



4-WAY CASSETTE

Q4DN-3-XY D28-D180



MANUAL
FOR INSTALLATION,
USE AND MAINTENANCE

PREFACE

Dear user

Thank you very much for purchasing and using our product. Please read the Manual carefully during your installation, use, maintenance and troubleshooting of the product, so that you can have a pretty good knowledge of and use the product correctly.

The Manual only applies to the indoor units listed. For outdoor units or other indoor units, please refer to the installation and operation manual of the units involved.

Please refer to the manual of corresponding equipment for detailed operation of auxiliary control equipment such as wire controller, remote controller and centralized controller.

The following descriptions are provided for the correct installation and use of the product:

- Please strictly follow the requirements of the Manual to ensure the correct and safe use of the product.
- All illustrations and contents in the Manual are for reference only. We will continuously improve and innovate the product without prior notice to make it cater to you in a better manner.
- The product needs to be cleaned and maintained on a regular basis to improve its air conditioning effect and extend its lifetime. Please contact your local service outlet before using the air conditioner every year. We will assign professional service personnel to provide you with paid cleaning, maintenance, and inspection services.
- After reading the Manual, please keep it properly for reference when necessary.

CONTENTS

Safety Warning		1
Description of Warning Signs /1	Safety Precautions /2	
Electrical Safety Requirements /3	Appendix /3	
Operating Instructions		6
Precautions for Use /6	Optimal Operation Mode /7	
Non-air Conditioner Fault /8	Display component /10	
Installation Instructions		11
Precautions for Installation /11	Installation Material /20	
Preparations before Installation /22	Installation of Indoor Units /26	
Installation of Refrigerant Connecting Pipe /36	Installation of Drainage Pipe /41	
Electrical Wiring Operation /45	Application Control /62	
Test Run /67		
Maintenance and Service		69
Safety Warnings /69	Cleaning and Maintenance /69	
Repair of Conventional Parts and Components /69		

For the contents and importance of the safety matters described herein, please read the text with a full understanding of the following contents (signs and icons), and be sure to observe the safety precautions to prevent personal injury or property damage to users or others.



SAFETY WARNING

Explanation of symbols displayed on the unit

	WARNING	This symbol shows that this appliance used a flammable refrigerant. If the refrigerant is leaked and exposed to an external ignition source, there is a risk of fire.
	CAUTION	This symbol shows that the operation manual should be read carefully.
	CAUTION	This symbol shows that a service personnel should be handling this equipment with reference to the installation manual.
	CAUTION	This symbol shows that information is available such as the operating manual or installation manual.



Caution: Risk of fire

(for IEC 60335-2-40: 2018 only)



Caution: Risk of fire

(for IEC/EN 60335-2-40
except IEC 60335-2-40: 2018)

[Note]

The symbols above is for R32 refrigerant system.

1 Description of Warning Signs

Different marks are used to indicate the levels of hazard severity. Please follow the instructions and ensure safe operation.



[Danger] In case of violations, serious injury or even death may occur.



[Warning] In case of violations, serious damage to the product and serious personal injury or even death, or electrical or fire hazards may occur.



[Caution] In case of violations, there will be a dangerous or unsafe situation that may result in minor personal injury or damage to products, equipment, and pro



[Note] Some useful operation and maintenance information.

Warning signs



Effective grounding required



Professional staff required

Installation prohibited



No inflammables



No Strong Current



No open flames



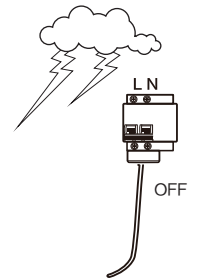
No acid and alkali substances

2 Safety Precautions

[Danger]

In thunderstorm weather, please turn off the main power switch, or lightning may damage the unit and cause accidents.

When refrigerant leaks, there shall be no smoke and fire. In this case, immediately turn off the main power switch, open the window for ventilation, keep away from the leakage point, contact local dealers or service outlets, and ask professional and technical personnel to repair.



[Warning]

The air conditioner shall be installed in such a way that the requirements of national standards and electrical specifications as well as the installation instructions herein are met.

Do not use liquid cleaners, liquefied cleaners, and corrosive cleaners to wipe the unit or sprinkle water or other liquids on it. Otherwise, its plastic parts will be damaged, and electric shock may occur in severe cases. Please turn off the main power switch before cleaning or maintenance of the unit; otherwise, accidents may occur.

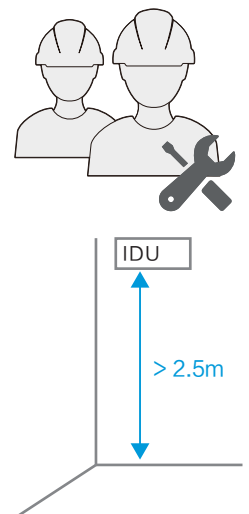
To remove and reinstall the air conditioner, please ask a professional technician for help.

Please contact a professional technician for maintenance and repair.

The air conditioner is classified as "an appliance not accessible to the general public".

The indoor unit shall be placed at a position out of the reach of children and at least 2.5 m above the ground.

The refrigerant leakage sensor is installed 1500mm above the ground.



[Caution]

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.

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. (Only European)

Children shall not play with the appliance. (Only European)

Cleaning and user maintenance shall not be made by children without supervision. (Only European)

This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons. (EN 60335-2-40:2003/A13:2012)

When the product is used for commercial application. This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons, the sound pressure level is below 70 dB(A).

3 Electric Safety Requirements

[Warning]

The air conditioner shall be installed according to national wiring specifications.

Wiring work must be performed by a duly qualified electrician.

All wiring work must comply with electrical safety specifications.

The air conditioner must be well-grounded, which means the main switch of the air conditioner must have a reliable grounding wire.

Disconnect all power supplies before contacting the junction device.

Do not remove or repair the air conditioner by yourself; otherwise, danger may occur. In case of any fault, please cut off the power supply immediately and contact the local dealer or local service outlet.

A separate power supply meeting the requirements of rated parameters must be provided for the air conditioner.

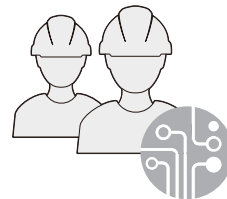
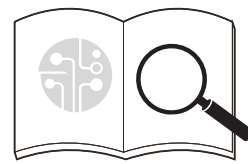
The fixed wiring connected to the air conditioner must be installed with a device to disconnect the power supply according to the wiring rules.

If the power cord is damaged, it must be replaced by a professional from the manufacturer's maintenance department or similar department to avoid danger.

The air conditioner's circuit board (PCB) is designed with a fuse to provide overcurrent protection.

The specifications of the fuse are printed on the circuit board.

NOTE: For the units with R32 refrigerant, only the blast-proof ceramic fuse can be used.

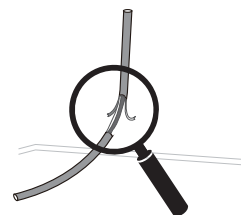


[Caution]

Do not disconnect the ground wire of the main power switch under any circumstances.

Do not use a damaged power cable. Replace it immediately if any damage is found.

Power on and preheat the air conditioner for at least 12 hours before use if it has never been used or been powered off for a long time.



4 Appendix

[Warning]

The following applies to r32 refrigerant systems.

Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized.

For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.

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.

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. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres.

Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

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.

No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains

or has contained flammable refrigerant 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 flammable 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.

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.

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

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

- the 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.

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, incorrect fitting of glands, etc.

Ensure that seals or sealing materials have not degraded such 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.

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.

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 ageing or continual vibration from sources such as compressors or fans.

When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used. However, 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;
- evacuate;
- purge again with inert gas;

- open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be “flushed” with OFN to render the unit safe. This process may need to be repeated several times. Compressed air or oxygen shall not be used for this task.

Flushing shall be achieved by breaking the vacuum in the system with OFN 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 OFN 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 ignition sources and there is ventilation available.

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.

Prior to recharging the system it shall be pressure tested with OFN.

DD.12 Decommissioning:

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

- Become familiar with the equipment and its operation.
- Isolate system electrically.
- 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.*
- Pump down refrigerant system, if possible.
- If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
- Make sure that cylinder is situated on the scales before recovery takes place.
- Start the recovery machine and operate in accordance with manufacturer's instructions.
- Do not overfill cylinders. (No more than 80 % volume liquid charge).
- Do not exceed the maximum working pressure of the cylinder, even temporarily.
- 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.
- Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

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

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 flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. 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.

Warning: disconnect the appliance from its power source during service and when replacing parts.

These units are partial unit air conditioners, complying with partial unit requirements of this International Standard, and must only be connected to other units that have been confirmed as complying to corresponding partial unit requirements of this International Standard.

OPERATING INSTRUCTIONS

1 Precautions for Use

[Warning]

Please turn off the main power switch if the unit is not used for a long time; otherwise, an accident may occur.

The air conditioner shall be installed at least 2.5m above the ground to prevent the risks below:

1. Do not touch the moving or live parts (rotors, motors, wind deflectors, etc.); otherwise, they may cause injury to you or damage to transmission parts.
2. You may not feel that comfortable if staying too close to the air conditioner.

When it is used with a combustion appliance, regular ventilation is required; otherwise, an insufficient oxygen supply may occur.

Do not allow children to play with the air conditioner; otherwise, a danger may occur.

Do not expose the indoor unit and controller to water and moisture; otherwise, a short circuit or even fire may occur.

Do not place the combustion appliance in the direct air supply position of the air conditioner; otherwise, incomplete combustion of the combustion appliance may occur.

Do not use or store flammable gases or liquids such as natural gas, hair gel, paint and gasoline near the air conditioner; otherwise, fire may occur.

Do not put animals and plants in the direct air supply of the air conditioner, so as not to cause harm to them.

In case of abnormal conditions, such as abnormal noise, smell, smoke, temperature rise, and leakage of electricity, please cut off the power supply immediately, and then contact the local dealer or air conditioner customer service center. Do not repair the air conditioner by yourself.

Do not place the combustible sprayer near the air conditioner or spray it directly to the air conditioner; otherwise, fire may occur.

Do not place the water container on the air conditioner. The water immersed in the air conditioner will weaken the insulation and cause electric shock.

After long-term use, please confirm whether the installation platform is worn. If placed on a worn platform, the air conditioner may fall and cause casualties.

Do not operate the switch with wet hands, which may cause electric shock.

During maintenance, please stop the air conditioner and cut off the power supply; otherwise, the high-speed operation of the rotors will cause injury.

It cannot be used to preserve food, animals and plants, precise instruments and artworks, which will lead to quality degradation.

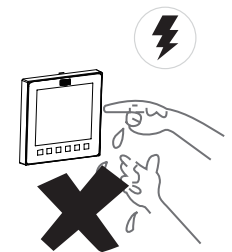
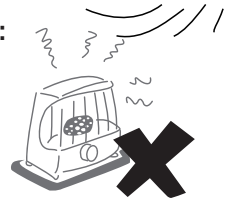
Do not use fuses beyond the specified capacity in the manual. For example, iron wires and copper wires will lead to failure, fire and other consequences. The power supply used must be a dedicated one for the air conditioner within the allowable voltage range.

Do not place any valuables under the air conditioner, since the air conditioner may produce condensed water under some failure conditions, which will cause damage to the valuables below.

Disposal: Do not dispose of this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available.

If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.



[Caution]

To use the unit normally, please follow the Operating Instructions herein; otherwise, internal protection or dripping of the unit may occur, or the cooling and heating effect may be reduced.

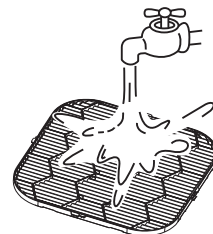
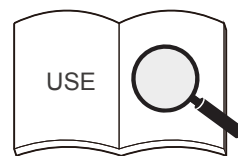
Please ensure that the room temperature is set properly, especially when there are old people, children or patients in the room.

Lightning or the start and stop of large electrical equipment in nearby factories may cause wrong operation of the air conditioner. Please turn off the main power switch for several seconds and turn it on, and then restart the air conditioner.

To avoid the danger caused by the wrong reset of the thermal circuit breaker, the air conditioner shall not be supplied by the external switching device, such as a timer or a circuit that is switched on and off at regular intervals by a general-purpose component.

Check whether the air filter is properly installed, and ensure that the air inlet and outlet of the indoor and outdoor units are not blocked.

If the air conditioner has not been used for a long time, please be sure to clean the air filter before starting the air conditioner. Otherwise, the dust and mold on the filter screen will cause air pollution or peculiar smell. Please refer to the chapter "Cleaning and Maintenance" for details.



2 Optimal Operation Mode

According to the characteristics of cold air sinking and hot air rising, it is suggested that the air deflector and the ceiling should be adjusted to form an angle of 30° ~ 65° for air outlet during cooling and heating to improve the effect of cooling and heating.



[Caution]

Long-term blowing at an angle of 30° may cause condensation on the surface of wind deflector. It is recommended to enable the anti-condensation function through the wire controller for mitigation of condensation.

Product operation scope

Please turn on the air conditioner under the temperature conditions below to maintain good performance:

Cooling	Indoor temperature	16~30°C
	Indoor humidity	≤80% (When the humidity exceeds 80%, dew may condense on the surface of the indoor unit or vaporific cold air may be blown out from the air outlet if it works for a long time)
Heating	Indoor temperature	16~30°C

[Caution]

The indoor unit operates stably within the temperature range given in the above table. If the normal operating range is exceeded, the indoor unit may stop working.

3 Non-air Conditioner Fault

Normal protection of air conditioner

In case of the following phenomena during your use of the air conditioner, it is normal and no maintenance is required.

Protection function

When the power switch is turned on, start the system immediately after it stops running, and the outdoor unit will stop working after about 4 minutes as the compressor cannot be shut down and started frequently, which is a normal phenomenon of the machine.

Cold air prevention function (cooling & heating)

In the heating mode (including heating in automatic mode), if the indoor heat exchanger does not reach a certain temperature, it is necessary to wait for the temperature of the heat exchanger to rise, and the indoor fan shall temporarily stop running or run at a low wind speed to prevent the cold air from blowing out.

Defrosting operation (cooling & heating)

In case of low outdoor temperature and high humidity, the heat exchanger of the outdoor unit may be covered with frost, which will reduce the heating capacity of the air conditioner. In this case, the air conditioner will stop heating and defrost automatically, and resume heating after defrosting.

During defrosting, the outdoor fan stops working and the indoor fan works according to the function of cold air prevention.

According to the outdoor temperature and frosting condition, the defrosting operation time varies, generally 2-10 minutes.

During the defrosting process, the outdoor unit may emit steam, which is caused by rapid defrosting and is a normal phenomenon.

Anti-condensation function

The indoor unit detects the operating environment. When the humidity is judged to be very high, the air conditioner will prevent the formation of condensation water by adjusting the angle of the wind deflector and the fan speed to avoid dripping. (This function is not available, if a third-party panel is selected)

Normal phenomenon rather than air conditioner fault

In case of the following phenomena during the use of the air conditioner, they are normal and can be removed by following the steps below or no measures are required.

■ The indoor unit gives off white mist

- ① In an environment with high indoor relative humidity, white mist may appear when "Cooling" works due to high humidity and large temperature difference between inlet and outlet.
- ② When the air conditioner is switched to "heating" after "defrosting", the moisture produced by defrosting the indoor unit is discharged as steam.

■ Dust is blown out from the indoor unit

If it is not used for a long time or for the first time, it is recommended to clean the filter screen; otherwise, the dust entering the indoor unit will be blown out.

■ Peculiar smell from the indoor unit

The indoor unit absorbs the smell of rooms, furniture or cigarettes, etc., and sends them out during operation. Therefore, it is recommended to have cleaning and maintenance by professional personnel on a regular basis.

■ There are water drops on the surface of the air conditioner

There may be water drops or slight water blowing on the surface of the air conditioner when the indoor relative humidity is high, which is normal. Please close the doors and windows.

■ "Self-cleaning" icing sound

After the air conditioner enters the self-cleaning stage, there may be a slight "click" sound for about 10 minutes, indicating that the indoor unit is freezing, which is normal.

■ Low noise of air conditioner

- ① When the air conditioner works under "Automatic", "Cooling", "Dehumidification" and "Heating" modes, there may be a low continuous "fizz" sound from it, which is the sound of refrigerant flowing between the indoor unit and the outdoor unit.
- ② A "fizz" may be heard for a short time after the air conditioner stops or during "defrosting", which is the sound made when the refrigerant stops flowing or the flow rate is changed.
- ③ When the air conditioner works in "Cooling" or "Dehumidification" mode, a low continuous "fizz" sound may be heard, which is the sound of a drainage pump running.
- ④ When the air conditioner just starts or stops running, a "squeak" and "clipping" sound may be heard, which is caused by thermal expansion and cold shrinkage of parts or surrounding decoration materials. Such a sound will disappear during normal operation.

■ "Cooling"/"Heating" (not available for a unit with cooling function only) mode is switched to only air supply mode during operation

The compressor of the air conditioner will automatically stop working and switch to the air supply mode only when the indoor unit reaches the set temperature. When the room temperature rises (in "Cooling" mode) or falls (in "Heating" mode) to a certain extent, the compressor will be restarted to resume the cooling or heating.

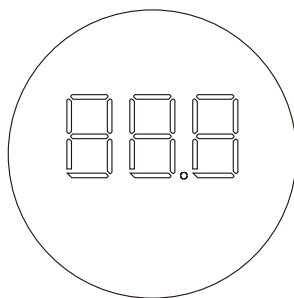
■ The heating effect may be reduced when the outdoor temperature is very low in winter

- ① When the cooling and heating air conditioner works in the "Heating" mode, the air conditioner absorbs heat from the outdoor air and releases it indoors to heat the room air, which is the heating principle of the heat pump of the air conditioner.
- ② When the heat pump works, the outdoor unit blows cold air, and the outdoor temperature drops. When the outdoor temperature is very low, the heating capacity will decrease gradually. It is recommended to use other auxiliary heating devices for heating.

■ No hot and cold options

For the same air conditioning system, the indoor unit can only work in cooling, heating or other modes at the same time. When the operation modes of multiple indoor units are inconsistent, a mode conflict will be caused. The operation mode of the indoor unit started later shall not be switched, and it can be switched only if all indoor units are shut down, and the operation modes of all indoor units shall be kept uniform.

4 Display component



Description of display functions:

- ① In the standby state, the main interface displays "- - -".
- ② When the unit is turned on, the main interface will display the set temperature in cooling and heating modes; In the air supply mode, the main interface displays the indoor temperature; In the dehumidification mode, the main interface displays the set temperature; When the humidity is set, the set humidity value will be displayed on the wire controller.
- ③ The illuminated display on the main interface can be turned on or off by pressing the light key on the remote controller.
- ④ When the system runs in a fault or special mode, the fault code or special mode running code will be displayed on the main interface. For details, please refer to the Section "Installation Instructions - Application Control - Definition of Fault Codes and Indications".

[Caution]

Some display functions are limited to V8 configuration, such as indoor and outdoor unit models, wire controllers and display components. Please consult your local dealer or service outlet for details.

Installation Instructions

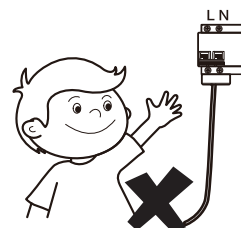
Please read this instructions carefully before installing the indoor unit

1 Precautions for Installation

Qualification and safety requirements

[Warning]

Please install the unit according to national standards.
Please commission the installation of the unit to a dealer or a professional technician. The unit must be installed by professional and technical personnel, who must have relevant professional knowledge. Users are not allowed to install the air conditioner by themselves. Otherwise, incorrect operation will cause fire, electric shock, injury, water leakage, etc., which may cause injury to you or others or damage the air conditioner. Do not perform modifications or repairs by yourself.
Improper repair may cause fire, electric shock, injury, water leakage and other accidents.
Be sure to entrust a dealer or a professional to repair it.
Verify whether an earth leakage circuit-breaker is installed.
An earth leakage circuit-breaker must be installed; otherwise, electric shock may occur. Local electrical company regulations shall be followed for power connection.
Reliable grounding must be carried out according to the law. Incomplete grounding may cause an electric shock.
Please entrust a dealer or professional to move, remove or install the air conditioner. Improper installation will result in fire, electric shock, injury, water leakage and other accidents.
Be sure to use our designated products for optional parts and additional parts for sale. When installing optional parts and additional parts for sale, please use our designated optional parts and entrust professionals to install them. Improper installation may cause fire, electric shock, water leakage and other hazards.
Use power cables and communication cables of specified specifications, and ensure that all wiring is properly connected to prevent the wiring terminals, power cables and communication cables from being pulled by external forces. Poor wiring or improper installation can cause a fire.
The air conditioner must be grounded. Check whether grounding cables are reliably connected or broken. Do not connect grounding cables to gas tanks, water pipes, lightning rods and telephone grounding cables.
The main power switch of the air conditioner shall be set at a position out of reach of children.
Prevent children from playing with the main power switch to cause danger, and do not cover the main power switch with curtains and other inflammables.
When refrigerant leaks, there shall be no smoke and fire.
If the air conditioner fails to work normally in "Cooling" or "Heating" mode, there may be refrigerant leakage. In this case, contact the dealer or professional personnel.
The refrigerant used in the air conditioner is safe and usually does not leak. In case of indoor leakage of refrigerant, it is easy to cause fire after contact with the smoke or fire of heater/electric furnace/stove. Please first turn off the power switch of the air conditioner, extinguish the fire of the burner and open the door and window of the room for ventilation to ensure that the concentration of refrigerant leakage in the room does not exceed the critical level. Then, stay away from the leakage point, and contact the dealer or professionals in time.
Please turn on the air conditioner after confirming that the maintenance personnel have repaired it for refrigerant leakage.



Exposure of the unit to water or other moisture before or after installation may cause a short circuit of electrical components.

Do not store it in a wet basement or expose it to rain or water.

Confirm whether the installation foundation and hoisting are secure and reliable.

Poor installation of the subbottom may cause the air conditioner to fall and cause accidents.

The influence of strong wind, typhoon, and earthquake shall be fully considered for reinforcement and installation.

Verify that drain pipes can drain smoothly.

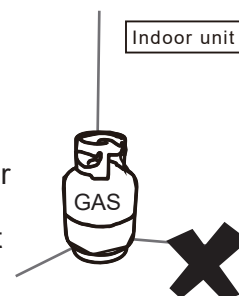
Improper pipe installation will cause water leakage, wet furniture and electrical appliances, damage carpets, etc.

After installation, check whether the refrigerant leaks.

Do not install the pipe in places with potential leakage of flammable gas.

In case of leakage of combustible gas, it is easy to cause fire if it stays around the indoor unit.

Ensure that the air filter with the mesh number ranging between 30 and 80 is installed at the return air grille of the air conditioner to filter the fine dust in the air and keep the air duct clean and prevent it from being polluted and blocked.



[Caution]

Indoor units, outdoor units, power cables and connecting wires shall be at least 1m away from high-power radio equipment to prevent electromagnetic wave interference and noise. (The electromagnetic waves in some bands are not sufficient to prevent noise even if they are more than 1 m away from each other.)

In rooms with fluorescent lamps (rectifying or quick-start type), the signal transmission distance of the remote controller (wireless) may not reach the predetermined value. The indoor unit should be installed as far away from the fluorescent lamp as possible.

Do not touch the fins of the heat exchanger. Improper touching may cause cutting.

For safety reasons, please handle the packed materials properly.

Nails and other packing materials may cause personal injury or other injuries. Please tear the plastic bag and dispose of it properly to prevent children from suffocating by playing with it.

Do not cut off the power supply immediately when the indoor unit stops working.

After changing the air inlet and outlet panels or the length and direction of the connecting air duct, please make the following settings on the controller before using the air conditioner next time: (For details, see the chapter "Application Control" in the installation section)

Reset the initial static pressure on the controller, or test run the outdoor unit once (done by the installer); set the current state as the reference state in which the filter screen is determined to be dirty and blocked.

If the operations above are not performed, the machine may not detect the dirt and blockage of the filter screen accurately.

[Caution]

For evaporating units and condensing units, the instructions or markings shall include a wording to assure that the maximum operating pressure is considered when connecting to any condenser unit or evaporator unit.

For evaporating units, condensing units and condenser units, the instructions or markings shall include refrigerant charging instructions.

A warning to assure that partial units shall only be connected to an appliance suitable for the same refrigerant.

This unit is a partial unit air conditioner, complying with partial unit requirements of this International Standard, and must only be connected to other units that have been confirmed as complying to corresponding partial unit requirements of this International Standard.

The electrical interfaces shall be specified with purpose, voltage, current, and safety class of construction.

The SELV connection points, if provided, are to be clearly indicated in the instructions.

The connection point should be marked with the “read the instructions” symbol per ISO 7000-0790 (2004-01) and the Class III symbol according to IEC 60417-5180 (2003-02).

[Note]

This unit is equipped with a refrigerant leak detector for safety. To be effective, the unit must be electrically powered at all times after installation, other than when servicing.

If any supplemental unit is employed to detect leaked refrigerant, such unit shall also apply this marking or be accompanied by such instructions.

Precautions for handling and lifting

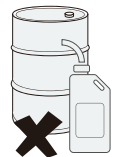
- ① Before the handling, please confirm the handling route of the air conditioning unit to the installation location.
- ② Do not unpack the air conditioner until it has been moved to the installation site.
- ③ When unpacking and moving the air conditioner, hold the hanger seat and do not apply force to other parts, especially to refrigerant piping, drainage pipes and plastic accessories, so as not to damage the air conditioner and cause personal injury.
- ④ Before installing the air conditioner, please check whether the refrigerant specified on the nameplate has been used. For details about the installation of outdoor unit, see the installation instructions in the accompanying installation and operation manual of the outdoor unit.

Prohibited places for installation

[Warning]

Do not install or operate the air conditioner in the following places:

-  Places filled with mineral oil or oil fume or mist, such as kitchens.
The plastic parts will be aged, and the heat exchanger will get dirty and blocked, eventually leading to poor cooling and heating effect, water leakage or other problems of the air conditioner.
-  Places where corrosive gases such as acid and alkaline gases are present.
Copper pipes and solder joints will corrode, eventually causing refrigerant leakage.
-  Places exposed to flammable gases and places where volatile flammable gases such as thinner and gasoline are used.
The electronics in the air conditioner may cause the surrounding gases to ignite.
-  Places where machines producing electromagnetic radiation are present.
The control system will fail, and the air conditioner will not function properly.
-  Places with high levels of salt in the air, such as seashores.
-  Places where explosions may occur.
-  Places such as in the compartments of vehicles, ships, etc.
-  Places such as factories with severe power supply voltage fluctuations.
-  Places under other special environmental conditions.



[Tips]

This series of air conditioners are used for comfort air conditioning, and must not be used in computer rooms and special places for storing precision instruments, food, animals, plants, artworks, etc.

Suggestions on selection of installation location

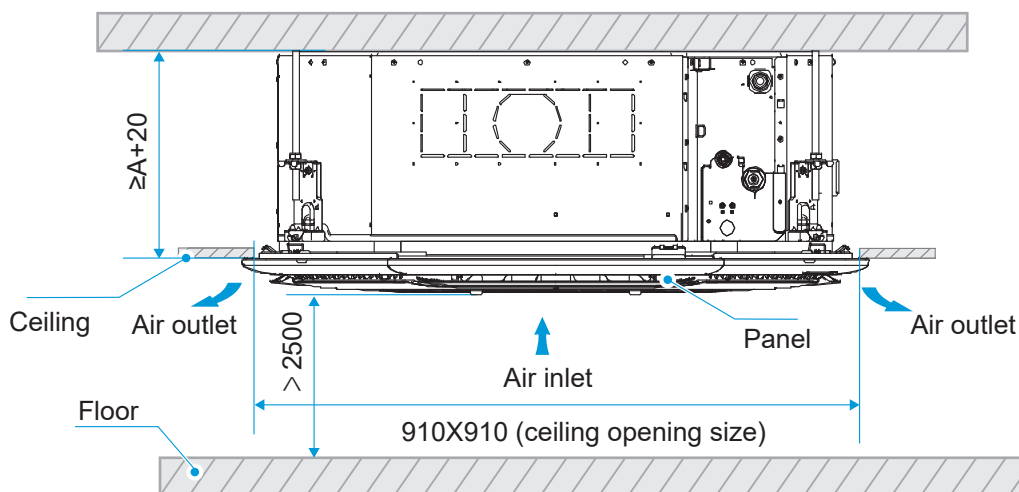
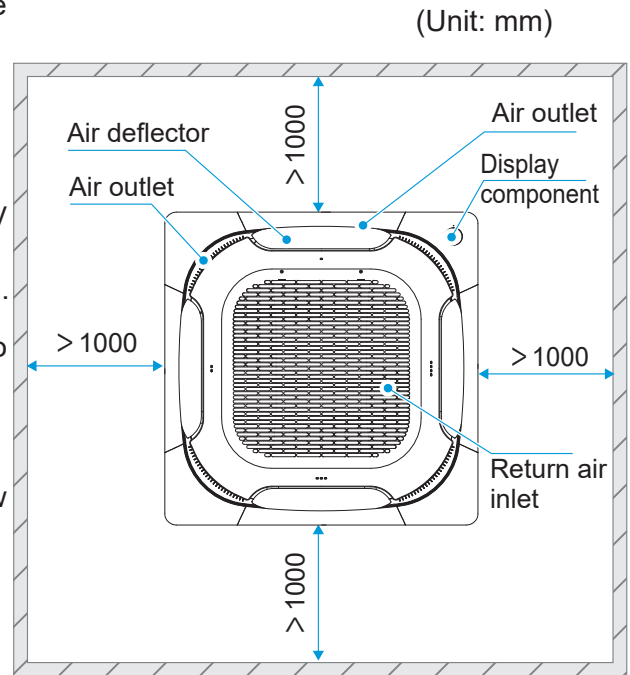
It is recommended that construction be carried out based on the design drawings of HVAC engineers. Select the installation location based on the following principles:

-  Ensure that the air flow in and out of the indoor unit is organized reasonably and that indoor air circulation is formed.
-  Guarantee the space for overhaul and maintenance of indoor unit.
-  The closer the drainage pipes and copper pipes are to the outdoor unit, the lower the cost of pipes required for construction is.
-  Prevent the air from the air conditioner from blowing directly onto the human body.

- ✓ The closer the wires are to the power supply cabinet, the lower the cost of wires is.
- ✓ Keep the return air of the air conditioner away from direct sunlight in the room.
- ✓ Do not interfere with light troughs, fire mains, gas pipelines and other facilities.
- ✓ Do not install the indoor unit on load-bearing beams, columns, or in other locations where the safety of the building structure will be affected.
- ✓ Install the wire controller and the indoor unit in the same installation place. Otherwise, the sampling point setting of the wire controller needs to be changed.

Select the location that fully meets the following conditions and user requirements to install the air conditioner:

- ✓ Adequate space for installation and maintenance shall be provided. (See the figure on the right)
- ✓ The ceiling shall be level and the building construction shall be strong enough to bear the weight of the indoor unit. Reinforcement measures shall be taken if necessary.
- ✓ The inlet and outlet air shall be free and least affected by outside air.
- ✓ The supply air can be spread to any position in the room.
- ✓ The connecting pipes and drainage pipes shall be easy to lead out.
- ✓ There shall be no direct radiation from heat sources.
- ✓ It shall be avoided to install the air conditioner in a narrow space with high noise requirements.
- ✓ The indoor unit shall be installed at a position between 2.5m and 4.5m above the ground.
- ✓ The condensed water can be drained smoothly.
- ✓ The length of piping between indoor and outdoor units shall be within the allowable range. (See the installation and operation manual of outdoor unit.)



Model(kW)	A
2.8~5.6	204
7.1~9.0	246
10.0~14.0	288

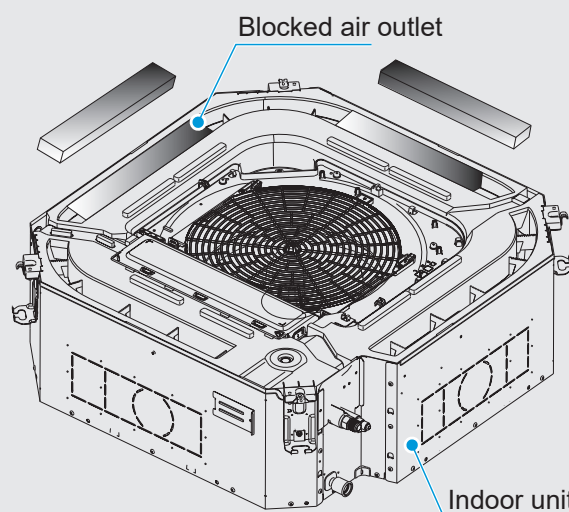
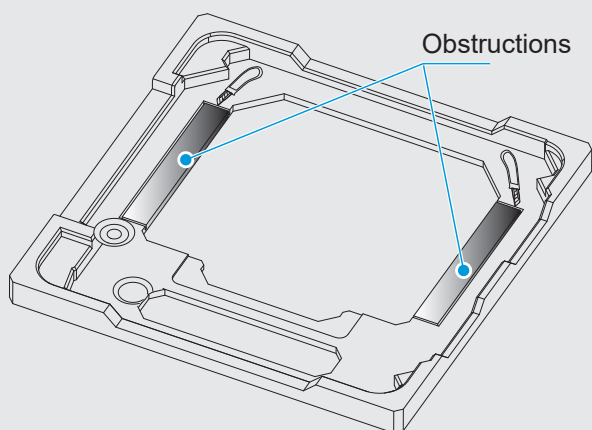
Suggestions on selection of installation location



Living room, office and other crowded places

In terms of installation position, the air outlet cannot be directed to positions with people, such as sofas and tea tables. The air shall be supplied from the side to improve comfort, because direct blowing will cause discomfort to the human body.

Obstructions (in the packing material) can be used to block the unused air outlet in the corner of the wall.



Please use a knife to remove the obstruction from the packing material

Schematic diagram of blocked air outlet



Dining room

Since the dining room is generally adjacent to the kitchen and there is heavy cooking oil fume in the kitchen, the central air conditioner could be installed on the ceiling of the dining room. The air outlet shall not face the dining table, because it is inevitable that dust will be adsorbed at the air outlet on the ceiling, so as to avoid blowing dust into the food when air is coming out of the air outlet and affecting food hygiene. The return air inlet shall be kept away from the kitchen as far as possible to avoid inhalation of cooking oil fume and affecting air quality.

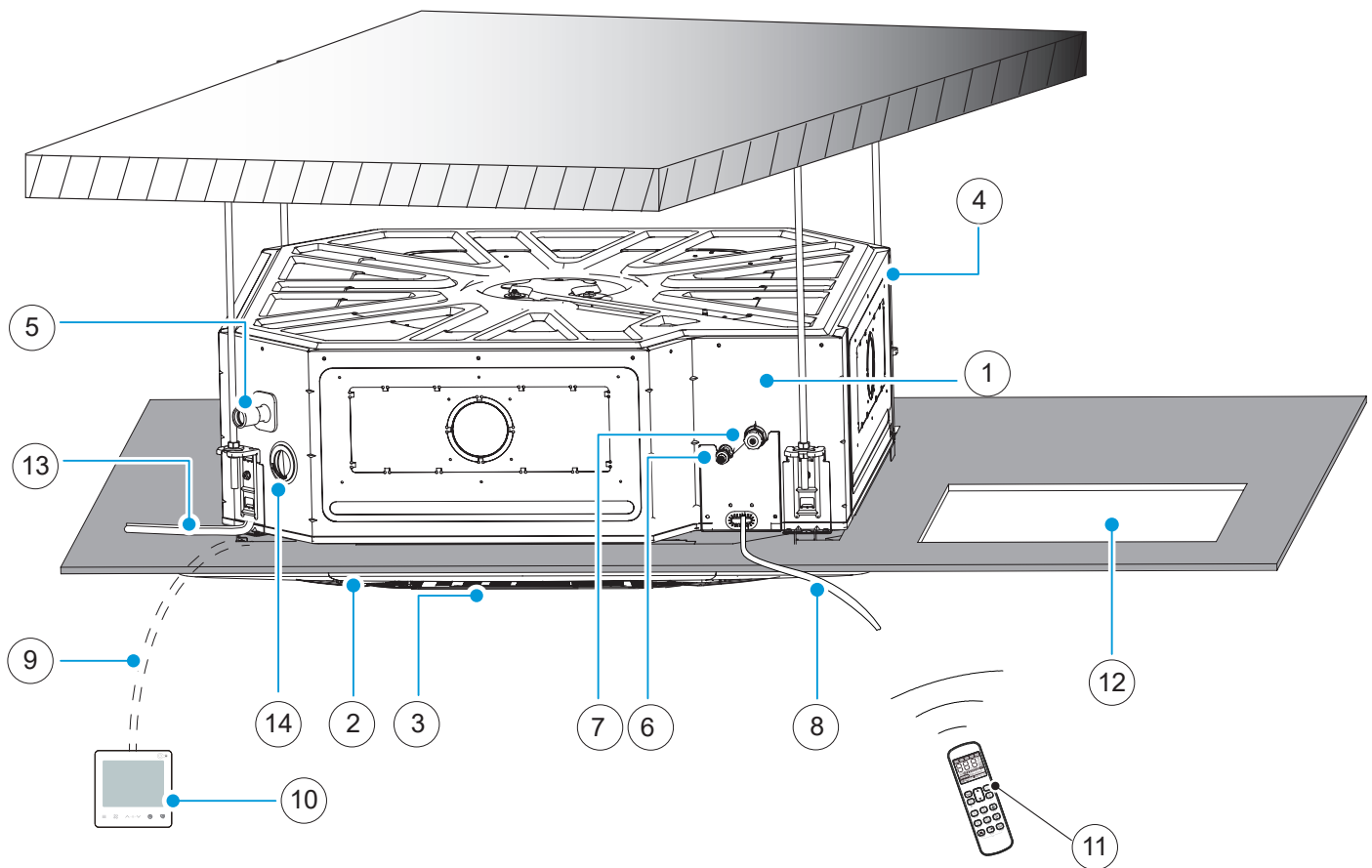


Bedroom

It shall be installed on the ceiling of the bedroom without direct blowing to the bed.

Component Name

Description of components



① Indoor unit	② Panel (additional)	③ Air outlet
④ Fresh air outlet	⑤ Drainage pipe	⑥ Liquid pipe
⑦ Air pipe	⑧ * Power supply and ground wire	⑨ *Connecting wire
⑩ Wire controller (additional)	⑪ Remote controller (additional)	⑫ Access panel
⑬ *Communication line	⑭ Water testing cover/water level, water level switch inspection hole	
⑮ Expansion vent		

"*" indicates the accessory is purchased on site.

[Tips]

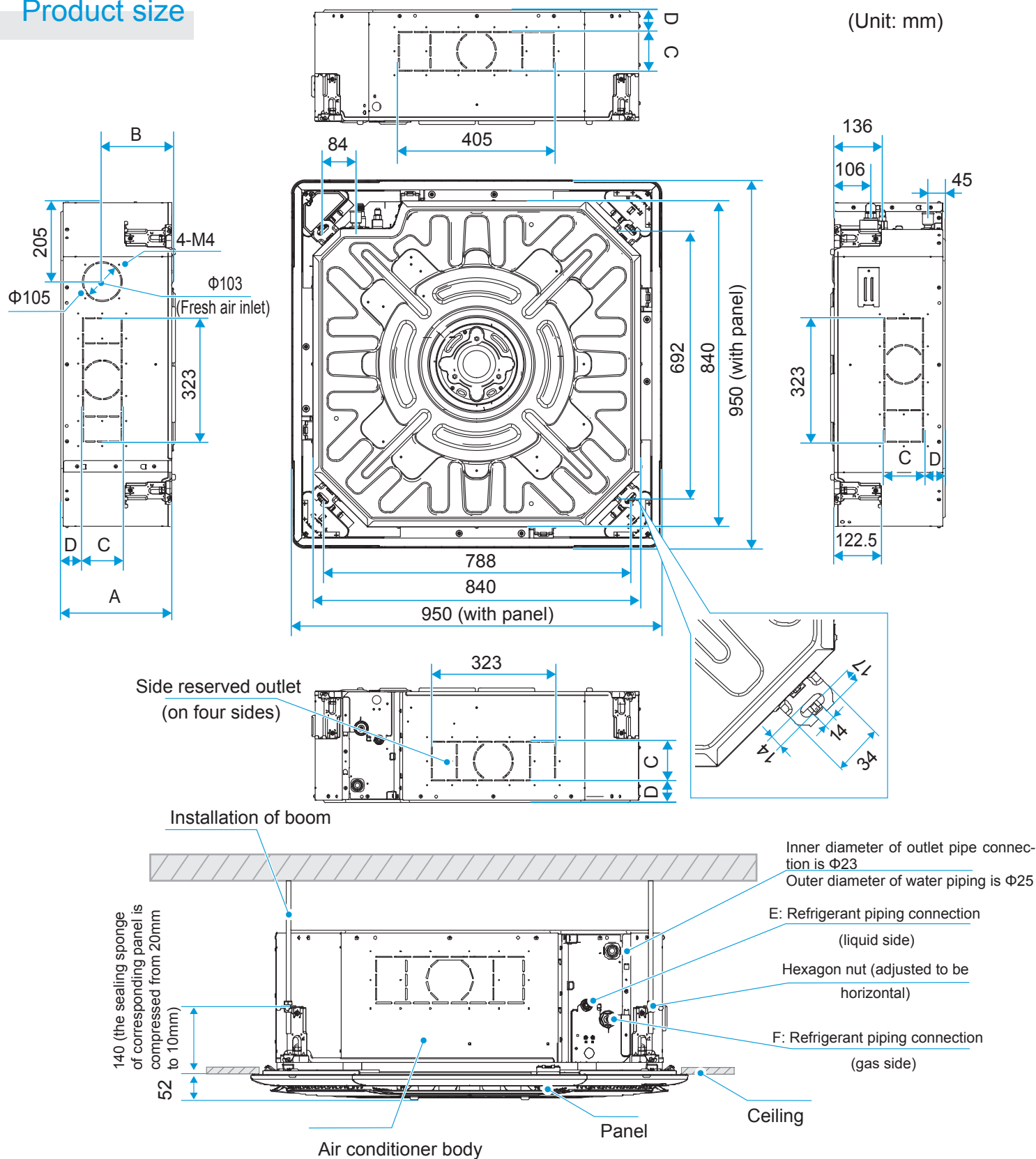
The panel, wire controller and remote controller are available in various models. All optional or additional parts shall be supplied by the Company.

Please refer to the product manual for optional accessories such as wire controller.

All illustrations herein are for the purpose of explanation only, so their appearance and functions may not be completely consistent with those of the products you purchased, and the actual model shall prevail.

Product size

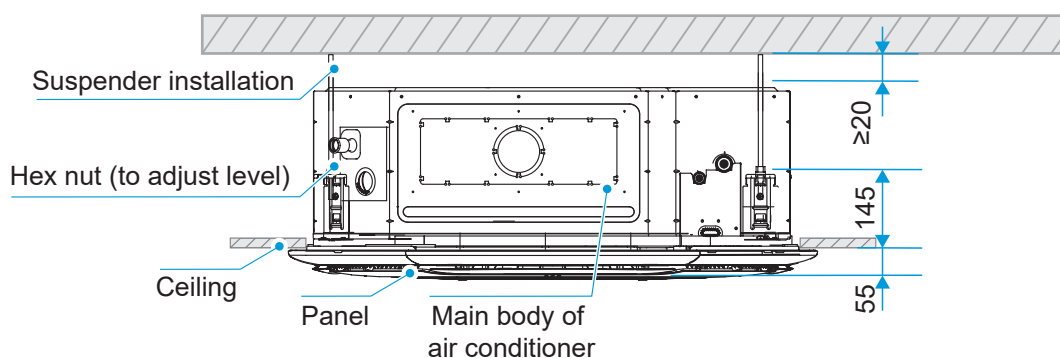
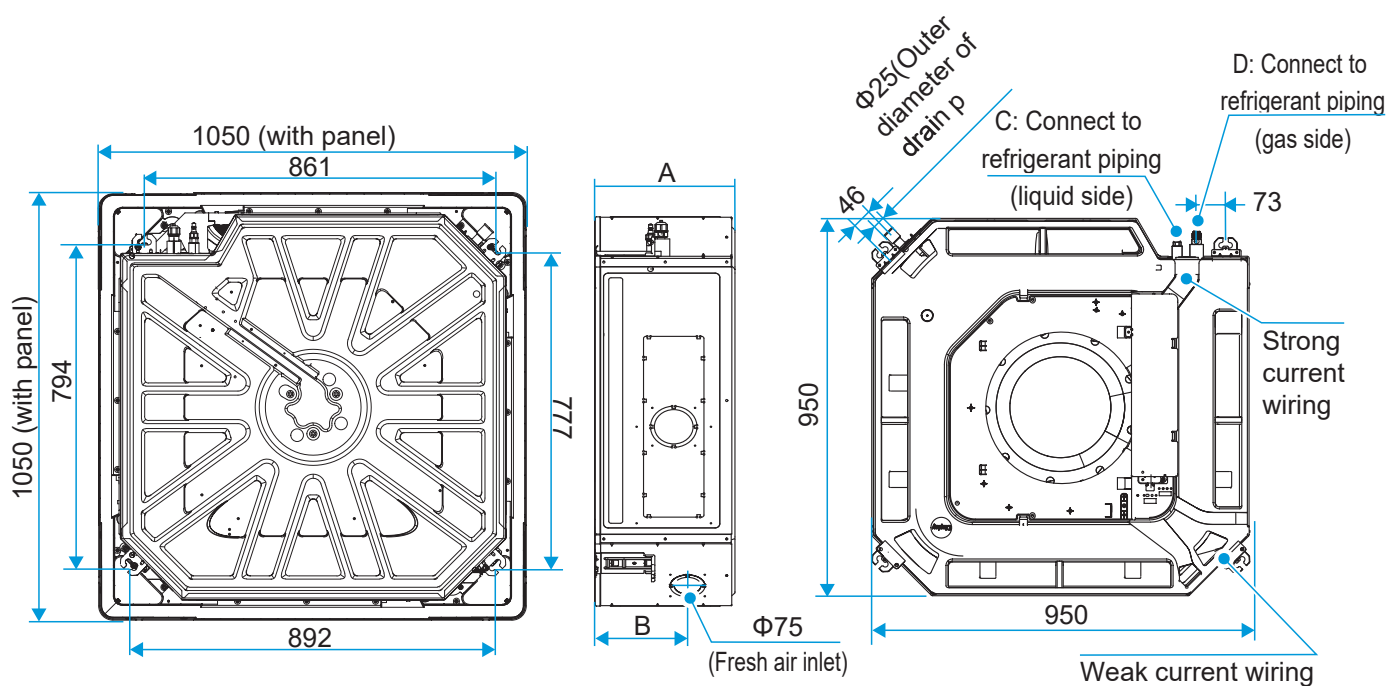
(Unit: mm)



Indoor unit body(kW)	A	B	C	D	F	E
2.8~5.6	204	141	63	41.5	$\Phi 12.7$	$\Phi 6.35$
7.1~9.0	246	163	103	41.5	$\Phi 15.9$	$\Phi 9.52$
10.0~14.0	288	190	103	56.5	$\Phi 15.9$	$\Phi 9.52$

Product Dimensions

(Unit: mm)



Model (kW)	A	B	C	D
16.0	300	200	$\Phi 9.5$	$\Phi 15.9$
18.0	300	200	$\Phi 9.5$	$\Phi 19.1$

2 Installation Material

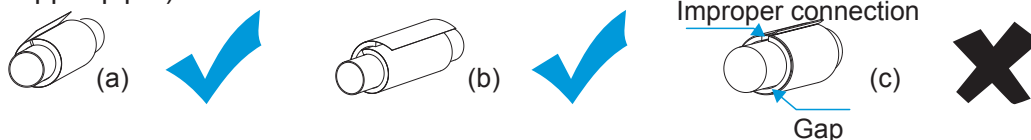
Product accessories

List of accessories

Installation and Operation Manual X 1 Installation and Operation Manual of indoor unit (Please be sure to provide it for the user)	Copper nut X 2 Used for the engineering installation of connecting pipe	Cable tie X 4 Used to tighten the connections between the drain hose and the indoor unit outlet and PVC water pipe	Insulation pipe X2 Thermal insulation and anti-condensation effect of piping connections	Cardboard X1 Determine the distance between the unit and ceiling opening
Remote controller (additional)	Wire controller (additional)	G3 filter screen (sold separately)	Medium-efficiency filter screen (sold separately)	

[Caution]

Please cut insulation pipes as needed during on-site installation. (Please refer to the following two methods (a) and (b) for installation, method (c) is the wrong, and there shall be no gap between the insulated pipe and the copper pipe.)



[Tips]

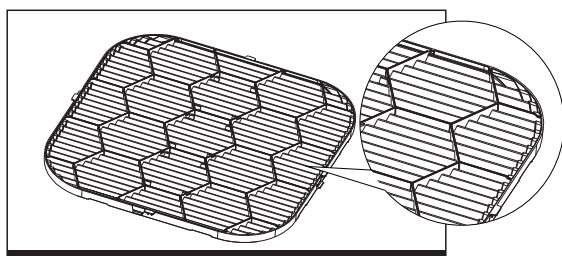
Please check whether the above items are included in the accessory package. If not, please contact the dealer for handling.

Do not throw away any accessories that may be needed for installation until the installation is complete.

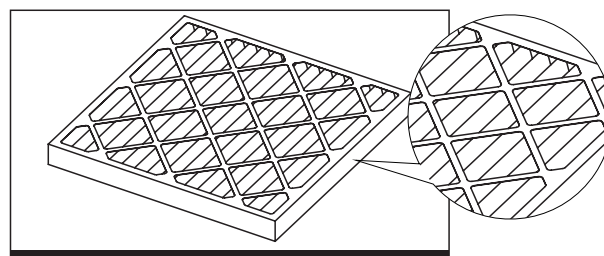
Customers can purchase additional or optional parts such as wire controller and remote controller.

The air filter screen is divided into G1 and G3 primary-efficiency filter screens and F6 medium-efficiency filter screen. The G3 primary-efficiency filter screen and F6 medium-efficiency filter screen shall be customized by the dealer.

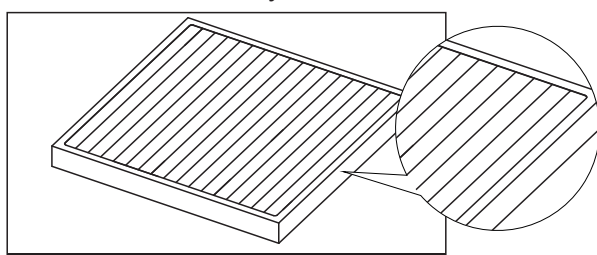
G1 primary-efficiency filter screen



G3 primary-efficiency filter screen



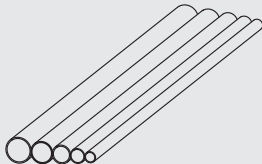
F6 medium-efficiency filter screen



Locally sourced accessories

List of accessories

Copper pipe	PVC drainage pipe	Insulation pipe	Expansion screw (M10) X4	Lifting bolt (M10) X4
For connection of indoor unit refrigerant system	For discharge of indoor unit condensate water	Prevent condensation in pipes	For the installation of indoor unit	For the installation of indoor unit

	Copper pipe specification (Unit: mm)		
Model (kW)	Piping	Liquid side	Gas side
16.0		$\Phi 9.52 \times 0.75$	$\Phi 15.9 \times 0.75$
18.0		$\Phi 9.52 \times 0.75$	$\Phi 19.1 \times 1.0$
Remarks	For connection of the IDU refrigerant system, it is recommended to use a soft copper tube (T2M), with the length selected according to the actual situation.		
Copper pipe specification (GB1527 drawn copper pipe) (unit: mm)			
Model(kW)	Piping	Liquid side	Gas side
2.8~5.6		$\phi 6.35 \times 0.75$	$\phi 12.7 \times 0.75$
7.1~14.0		$\phi 9.52 \times 0.75$	$\phi 15.9 \times 1.0$
Remarks	It is used for the connection of refrigerant system of indoor unit. Soft copper pipe (T2M) is recommended, and its length shall be based on the actual situation.		
	PVC drainage pipe It is used as the drainage pipe of indoor unit. It has an outer diameter of 25 mm and its length shall be based on the actual needs.		Insulation pipe The wall thickness of insulation pipe is usually more than 15 mm for copper pipes and more than 10 mm for rigid polyethylene pipe. The wall thickness shall be appropriately increased in closed wet areas.
			

 [Caution]

The materials for on-site installation, such as copper pipes, drainage pipes, lifting screws, various fasteners (pipe supports, clamps, screws, etc.), power cords, and signal cables, shall be purchased by the installer on site, and the material quality and specifications must meet the relevant national or industrial standards.

Requirements for insulation materials

Insulation of copper pipes

- ① Closed-cell foam insulation materials with a combustion performance grade of B1 and a heat resistance of over 120°C shall be used.
- ② Wall thickness of insulation pipe:
 1. When the diameter is greater than or equal to 15.9 mm, the wall thickness of the insulation pipe shall be greater than 20 mm.
 2. When the diameter is less than or equal to 12.7 mm, the wall thickness of the insulation pipe shall be greater than 15 mm.
- ③ For the system used for heating in winter in severe cold areas, the wall thickness of the insulation pipe shall be increased. For the insulation of the outdoor copper pipe part, the wall thickness of the insulation pipe is generally more than 40 mm. For the insulation of the indoor air duct part, it is recommended that the wall thickness of the insulation pipe be more than 20 mm.
- ④ The connection between insulation pipes and the cut part shall be applied with adhesive and then wrapped with electrical tape. The width of the tape shall not be less than 50 mm, in order to ensure firm connection.
- ⑤ The insulation between the copper pipe and the indoor unit shall be tight enough to prevent the generation of condensed water.
- ⑥ The insulation of copper pipes can be carried out only after it has been confirmed that there is no leakage point in the system based on the leakage inspection.

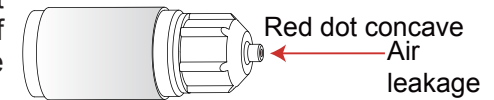
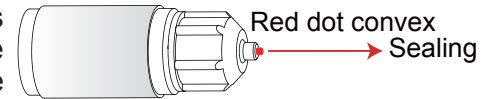
Drainage pipe insulation

- ① The indoor part of the drainage pipe shall be insulated to prevent condensation, and the insulation pipes with a thickness of more than 10 mm shall be used.
- ② If the pipe is not insulated along its whole length, the cut part must be re-bonded.
- ③ The connection between insulation pipes and the cut part shall be fixed with glue or clips and shall be located at the top of the pipeline.
- ④ The insulation of the water distribution pipe can be carried out only after it has been confirmed that there is no leakage point based on the drainage test.

3 Preparation before Installation

Unpacking inspection

- ① Before installation, carry out unpacking inspection to confirm whether the packaging materials are in good condition, whether the accessories included in the package are complete, whether the appearance of the air conditioner is intact, and whether the surfaces of parts, such as the heat exchanger, are worn.
- ② Check one sealing nut of the refrigerant pipe, and observe whether the red dot on the surface of the air duct sealing nut protrudes. If it protrudes, it indicates that the pipeline of the machine is well sealed; if it is dented, it indicates that the pipeline leaks. In the latter case, please contact the dealer.
- ③ Be sure to check the model of the machine before installation.
- ④ After the inspection of both indoor and outdoor units is completed, pack them in plastic bags to prevent foreign objects from entering the unit.

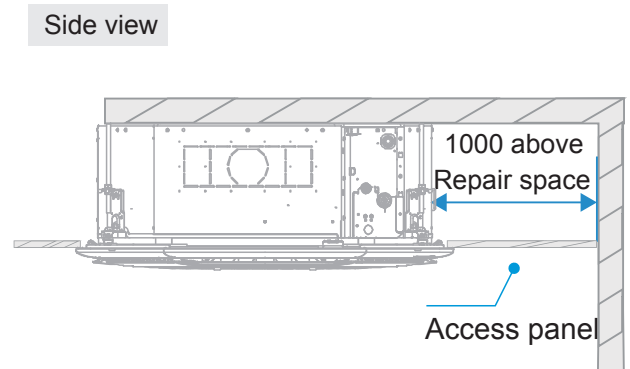
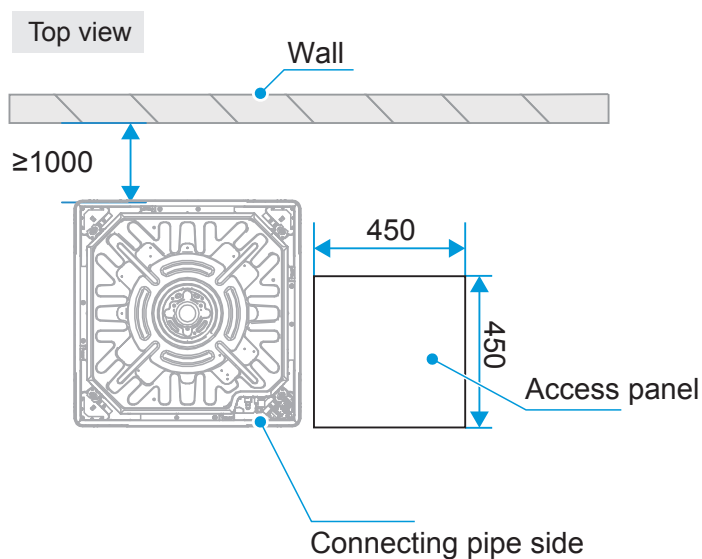


Positioning of indoor unit

Please confirm the positional relationship between the air conditioning unit and the lifting bolt.

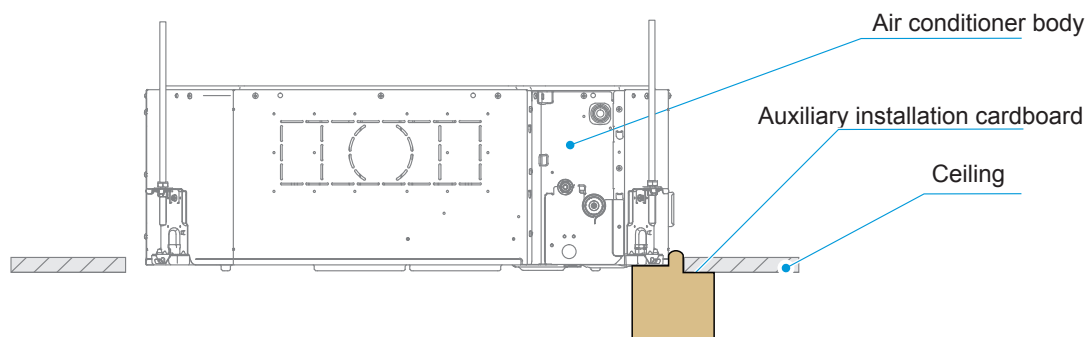
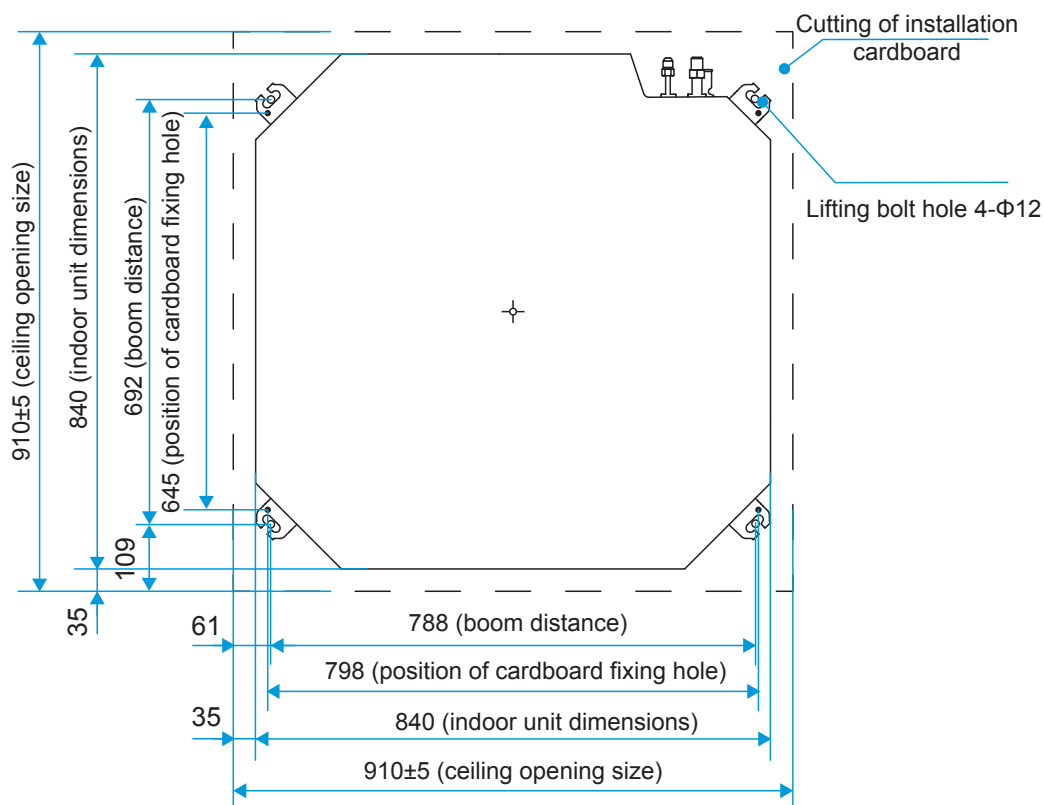
- ① Determine the lifting position of indoor unit according to the design drawings.
- ② Draw a line to locate the drilling position of the boom bolt based on the installation cardboard.
- ③ An access hole shall be provided on the side of the connecting pipe (recommended size: 450 x 450 mm).
- ④ There shall be no obstacles within 200 mm of the return air inlet.
- ⑤ Infrared level is recommended for line drawing and positioning.

(Unit: mm)



Please confirm the position relationship between the ceiling opening and the unit and lifting bolt

- 1 Please make a hole of 910 X 910 mm according to the profile of the installation cardboard. (Unit: mm)

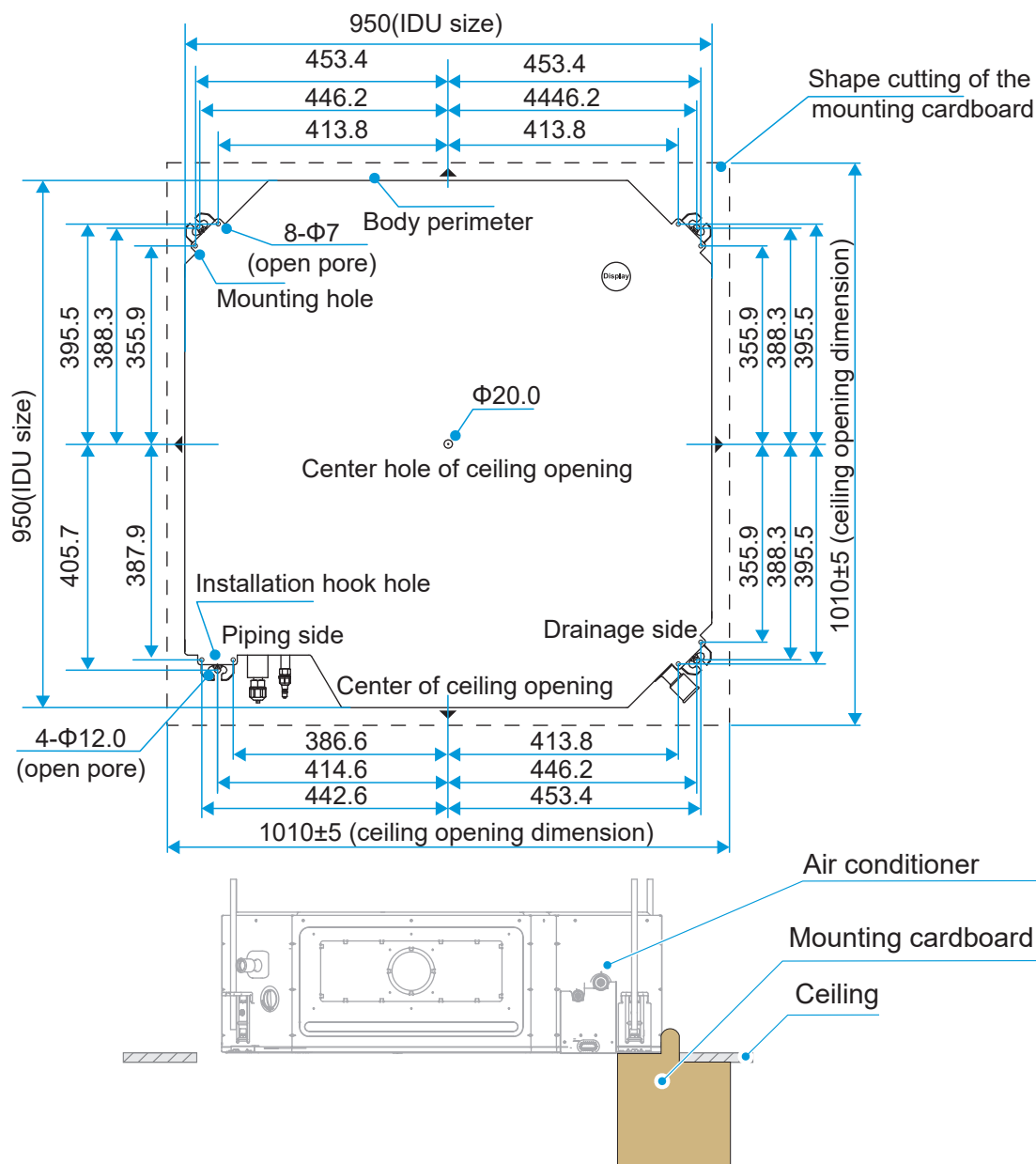


Auxiliary installation cardboard is used to adjust the spacing between the air conditioner body and the ceiling to ensure that the installed panel is fit closely with the ceiling

Determine the positions of the ceiling opening, the unit and the lifting bolts.

- 1 Cut a hole with a size of 1010mm x 1010mm according to the outline of the mounting cardboard.

(Unit: mm)



The mounting cardboard is used to adjust the distance between the air conditioner and the ceiling to ensure that the panel fits closely with the ceiling after installation.

[Caution]

- Hexagon nuts at the booms of four corners shall be adjusted to make the air conditioner body horizontal:
1. Please determine the position of booms according to the "lifting bolt hole" in four corners of this cardboard.
 2. Please cut this cardboard along the cutting line to help determine the position of openings on the body and ceiling, and drill 910 X 910 mm square holes on the ceiling.
 3. Before installing the ceiling, cut the cardboard along the cutting line and fix it on the air conditioner body to determine the size and position of the ceiling opening in advance.

- 2 Please determine the position of mounting hole based on the installation cardboard.

- 3 When installed on a new ceiling, the cardboard shall be attached to the body of the installed air conditioner for reference to determine the size, location, and center of the ceiling opening.

[Caution]

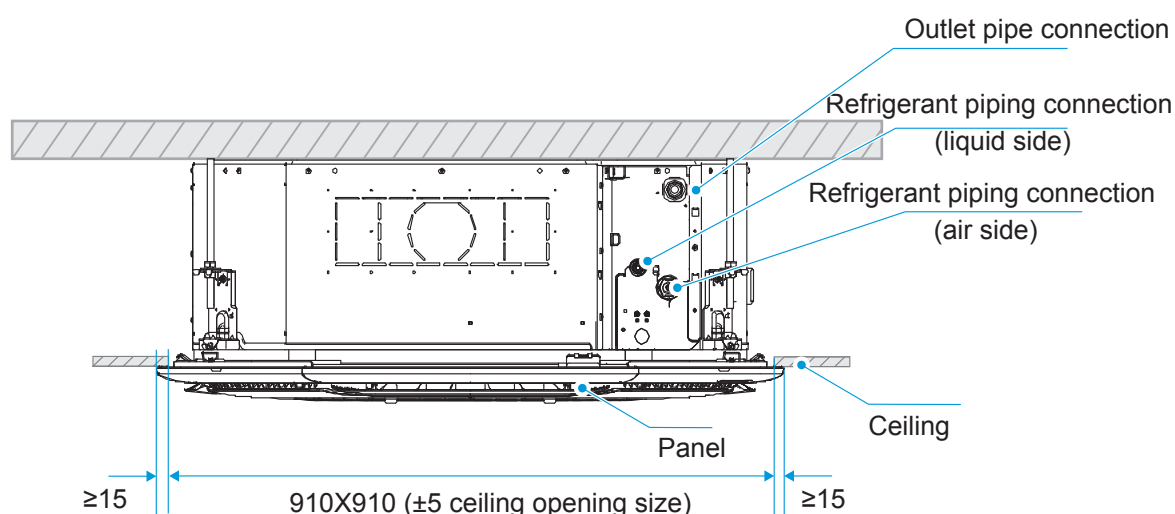
Use the four hexagon nuts for uniform adjustment, and ensure that the air conditioner body is horizontal. When a frame is used to fix the air conditioner on the ceiling:

The overlap between the ceiling and the decorative panel shall be kept above 10mm. The distance between indoor unit and ceiling shall be within 12mm. When the distance is above 15mm, please add ceiling materials or re-repair the ceiling.

Make openings required for installation on the ceiling where necessary (if there is a ceiling)

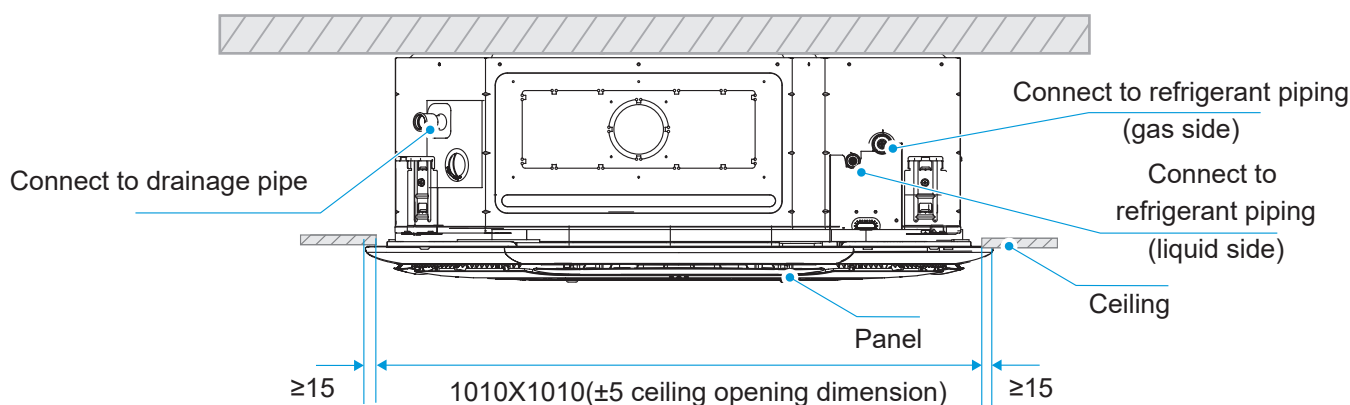
Refer to the figure below for the size of ceiling opening.

(Unit: mm)



For the dimensions of ceiling openings, refer to the following figure.

(Unit: mm)



[Caution]

Before the piping and wiring connection of the indoor unit, the refrigerant piping, outlet pipe, remote control line (which is not required when the wireless remote controller is used) as well as the connecting line, power line and grounding line between the indoor and outdoor units (please refer to the piping and wiring instructions) shall be constructed to ensure immediate connection to the indoor unit after installation.

Making openings on the ceiling may require to reinforce the ceiling frame to keep the ceiling flat and prevent ceiling vibration, please consult the builder for details.

4 Indoor Unit Installation

[Caution]

The air conditioner shall be installed at a location with sufficient strength to support the weight of the unit, and reinforcement measures shall be taken if necessary.

If the strength is insufficient, the unit may fall and cause personal injury.

Poor installation will cause the unit to fall and cause an accident.

Before routing the wires/pipes, make sure that the installation area (wall, floor, etc.) is safe and free of hidden dangers such as water, electricity and gas hazards.

Installation of lifting bolts

[Tips]

The bolts shall be made of high-quality carbon steel (galvanized or otherwise rust-proofed) or stainless steel.

The treatment of the ceiling varies from building to building. Please consult with the decoration engineers of the building for specific measures.

The fixing of lifting bolts depends on the specific situation and must be firm and reliable.

See the table below for the installation locations of lifting bolts.

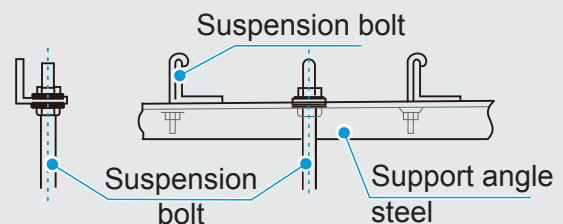
In the case of concrete slab

Use embedded bolts or stay bolts.



In the case of steel frame

Set up and use supporting angle steel directly

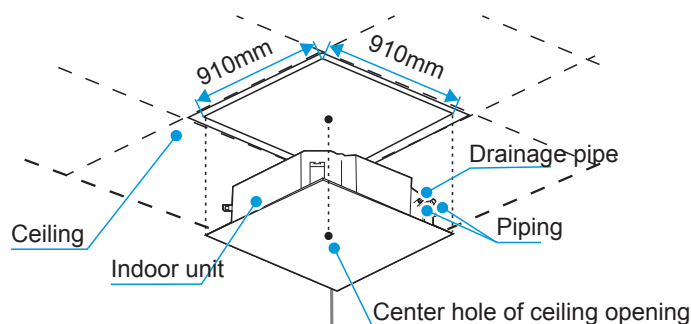


Installation of indoor units

1 Existing ceiling (whose surface shall be kept horizontal)

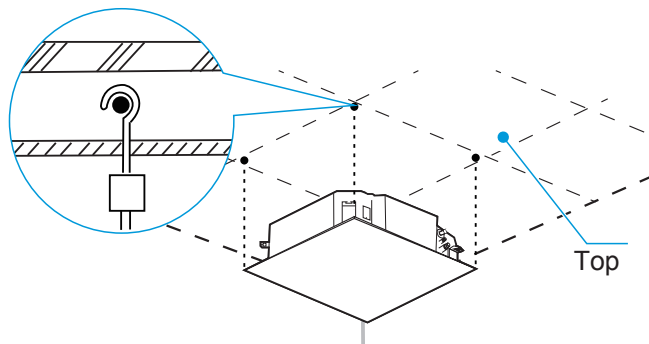
Please drill 910X910mm square holes in the ceiling according to the appearance of the installation cardboard (see the figure below)

- ① a. The opening center of ceiling is the same as the center of air conditioner body.
- b. Determine the length and outlet of connecting pipes, drainage pipes and electrical connecting lines.
- c. To keep the ceiling surface level and prevent vibration, strengthen the ceiling if necessary.



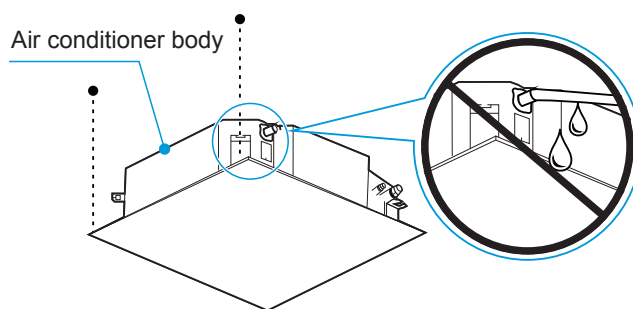
Please determine the position of lifting bolts according to the lifting bolt holes in four corners of the installation cardboard

- ②
 - a. Drill four $\Phi 12\text{mm}$ holes with a depth of 50~55mm on the roof at the specified position, and then embed expansion hooks.
 - b. During installation, the concave surface of lifting bolt shall face the expansion hook, and the length of lifting bolt shall be determined based on the ceiling height, and the excess part shall be cut off.
 - c. M10 or W3/8 bolts and screws shall be used for lifting.
 - d. Generally, the remaining length L is about 1/2 of thread length of the lifting bolt.

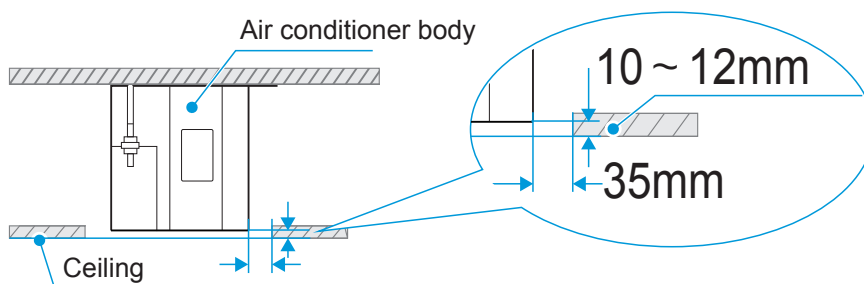


- ③ Use the hexagon nuts on the four lifting bolts for uniform adjustment and ensure that the body is horizontal.

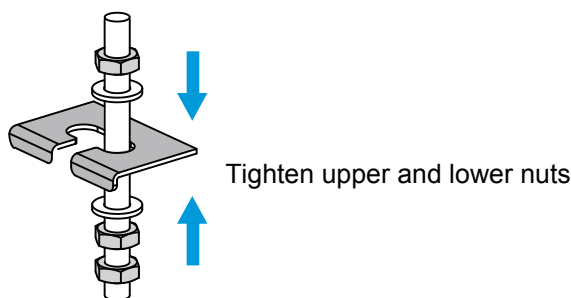
a. The inclination of drainage pipe may cause misoperation of the water level switch and water leakage.



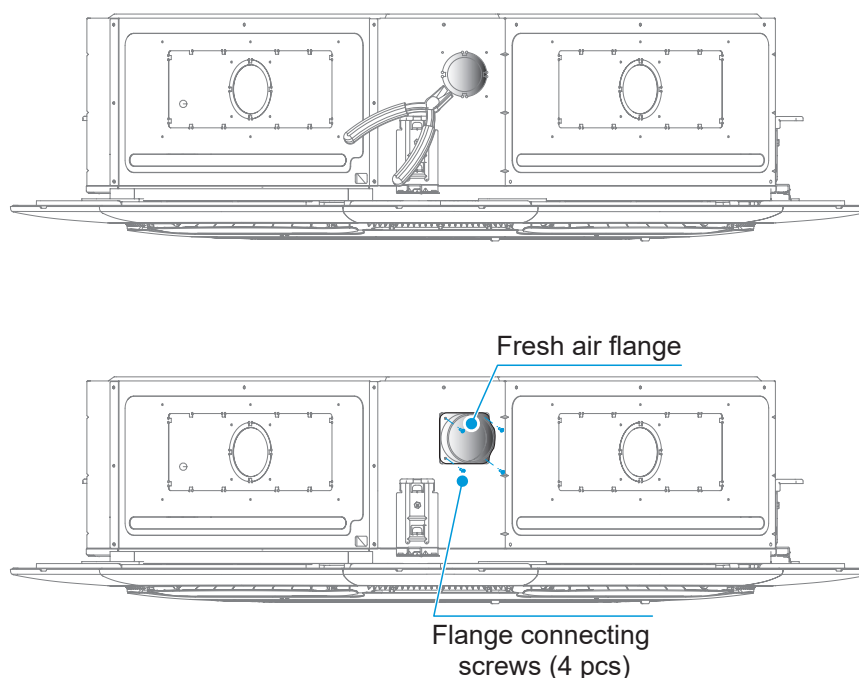
b. Adjust position of the body to ensure uniform spacing with four sides of the ceiling, and the lower bottom surface of the body shall be recessed into the bottom surface of the ceiling by 10~12mm.



c. After position and horizontal adjustment of the body, tighten the nuts on the lifting bolts to fix the air conditioner.



- ④ For units with fresh air functions, before installing IDUs: 1. Use diagonal pliers to remove the knockout at the fresh air unit at one side of the unit in advance. Install a fresh air flange at the fresh air unit and secure it with the flange connecting screws.

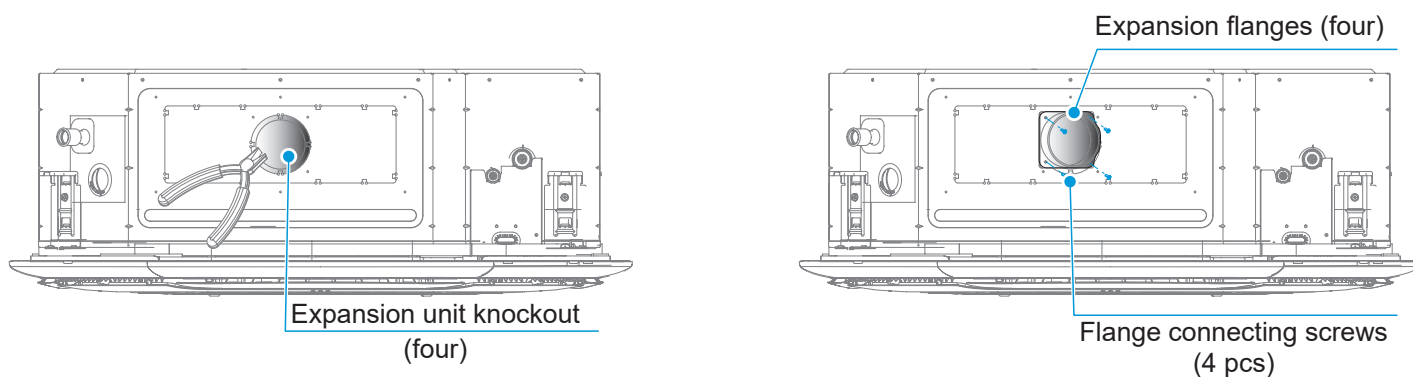


⚠ [Warning]

When connecting the fresh air unit, insulate the fresh air pipe with foam insulation materials that are at least 10mm thick.

The temperature difference between the fresh air provided by the fresh air unit to the IDU and the indoor temperature shall not exceed 5°C, otherwise there is a risk of condensation in the return air area of the air conditioner. Please use a fresh air unit equipped with a temperature regulation function. Or cover the enclosure of the fresh air outlet of the air conditioner with foam insulation material with a thickness of at least 10mm. The area and thickness of the insulation material should be adjusted depending on the actual situation.

- ⑤ For models with expansion units, use diagonal pliers to remove the knockouts at the expansion units at two sides of the unit in advance before installing IDUs. Install expansion flanges at the expansion unit and secure them with the flange connecting screws.



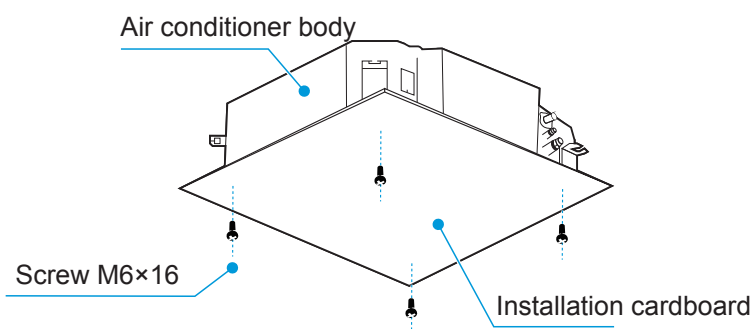
⚠ [Caution]

An expansion flange may be round or rectangular depending on the customer's needs.

2 New room and new ceiling

- ① For installation of lifting bolts, hooks can be embedded in new rooms, which must bear 4 times the weight of indoor units and will not be loosened due to concrete shrinkage.

- ② After the main body is hoisted, please fix the installation cardboard on the air conditioner body with screws M6X16 to determine the size and position of the ceiling opening in advance.
 - a. Keep the ceiling horizontal during installation.
 - b. Other parts are installed as described previously (at installation point 1 of existing ceiling).



- ③ Install as described previously (at installation point 3 of existing ceiling).

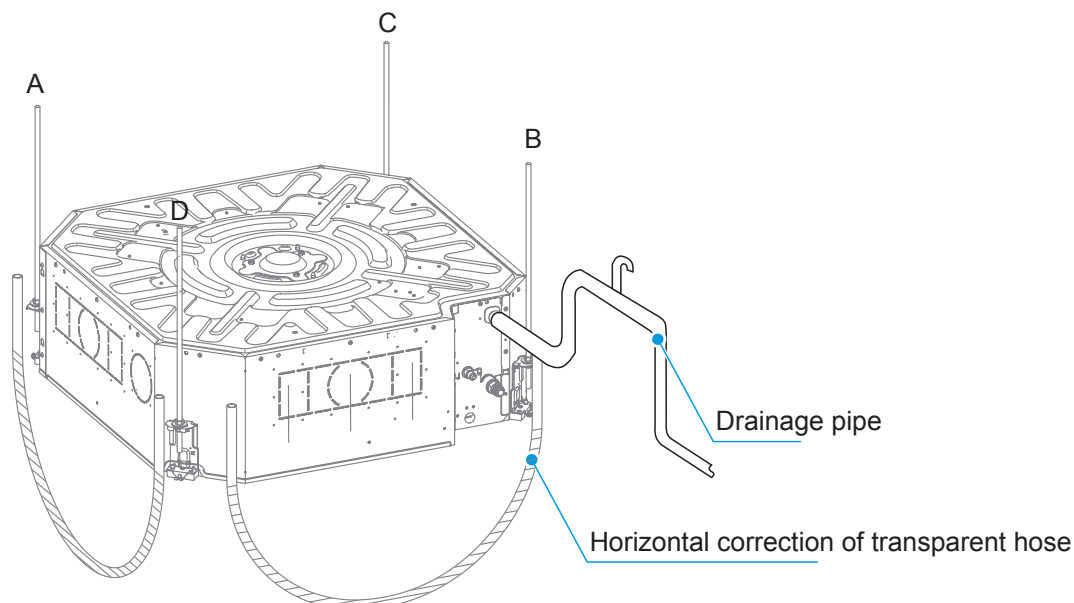
- ④ Remove the installation cardboard.

[Tips]

Ensure the levelness of the indoor unit host: please use a level gauge or a transparent hose filled with water to correct the indoor unit to be horizontal, otherwise water leakage will be caused.

The indoor unit is equipped with a built-in drainage pump and a water level switch. The unit shall not be tilted in the opposite direction of the condensate flow, otherwise the water level switch cannot work normally and water leakage will be caused.

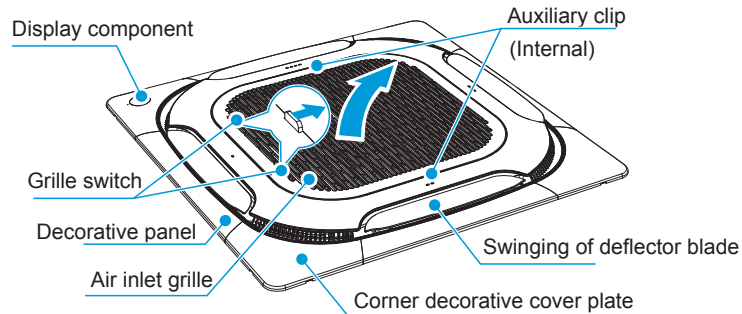
To ensure efficient drainage when there is no ceiling, please adjust the levelness of the body, in which the height of corner A shall be about 5mm higher than that of corner B, and the height of corners C and D shall be half of the height difference between corners A and B



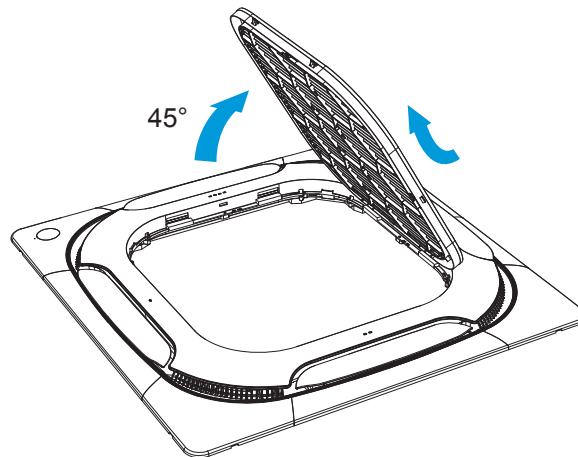
Panel installation

1 Remove air inlet grille

- ① Press the two grille switches simultaneously and lift them up.



- ② Lift the air inlet grille to about 45° and remove the air inlet grille.



💡 [Tips]

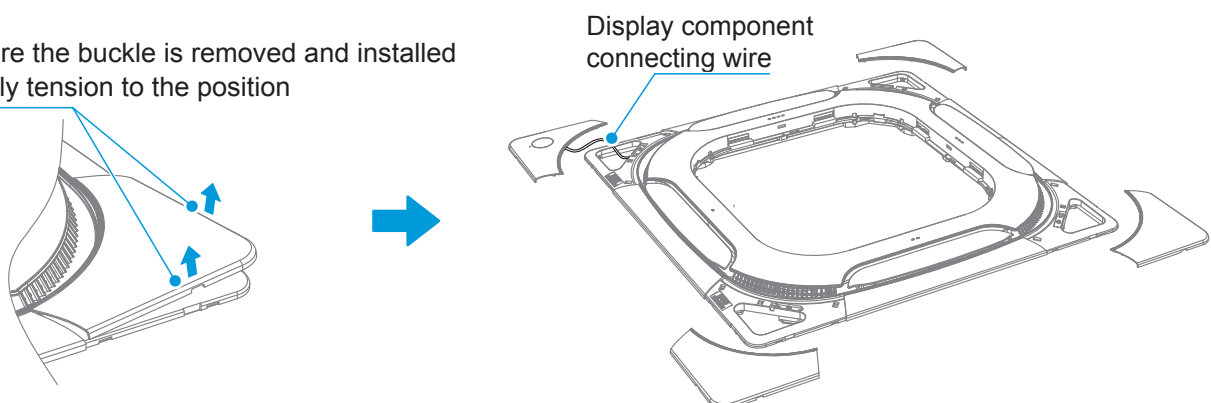
Do not place the panel downward or against wall, or on raised objects.

Do not collide or squeeze the air deflector.

There shall be requirements for installation direction of the panel, and the display side of the panel shall correspond to the outlet pipe side of the indoor unit, otherwise, defects such as air leakage and condensation may occur easily!

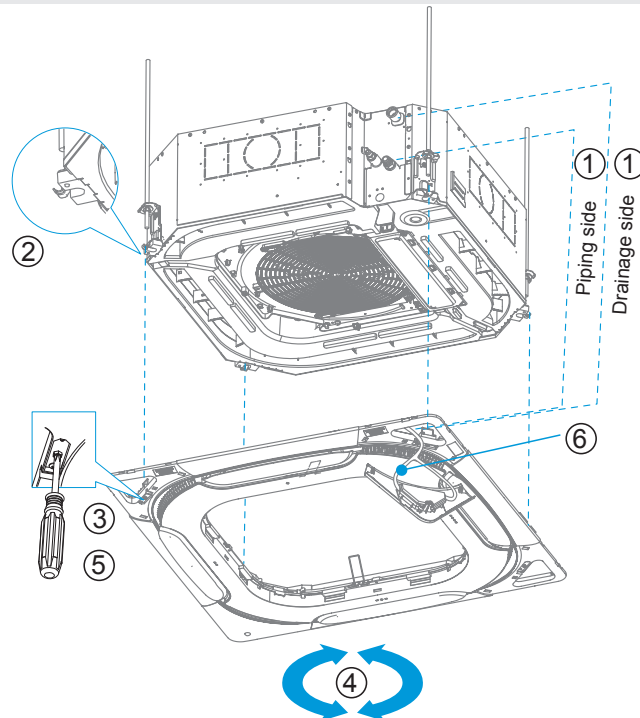
- ③ Remove the mounting cover plates in the four corners, take out the lifting rope of the mounting hanging plate from the hook inside the corner tip of the panel, and take out the mounting cover plate, as shown in the figure below.

where the buckle is removed and installed
Apply tension to the position



2 Install panel

- ① Align the decorative panel and the indoor unit: The decorative panel has two engraved letter marks: "Piping side" and "Drainage side". Rotate the decorative panel so that the side with mark "Piping side" is aligned with the refrigerant piping of the indoor unit. However, due to product updating, the drainage and piping of the existing product are on the same side, as shown in two serial numbers ① in the figure below.

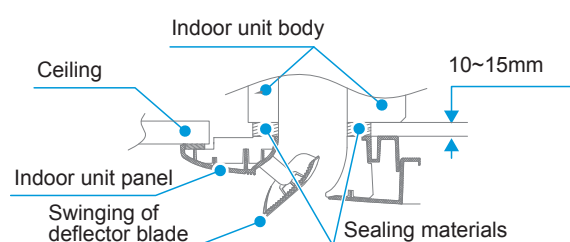


- ② Hanging of decorative panel: Hang two pre-hooks of the decorative panel in the two hooks of the air guide ring of the indoor unit respectively, and then hang the hanging wire buckle on the back of each corner of the decorative panel on the hooks (i.e. the extended long hooks) in the four corners of the indoor unit, as shown in No. ② in the above figure.

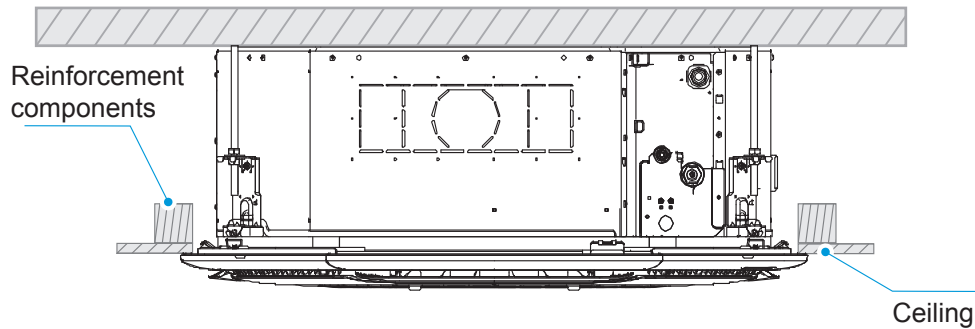
[Caution]

Do not clamp the cable of the decorative panel between the indoor unit and the decorative panel!

- ③ Pre-tighten the decorative panel: Screw in the locking screws in four corners of the decorative panel by about 5 mm. (The panel will rise by 5 mm at the same time)
- ④ Rotate the decorative panel in the direction of the arrow to cover the entire ceiling opening.
- ⑤ Tighten the four locking screws of Step ③ until the thickness of sealing material between the panel and the unit body is compressed to 10~15 mm. (as shown in the figure below)

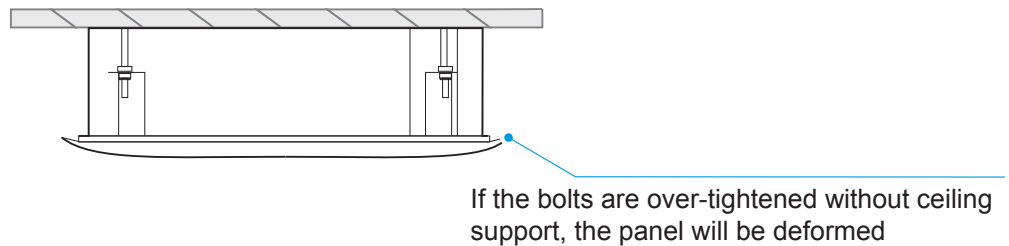


- ⑥ The ceiling shall have sufficient strength to ensure that the panel and ceiling can fit closely without a gap. If the ceiling strength is insufficient, please add reinforcement components. (As shown in the figure)



- ⑦ Do not pull the display components and their connecting cables during installation, otherwise a fault may occur.

- ⑧ If there is no ceiling for lifting, please adjust the four locking screws until the sealing material between the panel and the body is gently contacted without being compressed for 10~15mm. If there is no ceiling for support, the edge of panel will be deformed if the screws are over-tightened.

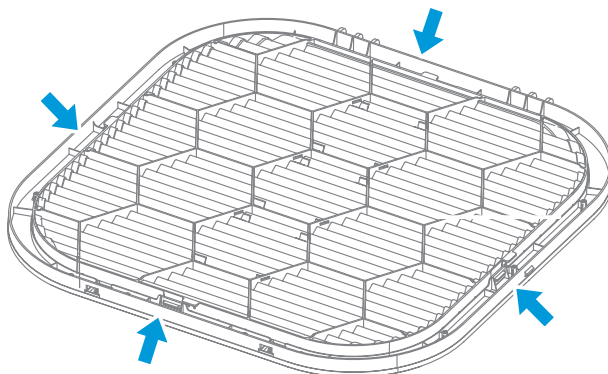


[Caution]

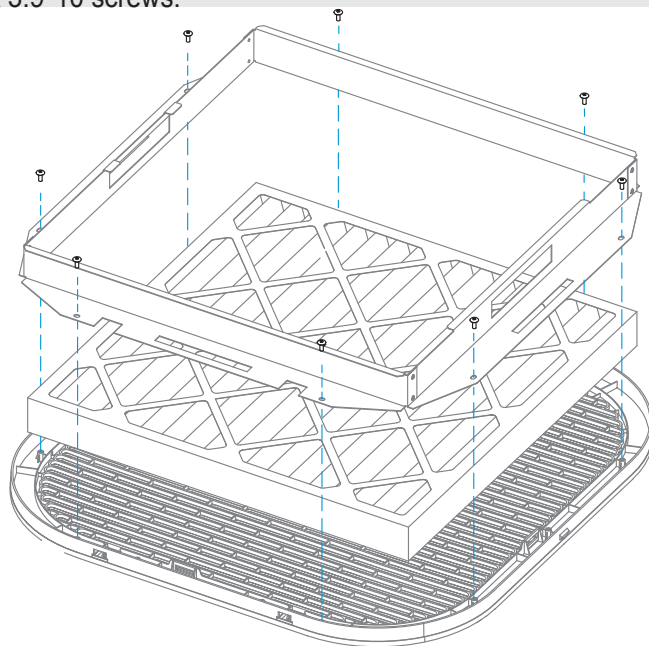
The figure showing indoor unit is only a schematic diagram for a model that can be adapted to this decorative panel. Other adaptable indoor units shall be subject to the real object and the operation method is the same as the above.

3 Install the filter screen

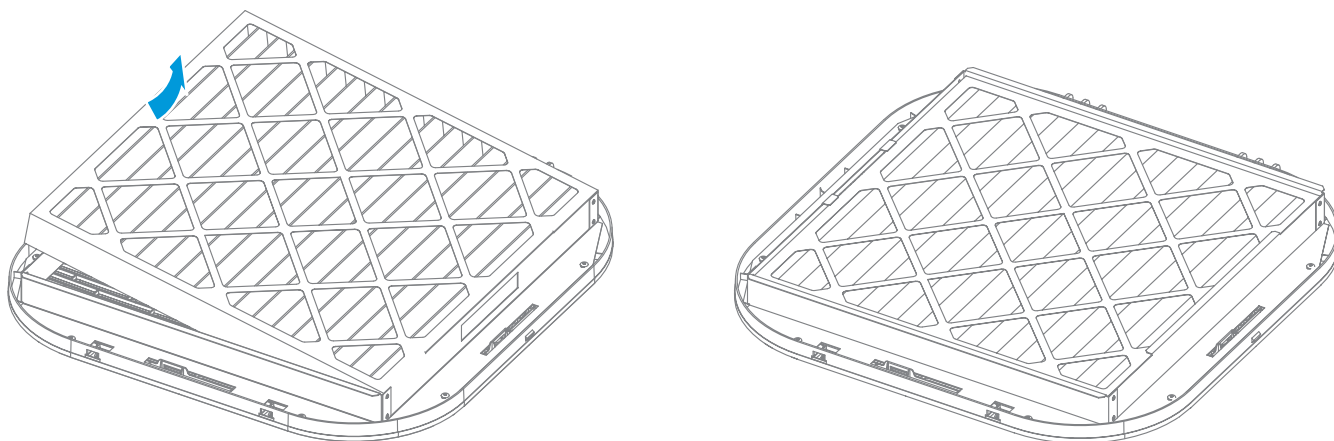
- ① If it is necessary to replace G1 primary-efficiency filter screen with G3 primary-efficiency filter screen and F6 medium-efficiency filter screen, press the clip inwards from four directions, and then remove G1 primary-efficiency filter screen from the air inlet grille.



- ② The G3 primary-efficiency filter screen is directional, including the air flow direction and the supporting direction of mounting bracket. There is a wire mesh on the side close to the rotor. The opposite direction to the support is shown in the following figure, so as to facilitate the pressing and pulling when replacing the filter screen. G3 primary-efficiency filter screen and F6 medium-efficiency filter screen shall be fixed on the air inlet grille with a mounting bracket and eight 3.9*10 screws.

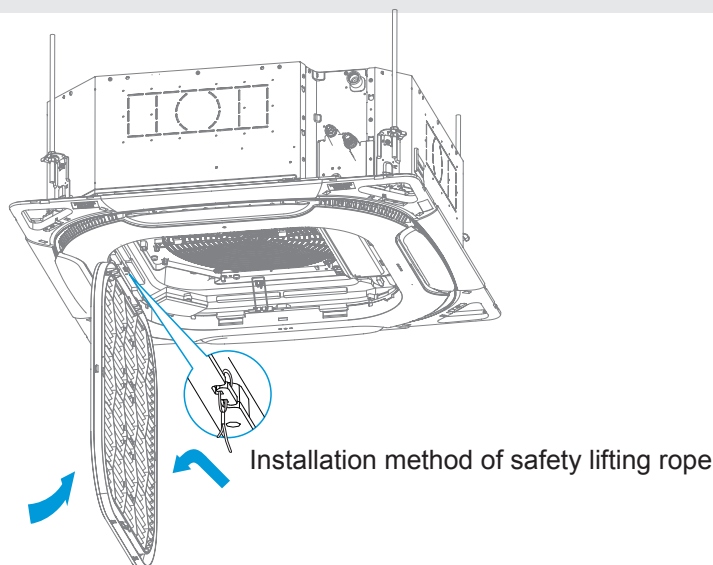


- ③ For initial installation and later replacement, the G3 primary-efficiency filter screen with grid is used. The G3 primary-efficiency filter screen and F6 medium-efficiency filter screen are replaced with one side pulled up while being pressed, and the filter screens are pulled out finally. The new one is replaced with in reverse order.



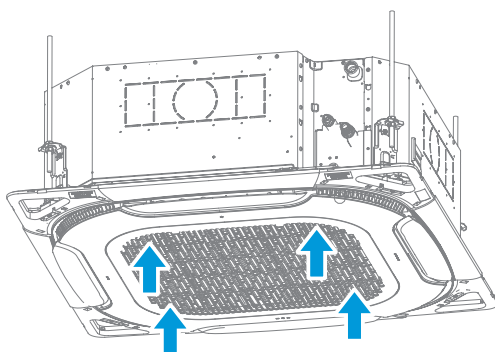
4 Installation of air inlet grille

- ① The air inlet grille is inclined by 45°, and the hanging hook is inserted into the hole of the hanging hook around the return air outlet of the decorative panel. There are 4 installation directions around the return air inlet, but only 2 of them have a structure attached to the safety lifting rope. The installation direction shall be determined according to the needs of users (as shown in the figure below).



- ② There is a safety lifting rope at the hook of air inlet grille, which shall be installed into the rope groove as shown in the example in the figure above.

- ③ Close the return air grille, and push the air inlet grille upward at the 4 positions indicated by the arrows in the figure below to make the return air grille completely stuck in the return air outlet. After assembling, please check whether the clearance around the air inlet grille is uniform, and ensure that all clips have been completely engaged.



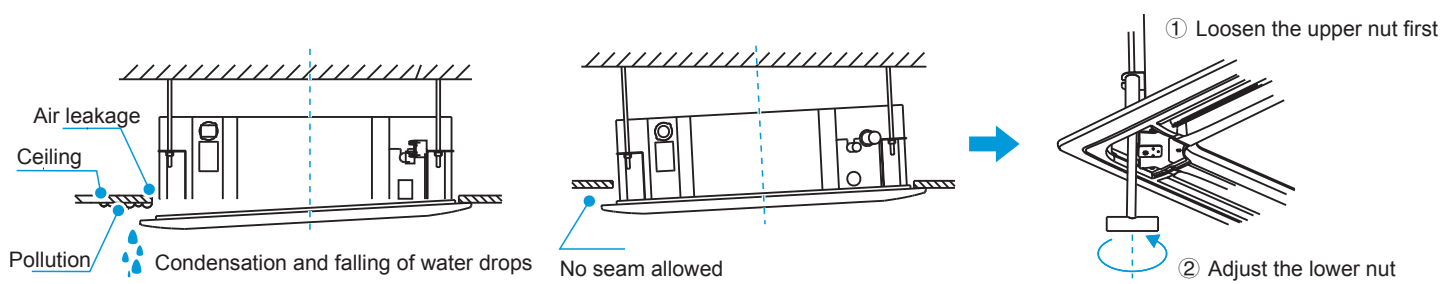
[Caution]

Do not roll the conductor of the swing motor into the sealing sponge.

Improper screw tightening can lead to the failure shown below.

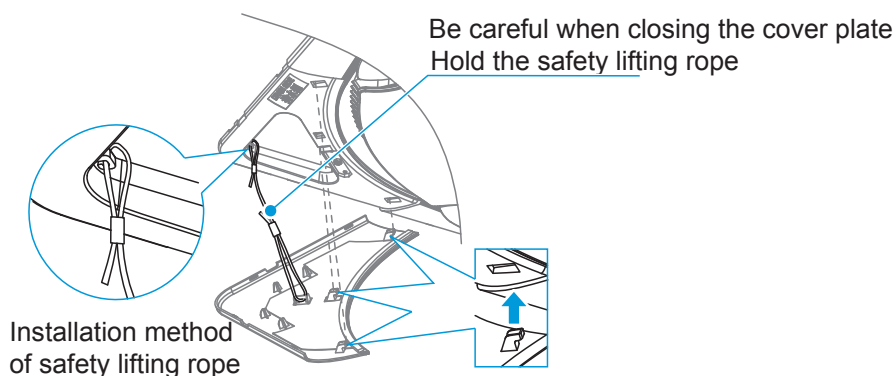
If there is still a seam between the ceiling and the panel after screws are tightened, the height of the indoor unit must be readjusted.

If the lifting level of the indoor unit and the drainage pipeline are not affected, the height of the indoor unit can be adjusted through the openings in the four corners of the panel.

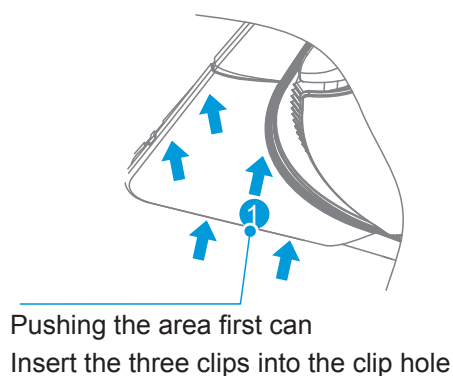


5 Installation of corner decorative cover plate and display cover plate

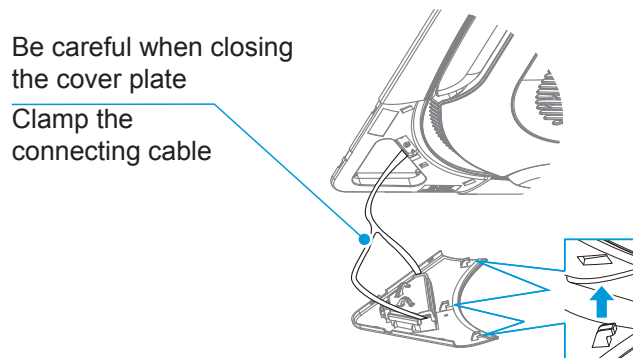
- ① Secure the safety lifting rope on the corner decorative cover plate to the decorative panel.



- ② Close the corner decorative cover plate: There are 3 clips on the decorative cover plate, which shall be inserted into the corresponding three holes on the decorative panel first, and are not engaged with the panel. Then press the position shown by arrow ① in the figure to engage the three clips with the decorative panel, and finally press the position shown by remaining four arrows to completely assemble the corner decorative cover plate and decorative panel.



- ③ The cover plate of the display component and the decorative panel are connected by cables, and it is unnecessary to install a safety lifting rope. The display components and decorative panels are installed in the same way as described in ② above.



5 Installation of Refrigerant Connecting Pipe

Length and height requirements for piping connection of indoor and outdoor units

The length and height difference of connecting pipes are different for the connection of different outdoor units. For details, please refer to the installation and operation manual of the outdoor unit.

⚠ [Warning]

During the installation of connecting pipes, air, dust and other debris shall be prevented from entering the pipeline system, and the inside of pipes must be kept dry.

The connecting pipes can be installed only after both the indoor and outdoor units have been fixed.

During the installation of connecting pipes, the actual installation length of the liquid pipe shall be recorded on site to facilitate the filling of refrigerant.

Copper pipes must be wrapped with insulation materials.

In case of refrigerant gas leakage during operation, please ventilate immediately.

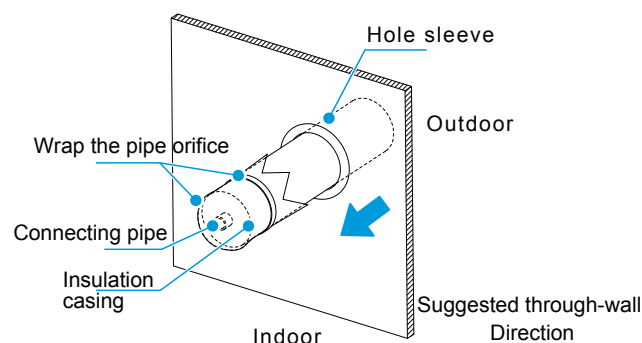
Pipe arrangement

- ① Bend the pipes or drill holes in the wall as needed. The bending deformation rate of the pipe shall not exceed 15%. Protective casing shall be provided at the place where the pipe passes through the wall or floor slab, and no weld shall be covered by the casing. The hole where the pipe passes through the outer wall must be sealed and tightly wrapped with binding tape to prevent impurities from entering the pipe. The pipes must be insulated with insulation pipes of appropriate size.



Note: D1 refers to the minimum diameter and D2 the nominal diameter

- ② The wrapped connecting pipe shall be plugged through the wall hole sleeve from the outdoor side and enter the indoor side. The pipes must be routed carefully to prevent damage.



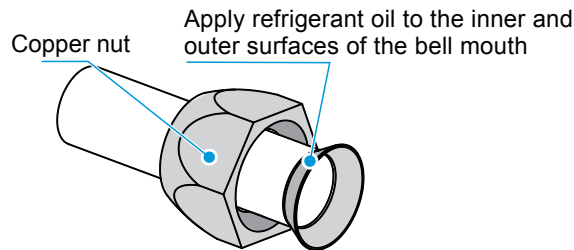
Pipe connection steps

Measure the required length of the connecting pipe, and make the connecting pipe according to the following method (see the section "pipe connection" for details).

Connect the indoor unit first, and then connect the outdoor unit.

- ① Before tightening the flared nut, apply refrigerant oil (must be compatible with the refrigerant of the unit) on the outer surface of the pipe flare, and then tighten the nut by hand for 3~4 turns.

When connecting or removing pipes, both wrenches must be operated at the same time.



[Caution]



The piping shall be bent and arranged carefully so as not to damage the piping and its insulation layer.



Do not let the weight of the connecting pipe be borne by the joint of the indoor unit, because if the pipe at the joint of the indoor unit is too heavy, the connecting pipe will be flattened and deformed, which will affect the cooling (heating) effect and even affect the seal at the interface, causing refrigerant leakage, or compress the insulation material, causing air leakage and condensation.

- ② The stop valve of the outdoor unit is fully closed when it is delivered out of the factory. For each connection, unscrew the nut from the stop valve and connect the flared pipe within 5 minutes. If the nut at the stop valve is removed for a long time, dust and other debris may enter the piping system, which may cause faults after long-time operation.

- ③ After the refrigerant pipes are connected to the indoor and outdoor units, remove the air according to the instructions in the column "air removal". After the air is removed, tighten the maintenance nut.

Pipe connection

Bend the pipe with your thumbs



Processing method

- ① Manual bending: which is applicable to small copper pipes ($\phi 6.35$ -12.7mm)
- ② Mechanical bending: applicable to a wide range ($\phi 6.35$ ~28 mm), using spring type, hand-operated or electric pipe bender.

[Caution]

The bending angle shall not exceed 90°. Otherwise, wrinkles will be generated in the pipe, which is easy to cause pipe rupture.

The bending radius shall not be less than 3.5D (pipe diameter) and shall be as large as possible to prevent the pipe from being flattened or crushed.

In the case of mechanical bending, the pipe bender inserted into the copper pipe must be clean.

1 Brazing of pipe

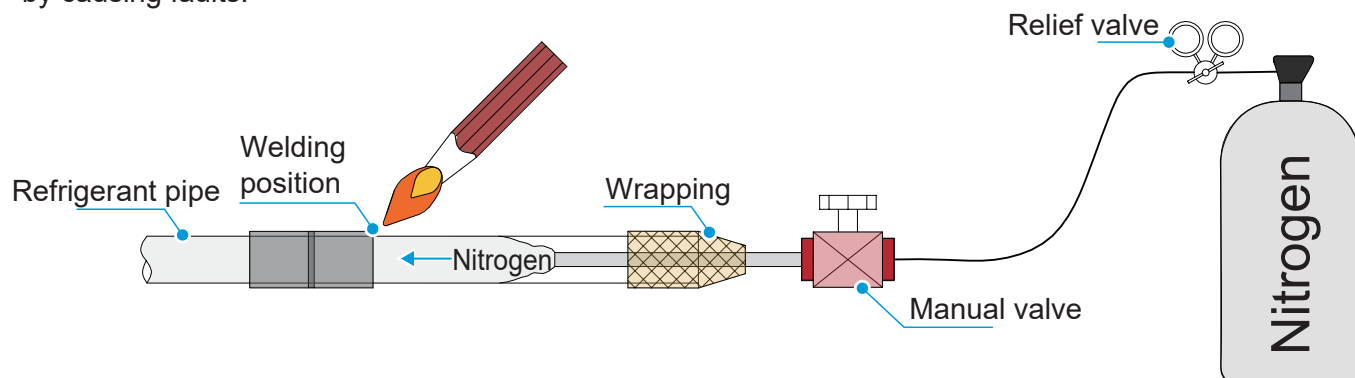
If the pipe is welded by brazing, nitrogen shall be filled into the pipe. The inner pipe shall be heated fully and evenly first, and then the outer pipe shall be heated evenly. The welding material shall be fully fed into the joint part of the pipe.

[Caution]

If the pipe is required to be filled with nitrogen during welding, its pressure must be controlled at 0.02 MPa with a relief valve.

Flux shall not be used for the welding of refrigerant connecting pipes. Please use phosphor copper solder that does not require flux (GB/T 6418-93BCu93P).

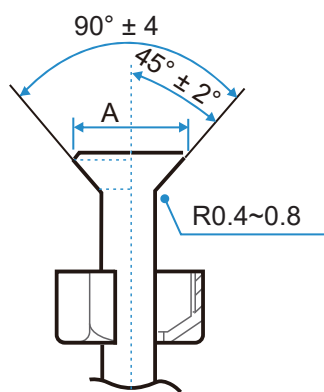
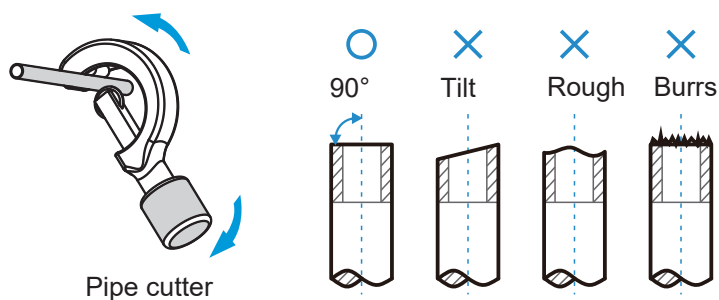
Do not use any antioxidants when welding pipes, because the pipes may be blocked by residual antioxidants, and components such as electronic expansion valve may be blocked after the unit is operated, thereby causing faults.



2 Flaring

Cut off the pipe by rotating the pipe cutter repeatedly.

Flare the pipe with the connecting nut, and connect the air ducts and liquid pipes of the indoor unit by flaring method.



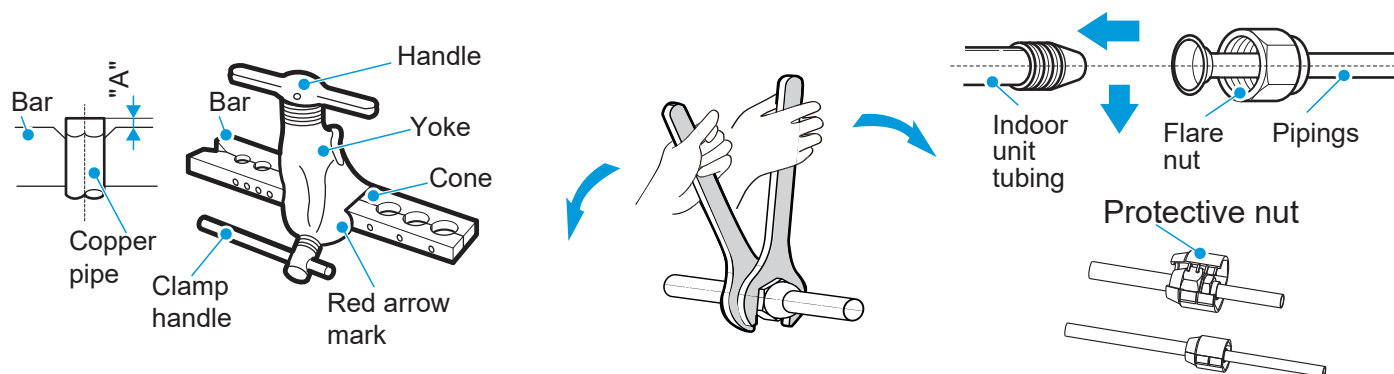
Outer diameter (mm)	A(mm)	
	Maximum	Minimum
φ6.35	8.7	8.3
φ9.52	12.4	12.0
φ12.7	15.8	15.4
φ15.9	19.1	18.6
φ19.1	23.3	22.9

3 Nut fastening

① Align the connecting piping, firstly tighten most of the thread of the connecting nut by hand, and then use a wrench to tighten the last 1-2 turns of the thread as shown in the figure.

② The welding is done on site, and the bell mouth cannot be used indoors.(For IEC/EN 60335-2-40 except IEC 60335-2-40: 2018)

- ③ The protective nut is a one-time part, it can not be reused. In case it is removed, it should be replaced with a new one.(For IEC 60335-2-40: 2018 only)



[Caution]

Excessive torque can break nut on installation conditions.
When flared joints are reused indoors, the flare part should be re-fabricated.

Pipe size (mm)	Tightening torque [N.m (kgf.cm)]
Φ6.35	14.2–17.2 (144–176)
Φ9.52	32.7–39.9 (333–407)
Φ12.7	49.5–60.3 (504–616)
Φ15.9	61.8–75.4 (630–770)
Φ19.1	97.2–118.6 (990–1210)

[Caution]

Depending on the installation conditions, excessive torque will damage the flared mouth, and too small torque cannot tighten the nut, which will cause refrigerant leakage. Please refer to the above table to determine the appropriate tightening torque.

Fixing of refrigerant pipe

Angle steel supports or round steel hangers should be used for fixing. If the liquid pipe and the air duct are suspended together, the fixing shall be based on the size of the liquid pipe.

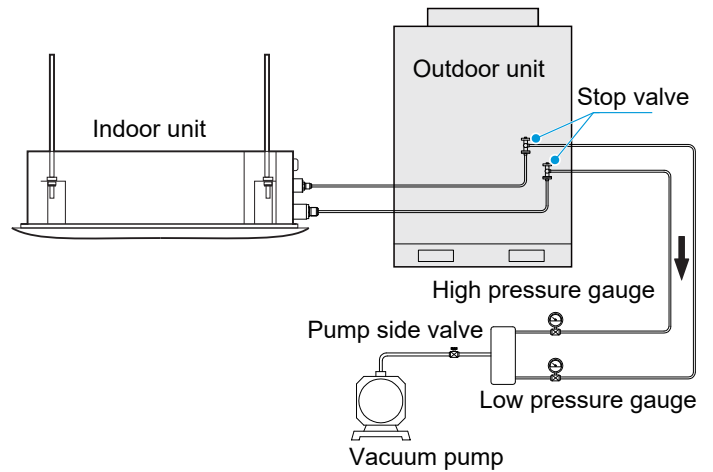
Outer diameter of pipe (mm)	≤20	20~40	≥40
Horizontal pipe spacing (m)	1.0	1.5	2.0
Riser spacing (m)	1.5	2.0	2.5

Air removal

Connect the refrigerant pipe to the gas and liquid sides of the outdoor unit, and use vacuum pumps for vacuumizing from both sides at the same time.



It is not allowed to use the refrigerant sealed in the outdoor unit for vacuumizing. The reduction of refrigerant in the outdoor unit will lead to performance degradation of the air conditioner.



Leakage inspection

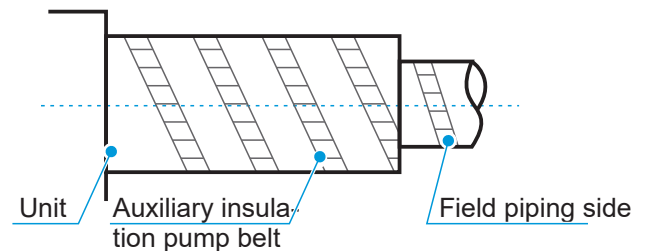
During leakage inspection, soap bubbles shall be used to check for leaks at the valve joints of the pipe connection.

Insulation treatment

During cooling, the temperature of the pipe on the liquid side and air side is low. In order to prevent condensation, please take adequate insulation measures.

[Tips]

Heat-resistant insulation materials above 120°C must be used for connecting pipes. The pipe connection part of the indoor unit shall be insulated with auxiliary insulation materials without gap. Additional protective treatment, such as adding metal pipe box and wrapping aluminum-platinum material, shall be carried out for the outdoor pipe part. Insulation materials exposed to the open air for a long time will age and lose their insulation performance.



6 Installation of Drainage Pipe

[Caution]

Before the installation of condensate water pipes, their direction and elevation shall be determined to avoid crossing with other pipes and ensure smooth and straight slope.

An exhaust port shall be provided at the highest point of the drainage pipe to ensure smooth discharge of condensed water. The exhaust port must face downwards to prevent dirt from entering the pipe.

It is strictly prohibited to connect drainage pipes to sewage pipes, fecal pipes and other pipes that are likely to produce corrosion or unpleasant odor, so as to avoid corrosion of indoor units (especially heat exchangers) and unpleasant odor in rooms, which will seriously affect heat exchange effects and user experience. The installation party will be held responsible for the consequences caused by the installation not as required.

After the pipe connection is completed, a water test and a full water test shall be carried out to check whether the drainage is smooth on the one hand and whether the piping system leaks water on the other hand.

The drainage pipe of the air conditioner must be installed separately from other sewage pipes, rainwater pipes and drainage pipes in the building.

The piping system shall be free of adverse slope and convex and concave pipes to prevent poor drainage caused by air resistance.

All drainage pipes shall be evenly wrapped with insulation pipes to prevent the generation of condensed water.

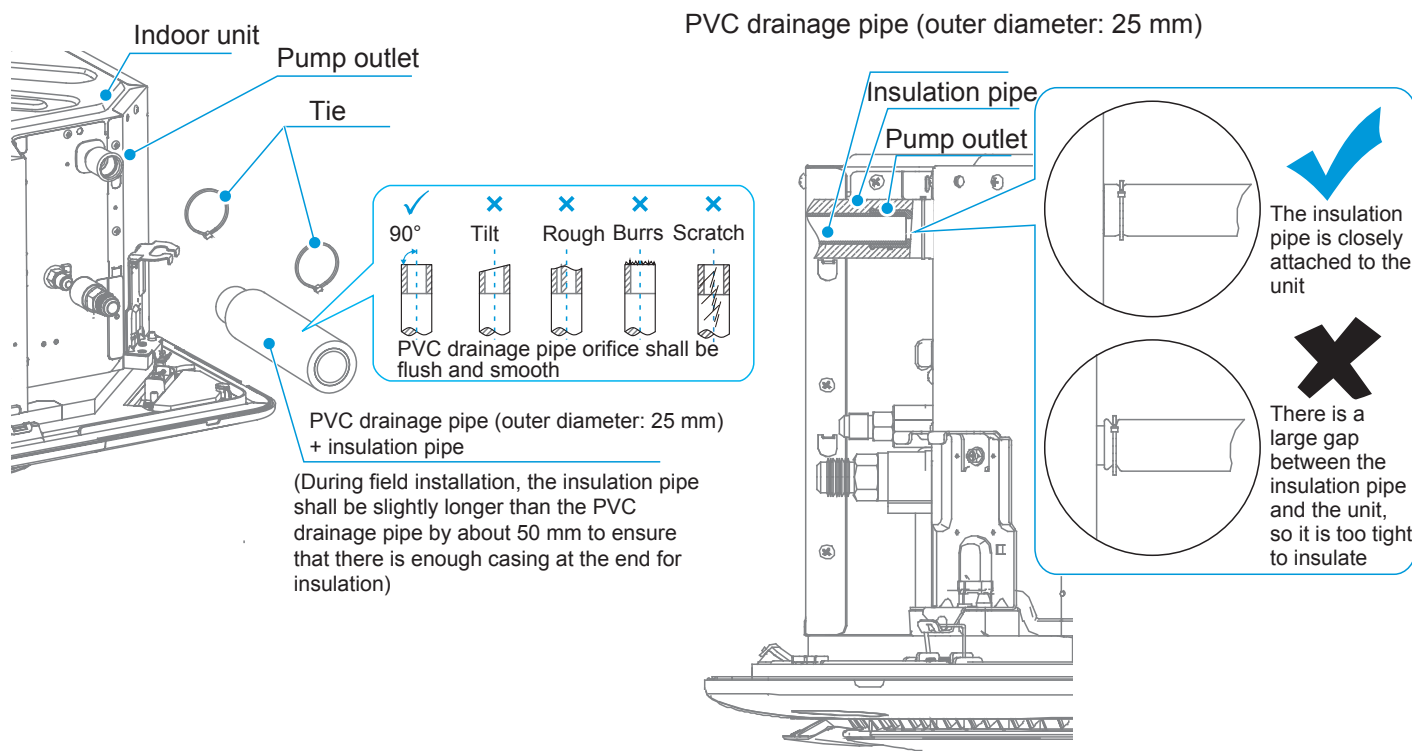
Please follow the following method to connect the drainage pipes. Improper installation of pipes will result in water leakage and damage to furniture and property.

All joints of the drainage system must be sealed to prevent water leakage.

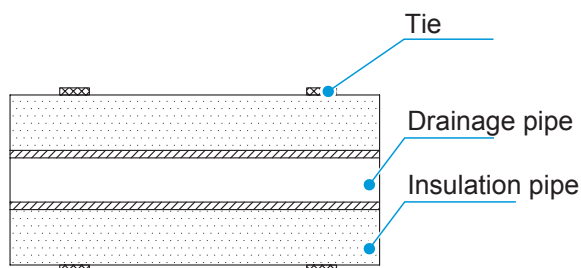
Installation of drainage pipe of indoor unit

The drainage pipe can be of PVC materials; Connect it to the water pump outlet directly, fasten them tightly with cable ties, push the insulation pipe to be closely attached to the main body of the unit, and then fasten it tightly at the end with cable ties.

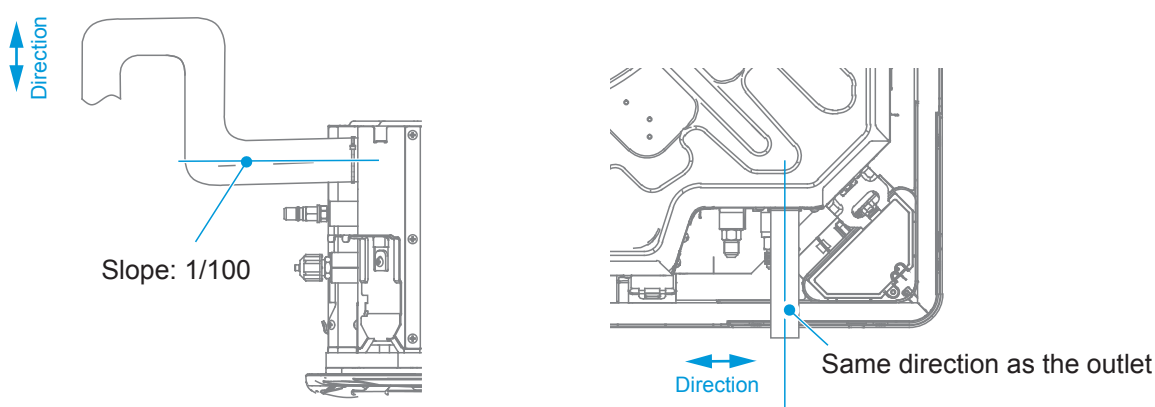
- ① The connections at both ends of the drain hose and the connection of the water pump outlet shall be fastened with cable ties, and PVC/rubber adhesive shall be used as an auxiliary. Please note the instructions for use of adhesive. Do not cause continuous corrosion to EPDM. Rigid PVC adhesive shall be used for the connections of other water pipes. In addition, please confirm that there is no leakage.



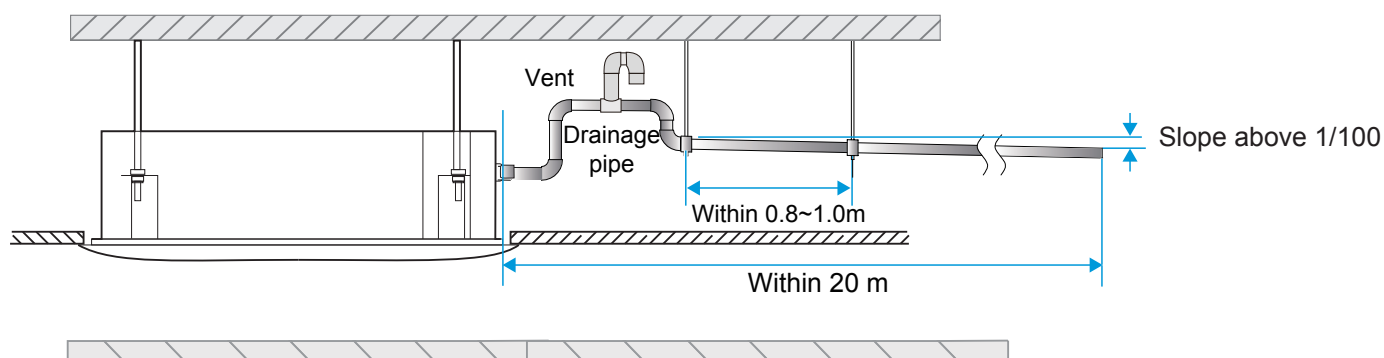
- ② The drainage pipes (especially the indoor part) of the main body shall be evenly wrapped with insulation pipes and fastened tightly with cable ties to prevent air from entering the pipe and to prevent the generation of condensed water.



- ③ In order to prevent too much water from flowing back into the air conditioner when the operation is stopped and to avoid long-distance upward drainage pipes, the drainage height shall be increased for a short distance when necessary (it is recommended that the highest point is not more than 1m from the lower surface of the indoor unit body), and the water shall be collected downward into the main drainage pipe. In addition, the drainage pipe and unit shall be consistent in horizontal direction, so that the drainage pipe shall not expand and trap water, otherwise abnormal noise will be caused.

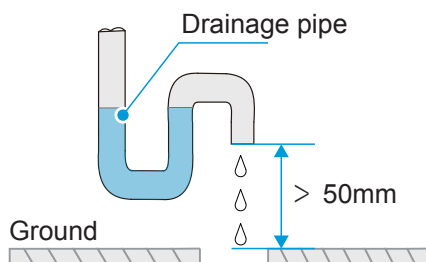


- ④ When connecting the drainage pipe, please do not pull the drainage pipe hard to avoid the drainage pipe joint from coming loose. The drainage pipe shall be pulled out within 20m horizontally, with a supporting point set every 0.8~1.0m to avoid deflection of the drainage pipe, or air resistance will be caused. Drainage pipes shall be provided with a supporting point every 1.5~2.0m.

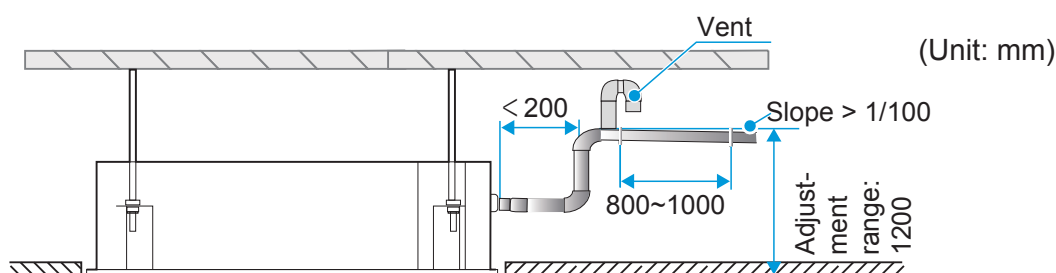


⑤

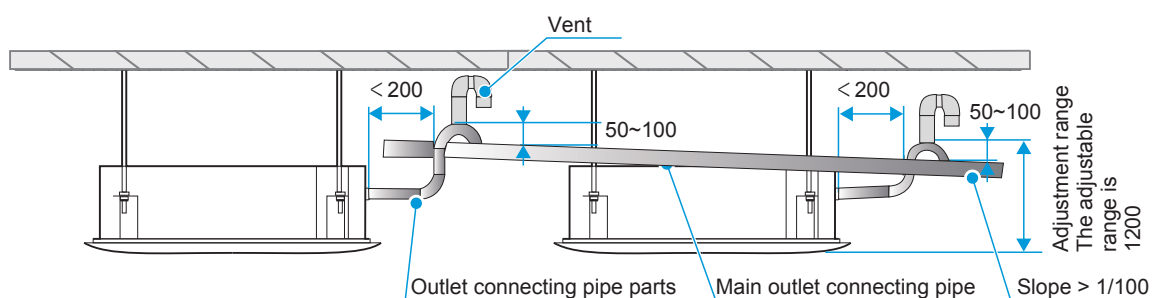
The end of the drain pipe shall be more than 50mm from the ground or the bottom of the drainage channel. Do not put the drainage pipe in water. When the condensate is discharged directly to the sewer, the drainage pipe must be bent upwards to form a U-shaped water seal to prevent stench from entering the room through the drainage pipe.



- Connection mode of drainage pipe:

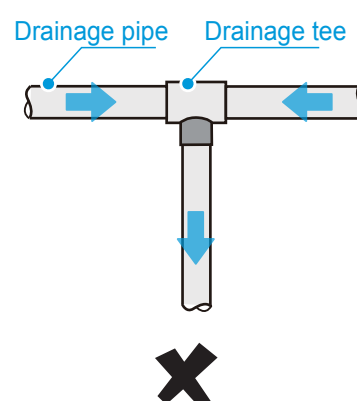
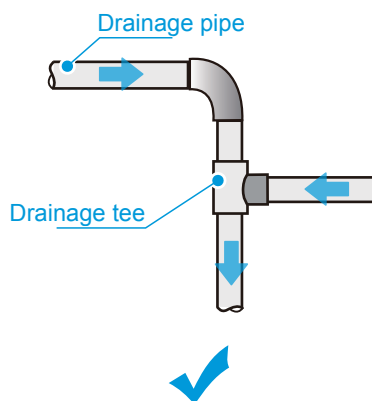
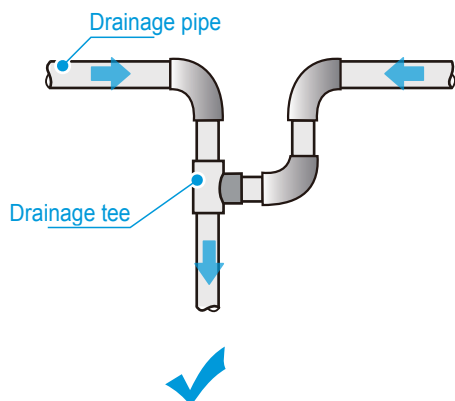


Connection mode of drainage pipes for a single machine



Drainage pipes of multiple machines are connected to sewers via the main drainage pipe

- Be sure to arrange horizontal drainage pipes properly to prevent them from flowing directly towards each other. Otherwise backward flow and poor drainage will be caused.

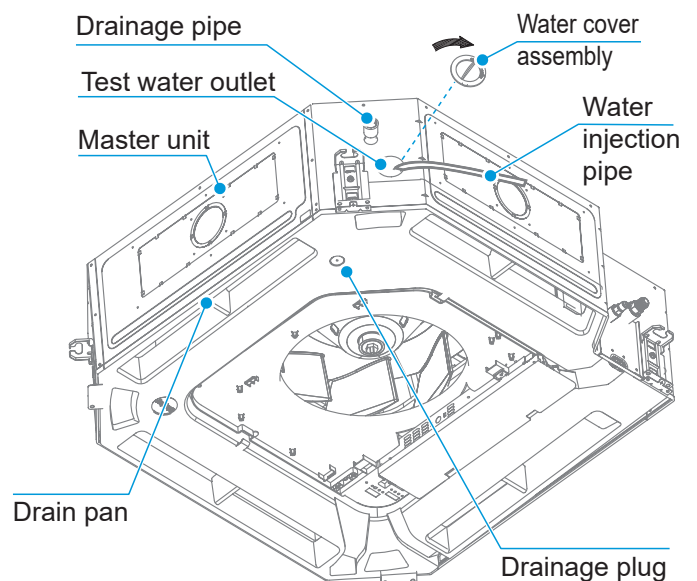
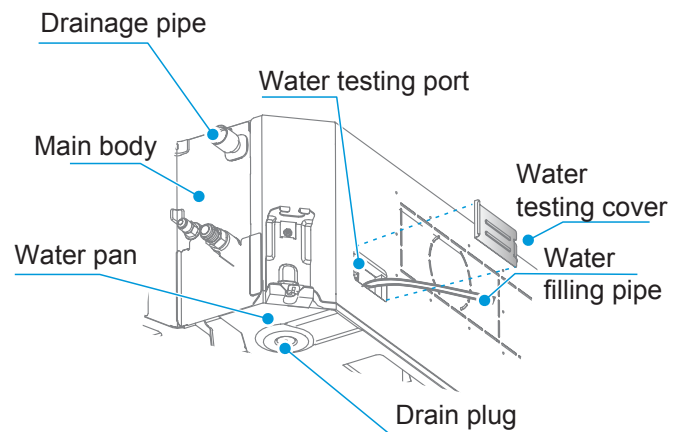


Drainage test

- 1 Before the test, ensure that the drainage pipeline is unblocked, and check whether all joints are sealed properly.
- 2 New rooms shall be subject to drainage tests before laying ceiling.

①

PVC drainage pipes (with an outer diameter of 25mm) can be used as the drainage pipes connected from each indoor unit, and the main pipes collected by multiple units shall be appropriately expanded according to the number of units. Users can purchase drainage pipes of suitable specifications and lengths from dealers or local after-sales service centers or purchase them directly from the market based on the actual installation conditions.



- ② Switch on the power and operate the air conditioner for refrigeration. Check the sound of a drainage pump in operation; At the same time check whether the water is drained properly at the drainage port (the water can be drained after a delay of about 1 minute, depending on the length of the drainage pipe), and check whether there is water leakage at each joint.

- ③ If the water is drained with the help of the drainage pump for the indoor unit, the water testing cover on the machine body needs to be unscrewed during the drainage test to check whether the drainage pump is turned on. If the drain pump is not turned on, check whether there is a problem with the drainage pump. In addition, it should be noted that the drainage pump is only turned on in the cooling mode or dehumidification mode, and will always be off in the heating mode.

- ④ Continue to add water until an alarm is given because the water level is too high; check whether the drainage pump immediately drains water. If the water level cannot drop below the warning level after 3 minutes, the unit will be shut down, and it can be started normally only after the power is off and water is drained.

- ⑤ Turn off the power supply, drain the accumulated water, and restore the water testing cover to its original position.

[Caution]

The drain plug at the bottom of the indoor unit is used to remove the accumulated water in the water pan during fault maintenance of the air conditioner, and it shall be secured to prevent water leakage during operation.

If there is any fault, remove it in time.

7 Electrical Wiring Operation

[Danger]

The power supply must be switched off before any electrical operation. Living working is strictly forbidden, otherwise serious personal injury may be caused.

The air conditioning unit shall be reliably grounded and shall meet the requirements of GB/T-50169 Code for Construction and Acceptance of Grounding Connection Electric Equipment Installation Engineering. Improper grounding might result in electric leakage, thereby causing serious personal injury.

[Warning]

It requires professional technicians to perform the installation or inspection and maintenance; All parts and materials must conform to the relevant regulations of the local country/region.

A dedicated power supply must be used for the air conditioning unit, with the power supply voltage conforming to the nominal operating voltage range of the air conditioning unit.

The power supply of the air conditioning unit must be provided with a power disconnecter that conforms to the requirements of relevant national technical standards for electrical equipment. The power disconnecter must be provided with short-circuit protection, overload protection and leakage protection functions. The clearance between open contacts of the disconnecter shall be at least 3 mm.

Power cords shall be copper-core cables, with the wire diameter meeting the current-carrying requirements. For details, please refer to "Selection of Power Cord Diameter and Circuit Breaker". The power cords with a smaller wire diameter may cause the power cord to heat up, thereby resulting in a fire.

Power cords and ground wires shall be reliably fixed to avoid stress on the terminal. Do not pull the power cord hard; Otherwise, the wiring may come loose or the terminal may be damaged.

Power cords and other strong current wires cannot be connected to weak current wires such as communication lines. Otherwise it may damage the product seriously.

It is strictly forbidden to bond and connect power cords. Bonding and connecting the power cord may cause it to heat up, thereby resulting in a fire.

[Caution]

Communication lines shall not be bonded and connected as far as possible. If the line is not long enough, reliable connection can be ensured by wire pressing or soldering, without the copper wire at the connection exposed. Otherwise communication faults will be caused.

In stead of being staggered, the power cord and communication line shall be routed separately, at a spacing of more than 5cm.

Keep the vicinity of the air conditioning unit as clean as possible to avoid small animals nesting and biting the lines. The line contact or a bite by small animals may result in a short circuit or electric leakage, thereby cause danger.

Do not connect the ground wire to gas pipes, tap water pipes, lightning rod ground wires or telephone ground wires.

Gas pipes: There will be a risk of explosion and fire in case of gas leak.

Water pipes: There will be no grounding effect in case rigid plastic pipes are used.

Lightning rod ground wires or telephone ground wires: There will be a risk of abnormal rise in ground potential during lightning stroke.

After all wiring construction is completed, check carefully before switching on the power supply.

Electrical characteristics

Machine capability (kW)	Power supply				Fan motor	
	Frequency (Hz)	Voltage (V)	MCA (A)	MFA (A)	Power (kW)	FLA (A)
2.8	50/60	220~240	0.51	15	0.045	0.41
3.6			0.51		0.045	0.41
4.5			0.59		0.045	0.47
5.6			0.59		0.045	0.47
7.1			0.94		0.125	0.75
8.0			1.05		0.125	0.84
9.0			1.09		0.125	0.87
10.0			0.95		0.125	0.76
11.2			1.18		0.125	0.94
14.0			1.41		0.125	1.13

Unit power (kW)	Electric specifications of the IDU					
	Frequency (Hz)	Voltage (V)	MCA (A)	MFA (A)	IFM power input (kW)	FLA (A)
16.0	50	220-240	2.30	15	0.125	1.83
18.0			2.73		0.125	2.10

Notes:

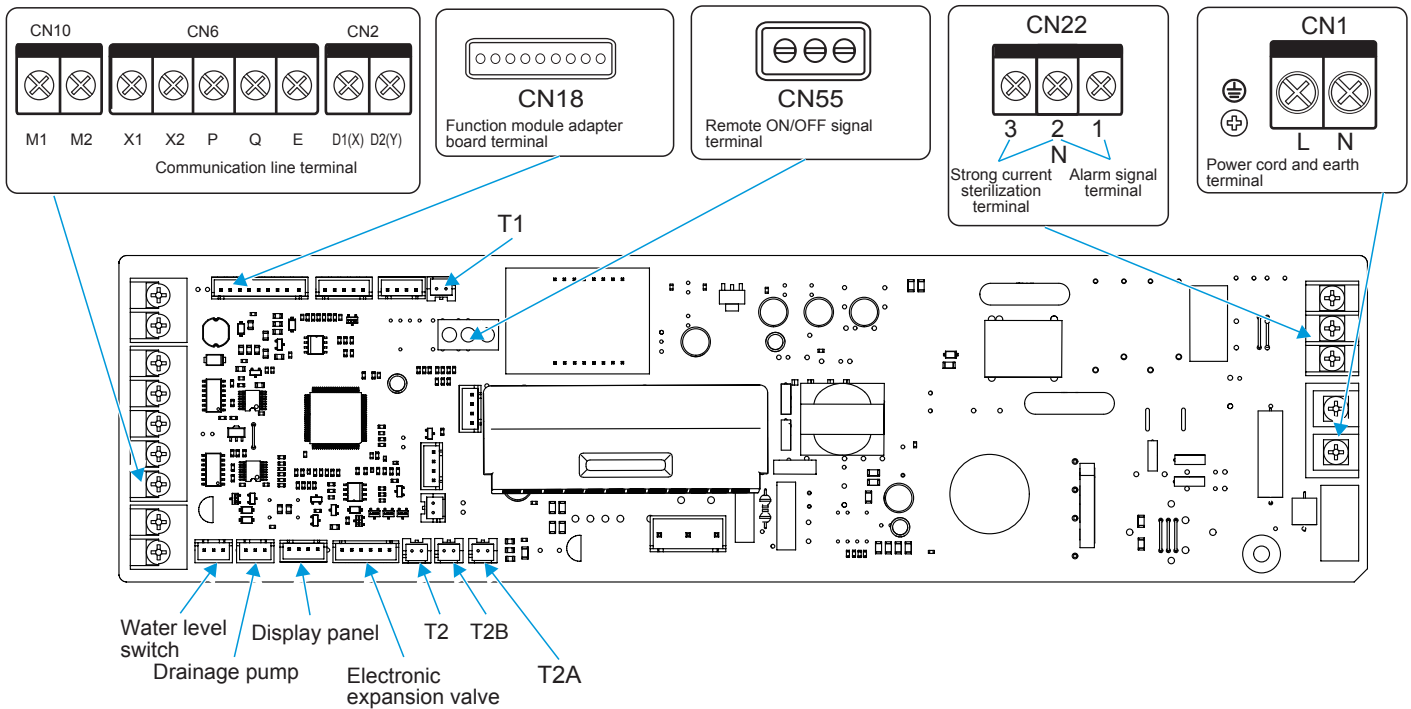
MCA: Min. Circuit Amps. (A), the minimum circuit carrying capacity that is used to select the minimum wire diameter for safe and long-term operation.

MFA: Max. Fuse Amps. (A), the maximum fuse current that is used to select specifications of circuit breakers.

FLA: Full Load Amps. (A), the full load (steady operation at maximum speed) current of motor.

Use wires with a cross-sectional area of at least 1 mm².

User wiring diagram



[Caution]



Both PQ communication and Easycom communication (M1M2) modes are available for the communication between indoor and outdoor units, but only one mode can be adopted. In the same system, it is forbidden to connect both PQ communication and Easycom communication; It is forbidden to connect Easycom communication to PQ or D1D2 communication.

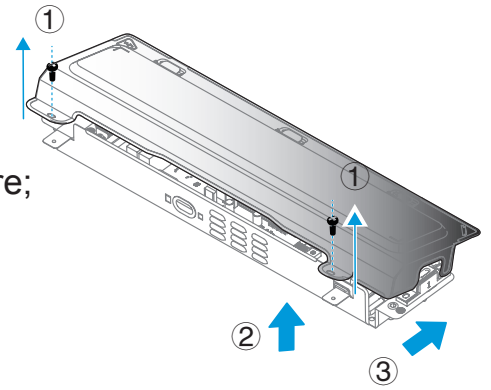
Do not connect M1M2 to PQ.

All weak point connection points meet SELV, such as X1, X2, P, Q, E, M1, M2, CN18, CN55 etc.

Wiring

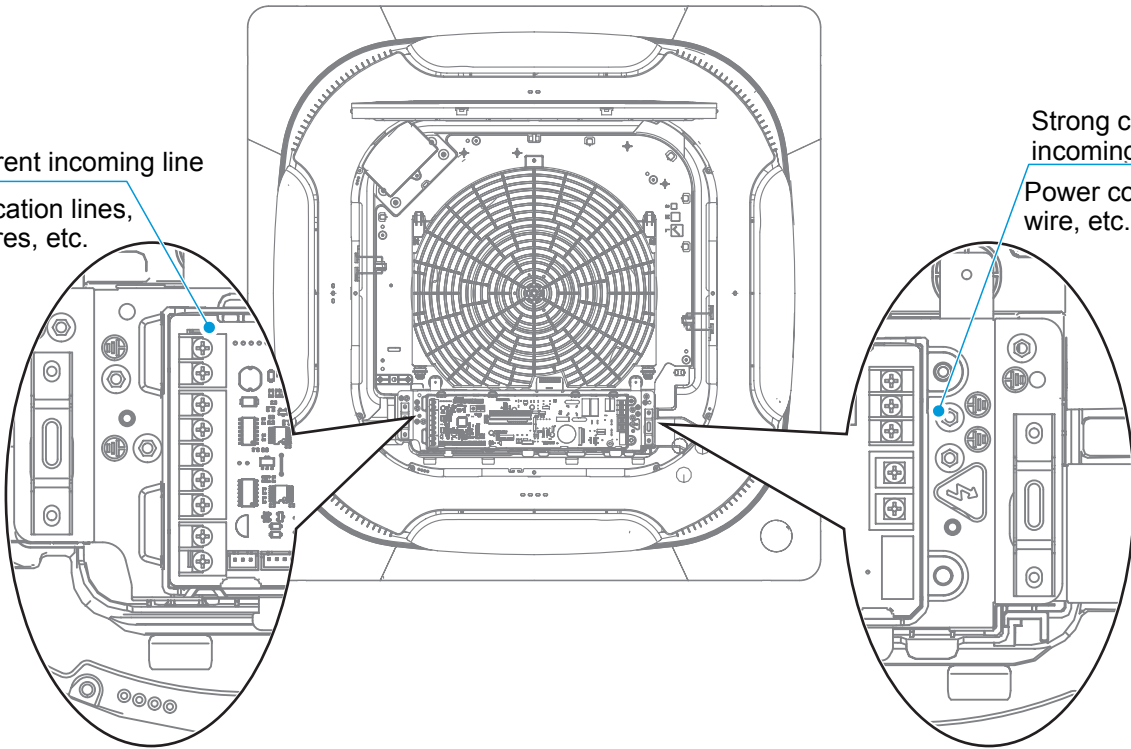
1 Open the electric control box cover of the indoor unit.

- ① Remove the screws at the positions shown in the figure;
- ② Lift the bottom end of the electric control box cover upward and push it forward;
- ③ Take out the electric control box cover downward.



2 Connect strong current wires (including the power cord, alarm signal output line, strong current sterilization line and ground wire) and weak current wires (including the communication line, ground wire, remote ON/OFF connection wire, and free function module connection wire) to the electric control box through the strong and weak current incoming lines on both sides of the electric control box.

Weak current incoming line
Communication lines,
ground wires, etc.



Strong current
incoming line
Power cord, ground
wire, etc.

[Caution]

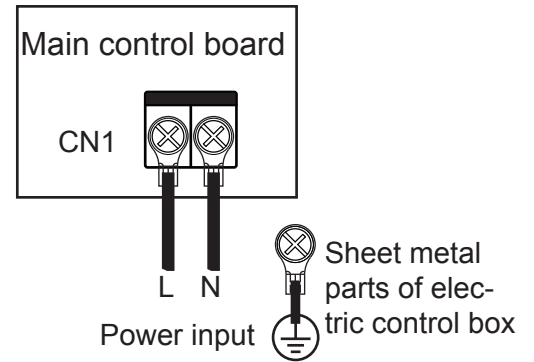
Strong and weak current incoming lines must be separated.

Alarm signal output, strong current sterilization, remote on/off, and free function modules are customized or optional.

3 Power cord connection

① Power cord connection of a single set

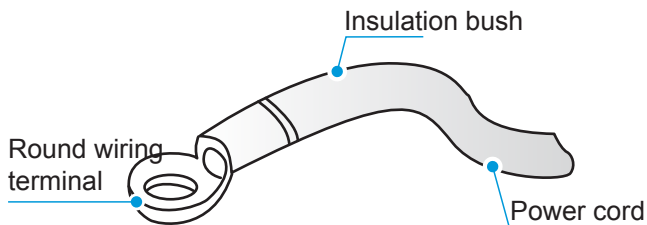
Fix the power terminal block of the indoor unit on the mainboard, connect the power cord to the power terminal block "CN1" on the mainboard, connect the live wire and null wire according to the marks "L" and "N" on the mainboard respectively, and connect the ground wire to the sheet metal parts of electric control box directly.



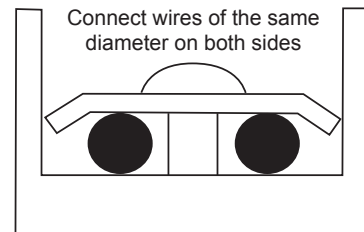
[Caution]

A It is strictly forbidden to bond and connect power cords. Bonding and connecting the power cord may cause it to heat up, thereby resulting in a fire.

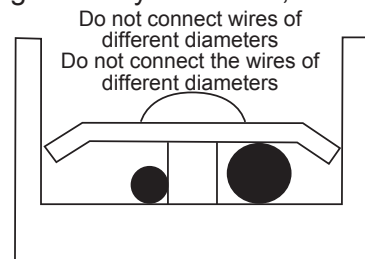
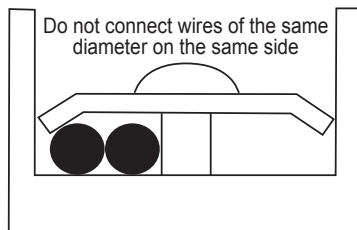
B Power cords require round wiring terminals with insulation and shall be firmly and reliably crimped before being connected to the power terminal block of indoor unit, as shown in the figure below:



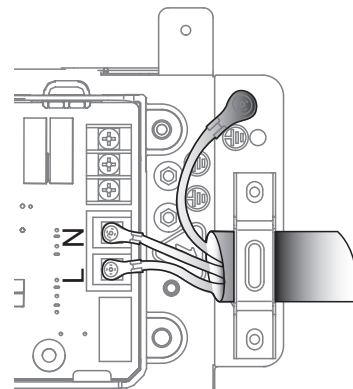
C In case it is impossible to crimp the round terminals with insulation due to the limitation of site conditions, connect the power cords of the same wire diameter to both sides of the power terminal of the indoor unit, as shown in the figure below:



D It is forbidden to press the power cords with the same wire diameter on the same side of the terminal, and it is forbidden to use two power cords with different wire diameters for the same terminal. Otherwise, it is likely to cause looseness due to uneven pressure, leading to safety accidents, as shown in the figure below:



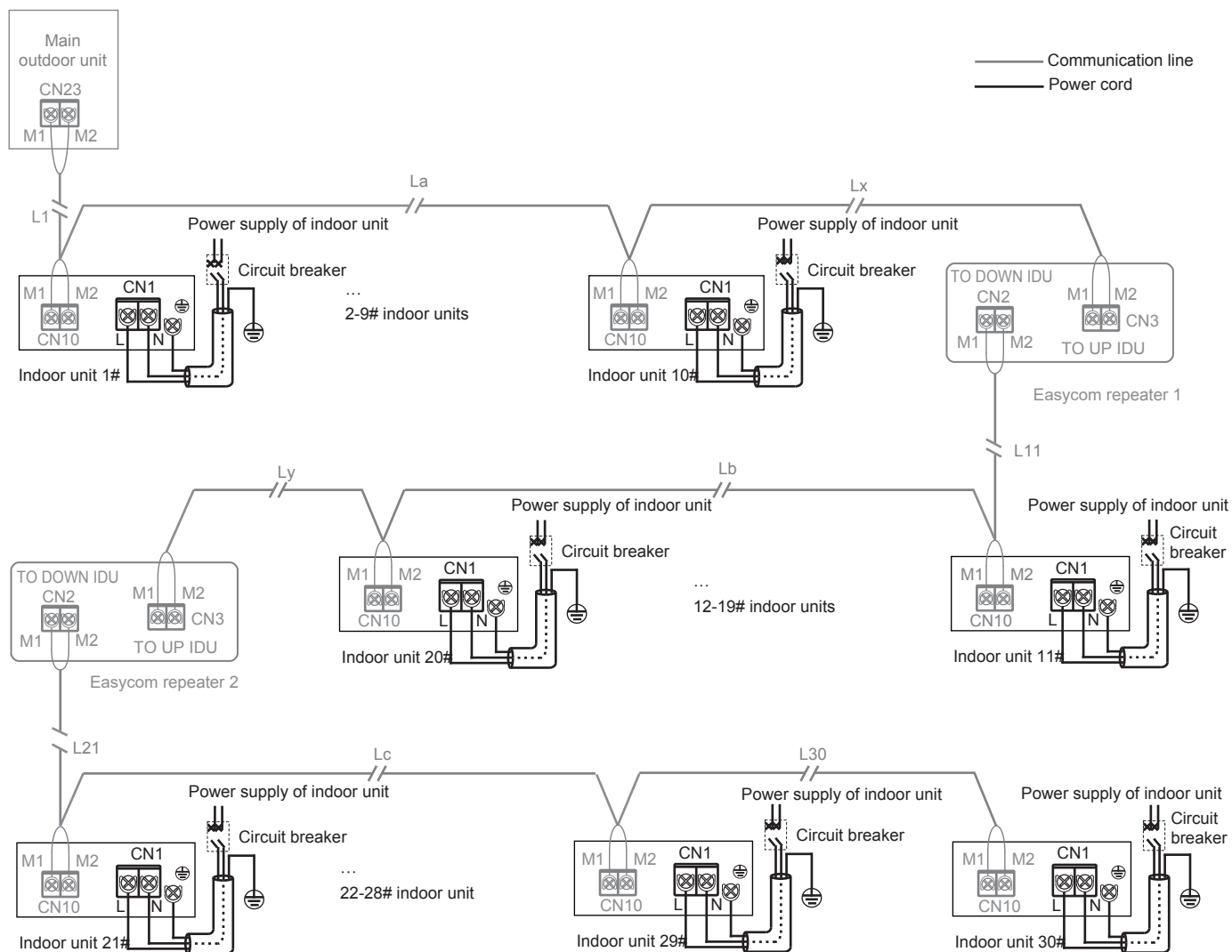
E The connected power cord shall be secured with the wire pressing plate to prevent looseness, as shown in the right figure:



② Power cord connection of the system

A In case of separate power supply for indoor units*, the wiring diagram is as follows:

Easycom communication with the function of power-down control valve:



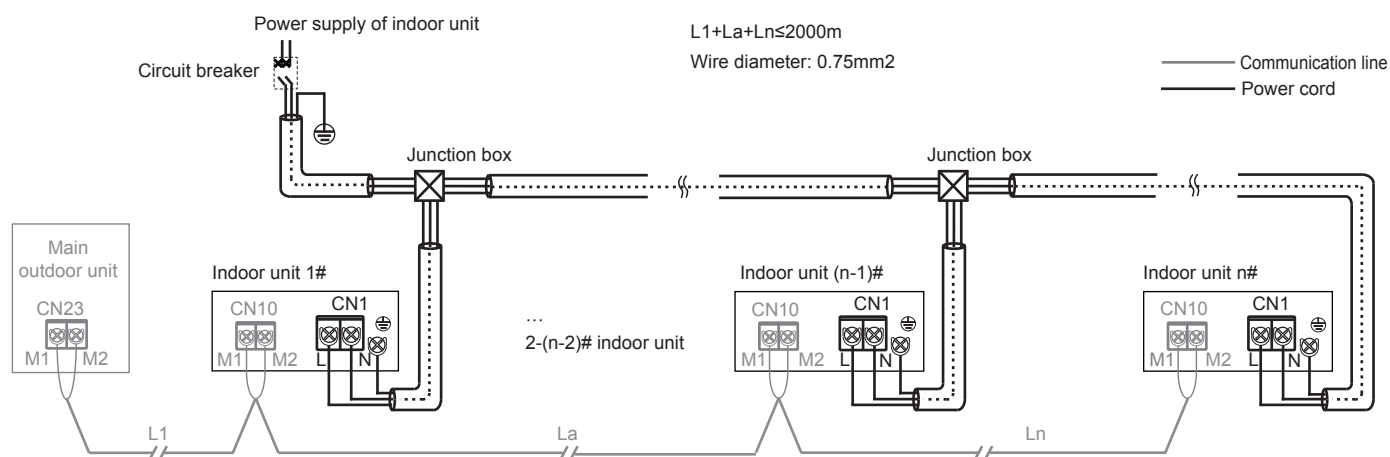
[Caution]

In case of separate power supply for indoor units, all the indoor units in the same refrigerant system must be V8 models* and the Easycom communication with the function of power-down control valve* must be adopted for the communication between indoor and outdoor units.

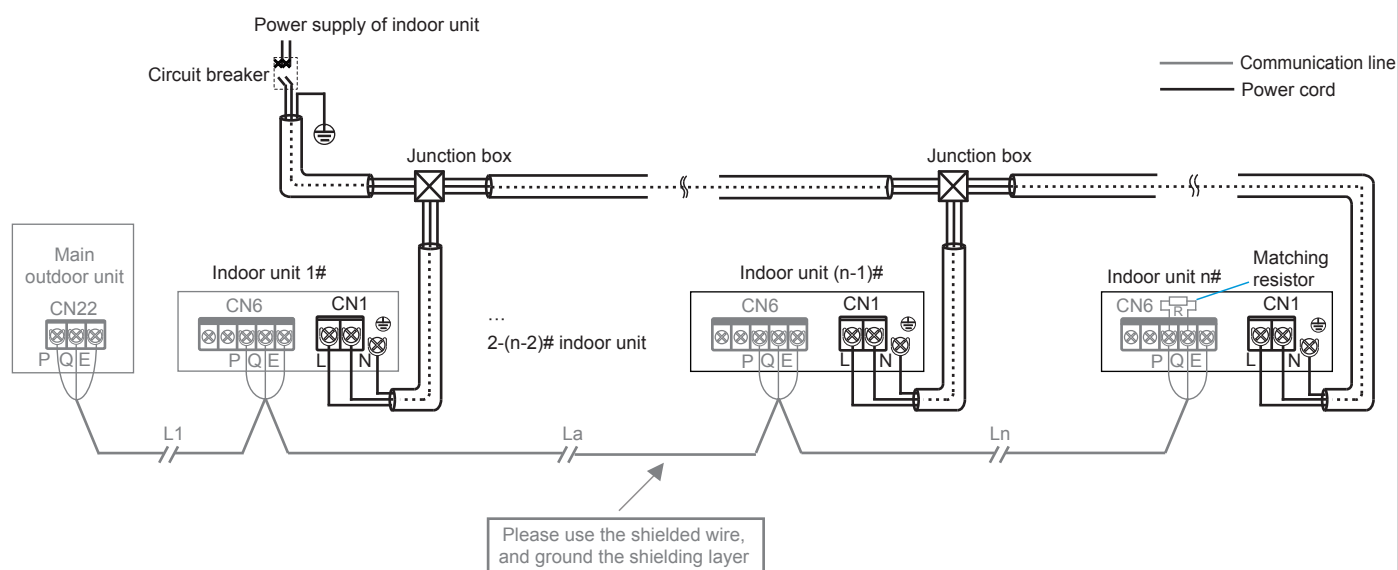
Since the function of power-down control valve is equipped in the above connection mode, the number of indoor units in the same refrigerant system shall be ≤ 30 , and only two repeaters* are required at most.

B In case of uniform power supply for indoor units*, the wiring diagram is as follows:

Easycom communication without the function of power-down control valve:



PQE communication:



[Caution]

In case of uniform power supply for indoor units, either Easycom without the function of power-down control valve or PQ communication can be adopted for the communication between the indoor and outdoor units if all the indoor units in the same refrigerant system are V8 models. In case the indoor unit other than a V8 model is adopted in the same refrigerant system, only PQ(E) communication can be adopted for the communication between indoor and outdoor units.

[Tips]

V8 indoor unit: "V8" will be on the outer carton.

Separate power supply: It enables the power supply of indoor units of the system to be controlled separately with different circuit breakers.

Uniform power supply: It requires the power supplies for all the indoor units of the system are under the control of the same circuit breaker and all the power supplies shall be switched on and off at the same time.

Function of power-down control valve: In case of power down of some indoor units in the same refrigerant system, and the main control board of the outdoor unit will continue to supply power to the indoor unit through Easycom communication line, so as to enable the continuous control valve of the indoor unit and ensure the stable operation of other indoor units in the system.

Repeater: It refers to a power supply repeater that is used to compensate the voltage drop caused by the overlong line or excessive line resistance when the main control board of the outdoor unit enable power-down control valve of the indoor unit through Easycom communication line. It is only used in the refrigerant system where separate power supply is adopted for indoor units.

4 Communication wire connection

① Communication modes between indoor and outdoor units

The outdoor unit of V8 series platform is equipped with Easycom (M1M2) communication independently developed, and the previous RS-485 (PQE) communication is retained, which is compatible with indoor units other than V8 models. Before installing the communication line, please select the appropriate communication mode based on the indoor unit model purchased, referring to table below:

Indoor unit models of the system	Optional communication modes between indoor and outdoor units	Remarks
All indoor units in the system are V8 models	Easycom (M1M2) communication	1. Supporting separate power supply* for indoor units of the system 2. Supporting any topological connection of communication lines 3. Supporting M1M2 two-core non-polarity communication
The indoor unit other than a V8 model is adopted in the system	RS-485 (PQE) communication	1. The indoor unit of the system requires uniform power supply 2. Only hand-in-hand series connection is allowed for communication lines 3. PQE three-core communication, PQ non-polarity communication

② Selection reference for communication line diameter

Function	Communication between indoor and outdoor units			One-control-one (two-control-one) communication	One-control-multiple (centralized control) communication
Type	Easycom communication (separate power supply for indoor units)	Easycom communication (uniform power supply for indoor units)	PQE communication (uniform power supply for indoor units)	X1X2 communication	D1D2 communication
Wire diameter	2×1.5 mm ² Line resistance ≤ 1.33Ω/100m	2×0.75mm ²	3×0.75mm ² (shielded wires)	2×0.75mm ² (shielded wires)	2×0.75mm ² (shielded wires)
Length	≤600m (add two repeaters)	≤2000m	≤1200m	≤200m	≤1200m
Wire type	Ordinary PVC sheathed and shielded flexible wire Copper core PVC insulated sheathed shielded flexible cable				
Wire standard	GB/T5023			JB/T8734	

[Caution]

For the selection of communication lines, please refer to the requirements of the above reference table. In case of high magnetic fields or strong interference in the environment, shielded wires are recommended for all communication lines.

The field wiring must be conducted by professionals in accordance with the relevant regulations of the local country/region.

It is forbidden to connect the communication line when the power supply is on.

It is forbidden to connect the power cord to the communication terminal. Otherwise the mainboard will be damaged.

The standard value of the screw tightening torque of the communication line terminal block is 0.5 N.m. Too low torque may cause poor contact; Too high torque may damage screws and terminal blocks.

In case of the indoor unit other than a V8 model present in the same refrigerant system, only PQE communication mode can be selected for the communication between indoor and outdoor units, with 3X0.75 mm² three-core shielded wires required to connect "P" "Q" "E".

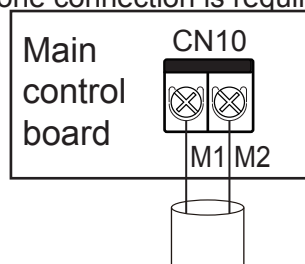
It is forbidden to bind the communication line with the refrigerant pipe and power cord. When the power cord is laid parallel to the communication line, a distance of more than 5cm shall be maintained to prevent the signal source interference.

Communication lines shall not be bonded and connected as far as possible. If the line is not long enough, reliable connection can be ensured by wire pressing or soldering, without the copper wire at the connection exposed. Otherwise communication faults will be caused.

③ Communication between indoor and outdoor units

A Easycom communication (separate power supply for indoor units)

Single set: Easycom communication is a new indoor and outdoor unit communication technology. In case of separate power supply for indoor units, the communication line of a wire diameter of 2X1.5 mm² is required, in order to enable the function of power-down control valve of indoor units. Connect the communication line to the terminal block "CN10" on the mainboard according to the marks "M1" and "M2"; As the Easycom communication is non-polarity communication, no one-to-one connection is required, as shown in the figure below:

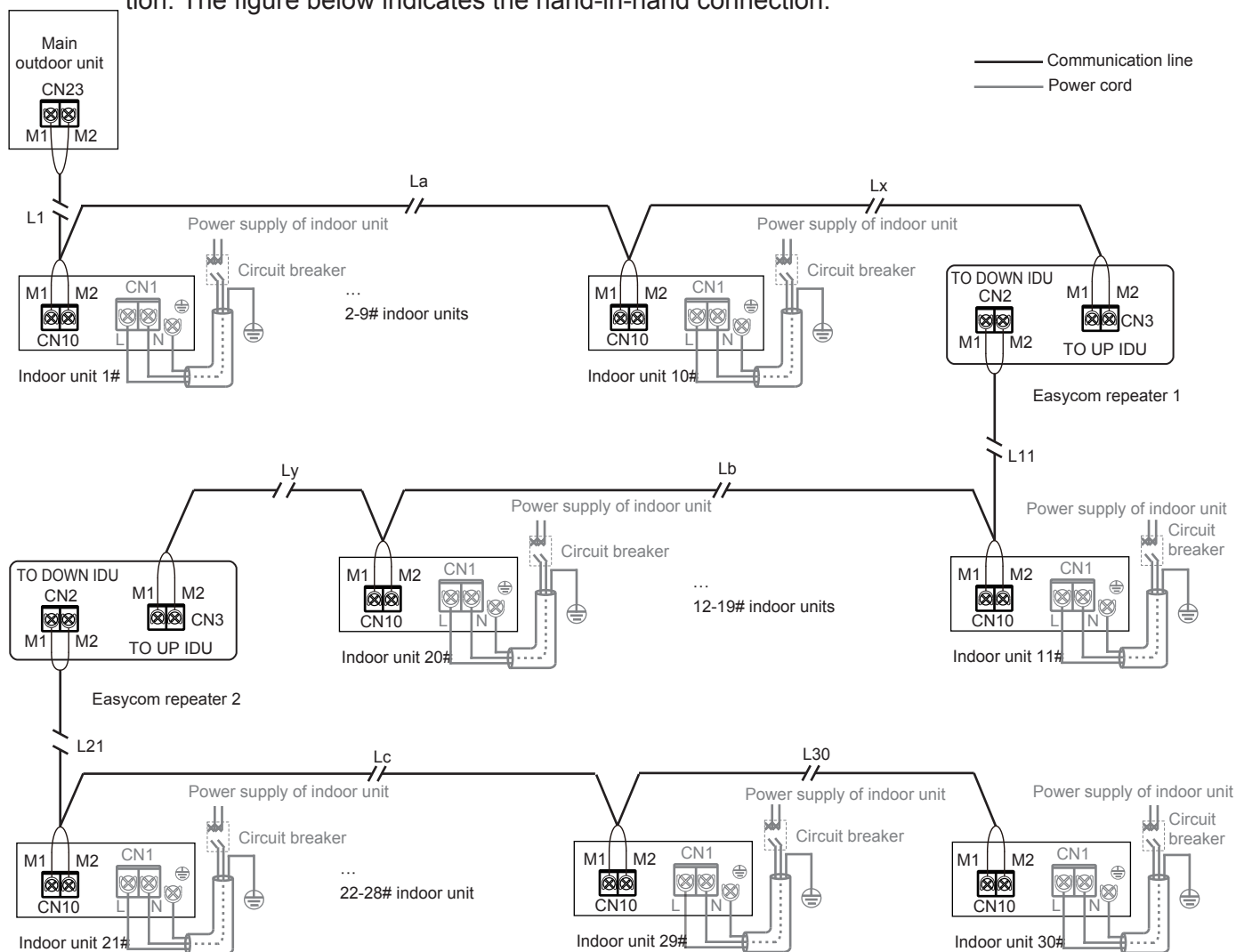


Connect to outdoor unit
M1M2 (Easycom)

[Caution]

It is forbidden to connect the Easycom communication line to PQ or D1D2 communication.

System: Easycom communication line of both outdoor and indoor units with the function of power-down control valve has a total length of up to 600m, supporting any topological connection. The figure below indicates the hand-in-hand connection:



$$L1+La+Lx \leq 200m \quad L11+Lb+Ly \leq 200m \quad L21+Lc+L30 \leq 200m$$

For other connection modes (tree topology, star topology and ring topology), please refer to the technical manual or consult the technical personnel.

[Caution]

In case the total distance is $\leq 200\text{m}$ and the total number of indoor units is ≤ 10 , and the main outdoor unit supply power to the control valve.

If the total distance is $> 200\text{m}$ or the total number of internal units is > 10 , an additional repeater is needed to increase the bus voltage.

The carrying capacity of the repeater is the same as that of the outdoor unit, with a bus length of 200m and 10 indoor units.

The indoor units requiring a general power supply in the same refrigerant system are ≤ 30 .

A maximum of 2 repeaters are installed in the same refrigerant system.

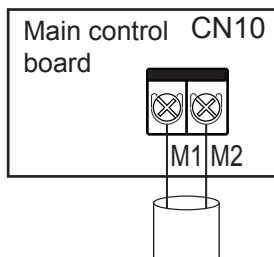
The power supply of the repeater and indoor unit shall be kept on/off at the same time, or UPS shall be used.

For the installation of the repeater, please refer to the installation instructions. It is forbidden to reversely connect the upstream indoor unit port with the downstream indoor unit port. Otherwise, communication faults will occur.

The repeater is an optional accessory. If you want it, please contact your local dealer.

B Easycom communication (uniform power supply for indoor unit)

Single set: When the indoor unit is powered uniformly, the Easycom communication line may not be with the function of the power-down control valve of the indoor unit. At this time, the communication line only needs to be with a wire diameter of $2 \times 0.75 \text{ mm}^2$. Connect the communication line to the terminal block "CN10" on the mainboard according to the marks "M1" and "M2"; As the Easycom communication is non-polarity communication, no one-to-one connection is required, as shown in the figure below:

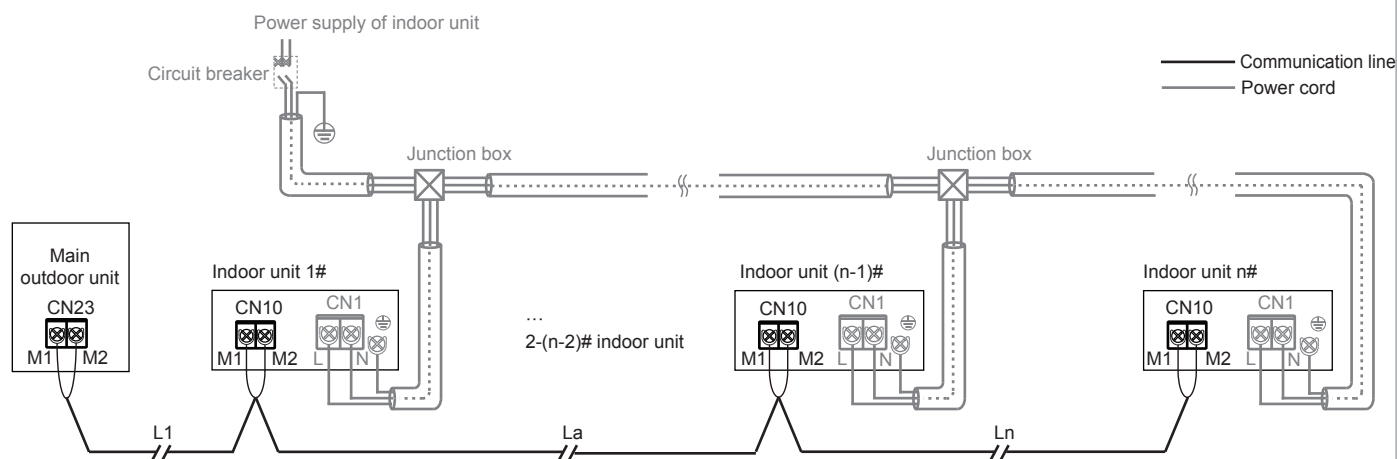


Connect to outdoor unit
M1M2 (Easycom)

[Caution]

It is forbidden to connect the Easycom communication line to PQ or D1D2 communication .

System: Easycom communication line of both outdoor and indoor units without the function of power-down control valve has a total length of up to 2000m, supporting any topological connection. The following figure indicates the hand-in-hand connection:



$$L1 + La + Ln \leq 2000m$$

For other connection modes (tree topology, star topology and ring topology), please refer to the technical documents or consult the technician.

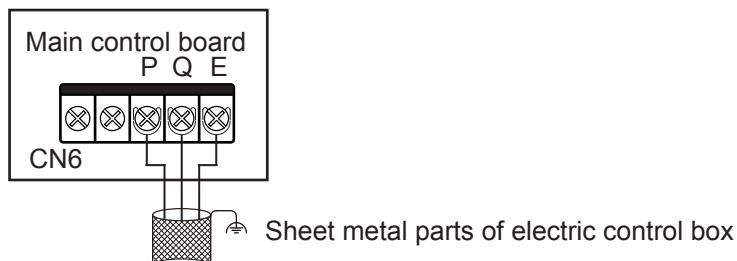
[Caution]

In the case of the Easycom communication without the function of power-down control valve, the indoor unit shall be uniformly powered. Please refer to the section "Power cord connection" for details. Meanwhile, the repeater is unnecessary for the system.

D PQE communication (uniform power supply for indoor unit)

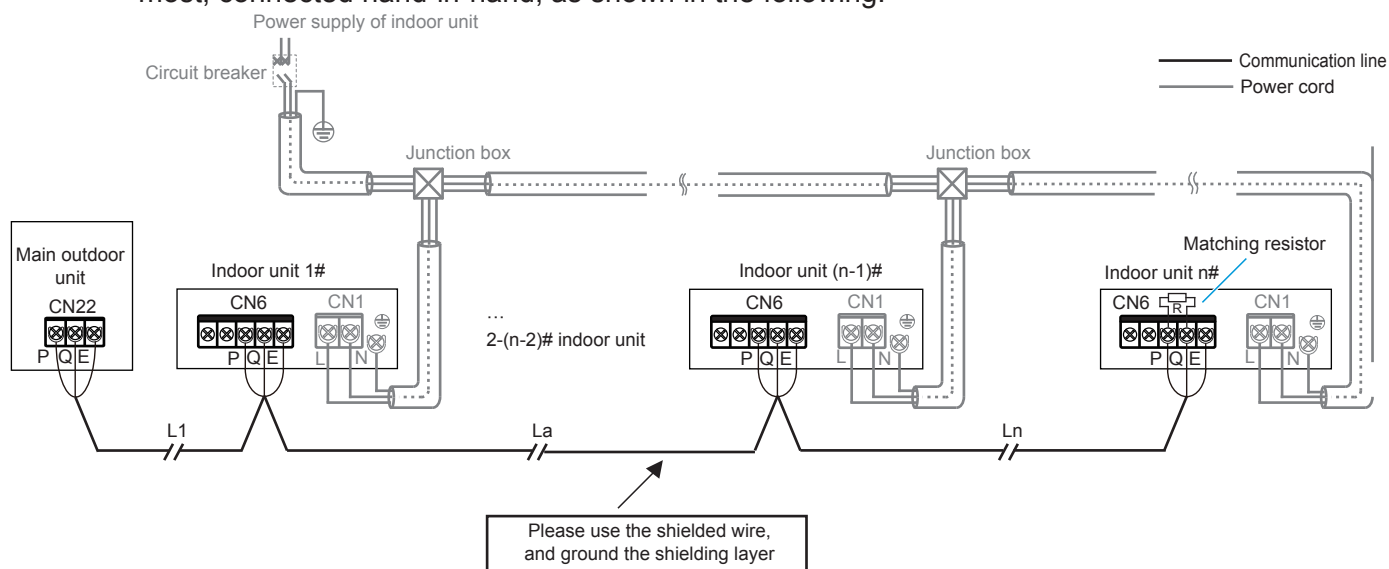
In the case of non-V8 indoor unit in the same refrigerant system, it needs to be connected to "P", "Q" and "E" for PQE communication.

Single set: The communication line of PQE shall be shielded wire and the shielding layer shall be effectively grounded, and shall be connected to the terminal block with the mainboard tag No. of "CN6", and shall be connected according to the symbols "P", "Q" and "E" of the mainboard. The PQ communication is non-polarized communication, and the shielding layer shall be connected to the sheet metal parts of the electric control box, as shown in the following:



Connect to outdoor unit PQE

System: The total length of communication of the indoor and outdoor units of PQE can reach 1200m at most, connected hand-in-hand, as shown in the following:



$$L1+La+Ln\leq1200m$$

[Caution]

When PQ(E) is used for communication, the indoor unit shall be uniformly powered.

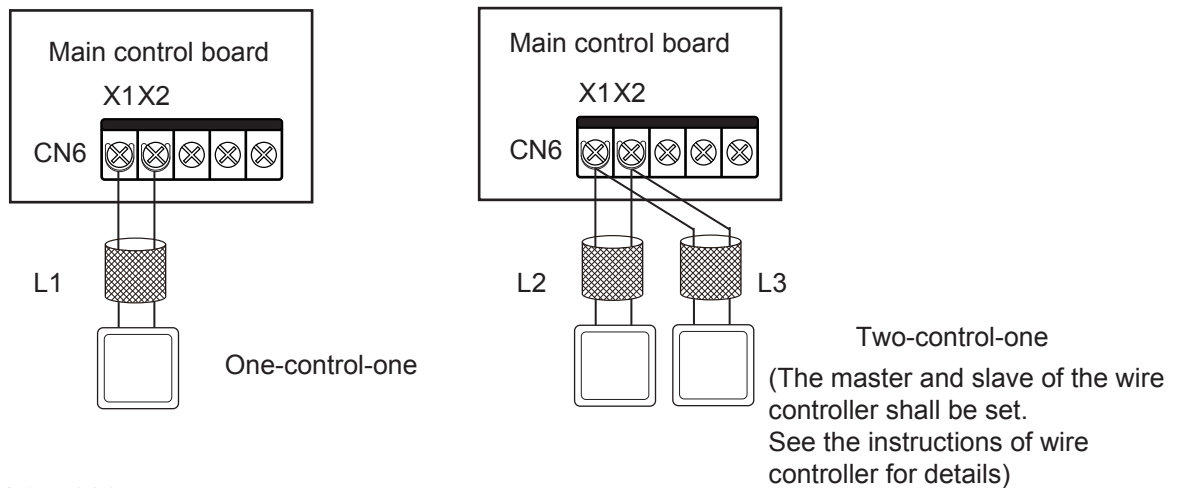
The communication can only be PQ(E) or Easycom. To realize the function of power-down control valve of the indoor unit, the Easycom communication must be used;

The PQ(E) communication line must be shielded wires, and other wires may affect the normal communication between the indoor and outdoor units.

For the last indoor unit, a matching resistor (in the outdoor unit accessory bag) shall be added to PQ.

④ X1X2 communication cable connection

The X1X2 communication is mainly connected to the wire controller to realize the functions of one-control-one, two-control-one by the wire controller. The total length of the X1X2 communication line can reach 200m, and shielded wires are required. The shielding layer is prohibited from grounding. Connect the communication lines to the terminal block "CN6" on the mainboard according to the marks "X1" and "X2". As the wire controller communication is non-polarity communication, no one-to-one connection is required, as shown in the figure below:



$L1 \leq 200\text{m}$, $L2+L3 \leq 200\text{m}$.

[Caution]

Two wire controllers of the same model can be used to control one indoor unit at the same time to realize two-control-one. At this time, the master-slave relationship between the two wire controllers shall be set. Refer to the instructions for wire controllers for details.

A D1D2 communication enables one-control-multiple and two-control-multiple functions of the indoor unit wire controller (up to 16 sets)
The D1D2 communication is 485 communication, and D1D2 can be used to realize one-control-multiple and two-control-multiple functions of the indoor unit wire controller, as shown in the following figure:

 [Caution]

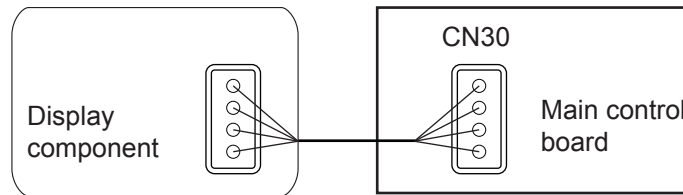
B D1D2 communication enables centralized control function of indoor unit

5 External connection board wiring (in the case of limited outdoor unit and system configuration)

The external connection board is the connection module outside the main board, including display components, function module adapter board, free function module 1 and free function module 2. Those are all optional modules.

① Display component connection

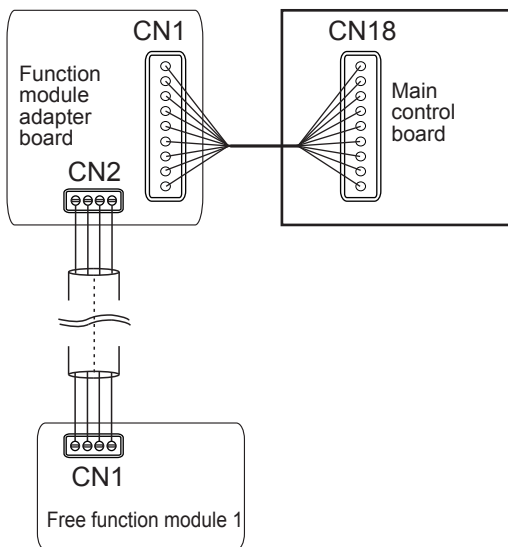
The display component is connected to the "CN30" socket of the main control board through a 4-core communication wire, as shown in the figure below:



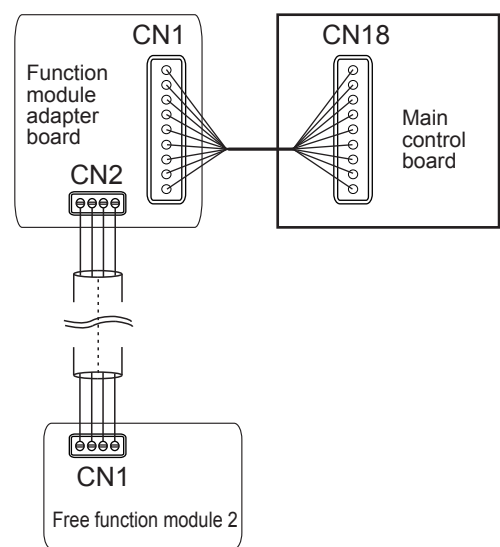
② Connection of function module adapter board

The free function module communicates with the main control board through the function module adapter board. Either select free function module 1 or 2 separately, or select both of the modules at the same time. The wiring diagram is as follows:

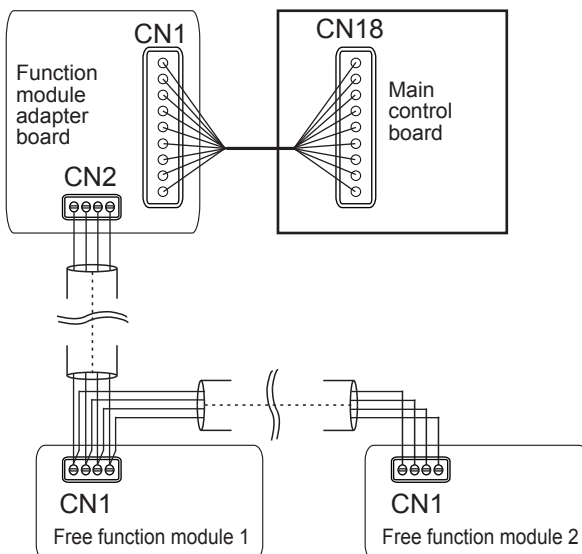
Free function module 1 only



Free function module 2 only



Both free function modules 1 and 2



[Caution]

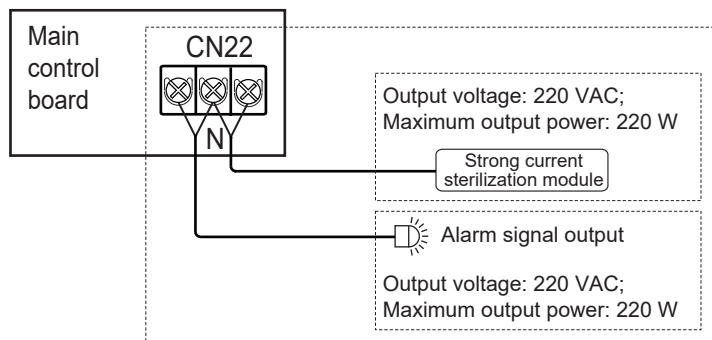
For the function introduction of function module adapter board, free function module 1 and 2, please see the function module specification.

6 Alarm signal and Sterilization module

Refer to the following figure for the wiring of alarm signal and Sterilization module.

CAUTION

The output voltage is 220-240V~.



NOTE

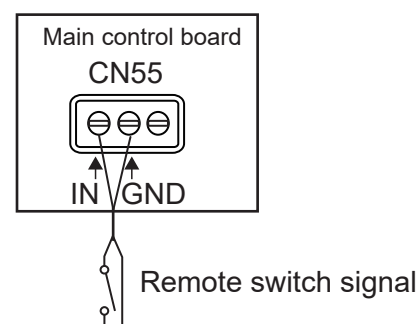
The Sterilization function needs to be active by the wired controller, refer to the manual of wired controller for the detail setting.

Other optional in-series equipment may be connected, contact the agent for detail.

7 Remote On/Off control

Refer to the following figure for using Remote On/Off control.

Remote Switch	Air Conditioning System
On	Off
Off	On



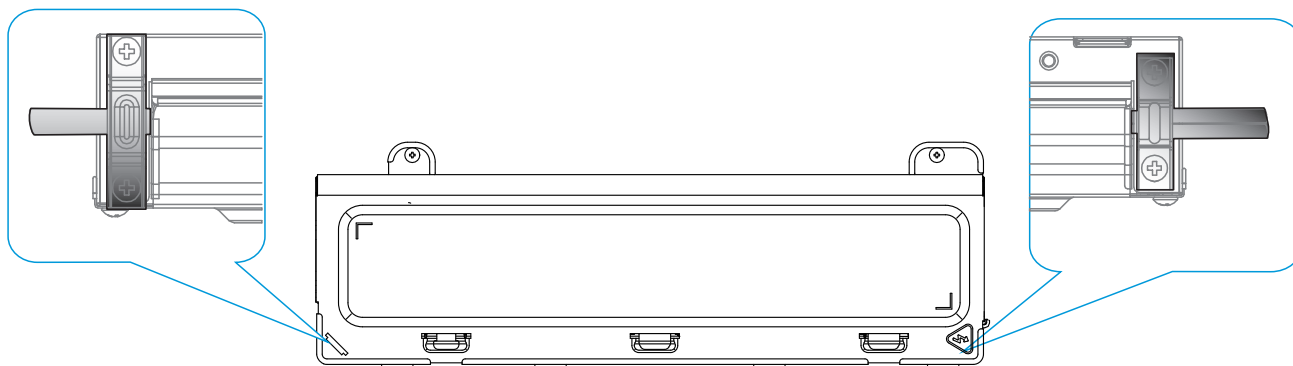
NOTE

The priority of remote control is higher than that of the wired controller.

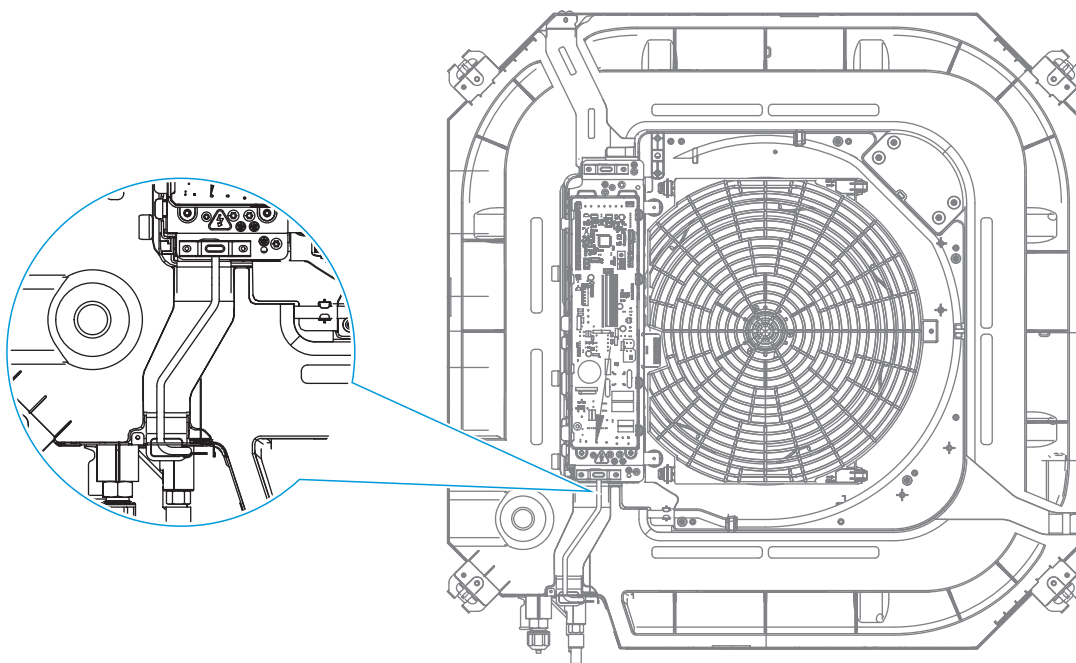
More remote control functions, such as delayed control, air conditioning system is on when remote control is on, please refer to the manual of wired controller.

8 Reclose the electric control box cover

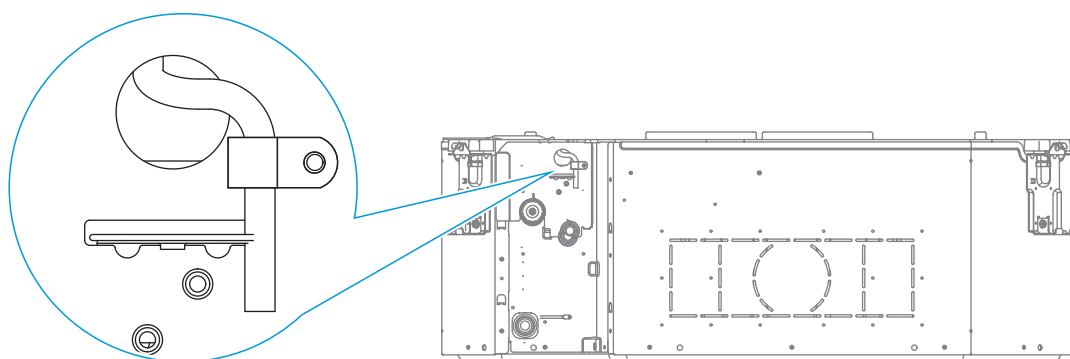
Straighten out the connecting wires and lay them flat, and close the electric control box cover again.



The power cord passes through the sealing plate's outlet hole and connects to the main control board's live wire, neutral wire, and earth wire, ensuring that the length of the earth wire is greater than that of the live and neutral wires, and then use a cable clamp to secure it.



Route the power cord, ensuring that it has a certain degree of slackness. Remove the screw of the sealing plate, use the accessory cable clamp to clamp the power cord, and then use the screw to fix the cable clamp on the sealing plate.



CAUTION

Do not cover the electric control box during power-on.

When covering the electric control box, arrange the cables carefully and do not clip the connecting wires on the electric control box cover.

Wiring clamps for models with auxiliary heater are not included as standard accessories.

8 Application Control

Fault code and definition

In case of the following situations (except for warning faults), please stop the operation of the air conditioner immediately, cut off the power switch and contact the local air conditioner customer service center. The fault code will be displayed on the display component of the machine and the wire controller display screen.

Fault definition	Fault code	Digital tube display
Emergency stop	A01	A01
Immediate shutdown for R32 refrigerant leakage	A11	A11
Outdoor unit	A51	A51
fault Sending fault code to the main indoor unit in case of linked fresh air fan fault (connected in series)	A71	A71
Sending fault code to the main indoor unit in case of linked humidification room indoor unit fault	A72	A72
Sending fault code to the main indoor unit in case of linked fresh air fan fault	A73	A73
(connected in series setting) Transmission to host after the failure of AHU Kit slave	A74	A74
Self-check fault	A81	A81
MS (Refrigerant flow direction reversing device) fault	A82	A82
Mode conflict (using V6 communication protocol)	A91	A91
Coil fault of 1# electronic expansion valve	b11	b11
Body fault of 1# electronic expansion valve	b12	b12
Coil fault of 2# electronic expansion valve	b13	b13
Body fault of 2# electronic expansion valve	b14	b14
1# Pump locked-rotor protection	b34	b34
2# Pump locked-rotor protection	b35	b35
Water level switch	b36	b36
alarm Reheater electric heating fault	b71	b71
Pre-treatment electric heating fault	b72	b72
Humidifier fault	b81	b81
Duplicate indoor unit address code	C11	C11

Fault definition	Fault code	Digital tube display
Abnormal communication between the indoor unit and the outdoor unit	C21	021
Abnormal communication between the main control board of indoor unit and the fan drive board	C41	041
Abnormal communication between the indoor unit and the wire controller	C51	051
Abnormal communication between indoor unit and Wi-Fi Kit	C52	052
Abnormal communication between the main control board of indoor unit and the display board	C61	061
Abnormal communication between AHU Kit slave and host	C71	071
Inconsistency between the number of AHU Kit and the set value	C72	072
Abnormal communication between indoor unit in the linkage humidification room and the main indoor unit	C73	073
Abnormal communication between linkage fresh air fan and main indoor unit (series setting)	C74	074
Abnormal communication between linkage fresh air fan and main indoor unit (non-series setting)	C75	075
Abnormal communication between main wire controller and slave controller	C76	076
Abnormal communication between main control board and 1# function expansion board of indoor unit	C77	077
Abnormal communication between the main control board of indoor unit and 2# function expansion board	C78	078
Abnormal communication between main control board and adapter board of indoor unit	C79	079
Too low inlet air temperature of indoor unit in the heating room	d16	016
Too high inlet air temperature of indoor unit in refrigeration room	d17	017
Alarm of over-temperature and over-humidity	d81	081
Sensor control board fault	dE1	0E1
PM2.5 sensor fault	dE2	0E2
CO2 sensor fault	dE3	0E3
Formaldehyde sensor fault	dE4	0E4
Smart eye sensor fault	dE5	0E5
T0 (fresh air intake temperature sensor) short-circuited or open-circuited	E21	021
Upper shed dry bulb sensor short-circuited or open-circuited	E22	022
Lower shed dry bulb sensor short-circuited or open-circuited	E23	023
T1 (return air temperature sensor of indoor unit) short-circuited or open-circuited	E24	024

Fault definition	Fault code	Digital tube display
Built-in room temperature sensor of wire controller short-circuited or open-circuited	E31	E31
Wireless temperature sensor short-circuited or open-circuited	E32	E32
External room temperature sensor short-circuited or open-circuited	E33	E33
Tcp (pre-cooled fresh air temperature sensor) short-circuited or open-circuited	E61	E61
Tph (preheated fresh air temperature sensor) short-circuited or open-circuited	E62	E62
TA (outlet air temperature sensor) short-circuited or open-circuited	E81	E81
Outlet air humidity sensor fault	EA1	EA1
Return air humidity sensor fault	EA2	EA2
Upper shed wet bulb sensor fault	EA3	EA3
Lower shed wet bulb sensor fault	EA4	EA4
R32 Refrigerant leakage sensor fault	EC1	EC1
T2A (heat exchanger inlet temperature sensor) short circuit or open circuit	F01	F01
T2 (heat exchanger middle temperature sensor) short circuit or open circuit	F11	F11
T2 (heat exchanger middle temperature sensor) over-temperature protection	F12	F12
T2B (heat exchanger outlet temperature sensor) short circuit or open circuit	F21	F21
Main control board EEPROM fault	P71	P71
Indoor unit display control board EEPROM fault	P72	P72
Locked (electronic lock)	U01	U01
Model code not set	U11	U11
Capacity code setting failure	U12	U12
Capacity code setting error	U14	U14
AHU kit fan control input signal dial setting error	U15	U15
No address code detected	U38	U38
Multiple motor faults	J01	J01
IPM (fan module) overcurrent protection	J1E	J1E
Phase current instantaneous overcurrent protection	J11	J11

Fault definition	Fault code	Digital tube display
Busbar voltage too low	J3E	
Busbar voltage too high	J31	
Abnormal bias of phase current sampling value	J43	
Mismatching between motor and indoor unit model	J45	
Mismatching between IPM and indoor unit model	J47	
Motor start failure	J5E	
Motor stall protection	J52	
Speed control mode setting error	J55	
Motor phase loss protection	J6E	

Operating status code and definition (non-fault)

Definition	Code	Digital tube display
Oil return or preheating operation	d0	
Self-cleaning operation	dC	
Mode conflict (using V8 communication protocol)	dd	
Defrosting operation	dF	
Static pressure test	d51	
Remote shutdown	d61	
Backup operation of indoor unit	d71	
Backup operation of outdoor unit	d72	
Upgrade operation of main control program	OTA	

[Caution]

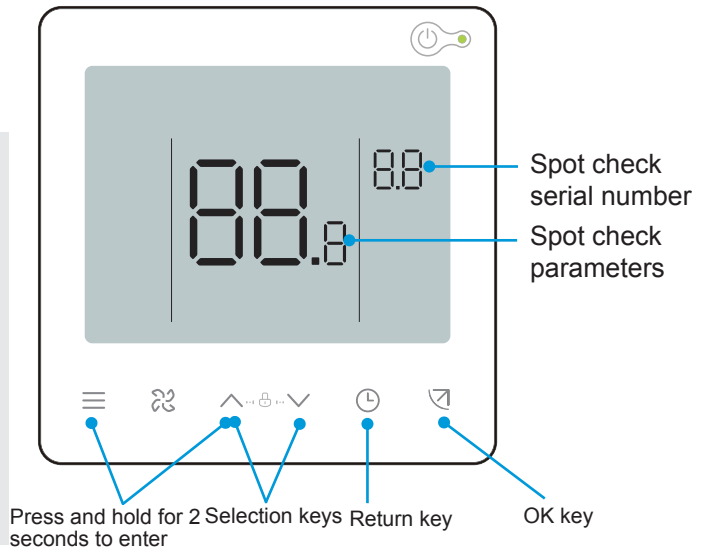
The complete fault code can be displayed only after the model of outdoor unit and the configuration of indoor unit (including wire controller, display components, etc.) are limited.

During the upgrade operation of main control program, the indoor unit and the outdoor unit must be kept in a power-on state, and shall not be powered off, otherwise the upgrade operation will stop.

Spot check description

The two-way communication wire controller (taking WDC3-86S as an example) is used to query the spot check function. The steps are as follows:

- ① In the main interface, press and hold "≡" and "▲" keys for 2 seconds to enter the query interface.
The outdoor unit screen will display u00-u03, the indoor unit screen will display n00-n63 (the last two digits are the indoor unit address), and the wire controller screen will display "CC". Press "▲" and "▼" to select the corresponding indoor unit address, and press "↵" key to enter the parameter query.
- ② Press "▲" and "▼" again to query parameters, and the parameters can be queried circularly.
See the checklist below for details.
- ③ Press "⌚" key to exit the query function.
- ④ The "Timing area" at the top of the query interface displays the spot check serial number, and the "Temperature area" displays the spot check parameters.



S/N	Display contents	S/N	Display contents
1	Communication address of indoor and outdoor units (the current address of indoor unit is displayed in sequence every 0.5s)	13	Exhaust temperature of compressor
2	Capacity of indoor unit	14	Target overheat
3	Actual set temperature Ts	15	EXV opening (actual opening/8)
4	Set temperature Ts for current operation	16	Software version No.
5	Actual T1 indoor temperature	17	Version No. of display board
6	Modified indoor temperature T1_modify	18	Version No. fan driver
7	Actual T2 exchanger middle temperature	19	Historical fault code (most recently)
8	Actual T2A heat exchanger liquid tube side temperature	20	Historical fault code (more recently)
9	Actual T2B heat exchanger air pipe side temperature	21	Network address display of indoor unit
10	Actual setting humidity RH	22	Expansion board address display of indoor unit
11	Actual RH indoor humidity	23	Display [— — —]
12	Real-time static pressure 3		

9 Test run

Precautions before test run

- Check whether the indoor and outdoor units are installed correctly.
- Check whether the piping is correct and whether the refrigerant pipeline system has been detected for leakage.
- Check whether the length of piping and additional amount of refrigerant have been recorded.
- Check whether the wiring is correct and firm without virtual connection; whether the grounding wire is correctly connected.
- Check whether the supply voltage is equal to the rated voltage of the air conditioner.
- Check whether the thermal insulation has been improved.
- Check whether there are obstacles at the air inlet and outlet of indoor and outdoor units.
- Fully open the air pipe and liquid pipe stop valves of the outdoor unit.
- Power on and preheat the outdoor unit for 12h.

Test run

Control the air conditioner for cooling or heating operation with a wire/remote controller, and operate according to the instructions.

In case of any fault, please troubleshoot according to the "Non-air Conditioner Fault" part of the Operation Part in this instructions.

[Caution]

■ Operate according to the test run method of outdoor unit.

Indoor unit

- Check whether the wire/remote control switch is normal.
- Check whether the wire/remote control display is normal, whether the function keys are normal, whether the room temperature regulation is normal, and whether the airflow and direction regulation are normal.
- Check whether the indicator lamp is on normally.
- Check whether the drainage is normal.
- Check indoor units one by one for normal operation, cooling or heating, vibration and abnormal sound.

Outdoor unit

- Check whether there is vibration and abnormal sound during operation.
- Check whether the generated wind, noise and condensate affect neighbors.
- Check whether the refrigerant leaks.

Check points after installation

To ensure a comfortable indoor environment for users, please read the following installation points carefully, and confirm whether the installation of air conditioner meets the requirements. Please tick "√" for the items meeting the requirements and "X" for those failing to meet the requirements.

Check item	Possible consequences if it is improper	Qualified or not
Check whether the indoor unit and outdoor unit are installed firmly	Falling, vibration and noise of air conditioner	
Check whether the installation of indoor unit has been completed	The machine does not work properly or parts are burnt	
Whether it is checked for air leakage	Lack of cold air or hot air	
Whether the heat insulation is good (refrigerant piping, drainage pipe and air duct)	Condensate dripping	
Check whether all orifices of copper pipes have been sealed before installation to prevent dust	Compressor fault	
Check whether the refrigerant pipe is filled with nitrogen for shielded welding during welding (with nitrogen cylinder on site)	A large number of oxide films are formed on the inner surface of the copper pipe, and the poor system operation leads to major faults	
Check whether drainage test is carried out, whether the drainage is smooth, and whether the connecting pipe is firm	Water leakage	
Check whether the supply voltage is in line with the rated voltage of the air conditioner.	The machine does not work properly or parts are burnt	
Check whether the wires and piping are correctly connected	The machine does not work properly or parts are burnt	
Check whether the air conditioner is safely grounded	It's very dangerous in case of electric leakage	
Check whether the power cord and connecting wire of specified specification are used	The machine does not work properly or parts are burnt	
Confirm whether the binding screw is loose	Electric shock or fire	
Check whether the air inlet and outlet of indoor unit and outdoor unit are blocked	Lack of cold air or hot air	
Set the indoor unit in constant speed mode, and check whether the external static pressure has been set	No cooling or heating	
Check whether the refrigerant piping length and refrigerant filling amount are recorded	The refrigerant volume in the air conditioning system is unknown	
Check whether an access panel is reserved for the indoor unit installation position	Difficulty in repair and maintenance	
Check whether the air filter screen and grille (air inlet and outlet) are installed	The machine doesn't work properly	
Check whether the temperature in each room can meet the requirements during commissioning	Failure to meet user comfort requirements	
Whether the operation method is explained to the user according to the Operation Part of this instructions	Poor use effect	
Whether the operation method and cleaning method of the air filter screen and grille (air inlet and outlet) are explained to the user	Poor use effect	

Maintenance and Service

1 Safety Warnings

[Warning]

For safety, be sure to shut down and cut off the power supply before cleaning the air conditioner.

Do not remove or repair the air conditioner by yourself; otherwise, fire or other dangers may occur.

Maintenance can only be carried out by professional maintenance personnel.

Do not use flammable and explosive materials (such as hairspray or insecticide) near this product.

Do not use paint thinner or other organic solvents to clean the product, as this may cause cracks, electric shock or fire.

Optional accessories must be installed by qualified agents and professionally qualified electricians.

Be sure to use the optional accessories designated by the Company.

Improper installation may lead to water leakage, electric shock and fire.

Do not wash the air conditioner with water; otherwise, electric shock may be caused.

Use a solid standing platform.

2 Cleaning and Maintenance

Cleaning of air filter screen

[Caution]

G1 primary-efficiency filter screen is a standard part, and G3 primary-efficiency filter screen and F6 medium-efficiency filter screen are optional parts.

The air filter screen can remove dust or other particles from the air. If it is blocked, the effectiveness of the air conditioner will be greatly reduced.

Therefore, please always clean the air filter screen during long-term use.

For the indoor unit in constant speed mode, if it is installed in a dusty place, the cleaning frequency of filter screen shall be increased, and once a month is recommended.

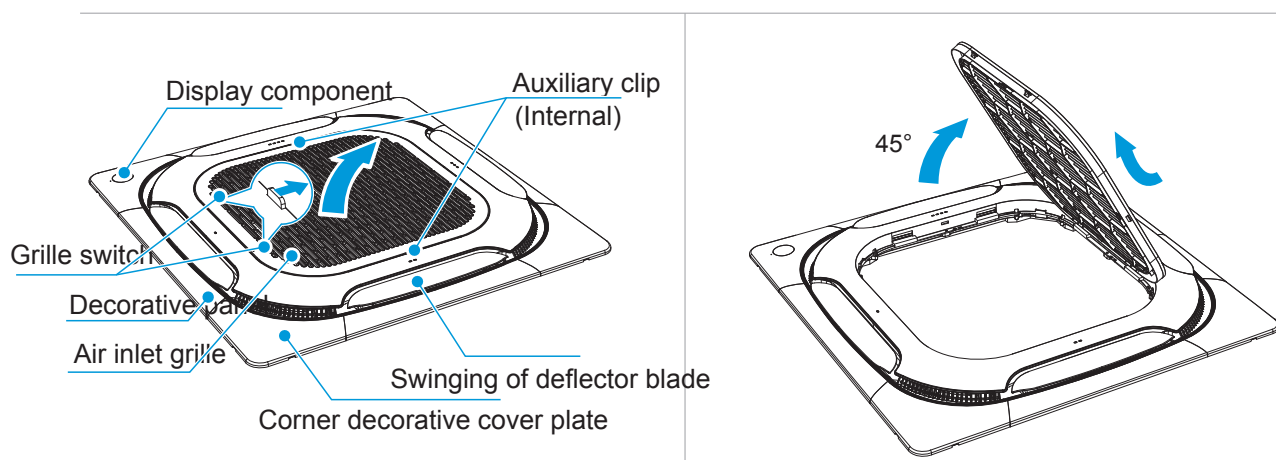
Replace the filter screen if the dirt is serious and difficult to clean.

Do not remove the air filter screen before cleaning, otherwise it may cause a fault.

If the air conditioner is used without an air filter screen, dust accumulation in the air conditioner will often cause faults due to failure to remove dust in the indoor air.

1 Schematic diagram of steps

- ① Remove the air inlet grille.
Press the two grille switches simultaneously and lift them up. Lift the air inlet grille to about 45 degrees

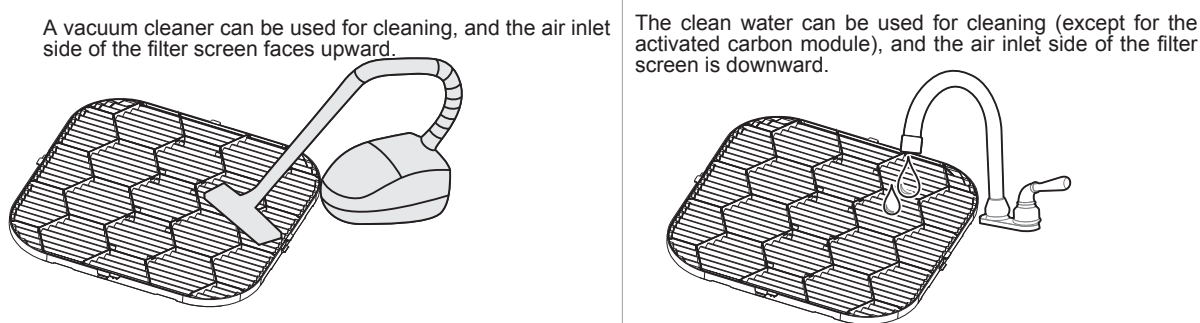


- ② Remove the filter screen.

💡 [Tips]

The filter screen shall be replaced, removed and installed by professional technicians. Incorrect operation may cause electric shock or injury by touching rotating parts.

- ③ Clean the filter screen (only G1 primary-efficiency filter screen can be cleaned).



💡 [Tips]

The G3 filter screen is replaced once every six months to once a year; the medium-efficiency filter screen can be cleaned with a cleaner or an air gun.

Do not dry the filter screen under direct sunlight or by fire to avoid deformation.

If the filter screen is dirty, please use a soft brush and neutral detergent to clean it, then dehydrate it and dry it in the shade.

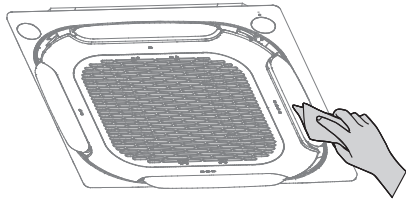
It is prohibited for non-professionals to remove, replace or repair the filter screen.

- ④ Reinstall the filter screen.

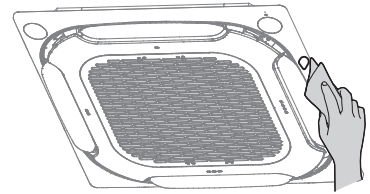
- ⑤ Reinstall the air inlet grille in the reverse order of steps 1 and 2 described above and close it.

Cleaning of air outlet and external panel

1 Wipe with a soft dry cloth.



2 If it is difficult to remove the stain, please clean it with clean water or neutral detergent.



[Caution]

Do not use gasoline, benzene, volatile agents, detergent powder and liquid insecticide, etc.; otherwise discoloration or deformation will be caused.

Do not wet the interior of the indoor unit; otherwise, electric shock or fire accident may occur.

Do not scrub the wind deflector with water vigorously.

If the air conditioner is used without an air filter screen, dust accumulation in the air conditioner will often cause faults due to failure to remove dust in the indoor air.

Maintenance

During in-depth maintenance, the air conditioner is generally cleaned and maintained by professional technicians every 2~3 years.

G1 primary-efficiency filter screen is generally used for indoor unit of the air conditioner, and is generally cleaned every three months.

If there is much dust in the service environment, the air filter screen will accelerate the dust accumulation, the airflow will be reduced, and the capacity will be reduced. Therefore, it is necessary to increase cleaning frequency so as to prevent the filter screen from being blocked by too much dust. Otherwise, it will affect air conditioning effects and the indoor sanitary environment.

Preheat in advance.

When the heating season comes, the power supply of the outdoor main unit shall be connected more than 4 hours in advance before use for preheating. The preheating time is affected by weather and temperature.

In this way, the operation is more stable and it is conducive to maintaining the optimal lubrication of refrigerant oil in the A/C compressor, thus prolonging the service life of the compressor.

Before leaving the air conditioner idle for a long time, please do the following:

1. Select the "air supply" operation mode to run the indoor unit for a period of time to dry it.
2. If the unit is not used for a long time, it shall be powered off or the power plug shall be unplugged to reduce the standby power consumption. At the same time, wipe the wireless remote controller clean with a clean and soft dry cloth, and remove the battery.

[Caution]

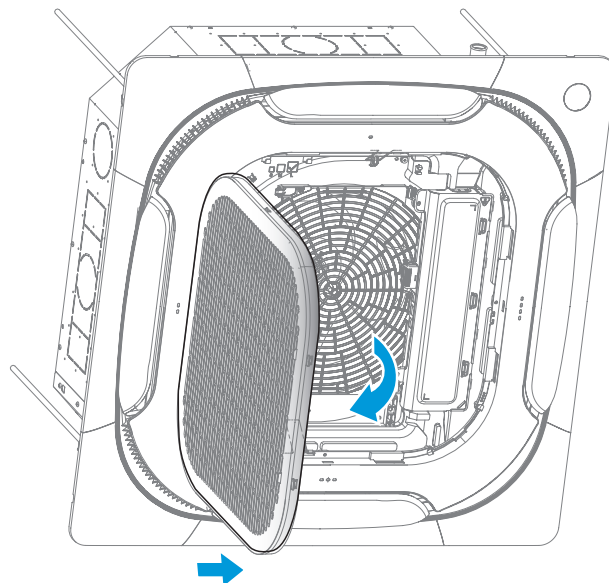
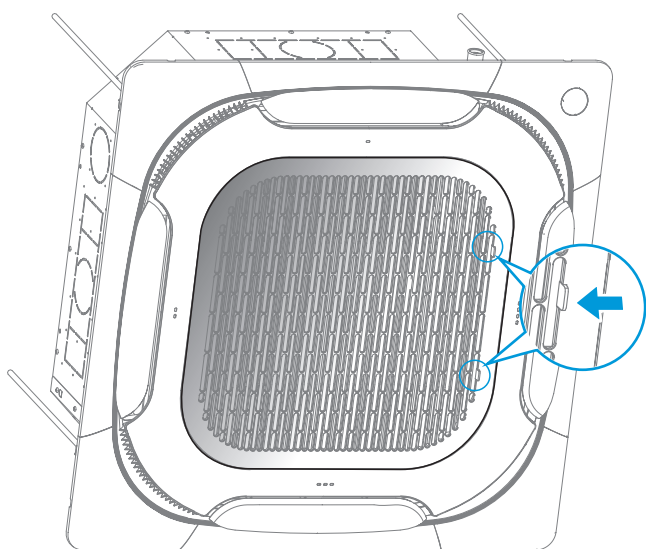
Before the air conditioner is idle for a long time, regularly check and clean the internal components of the outdoor unit. Please contact the local air conditioner customer service center or the special technical service department for details.

After a long idle time, check to see if the return air inlet and outlet of indoor and outdoor units are blocked or not. If they are blocked, please clean immediately.

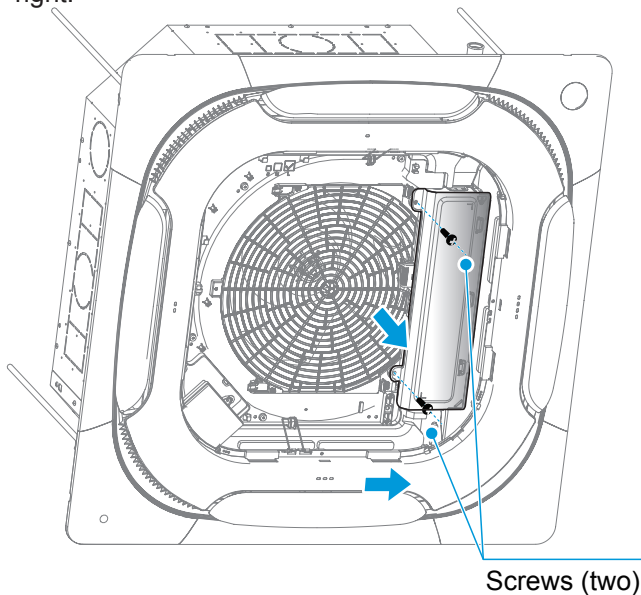
3 Repair of Conventional Parts and Components

Maintenance of electronic control mainboard and room temperature sensor

- 1** Open the air inlet grille
Press the two grille switches on the air inlet grille towards the left, and then open the air inlet grille downwards. Open the grille to approximately 45 degrees, push the grille obliquely to the unit and leave the panel, release the lifting rope, and remove the air inlet grille.

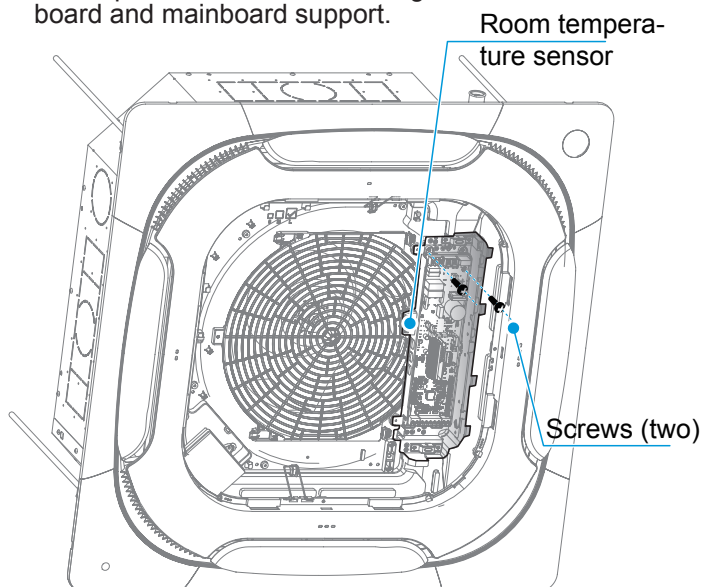


- 2** Open the electric control box cover
Remove the two screws at positions shown in the figure, pull the bottom end of the electric control box cover outward horizontally for a certain distance, and take out the electric control box cover towards the right.



Screws (two)

- 3** Remove the room temperature sensor for troubleshooting and repair.
Remove the terminal on the mainboard, the screws at the positions shown in the figure, and the mainboard and mainboard support.

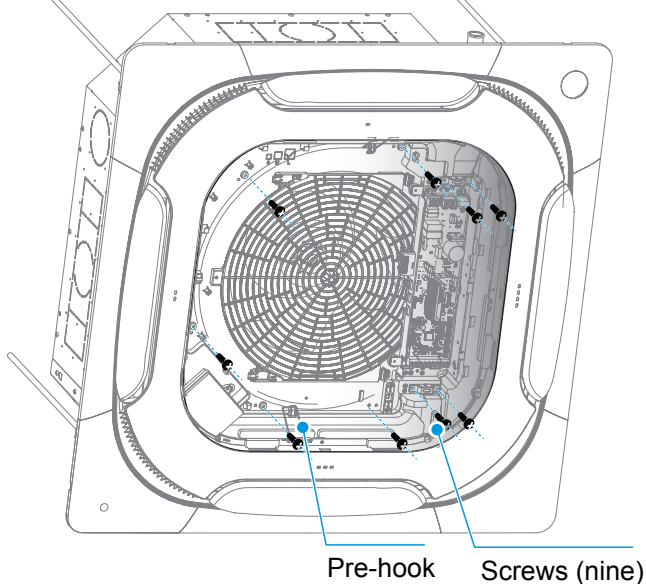


Screws (two)

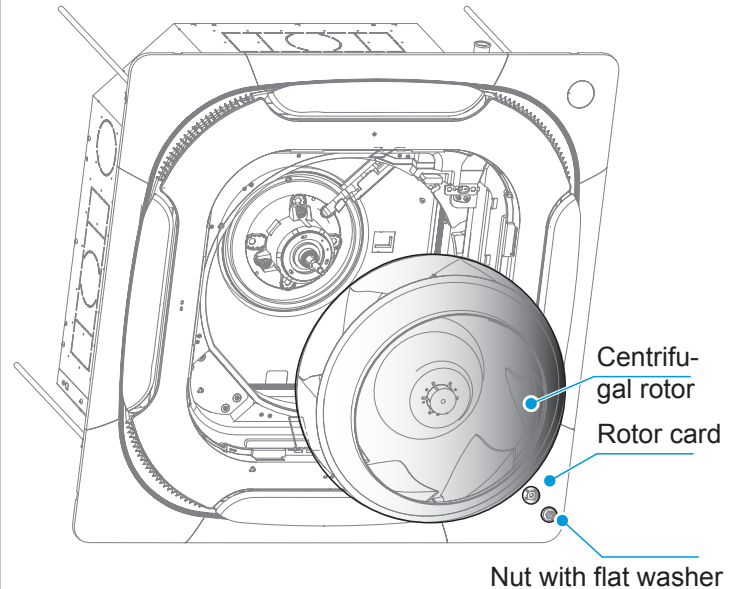
Maintenance of rotor

1 Remove the mainboard and the mainboard support as described above.

2 Unscrew the 4 screws on the right side, remove the sheet metal of the electric control box; unscrew the 5 screws on the left side, open the pre-hook of the panel, and remove the air guide ring.



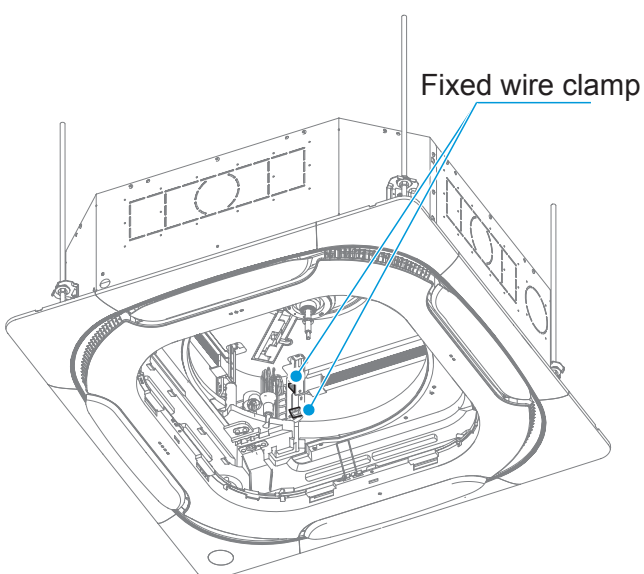
3 Replace the rotor after removing the center nut and the rotor card
Remove the nut with flat washer and rotor card shown in the figure, and the centrifugal rotor.



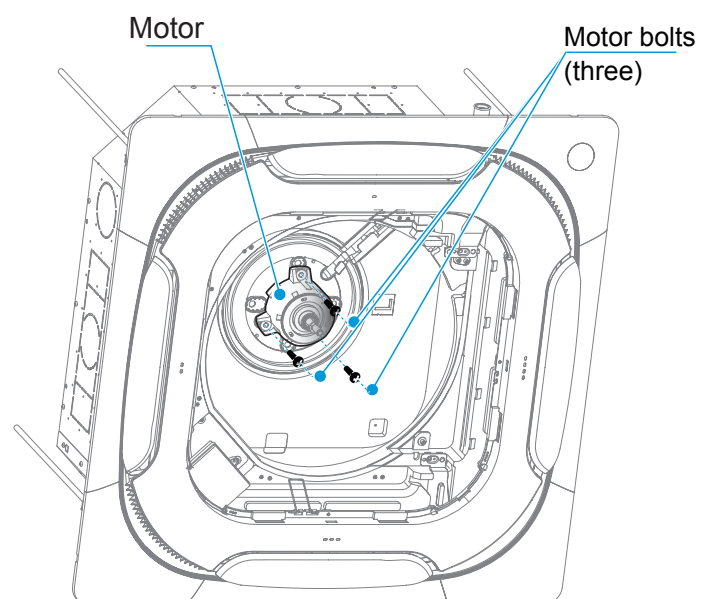
Maintenance of main motor

1 Remove the rotor as described above.

2 Remove the motor wire from the fixed wire clamp.



3 Remove the three motor bolts at positions shown in the figure and remove the motor.



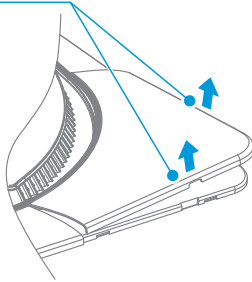
4 Replace the installation motor in reverse order

Maintenance of evaporator, electric auxiliary heating device and temperature sensor

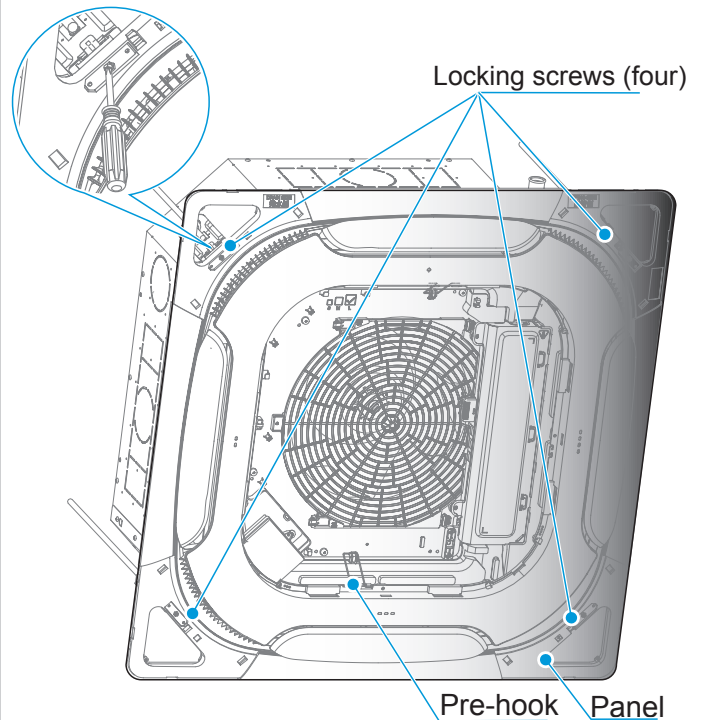
1 Remove the air inlet grille according to the above steps (recover the refrigerant before repairing the evaporator).

2 Remove the decorative panels in the four corners

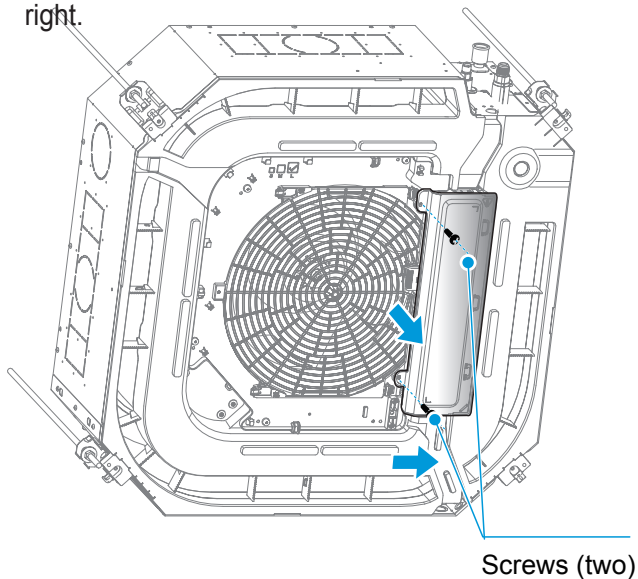
where the buckle is removed and installed
Apply tension to the position



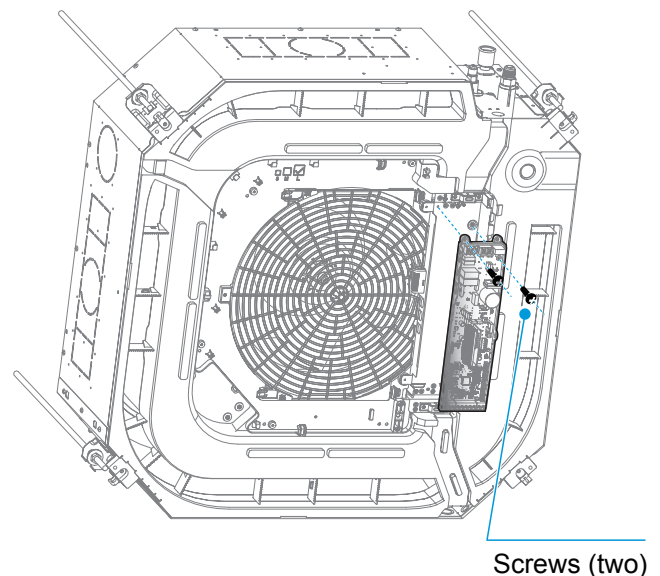
3 Unscrew the locking screws in the four corners and remove the hooks in the four corners of the panel from the indoor unit. Remove the pre-hook on the panel from the air guide ring and remove the panel.



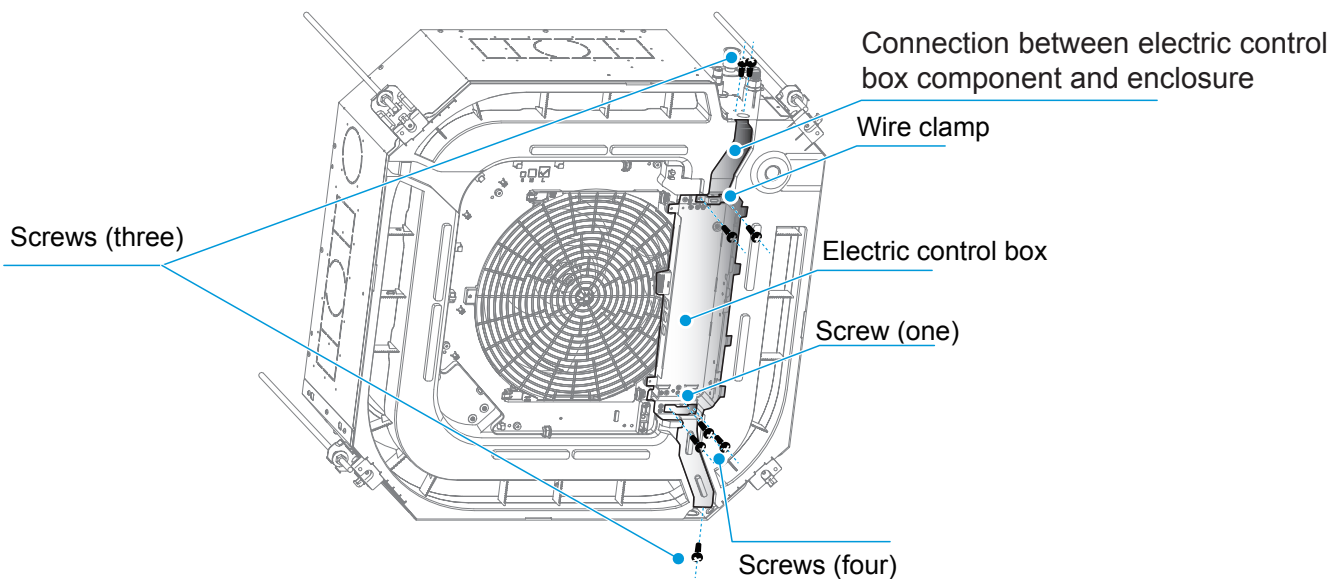
3 Open the electric control box cover
Remove the two screws at positions shown in the figure, pull the bottom end of the electric control box cover outward horizontally for a certain distance, and take out the electric control box cover towards the right.



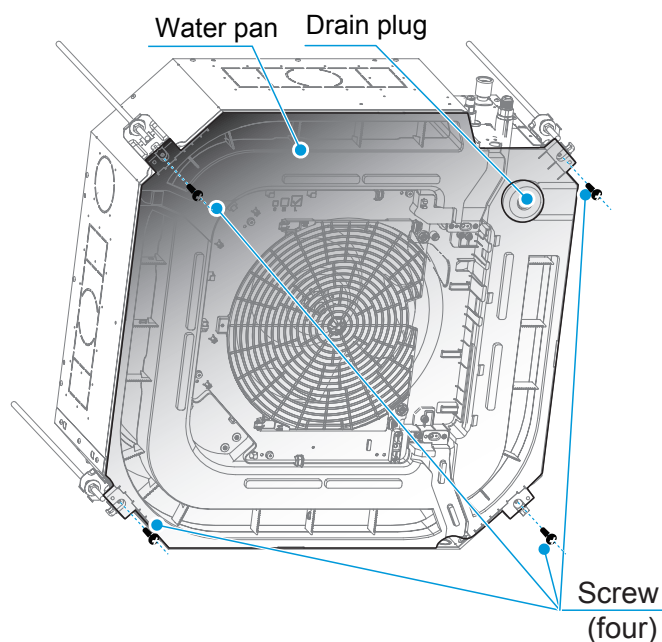
4 Remove the mainboard
Remove the terminal on the mainboard and the screws shown in the figure.



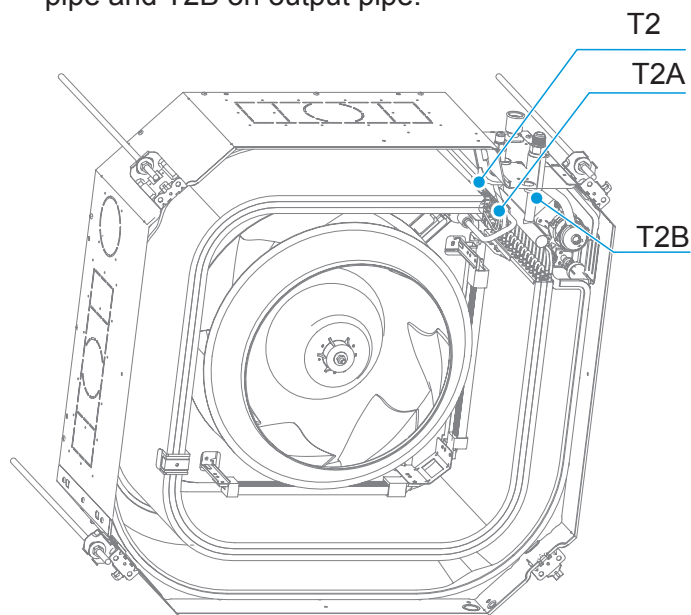
- 5 Remove the screws (three) connecting the electric control box component and the enclosure, and then remove the screws (four) of the wire clamp and the screw (one) of the electric control box.



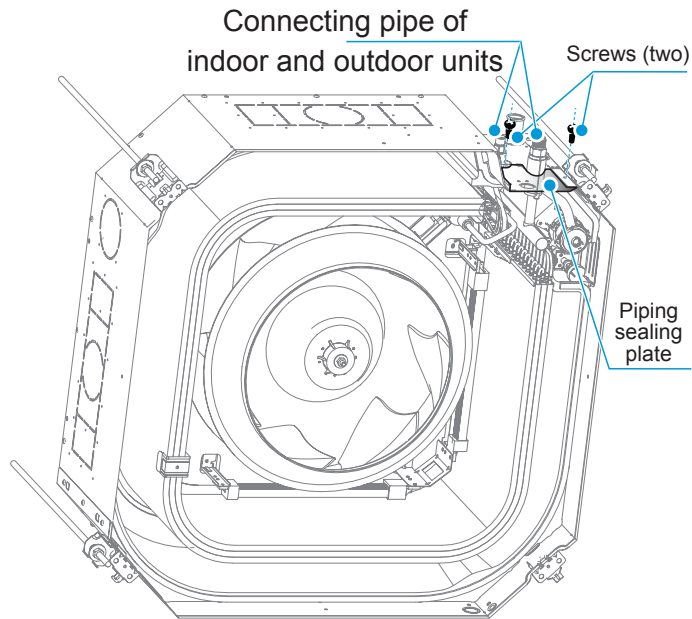
- 6 Place a small barrel under the drain plug of the water pan, remove the drain plug to drain water in the water pan, remove the screws at the positions shown in the figure, and then remove the water pan together with the air guide ring.



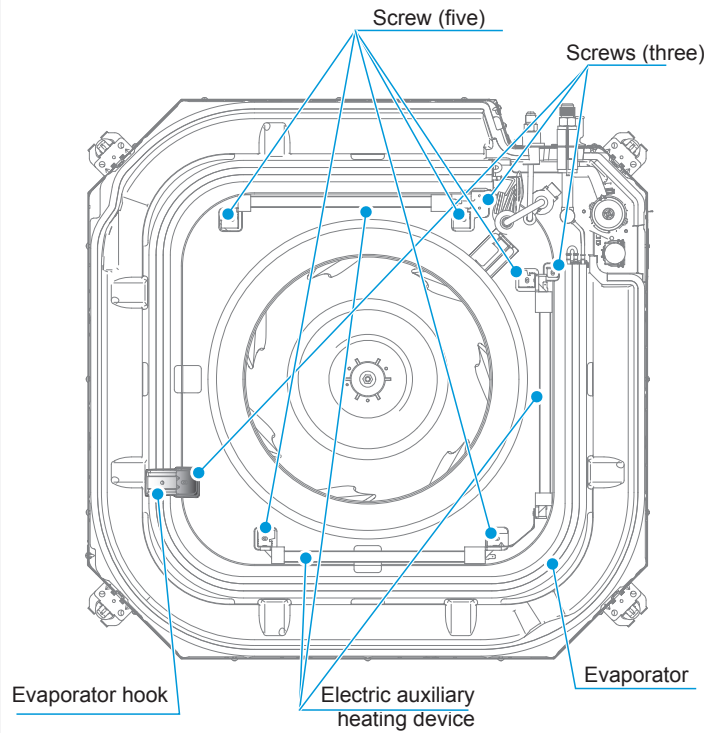
- 7 Troubleshoot and repair the temperature sensor. T2 is located on the long U pipe, T2A on capillary pipe and T2B on output pipe.



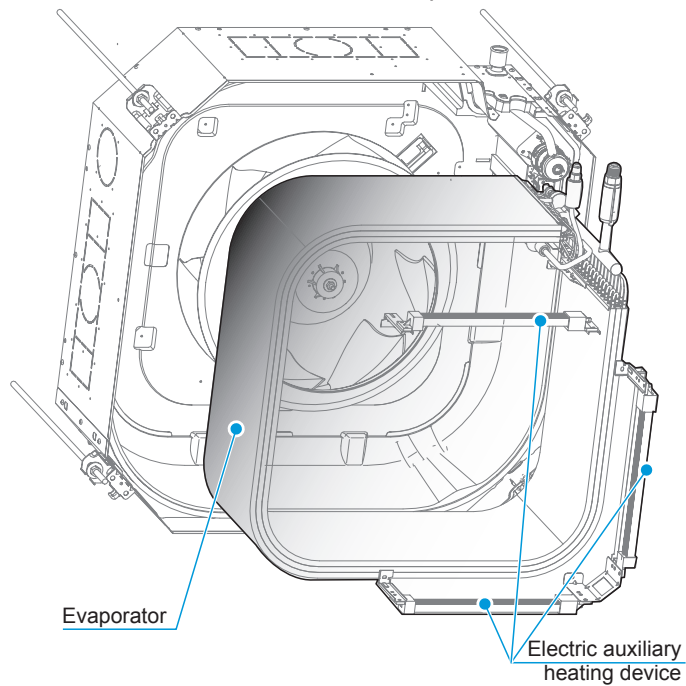
- 8 Remove the connecting pipe of the indoor and outdoor units, screws of the two piping sealing plates, and the piping sealing plates.



- 9 Remove evaporator after its fixing frame and three fixing screws are removed; remove the electric auxiliary heating device after its five fixing screws are removed.

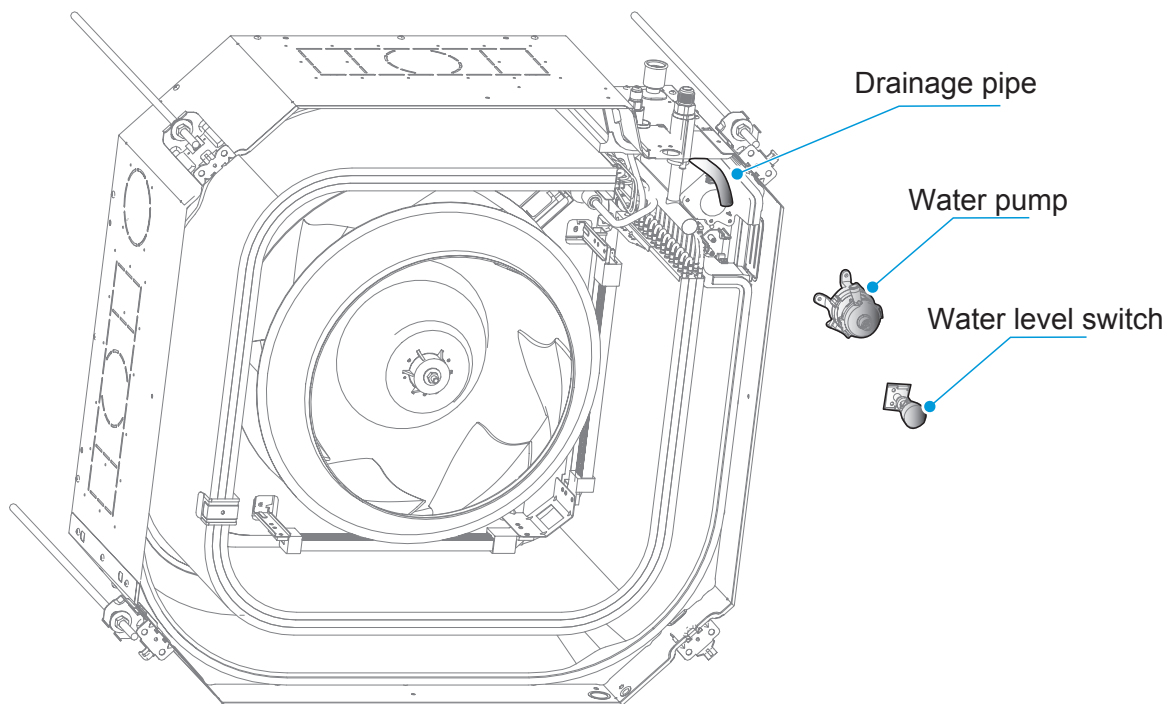


- 10 Remove the evaporator and electric auxiliary heating device, and troubleshoot and repair them.



Maintenance of pump

- 1 Remove the air inlet grille, electric control box cover, all connecting wire panels, panels, electric control boxes, air guide rings and water pans according to the above steps
- 2 Remove the drainage pipe
- 3 After removing the two fixing screws, take out the water pump for replacement or maintenance. Remove the fixing screws of water pump and water pump bracket, as well as the water pump and water level switch.



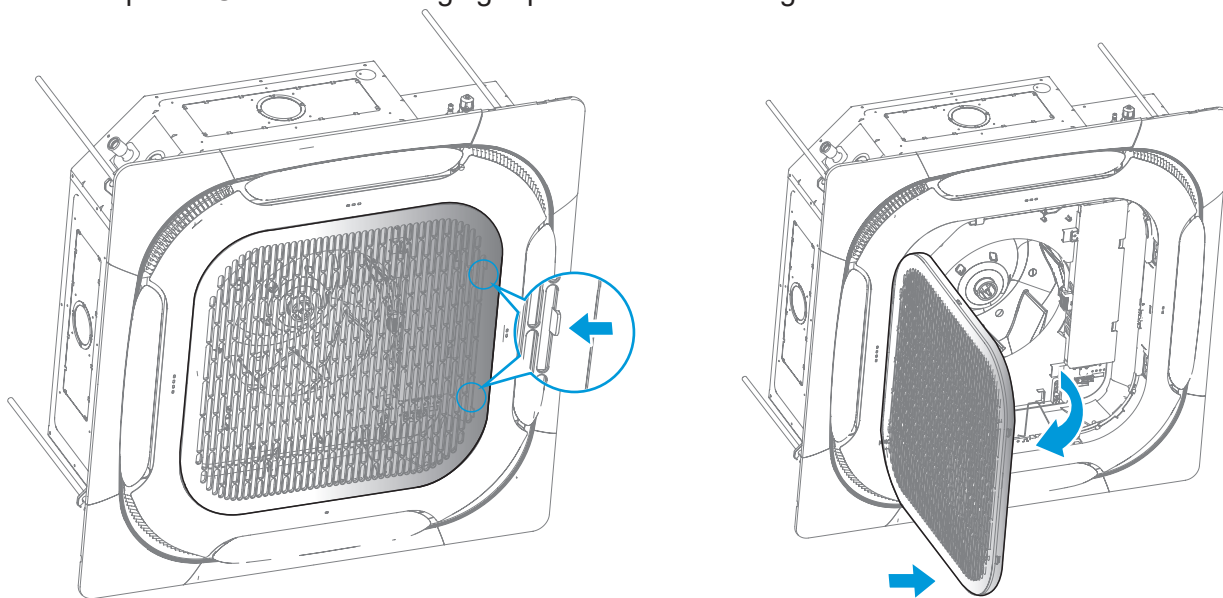
3 Maintenance of Conventional Parts

Maintenance of Electronic Control Main Board and Room Temperature Sensor

1 Open the air inlet grille.

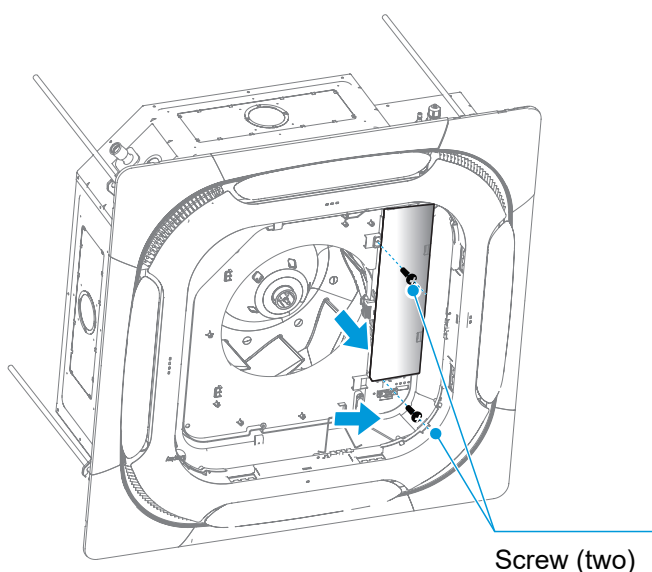
Press the two grille clamps of the air inlet grille to the left and open the grille downwards.

Raise the air inlet grille to about 45°, and push the grille towards the unit direction to separate the grille from the panel. Unfasten the hanging rope and remove the grille.



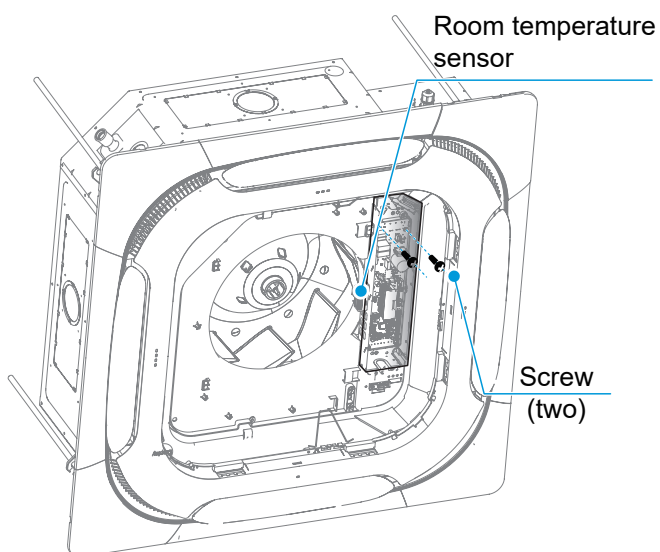
2 Open the electric control box cover.

Remove the two screws at the positions shown in the figure, and pull out the bottom end of the electric control box cover horizontally for a certain distance. Remove the electric control box cover to the right.



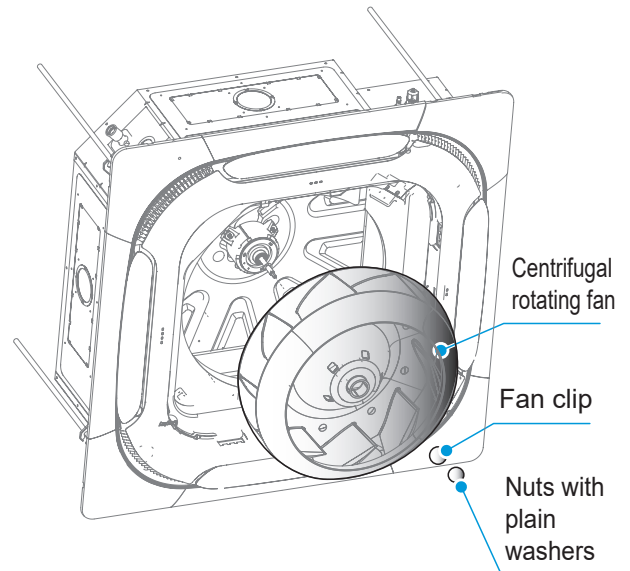
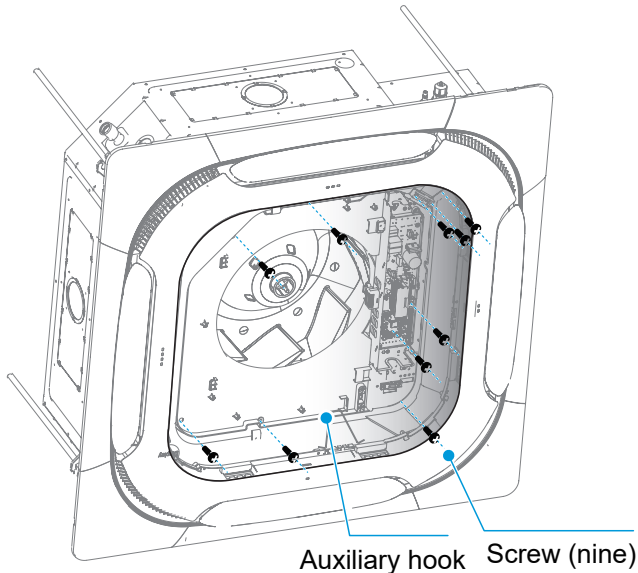
3 Remove the room temperature sensor for troubleshooting and repair.

Unplug the terminals on the main control board and remove the screws at the positions shown in the figure. Remove the main control board and main control board support.



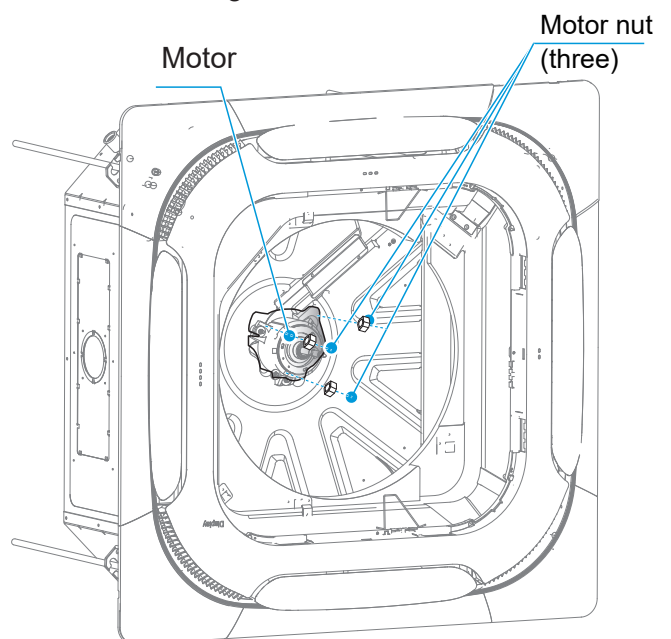
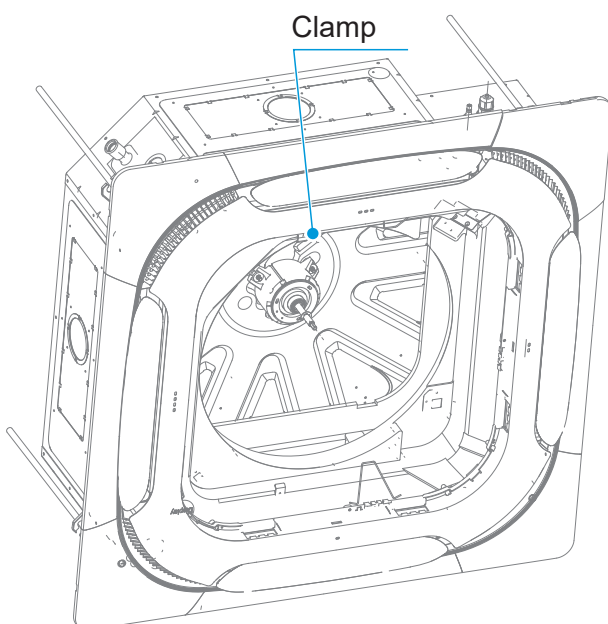
Maintenance of Fan

- 1 Follow the steps above to remove the main control board and the main control board support.
- 2 Loosen the four screws on the right and remove the sheet metal of the electric control box; loosen the five screws on the left, open the auxiliary hooks of the panel, and remove the air guide ring.
- 3 Replace the fan after removing the nuts at the center of the fan and the fan clip. Remove the nuts with flat washers and the fan clip at the position shown in the figure, and remove the centrifugal fan.



Maintenance of Main Motor

- 1 Follow the steps above to remove the fan.
- 2 Take the motor cable out of the clamp.
- 3 Remove the three motor nuts at the positions shown in the figure and remove the motor.



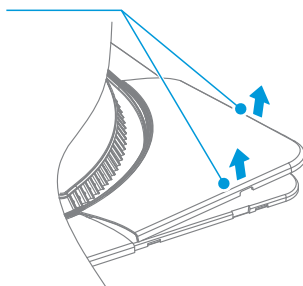
- 4 Replace and install motors in reverse order.

Maintaining the Evaporator and Temperature Sensor

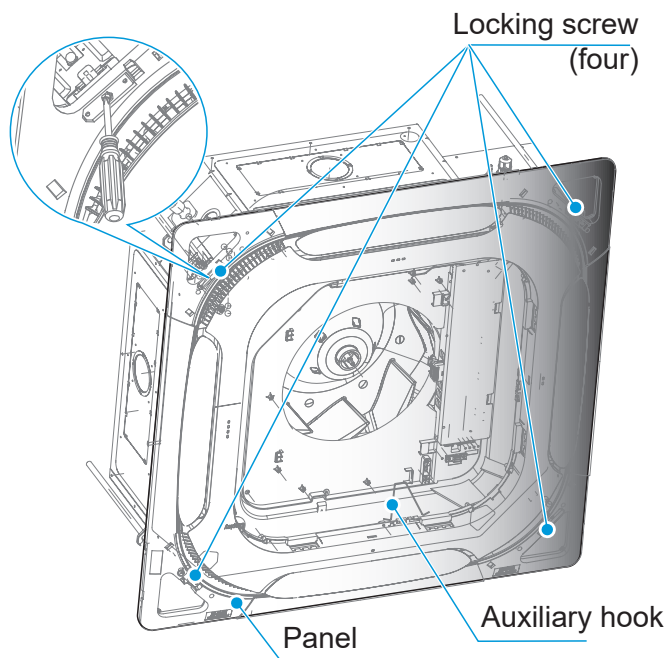
1 Follow the steps above to remove the air inlet grille (recover refrigerant before repairing the evaporator).

2 Remove the decoration panels at four corners.

Exert pulling force from the position for installing/removing buckle

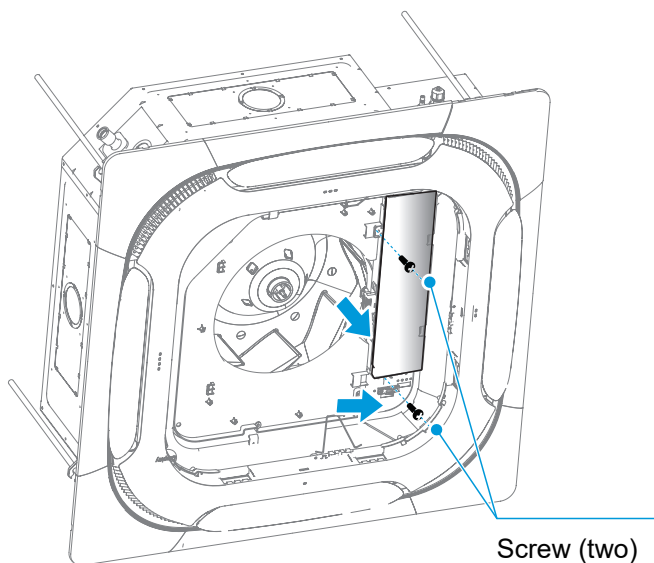


3 Loosen the locking screws at four corners and remove the hooks at four corners of the panel from the IDU. Take the auxiliary hooks of the panel from the air guide ring to remove the panel.



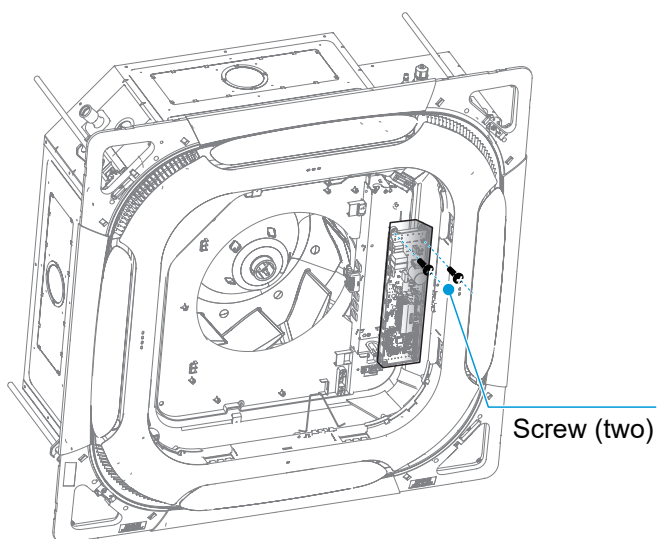
3 Open the electric control box cover.

Remove the two screws at the positions shown in the figure, and pull out the bottom end of the electric control box cover horizontally for a certain distance. Remove the electric control box cover to the right.

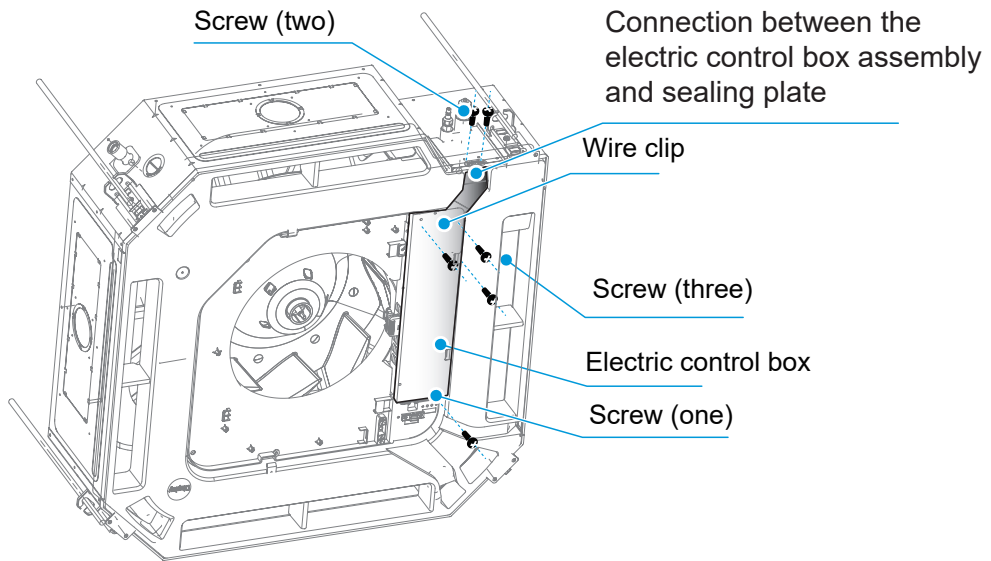


4 Remove the main control board

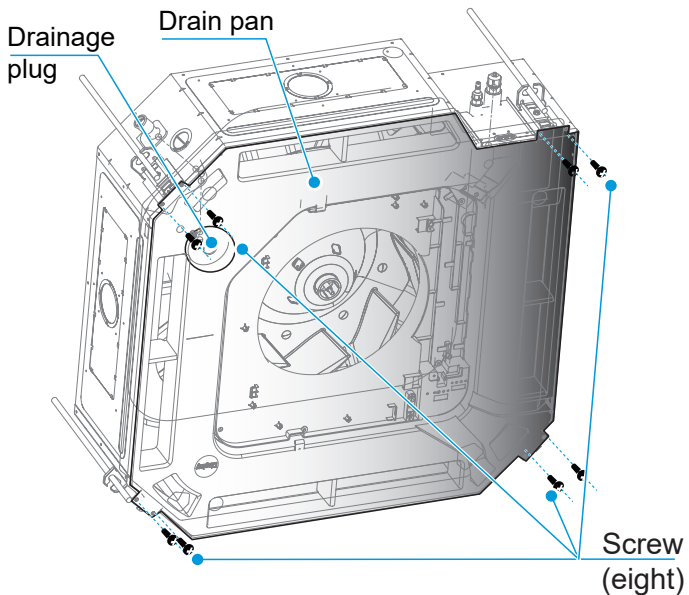
Unplug the terminals of the main control board and remove the screws at the positions shown in the figure.



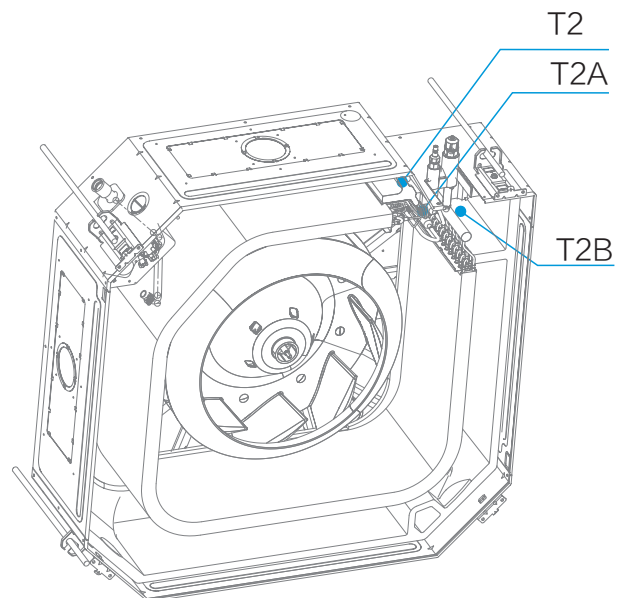
- 5** First remove the screws (two) connecting the electric control box and the sealing plate, and then remove the screws (three) of the wire clip and the screw (one) of the electric control box.



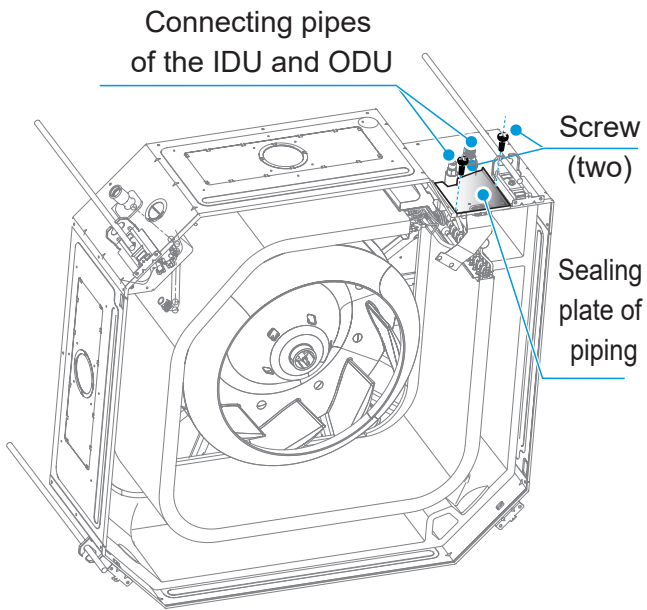
- 6** Place a bucket under the drainage plug of the drain pan, and remove the drainage plug to empty the drain pan. Loosen the screws at the positions shown in the figure and remove the drain pan with the air guide ring.



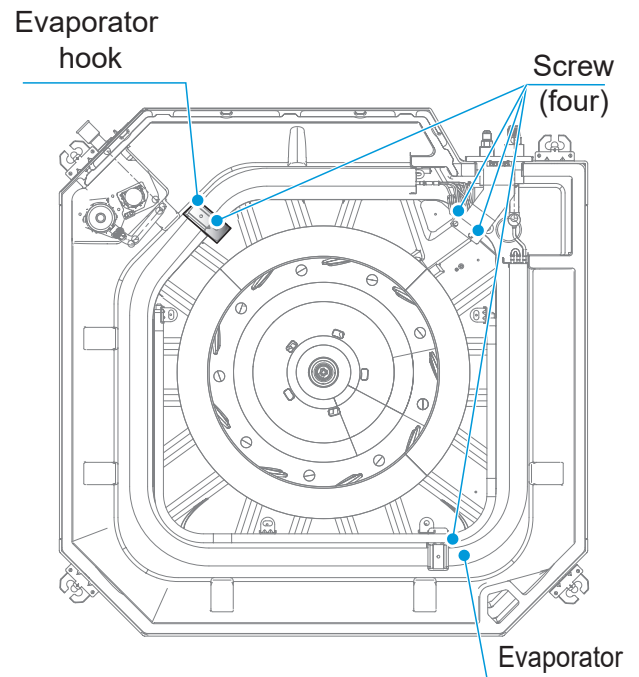
- 7** Troubleshoot the temperature sensor. T2 is located on the long U-shaped pipe, T2A on the capillary tube, and T2B on the output pipe.



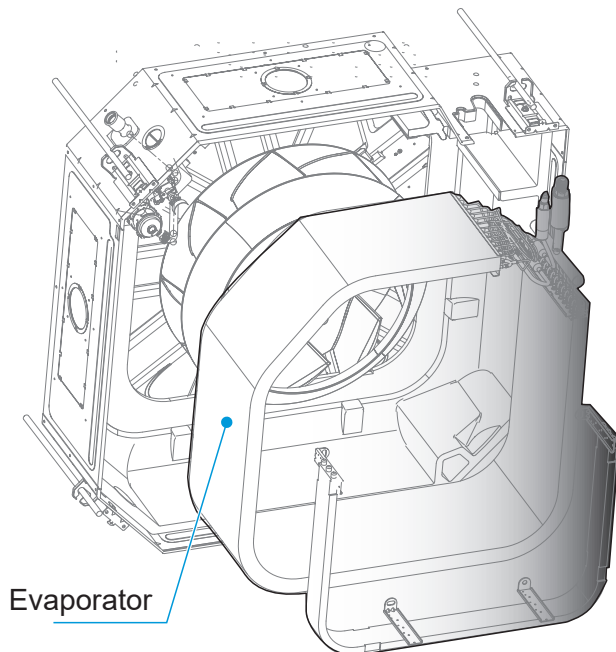
- 8** Remove the connecting pipes of IDU and ODU and unscrew the two screws of the sealing plate of the piping to remove the plate.



- 9** After removing three fixing screws, remove the evaporator fix board. Then remove the evaporator.

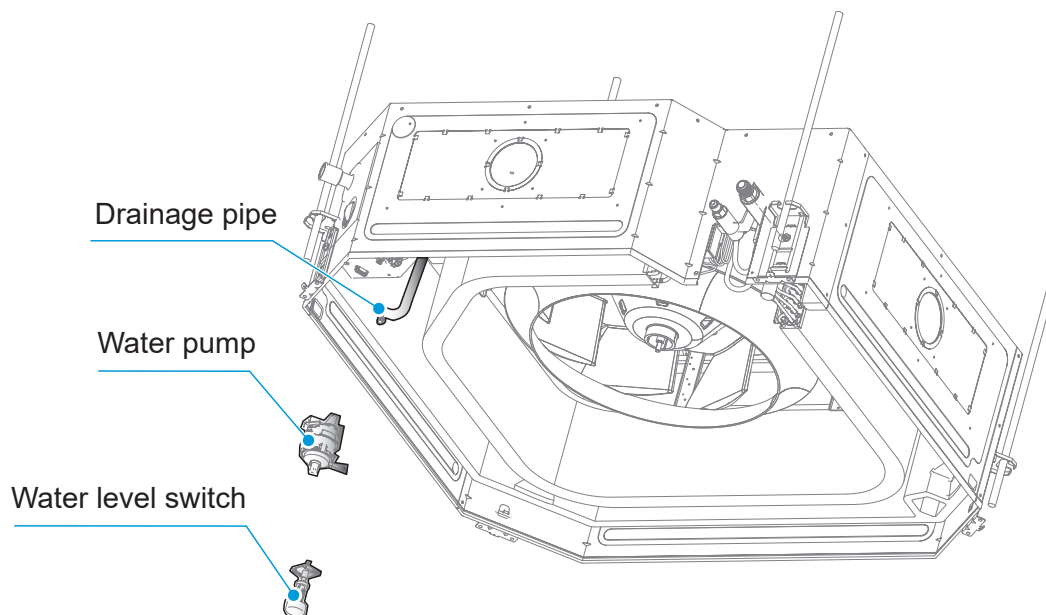


- 10** Remove the evaporator, troubleshoot and repair it.



Maintenance of Water Pump

- 1 Follow the steps above to remove the air inlet grille, electric control box cover, wires, panel, electric control box, air guide ring, and drain pan.
- 2 Unplug the drainage pipe.
- 3 After removing the two fixing screws, the pump can be taken out for replacement or maintenance. Remove the fixing screws of the water pump and the pump bracket, and remove the water pump and water level switch.



WE DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE MACHINE

DICHIARIAMO SOTTO LA NOSTRA SOLA RESPONSABILITÀ CHE LA MACCHINA
WIR ERKLÄREN EIGENVERANTWORTLICH, DASS DIE MASCHINE
NOUS DÉCLARONS SOUS NOTRE SEULE RESPONSABILITÉ QUE LA MACHINE
EL FABRICANTE DECLARA BAJO SU EXCLUSIVA RESPONSABILIDAD QUE LA MÁQUINA

CATEGORY	DIRECT EXPANSION TERMINALS - Heat pump
CATEGORIA	TERMINALI AD ESPANSIONE DIRETTA - Pompa di calore
KATEGORIE	DIREKTVERDAMPFUNGSGERÄTE - Wärmepumpe
CATEGORIE	TERMINAUX À DÉTENTE DIRECTE - Pompe à chaleur
CATEGORIA	TERMINALES POR EXPANSIÓN DIRECTA - Bomba de calor

TYPE / TIPO / TYP / TYPE / TIPO

MODEL	
Q4DN-3-XY D28	Q4DN-3-XY D36
Q4DN-3-XY D45	Q4DN-3-XY D56
Q4DN-3-XY D71	Q4DN-3-XY D80
Q4DN-3-XY D90	Q4DN-3-XY D100
Q4DN-3-XY D112	Q4DN-3-XY D140
Q4DN-3-XY D160	Q4DN-3-XY D180

- **COMPLIES WITH THE FOLLOWING EC DIRECTIVES, INCLUDING THE MOST RECENT AMENDMENTS, AND THE RELEVANT NATIONAL HARMONISATION LEGISLATION CURRENTLY IN FORCE:**
- RISULTA IN CONFORMITÀ CON QUANTO PREVISTO DALLE SEGUENTI DIRETTIVE CE, COMPRESE LE ULTIME MODIFICHE, E CON LA RELATIVA LEGISLAZIONE NAZIONALE DI RECEPIMENTO:
- DEN IN DEN FOLGENDEN EG-RICHTLINIEN VORGESEHENEN VORSCHRIFTEN, EINSCHLIEßLICH DER LETZTEN ÄNDERUNGEN, SOWIE DEN ANGEWANDTEN LANDESGESETZEN ENTSPRICHT:
- EST CONFORME AUX DIRECTIVES CE SUIVANTES, Y COMPRIS LES DERNIÈRES MODIFICATIONS, ET À LA LÉGISLATION NATIONALE D'ACCUEIL CORRESPONDANTE:
- ES CONFORME A LAS SIGUIENTES DIRECTIVAS CE, INCLUIDAS LAS ÚLTIMAS MODIFICACIONES, Y A LA RELATIVA LEGISLACIÓN NACIONAL DE RECEPCIÓN:

☒	2006/42/EC	machinery directive / direttiva macchine Maschinenrichtlinie / directive sur les machines directiva máquinas
☒	2014/30/UE	electromagnetic compatibility / compatibilità elettromagnetica Elektromagnetische Verträglichkeit / compatibilité électromagnétique compatibilidad electromagnética
☒	2009/125/CE	Ecodesign / Progettazione ecocompatibile / Ecodesign / Éco-conception / Ecodiseño
☒	2011/65/UE	2015/863/UE RoHS

-Unit manufactured and tested according to the followings Standards:
-Unità costruita e collaudata in conformità alle seguenti Normative:
-Unité construite et testée en conformité avec les Réglementations suivantes
-Unidad construida y probada de acuerdo con las siguientes Normativas
-Gebautes und geprüfetes Gerät nach folgenden Normen

EN 60335-1 :2012/A15 :2021 EN 60335-2-40 :2003/A13 :2012
EN 62233 :2008 EN IEC 55014-1 :2021 EN 55014-1 :2017/A11 :2020
EN IEC 55014-2 :2021 EN 55014-2 :2015 EN IEC 61000-3-2 :2019/A1 :2021
EN IEC 61000-3-2 :2019 EN 61000-3-3 :2013/A2 :2021
EN IEC 61000-3-3 :2013/A1 :2019 EN IEC 61000-6-3 :2021
EN IEC 61000-6-1 :2019
EN 62321-1 :2013 EN 62321-2 :2014 EN 62321-3-1 :2014
EN 62321-4 :2014 EN 62321-5 :2014 EN 62321-6 :2015
EN 62321-7-1 :2015 EN 62321-7-2 :2017 EN 62321-8 :2017

-Responsible to constitute the technical file is the company n°00708410253 and registered at the Chamber of Commerce of Belluno Italy
-Responsabile a costituire il fascicolo tecnico è la società n° 00708410253 registrata presso la Camera di Commercio di Belluno Italia
-Verantwortliche für die technischen Unterlagen zusammenstellen n°00708410253 ist das Unternehmen bei der Handelskammer von Belluno Italien registriert
-Responsable pour compiler le dossier technique est la société n°00708410253 enregistrée à la Chambre de Commerce de Belluno en Italie
-Encargado de elaborar el expediente técnico es la empresa N° 00708410253 registrada en la Cámara de Comercio de Belluno Italia

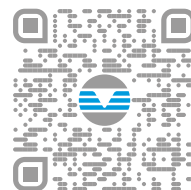
FELTRE, **19/04/2023**

NAME / NOME / VORNAME / PRÉNOM / NOMBRE
SURNAME / COGNOME / ZUNAME / NOM / APELLIDOS
COMPANY POSITION / POSIZIONE / BETRIEBSPOSITION / FONCTION / CARGO

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