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LG

ENGLISH

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LG

Air Conditioner

INSTALLATION MANUAL

IMPORTANT

- 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.

IMPORTANT!

Please read this instruction sheet completely before installing the product.

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system so it operates safely and efficiently.



WARNING

- 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 National Electrical Code NFPA 70/ANSI C1-1993 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.

CAUTION: Improper installation, adjustment, alteration, service or maintenance can void the warranty. The weight of the condensing unit requires caution and proper handling procedures when lifting or moving to avoid personal injury. Use care to avoid contact with sharp or pointed edges.

Safety Precautions

- Always wear safety eye wear and work gloves when installing equipment.
- Never assume electrical power is disconnected. Check with meter and equipment.
- Keep hands out of fan areas when power is connected to equipment.
- R-410A causes frostbite burns.
- R-410A is toxic when burned.

NOTE TO INSTALLING DEALER: The Owners Instructions and Warranty are to be given to the owner or prominently displayed near the indoor Furnace/Air Handler Unit.



Special warnings

When wiring:

Electrical shock can cause severe personal injury or death. Only a qualified, experienced electrician should attempt to wire this system.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause accidental injury or death.
- Ground the unit following local electrical codes.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.

When transporting:

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your finger.

When installing...

- ... **in a wall:** Make sure the wall is strong enough to hold the unit's weight. It may be necessary to construct a strong wood or metal frame to provide added support.
- ... **in a room:** Properly insulate any tubing run inside a room to prevent "sweating" that can cause dripping and water damage to wall and floors.
- ... **in moist or uneven locations:** Use a raised concrete pad or concrete blocks provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.
- ... **in an area with high winds:** Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.
- ... **in a snowy area(for Heat Pump Model):** Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When connecting refrigerant tubing

- Keep all tubing runs as short as possible.
- Use the flare method for connecting tubing.
- Check carefully for leaks before starting the test run.

When servicing

- Turn the power OFF at the main power box(mains) before opening the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.

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Safety Precautions



To prevent the injury of the user or other people and property damage, the following instructions must be followed.

- Be sure to read before installing the air conditioner.
- Be sure to observe the cautions specified here as they include important items related to safety.
- Incorrect operation due to ignoring instruction will cause harm or damage. The seriousness is classified by the following indications.

⚠ WARNING This symbol indicates the possibility of death or serious injury.

⚠ CAUTION This symbol indicates the possibility of injury or damage to properties only.

- The meanings of the symbols used in this manual are as shown below.

| | |
|---|---|
|  | Be sure not to do. |
|  | Be sure to follow the instruction. |

⚠ WARNING

■ Installation

- | | | |
|---|--|--|
| Always perform grounding. | Don't use a power cord, a plug or a loose socket which is damaged. | For installation of the product, always contact the service center or a professional installation agency. |
| <ul style="list-style-type: none">• Otherwise, it may cause electrical shock. | <ul style="list-style-type: none">• Otherwise, it may cause a fire or electrical shock. | <ul style="list-style-type: none">• 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. | Always install an air leakage breaker and a dedicated switching board. | Do not keep or use flammable gases or combustibles near the air conditioner. |
| <ul style="list-style-type: none">• 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. | <ul style="list-style-type: none">• No installation may cause a fire and electrical shock. | <ul style="list-style-type: none">• 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. | Do not disassemble or repair the product randomly. | |
| <ul style="list-style-type: none">• It may cause injury or an accident. | <ul style="list-style-type: none">• 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.

■ Operation

Do not share the outlet with other appliances.

- It will cause an electric shock or a fire due to heat generation.

Do not use the damaged power cord.

- Otherwise, it may cause a fire or electrical shock.

Do not modify or extend the power cord randomly.

- Otherwise, it may cause a fire or electrical shock.

Take care so that the power cord may not be pulled during operation.

- Otherwise, it may cause a fire or electrical shock.

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 use the power cord near the heating tools.

- Otherwise, it may cause a fire and 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.

Hold the plug by the head when taking it out.

- It may cause electric shock and damage.

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.

Do not place a heavy object on the power cord.

- Otherwise, it may cause a fire or electrical shock.

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.

CAUTION

■ Installation

Install the drain hose to ensure that drain can be securely done.

- Otherwise, it may cause water leakage.

Always inspect gas leakage after the installation and repair of product.

- Otherwise, it may cause the failure of product.

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.

Keep level parallel in installing the product.

- Otherwise, it may cause vibration or water leakage.

■ Operation

Avoid excessive cooling and perform ventilation sometimes.

- Otherwise, it may do harm to your health.

Do not use an appliance for special purposes such as preserving animals vegetables, precision machine, or art articles.

- Otherwise, it may damage your properties.

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 place obstacles around the flow inlet or outlet.

- Otherwise, it may cause the failure of appliance or an accident.

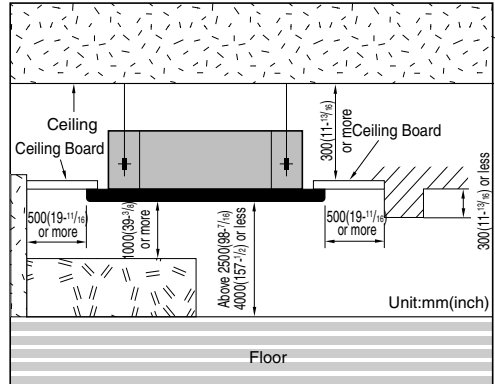
Installation of Indoor, Outdoor Unit

Installation Places

1. Indoor unit

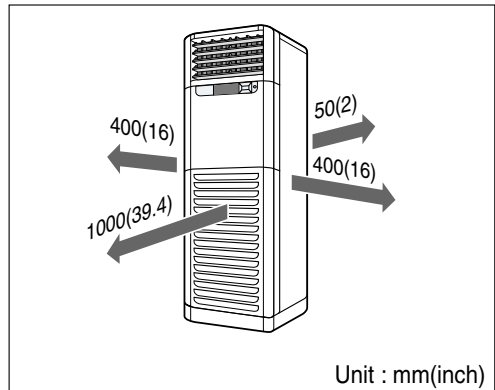
Cassette type

- There should not be any heat source or steam near the unit.
- There should not be any obstacles to prevent the air circulation.
- A place where air circulation in the room will be good.
- A place where drainage can be easily obtained.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.
- Ensure the spaces indicated by arrows from the wall, ceiling, or other obstacles.
- The indoor unit must keep the maintenance space.



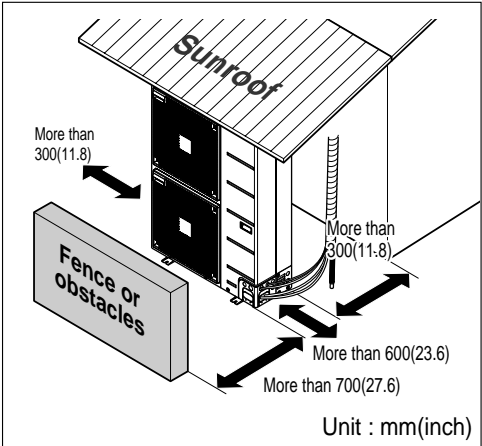
Floor Standing type

- There should not be any heat source or steam near the unit.
- There should not be any obstacles to prevent the air circulation.
- A place where air circulation in the room will be good.
- A place where drainage can be easily obtained.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.
- Ensure the spaces indicated by arrows from the wall, ceiling, or other obstacles.
- The indoor unit must keep the maintenance space.



2. Outdoor unit

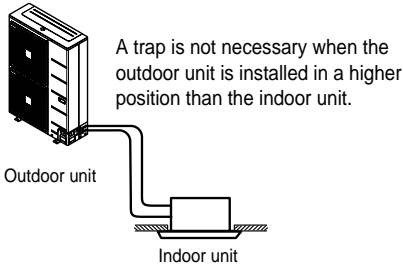
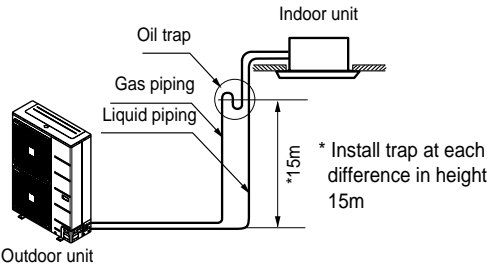
- If an awning is built over the unit to prevent direct sunlight or rain exposure, make sure that heat radiation from the condenser is not restricted.
- Ensure that the spaces indicated by arrows around front, back and side of the unit.
- Do not place animals and plants in the path of the warm air.
- Take the air conditioner weight into account and select a place where noise and vibration are minimum.
- Select a place so that the warm air and noise from the air conditioner do not disturb neighbors.



3. Piping length and the elevation

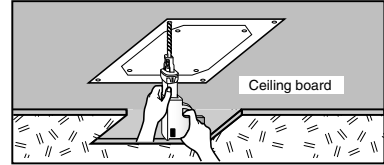
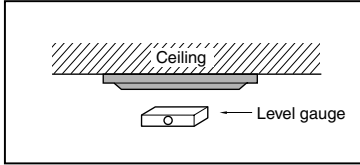
Single Operation

| Capacity | Pipe Size Unit : mm(inch) | | Length A Unit : m(ft) | | Elevation B Unit : m(ft) | | Additional refrigerant Unit : g/m (oz/ft) |
|-----------|------------------------------|-----------|--------------------------|--|-----------------------------|--|---|
| | Gas | Liquid | Standard | Max. | Standard | Max. | |
| 42k Btu/h | 15.88(5/8) | 9.52(3/8) | 7.5(25) | 50(164)Cassette type 40(131)Floor standing type | 5(16) | 30(98)Cassette type 25(82)Floor standing type | 40(0.43) |

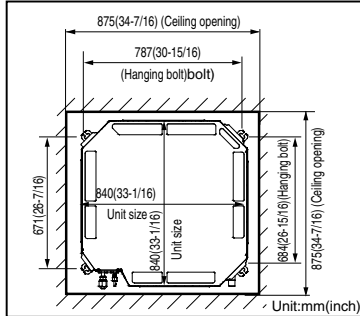


The indoor unit installation

1. Cassette type



TM/TN/TP Chassis



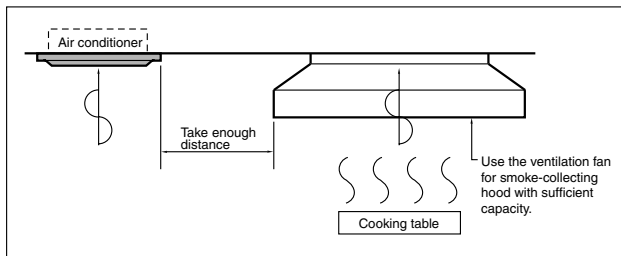
CAUTION :

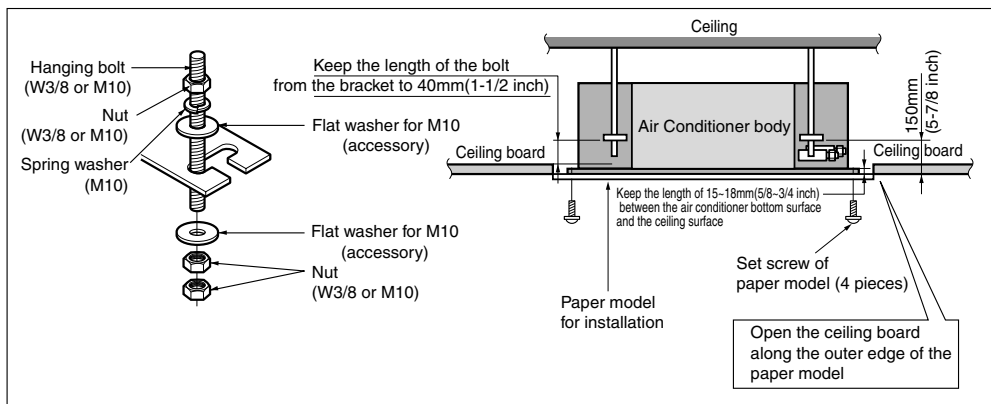
- This air-conditioner uses a drain pump.
- Install the unit horizontally using a level gauge.
- During the installation, care should be taken not to damage electric wires.

- Select and mark the position for fixing bolts and piping hole.
- Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.
- Drill the hole for anchor bolt on the wall.

NOTICE

- Avoid the following installation location.
 1. Such places as restaurants and kitchen where considerable amount of oil steam and flour is generated. These may cause heat exchange efficiency reduction, or water drops, drain pump mal-function. In these cases, take the following actions;
 - Make sure that ventilation fan is enough to cover all noxious gases from this place.
 - Ensure enough distance from the cooking room to install the air conditioner in such a place where it may not suck oily steam.
 2. Avoid installing air conditioner in such places where cooking oil or iron powder is generated.
 3. Avoid places where inflammable gas is generated.
 4. Avoid place where noxious gas is generated.
 5. Avoid places near high frequency generators.





• The following parts is option.

- ① Hanging Bolt - W 3/8 or M10
- ② Nut - W 3/8 or M10
- ③ Spring Washer - M10
- ④ Plate Washer - M10

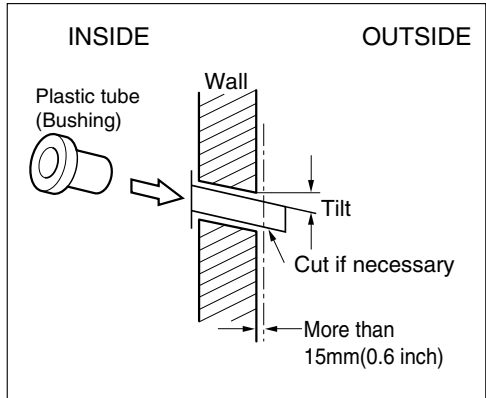
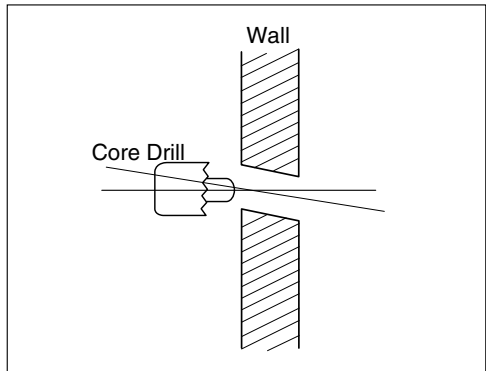
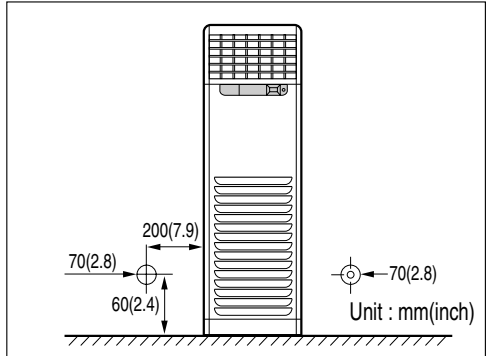
• Drill the piping hole on the wall slightly tilted to the outdoor side using a $\varnothing 70$ hole-core drill.



CAUTION : Tighten the nut and bolt to prevent unit from falling off.

2. Floor Standing type

1. The mounting floor should be strong and solid enough to prevent it from vibration.
2. Drill the piping hole with 70mm diameter hole-core drill at either the right or the left of indoor unit. The hole should be slightly slant to the outdoor side.
3. Insert the plastic tube through the hole.
4. Cut the extruded outside part of the plastic tube, if necessary.



Remote controller installation

Wired remote controller installation

- Since the room temperature sensor is in the remote controller, the remote controller box should be installed in a place away from direct sunlight, high humidity and direct supply of cold air to maintain proper space temperature. Install the remote controller about 5ft(1.5m) above the floor in an area with good air circulation at an average temperature.

Do not install the remote controller where it can be affected by:

- Drafts, or dead spots behind doors and in corners.
- Hot or cold air from ducts.
- Radiant heat from sun or appliances.
- Concealed pipes and chimneys.
- Uncontrolled areas such as an outside wall behind the remote controller.
- This remote controller is equipped with a seven segment LED. display. For proper display of the remote controller LED's, the remote controller should be installed properly as shown in Fig.1.
(The standard height is 1.2~1.5 m from floor level.)

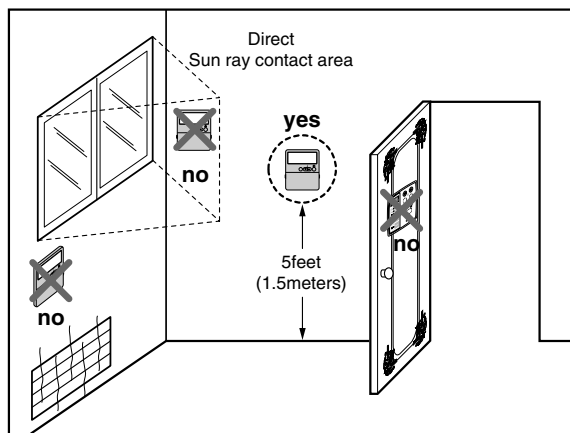
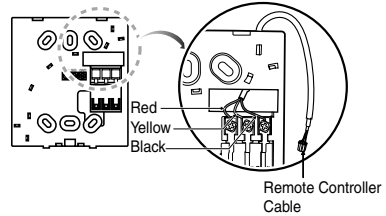


Fig.1 Typical locations for remote controller

Installation of Wired Remote Controller(Cassette type)

1. Connect the wired remote controller cable to the wired remote controller installation board as shown in the right picture.

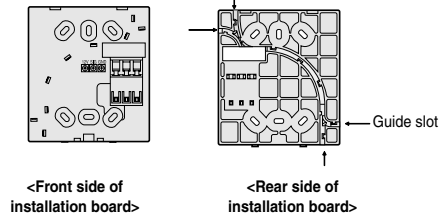
| | |
|-----|-------------|
| 12V | Red wire |
| SIG | Yellow wire |
| GND | Black wire |



- ※ The wired remote controller cable is connected as factory default.

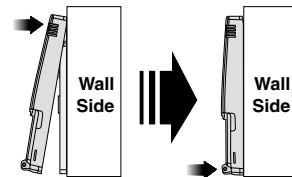
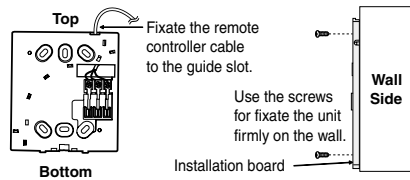
2. After fixing the cable to the guide slot, attach the wired remote controller installation board at the desired location.

- Before fixing the wired remote controller cable to the guide slot, remove any clogged part of the case in the direction to install before the installation.

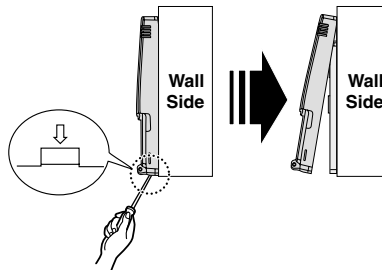


3. After locating the wired remote controller installation board at the desired location, screw the unit firmly. (When there is a buried box, install the wired remote controller board to fit the buried box.)

- Use the screw provided.

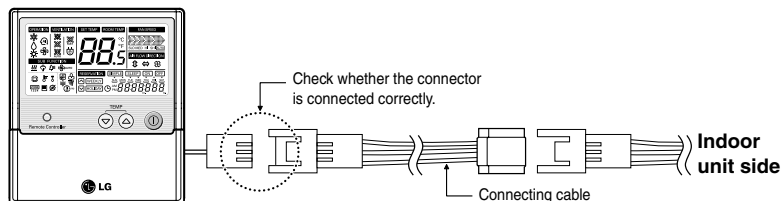


4. After fixing the top part of the wired remote controller to the installation board as shown in beside picture, press the bottom part to assemble the controller to it's board.



When disassemble the wired remote controller from the installation board, use the driver as shown in the right picture and insert it into the hole with the arrow. And when you pull the driver in the front direction, the wired remote controller will be separated.

5. Use the connecting cable to connect the indoor unit and the wired remote controller.



6. When the distance between the wired remote controller and the indoor unit is 10m and above, use the extension cable.



CAUTION

When installing the wired remote controller, do not bury it in the wall.
(It can cause damage in the temperature sensor.)

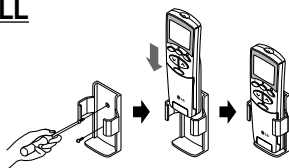
Do not install the cable to be 50m or above.

(It can cause communication error.)

- When installing the extension cable, check the connecting direction of the connector of the remote controller side and the product side for correct installation.
- If you install the extension cable in the opposite direction, the connector will not be connected.
- Specification of extension cable: 2547 1007 22# 2 core 3 shield 5 or above.

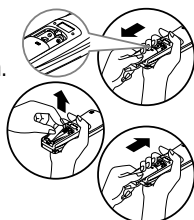
Wireless Remote Controller

HOW TO MOUNT ONTO A WALL



HOW TO INSERT BATTERIES

1. Remove the battery cover from the remote controller.
 - Slide the cover according to the arrow direction.
2. Insert the two batteries.
 - Be sure that the (+) and (-) directions are correct.
 - Be sure that both batteries are new.
3. Re-attach the cover.
 - Slide it back into position.



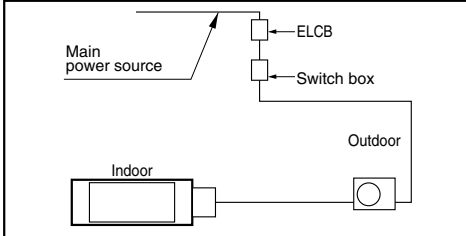
- Do not use rechargeable batteries, such as batteries differ from standard dry cells in shape, dimensions, and performance.
- Remove the batteries from the remote controller if the air conditioner is not going to be used for some long time.

Wiring Connection

Electrical Wiring

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

- All wiring must comply with local requirements.
- Select a power source that is capable of supplying the current required by the air conditioner.
- Use a recognized ELCB(Electric Leakage Circuit Breaker) between the power source and the unit. A disconnection device to adequately disconnect all supply lines must be fitted.
- Model of circuit breaker recommended by authorized personnel only

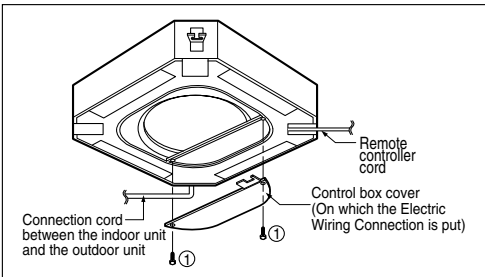


| Model | Phase(Ø) | ELCB |
|-----------|----------|------|
| 42k Btu/h | 1 | 40A |

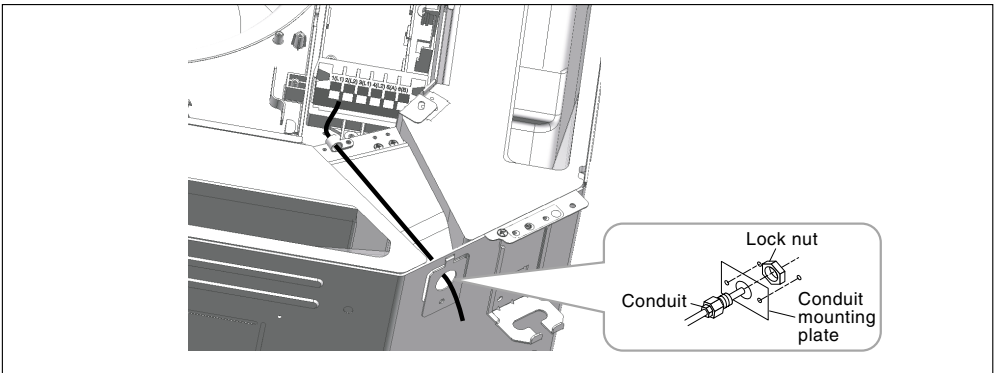
Connecting cables to the Indoor Unit

- Remove the control box cover for electrical connection between the indoor and outdoor unit. (Remove screws ①.)
- Use the cord clammer to fix the cord.

1. Cassette type



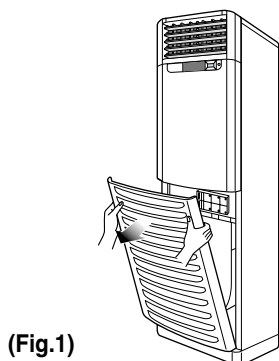
! WARNING : Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazzard may also exist. Therefore, be sure all wiring is tightly connected.



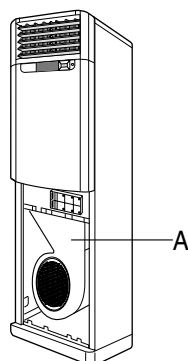
2. Floor Standing type

Procedure for Connecting the Cable to Indoor Unit, is as follows:

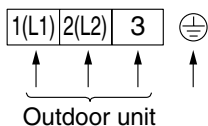
1. Open The Front Door Manually, as shown in Fig. 1.
2. Open the Control Box Cover (A) with Driver, (⊕) as shown in Fig. 2.
3. Connect the Cables (LG doesn't supply) to the terminal Block of Indoor Unit, as shown in Fig. 3.
4. Install a power supply line or connecting cables as the Fig. 4 in order to prevent the connecting wires from being cut by sharp edge of the hole.
5. Secure the Control Box Cover (A) to its original position with the help of Driver(⊕).
6. Close the Front Door.



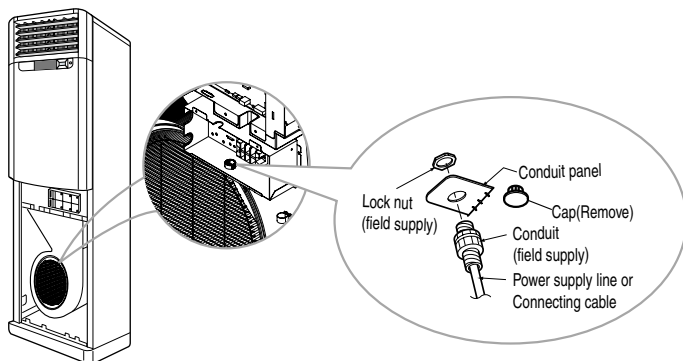
(Fig.1)



(Fig.2)



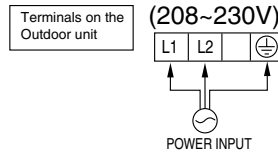
(Fig.3)



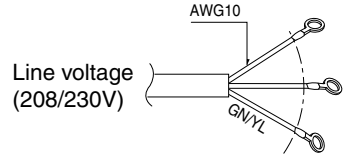
(Fig.4)

Connecting Cables between Indoor Unit and Outdoor Unit

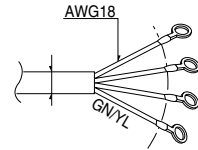
- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
- Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively



RECOMMENDATION: The power cord connected to the outdoor unit should be comply with the following specifications: ETL recognized and CSA certified.



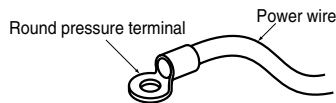
The power connecting cable connected to the indoor and outdoor unit should be comply with the following specifications: ETL recognized and CSA certified.



RECOMMENDATION: When using the separate wires as the power cord, please secure the separate wires into the control box panel using tie wraps to hold all wires together in place.

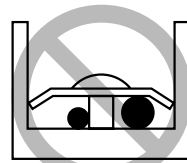
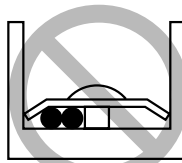
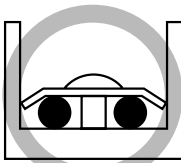
Precautions when laying power wiring

Use round pressure terminals for connections to the power terminal block.



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.

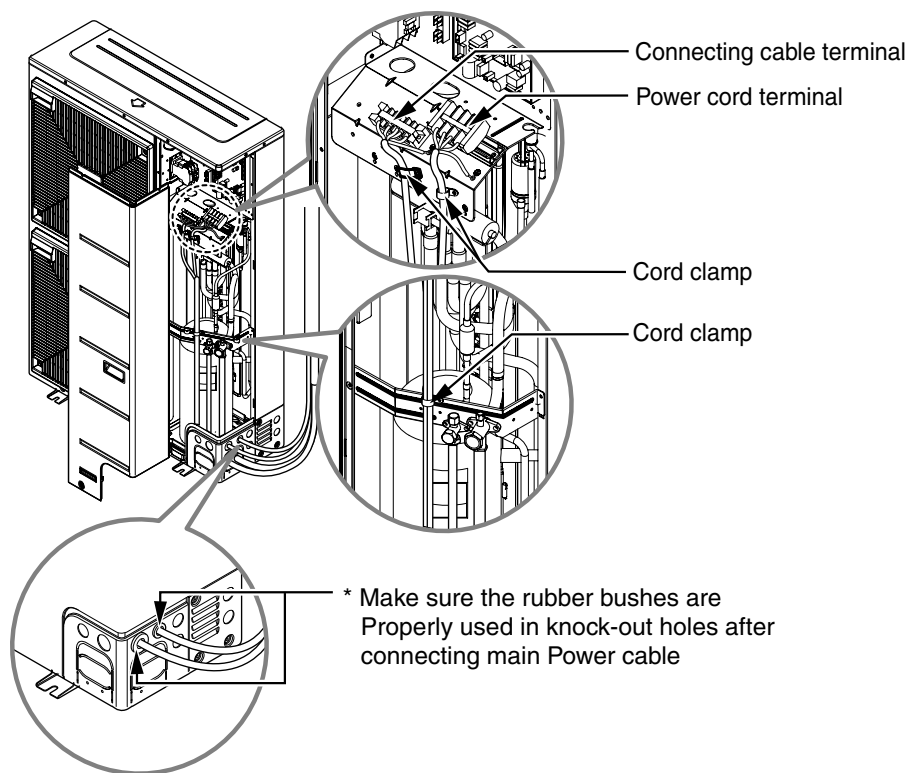


WARNING:

Make sure that the screws of the terminal are free from looseness.

Connecting the cable to Outdoor Unit

- Remove the side panel for wiring connection.
 - Use the cord clamp to fix the cord.
 - Earthing work
 - Case 1 :Terminal block of Outdoor Unit have ⊕ mark.
 - Connect the cable of diameter 1.6mm² or more to the earthing terminal provided in the control box and do earthing.
 - Case 2 :Terminal block of Outdoor Unit don't have ⊕ mark.
 - Connect the cable of diameter 1.6mm² or more, to the panel of control box, marked as ⊕ and fasten with earth screw.
- ※ **Please check!**



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.

Flaring Work and Connection of Piping

Flaring work

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

1) Cut the pipes and the cable.

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

2) Burrs removal

- Completely remove all burrs from the cut cross section of pipe/tube.
- Put the end of the copper tube/pipe to downward direction as you remove burrs in order to avoid to let burrs drop in the tubing.

3) Putting nut on

- Remove flare nuts attached to indoor and outdoor units, then put them on pipe/tube having completed burr removal.
- (Not possible to put them on after flaring work)

4) Flaring work

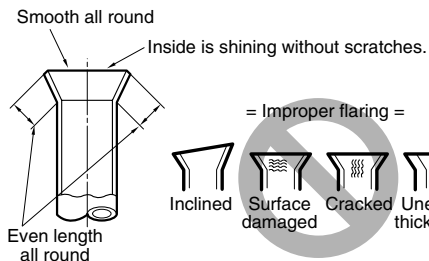
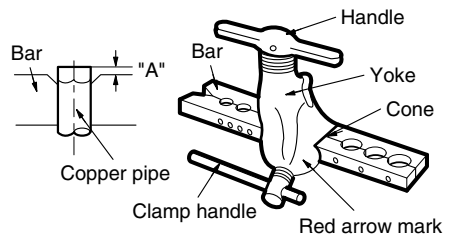
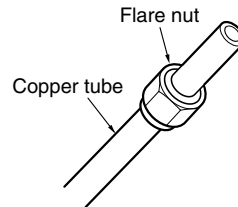
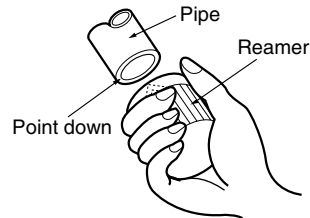
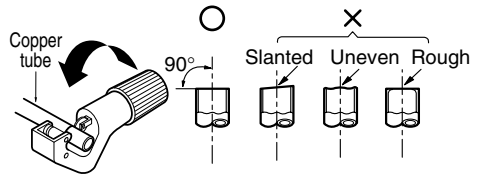
- Carry out flaring work using flaring tool as shown below.

| Outside diameter | | A | |
|------------------|------|---------|-----------|
| mm | inch | mm | inch |
| Ø6.35 | 1/4 | 1.1~1.3 | 0.04~0.05 |
| Ø9.52 | 3/8 | 1.5~1.7 | 0.06~0.07 |
| Ø12.7 | 1/2 | 1.6~1.8 | 0.06~0.07 |
| Ø15.88 | 5/8 | 1.6~1.8 | 0.06~0.07 |
| Ø19.05 | 3/4 | 1.9~2.1 | 0.07~0.08 |

Firmly hold copper tube in a bar(or die) as indicated dimension in the table above.

5) Check

- Compare the flared work with figure.
- If flare is noted to be defective, cut off the flared section and do flaring work again.

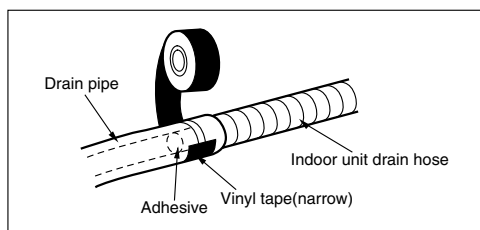
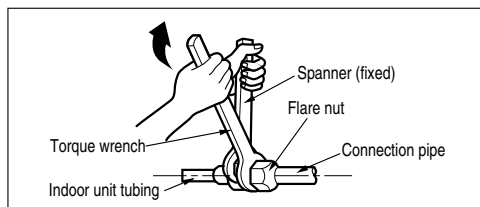
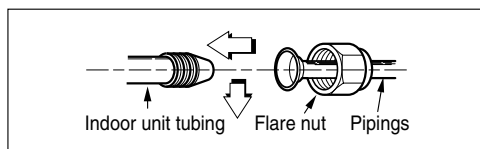


Connecting the pipings to the indoor unit and drain hose to drain pipe

- Align the center of the pipings and sufficiently tighten the flare nut by hand.
- Tighten the flare nut with a wrench.

| Outside diameter | | Torque |
|------------------|------|-----------------|
| mm | inch | kgf·m(lbf·ft) |
| Ø6.35 | 1/4 | 1.8~2.5(13~18) |
| Ø9.52 | 3/8 | 3.4~4.2(24~30) |
| Ø12.7 | 1/2 | 5.5~6.6(40~48) |
| Ø15.88 | 5/8 | 6.3~8.2(46~59) |
| Ø19.05 | 3/4 | 9.9~12.1(72~88) |

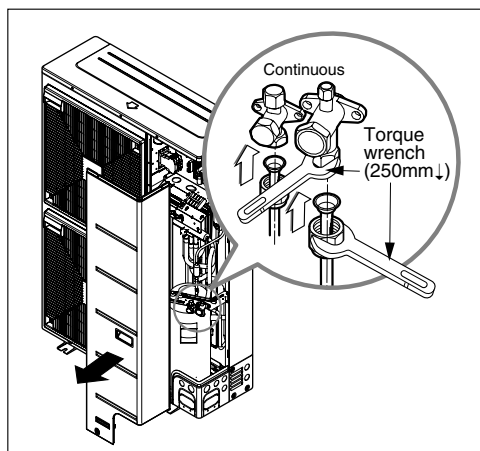
- When extending the drain hose at the indoor unit, install the drain pipe.



Connecting the pipes to the Outdoor unit

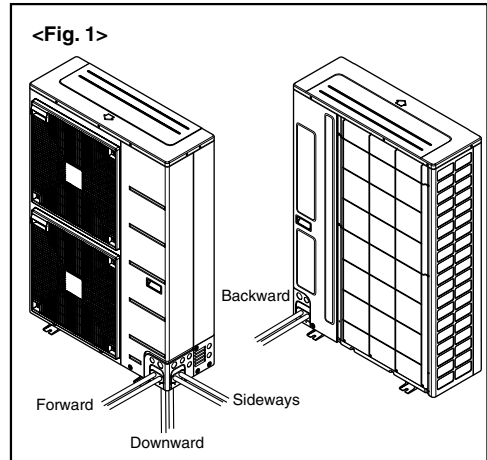
- Align the center of the piping and sufficiently tighten the flare nut by hand.
- Finally, tighten the flare nut with torque wrench until the wrench clicks.
 - When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.

| Outside diameter | | Torque |
|------------------|------|-----------------|
| mm | inch | kgf·m(lbf·ft) |
| Ø6.35 | 1/4 | 1.8~2.5(13~18) |
| Ø9.52 | 3/8 | 3.4~4.2(24~30) |
| Ø12.7 | 1/2 | 5.5~6.6(40~48) |
| Ø15.88 | 5/8 | 6.3~8.2(46~59) |
| Ø19.05 | 3/4 | 9.9~12.1(72~88) |

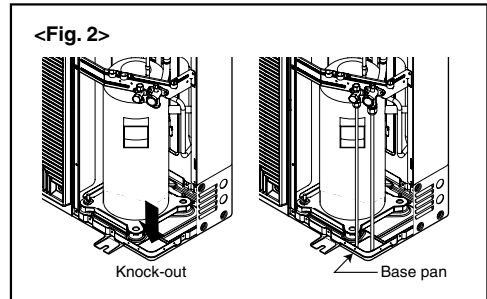


* When tighten the pipe, hold the hexagonal body.

- For the units with capacity more than 12.5kW, the installation piping is connectable in four directions.(Fig. 1)

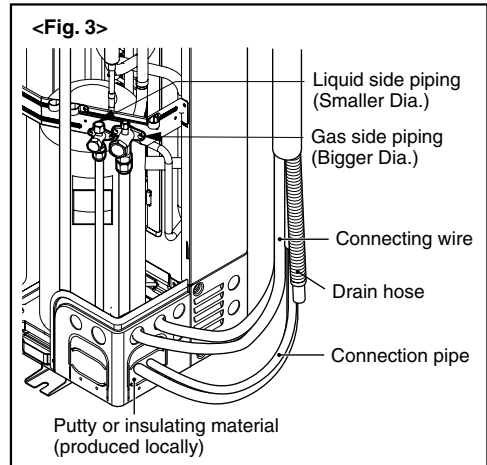


- When connecting in a downward direction, knock out the knockout hole of the base pan. (Fig. 2)



Preventing foreign objects from entering (Fig. 3)

- Plug the pipe through-holes with putty or insulation material(produced locally)to stop up all gaps,as shown in the Fig. 3.
- Insects or small animals entering the outdoor unit may cause a short circuit in the electrical box.



Forming the piping

Form the piping by wrapping the connecting portion of the indoor unit with insulation material and secure it with two kinds of vinyl tape.

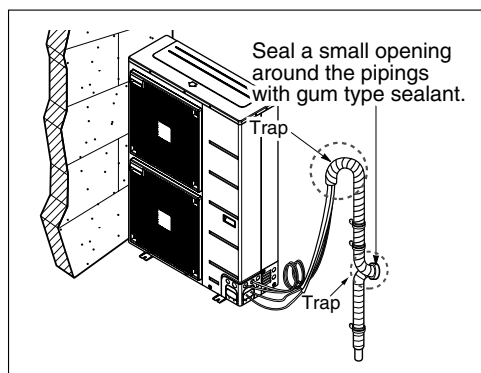
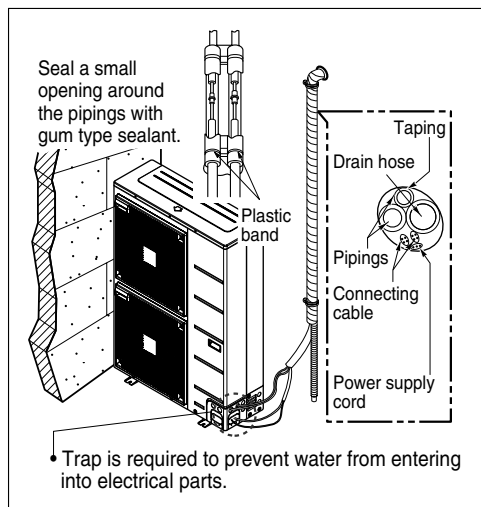
- If you want to connect an additional drain hose, the end of the drain outlet should be routed above the ground. Secure the drain hose appropriately.

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

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.

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

1. Tape the piping and connecting cable from down to up.
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 by saddle or equivalent.



Leakage test and Evacuation

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

1. Pressure in the system rises.
2. Operating current rises.
3. Cooling(or heating) efficiency drops.
4. Moisture in the refrigerant circuit may freeze and block capillary tubing.
5. Water may lead to corrosion of parts in the refrigeration system.

Therefore, the indoor/outdoor unit and connecting tube must be checked for leak tight, and vacuumed to remove incondensable gas and moisture in the system.

Preparation

- 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. Check that both the liquid and the gas side service valves on the outdoor unit are kept closed at this stage.

Leakage test

- Connect the manifold valve(with pressure gauges) and dry nitrogen gas cylinder to this service port with charge hoses.



CAUTION: Be sure to use a manifold valve for leakage test.

If it is not available, use a stop valve for this purpose. The "Hi" knob of the manifold valve must always be kept close.

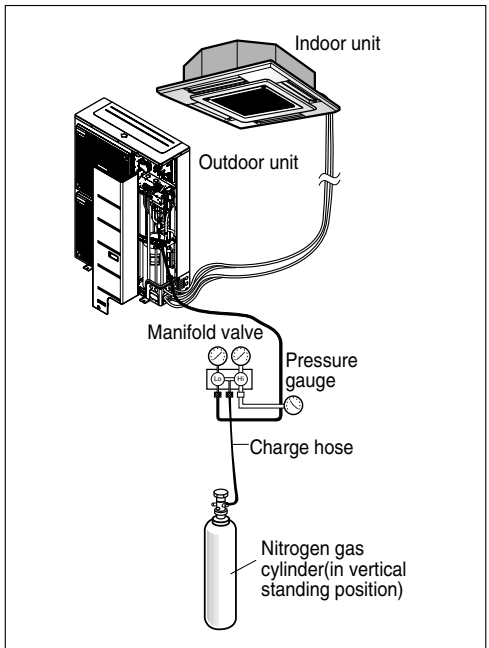
- Pressurize the system to no more than 3.0 Mpa with dry nitrogen gas and close the cylinder valve when the gauge reading reached 3.0 Mpa. Next, test for leaks with liquid soap.



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.

1. Do a leakage 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.

2. 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.



Evacuation

1. Connect the charge hose end described in the preceding steps to the vacuum pump to evacuate the tubing and indoor unit.
Confirm the "Lo and Hi" knob of the manifold valve is open. Then, run the vacuum pump.
The operation time for evacuation varies with tubing length and capacity of the pump. The following table shows the time required for evacuation.

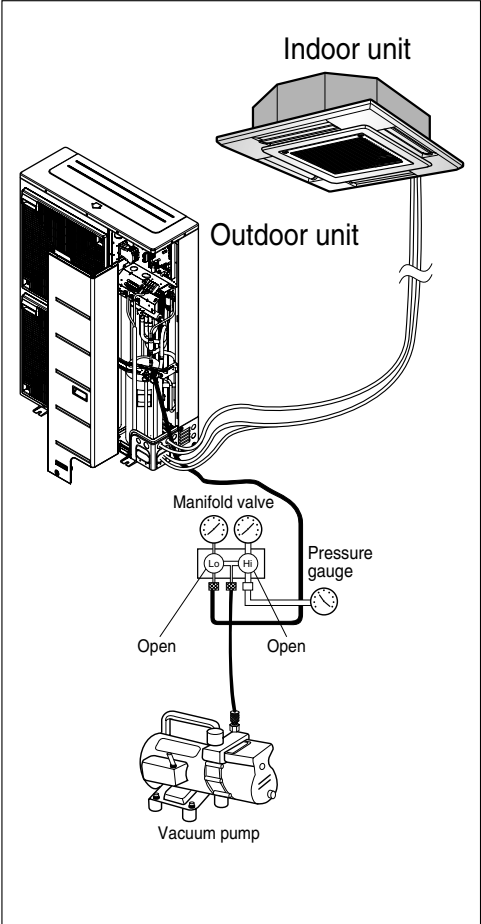
| Required time for evacuation when 30 gal/h vacuum pump is used | |
|--|---|
| If tubing length is less than 10 m(33 ft) | If tubing length is longer than 10 m(33 ft) |
| 30 min. or more | 60 min. or more |
| 0.5 torr or less | |

2. When the desired vacuum is reached, close the "Lo and Hi" knob of the manifold valve and stop the vacuum pump.

Finishing the job

1. With a service valve wrench, turn the valve stem of liquid side valve counter-clockwise to fully open the valve.
2. Turn the valve stem of gas side valve counter-clockwise to fully open the valve.
3. Loosen the charge hose connected to the gas side service port slightly to release the pressure, then remove the hose.
4. Replace the flare nut and its bonnet on the gas side service port and fasten the flare nut securely with an adjustable wrench. This process is very important to prevent leakage from the system.
5. Replace the valve caps at both gas and liquid side service valves and fasten them tight.

This completes air purging with a vacuum pump.
The air conditioner is now ready to test run.

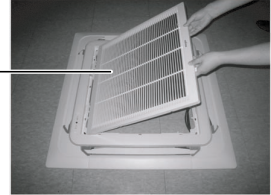


Installation of Decorative Panel

**The decorative panel has its installation direction.
Before installing the decorative panel, always remove the paper template.**

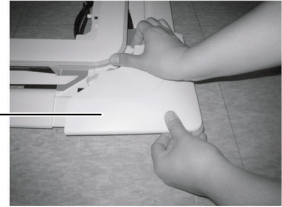
1. Remove the packing and take out air inlet grille from front panel.

Front grille



2. Remove the Corner covers of the panel.

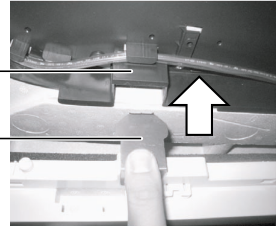
Coner cover



3. Fit the panel on the unit by inserting hooks as shown in picture.

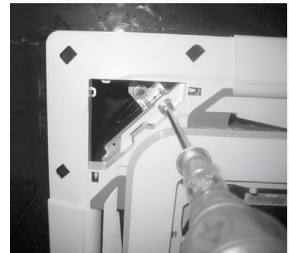
Hook clip

Hook

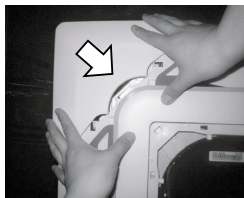


4. Insert two screws on diagonal corners of panel. Do not tighten the bolts completely. (The fixing screws are included in the indoor unit box.)

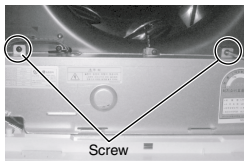
Check the alignment of panel with the ceiling. Height can be adjusted using hanging bolts as shown in picture. Insert the other two screws and tighten all screws completely.



5. Fit the corner covers.



6. Open two screws of control panel cover.

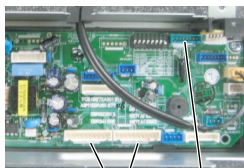


7. Connect one display connector and two vane control connectors of front panel to indoor unit PCB.

The position marking on PCB is as:

Display connector : CN-DISPLAY

Vane control connector: CN-VANE 1,2

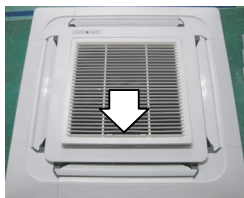


CN-VANE 1,2 CN-DISPLAY

8. Close the cover for control box.

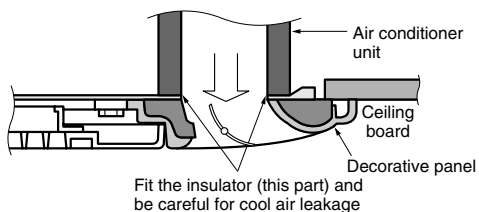


9. Install the air inlet grille and Filter on the panel.

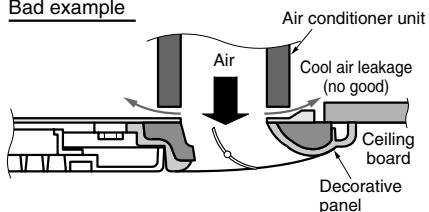


CAUTION: Install certainly the decorative panel.
Cool air leakage causes sweating. ⇨ Water drops fall.

Good example



Bad example

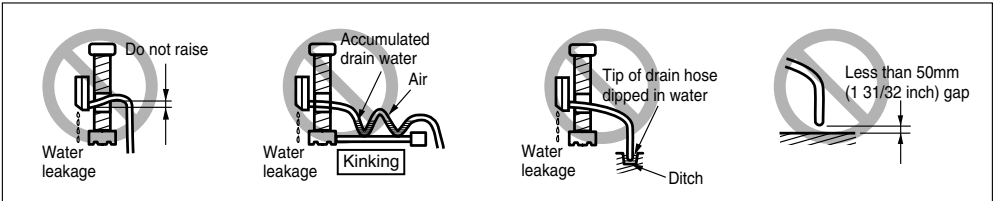


Indoor Unit Drain Piping

[Floor Standing Type]

1. The drain hose should point downward for optimum drainage.

2. Incorrect Installation Examples:

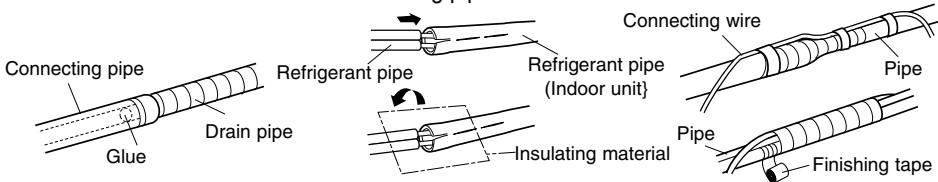


How to use the finishing tape for the drainpipe

After applying the glue, insert the drainpipe completely.

Wind the insulating material to connect the insulating material of the indoor unit and the insulating material of the connecting pipe.

Wind the finishing tape around the connecting pipe, the drainpipe, and the wire.



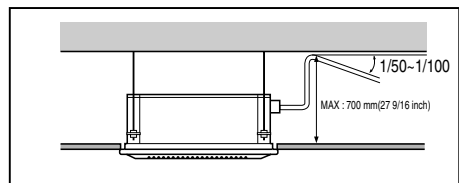
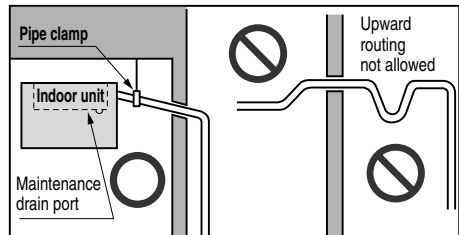
[Cassette Type]

- Drain piping must have down-slope (1/50 to 1/100); be sure not to provide up-and-down slope to prevent reversal flow.
- During drain piping connection, be careful not to exert extra force on the drain port on the indoor unit.
- The outside diameter of the drain connection on the indoor unit is 32mm(1 1/4 inch).

Piping material: Polyvinyl chloride pipe inner diameters \varnothing 25mm(1 inch) and pipe fittings

- Be sure to install heat insulation on the drain piping.

Heat insulation material: Polyethylene foam with thickness more than 8mm(5/16 inch).

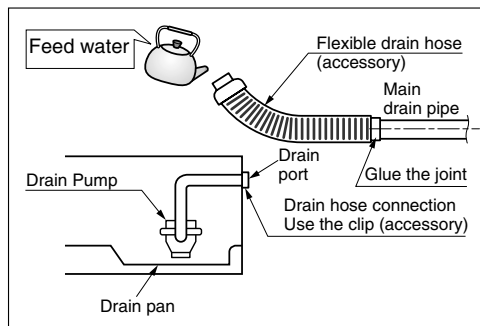


Drain test

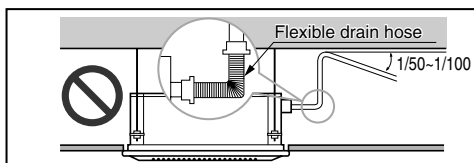
The air conditioner uses a drain pump to drain water.

Use the following procedure to test the drain pump operation:

- Connect the main drain pipe to the exterior and leave it provisionally until the test comes to an end.
- Feed water to the flexible drain hose and check the piping for leakage.
- Be sure to check the drain pump for normal operating and noise when electrical wiring is complete.
- When the test is complete, connect the flexible drain hose to the drain port on the indoor unit.



CAUTION : The supplied flexible drain hose should not be curved, neither screwed. The curved or screwed hose may cause a leakage of water.

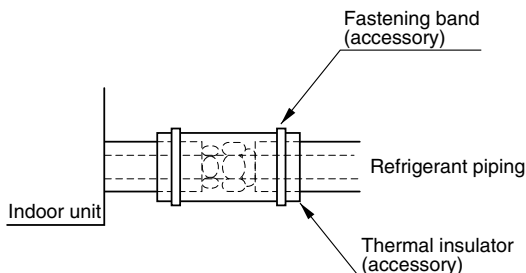


Heat insulation

1. Use the heat insulation material for the refrigerant piping which has an excellent heat-resistance [over 120°C(248°F)].

2. Precautions in high humidity circumstance:

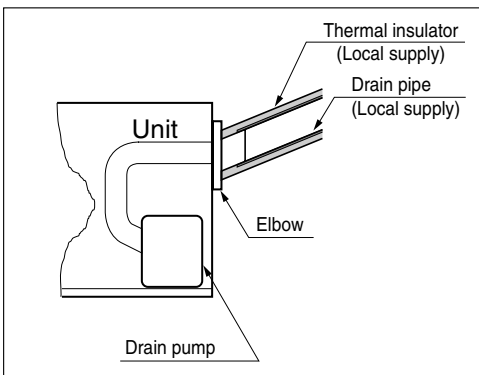
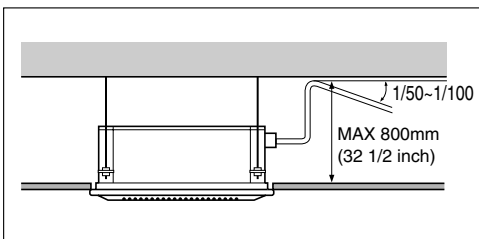
This air conditioner has been tested according to the "KS Standard Conditions with Mist" and confirmed that there is not any default. However, if it is operated for a long time in high humid atmosphere [dew point temperature: more than 23°C(73.4°F)], water drops are liable to fall. In this case, add heat insulation material according to the following procedure:



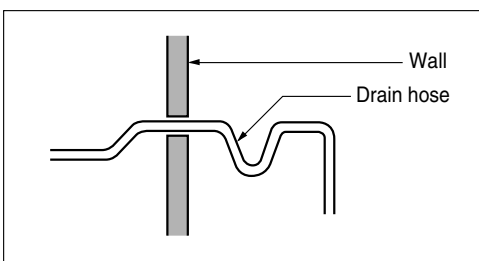
- Heat insulation material to be prepared... Adiabatic glass wool with thickness 10 to 20mm.
- Stick glass wool on all air conditioners that are located in ceiling atmosphere.

Attention

1. Possible drain-head height is up to 700mm(27 9/16 inch). So, it must be installed below 800mm(32 1/2 inch).
2. Keep the drain hose downward up to 1/50~1/100 inclination.
Prevent any upward flow or reverse flow in any part.
3. 5mm(3/16 inch) or thicker formed thermal insulator is provided for the drain pipe.



4. Upward routing is not allowed.
5. Be sure to check the drain pump for normal operation and abnormal noise when electrical wiring is complete.



Test running

1. PRECAUTIONS IN TEST RUNNING

- The initial power supply must provide at least 90% of the rated voltage. Otherwise, the air conditioner should not be operated.



- CAUTION**
- ① For test run, carry out the cooling operation firstly even during heating season. If heating operation is carried out firstly, it leads to the trouble of compressor. Then attention must be paid.
 - ② Carry out the test run more than 5 minutes without fail.
(Test run will be cancelled 18 minutes later automatically)

CHECK THE FOLLOWING ITEMS WHEN INSTALLATION IS COMPLETE

- After completing work, be sure to measure and record trial run properties, and store measured data, etc.
- Measuring items are room temperature, outside temperature, suction temperature, blow out temperature, wind velocity, wind volume, voltage, current, presence of abnormal vibration and noise, operating pressure, piping temperature, compressive pressure.
- As to the structure and appearance, check following items.

- ☐ Is the circulation of air adequate?
- ☐ Is the draining smooth?
- ☐ Is the heat insulation complete (refrigerant and drain piping)?
- ☐ Is there any leakage of refrigerant?

- ☐ Is the remote controller switch operated?
- ☐ Is there any faulty wiring?
- ☐ Are not terminal screws loosened?

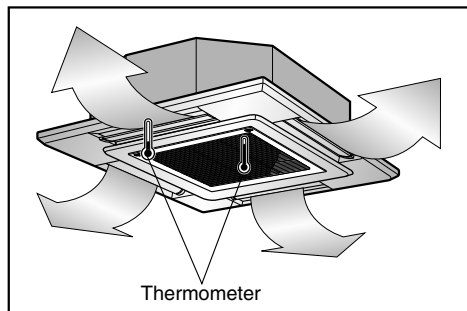
M4.....118N·cm{12kgf·cm} M5.....196N·cm{20kgf·cm}
M6.....245N·cm{25kgf·cm} M8.....588N·cm{60kgf·cm}

2. Connection of power supply

1. Connect the power supply cord to the independent power supply.
 - Circuit breaker is required.
2. Operate the unit for fifteen minutes or more.

3. Evaluation of the performance

1. Measure the temperature of the intake and discharge air.
2. Ensure the difference between the intake temperature and the discharge one is more than 8°C (Cooling) or reversely (Heating).

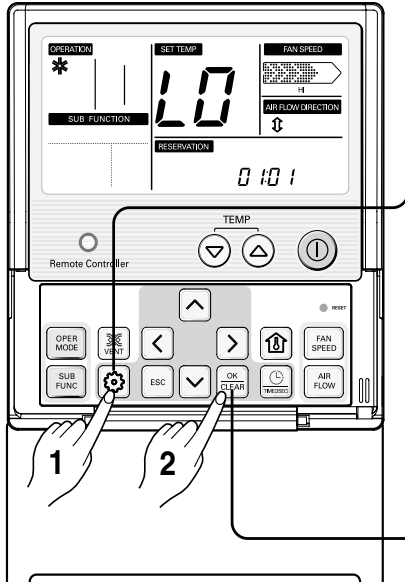



Installer Setting -Test Run Mode

1. Cassette type

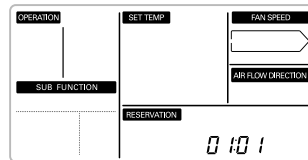
After installing the product, you must run a Test Run mode.

For details related to this operation, refer to the product manual.

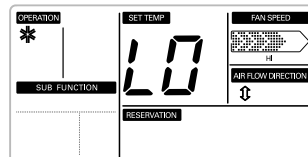


- 1** Keep pressing  button setting for 4 secs to enter installer setting mode until code displayed in timer segment.

0:10:1
Function Code Set

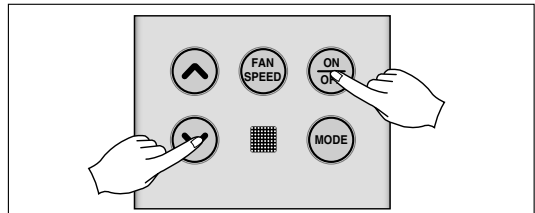


- 2** Press  button to start.



Floor Standing type

Push the temperature low key and On/Off Key For over 3 sec simultaneously indoor side



- * 18°C cooling, High Fan Speed, Airflow direction mode will be operated during 18 minutes with ignoring room temperature.
- * After running 18 minutes under test run mode, system will automatically turn OFF.
- * In case of duct type, the Airflow UP/DOWN function is not displayed.
- * During test run mode, receiving signal from wireless remote controller will release this operation.
- If you press any kind of button, Test Run mode will be released.



CAUTION: After the confirmation of the above conditions, prepare the wiring as follows:

- 1) Never fail to have an individual power specialized for the air conditioner. As for the method of wiring, be guided by the circuit diagram pasted on the inside of control box cover.
- 2) Provide a circuit breaker switch between power source and the unit.
- 3) The screw which fasten the wiring in the casing of electrical fittings are liable to come loose from vibrations to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could give rise to burn-out of the wires.)
- 4) Specification of power source
- 5) Confirm that electrical capacity is sufficient.
- 6) Be sure that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.
- 7) Confirm that the cable thickness is as specified in the power sources specification.
(Particularly note the relation between cable length and thickness.)
- 8) Never fail to equip a leakage breaker where it is wet or moist.
- 9) The following troubles would be caused by voltage drop-down.
 - Vibration of a magnetic switch, damage on the contact point there of, fuse breaking, disturbance to the normal function of a overload protection device.
 - Proper starting power is not given to the compressor.

HAND OVER

Teach the customer the operation and maintenance procedures, using the operation manual (air filter cleaning, temperature control, etc.).

Installation Guide at the Seaside

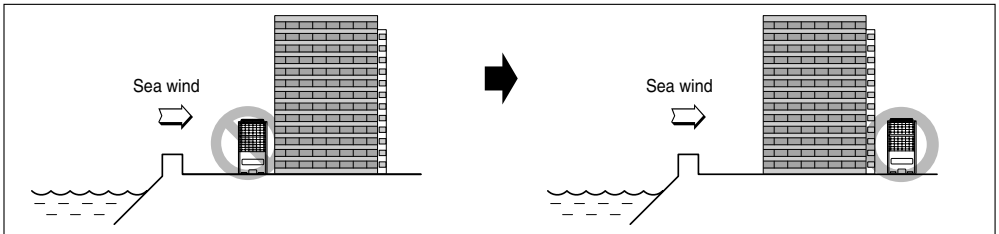


CAUTION:

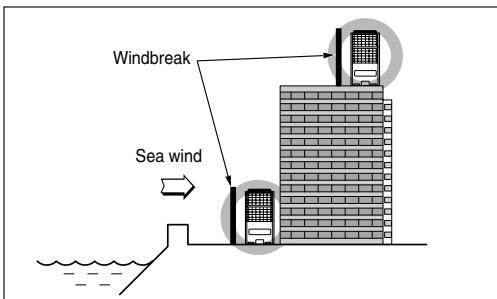
1. Air conditioners should not be installed in areas where corrosive gases, such as acid or alkaline gas, are produced.
2. Do not install the product where it could be exposed to sea wind (salty wind) directly. It can result corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunction or inefficient performance.
3. 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 heat exchanger.

Selecting the location(Outdoor Unit)

- 1) If the outdoor unit is to be installed close to the seaside, direct exposure to the sea wind should be avoided. Install the outdoor unit on the opposite side of the sea wind direction.



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



- 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.

- 3) Select a well-drained place.

1. If you can't meet above guide line in the seaside installation, please contact LG Electronics for the additional anticorrosion treatment.
2. Periodic (more than once/year) cleaning of the dust or salt particles stuck on the heat exchanger by using water



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specifications, designs and other content presented in this manual are current as of September 2007 but subject to change without notice.