ENGLISH
FRANÇAIS
ESPAÑOL

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.

Ceilling Concealed Duct
MA chassis

MFL71976901
Rev.03_071723

www.lghvac.com
www.lg.com

TIPS FOR SAVING ENERGY

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

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

For your records

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

Model number :

Serial number :

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

Dealer's name :

Date of purchase :

SAFETY INSTRUCTIONS

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

- Installation or repairs made by unqualified persons can result in hazards to you and others.
- Installation of all field wiring and components MUST conform with local building codes or, in the absence of local codes, with the National Electrical Code 70 and the National Building Construction and Safety Code or Canadian Electrical code and National Building Code of Canada.
- The information contained in the manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.
- Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.

Installation

- Always perform grounding. - Otherwise, it may cause electrical shock.
- For installation of the product, always contact the service center or a professional installation agency. - Otherwise, it may cause a fire, electrical shock, explosion or injury.
- Securely attach the electrical part cover to the indoor unit and the service panel to the outdoor unit. - If the electrical part cover of the indoor unit and the service panel of the outdoor unit are not attached securely, it could result in a fire or electric shock due to dust, water, etc.
- Always install an air leakage breaker and a dedicated switching board. - No installation may cause a fire and electrical shock.
- Do not keep or use flammable gases or combustibles near the air conditioner. - Otherwise, it may cause a fire or the failure of product.
- Ensure that an installation frame of the outdoor unit is not damaged due to use for a long time. - It may cause injury or an accident.
- Do not disassemble or repair the product randomly. - It will cause a fire or electrical shock.
- Do not install the product at a place that there is concern of falling down. - Otherwise, it may result in personal injury.
- Use caution when unpacking and installing. - Sharp edges may cause injury.

- Use a vacuum pump or Inert (nitrogen) gas when doing leakage test or air purge. Do not compress air or Oxygen and Do not use Flammable gases. Otherwise, it may cause fire or explosion. There is the risk of death, injury, fire or explosion.
- Consult your lacal dealer regarding what to do in case of refrigerant leakage.
  When the air conditioner is to be installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.
- Carry out the specified installation work after taking into account earthquakes.
  Failure to do so during installation work may result in the unit falling and causing accidents.
- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual. An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- Be sure to switch off the unit before touching any electrical parts.
- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires.
- If refrigerant gas leaks during installation, ventilate the area immediately.
  Toxic gas may be produced if the refrigerant gas comes into contact with fire.
- Make sure to be materials in a compartment handling air for circulation through a duct supplying only one room.
- For installation of the UVnano Filter Box(a non integral duct mounted UV lamp system approved by LG Electronics), always contact the service center or a professional installation agency.
  - Otherwise, it may cause a ultraviolet(UV) radiation exposure to eyes and skins, electrical shock, or injury.
- When installing the product vertical standing position, vertical drain pan(accessory kit) must be installed. Otherwise, drain water leakage will occur and can cause hazardous damage.

Operation

- Unplug the unit if strange sounds, smell, or smoke comes from it. - Otherwise, it may cause electrical shock or a fire.
- Keep the flames away. - Otherwise, it may cause a fire.
- Take the power plug out if necessary, holding the head of the plug and do not touch it with wet hands.
  - Otherwise, it may cause a fire or electrical shock.
- Do not open the suction inlet of the indoor/outdoor unit during operation. - Otherwise, it may electrical shock and failure.
- Do not allow water to run into electrical parts. - Otherwise, it may cause the failure of machine or electrical shock.
- Never touch the metal parts of the unit when removing the filter. - They are sharp and may cause injury.
- Do not step on the indoor/outdoor unit and do not put anything on it. - It may cause an injury through dropping of the unit or falling down.
- When the product is submerged into water, always contact the service center. - Otherwise, it may cause a fire or electrical shock.
- Take care so that children may not step on the outdoor unit. - Otherwise, children may be seriously injured due to falling down.

⚠ CAUTION

Installation

- Install the drain hose to ensure that drain can be securely done. - Otherwise, it may cause water leakage.
- Install the product so that the noise or hot wind from the outdoor unit may not cause any damage to the neighbors. - Otherwise, it may cause dispute with the neighbors.
- Always inspect gas leakage after the installation and repair of product. - Otherwise, it may cause the failure of product.
- Keep level parallel in installing the product. - Otherwise, it may cause vibration or water leakage.
- Do not install the unit in potentially explosive atmospheres.

Operation

- Avoid excessive cooling and perform ventilation sometimes. - Otherwise, it may do harm to your health.
- Use a soft cloth to clean. Do not use wax, thinner, or a strong detergent. - The appearance of the air conditioner may deteriorate, change color, or develop surface flaws.
- Do not use an appliance for special purposes such as preserving animals vegetables, precision machine, or art articles. - Otherwise, it may damage your properties.
- Do not place obstacles around the flow inlet or outlet. - Otherwise, it may cause the failure of appliance or an accident.

ENGLISH

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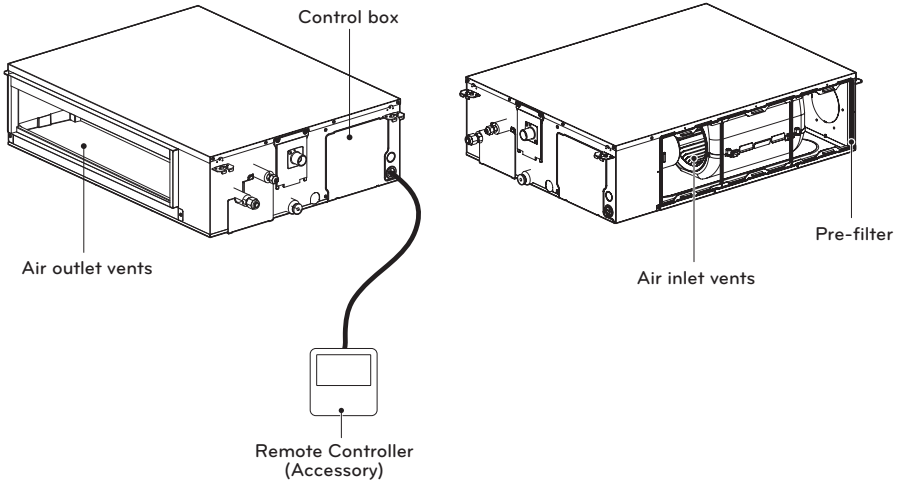
INSTALLATION PARTS



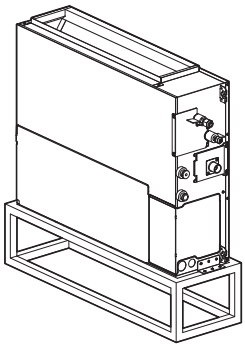
Name	Drain hose	Vinyl	Clamp metal	Washer for hanging bracket	Clamp (Tie Wrap)	Insulation for fitting
Quantity	1 EA	1 EA	2 EA	8 EA	4 EA	1 set
Shape						 for gas pipe for liquid pipe

* Screws for fixing panels are attached to decoration panel.

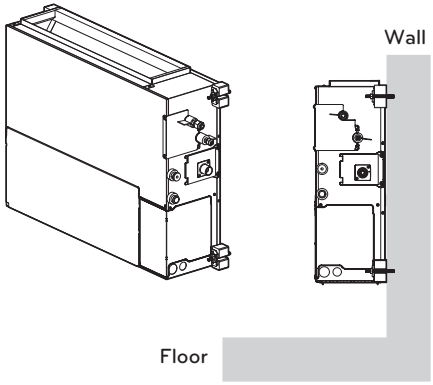
Vertical installation parts (Option)

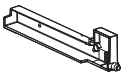
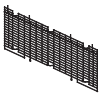
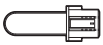
*You must purchase the optional parts in order to install product vertically.

Case 1. Installation on the floor



Case 2. Installation on the wall



Name	Vertical drain pan assembly	Mesh metal	Screw (D4, L10)	Terminal to short CN_FLOAT	Terminal to suppress CN_D_PUMP
Quantity	1 EA	1 EA	5 EA	1 EA	1 EA
Shape					
Name	Vertical installation manual	Bush	Washer	Nut (M10)	Label, Caution
Quantity	1 EA	4 EA	4 EA	4 EA	2 EA
Shape					

⚠ WARNING

When installing the product vertically, the mesh steel provided must be installed to protect the injury from the moving parts.

NOTE

- Required parts will be different depending on the installation location.

INSTALLATION

Indoor unit

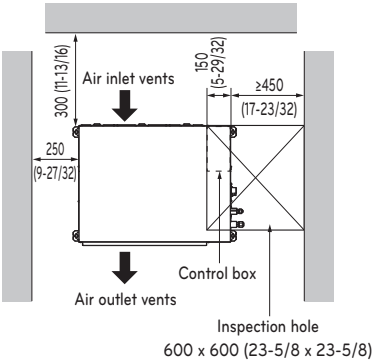
Install the air conditioner in the location that satisfies the following conditions.
- The place shall easily bear a load exceeding four times the indoor unit's weight.
- The place shall be able to inspect the unit as the figure.
- The place where the unit shall be leveled.
- The place shall easily connect 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

Confirm the positional relationship between the unit and suspension bolts.
- Installation the ceiling opening to clean the filter or service under the product.

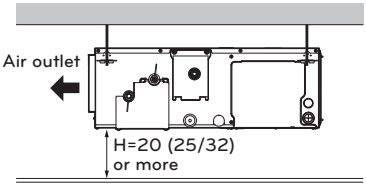
⚠ WARNING

- Make sure to be materials in a compartment handling air for circulation through a duct supplying only one room.
- The product may be damaged if installed in an inappropriate condition.

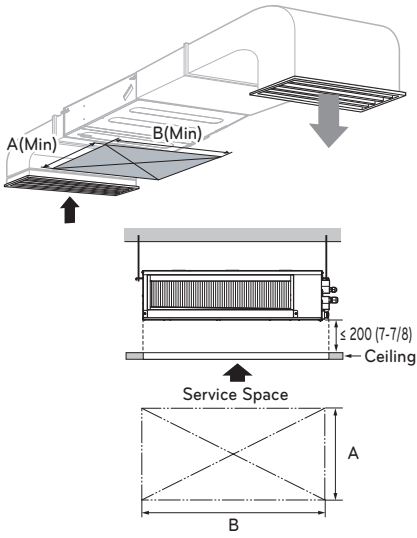
Top view [Unit: mm(inch)]



Side view [Unit: mm(inch)]



• Suitable dimension "H" is necessary to get a slope to drain as shown in the figure



[Unit : mm (inch)]

Capacity (kBtu/h)	A	B
~ 24	800 (31-1/2)	1000 (39-3/8)

❉ If distance between false ceiling and actual ceiling is less than 200 mm (7-7/8 inch), the inspection hole size should be more than size of Indoor unit.

❉ These figures are representative. Actual appearance of indoor unit may be different but clearances will stay the same.

NOTE

- These values are the least space for installation. If any service area is needed for service according to field circumstance, obtain enough service space.
- Places where products are installed should not be any obstacles to the air circulation or installation. Ensure the spaces from the wall, ceiling, or other obstacles.
- According to type of indoor unit, external appearance or installed structure could be different.
- According to product type, model line up, sales region..etc, applicability of each chassis could be different.

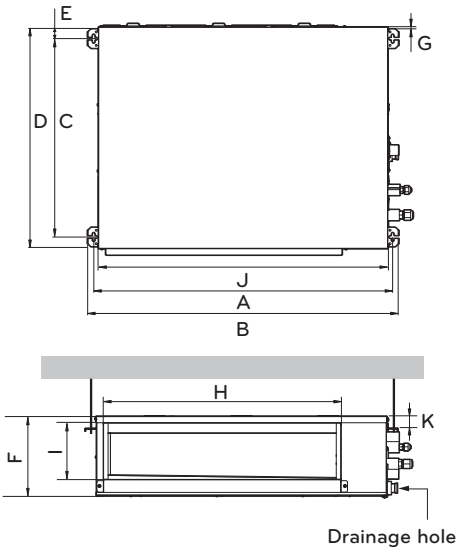
Ceiling dimension and hanging bolt location

Installation of Unit

Install the unit above the ceiling correctly.

POSITION OF SUSPENSION BOLT

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



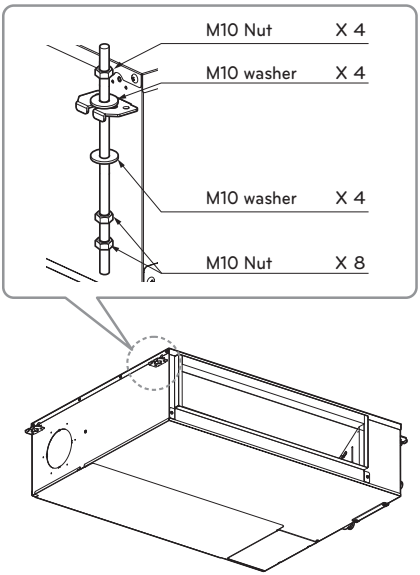
[Unit:mm(inch)]

Dimension \ Capacity(kBtu/h)	~24k
A	933.4 (36-3/4)
B	972.4 (38-9/32)
C	619.2 (24-3/8)
D	679.2 (26-3/4)
E	30 (1-3/16)
F	245 (9-21/32)
G	5.2 (7/32)
H	738 (29-1/16)
I	176.4 (6-15/16)
J	900 (35-7/16)
K	37.6 (1-15/32)

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

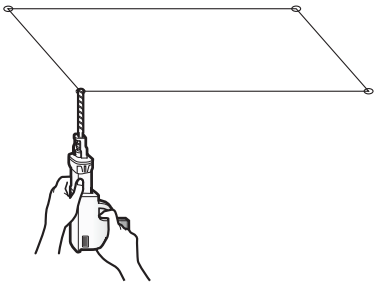
POSITION OF CONSOLE BOLT

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

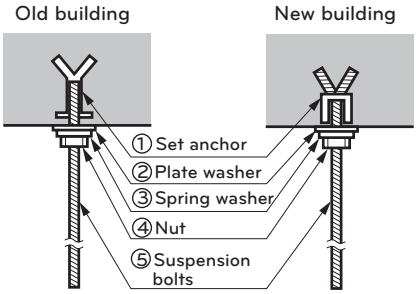


Indoor Unit Installation

- 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.

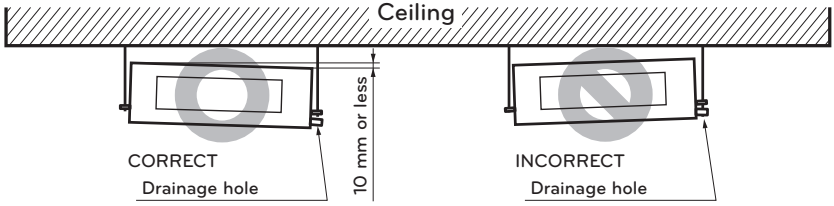
⚠ CAUTION

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

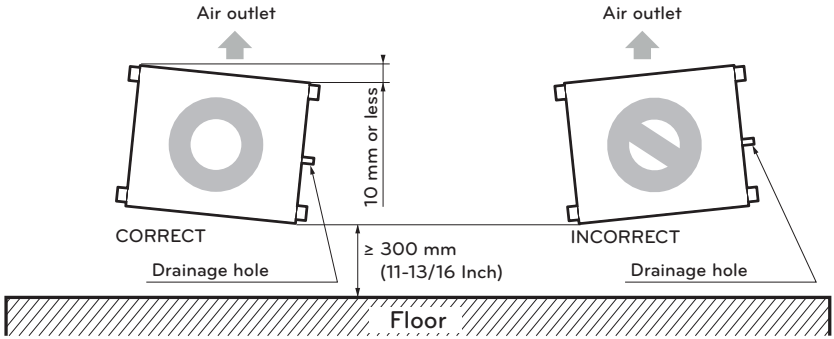
2 Minimum thickness of the insulation for the connecting pipe shall be 5 mm(3/16 inch).

Front of view

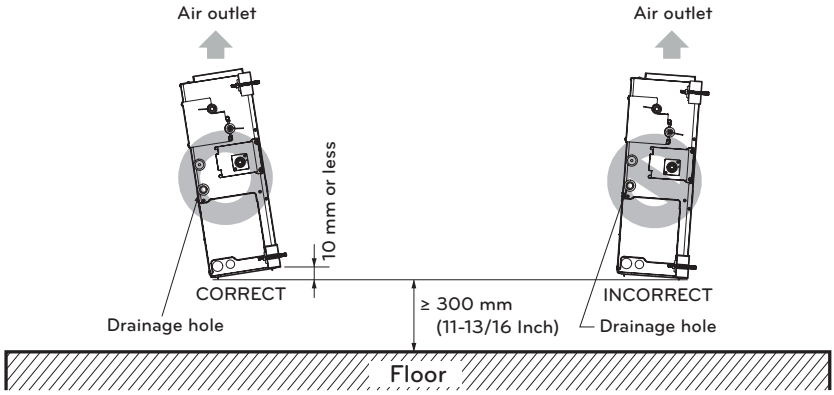
• The unit must be declined to the drain hose connected when finished installation.



Front of vertical installation view



Side of vertical installation view

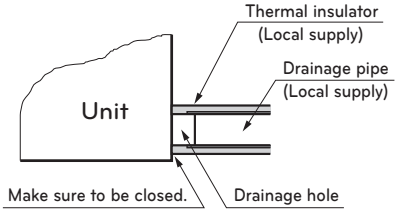


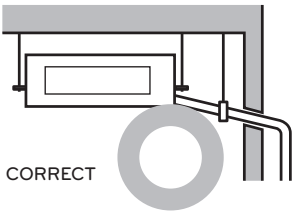
⚠ CAUTION

CAUTION FOR GRADIENT OF UNIT AND DRAIN PIPING

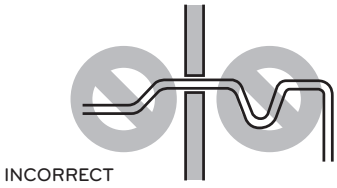
Lay the drain hose with a downward inclination so water will drain out.

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





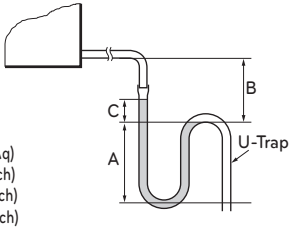
- Upward routing not allowed



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

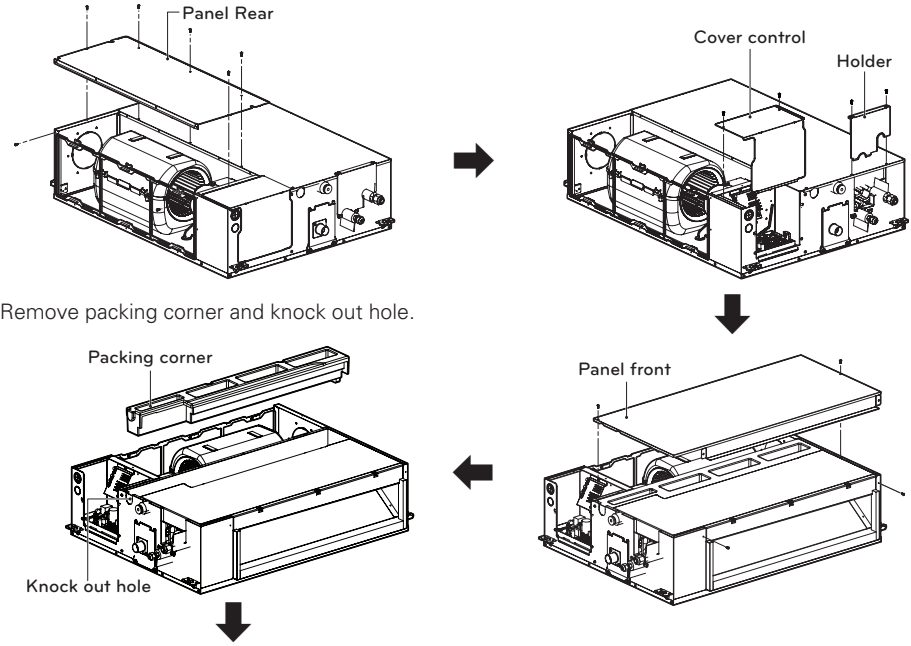
Applied U-Trap Dimension

A ≥ 70 mm(2-3/4 inch)
B ≥ 2C
C ≥ 2 x SP
SP = External Pressure
(mmAq(inAq))
Ex) External Pressure
= 10 mmAq (0.39 inAq)
A ≥ 70 mm(2-3/4 inch)
B ≥ 40 mm(1-9/16 inch)
C ≥ 20 mm(25/32 inch)



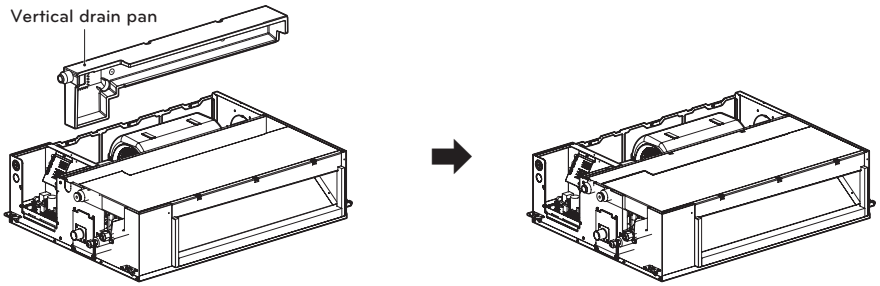
How to replace vertical installation kit

Remove panel rear, cover control, holder and panel front.



Remove packing corner and knock out hole.

Replace corner packing with vertical drain pan.



Reassemble in reverse order.

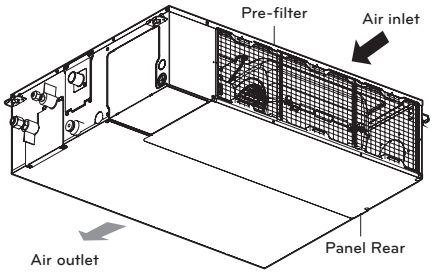
Remove connector of CN_D_PUMP and CN_FLOAT.

Insert terminals for CN_D_PUMP and CN_FLOAT as following images

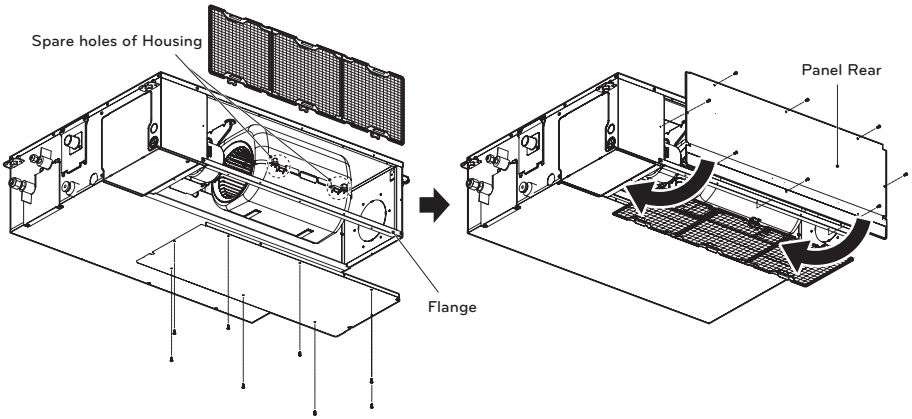
⚠ CAUTION

When installing/replacing/servicing, please wear anti-static gloves.

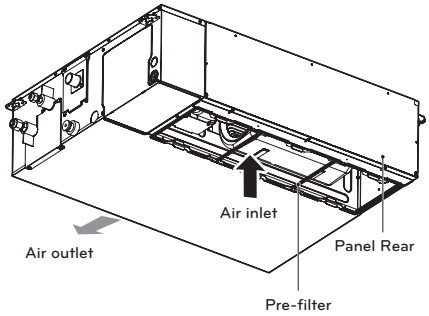
How to change suction side from back to bottom



Suction from back side of MA chassis.



In case of changing suction side from back to bottom, bend the panel rear and fix it to flange with screws. If the hooks on the Housing are damaged, two screws supplied field can be fixed to the spare holes.

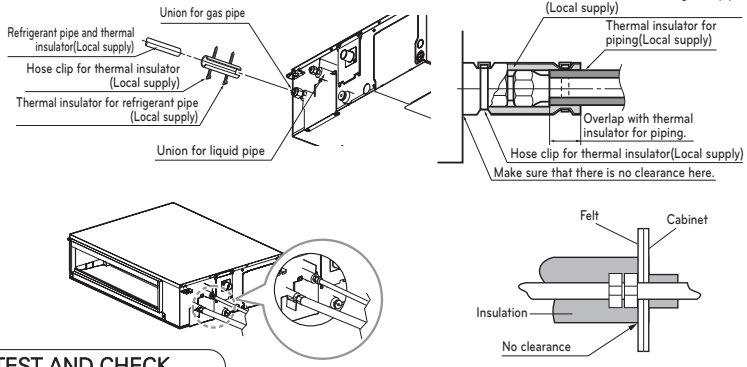


Suction from bottom side of MA chassis.

INSULATION, OTHERS	Insulate the joint and tubes completely.

THERMAL INSULATION All thermal insulation must comply with local requirement.

INDOOR UNIT



TEST AND CHECK

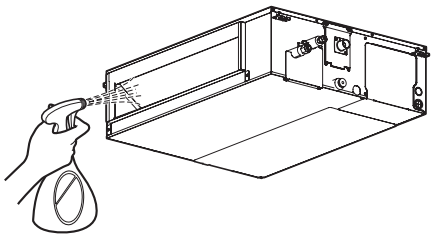
After all workings are finished, check the working and operation.

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

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.

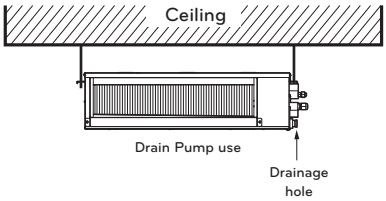


⚠ CAUTION

- Install declination of the indoor unit is very important for the drain of the duct type air conditioner.
- Minimum thickness of the insulation for the connecting pipe shall be 19 mm(3/4 inch).

Front of view

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



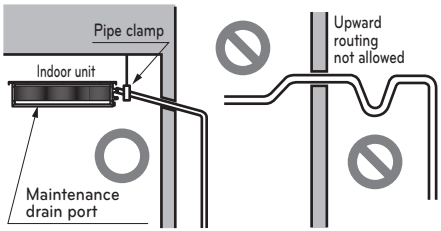
Indoor Unit Drain Piping

- Drain piping must have down-slope (1/50 to 1/100): be sure not to provide up-and-down slope to prevent reversal flow.
- During drain piping connection, be careful not to exert extra force on the drain port on the indoor unit.
- The outside diameter of the drain connection on the indoor unit is 32 mm(1-1/4 inch).

Piping material: Polyvinyl chloride pipe VP-25 and pipe fittings

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

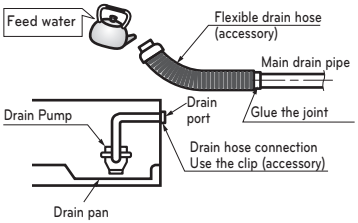
Heat insulation material: Polyethylene foam with thickness more than 8 mm(5/16 inch).



Drain test

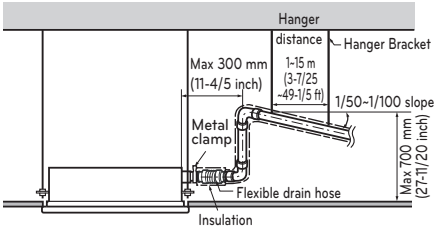
The air conditioner uses a drain pump to drain water.
Use the following procedure to test the drain pump operation:

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



⚠ CAUTION

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



HAND OVER

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

Combination indoor units

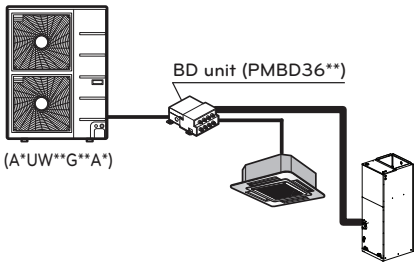
(AMNW**G**A*)

The indoor units connectable to the outdoor unit are shown below

Indoor Unit		Outdoor Unit (kBtu/h)	
Type	Capacity (kBtu/h)	36	54
Vertical AHU	24	O	O
	36	X	O
Ceiling Concealed Duct (High/Middle Static)	9	O	O
	12	O	O
	18	O	O
	24	O	O
	36	X	O

NOTE

1. The total capacity(in Btu/h unit) of connected indoor unit models represents the total sum of the figures expressed in the indoor model name.
2. Combinations in which the total capacity of the connected indoor units exceeds the capacity of the outdoor unit will reduce the capacity of each indoor unit below the rated capacity during simultaneous operation. Therefore, if circumstances allows, combine indoor units within the capacity of the outdoor unit.
3. VAHU, Ceiling Concealed Duct (High/Middle Static) type indoor unit's combination calculation method as below.
   Calculation method for total capacity of connectable indoor unit to an outdoor unit
   = (Sum of all VAHU & Ceiling Concealed Duct(High/Middle Static) type indoor units capacity
   x 1.3) + Sum of all other indoor unit's capacity



Outdoor Unit (kBtu/h)	Total capacity of connectable indoor units (kBtu/h)
36	48
54	73

Example)

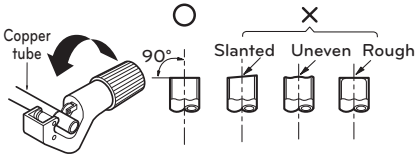
Total rated capacity index :

4Way CST	
AMNW18GTQA0 [LMCN185HV]	18
	+
VAHU	
AMNW36GNJA0 [LMVN360HV]	36 x 1.3
	=
	64.8 < 73

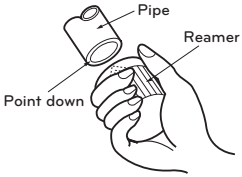
Flaring work

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

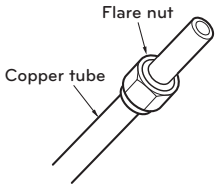
1 Cut the pipes
- Use the accessory piping kit or the pipes purchased locally.
- Measure the distance between the indoor and the outdoor unit.
- Cut the pipes a little longer than measured distance.
- Cut the cable 1.5 m(4.9 ft) longer than the pipe length.



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



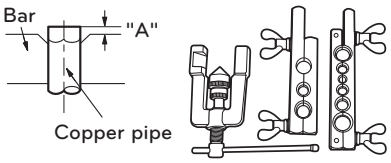
3 Putting nut on
- Remove flare nuts attached to indoor and outdoor units, than put them on pipe/tube having completed burr removal. (Not possible to put them on after flaring work)



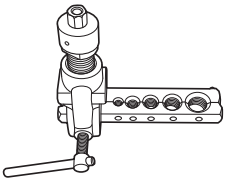
4 Flaring work
- Carry out flaring work using flaring tool as shown below.

Pipe diameter Inch (mm)	A Inch (mm)		Thickness 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)	0.03 (0.7)
Ø 3/8 (Ø 9.52)	0.06~0.07 (1.5~1.7)		0.03 (0.8)
Ø 1/2 (Ø 12.7)	0.06~0.07 (1.6~1.8)		0.03 (0.8)
Ø 5/8 (Ø 15.88)	0.06~0.07 (1.6~1.8)		0.04 (1.0)
Ø 3/4 (Ø 19.05)	0.07~0.08 (1.9~2.1)		0.04 (1.0)

<Wing nut type>

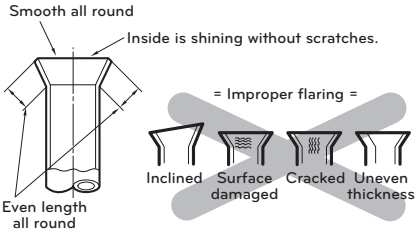


<Clutch type>



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

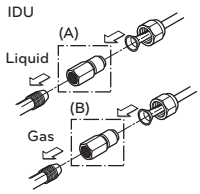
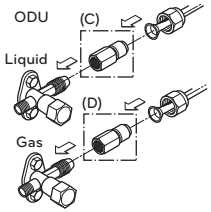
5 Check
- Compare the flared work with figure.
- If flare is noted to be defective, cut off the flared section and do flaring work again.



Connection of piping - Indoor, Outdoor, BD Unit

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

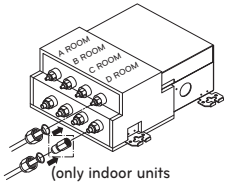
ODU	Duct(IDU) Capacity (kBtu/h)	Refrigerant Connections Pipe size (inch (Ø mm))	
		Liquid	Gas
Single Zone	9	1/4 (Ø6.35)	3/8 (Ø9.52)
	12	1/4 (Ø6.35)	3/8 (Ø9.52)
	18	3/8 (Ø9.52)	5/8 (Ø15.88)
	24	3/8 (Ø9.52)	5/8 (Ø15.88)
Multi Zone	9	1/4 (Ø6.35)	3/8 (Ø9.52)
	12	1/4 (Ø6.35)	3/8 (Ø9.52)
	18	1/4 (Ø6.35)	1/2 (Ø12.7)
	24	1/4 (Ø6.35)	1/2 (Ø12.7)

Image					
ODU	Duct(IDU) Capacity (kBtu/h)	Socket for Duct(IDU) (inch (Ø mm))		Socket for ODU (inch (Ø mm))	
		Liquid (A)	Gas (B)	Liquid (C)	Gas (D)
Single Zone	9	X	X	X	X
	12	X	X	X	X
	18	1/4 (Ø 6.35) → 3/8 (Ø 9.52)	1/2 (Ø 12.7) → 5/8 (Ø 15.88)	X	X
	24	X	X	X	X
Multi Zone	9	X	X	X	X
	12	X	X	X	X
	18	X	X	X	3/8 (Ø 9.52) → 1/2 (Ø 12.7)
	24	3/8 (Ø 9.52) →1/4 (Ø 6.35)	5/8 (Ø 15.88) →1/2 (Ø 12.7)	X	3/8 (Ø 9.52) → 1/2 (Ø 12.7)

BD Unit	Refrigerant Connections Pipe Size (inch (mm))		Connectable Indoor Unit Capacity (kBtu/h)
	Liquid	Gas	
PMBD3620	1/4 (Ø 6.35) x 2 EA	3/8 (Ø 9.52) x 2 EA	9/12/18/24 k
PMBD3630	1/4 (Ø 6.35) x 3 EA	3/8 (Ø 9.52) x 3 EA	9/12/18/24 k
PMBD3640	1/4 (Ø 6.35) x 4 EA	3/8 (Ø 9.52) x 4 EA	9/12/18/24 k
PMBD3641	1/4 (Ø 6.35) x 4 EA	3/8 (Ø 9.52) x 3 EA	9/12/18/24 k (A/B/C ROOM)
		1/2 (Ø 12.7) x 1 EA	36 k (D ROOM)

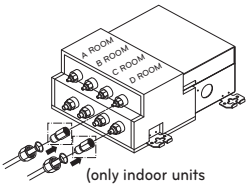
❉ BD Unit(PMBD3641) includes the sockets.
(Ø 12.7 → Ø 15.88 x 1 EA,
Ø 6.35 → Ø 9.52 x 1 EA)

(PMBD3620 / PMBD3630 / PMBD3640)



(only indoor units 24 kBtu/h)

(PMBD3641)

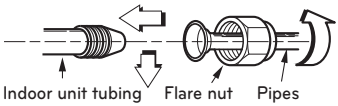


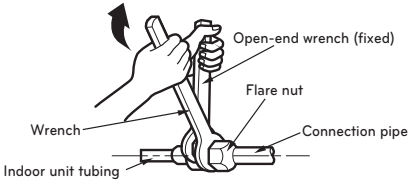
(only indoor units 36 kBtu/h connect "D ROOM")

Finally, tighten the flare nut with torque wrench until the wrench clicks.

- When tightening the flare nut with torque wrench ensure the direction for tightening follows the arrow on the wrench.

Outside diameter		Torque		
mm	inch	N·m	kgf·m	lbf·ft
Ø 6.35	1/4	14~18	1.4~1.8	10~13
Ø 9.52	3/8	34~42	3.5~4.3	25~31
Ø 12.7	1/2	49~61	5.0~6.2	36~45
Ø 15.88	5/8	69~82	7.0~8.4	51~60
Ø 19.05	3/4	100~120	10.0~12.2	73~88



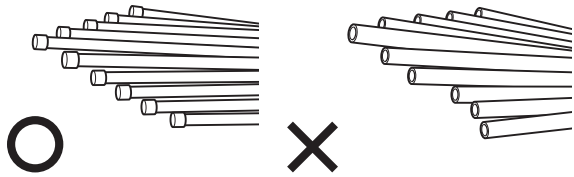


⚠ CAUTION

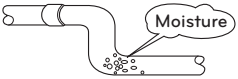
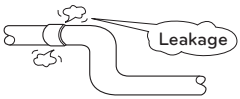
When tightened over torque specification of table, a flare nut may broken and cause a leakage of refrigerant.

Plumbing materials and storage methods

Pipe must be able to obtain the specified thickness and should be used with low impurities. Also when handling storage, pipe must be careful to prevent a fracture, deformity and wound. Should not be mixed with contaminations such as dust, moisture.



Refrigerant piping on three principles

	Drying	Cleanliness	Airtight
	Should be no moisture inside	No dust inside.	There is no refrigerant leakage
Items			
Cause failure	- Significant hydrolysis of refrigerant oil - Degradation of refrigerant oil - Poor insulation of the compressor - Do not cold and warm - Clogging of EEV, Capillary	- Degradation of refrigerant oil - Poor insulation of the compressor - Do not cold and warm - Clogging of EEV, Capillary	- Gas shortages - Degradation of refrigerant oil - Poor insulation of the compressor - Do not cold and warm
Countermeasure	- No moisture in the pipe - Until the connection is completed, the plumbing pipe entrance should be strictly controlled. - Stop plumbing at rainy day. - Pipe entrance should be taken side or bottom. - When removal burr after cutting pipe, pipe entrance should be taken down. - Pipe entrance should be fitted cap when pass through the walls.	- No dust in the pipe. - Until the connection is completed, the plumbing pipe entrance should be strictly controlled. - Pipe entrance should be taken side or bottom. - When removal burr after cutting pipe, pipe entrance should be taken down. - Pipe entrance should be fitted cap when pass through the walls.	- Airtightness test should be. - Brazing operations to comply with standards. - Flare to comply with standards. - Flange connections to comply with standards.

Nitrogen substitution method

Welding, as when heating without nitrogen substitution a large amount of the oxide film is formed on the internal piping.

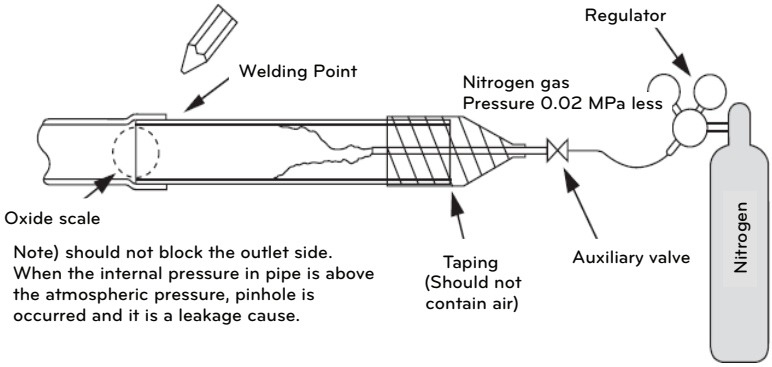
The oxide film is a caused by clogging EEV, Capillary, oil hole of accumulator and suction hole of oil pump in compressor.

It prevents normal operation of the compressor.

In order to avoid this problem, Welding should be done after replacing air by nitrogen gas.

When welding plumbing pipe, the work is required.

◆How to work



⚠ CAUTION

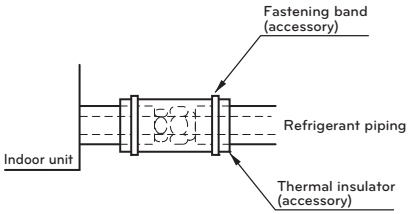
1. Always use the nitrogen.(not use oxygen, carbon dioxide, and a Chevron gas):
   Please use the following nitrogen pressure 0.02MPa
   Oxygen -------- Promotes oxidative degradation of refrigerant oil.
   Because it is flammable, it is strictly prohibited to use
   Carbon dioxide --- Degrade the drying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

Heat insulation

1 Use the heat insulation material for the refrigerant piping which has an excellent heat-resistance (over 120 °C).

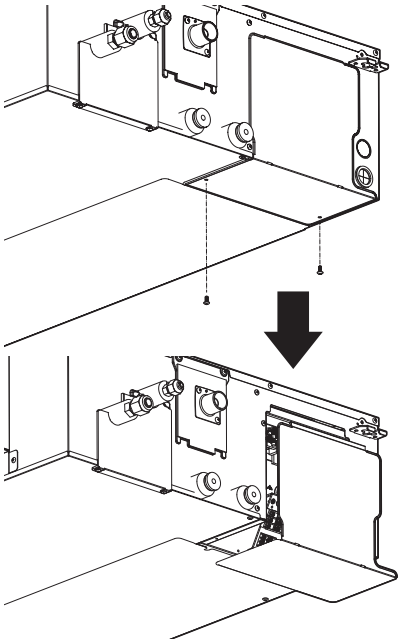
2 Precautions in high humidity circumstance: This air conditioner has been tested according to the "KS Standard Conditions with Mist" and confirmed that there is not any default. However, if it is operated for a long time in high humid atmosphere (dew point temperature: more than 23 °C), water drops are liable to fall. In this case, add heat insulation material according to the following procedure:

- Heat insulation material to be prepared... Adiabatic glass wool with thickness 10 to 20 mm.
- Stick glass wool on all air conditioners that are located in ceiling atmosphere.

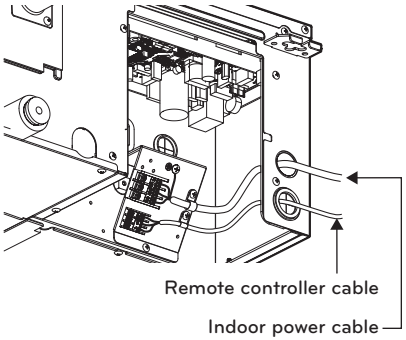


Wiring Connection

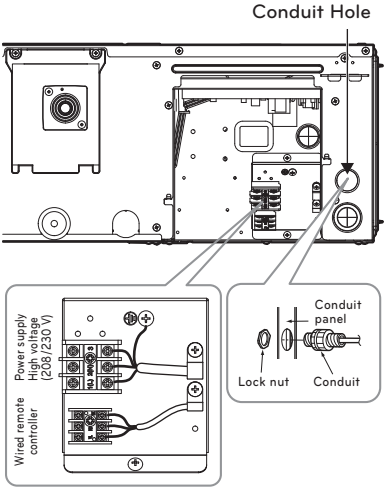
- Remove the control box cover for electrical connection between the indoor and outdoor unit. (Remove screws)
- Open the control box cover and connect the remote controller cables, transmission cables and indoor power cables.
- Use the cord clamper to fix the cord.
- Control box cover is consist of one panel.



After remove the control box cover, insert cables onto the bush and conduit and then connect at terminal block.



Remote controller cable and transmission cable between the indoor unit and the outdoor unit



WARNING

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

NOTE

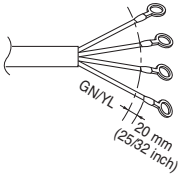
Use time delay fuses only.

Check the fuses specification with the circuit label affixed to the control cover.

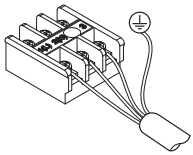
CAUTION

The power connecting cable between the outdoor and indoor units must comply with the following specifications: NRTL Recognized (for example, UL or ETL recognized and CSA certified).

AWG 18-4 is the minimum recommended wire size, however, the selected conductors must comply with local codes and be suitable for installation in wet locations.

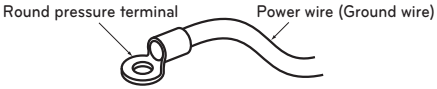


If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent. When the connection line between the indoor unit and outdoor unit and outdoor unit is over 40 m, connect the telecommunication line and power line separately.



Precautions when laying power and ground wiring

Use round pressure terminals for connections to the power terminal block.
When laying ground wiring, you must use round pressure terminals.



When none are available, follow the instructions below.
- Do not connect wiring of different thicknesses to the power terminal block. (Slack in the power wiring may cause abnormal heat.)
- When connecting wiring which is the same thickness, do as shown in the figure below.

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

NOTE

Use connection cable NRTL(UL, ETL, CAS…) listed and stranded copper(4) THHN conductors, sunlight (UV) resistant ROHS compliant PVC jacket 600 V direct burial listed, approved for wet conditions. Temperature rated for –20 °C(-4 °F) to 90 °C(194 °F). And this cable should be enclosed in conduit.

⚠ WARNING

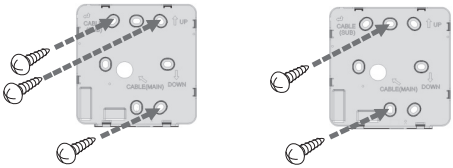
- Be sure to comply with local and national codes while running the wire from the indoor unit to the outdoor unit(size of wire and wiring method, etc).
- Every wire must be connected firmly.
- No wire should be allowed to touch refrigerant tubing, the compressor or any moving parts.
- The communication wirings of air conditioner should be separate and isolated from external device's electric wiring such as computers, elevator, radio & Television broadcasting facilities, as well as medical imaging offices.
- Take measures to prevent electrical leakage as required.

REMOTE CONTROLLER INSTALLATION

※ Remote controller is provided as an accessory.

Please fix tightly using provided screw after placing remote controller setup board on the place where you like to setup.

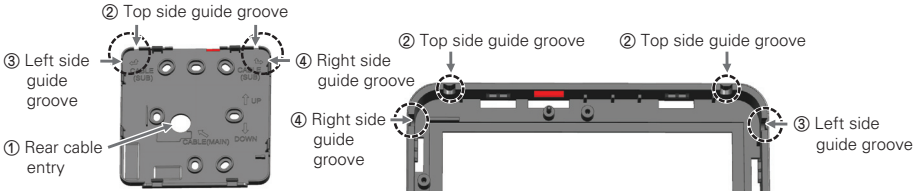
- Please set it up not to bend because poor setup could take place if setup board bends. Please set up remote controller board fit to the reclamation box if there is a reclamation box.



Can set up Wired remote controller cable into 4 directions.

- Installation direction: Rear entry, top side, right side, left side.
- When you install the remote controller cable at the top, right and left side, remove the remote controller cable guide hole before the installation.
  ※ Use a long nose pliers to remove the guide hole.

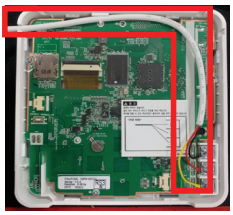
• After removing the hole, trim the cut surface neatly.



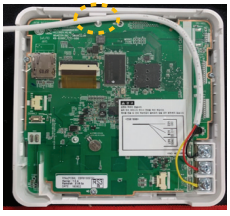
• When installing the remote control cable on the left side, be sure to install it in the following guide.

1. Make the cable to "ㄱ" shape as shown below.
2. Fit the bent "ㄱ" cable into the upper center piece of case.
3. Tighten the installation plate with preventing interference with the surrounding guide structure.

※ If the cable is assembled in a shape other than "ㄱ", it may not be fastened to the installation plate due to interference with the structure of case.

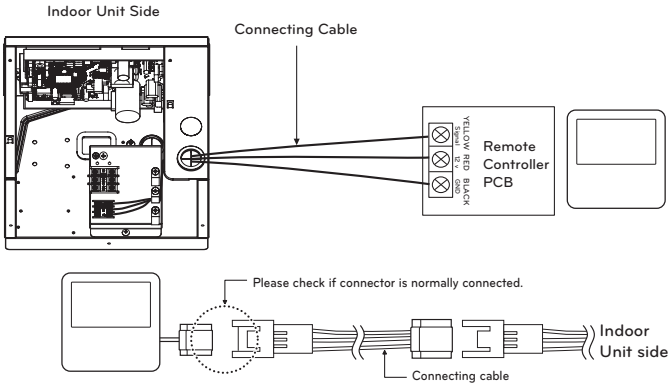


Reference. the bent cable shape



The Upper center boss for fixing the bent cable

Please connect indoor unit and remote controller using connection cable.



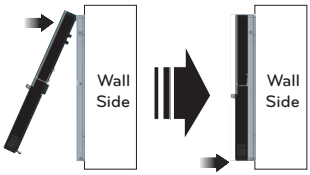
12 V	Red
Signal	Yellow
GND	Black

Please use extension cable if the distance between wired remote controller and indoor unit is more than 10 m(32-4/5 ft).

Please fix remote controller upper part into the setup board attached to the surface of the wall, as the picture below, and then, connect with setup board by pressing lower part.

- Please connect not to make a gap at the remote controller and setup board's upper and lower, right and left part.

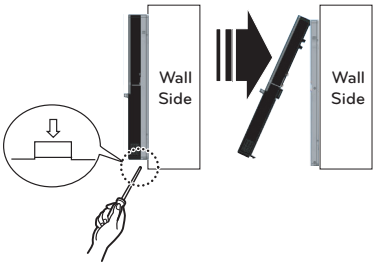
<Connecting order>



When separating remote controller from setup board, as the picture below, after inserting into the lower separating hole using screw driver and then, spinning clockwise, remote controller is separated.

- There are two separating holes. Please individually separate one at a time.
- Please be careful not to damage the inside components when separating.

<Separating order>



⚠ CAUTION

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 cable to be 50 m or above. (It can cause communication error.)

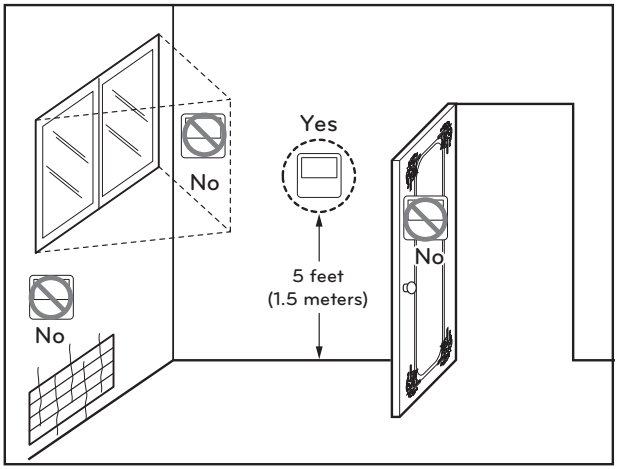
- When installing the extension cable, check the connecting direction of the connector of the remote controller side and the product side for correct installation.
- If you install the extension cable in the opposite direction, the connector will not be connected.
- Specification of extension cable: 2547 1007 22# 2 core 3 shield 5 or above.
- Apply totally enclosed noncombustible conduit in case of local building code Requiring plenum cable usage.

Wired remote controller installation

Since the room temperature sensor is in the remote controller, the remote controller box should be installed in a place away from direct sunlight, high humidity and direct supply of cold air to maintain proper space temperature. Install the remote controller about 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 LCD. display. For proper display of the remote controller LCD's, the remote controller should be installed properly as shown in Fig.1. (The standard height is 4~5 ft (1.2~1.5 m) from floor level.)



[Fig.1]

HOW TO SET E.S.P

Installer Setting - E.S.P.

This is the function that decides the strength of the wind for each wind level and because this function is to make the installation easier.

- If you set ESP incorrectly, the air conditioner may malfunction.
- This setting must be carried out by a certificated-technician.

※ **The procedure of setting E.S.P. is refer to the manual of remote controller.**

- Precaution shall be taken not to alter the E.S.P value corresponded to each air flow section.
- E.S.P value can be varied according to the products.
- In the case of going to the next air flow rate stage by pressing the fan-speed button during the setup of the E.S.P value, the E.S.P value of previous air flow rate will be maintained by remembering the E.S.P value prior to the shift.

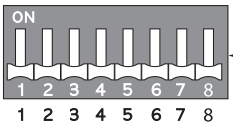
Static Pressure		(mmAq)	2.5	4	5	6	7	8	9	10	11	13	15
		(in. wg)	0.1	0.16	0.2	0.24	0.28	0.31	0.35	0.39	0.43	0.51	0.59
Capacity	Step	CFM	Setting Value										
24k	High	706.3	122	128	131	132	136	143	146	148	152	158	164
	Mid	547.4	103	110	114	117	121	127	130	135	138	145	154
	Low	459.1	93	100	105	109	114	118	122	128	131	139	146
18k	High	635.7	106	113	117	121	126	128	133	137	139	149	156
	Mid	529.7	94	102	108	109	115	119	122	130	134	145	152
	Low	423.8	82	92	100	103	108	114	118	126	130	139	147
12k	High	494.4	91	98	105	108	113	118	122	130	134	143	151
	Mid	423.8	82	92	100	103	108	114	118	126	130	139	147
	Low	353.1	76	88	96	99	104	110	114	121	126	135	143
9k	High	353.1	76	88	96	99	104	110	115	121	126	135	143
	Mid	317.8	72	82	92	95	100	106	111	117	121	131	139
	Low	282.5	68	78	88	91	96	102	107	113	117	127	135

SELF-DIAGNOSIS FUNCTION

Indoor Unit Error

Error Code	Description	Indoor status
01	Indoor Room sensor error	OFF
02	Indoor in-pipe sensor error	OFF
03	Remote controller error	OFF
04	Drain pump error	OFF
05	Communication error indoor and outdoor	OFF
06	Indoor out-pipe sensor error	OFF
09	EEPROM error (indoor)	OFF
10	BLDC motor fan lock (indoor)	OFF

DIP SWITCH SETTING



Indoor PCB

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Master	Slave	Group control setting using 7-Day Programmable Controller; selects Master / Slave on each indoor unit
SW4	DRY CONTACT MODE	Variable	Auto	Sets operation mode for optional Dry Contact accessory 1. Variable: Auto or Manual Mode can be set through 7-Day Programmable Controller or Wireless Remote Controller (factory default setting is Auto if there is no setting) 2. Auto: For Dry Contact, it is always Auto mode
SW5	CONTINUOUS FAN	Off	On	Selects continuous fan for ducted indoor units. 1. On: Indoor unit fan will always operate at a set fan speed, except when the system is off, or the outdoor unit is in defrost mode (when the outdoor unit is in defrost mode, the fan will operate at super low fan speed) 2. Off: Indoor unit fan speed can be changed by on / off
SW6	HEATER INTERLOCK	Off	On	Selects heater interlock function for vertical air handler units 1. On: Automatic (heater will automatically operate during heating mode) 2. Off: Manual (heater needs to be manually turned on during heating mode)

US	Please call the installing contractor of your product, as warranty service will be provided by them.
CANADA	Please call the installing contractor or HVAC service provider for service. Veuillez appeler l'installateur ou le fournisseur de services de chauffage, de ventilation et de climatisation pour obtenir un service. Service call Number # : (888) LG Canada, (888) 542-2623 Numéro pour les appels de service : LG Canada, 1-888-542-2623