



LG

Life's Good

ENGLISH

ESPAÑOL

INSTALLATION MANUAL

AIR CONDITIONER

- Please read this installation manual completely before installing the product.
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only.
- Please retain this installation manual for future reference after reading it thoroughly.

TYPE : Ducted Split



P/NO : MFL68061101

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 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.
- The information contained in the manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.
- Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.

Installation

- Do not use a defective or underrated circuit breaker. Use this appliance on a dedicated circuit. There is risk of fire or electric shock.
- For electrical work, contact the dealer, seller, a qualified electrician, or an Authorized Service Center. Do not disassemble or repair the product. There is risk of fire or electric shock.
- Always ground the product. There is risk of fire or electric shock.
- Install the panel and the cover of control box securely. There is risk of fire or electric shock.
- Always install a dedicated circuit and breaker. Improper wiring or installation may cause fire or electric shock.
- Use the correctly rated breaker or fuse. There is risk of fire or electric shock.
- Do not modify or extend the power cable. There is risk of fire or electric shock.
- Do not let the air conditioner run for a long time when the humidity is very high and a door or a window is left open. Moisture may condense and wet or damage furniture.
- Be cautious when unpacking and installing the product. Sharp edges could cause injury. Be especially careful of the case edges and the fins on the condenser and evaporator.
- For installation, always contact the dealer or an Authorized Service Center. There is risk of fire, electric shock, explosion, or injury.
- Do not install the product on a defective installation stand. It may cause injury, accident, or damage to the product.
- Be sure the installation area does not deteriorate with age. If the base collapses, the air conditioner could fall with it, causing property damage, product failure, and personal injury.
- Use a vacuum pump or Inert (nitrogen) gas when doing leakage test or air purge. Do not compress air or Oxygen and do not use Flammable gases. Otherwise, it may cause fire or explosion. There is the risk of death, injury, fire or explosion.

Operation

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



CAUTION

Installation

- Always check for gas (refrigerant) leakage after installation or repair of product. Low refrigerant levels may cause failure of product.
- Install the drain hose to ensure that water is drained away properly. A bad connection may cause water leakage.
- Keep level even when installing the product. To avoid vibration or water leakage.
- Do not install the product where the noise or hot air from the outdoor unit could damage the neighborhoods. It may cause a problem for your neighbors.
- Use two or more people to lift and transport the product. Avoid personal injury.
- Do not install the product where it will be exposed to sea wind (salt spray) directly. It may cause corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunction or inefficient operation.
- If you eat the liquid from the batteries, brush your teeth and see doctor. Do not use the remote if the batteries have leaked. The chemicals in batteries could cause burns or other health hazards.
- Safely dispose of the packing materials. Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries. Tear apart and throw away plastic packaging bags so that children may not play with them. If children play with a plastic bag which was not torn apart, they face the risk of suffocation.

TABLE OF CONTENTS

2 TIPS FOR SAVING ENERGY

3 IMPORTANT SAFETY INSTRUCTIONS

6 FEATURES

- 6 Accessories
- 7 Duct Connection Dimensions

8 INSTALLATION

- 8 Selection of the best location
- 9 Upflow Installation
- 10 Duct work
- 11 Insulation
- 12 Condensate Drain
- 14 Wiring Connection

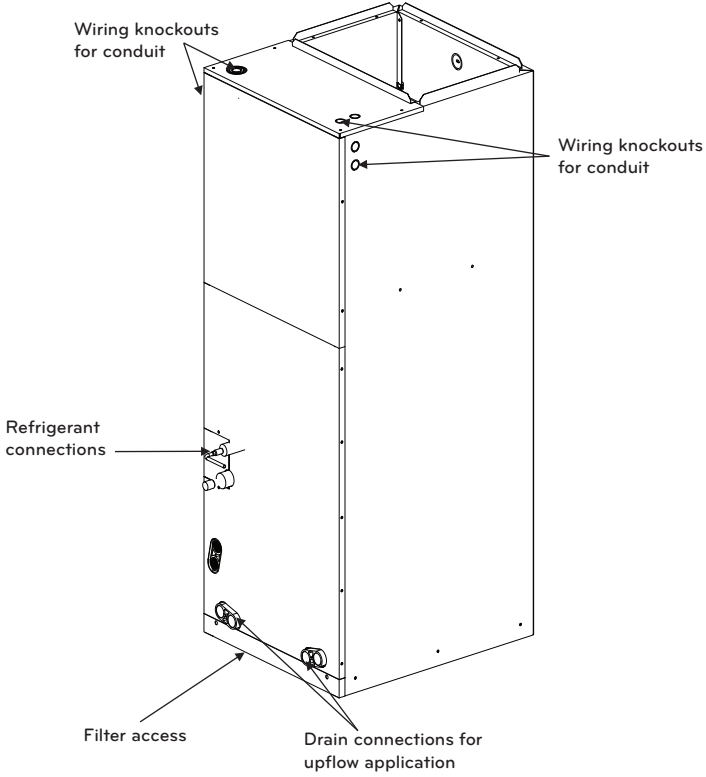
16 INSTALLATION INSTRUCTION

- 19 Remote controller installation
- 20 Group control

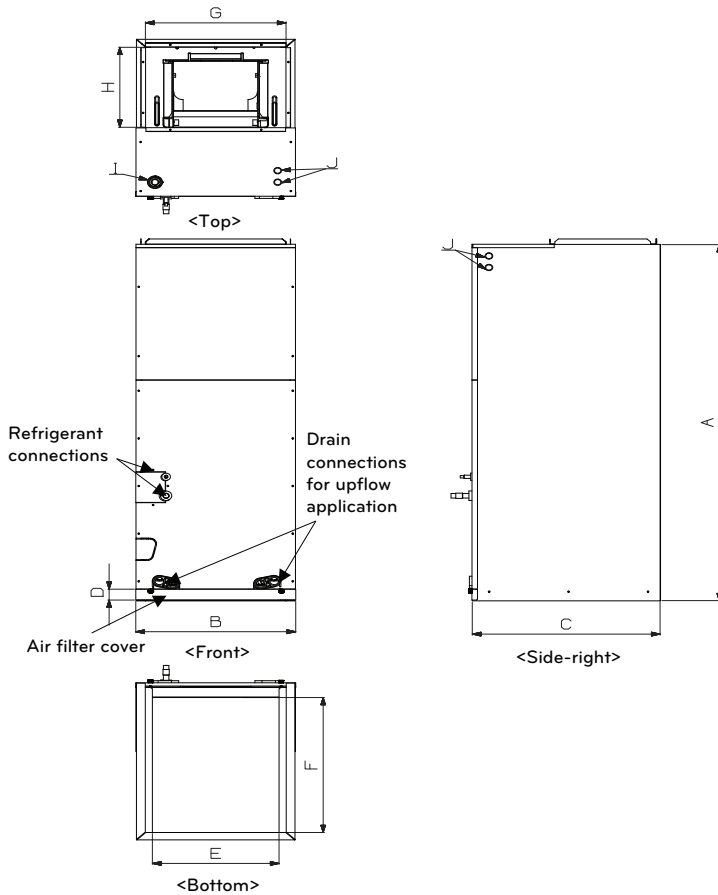
21 PRODUCT DATA

- 21 External Static Pressure & Air Flow

FEATURES



Duct Connection Dimensions



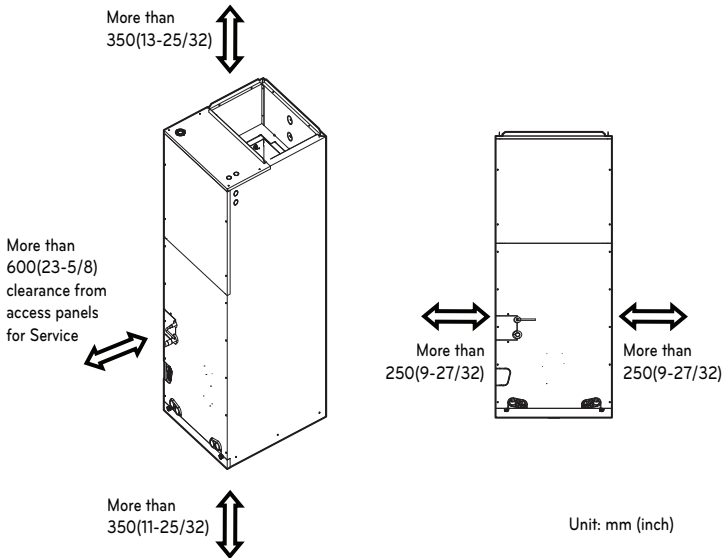
(Unit: inch(mm))

Capacity (kBtu/h (RT))	Dimensions								Wiring Knock out		Refrigerant Connections Pipe size	
	A	B	C	D	E	F	G	H	I	J	Liquid	Gas
	Height	Width	Depth						Power	Commu- nication		
54(4.5)	55-1/8 (1401)	25 (635)	21-3/8 (540)	1-9/16 (40)	24-1/2 (623)	20 (530)	24 (610)	12-1/8 (308)	1-11/16 (43)	7/8 (22)	3/8 (9.52)	3/4 (19.05)

INSTALLATION

Selection of the best location

- Where optimum air distribution can be ensured.
- Where nothing blocks air passage and install the duct work.
- Where condensate can be properly drained.
- Where the ceiling is strong enough to bear the indoor unit weight.
- Where the false ceiling is not noticeably on an incline.
- Where sufficient clearance for maintenance and service can be ensured.
- Where piping between indoor and outdoor units is possible within the allowable limit. Refer to the installation manual for the outdoor unit.
- Vertical Air Handling Unit can be installed for upflow positions.



NOTE

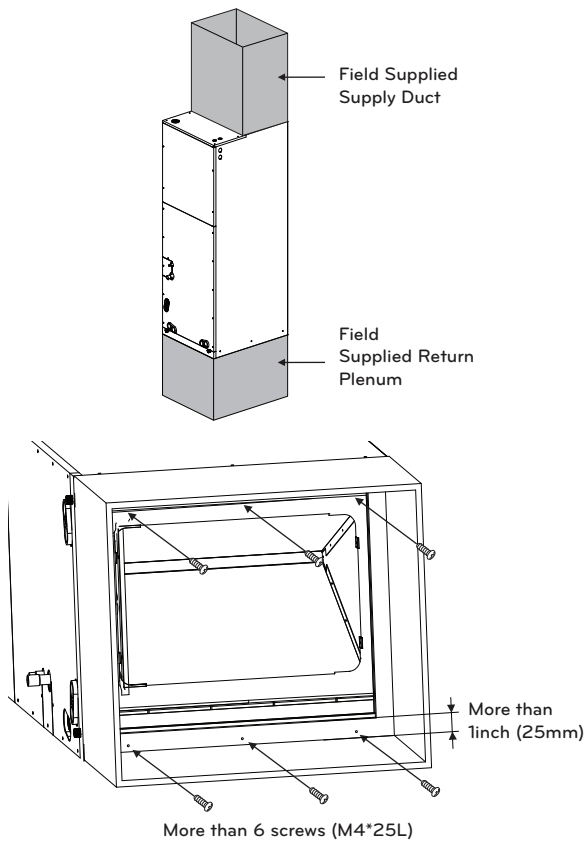
- The remote control may operate other electronic devices if pointed towards them. Make sure to point the remote control towards the signal receiver of the air conditioner.
- For proper operation, use a soft cloth to clean the signal transmitter and receiver.

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.

Upflow Installation

- Position unit on plenum or other suitable foundation.
- If the unit on plenum, make holes in plenum. Return air duct should be connected through holes. Plenum should be connected in the unit using each 3 screws on the left and right side.
- After the duct is secured, seal around the supply duct to prevent air leakage. The filter access must remain unobstructed.
- If plenum is not used, a frame strong enough to support the total weight must be provided.
- Provide a minimum height of 14 inches (350mm) for proper unrestricted airflow.
- Vibration isolators (purchased locally) must be placed between the unit and pedestal.

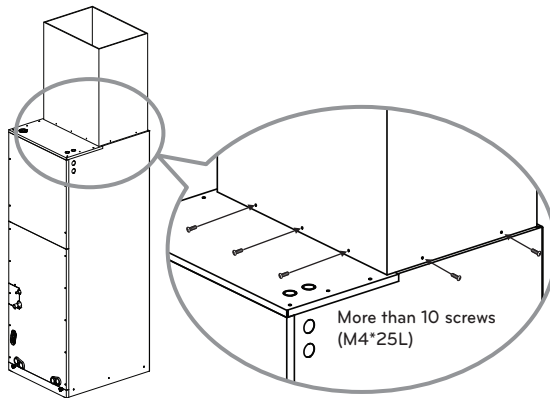


CAUTION

Do not connect the screws on Front and Rear side, it may cause the filter can not be mounted.

Duct work

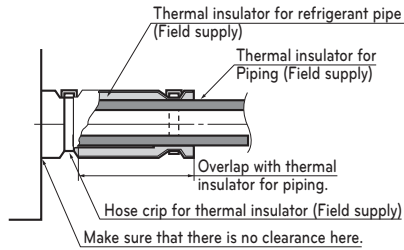
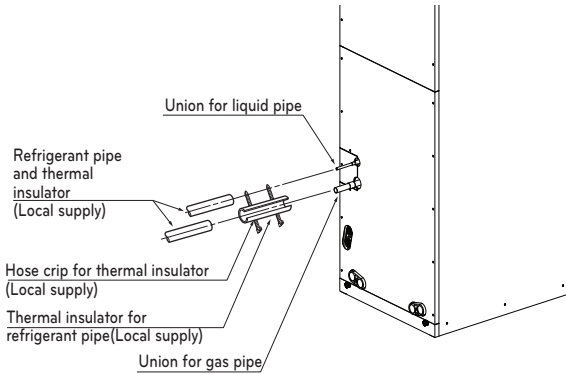
- Over 10 screws should be used for joining supply duct with the unit.
- To prevent vibration transmission, exploit flexible connectors between duct and the unit. It is mandatory that the flexible connector between unit and duct at discharge connection should be made off heat resistive material when electric heater is installed.
- Duct work must be insulated and covered with vapor barrier when routed through unconditioned space.
- Internal acoustical insulation lining may necessary for the metal duct system if it do not have 90° elbow and 10ft. of main duct to first branch takeoff.
- It is advised that a fibrous duct work could be used as a substitute if built and installed in accordance with the most recent edition of SMACNA construction standard on fibrous glass ducts.
- Collectively fibrous duct work and acoustical lining shall obey National Fire Protection Association standards 90A or B as tested by UL standard 181 for class 1 air ducts.
- Seal around the delivery duct subsequent to when the duct is secured so that to facilitate prevention of air leakage.



Insulation

Insulate the joint and tubes completely.

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



Recommend

Classification		Air conditioned location		Non-air conditioned location	
		Note1) General location	Note2) Special location	Note3) General location	Note4) Negative location
Liquid Pipe	Ø 3/8(9.52)	Above t 3/8 (9.52)	Above t 3/8 (9.52)	Above t 3/8 (9.52)	Above t 3/8 (9.52)
Gas Pipe	Ø 3/4(19.05)	Above t 1/2 (12.7)	Above t 3/4 (19.05)	Above t 3/4 (19.06)	Above t 1 (25)

- * Note 1) General location: When the pipe passes through indoors in which the indoor unit is operated
- Apartment, classroom, office, mall, hospital, office-tel etc.

Note 2) Special location

1. When the location is air conditioned but has severe temperature/humidity difference due to high ceiling
 - Church, auditorium, theater, lobby etc.
2. When the location is air conditioned but the internal temperature/humidity of the ceiling finishing is high
 - Bathroom/swimming pool locker room etc. (Building with roof ceiling of sandwich assembly type)

Note 3) General location: When the pipe passes indoors where the indoor unit is not operated

- Hall way etc. (Dormitory, school, office-tel)

Note 4) Negative condition: When below conditions 1 and 2 are met.

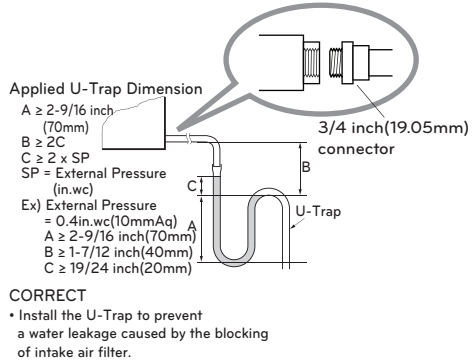
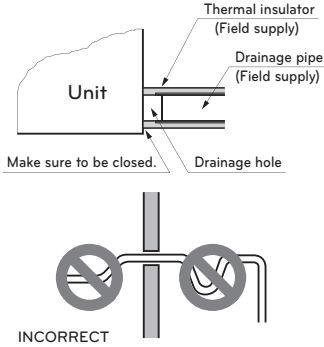
1. When the pipe passes indoors where the indoor unit is not operated
2. When the humidity is high, regionally, and there is no air flow in the pipe passing area
 - When installing the outside unit within the outside pipe tray or at a location where it is ok to have freezes, apply 13t.
 - If you are not sure with the selection of heat insulation material, coordinate with the supervision or HQ.
 - The thickness of the above heat insulation material is based on the heat conductivity of 0.088W/m°C.

Condensate Drain

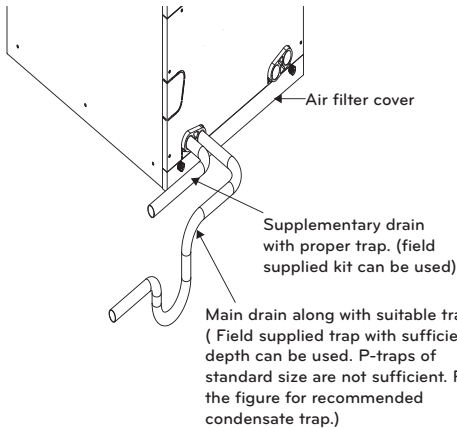
- The drainage performance has to be optimized by installing both primary and secondary drain lines along with properly sized condensate traps in order to prevent property damage.
- Care should be taken to avoid the blocking of filter access panel while connecting condensate drain lines. The primary and secondary condensate traps has to be primed after connecting to the drain pan.
- A field supplied external condensate pan has to be installed underneath the entire unit if the unit is above the living space . Other wise damage may result due to condensate over flow. Also a additional external condensate line should run from unit in to the pan.
- The entire condensate should be drained from the external condensate pan to some noticeable area. It is advised to install traps in condensate lines as near to the coil as possible. The outlet of each trap should be below its connection to the condensate pan avert condensate from overflowing drain pan.
- If located above the living area then all traps should be prime and insulated and also tested for leakage.
- PVC 3/4 inch(19.05mm) male pipe thread fitting is advised to use at condensate pan with gentle tight.
- For easy drain flow the drain hose has to be pointed downward.
- Care should be taken to not use pipe joint connection or PVC/CPVC for units drain line connection. Use only Teflon tape.
- For preventing winter freeze up on condensate line special means should be provided for drainage.

GRADIENT OF UNIT AND DRAIN PIPING

- Always lay the drain with downward inclination(1/50 to 1/100). Prevent any upward flow or reverse flow in any part.
- 5/24 inch(5mm) or thicker formed thermal insulator shall always be provided for the drain pipe.



Upflow Drain



CAUTION

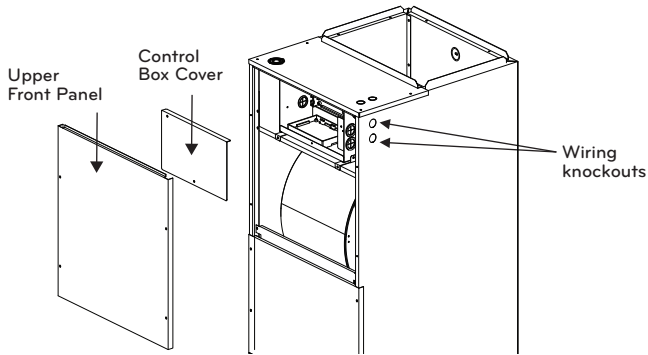
The supplied flexible drain hose should not be strained. A strained hose may cause leakage of water.

Wiring Connection

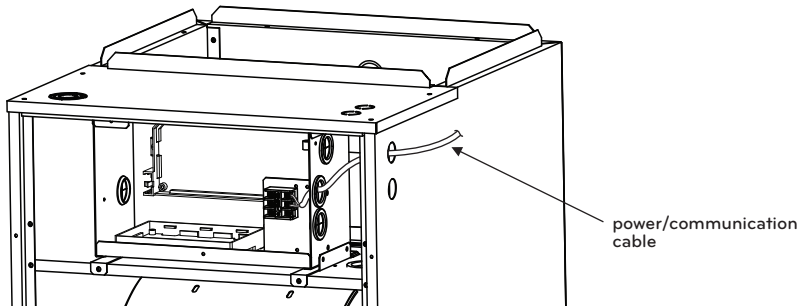
Connect the wires to the terminals on the control board individually according to the outdoor unit connection.

Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively.

* Copper wire should be used.



- 1 Detach the upper panel & control box cover. And remove wiring Knockouts.



- 2 Install conduit to the wiring knockouts. Connect power/communication cable to terminal block through the wiring knockouts.

! NOTE

- Separately wire power supply cord and connecting cable.
- Use heat-proof electrical wiring capable of withstanding temperature up to 75°C(167°F).
- Use outdoor and waterproof connection cable NRTL(UL, ETL, CSA...) listed and rated more than 300V for the connection between indoor and outdoor unit. and this cable should be enclosed in conduit.

! CAUTION

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

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

INSTALLATION INSTRUCTION

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

- Please set it up not to bend because poor setup could take place if setup board bends.

Please set up remote controller board fit to the reclamation box if there is a reclamation box.

2 Can set up wired remote controller cable into three directions.

- Set up direction: the surface of wall reclamation, upper, right

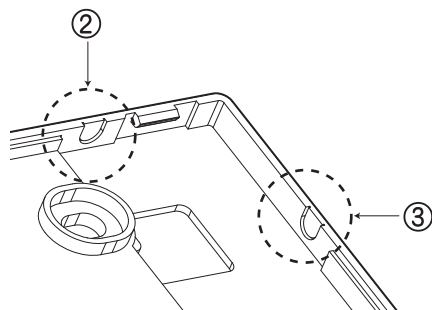
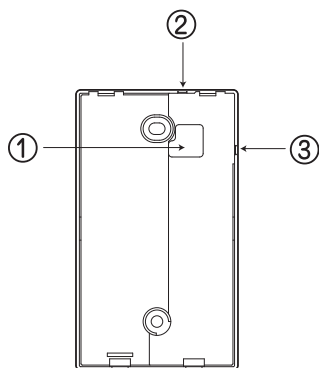
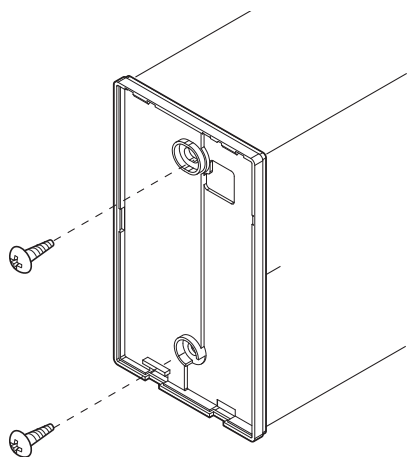
- If setting up remote controller cable into upper and right side, please set up after removing remote controller cable guide groove.

* Remove guide groove with long nose.

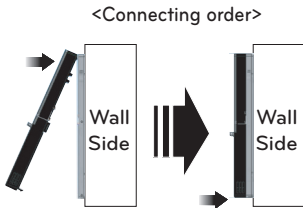
① Reclamation to the surface of the wall

② Upper part guide groove

③ Right part guide groove

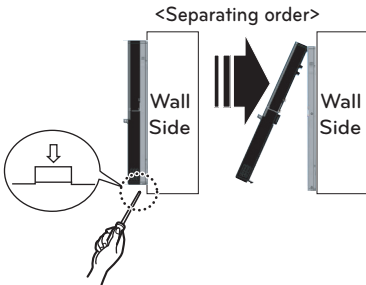


- 3 Please fix remote controller upper part into the backplate attached to the surface of the wall, as the picture below, and then, connect with backplate by pressing lower part.
- Please make sure to leave no gaps on the top, bottom, left or right sides between the remote controller and backplate.
 - Before assembly with the backplate, arrange the Cable not to interfere with circuit parts.



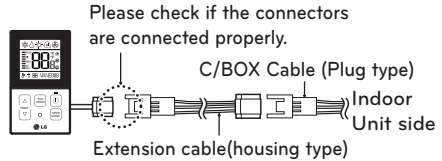
Remove remote controller by inserting a screwdriver into the lower separating holes and twisting to release the controller from backplate.

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



- 4 Please refer to the following directions when connecting the indoor unit and the wired remote controller together.

- Please connect the cables as shown in the figure below when connecting the plug type cable from the indoor unit's C/BOX and the housing type of the extension cable.



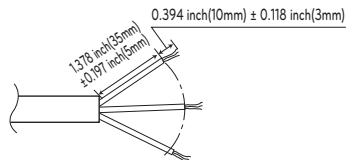
Signal	Yellow
12V	Red
GND	Black

CAUTION

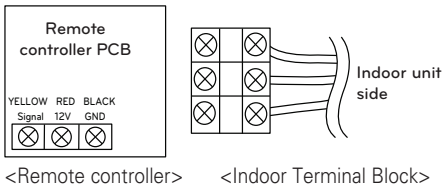
- Specification of LG supplied extension cable: AWG#22, 3 core shielded. (Model : PZCWRC1)
- * Apply enclosed noncombustible conduit(metal raceway) totally or use FT-6 rated cable or above level in case of local electric & building code that requires plenum (CMP) cable usage.

- When connecting Terminal Blocks of the indoor C/BOX and the wired remote controller with the extension cable, refer to the steps below.

- ① Remove the screw on the cable which is fastened to the wired remote controller's Terminal Block by loosening with a screw driver.
- ② Remove the housing of the provided 32ft extension cable with a cutting nipper and peel it as shown in the figure below. (when purchasing the extension cable at the site directly, please peel it as shown in the figure below.)



- ③ Make sure each wire is securely fastened under each screw terminal and the wires are not in contact with each other.
- ④ Please connect the Terminal blocks of indoor unit's C/BOX and wired remote controller by referring to the images and contents shown below.
- Connect the yellow(signal) part of the wired remote controller's terminal block and the 'YL' part of the indoor unit's terminal block. Connect the red(12V) part of the wired remote controller's terminal block and the 'RD' part of the indoor unit's terminal block. Connect the black(GND) part of the wired remote controller's terminal block and the 'BK' part of the indoor unit's terminal block.



Remote controller PCB Terminal block Remark	Indoor Terminal block	Function
YELLOW	YL	Signal
RED	RD	12V
BLACK	BK	GND

- * In case of loosened screws or insufficient contact between the terminal and the wire, remote controller may not function properly.
- * When the power is off on the remote controller, check the connection between the remote controller and 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 wires and terminal block structure.

CAUTION

- Installation work must be performed in accordance with the national wiring standards and local by authorized personnel only.
- Installations must comply with the applicable local/national or international standards.
- AWG#22, 3 core shielded is recommended when using the large hole in the center of the back plate.
- AWG#24, 3 core shielded is recommended when using the side or top knock-out of the back plate.

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

CAUTION

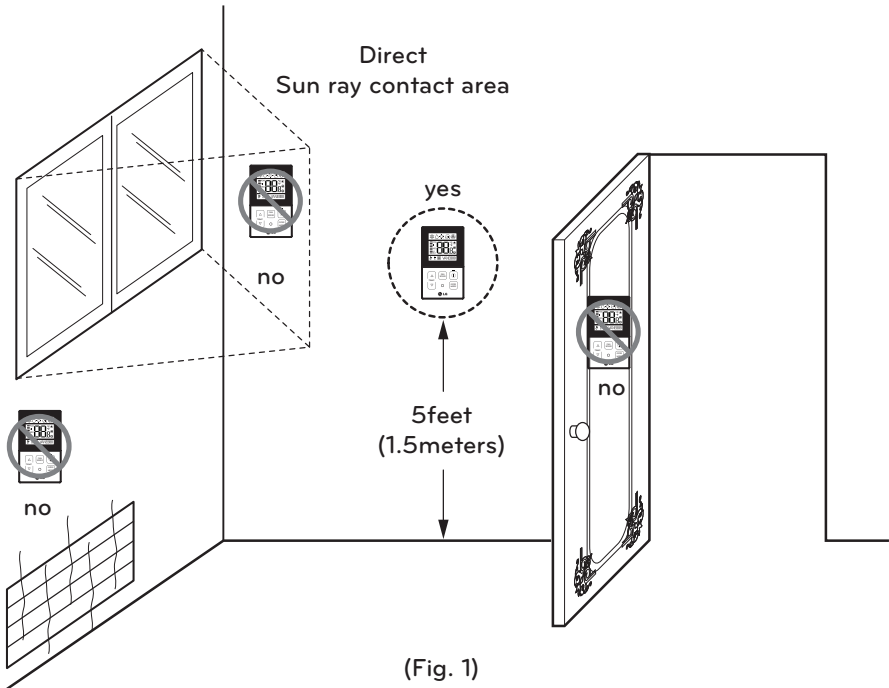
- When installing the wired remote controller, do not bury it in the wall. (It can cause damage in the temperature sensor.)
- Do not install the cable to be 164ft(50m) or longer. (It can cause communication error.)

Remote controller installation

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

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

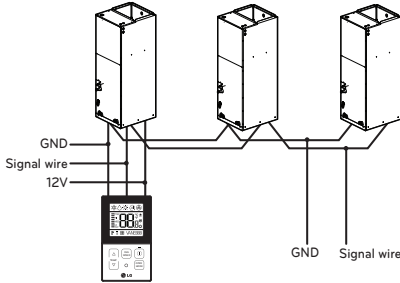
- Drafts, or dead spots behind doors and in corners.
- Hot or cold air from ducts.
- Radiant heat from sun or appliances.
- Concealed pipes and chimneys.
- Uncontrolled areas such as an outside wall behind the remote controller.
- This remote controller is equipped with LCD. display. For proper display of the remote controller LCD's, the remote controller should be installed properly as shown in Fig.1. (The standard height is 4~5 ft (1.2~1.5 m) from floor level.)



Group control

1 When installing more than 2 units of air conditioner to one wired remote controller, please connect as the right figure.

- If it is not event communication indoor unit, set the unit as slave.
- Check for event communication through the product manual.



When controlling multiple indoor units with event communication function with one remote controller, you must change the master/slave setting from the indoor unit.

Indoor units, the master/slave configuration of the product after completion of indoor unit power 'OFF' and then 'ON' the power after 1 minutes elapsed sign up.

- For ceiling type cassette and duct product group, change the switch setting of the indoor PCB.



#3 switch OFF: Master
(Factory default setting)



#3 switch ON: Slave

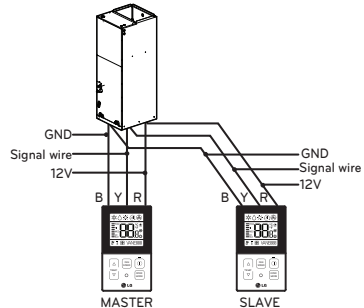
- For wall-mount type and stand type product, change the master/slave setting with the wireless remote controller. (Refer to wireless remote controller manual for detail)

* When installing 2 remote controllers to one indoor unit with event communication function, set the master/slave of the remote controller. (Refer to remote controller master/slave selection)

When controlling the group, some functions excluding basic operation setting, fan level Min/Mid/Max, remote controller lock setting and time setting may be limited.

2 When installing more than 2 wired remote controllers to one air conditioner, please connect as the right picture.

- When installing more than 2 units of wired remote controller to one air conditioner, set one wired remote controller as master and the others all as slaves, as shown in the right picture.
- You cannot control the group as shown in the right for some products.
- Refer to the product manual for more detail.



- When controlling in groups, set the master/slaver of the remote controller. Refer to Installer setting section on how to set master/slave for more detail.

PRODUCT DATA

External Static Pressure & Air Flow

Capacity (kBtu/h(RT))	Flow rate (CFM)	Setting Value @ ESP(in.wc)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
54(4.5)	High(1475)	77	82	87	93	98	102	110	115	115	115
	Middle(1400)	74	79	84	91	96	102	110	115	115	115
	Low(1260)	67	75	80	87	90	98	102	110	110	110

Air handler units are UL Listed up to 0.5 in.wc external static pressure, including air filter, set coil, unless otherwise noted.

- Flow rate(CFM) is decreased by 3% per 0.1in.wc from 0.8 in.wc to 1.0 in.wc
- If flow rate(CFM) is increased by 400CFM/ton from 1.5RT to 2.5RT of capacity, the ESP value should be increased by 4.
- If flow rate(CFM) is increased by 400CFM/ton from 3.0RT to 4.5RT of capacity, the ESP value should be increased by 5.
- in.wc = inch Water Column, inAq
- Factory Default: High Static Pressure,
High static pressure is 0.5 in.wc,
Low static pressure is 0.3 in.wc

If you set ESP incorrectly, the air conditioner may cause cooling capacity down or malfunction.

