LG LG

ENGLISH

Here are some tips that will help you minimize the power consumption when you use the air conditioner. You can use your air conditioner more efficiently by referring to the instructions

- Do not cool excessively indoors. This may be harmful for your health and may consume more
- Block sunlight with blinds or curtains while you are operating the air conditioner.
 Keep doors or windows closed tightly while you are operating the air conditioner.
- · Adjust the direction of the air flow vertically or horizontally to circulate indoor air.
- . Open windows regularly for ventilation as the indoor air quality may deteriorate if the air condi-
- Clean the air filter once every 2 weeks. Dust and impurities collected in the air filter may block the
- air flow or weaken the cooling / dehumidifying functions.

For your records

Staple your receipt to this page in case you need it to prove the date of purchase or for warranty ses. Write the model number and the serial number here

Model number

Serial number

You can find them on a label on the side of each unit.

TIPS FOR SAVING ENERGY

Dealer's name Date of purchase

IMPORTANT SAFETY INSTRUCTIONS READ ALL INSTRUCTIONS BEFORE USING THE APPLIANCE.

Always comply with the following precautions to avoid dangerous situations and ensure peak performance of your product.

MARNING

It can result in serious injury or death when the directions are ignored.

∴ CAUTION

It can result in minor injury or product damage when the directions are ignored.

MARNING

- Installation or repairs made by unqualified persons can result in hazards to you and others. Installation MUST conform with local building codes or, in the absence of local codes, with the Nation Electrical Code NFPA 70/ANSI C1-1003 or current edition and Canadian Electrical Code Part1 CSA C.22.1.
- 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.

- Don't use a power cord, a plug or a loose socket which is damaged.
 Otherwise, it may cause a fire or electrical shock.
- For electrical work, contact the dealer, seller, a qualified electrician, or an Authorized Service Center - Do not disassemble or repair the product. There is risk of fire or electric shock Always ground the product.
- There is risk of fire or electric shock.
- Install the panel and the cover of control box securely. - There is risk of fire or electric shock.
- Always install a dedicated circuit and breaker - Improper wiring or installation may cause fire or electric shock.
- Use the correctly rated breaker or fuse.
 There is risk of fire or electric shock.
- Do not modify or extend the power cable.
 There is risk of fire or electric shock.

3 Pull back the tubing holder.

type of model

Good case

4 Remove pipe port cover and positioning

* The feature can be changed according to a

Press on the tubing cover and unfold the tubing to downward slowly. And then bend to the left side slowly.

- Do not let the air conditioner run for a long time when the humidity is very high and a door or a window is left open. - Moisture may condense and wet or damage furniture.
- Be cautious when unpacking and installing the product.
 Sharp edges could cause injury. Be especially careful of the case edges and the fins on the con-

Tubing holde

- denser and evaporator. For installation, always contact the dealer or an Authorized Service Center.
 There is risk of fire, electric shock, explosion, or injury.

. Do not install the product on a defective installation stand. It may cause injury, accident, or damage to the product.

- · Be sure the installation area does not deteriorate with age
- If the base collapses, the air conditioner could fall with it, causing property damage, product failure, and personal injury.
- . There is a risk of fire and explosion Inert as first original to exposition.

 Inert as first original for a comparison of pipes etc. If you are using combustible gases including oxygen, product may have the risk of fires and ex-

Do not store or use flammable gas or combustibles near the product.
 There is risk of fire or failure of product.

⚠ CAUTION

- Always check for gas (refrigerant) leakage after installation or repair of product.
 Low refrigerant levels may cause failure of product.
- Install the drain hose to ensure that water is drained away properly. - A bad connection may cause water leakage
- Keep level even when installing the product.
- To avoid vibration or water leakage
- Do not install the product where the noise or hot air from the outdoor unit could damage the neigh-

INSTALLATION PARTS

- It may cause a problem for your neighbors. • Use two or more people to lift and transport the product.
- Avoid personal injury.
- Do not install the product where it will be exposed to sea wind (salt spray) directly. It may cause corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunction or inefficient operation.

Name	Quantity	Shape
Installation plate	1 EA	
		The feature can be changed according to a type of model.
Type "A" screw	5 EA	
Type "B" screw	2 EA	
Type "C" screw	2 EA	7 7
Remote control holder	1 EA	

Screws for fixing panels are attached to decoration panel.

INSTALLATION TOOLS

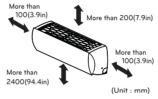
Figure	Name	Figure	Name
⊕	Screw driver		Multi-meter
	Electric drill		Hexagonal wrench
	Measuring tape, Knife		Ammeter
	Hole core drill		Gas-leak detector
	Spanner	00	Thermometer, Level
W. C.	Torque wrench		Flaring tool set
		- A	

INSTALLATION

Select the best Location

- Select a place where there are no obstacles
- Make sure that condensation drainage can
- Ensure that the interval between a wall and the left (or right) of the unit is more than 100mm. The unit should be installed as high of 200mm from ceiling.

- Use a metal detector to locate studs to prevent unnecessary damage to the wall

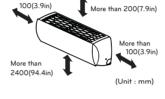


* The feature can be changed according to a type of model.

~_**!**CAUTION−

Install the indoor unit on the wall where

Indoor unit



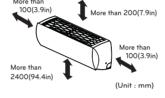
* The feature can be changed according to a type of model

. You should purchase the installation parts.

INSTALLATION MAP

- There should not be any heat or steam near

- around of the unit.
- be conveniently routed away. - Do not install near a doorway.
- as possible on the wall, allowing a minimum



of the warm air.

Outdoor unit

- Ensure that the space around the back and sides is more than 300mm. The space in front of the unit should be more than 700mm of space.

- If an awning is built over the unit to prevent direct sunlight or rain exposure, make sure that heat radiation from the condenser is not

Sleeve (X Bushing-Sleeve (*)

Putty(Gum Type Sealant) (※)

- Bend the pipe as closely

but be careful that it

Vinyl tape (Wide) (%)

Connecting cable (%)

(Optional Parts)

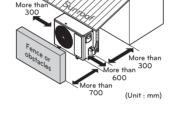
Apply after carrying out a drainage test.
 To carry out the drainage test, remove the air filters

Gas side piping (%) (Optional Parts)

Liquid side piping (%) (Optional Parts) Additional drain pipe (%)

- Do not place animals and plants in the path -Take the weight of the air conditioner into ac-count and select a place where noise and vi-

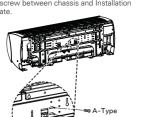
bration are minimum. Select a place where the warm air and noise from the air conditioner do not disturb neigh-



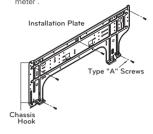
Indoor unit

Fixing Installation Plate

The wall you select should be strong and solid enough to prevent vibration. Before installation, confirm the position of a screw between chassis and Installation



2 Mount the installation plate on the wall with type "A" screws. If mounting the unit on a concrete wall, use anchor bolts. Mount the installation plate horizontally by aligning the centerline using Horizontal



3 Measure the wall and mark the centerline. It is also important to use caution concern it is also important to use caution concerning the location of the installation plate.

Routing of the wiring to power outlets is through the walls typically. Drilling the hole through the wall for piping connections must be done safely.

1. Completely remove all burrs from the cut

2. While removing burrs put the end of the

copper tube/pipe in a downward directio

while removing burrs location is also changed in order to avoid dropping burrs into the tubing.

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

1 Firmly hold copper pipe in a bar with the di-

2 Carry out flaring work with the flaring tool

1/4

3/8

5/8

3/4

1.1~1.3

1.5~1.7

1.6~1.8

1.9~2.1

Burrs removal

Putting nut on

flare work)

Flaring work

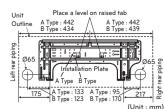
Ø6.35

Ø9.52

Ø15.88

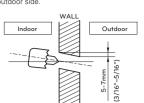
Ø19.05

cross section of pipe/tube.



Drill a Hole in the Wall

Drill the piping hole with a ø65mm hole core drill. Drill the piping hole at either the right or the left with the hole slightly slanted to the outdoor side.

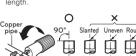


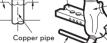
Flaring Work

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. Measure the distance between the indoor and the outdoor unit.
- 3 Cut the pipes a little longer than measured
- 4 Cut the cable 1.5m longer than the pipe





Check

1 Compare the flared work with the figure

2 If a flared section is defective, cut it off and do flaring work again.



Connecting the Piping

1 Open the panel of the indoor unit. 2 Remove the chassis cover from the unit by



3

2

∠!\CAUTION—

According to the confirmation of the above conditions, prepare the wiring as follows. Never fail to have an individual power circuit specifically for the air condi-tioner. As for the method of wiring, be guided by the circuit diagram posted on the inside of control cover.

2 The screw which fasten the wiring in the casing of electrical fittings are li-able to come loose from vibrations to which the unit is subjected during the

course of transportation. Check then

and make sure that they are all tightly fastened. (If they are loose, it could cause burn-out of the wires.)

3 Specification of power source. 4 Confirm that electrical capacity is suffi-5 See that the starting voltage is main

rated voltage marked on the name 6 Confirm that the cable thickness is as specified in the power source specifi-

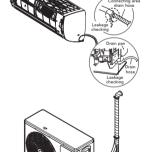
cable length and thickness. 7 Always install an earth leakage circuit breaker in a wet or moist area. 8 The following would be caused by voltage drop.

Vibration of a magnetic switch, which will damage the contact point, fuse breaking, disturbance of the normal function of the overload. The means for disconnection from a power supply shall be incorporated in the fixed wiring and have an air gap contact separation of at least 3mm in

each active(phase) conductors.

Checking the Drainage

Pour a glass of water on the evaporator Ensure the water flows through the drain hose of the indoor unit without any leak-age and goes out the drain exit.



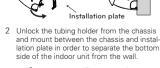
*The feature can be changed according a type

Drain piping 1 The drain hose should point downward for



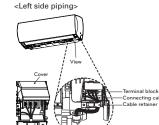
In cases where the outdoor unit is installed below the indoor unit perform the following.

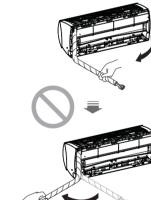
 Hook the indoor unit onto the upper portion of the installation plate.(engage the three hooks at the top of the indoor unit the property of the indoor unit onto the upper portion of the indoor unit of t with the upper edge of the installation plate) Ensure that the hooks are properly

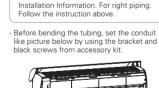












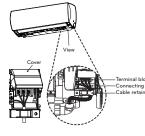
-____CAUTION-

Installation of Indoor Unit



bottom side of indoor unit and connect the cable. (You can see detail contents in 'Cor necting the cables' section.)

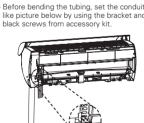
1 Raise the cover of terminal block.

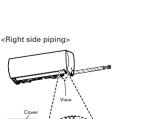


Bad case



* The feature can be changed according to a





4 Close the cover of control box.

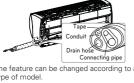


NOTE -

Insert the drain hose at left side when

you use left side piping type.

<Right side piping>



~___.CAUTION− Must use the elbow type

1. Disassemble bracket (from indoor unit)

Method:

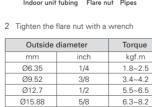


rial* so that dripping from sweating (condensation) will not damage furniture or * Foamed polyethylene or equivalent is

insulate the hose with an insulation mate



Indoor unit tubing Flare nut Pipes



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

Wrap with vinyl tape

rear piping housing section.

Finishing the indoor unit

1 Mount the tubing holder in the original

2 Ensure that the hooks are properly seated

3 Press the lower left and right sides of the unit against the installation plate until the

hooks engage into their slots (clicking

4 Finish the assembly by screwing the unit

to the installation plate by using two pieces

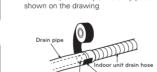
of type "C" screws. And assemble a chas-

on the installation plate by moving it left

installation

and right.

3. When needed to extend the drain hose of



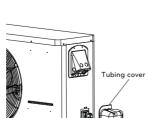
Wrap the insulation material around the connecting portion.

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

Set the tubing cutting line upward.
 Wrap the area which accommodates the rear piping housing section with vinyl tape.

Good Case

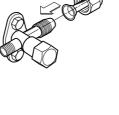
-/! CAUTION-



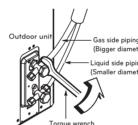
Connecting the Piping

- Remove the tubing cover from the unit by loosening the screw.

Outdoor unit



- Finally, tighten the flare nut with torque wrench until the wrench clicks. When tightening the flare nut with torque follows the arrow on the wrench.



inch kgf.m

5/8 6.3~8.2

3/4 9.9~12.1

1.8~2.5

3.4~4.2

5.5~6.5

trol board individually according to the outdoor unit connection. (Ensure that the color of the wires of the outdoor unit and the terminal No. are the same as those of the indoor unit.)

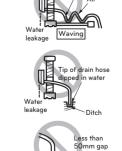
The circuit diagram is a subject to The earth wire should be longer than the - When installing, refer to the circuit diagram on the chassis cover. - Connect the wires firmly so that they may not be pulled out easily.





1 Tape the piping, drain hose and connecting cable from down to up. 2 Secure the tapped piping along the exterior wall using saddle or equivalent. around pipings with a gum type sealant.

*The feature can be changed according a type







5

- Gas side piping (Smaller diameter

Ø19.05

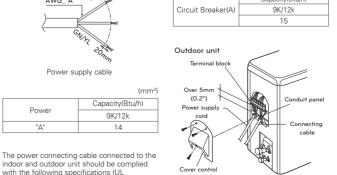
Connecting the Cables Connect the cable to the indoor unit by con

-∠!\CAUTION-

Connect the wires according to color codes, referring to the wiring diagram.



Connect the wires to the terminals on the control board individually. 2 Do not make drain piping like the following. Forming the Piping



Secure the cable onto the control board with the cord clamp.

Use a recognized circuit breaker between the power source and the unit.
 A disconnecting device to adequately disconnect all supply lines must be fitted.

Provide the circuit breaker between power source and the unit as shown by

*The feature can be changed according a type

Air Circuit Breaker

Main power source

Power supply cable

with the following specifications (UL

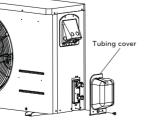
Connecting cable

9k/24k

recognized or CSA certified).

9K/12k

-ACCAUTION-The power cord connected to the outdoor unit should be complied with the following specifications (UL recognized or unit, seal the hole of a wall except the pipe's ways to prevent condensate from inflow of outdoor air. CSA certified).

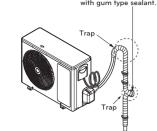




In cases where the outdoor unit is installed above the Indoor unit perform the following.

- 1 Tape the piping and connecting cable from
- 2 Secure the taped piping along the exterior wall. Form a trap to prevent water entering the room. 3 Fix the piping onto the wall using saddle or

Seal a small opening around the pipings with gum type sealant.



*The feature can be changed according a type

Air Purging

The air and moisture remaining in the refrigerant system have undesirable effects as indicated below.

- Pressure in the system rises. Operating current rises. - Cooling(or heating) efficiency drops.

 Moisture in the refrigerant circuit may freeze and block capillary tubing. - Water may lead to corrosion of parts in the refrigeration system. Therefore, after evacuating the system, take a leak test for the piping and tubing between the indoor and outdoor unit.

-<u>(Î</u> CAUTION-

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. Usually, the cylinder is used in a vertical standing position.

Be sure to use a manifold valve for air purging. If it is not available, use a stop valve for this purpose. The knob of the 3-way valve must always be kept close.

Pressurize the system to not more than 150 P.S.I.G. with dry nitrogen gas and close the cylinder valve when the gauge reading reaches 150 P.S.I.G. Next, test for leaks with liquid soap.

- MARNING -

Evacuation

3-way valve

There is a risk of fire and explosion.

- Inert gas (nitrogen) should be used when you check plumbing leaks, cleaning or repairs of pipes etc. If you are using combustible gases including oxygen, product may have the risk of fires and explosions.

- Connect the charge hose end described in the preceding steps to the vacuum pump to evacuate the tubing and indoor unit. Confirm the "Lo" knob of the pressure Gauge is open. Then, run the vacuum pump. The operation time for evacuation varies with the backets and executed that the confirmation of the pressure of the state of the

tubing length and capacity of the pump. The following table shows the time required for evacuation

Required time for evacuation when 30 gal/h

10 min. or more 15 min. or more

- When the desired vacuum is reached, close the knob of the 3-way valve and stop the

If tubing length is less than 10m (33 ft)

vacuum pump.

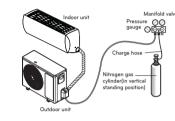
vacuum pump is used

If tubing length is longer than 10m (33 ft)

8

- Do a leak test of all joints of the tubing(both indoor and outdoor) and both gas and liquid side service valves.
Bubbles indicate a leak. Be sure to wipe off

the soap with a clean cloth. After the system is found to be free of leaks, relieve the nitrogen pressure by loosening the charge hose connector at the nitrogen cylinder. When the system pressure is reduced to normal, disconnect the hose from the cylinder.



*The feature can be changed according to a

Soap water method

Remove the caps from the 2-way and 3-way Remove the service-port cap from the 3-way

- Apply a soap water or a liquid neutral detergent on the indoor unit connection or out-door unit connections by a soft brush to check for leakage of the connecting points of - If bubbles come out, the pipes have leakage

Air purging with vacuum pump

kept closed at this stage.

-/!\CAUTION-

Check that each tube(both liquid and gas Check that each tube(both liquid and gas side tubes) between the indoor and outdoor units have been properly connected and all wiring for the test run has been completed. Remove the service valve caps from both the gas and the liquid side on the outdoor unit. Note that both the liquid and the gas side service valves on the outdoor unit are kent closed at this stage.

Loosen the charge hose connected to the gas side service port slightly to release the pressure, then remove the hose. - Leak test Connect the manifold valve(with pressure gauges) and dry nitrogen gas cylinder to this service port with charge hoses.

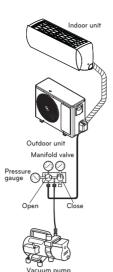
Finishing the Job

fully open the valve

 Replace the flare nut and its bonnet on the gas side service port and fasten the flare nut se-curely with an adjustable wrench. This process is very important to prevent leakage from the system.

- With a service valve wrench, turn the valve of liquid side counter-clockwise to fully open the

Turn the valve of gas side counter clockwise to

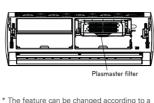


- Replace the valve caps at both gas and liquid side service valves and fasten them tight. This completes air purging with a vacuum pump. Replace the pipe cover to the outdoor unit by Now the air conditioner is ready for test run.

* The feature can be changed according to a type

Installation of filters





* The feature can be changed according to a type of model.

Evaluation of the performance

Operate the unit for 15~20 minutes, then check the system refrigerant charge: - Measure the pressure of the gas side service

- Measure the air temperature from inlet and outlet of air conditioner.

- Ensure the difference between the inlet and outlet temperature is more than 8°C. - For reference; the gas side pressure at optimum condition is shown on table (cooling)

The air conditioner is now ready to use.



8.5~9.5kg/cm²G(1 20~135 P.S.I.G.) R-410A 35°C *The feature can be changed according to a type of model.

Refrigerant Outside ambi-ent TEMP. The pressure of the gas side

NOTE-

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 under-charged, and charge should be added.

Pump down

This is performed when the unit is relocated or the refrigerant circuit is serviced. Pump Down means collecting all refrigerant into the outdoor unit without the loss of refrig-

CAUTION-

Be sure to perform Pump Down procedure in the cooling mode

- Connect a low-pressure gauge manifold hose to the charge port on the gas side service

- Open the gas side service valve halfway and purge the air in the manifold hose using the

Turn on the unit's operating switch and start

- When the low-pressure gauge reading be-comes 1 to 0.5kg/cm² G(14.2 to 7.1 P.S.I.G.), fully close the gas side valive and then quickly turn off the unit. Now Pump Down procedure is completed, and all refrigerant is collected into the outdoor unit.

- Close the liquid side service valve(all the



-/!CAUTION-

Piping Length and Elevation

GAS

Pipe Size

mm inch mm

2.5k, 3.5k Ø9.52 3/8 Ø6.35 1/4

LIQUID

inch

Capacity is based on standard length and maximum allowable length is on the basis of reliability. Additional refrigerant must be charged after 12.5 m (there is no need to charge till 12.5 m based on reliability)

Max. Additional Re-

Elevation B (m) (after 12.5 m)

10

Max.

Length (m)

20

Standard

Length (m)

7.5

Operation ranges

The table below indicates the temperature ranges the air conditioner can be Operated within.

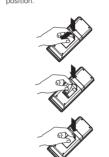
Mode	Indoor temperature	Outdoor temperature
Cooling	-10°C~48°C(14°F~118.4°F)	-10°C~48°C(14°F~118.4°F)
Heating	-10°C~24°C(14.0°F~75.2°F)	-10°C~24°C(14.0°F~75.2°F)

Test Running

- Check that all tubing and wiring are properly - Check that the gas and liquid side service

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 pushing it back into position.



- NOTE-

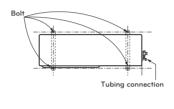
- Use 2 AAA(1.5volt) batteries. Do not use rechargeable batteries. - Remove the batteries from the remote

controller if the system is not used for a long time

Settlement of outdoor unit

- Fix the outdoor unit with a bolt and nut(ø10mm) tightly and horizontally on a concrete or rigid mount. - When installing on the wall, roof or rooftop, anchor the mounting base securely with a nail or wire assuming the influence of wind and earthquake.

- If the vibration of the unit is transmitted to the pipe, secure the unit with an anti-vibra-



Installation guide at the seaside

_____CAUTION— Air conditioners should not be installed in areas where corrosive gases, such as acid or alkaline gas, are produced. Do not install the product where it could be exposed to sea wind (salty wind) directly. It can result corrosion on the product. Corrosion, particularly on the

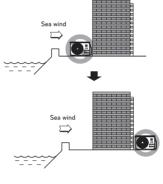
the seaside, direct exposure to the sea wind should be avoided. Install the outdoor unit on the opposite side of the sea wind direction.

In case, to install the outdoor unit on the seaside, set up a windbreak not to be exposed to the sea wind.

condenser and evaporator fins, could cause product malfunction or inefficient

If outdoor unit is installed close to the seaside, it should avoid direct exposure to the sea wind. Otherwise it needs additional anticorrosion treatment on the

Selecting the location(Outdoor Unit) If the outdoor unit is to be installed close to



- It should be strong enough like concrete to prevent the sea wind from the sea. The height and width should be more than 150% of the outdoor unit. - It should be keep more than 70 cm of space between outdoor unit and the windbreak for easy air flow.

Select a well-drained place.

NOTE-

- If you can't meet above guide line in the seaside installation, please contact LG Electronics for the additional

- Periodic (more than once/year) cleaning of the dust or salt particles stuck on the heat exchanger by using

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