

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.

MULTI TYPE CEILING CASSETTE



MFL65779702
Rev.02_010821

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TIPS FOR SAVING ENERGY

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

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

For your records

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

Model number : _____

Serial number : _____

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

Dealer's name : _____

Date of purchase : _____

IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE USING THE APPLIANCE.

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

WARNING

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

CAUTION

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

WARNING

- Installation or repairs made by unqualified persons can result in hazards to you and others.
- Installation **MUST** conform with local building codes or, in the absence of local codes, with the Nation Electrical Code NFPA 70/ANSI C1-1003 or current edition and Canadian Electrical Code Part1 CSA C.22.1.
- The information contained in the manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.
- Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.

Installation

- Do not use a defective or underrated circuit breaker. Use this appliance on a dedicated circuit.
 - There is risk of fire or electric shock.
- For electrical work, contact the dealer, seller, a qualified electrician, or an Authorized Service Center.
 - Do not disassemble or repair the product. There is risk of fire or electric shock.
- Always ground the product.
 - There is risk of fire or electric shock.
- Install the panel and the cover of control box securely.
 - There is risk of fire or electric shock.
- Always install a dedicated circuit and breaker.
 - Improper wiring or installation may cause fire or electric shock.
- Use the correctly rated breaker or fuse.
 - There is risk of fire or electric shock.
- Do not modify or extend the power cable.
 - There is risk of fire or electric shock.
- Do not let the air conditioner run for a long time when the humidity is very high and a door or a window is left open.
 - Moisture may condense and wet or damage furniture.
- Be cautious when unpacking and installing the product.
 - Sharp edges could cause injury. Be especially careful of the case edges and the fins on the condenser and evaporator.
- For installation, always contact the dealer or an Authorized Service Center.
 - There is risk of fire, electric shock, explosion, or injury.

4 IMPORTANT SAFETY INSTRUCTIONS

- Do not install the product on a defective installation stand.
 - It may cause injury, accident, or damage to the product.
- Be sure the installation area does not deteriorate with age.
 - If the base collapses, the air conditioner could fall with it, causing property damage, product failure, and personal injury.
- Do not use the aluminum pipe.
 - It will cause gas leakage.
- Use a vacuum pump or Inert (nitrogen) gas when doing leakage test or air purge. Do not compress air or Oxygen and Do not use Flammable gases. Otherwise, it may cause fire or explosion.
 - There is the risk of death, injury, fire or explosion.

Operation

- Do not store or use flammable gas or combustibles near the product.
 - There is risk of fire or failure of product.



CAUTION

Installation

- Always check for gas (refrigerant) leakage after installation or repair of product.
 - Low refrigerant levels may cause failure of product.
- Install the drain hose to ensure that water is drained away properly.
 - A bad connection may cause water leakage.
- Keep level even when installing the product.
 - To avoid vibration or water leakage.
- Do not install the product where the noise or hot air from the outdoor unit could damage the neighborhoods.
 - It may cause a problem for your neighbors.
- Use two or more people to lift and transport the product.
 - Avoid personal injury.
- Do not install the product where it will be exposed to sea wind (salt spray) directly.
 - It may cause corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunction or inefficient operation.
- Do not install the unit in potentially explosive atmospheres.

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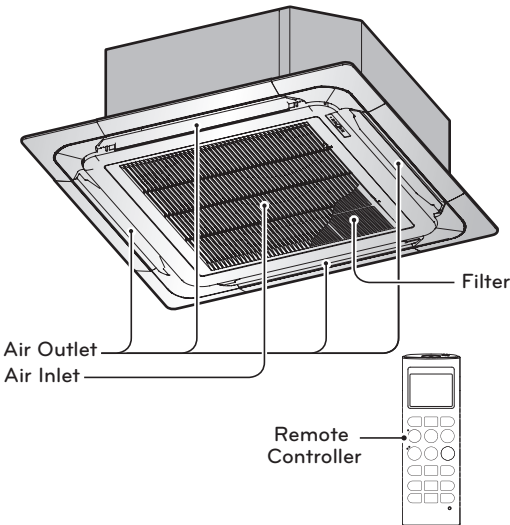
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INTRODUCTION

Features



Name	Quantity	Shape	Other
Clamp metal	2 EA		• Paper pattern for installation • Owner's manual • Installation manual
Drain hose	1 EA		
Insulation for fitting	1 set	for gas pipe for liquid pipe	
Washer for hanging bracket	8 EA		
Clamp (Tie Wrap)	4 EA		
Bolt	4 EA		

Screws for fixing panels are attached to decoration panel.

INSTALLATION

Read completely, then follow step by step.

Selection of the best location

There should not be any heat source or steam near the unit.

There should not be any obstacles to the air circulation.

A place where air circulation in the room will be good.

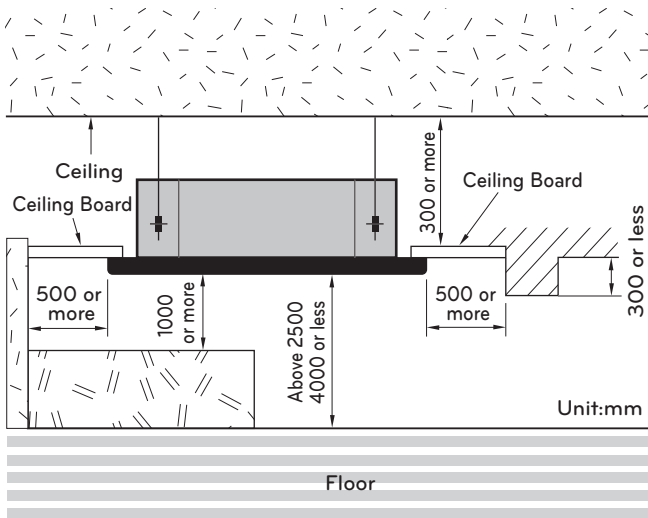
A place where drainage can be easily obtained.

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 have the maintenance space.



CAUTION

In case that the unit is installed near the sea, the installation parts may be corroded by salt. The installation parts (and the unit) should be taken appropriate anti-corrosion measures.

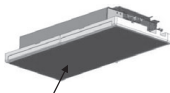
* Please use an annexed sheet or the corrugated cardboard on the bottom of packing as installation sheet.

* When using the bottom sheet, please use it after separating the installation sheet from packing of the product floor by using a knife etc as a picture below.

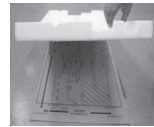


Annexed sheet

Or

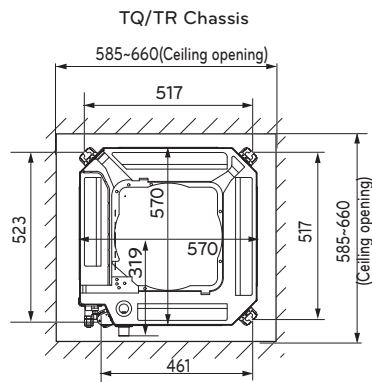
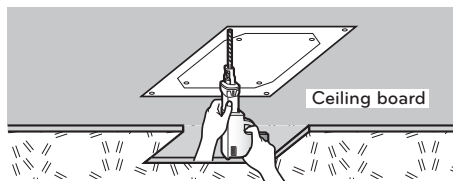
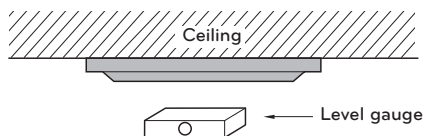


Packing corrugated cardboard on the bottom

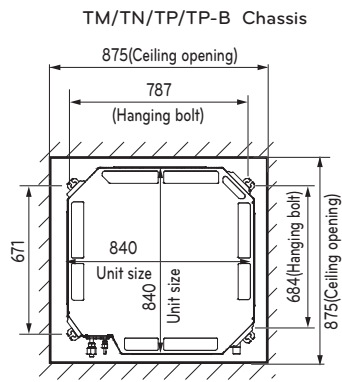


Ceiling dimension and hanging bolt location

The dimensions of the paper model for installation are the same as those of the ceiling opening dimensions.



Unit:mm



Unit:mm

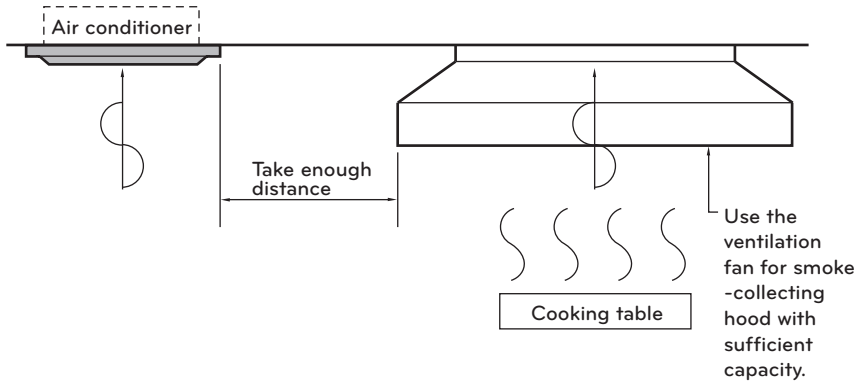
CAUTION

- 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.

Select and mark the position for fixing bolts and piping hole.

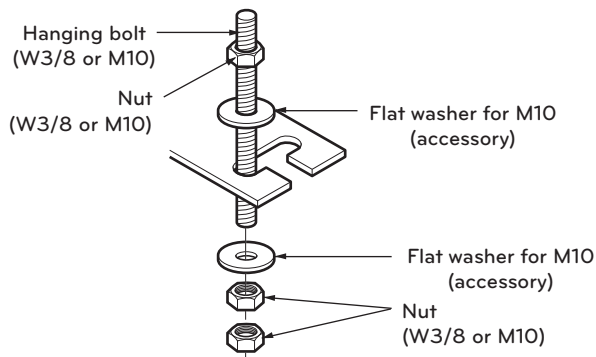
Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.

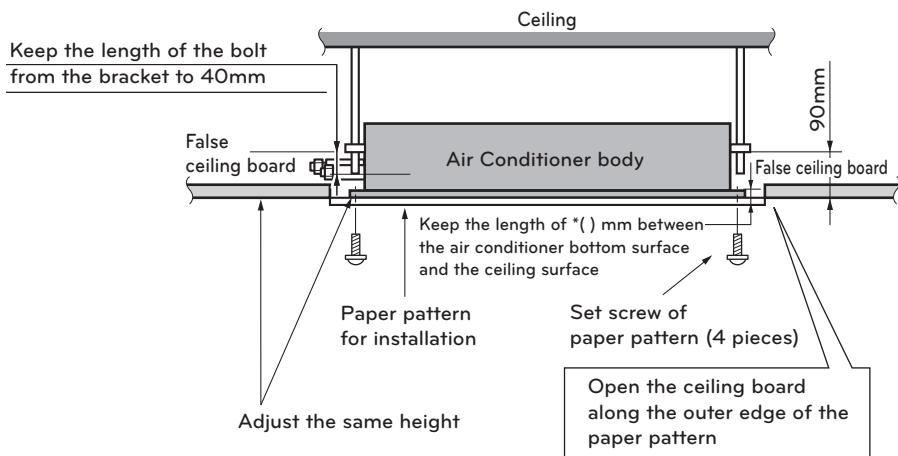
Drill the hole for anchor bolt on the wall.



! 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 installing 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 are local purchasing.

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

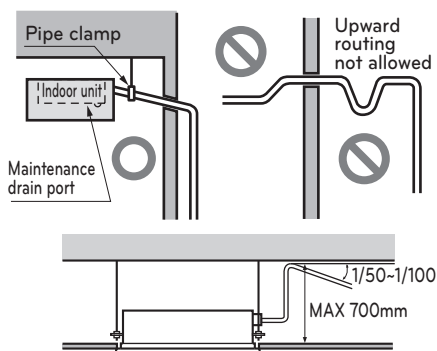
CAUTION

Tighten the nut and bolt to prevent the unit from falling.

$\ast()$ → TQ/TR : 31~34mm
TM/TM-A/TN/TP/TP-B : 15mm

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 32mm.
 - Piping material: Polyvinyl chloride pipe VP-25 and pipe fittings
- Be sure to install heat insulation on the drain piping.
 - Heat insulation material: Polyethylene foam with thickness more than 8 mm.

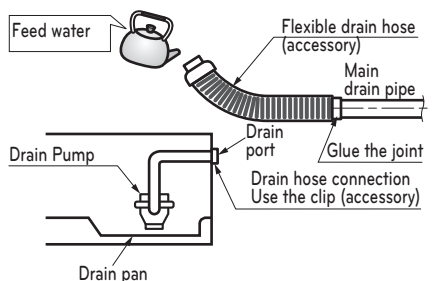


Drain test

The air conditioner uses a drain pump to drain water.

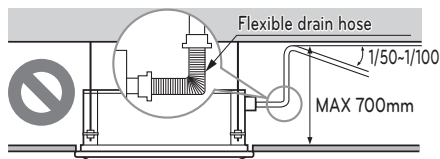
Use the following procedure to test the drain pump operation:

- 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.



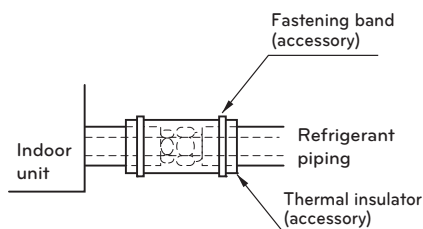
CAUTION

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

- 1 Never fail to have an individual power specialized for the air conditioner. As for the method of wiring, be guided by the circuit diagram posted on the inside of control box cover.
- 2 Provide a circuit breaker switch between power source and the unit.
- 3 The screws which fasten the wiring in the casing of electrical fittings are liable to come loose from vibrations to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could give rise to burn-out of the wires.)
- 4 Specification of power source
- 5 Confirm that electrical capacity is sufficient.
- 6 Be sure that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.
- 7 Confirm that the cable thickness is as specified in the power sources specification. (Particularly note the relation between cable length and thickness.)
- 8 Never fail to equip a leakage breaker where it is wet or moist.
- 9 The following troubles would be caused by voltage drop-down.
 - Vibration of a magnetic switch, damage on the contact point, fuse breaking, disturbance by the normal function of an overload protection device.
 - Proper starting power is not given to the compressor.

HEAT INSULATION

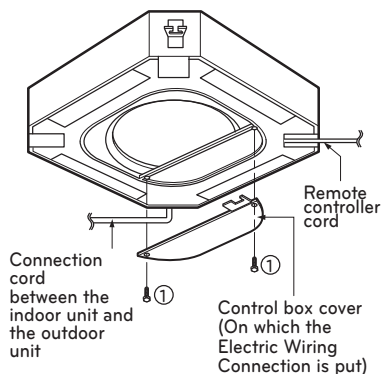
- Use the heat insulation material for the refrigerant piping which has an excellent heat-resistance (over 120 °C).
- Precautions in high humidity circumstance: This air conditioner has been tested according to the "KS Standard Conditions with Mist" and confirmed that there is not any default. However,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

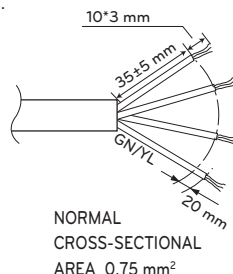
Wiring Connection

- 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 clumper 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).



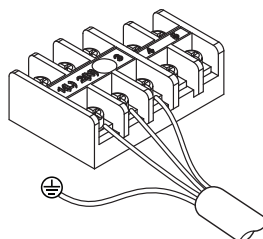
If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.

Pipes and wires should be purchased separately for installation of the product.

Rated current of Appliance A	Nominal Cross-sectional area mm²
≤ 6	0.75
> 6 and ≤ 10	1
> 10 and ≤ 16	1.5
> 16 and ≤ 25	2.5
> 25 and ≤ 32	4
> 32 and ≤ 40	6

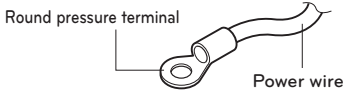
CAUTION

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



Precautions when laying power wiring

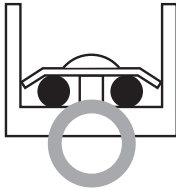
Use round pressure terminals for connections to the power terminal block.



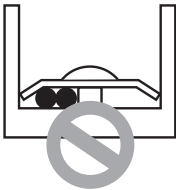
When none are available, follow the instructions below.

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

Connect same thickness wiring to both sides.



It is forbidden to connect two to one side.



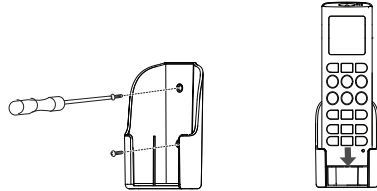
It is forbidden to connect wiring of different thicknesses.



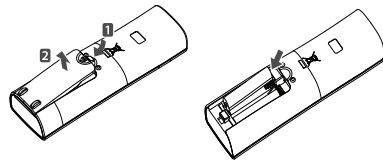
- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal block.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.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

Remote Control Preparation

How to mount onto a wall



- 1 Remove the battery cover from the remote controller.
 - Slide the cover according to the arrow direction.
- 2 Insert the two batteries.
 - Be sure that the (+) and (-) directions are correct.
 - Be sure that both batteries are new.
- 3 Re-attach the cover.
 - Slide it back into position.



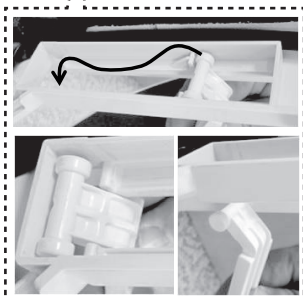
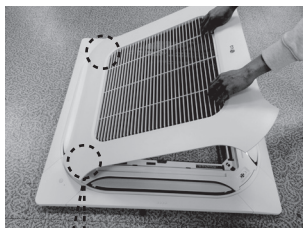
- Do not use rechargeable batteries, such batteries differ from standard dry cells in shape, dimensions, and performance.
- Remove the batteries from the remote controller if the air conditioner is not going to be used for some long time.

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.



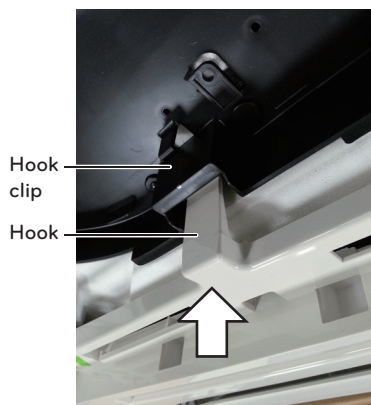
Separate the link from the front grill

- 2 Remove the Corner covers of the panel.

Corner cover



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

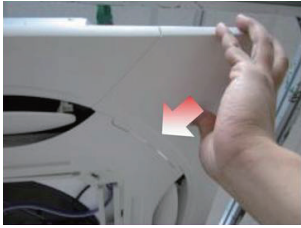


- 4 Insert two screws on diagonal corners of panel. Do not tighten the bolts completely. (The fixing screws are included in the indoor unit box.)

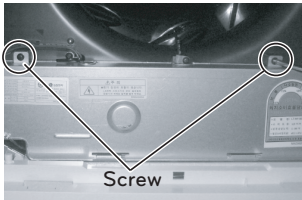
Check the alignment of panel with the ceiling. Height can be adjusted using hanging bolts as shown in picture. Insert the other two screws and tighten all screws completely.



- 5 Fit the corner covers.



- 6 Open two screws of control panel cover.

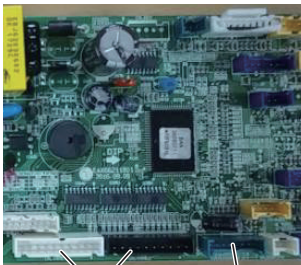


- 7 Connect one display connector and two vane control connectors of front panel to indoor unit PCB.

The position marking on PCB is as:

Display connector : CN_DISPLAY

Vane control connector: CN_VANE 1,2



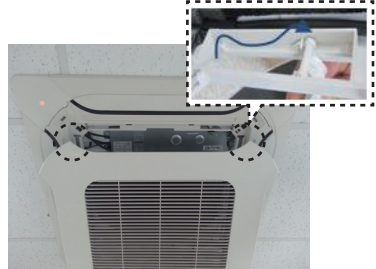
CN_VANE 1,2 CN_DISPLAY

- 8 Close the cover for control box.

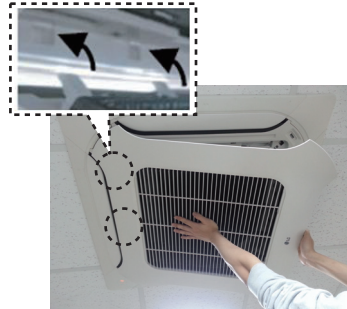


- 9 Install the air inlet grille and Filter on the panel.

- After inserting the edge of the grill into the panel body, close the door lock and press on the left, right, and center sections.



Installing the grill link on the panel body



Inserting the edge into the panel body



Closing the door lock

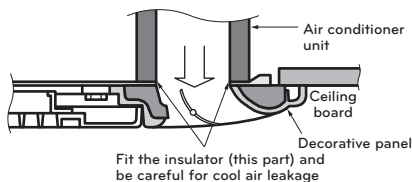


Check the left, right and central sections

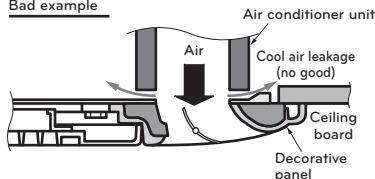
! CAUTION

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

Good example



Bad example



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}

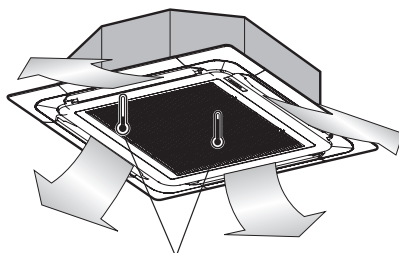
M8.....588 N·cm{60 kgf·cm}

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

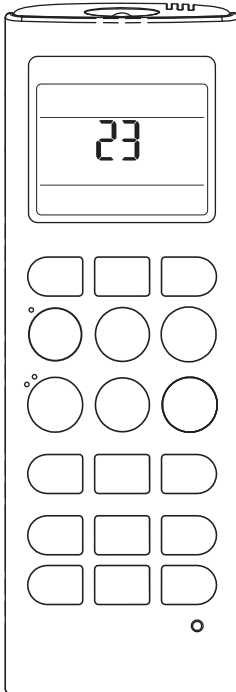
- Measure the temperature of the intake and discharge air.
- Ensure the difference between the intake temperature and the discharge one is more than 8 °C (Cooling) or reversely (Heating).



Thermometer

INSTALLATION INSTRUCTIONS

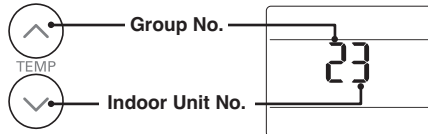
Installer Setting - Setting Address of Central Control



- 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 unit type.

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

Installer Setting - Checking Address of Central Control

- 1** With the PLASMA 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.



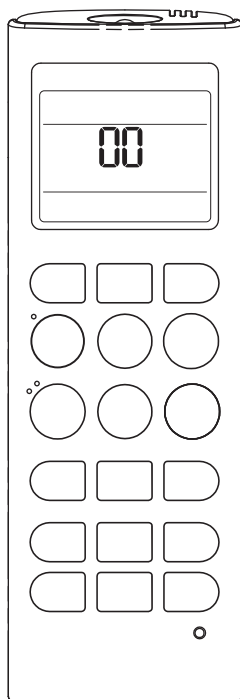
- 3** Reset the remote controller to use the general operation mode.



Installer Setting -How to enter installer setting mode

! CAUTION

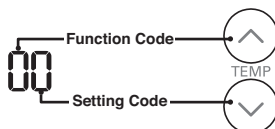
Installer setting mode is to set the detail function of the remote controller.
If the installer setting mode is not set correctly, it can cause problems to the product, user injury or property damage. This must be set by an certificated installer, and any installation or change that is carried out by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



- 1** With the FAN SPEED 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 Code Table

No.	Function	Function Code	Setting Value	Remote Controller LCD
0	Mode Override	0	0 : Set to Master	00
			1 : Set to Slave	01
1	Ceiling Height Selection	1	1 : Standard	11
			2 : Low	12
			3 : High	13
			4 : Super High	14
2	Group Control	2	0 : Set to Master	20
			1 : Set to Slave	21
			2 : Check Master/Slave	22
	Auxiliary heater	2	3 : Set to Auxiliary heater	23
			4 : Cancel Auxiliary heater	24
			5 : Check Auxiliary heater Installation	25

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.

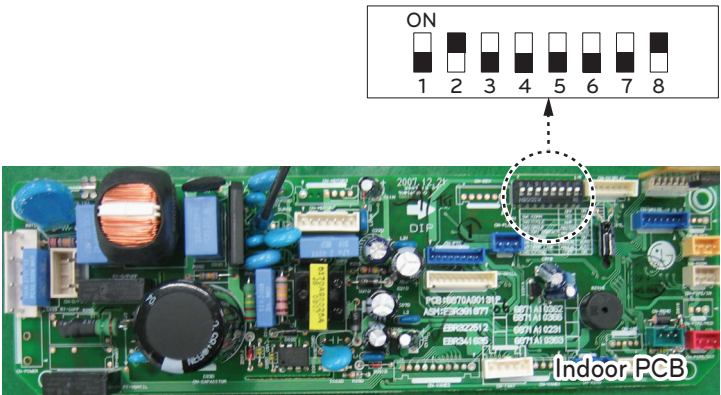
Group Control

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.

DIP Switch Setting of Indoor unit PCB



	Function	Description	Setting Off	Setting On	Default
SW3	Group Control	Selection of Master or Slave	Master	Slave	Off
SW4	Dry Contact Mode	Selection of Dry Contact Mode	Wired/Wireless remote controller Selection of Manual or Auto operation Mode	Auto	Off

NOTE

Please refer to the wired remote controller accessory manual for more details about 'Group Control' & 'Dry Contact Mode'.

