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QUICK 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. This equipment shall be provided with a supply conductor complying with the national regulation.

Original instruction(R410A/R32)

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This manual is the simplified version of original manual.
You can obtain the original manual from www.lg.com.

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www.lg.com

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Airborne Noise Emission

The A-weighted sound pressure emitted by this product is below 70 dB.

The noise level can vary depending on the site.

The figures quoted are emission level and are not necessarily safe working levels.

Whilst there is a correlation between the emission and exposure levels, this cannot be used reliably to determine whether or not further precautions are required.

Factor that influence the actual level of exposure of the workforce include the characteristics of the work room and the other sources of noise, i.e. the number of equipment and other adjacent processes and the length of time for which an operator exposed to the noise. Also, the permissible exposure level can vary from country to country.

This information, however, will enable the user of the equipment to make a better evaluation of the hazard and risk.

Limiting concentration

Limiting concentration is the limit of Freon gas concentration where immediate measures can be taken without hurting human body when refrigerant leaks in the air. The limiting concentration shall be described in the unit of kg/m^3 (Freon gas weight per unit air volume) for facilitating calculation.

Limiting concentration: 0.44 kg/m ^{3}(R410A)

$$\text{Refrigerant concentration } (kg/m^3) = \frac{\text{Total amount of replenished refrigerant in refrigerant facility } (kg)}{\text{Capacity of smallest room where indoor unit is installed } (m^3)}$$

Product information

- Product Name : Air conditioner
- Model Name :

Product Sales Name	Model Factory Name
ARNa***Gxy# series a = U(DC Inverter and H/P and C/O) , H(Hydro Kit) x = Chassis Name y = Combinations of functions *** = Numeric; (Cooling capacity) # = Numeric; (Series No)	

- Additional Information : serial number is refer to the barcode on the product.
- Max Allowable pressure
  High side : 4.2 MPa / Low Side : 2.4 MPa
  (ARNa***Gxy# series)
- Max Allowable water temperature
  High side : 80°C / Low side : 10°C
  (ARNH***Gxy# series)
- Allowable water pressure
  ~ 0.98 Mpa (0.3~10 kg f/cm ^{2})
  (ARNH***Gxy# series)

IMPORTANT SAFETY INSTRUCTIONS

The following symbols are displayed on indoor and outdoor units.

	Read the precautions in this manual carefully before operating the unit.		This appliance is filled with flammable refrigerant (R32)
	This symbol indicates that the Operation Manual should be read carefully.		This symbol indicates that a service personnel should be handling this equipment with reference to the Installation Manual.

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 work must be performed in accordance with the National Electric Code by qualified and authorized personnel only.
- 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.
- Ducts connected to an appliance shall not contain an ignition source. (for R32)
- This equipment shall be provided with a supply conductor complying with the national regulation.
- Compliance with national gas regulations shall be observed.
- Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry accredited assessment authority, which authorises their competence to handle refrigerants safely in accordance with an industry recognised assessment specification. (for R32)
- Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants. (for R32)

Installation

- Do not use a defective or underrated circuit breaker. Use the correctly rated breaker and fuse. 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 by yourself. There is risk of fire or electric shock.
- Always ground the product as per the wiring diagram. Do not connect the ground wire to gas or water pipes lightening rod or telephone ground wire. 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 due to dust, water etc.
- Use the correctly rated breaker or fuse. There is risk of fire or electric shock.
- Do not modify or extend the power cable. If the power cable or cord has scrathes or skin peeled off or deteriorated then it must be replaced. There is risk of fire or electric shock.
- For installation, removal or reinstall, 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. Be sure that the installation area does not deteriorate with age. It may cause product to fall.
- Never install the outdoor unit on a moving base or a place from where it can fall down.
  The falling outdoor unit can cause damage or injury or even death of a person.
- In outdoor unit the step-up capacitor supplies high voltage electricity to the electrical components. Be sure to discharge the capacitor completely before conducting the repair work. An charged capacitor can cause electrical shock.
- When installing the unit, use the installation kit provided with the product. Otherwise the unit may fall and cause severe injury.
- Indoor/outdoor wiring connections must be secured tightly and the cable should be routed properly so that there is no force pulling the cable from the connection terminals. Improper or loose connections can cause heat generation or fire.
- Safely dispose off the packing materials. Like screws, nails, batteries, broken things etc after installation or svc and then tear away and throw away the plastic packaging bags. Children may play with them and cause injury.
- Be sure to check the refrigerant to be used. Please read the label on the product. Incorrect refrigerant used can prevent the normal operation of the unit.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater.)
- Keep any required ventilation openings clear of obstruction.

- The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation. (for R32)
- For installation of the product, always contact the service center or a professional installation agency.
  Otherwise, it may cause a fire, electrical shock, explosion or injury.
- Mechanical connections shall be accessible for maintenance purposes.
- The appliance shall be disconnected from its power source during service and when replacing parts.
- The appliance shall be installed in accordance with national wiring regulations.

Operation

- When the product is soaked (flooded or submerged) in water, contact an Authorized Service Center for repair before using it again. There is risk of fire or eletric shock.
- Be sure to use only those parts which are listed in the svc parts list. Never attempt to modify the equipment. The use of inappropriate parts can cause an electrical shock, excessive heat generation or fire.
- Do not touch, operate, or repair the product with wet hands. Hold the plug by hand when taking out. There is risk of electric shock or fire.
- Do not place a heater or other heating appliances near the power cable. There is risk of fire and electric shock.
- Do not allow water to run into electric parts. Install the unit away from water sources. There is risk of fire, failure of the product, or electric shock.
- Do not store or use or even allow flammable gas or combustibles near the product. There is risk of fire.
- Do not use the product in a tightly closed space for a long time. Perform ventilation regularly. Oxygen deficiency could occur and hence harm your health.
- Do not open the front grille of the product during operation. (Do not touch the electrostatic filter, if the unit is so equipped.) There is risk of physical injury, electric shock, or product failure.
- If strange sound, smell or smoke comes from product. Immediately turn the breaker off or disconnect the power supply cable. There is risk of electric shock or fire.
- Ventilate the product room from time to time when operating it together with a stove, or heating element etc. Oxygen deficiency can occur and hence harm your health.
- Do not touch refrigerant pipe and water pipe or any internal parts while the unit is operating or immediately after operation. It can cause a burn or frostbite.
- Do not step on the indoor/outdoor unit and do not put anything on it. It may cause an injury through dropping of the unit or falling down.

- When the product is not to be used for a long time, disconnect the power supply plug or turn off the breaker. There is risk of product damage or failure, or unintended operation.
- Take care to ensure that nobody especially kids could step on or fall onto the outdoor unit. This could result in personal injury and product damage.
- Take care to ensure that power cable could not be pulled out or damaged during operation. There is risk of fire or electric shock.
- Do not place anything on the power cable. There is risk of fire or electric shock.
- When flammable gas leaks, turn off the gas and open a window for ventilation befor turning on the product. Do not use the telephone or turn switches on or off. There is risk of explosion or fire.
- Make sure to ventilate sufficiently when this air conditioner and a heating appliance such as a heater are used simultaneously. Failure to do so may result in fire, serious injury, or product failure.
- Periodic (more than once/year) cleaning of the dust or salt particles stuck on the heat exchanger by using water.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- Do not pierce or burn refrigerant cycle part.
- Be aware that refrigerants may not contain an odour.
- When mechanical connectors are reused indoors, sealing parts shall be renewed. (for R32)
- When flared joints are reused indoors, the flare part shall be re-fabricated. (for R32)

⚠ CAUTION

Installation

- Two or more people must 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.
- Install the drain hose to ensure that the condensed water is drained away properly. A bad connection may cause water leakage.
- Keep level even when installing the product. To avoid vibration or noise.
- Do not install the product where the noise or hot air from the outdoor unit could damage or disturb the neighborhoods. It may cause a problem for your neighbors and hence dispute.
- Always check for gas (refrigerant) leakage after installation or repair of product. Low refrigerant levels may cause failure of product.
- Wear adequate personal protection equipment (PPE) when installing, maintaining or servicing the product.

- The appliance shall be stored so as to prevent mechanical damage from occurring.
- Refrigerant tubing shall be protected or enclosed to avoid damage.
- Flexible refrigerant connectors (such as connecting lines between the indoor and outdoor unit) that may be displaced during normal operations shall be protected against mechanical damage.
- The installation of pipe-work shall be kept to a minimum.
- Pipe-work shall be protected from physical damage.
- A brazed, welded, or mechanical connection shall be made before opening the valves to permit refrigerant to flow between the refrigerating system parts.
- Keep level parallel in installing the product. Otherwise, it may cause vibration or water leakage. It may cause injury or an accident.
- Do not install the unit in potentially explosive atmospheres.

Operation

- Do not use the product for special purposes, such as preserving foods, works of art, etc. It is a consumer air conditioner, not a precision refrigeration system. There is risk of damage or loss of property.
- Do not block the inlet or outlet of air flow. It may cause product failure.
- Use a soft cloth to clean. Do not use harsh detergents, solvents or splashing water etc. There is risk of fire, electric shock, or damage to the plastic parts of the product.
- Do not touch the metal parts of the product when removing the air filter. There is risk of personal injury.
- Do not step on or put anyting on the product. There is risk of personal injury and failure of product.
- Always insert the filter securely after cleaning. Clean the filter every two weeks or more often if necessary. A dirty filter reduces the efficiency.
- Do not insert hands or other objects through the air inlet or outlet while the product is operating. There are sharp and moving parts that could cause personal injury.
- Be cautious when unpacking and installing the product. Sharp edges could cause injury.
- If the refrigerant gas leaks during the repair, do not touch the leakaing refrigerant gas. The refrigernat gas can cause frostbite (cold burn).
- Do not tilt the unit when removing or uninstalling it. The condensed water inside can spill.
- Do not touch refrigerant pipe and water pipe or any internal parts while the unit is operating or immediately after operation. It can cause a burn or frostbite.
- If the refrigerant gas leaks during the installation, ventilate the area immediately. Otherwise it can be harmfull for your health.

- Dismantling the unit, treatment of the refrigerant oil and eventual parts should be done in accordance with local and national standards.
- Replace the all batteries in the remote control with new ones of the same type. Do not mix old and new batteries or different types of batteries. There is risk of fire or product failure.
- Do not recharge or disassemble the batteries. Do not dispose off batteries in a fire. They may burn or explode.
- If the liquid from the batteries gets onto your skin or clothes, wash it well with clean water. Do not use the remote if the batteries have leaked. The chemicals in batteries could cause burns or other health hazards.
- If you swallow the battery fluid from a leak, wash out the inside of your mouth thoroughly and then consult a doctor. Failure to do so may result in serious health complications.
- 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.
- Do not expose your skin or kids or plants to the cool or hot air draft. This could harm to your health.
- Do not drink the water drained from the product. It is not sanitary and could cause serious health issues.
- Use a firm stool or ladder when cleaning, maintaining or repairing the product at an height. Be careful and avoid personal injury.
- Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

INSTALLATION PLACE

- 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.
- For more information, refer to installation manual.

⚠ 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.

LIFTING METHOD

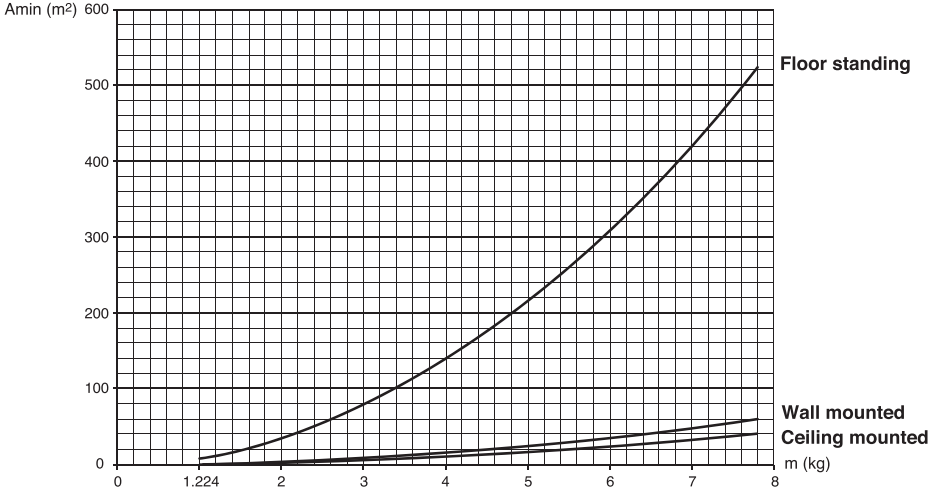
Use two or more people to lift and transport the product.

⚠ CAUTION

- Do not have only one person carry product if it is more than 20 kg.
- PP bands are used to pack some products. Do not use them as a mean for transportation because they are dangerous.
- Do not touch heat exchanger fins with your bare hands. Otherwise you may get a cut in your hands.
- Tear plastic packaging bag and scrap it so that children cannot play with it. Otherwise plastic packaging bag may suffocate children to death.
- When carrying in Outdoor Unit, be sure to support it at four points. Carrying in and lifting with 3-point support may make Outdoor Unit unstable, resulting in a fall.
- Use 2 belts of at least 8 m long.
- Place extra cloth or boards in the locations where the casing comes in contact with the sling to prevent damage.
- Hoist the unit making sure it is being lifted at its center of gravity.

Minimum floor area (for R32)

- The appliance shall be installed, operated and stored in a room with a floor area larger than the minimum area.
- Use the graph of table to determine the minimum area.



- m : Total refrigerant amount in the system
- Total refrigerant amount : factory refrigerant charge + additional refrigerant amount
- Amin : minimum area for installation

Floor location	
m (kg)	Amin (m²)
< 1.224	-
1.224	12.9
1.4	16.82
1.6	21.97
1.8	27.80
2	34.32
2.2	41.53
2.4	49.42
2.6	58.00
2.8	67.27
3	77.22
3.2	87.86
3.4	99.19
3.6	111.20
3.8	123.90
4	137.29
4.2	151.36
4.4	166.12

Floor location	
m (kg)	Amin (m²)
4.6	181.56
4.8	197.70
5	214.51
5.2	232.02
5.4	250.21
5.6	269.09
5.8	288.65
6	308.90
6.2	329.84
6.4	351.46
6.6	373.77
6.8	396.76
7	420.45
7.2	444.81
7.4	469.87
7.6	495.61
7.8	522.04

Wall mounted	
m (kg)	Amin (m²)
< 1.224	-
1.224	1.43
1.4	1.87
1.6	2.44
1.8	3.09
2	3.81
2.2	4.61
2.4	5.49
2.6	6.44
2.8	7.47
3	8.58
3.2	9.76
3.4	11.02
3.6	12.36
3.8	13.77
4	15.25
4.2	16.82
4.4	18.46

Wall mounted	
m (kg)	Amin (m²)
4.6	20.17
4.8	21.97
5	23.83
5.2	25.78
5.4	27.80
5.6	29.90
5.8	32.07
6	34.32
6.2	36.65
6.4	39.05
6.6	41.53
6.8	44.08
7	46.72
7.2	49.42
7.4	52.21
7.6	55.07
7.8	58.00

Ceiling Mounted	
m (kg)	Amin (m²)
< 1.224	-
1.224	0.956
1.4	1.25
1.6	1.63
1.8	2.07
2	2.55
2.2	3.09
2.4	3.68
2.6	4.31
2.8	5.00
3	5.74
3.2	6.54
3.4	7.38
3.6	8.27
3.8	9.22
4	10.21
4.2	11.26
4.4	12.36

Ceiling Mounted	
m (kg)	Amin (m²)
4.6	13.50
4.8	14.70
5	15.96
5.2	17.26
5.4	18.61
5.6	20.01
5.8	21.47
6	22.98
6.2	24.53
6.4	26.14
6.6	27.80
6.8	29.51
7	31.27
7.2	33.09
7.4	34.95
7.6	36.86
7.8	38.83

ELECTRICAL WIRING

- Follow ordinance of your governmental organization for technical standard related to electrical equipment, wiring regulations and guidance of each electric power company.

WARNING

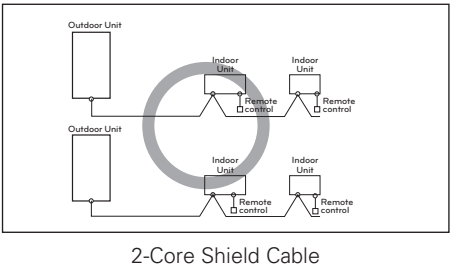
Be sure to have authorized electrical engineers do the electric work using special circuits in accordance with regulations and installation manual.
If power supply circuit has a lack of capacity or electric work deficiency, it may cause an electric shock or fire.

- Install the Outdoor Unit communication cable away from the power source wiring so that it is not affected by electric noise from the power source. (Do not run it through the same conduit.)
- Be sure to provide designated grounding work to Outdoor Unit.

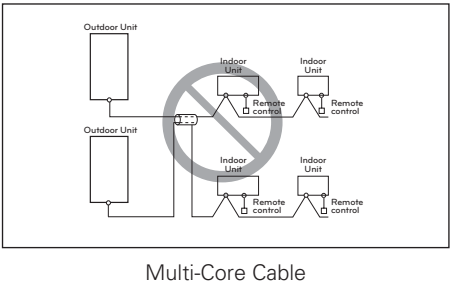
CAUTION

Be sure to correct the outdoor unit to earth. Do not connect ground wire to any gas pipe, liquid pipe, lightening rod or telephone earth line. If earth is incomplete, it may cause an electric shock.

- Give some allowance to wiring for electrical part box of Indoor and Outdoor Units, because the box is sometimes removed at the time of service work.
- Never connect the main power source to terminal block of communication cable. If connected, electrical parts will be burnt out.
- Use 2-core shield cable for communication cable.(◯ mark in the figure below) If communication cable of different systems are wired with the same multiplecore cable, the resultant poor transmitting and receiving will cause erroneous operations. (⃠ mark in the figure below)
- Only the communication cable specified should be connected to the terminal block for Outdoor Unit communication.
- Supply line of appliances shall not be lighter than polychloroprene sheathed. (code designation 60245 IEC 57)



2-Core Shield Cable



Multi-Core Cable

⚠ CAUTION

- Use the 2-core shield cables for communication cables. Never use them together with power cables.
- The conductive shielding layer of cable should be grounded to the metal part of both units.
- Never use multi-core cable.
- As this unit is equipped with an inverter, to install a phase leading capacitor not only will deteriorate power factor improvement effect, but also may cause capacitor abnormal heating. Therefore, never install a phase leading capacitor.
- Make sure that the power unbalance ratio is not greater than 2%.
  If it is greater the units lifespan will be reduced.

Electric Characteristics

- Recommended circuit breaker is ELCB
- MFA is used to select the circuit breaker and ground fault circuit interrupter
- Refer to the PDB about detail electric characteristics

ELCB : Earth Leakage Circuit Breaker
MFA : Maximum Fuse Amperes(A)
PDB : Product Data Book

Maintenance and Service

⚠ CAUTION

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

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.



Air Filters

The air filters behind the front panel / grill should be checked and cleaned once in every 2 weeks or more often if necessary. To remove the filters see the self explanatory diagrams for each model type. Clean the filters with a vacuum cleaner or warm soapy water. If dirt is not easily removed, wash with a solution of detergent in luke warm water. Dry well in shade after washing and reinstall the filters back in place.

Plasma Filters

The plasma filters behind the air filter should be checked and cleaned once in every 3 months or more often if necessary. To remove the filters see the self explanatory diagrams for each model type. Clean the filters with a vacuum cleaner. If it is dirty wash it with water and dry well in shade an install back in place.

Deodorizer Filters

Remove the deodorizer filters behind the air filter and expose them in direct sunlight for 2 hours.
And then insert these filters into original position.


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