ENGLISH
FRANÇAIS
ESPAÑOL

INSTALLATION MANUAL

AIR CONDITIONER

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

CONSOLE

MFL05739501
Rev.00_101424

www.lghvac.com
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Safety Instructions

	Read the precautions in this manual carefully before operating the unit.
	This symbol indicates that the Operation Manual should be read carefully.
	This appliance is filled with flammable refrigerant.
	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 of all field wiring and components MUST conform with local building codes or, in the absence of local codes, with the National Electrical Code 70 and the National Building Construction and Safety Code or Canadian Electrical code and National Building Code of Canada.
- The information contained in the manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.
- Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.

Installation

- Always perform grounding.
  - Otherwise, it may cause electrical shock.
- 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.
- Securely attach the electrical part cover to the indoor unit and the service panel to the outdoor unit.
  - If the electrical part cover of the indoor unit and the service panel of the outdoor unit are not attached securely, it could result in a fire or electric shock due to dust, water, etc.
- Always install an air leakage breaker and a dedicated switching board.
  - No installation may cause a fire and electrical shock.
- Do not keep or use flammable gases or combustibles near the air conditioner.
  - Otherwise, it may cause a fire or the failure of product.
- Ensure that an installation frame of the outdoor unit is not damaged due to use for a long time.
  - It may cause injury or an accident.
- Do not disassemble or repair the product randomly.
  - It will cause a fire or electrical shock.
- Do not install the product at a place that there is concern of falling down.
  - Otherwise, it may result in personal injury.
- Use caution when unpacking and installing.
  - Sharp edges may cause injury.
- Use a vacuum pump or Inert (nitrogen) gas when doing leakage test or air purge. Do not compress air or Oxygen and Do not use Flammable gases. Otherwise, it may cause fire or explosion. There is the risk of death, injury, fire or explosion.
- Consult your lacal dealer regarding what to do in case of refrigerant leakage.
  When the air conditioner is to be installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.
- Carry out the specified installation work after taking into account earthquakes.
  Failure to do so during installation work may result in the unit falling and causing accidents.

- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual. An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- Be sure to switch off the unit before touching any electrical parts.
- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires.
- If refrigerant gas leaks during installation, ventilate the area immediately.
  Toxic gas may be produced if the refrigerant gas comes into contact with fire.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- 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.)
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odour.
- The manufacturer may provide other suitable examples or may provide additional information about the refrigerant odour.
- Pipe-work including piping material, pipe routing, and installation shall include protection from physical damage in operation and service, and be in compliance with national and local codes and standards, such as ASHRAE 15, ASHRAE 15.2, IAPMO Uniform Mechanical Code, ICC International Mechanical Code, or CSA B52. All field joints shall be accessible for inspection prior to being covered or enclosed
- An unventilated area where the appliance using flammable refrigerants is installed shall be so constructed that should any refrigerant leak, it will not stagnate so as to create a fire or explosion hazard.
- 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;
- After completion of field piping for split systems, the field pipework shall be pressure tested with an inert gas and then vacuum tested prior to refrigerant charging, according to the following requirements:
  - The minimum test pressure for the low side of the system shall be the low side design pressure and the minimum test pressure for the high side of the system shall be the high side design pressure, unless the high side of the system, cannot be isolated from the low side of the system in which case the entire system shall be pressure tested to the low side design pressure.
  - The test pressure after removal of pressure source shall be maintained for at least 1 h with no decrease of pressure indicated by the test gauge, with test gauge resolution not exceeding 5% of the test pressure.
  - During the evacuation test, after achieving a vacuum level specified in the manual or less, the refrigeration system shall be isolated from the vacuum pump and the pressure shall not rise above 1500 microns within 10 min. The vacuum pressure level shall be specified in the manual, and shall be the lessor of 500 microns or the value required for compliance with national and local codes and standards, which may vary between residential, commercial, and industrial buildings.
- Do not install indoor units in laundry rooms.

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 qualified person by manufacturer.

Examples for such working procedures are:

- Breaking into the refrigerating circuit;
- Opening of sealed components;
- Opening of ventilated enclosures.

- 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.
- A brazed, welded, or mechanical connection shall be made before opening the valves to permit refrigerant to flow between the refrigerating system parts.
- Keep any required ventilation openings clear of obstruction.
- Mechanical connections (mechanical connectors or flared joints) shall be accessible for maintenance purposes.
- Flexible pipe elements shall be protected against mechanical damage, excessive stress by torsion, or other forces. They should be checked for mechanical damage annually.
- 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.
- 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.
- Provision shall be made for expansion and contraction of long runs of piping.
- Steel pipes and components shall be protected against corrosion with a rustproof coating before applying any insulation.
- Non-duct connected appliances containing A2L refrigerants with the supply and return air openings in the conditioned space may have the body of the appliance may be installed in open areas such as false ceilings not being used as return air plenums, as long as the conditioned air does not directly communicate with the air of the false ceiling.

NOTE

- Properly insulate all cold surfaces to prevent “sweating”.
  - Cold surfaces such as uninsulated piping can generate condensate that may drip and cause a slippery surface condition and / or water damage to interior surfaces.
- Always check for system refrigerant leaks after the unit has been installed.
  - Low refrigerant levels may cause product failure.
    ⃠ Do not make refrigerant substitutions. Use R32 only.
  - If a different refrigerant is used, or air mixes with original refrigerant, the unit will malfunction and be damaged.
- Keep the unit upright during installation to avoid vibration or water leakage.

Wiring

- High voltage electricity is required to operate this system. Adhere to applicable building codes: National Electrical Code (NEC) for U.S. and Mexico, Canada Electrical Code (CE) for Canada and these instructions when wiring.
  - Improper connections and inadequate grounding can cause accidental injury or death.
- Always ground the unit following local, state, and national Codes.
  - There is risk of fire, electric shock, and physical injury or death.
- Properly size all circuit breakers or fuses.
  - There is risk of fire, electric shock, explosion, physical injury or death. The indoor unit got power from outdoor unit. Details of fuses or circuit breakers are indicated in installation manual of outdoor unit.
- The information contained in this manual is intended for use by an industry-qualified, experienced, certified electrician familiar with NEC for U.S. and Mexico, or CE for Canada who is 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 or death.
- Refer to local, state, and federal codes, and use power wires of sufficient current capacity and rating.
  - Wires that are too small may generate heat and cause a fire.
- All electric work must be performed by a licensed electrician and conform to local building codes or, in the absence of local codes, with NEC for U.S. and Mexico, or CE for Canada, and the instructions given in this manual.
  - If the power source capacity is inadequate or the electric work is not performed properly, it may result in fire, electric shock, physical injury or death.
- Secure all field wiring connections with appropriate wire strain relief.
  - Improperly securing wires will create undue stress on equipment power lugs. Inadequate connections may generate heat, cause a fire and physical injury or death.
- Properly tighten all power lugs.
  - Loose wiring may overheat at connection points, causing a fire, physical injury or death.
- ⃠ Do not change the settings of the protection devices.
  - If the pressure switch, thermal switch, or other protection devices are bypassed or forced to work improperly, or parts other than those specified by LG are used, there is risk of fire, electric shock, explosion, and physical injury or death.
- The appliance shall be installed in accordance with national wiring regulations.
- Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

NOTE

⃠ Do not supply power to the unit until all electrical wiring, controls wiring, piping, installation, and refrigerant system evacuation are completed.

Operation

- Unplug the unit if strange sounds, smell, or smoke comes from it.
  - Otherwise, it may cause electrical shock or a fire.
- Keep the flames away.
  - Otherwise, it may cause a fire.
- Take the power plug out if necessary, holding the head of the plug and do not touch it with wet hands.
  - Otherwise, it may cause a fire or electrical shock.
- Do not open the suction inlet of the indoor/outdoor unit during operation.
  - Otherwise, it may electrical shock and failure.
- Do not allow water to run into electrical parts.
  - Otherwise, it may cause the failure of machine or electrical shock.
- Never touch the metal parts of the unit when removing the filter.
  - They are sharp and may cause injury.
- 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 submerged into water, always contact the service center.
  - Otherwise, it may cause a fire or electrical shock.
- Take care so that children may not step on the outdoor unit.
  - Otherwise, children may be seriously injured due to falling down.
- The appliance shall be stored so as to prevent mechanical damage from occurring.
- 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.
- LEAK DETECTION SYSTEM installed. Unit must be powered except for service. This unit is equipped with a refrigerant leak detector for safety. To be effective, the unit must be electrically powered at all times after installation, other than when servicing.

Service & Installation

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 CO_2 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.

Checks to the refrigerating equipment

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification.

At all times the manufacturer’s maintenance and service guidelines shall be followed. If in doubt consult the manufacturer’s technical department for assistance.

The following checks shall be applied to installations using flammable refrigerants:

- The actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed
- The ventilation machinery and outlets are operating adequately and are not obstructed
- If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant
- Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected
- Refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

Checks to electrical devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include:

- Capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking.
- No live electrical components and wiring are exposed while charging, recovering or purging the system.
- Continuity of earth bonding

Repairs to sealed components

Sealed electrical components shall be replaced.

Repair to intrinsically safe components

Intrinsically safe components must be replaced.

Cabling

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

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.

Leak detection methods

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 may not be adequate, or may need re-calibration. (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 may react with the refrigerant and corrode the copper pipework.

NOTE

Examples of leak detection fluids are.

- Bubble method.
- Fluorescent method agents.

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 removal and evacuation procedure.

Removal and 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 be 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 or purge with inert gas when using flame to open circuit; and
- Open the circuit.

The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times.

Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for A2L). This process shall be repeated until no refrigerant is within the system (optional for A2L). When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.

The outlet for the vacuum pump shall not be close to any potential ignition sources, and ventilation shall be 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 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).
- 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.

a) Become familiar with the equipment and its operation.

b) Isolate system electrically.

c) Before attempting the procedure ensure that:
   - Mechanical handling equipment is available, if required, for handling refrigerant cylinders
   - All personal protective equipment is available and being used correctly
   - The recovery process is supervised at all times by a competent person
   - Recovery equipment and cylinders conform to the appropriate standards.

d) Pump down refrigerant system, if possible.

e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.

f) Make sure that cylinder is situated on the scales before recovery takes place.

g) Start the recovery machine and operate in accordance with instructions.

h) Do not overfill cylinders. (No more than 80 % volume liquid charge).

i) Do not exceed the maximum working pressure of the cylinder, even temporarily.

j) 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.

k) Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

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.

Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice 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.

If in doubt, the manufacturer should be consulted. 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.

The recovered refrigerant shall be processed according to local legislation in the correct recovery cylinder, and the relevant waste transfer note arranged.

Do not mix refrigerants in recovery units and especially not in cylinders.

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.

When oil is drained from a system, it shall be carried out safely.

⚠ CAUTION

Installation

- Be very careful when transporting the product. There is a risk of the product falling and causing physical injury.
  - Use appropriate moving equipment to transport each frame ensure the equipment is capable of supporting the weight of the equipment.
- The Limited Warranty is void and of no effect, and LG will have no liability hereunder to any Customer or third party, to the extent any of the following occur: acts, omissions, and conduct of any and all third parties including, but not limited to, the installing contractor and any repairs, service or maintenance by unauthorized or unqualified persons.

- Install the drain hose to ensure that drain can be securely done.
  - Otherwise, it may cause water leakage.
- 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 neighbors.
- Always inspect gas leakage after the installation and repair of product.
  - Otherwise, it may cause the failure of product.
- Keep level parallel in installing the product.
  - Otherwise, it may cause vibration or water leakage.
- Do not install the unit in potentially explosive atmospheres.
- The installation of pipe-work shall be kept to a minimum.
- 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.
- When mechanical connectors are reused indoors, sealing parts shall be renewed.
- When flared joints are reused indoors, the flare part shall be re-fabricated.

Operation

- Avoid excessive cooling and perform ventilation sometimes.
  - Otherwise, it may do harm to your health.
- Use a soft cloth to clean. Do not use wax, thinner, or a strong detergent.
  - The appearance of the air conditioner may deteriorate, change color, or develop surface flaws.
- Do not use an appliance for special purposes such as preserving animals vegetables, precision machine, or art articles.
  - Otherwise, it may damage your properties.
- Do not place obstacles around the flow inlet or outlet.
  - Otherwise, it may cause the failure of appliance or an accident.
- This appliance is not intended for the purposes of cooling INFORMATION TECHNOLOGY EQUIPMENT
- 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.

Service

- Servicing shall be performed only as recommended by the manufacturer.

Minimum Floor Area

The appliance shall be installed, operated and stored in a room with a floor area larger than the minimum floor area. Installers must use refrigerant charge amounts that meet the requirements to comply with use conditions required in SNAP Rules.

In this manual, provide a simple method to find minimum floor area in table. For more accurate value, use LATS or-R Checker.

Single-Split System(UL 60335-2-40:2019 Edition 3)

- Minimum floor area for Single Split System(UL 60335-2-40:2019 Edition 3)
- Minimum total conditioned room area (UL 60335-2-40:2019 Edition 3)

Multi-Split System (UL 60335-2-40:2019 Edition 3)

- Minimum floor area for Multi-Split System (UL 60335-2-40:2019 Edition 3)

ETRS Unit(UL 60335-2-40:2022 Edition 4)

- Minimum floor area for ETRS unit (UL 60335-2-40:2022 Edition 4)
- Minimum total conditioned room area (UL 60335-2-40:2022 Edition 4)

Minimum floor area for Single-Split System (UL 60335-2-40:2019 Edition 3)

The following instructions apply when only one indoor unit is connected to an outdoor unit.

- Use the <Table1> to determine the minimum floor area with m and h.
- If m is not in table, use the next larger value.
- m : Total refrigerant charge in system.
- Total refrigerant charge in system : factory refrigerant charge +additional refrigerant charge.
- h : Installed height.
- A_{min} : Minimum floor area.

NOTE

- If the opening height of discharge of intake duct outlet is lower than the unit installation height, the installation height is the lower opening height of duct outlet.

<Table 1> : Table for Single-Split System.

Maximum of m is 7.7 kg

Minimum floor area			
m		A_{min}	
kg	oz	m^2	ft^2
≤ 1.842	≤ 64.97	-	-
1.85	65.26	40.17	432.43
2.00	70.55	43.43	467.49
2.20	77.60	47.77	514.24
2.40	84.66	52.12	560.99
2.60	91.71	57.53	619.29
2.80	98.77	66.72	718.23
3.00	105.82	76.60	824.49
3.20	112.88	87.15	938.09
3.40	119.93	98.39	1059.02
3.60	126.99	110.30	1187.27
3.80	134.04	122.90	1322.86
4.00	141.10	136.17	1465.77
4.20	148.15	150.13	1616.01
4.40	155.21	164.77	1773.58
4.60	162.26	180.09	1938.48

Minimum floor area			
m		A_{min}	
kg	oz	m^2	ft^2
4.80	169.32	196.09	2110.71
5.00	176.37	212.77	2290.26
5.20	183.42	230.13	2477.15
5.40	190.48	248.18	2671.36
5.60	197.53	266.90	2872.91
5.80	204.59	286.30	3081.78
6.00	211.64	306.39	3297.98
6.20	218.70	327.16	3521.51
6.40	225.75	348.60	3752.37
6.60	232.81	370.73	3990.55
6.80	239.86	393.54	4236.07
7.00	246.92	417.03	4488.91
7.20	253.97	441.20	4749.09
7.40	261.03	466.05	5016.59
7.60	268.08	491.59	5291.42
7.70	271.61	504.61	5431.59

Minimum floor area for Multi-Split System (UL 60335-2-40:2019 Edition 3)

The following instructions apply when two or more independently controlled indoor units on a single refrigeration system. Height of room where indoor units are installed must be higher than 2.0 m.

- Use the <Table 2> to determine the minimum floor area with m.
- If m is not in table, use the next larger value.
- m : Total refrigerant charge in system.
- Total refrigerant charge in system : factory refrigerant charge + additional refrigerant charge.
- A_{min} : minimum floor area.

NOTE

- Multi F and Multi V Indoor units shall not be used in a sealed room without ventilation to the outside of the room.
- Multi F and Multi V indoor units shall not be installed on the lowest underground floor of the building.

<Table 2> : Table for Multi-Split System

Maximum of m is 7.7 kg

Minimum floor area			
m		A_{min}	
kg	oz	m^2	ft^2
≤ 1.842	≤ 64.97	-	-
1.85	65.26	12.05	129.73
2.00	70.55	13.03	140.25
2.20	77.60	14.33	154.27
2.40	84.66	15.64	168.30
2.60	91.71	16.94	182.32
2.80	98.77	18.24	196.35
3.00	105.82	19.54	210.37
3.20	112.88	20.85	224.40
3.40	119.93	22.15	238.42
3.60	126.99	23.45	252.45
3.80	134.04	24.76	266.47
4.00	141.10	26.06	280.50
4.20	148.15	27.36	294.52
4.40	155.21	28.66	308.54
4.60	162.26	29.97	322.57

Minimum floor area			
m		A_{min}	
kg	oz	m^2	ft^2
4.80	169.32	31.27	336.59
5.00	176.37	32.57	350.62
5.20	183.42	33.88	364.64
5.40	190.48	35.18	378.67
5.60	197.53	36.48	392.69
5.80	204.59	37.79	406.72
6.00	211.64	39.09	420.74
6.20	218.70	40.39	434.77
6.40	225.75	41.69	448.79
6.60	232.81	43.00	462.82
6.80	239.86	44.30	476.84
7.00	246.92	45.60	490.87
7.20	253.97	46.91	504.89
7.40	261.03	48.21	518.92
7.60	268.08	49.51	532.94
7.70	271.61	50.16	539.95

Minimum floor area for ETRS unit (UL 60335-2-40:2022 Edition 4)

The following instructions apply to appliance marked "ETRS" on the nameplate (enhanced tightness refrigerating systems). Height of room where indoor units are installed must be higher than 2.0 m.

- Use the <Table 3> to determine the minimum floor area with m.
- If m is not in table, use the next larger value.
- m : Total refrigerant charge in system.
- Total refrigerant charge in system : factory refrigerant charge + additional refrigerant charge.
- A_{min} : minimum floor area.

<Table 3> : Table for ETRS Unit.

Maximum of m is 7.7 kg

Minimum floor area			
m		A_{min}	
kg	oz	m^2	ft^2
≤ 1.836	≤ 64.76	-	-
1.84	64.80	6.00	64.62
2.00	70.55	6.54	70.35
2.20	77.60	7.19	77.39
2.40	84.66	7.84	84.42
2.60	91.71	8.50	91.46
2.80	98.77	9.15	98.49
3.00	105.82	9.80	105.53
3.20	112.88	10.46	112.56
3.40	119.93	11.11	119.60
3.60	126.99	11.76	126.64
3.80	134.04	12.42	133.67
4.00	141.10	13.07	140.71
4.20	148.15	13.73	147.74
4.40	155.21	14.38	154.78
4.60	162.26	15.03	161.81

Minimum floor area			
m		A_{min}	
kg	oz	m^2	ft^2
4.80	169.32	15.69	168.85
5.00	176.37	16.34	175.88
5.20	183.42	16.99	182.92
5.40	190.48	17.65	189.95
5.60	197.53	18.30	196.99
5.80	204.59	18.95	204.02
6.00	211.64	19.61	211.06
6.20	218.70	20.26	218.09
6.40	225.75	20.92	225.13
6.60	232.81	21.57	232.16
6.80	239.86	22.22	239.20
7.00	246.92	22.88	246.24
7.20	253.97	23.53	253.27
7.40	261.03	24.18	260.31
7.60	268.08	24.84	267.34
7.70	271.61	25.16	270.86

Altitude adjustment

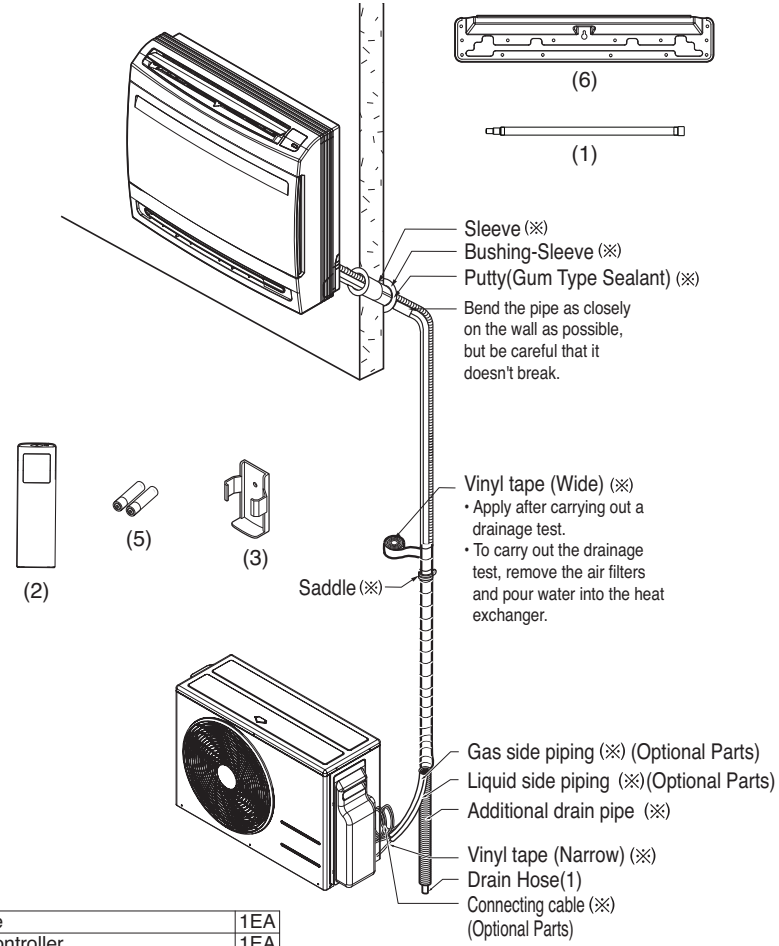
- The minimum room area of A_{min} shall be corrected by multiplying by the altitude adjustment factor(AF) in the below table based on for building site ground level altitude (Halt) in meters(feet).

Unit : m (ft)

Halt	0	200 (656.2)	400 (1 312.3)	600 (1 968.5)	800 (2 624.7)	1 000 (3 280.8)
AF	1	1	1	1	1.02	1.05
Halt	1 200 (3 937.0)	1 400 (4 593.2)	1 600 (5 249.3)	1 800 (5 905.5)	2 000 (6 561.7)	
AF	1.07	1.1	1.12	1.15	1.18	

Installation

Installation Map



ACCESSORIES

(1)	Drain Hose	1EA
(2)	Remote Controller	1EA
(3)	Remote Controller Holder	1EA
(4)	Fixing Screw for R.Controller Holder	2EA
(5)	Battery (AAA)	2EA
(6)	Install plate	1EA
(7)	Fixing Screw for Install Plate 4*25mm	5EA

※ (4),(7) → Screw

- The feature can be changed according to type of model.
  (This feature is for single outdoor unit)

NOTICE

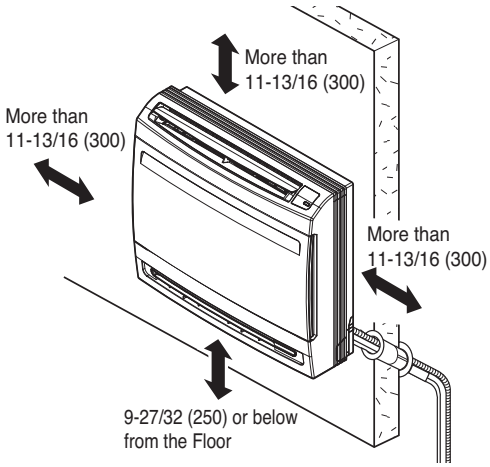
(※) You should purchase the installation parts.

Choosing an installation Site

1. There should not be any heat or steam near the unit.
2. Select a place where there are no obstacles around of the unit.
3. Make sure that condensation drainage can be conveniently routed away.
4. Do not install near a doorway.
5. Ensure that the interval between a wall and the left (or right) of the unit is more than 11-13/16" (300mm).
6. Use a metal detector to locate studs to prevent unnecessary damage to the wall.
7. Keep away from electronic ignition type fluorescent lamps as they may shorten the remote controller range.
8. Please check at least 3.3ft (1m) away from television or radio.(It cause interference with the picture or sound.)
9. Do not install indoor units in laundry rooms.

NOTICE

- Before choosing the installation site, please obtain user approval.
- If the unit is installed below a window,check the interference of window curtain. [more than 11-13/16”(300mm)]

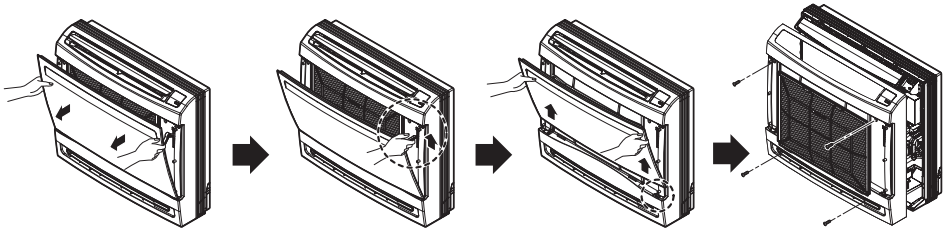


[Unit : inch (mm)]

Indoor unit installation

4-1.Preparation / Removing front panel

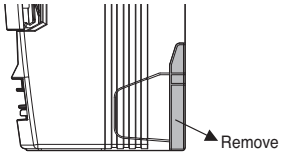
1. Open the front grille by pulling forward.
2. Then pull out the link of grille from groove in front panel.
3. Then pull out 2 hinges of grille from grooves in front panel.
4. Then remove 4 screws, dismount the front panel while pulling it forward.
   If Leak Detector is separated from front panel, reassemble it with hooks.



4-2. Preparation / For Moldings , Side Piping, and Concealed Installation

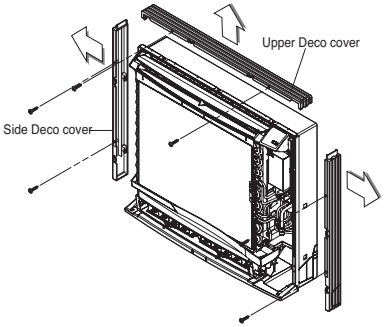
4-2-1 For Moldings

1. Remove the slit portions on the Rear Panel.



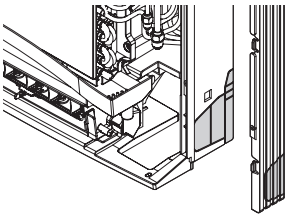
4-2-2 For Concealed Installation

1. Remove the 6 screws.
2. Remove the Upper Deco cover.
3. Remove the Side Deco covers.



4-2-3 For Side Piping (Reference 4-2-2.)

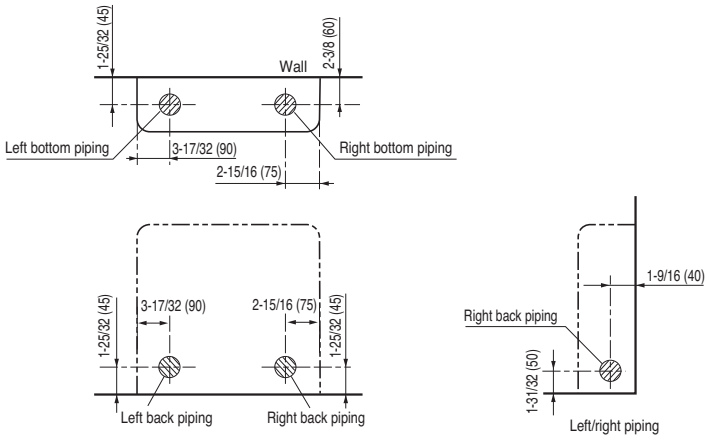
1. Remove the Deco Covers.
2. Remove the slit portions.
3. Assemble the Deco Covers.



4-3.Refrigerant Piping

1. The location of hole is different depending on which side of the pipe is taken out.

2. Drill a hole Ø 2-3/4"(70mm) in the point indicated by ▨ symbol in the illustration as below.



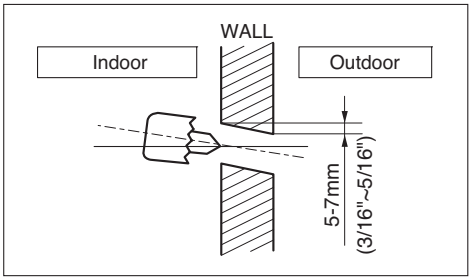
[Unit : inch (mm)]

NOTICE

- The suggested shortest pipe length is 16.4ft (5m), in order to avoid noise from the outdoor unit and vibration.

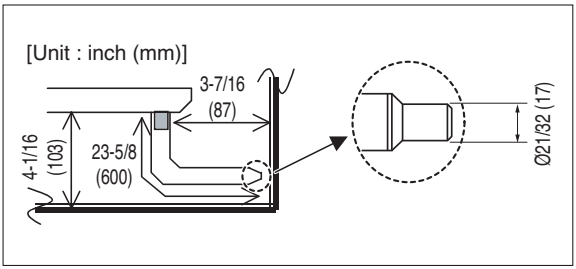
4-4.Drill a Hole in the wall

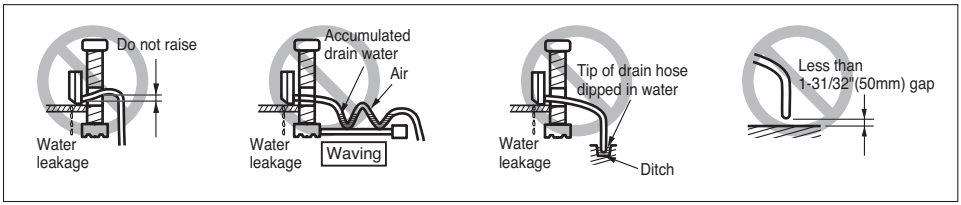
• Drill the piping hole with a Ø 2-3/4" (70mm) hole core drill. Drill the piping hole at either the right or the left with the hole slightly slanted to the outdoor side.



4-5.Drain piping

1. The Outer diameter of Drain Hose (which is supplied with indoor unit) is 21/32" (17mm) at connecting end 23-5/8" (600mm) long.
2. Use commercial rigid PVC pipe for extension.
3. Insulate the indoor drain pipe with 13/32"(10mm) or more of insulation material to prevent condensation.





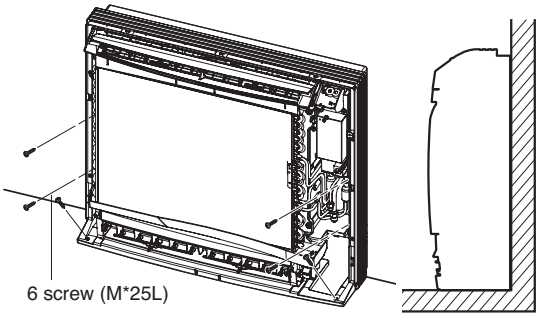
NOTICE

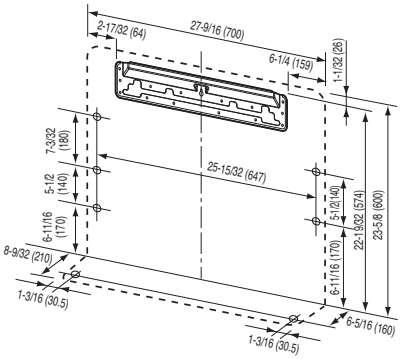
- The drain pipe should be inclined downward so that water will flow smoothly without any accumulation.

4-6. Installing Indoor unit

4-6-1 Installation on the Floor.

1. Fix up using 6 screws for floor installation.

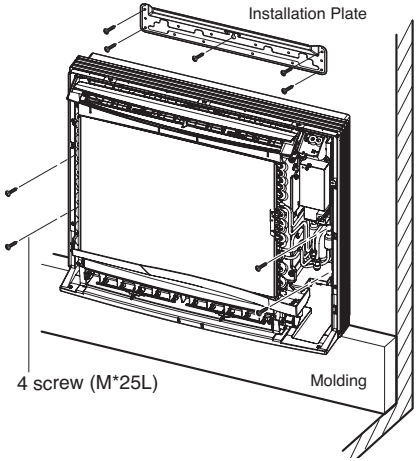


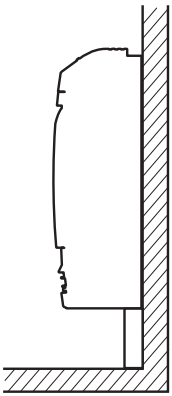


[Unit : inch (mm)]

4-6-2 Installation on the Wall

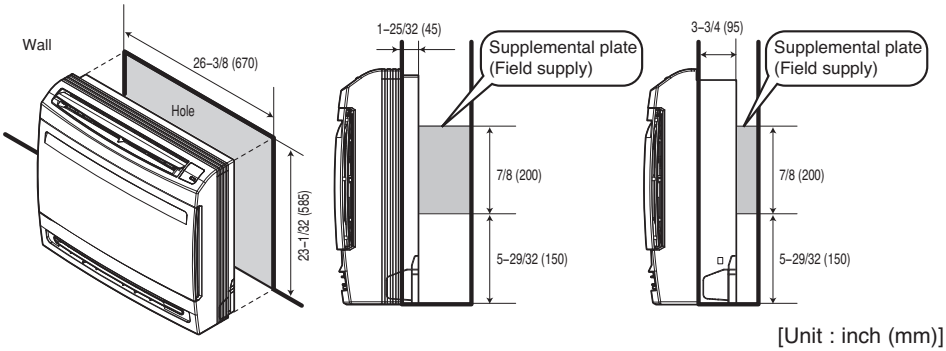
1. Fix up the installation plate using 5 screws provided and the indoor unit using 4 screws.
2. The installation plate should be fixed on a wall which can support the weight of the indoor unit.





4-6-3 Half concealed installation.

1. Make a wall hole of the size shown Fig-1.



[Unit : inch (mm)]

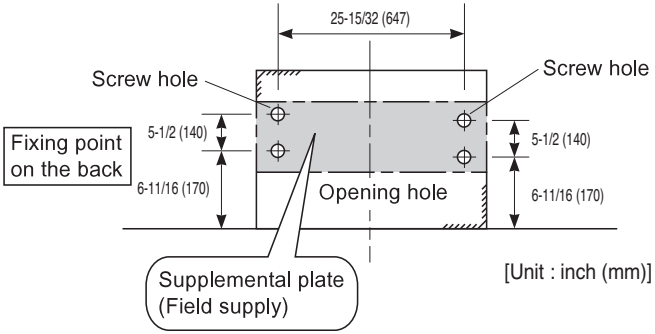
<Fig - 1>

1) Normal concealed

2) Deep concealed

2. Installation of supplemental plate for attaching main unit

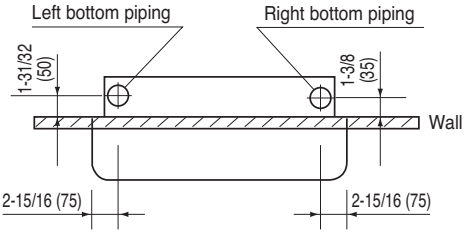
• The rear of the unit can be fixed with screws at the points shown in the Fig-2.
Be sure to install the supplemental plate in accordance with the depth of the inner wall.

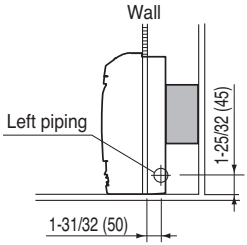


[Unit : inch (mm)]

<Fig - 2>

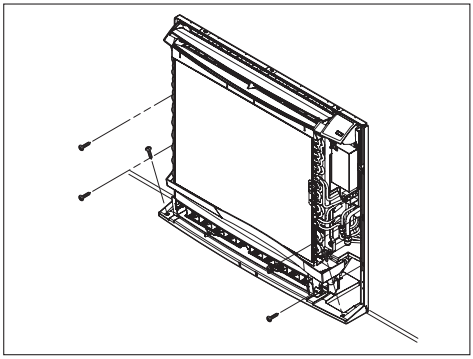
3.Piping Hole





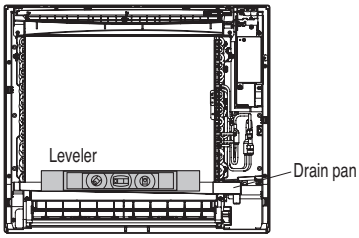
[Unit : inch (mm)]

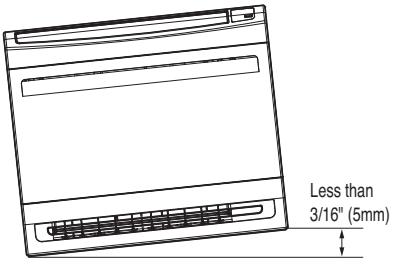
4. Remove the Deco Covers and Fixing Indoor Unit.
   1) Remove the Deco Covers.(Reference 4-2-2.)
   2) Insert the Indoor Unit to the Wall hole.
   3) Secure using 6 screws. (shown in the illustration)

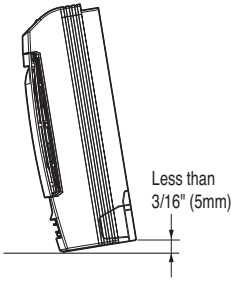


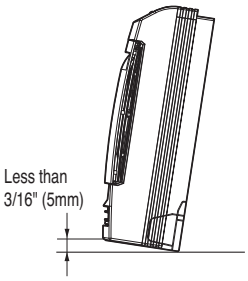
NOTICE

- Check the horizon of Indoor unit with the wall. Please use the Leveler on the drain pan guide.







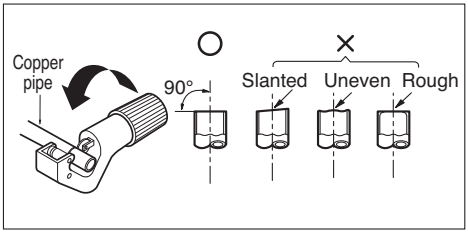


Flaring Work

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

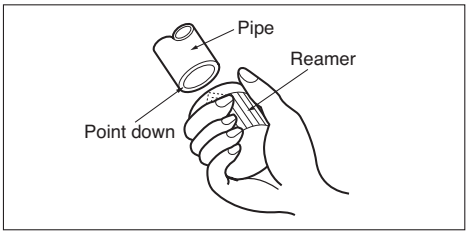
Cut the pipes and the cable.

1. Use the piping kit accessory or the pipes purchased locally.
2. Measure the distance between the indoor and the outdoor unit.
3. Cut the pipes a little longer than measured distance.
4. Cut the cable 4.9ft(1.5m) longer than the pipe length.



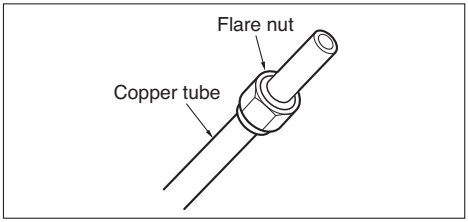
Burrs removal

1. Completely remove all burrs from the cut cross section of pipe/tube.
2. While removing burrs put the end of the copper tube/pipe in a downward direction while removing burrs location is also changed in order to avoid dropping burrs into the tubing.



Putting nut on

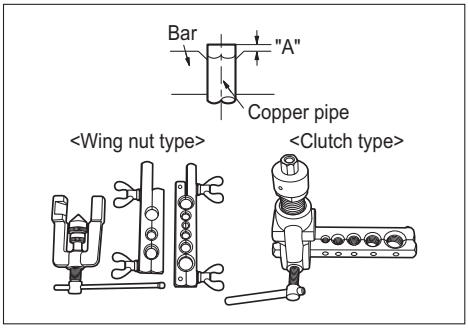
• Remove flare nuts attached to indoor and outdoor unit, then put them on pipe/tube having completed burr removal.
(not possible to put them on after finishing flare work)



Flaring work

1. Firmly hold copper pipe in a bar with the dimension shown in below table table below.
2. Carry out flaring work with the flaring tool.

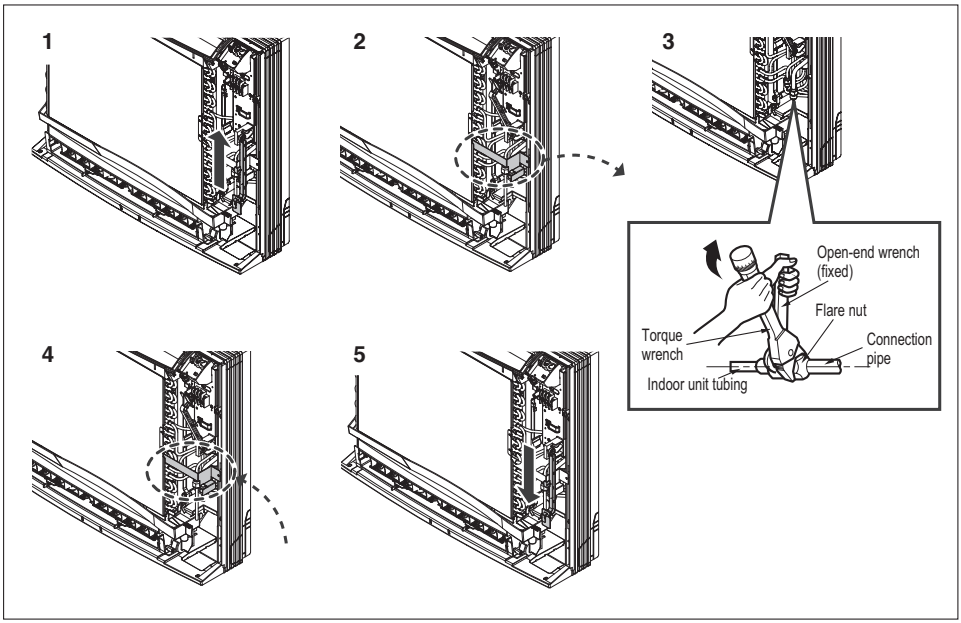
Pipe diameter Inch (mm)	A inch (mm)	
	Wing nut type	Clutch type
Ø 1/4 (Ø6.35)	0.04~0.05(1.1~1.3)	0~0.02 (0~0.5)
Ø 3/8 (Ø9.52)	0.06~0.07(1.5~1.7)	
Ø 1/2 (Ø12.7)	0.06~0.07(1.6~1.8)	
Ø 5/8 (Ø15.88)	0.06~0.07(1.6~1.8)	
Ø 3/4 (Ø19.05)	0.07~0.08(1.9~2.1)	



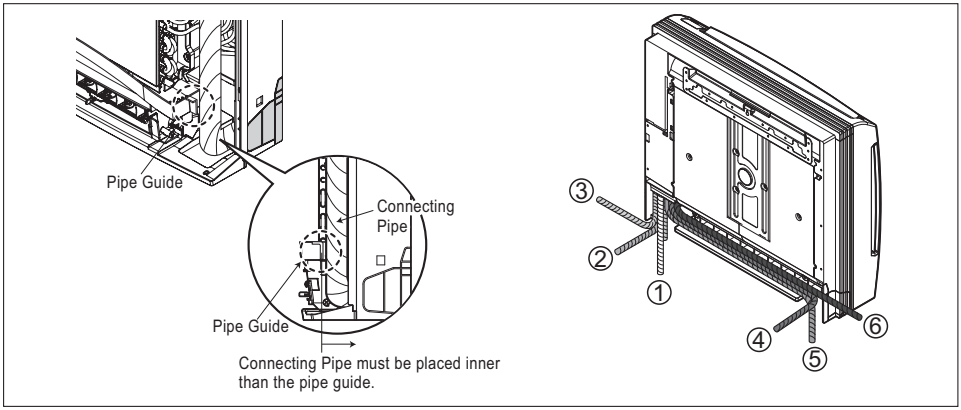
Connecting the Piping

When you connect the refrigerant pipe, it is easier that you connect the gas pipe first.

1. Hold up the Sensor Link.
2. Separate the Pipe Bracket (2 screws)
3. Connect the refrigerant pipe. (Refer to next page)
4. Assemble the Pipe Bracket (2 screws)
5. Put down the Sensor Link.



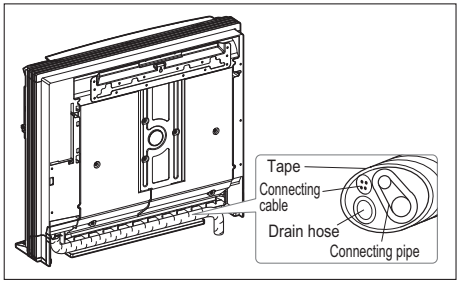
6. After connecting, check the pipe arrangement as per illustration.
7. The piping can be arranged in six ways as shown in the illustration below.



⚠ CAUTION

If the drain hose is routed inside the room insulate the hose with an insulation material* so that dripping from sweating (condensation) will not damage furniture or floors.

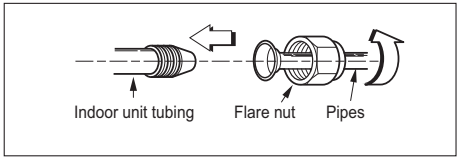
* Foamed polyethylene or equivalent is recommended.

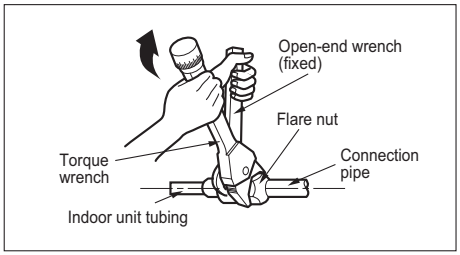


Connecting the installation pipe and drain hose to the indoor unit.

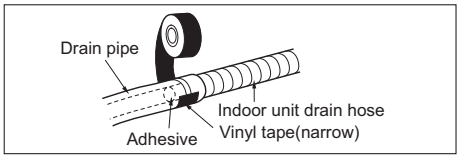
1. Align the center of the pipes and sufficiently tighten the flare nut by hand.
2. Tighten the flare nut with a wrench.

Piping Size		Torque		
mm	inch	kgf·cm	N·m	lbf·ft
Ø 6.35	Ø 1/4	180 ~ 250	17.6 ~ 24.5	13 ~ 18
Ø 9.52	Ø 3/8	340 ~ 420	33.3 ~ 41.2	25 ~ 30
Ø 12.7	Ø 1/2	550 ~ 660	53.9 ~ 64.7	40 ~ 48
Ø 15.88	Ø 5/8	630 ~ 820	61.7 ~ 80.4	45 ~ 59
Ø 19.05	Ø 3/4	990 ~ 1,210	97.0 ~ 118.7	71 ~ 87



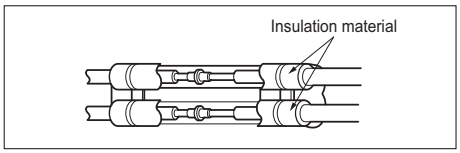


3. When needed to extend the drain hose of indoor unit, assemble the drain pipe as shown on the drawing



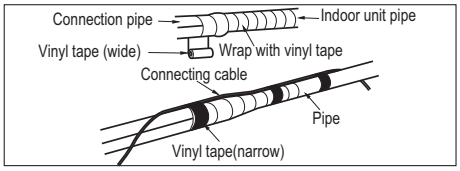
Wrap the insulation material around the connecting portion.

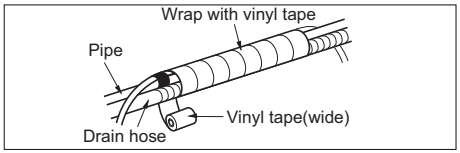
1. Overlap the connection pipe insulation material and the indoor unit pipe insulation material. Bind them together with vinyl tape so that there may be no gap.



2. Wrap the area which accommodates the rear piping housing section with vinyl tape.

3. Bundle the piping and drain hose together by wrapping them with vinyl tape sufficient enough to cover where they fit into the rear piping housing section.

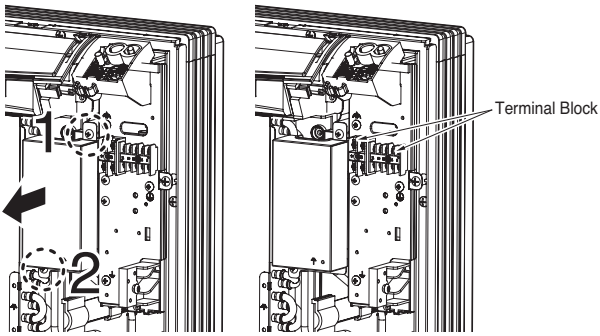




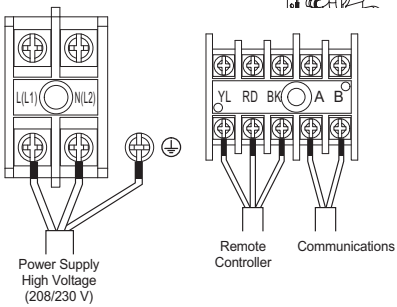
Wiring Connection

Wiring Connection

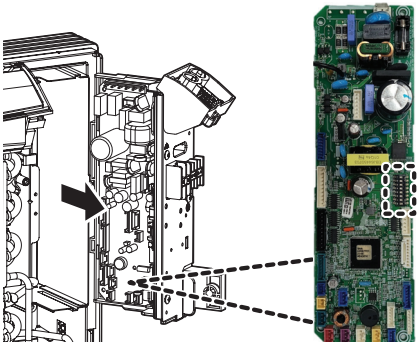
1. Loosen No 1,2 screws of control box cover.



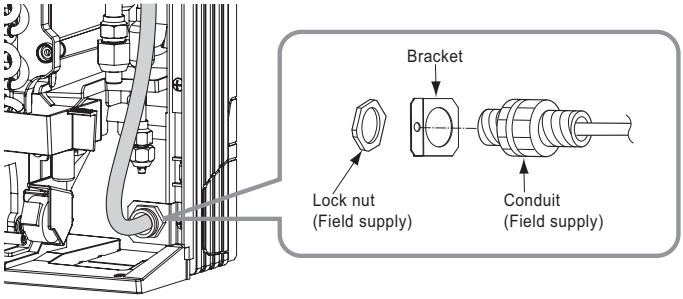
2. Connect the cable to the Terminal block as below diagram.



3. If indoor unit's setting is needed, loosen No.3 screw and lift up the PCB. (option: usage of bottom vanes, limit angle of top vane)

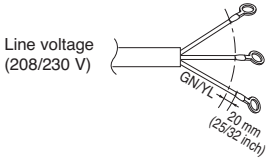


Dip S/W	Description	S/W OFF	S/W ON
S/W 5	Install scene	Exposed	Half Concealed
S/W 7	Vane	Top+Bottom vane	Top vane only

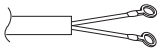


⚠ CAUTION

The power and communication connecting cable between the outdoor and indoor units must comply with the following specifications: NRTL Recognized (for example, UL or ETL recognized and CSA certified).
AWG 18 is the minimum recommended wire size, however, the selected conductors must comply with local codes and be suitable for installation in wet locations.



Power supply cable

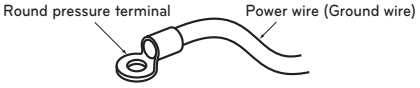


Communication cable

If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.
When the connection line between the indoor unit and outdoor unit is over 40m(131 ft), separate power and communication wires by at least 50 mm(2 inch).

Precautions when laying power and ground wiring

Use round pressure terminals for connections to the power terminal block.
When laying ground wiring, you must use round pressure terminals.



When none are available, follow the instructions below.

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

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

NOTICE

Use connection cable NRTL(UL, ETL, CAS…) listed and stranded copper(4) THHN conductors, sunlight (UV) resistant ROHS compliant PVC jacket 600 V direct burial listed, approved for wet conditions. Temperature rated for –20 °C(-4 °F) to
90 °C(194 °F). And this cable should be enclosed in conduit.

⚠ WARNING

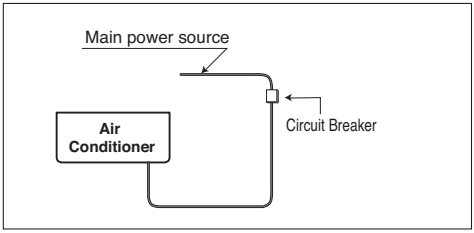
- Be sure to comply with local and national codes while running the wire from the indoor unit to the outdoor unit(size of wire and wiring method, etc).
- Every wire must be connected firmly.
- No wire should be allowed to touch refrigerant tubing, the compressor or any moving parts.
- The communication wirings of air conditioner should be separate and isolated from external device's electric wiring such as computers, elevator, radio & Television broadcasting facilities, as well as medical imaging offices.
- All communication and power wiring must be connected to the terminals using connectors certified or recognized according to UL and CSA standard.

Electrical Wiring

1. All wiring must comply with LOCAL REGULATIONS.
2. Select a power source that is capable of supplying the current required by the air conditioner.
3. Feed the power source to the unit via a distribution switch board designed for this purpose.
4. The terminal screws inside the control box may be loose due to vibration during transport. Check the screws for loose connection.
   (Running the air conditioner with loose connection can overload and damage electrical components.)
5. Always ground the air conditioner with a grounding wire and connector to meet the LOCAL REGULATION.

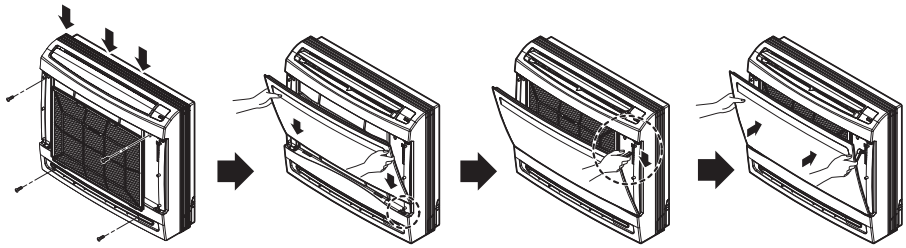
⚠ CAUTION

- **The circuit diagram is not subject to change without notice.**
- **Be sure to connect wires according to the wiring diagram.**
- **Connect the wires firmly, so that not to be pulled out easily.**
- **Connect the wires according to color codes by referring the wiring diagram.**



Installation of Front Panel

1. Fit the Front Panel onto the indoor unit and push the upper area that are marked with arrows.
2. Check the air sensor and install the 4 screws.
3. Then assemble the front grille and put the hinges.
4. Close the grille.

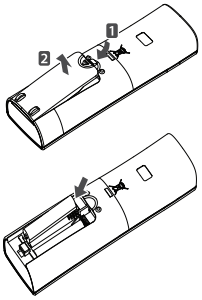


Test Running

1. Check that all tubing and wiring are properly connected.
2. Check that the gas and liquid side service valves are fully open.

Prepare remote controller

1. Remove the battery cover by pulling it according to the arrow direction.
2. Insert new batteries making sure that the (+) and (-) of battery are installed correctly.
3. Reattach the cover by sliding it back into position.

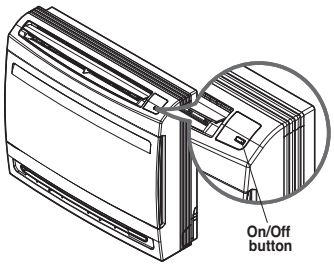


NOTICE

1. Always use/replace both batteries of same type.
2. If the system is not to be used for a long time, remove the batteries to save their working life.
3. If the display screen of remote controller starts, fading replace both of the batteries.
4. Use 2 AAA(1.5 volt) batteries.

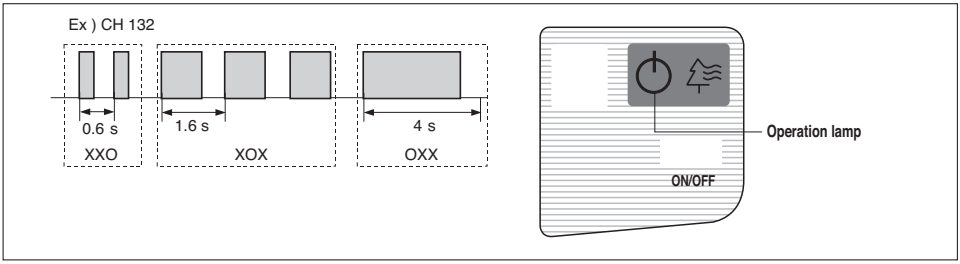
Test operation

During the TEST OPERATION, the unit operates in cooling mode at high speed fan, regardless of room temperature and resets in 18 minutes. During test operation, if remote controller signal is received, the unit operates as remote controller sets. If you want to use this operation, **Press and hold the ON/OFF button for 3~5 seconds**, then the buzzer sound 1 'beep'. If you want to stop the operation, re-press the button.



Self-Diagnosis Function

This unit has an inbuilt error diagnosis capability. Error is displayed by 'RED' Operation Lamp. Please contact your serviceman/dealer in such a situation.

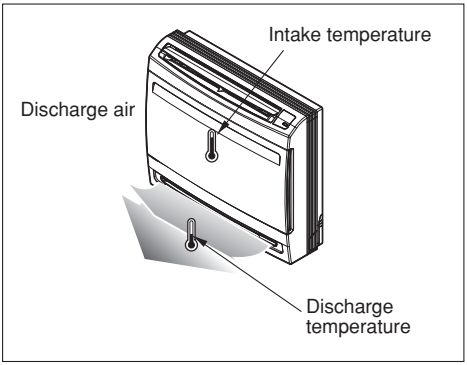


Evaluation of the performance

Operate the unit for 10~15 minutes, then check the system refrigerant charge:

1. Measure the pressure of the gas side service valve.
2. Measure the air temperature from inlet and outlet of air conditioner.
3. Ensure the difference between the inlet and outlet temperature is more than 14.4 °F (8 °C).
4. For reference; the gas side pressure at optimum condition is shown on table (cooling)

The air conditioner is now ready to use.



Refrigerant	Outside ambient TEMP.	The pressure of the gas side
R32	95°F (35°C)	8.5~9.5kg/cm²G(120~135 P.S.I.G.)

NOTICE

If the actual pressure is higher than shown, the system is most likely over-charged, and charge should be removed. If the actual pressure are lower than shown, the system is most likely undercharged, and charge should be added.

Leak Detection System

R32 Leak Detection System

The R32 refrigerant leak detector detects the concentration of refrigerant (R32) in the air. When the concentration of refrigerant in the air is 5 000 ppm or higher, Leak Detection system will be activated. If Leak Detection system is activated, the following actions will be operated automatically:

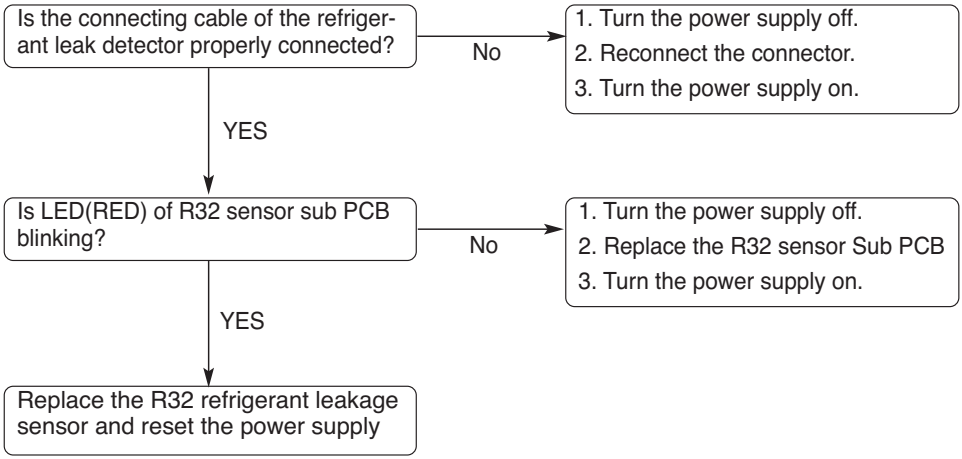
- Wired remote controller and indoor units display an Error code and R32 Sensor Sub PCB issues an alarm so that the user realizes that there is a refrigerant leak.(The alarm function is only available in some product)
- The fan of the indoor unit where the error code is displayed will turn on.
- The unit cannot be used until error code disappears.

⚠ WARNING

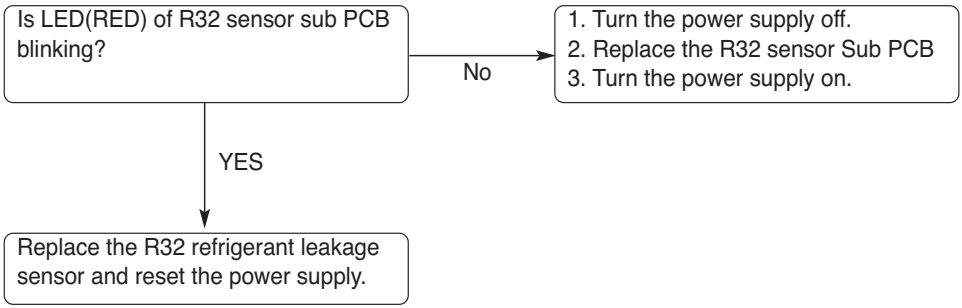
- If there are error code such as 228,229 and 230, ventilate the room and contact authorized personnel immediately.
- If there is an error code of 236, the refrigerant leak detector has a lifetime of less than 6 months. Contact authorized personnel immediately.
- The R32 refrigerant detector must be replaced after detecting any gases or at the end of its lifetime (3650 days).
- Refrigerant leak detectors for Leak Detection System shall only be replaced with detectors specified by the appliance manufacture.
- R32 Leak detection system replacement shall be carried out by authorized personnel only.
- There is possibility detecting other gases, not R32. Do not use highly concentrated chemicals (e.g. Ethanol, Smoke, Hair spray and pesticide) near the indoor unit. R32 refrigerant leakage sensor may detect incorrectly.

Troubleshooting

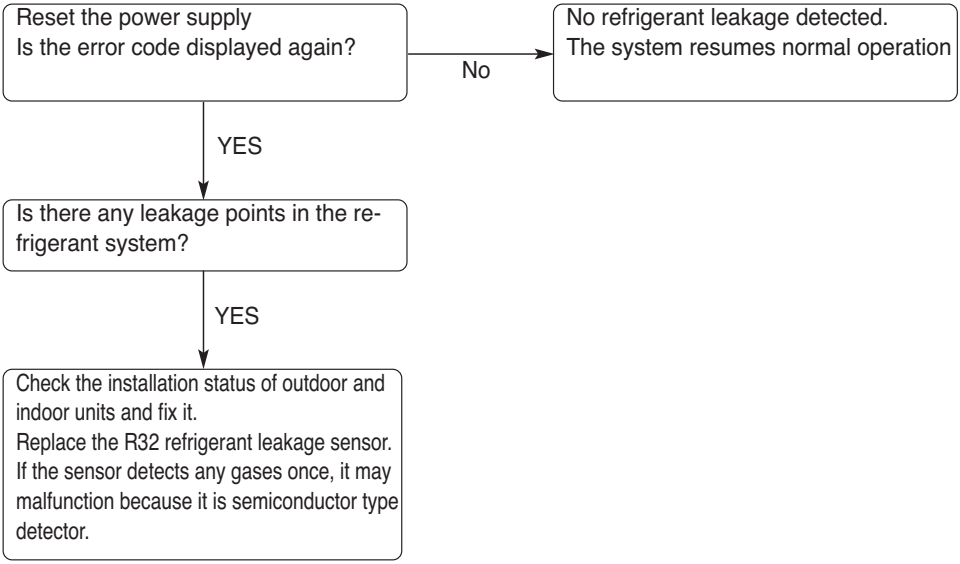
Error Code	Error Type	Error point	Main reasons
CH 228	Refrigerant leak detector malfunction error	Refrigerant leak detector has failed.	• The sensor is breaking of short. • Abnormal voltage of DC converter. • Abnormal operation of microprocessor.



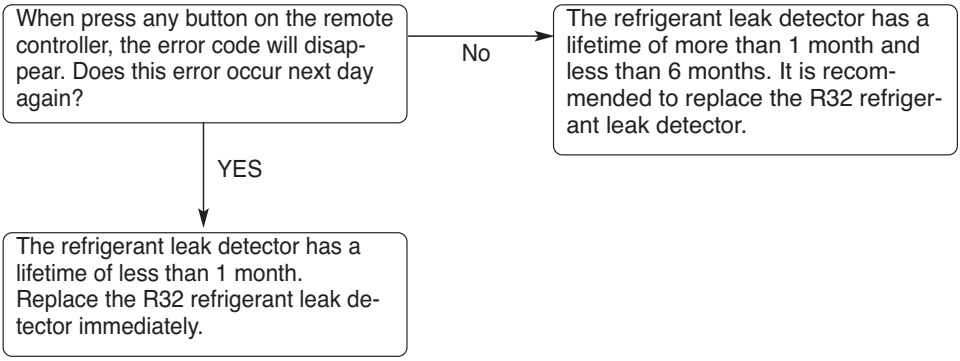
Error Code	Error Type	Error point	Main reasons
CH 229	Refrigerant leak detector lifetime error	The lifetime of the refrigerant leak detector has reached the end	• The lifetime of the refrigerant leak detector has been reached, so replace the sensor.



Error Code	Error Type	Error point	Main reasons
CH 230	Refrigerant leak detection error	Refrigerant leak detected by refrigerant leak detector.	• Refrigerant leak detection



Error Code	Error Type	Error point	Main reasons
CH 236	Refrigerant leak detector lifetime pre-alarm	An error occurs once a month when the lifespan of the leak detector has elapsed 9 years and 6 months. An error occurs once a day when the lifespan of the leak detector has elapsed 9 years and 11 months.	• The refrigerant leak detector has 10 years lifespan.



US	Please call the installing contractor of your product, as warranty service will be provided by them.
CANADA	Service call Number # : (888) LG Canada, (888) 542-2623 Numéro pour les appels de service : LG Canada, 1-888-542-2623