

LG

Low Static Hide Away Type Air Conditioner

OWNER'S & INSTALLATION MANUAL

LG

IMPORTANT

Please read through this manual. It contains valuable information about your air conditioner. This manual may help save time and money by explaining proper product maintenance and preventing improper use.

PRECAUTIONS

Pay close attention to precautions in order to prevent potential hazards and damage from misuse or improper installation. LG is not responsible for any damages caused by misuse of the product.



P/No.: MFL62760202

OUT-LINE OF INSTALLATION

Index

Page No.

1.The following should be always observed for safety 3

Installation works	Installation Parts	Required tools
--------------------	--------------------	----------------

2. Installation of Indoor, Outdoor unit 4

- | | |
|---|---------------------------|
| A) Selection of best location of indoor 04 | • Level |
| B) Ceiling dimension & Hanging blot detail.....05 | • Screw driver |
| C) Filter convertible option.....06 | • Electric drill |
| D) Drain piping 07 | • Four Type "A" screws |
| E) Insulation of the piping & drain...08 | • Connecting cable |
| F) Out door unit best location & piping 10 | • Hole core drill (ø70mm) |

3. Connecting Pipes to the Indoor Unit 12

- | | | |
|-------------------------------|------------------------|--------------------|
| 1) Preparation of Piping...12 | • Pipes: Gas side | • FlaringTools set |
| | Liquid side | |
| | • Insulated drain hose | |
| | • Insulation materials | |

4. Connecting Pipes to the Outdoor Unit 14

- 1) Connecting the pipes to the Outdoor Unit 14

5. IR Remote Sensor installation & operation detail..... 14

6. Connecting Cables between Indoor Unit and Outdoor Unit 16

- | | |
|---|----------------|
| A) Circuit Breaker Detail.....16 | • Screw driver |
| B) Wiring diagram, wiring specification & interconnection detail.....17 | |
| C) Outdoor Wire Routine & Pipe Routine.....25 | |

7. Air Purging of the Connecting Pipes and the Indoor Unit..... 27

- Hexagonal Wrench (4mm/5mm)
- Gas-leak Detector

8. Operating Instructions..... 28

- | | |
|------------------------------------|----|
| A) Indoor Unit, Outdoor Unit | 28 |
| B) Remote Control Preparation .. | 29 |
| C) Remote Control Operations .. | 30 |

1. The following should be always observed for safety

- Please report to or take consent by the supply authority before connecting to the system.
- Be sure to read "THE FOLLOWING SHOULD BE ALWAYS OBSERVED FOR SAFETY" before installing the air conditioner.
- Be sure to observe the cautions specified here as they include important items related to safety.
- The indications and meanings are as follows.

	WARNING	Could lead to death, serious injury, etc.
	CAUTION	Could lead to serious injury in particular environments when operated incorrectly.

- After reading this manual, be sure to keep it together with the owner's manual in an accessible place.



WARNING

Do not install it yourself (customer).

- Incomplete installation could cause injury due to fire, electric shock, the unit falling or a leakage of water. Consult the dealer from whom you purchased the unit or special installer.

Install the unit securely in a place which can bear the weight of the unit.

- When installed in an insufficient strong place, the unit could fall causing injured.

Use the specified wires to connect the indoor and the outdoor units securely and attach the wires firmly to the terminal board connecting sections so the stress of the wires is not applied to the sections.

- Incomplete connecting and fixing could cause fire.

Check that the refrigerant gas do not leak after installation is completed.

Perform the installation securely referring to the installation manual.

- Incomplete installation could cause a personal injury due to fire, electric shock, the unit falling or a leakage of water.

Perform electrical work according to the installation manual and be sure to use an exclusive circuit.

- If the capacity of the power circuit is insufficient or there is incomplete electrical work, it could result in a fire or an electric shock.

Attach the electrical part cover to the indoor unit and the service panel to the outdoor unit securely.

- If the electrical part cover if the indoor unit and/or the service panel if the outdoor unit are not attached securely, it could result in a fire or electric shock due to dust, water, etc.

Be sure to use the part provided or specified parts for the installation work.

- The use of defective parts could cause an injury or leakage of water due to a fire, electric shock, the unit falling, etc.



CAUTION

Perform the drainage/piping work securely according to the installation manual.

- If there is a defect in the drainage/piping work, water could drop from the unit and household goods could be wet and damaged.

Do not install the unit in a place where an inflammable gas leaks.

- If gas leaks and accumulates in the area surrounding the unit, it could cause an explosion.

2). Installation of indoor & Outdoor.

A). Selection of the best location of Indoor

Indoor unit

Install the air conditioner in the location that satisfies the following conditions.

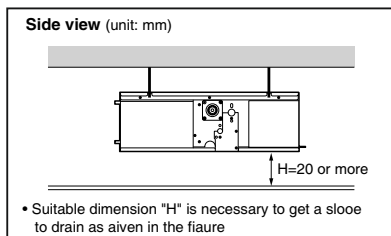
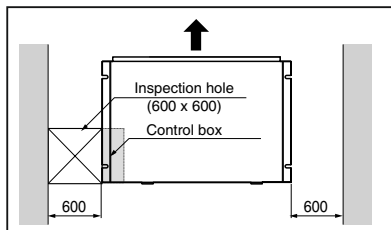
- The place shall easily bear a load exceeding four times the indoor unit's weight.
- The place shall be able to inspect the unit as the figure.
- The place where the unit shall be leveled.
- The place shall easily connect with the outdoor unit.
- The place where the unit is not affected by an electrical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

Confirm the positional relationship between the unit and suspension bolts.

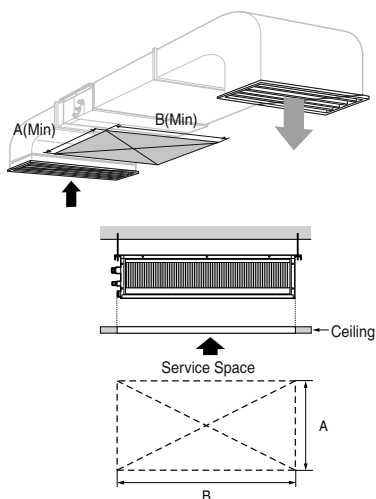
- Installation the ceiling opening to clean the filter or service under the product.

(Length: mm)

Capacity(Btu/h)	A	B
18/24/30k	600	1100
36/48/60k		



Low static Duct type



[Inspection Hole Standard]

Number of Inspection hole	Distance between False ceiling & Actual ceiling	Remarks
1	More than 100cm	Sufficient space in the ceiling for servicing.
2	20cm to 100cm	Insufficient space. Difficult for servicing
Hole size should be more than the size of IDU.	Less than 20cm	Minimum height for motor replacement.

B).Ceiling dimension and hanging bolt location

Installation of Unit

Install the unit above the ceiling correctly.

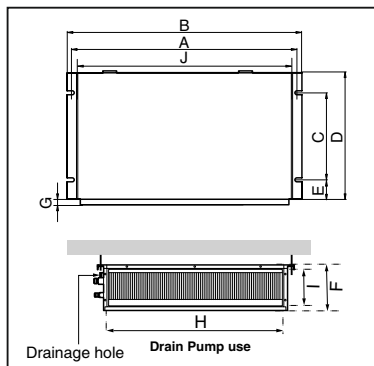
CASE 1

POSITION OF SUSPENSION BOLT

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

(Unit:mm)

Dimension Capacity(Btu/h)	A	B	C	D	E	F	G	H	I	J
18/24/30k BTU/h	1130	1180	383	575	93	190	21	1065	163	1100
36/48/60k BTU/h										

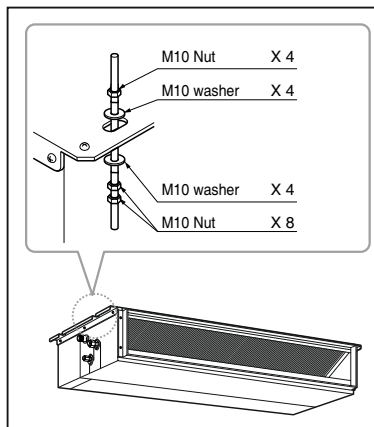


CASE 2

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

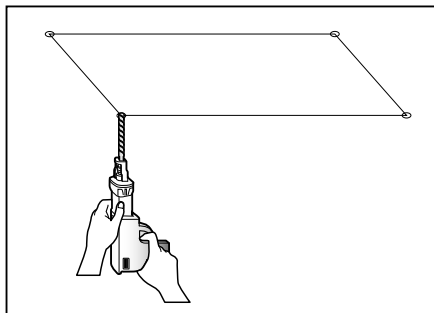
POSITION OF CONSOLE BOLT

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



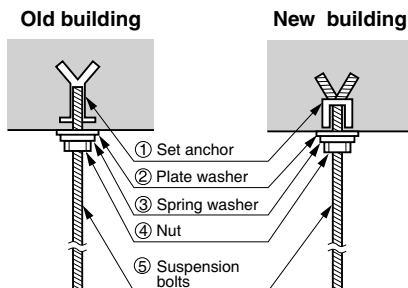
Indoor Unit Installation

- Select and mark the position for fixing bolts.
- Drill the hole for set anchor on the face of ceiling.

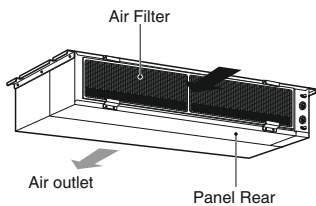


CAUTION : Tighten the nut and bolt to prevent unit falling.

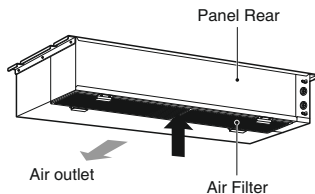
- Insert the set anchor and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- Mount the suspension bolts to the set anchor firmly.
- Secure the installation plates onto the suspension bolts (adjust level roughly) using nuts, washers and spring washers.



C).Filter convertible option.



- Low static duct type in case of suction from back side.



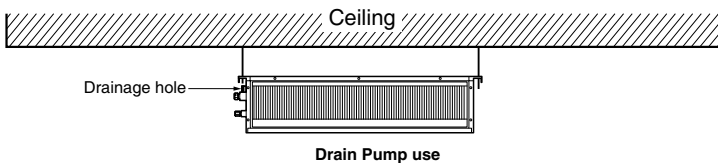
- Low static duct type in case of suction from bottom side.

CAUTION

1. **Install declination** of the indoor unit is very **important for the drain** of the duct type air conditioner.
2. Minimum thickness of the insulation for the connecting pipe shall be 19mm.

Front of view

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



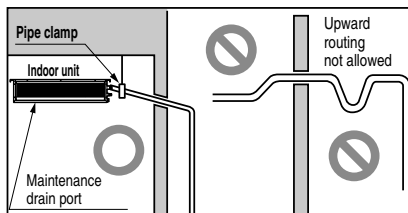
D). Drain Piping

- 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

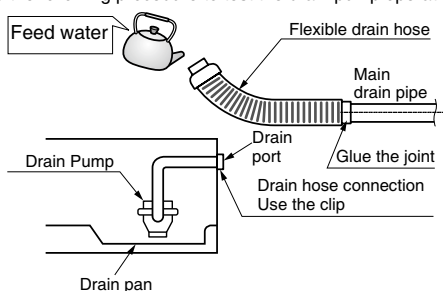
- Be sure to install heat insulation on the drain piping.

Heat insulation material: Polyethylene foam with thickness more than 8 mm.



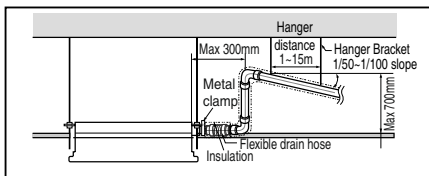
Drain test

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.

HAND OVER

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

Standard Accessories

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

- Owner's manual
- Installation manual

E). Insulation of the Piping & Drain

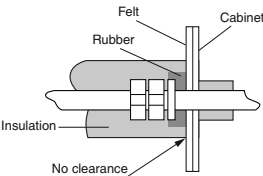
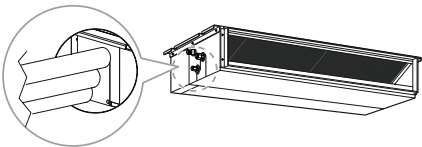
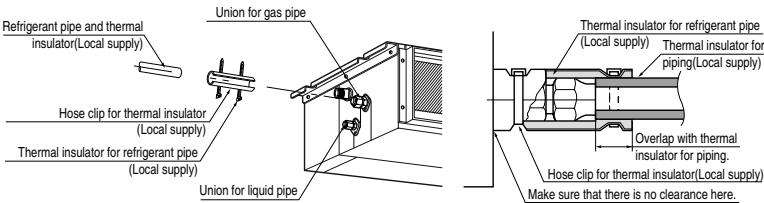
INSULATION, OTHERS

Insulate the joint and tubes completely.

THERMAL INSULATION

All thermal insulation must comply with local requirement.

INDOOR UNIT



TEST AND CHECK

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

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

Care and maintenance

Caution: Before performing any maintenance, turn off the main power to the system.

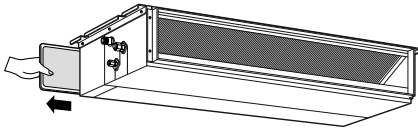
Indoor Unit

Grille, Case, and Remote Control

- Turn the system off before cleaning. To clean, wipe with a soft, dry cloth. Do not use bleach or abrasives.

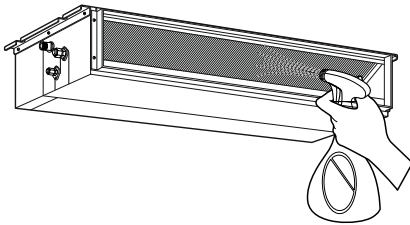
Note:

Supply power must be disconnected before cleaning the indoor unit.



Air Filter

The air filters behind Indoor unit (the suction side) should be checked and cleaned once every 2 weeks or more often if necessary.



- Never use any of the followings:

- Water hotter than 40°C
Could cause deformation and/or discoloration.
- Volatile substances
Could damage the surfaces of the air conditioner.

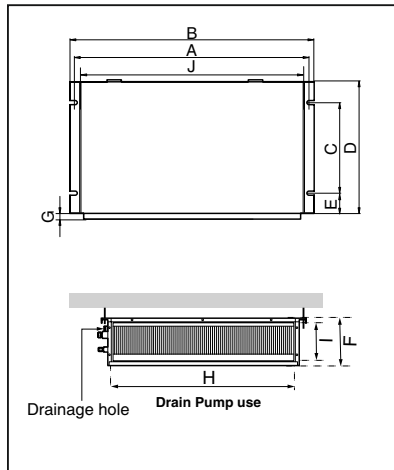


- Clean the filter with a vacuum or warm, soapy water.
 - If very dirty, wash with a solution of detergent in lukewarm water.
 - If hot water (50°C or more) is used, filter may be deformed.
- After washing with water, dry well in the shade.
- Re-install the air filter.

Indoor Unit Dimensions (mm)

(Unit:mm)

Dimension	A	B	C	D	E	F	G	H	I	J
Capacity(Btu/h)										
18/24/30k BTU/h	1130	1180	383	575	93	190	21	1065	163	1100
36/48/60k BTU/h										



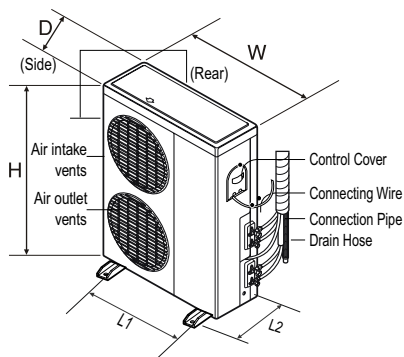
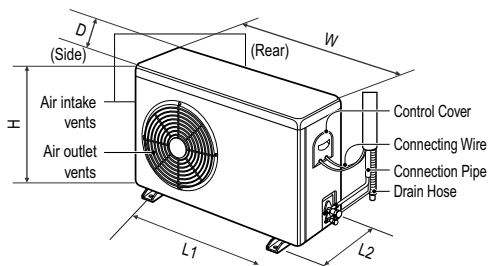
F). Outdoor Unit best location & piping.

The heat exchanger coils and panel vents of the outdoor unit should be checked regularly. If clogged with dirt or soot, the heat exchanger and panel vents may be professionally steam cleaned.

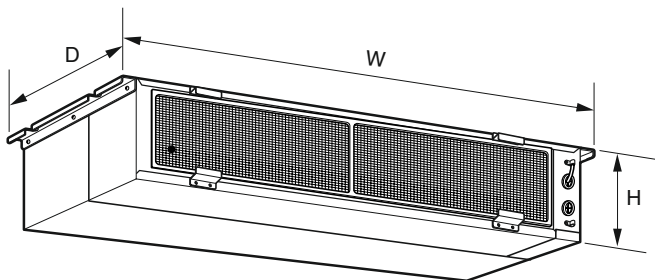
Note:

Dirty or clogged coils will reduce the operating efficiency of the system and cause higher operating costs.

Outdoor Unit



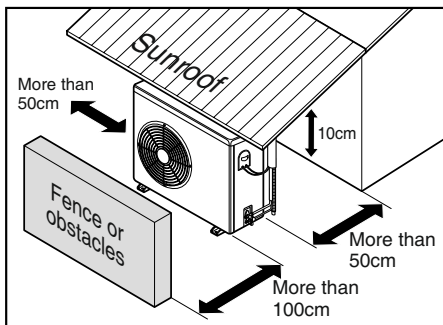
Indoor Unit



Model	Capacity	Indoor dimension			Outdoor Dimension				
		W	D	H	W	D	H	L1	L2
LB-B2156QC	1.5 TR	1180	575	190	800	260	555	590	305
LB-B2206QC	2 TR	1180	575	190	800	260	555	590	305
LB-B2256QC / LB-B2258QC	2.5 TR	1180	575	190	870	320	655	545	350
JB-B2156QC	1.5 TR	1180	575	190	870	320	655	545	350
JB-B2258QC	2.5 TR	1180	575	190	870	320	800	545	350
LMA36B2ALI	1.5x2 TR	1180	575	190	870	320	655	545	350
LMA48B2ALI	2.0x2 TR	1180	575	190	906	406	1135	606	465
LMA60B2ALI	2.5x2 TR	1180	575	190	906	406	1135	606	465

>>Outdoor unit space requirement.

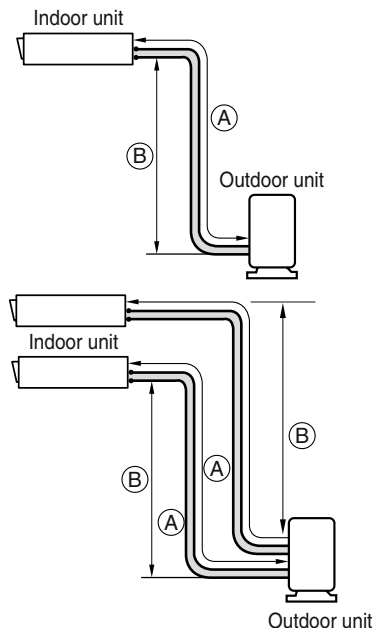
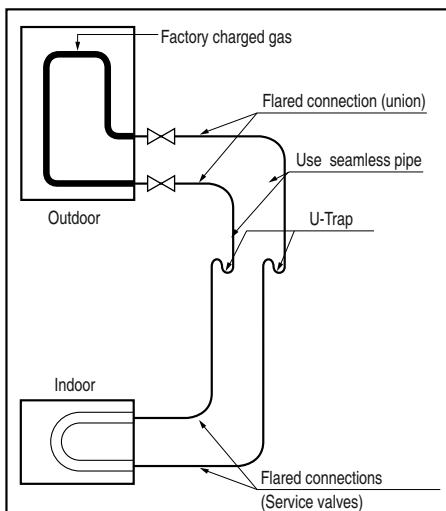
- If an awning is built over the unit to prevent direct sunlight or rain exposure, be careful that heat radiation from the condenser is not restricted.
- There should not be any animals or plants which could be affected by hot air discharged.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence or other obstacles.



>>Piping length and the elevation

Model	Capacity	Pipi Sizes (Dia In Inch)		Length(A meter)		Elevation(B meter)		Additional Gas Charge
		Gas	Liquid	standard	Max	standard	Max	
LB-B2156QC	1.5 TR	1/2"	1/4"	7.5	30	5	15	R-22 15gm
LB-B2206QC	2 TR	5/8"	1/4"	7.5	30	5	15	R-22 20gm
LB-B2256QC/ LB-B2258QC	2.5 TR	5/8"	3/8"	7.5	30	5	15	R-22 25gm
JB-B2156QC	1.5 TR	5/8"	3/8"	7.5	80	5	35	R-410 30gm
JB-B2258QC	2.5 TR	5/8"	3/8"	7.5	80	5	35	R-410 30gm
LMA36B2ALI	1.5x2 TR	1/2" x 2	1/4"x2	5	30	5	15	R-22 15gm
LMA48B2ALI	2.0x2 TR	5/8" x 2	1/4"x2	5	30	5	15	R-22 20gm
LMA60B2ALI	2.5x2 TR	5/8" x 2	3/8"x2	5	30	5	15	R-22 25gm

- Capacity is based on standard length and maximum allowance length is on the basis of reliability .
- Oil trap should be installed every 5 meters.
- If 18K model is installed at a distance of 15m, 150g of refrigerant should be added $[(15-5) \times 15g = 150g]$.



3. Connecting Pipes to the Indoor Unit

3-1. Preparation of Piping

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

1) 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 1.5m 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

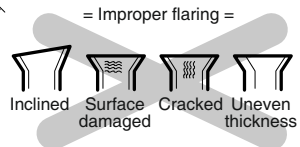
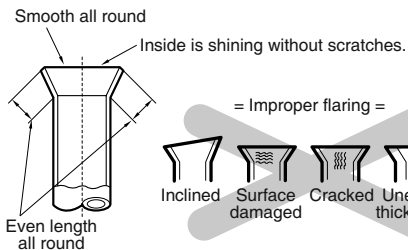
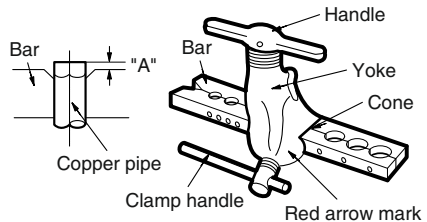
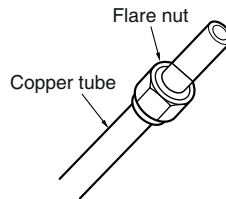
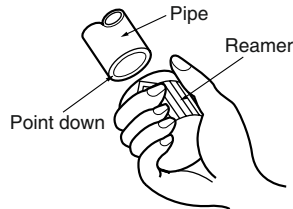
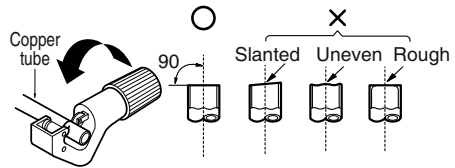
- Carry out flaring work using flaring tool as shown below.

Outside Diameter	"A"
1/4"	0~0.5
3/8"	0.5~0.8
1/2"	0.5~0.8
5/8"	0.8~1.0
3/4"	1.0~1.3

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.



6) Pipe bending

Annealed copper pipe with small diameter ($\phi 6.35$ or $\phi 9.52$) can be easily bent manually. In this case, secure large R(radius) for the bend section and gradually bend pipe. If annealed copper pipe is large in diameter ($\phi 12.7$, $\phi 15.88$ or $\phi 19.05$), bend pipe with bender. Use bender appropriate for the pipe diameter.

7) Brazing

In refrigerant piping, bending (in particular, acute bending) must be minimized to reduce piping resistance. Bending is, however, necessary in some places by virtue of the installation position of devices or of the building structure, piping distance or finishing appearance. Perform brazing using ready-made elbow. Aside from this function, brazing also serves to connect straight pipes, generally using ready-made sockets. While brazing, protect piping against heat with wet cloth to avoid damaging valve packing or burning thermal insulator with burner heat. While brazing, blow inert gas (nitrogen gas or carbonic gas) to prevent formation of oxidation film in copper piping; otherwise, the refrigerant circuit will clog. The blowing of nitrogen gas (or carbonic gas) through 3-way valves is described in the following:

8) Refrigerant piping(Flare piping)

When connecting piping, be sure to keep piping dry(keep piping away from water), clean (keep piping away from dust) and airtight (avoid refrigerant leakage).

When connecting piping on rainy days or making a through-hole in wall, take due care to prevent water or plaster from entering piping.

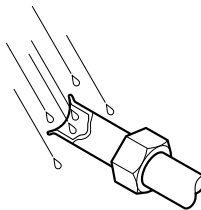


CAUTION

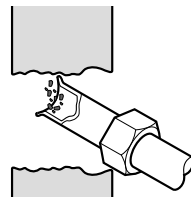
- a. This procedure is designed to prevent formation of oxidation film by filling piping with inert gas. Note that excessive gas pressure will generate pinholes at brazed points.

(Nitrogen gas: Supply pressure
0.05~0.1 kg/cm²G)

- b. When supplying inert gas, be sure to open one end of piping.



Water enters



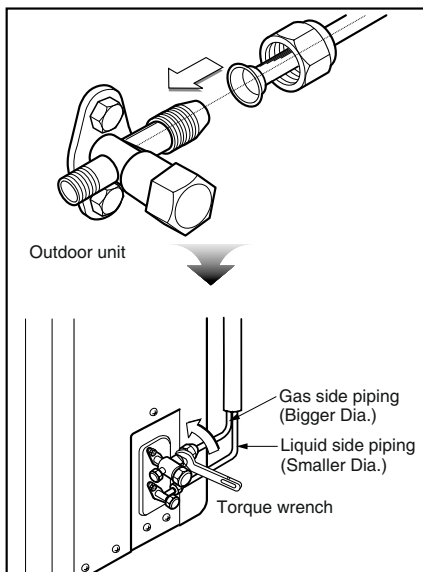
Plaster enters

4. Connecting Pipes to the Outdoor Unit

1) Connecting the pipes to the Outdoor unit

1. Align the center of the pipings and sufficiently tighten the flare nut with fingers.
2. 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.

Pipe size	Torque
1/4"	1.8kg.m
3/8"	4.2kg.m
1/2"	5.5kg.m
5/8"	6.6kg.m
3/4"	6.6kg.m



5. IR Remote Sensor Installation & Operation

- Install the IR remote sensor about 6 feet above the floor in an area with good air circulation at an average temperature.

Do not install the IR remote sensor 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 IR remote sensor is equipped with LED display and ON/OFF button. For proper display of the IR remote sensor The IR remote sensor should be installed properly as shown in Fig.1.
(The standard height is 6 feet from floor level.)

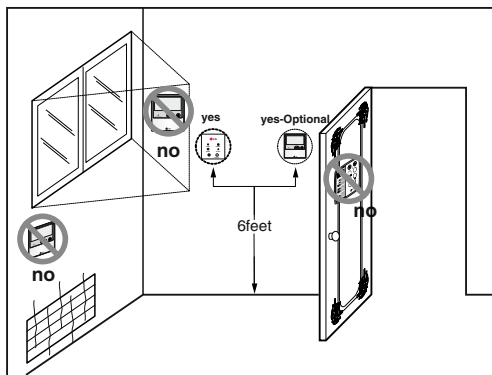


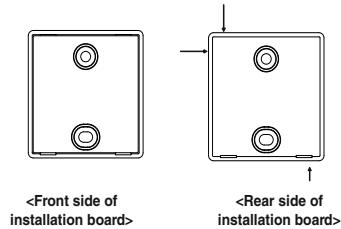
Fig.1 Typical locations for IR Remote Sensor

Installation of IR Remote Sensor

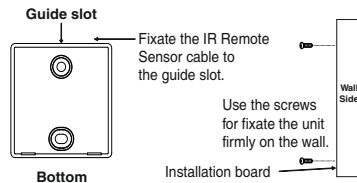
1. Connect the IR sensor cable to the CN-DISPLAY connector of main PCB Assy.

The IR sensor cable is connected as factory default.

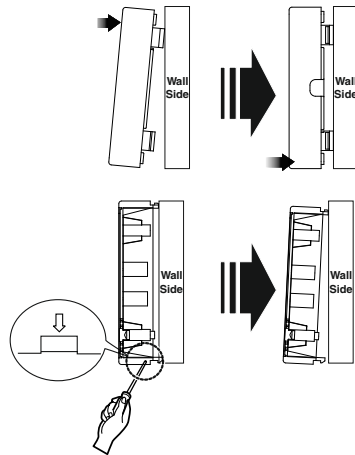
2. Fix the rear side of the installation board with the screw.



3. Now attach the IR PCB Assy at the rear side of installation board.



When disassemble the IR remote sensor from the installation board, use the driver as shown in the right picture and insert it into the hole with the arrow. And when you pull the driver in the front direction, the IR remote sensor will be separated.



CAUTION

**Do not install the cable to be 10m or above.
(It can cause communication error.)**

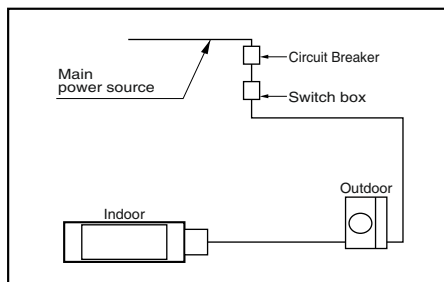
- When installing the extension cable, check the connecting direction of the connector of the IR remote sensor side and the product side for correct installation.
- If you install the extension cable in the opposite direction, the connector will not be connected.
- Specification of extension cable: AWG 26 (2sim 7shield) or above

6). Connecting Cable between Indoor and Outdoor Unit

Perform the electrical wiring work according to the electrical wiring connection.

A) Circuit Breaker Detail

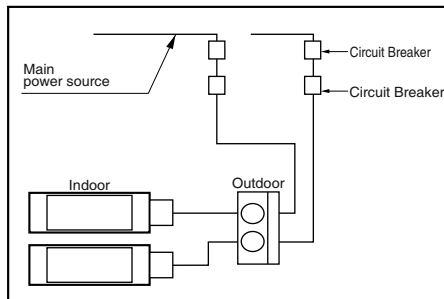
- All wiring must comply with local requirements.
- Select a power source that is capable of supplying the current required by the air conditioner.
- Use a recognized circuit breaker between the power source and the unit. A disconnection device to adequately disconnect all supply lines must be fitted.



- Capacity of circuit breaker

Model	Capacity	1 Phase	3 Phase
LB-B2156QC	1.5 TR	25	NA
LB-B2206QC	2 TR	25	NA
LB-B2256QC	2.5 TR	32	NA
LB-B2258QC	2.5 TR	NA	20
JB-B2156QC	1.5 TR	25	NA
JB-B2258QC	2.5 TR	NA	20
LMA36B2ALI	1.5x2 TR	20 x 2	NA
LMA48B2ALI	2.0x2 TR	20 x 2	NA
LMA60B2ALI	2.5x2 TR	NA	32

- Warranty will be null & void if wiring is not as per installation instructions.



B) Wiring Diagram

Indoor Wiring Diagram :

Model :

LB-B2156QC /

LB-B2206QC /

LB-B2256QC /

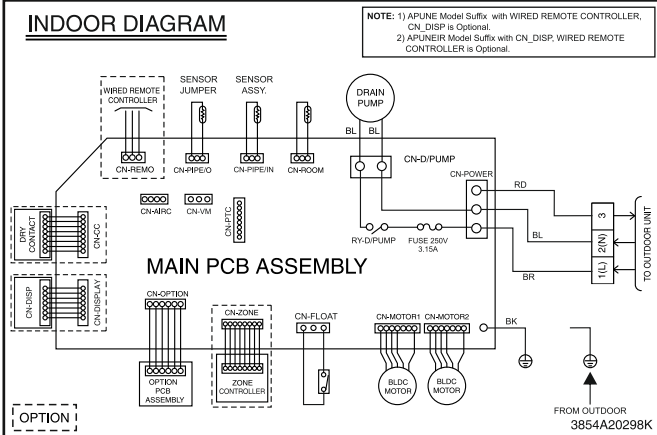
LB-B2258QC /

LMA36B2ALI /

LMA48B2ALI /

LMA60B2ALI

(R-22 Gas Charge Model)



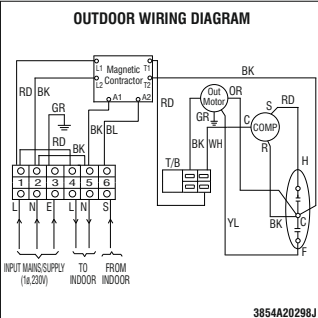
NOTE : Connect IR PCB Assy. at CN-DISP of PCB Assy.

Outdoor Wiring Diagram :

Model :

LB-B2256QC

(R-22 Gas Charge Model)

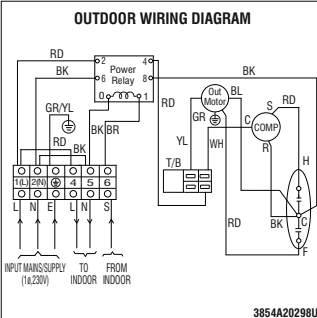


Model :

LB-B2156QC /

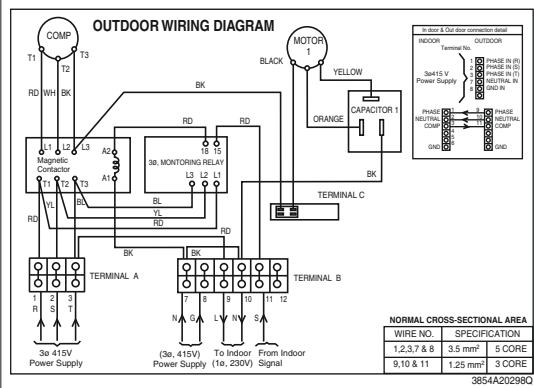
LB-B2206QC

(R-22 Gas Charge Model)



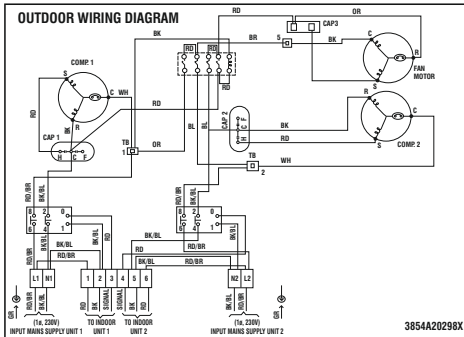
Model : LB-B2258QC

(R-22 Gas charge Model)



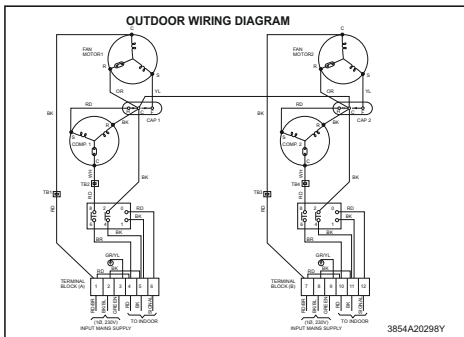
Outdoor Wiring Diagram :

Model : LMA36B2ALI (R-22 Gas Charge Model)



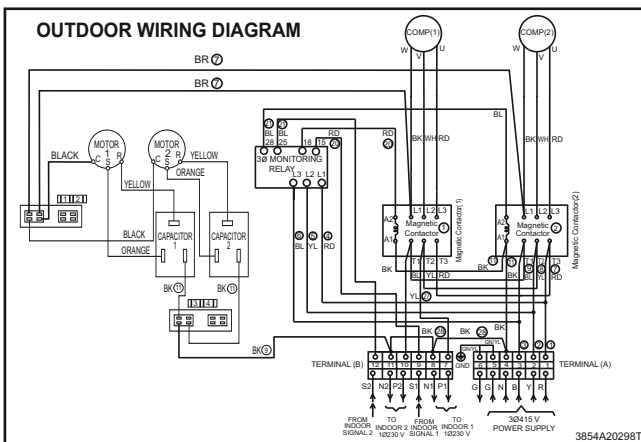
Outdoor Wiring Diagram :

Model : LMA48B2ALI (R-22 Gas Charge Model)



Outdoor Wiring Diagram :

Model : LMA60B2ALI (R-22 Gas Charge Model)



Model : JB-B2156QC (R410 Gas Charge Model)



Model : JB-B2156QC (R410 Gas Charge Model)



Model : JB-B2258QC (R410 Gas Charge Model)



Model : JB-B2258QC (R410 Gas Charge Model)



Connecting Cables between Indoor and Outdoor Unit

18/24/30K BTU/h

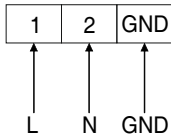
Applied Model:- LB-B2156QC, LB-B2206QC, LB-B2256QC, JB-B2156QC.

1) Connecting cables to the Indoor Unit

- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
- Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively

1) Input 1-phase power supply into outdoor & wire specification.

Outdoor terminal block



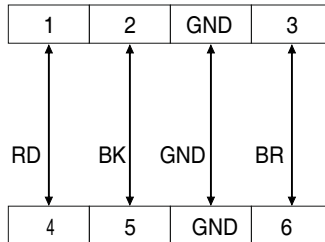
Wire specification.

Model	Capacity	1 Phase
		mm ² * core
LB-B2156QC	1.5 tr	2.5 mm ² *3
LB-B2206QC	2 TR	2.5 mm ² *3
LB-B2256QC	2.5 TR	2.5 mm ² *3
JB-B2156QC	1.5 TR	2.5 mm ² *3

2) For connection between of Indoor and Outdoor unit & wire specification

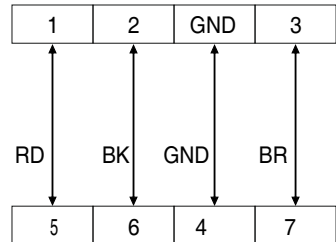
A) LB-B2156QC, LB-B2206QC, LB-B2256QC

Indoor terminal block



Outdoor terminal block

B) JB-B2156QC



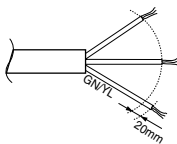
Note : GND = Ground Earthing

Wire specification.

Model	Capacity	1 Phase	No of core
LB-B2156QC	1.5 tr	1.5 mm ²	4
LB-B2206QC	2 TR	1.5 mm ²	4
LB-B2256QC	2.5 TR	1.5 mm ²	4
JB-B2156QC	1.5 TR	1.5 mm ²	4

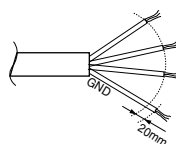
CAUTION

The power cord connected to the outdoor unit should be with the following specifications



Capacity	1 Phase
18/24 K BTU/h	2.5mm ²

The connecting cable connected to the indoor and outdoor unit should be with the following specifications



NORMAL CROSS-SECTIONAL AREA
1.25mm² (18/24K)

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

⚠ WARNING

Make sure that the screws of the terminal are free from looseness.

2) Clamping of cables

- Arrange 2 power cables on the control panel.
- First, fasten the steel clamp with a screw to the inner boss of control panel.
- For the cooling model, fix the other side of the clamp with a screw strongly.

Connecting Cables between Indoor and Outdoor Unit

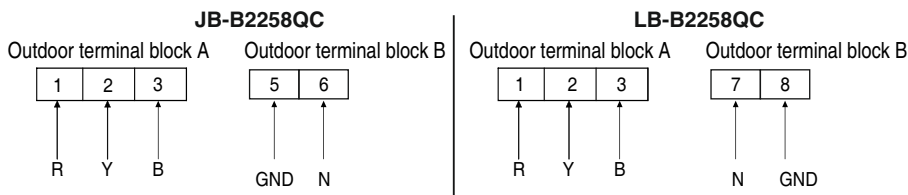
30K BTU/h

Applied Model:- JB-B2258QC / LB-B2258QC.

1) Connecting cables to the indoor Unit

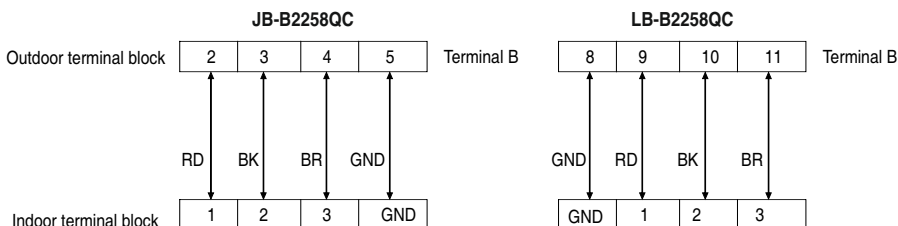
- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
- Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively.

1) **Input 3-phase power supply into outdoor, cable specification 4 core 2.5 sq mm² & Separable Earthing Wire.**



Note : GND = Ground Earthing

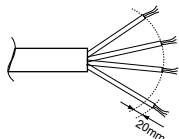
2) **For connection between of Indoor and Outdoor unit & wire specification 4 core , 1.25 sq mm² .**



Note : GND = Ground Earthing

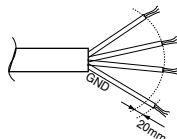
CAUTION

The power cord connected to the outdoor unit should be with the following specifications



NORMAL CROSS-SECTIONAL AREA	
Capacity	3 Phase
30K BTU/h	2.5mm ²

The connecting cable connected to the indoor and outdoor unit should be with the following specifications



NORMAL CROSS-SECTIONAL AREA	
1.25mm ²	(30K)

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



WARNING

Make sure that the screws of the terminal are free from looseness.

2) Clamping of cables

- 1) Arrange 2 power cables on the control panel.
- 2) First, fasten the steel clamp with a screw to the inner boss of control panel.
- 3) For the cooling model, fix the other side of the clamp with a screw strongly.

Connecting Cables between Indoor and Outdoor Unit

36/48K BTU/h

Applied Model:- LMA36B2ALI, LMA48B2ALI

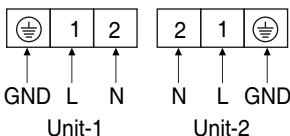
1) Connecting cables to the Indoor Unit

- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
- Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively

1) Input 1-phase power supply into outdoor & wire specification.

A) LMA36B2ALI

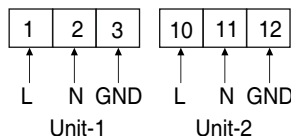
Outdoor terminal block



Wire specification.

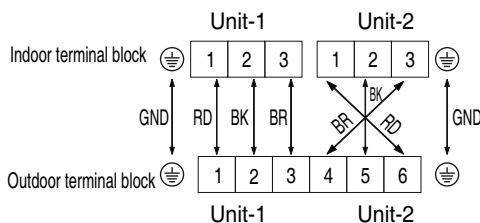
Model	Capacity	1 Phase mm ² * core
LMA36B2ALI	1.5TR x 2	2.5 mm ² *3
LMA48B2ALI	2TR x 2	2.5 mm ² *3

B) LMA48B2ALI



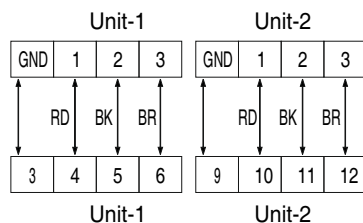
2) For connection between of Indoor and Outdoor unit & wire specification

A) LMA36B2ALI



Note : GND = Ground Earthing

B) LMA48B2ALI

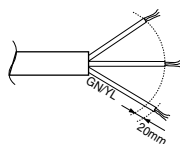


Wire specification.

Model	Capacity	1 Phase	No of core
LMA36B2ALI	1.5 TR x 2	1.5 mm ²	4
LMA48B2ALI	2 TR x 2	1.5 mm ²	4

CAUTION

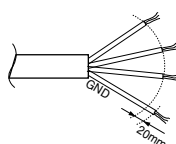
The power cord connected to the outdoor unit should be with the following specifications



NORMAL CROSS-SECTIONAL AREA

Capacity	1 Phase
36/48 K BTU/h	2.5mm ²

The connecting cable connected to the indoor and outdoor unit should be with the following specifications



NORMAL
CROSS-SECTIONAL
AREA
1.25mm² (36/48K)

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

⚠ WARNING

Make sure that the screws of the terminal are free from looseness.

2) Clamping of cables

- Arrange 2 power cables on the control panel.
- First, fasten the steel clamp with a screw to the inner boss of control panel.
- For the cooling model, fix the other side of the clamp with a screw strongly.

Connecting Cables between Indoor and Outdoor Unit

60K BTU/h

Applied Model:- LMA60B2ALI

1) Connecting cables to the indoor Unit

- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
- Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively.

1) Input 3-phase power supply into outdoor, cable specification 4 core 2.5 sq mm² & Separable Earthing Wire.

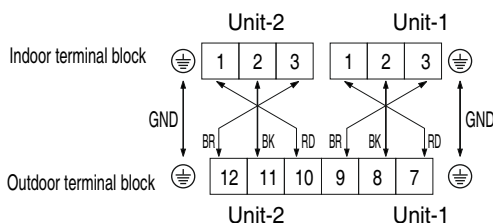
LMA60B2ALI

Outdoor terminal block



Note : GND = Ground Earthing

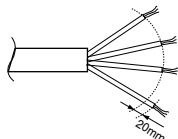
2) For connection between of Indoor and Outdoor unit & wire specification 4 core , 1.25 sq mm² .



Note : GND = Ground Earthing

CAUTION

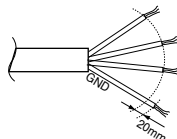
The power cord connected to the outdoor unit should be with the following specifications



NORMAL CROSS-SECTIONAL AREA

Capacity	3 Phase
60K BTU/h	2.5mm ²

The connecting cable connected to the indoor and outdoor unit should be with the following specifications



NORMAL CROSS-SECTIONAL AREA
1.25mm² (60K)

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



WARNING

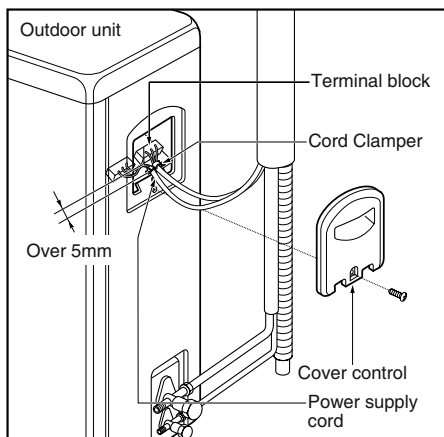
Make sure that the screws of the terminal are free from looseness.

2) Clamping of cables

- 1) Arrange 2 power cables on the control panel.
- 2) First, fasten the steel clamp with a screw to the inner boss of control panel.
- 3) For the cooling model, fix the other side of the clamp with a screw strongly.

C) Outdoor Wiring Routine and Pipe Routine

1. Remove the Cover control from the unit by loosening a screw.
Connect the wires to the terminals on the control board individually as following.
2. Secure the cable onto the control board with the holder (clamper).
3. Refix the cover control to the original position with the screw.



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.

>> Piping Routine

1. Wrap the connecting portion of indoor unit with the Insulation material and secure it with two Plastic Bands. (for the right pipings)

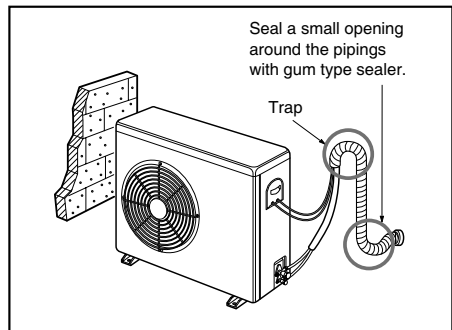
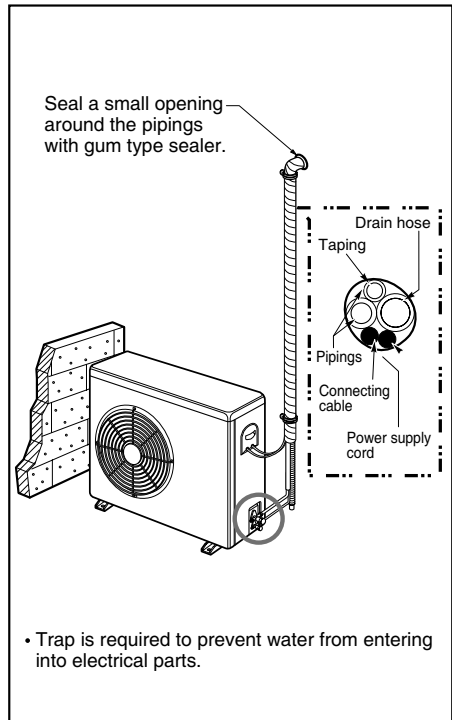
- If you want to connect an additional drain hose, the end of the drain-outlet should keep distance from the ground. (Do not dip it into water, and fix it on the wall to avoid swinging in the wind.)

In case of the Outdoor unit being installed below position of the Indoor unit.

2. Tape the Pplings, drain hose and Connecting Cable from bottom to top.
3. Form the pplings gathered by taping along the exterior wall and fix it onto the wall by saddle or equivalent.

In case of the Outdoor Unit being installed above position of the Indoor Unit.

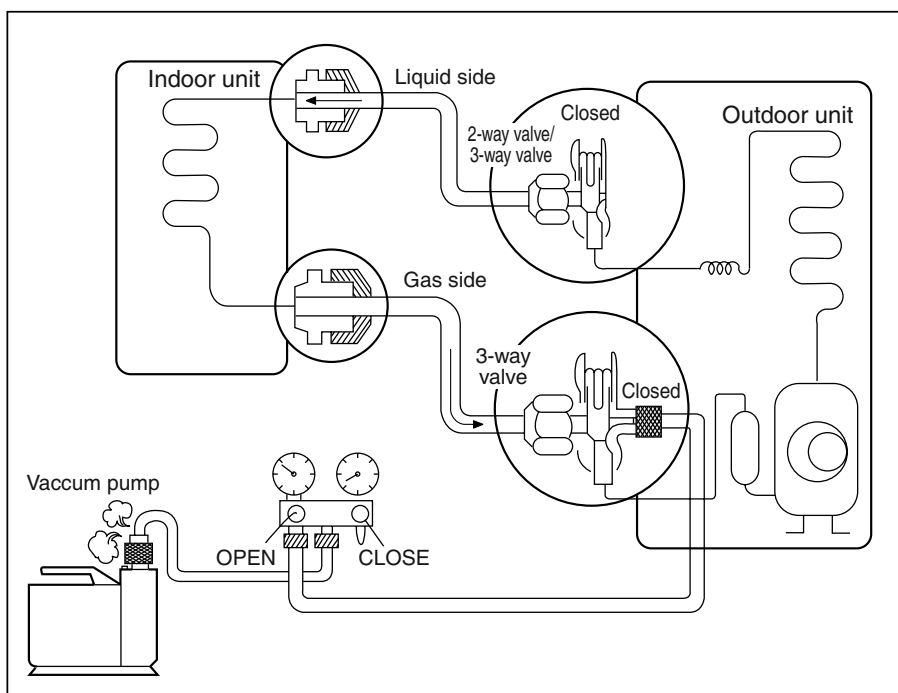
2. Tape the Pplings and Connecting cable from bottom to top.
3. Form the pplings gathered by taping along the exterior wall, and make the trap prevent water from entering into the room.
4. Fix the pplings onto the wall by saddle or equivalent.



7. Air Purging of the Connecting Pipes and the Indoor Unit

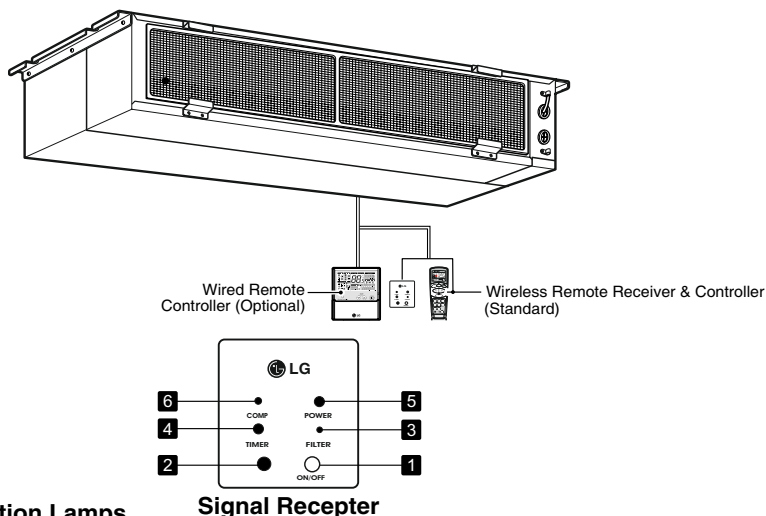
The air which contains moisture remaining in the refrigeration cycle may cause a malfunction on the compressor.

1. Confirm that both the liquid side valve and the gas side valve are set to the closed position.
2. After connecting the piping, check the joints for gas leakage with gas leak detector.
3. Remove the service port nut, and connect the gauge manifold and the vacuum pump to the service port by the charge hose.
4. Vacuum the indoor unit and the connecting pipes until the pressure in them lowers to below -76cmHg.
5. Remove the valve stem nuts, and fully open the stems of the 2-way and 3-way valves with a hexagon wrench.
6. Tighten the valve stem nuts of the 2-way valve and 3-way valve.
7. Disconnect the charge hose and fit the nut to the service port.
(Tightening torque: 1.8kg.m)



8. Operating Instructions

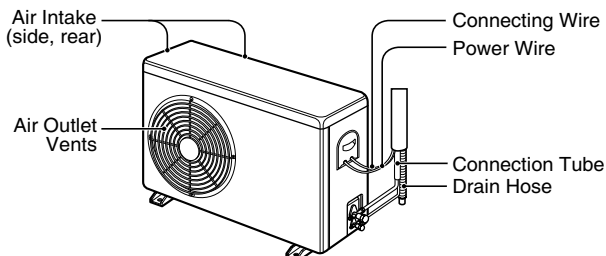
A) Indoor Unit, Outdoor Unit



Operation Indication Lamps

- 1** Forced Operation : Use the ON/OFF button when remote control is not available.
- 2** Signal Receptor : Receives the signal from remote control (signal receiving sound: one long beep)
- 3** FILTER SIGN : Lights up after 240 hours from the time of first power on operation.
- 4** TIMER : Lights up during timer operation.
- 5** ON/OFF : Lights up during system operation.
- 6** COMP : Lights up during outdoor operation (i.e. when compressor switch on)

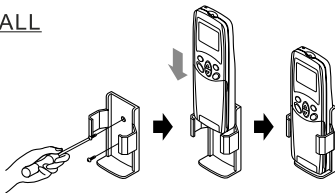
Outdoor Unit



Cooling model: Low static Type Air Conditioner for cooling

B) Remote Control Preparation

HOW TO MOUNT ONTO A WALL



HOW TO INSERT BATTERIES

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.



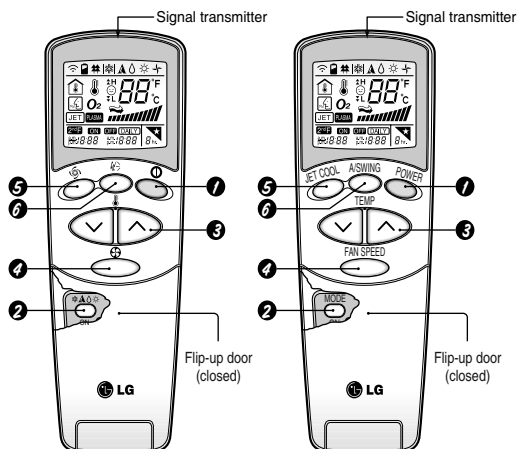
- Do not use rechargeable batteries, such batteries differ from standard dry cells in shape, dimensions, and performance.
- Remove the batteries from the remote controller if the air conditioner is not going to be used for some long time.

C) Remote Control Operations

The remote control transmits the signals to the system.



Features of the Remote Control- Door Closed



TYPE A

TYPE B

1 START/STOP BUTTON
Operation starts when this button is pressed and stops when the button is pressed again.

2 OPERATION MODE SELECTION BUTTON
Used to select the operation mode.

3 ROOM TEMPERATURE SETTING BUTTONS
Used to select the room temperature.

4 INDOOR FAN SPEED SELECTOR
Used to select fan speed in four steps low, medium, high, or CHAOS.

For low static duct unit, CHAOS speed is not available.

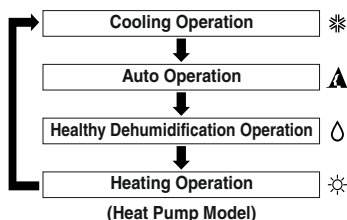
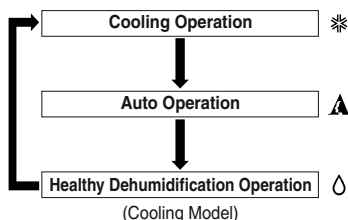
5 JET COOL
Used to start or stop the speed cooling. (Speed cooling operates super high fan speed in cooling mode).

For low static duct unit, JET COOL function is not available.

6 AIR SWING BUTTON
Used to stop or start louver movement and set the desired up/down airflow direction.

For low static duct unit, AIR SWING function is not available.

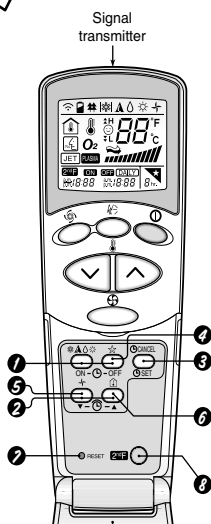
Operation Mode



* Your unit shall have either Type A or Type B Remote Control.



Features of the Remote Control- Door Opened



1 ON/OFF TIMER BUTTONS
Used to set the time of starting and stopping operation.

2 TIME SETTING BUTTONS
Used to adjust the time, (See page 38)

3 TIMER SET/CANCEL BUTTONS
Used to set the timer when the desired time is obtained and to cancel the Timer operation. (See page 38)

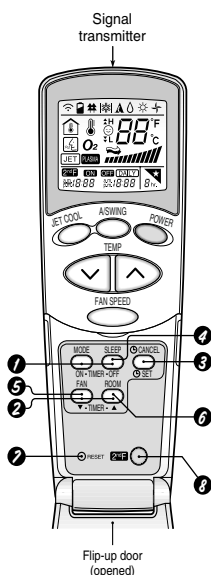
4 SLEEP MODE AUTO BUTTON
Used to set Sleep Mode Auto operation. (See page 38)

5 AIR CIRCULATION BUTTON
Used to circulate the room air without cooling or heating. (See page 39)

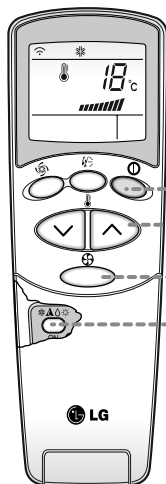
6 ROOM TEMPERATURE CHECKING BUTTON
Used to check the room temperature.

7 RESET BUTTON
Used prior to resetting time or after replacing batteries.

8 2ndF BUTTON
Used prior to using modes printed in blue at the bottom of buttons. (See page 37)



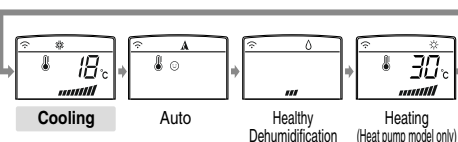
Cooling operation



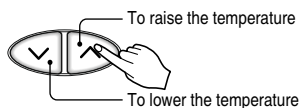
- 1 Press the Start/Stop button.
The unit will respond with a beep.



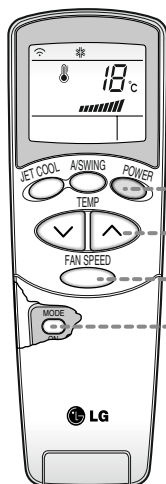
- 2 Open the door of the remote controller. To select **Cooling Operation**, press the Operation Mode Selection button. Each time the button is pressed, the operation mode is shifted in the direction of the arrow.



- 3 Close the door of the remote controller. Set the temperature lower than the room temperature. The temperature can be set within a range of 18°C~30°C at intervals of 1°C.

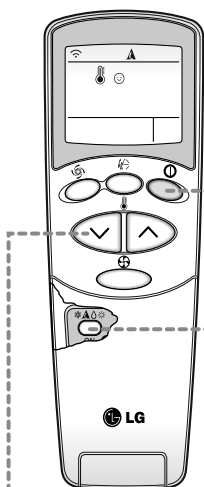


- 4 Set the fan speed again with the door of the remote controller still closed. You can select the fan speed in 3 steps-low, medium, & high. Each time the button is pressed, the fan speed mode is shifted.



* CHAOS speed is not available for low static duct unit.

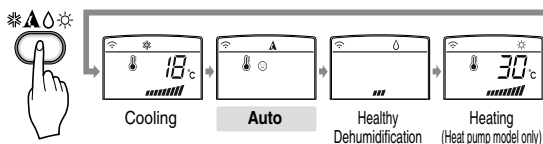
Auto operation (Optional)



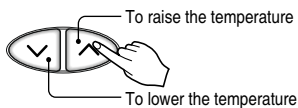
- 1 Press the Start/Stop button.
The unit will respond with a beep.



- 2 Open the door of the remote controller. To select **Auto Operation**, press the operation mode selection button. Each time the button is pressed, the operation mode is shifted in the direction of the arrow.



- 3 The temperature and fan speed are automatically set by the electronic controls based on the actual room temperature. If you want to change the set temperature, press the Room Temperature Setting buttons. The cooler or warmer you feel, the more times (up to two times) you should press the button. The set temperature will be changed automatically.

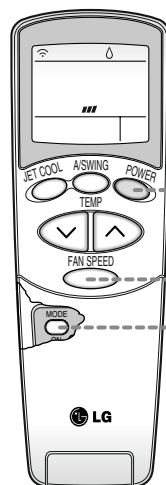
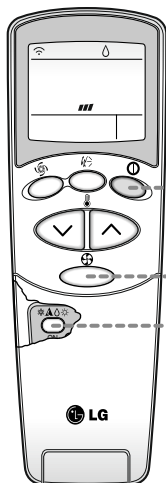


* CHAOS speed is not available for low static duct unit.

During Auto Operation

- ❑ You cannot control the indoor fan speed. It has already been set by the Fuzzy rule.
- ❑ If the system is not operating as desired, manually switch to another mode. The system will not automatically switch from the cooling mode to the heating mode, or from heating mode to cooling mode, it must be done by manually resetting.

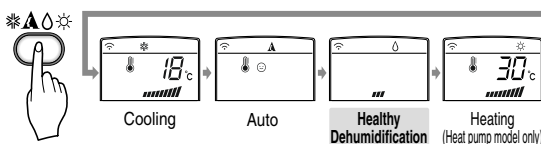
Healthy dehumidification operation



- 1 Press the Start/Stop button.
The unit will respond with a beep.



- 2 Open the door of the remote controller. To select **Healthy Dehumidification Operation**, press the Operation Mode Selection button.
Each time the button is pressed, the operation mode is shifted in the direction of the arrow.



- 3 Set the fan speed again with the door of the remote controller still closed.
You can select the fan speed in 3 steps-low, medium, high. Each time the button is pressed, the fan speed mode is shifted.



* CHAOS speed is not available for low static duct unit.

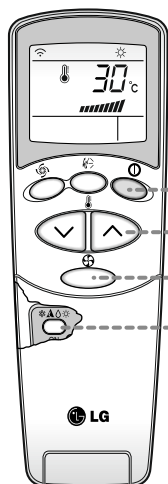
During Healthy Dehumidification Operation

❑ If you select the dehumidification mode on the operation selection button, the product starts to run the dehumidification function. It automatically sets the room temp. and airflow volume to the best condition for dehumidification, based on the sensed current room temp.

In this case, however, the setting temp. is not displayed on the remote controller and you are not able to control the room temp. either.

❑ During the healthy dehumidification function, the airflow volume is automatically set according to the optimization algorithm responding to the current room temp. status, so that the room condition is kept healthy and comfortable even in the very humid season.

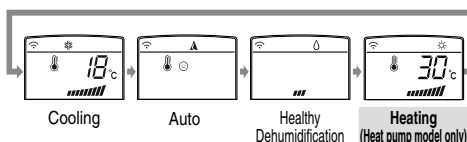
Heating operation (Heat pump model only)



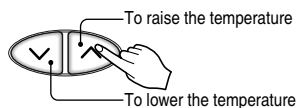
- 1 Press the Start/Stop button.
The unit will respond with a beep.



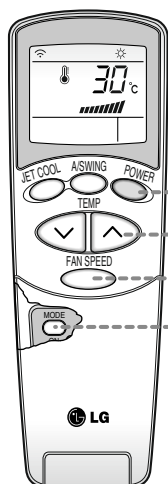
- 2 Open the door of the remote controller. To select **Heating Operation**, press the Operation Mode Selection button. Each time the button is pressed, the operation mode is shifted in the direction of the arrow.



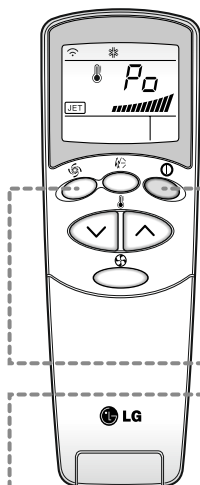
- 3 Close the door of the remote controller.
Set the temperature higher than the room temperature.
The temperature can be set within a range of 18°C~30°C at intervals of 1°C.



- 4 Set the fan speed again with the door of the remote controller still closed. You can select the fan speed in Three steps—low, medium, & high. Each time the button is pressed, the fan speed mode is shifted.



Jet cool operation (optional)



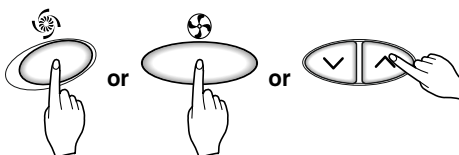
- 1 Press the Start/Stop button.
The unit will respond with a beep.



- 2 Press the **Jet Cool** button to operate the speed cooling mode and the unit will operate at super high fan speed on cooling mode for 30 minutes.



- 3 To cancel the Jet Cool mode, press the Jet Cool buttons, The fan speed button or the room temperature setting button again and the unit will operate at high fan speed on cooling mode.



NOTICE

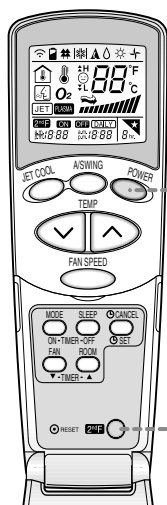
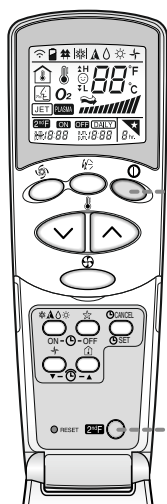
❑ During the JET COOL function at any moment, the A/C starts to blow the cool air at extremely high speed for 30 minutes setting the room temp. automatically to 18° C. It is especially used to cool the room temp. quickly in a hot summer.

In heat pump mode or auto changeover mode, however, the JET COOL function is not available.

❑ In order to return to the normal cooling mode from the JET COOL mode, just press the operation mode selection button, airflow volume selection, temp. setting button or the JET COOL button again.

❑ JET COOL function is not available for LS duct models.

2nd F operation



- 1 Press the Start/Stop button.
The unit will respond with a beep.



- 2 Open the door of the remote controller and press the 2nd Function button to operate functions printed blue color under buttons.
(Check the indication of 2nd function on the display of the remote controller.)



- 3 2nd function disappears in a short time automatically or when the button is pressed again.

For more details, refer to functions next pages.

Additional Features

★ Sleep mode

1. Press the Sleep Mode Auto button to set the time you want the unit to stop automatically.
2. The Timer is programmed in one-hour increments by pressing the Sleep Mode Auto button 1 to 7 times. The sleep mode is available for 1 to 7 times. To alter the time period in steps of 1 hour, press the Sleep Mode Button while aiming at air conditioner.
3. Make sure the Sleep Mode Auto LED lights up.
To cancel the Sleep Mode, press the sleep Mode Auto button several times until the star (★) disappears from the operation display.



NOTICE

The Sleep Mode will be operated at slow fan speed (cooling) or medium fan speed (heat pump only) for a comfortable sleep.

⌚ Setting the time

1. Time can be set only when you press the Reset button. Having replacing the batteries, you should press the reset buttons to reset the time. Press the Start/Stop button.
2. Press 2nd F button and check if 2nd F icon is on.
3. Press the Time Setting buttons until the desired time is set.
4. Press the Timer SET button.

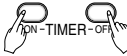


NOTICE

Check the indicator for A.M. and P.M.

⌚ Delay start/Pre-set stop

1. Make sure the time is set correctly on the display of the remote controller.
2. Press 2nd F button.
3. Press the ON/OFF Timer buttons to turn Timer on or off.
4. Press the Time Setting buttons until the desired time is set.
5. To set the selected time, press the Timer setting button aiming the remote controller at the signal receptor.



To cancel the timer setting

Check if 2nd F icon is off.

Press the Timer Cancel button aiming the remote controller at the signal receptor.
(The timer lamp on the air conditioner and the display will go out.)



NOTICE

Select one of the following four types of operation.

with the unit running



Delay OFF Timer



Delay ON Timer



Delay OFF and ON Timer

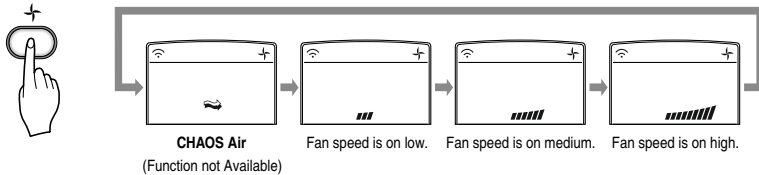


Delay ON and OFF Timer

Air circulation mode

Circulates the room air without cooling or heating.

1. Press the Start/Stop button. the unit will respond with a beep.
2. Open the door on the remote control. Press the Air Circulation button. Close the door on the remote control. Now each time that you press the Indoor Fan Speed Selector button, the fan speed is shifted from low to CHAOS and back to low again.

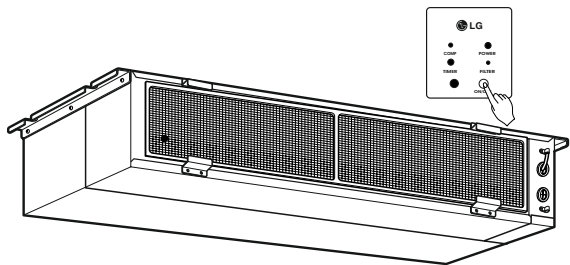


Forced operation

Use for ON/OFF the unit in case of remote misplace.

Press the ON/OFF button on IR PCB Assembly for 3 seconds, once you listen beep sound remove your hand.

Note :1) Forced operation button location varies with model.



Error Diagnosis

Sr. No.	ERROR CODE	DIAGNOSIS	DESCRIPTION
1	CH-01	Check room thermistor	Recover after 5 seconds of operation when respective thermistor healthy
2	CH-02	Check pipe thermistor (CN-Pipe/In)	Recover after 3 seconds of operation when respective thermistor healthy
3	CH-04	Check float sensor / Jumper	Recover after 4 minutes of operation when float sensor / Jumper healthy
4	CH-05	Check Dipswitch comm (Yes/No)	Check Dipswitch setting and Power Reset
5	CH-09	Check Option PCB (EPROM)	Check Interconnection of Option PCB and Power Reset

