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.

4-WAY CEILING CASSETTE

MFL61971220
Rev.01_061220

http://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 :

IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE USING THE APPLIANCE.

Always comply with the following precautions to avoid dangerous situations and ensure peak performance of your product.

⚠ WARNING

It can result in serious injury or death when the directions are ignored.

⚠ CAUTION

It can result in minor injury or product damage when the directions are ignored.

⚠ WARNING

- Installation or repairs made by unqualified persons can result in hazards to you and others.
- Installation of all field wiring and components MUST conform with local building codes 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.
- Don't use a power cord, a plug or a loose socket which is damaged.
  - Otherwise, it may cause a fire or 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.

Operation

- Do not share the outlet with other appliances.
  - It will cause an electric shock or a fire due to heat generation.
- Do not use the damaged power cord.
  - Otherwise, it may cause a fire or electrical shock.

- Do not modify or extend the power cord randomly.
  - Otherwise, it may cause a fire or electrical shock.
- Take care so that the power cord may not be pulled during operation.
  - Otherwise, it may cause a fire or electrical shock.
- 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 use the power cord near the heating tools.
  - Otherwise, it may cause a fire and 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.
- Hold the plug by the head when taking it out.
  - It may cause electric shock and damage.
- 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.
- Do not place a heavy object on the power cord.
  - Otherwise, it may cause a fire or electrical shock.
- 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.

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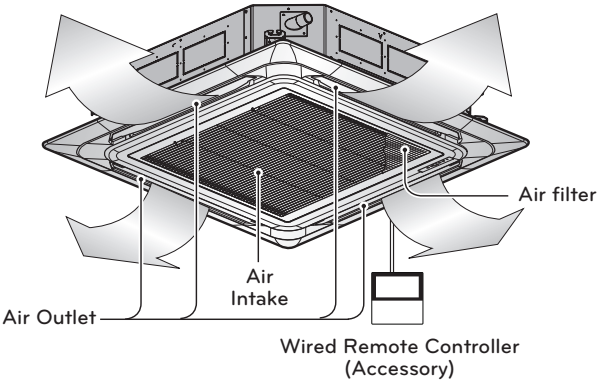
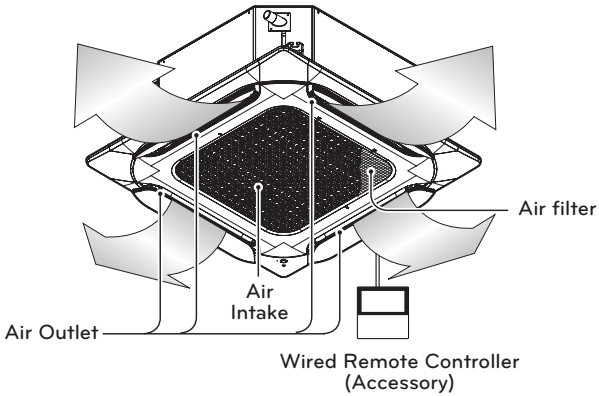
INSTALLATION PARTS





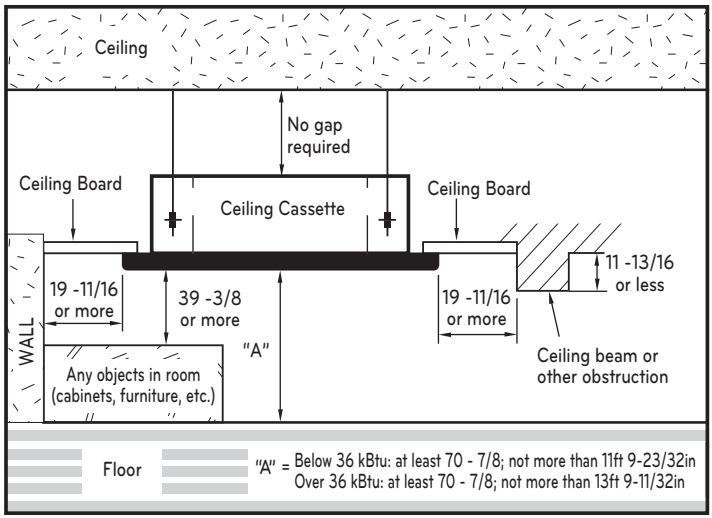
Installation Tool

Name	Drain hose	Clamp metal	Washer for hanging backet	Plastic band	Insulation for fitting	Conduit mounting plate	
Quantity	1 EA	2 EA	8 EA	4 EA	1 SET	1 EA	
Shape							(Other) • Paper pattern for installation • Manual

• Screws for fixing panels are attached to decoration panel.

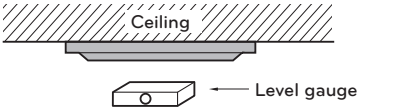
INSTALLATION PLACES

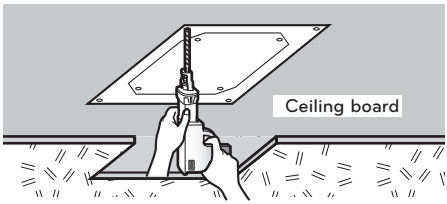
- There should not be any heat source or steam near the unit.
- There should not be any obstacles to prevent the air circulation.
- A place where air circulation in the room will be good.
- A place where drainage can be easily obtained.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.
- Ensure the spaces indicated by arrows from the wall, ceiling, or other obstacles.
- The indoor unit must keep the maintenance space.



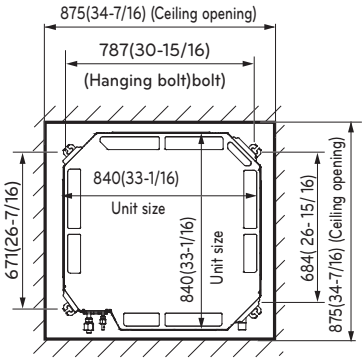
Unit: inch

THE INDOOR UNIT INSTALLATION



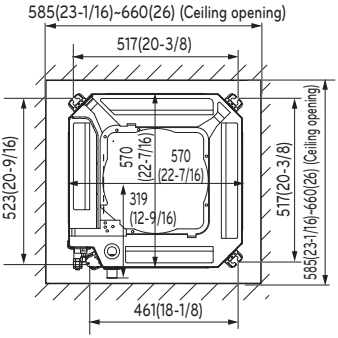


[TM/TM-A/TN/TP/TP-B Chassis] Unit:mm(inch)



Panel size : 950(37-3/8) x 950(37-3/8) mm

[TQ/TR Chassis] Unit:mm(inch)



Panel size : 700(27-9/16) x 700(27-9/16) mm

- Select and mark the position for fixing bolts and piping hole.
- Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.
- Drill the hole for anchor bolt on the wall.
- When using cardboard on the bottom of packaging, use after separating installation paper from bottom of the product packaging using back of a knife as shown in the picture (TM/TM-A/TN/TP/TP-B)

Included Paper

Cardboard on the bottom of packaging

CAUTION

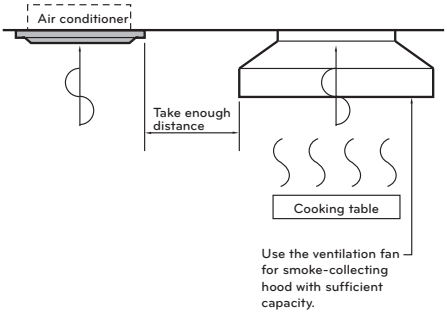
- This air-conditioner uses a drain pump.
- Install the unit horizontally using a level gauge.
- During the installation, care should be taken not to damage electric wires.

NOTE

Avoid the following installation location.

1 Such places as restaurants and kitchen where considerable amount of oil steam and flour is generated. These may cause heat exchange efficiency reduction, or water drops, drain pump mal-function. In these cases, take the following actions;

- Make sure that ventilation fan is enough to cover all noxious gases from this place.
- Ensure enough distance from the cooking room to install the air conditioner in such a place where it may not suck oily steam.

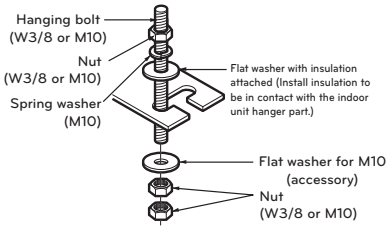


2 Avoid installng air conditioner in such places where cooking oil or iron powder is generated.

3 Avoid places where inflammable gas is generated.

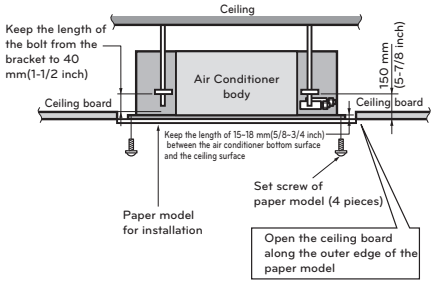
4 Avoid place where noxious gas is generated.

5 Avoid places near high frequency generators.



The following parts is option.

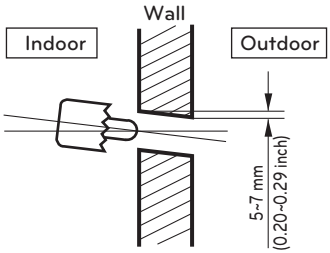
① Hanging Bolt - W 3/8 or M10
② Nut - W 3/8 or M10
③ Spring Washer - M10
④ Plate Washer - M10



Drill the piping hole on the wall slightly tilted to the outdoor side using a Ø 70 hole-core drill.

⚠ CAUTION

Tighten the nut and bolt to prevent unit falling.

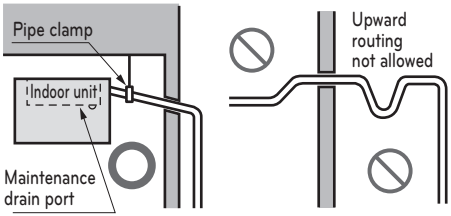


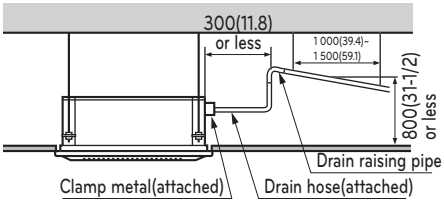
Indoor Unit Drain Piping

- 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.

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

- Be sure to execute heat insulation on the drain piping.
- Install the drain raising pipes at a right angle to the indoor unit and no more than 300 mm from the unit.





Unit:mm(inch)

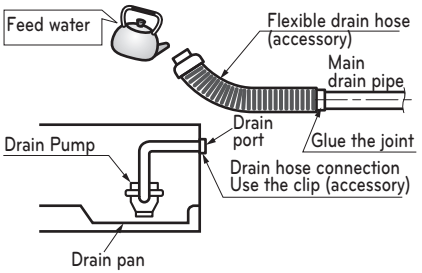
Heat insulation material: Polyethylene foam with thickness more than 8 mm(0.3 inch).

Drain test

The air conditioner uses a drain pump to drain water.

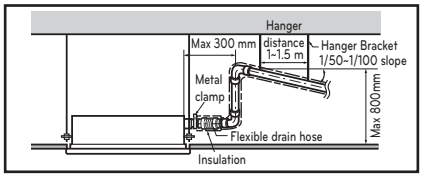
Use the following procedure to test the drain pump operation:

- 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.



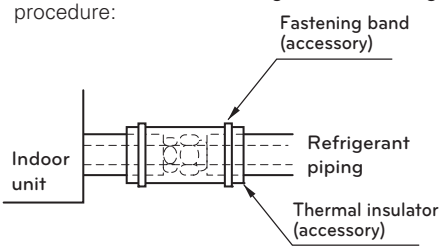
⚠ CAUTION

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



HEAT INSULATION

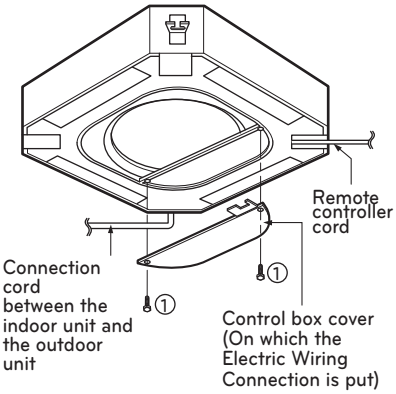
- Use the heat insulation material for the refrigerant piping which has an excellent heat-resistance (over 120 °C).
- Precautions in high humidity circumstance: This air conditioner has been tested according to the "KS Standard Conditions with Mist" and confirmed that there is not any default. However, 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:

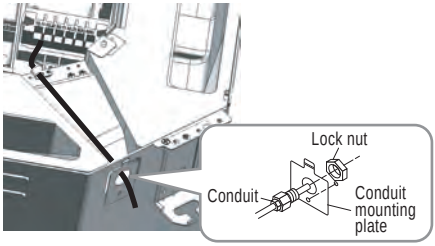


- Heat insulation material to be prepared : Adiabatic EPDM or NBR with thickness 10 to 20 mm.
- Stick glass wool on all air conditioners that are located in ceiling atmosphere.

Wiring Connection

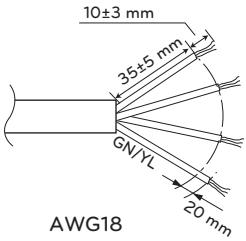
- Open the control box cover and connect the Remote controller cord and Indoor power wires.
- Remove the control box cover for electrical connection between the indoor and outdoor unit. (Remove screws ①)
- Use the cord clamper to fix the cord.





⚠ CAUTION

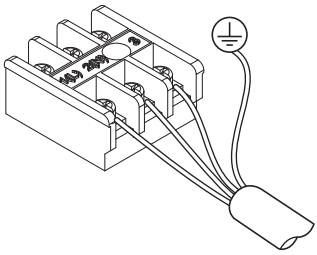
The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (This equipment shall be provided with a cord set complying with the national regulation).



If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.

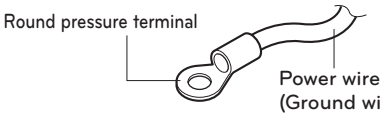
⚠ CAUTION

The Power cord connected to the unit should be selected according to the following specifications.



Precautions when laying power and ground wiring

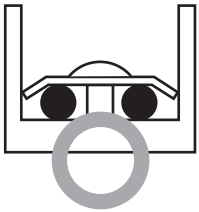
Use round pressure terminals for connections to the power terminal block.
When laying ground wiring, you must use round pressure terminals.



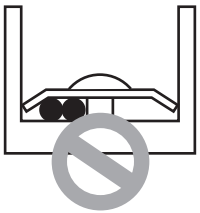
When none are available, follow the instructions below.

- 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.

Connect same thickness wiring to both sides.



It is forbidden to connect two to one side.



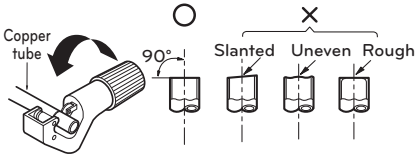
It is forbidden to connect wiring of different thicknesses.

- 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 tighterning impossible.
- Over-tightening the terminal screws may break them.

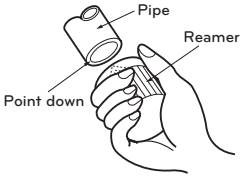
Flaring work

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

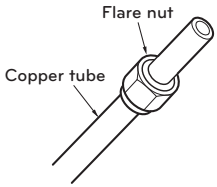
1 Cut the pipes
- Use the accessory piping kit or the pipes purchased locally.
- Measure the distance between the indoor and the outdoor unit.
- Cut the pipes a little longer than measured distance.
- Cut the cable 1.5m(4.9ft) longer than the pipe length.



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.



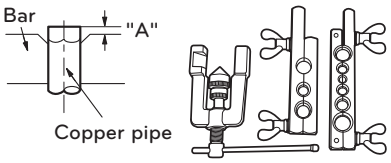
3 Putting nut on
- Remove flare nuts attached to indoor and outdoor units, than put them on pipe/tube having completed burr removal. (Not possible to put them on after flaring work)



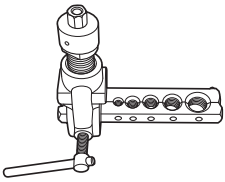
4 Flaring work
- Carry out flaring work using flaring tool as shown below.

Pipe diameter Inch (mm)	A Inch (mm)		Thickness Inch (mm)
	Wing nut type	Clutch type	
Ø1/4 (Ø6.35)	0.04~0.05 (1.1~1.3)	0~0.02 (0~0.5)	0.03 (0.7)
Ø3/8 (Ø9.52)	0.06~0.07 (1.5~1.7)		0.03 (0.8)
Ø1/2 (Ø12.7)	0.06~0.07 (1.6~1.8)		0.03 (0.8)
Ø5/8 (Ø15.88)	0.06~0.07 (1.6~1.8)		0.04 (1.0)
Ø3/4 (Ø19.05)	0.07~0.08 (1.9~2.1)		0.04 (1.0)

<Wing nut type>

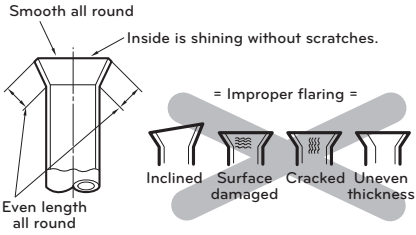


<Clutch type>



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

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

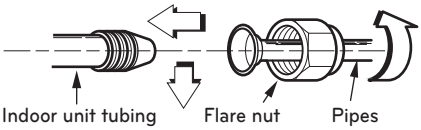
ODU	Capacity (kBtu/h)	Refrigerant Connections Pipe size	
		Liquid	Gas
Single Zone	18	3/8 (Ø9.52)	5/8 (Ø15.88)

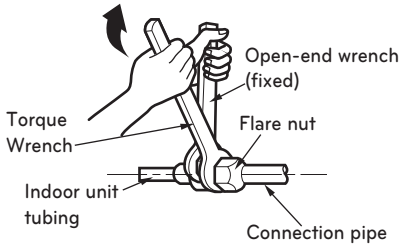
❊ Indoor Unit (18k) includes the sockets.
(Ø 6.35 ⟶ Ø 9.52 x 1EA, Ø 12.7 ⟶ Ø 15.88 x 1EA, Ø 9.52 ⟶ Ø 12.7 x 1EA)

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.

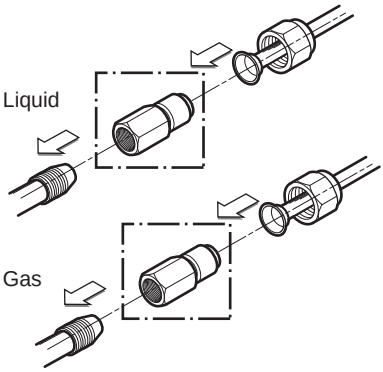
Outside diameter		Torque		
mm	inch	N·m	kgf·m	lbf·ft
Ø6.35	1/4	14~18	1.4~1.8	10~13
Ø9.52	3/8	34~42	3.5~4.3	25~31
Ø12.7	1/2	49~61	5.0~6.2	36~45
Ø15.88	5/8	69~82	7.0~8.4	51~60
Ø19.05	3/4	100~120	10.0~12.2	73~88





For Single zone

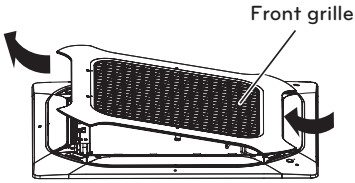
IDU



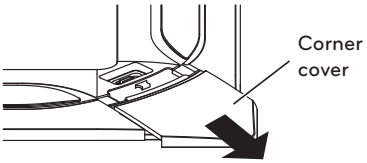
INSTALLATION OF DECORATIVE PANEL (ACCESSORY)

The decorative panel has its installation direction.
Before installing the decorative panel, always remove the paper template.

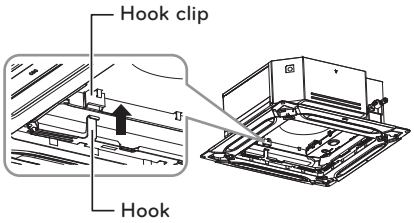
1 Remove the packing and take out air inlet grille from front panel.



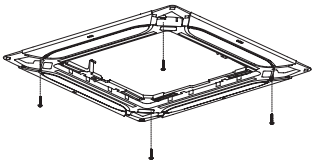
2 Remove the Corner covers of the panel.



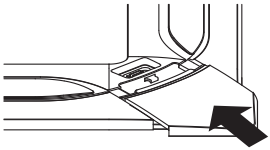
3 Fit the panel on the unit by inserting hooks as shown in picture.



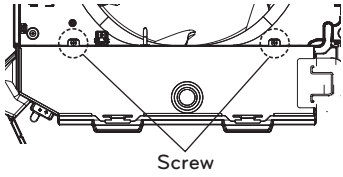
4 Insert two screws on diagonal corners of panel. Do not tighten the bolts completely. (The fixing screws are included in the indoor unit box.)
Check the alignment of panel with the ceiling. Height can be adjusted using hanging bolts as shown in picture. Insert the other two screws and tighten all screws completely.



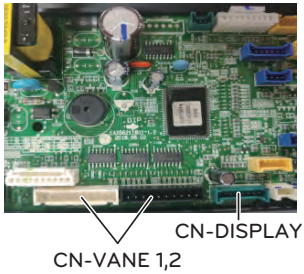
5 Fit the corner covers.



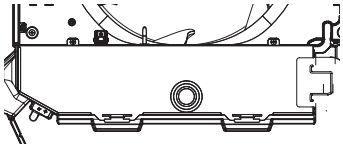
6 Open two screws of control panel cover.



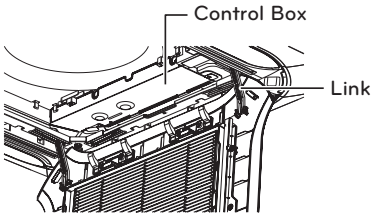
7 Connect one display connector and two vane control connectors of front panel to indoor unit PCB.
The position marking on PCB is as:
Display connector : CN-DISPLAY
Vane control connector: CN-VANE 1,2



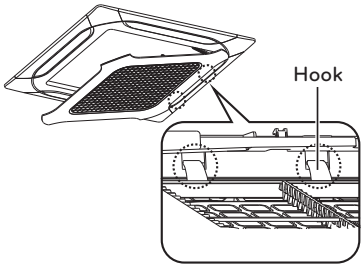
8 Close the cover for control box.



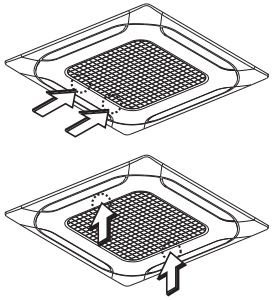
9 Fit the link on the panel as shown in picture. (The link is included in the front panel unit box.) (TM/TM-A/TN/TP/TP-B)



10 Fit the panel on the unit by inserting hooks as shown in picture.
(TM/TM-A/TN/TP/TP-B)



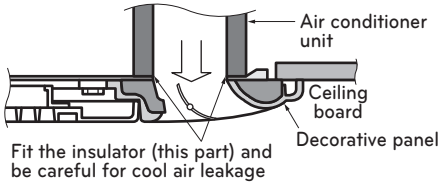
11 Install the air inlet grille and Filter on the panel.



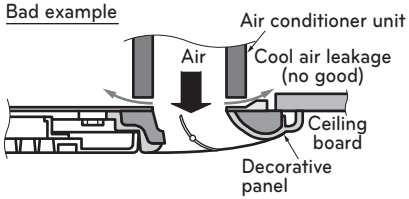
⚠ CAUTION

Install certainly the decorative panel.
Cool air leakage causes sweating. ⇨
Water drops fall.

Good example



Bad example



TEST RUNNING

PRECAUTIONS IN TEST RUN

- 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)

- To cancel the test run, press any button.

CHECK THE FOLLOWING ITEMS WHEN INSTALLATION IS COMPLETED

- 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?

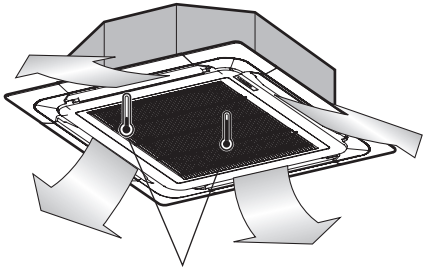
M4.....118 N·cm{12 kgf·cm}
M5.....196 N·cm{20 kgf·cm}
M6.....245 N·cm{25 kgf·cm}
M8.....588 N·cm{60 kgf·cm}

Connection of power supply

- Connect the power supply cord to the independent power supply.
  Circuit breaker is required.
- Operate the unit for 15 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).

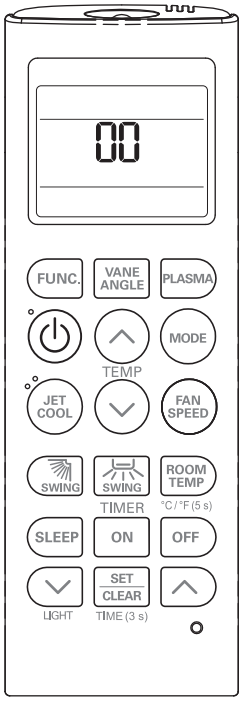


INSTALLATION INSTRUCTIONS

Installer Setting - How to enter installer setting mode

⚠ CAUTION

Installer setting mode is to set the detail function of the remote controller.
If the installer setting mode is not set correctly, it can cause problems to the product, user injury or property damage. This must be set by an certificated installer, and any installation or change that is carried out by a non-certificated person should be responsible for the results. In this case, free service cannot be provided.



1 With the JET COOL button pressed, press the RESET button.

2 By using the TEMPERATURE SETTING button, set function code and setting value. (Please refer the Installer Setting Code Table.)

3 Press the ON/OFF button toward the indoor unit 1 time.

4 Reset the remote controller to use the general operation mode.

Refer to the Installer Setting Code Table on the next page.

Installer Setting - Installer Setting Code Table

No.	Function	Function Code	Setting Value	Remote Controller LCD
0	Mode Override	0	0 : Set to Master	0.0
			1 : Set to Slave	0.1
1	Ceiling Height Selection	1	1 : Standard	1.1
			2 : Low	1.2
			3 : High	1.3
			4 : Super High	1.4
2	Group Control	2	0 : Set to Master	2.0
			1 : Set to Slave	2.1
			2 : Check Master/Slave	2.2
	Auxiliary heater	2	3 : Set to Auxiliary heater	2.3
			4 : Cancel Auxiliary heater	2.4
			5 : Check Auxiliary heater Installation	2.5

Mode Override

This Function is only for Non-Auto Changeover H/P model.

Ceiling Height Selection

Indoor unit connected to wired remote controller operate as wired remote controller setting.

Group Control

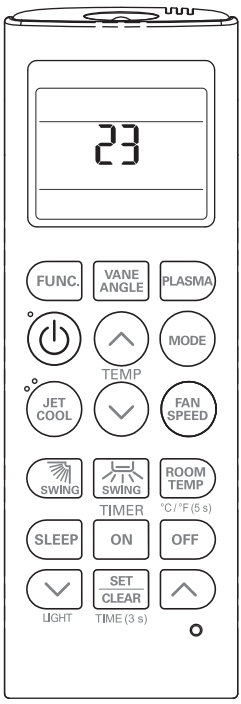
This function is only for group control. Please don't set this function in case of non-group control.

After setting Group Control of the product, turn off the power then turn it back on after 1 minute.

Auxiliary heater

This function is only applied to models with Auxiliary Heater function being activated.

Installer Setting - Setting Address of Central Control



1 With the MODE button pressed, press the RESET button.

2 By using the temperature setting button, set the indoor unit address.

- Setting range : 00 ~ FF

3 After setting the address, press the ON/OFF button toward the indoor unit 1 time.

4 The indoor unit will display the set address to complete the address setting.

- The address display time and method can differ by the indoor uint type.

5 Reset the remote controller to use the general operation mode.

Installer Setting - Checking Address of Central Control

1 With the FUNC. button pressed, press the RESET button.

2 Press the ON/OFF button toward the indoor unit 1 time, and the indoor unit will display the set address in the display window.

- The address display time and method can differ by the indoor unit type.

3 Reset the remote controller to use the general operation mode.

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.

Standard Inverter

MFL68061228
Rev.01_061120

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.
- Don't use a power cord, a plug or a loose socket which is damaged.
  - Otherwise, it may cause a fire or 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.

Operation

- Do not share the outlet with other appliances.
  - It will cause an electric shock or a fire due to heat generation.
- Do not use the damaged power cord.
  - Otherwise, it may cause a fire or electrical shock.
- Do not modify or extend the power cord randomly.
  - Otherwise, it may cause a fire or electrical shock.
- Take care so that the power cord may not be pulled during operation.
  - Otherwise, it may cause a fire or electrical shock.
- 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 use the power cord near the heating tools.
  - Otherwise, it may cause a fire and 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.
- Hold the plug by the head when taking it out.
  - It may cause electric shock and damage.
- 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.
- Do not place a heavy object on the power cord.
  - Otherwise, it may cause a fire or electrical shock.
- 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.

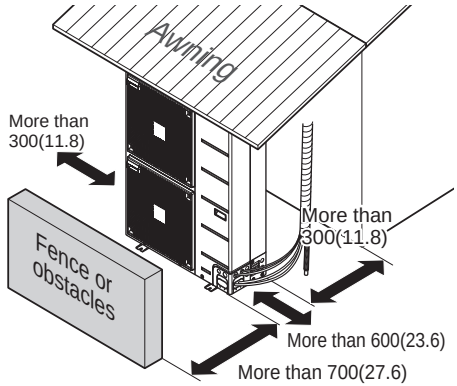
ENGLISH

TABLE OF CONTENTS

INSTALLATION OF OUTDOOR UNIT

Installation Places

- 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.



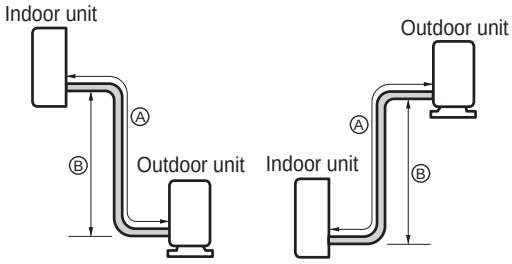
Unit : mm(inch)

Piping length and the elevation

CAPACITY (kBtu/h)	Pipe Size mm(inch)		Length A Unit : m(ft)		Elevation B Unit : m(ft)		Additional refrigerant Unit : g/m(oz/ft)	A-Coil Combination Additional refrigerant * Unit : g(oz)
	Gas	Liquid	Standard	Max.	Standard	Max.		
18	Ø 15.88(5/8)	Ø 9.52(3/8)	7.5(24.6)	50(164)	5(16)	30(98)	40(0.43)	- 500(17.6)
24	Ø 15.88(5/8)	Ø 9.52(3/8)	7.5(24.6)	50(164)	5(16)	30(98)	40(0.43)	- 200(7.1)
36	Ø 15.88(5/8)	Ø 9.52(3/8)	7.5(24.6)	75(246)	5(16)	30(98)	40(0.43)	- -
42	Ø 15.88(5/8)	Ø 9.52(3/8)	7.5(24.6)	75(246)	5(16)	30(98)	40(0.43)	- -
48	Ø 15.88(5/8)	Ø 9.52(3/8)	7.5(24.6)	75(246)	5(16)	30(98)	40(0.43)	-

If installed tube is shorter than 7.5 m(24.6 ft), additional refrigerant charging is not necessary.
Additional Refrigerant = [A -7.5 m(2.46 ft)] x Additional refrigerant [g(oz)]

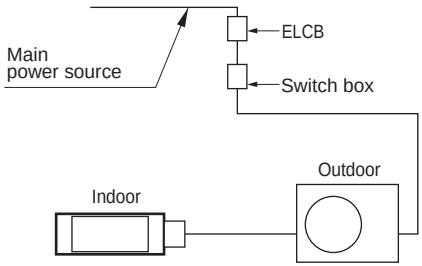
* In case of A-Coil combination, Charge additional refrigerant
ex) If installed tube is shorter than 7.5 m(24.6 ft), Charge additional refrigerant for A-Coil Combination [g(oz)]
ex) If installed tube is more than 7.5 m(24.6 ft),
Total Additional Refrigerant = { [A -7.5 m(2.46 ft)] x Additional refrigerant [g(oz)] } + additional refrigerant fot A-Coil Combination [g(oz)]



WIRING CONNECTION

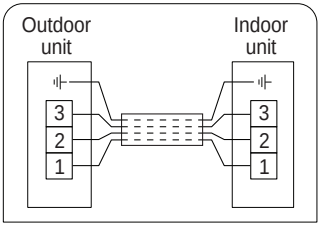
Electrical Wiring

- 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 ELCB(Electric Leakage Circuit Breaker) between the power source and the unit. A disconnection device to adequately disconnect all supply lines must be fitted.
- Model of circuit breaker recommended by authorized personnel only.



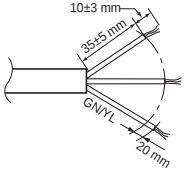
Model	Phase(Ø)	ELCB (A)
18k	1	30
24k	1	30
36k	1	40
42k	1	40
48k	1	40

Connecting Cables between Indoor Unit and Outdoor Unit

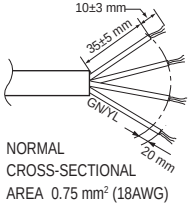


⚠ CAUTION

The power cord connected to the outdoor unit should be complied with IEC 60245 or HD 22.4 S4 (This equipment shall be provided with a cord set complying with the national regulation.



The connecting cable connected to the outdoor unit should be complied with IEC 60245 or HD 22.4 S4 (This equipment shall be provided with a cord set complying with the national regulation.)

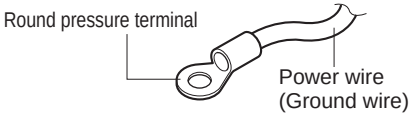


When the connection line between the indoor unit and outdoor unit is over 40 m(131 ft), connect the telecommunication line and power line separately.

- If the power cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.

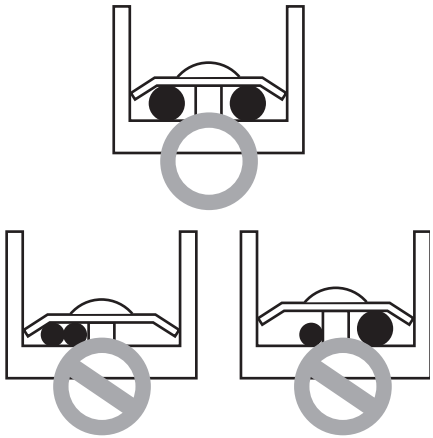
Precautions when laying power and ground wiring

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.



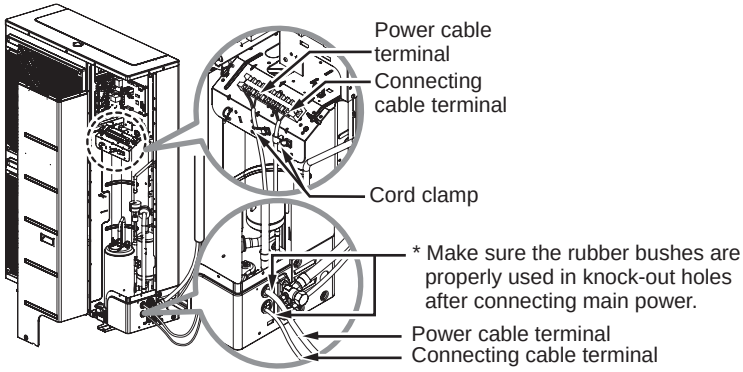
- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal block.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.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

ENGLISH

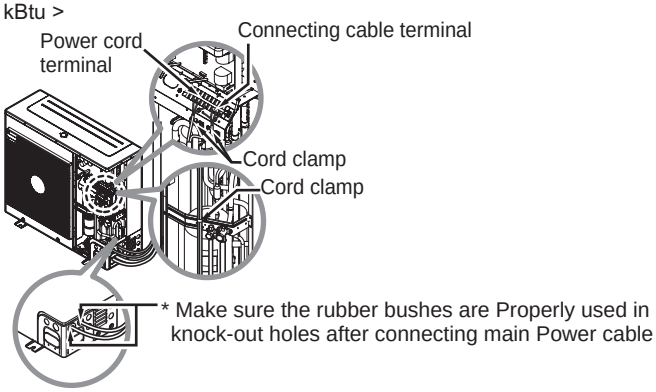
Connecting the cable to Outdoor Unit

- Remove the side panel for wiring connection.
- Use the cord clamp to fix the cord.
- Earthing work
  Connect the cable of diameter more to the earthing terminal provided in the control box and do earthing.

< 36 / 42 / 48 kBtu >



< 18 / 24 kBtu >



⚠ 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.

⚠ CAUTION

- The Power cord connected to the unit should be selected according to the following specifications.

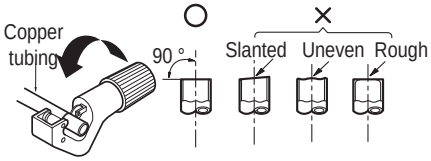
CONNECTING COPPER PIPES

Preparation of Piping

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

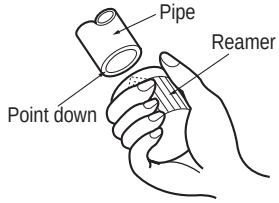
Cut the pipes and the cable.

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



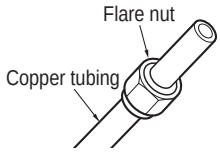
Burrs removal

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



Putting nut on

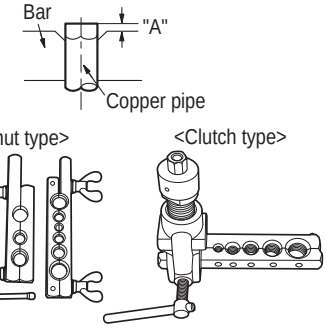
- Remove flare nuts attached to indoor and outdoor units, than put them on pipe/tube having completed burr removal.
  (Not possible to put them on after flaring work)



Flaring work

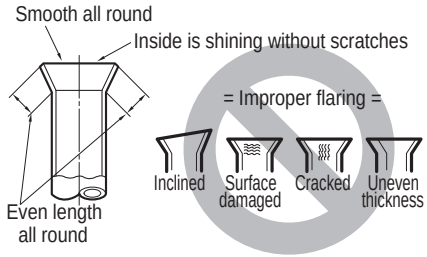
- Firmly hold copper tube in a bar(or die) as indicated dimension in the table above.
- Carry out flaring work using dedicated flaring tool for R-410A as shown below.

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)	



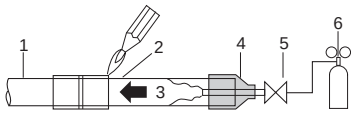
Check

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



NOTE

Always blow nitrogen into pipe which is brazed. Always use a non-oxidizing brazing material for brazing the parts and do not use flux. If not, oxidized film can cause clogging or damage to the compressor unit and flux can harm the copper piping or refrigerant oil.



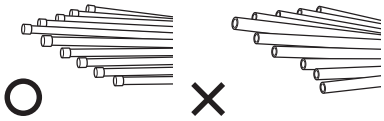
1	Refrigerant piping	4	Taping
2	Pipe to be brazed	5	Valve
3	Nitrogen	6	Pressure-reducing valve

• The torch tip should be positioned at the opposite angle to shop the correct way to apply heat on the pipe coupling.

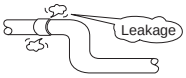
Plumbing materials and storage methods

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.



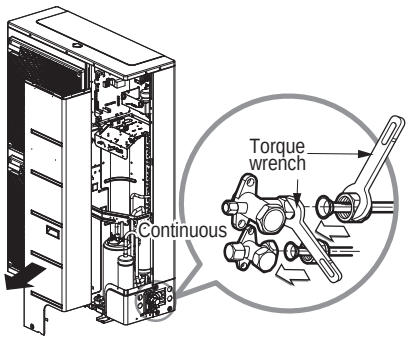
Refrigerant piping on three principles

	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.

Connecting the pipes to the Outdoor unit

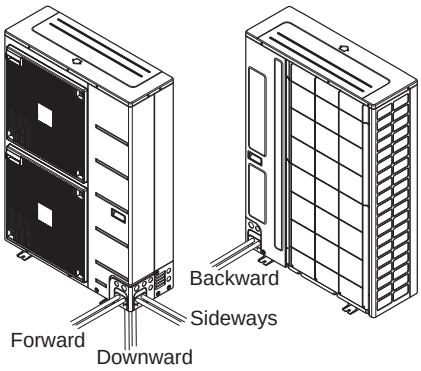
- Align the center of the piping and sufficiently tighten the flare nut by hand.
- Finally, tighten the flare nut with torque wrench until the wrench clicks.
  When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.

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



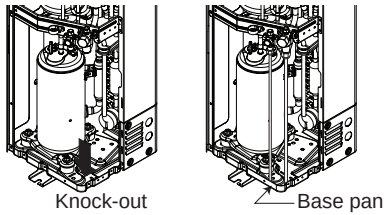
* When tighten the pipe, hold the hexagonal body.

<Figure 1>



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

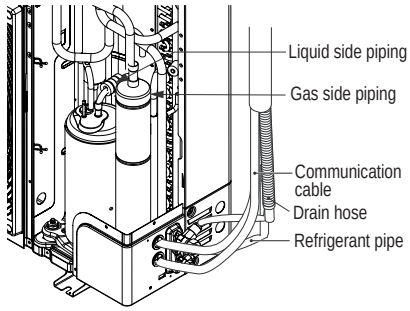
<Figure 2>



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.

<Figure 3>



⚠ CAUTION

- Insects or small animals entering the outdoor unit may cause a short circuit in the electrical box.

Forming the piping

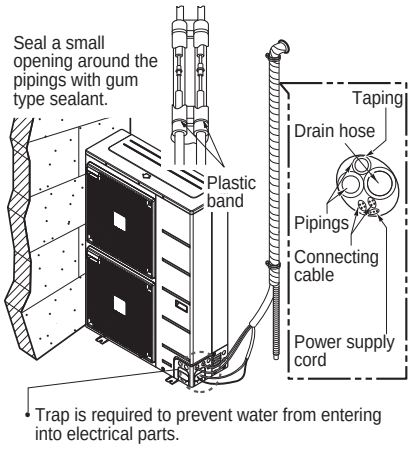
Form the piping by wrapping the connecting portion of the indoor unit with insulation material and secure it with two kinds of vinyl tape.

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

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

1 Tape the piping, drain hose and connecting cable from down to up.

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

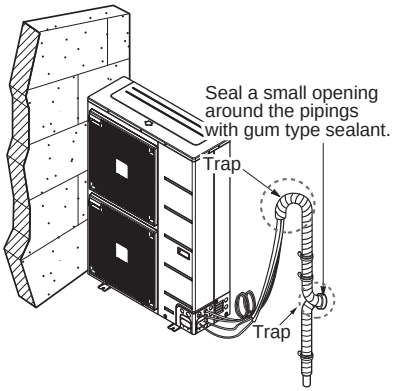


In cases where the outdoor unit is installed above the indoor unit perform the following.

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

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

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



LEAKAGE TEST AND EVACUATION

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

1 Pressure in the system rises.
2 Operating current rises.
3 Cooling(or heating) efficiency drops.
4 Moisture in the refrigerant circuit may freeze and block capillary tubing.
5 Water may lead to corrosion of parts in the refrigeration system.

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

Preparation

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

Leakage test

Connect the manifold valve(with pressure gauges) and dry nitrogen gas cylinder to this service port with charge hoses.

⚠ CAUTION

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

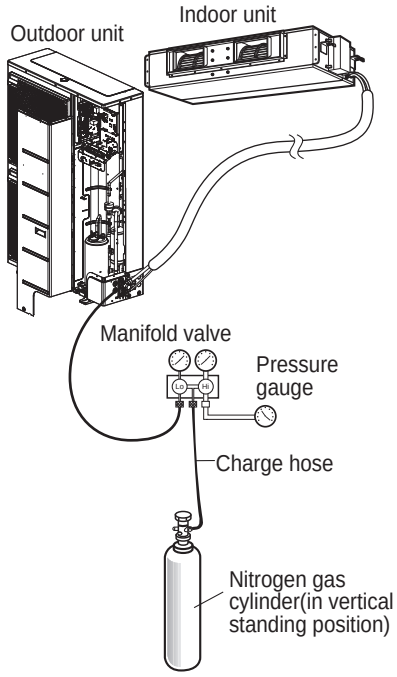
Pressurize the system to no more than 3.0 MPa (427 P.S.I.G) with dry nitrogen gas and close the cylinder valve when the gauge reading reached 3.0 MPa (427 P.S.I.G) Next, test for leaks with liquid soap.

⚠ CAUTION

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

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

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

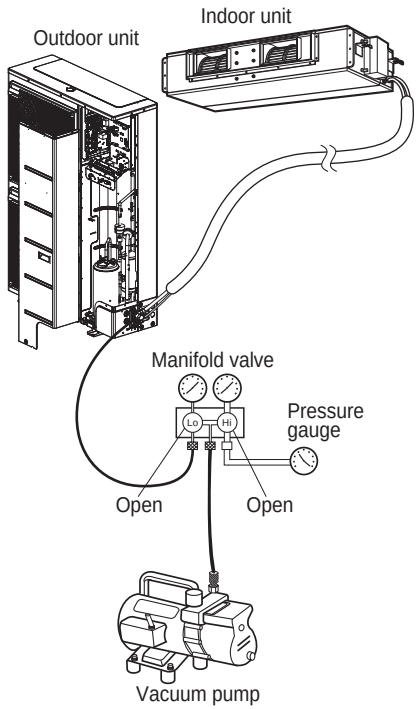


Evacuation

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

Required time for evacuation when 30 gal/h(114 l/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 (0.01 psi)(0.53 torr) or less	

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



Finishing the job

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

This completes air purging with a vacuum pump.

The air conditioner is now ready to test run.

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.

NOTE

- 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?

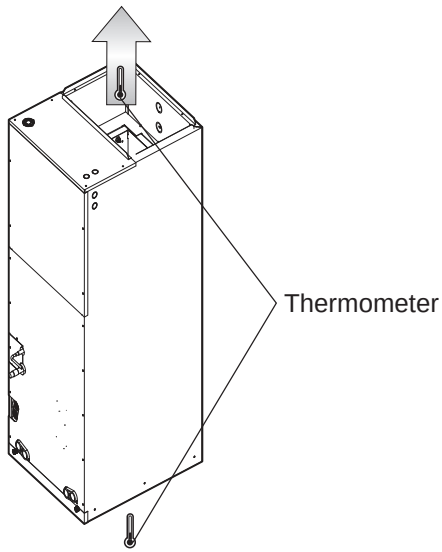
M4.....118 N·cm (10.4 lbs·inch)
M5.....196 N·cm (17.3 lbs·inch)
M6.....245 N·cm (21.7 lbs·inch)
M8.....588 N·cm (52 lbs·inch)

Connection of power supply

- Connect the power supply cord 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).



HAND OVER

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

ENGLISH

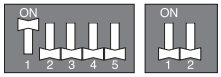
FUNCTION

Pump Down

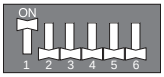
Setting Procedure

1 Set the DIP Switch as follow after shutting the power source down.

18k
24k (4kW Controller)



24k (4.5kW Controller)



36k
42k
48k

2 Reset the power.

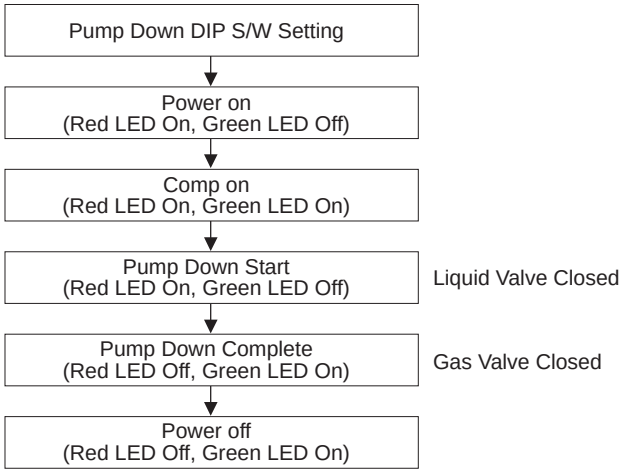
3 Red LED and Green LED of PCB lights during work.
(The indoor unit is operated by force.)

4 If operation is done, Red LED will be turned off.
If operation is not done normally, Red LED will blink.

5 Close the Liquid valve only after green LED turned off (7 minutes from the start of the machine).
Then close the gas valve after Green LED on.

NOTE

- When the green LED of PCB is on, compressor is going to be off because of low pressure.
- You should return the DIP Switch to operate normally after finishing the operation.
- Improper Pump down will lead to product turn off along with LED (green &red) off with in 20 minutes from the initial start.

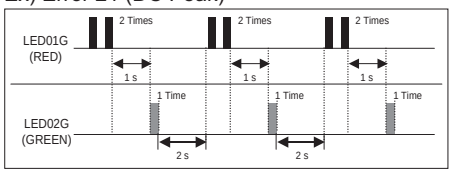


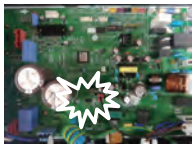
SELF-DIAGNOSIS FUNCTION

Error Indicator (Outdoor)

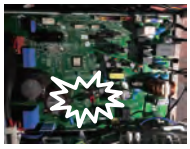
Outdoor Error

Ex) Error 21 (DC Peak)

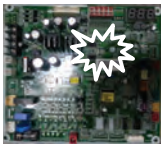




18k
24k (4kW Controller)



24k
(4.5kW Controller)



36k
42k
48k

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

ENGLISH

DIP S/W Setting

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
18k 24k (4kW Controller)	24k (4.5kW Controller)	36k 42k 48k	
1 2 3 4 5	1 2 3 4 5 1 2	1 2 3 4 5 6	
			Normal Operation (No Function)
			Pump Down
			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)

⚠ WARNING

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

NOTE

- 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.

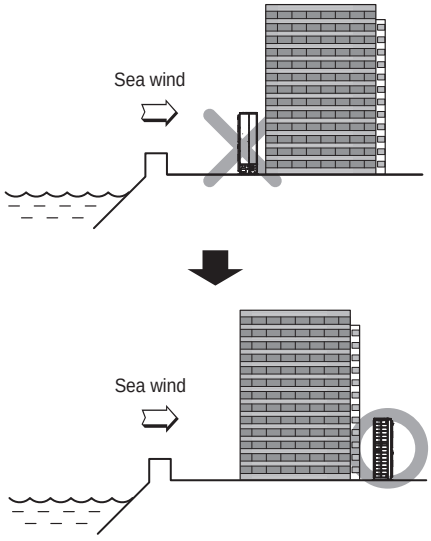
INSTALLATION GUIDE AT THE SEASIDE

NOTE

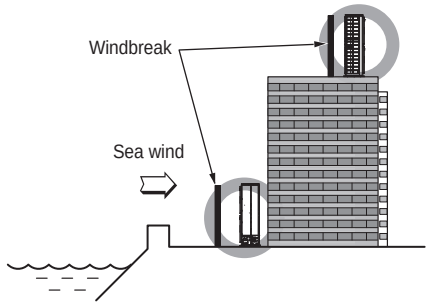
- Air conditioners should not be installed in areas where corrosive gases, such as acid or alkaline gas, are produced.
- Do not install the product where it could be exposed to sea wind (salty wind) directly. It can result corrosion on the product. Corrosion, particularly on the condenser and evaporator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

Selecting the location(Outdoor unit)

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



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



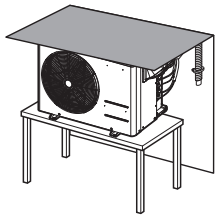
- It should be strong enough like concrete to prevent the sea wind from the sea.
- The height and width should be more than 150 % of the outdoor unit.
- It should be keep more than 70 cm of space between outdoor unit and the windbreak for easy air flow.

Select a well-drained place.

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

SEASONAL WIND AND CAUTIONS IN WINTER

- Sufficient measures are required in a snow area or severe cold area in winter so that product can be operated well.
- Get ready for seasonal wind or snow in winter even in other areas.
- Install a suction and discharge duct not to let in snow or rain.
- Install the outdoor unit not to come in contact with snow directly. If snow piles up and freezes on the air suction hole, the system may malfunction. If it is installed at snowy area, attach the hood to the system.
- Install the outdoor unit at the higher installation console by 50 cm than the average snowfall (annual average snowfall) if it is installed at the area with much snowfall.
- Where snow accumulated on the upper part of the Outdoor Unit by more than 10 cm, always remove snow for operation.



1. The height of H frame must be more than 2 times the snowfall and its width shall not exceed the width of the product. (If width of the frame is wider than that of the product, snow may accumulate)
2. Don't install the suction hole and discharge hole of the Outdoor Unit facing the seasonal wind.

US	Please call the installing contractor of your product, as warranty service will be provided by them.
CANADA	Service call Number # : (888) LG Canada, (888) 542-2623 Numéro pour les appels de service : LG Canada, 1-888-542-2623