OWNER'S & INSTALLATION MANUAL

AIR CONDITIONER

Please read this installation manual completely before installing the product.
Please retain this installation manual for future reference after reading it thoroughly.

ENGLISH **ITALIANO** **FRANÇAIS** **ESPAÑOL**
DEUTSCH **ΕΛΛΗΝΙΚΑ** **NEDERLANDS** **POLSKI**
ČEŠTINA **ROMÂNĂ** **PORTUGUÊS** **MAGYAR**
БЪЛГАРСКИ **SRPSKI** **HRVATSKI** **SVENSKA**
NORSK **SUOMI** **DANSK** **CATALÀ**

Original instruction (R32)
This manual is the simplified version of original manual.
You can obtain the original manual from www.lg.com.

MFL05841201
Rev.00_121625

www.lg.com

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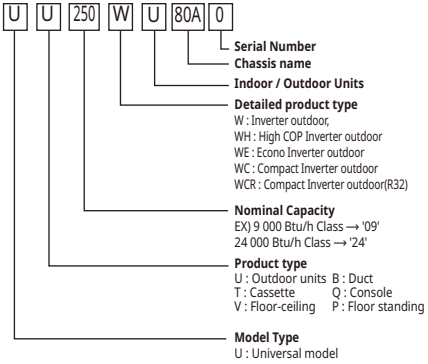
MODEL DESIGNATION

Product information

- Product Name : Air conditioner
- Model Name :



- Additional Information : serial number is refer to the barcode on the product.
- Maximum allowable pressure
  High side : 4.2 MPa / 4.32 MPa
  (it can be different by model)
  Low side : 2.4 MPa
- Refrigerant : R32

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.

IMPORTANT SAFETY INSTRUCTIONS

	Read the precautions in this manual carefully before operating the unit.		This appliance is filled with flammable refrigerant. (for 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.

The following safety guidelines are intended to prevent unforeseen risks or damage from unsafe or incorrect operation of the appliance. The guidelines are separated into 'WARNING' and 'CAUTION' as described below.

This symbol is displayed to indicate matters and operations that can cause risk. Read the part with this symbol carefully and follow the instructions in order to avoid risk.

WARNING

This indicates that the failure to follow the instructions can cause serious injury or death.

CAUTION

This indicates that the failure to follow the instructions can cause the minor injury or damage to the product.

WARNING

- Installation or repairs made by unqualified persons can result in hazards to you and others.
- Installation 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 a potential ignition source.
- This equipment shall be provided with a supply conductor complying with the national regulation.
- Compliance with national gas regulations shall be observed.
- This unit is equipped with a leak detection system for safety. For leak detection to be effective, the unit must be electrically powered at all times after installation, other than when servicing.
- This unit is equipped with electrically powered safety measures. For the safety measures to be effective, the unit must be electrically powered at all times after installation, other than when servicing.
- Servicing shall be performed only as recommended by the manufacturer.
- The manufacturer should specify other potential continuously operating sources known to cause ignition of the refrigerant used.
- Pipe-work shall not be installed in an unventilated space, if that space is smaller than Amin in Annex GG, except for A2L refrigerants where installed pipe-work has no connecting joints or is connected with at least one of the following:
  1) joints in compliance with ISO 14903,
  2) joints in enclosures which vent to the unit or to the outside,
  3) joints in enclosures which vent to a room with a room area of at least Amin as specified in GG.2.1;
- Where openings according to GG.1.4 are applied, information that these openings shall not be blocked

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- 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 authorizes their competence to handle refrigerants safely in accordance with an industry recognized assessment specification.
- 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.
- Connected via an air duct system to one or more rooms, the supply and return air shall be directly ducted to the space. Open areas such as false ceilings shall not be used as a return air duct.
- The non-fixed appliance shall be stored in a room without continuously operating open flames (for example an operating gas appliance) or other potential ignition sources (for example an operating electric heater, hot surfaces)

Installation

- Precautions shall be taken to avoid excessive vibration or pulsation to refrigerating piping.
- Piping in refrigerating systems shall be so designed and installed to minimize the likelihood hydraulic shock damaging the system.
- Steel pipes and components shall be protected against corrosion with a rustproof coating before applying any insulation.
- For mechanical ventilation as specified in GG.8.3, the air extraction opening from the room shall be located equal or below the refrigerant release point. For floor mounted units, it shall be as low as practicable. The air extraction openings shall be located in a sufficient distance from the air intake openings to prevent re-circulation to the space.
- 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 scratches 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 open flames (for example an operating gas appliance) or other potential ignition sources (for example an operating electric heater, hot surfaces).
- Keep any required ventilation openings clear of obstruction.
- The non-fixed appiance shall be stored in an area where the room size corresponds to the room area as specified for operation
- A warning that if appliances connected via an air duct system to one or more rooms with A2L REFRIGERANTS are installed in a room with an area less than Amin as determined in standard, that room shall be without continuously operating open flames (e.g. an operating gas appliance) or other POTENTIAL IGNITION SOURCES (for e.g., an operating electric heater, hot surfaces). A flame-producing device may be installed in the same space if the device is provided with an effective flame arrest.
- 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 (mechanical connectors or flared joints) 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.
- 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.)

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- Pipe-work shall not be installed in an unventilated space, if that space is smaller than Amin, except for A2L refrigerants where installed pipe-work has no connecting joints or is connected with at least one of the following:
  1) joints in compliance with ISO 14903,
  2) joints in enclosures which vent to the unit or to the outside,
  3) joints in enclosures which vent to a room with a room area of at
- Electrical components shall only be replaced with parts specified by the appliance manufacturer. Replacement with other parts may result in the ignition of refrigerant in the event of a leak.
- Field-made refrigerant joints indoors shall be tightness tested. The test method shall have a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0,25 times the maximum allowable pressure. No leak shall be detected
- The supply and return air shall be directly ducted to the space.
- Open areas such as false ceilings shall not be used as a return air duct.

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 electric 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.

NOTE

- The use of silicon sealant can inhibit the effectiveness of some types of leak detection equipment.
- Intrinsically safe components do not have to be isolated prior to working on them.

- 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 before 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.
- Be aware that refrigerants may not contain an odour.
- 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 harmful 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.
- Pipe-work shall be securely mounted and guarded from physical damage.

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- When mechanical connectors are reused indoors, sealing parts shall be renewed.
- When flared joints are reused indoors, the flare part shall be re-fabricated.

⚠ 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 inspect gas leakage after the installation and repair 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 can be displaced during normal operation 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. A vacuum valve shall be provided to evacuate the interconnecting pipe and/or any uncharged refrigerating system part.

- Keep level parallel in installing the product. Otherwise, it may cause vibration or water leakage. It may cause injury or an accident.
- Install the product so that the noise or hot wind from the outdoor unit may not cause any damage to the neighbors. Otherwise, it may cause dispute with the neigh-bors.
- Take care so that children may not step on the outdoor unit. Otherwise, children may be seriously injured due to falling down.
- 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.
- If anyone other than a licensed Professional installs, repairs, or alters LG Electronics Air Conditioning Products, the warranty is voided.
  All costs associated with repair are then the full responsibility of the owner.
- Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- Do not insert a drain hose in drain or soil pipe.
  Bad smells can occur and it results in a corrosion of a heat exchanger or pipe.
- Do not install the unit in potentially explosive atmospheres.
- The installation instructions for appliances that are intended to be permanently connected to fixed wiring, and have a leakage current not exceeding 10 mA, shall state that the installation of a residual current device (RCD) having a rated residual operating current not exceeding 30 mA is advisable.
- Piping material: Phosphoric acid deoxidised seamless copper.
- Provision shall be made for expansion and contraction of long runs of piping.
- Field-made refrigerant joints indoors shall be tightness tested according to the following requirements: The test method shall have a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0,25 times the maximum allowable pressure. No leak shall be detected.

- Repairs to sealed electric components
- Sealed electrical components shall not be repaired.

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 anything 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 leaking refrigerant gas. The refrigerant gas can cause frostbite (cold burn).
- Protection devices, piping and fittings shall be protected as far as possible against adverse environmental effects, for example, the danger of water collecting and freezing in relief pipes or the accumulation of dirt and debris.

Safety Instructions for the Service

Labelling

- Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant

Checks to the area

- Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.

Work procedure

- Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.

General work area

- All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.

Checking for presence of refrigerant

- The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

Presence of fire extinguisher

- If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

No ignition sources

- No person carrying out work in relation to a refrigerating system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion.
- All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space.
- Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. “No Smoking” signs shall be displayed.

Ventilated area

- Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

Detection of flammable refrigerants

- Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

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- The following leak detection methods are deemed acceptable for all refrigerant systems.
- Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity can be inadequate, or can need recalibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.
- Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine can react with the refrigerant and corrode the copper pipe-work.

NOTE

- Examples of leak detection methods are
  - bubble method,
  - fluorescent agent method.
- If a leak is suspected, all naked flames shall be removed/extinguished.
- If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut-off valves) in a part of the system remote from the leak. Removal of refrigerant shall be according to Refrigerant removal and circuit evacuation proecdure.
- An example of an inert gas is dry nitrogen.

- Purging of the refrigerant circuit shall be achieved by breaking the vacuum in the system with inert gas and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. The system shall be vented down to atmospheric pressure to enable work to take place. Ensure that the outlet of the vacuum pump is not close to any potential ignition sources and that ventilation is available.

Charging procedures

- In addition to conventional charging procedures, the following requirements shall be followed.
  - Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
  - Cylinders shall be kept upright in an appropriate position according to the instruction.
  - Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
  - Label the system when charging is complete (if not already labelled).
  - Extreme care shall be taken not to overfill the refrigerating system.
- Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

Decommissioning

- Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.

  1) Become familiar with the equipment and its operation.
  2) Isolate system electrically.
  3) Before attempting the procedure, ensure that:
     a) mechanical handling equipment is available, if required, for handling refrigerant cylinders;
     b) all personal protective equipment is available and being used correctly;

c) the recovery process is supervised at all times by a competent person;

d) recovery equipment and cylinders conform to the appropriate standards.

4) Pump down refrigerant system, if possible.
5) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
6) Make sure that the cylinder is situated on the scales before recovery takes place.
7) Start the recovery machine and operate in accordance with manufacturer's instructions.
8) Do not overfill cylinders (no more than 80 % volume liquid charge).
9) Do not exceed the maximum working pressure of the cylinder, even temporarily.
10) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
11) Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

Recovery

- When removing refrigerant from a system, either for servicing or decommissioning, it is required to follow good practice so that all refrigerants are removed safely.
- When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order.
- Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.
- The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of the flammable refrigerant.

- Consult manufacturer if in doubt. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition.
- If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. Draining of oil from a system shall be carried out safely.

Qualification of workers

- The manual shall contain specific information about the required qualification of the working personnel for maintenance, service and repair operations. Every working procedure that affects safety means shall only be carried out by competent persons according to Annex HH.
- Examples for such working procedures are:
- Breaking into the refrigerating circuit.
- Opening of sealed components.
- Opening of ventilated enclosures.

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- Field-made refrigerant joints indoors shall be tightness tested. The test method shall have a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0,25 times the maximum allowable pressure. No leak shall be detected.

NOTE

- An example of an inert gas is dry nitrogen
- Purging shall be achieved by breaking the vacuum in the system with inert gas and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. The system shall be vented down to atmospheric pressure to enable work to take place.
- Ensure that the outlet for of the vacuum pump is not close to any potential ignition sources and that ventilation is available.

- Auxiliary devices which may be a potential ignition source shall not be installed in the duct work. Examples of such potential ignition sources are hot surfaces with a temperature exceeding 700°C and electric switching devices.
- Only auxiliary devices approved by the appliance manufacturer or declared suitable with the refrigerant shall be installed in connecting ductwork
- The manufacturer shall list in the instructions all approved auxiliary devices by manufacturer and model number for use with the specific appliance, if those devices have a potential to become an ignition source (Drain Pump : PBDP9)
- When a limited life refrigerant sensor is employed, the life of the refrigerant sensor and instruction on how to replace it
- Information that the refrigerant detection system refrigerant sensors shall only be replaced with refrigerant sensors specified by the appliance manufacturer.

Refrigerant removal and circuit evacuation

- When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used.
- However, for flammable refrigerants it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to
  - safely remove refrigerant following local and national regulations;
  - evacuate;
  - purge the circuit with inert gas (optional for A2L);
  - evacuate (optional for A2L);
  - continuously flush with inert gas when using flame to open circuit;
  - open the circuit
- The refrigerant charge shall be recovered into the correct recovery Cylinders.
- The manufacturer shall specify the inert gases that can be used.
- Compressed air or oxygen shall not be used for purging refrigerant Systems.

NOTE

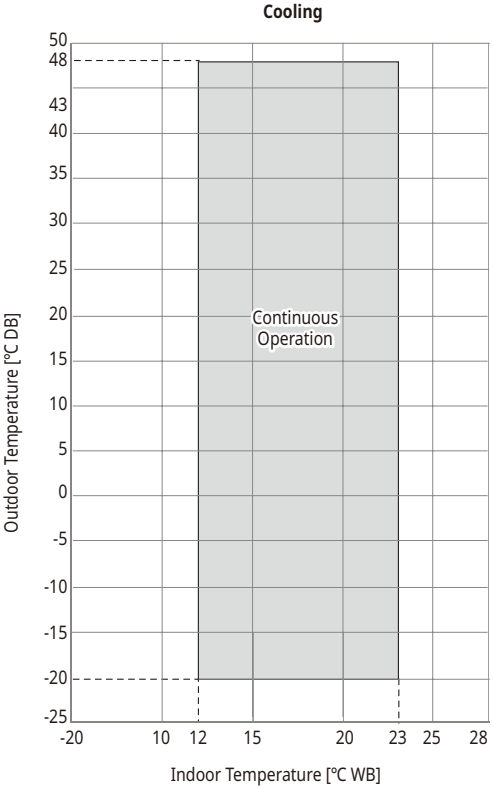
- An example of an inert gas is dry nitrogen

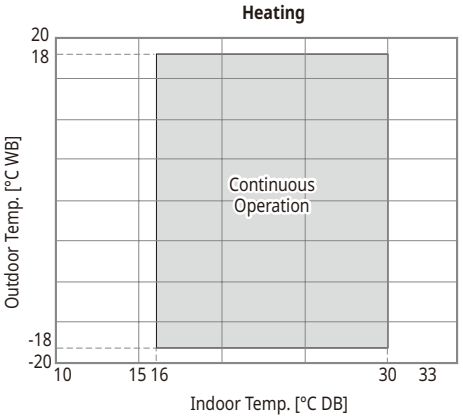
- Purging shall be achieved by breaking the vacuum in the system with inert gas and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. The system shall be vented down to atmospheric pressure to enable work to take place.
- Ensure that the outlet for of the vacuum pump is not close to any potential ignition sources and that ventilation is available.

- For appliances with a leak detection system, safety shut-off valves shall not be reset until the room has been ventilated, because resetting can result in additional flammable refrigerant released into the space.
- Connected via an air duct system to one or more rooms, the supply and return air shall be directly ducted to the space. Open areas such as false ceilings shall not be used as a return air duct.
- Where field installed safety shut-off valves are specified for refrigerating systems, a warning that only safety shut-off valves specified by the appliance manufacturer shall be used.
- Information that safety shut-off valves shall only be replaced with valves specified by the appliance manufacturer
- Where safety shut-off valves are to be field installed, information on where and how the safety shut-off valves shall be installed
- Information that safety shut-off valves shall only be replaced with valves specified by the appliance manufacturer
- Where remote refrigerant detection systems are specified, a warning that only refrigerant sensors specified by the appliance manufacturer may be used
- Provision shall be made for expansion and contraction of long runs of piping.
- Minimum opening area for natural ventilation Anv,min.
- Refrigerant charge, mc, and, if the releasable charge, mrl, has been determined, the releasable charge, mrl. The effect on refrigerant charge shall be considered from field-installed piping, field charging, or both, if applicable

Intervalo de funcionamento

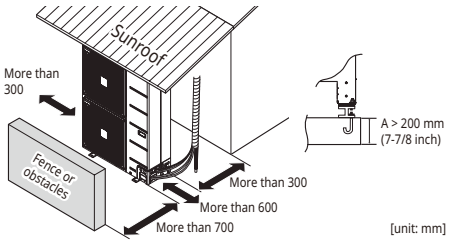
ZUUW70LA0 [UU200W U80A0], ZUUW85LA0 [UU250W U80A0]





INSTALLATION PLACES

- If an awning is built over the unit to prevent direct sunlight or rain exposure, make sure that heat radiation from the condenser is not restricted.
- Ensure that the spaces indicated by arrows around front, back and side of the unit.
- Do not place animals and plants in the path of the warm air.
- Take the air conditioner weight into account and select a place where noise and vibration are minimum.
- Select a place so that the warm air and noise from the air conditioner do not disturb neighbors.
- Place that can sufficiently endure the weight and vibration of the outdoor unit and where even installation is possible
- Place that has no direct influence of snow or rain
- Place with no danger of snowfall or icicle drop
- Place without weak floor or base such as decrepit part of the building or with a lot of snow accumulation



⚠ CAUTION

Be very careful while carrying the product.

- Do not have only one person carry product if t 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 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.

Piping length and the elevation

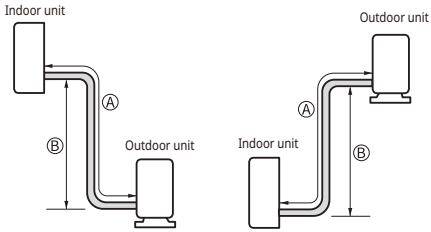
- **Single Operation**

Model	Pipe Size mm(inch)		Length A(m)	
	Gas	Liquid	Standard	Max.
UB200 UB250	Ø22.2 (7/8)	Ø12.7 (1/2)	7.5	75

Model	Elevation B(m)		Additional refrigerant (g/m)
	Standard	Max.	
UB200 UB250	5	30	70

If installed tube is shorter than 30 m, additional charging is not necessary.

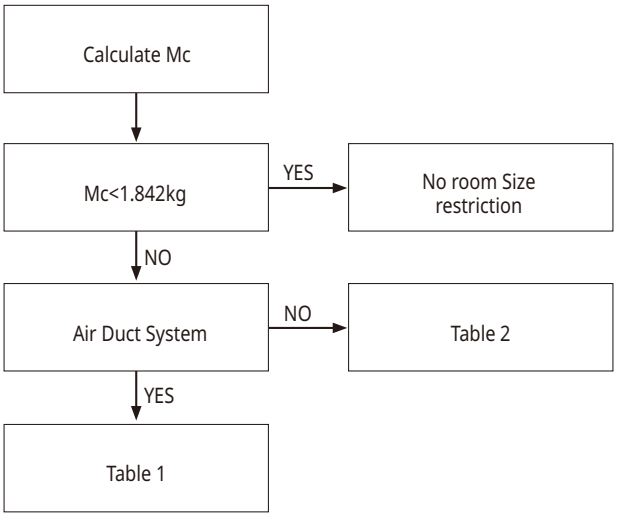
Additional Refrigerant = (A-30) x Additional refrigerant (g)



MINIMUM FLOOR AREA

All indoor units should be installed satisfying A, TA, or VA is larger than Amin.

Flow Chart



Mc : Total amount of refrigerant in the system(kg)

A : Floor Area (smallest room area connected via duct system)

TA : Total Floor Area (Sum of room area connected via duct system)

Amin : Minimum Floor Area
Minimum installation height for ducted indoor unit is 2.2m

<Table 1>

Maximum of m is 8.1kg

Minimum Floor area		Minimum Floor area		Minimum Floor area	
m	TAmin	m	TAmin	m	TAmin
Kg	M^2	Kg	M^2	Kg	M^2
1.85	5.48	3.05	9.03	4.25	12.59
1.9	5.63	3.1	9.18	4.3	12.73
1.95	5.77	3.15	9.33	4.35	12.88
2	5.92	3.2	9.48	4.4	13.03
2.05	6.07	3.25	9.62	4.45	13.18
2.1	6.22	3.3	9.77	4.5	13.33
2.15	6.37	3.35	9.92	4.55	13.47
2.2	6.51	3.4	10.07	4.6	13.62
2.25	6.66	3.45	10.22	4.65	13.77
2.3	6.81	3.5	10.36	4.7	13.92
2.35	6.96	3.55	10.51	4.75	14.07
2.4	7.11	3.6	10.66	4.8	14.21
2.45	7.25	3.65	10.81	4.85	14.36
2.5	7.4	3.7	10.96	4.9	14.51
2.55	7.55	3.75	11.1	4.95	14.66
2.6	7.7	3.8	11.25	5	14.81
2.65	7.85	3.85	11.4	5.05	14.95
2.7	8	3.9	11.55	5.1	15.1
2.75	8.14	3.95	11.7	5.15	15.25
2.8	8.29	4	11.84	5.2	15.4
2.85	8.44	4.05	11.99	5.25	15.55
2.9	8.59	4.1	12.14	5.3	15.69
2.95	8.74	4.15	12.29	5.35	15.84
3	8.88	4.2	12.44	5.4	15.99

Minimum Floor area		Minimum Floor area		Minimum Floor area	
m	TAmin	m	TAmin	m	TAmin
Kg	M^2	Kg	M^2	Kg	M^2
5.45	16.14	6.65	19.69	7.85	23.25
5.50	16.29	6.7	19.84	7.9	23.39
5.55	16.43	6.75	19.99	7.95	23.54
5.6	16.58	6.8	20.14	8	23.69
5.65	16.73	6.85	20.28	8.05	23.84
5.7	16.88	6.9	20.43	8.1	23.99
5.75	17.03	6.95	20.58	8.15	24.13
5.8	17.18	7	20.73	8.2	24.28
5.85	17.32	7.05	20.88	8.25	24.43
5.9	17.47	7.1	21.02	8.3	24.58
5.95	17.62	7.15	21.17	8.35	24.73
6	17.77	7.2	21.32	8.4	24.87
6.05	17.92	7.25	21.47	8.45	25.02
6.1	18.06	7.3	21.62	8.5	25.17
6.15	18.21	7.35	21.76	8.55	25.32
6.2	18.36	7.4	21.91	8.6	25.47
6.25	18.51	7.45	22.06	8.65	25.61
6.3	18.66	7.5	22.21	8.7	25.76
6.35	18.8	7.55	22.36	8.75	25.91
6.4	18.95	7.6	22.51	8.8	26.06
6.45	19.1	7.65	22.65	8.85	26.21
6.5	19.25	7.7	22.8	8.9	26.35
6.55	19.4	7.75	22.95	8.95	26.5
6.6	19.54	7.8	23.1	9	26.65

<Table 2>

Maximum of m is 8.1kg

Minimum Floor area		Minimum Floor area		Minimum Floor area	
m	Amin	m	Amin	m	Amin
Kg	M^2	Kg	M^2	Kg	M^2
1.85	3.65	3.05	6.02	4.25	11.43
1.9	3.75	3.1	6.12	4.3	11.7
1.95	3.85	3.15	6.28	4.35	11.98
2	3.95	3.2	6.48	4.4	12.26
2.05	4.05	3.25	6.69	4.45	12.54
2.1	4.15	3.3	6.89	4.5	12.82
2.15	4.24	3.35	7.1	4.55	13.11
2.2	4.34	3.4	7.32	4.60	13.4
2.25	4.44	3.45	7.53	4.65	13.69
2.3	4.54	3.5	7.75	4.7	13.98
2.35	4.64	3.55	7.98	4.75	14.28
2.4	4.74	3.6	8.2	4.8	14.59
2.45	4.84	3.65	8.43	4.85	14.89
2.5	4.94	3.7	8.67	4.9	15.2
2.55	5.03	3.75	8.9	4.95	15.51
2.6	5.13	3.8	9.14	5	15.83
2.65	5.23	3.85	9.38	5.05	16.14
2.7	5.33	3.9	9.63	5.1	16.47
2.75	5.43	3.95	9.88	5.15	16.79
2.8	5.53	4	10.13	5.2	17.12
2.85	5.63	4.05	10.38	5.25	17.45
2.9	5.73	4.1	10.64	5.3	17.78
2.95	5.82	4.15	10.9	5.35	18.12
3	5.92	4.2	11.17	5.4	18.46

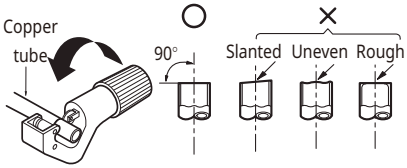
Minimum Floor area		Minimum Floor area		Minimum Floor area	
m	Amin	m	Amin	m	Amin
Kg	M^2	Kg	M^2	Kg	M^2
5.45	18.8	6.65	27.99	7.85	39.01
5.5	19.15	6.7	28.42	7.9	39.51
5.55	19.5	6.75	28.84	7.95	40.01
5.6	19.85	6.8	29.51	8.00	40.85
5.65	20.21	6.85	29.7	8.05	41.02
5.7	20.57	6.9	30.14	8.1	41.53
5.75	20.93	6.95	30.58	8.15	42.05
5.8	21.3	7	31.02	8.2	42.57
5.85	21.66	7.05	31.46	8.25	43.09
5.9	22.04	7.1	31.91	8.3	43.61
5.95	22.41	7.15	32.36	8.35	44.14
6	22.79	7.2	32.82	8.4	44.67
6.05	23.17	7.25	33.27	8.45	45.2
6.1	23.56	7.3	33.73	8.5	45.74
6.15	23.94	7.35	34.2	8.55	46.28
6.2	24.33	7.4	34.67	8.6	46.82
6.25	24.73	7.45	35.14	8.65	47.37
6.3	25.13	7.5	35.61	8.7	47.91
6.35	25.53	7.55	36.08	8.75	48.47
6.4	25.93	7.6	36.56	8.8	49.02
6.45	26.34	7.65	37.05	8.85	49.58
6.5	26.75	7.7	37.53	8.9	50.14
6.55	27.16	7.75	38.02	8.95	50.71
6.6	27.58	7.8	38.51	9	51.28

CONNECTING PIPES

Preparation of Piping

– Use the de-oxidised copper as piping materials to install.

Cut the pipes and the cable.



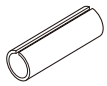
Burrs removal

– 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.
– The piping type of this product is only brazing type

LIFTING METHOD

– When carrying the suspended, unit pass the ropes under the unit and use the two suspension points each at the front and rear.
– Always lift the unit with ropes attached at four points so that impact is not applied to the unit.
– Attach the ropes to the unit at an angle of 40° or less.

INSTALLATION TOOL

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	– Paper pattern for installation – Manual
Shape					 For gas pipe  For liquid pipe	

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 this installation manual. If power supply circuit has a lack of capacity or electric work deficiency, it may cause an electric shock or fire.

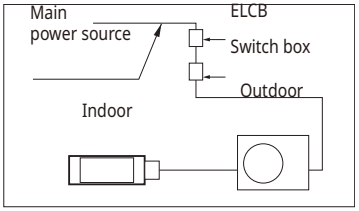
Perform the electrical wiring work according to the electrical wiring connection.

– All wiring must comply with local requirements.

– Select a power source that is capable of supplying the current required by the air conditioner.

– Use a recognized ELCB(Electric Leakage Circuit Breaker) between the power source and the unit. A disconnection device to adequately disconnect all supply lines must be fitted.

– Model of circuit breaker recommended by authorized personnel only



Model(Btu/h)	Phase(Ø)	ELCB
85 k/70 k	3	30 A

⚠ 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.

- Refer to the PDB about detail electric characteristics
- 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
- When the connection line between the indoor unit and outdoor unit is over 40 m, connect the telecommunication line and power line separately.
- Supply line of appliances shall not be lighter than polychloroprene sheathed. (code designation 60245 IEC 57)
- Pipes and wires should be purchased separately for installation of the product.

Minimum cross-sectional area of conductors

Rated current of appliance A	Nominal cross-sectional area mm²
≤ 6	0.75
> 6 and ≤10	1.0
> 6 and ≤10	1.5
> 16 and ≤ 25	2.5
> 25 and ≤ 32	4
> 32 and ≤ 40	6

MAINTENANCE

Clean the product regularly to maintain optimal performance and to prevent possible breakdown.

⚠ CAUTION

- Turn off the power and unplug the power cord before you perform any maintenance; otherwise it may cause electric shock.
- Never use water that is hotter than 40 °C when you clean the filters. It may cause deformation or discoloration.
- Never use volatile substances when you clean the filters. They may damage the surface of the product.

Operation Tips!

- **Do not overcool the room.**

  This is not good for the health and wastes electricity.
- **Keep blinds or curtains closed.**

  Do not let direct sunshine enter the room when the air conditioner is in operation.
- **Keep the room temperature uniform.**

  Adjust the vertical and horizontal airflow direction to ensure a uniform temperature in the room.
- **Make sure that the doors and windows are shut tight.**

  Avoid opening doors and windows as much as possible to keep the cool air in the room.
- **Clean the air filter regularly.**

  Blockages in the air filter reduce the airflow and lower cooling and dehumidifying effects. Clean at least once every two weeks.
- **Ventilate the room occasionally.**

  Since windows are kept closed, it is a good idea to open them and ventilate the room now and then.

Memo

Memo



Manufacturer :
LG Electronics Inc.
84, Wanam-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do, KOREA

UK Importer : LG Electronics U.K. Ltd
Velocity 2, Brooklands Drive, Weybridge, KT13 0SL

Eco design requirement

- The information for Eco design is available on the following free access website.
  https://www.lg.com/global/support/cedoc/cedoc