



Owner's Manual

Original Instructions

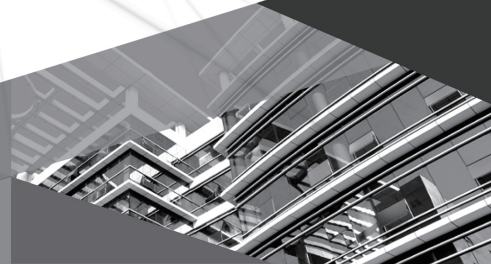
Split Air Conditioner



Thank you for choosing our product.

Please read this Owner's Manual carefully before operation and retain it for future reference.

If you have lost the Owner's Manual, please contact the local agent or visit www.gree.com or send an email to global@cn.gree.com for the electronic version.



GWH09AOCXD-K6DNA1B
GWH12AOCXD-K6DNA1B

Content

Operation Notices

The Refrigerant.....	1
Precautions.....	2
Special Functions and Instructions.....	7

Installation Notice

Safety operation of flammable refrigerant.....	11
Installation dimension diagram.....	13
Safety precautions for installing and relocating the unit.....	14
Tools for installation.....	15
Selection of installation location.....	15
Requirements for electric connection.....	16

Installation

Name Description of Components in the Accessory Box.....	17
Installation of indoor unit.....	18
Installation Instructions for Fresh Air Ventilation Device (Exhaust).....	25
Installation of outdoor unit.....	28
Vacuum pumping.....	31
Leakage detection.....	31
Check after installation.....	32
Test operation.....	32

Maintenance

Clean and Maintenance.....	33
----------------------------	----

Screen Operation Guide

Parts' Name.....	37
Buttons on remote controller.....	39
Introduction for buttons on remote controller.....	39
Replacement of batteries in remote controller.....	44
Emergency operation.....	44

Malfunction

Malfunction analysis.....	45
---------------------------	----

Attachment

Configuration of connection pipe.....	49
Pipe expanding method.....	51
Specialist's Manual.....	52

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

Explanation of Symbols



DANGER

Indicates a hazardous situation that, if not avoided, will result in death or serious injury.



WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.



CAUTION

Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.

NOTICE

Indicates important but not hazard-related information, used to indicate risk of property damage.



Indicates a hazard that would be assigned a signal word **WARNING** or **CAUTION**.

Exception Clauses

Manufacturer will bear no responsibilities when personal injury or property loss is caused by the following reasons.

1. Damage the product due to improper use or misuse of the product;
2. Alter, change, maintain or use the product with other equipment without abiding by the instruction manual of manufacturer;
3. After verification, the defect of product is directly caused by corrosive gas;
4. After verification, the defects are due to improper operation during transportation of product;
5. Operate, repair, maintain the unit without abiding by instruction manual or related regulations;
6. After verification, the problem or dispute is caused by the quality specification or performance of parts and components that produced by other manufacturers;
7. The damage is caused by natural calamities, bad using environment or force majeure.

If it needs to install, move or maintain the air conditioner, please contact dealer or local service center to conduct it at first. Air conditioner must be installed, moved or maintained by appointed unit. Otherwise, it may cause serious damage or personal injury or death.

When refrigerant leaks or requires discharge during installation, maintenance, or disassembly, it should be handled by certified professionals or otherwise in compliance with local laws and regulations.



Appliance filled with flammable gas R32.



Before use the appliance, read the owner's manual first.



Before install the appliance, read the installation manual first.



Before repair the appliance, read the service manual first.

The Refrigerant

- To realize the function of the air conditioner unit, a special refrigerant circulates in the system. The used refrigerant is the fluoride R32, which is specially cleaned. The refrigerant is flammable and inodorous. Furthermore, it can lead to explosion under certain conditions. But the flammability of the refrigerant is very low. It can be ignited only by fire.
- Compared to common refrigerants, R32 is a nonpolluting refrigerant with no harm to the ozonosphere. The influence upon the greenhouse effect is also lower. R32 has got very good thermodynamic features which lead to a really high energy efficiency. The units therefore need a less filling.

WARNING:

Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacture. Should repair be necessary, contact your nearest authorized Service Centre. Any repairs carried out by unqualified personnel may be dangerous. The appliance shall be stored in a room without continuously operating ignition sources. (for example: open flames, an operating gas appliance or an operating electric heater.) Do not pierce or burn.

Appliance shall be installed, operated and stored in a room with a floor area larger than $X \text{ m}^2$. (Please refer to table "a" in section of " Safety operation of flammable refrigerant " for Space X.)

Appliance filled with flammable gas R32. For repairs, strictly follow manufacturer's instructions only. Be aware that refrigerants may not contain an odour. Read specialist's manual.





WARNING

Operation and Maintenance

- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.
- Do not connect air conditioner to multi-purpose socket. Otherwise, it may cause fire hazard.
- Do disconnect power supply when cleaning air conditioner. Otherwise, it may cause electric shock.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Do not wash the air conditioner with water to avoid electric shock.
- Do not spray water on indoor unit. It may cause electric shock or malfunction.
- After removing the filter, do not touch fins to avoid injury.
- Do not use fire or hair dryer to dry the filter to avoid deformation or fire hazard.

Precautions



WARNING

- Maintenance must be performed by qualified professionals. Otherwise, it may cause personal injury or damage.
- Do not repair air conditioner by yourself. It may cause electric shock or damage. Please contact dealer when you need to repair air conditioner.
- Do not extend fingers or objects into air inlet or air outlet. It may cause personal injury or damage.
- Do not block air outlet or air inlet. It may cause malfunction.
- Do not spill water on the remote controller, otherwise the remote controller may be broken.
- When below phenomenon occurs, please turn off air conditioner and disconnect power immediately, and then contact the dealer or qualified professionals for service.
 - Power cord is overheating or damaged.
 - There's abnormal sound during operation.
 - Circuit break trips off frequently.
 - Air conditioner gives off burning smell.
 - Indoor unit is leaking.
- If the air conditioner operates under abnormal conditions, it may cause malfunction, electric shock or fire hazard.
- When turning on or turning off the unit by emergency operation switch, please press this switch with an insulating object other than metal.
- Do not step on top panel of outdoor unit, or put heavy objects. It may cause damage or personal injury.

Precautions



WARNING

Attachment

- Installation must be performed by qualified professionals. Otherwise, it may cause personal injury or damage.
- Must follow the electric safety regulations when installing the unit.
- According to the local safety regulations, use qualified power supply circuit and circuit break.
- Do install the circuit break. If not, it may cause malfunction.
- An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
- Including an circuit break with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload.
- Air Conditioner should be properly grounded. Incorrect grounding may cause electric shock.
- Don't use unqualified power cord.
- Make sure the power supply matches with the requirement of air conditioner. Unstable power supply or incorrect wiring may result in electric shock, fire hazard or malfunction. Please install proper power supply cables before using the air conditioner.
- Properly connect the live wire, neutral wire and grounding wire of power socket.
- Be sure to cut off the power supply before proceeding any work related to electricity and safety.

Precautions



WARNING

- Do not put through the power before finishing installation.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.
- The appliance shall be installed in accordance with national wiring regulations.
- Installation must be performed in accordance with the requirement of NEC and CEC by authorized personnel only.
- The air conditioner is the first class electric appliance. It must be properly grounding with specialized grounding device by a professional. Please make sure it is always grounded effectively, otherwise it may cause electric shock.
- The yellow-green wire in air conditioner is grounding wire, which can't be used for other purposes.
- The grounding resistance should comply with national electric safety regulations.
- The appliance must be positioned so that the plug is accessible.
- All wires of indoor unit and outdoor unit should be connected by a professional.
- If the length of power connection wire is insufficient, please contact the supplier for a new one. Avoid extending the wire by yourself.

Precautions



WARNING

- For the air conditioner with plug, the plug should be reachable after finishing installation.
- For the air conditioner without plug, an circuit break must be installed in the line.
- If you need to relocate the air conditioner to another place, only the qualified person can perform the work. Otherwise, it may cause personal injury or damage.
- Select a location which is out of reach for children and far away from animals or plants. If it is unavoidable, please add the fence for safety purpose.
- The indoor unit should be installed close to the wall.
- Instructions for installation and use of this product are provided by the manufacturer.

Working temperature range

	Indoor side DB/WB(°C)	Outdoor side DB/WB(°C)
Maximum cooling	32/23	43/26
Maximum heating	27/-	24/18

NOTICE:

- The operating temperature range (outdoor temperature) for cooling only unit is 18°C ~ 43°C ; for heat pump unit is -15°C ~ 43°C .

Special Functions and Instructions

Defrost function

Under heating mode, after operating for a period of time, the outdoor heat exchanger may frost, which will impact the heating effect. Then the air conditioner will automatically enter defrost mode. When defrosting, the indoor unit will not supply hot air, and you may hear liquid flowing sound; condensate water or stream may generate in outdoor unit. The above are all belonging to normal phenomenon.

Anti-cold wind function

In heating mode, when the heating operation starts or the automatic defrost operation ends, if the indoor heat exchanger does not reach a certain temperature, the indoor fan will not start immediately to prevent the cold wind from being blown.

Air louver automatic reset function

In order to prevent the air louver from being jammed due to artificial movement of the air louver, the air louver will perform a reset action for about 50 seconds when the power is turned off or the unit is re-energized after power failure. This is a normal phenomenon. Do not disconnect the power supply before the air louver is closed.

Heating and supplying residual heat function

When it operates in heating mode or automatic heating mode with the compressor and the indoor fan operating, turn off the unit, the compressor and outdoor fan stop, the air louver turns to the level position, and the indoor fan will operate at a low fan speed for a short period of time and then shut down. For the good appearance of product, the air louver will close again after shutdown, which is a normal phenomenon.


Photosensitive function




When set the remote controller to "Auto Light", the air conditioner automatically adjusts the display brightness and buzzer sound according to the ambient light intensity. When the air conditioner detects that the ambient light is weak for a period of time, it automatically turns off the display. If it is operated by remote controller, the display will display at low brightness for a short time and the buzzer will beep slightly; when the air conditioner detects a strong ambient light for a period of time, it will exit the above control. The air conditioner will automatically turn on sleep mode if it detects low ambient light for a long time in automatic mode.

Fresh air function


Through the indoor unit fresh air device and the independent fresh air ventilation device (exhaust), the outdoor side fresh air can be introduced into the room through filtration, and the indoor side dirty air can be discharged outdoors to keep the indoor air fresh.

Special Functions and Instructions

The carbon dioxide concentration indicator “” displays “green”, “yellow (orange)”, and “red” respectively indicating that the indoor carbon dioxide concentration levels are “excellent”, “medium”, and “poor”.

1. Fresh air function: under power-on or power-off status, open the fresh air function by pressing the “” button on the remote controller, “” and “” on the indoor unit panel are on.
2. When the fresh air function is activated, different fan speeds correspond to different fresh air ventilation volumes. The higher the fan speed is, the greater the fresh air ventilation volume will be. If there is a large demand for fresh air or a better fresh air effect is required, it is recommended to increase fan speed appropriately. The higher the fan speed is, the better the fresh air effect will be.
3. The carbon dioxide concentration value used by the fresh air function is the value of carbon dioxide concentration near the air conditioning detection sensor. The detection value is for reference only, and there will be a certain difference from the concentration value of detection result measured by professional instruments and equipment.

Tips:

- ① When the air conditioner is first powered on, the carbon dioxide sensor needs to be warmed up for a period of time. During the warm-up period, the carbon dioxide concentration level is processed according to “medium” level. After warming up, the carbon dioxide concentration level is updated according to the actual situation.
- ② When the room is densely populated, the area of use is relatively small, or the room is newly renovated, and the fresh air function is turned on at the highest fan speed for a long time, “” still shows red, it is recommended to open the door and windows for ventilation.

Please note when installing:

- ① In order to ensure the fresh air effect, the indoor air inlet of fresh air ventilation device (exhaust) should be away from the fresh air outlet of the indoor unit (install it on the right side opposite to the indoor unit as much as possible), and in a hidden location such as a corner.
- ② The air outlet and fresh air outlet should be kept at least 20 cm away in both indoor and outdoor sides to prevent mutual interference.
- ③ Make sure that there are no obstacles outside the wall of installation location, and there are no drain pipes that hinder the installation of fresh air ventilation device (exhaust) [make sure that there is enough space to place the fresh air ventilation device (exhaust) outside the wall at the hole position], air inlet of the fresh air ventilation device (exhaust) inside the wall should be over 1.5 meters away from the head of the bed.
- ④ It is recommended that the fresh air ventilation device (exhaust) be installed in a place where it is convenient for high-altitude operations. In order to facilitate

Special Functions and Instructions

installation and later maintenance, location of the fresh air ventilation device (exhaust) should take enough operating space into consideration when selecting the location.

⑤ The fresh air ventilation device (exhaust) should be as far away as possible from the outdoor unit to prevent abnormal vibration or noise.

⑥ It is recommended that the air inlet of fresh air pipe be installed in the place where is convenient for high-altitude operations. In order to facilitate installation and later maintenance, location of the fresh air duct inlet should take enough operating space into consideration when selecting the location.

⑦ The outdoor fresh air inlet should avoid the air outlet of outdoor unit as far as possible and keep a certain distance, try to avoid the fresh air inlet installed inside the outdoor louver grille, especially in the dirty, high-temperature and closed wall hole, to ensure the quality of the fresh air.

UV-C lamp

WARNING

This appliance contains a UV emitter. Do not stare at the light source.

– this appliance contains a UV-C lamp;

– read the maintenance instructions before opening the appliance;

– details for cleaning and other user maintenance of the appliance.

① Prior to cleaning or other maintenance, the appliance must be disconnected from the supply mains;

② Open the panel to take out the filter.

③ Use a soft cotton cloth to wipe the quartz glass until it's clean.

④ Reinstall the filter when it has been cleaned and then close the panel cover.

– the method, frequency of cleaning, and necessary precautions to be taken;

Cleaning method: wipe the quartz glass with soft cloth until the surface is clean.

Cleaning frequency: clean it every 6 months; the cleaning frequency can be properly adjusted according to the degree of air cleanliness;

Preventive measures:

① The unit must be turned off and the power must be cut off before cleaning. Otherwise, it may cause electric shock and damage by UV.

② Do not use volatile oil, alcohol, diluents or lacquer to clean the UV-C lamp. Otherwise, the UV-C lamp may be damaged.

③ Do not touch the fins of indoor unit to prevent scalding.

④ Do not scratch the surface of glass when wiping it.

Special Functions and Instructions

- unintended use of the appliance or damage to the housing may result in the escape of dangerous UV-C radiation. UV-C radiation may, even in small doses, cause harm to the eyes and skin;
- appliances that are obviously damaged must not be operated;
- before opening doors and access panels bearing the ultraviolet radiation hazard Symbol for the conducting user maintenance, it is recommended to disconnect the power;
- UV-C barriers bearing the ultraviolet radiation hazard symbol should not be removed;
- do not operate UV-C lamps outside of the appliance.

WARNING

- Do not operate the UV-C emitter when it is removed from the appliance;
- To avoid any dangerous situations, the user shall not replace the UV-C lamp, which must be performed by the manufacturer or the professionals of the maintenance or similar department;

Safety operation of flammable refrigerant

Qualification requirement for installation and maintenance man

- All the work men who are engaging in the refrigeration system should bear the valid certification awarded by the authoritative organization and the qualification for dealing with the refrigeration system recognized by this industry. If it needs other technician to maintain and repair the appliance, they should be supervised by the person who bears the qualification for using the flammable refrigerant.
- It can only be repaired by the method suggested by the equipment's manufacturer.

Installation notes

- The air conditioner is not allowed to use in a room that has running fire (such as fire source, working coal gas ware, operating heater).
- It is not allowed to drill hole or burn the connection pipe.
- The air conditioner must be installed in a room that is larger than the minimum room area. The minimum room area is shown on the nameplate or following table a.
- Leak test is a must after installation.

table a - Minimum room area (m²)

Minimum room area(m ²)	Charge amount (kg)	≤1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2	2.1	2.2	2.3	2.4	2.5
	floor location	/	14.5	16.8	19.3	22	24.8	27.8	31	34.3	37.8	41.5	45.4	49.4	53.6
window mounted	/	5.2	6.1	7	7.9	8.9	10	11.2	12.4	13.6	15	16.3	17.8	19.3	
wall mounted	/	1.6	1.9	2.1	2.4	2.8	3.1	3.4	3.8	4.2	4.6	5	5.5	6	
ceiling mounted	/	1.1	1.3	1.4	1.6	1.8	2.1	2.3	2.6	2.8	3.1	3.4	3.7	4	

Maintenance notes

- Check whether the maintenance area or the room area meet the requirement of the nameplate.
 - It's only allowed to be operated in the rooms that meet the requirement of the nameplate.
- Check whether the maintenance area is well-ventilated.
 - The continuous ventilation status should be kept during the operation process.
- Check whether there is fire source or potential fire source in the maintenance area.
 - The naked flame is prohibited in the maintenance area; and the “no smoking” warning board should be hanged.
- Check whether the appliance mark is in good condition.
 - Replace the vague or damaged warning mark.

Welding

- If you should cut or weld the refrigerant system pipes in the process of maintaining, please follow the steps as below:

Safety operation of flammable refrigerant

- a. Shut down the unit and cut power supply
 - b. Eliminate the refrigerant
 - c. Vacuuming
 - d. Clean it with N₂ gas
 - e. Cutting or welding
 - f. Carry back to the service spot for welding
- The refrigerant should be recycled into the specialized storage tank.
 - Make sure that there isn't any naked flame near the outlet of the vacuum pump and it's well-ventilated.

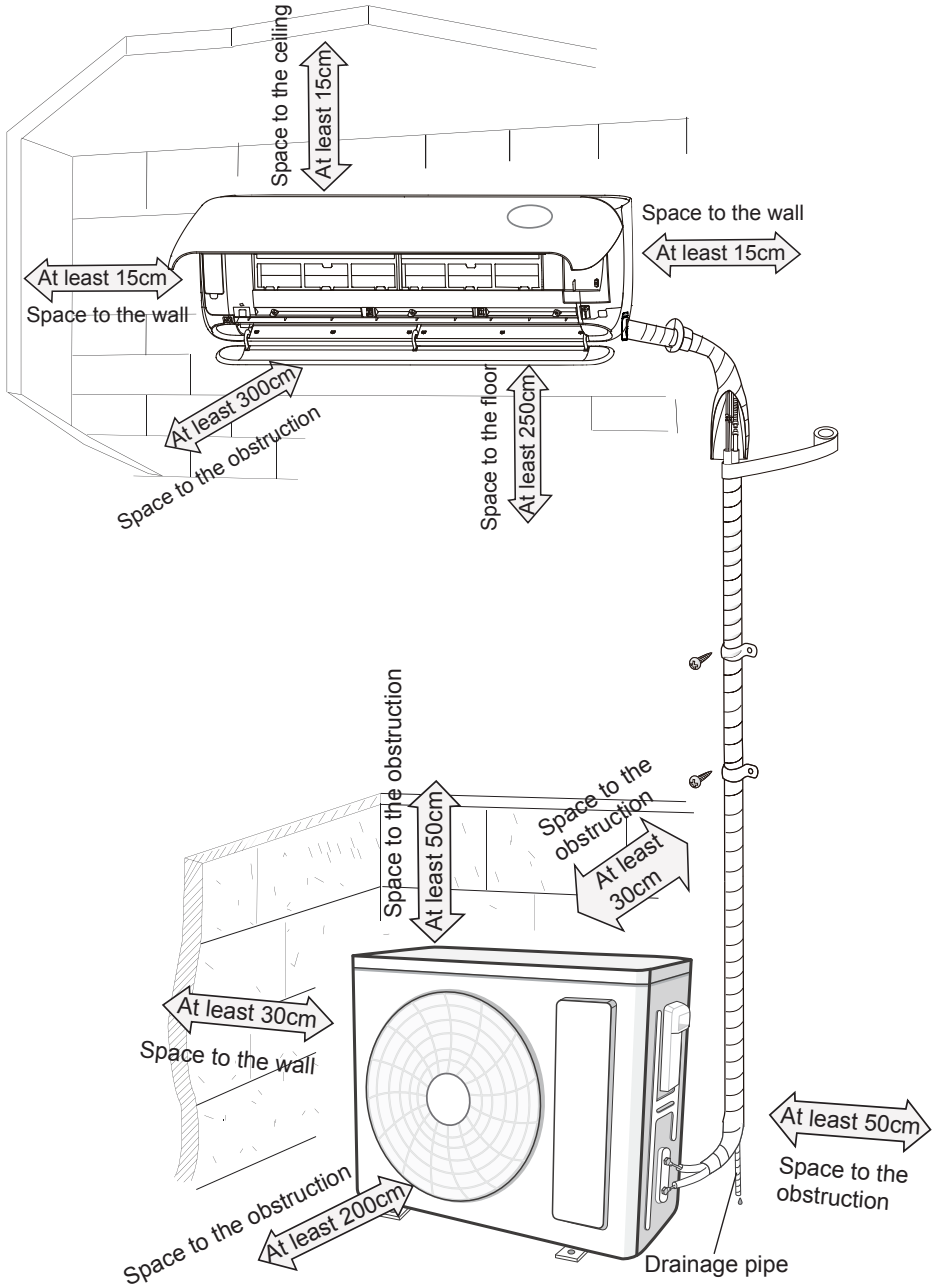
Filling the refrigerant

- Use the refrigerant filling appliances specialized for R32. Make sure that different kinds of refrigerant won't contaminate with each other.
- The refrigerant tank should be kept upright at the time of filling refrigerant.
- Stick the label on the system after filling is finished (or haven't finished).
- Don't overfilling.
- After filling is finished, please do the leakage detection before test running; another time of leak detection should be done when it's removed.

Safety instructions for transportation and storage

- Please use the flammable gas detector to check before unload and open the container.
- No fire source and smoking.
- According to the local rules and laws.

Installation dimension diagram



Safety precautions for installing and relocating the unit

To ensure safety, please be mindful of the following precautions.

Warning

- **When installing or relocating the unit, be sure to keep the refrigerant circuit free from air or substances other than the specified refrigerant.**
Any presence of air or other foreign substance in the refrigerant circuit will cause system pressure rise or compressor rupture, resulting in injury.
- **When installing or moving this unit, do not charge the refrigerant which is not comply with that on the nameplate or unqualified refrigerant.**
Otherwise, it may cause abnormal operation, wrong action, mechanical malfunction or even series safety accident.
- **When refrigerant needs to be recovered during relocating or repairing the unit, be sure that the unit is running in cooling mode. Then, fully close the valve at high pressure side (liquid valve). About 30-40 seconds later, fully close the valve at low pressure side (gas valve), immediately stop the unit and disconnect power. Please note that the time for refrigerant recovery should not exceed 1 minute.**
If refrigerant recovery takes too much time, air may be sucked in and cause pressure rise or compressor rupture, resulting in injury.
- **During refrigerant recovery, make sure that liquid valve and gas valve are fully closed and power is disconnected before detaching the connection pipe.**
If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.
- **When installing the unit, make sure that connection pipe is securely connected before the compressor starts running.**
If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.
- **Prohibit installing the unit at the place where there may be leaked corrosive gas or flammable gas.**
If there leaked gas around the unit, it may cause explosion and other accidents.
- **Do not use extension cords for electrical connections. If the electric wire is not long enough, please contact a local service center authorized and ask for a proper electric wire.**
Poor connections may lead to electric shock or fire.
- **Use the specified types of wires for electrical connections between the indoor and outdoor units. Firmly clamp the wires so that their terminals receive no external stresses.**
Electric wires with insufficient capacity, wrong wire connections and insecure wire terminals may cause electric shock or fire.

Tools for installation

1 Level meter	2 Screw driver	3 Impact drill
4 Drill head	5 Pipe expander	6 Torque wrench
7 Open-end wrench	8 Pipe cutter	9 Leakage detector
10 Vacuum pump	11 Pressure meter	12 Universal meter
13 Inner hexagon spanner		14 Measuring tape

Note:

- Please contact the local agent for installation.
- Don't use unqualified power cord.

Selection of installation location

Basic requirement	Indoor unit
<p>Installing the unit in the following places may cause malfunction. If it is unavoidable, please consult the local dealer:</p> <ol style="list-style-type: none"> 1. The place with strong heat sources, vapors, flammable or explosive gas, or volatile objects spread in the air. 2. The place with high-frequency devices (such as welding machine, medical equipment). 3. The place near coast area. 4. The place with oil or fumes in the air. 5. The place with sulfureted gas. 6. Other places with special circumstances. 7. The appliance shall not be installed in the laundry. 8. It's not allowed to be installed on the unstable or motive base structure (such as truck) or in the corrosive environment (such as chemical factory). 	<ol style="list-style-type: none"> 1. There should be no obstruction near air inlet and air outlet. 2. Select a location where the condensation water can be dispersed easily and won't affect other people. 3. Select a location which is convenient to connect the outdoor unit and near the power socket. 4. Select a location which is out of reach for children. 5. The location should be able to withstand the weight of indoor unit and won't increase noise and vibration. 6. The appliance must be installed 2.5m above floor. 7. Don't install the indoor unit right above the electric appliance. 8. Please try your best to keep way from fluorescent lamp.
Outdoor unit	
<ol style="list-style-type: none"> 1. Select a location where the noise and outflow air emitted by the outdoor unit will not affect neighborhood. 2. The location should be well ventilated and dry, in which the outdoor unit won't be exposed directly to sunlight or strong wind. 3. The location should be able to withstand the weight of outdoor unit. 4. Make sure that the installation follows the requirement of installation dimension diagram. 5. Select a location which is out of reach for children and far away from animals or plants. If it is unavoidable, please add the fence for safety purpose. 	

Requirements for electric connection

Safety precaution

1. Must follow the electric safety regulations when installing the unit.
2. According to the local safety regulations, use qualified power supply circuit and air switch.
3. Make sure the power supply matches with the requirement of air conditioner. Unstable power supply or incorrect wiring or malfunction. Please install proper power supply cables before using the air conditioner.
4. Properly connect the live wire, neutral wire and grounding wire of power socket.
5. Be sure to cut off the power supply before proceeding any work related to electricity and safety. For models with a power plug, make sure the plug is within reach after installation.
6. Do not put through the power before finishing installation.
7. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
8. The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.
9. The appliance shall be installed in accordance with national wiring regulations.
10. Appliance shall be installed, operated and stored in a room with a floor area larger than Xm^2 . (Please refer to table "a" in section of " Safety operation of flammable refrigerant " for Space X.)



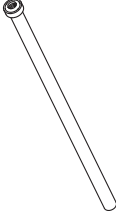
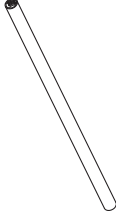





Please notice that the unit is filled with flammable gas R32. Inappropriate treatment of the unit involves the risk of severe damages of people and material. Details to this refrigerant are found in chapter "refrigerant".

Grounding requirement

1. The air conditioner is the first class electric appliance. It must be properly grounding with specialized grounding device by a professional. Please make sure it is always grounded effectively, otherwise it may cause electric shock.
2. The yellow-green wire in air conditioner is grounding wire, which can't be used for other purposes.
3. The grounding resistance should comply with national electric safety regulations.
4. The appliance must be positioned so that the plug is accessible.
5. An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
6. Including an air switch with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

Air-conditioner	Air switch capacity
09K, 12K	10A

Name Description of Components in the Accessory Box

 <p>Fresh air pipe 3 (air in)</p>	 <p>Fresh air pipe 4 (air in)</p>
 <p>Air outlet assembly</p>	 <p>Rainproof joint 2</p>
 <p>Filter assembly</p>	 <p>Fixing clamp</p>
 <p>Health filter</p>	

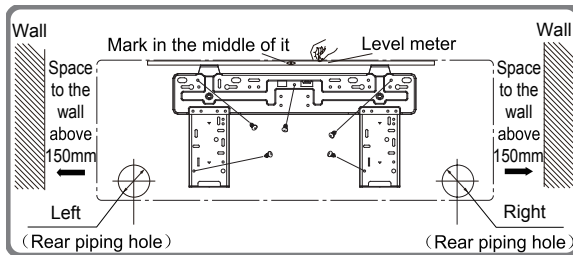
Note:

1. The after-sales installation personnel select the required parts according to the different installation environment. Therefore, some parts may not be needed for the installation. Please refer to the actual installation.
2. No air out assembly for the models without the air discharge function.

Installation of indoor unit

■ Install wall-mounted plate

- Use the hanging line method or leveling instrument to find the level. The indoor unit must be installed horizontally and must not be tilted left or right to prevent water leak.
- Fix the wall-mounted plate to the wall with screw after treatment (such as pre-embedded plastic particles).
- After installation, pull the wall-mounted plate by hand to confirm whether it is firmly fixed. After installation, the wall-mounted plate should be able to withstand a weight of 60 kg, and the stress of each fixing screw should be relatively uniform.



■ Connect the drain pipe

- Connect the drain pipe in the accessory to the outlet pipe of the indoor unit, and fix it with two rounds of electrical tape.
- Take out the insulation tube in the accessory and wrap it on the drain pipe.
- Wrap the insulation tube with wrapping tape. During the wrapping, start from the connection between the outlet pipe of the indoor unit and the insulation tube to avoid the movement of the insulation tube after installation. The drain pipe should be inclined from the inside to the outside to ensure that the condensate can be discharged smoothly.

Note:

that the drain part of insulation pipe that wrapped in the indoor side should be tightly connected with the casing outside the outlet pipe of the indoor unit; the drain pipe should be inclined, and there should be no twists, bumps, undulations, etc., and the outlet should not be placed in the water, the pipelines which is prone to corrosion or odor.

Installation of indoor unit

Indoor unit wiring

- The indoor unit has been connected to the power cord and power cable, you only need to check for looseness.

Warning:

Because one end of the power cable is connected in the unit, when the single unit conducts power-on test, the other end of the power cable may be live, please pay attention to insulation to avoid short circuit or electric shock. When the length of the connecting wire is not enough, please contact the local Service Center to re-equip a dedicated wire with sufficient length, and additional connection between the wires is not allowed.

Install connecting pipe (subject to actual distribution)

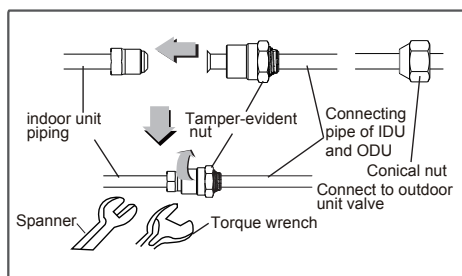
- Due to the technical innovation and improvement of product, there are currently two installation status and installation methods for R32 refrigerant connection pipe parts: temper-evident nuts or temper-evident boxes. Which will not affect the performance, use and other effects of product due to improvement.

Installation method:

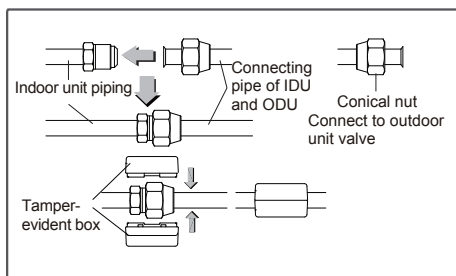
unfold the connecting pipe, bend the connecting pipe according to the required length, open the nut on the indoor unit pipe, align the cone mouth of the connecting pipe to the center of the corresponding indoor unit pipe, tighten the nut by hand, and then tighten with a torque wrench. Once the tamper-evident nut or tamper-evident box is installed, it cannot be removed. If you need to disconnect the indoor and outdoor units, cut and replace the connector and re-weld.

1. For the indoor unit using tamper-evident nut, a special non-removable connector is used.

2. For the connecting pipe of indoor unit using the tamper-evident box, the delivered tamper-evident box must be installed.



Installation drawing of tamper-evident nut



Tamper-evident box installation drawing

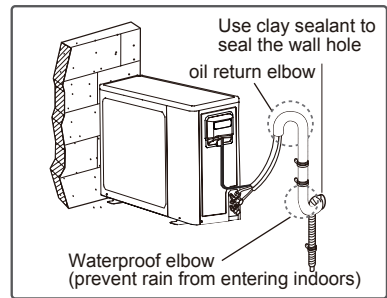
Installation of indoor unit

⚠ Notice:

- 1.The tamper-evident nut and tamper-evident box are installed at the connection end of indoor unit and connected to the indoor unit
- 2.The tamper-evident box should be staggered during installation, and do not overlap. The part of the tamper-evident box must be completely covered with the delivered insulation tube before wrapping.
- 3.First connect the connecting pipe to indoor unit, and then to the outdoor unit; bend and arrange the pipe carefully so as not to damage the connecting pipe; the joint nut should not be over-tightened, otherwise it will cause refrigerant leak.
- 4.When the outdoor unit is installed higher than the indoor unit, there must be a oil return elbow.

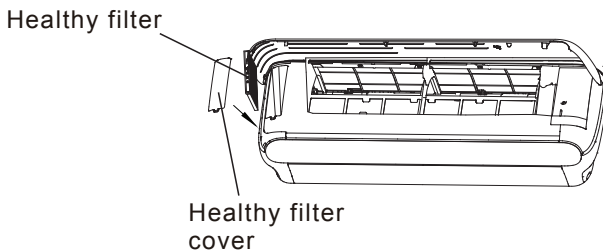
See the following table for tightening torque:

Hex nut diameter	Tightening torque (N·m)
1/4"	15~20
3/8"	30~40
1/2"	45~55
5/8"	60~65
3/4"	70~75



■ Install healthy filter

- Remove the packaging plastic bag of healthy filter, open the air conditioner panel, pull out the healthy filter cover, insert the healthy filter, please note that the letterform should be facing the user, distinguish the front and back, finally cover the healthy filter cover and panel.



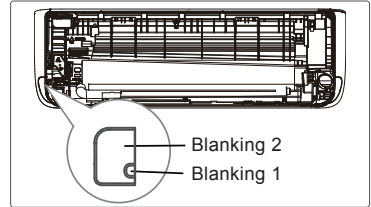
Installation of indoor unit

■ Confirm the position of pipe outlet and drill a hole

● Confirm the position of pipe outlet

The pipe can be led out from the left, right and back side of unit. When leading the pipe (wire) from the left or right side, cut the blanking (knockout hole) of pipe left on the base of air conditioner as needed.

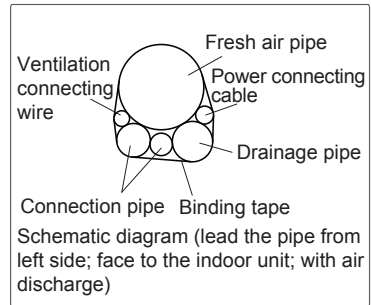
1. When only leading out the power cord, cut the blanking 1;
2. When leading out the fresh air pipe, connection pipe, drainage pipe, power connecting cable, power cord and ventilation connection wire, cut blanking 1 and blanking 2;
3. When the blanking is cut, remove the burrs at the pipe outlet to prevent scratching the drainage pipe.



● Lead the pipe from left side (face to the panel)

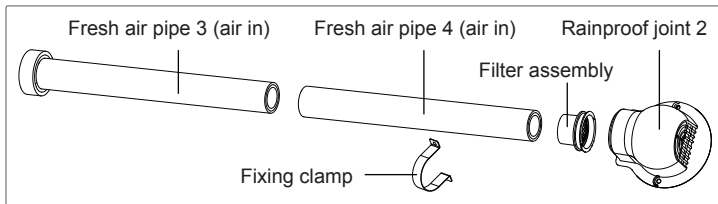
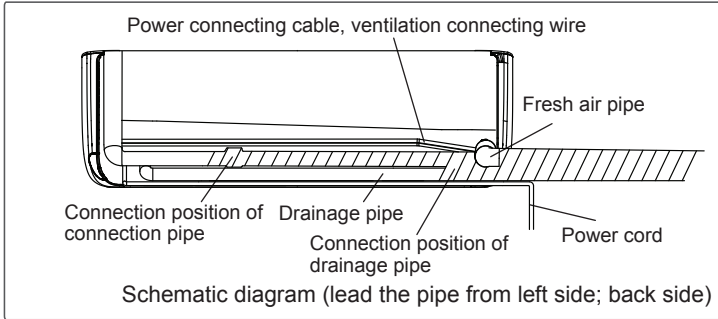
1. Aim the fresh air pipe 3 (air in) at the fresh air inlet of indoor unit, and then buckle them well. Note: Decide whether use the fresh air pipe (air in) or not according to the distance from the unit to the hole on wall, and cut the fresh air basing on the actual needs.

2. Use the binding tape to bind the connection pipe from the connection position. Not bind the drainage pipe and put it under the connection pipe. Not bind the power connecting cable and ventilation connection pipe, and put them above the connection pipe. Bind the connection pipe, drainage pipe, power connecting cable and ventilation connection wire together according to the common requirements from the connection position of extended pipe of drainage pipe.



3. Use binding tape to bind the fresh air pipe and connection pipe together by the sequence as shown in the figure at the gathering position of fresh air pipe.
 4. Place the power cord at the gap between the drainage pipe and the bottom case. No need to bind the power cord.
- Note: No ventilation connection wire for the models without air discharge function.

Installation of indoor unit

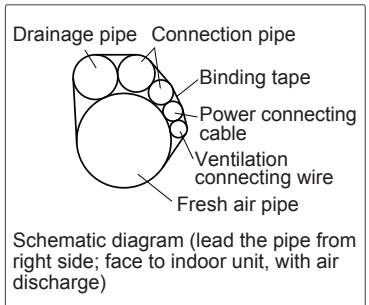


- Lead the pipe from right side (face to the panel)

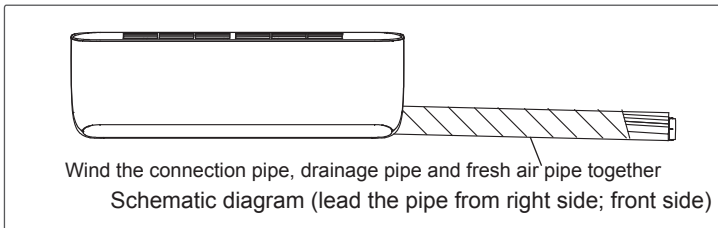
1. Aim the fresh air pipe 3 (air in) with the fresh air inlet of indoor unit, and then buckle them well. Connect fresh air pipe 3 (air in) and fresh air pipe 4 (air in) together.

Note: Cut the fresh pipe as needed.

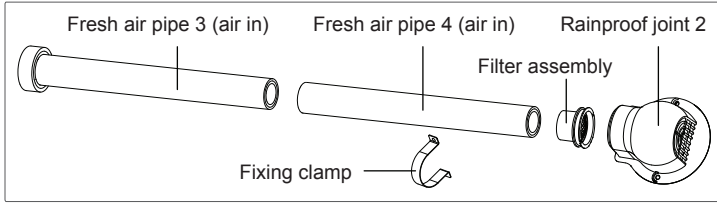
2. Use binding tape to wind the connection pipe, drainage pipe, power connection cable, ventilation connection wire and fresh air pipe together by the sequence as shown in the figure.



Note: No ventilation connection wire for the models without air discharge function.



Installation of indoor unit



- Lead the pipe from back side (not suggested)

Note: The method of leading the pipe from the back side is not suggested. If it's needed, please make the hole according to the actual circumstances.

- Drill holes

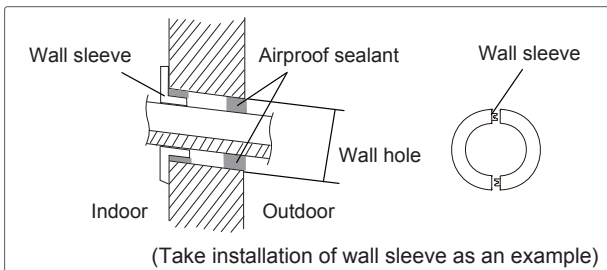
The reserved hole in the room is prioritized. If this hole is not suitable, please drill a hole with the diameter of 63mm according to the installation position of indoor unit. Please note that the hole should tilt from inside to outside.

Note: Please do not damage the wires embedded in the wall when making holes.

Fix indoor unit

- Put pipe through the wall

1. As for leading out the pipe from left or right side, wall sleeve should be adopted to ensuring the beautiful appearance of wall.
2. When leading the pipe from the back side, the connection pipe and the fresh air pipe passes the wall hole directly. It needs to seal the wall hole to prevent the rats.

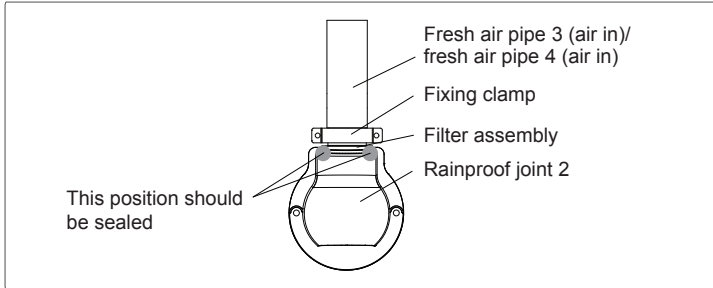


Outside installation

1. As for outside installation, separate the fresh air pipe and the connection pipe, install the filter assembly at the terminal of fresh air pipe 3 (air in)/fresh air pipe 4 (air in), turn around the fresh air pipe to stick the fresh air pipe and the filter assembly on the wall with the opening of filter assembly facing downwards, and then fix the fixing clamp at the filter assembly with two screws (it needs to use the expansion colloidal particles).

Installation of indoor unit

2. Select a position with good ventilation for the air outlet at the terminal of fresh air pipe, and the air outlet should face downwards; set the rainproof joint 2 in the groove of filter assembly and fix them with screws (it needs to use expansion colloidal particles), seal the gap between the rainproof joint 2 and the wall with polyfoam; the holes at the outside of wall should also be sealed with airproof sealant or polyfoam.



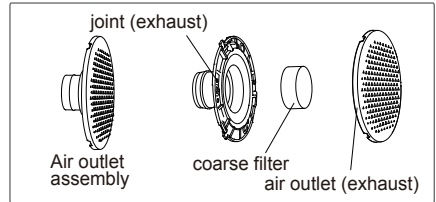
Installation Instructions for Fresh Air Ventilation Device (Exhaust)

Punch

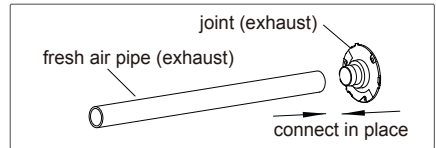
- A wall hole with 63mm diameter needs to be drilled according to the installation position of the fresh air ventilation device (exhaust). The wall hole requires high inside and low outside.

Indoor side installation

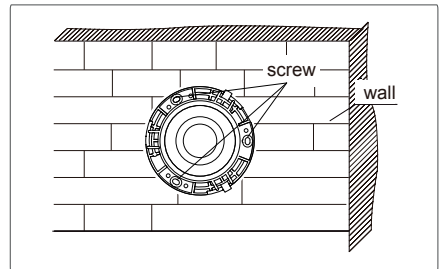
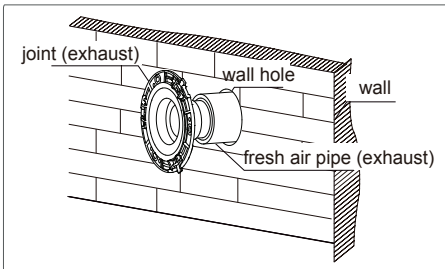
1. Take out the air outlet assembly from the accessory box, and use a flat tool to gently pry the air outlet (exhaust) and remove the coarse filter.



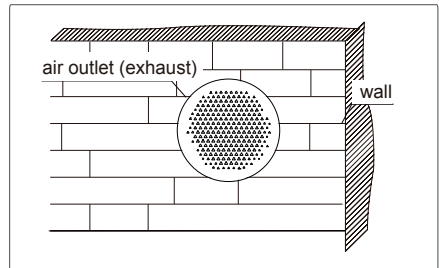
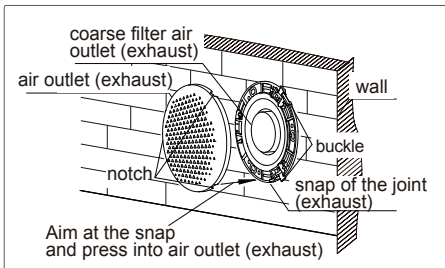
2. Connect the joint (exhaust) and fresh air pipe (exhaust) in place.



3. Thread the connected fresh air pipe (exhaust) through the wall hole, and fix the joint (exhaust) on the wall with three screws (expansion rubber particles are required). The screw holes should be angled outwards from the wall holes to prevent it from damaging to the wall holes.



4. Put the coarse filter in, align the notch on the air outlet (exhaust) with the snap on the joint (exhaust), and press it into place.



Installation Instructions for Fresh Air Ventilation Device (Exhaust)

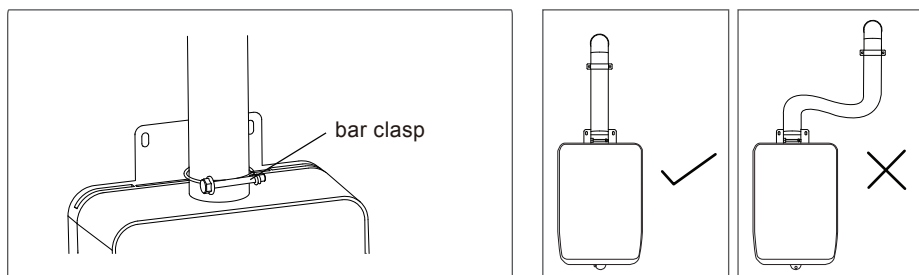
Outdoor side installation

1. Connect the fresh air pipe (exhaust) to the outdoor joint of the fresh air ventilation device (exhaust), and use the bar clamp to tighten the fresh air pipe (exhaust) and the outdoor joint at the connection, note that the bar clamp should be as close to the outdoor joint as possible.

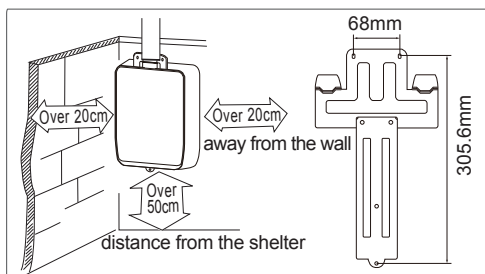
Tip:

the fresh air pipe (exhaust) cannot be cut, otherwise the port cannot be connected.

2. Please adjust the position of fresh air ventilation device (exhaust) according to the length of the ventilation tube and the length of the ventilation cable of the fresh air ventilation device (exhaust), that is, to ensure that the ventilation cable can be connected to the corresponding terminals of outdoor side fresh air ventilation device (exhaust). Tip: the height of fresh air ventilation device (exhaust) must be lower than the height of indoor side wall hole, and do not bend the fresh air pipe (exhaust) upward, to avoid the possibility of water accumulation in the pipe and ensure that the condensate water can be smoothly discharged to the outdoor along the fresh air pipe (exhaust) as shown in the figure.



3. Choose the installation location in the outdoor side as shown in the figure.

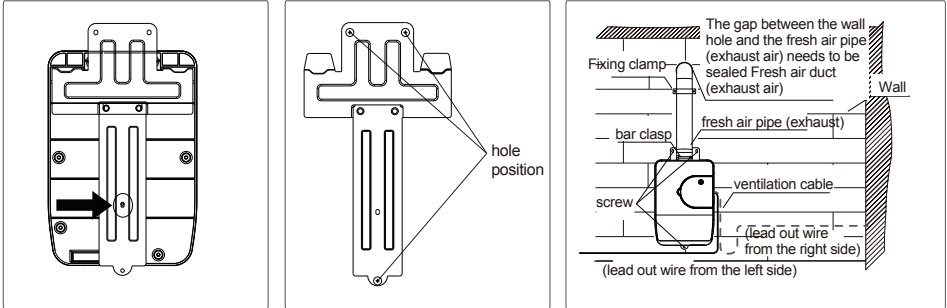


Specific installation steps:

- ① Unscrew the screw pointed by the arrow.
- ② Remove the wall-mounted plate, punch three screw holes on the wall according to the hole position of the wall-mounted plate, and put in the expansion rubber particles.
- ③ Reinstall the wall-mounted plate to the fresh air ventilation device (exhaust) and fix the rear screws.

Installation Instructions for Fresh Air Ventilation Device (Exhaust)

④ The screws pass through the sheet metal parts to fix the outdoor side device of the fresh air ventilation device (exhaust) to the wall. The fresh air pipe (exhaust) needs to be fixed with a fixing clamp at the bending place outside the wall. The gap between the outdoor side wall hole and the fresh air pipe (exhaust) needs to be sealed. The ventilation cable must be arranged from the bottom of fresh air ventilation device (exhaust) to prevent water from flowing down along the wire into the casing.



4.If the outdoor connecting wire cannot be bundled with the air conditioner connecting pipe, you need to use a fixing clamp to fix the connecting wires horizontally and vertically on the outside wall.

■ Connection of outdoor ventilation cable

- 1.Unscrew the screws and open the cover of electrical box (see figure a);
- 2.Unscrew the screw of fixing clamp and remove the clamp. Thread the ventilation cable through the rubber ring of the wire hole into the wiring in the ventilation box (see figure b), connect the terminal of the ventilation cable to the air docking terminal on the mainboard, and place it in the electrical box (see figure c);
- 3.Adjust the length of the ventilation cable, press it with a fixing clamp, and tighten the screw (see figure d);
- 4.Fix the cover of electrical box (see figure e).



figure a

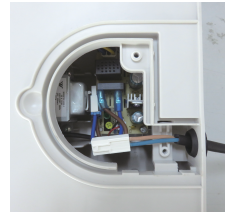


figure b



figure c

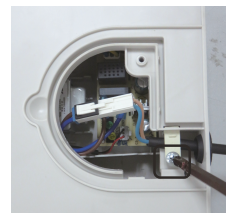


figure d



figure e

Installation of outdoor unit

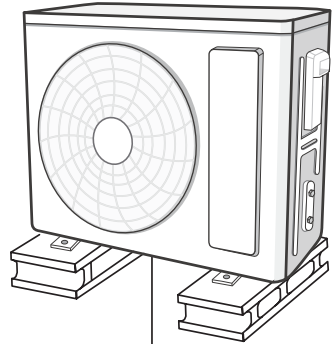
Step one: fix the support of outdoor unit

(select it according to the actual installation situation)

1. Select installation location according to the house structure.
2. Fix the support of outdoor unit on the selected location with expansion screws.

Note:

- Take sufficient protective measures when installing the outdoor unit.
- Make sure the support can withstand at least four times of the unit weight.
- The outdoor unit should be installed at least 3cm above the floor in order to install drain joint. (for the model with heating tube, the installation height should be no less than 20cm.)
- For the unit with cooling capacity of 2300W ~5000W, 6 expansion screws are needed; for the unit with cooling capacity of 6000W ~8000W, 8 expansion screws are needed; for the unit with cooling capacity of 10000W ~16000W, 10 expansion screws are needed.

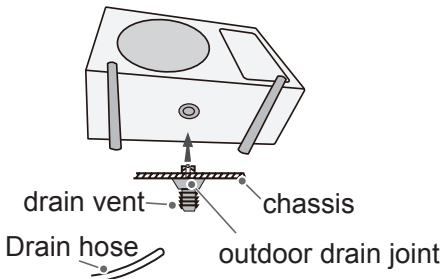


at least 3cm above the floor

Step two: install drain joint (Only for some models)

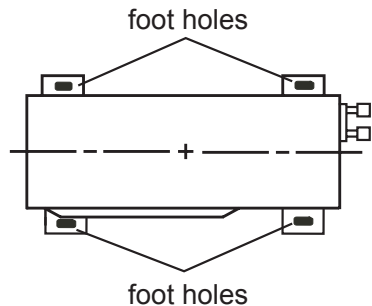
1. Connect the outdoor drain joint into the hole on the chassis, as shown in the picture below.
2. Connect the drain hose into the drain vent.

NOTE: As for the shape of drainage joint, please refer to the current product. Do not install the drainage joint in the severe cold area. Otherwise, it will be frosted and then cause malfunction.



Step three: fix outdoor unit

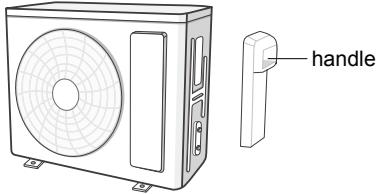
1. Place the outdoor unit on the support.
2. Fix the foot holes of outdoor unit with bolts.



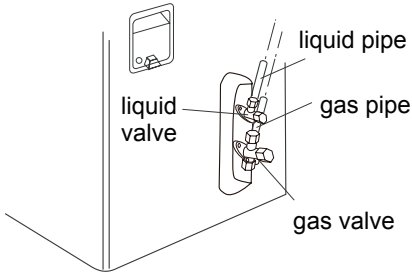
Installation of outdoor unit

Step four: connect indoor and outdoor pipes

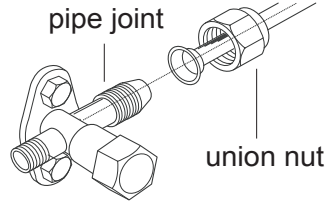
1. Remove the front side plate or handle.



2. Remove the screw cap of valve and aim the pipe joint at the bellmouth of pipe.



3. Pretighten the union nut with hand.

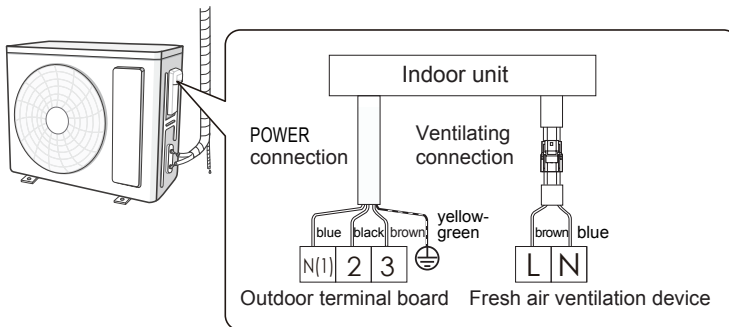


4. Tighten the union nut with torque wrench by referring to the sheet below.

Hex nut diameter	Tightening torque (N·m)
1/4"	15~20
3/8"	30~40
1/2"	45~55
5/8"	60~65
3/4"	70~75

Step five: connect outdoor electric wire

1. Remove the wire clip; connect the power connection wire and signal control wire (only for cooling and heating unit) to the wiring terminal according to the color; fix them with screws.



Note: the wiring board is for reference only, please refer to the actual one.

Installation of outdoor unit

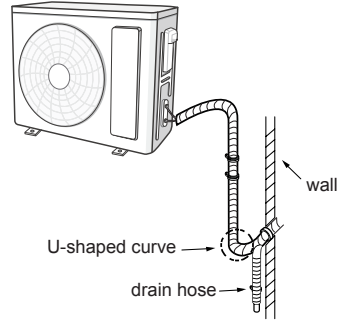
2. Fix the power connection wire and signal control wire with wire clip (only for cooling and heating unit).

Note:

- After tightening the screw, pull the power cord slightly to check if it is firm.
- Never cut the power connection wire to prolong or shorten the distance.

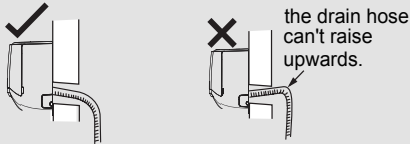
Step six: neat the pipes

1. The pipes should be placed along the wall, bent reasonably and hidden possibly. Min. semidiameter of bending the pipe is 10cm.
2. If the outdoor unit is higher than the wall hole, you must set a U-shaped curve in the pipe before pipe goes into the room, in order to prevent rain from getting into the room.

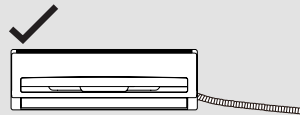
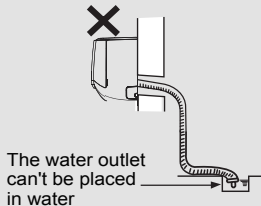


Note:

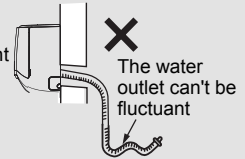
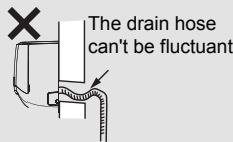
- The through-wall height of drain hose shouldn't be higher than the outlet pipe hole of indoor unit.
- Slant the drain hose slightly downwards. The drain hose can't be curved, raised and fluctuant, etc.



- The water outlet can't be placed in water in order to drain smoothly.



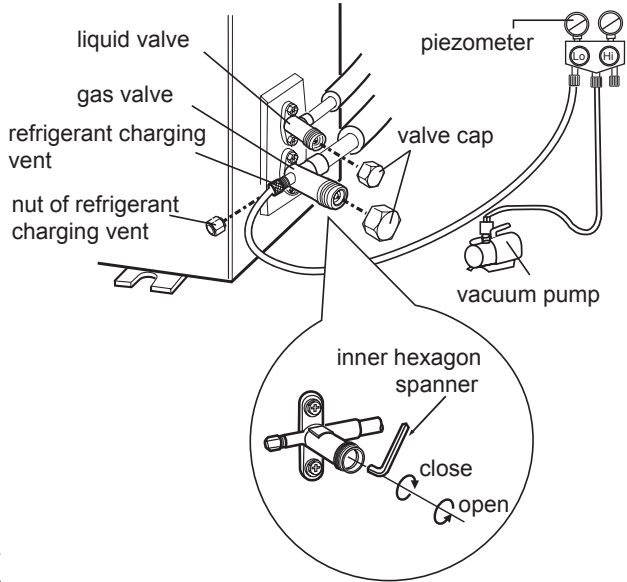
- The drain hose can't be fluctuant



Vacuum pumping

Use vacuum pump

1. Remove the valve caps on the liquid valve and gas valve and the nut of refrigerant charging vent.
2. Connect the charging hose of piezometer to the refrigerant charging vent of gas valve and then connect the other charging hose to the vacuum pump.
3. Open the piezometer completely and operate for 10-15min to check if the pressure of piezometer remains in -0.1MPa .
4. Close the vacuum pump and maintain this status for 1-2min to check if the pressure of piezometer remains in -0.1MPa . If the pressure decreases, there may be leakage.
5. Remove the piezometer, open the valve core of liquid valve and gas valve completely with inner hexagon spanner.
6. Tighten the screw caps of valves and refrigerant charging vent.
7. Reinstall the handle.



Leakage detection

1. With leakage detector:
Check if there is leakage with leakage detector.
2. With soap water:
If leakage detector is not available, please use soap water for leakage detection. Apply soap water at the suspected position and keep the soap water for more than 3min. If there are air bubbles coming out of this position, there's a leakage.

Check after installation

- Check according to the following requirement after finishing installation.

Items to be checked	Possible malfunction
Has the unit been installed firmly?	The unit may drop, shake or emit noise.
Have you done the refrigerant leakage test?	It may cause insufficient cooling (heating) capacity.
Is heat insulation of pipeline sufficient?	It may cause condensation and water dripping.
Is water drained well?	It may cause condensation and water dripping.
Is the voltage of power supply according to the voltage marked on the nameplate?	It may cause malfunction or damaged the parts.
Is electric wiring and pipeline installed correctly?	It may cause malfunction or damaged the parts.
Is the unit grounded securely?	It may cause electric leakage.
Does the power cord follow the specification?	It may cause malfunction or damaged the parts.
Is there any obstruction in the air inlet and outlet?	It may cause insufficient cooling (heating) capacity.
The dust and sundries caused during installation are removed?	It may cause malfunction or damaged the parts.
The gas valve and liquid valve of connection pipe are open completely?	It may cause insufficient cooling (heating) capacity.
Is the inlet and outlet of piping hole been covered?	It may cause insufficient cooling (heating) capacity or waste electricity.

Test operation

1. Preparation of test operation

- The client approves the air conditioner.
- Specify the important notes for air conditioner to the client.

2. Method of test operation

- Put through the power, press ON/OFF button on the remote controller to start operation.
- Press MODE button to select AUTO, COOL, DRY, FAN and HEAT to check whether the operation is normal or not.
- If the ambient temperature is lower than 16°C , the air conditioner can't start cooling.
- Press "Fresh Air" button to observe whether the operation is normal and confirm whether there's air supply from the fresh air outlet.

Clean and Maintenance

⚠ Please read before cleaning

- Power supply must be cut off before cleaning the air conditioner, otherwise it may cause electric shock.
- Do not use volatile oil, alcohol, thinner, paint, etc. to clean the air conditioner, otherwise the air conditioner may be damaged.
- Do not touch the fins of indoor unit to avoid scratches.

Clean the panel

Please soak the soft cloth with warm water below 45 °C, and use the cloth to wipe the dirty part gently after wringing, and do not remove the panel when cleaning. The air conditioner has microcomputer components and circuit boards, which must not be soaked in moisture.

Clean the filter

1. Clean the air filter

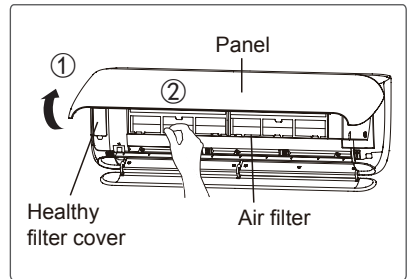
(about once in every three months)

- ① Open the panel and take out the air filter
- ② Clean the air filter

Use a vacuum cleaner or water to clean the air filter. When the air filter is dirty (such as oil stains), neutral detergent can be used, and clean with warm water (below 45 °C), then dry in a cool place.

- ③ Install air filter

After cleaning, re-install the air filter in the opposite direction of removal and fasten the panel cover.

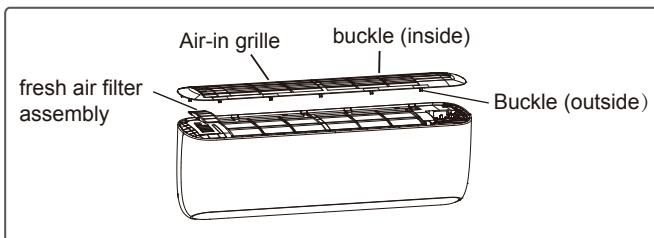


2. Clean the fresh air filter assembly

Pull the front side of air-in grille assembly (near the panel) vertically upward, take out the air-in grille assembly, remove the fresh air filter assembly from the air-in grille assembly; after wiping and cleaning the air-in grille and fresh air filter, re-install them in the reverse order of removal.


Tip:

When reinstalling the air-in grille assembly, first install the inner buckle, and then press the outer buckle.



Clean and Maintenance

3. Replace healthy filter

Before replacing the healthy filter, the unit must be shut down and power supply must be cut off, otherwise it may cause electric shock. Because the healthy effect will decay with time during the service life, when the panel's fresh air/exhaust air indicator “” flashes or the healthy filter has an odor, please replace the healthy filter. Never use water or any other cleaning agent to clean the healthy filter.

Steps for replacement:

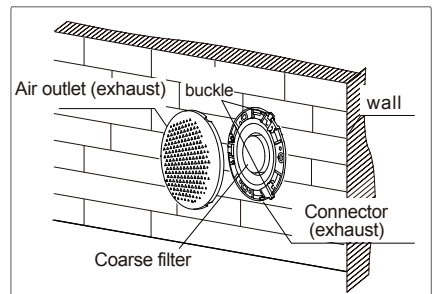
- ① Open the panel, remove the healthy filter cover, and pull out the healthy filter ;
- ② Remove the packaging plastic bag for new healthy filter and then install in the original position. Please note that the letterform faces the user, and it needs to be pushed to the end during installation;
- ③ Cover the healthy filter cover and close the panel;
- ④ Turn on the power and use the remote controller to press and hold the “fresh air” button for 3 seconds to eliminate the healthy filter replacement reminder.

Tip:

Scan the QR code on the bar code of air conditioner, slide up to enter more functions, click “Buy Accessories” to purchase a healthy filter.

4. Clean the air outlet assembly

Use a flat tool to gently pry out the air outlet (exhaust) at the position where the air outlet (exhaust) and the joint (exhaust) buckle are docked, remove the coarse filter, and wipe the surface of air outlet (exhaust) and joint (exhaust), rinse the coarse effect filter directly with clean water, dry it, and put the coarse effect filter in its original position, and then align the air outlet (exhaust) with the snap on the joint (exhaust) to press into place.



Note: The buckle position of this picture is for reference only

When the unit is reused after a long time

- ① Check whether the inlet and outlet of the unit are blocked.
- ② Clean the filter and indoor and outdoor unit body.
- ③ Check whether the ground wire is reliably grounded.
- ④ Check whether the remote controller is in normal use.
- ⑤ Check whether the mounting frame of outdoor unit is damaged, if there is any damage, please contact Special Service Center. If the outdoor unit is rusted, paint should be applied to the rusted area to prevent it from expanding if the personal safety is guaranteed.
- ⑥ Check if the fresh air filter assembly is clogged, and clean the fresh air filter assembly.
- ⑦ Check whether there are foreign objects blocking the air inlet and outlet on the outdoor side, and observe whether the installation of outdoor exhaust fan is normal.

Clean and Maintenance

When not using for a long time

- ① Turn off the power supply of air conditioner.
- ② Remove dust and debris from the outdoor unit.
- ③ Check whether the mounting frame of outdoor unit is damaged, if there is any damage, please contact Special Service Center. If the outdoor unit is rusted, paint should be applied to the rusted area to prevent it from expanding if the personal safety is guaranteed.
- ④ A special protective cover can be used to wrap the indoor and outdoor units to prevent rainwater, dust, etc. from entering the air conditioner and corroding the unit.

Remove and wash the air louver and swing blades

Tip: It is recommended to operate by professionals.

1. First turn on the unit, when the air louver opens, disconnect the power supply directly (pull out the power plug to make the air louver stop in an opening status).

2. Remove the air louver

① Turn the large and small air deflectors to the position shown in the figure below.

② Pull the three cooperating positions of the large air deflector and the transmission rod assembly in sequence in the direction indicated by the arrow position of the large air deflector, so that the large air deflector can be removed from the claws of the three transmission rod assemblies, then the large air louver is removed.

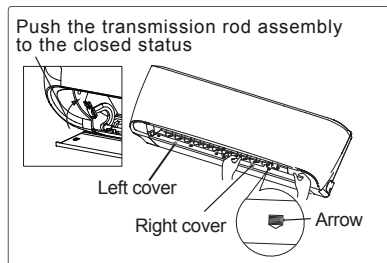
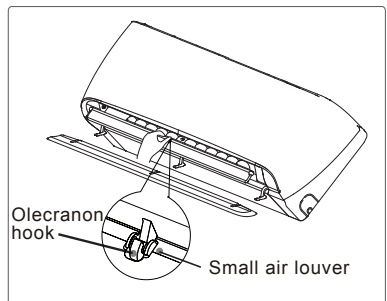
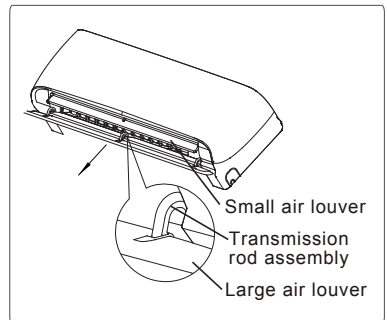
③ First remove the middle olecranon hook of the small air louver, hold the middle of small air louver to lift it towards the gap of the olecranon hook, and make the middle shaft of the small air louver come out.

④ First pull the right end of the small air louver outward to make it separate from the panel, and then directly pull the left end of the small air louver to remove it.

3. Remove the cover

① Push the transmission rod assembly to the closed status first, press the right end of the right cover with one hand as shown in the figure below, press the left end of the right cover with another hand, and pull the right end of the cover in the direction shown by the arrow position until the buckles of right and left ends of right cover come out of the panel.

② Remove the left cover in the same way.

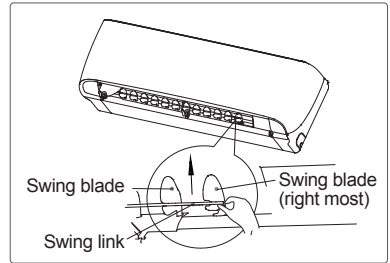


Clean and Maintenance

4.Remove the swing blade

① As shown in the figure, pull the swing link and the right swing blade apart, and remove the swing link.

② Hold the root of the swing blade by hand (the rightmost swing blade cannot be removed) and pull upwards as shown by the arrow in the figure until the buckle of the swing blade is separated from the panel body, then the swing blade can be removed.



5.Clean and install

① Please use warm water under 45 °C to soaked a cloth, wring it dry and wipe the dismantled parts and dirty parts of air duct.

② After cleaning and drying, reinstall in the opposite direction of disassembly:

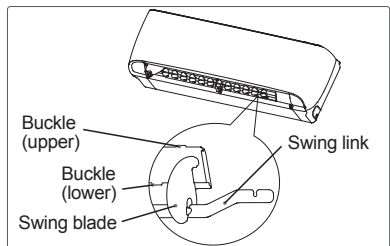
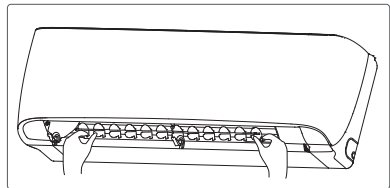
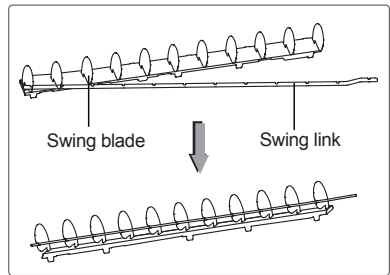
First install the swing link on the swing blade, then install the swing blade assembly on the case, then install the cover plate, and finally install the air louvers [install the small air louver first (when installing the small air louver, install the right end first, then the left end, and finally press in the middle to reinstall), and then install the large air louver].

After the installation is completed, re-energize the air conditioner until the air louver is automatically reset and closed before it can be used normally.

Tip: Steps to install the swing blade assembly can be as follows:

① First insert the buckle (upper) of the swing blade assembly into the casing slot, then press the buckle (lower) as shown in the figure below, so that the buckle of the swing blade assembly snaps into the corresponding slot, finally fasten the swing link into the rightmost swing blade, then the swing blade is well installed.

② After the installation is completed, shake the swing link by hand to check whether the swing blades are installed in place.

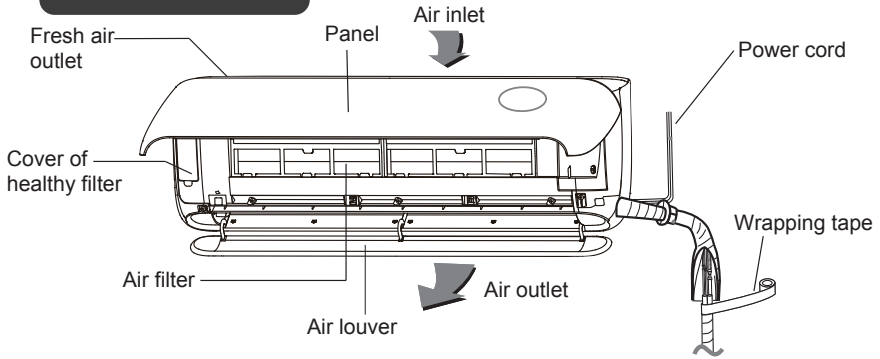


Note:

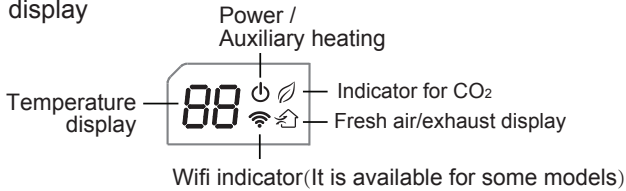
The rotating shaft and bolt of air louver belong to moving parts, which are evenly coated with lubricating silicone grease. To avoid noise problems, please do not wash and wipe them.

Parts' Name

Indoor Unit



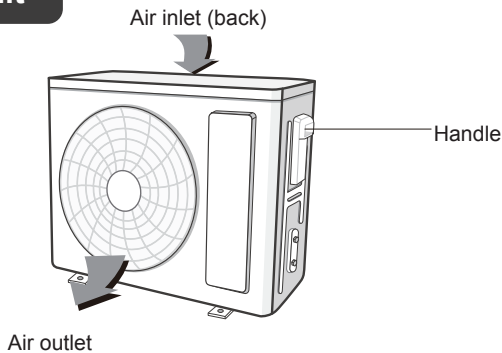
display



remote controller

(Display content or position may be different from above graphics, please refer to actual products)

Outdoor Unit

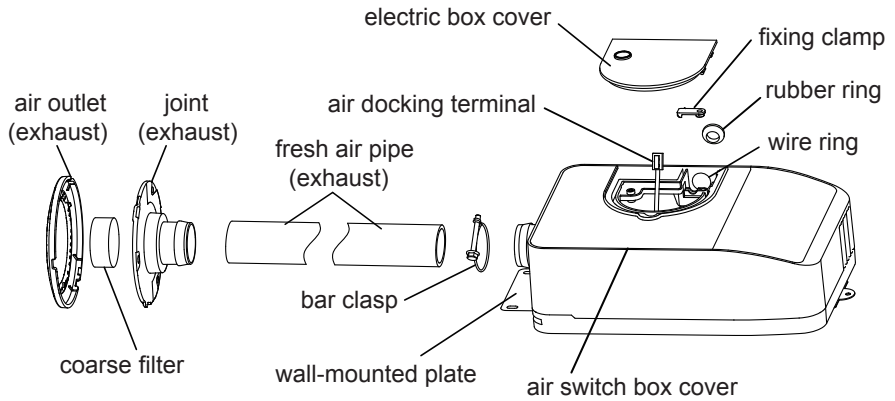


NOTICE:

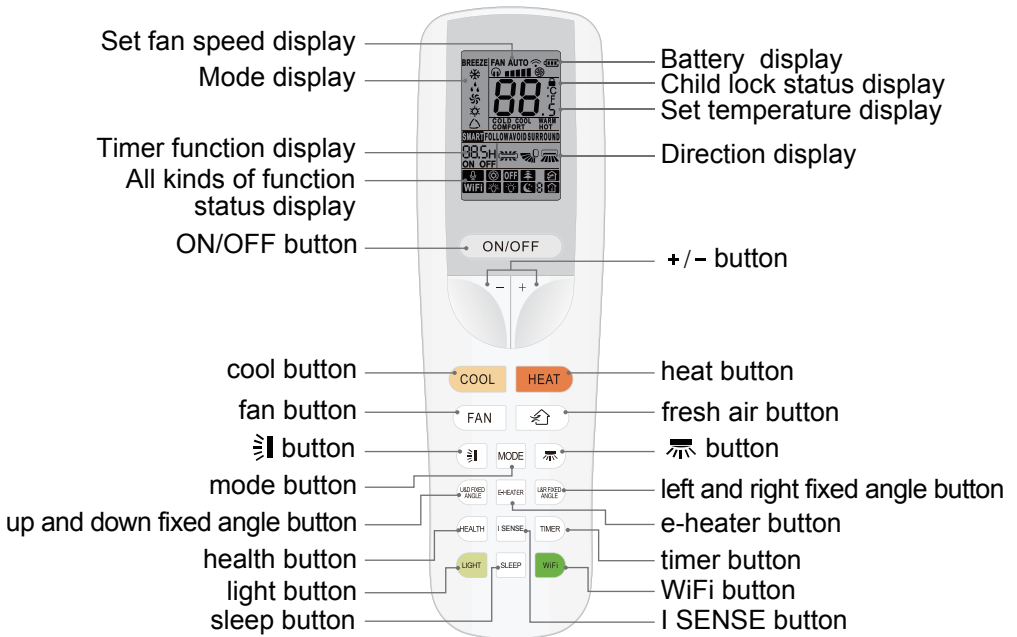
Actual product may be different from above graphics, please refer to actual products.

Parts' Name

For Fresh Air Ventilation Device (Exhaust)




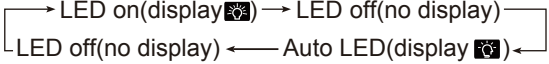








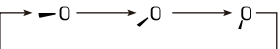
Buttons on remote controller



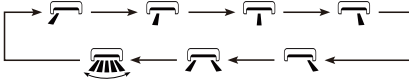


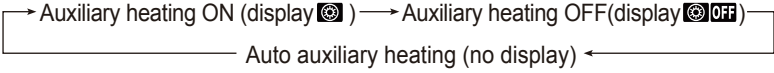



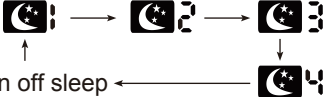
Introduction for buttons on remote controller

ON/OFF button	<ul style="list-style-type: none"> ● Press this button to turn on/off the air conditioner. ● When turning on/off, clear off the original timer and sleep setting.
MODE button	<ul style="list-style-type: none"> ● Press this button, the circulation mode will change as the fig is shown: <div style="text-align: center;"> </div> Tip: Cooling only type does not receive heating mode signal. Temperature can't be adjusted under auto mode.
WiFi button	<ul style="list-style-type: none"> ● Press " WiFi " button to turn on WiFi function, "WiFi " icon will be displayed on the remote controller; Hold " WiFi " button for 5s to turn off WiFi function and " WiFi " icon will disappear. Under off status, press "MODE" and " WiFi " buttons simultaneously for 1s, WiFi module will restore factory settings. ● This function is only available for some models.

Introduction for buttons on remote controller

<p>+/- button</p>	<ul style="list-style-type: none"> For every press of “-” or “+” button, the set temperature will decrease or increase 1℃. Press “-” or “+” button for over 1 second, the temperature value will be changed quickly and the information will be sent until the button is loose. Press “-” and “+” button at the same time for 3 seconds to lock or unlock the keyboard, after locking, the remote controller will display the lock icon “ <p>LIGHT button</p> 	<ul style="list-style-type: none"> Press this button to control the LED status on the displayer, the circulation change is as follow: <div style="text-align: center; margin-top: 10px;">  <pre> graph TD A[LED on (display )] --> B[LED off (no display)] B --> C[Auto LED (display )] C --> D[LED off (no display)] D --> A </pre> </div>
<p>COOL button</p>	<ul style="list-style-type: none"> Press this button, the air conditioner will conduct cooling mode. Hold “cool” button under cooling mode for 5s to turn on or turn off the cool function; once this function is turned on, “cool icon” and “COOL” will be displayed on the remote controller. 	
<p>HEAT button</p>	<ul style="list-style-type: none"> Press this button, the air conditioner will conduct heating mode. 	
<p> button</p>	<ul style="list-style-type: none"> Press this button to start (display “” icon) or shut down (no display “” icon) left and right swing function. Remark: according to the comfort demand of air supply, the swing range under different modes is different. 	
<p> button</p>	<ul style="list-style-type: none"> Press this button to start (display “” icon) or shut down (no display “” icon) up and down swing function. Remark: according to the comfort demand of air supply, the swing range under different modes is different. 	
<p>TIMER button</p>	<ul style="list-style-type: none"> Press this button to set timer ON/OFF. Press this button, the character of H and OFF (ON) will blink. At this time, press “+” or “-” button to adjust timer (long press “+” or “-” button, time value will change quickly), the setting range is 0.5~24 hour(s); press this button again to confirm timer, the character of H and OFF (ON) will not blink any more. 	
<p>Up and down fixed angle button</p>	<ul style="list-style-type: none"> Press this button to set up and down swing status, the circulation change is as follow: <div style="text-align: center; margin-top: 10px;">  <pre> graph LR A[0] --> B[0] B --> C[0] C --> D[0] </pre> </div> 	

Introduction for buttons on remote controller

<p>Left and right fixed angle button</p>	<ul style="list-style-type: none"> Press this button to set left and right swing status, the circulation change is as follow:  This is a general remote controller, when receiving “”, the swing status is the same as “”.
<p>E-HEATER button</p>	<ul style="list-style-type: none"> Under heating mode, press this button, circulation change of auxiliary heating status is as follow:  After starting heating mode, the remote controller will automatically restore to the auxiliary heating status set previously. The function is only available for some models.
<p>FAN button</p>	<ul style="list-style-type: none"> Press this button, circulation change of fan speed is as follow:  Under dry mode, it can only be operated under the fan speed of . Quiet function can only be started under cooling and heating mode. Turbo can be started under cooling and heating mode. When turning on the fresh air function with the remote controller under off status, the fan speed will change circularly as follow: 
<p>SLEEP button</p>	<ul style="list-style-type: none"> Press this button, the sleeping status will be circulated in the following sequence:  Sleep 1 Cooling mode: under sleep status and after operation for 1h, the temperature of the master unit will increase 1℃, then 2℃ after 2h, after that, the unit will be operated at the set temperature. Heating mode: under sleep status and after operation for 1h, the set temperature will decrease, then decrease 2℃ after 2h, after that, the unit will be operated at the set temperature.

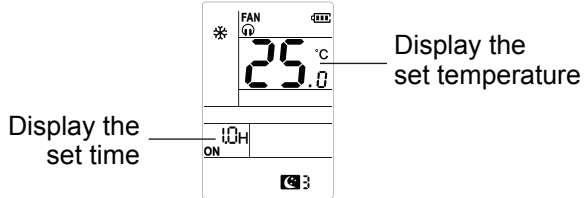
Introduction for buttons on remote controller

SLEEP button

Sleep 2 is the sleep temperature curve preset based on the system.

Sleep 3 is the sleep curve setting under DIY sleep mode:

(1) Under Sleep 3 mode, long press “U&D FIXED ANGLE” button to enter personalized sleep setting status, as the fig shown:




(2) Adjust “-” or “+” button to change the corresponding set temperature, after that, press “U&D FIXED ANGLE” button for confirmation to set temperature for the next hour, until temperature setting for the next 8h is finished. If sleep curve setting is completed, at this time, the remote controller will display again.

(3) If not pressing any buttons in 10 seconds, the remote controller will exit sleep curve setting status automatically and restore the original display. During setting process, if pressing “ON/OFF”, “Timer”, “Sleep” or other modes, it will exit the sleep curve setting as well.

- Sleep 4 is the afternoon nap mode. The temperature will be changed automatically according to afternoon nap status.
- If re-energizing the unit after power off, sleep mode will be cancelled acquiescently; if micro sense function is not activated, when starting the sleep function, quiet fan speed will be started automatically.

button

- Press this button under power-on or power-off status can turn on or turn off fresh air function.
- If the fresh air/exhaust air indicator of air conditioner “” flashes, it is reminding to replace the healthy filter. After replacing the filter, press “HEALTH” button via remote controller for 3 seconds, the replacing reminding will be eliminated.

I SENSE button

- In Cool or Heat mode, press this button and the unit will work in the following sequence:




- **FOLLOW:** the unit will control the vertical and horizontal swing louvers automatically according to the body sensing device so as to blow air toward people.


Introduction for buttons on remote controller

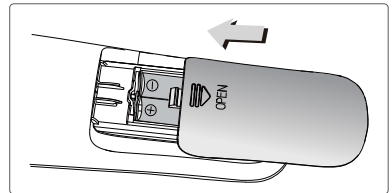
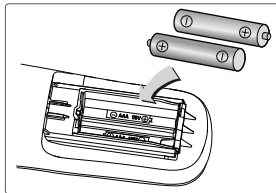
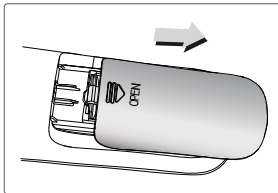
	<ul style="list-style-type: none">● AVOID: the unit will control the vertical and horizontal swing louvers automatically according to the body sensing device so as to avoid direct airflow to people.
Auto clean function	<ul style="list-style-type: none">● Under unit off status, hold "MODE" and "FAN" buttons simultaneously for 5s to turn on or turn off the auto clean function. When the auto clean function is turned on, indoor unit displays "CL" . During the auto clean process of evaporator, the unit will perform fast cooling or fast heating. There may be some noise, which is the sound of flowing liquid or thermal expansion or cold shrinkage. The air conditioner may blow cool or warm air, which is a normal phenomenon. During cleaning, please make sure the room is well ventilated to avoid affecting the degree of comfort.● Notice: The auto clean function can only work under normal ambient temperature. If the room is dusty, clean once a month; if not, clean once every three months. After the auto clean function is turned on, you may leave the room. When auto clean is finished, the air conditioner will enter standby mode.● This function is applicable for some models.

Replacement of batteries in remote controller

NOTICE:

1. Don't mix the new battery with the old one and batteries of different types shall not be mixed. The remote controller shall be kept well; Liquid shall not flow into the remote controller; the remote controller shall avoid direct sunshine or not be put in places with high temperature.
2. If not using the remote controller for a long time, please take out the battery.
3. When the remote controller is sending message, “” icon will blink for about 1 second. When receiving effective remote message, the air conditioner will give out a sound.

1. Slightly press the “” mark, then push the battery cover of remote controller towards the arrows direction.
2. Install two new No.7 (1.5V) dry batteries and ensure “ \oplus ” and “ \ominus ” is correctly placed.
3. Close the battery cover of remote controller.



Remark: the remote controller will display the remaining battery life, when it displays “”, please replace the battery immediately.

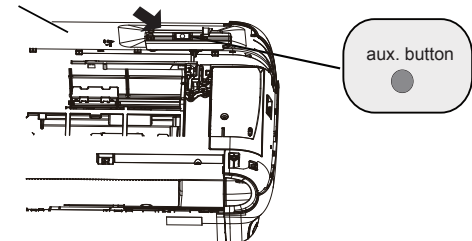
Emergency operation

If remote controller is lost or damaged, please use aux. button to turn on or turn off the air conditioner. The operation in details is as below:

As shown in the fig. Open panel, press aux. button to turn on or turn off the air conditioner. When the air conditioner is turned on, it will operate under auto mode.

WARNING:

Use insulated object to press the auto button



Malfunction analysis

General phenomenon analysis

Please check below items before asking for maintenance. If the malfunction still can't be eliminated, please contact local dealer or qualified professionals.

Phenomenon	Check items	Solution
Indoor unit can't receive remote controller's signal or remote controller has no action.	<ul style="list-style-type: none"> Whether it's interfered severely (such as static electricity, stable voltage)? 	<ul style="list-style-type: none"> Pull out the plug. Reinsert the plug after about 3min, and then turn on the unit again.
	<ul style="list-style-type: none"> Whether remote controller is within the signal receiving range? 	<ul style="list-style-type: none"> Signal receiving range is 8m.
	<ul style="list-style-type: none"> Whether there are obstacles? 	<ul style="list-style-type: none"> Remove obstacles.
	<ul style="list-style-type: none"> Whether remote controller is pointing at the receiving window? 	<ul style="list-style-type: none"> Select proper angle and point the remote controller at the receiving window on indoor unit.
	<ul style="list-style-type: none"> Is sensitivity of remote controller low; fuzzy display and no display? 	<ul style="list-style-type: none"> Check the batteries. If the power of batteries is too low, please replace them.
	<ul style="list-style-type: none"> No display when operating remote controller? 	<ul style="list-style-type: none"> Check whether remote controller appears to be damaged. If yes, replace it.
	<ul style="list-style-type: none"> Fluorescent lamp in room? 	<ul style="list-style-type: none"> Take the remote controller close to indoor unit. Turn off the fluorescent lamp and then try it again.
No air emitted from indoor unit	<ul style="list-style-type: none"> Air inlet or air outlet of indoor unit is blocked? 	<ul style="list-style-type: none"> Eliminate obstacles.
	<ul style="list-style-type: none"> Under heating mode, indoor temperature is reached to set temperature? 	<ul style="list-style-type: none"> After reaching to set temperature, indoor unit will stop blowing out air.
	<ul style="list-style-type: none"> Heating mode is turned on just now? 	<ul style="list-style-type: none"> In order to prevent blowing out cold air, indoor unit will be started after delaying for several minutes, which is a normal phenomenon.

Malfunction analysis

Phenomenon	Check items	Solution
Air conditioner can't operate	<ul style="list-style-type: none"> ● Power failure? 	<ul style="list-style-type: none"> ● Wait until power recovery.
	<ul style="list-style-type: none"> ● Is plug loose? 	<ul style="list-style-type: none"> ● Reinsert the plug.
	<ul style="list-style-type: none"> ● Air switch trips off or fuse is burnt out? 	<ul style="list-style-type: none"> ● Ask professional to replace air switch or fuse.
	<ul style="list-style-type: none"> ● Wiring has malfunction? 	<ul style="list-style-type: none"> ● Ask professional to replace it.
	<ul style="list-style-type: none"> ● Unit has restarted immediately after stopping operation? 	<ul style="list-style-type: none"> ● Wait for 3min, and then turn on the unit again.
	<ul style="list-style-type: none"> ● Whether the function setting for remote controller is correct? 	<ul style="list-style-type: none"> ● Reset the function.
Mist is emitted from indoor unit's air outlet	<ul style="list-style-type: none"> ● Indoor temperature and humidity is high? 	<ul style="list-style-type: none"> ● Because indoor air is cooled rapidly. After a while, indoor temperature and humidity will be decrease and mist will disappear.
Set temperature can't be adjusted	<ul style="list-style-type: none"> ● Your required temperature exceeds the set temperature range? 	<ul style="list-style-type: none"> ● Set temperature range: 16°C~30°C
Cooling (heating) effect is not good.	<ul style="list-style-type: none"> ● Voltage is too low? 	<ul style="list-style-type: none"> ● Wait until the voltage resumes normal.
	<ul style="list-style-type: none"> ● Filter is dirty? 	<ul style="list-style-type: none"> ● Clean the filter.
	<ul style="list-style-type: none"> ● Set temperature is in proper range? 	<ul style="list-style-type: none"> ● Adjust temperature to proper range.
	<ul style="list-style-type: none"> ● Door and window are open? 	<ul style="list-style-type: none"> ● Close door and window.

Malfunction analysis

Phenomenon	Check items	Solution
Odours are emitted	<ul style="list-style-type: none">• Whether there's odour source, such as furniture and cigarette, etc.	<ul style="list-style-type: none">• Eliminate the odour source.• Clean the filter.
Air conditioner operates abnormally	<ul style="list-style-type: none">• Whether there's interference, such as thunder, wireless devices, etc.	<ul style="list-style-type: none">• Disconnect power, put back power, and then turn on the unit again.
"Water flowing" noise	<ul style="list-style-type: none">• Air conditioner is turned on or turned off just now?	<ul style="list-style-type: none">• The noise is the sound of refrigerant flowing inside the unit, which is a normal phenomenon.
Cracking noise	<ul style="list-style-type: none">• Air conditioner is turned on or turned off just now?	<ul style="list-style-type: none">• This is the sound of friction caused by expansion and/or contraction of panel or other parts due to the change of temperature.

Malfunction analysis

Error Code

- When air conditioner status is abnormal, temperature indicator on indoor unit will blink to display corresponding error code. Please refer to below list for identification of error code.

Error code	Troubleshooting
E5	It can be eliminated after restarting the unit. If not, please contact qualified professionals for service.
E8	It can be eliminated after restarting the unit. If not, please contact qualified professionals for service.
H6	It can be eliminated after restarting the unit. If not, please contact qualified professionals for service.
C5	Please contact qualified professionals for service.
F0	Please contact qualified professionals for service.
F1	Please contact qualified professionals for service.
F2	Please contact qualified professionals for service.
H3	It can be eliminated after restarting the unit. If not, please contact qualified professionals for service.
E1	It can be eliminated after restarting the unit. If not, please contact qualified professionals for service.
E6	It can be eliminated after restarting the unit. If not, please contact qualified professionals for service.

Note: If there're other error codes, please contact qualified professionals for service.



WARNING

- When below phenomenon occurs, please turn off air conditioner and disconnect power immediately, and then contact the dealer or qualified professionals for service.
 - Power cord is overheating or damaged.
 - There's abnormal sound during operation.
 - Air switch trips off frequently.
 - Air conditioner gives off burning smell.
 - Indoor unit is leaking.
- Do not repair or refit the air conditioner by yourself.
- If the air conditioner operates under abnormal conditions, it may cause malfunction, electric shock or fire hazard.

Configuration of connection pipe

1. Standard length of connection pipe

- 5m、7.5m、8m

2. Min. length of connection pipe

For the unit with standard connection pipe of 5m, there is no limitation for the min. length of connection pipe. For the unit with standard connection pipe of 7.5m and 8m, the min. length of connection pipe is 3m.

3. Max. length of connection pipe

Sheet 1 Max. length of connection pipe

Unit: m

capacity	Max. length of connection pipe	capacity	Max. length of connection pipe
5000Btu/h (1465W)	15	24000Btu/h (7032W)	25
7000Btu/h (2051W)	15	28000Btu/h (8204W)	30
9000Btu/h (2637W)	15	36000Btu/h (10548W)	30
12000Btu/h (3516W)	20	42000Btu/h (12306W)	30
18000Btu/h (5274W)	25	48000Btu/h (14064W)	30

4. The calculation method of additional refrigerant oil and refrigerant charging amount after prolonging connection pipe

After the length of connection pipe is prolonged for 10m at the basis of standard length, you should add 5ml of refrigerant oil for each additional 5m of connection pipe.

The calculation method of additional refrigerant charging amount (on the basis of liquid pipe):

- (1) Additional refrigerant charging amount= prolonged length of liquid pipe × additional refrigerant charging amount per meter
- (2) Basing on the length of standard pipe, add refrigerant according to the requirement as shown in the table. The additional refrigerant charging amount per meter is different according to the diameter of liquid pipe. See Sheet 2.

Configuration of connection pipe

Sheet 2. Additional refrigerant charging amount for R32

Piping size		Indoor unit throttle	Outdoor unit throttle	
Liquid pipe	Gas pipe	Cooling only, cooling and heating (g / m)	Cooling only (g / m)	cooling and heating (g / m)
1/4"	3/8" or 1/2"	16	12	16
1/4" or 3/8"	5/8" or 3/4"	40	12	40
1/2"	3/4" or 7/8"	80	24	96
5/8"	1" or 1 1/4"	136	48	96
3/4"	–	200	200	200
7/8"	–	280	280	280

Note: The additional refrigerant charging amount in Sheet 2 is recommended value, not compulsory.

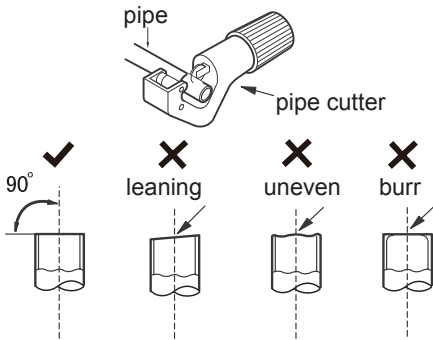
Pipe expanding method

Note:

Improper pipe expanding is the main cause of refrigerant leakage. Please expand the pipe according to the following steps:

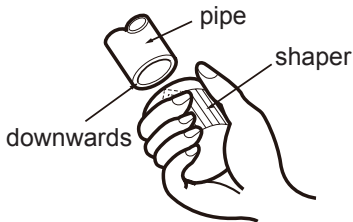
A: Cut the pipe

- Confirm the pipe length according to the distance of indoor unit and outdoor unit.
- Cut the required pipe with pipe cutter.



B: Remove the burrs

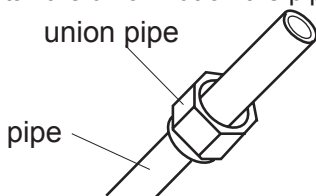
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.



C: Put on suitable insulating pipe

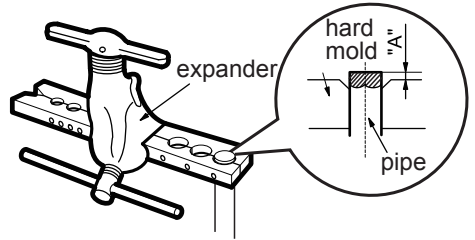
D: Put on the union nut

- Remove the union nut on the indoor connection pipe and outdoor valve; install the union nut on the pipe.



E: Expand the port

- Expand the port with expander.



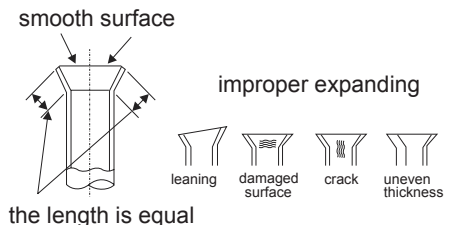
Note:

- "A" is different according to the diameter, please refer to the sheet below:

Outer diameter (mm)	A(mm)	
	Max	Min
Φ6 - 6.35(1/4")	1.3	0.7
Φ9 - 9.52(3/8")	1.6	1.0
Φ12-12.7(1/2")	1.8	1.0
Φ15.8-16(5/8")	2.4	2.2

F: Inspection

- Check the quality of expanding port. If there is any blemish, expand the port again according to the steps above.



the length is equal

Specialist's Manual

- **The following checks shall be applied to installations using flammable refrigerants:**
 - the charge size 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.
- **Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.**
- **Initial safety checks shall include:**
 - that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
 - that no live electrical components and wiring are exposed while charging, recovering or purging the system;
 - that there is continuity of earth bonding.
- **Checks to the area**

Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised. For repair to the refrigerating system, DD.4.3 to DD.4.7 shall be completed prior to conducting work on the system.
- **Work procedure**

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

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

Specialist's Manual

- **Checking for presence of refrigerant**

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

- **Presence of fire extinguisher**

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

- **Ventilated area**

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

- **Checks to the refrigeration equipment**

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance.

- **Checks to electrical devices**

- that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
- that no live electrical components and wiring are exposed while charging, recovering or purging the system.

- **No ignition sources**

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

- **Repairs to sealed components**

During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incor-

Specialist's Manual

rect fitting of glands, etc.

- Ensure that the apparatus is mounted securely.
- Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications.

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

• **Repair to intrinsically safe components**

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.

Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.

Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

• **Cabling**

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

• **Leak detection methods**

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.

• **Detection of flammable refrigerants**

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

The following leak detection methods are deemed acceptable for all refrigerant systems.

Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the **LFL** of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25% maximum) is confirmed.

Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

NOTE: Examples of leak detection fluids are

- bubble method,
- fluorescent method agents.

Specialist's Manual

If a leak is suspected, all naked flames shall be removed/extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Removal of refrigerant shall be according to clause DD.9.

• **Removal and evacuation**

When breaking into the refrigerant circuit to make repairs - or for any other purpose - conventional procedures shall be used. However, for flammable refrigerants it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to:

- remove refrigerant;
- purge the circuit with inert gas (optional for A2L);
- evacuate (optional for A2L);
- purge with inert gas (optional for A2L);
- open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. For appliances containing flammable refrigerants other than A2L refrigerants, the system shall be perged process may need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, other than A2L refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe-work are to take place.

Ensure that the outlet for the vacuum pump is not close to any potential ignition sources and that ventilation is available.

• **Charging procedures**

In addition to conventional charging procedures, the following requirements shall be followed.

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
- Cylinders shall be kept in an appropriate position according to the instructions.
- Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the refrigerating system.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

• **Decommissioning**

Before carrying out this procedure, it is essential that the technician is completely

Specialist's Manual

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

- a) Become familiar with the equipment and its operation.
- b) Isolate system electrically.
- c) Before attempting the procedure, ensure that:
 - mechanical handling equipment is available, if required, for handling refrigerant cylinders;
 - all personal protective equipment is available and being used correctly;
 - the recovery process is supervised at all times by a competent person;
 - recovery equipment and cylinders conform to the appropriate standards.
- d) Pump down refrigerant system, if possible.
- e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
- f) Make sure that cylinder is situated on the scales before recovery takes place.
- g) Start the recovery machine and operate in accordance with manufacturer's instructions.
- h) Do not overfill cylinders. (No more than 80% volume liquid charge).
- i) Do not exceed the maximum working pressure of the cylinder, even temporarily.
- j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
- k) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

• Labelling

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

• Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge are available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including, when applicable, flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working

Specialist's Manual

order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

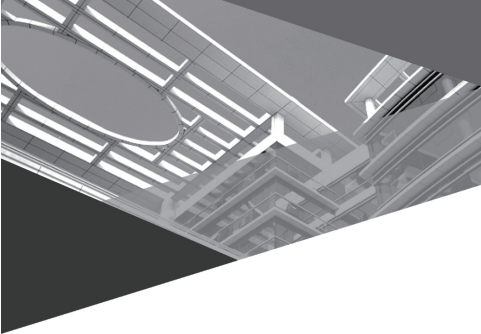
The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

- **General**

That compliance with national gas regulations shall be observed.

That mechanical connections made in accordance with 22.118 shall be accessible for maintenance purposes.



GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

Add: West Jinji Rd, Qianshan, Zhuhai,Guangdong, China, 519070

Tel: (+86-756) 8522218

Fax: (+86-756) 8669426

E-mail: global@cn.gree.com

Web: www.gree.com



600005065204