



INSTALLATION MANUAL

AIR CONDITIONER



Read this installation manual thoroughly before installing the appliance and keep it handy for reference at all times.

TYPE: WALL MOUNTED

EN ENGLISH

ES ESPAÑOL

DE DEUTSCH

EL ΕΛΛΗΝΙΚΑ

FR FRANÇAIS

IT ITALIANO

NL NEDERLANDS

CZ ČEŠTINA

PL POLSKI

RO ROMÂNĂ

UK УКРАЇНСЬКА



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This manual may contain images or content that may be different from the model you purchased.
This manual is subject to revision by the manufacturer.

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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.

The following symbols are displayed on indoor and outdoor units.



This symbol indicates that this appliance uses a flammable refrigerant. If the refrigerant is leaked and exposure to an external ignition source, there is a risk of fire.



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.



This symbol indicates that information is available such as the Operating Manual or Installation Manual.

IMPORTANT SAFETY INSTRUCTIONS

WARNING

To reduce the risk of explosion, fire, death, electric shock, injury or scalding to persons when using this product, follow basic precautions, including the following:

- The information contained in the manual is intended for use by a qualified service technician who is familiar with the safety procedures and equipped with the proper tools and test instruments.
- The appliance shall be installed in accordance with national wiring regulations.
- Compliance with national gas regulations shall be observed.
- 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 person in order to avoid a hazard.
- Appliance shall be disconnected from its power source during service and when replacing parts.
- Failure to read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.
- Check that appliance's voltage level is 90 % ~ 110 % of the rated voltage. (To check it, refer to the label attached to the side of the appliance.)
- Do not install the appliance on an unstable surface or in a place where there is danger of it falling.
- This appliance must be grounded. In the event of malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current.

- Improper connection of the equipment-grounding conductor can result in risk of electric shock. Check with a qualified electrician or service personnel if you are in doubt as to whether the appliance is properly grounded.
- If the power supply cable is damaged or the cable connection is loose, do not use the power supply cable and contact an authorized service center.
- Do not connect the ground wire to a gas pipe, a lightning rod, or a telephone ground wire.
- Do not share the power supply for this unit with other appliances or devices, it must be a dedicated power source for this appliance.
- Do not modify or extend the power cable.
- Ensure the power cable is secure so that it does not come out while the appliance is operating.
- Do not touch the power plug or the appliance controls with wet hands.
- Cut the power during a severe thunderstorm or lightening or when not in use for a long period of time.
- Do not grab the power cable when removing the plug, but rather hold the power plug tightly.
- Do not bend the power cable excessively or place a heavy object on it.
- Do not turn on the circuit breaker or power when covers are removed or opened.
- Make sure that the pipe and the power cable connecting the indoor and outdoor units are not pulled too tight when installing the appliance.
- Install dedicated electric outlet and circuit breaker for the appliance.
- Make sure to close the cover of the control box after connecting the wiring to the appliance.

- Loose connections may cause electrical sparks, injury, and death.
- Do not install the appliance in a place where flammable liquids or gases such as gasoline, propane, paint thinner, etc., are stored.
- Do not install the unit in potentially explosive atmospheres.
- Only use the refrigerant designated on the label, do not put any foreign substances into the appliance.
- Do not use uncertified refrigerants.
- 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.
- Keep any required ventilation openings clear of obstruction.
- 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.
- When mechanical connectors are reused indoors, sealing parts shall be renewed.
- When flared joints are reused indoors, the flare part shall be re-fabricated.
- Mechanical connections (mechanical connectors or flared joints) shall be accessible for maintenance purposes.

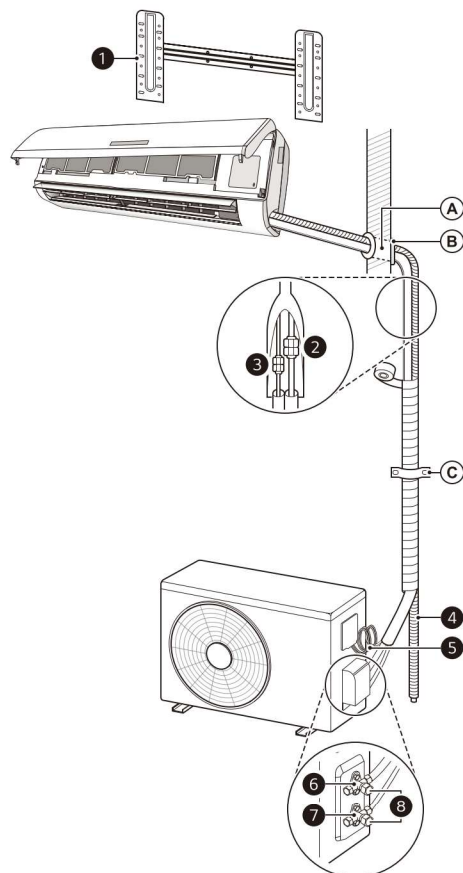
- A brazed, welded, or mechanical connection shall be made before opening the valves to permit refrigerant to flow between the refrigerating system parts.
- Use non-flammable gas (nitrogen) to check for leak and to purge air.
- Use only refrigerant grade pipe specific for R32 refrigerant. Do Not Use R22 products, which have lower pressure ratings and can result in excessive pressure, explosion and injury.
- Inert gas (oxygen free nitrogen) should be used when you checking for leaks, cleaning or repairs of pipes etc. If you are using combustible gases including oxygen, appliance may have the risk of fires and explosions.
- Do not use copper pipes which are deformed. Otherwise, the expansion valve or capillary tube may become blocked with contaminants.
- Ducts connected to an appliance shall not contain an ignition source.
- The installation of pipe-work shall be kept to a minimum.
- When installing or relocating the appliance, consult with a qualified technician to set up the appliance. The appliance should not be installed by someone without proper qualifications.
- Operating the appliance while it is disconnected to the pipe could result in explosion and damage. Use the appliance after connecting it to the pipe once the appliance has been relocated and the refrigerant circuit repaired.
- Do not place a heater or other heating appliances near the power cable.
- Do not step on and climb on the outdoor unit. It may cause electric shock, fire or damage to the unit.
- Close the extra installation hole.

 CAUTION

To reduce the risk of minor injury to persons, malfunction, or damage to the product or property when using this product, follow basic precautions, including the following:

- Install at places where it can endure the weight and vibration/noise of the outdoor unit.
- Install the appliance in a place where the noise from the outdoor unit or the exhaust air will not inconvenience the neighbors. Failure to do so may result in conflict with the neighbors.
- Do not install the outdoor unit near the septic tank, drain or toilet exhaust duct. It results in a corrosion of a heat exchanger or pipe.
- Ensure the appliance is installed level. Otherwise, it may cause vibration or water leakage.
- Make sure that the base of the outdoor unit is firmly fixed.
- Install the drain hose properly for the smooth drainage of water condensation.
- 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 touch the leaking refrigerant during installation or repair.
- Do not discharge the refrigerant into the atmosphere.
- If refrigerant leaks, ventilate the room.
- Always check for gas (refrigerant) leakage after installation or repair of appliance.
- Be cautious not to get injured by the sharp edges while installing the appliance or taking it out of its packaging.
- Ensure that you carry by the chassis when you lift the unit.

- This appliance should only be transported by two or more people holding the appliance securely.
- During working on heights fasten safety belt to put for personal safety.
- Safely dispose of packing materials such as screws, nails, plastic bag or batteries using proper packaging after installation or repair.
- To avoid nitrogen entering the refrigerant system in a liquid state, the top of the cylinder must be higher than its bottom when you pressurize the system.
- The tubing shall be protected to the extent that it will not be handled or used for carrying during moving of the appliance.
- Ventilation system have to be installed in the space when appliance with R32 is using for cooling of electric equipment.
- Do not use the appliance for special purposes, such as preserving foods, works of art, and etc. It is an appliance for consumer purposes, not a precision refrigerant system. There is risk of damage or loss of property.



Parts

- ① Installation Plate
- ② Gas Pipe (Larger Pipe)
- ③ Liquid Pipe (Smaller Pipe)
- ④ Drain Hose
- ⑤ Power Supply Cable
- ⑥ Gas Service Valve
- ⑦ Liquid Service Valve
 - This feature could be different depending on models.
- ⑧ (Gas/Liquid) Service Valve Cap

NOTE

- If needed, additional pipes, drain hoses, and power cables must be purchased separately.

Local Purchases

It is highly recommended that you install the following parts:

- Ⓐ Sleeve
- Ⓑ Sealant
- Ⓒ Clamp

NOTE

- The feature may be changed according to the type of model.

Installation Tools



Phillips Screwdriver



Standard Screwdriver



Electrical Drill



Hole Core Drill



Adjustable Wrench



Torque Wrench



Spirit Level



Tape Measure



Tube Cutter



Tube Expander



Reamer



Cutting Knife



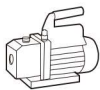
Hexagon Wrench



Thermometer

Gas Leak Detector
(R32)

Current Meter

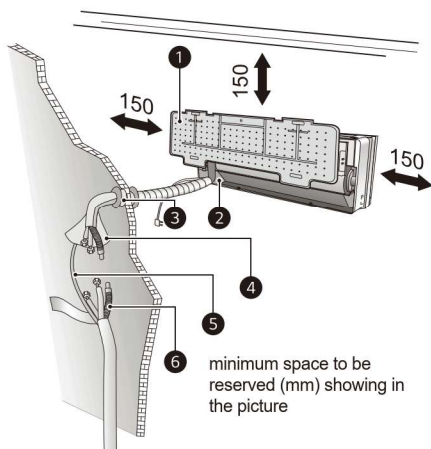
Manifold Gauge
(R32)Vacuum Pump
(R32)Reclaim Unit
(R32)Ventilation Equipment
(R32)

NOTE

- Leakage detector which is confirmed rated for use with R32, should be used when you are checking for leaks.
- 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.
- Ventilation Equipment: For AC system using R32 (A2L gases) a ventilation equipment with "Ex" mark only should be used when a system design exceeds the Lower Flammable Limit if the gas was to escape from a system.

Indoor Unit

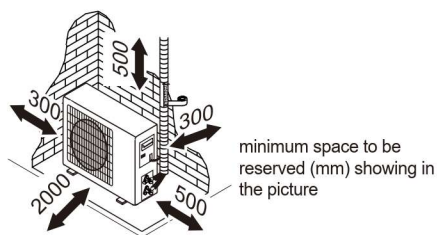
- Install the indoor unit on a strong wall that is not subject to vibrations.
- The in let and outlet ports should not be obstructed: the air should be able to blow all over the room.
- Do not install the unit near a source of heat, steam, or flammable gas.
- Install the unit near an electric socket or private circuit.
- Do not install the unit where it will be exposed to direct sunlight.
- Select a site where the condensed water can be easily drained out, and where it is easily connected to outdoor unit.
- Check the machine operation regularly and reserve the necessary spaces as shown in the picture.
- Select a place where the filter can be easily taken out.



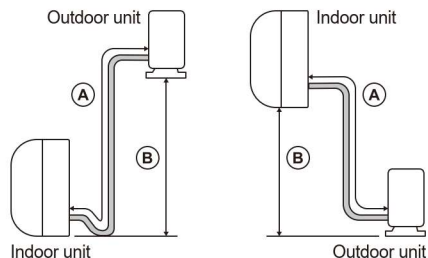
- ① Mounting plate
- ② Condensed water drain pipe
- ③ Sleeve
- ④ Insulating covering
- ⑤ Electrical cable
- ⑥ Water drain pipe

Outdoor Unit

- Do not install the outdoor unit near sources of heat, steam or flammable gas.
- Do not install the unit in too windy or dusty places.
- Do not install the unit where people often pass. Select a place where the air discharge and operating sound will not disturb the neighbours.
- Avoid installing the unit where it will be exposed to direct sunlight (other wise use a protection, if necessary, that should not interfere with the air flow).
- Reserve the spaces as shown in the picture for the air to circulate freely.
- Install the outdoor unit in a safe and solid place.
- If the outdoor unit is subject to vibration, place rubber gaskets onto the feet of the unit.



Installation Diagram



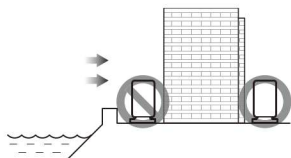
- (A) Should be less than 15 m
- (B) Height should be less than 10 m

NOTE

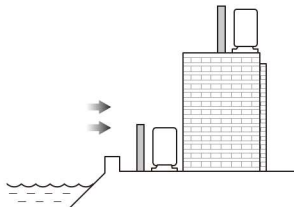
- The purchaser must ensure that the person and/or company who is to install, maintain or repair this air conditioner has qualifications and experience in refrigerant products.
- Maximum Communication Cable Length (m) =
 (A) Maximum Length (m) x 1.1

Precautions for Installation in Coastal Areas

- Do not install the appliance in an area where it is directly exposed to sea air (salt spray).
 - Saline conditions are a cause of corrosion. (Particularly, corrosion of the condenser and evaporator can damage the appliance or impair its performance.)



- Set up windbreak in front of the outdoor unit if installing it in coastal areas.
 - Avoid direct exposure to salt winds.
 - Install a firm and stiff concrete-wind shield that can withstand salt winds.



NOTE

- If you have to set up the outdoor unit in a coastal area, unless the installation conditions are able to satisfy the above precautions, call an LG Electronics Customer Service Center to find out about alternatives.

Precautions for Installation in Special Regions (Snowfall, Strong Winds, Area with Severely Cold or Humid Weather)

- Install the outdoor unit where the airflow fans are protected from being buried under snow. Accumulated snow could cause the device to malfunction by clogging the airflow.
- Install the outdoor unit on a platform at least 500 mm above the ground where a location has heavier snowfall than the annual average. (The size of the platform should correspond with the size of the outdoor unit. If the platform is wider or longer than the outdoor unit, snow may accumulate.)
- Put a snow-protective cover on the outdoor unit.
- Place the inlet and outlet for the outdoor unit in opposite directions to direct airflow and to prevent snow and rain from flowing into the equipment.
- Install the outdoor unit in a spot that is well lit and well ventilated in highly humid areas (near sea or fresh water bodies).

Refrigerant (for R32 Only)

WARNING

- The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- The appliance shall be stored in a room without continuously operating open flames (for example an operating gas appliance) and ignition sources (for example an operating electric heater).
- The appliance shall be stored so as to prevent mechanical damage from occurring.
- 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.
- Pipe-work shall be protected from physical damage.

Minimum Floor Area

Refer the minimum floor area depending on the installation height. If outdoor units are installed indoors, outdoor units also meet the minimum floor area.

m (kg)	Minimum Floor Area (m ²)		
	Floor Standing	Wall Mounted	Ceiling Mounted
< 1.224	-	-	-
1.224	12.90	1.43	0.956
1.4	16.82	1.87	1.25
1.6	21.97	2.44	1.63
1.8	27.80	3.09	2.07
2.0	34.32	3.81	2.55
2.2	41.53	4.61	3.09
2.4	49.42	5.49	3.68

- m: Total refrigerant amount in the system
- Total refrigerant amount: Factory refrigerant charge + Additional refrigerant amount

NOTE

- 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.
- Refrigeration 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.

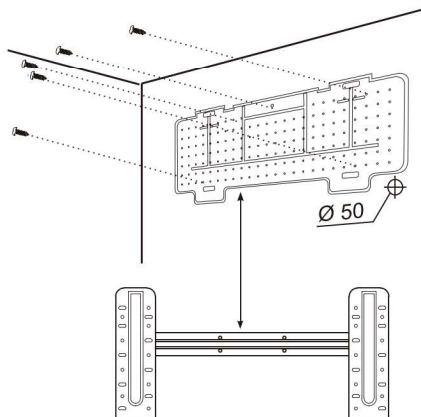
Before starting installation, decide on the position of the indoor and outdoor units, taking into account the minimum space reserved around the units.

! WARNING

- Do not install your air conditioner in a wet room such as a bathroom or laundry etc.
- The installation site should be 250 cm or more above the floor.

Installation of the Mounting Plate

- 1 Always mount the rear panel horizontally and vertically.
- 2 Drill 32 mm deep holes in the wall to fix the plate.
- 3 Insert the plastic anchors into the hole.
- 4 Fix the rear panel on the wall with provided tapping screws.
- 5 Be sure that the rear panel has been fixed firmly enough to withstand the weight.

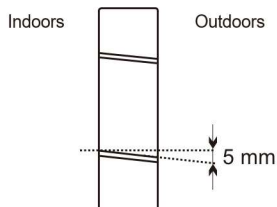


NOTE

- The shape of the mounting plate may be different from the one above, but installation method is similar.

Drilling a Hole in the Wall for the Piping

- 1 Make the piping hole (Ø 55) in the wall at a slight downward slant to the outdoor side.
- 2 Insert the piping-hole sleeve into the hole to prevent the connection piping and wiring from being damaged when passing through the hole.



! WARNING

- The hole must slope downwards towards the exterior.

NOTE

- Keep the drain pipe down towards the direction of the wall hole, otherwise leakage may occur.

Preparing the Pipe and Power Cable

Once the gap between the indoor unit and the outdoor unit one has been measured, cut the pipe and power cable to the proper length.

- Cut the pipe slightly longer than the measurement.
- Cut the power cable 1.5 m longer than the pipe.

NOTE

- If you purchase the pipe separately, do not use thinner pipe than the specified value.
- Use the deoxidized copper as piping materials to install.

Flare Work

Flaring must be performed accurately to prevent any gas leakage.

- 1 Cut the pipe with a copper tube cutter.

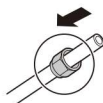


- 2 Remove the burrs using a reamer.

- Hold the edge of the cut pipe so it is pointing downward and remove the burrs. This helps prevent metal powder from getting into the pipe.



- 3 Put the flare nut onto the pipe (burr is removed).



- 4 After inserting the pipe into the tube expander, begin flaring.

- As seen in diagram "a", put the pipe slightly above the upper side of the Bar.



Piping Size		a (Wing Nut)	Thickness
mm	inch	mm	mm
Ø 6.35	Ø 1/4	1.1~1.3	0.7
Ø 9.52	Ø 3/8	1.5~1.7	0.8
Ø 12.70	Ø 1/2	1.6~1.8	0.8
Ø 15.88	Ø 5/8	1.6~1.8	1.0

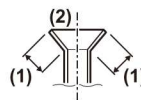
NOTE

- a (Clutch): 0.0~0.5 mm
- Temper grade of pipe: Annealed

- 5 Check out the condition of the flare.

- Check that the flared section of the pipe (1) was flared evenly in its curved surface and thickness.
- Make sure all flared surfaces (2) have been flared smoothly.

Example of Correct Flaring



Example of Incorrect Flaring

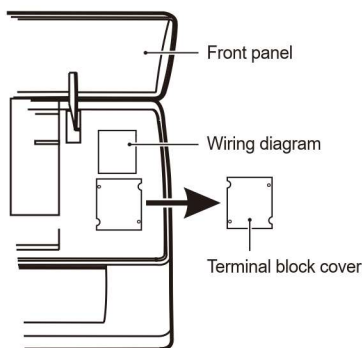


NOTE

- If the expanded pipe has tilting, surface damage, cracks, or a thickness imbalance, perform the flaring operation again.

Electrical Connections

- 1 Open the front panel.
- 2 Take off the cover as indicated in the picture (by removing a screw or breaking the hooks).
- 3 For the electrical connections, see the circuit diagram on the right part of the unit under the front panel.
- 4 Connect the cable wires to the screw terminals by following the numbering, use wire size suitable to the electric power input (see name plate on the unit) and according to all current national safety code requirements.

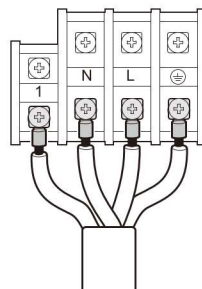


! WARNING

- The cable connecting the outdoor and indoor units must be suitable for outdoor use. (code designation 60245 IEC 57)
- The plug must be accessible also after the appliance has been installed so that it can be pulled out if necessary.
- An efficient earth connection must be ensured.
- If the power cable is damaged, it must be replaced by an authorised Service Centre.

NOTE

- Optional the wires can be connected to the main PCB of indoor unit by manufacturer according to the model without terminal block.



Inter-Connecting Cable

! WARNING

- Loose screws may cause electrical sparks, injury, and death.

! CAUTION

- Without exception, install an independent power circuit specifically designed for the appliance. Refer to the circuit diagram attached inside the control cover for where to connect the cable.
- Screw connections in the appliance's control box can vibrate loose during transporting and operating the appliance. Check that all the connections in the appliance are securely fixed at all times. (If they have loosened, both the wire and the termination can be broken.)

NOTE

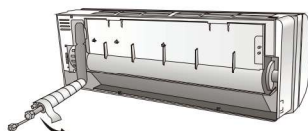
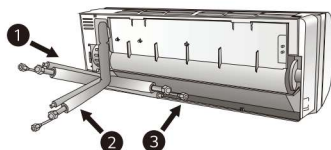
- Circuit diagrams may be altered by the manufacturer without any notification.
- The feature may be changed according to the type of model.

Refrigerant Piping Connection

The piping can be run in the 3 directions indicated by numbers in the picture. When the piping is run in direction 1 or 3, cut a notch along the groove on the side of the indoor unit with a cutter.

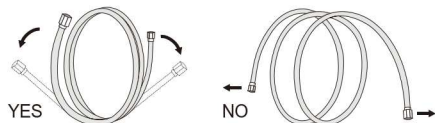
Run the piping in the direction of the wall hole and bind the copper pipes, the drain pipe and the power cables together with the tape with the drain pipe at the bottom, so that water can flow freely.

- Do not remove the cap from the pipe until connecting it, to avoid dampness or dirt from entering.
- If the pipe is bent or pulled too often, it will become stiff. Do not bend the pipe more than three times at one point.
- When extending the rolled pipe, straighten the pipe by unwinding it gently as shown in the picture.



Shape the connection pipe

Extending the rolled pipe

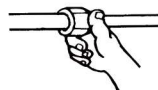


Connections to the Indoor Unit

- 1 Remove the indoor unit pipe cap (check that there is no debris inside).



- 2 Insert the flare nut and create a flange at the extreme end of the connection pipe.



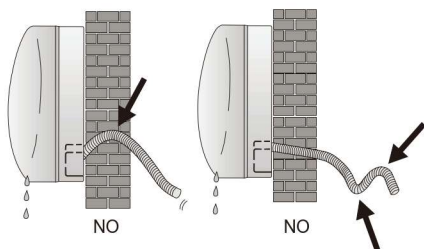
- 3 Tighten the connections by using two wrenches working in opposite directions.



Indoor Unit Condensed Water Drainage

The indoor unit condensed water drainage is fundamental for the success of the installation.

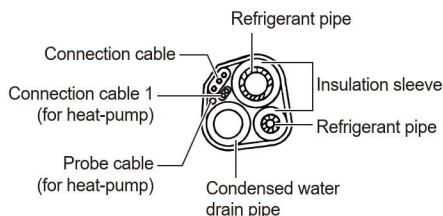
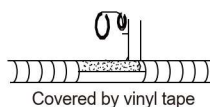
- 1 Place the drain hose below the piping, taking care not to create siphons.
- 2 The drain hose must slant downwards to aid drainage.
- 3 Do not bend the drain hose or leave it protruding or twisted and do not put the end of it in water. If an extension is connected to the drain hose, ensure that it is lagged when it passes into the indoor unit.
- 4 If the piping is installed to the right, the pipes, power cable and drain hose must be lagged and secured onto the rear of the unit with a pipe connection.
 - 1) Insert the pipe connection into the relative slot.
 - 2) Press to join the pipe connection to the base.



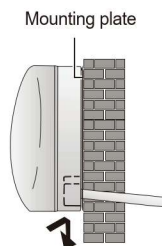
Installation of the Indoor Unit

After having connected the pipe according to the instructions, install the connection cables. Now install the drain pipe. After connection, lag the pipe, cables and drain pipe with the insulating material.

- 1 Arrange the pipes, cables and drain hose well.
- 2 Lag the pipe joints with insulating material, securing it with vinyl tape.



- 3 Run the bound pipe, cables and drain pipe through the wall hole and mount the indoor unit onto the upper part of the mounting plate securely.
- 4 Press and push the lower part of the indoor unit tightly against the mounting plate.

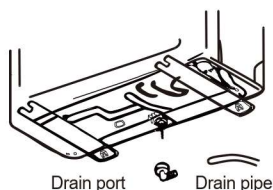


- The outdoor unit should be installed on a solid wall and fastened securely.
- The following procedure must be observed before connecting the pipes and connecting cables: decide which is the best position on the wall and leave enough space to be able to carry out maintenance easily.
- Fasten the support to the wall using screw anchors which are particularly suited to the type of wall.
- Use a larger quantity of screw anchors than normally required for the weight they have to bear to avoid vibration during operation and remain fastened in the same position for years without the screws becoming loose.
- The unit must be installed following the national regulations.

Outdoor Unit Condensed Water Drainage (only for Heat Pump Models)

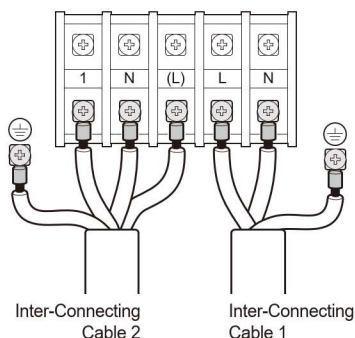
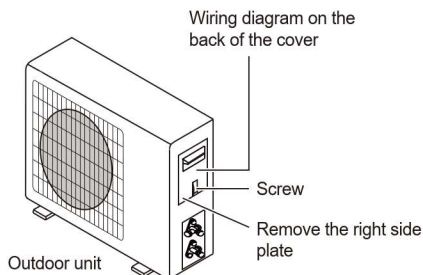
The condensed water and the ice formed in the outdoor unit during heating operation can be drained away through the drain pipe.

- 1 Fasten the drain port in the 25 mm hole placed in the part of the unit as shown in the picture.
- 2 Connect the drain port and the drain pipe. Pay attention that water is drained in a suitable place.



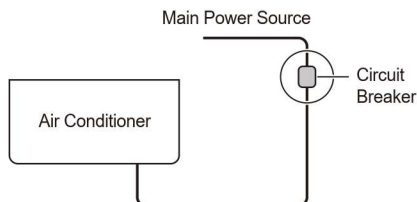
Electrical Connections

- 1 Remove the handle on the right side plate of outdoor unit.
- 2 Connect the power connection cord to the terminal board. Wiring should fit that of indoor unit.
- 3 With following number and code, use compatible cable size with voltage input (check nameplate on unit) according to current national requirement code. (Connection must be fixed properly). Use supply cable code 60245 IEC 57 to connecting indoor and outdoor unit.
- 4 Recover the handle.



Circuit Breaker

Between the power and the appliance, install a certified circuit breaker. The interrupting device should be equipped to properly block all power sources.



Model	Circuit Breaker
WZ09AAS	16 A
WZ09AWS	
WZ12AAS	
WZ12AWS	
WZ18AAS	
WZ18AWS	
WZ24AAS	
WZ24AWS	

NOTE

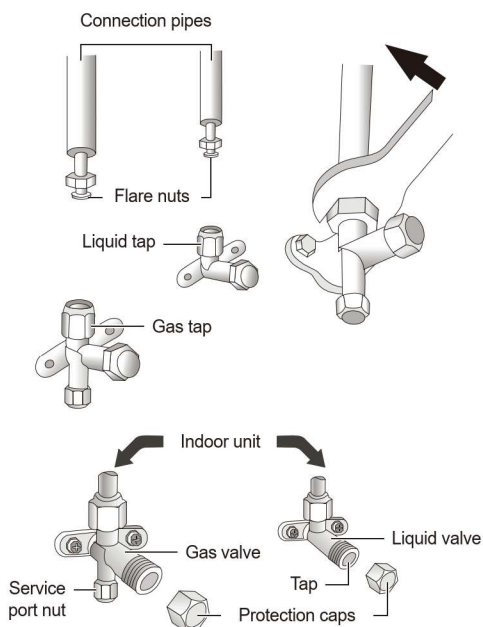
- Check whether the current capacity of the selected cable and wiring exceeds the rated capacity of the recommended circuit breaker.

Connecting the Pipes

Screw the flare nuts to the outdoor unit coupling with the same tightening procedures described for the indoor unit.

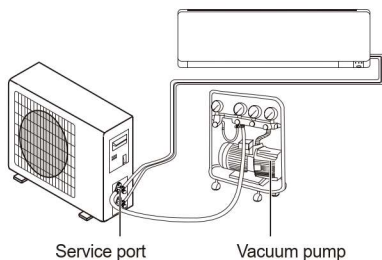
To avoid leakage, pay attention to the following points:

- Tighten the flare nuts using two wrenches. Pay attention not to damage the pipes.
- If the tightening torque is not sufficient, there will probably be some leakage. With excessive tightening torque there will also be some leakage, as the flange could be damaged.
- The surest system consists in tightening the connection by using a fix wrench and a torque wrench: in this case use the table on page 24.



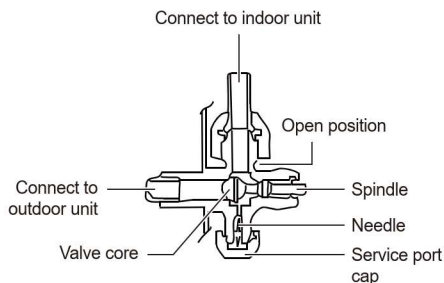
Bleeding

The air and humidity left inside the refrigerant circulation can cause compressor malfunction. After having connected the indoor and outdoor units, bleed the air and humidity from the refrigerant circulation using a vacuum pump.

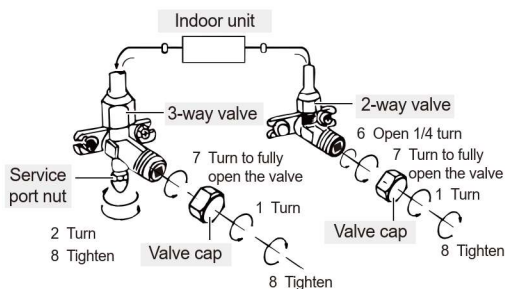


- 1 Unscrew and remove the caps from the 2-way and 3-way valves.
- 2 Unscrew and remove the cap from the service port.
- 3 Connect the vacuum pump hose to the service port.
- 4 Operate the vacuum pump for 10 - 15 minutes until an absolute vacuum of 10 mm Hg has been reached.
- 5 With the vacuum pump still in operation, close the low - pressure knob on the vacuum pump coupling. Stop the vacuum pump.
- 6 Open the 2-way valve by 1/4 turn and then close it after 10 seconds. Check all the joints for leaks using liquid soap or an electronic leak device.
- 7 Turn the body of the 2-way and 3-way valves. Disconnect the vacuum pump hose.
- 8 Replace and tighten all the caps on the valves.

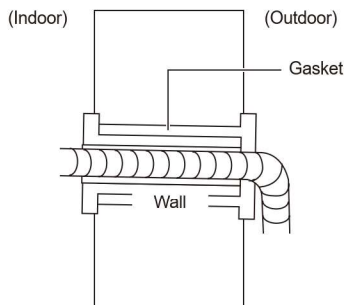
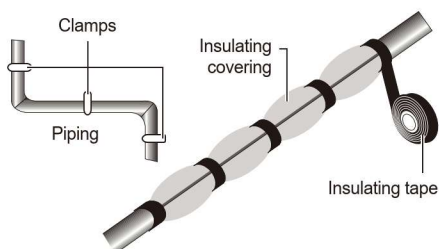
3-way valve diagram



Refrigerant flow direction



- 1 Wind insulating covering around the joints of the indoor unit and fix it with insulating tape.
- 2 Fix the exceeding part of the signal cable to the piping or to the outdoor unit.
- 3 Fix the piping to the wall (after having coated it with insulating tape) using clamps or insert them into plastic slots.
- 4 Seal the hole in the wall through which the piping is passed so that no air or water can fill.



Indoor Unit Test

- Do the ON/OFF and FAN operate normally?
- Does the MODE operate normally?
- Do the set point and TIMER function properly?
- Does each lamp light normally?
- Do the flap for air flow direction operate normally?
- Is the condensed water drained regularly?

Outdoor Unit Test

- Is there any abnormal noise or vibration during operation?
- Could the noise, the air flow or the condensed water drainage disturb the neighbours?
- Is there any coolant leakage?

NOTE

- The electronic controller allows the compressor to start only three minutes after voltage has reached the system.

Charging the Refrigerant

Model	Liquid pipe diameter	Gas pipe diameter	Length of pipe with standard charge	Maximum distance between indoor and outdoor unit	Additional refrigerant charge	Max. diff. in level between indoor and outdoor unit	Refrigerant charge at maximum pipe length	Type of refrigerant (1)
WZ09AAS WZ09AWS	1/4" (Ø 6.35)	3/8" (Ø 9.52)	5 m	15 m	16 g/m	10 m	0.680 kg	R32
WZ12AAS WZ12AWS	1/4" (Ø 6.35)	3/8" (Ø 9.52)	5 m	15 m	16 g/m	10 m	0.700 kg	R32
WZ18AAS WZ18AWS	1/4" (Ø 6.35)	3/8" (Ø 9.52)	5 m	15 m	16 g/m	10 m	0.940 kg	R32
WZ24AAS WZ24AWS	3/8" (Ø 9.52)	1/2" (Ø 12.70)	5 m	15 m	16 g/m	10 m	1.160 kg	R32

(1) Refer to the data rating label stuck on the outdoor unit.

Tightening Torque for Protection Caps and Flange Connection

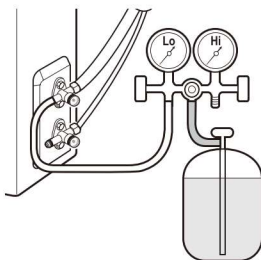
Pipe	Tightening torque (N x m)	Corresponding stress (using a 20 cm wrench)		Tightening torque (N x m)
1/4" (Ø 6.35)	14 - 18	Wrist strength	Service port nut	20 - 25
3/8" (Ø 9.52)	34 - 42	Arm strength	Protection caps	10 - 12
1/2" (Ø 12.70)	49 - 61	Arm strength		
5/8" (Ø 15.88)	68 - 82	Arm strength		

NOTE

- The amount of refrigerant charged is based on the standardized pipe length. If the installed pipe is longer than the standard length, extra refrigerant needs to be added.
- Reliability cannot be guaranteed if the pipe is longer than the maximum length.
- It may cause reliability, performance, noise, and vibration problems, if piping limitations are not met. Ensure there's a minimum piping length, by making loops if necessary, if the indoor unit and outdoor unit are too close.

Charge Using the Refrigerant Cylinder with a Siphon

- This is usually applied to R32. Charge the refrigerant (gas phase) by standing the refrigerant cylinder.



NOTE

- Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
- Ensure that contamination of different refrigerants does not occur when using charging equipment.
- Extreme care shall be taken not to overfill the refrigerant system.
- Prior to recharging the system it shall be pressure tested with oxygen free nitrogen (OFN). 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.
- The handling of the refrigerant must comply with national regulations.

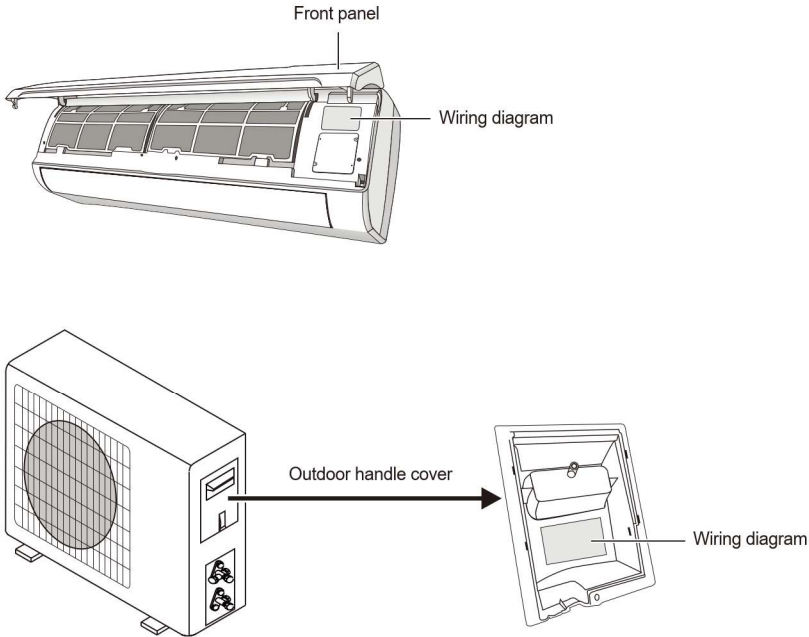
Cable Wires Specification

Capacity (Btu/h)	Power supply cable			Connection supply cable			
	L	N	⊕	L	N	1	⊕
9/12/18/24 k	1.5 mm ²			0.75 mm ²			

Wiring Diagram

For different models, the wiring diagram may be different. Please refer to the wiring diagrams pasted on the indoor unit and outdoor unit respectively.

- On indoor unit, the wiring diagram is pasted under the front panel.
- On outdoor unit, the wiring diagram is pasted on the backside of the outdoor handle cover.



NOTE

- For some models the wires has been connected to the main PCB of indoor unit by manufacturer without terminal block.

Check-Up for Gas Leakage

Gas leakage can damage the appliance's performance. Check for gas leakage by applying soapy water on the outdoor unit pipe connected to the indoor unit pipe's joint.

- If there is gas leakage, bubbling will occur.
- In case of bubbling, check the cause of the gas leakage.

NOTE

- Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.)
- Leak detection equipment shall be set at a percentage of the LFL (Lower flammable limit) 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 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 pipe-work.
- 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.
- Oxygen free nitrogen (OFN) shall be purged through the system both before and during the brazing process.

Checking the Performance

After operating the appliance for 15-18 minutes, check the list below;

- 1 Check the pressure of the gas service valve.

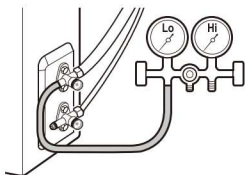
Outdoor Temperature	Pressure of Service Valve (Gas)
20 °C (68 °F)~ 35 °C (95 °F)	8.4~9.5 kgf/cm ² G (120~135 psi)
35 °C (95 °F)~ 40 °C (104 °F)	9.5~10.5 kgf/cm ² G (135~150 psi)
40 °C (104 °F)~ 45 °C (113 °F)	10.5~11.6 kgf/cm ² G (150~165 psi)
45 °C (113 °F)~ 48 °C (118 °F)	11.6~12.3 kgf/cm ² G (165~175 psi)

NOTE

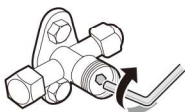
- If the actual pressure is higher than shown, the refrigerant system is most likely overcharged, and charge should be removed. If the actual pressure are lower than shown, the refrigerant system is most likely undercharged, and charge should be added.
- 2 Measure the temperature of the inlet and the outlet of the indoor unit.
 - A difference of eight degrees Celsius between the inlet and the outlet indicates that the cooling performance is in normal.
 - 3 Separate the low-pressure hose of the manifold gauge from the outdoor unit.
 - 4 Close the core valve cap of the gas service valve.
 - Tighten the core valve cap securely with an adjustable wrench.

In case of appliance relocation and repair of the refrigerant system, operate the pump down process that brings the refrigerant from the indoor unit and pipes it to the outdoor unit to avoid refrigerant loss.

- Operate the pump down process in the cooling mode.
- 1 Remove the caps from the gas service valve, the liquid service valve, and the core valves in the outdoor unit.
 - 2 Connect the low-pressure hose of the manifold gauge to the core valve of the gas service valve.



- 3 Operate the appliance in the cooling mode.
 - Operate the appliance more than 10 minutes after checking whether the compressor of the outdoor unit is operating properly.
- 4 Close the liquid service valve in the outdoor unit.
 - Rotate the valve clockwise using a hexagon wrench.



- 5 Close the gas service valve in the outdoor unit at a pressure of 0.5 kgf/cm² (7.1~14.2 psi).
 - Rotate the valve clockwise using a hexagon wrench.

- 6 Turn off the appliance.

NOTE

- Do not operate the appliance for a long time. It may cause damage to the compressor.

- 7 Separate the low-pressure hose of the manifold gauge and the pipe connected to the outdoor unit.

- Use a torque wrench and adjustable wrench.

- 8 Close the caps from the gas service valve, the liquid service valve, and the core valves.

- Tighten all the caps by using an adjustable wrench and torque wrench.

NOTE

- Block the outdoor valve by screwing a flare nut through the pipe after welding the end of the separated pipe. This can protect the appliance from air, vapor, and foreign substances.

! WARNING

- Operating the appliance while it is disconnected to the pipe could result in explosion and damage. Use the appliance after connecting it to the pipe once the appliance has been relocated and the refrigerant circuit repaired.