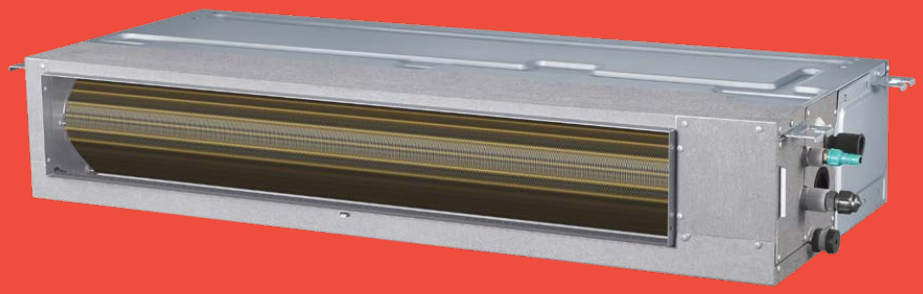
LOW STATIC PRESSURE DUCT

CNT3-3-XY D15÷D112 series



MANUAL

FOR INSTALLATION, USE AND MAINTENANCE

M0Q200002-00 - 01/2024

PREFACE

Dear users,

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

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

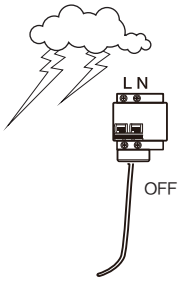
No Strong Current

No open flames

No acid and alkali substances

2 Safety Precautions

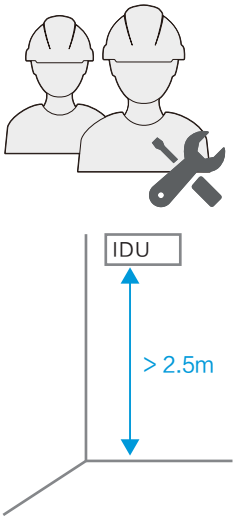
[Danger]



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)

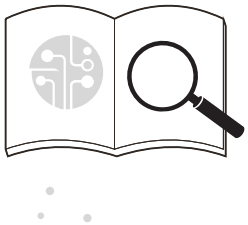
Cleaning and user maintenance shall not be made by children without supervision.(Only European)

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 comercial 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.

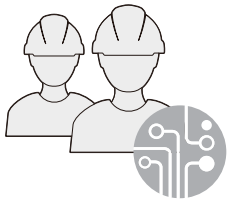
Wiring work must be performed by a duly qualified electrician.

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.



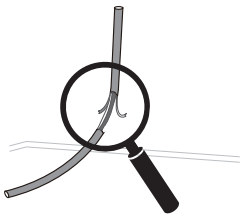
A separate power supply meeting the requirements of rated parameters must be provided for the air conditioner.

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 riskof 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 whiule 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.

a) Become familiar with the equipment and its operation.
b) Isolate system electrically.
c) Before attempting the procedure ensure that:
- *mechanical handling equipment is available, if required, for handling refrigerant cylinders;*
- *all personal protective equipment is available and being used correctly;*
- *the recovery process is supervised at all times by a competent person;*
- *recovery equipment and cylinders conform to the appropriate standards.*

d) Pump down refrigerant system, if possible.
e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
f) Make sure that cylinder is situated on the scales before recovery takes place.
g) Start the recovery machine and operate in accordance with manufacturer's instructions.
h) Do not overfill cylinders. (No more than 80 % volume liquid charge).
i) Do not exceed the maximum working pressure of the cylinder, even temporarily.
j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
k) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

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

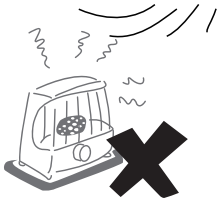
1 Precautions for Use

⚠ [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.

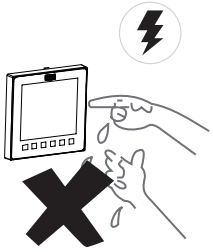
Do not place the combustion appliance in the direct air supply position of the air conditioner; otherwise, incomplete combustion of the combustion appliance may occur.

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.

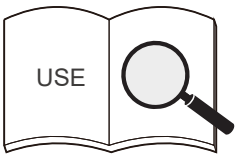
Do not use fuses beyond the specified capacity in the manual. For example, iron wires and copper wires will lead to failure, fire and other consequences. The power supply used must be a dedicated one for the air conditioner within the allowable voltage range.

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]

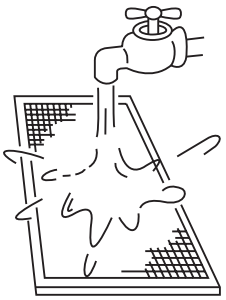


To use the unit normally, please follow the Operating Instructions herein; otherwise, internal protection or dripping of the unit may occur, or the cooling and heating effect may be reduced.

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.

When using the air conditioner or replacing the filter screen for the first time, please set the wire controller by following the steps below:

1. Reset the initial static pressure on the wire 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. (For details, see the chapter "Application Control" in the installation section)
2. Set the difference between the initial and final resistance of the filter screen. (See the instructions of wire controller for details)

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

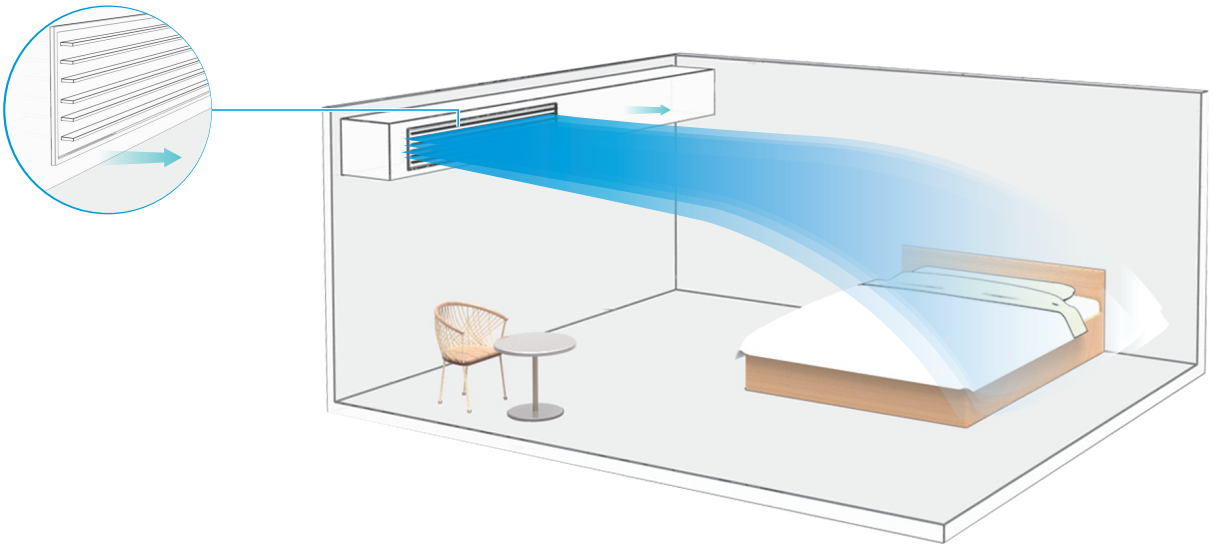
2 Optimal Operation Mode

According to the characteristics of cold air sinking and hot air rising, it is suggested that the air outlet direction of the air deflector should be adjusted respectively during cooling and heating to improve the effect of cooling and heating.

When the components at the air outlet are used, it is recommended to make adjustments below.

Cooling

It is recommended to adjust horizontally the wind deflector of the air outlet grille to achieve a good cooling effect in the whole room.

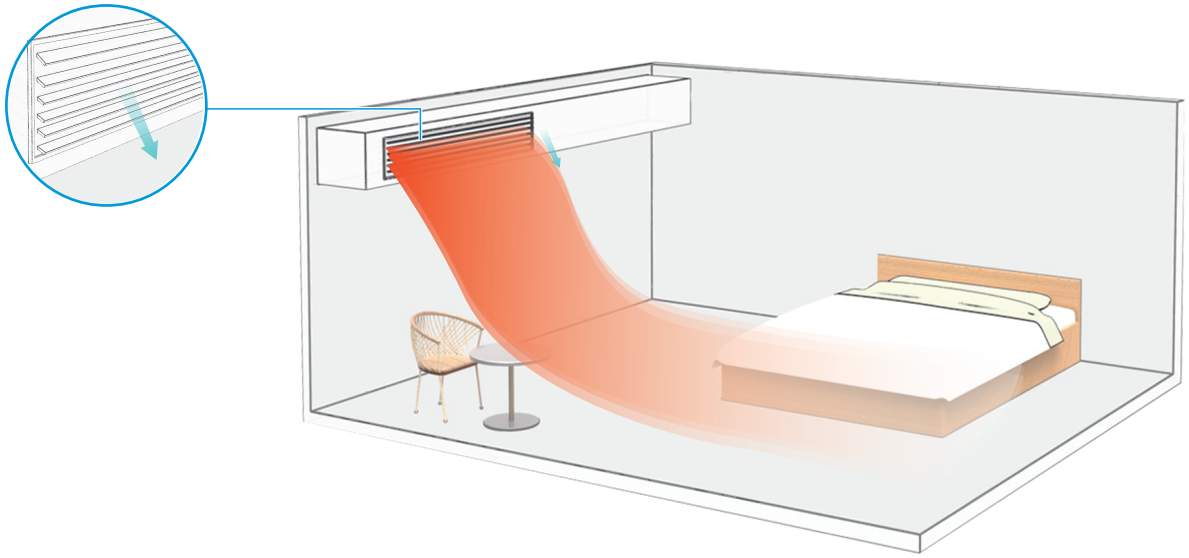


[Caution]

If cooling works with the air outlet facing downwards, condensation may occur on the surface of the air outlet and the wind deflector.

Heating

It is recommended to adjust downward the wind deflector of the air outlet grille to achieve a good heating effect on the bottom floor of the room.



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 and display an error code.

3 Non-air Conditioner Fault Phenomenon

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.
Anti-cold wind 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.

■ The indoor unit gives off white mist

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 draining pump running.
4. When the air conditioner just starts or stops running, a "squeak" and "clopping" sound may be heard, which is caused by thermal expansion and cold shrinkage of components 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, it is more difficult for the air conditioner to absorb heat from the outdoor air, so the heating capacity will decrease gradually. It is recommended to use other heating devices for heating together.

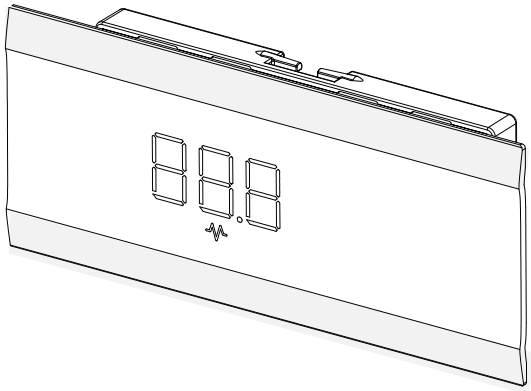
Mode conflict

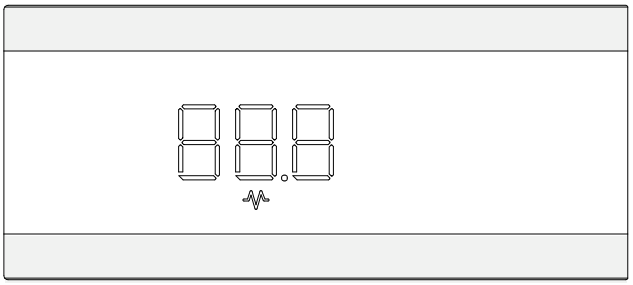
For the same air conditioning system, the indoor unit can only work in cooling, heating or other modes at the same time. When the operation modes of multiple indoor units are inconsistent, a mode conflict will be caused. It is necessary to ensure that the operating mode of all indoor units is consistent.

No hot and cold options

For the same set of air conditioning system, when the outside unit is changed over to the priority mode, the mode supported by the indoor unit can be selected for the main wire controller. The wire controller of the non-main indoor unit displays the icon of "No hot and cold options". The mode setting is unavailable and is the same as the operation mode of the main indoor unit.

4 Display components (Sold separately)





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. When the electric auxiliary heating is turned on, the electric auxiliary heating icon " " on the main interface will illuminate.
4. The illuminated display on the main interface can be turned on or off by pressing the light key on the remote controller.
5. 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. See the section "Fault Code and Indication Definition" for details.

[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

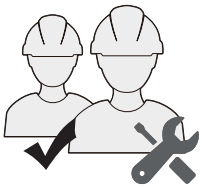
Qualification and Safety Regulation Requirements

⚠ [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.

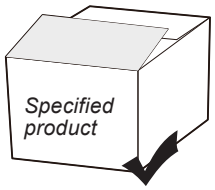


Verify whether an earth leakage circuit-breaker is installed.
An earth leakage circuit-breaker must be installed; otherwise, electric shock may occur.

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.

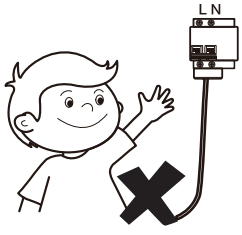
Be sure to use our designated products for optional parts and additional parts for sale.
When installing optional parts and additional parts for sale, please use our designated optional parts and entrust professionals to install them. Improper installation may cause fire, electric shock, water leakage 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.

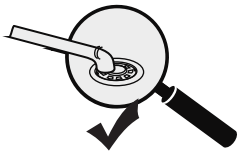
The main power switch of the air conditioner shall be set at a position out of reach of children.
Prevent children from playing with the main power switch to cause danger, and do not cover the main power switch with curtains and other inflammables.



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 (per inch) 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.

⚠ [WARNING for Using R32 Refrigerant]

When flammable refrigerant are employed, appliance shall be stored in a well -ventilated area where the room size corresponds to the room area as specifiec for operation.

For R32 frigerant models:

Appliance shall be installed, operated and stored in a room with a floor area larger than X m² .

Appliance shall not be installed in an unvertilated space, if that space is smaller than X m².

When using R32 refrigerant, the applicable room area must be greater than or equal to the minimum applicable room area. For the minimum applicable room area, please refer to the manual of the outdoor unit.

Reusable mechanical connectors and flared joints are not allowed indoors.(EN Standard Requirements).

When mechanical connectors are reused indoors, sealing parts shall be renewed. When flared joints are reused indoors, the flare part shall be re-fabricated. (IEC Standard Requirements)

Mechanical connectors used indoors shall comply with ISO 14903.

[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.

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.

[Note]

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 *Fig. 1*)
- 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 greater than 2.5m 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.)

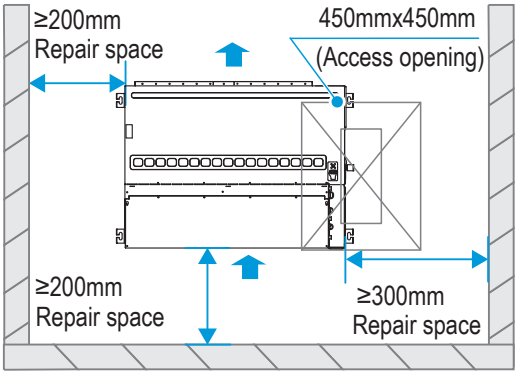


Fig. 1

Suggestions on selection of installation location

Living room, office and other crowded places

Generally, a concealed arrangement and the air supply mode of "side air supply and lower air return" shall be adopted.

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.

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 passage between the dining room and the kitchen. 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.

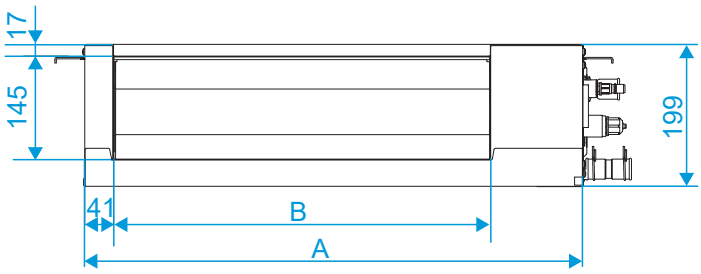
Bedroom

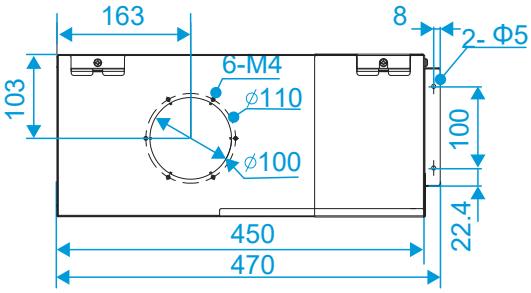
The air conditioner can be installed on the suspended ceiling above the bedroom door, or near the window. The flexible air supply mode of "side air supply and lower air return" shall be adopted. In terms of installation position, avoid blowing air directly onto the bed as far as possible.

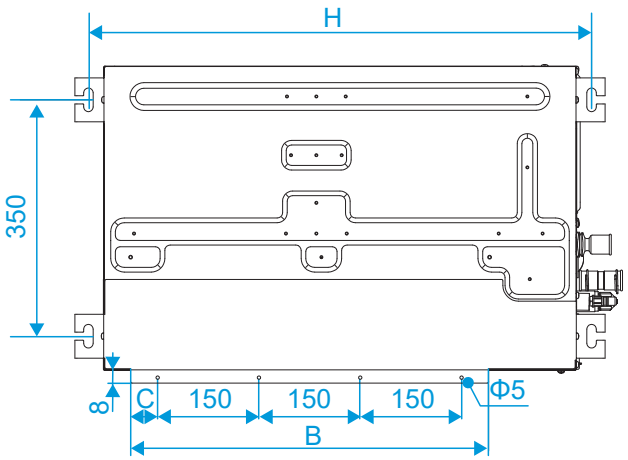
Product size

(Unit: mm)

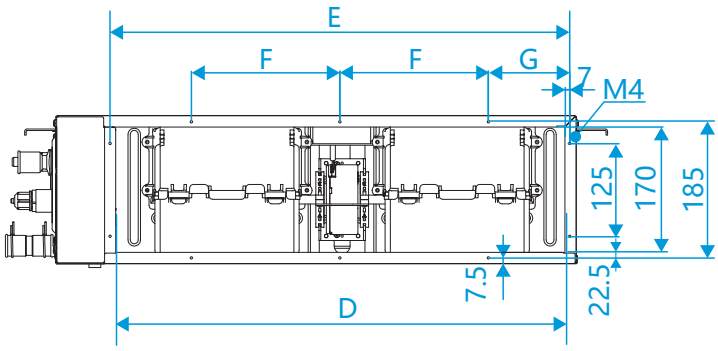
Appearance and size of air outlet and fresh air outlet



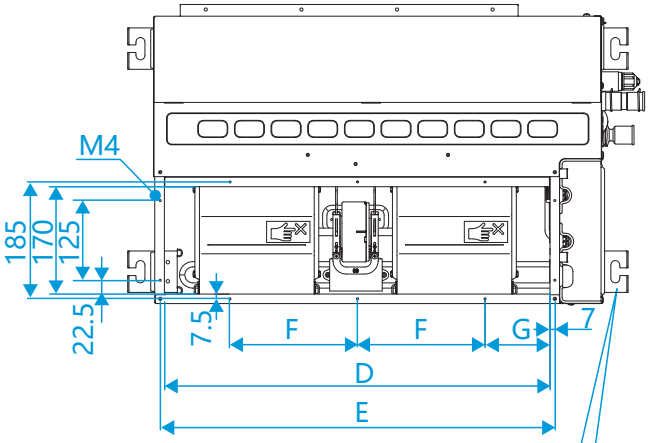




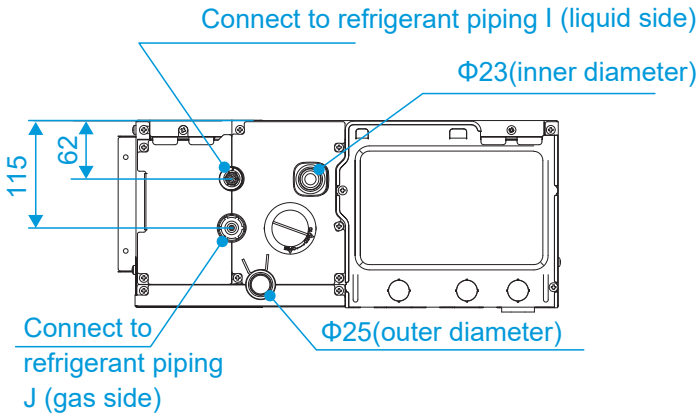
Size of return air inlet (rear air return mode):

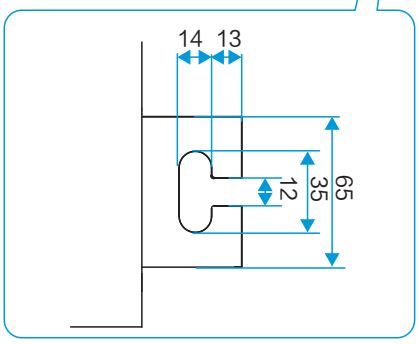


Size of return air inlet (lower air return mode) and distance between lifting lugs:



Piping and water pipe size:





Model	A	B	C	D	E	F	G	H	I	J
15~28	550	380	40	455	469	250	109.5	595	ϕ6.35	ϕ12.7
36	700	530	40	605	619	200	109.5	745		
45~56	900	730	65	805	819	200	109.5	945		
71	1100	930	15	1005	1019	200	109.5	1145	ϕ9.52	ϕ15.9
80~112	1600	1400	25	1505	1519	200	159.5	1645		

2 Installation Materials

Product accessories

List of accessories				
Instation & Owner's Manual X 1 IDU Installation Instructions (Make sure to hand it over to the user)	Drainage pipe X 1 N/A for models with drainage pumps	Insulation pipe X 2 Used for thermal insulation at piping connections	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
Air filter X 1	Display components (Sold separately)	Remote controller (Sold separately)	Wire controller (Sold separately)	

[Note]

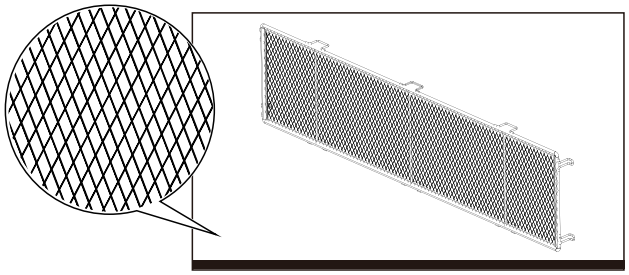
Please check whether the above items are included in the accessory package. If not, please contact the dealer for handling.

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

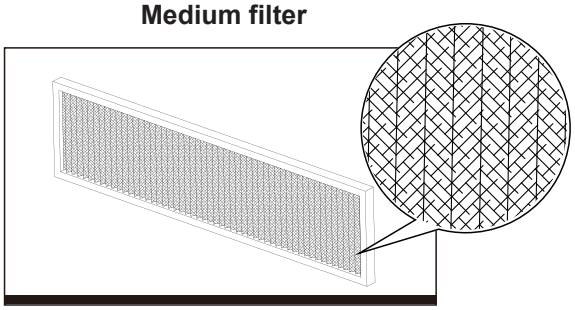
Customers may choose to purchase optional accessories, such as wire controller, display component, and remote controller).

The air filter includes primary and medium filters.

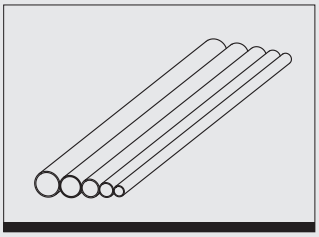
Primary filter



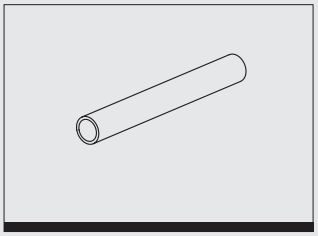
Medium filter



Locally sourced accessories

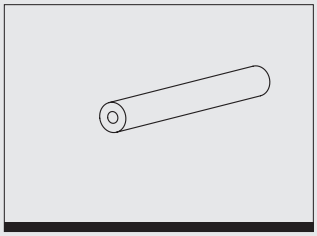


Copper pipe (unit: mm)		
Model / Piping	Liquid side	Gas side
15~56	Φ6.4×0.75	Φ12.7×0.75
71~112	Φ9.5×0.75	Φ15.9×1.0
Remarks	It is used for the connection of refrigerant system of indoor unit. Soft copper pipe (T2M) is recommended, and its length shall be based on the actual situation.	



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.



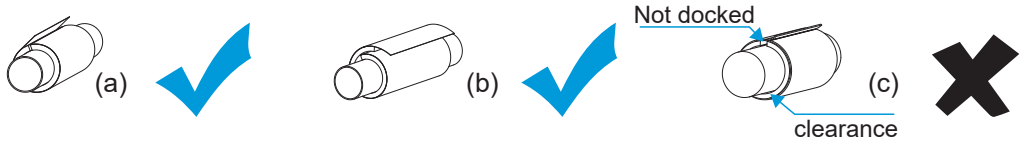
Insulation pipe

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, air ducts, flexible hoses connecting air outlets, drainage pipes, lifting screws, air supply and return grilles, 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.

When installing the insulation pipe on site, please cut it according to the actual needs. (refer to the following two methods (a) (b) for installation, (c) is the wrong method)

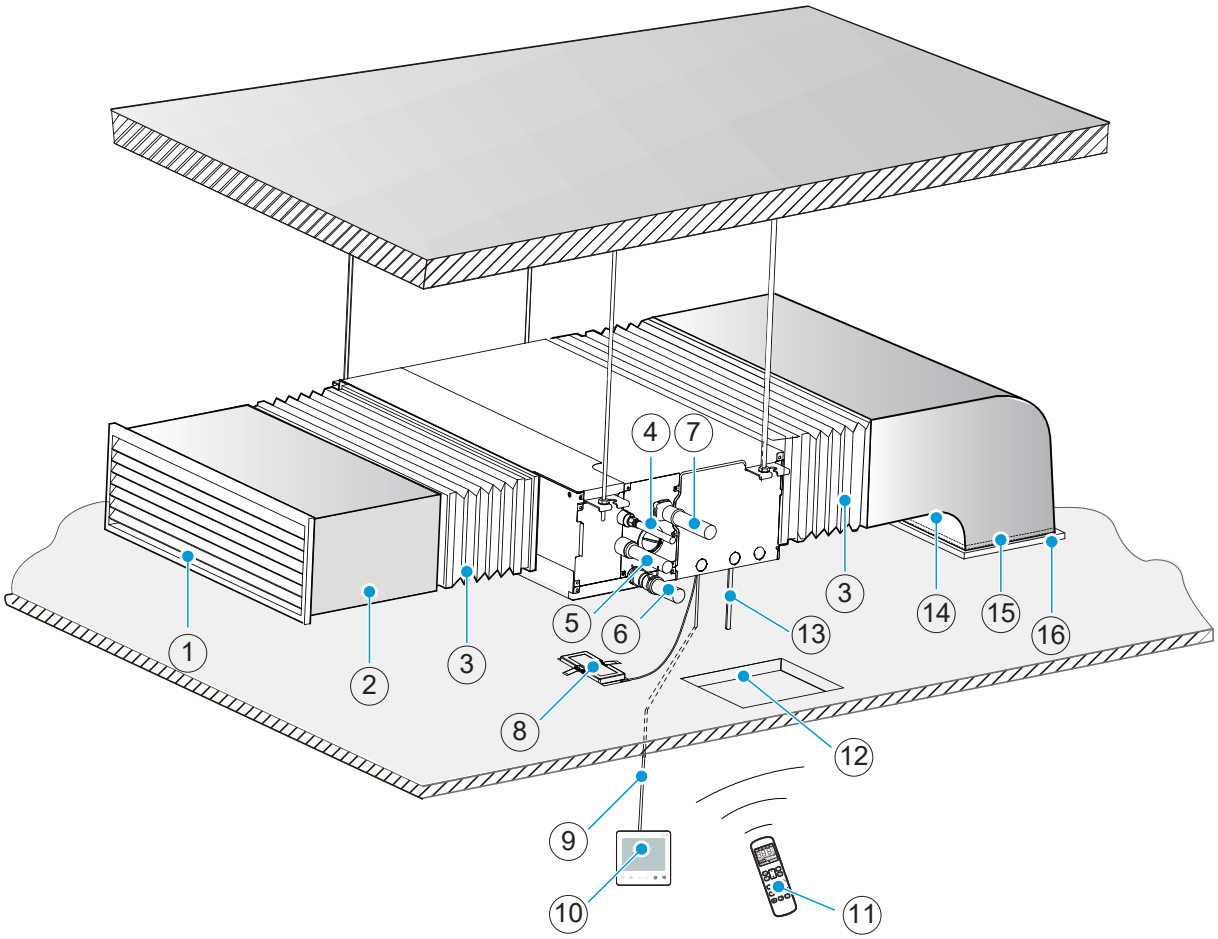


Requirements for insulation materials

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: a. 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. b. 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.
Insulation of air ducts	1. The insulation of air duct components and equipment shall be carried out after the air duct system has passed the air leakage test or quality inspection. 2. Generally, centrifugal glass wool or rubber and plastic materials are used for thermal insulation, or new insulation air ducts shall be used. The insulation layer shall be flat and compact, without cracks, voids and other defects. 3. The supports, hangers and brackets of the air ducts shall be arranged outside the insulation layer, and skids shall be inlaid between the supports, hangers and brackets and the air ducts. 4. Thickness of insulation layer: a. For the air supply and return ducts laid in non-air-conditioned rooms, the thickness of the insulation layer shall not be less than 40 mm if centrifugal glass wool is used for insulation. b. For the air supply and return ducts laid in the air-conditioned rooms, the thickness of the insulation layer shall not be less than 25 mm if centrifugal glass wool is used for insulation. c. If rubber and plastic materials or other materials are used, the thickness of the insulation layer shall be based on the design requirements or the calculations.
Insulation of drainage pipe	1. The indoor part of the drainage pipe shall be insulated to prevent condensation, and a protective sleeve 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 Component Name

Description of components



① * Air outlet grille	② * Air outlet duct	③ * Flexible hose
④ Air pipe	⑤ Liquid pipe	⑥ Drainage pipe without pump
⑦ Drainage pipe with pump	⑧ Display components(Sold separately)	⑨ * Connecting wire
⑩ Wire controller(Sold separately)	⑪ Remote controller(Sold separately)	⑫ Access panel
⑬ * Power supply and ground wire	⑭ Air filter screen (Sold separately)	⑮ * Return air duct
⑯ * Return air grille		

*" * " indicates the accessory is purchased on site.*

[Note]

All parts selected or sold separately shall be our accessories.

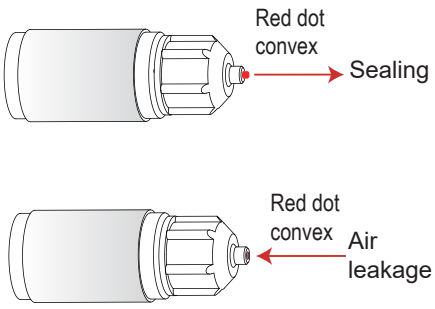
Please refer to the product manual for optional accessories such as wire controller.

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.

4 Preparations 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 components, such as the heat exchanger, are worn.
2. Check the two sealing nuts 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.



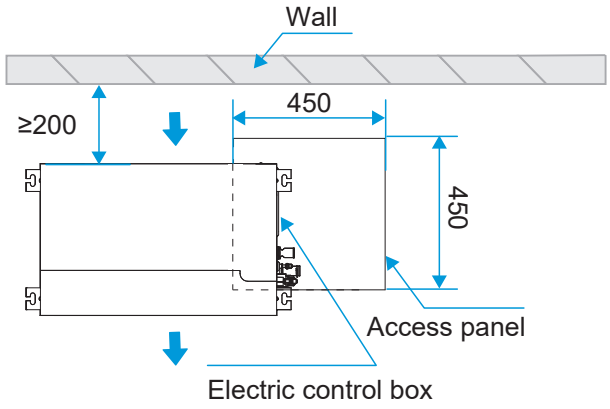
Positioning of internal unit

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

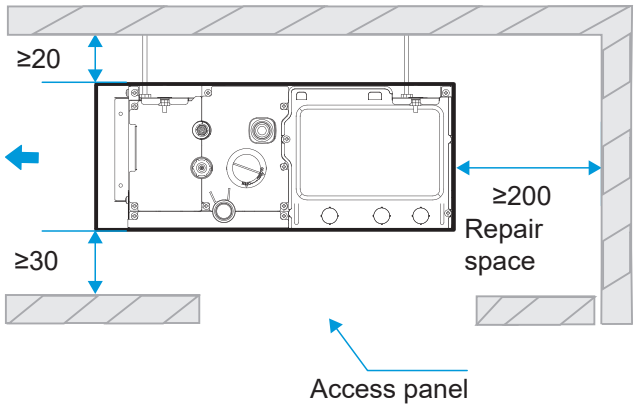
1. The air outlet and return mode of the indoor unit and its lifting position shall be determined according to the design drawings.
2. A line shall be drawn to locate the drilling position of the suspender bolt according to the three-dimensional drawing of the unit.
3. An access hole shall be provided on the side of the electric control box (recommended size: 450 x 450 mm).
4. In order to facilitate the removal of the motor, the rear end of the indoor unit shall be at least 200 mm away from the wall.
5. There shall be no obstacles within 200 mm of the return air inlet.
6. Infrared level is recommended for line drawing and positioning.

(Unit: mm)

Top view



Side view

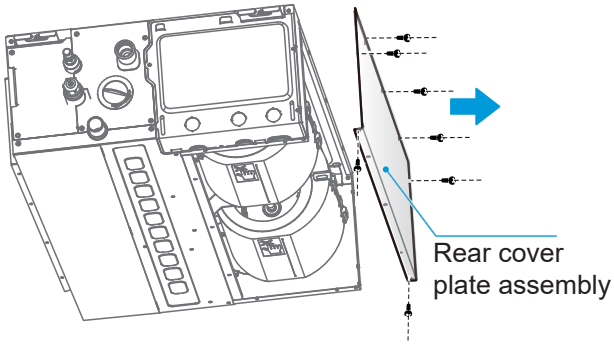


On-site adjustment of return air box

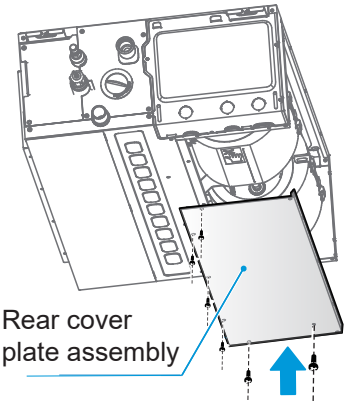
This series of air conditioners have two air return modes:

1. Lower air return mode, a factory default for 15~71 models;
2. Rear air return mode, a factory default for 80~112 models. Both air return modes can be customized, and can also be adjusted on site. See the following two diagrams for the adjustment method:

Removal of rear cover plate assembly



Installation of rear cover plate assembly



5 Installation of Indoor Units

⚠ [Warning]

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 screws

1. According to the distance between the four lifting holes of the indoor unit, use a pencil to draw the positions of the fixing screws on the ceiling for lifting the indoor unit. After drilling, tighten the processed expansion screw (the screw is a 490 mm long full-thread bolt welded on the φ8 mm expansion screw. Then place it with 2 nuts into the hole), and then place the four corners of the indoor unit into the bolts to lift the indoor unit.
2. Four suspenders shall be used for lifting, and the diameter of lifting bolts shall not be less than 10 mm. The suspender must be strong enough to bear twice the weight of the indoor unit, and the lower part of the suspender shall be locked with double nuts.
3. If the length of the suspender exceeds 1.5m, two diagonal braces must be added at the diagonal line to prevent shaking.
4. Removal of ceiling: As the building structures are different, please consult with the interior decorator of the building for specific measures.

a. Ceiling treatment: The ceiling base frame must be strengthened in order to ensure ceiling levelness and prevent the ceiling from vibrating.

b. Cut and remove the ceiling base frame.

c. Reinforce the end faces left after the ceiling is removed, and further reinforce the base frame securing both ends of the ceiling.

d. After the main body is lifted, carry out piping and wiring operations in the ceiling, and determine the leading-out direction of piping after the installation location is selected.

Especially in the case of existing ceilings, please pull the refrigerant piping, drainage pipes, indoor and outdoor connecting wire, and wire controller wires to the connection positions before lifting the unit.

[Caution]

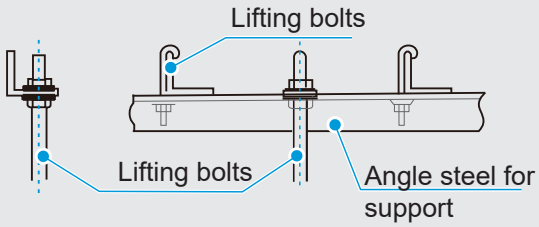
The bolts shall be made of high-quality carbon steel (galvanized or otherwise rust-proofed) or stainless steel.

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.

Installation of lifting bolts

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

In the case of concrete slab	In the case of steel frame
Use embedded bolts and pull bolts	Directly set and use an angle steel for support.
	

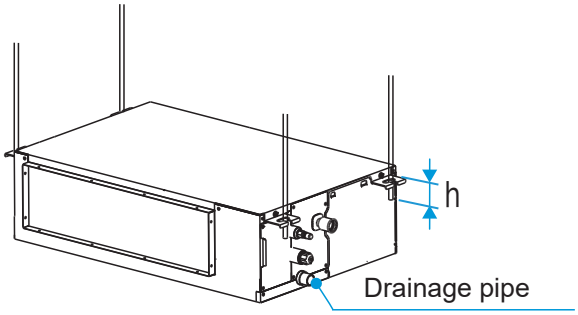
Installation of indoor unit

[Caution]

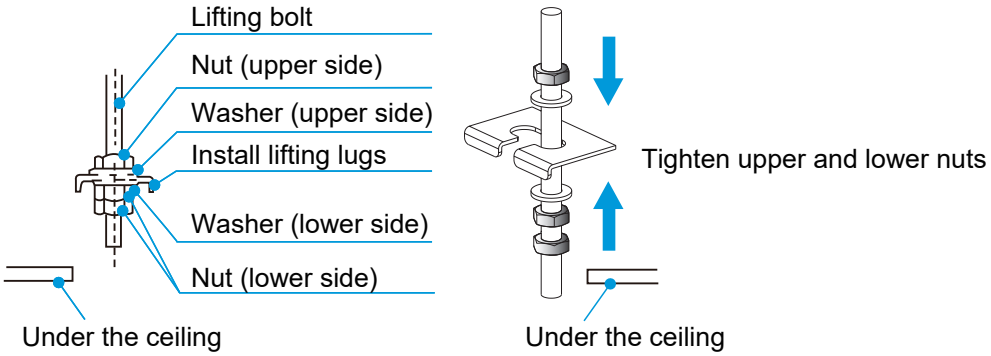
The indoor unit shall not be installed close to the ceiling, and it shall be kept level or within 1° inclination towards the drainage side. (For the models without drainage pumps, an inclination of 1/100 towards the drainage side is required, and any inclination towards the non-drainage side is not allowed.) Otherwise, it will cause poor drainage and water leakage.

After the indoor unit is lifted, measures shall be taken to prevent dust and debris. For example, the accompanying plastic packing bags may be used for protection.

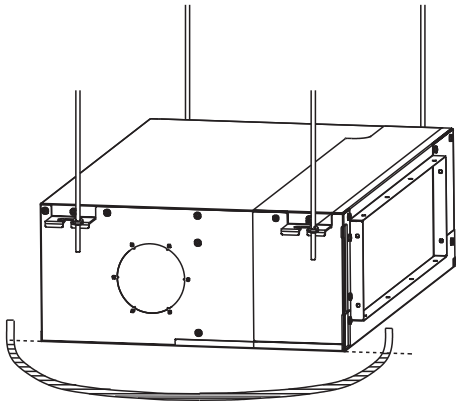
① Adjust the position of the nut, determine the gap between the washer (lower side) and the ceiling according to the actual construction conditions, control the distance h between the lifting lug and the lifting bolt within the range of 40~80 mm, so as to facilitate the pipe connection and the removal of electrical box cover.



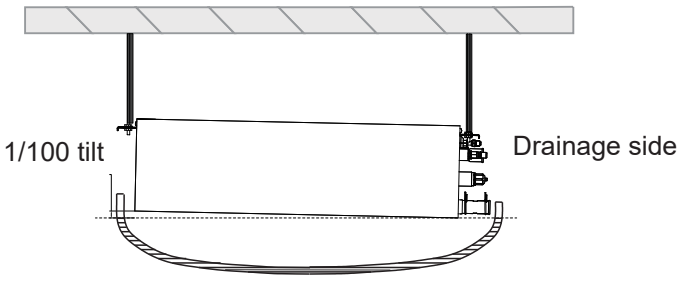
② Put the lifting bolt into the oblong hole of the lifting lug, and be sure to fix the upper and lower parts of the lug with washers and nuts.



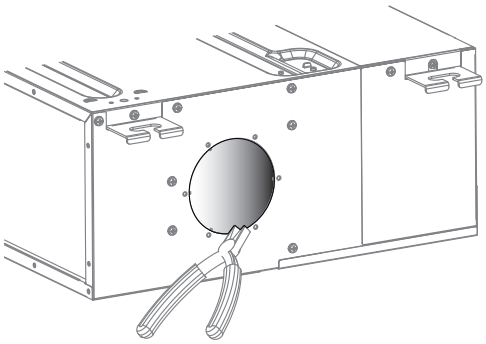
③ Observe the water level with a transparent soft water pipe (law of communicating vessels), and confirm the levelness in the width direction of the unit to keep it level.

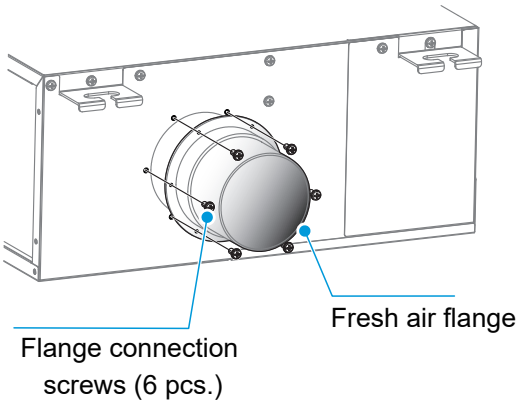


④ Observe the water level with a transparent soft water pipe (law of communicating vessels), and confirm the inclination angle in the length direction of the unit. The inclination angle shall be 1/100 downward to the drainage side, and any inclination downward to the non-drainage side is not allowed.



⑤ For models with fresh air function, please remove the knockout hole at the fresh air unit on the side of the machine with diagonal pliers or other tools before installing the indoor unit. Install the fresh air flange at the fresh air unit and fix it with flange connecting screws.





⚠ [Warning]

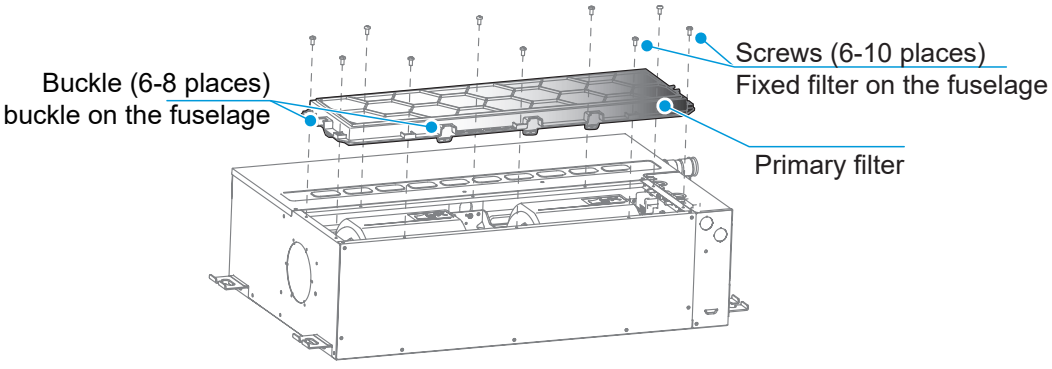
When connecting the fresh air equipment, please note that the fresh air duct needs to be insulated properly. It is recommended to cover it with foam insulation materials with a thickness of more than 10 mm.

The temperature difference between the fresh air temperature provided by the fresh air equipment to the indoor unit and the indoor temperature should not exceed 5°C. Otherwise, there is a risk of condensation in the air return area of the air conditioner. Please use the fresh air equipment with temperature regulation function. Alternatively, cover the enclosure of the side wall of fresh air outlet of the air conditioner with foam insulation materials with a thickness of more than 10 mm, and adjust the area and thickness appropriately according to the actual use conditions.

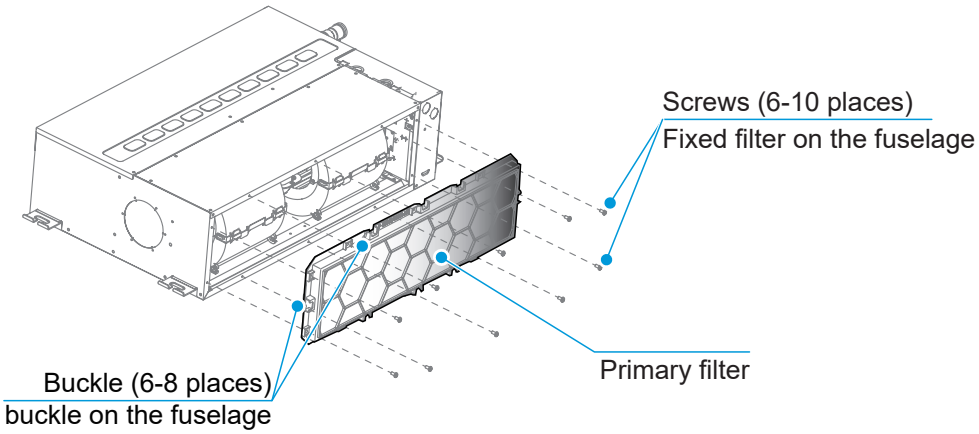
Installation of air filter

① Installation of the monolithic filter

Lower return air installation

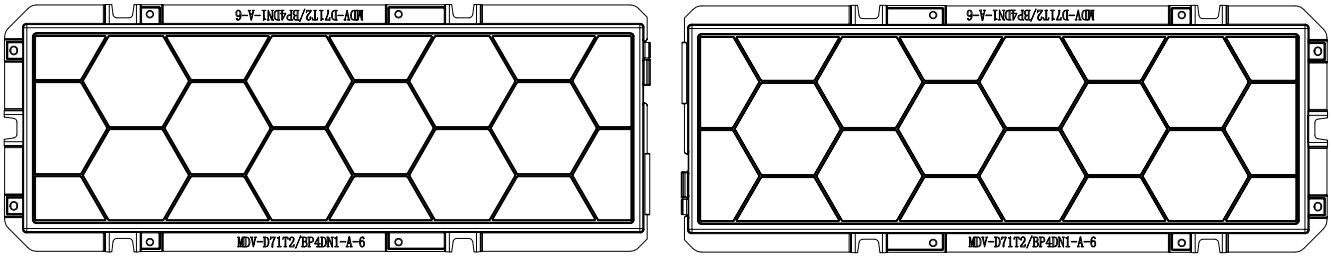


Back air installation

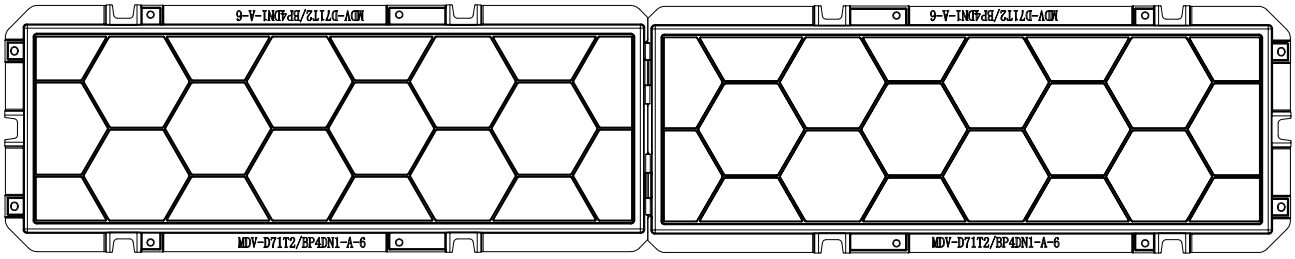


② Installation of the double-piece filter

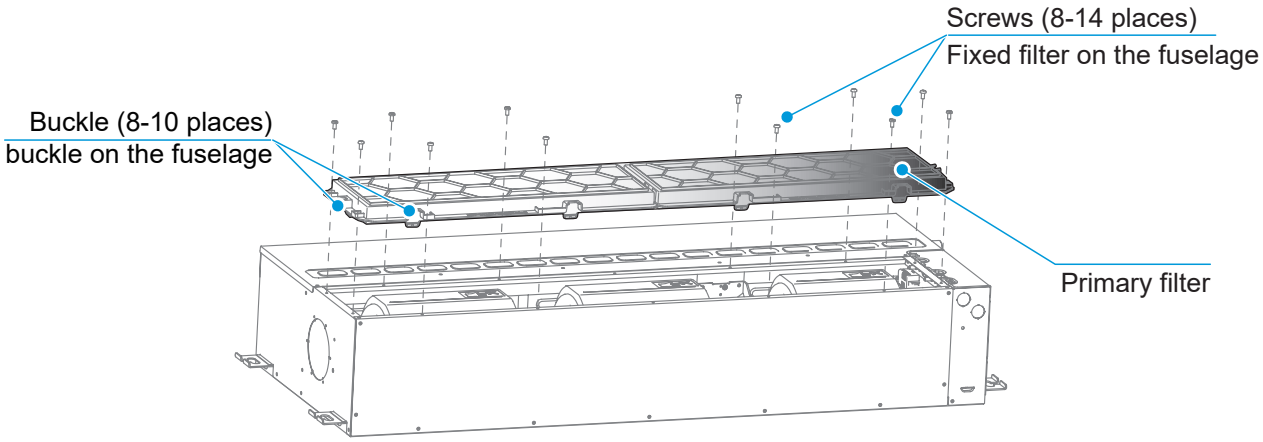
Before filter splicing



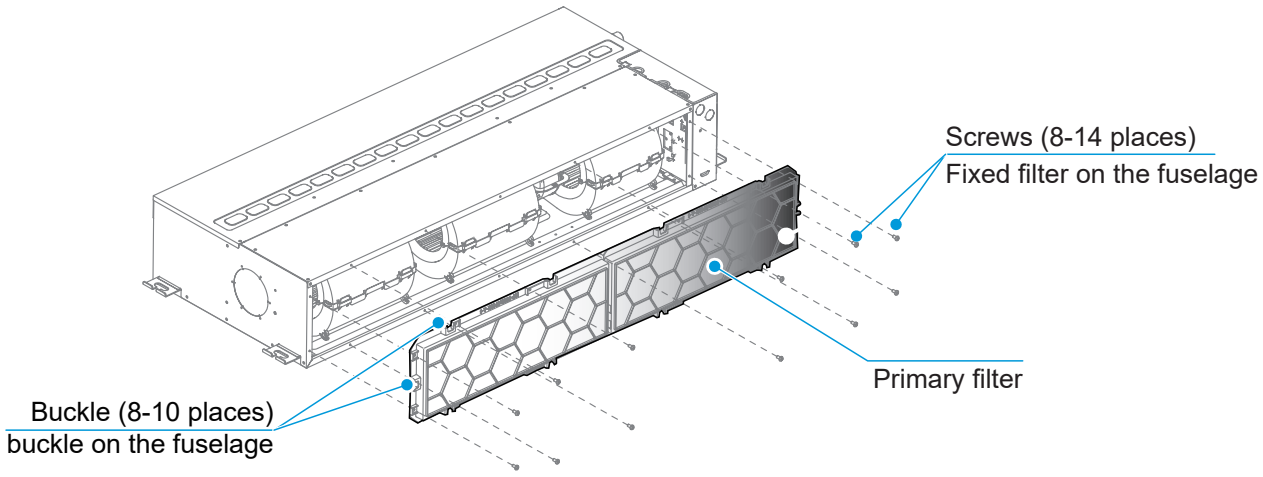
After the filter is spliced



Lower return air installation



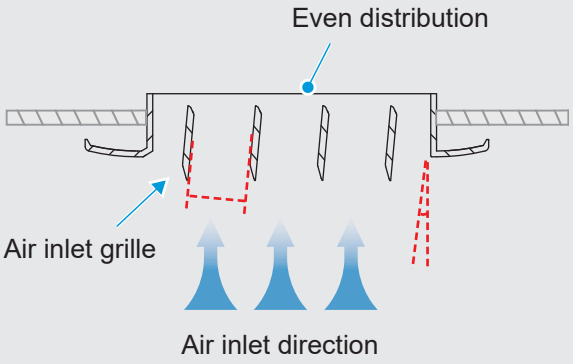
Back air installation



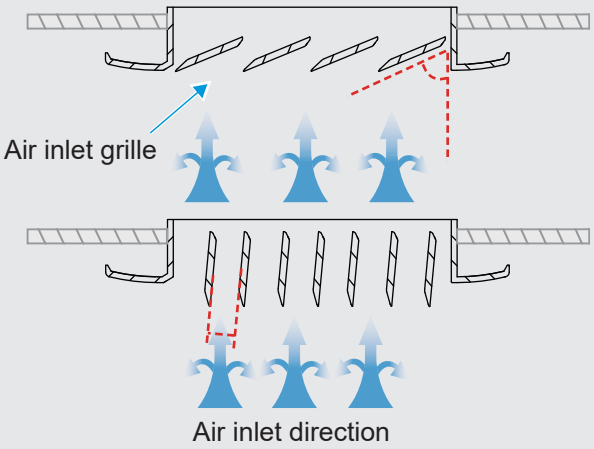
Air inlet panel of return air box

[Caution]

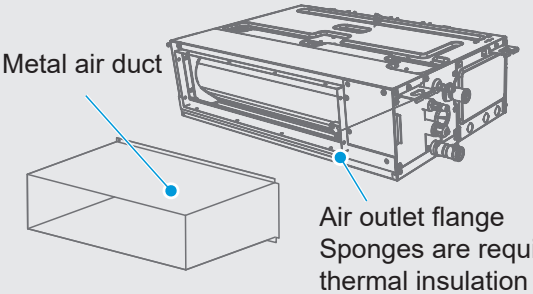
When making the air inlet panel of the return air box, pay attention to the spacing between the air inlet grilles. The angle shall be kept parallel to the air inlet direction as far as possible.



The spacing between the return air grilles shall neither be too large nor too small, and the angle shall not deviate too much from the air inlet direction.



If the air outlet panel is far away from the unit and needs to be connected to the air outlet flange of the unit through a metal air duct, sponge shall be pasted on the contact surface of sheet metal for sealing and thermal insulation.



6 Installation of Refrigerant Connecting Pipe

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.

[Caution]

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.

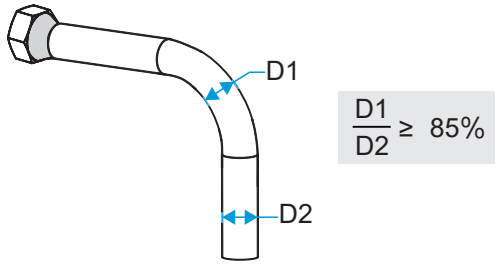
Copper pipes must be wrapped with insulation materials.

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

Pipe arrangement

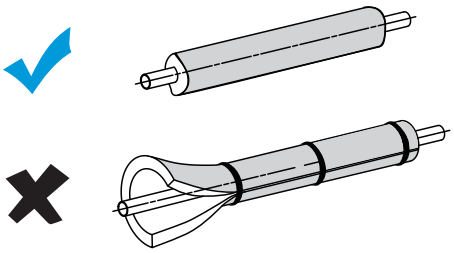
① Bend the pipes or drill holes in the wall as needed. The bending deformation rate of the pipe shall not exceed 15%. Protective casing shall be provided at the place where the pipe passes through the wall or floor slab, and no weld shall be covered by the casing. The hole where the pipe passes through 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.

Pipe bending



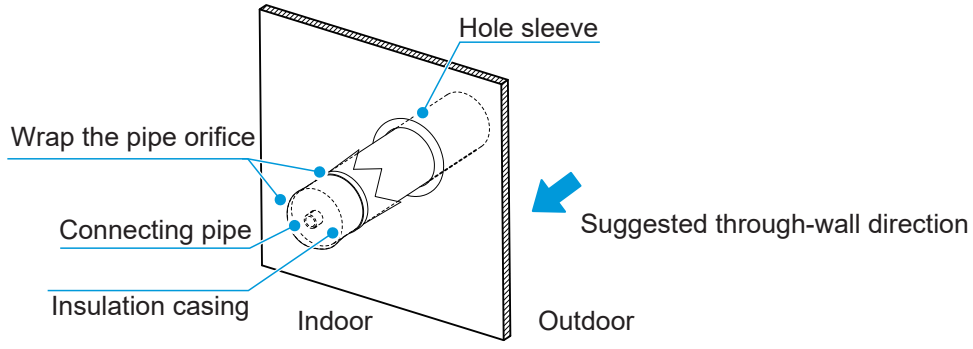
$\frac{D1}{D2} \geq 85\%$

Pipe insulation



Note: D1 is the minimum diameter and D2 is the nominal diameter

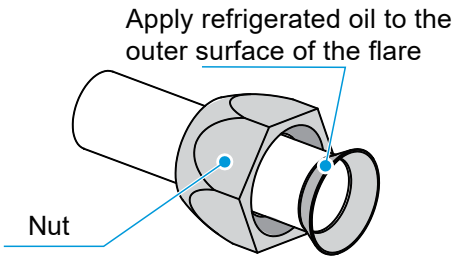
② The wrapped connecting pipe shall be plugged through the wall hole sleeve from the outdoor side and enter the indoor side. The pipes must be routed carefully to prevent damage.



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).

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 the conical surface of the connecting nut, and then tighten the nut by hand for 3~4 turns, as shown in the figure on the left.
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.

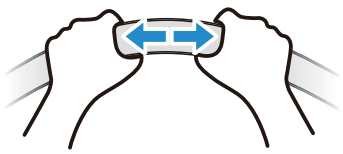
✗ Do not let the weight of the connecting pipe be borne by the joint of the indoor unit, because if the pipe at the joint of the indoor unit is too heavy, the connecting pipe will be flattened and deformed, which will affect the cooling (heating) effect or compress the insulation material, causing air 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: applicable to small copper pipe (ф6.35~12.7 mm).
2. Mechanical bending: applicable to a wide range (ф6.35~28.6 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

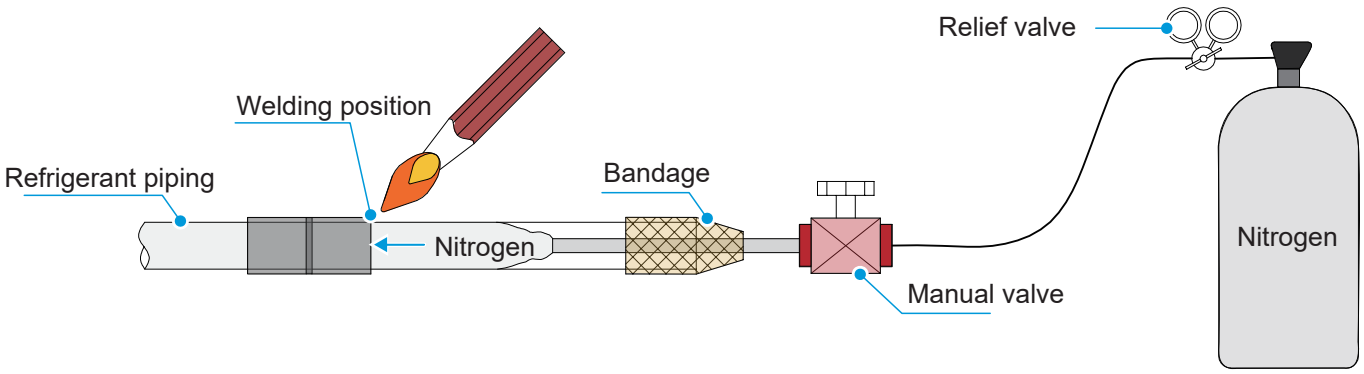
If the pipe is welded by brazing, nitrogen shall be filled into the pipe. The inner pipe shall be heated fully and evenly first, and then the outer pipe shall be heated evenly. The welding material shall be fully fed into the joint part of the pipe.

[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.

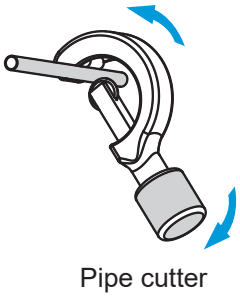
Do not use any antioxidants when welding pipes, because the pipes may be blocked by residual antioxidants, and components such as electronic expansion valve may be blocked after the unit is operated, thereby causing faults.

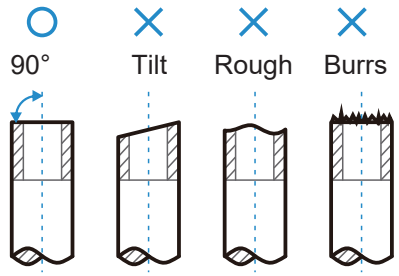


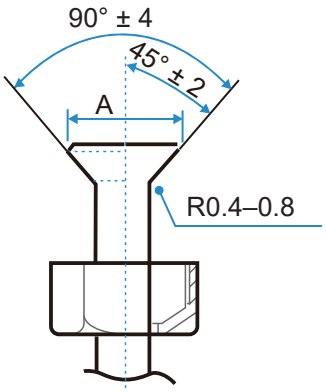
2 Flaring

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.







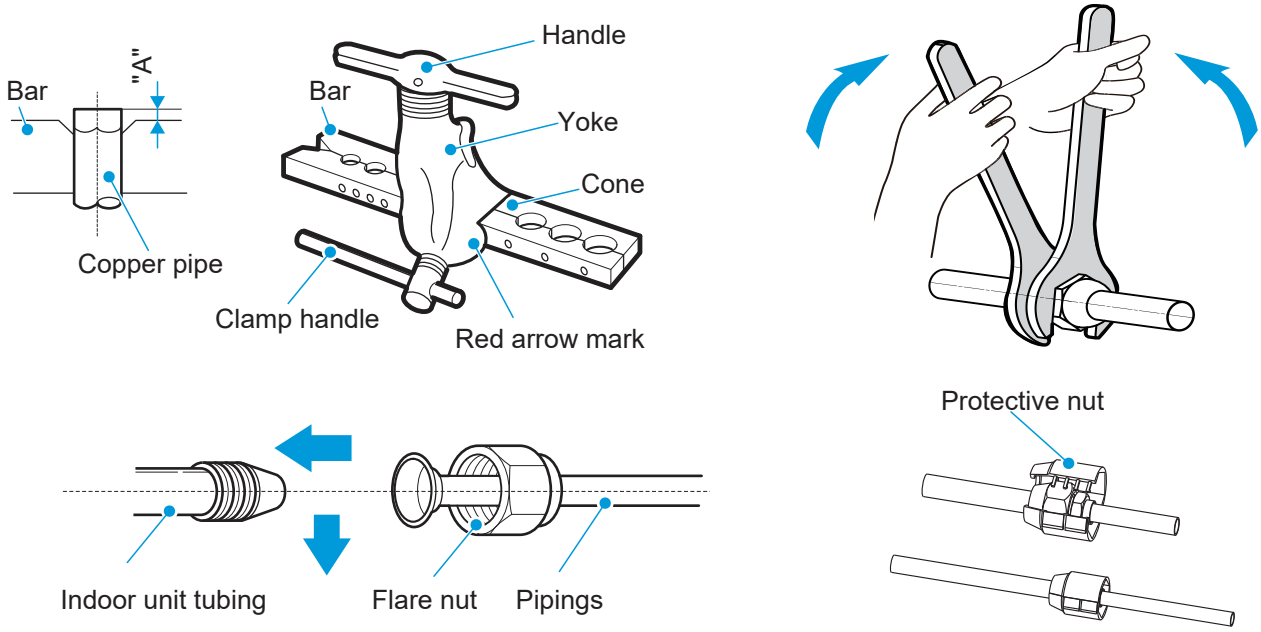
Outer diameter (mm)	A (mm)	
	Maximum	Minimum
Φ6.35	8.7	8.3
Φ9.52	12.4	12.0
Φ12.7	15.8	15.4
Φ15.9	19.1	18.6
Φ19.1	23.3	22.9

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.

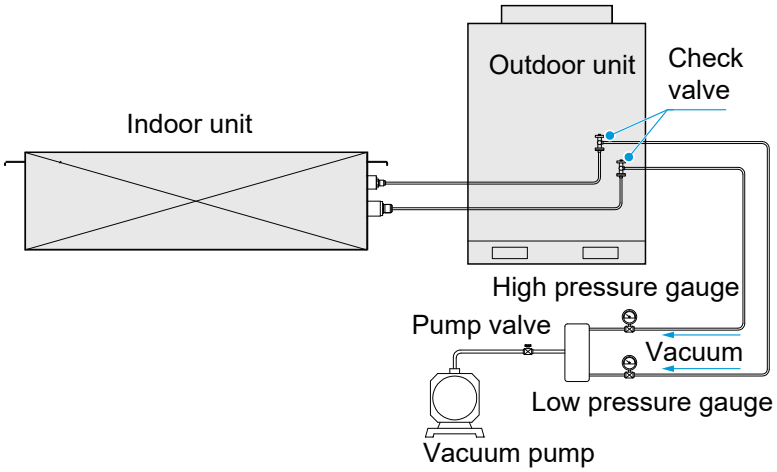
Fixing of refrigerant pipe

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.

Copper pipe diameter (mm)	≤20	20 to 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.



[Note]

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

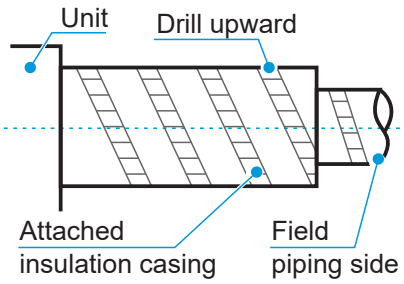
During cooling, the temperature of the pipe on the liquid side and air side is low. In order to prevent condensation, please take adequate insulation measures.

[Note]

Heat-resistant insulation materials above 120°C must be used for gas-side pipe.

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.



7 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.

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.

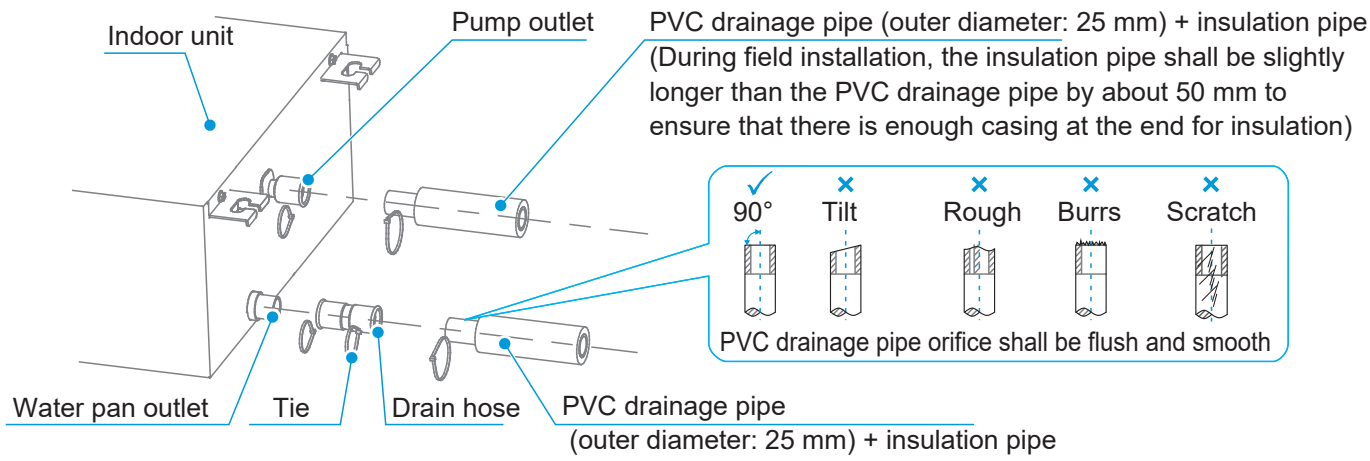
All drainage pipes shall be evenly wrapped with insulation pipes to prevent the generation of condensed water.

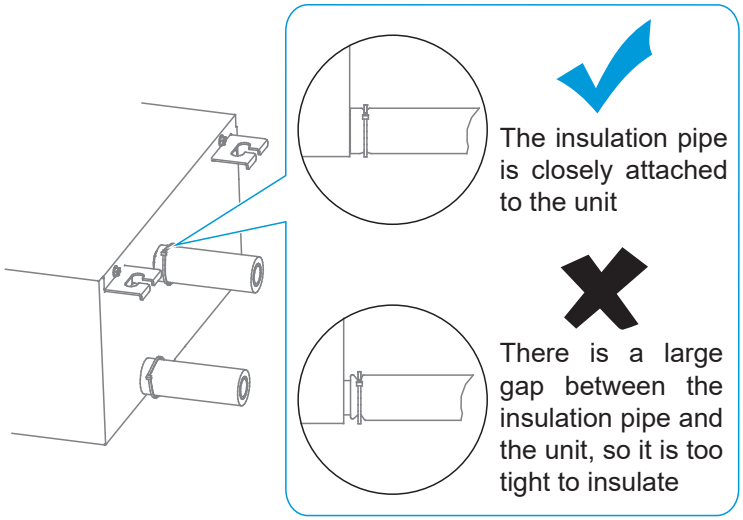
Please follow the following method to connect the drainage pipes. Improper installation of pipes will result in water leakage and damage to furniture and property.

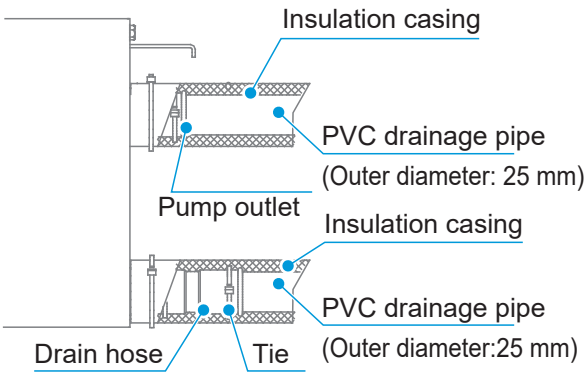
All joints of the drainage system must be sealed to prevent water leakage.

Installation of drainage pipe of indoor unit

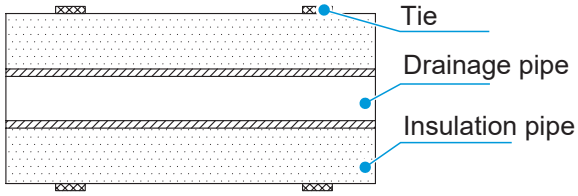
① Models without a water pump: connect the water pan outlet to the PVC water pipe with the accessory drain hose, fasten the connections at both ends of the drain hose with cable ties, push the insulation pipe to be closely attached to the main body of the unit, and then fasten it tightly at the end with cable ties.
Models with a water pump: connect the PVC water pipe 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.
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.



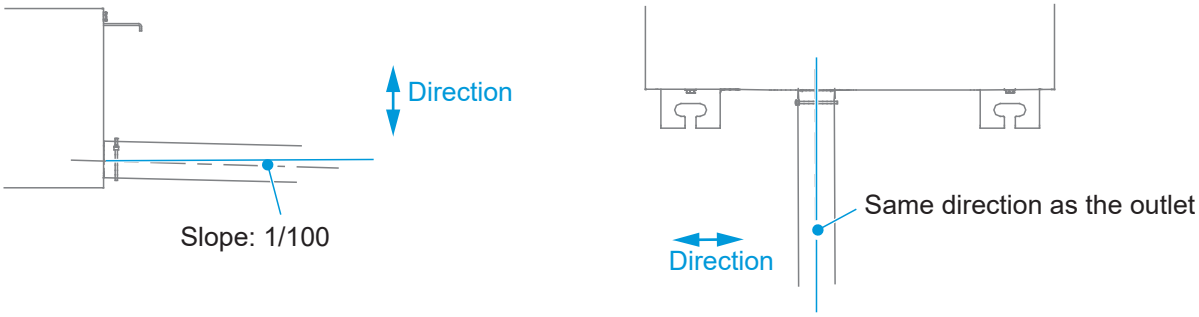




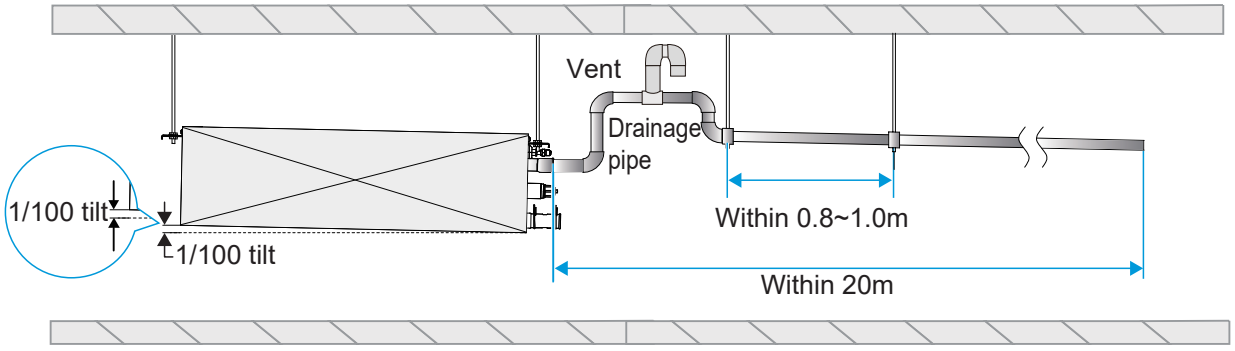
② The pumping connecting pipe and drainage pipe (especially the indoor part) of the main body shall be evenly wrapped with insulation pipes and fastened tightly with cable ties to prevent air from entering the pipe and to prevent the generation of condensed water.



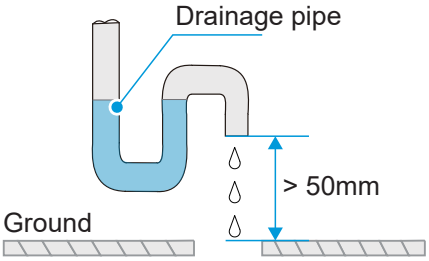
③ In order to prevent water from flowing back into the air conditioner when it is stopped, the drainage pipe shall be inclined downward to the outdoor side (drainage side), with a downward inclination of more than 1/100. In addition, the left and right directions of the drainage pipe shall be consistent with those of the unit drainage outlet, and the drainage pipe shall not expand and trap water. Otherwise, it will cause abnormal nois.



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 risers shall be provided with a supporting point every 1.5~2.0m.

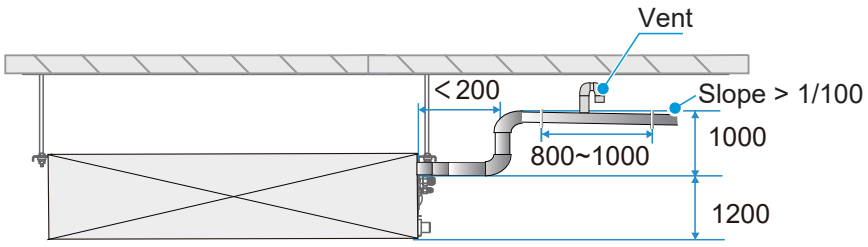


⑤ The end of the drain pipe shall be more than 50mm from the ground or the bottom of the drainage channel. Do not put the drainage pipe in water. When the condensate is discharged directly to the sewer, the drainage pipe must be bent upwards to form a U-shaped water seal to prevent stench from entering the room through the drainage pipe.

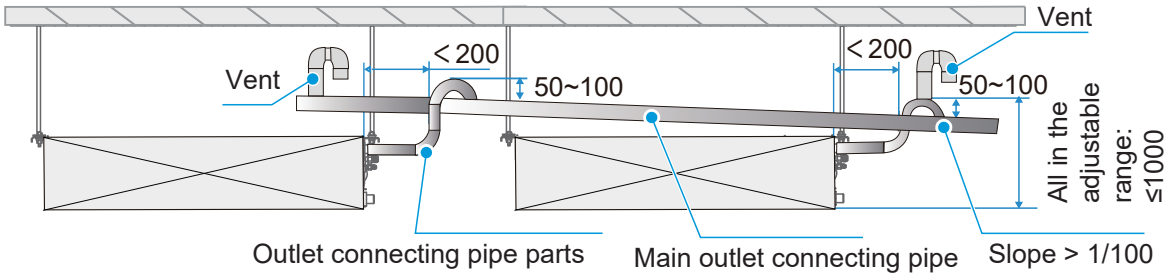


- Connection mode of drainage pipes using drainage pumps

(Unit: mm)



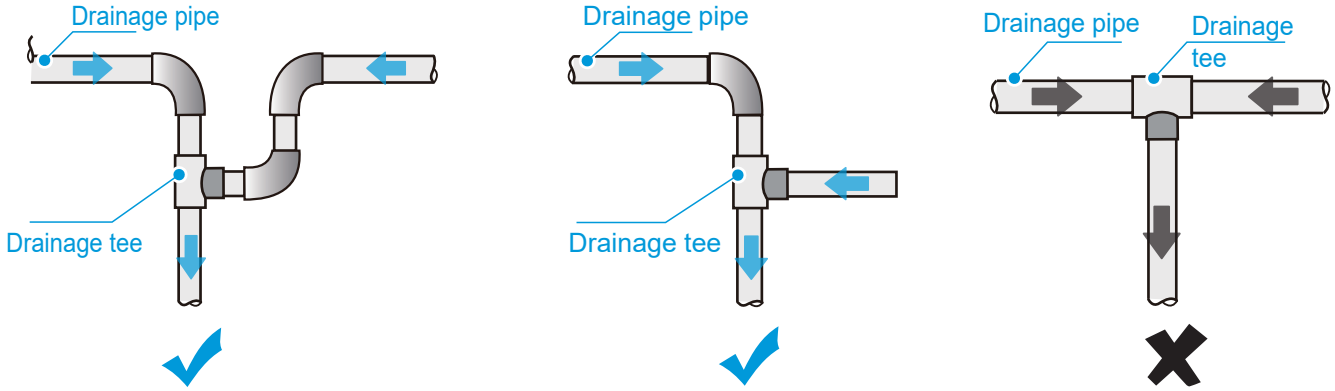
Connection mode of drainage pipe of drainage pump for single machine



Drainage pipes of drainage pumps for multiple machines are connected to the sewer via the main drainage pipe

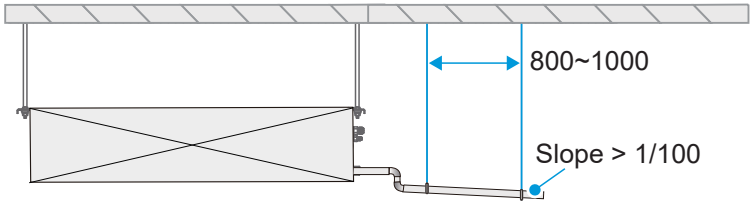
[Caution]

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.

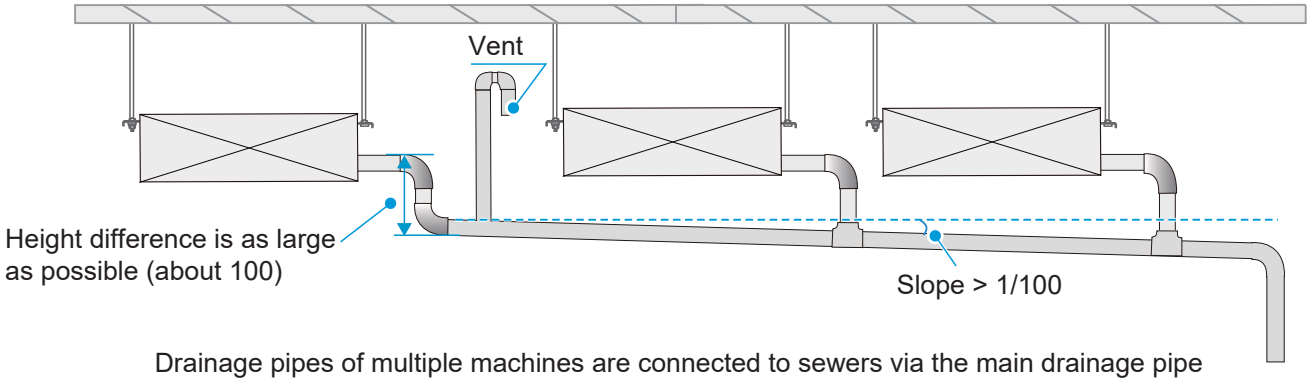


- Connection mode of drainage pipes without drainage pumps

(Unit: mm)



Connection mode of drainage pipes for a single machine



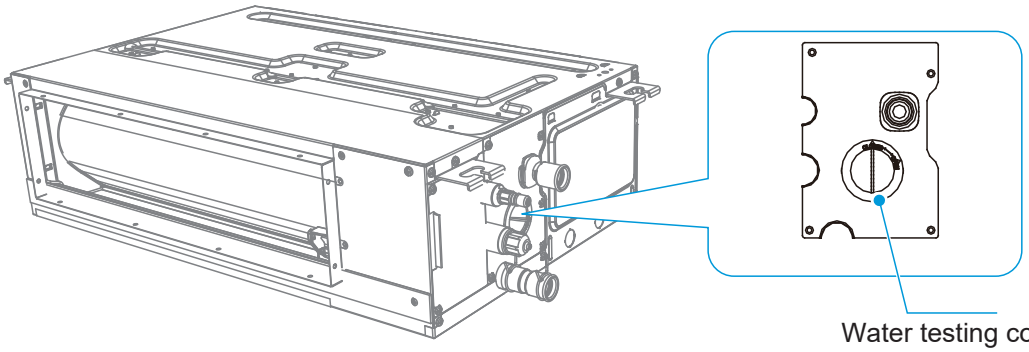
Drainage pipes of multiple machines are connected to sewers via the main drainage pipe

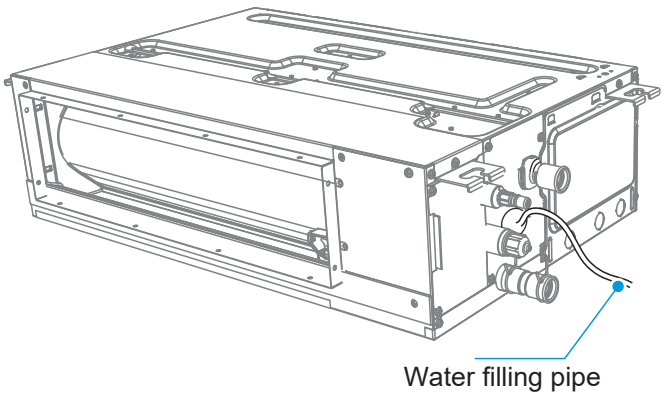
Drainage test

① Before the test, ensure that the drainage pipeline is unhindered, and check if all joints are sealed properly.

② New rooms shall be subject to drainage tests before laying ceiling.

- Inject water into the water pan using the water filling pipe. Refer to the table below for the water injection rate.
- Switch on the power and operate the air conditioner for refrigeration. 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.
- If the water is drained with the help of the drainage pump for the indoor unit, the water testing cover (the black round plastic part) 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, and will always be off in the heating mode. After the drainage test, the water testing cover needs to be installed back to its original position. The water testing cover and water filling pipe are shown in the figure below.



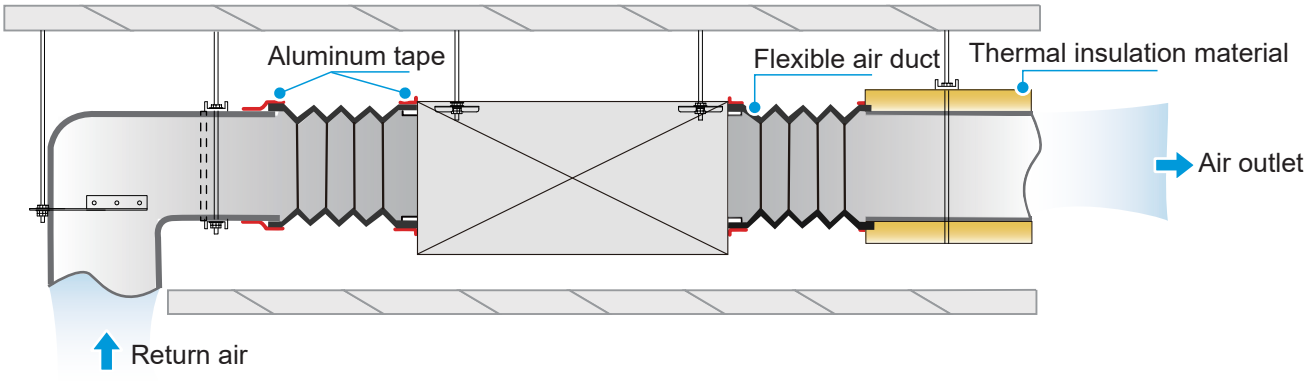


Water injection rate: (unit: ml)

Indoor unit model	Water injection rate
15~28	1100
36	1400
45~56	2000
71	2200
80~112	2400

8 Installation of Air Duct

- Please connect the locally purchased air ducts and flexible air ducts (note that the eco-friendly and odorless materials should be selected to avoid air pollution and unpleasant odor when the air conditioner is operating).
- Install the flange on the return air side, and seal the flange on the return air side and the air duct connection with aluminum tape to avoid air leakage.
- Seal the air supply side flange and the air duct connection with aluminum tape etc. to avoid air leakage.
- Air supply side ducts shall be insulated with thermal insulation material to prevent condensation of the duct.
- When installing air ducts and components, fix and adjust the supports and hangers when necessary to make their positions correct and stress uniform.
- Before installation of air ducts and components, the ducts shall be kept clean and free of sundries.
- After air ducts and components are installed, the air ducts shall be tested for tightness, and the air leakage rate shall comply with the provisions of national standards.



[Caution]

It is forbidden to dislocate the connection between the air duct of the air conditioner outlet and the return air outlet and the ceiling opening to prevent the short circuit of the return air. (please refer to the figure below)

Canvas or flexible air ducts shall be used to connect indoor units and air ducts, at an effective distance (width) of 150~300mm.

Wires, cables and other toxic, inflammable and explosive gases or liquid pipes shall not be laid in the air ducts.

The air duct regulator shall be installed in a position, easy to operate, in a flexible and reliable manner.

The vents are installed and connected with the air duct tightly and firmly.

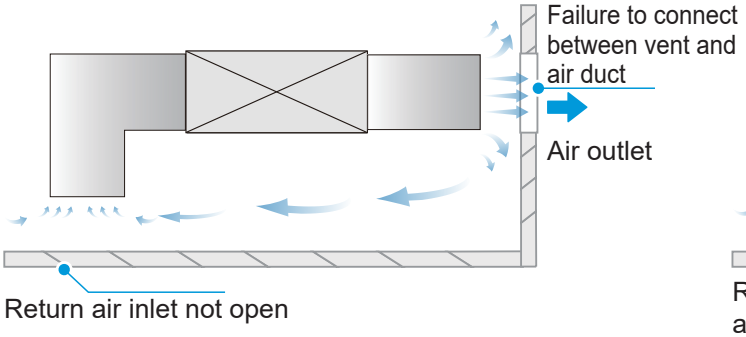
The frame are closely attached to the building decoration, and the outer surface shall be flat and flexibly adjusted, rather than being twisted or used for deviation adjustment.

When the vent is horizontally installed, the deviation of levelness is not more than 3/1000; When the vent is vertically installed, the deviation of verticality is not more than 2/1000.

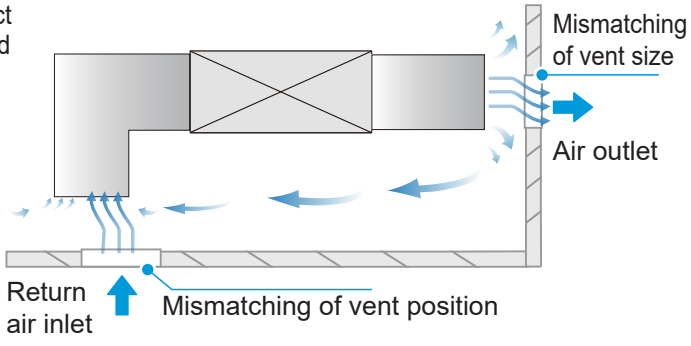
The same vents in the same room shall be installed at the same height above the ground and in alignment.

All metal accessories (including supports, hangers and brackets) of the pipeline system works shall be subject to anti-corrosion treatment.

Failure to connect between vent and air duct



Mismatching of size and position of vent



9 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 in accordance with relevant laws and regulations of the local country/region. 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 components 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 disconnector that conforms to the requirements of relevant national technical standards for electrical equipment. The power disconnector must be provided with short-circuit protection, overload protection and leakage protection functions. The clearance between open contacts of the disconnector 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 Leakage Protector". 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 the product may be seriously damaged.

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. Otherwise communication faults may be caused.

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 stoke.

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

Electrical characteristics

Machine capacity (KW)	Power supply				Fan motor	
	Frequency (Hz)	Voltage (V)	MCA (A)	MFA (A)	Power (W)	FLA (A)
1.5	50~ or 50/60~	220~240	0.88	15	20	0.7
2.2			0.88		20	0.7
2.8						
			0.88		20	0.7
3.6			0.94		20	0.75
4.5			1.1		30	0.85
5.6			1.1		30	0.85
7.1			1.2		50	0.94
8.0			1.7		60	1.35
9.0			1.7		60	1.35
11.2			1.7		60	1.35

[Note]

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.

MCA of the model with auxiliary electric heating = the full-load current of motor FLA*1.25+ the rated current of electric auxiliary heater*1.25

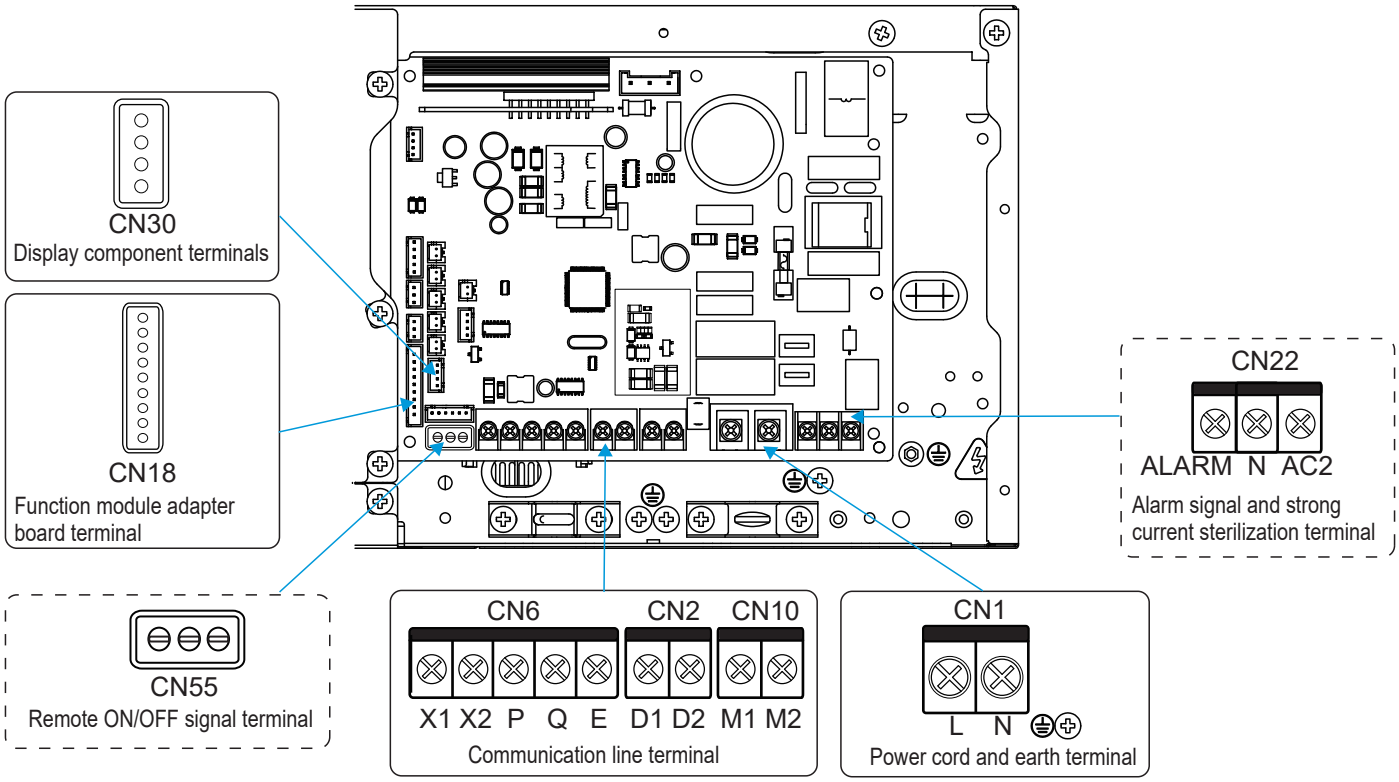
MFA: Max. Fuse Amps. (A), the maximum fuse current that is used to select fuse protectors, fuses, air circuit breakers.

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

3 Wire diameter selection (minimum)

Rated current (A)	Nominal cross-sectional area (mm^2)	
	Soft wire	Hard wire
≤3	0.5 and 0.75	1 to 2.5
>3 and ≤6	0.75 and 1	1 to 2.5
>6 and ≤10	1 and 1.5	1 to 2.5
>10 and ≤16	1.5 and 2.5	1.5 to 4
>16 and ≤25	2.5 and 4	2.5 to 6
>25 and ≤32	4 and 6	4 to 10
>32 and ≤50	6 and 10	6 to 16
>50 and ≤63	10 and 16	10 to 25

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.

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

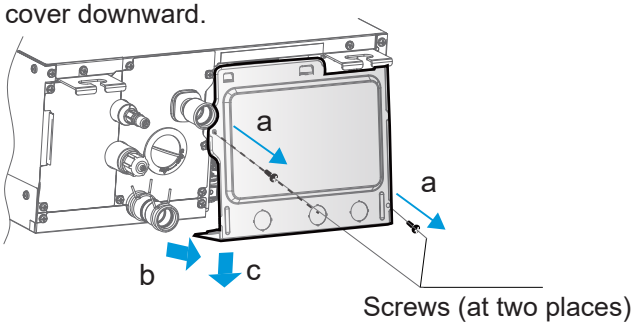
Wiring

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

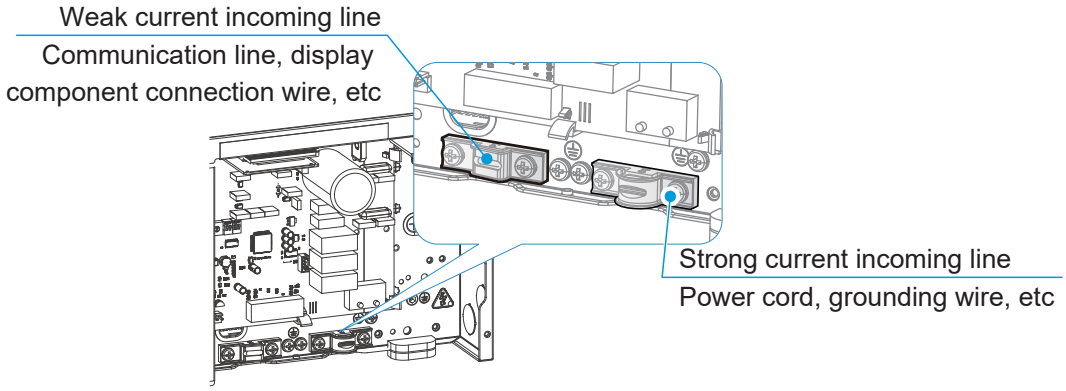
a. Remove the screws shown in the figure;

b.Pull the bottom end of the electric control box cover outward horizontally for a certain distance;

c.Take out the electric control box cover downward.



2 Connect strong current wires (power cord, alarm signal output line, strong current sterilization line) and weak current wires (communication line, display component connection 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.



[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 Selection reference for power cord diameter and circuit breaker

Model	Minimum cross-sectional area of copper core PVC insulated wire BVV power cord (mm^2)
Model 15-112 without auxiliary electric heating	3×1.0
Model 15-40 with auxiliary electric heating	3×1.0
Model 45-112 with auxiliary electric heating	3×2.5

[Caution]

For the selection of power cords and circuit breakers, please refer to the requirements of the above reference table.

The circuit breaker must be provided with short-circuit protection, overload protection and leakage protection functions.

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

The standard value of the screw tightening torque of the power terminal block is 1.0-1.2N.m. Too low torque may cause poor contact and heating, thereby resulting in a fire; Too high torque may damage screws and terminal blocks.

Sheathed copper-core cables must be selected as power cords in accordance with the requirements of relevant local national/regional regulations.

In case of longer power lines, a thicker wire diameter needs to be considered. The voltage drop can be calculated based on the maximum load current of the actual unit, the resistivity of the equipped conductor and the required length to ensure that the voltage drop on the power cord is less than 2% of the power supply voltage.

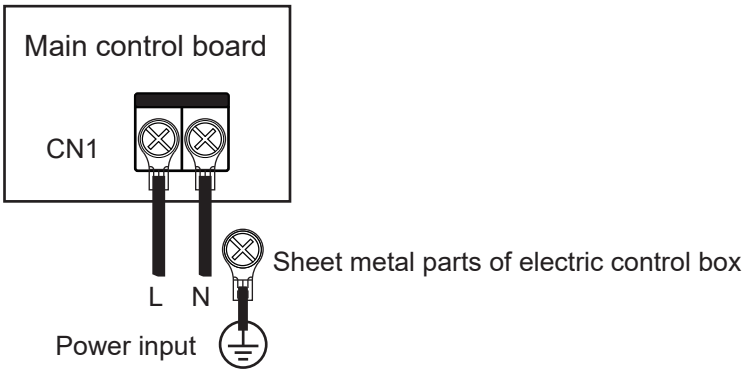
In case all indoor units are V8 models in the same set of refrigerant system, both the separate power supply (EasyCom communication with the function of power-down control valve shall be selected for the communication between indoor and outdoor units; For details, please refer to the description below) or uniform power supply can be adopted for indoor units.

In case the indoor unit other than a V8 model is adopted in the same refrigerant system, uniform power supply must be adopted for indoor units.

In case of uniform power supply for indoor units, please select the main circuit breaker specification based on the actual current and number of indoor units in the system.

② Power cord connection of a single set

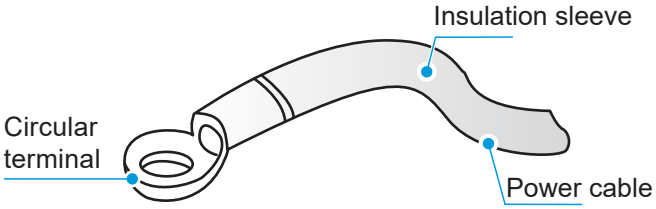
Fix the power terminal block of the indoor unit on the mainboard, connect the power cord to the power terminal block "CN1" on the mainboard, connect the live wire and null wire according to the marks "L" and "N" on the mainboard respectively, and connect the ground wire to the sheet metal parts of electric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



[Caution]

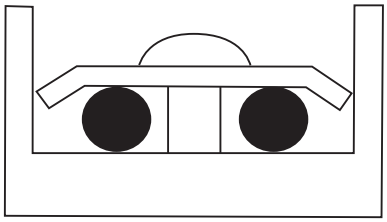
A It is strictly forbidden to bond and connect power cords. Bonding and connecting the power cord may cause it to heat up, thereby resulting in a fire.

B Power cords require round 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.



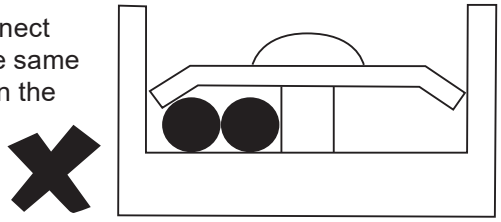
C In case it is impossible to crimp the round terminals with insulation due to the limitation of site conditions, connect the power cords of the same wire diameter to both sides of the power tèrminal of the indoor unit, as shown in the figure below.

Connect wires of the same diameter on both sides

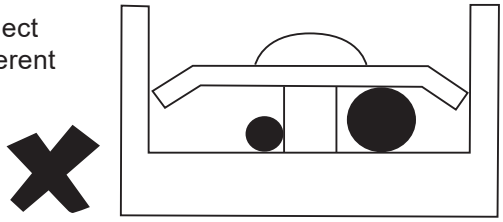


D It is forbidden to press the power cords with the same wire diameter on the same side of the terminal, and it is forbidden to use two power cords with different wire diameters for the same terminal. Otherwise, it is likely to cause looseness due to uneven pressure, leading to safety accidents, as shown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

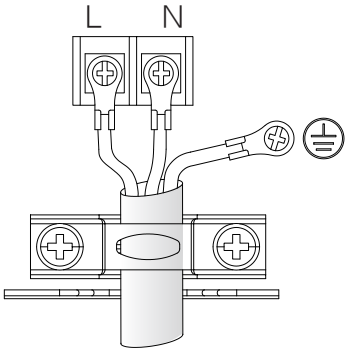
Do not connect wires of the same diameter on the same side



Do not connect wires of different diameters



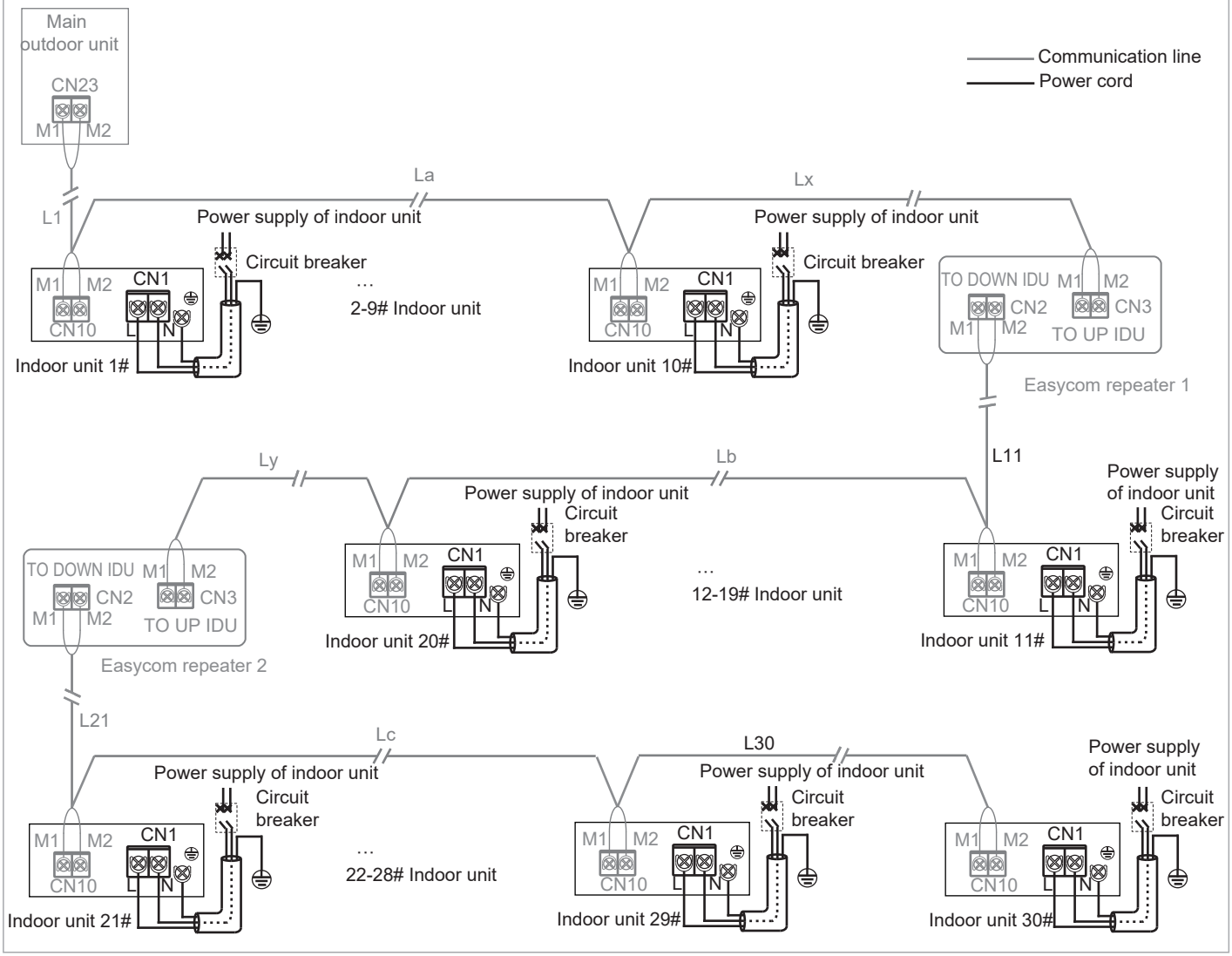
E Power cords require round terminals with insulation and shall be firmly and reliably crimped before being connected to the power terminal block of indoor unit, as shown in the figure below.



③ 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.

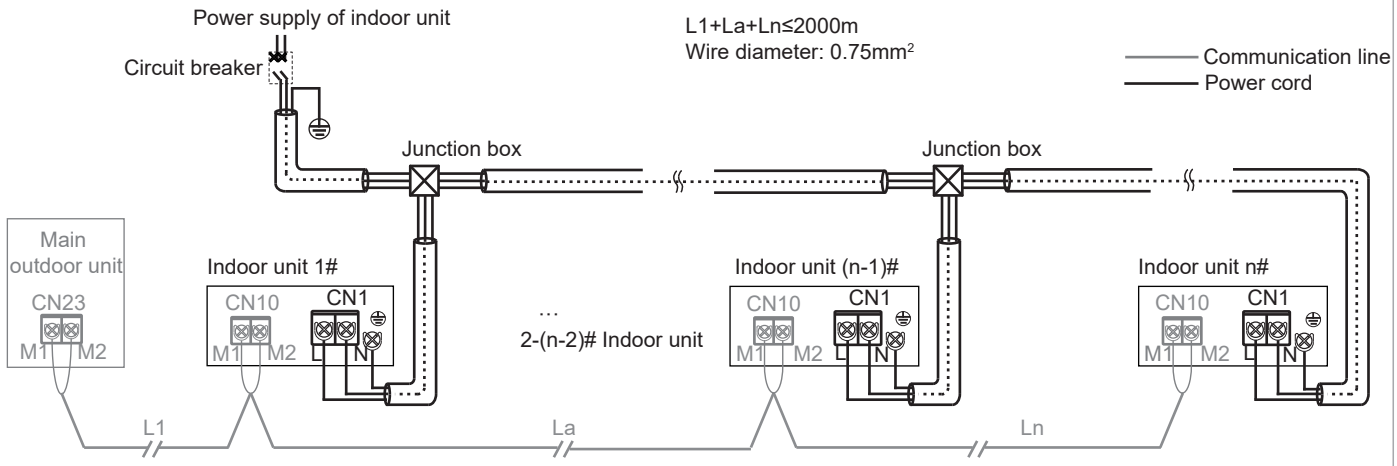
Since the function of power-down control valve is equipped in the above connection mode, the number of indoor units in the same refrigerant system shall be ≤30, and only two repeaters* are required at most.

When the light commercial standards EN 61000-6-1 and EN 61000-6-3 are applicable, the shielded and unshielded cables that the machine can use, that is, EasyCom and non-EasyCom can be used.

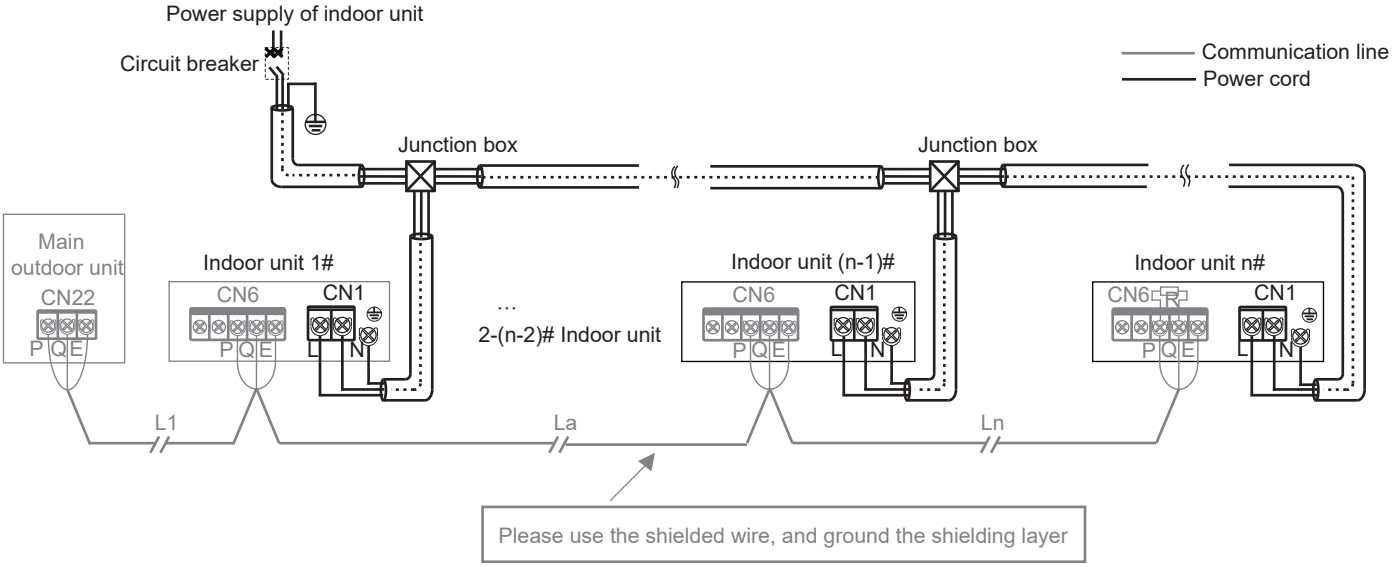
When the home standard standards EN 55014-1 and EN 55014-2 are applicable, the machine can only use shielded wires, and the unshielded EasyCom is unqualified when testing the terminal voltage.

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.

[Note]

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 mode selection of indoor 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 (shielded wires) (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 (shielded wires) 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		

[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 3X0.75mm^2 three-core shielded wires required to connect "P" "Q" "E".

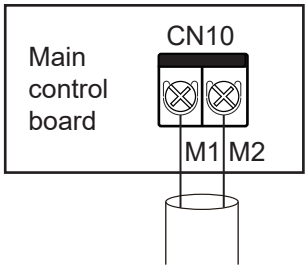
It is forbidden to bind the communication line with the refrigerant pipe and power cord. When the power cord is laid parallel to the communication line, a distance of more than 5cm shall be maintained to prevent the signal source interference.

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)

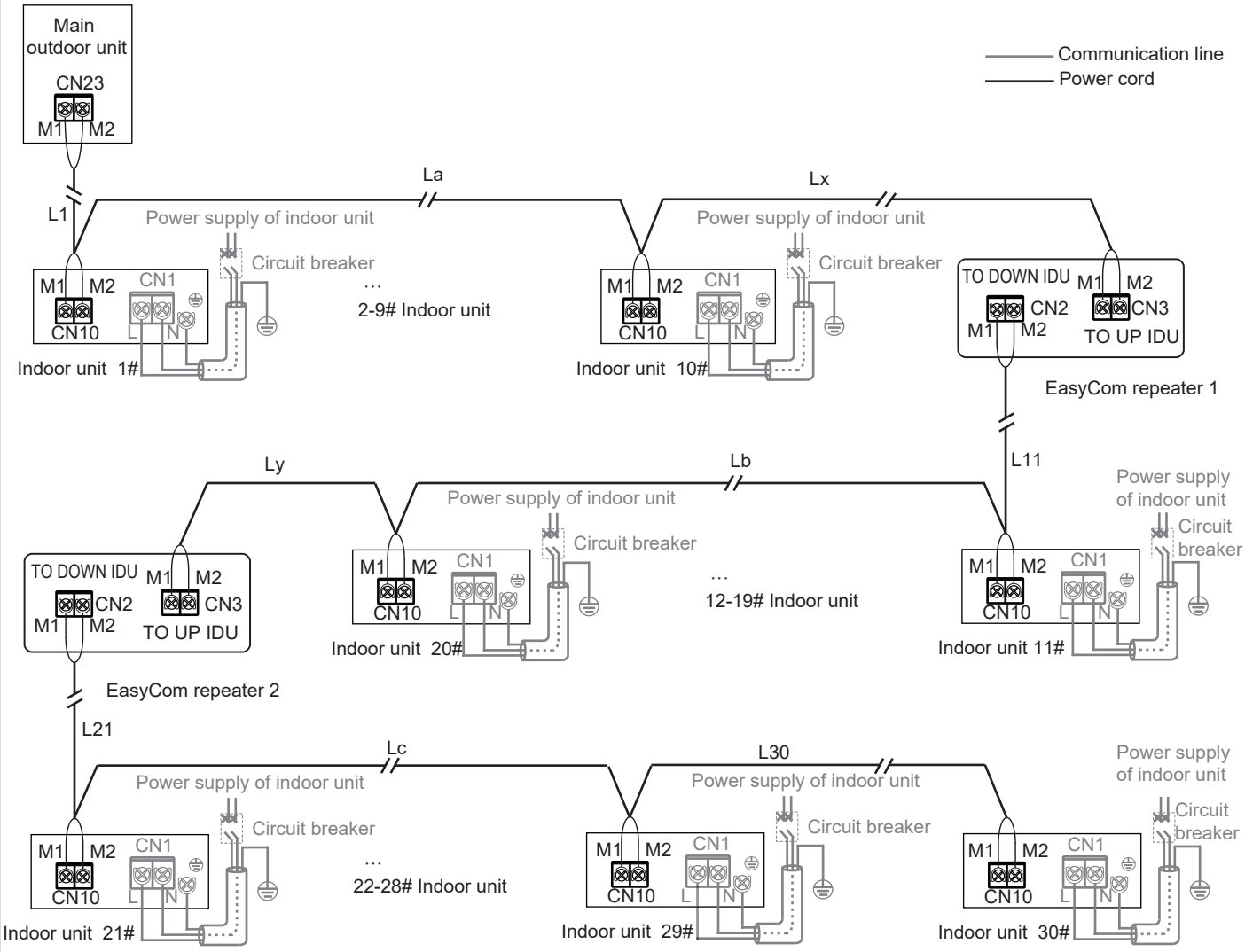
Single set: EasyCom communication is a new indoor and outdoor unit communication technology. In case of separate power supply for indoor units, the communication line of a wire diameter of 2X1.5mm² required, in order to enable the function of power-down control valve of indoor units. Connect the communication 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.



[Caution]

It is forbidden to connect the EasyCom communication cable 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≤200m L11+Lb+Ly≤200m L21+Lc+L30≤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 ≤200m 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 ＞200m 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.

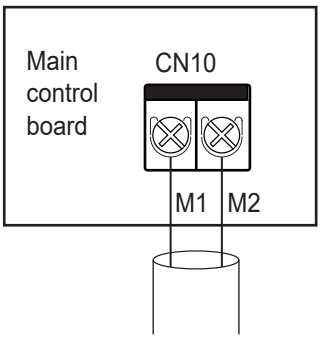
For the installation of the repeater, please refer to the installation instructions. It is forbidden to reversely connect the upstream indoor unit port with the downstream indoor unit port. Otherwise, communication faults will occur.

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 2X0.75mm². 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.

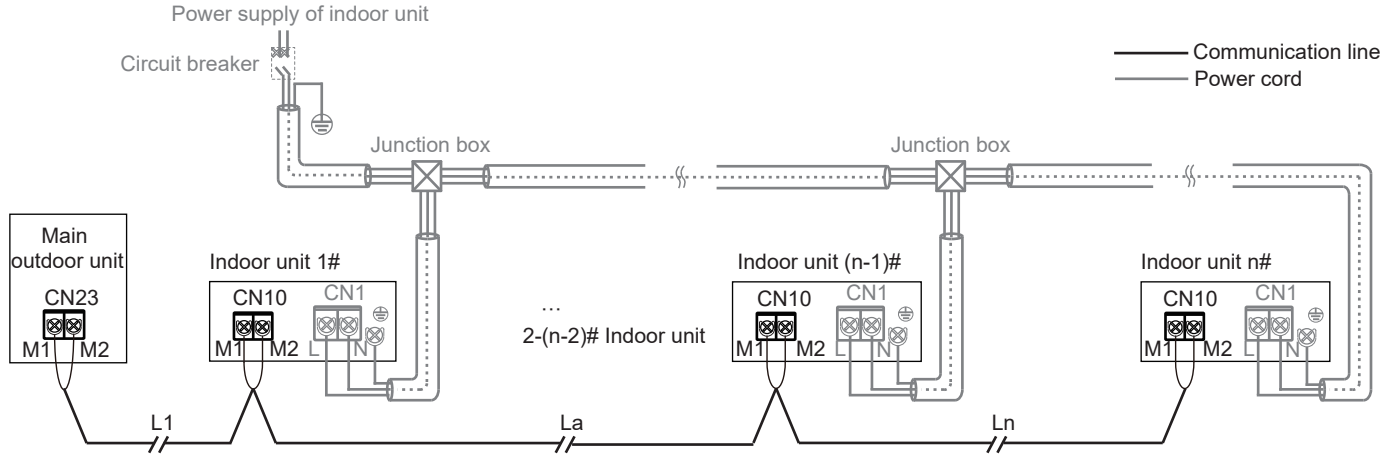


Connect to outdoor unit
M1M2 (EasyCom)

[Caution]

It is forbidden to connect the EasyCom communication cable 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 2,000m, supporting any topological connection. The following figure indicates the hand-in-hand connection



L1+La+Ln≤2000m

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

[Caution]

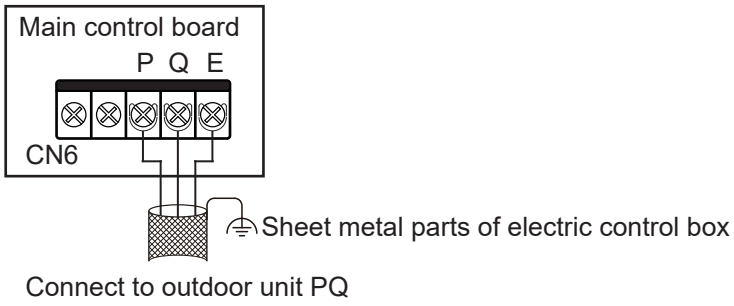
In the case of the EasyCom communication without the function of power-down control valve, the indoor unit shall be uniformly powered. Please refer to the section "Power cord connection" for details.

Meanwhile, the repeater is unnecessary for the system.

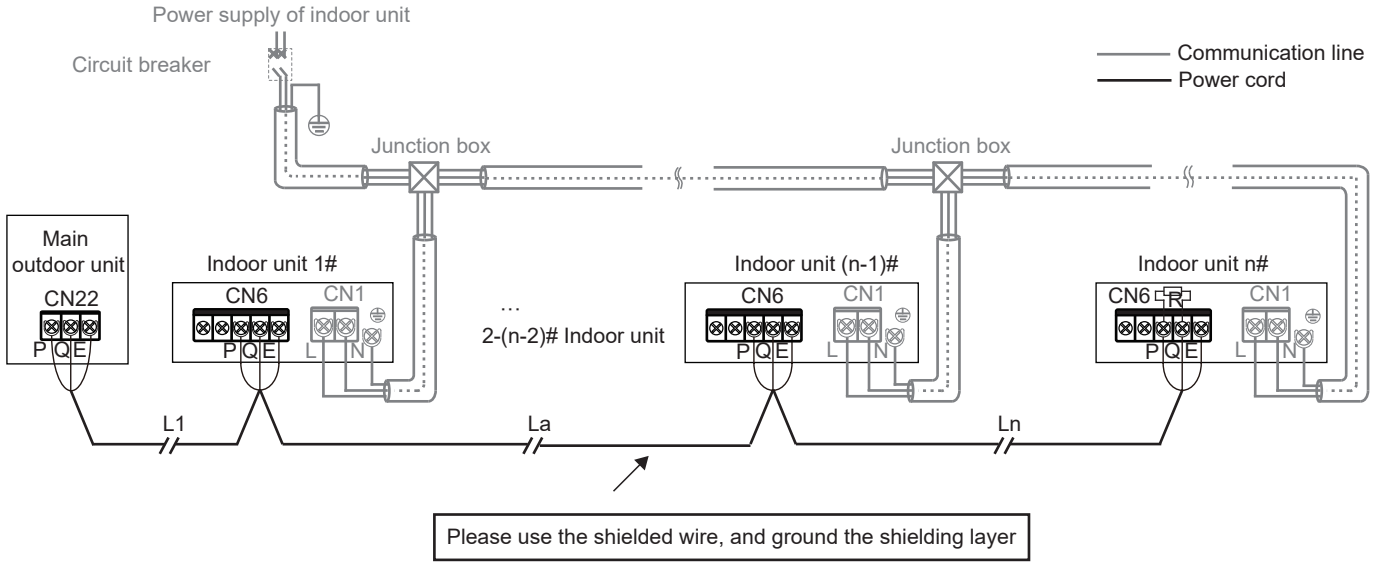
D PQE communication (uniform power supply for indoor unit)

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.



System: The total length of communication of the indoor and outdoor units of PQE can reach 1,200m at most, connected hand-in-hand, as shown in the following.



L1+La+Ln≤1200m

[Caution]

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

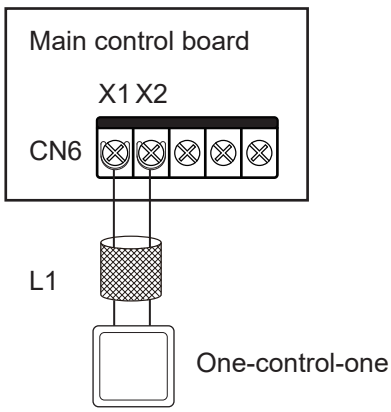
The communication can only be PQ(E) or EasyCom. To realize the function of power-down control valve of the indoor unit, the EasyCom communication must be used;

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

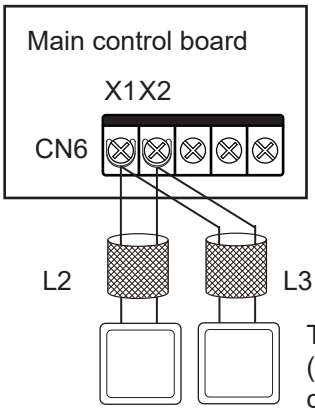
For the last indoor unit, a matching resistor (in the outdoor unit accessory bag) shall be added to PQ.

④ X1X2 communication line 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. The communication line shall be connected to the terminal block with the mainboard tag No. of "CN6", and shall be connected according to the symbols "X1" and "X2" of the mainboard. The wire controller communication is non-polarized communication, and no one-to-one connection is required, as shown in the following.



One-control-one



Two-control-one
(The master and slave of the wire controller shall be set. See the instructions of wire controller for details)

L1≤200m, L2+L3≤200m.

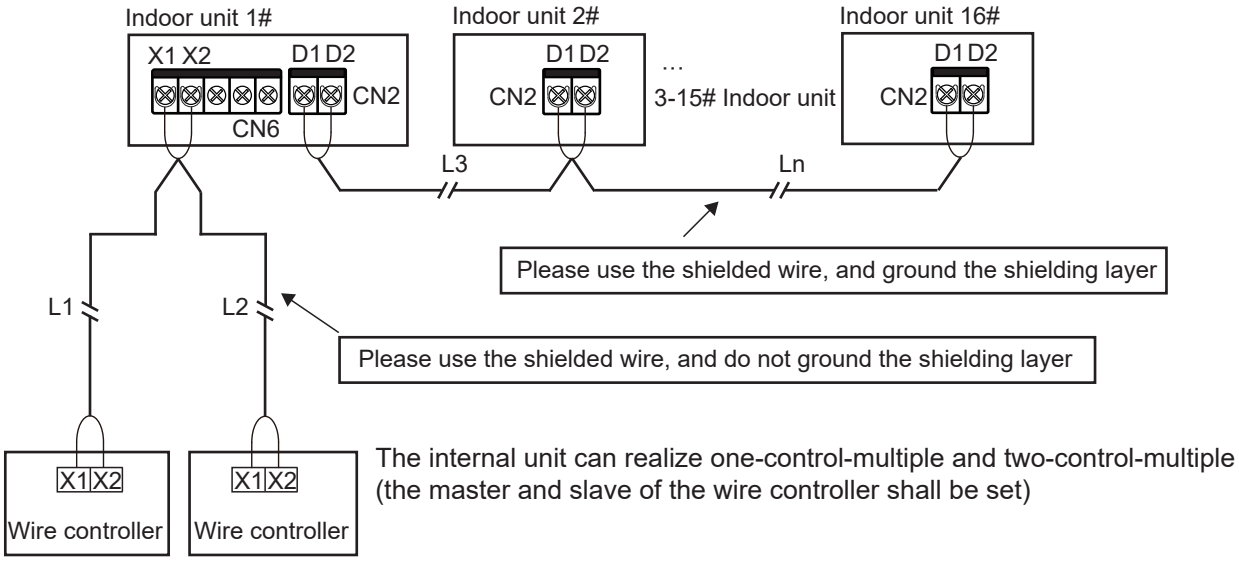
[Caution]

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.

⑤ D1D2 communication line connection (limiting outdoor unit and system configuration)

A D1D2 communication realizes 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



The internal unit can realize one-control-multiple and two-control-multiple (the master and slave of the wire controller shall be set)

L1+L2≤200m, L3+Ln≤1200m.

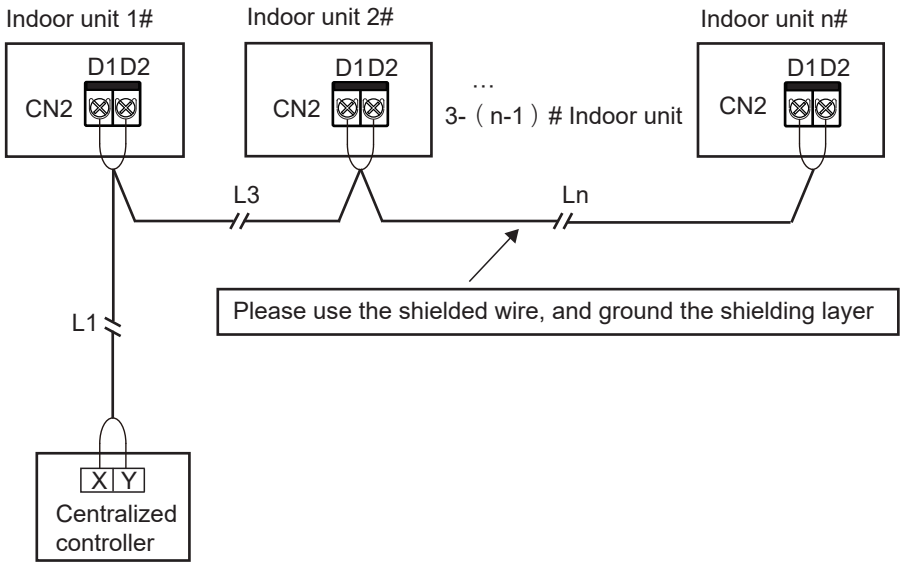
[Caution]

When all the indoor units in the same refrigerant system are V8 type, D1D2 communication can realize one-control-multiple and two-control-multiple functions.

The two-control-multiple controllers shall be of the same model.

B D1D2 communication realizes centralized control function of indoor unit

D1D2 can also be connected to the centralized controller to realize the centralized control function of the indoor unit, as shown in the following figure.



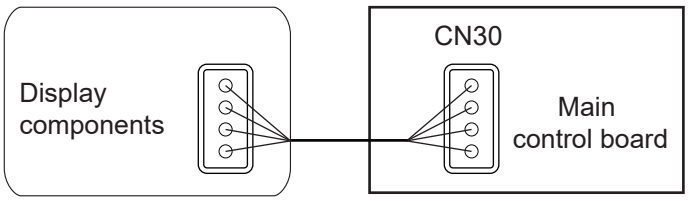
L1+L3+Ln≤1200m

5 External connection board wiring (limiting external 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

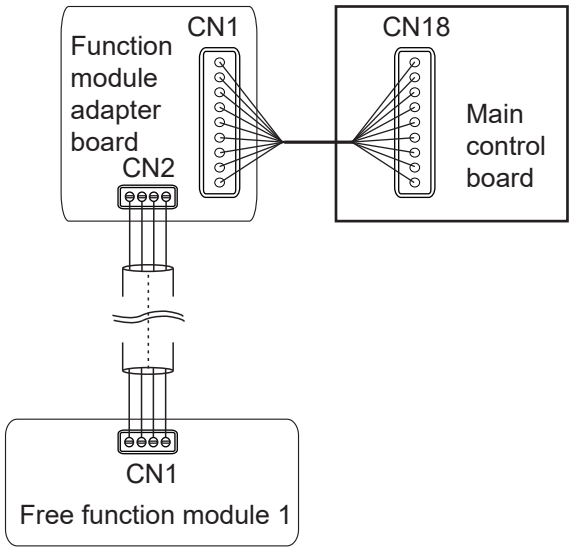
The display component is connected to the "CN30" socket of the main control board through a 4-core communication wire, as shown in the figure below.



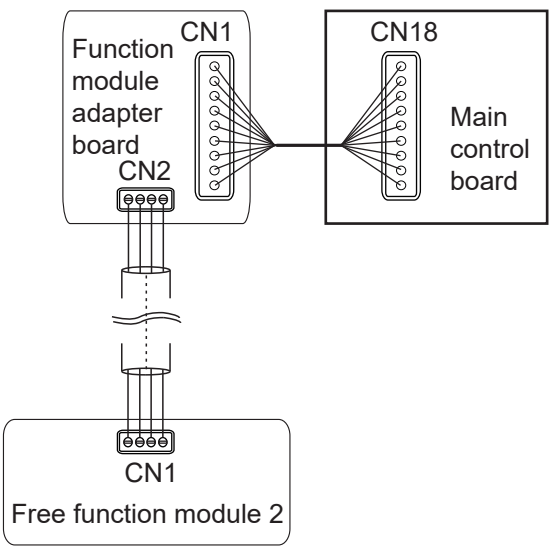
② Connection of function module adapter board

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.

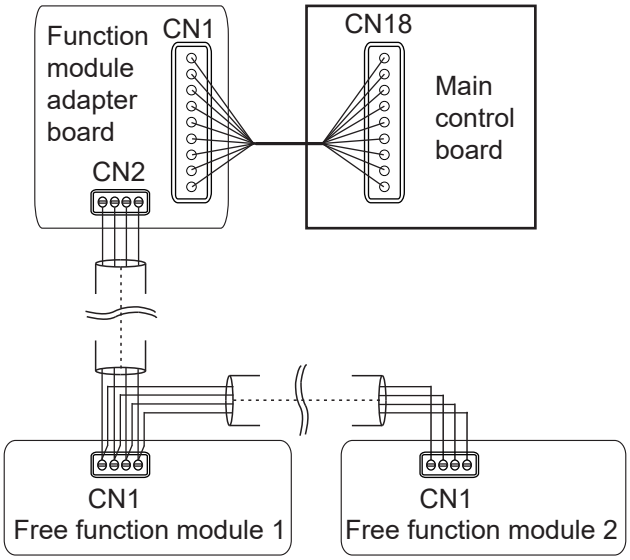
Only free function module 1



Only free function module 2



Both free function modules 1 and 2

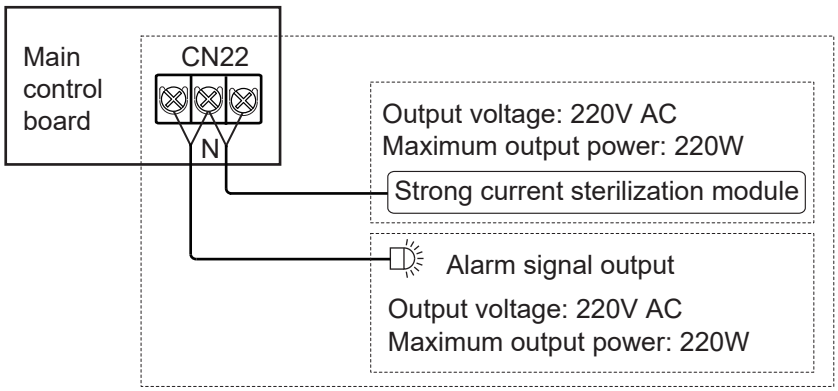


[Caution]

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

6 Alarm signal output, strong current sterilization connection (customized)

The alarm signal output and strong current sterilization wiring seat are fixed on the main board, connecting to the "CN22" socket. For the connection, refer to the schematic diagram, and they share a zero line as shown in the following figure.

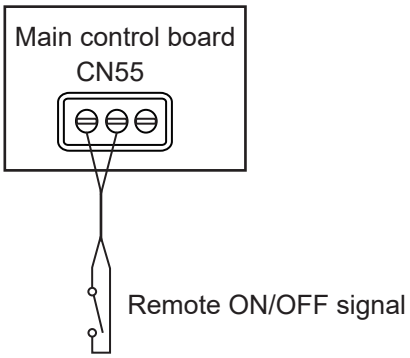


[Caution]

Alarm signal output and strong current sterilization are customized functions.

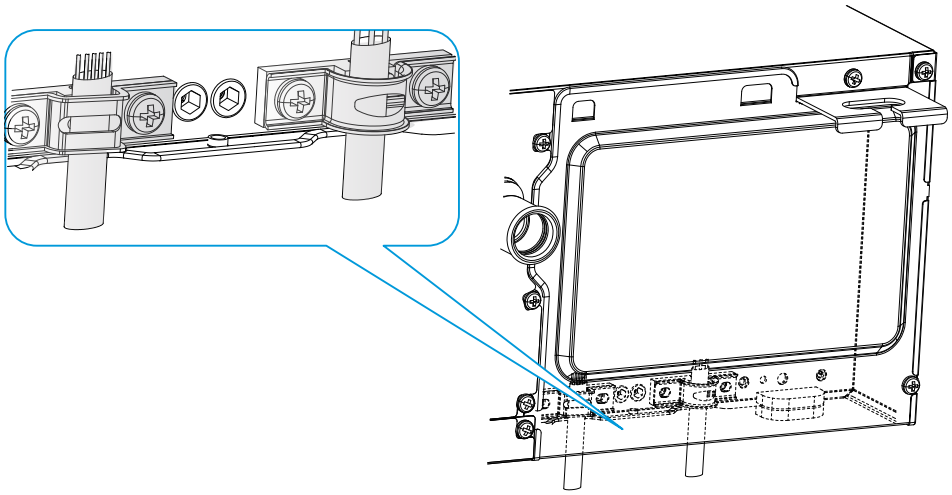
7 Remote ON/OFF signal wiring (customized)

The wiring socket of the remote ON/OFF signal signal is fixed on the main board with the number of "CN55". Connect the terminals 1 and 2 to finish the connection (the third terminal is not functional) according to the identification on the main board, as shown in the following figure.



8 Re-cover the electric control box

Straighten and level the connecting wires, and re-cover the electric control box.



[Caution]

Do not cover the electric control box while it is powered on.

Note the wires to prevent disorder when covering the electric control box. Do not clamp the connecting wire on the electric control box cover.

10 Application Control

Error codes and definitions

In case of the following circumstances, please stop the air conditioner immediately, cut off the power switch and contact the local air conditioner customer service center. The error code is displayed on the display panel and the wired controller display.

Code	Definition	Digital tube display
A01	Emergency shut down	
A11	R32 refrigerant leakage, immediate shutdown	
A51	Outdoor unit failure	
A71	After the failure of the linked new fan, it will be transmitted to the main indoor unit.(series connection setting)	
A72	After the linkage humidification indoor unit fails, it is transmitted to the main indoor unit.	
A73	After the failure of the linked new fan, it will be transmitted to the main indoor unit.(non-series connection setting)	
A74	AHU Kit slave is transmitted to the master after failure	
A81	Self-checking failure	
A82	MS box Error	
A91	Mode conflict (using V6 communication protocol)	
b11	1# Electronic expansion valve coil failure	
b12	1# electronic expansion valve failure	
b13	2# Electronic expansion valve coil failure	
b14	2# Electronic expansion valve failure	
b34	1# Pump blocking protection	
b35	2# Pump blocking protection	
b36	Water level switch alarm	
b71	Rethermoelectric heating failure	
b72	Preconditioning electric heater failure	
b81	Humidifier failure	

Code	Definition	Digital tube display
C11	The address code of the indoor unit is repeated	
C21	Communication error between indoor and outdoor units	
C41	Communication error between the main control board of the indoor unit and the fan driver board	
C51	Communication error between the indoor unit and the controller	
C52	Communication error between the indoor unit and the Wi-Fi Kit	
C61	Communication error between the indoor unit main control board and display board	
C71	Communication error between the slave AHU Kit and the host	
C72	AHU Kit quantity inconsistent with settings	
C73	Communication error between the combined humidifier indoor unit and the main indoor unit	
C74	Communication error between the linkage new fan and the main indoor unit (series connection setting)	
C75	Communication error between the linkage new fan and the main indoor unit (non-series connection setting)	
C76	Communication error between master controller and slave controller	
C77	Communication error between the main control board of the indoor unit and 1# function expansion board	
C78	Communication error between the main PCB of the indoor unit and 2# function expansion board	
C79	Communication error between the main PCB of the indoor unit and the conversion board	
d16	Inlet air temperature of the indoor unit in heating operation is too low	
d17	Inlet air temperature of the indoor unit in cooling operation is too high	
d81	Temperature and humidity alarm out of range	
dE1	The sensor control board failure	
dE2	PM2.5 sensor failure	
dE3	CO2 sensor failure	
dE4	Formaldehyde sensor failure	
dE5	Smart eye sensor failure	
E21	T0-Fresh air inlet temperature sensor short circuit or break	
E22	The dry bulb temperature sensor(upper) is short-circuited or disconnected	

Code	Definition	Digital tube display
E23	The dry bulb temperature sensor (lower) shed is short-circuited or disconnected	
E24	T1-indoor unit return air temperature sensor short-circuited or disconnected	
E31	Room temperature sensor in the wire controller short-circuit or disconnection	
E32	Wireless temperature sensor short-circuited or disconnected	
E33	External room temperature sensor short-circuited or disconnected	
E61	Tcp-fresh air temperature sensor after precooling short-circuited or disconnected	
E62	Tph-fresh air temperature sensor after preheating short-circuited or disconnected	
E81	TA-air outlet temperature sensor short-circuited or disconnected	
EA1	Air outlet humidity sensor failur	
EA2	Return air humidity sensor failure	
EA3	The wet bulb sensor(upper) failure	
EA4	The wet bulb sensor (lower) failure	
EC1	R32 refrigerant leak sensor failure	
F01	T2A-heat exchanger inlet temperature sensor short circuit or disconnect	
F11	T2-temperature sensor in the middle of heat exchanger short circuit or disconnect	
F12	T2 -temperature sensor in the middle of heat exchanger overtemperature protection	
F21	T2B -temperature sensor in heat exchanger short circuit or disconnect	
P71	EEPROM of the main PCB failure	
P72	EEPROM of the display board of the indoor unit failure	
U01	Not unlocked (electronic lock)	
U11	The model code not set	
U12	HP not set	
U14	HP setting error	
U15	DIP switch of the AHU Kit fan control input signal is incorrectly set	
U38	No address code detected	

Code	Definition	Digital tube display
J01	Multiple motor failures	
J1E	IPM fan module overcurrent protection	
J11	Phase current transient overcurrent protection	
J3E	Low bus voltage failure	
J31	Excessive bus voltage failure	
J43	The sampling value of the phase current is abnormal	
J45	Motor does not match indoor machine model	
J47	IPM does not match the indoor unit model	
J5E	Motor startup failure	
J52	Motor blocking protection	
J55	The speed control mode is incorrectly set	
J6E	Motor lack of phase protection	

Non-error codes and definitions

Code	Definition	Digital tube display
d0	Oil return or preheating running	
dC	Self-cleaning running	
dd	Mode conflict (using V8 communication protocol)	
dF	Defrost running	
d51	Static pressure detection	
d61	Remote shutdown	
d71	Indoor unit is in Backup operation	
d72	Outdoor unit is in Backup operation	
OTA	Master program upgrade operation	

[Caution]

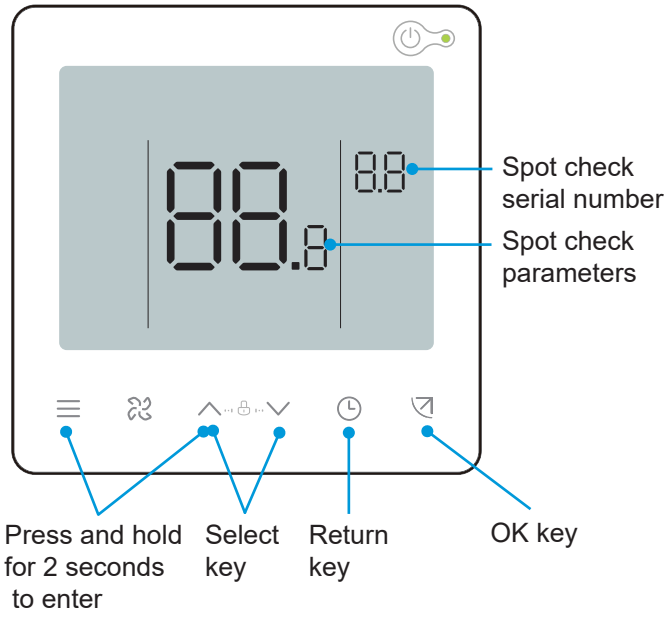
The complete fault code can be displayed only after the model of outdoor unit and the configuration of indoor unit (including wire controller, display components, etc.) are limited.

During the upgrade operation of the main control program, the power supply of the indoor unit and the outdoor unit must be kept on, and it is strictly forbidden to cut off the power, otherwise the upgrade operation of the main control program will be terminated.

Non-error codes and definitions

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 external computer displays u00-u03, the outdoor unit displays n00-n63 (the last two digits are the indoor unit address), the wire controller displays "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 the "🕒" 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	Correspondence address of indoor and outdoor units (Indoor unit network address display Indoor unit expansion board address display)	12	Corrected room temperature T1_modify
		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	Dashboard version No.
6	Corrected room temperature T1_modify	18	Fan driver version No.
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	Indoor unit network address display
10	Actual setting humidity RHs	22	Indoor unit expansion board address display
11	Actual RH indoor humidity	23	Display [———]

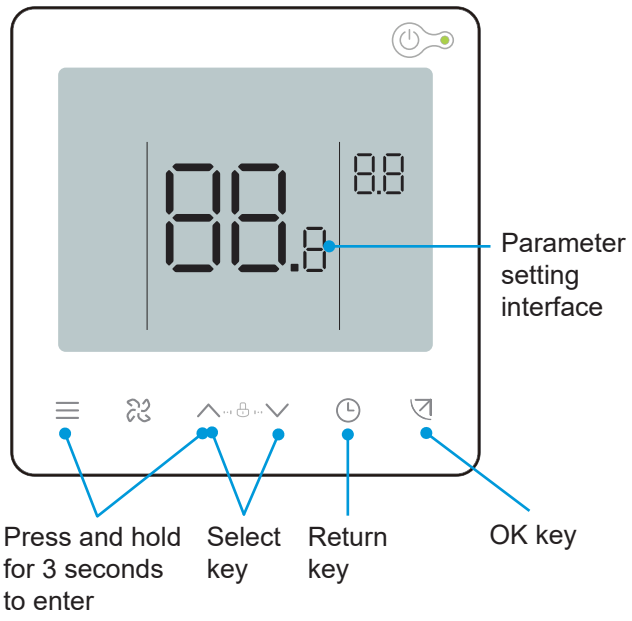
External static pressure setting

The external static pressure is set by the wire controller with two-way communication (taking KJR-86S/BK as an example), including the following two cases.

1 Constant airflow mode

For the indoor unit with constant airflow function, the factory default constant airflow is adopted. After installation, the initial static pressure test shall be carried out. The steps are as follows.

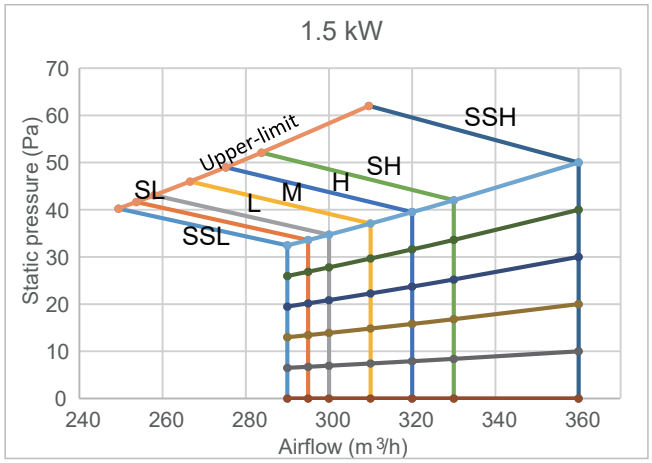
1. In the main interface, press and hold the "☰" + "⤢" keys for 3 seconds to enter, the outdoor unit displays u00-u03, the indoor unit displays n00-n63 (the last two digits are the indoor unit address), and the wire controller displays "CC". Press the "▲" key and "▼" key to select the corresponding indoor unit address, and press the "⤢" key to enter the parameter setting interface, the main interface of the wire controller displays "n00".
2. After entering the parameter setting interface, press "▲" and "▼" to switch the "parameter code" to the initial static pressure test "n58", press "⤢" key to enter the specific parameter setting, press "▲" and "▼" to set the parameter to "01", and press "⤢" key to complete the setting. The wire controller sends the initial static pressure test command to the indoor unit. Wait for a few minutes to complete the initial static pressure test of the indoor unit.
3. Press the "🕒" key to return to the previous layer until exit the parameter setting or exit 60 seconds after no operation.

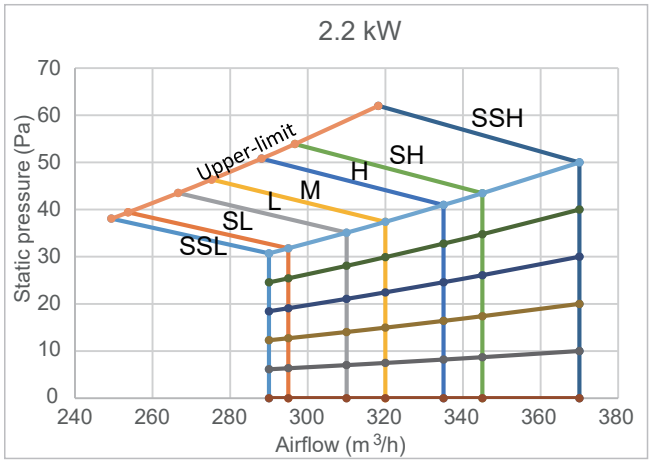


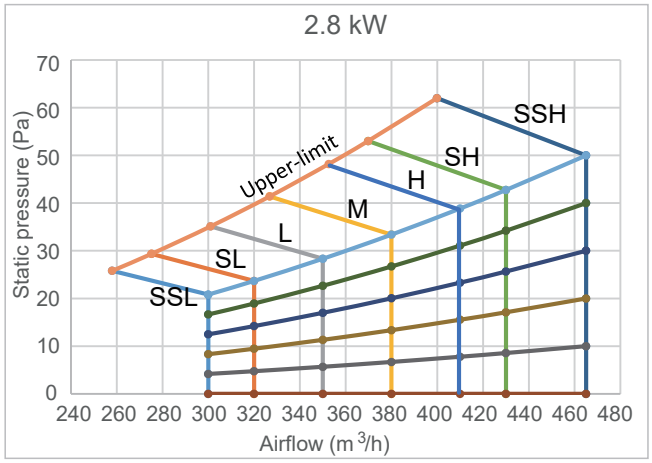
Parameter code	Parameter Name	Parameter Range	Default Value	Remarks
n58	Initial static pressure test	00/01	00	00: not reset; 01: reset

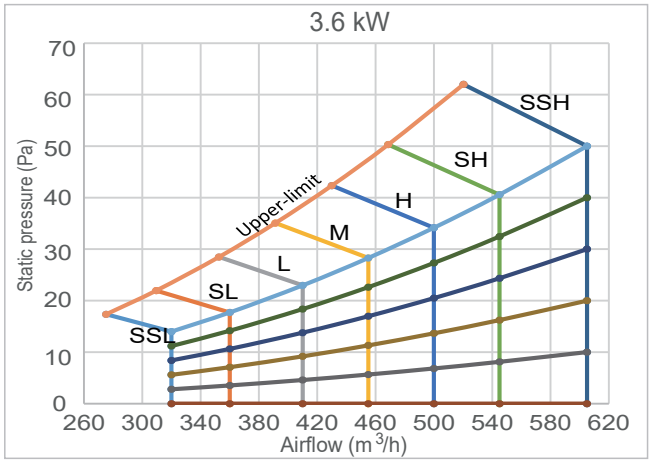
Wind pressure curve

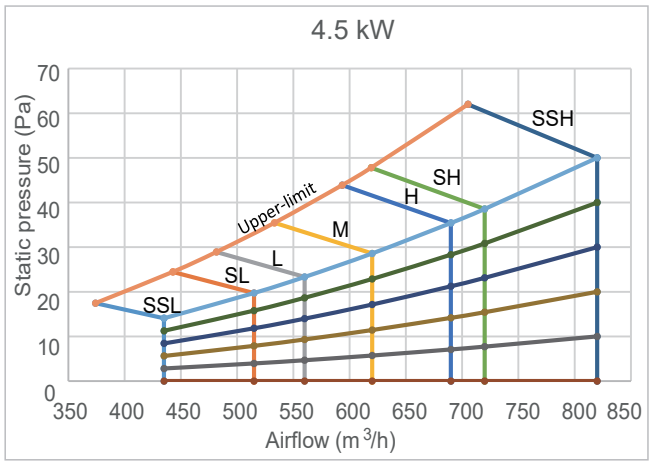
Constant airflow - adaptive

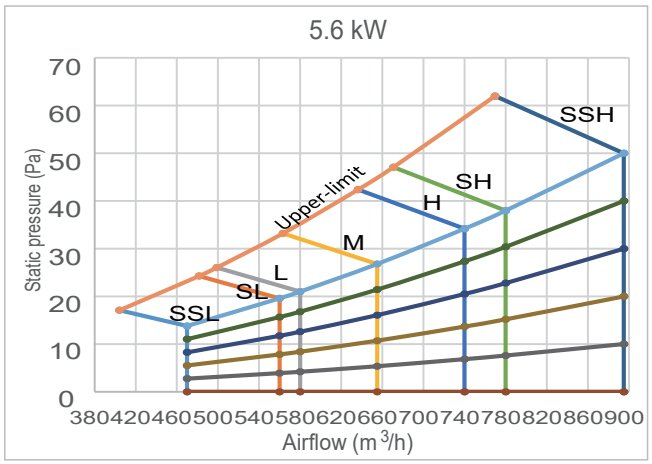


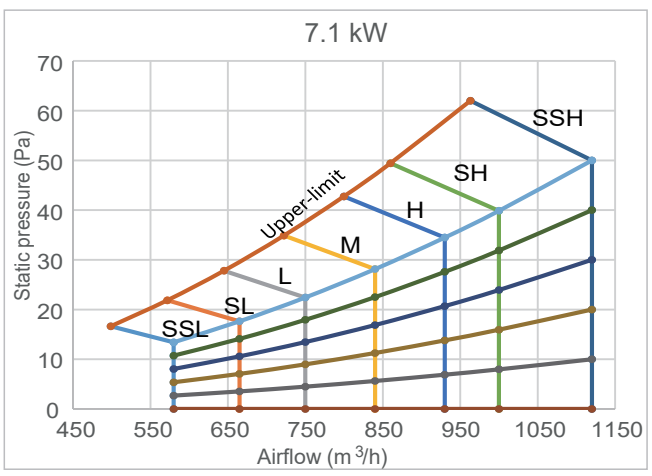


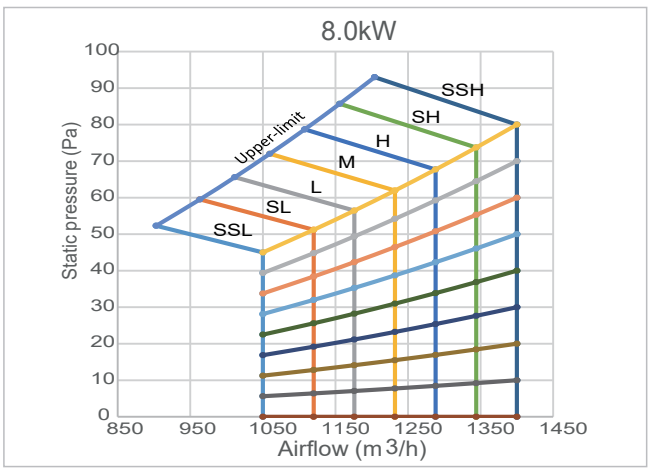


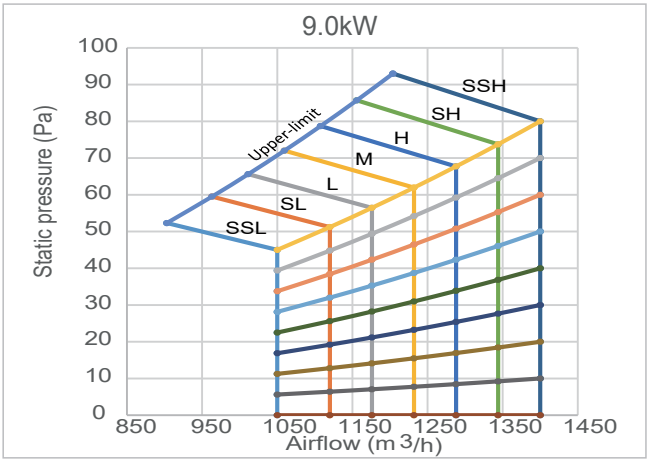


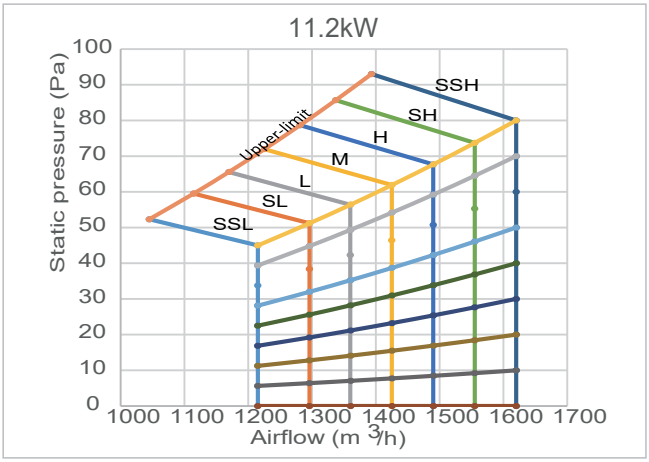












2 Constant speed mode

The two-way communication wire controller is required to set the external static pressure parameters to overcome the air outlet resistance. The steps are as follows.

1. In the main interface, press and hold the "≡" + "⊿" keys for 3 seconds to enter, and the main interface displays "CC". Press "▲" key and "▼" key to select the indoor unit (the indoor unit displays "n00-n63" and the last two digits are the indoor unit address). Press "⊿" key to enter the parameter setting interface, and the main interface of the wire controller displays "n00".
2. After entering the parameter setting interface, the main interface of the wire controller displays "n00". Press "⊿" to enter the specific parameter setting, then press "▲" and "▼" to adjust the parameter value of the external static pressure gear, and press "⊿" to save the parameters to complete the external static pressure parameter setting.
3. Press the "◷" key to return to the previous layer until exit the parameter setting or exit 60 seconds after no operation.

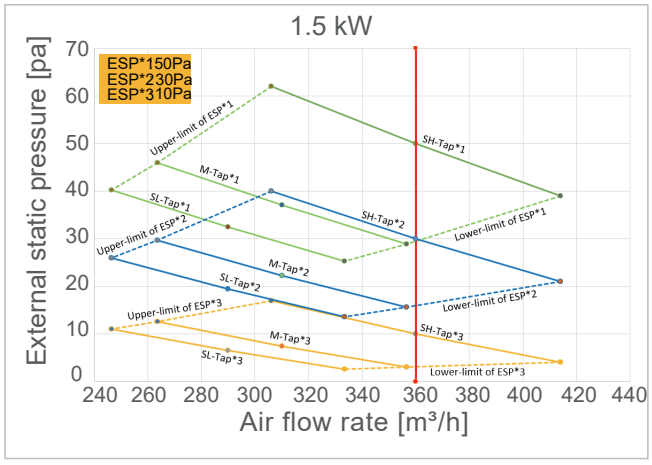
Parameter code	Parameter Name	Parameter Range	Default Value	Remarks
n00	External static pressure	External static pressure gear: 00/01/02/03/04/05/~/19	00 (models 15~71) 01 (models 80~112)	The indoor unit sets corresponding static pressure value FF of according to gear

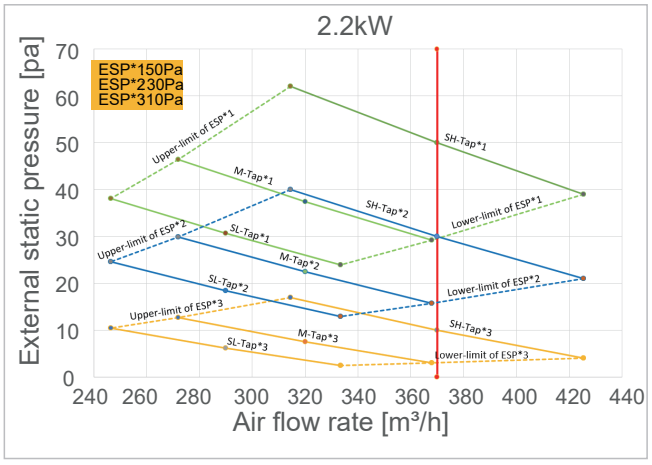
Static pressure setting parameter list

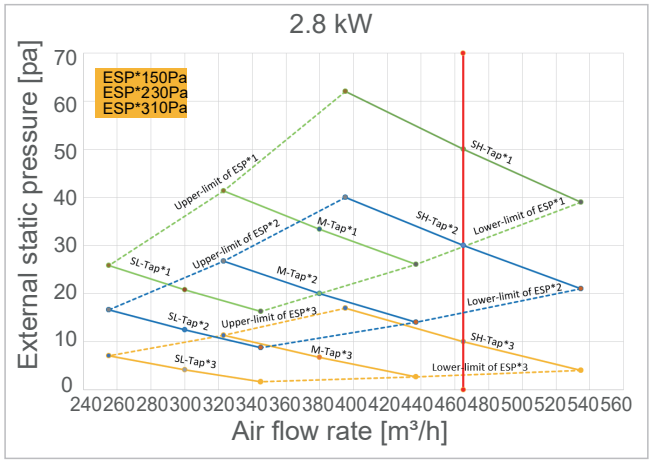
Machine capability	Static pressure setting							
KW*100	Gear 0	Gear 1	Gear 2	Gear 3	Gear 4	Gear 5	Gear 6	Gear 7~19
HP	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa
15（0.6HP）	10	20	30	40	50	50	50	50
22（0.8HP）	10	20	30	40	50	50	50	50
28（1HP）	10	20	30	40	50	50	50	50
36（1.2HP）	10	20	30	40	50	50	50	50
45（1.7HP）	10	20	30	40	50	50	50	50
56（2.0HP）	10	20	30	40	50	50	50	50
71（2.5HP）	10	20	30	40	50	50	50	50
80（3HP）	10	20	30	40	50	60	70	80
90（3.2HP）	10	20	30	40	50	60	70	80
112（4HP）	10	20	30	40	50	60	70	80

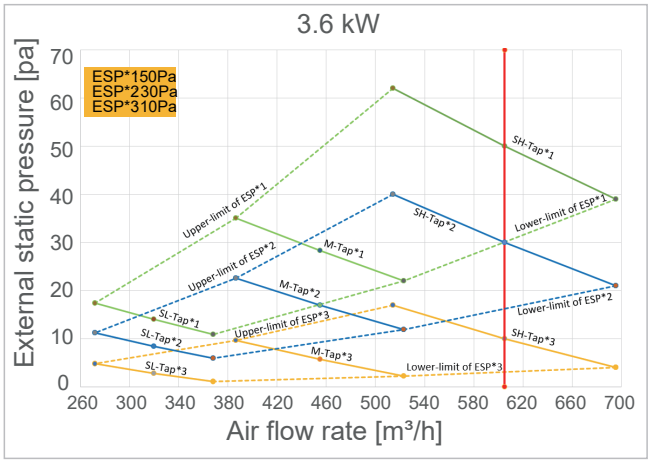
Wind pressure curve

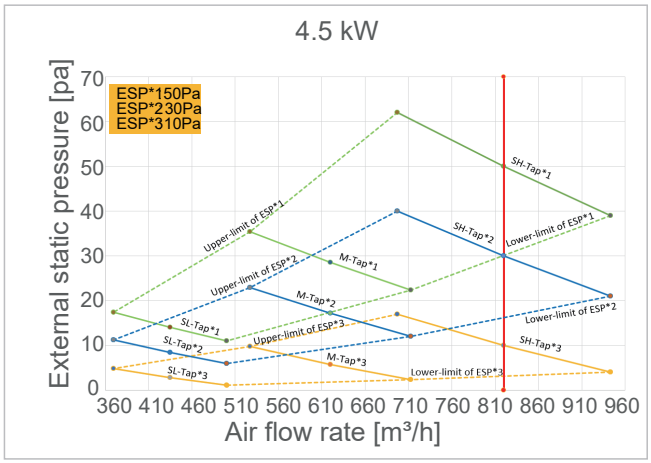
Non-constant airflow

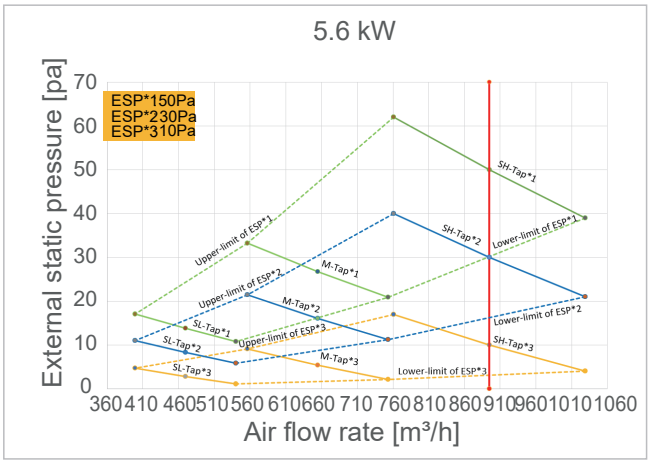


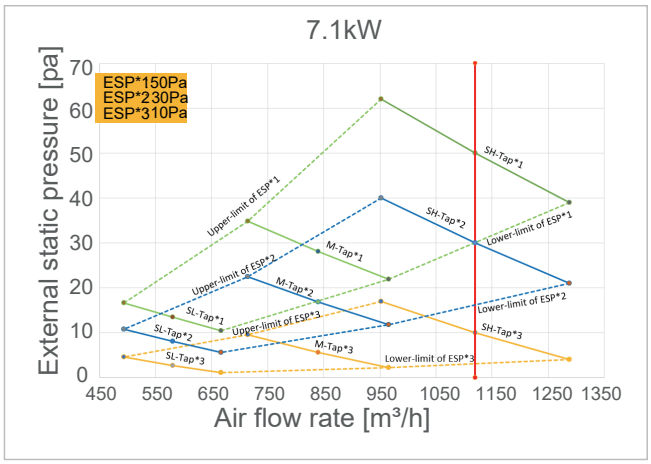


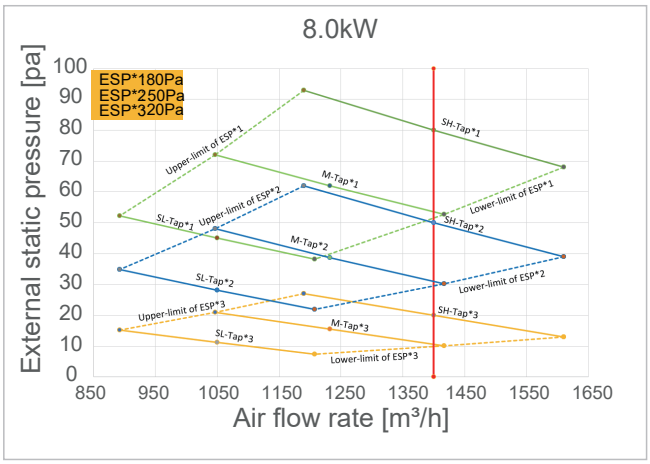


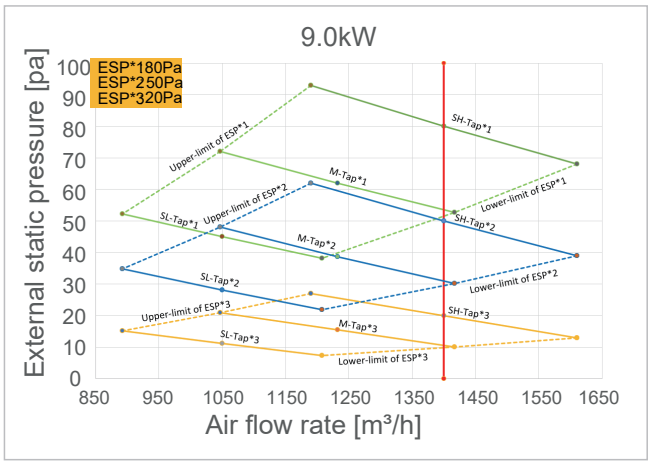



4.5 kW
External static pressure [pa]
Air flow rate [m³/h]
ESP*150Pa
ESP*230Pa
ESP*310Pa
SH-Tap*1
SH-Tap*2
SH-Tap*3
M-Tap*1
M-Tap*2
M-Tap*3
SL-Tap*1
SL-Tap*2
SL-Tap*3
Upper-limit of ESP*1
Upper-limit of ESP*2
Upper-limit of ESP*3
Lower-limit of ESP*1
Lower-limit of ESP*2
Lower-limit of ESP*3


5.6 kW
External static pressure [pa]
Air flow rate [m³/h]
ESP*150Pa
ESP*230Pa
ESP*310Pa
SH-Tap*1
SH-Tap*2
SH-Tap*3
M-Tap*1
M-Tap*2
M-Tap*3
SL-Tap*1
SL-Tap*2
SL-Tap*3
Upper-limit of ESP*1
Upper-limit of ESP*2
Upper-limit of ESP*3
Lower-limit of ESP*1
Lower-limit of ESP*2
Lower-limit of ESP*3


7.1kW
External static pressure [pa]
Air flow rate [m³/h]
ESP*150Pa
ESP*230Pa
ESP*310Pa
SH-Tap*1
SH-Tap*2
SH-Tap*3
M-Tap*1
M-Tap*2
M-Tap*3
SL-Tap*1
SL-Tap*2
SL-Tap*3
Upper-limit of ESP*1
Upper-limit of ESP*2
Upper-limit of ESP*3
Lower-limit of ESP*1
Lower-limit of ESP*2
Lower-limit of ESP*3


8.0kW
External static pressure [pa]
Air flow rate [m³/h]
ESP*180Pa
ESP*250Pa
ESP*320Pa
SH-Tap*1
SH-Tap*2
SH-Tap*3
M-Tap*1
M-Tap*2
M-Tap*3
SL-Tap*1
SL-Tap*2
SL-Tap*3
Upper-limit of ESP*1
Upper-limit of ESP*2
Upper-limit of ESP*3
Lower-limit of ESP*1
Lower-limit of ESP*2
Lower-limit of ESP*3


9.0kW
External static pressure [pa]
Air flow rate [m³/h]
ESP*180Pa
ESP*250Pa
ESP*320Pa
SH-Tap*1
SH-Tap*2
SH-Tap*3
M-Tap*1
M-Tap*2
M-Tap*3
SL-Tap*1
SL-Tap*2
SL-Tap*3
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Upper-limit of ESP*2
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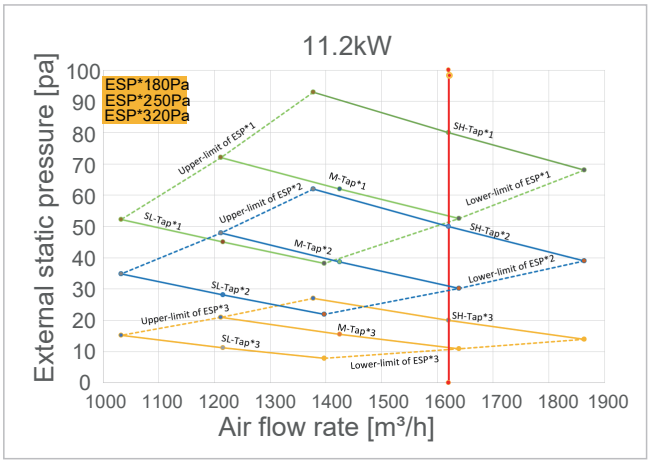
Lower-limit of ESP*3


11.2kW
External static pressure [pa]
Air flow rate [m³/h]
ESP*180Pa
ESP*250Pa
ESP*320Pa
SH-Tap*1
SH-Tap*2
SH-Tap*3
M-Tap*1
M-Tap*2
M-Tap*3
SL-Tap*1
SL-Tap*2
SL-Tap*3
Upper-limit of ESP*1
Upper-limit of ESP*2
Upper-limit of ESP*3
Lower-limit of ESP*1
Lower-limit of ESP*2
Lower-limit of ESP*3

3 Mode switching between constant airflow and constant speed

The switching steps of the two operation modes are as follows.

1. In the main interface, press and hold the "≡" + "⌂" keys for 3 seconds to enter, and the main interface displays "CC". Press the "▲" key and "▲" key to select the indoor unit (the indoor unit displays "n00-n63" and the last two digits are the indoor unit address). Press the "⌂" key to enter the parameter setting interface, and the main interface of the wire controller displays "n00".
2. After entering the parameter setting interface, press "▲" and "▼" to switch the "parameter code" to the constant airflow setting parameter code "n30", press "⌂" to enter the specific parameter setting, then press "▲" and "▼" to adjust to the demand mode parameter value, and press "⌂" to save the parameter to complete the operation mode parameter setting.
3. Press the "🕒" key to return to the previous layer until exit the parameter setting or exit 60 seconds after no operation.

Parameter code	Parameter Name	Parameter Range	Default Value	Remarks
n30	Constant airflow setting	00/01	01	00: constant rotating speed; 01: constant airflow

[Caution]

Parameters can be set in the ON or OFF status.

In the parameter setting interface, the wire controller does not respond to the remote control signal; the wire controller does not respond to the app remote control signal.

In the parameter setting interface, the mode, airflow rate and switch buttons are invalid.

See the instructions of wire controller for details of remote controller setting parameters.

See the instructions of wire controller for other parameters of indoor unit.

11 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 those meeting the requirements and "X" for those failed to meet the requirements.

Check item	Inspection contents	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 components 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 power cord, connecting wire and piping are correctly connected	The machine does not work properly or components are burnt	
Check whether the wires and piping are correctly connected	The machine does not work properly or components 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 components 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 Warning

⚠ [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]

The air filter screen is optional.

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. For the indoor unit in constant airflow mode, the reminder for cleaning the filter screen on the wire controller shall prevail.

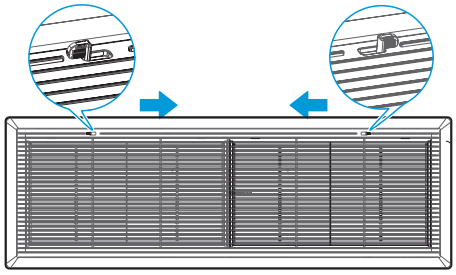
Replace the filter screen if the dirt is serious and difficult to clean.

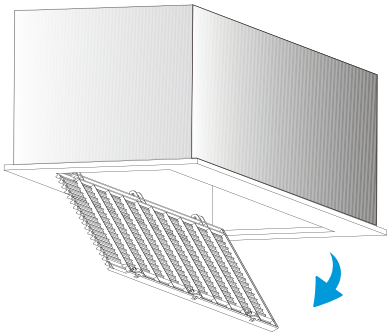
Do not remove the air filter screen before cleaning, otherwise it may cause a fault.

1 Schematic diagram of steps

① Open the air inlet grille.

For the duct type air conditioner, open the air inlet grille according to the method as shown as shown in the figure.



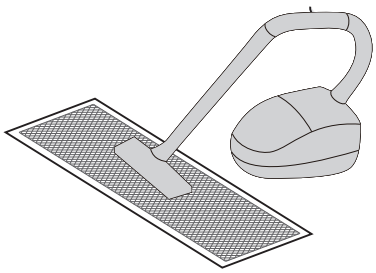
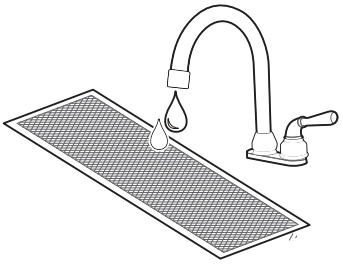


② Remove the filter screen.

[Note]

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

③ Clean the filter screen.

A vacuum cleaner can be used for cleaning, and the air inlet side of the filter screen faces upward.	The clean water can be used for cleaning (except for the activated carbon module), and the air inlet side of the filter screen is downward.
	

[Caution]

Do not dry the filter screen with fire and other combustion appliances to avoid deformation of the filter screen.

If the filter screen is dirty, please use a soft brush and neutral detergent to clean it, then dehydrate it and day 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 and close the air inlet grille in the reverse order of steps 1 and 2 described above.

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.

For indoor units in constant speed mode, the primary filter 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. In severe cases, too much dust will block the filter screen, affecting the air conditioning effect and the indoor sanitary environment.

Preheat it 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.

Complete the following steps before the air conditioner is set aside for a long time:

1. If the air conditioner is not used for a long time due to seasonal changes etc., the unit should be operated for 4-5 hours in the "Air supply" operation mode until the inside of the unit is completely dry, otherwise, it may cause health and hygiene problems due to the growth of mold in the room.
2. When not in use for a long time, power off or unplug the power plug to reduce standby power consumption, and wipe the wireless remote controller with a clean soft dry cloth and remove the battery.
3. Please turn on the power switch on 12 hours before using the air conditioner again. In addition, do not turn off the power switch during seasons when the air conditioner is used frequently, as this may cause a malfunction.

[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.

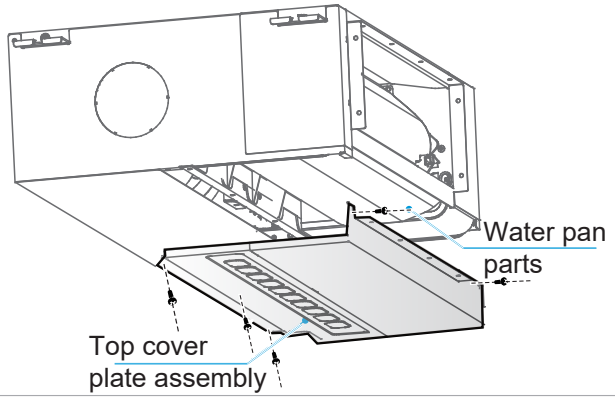
After a long idle time, check to see if the return air inlet and outlet of indoor and outdoor units are blocked or not. If they are blocked, please clean immediately.

3 Repair of Conventional Parts and Components

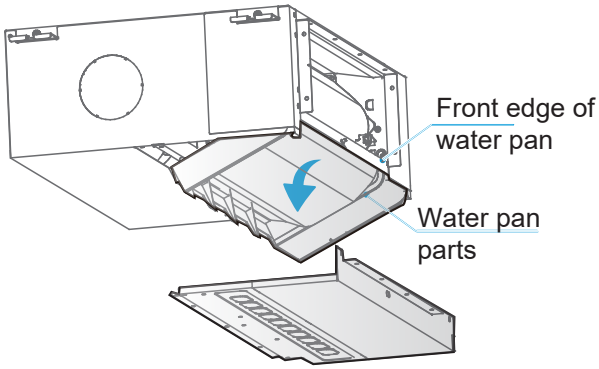
Repair of conventional parts and components

When repairing the internal parts and components of the machine, it is necessary to remove the water pan first. Please remove the water pan according to the following schematic diagram, otherwise it is easy to cause water leakage of the machine (please confirm that there is no residual water in the water pan before removal).

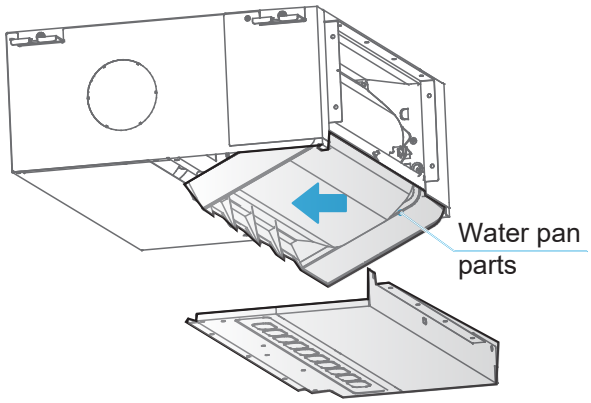
1 Remove the top cover plate assembly



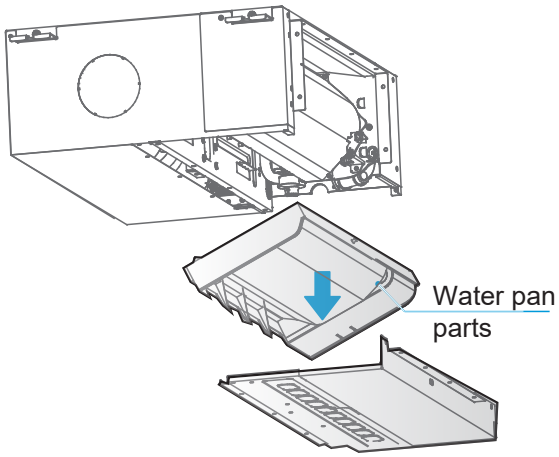
2 Water pan parts rotate 30 to 45 degrees around the front edge of water pan



3 Move the water pan parts leftward for more than 30 mm

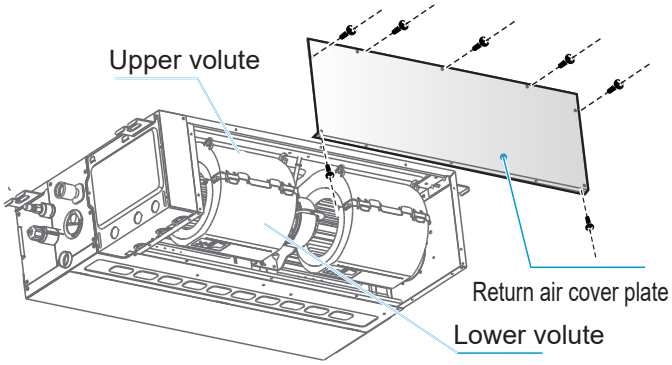


4 Move water pan parts down until it disconnects from the unit

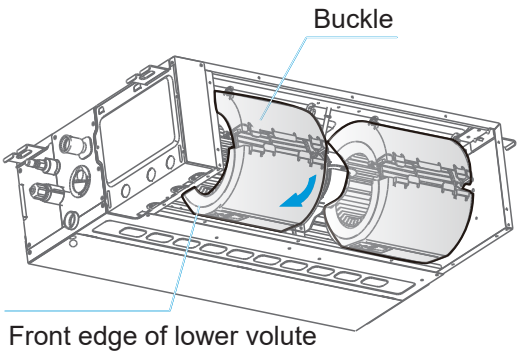


Repair of relevant parts and components of fan

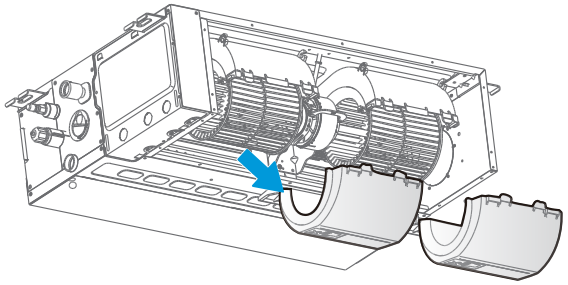
1 Remove the return air cover plate
(Take the lower return air model as an example. Remove the filter screen first if any.)



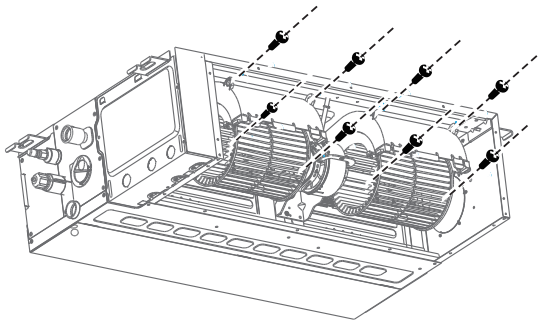
2 Press the buckle of upper volute and rotate the lower volute about 30 degrees around the front edge of the lower volute.



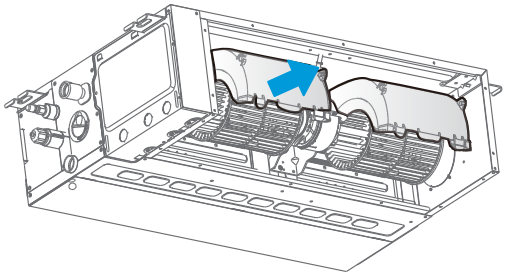
3 **Take out the lower part of lower volute obliquely downwards.**



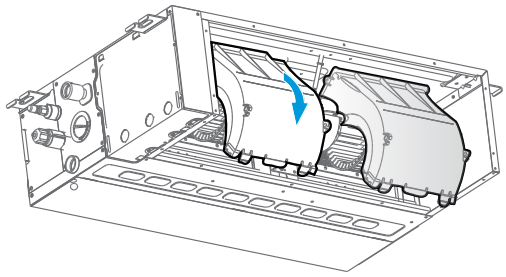
4 **Loosen the screw on the upper volute.**



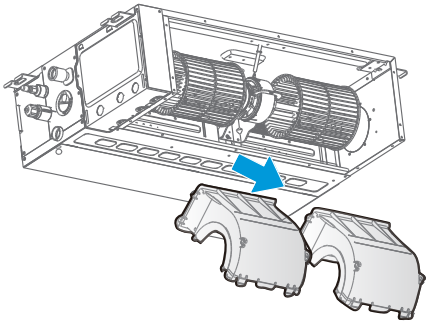
5 **Move the upper volute backward for about 50 mm.**



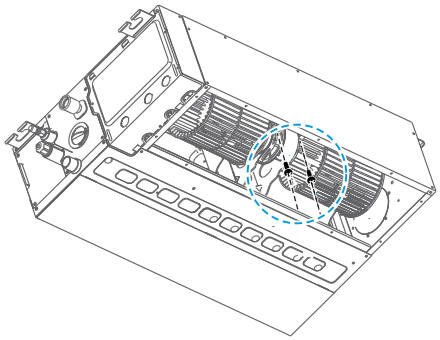
6 **Rotate the volute downward along the rotor by more than 90°.**



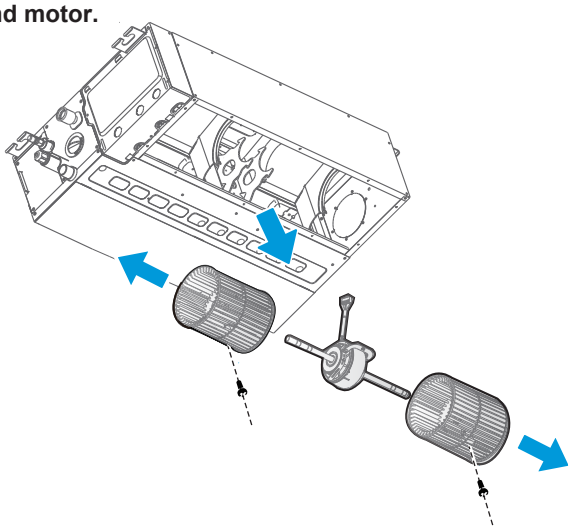
7 **Take out the lower volute obliquely downwards**



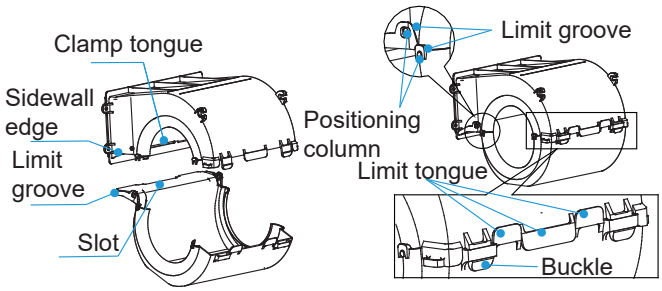
8 **Loosen the fastening screws of the motor coaming.**



9 **Remove the motor and rotor together; loosen the fastening screw of the rotor, and remove the rotor and motor.**



Note: For assembling, the slot shall be aligned with the clamp tongue, and the limit groove shall be aligned with the sidewall edge before fastening; then the limit groove, positioning column and buckle shall be checked for proper installation, and the limit tongue shall cover the outer side of the volute.



[Note]

In the first step of repair of the rear return air fan model, remove the return air cover plate downward, and keep other steps the same.

Repair of drainage pump (model with pump)

1. Remove the screws from the water pump cover plate and piping pressure plate, and remove the piping pressure plate first, as shown in Fig. A.
2. Unplug the power supply of water pump and water level switch.
3. Replace drainage pump assembly.

Repair of electronic expansion valve and temperature sensor

1. Remove the screws from the water pump cover plate and piping pressure plate, and remove the piping pressure plate first, as shown in Fig. A.
2. Unplug the power supply of water pump and water level switch, and remove the water pump assembly.
3. Replace the temperature sensor and electronic expansion valve.

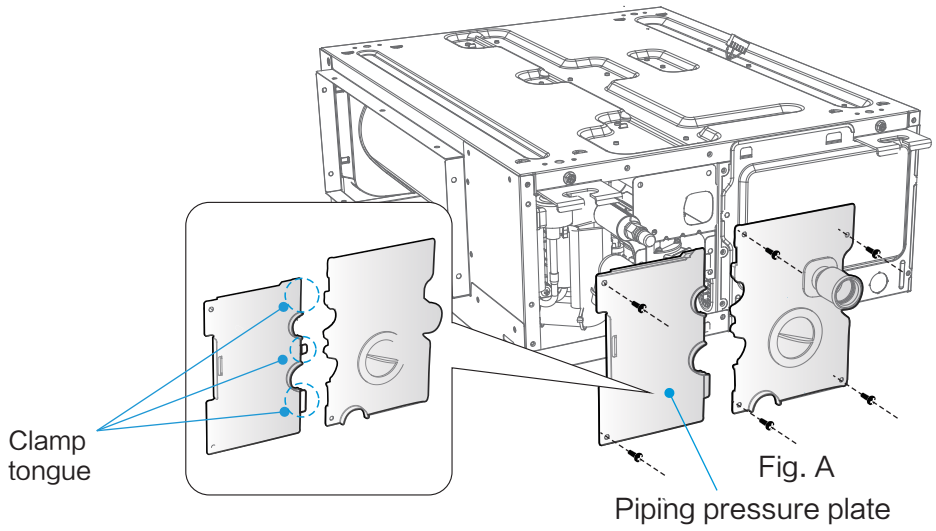


Fig. A

[Note]

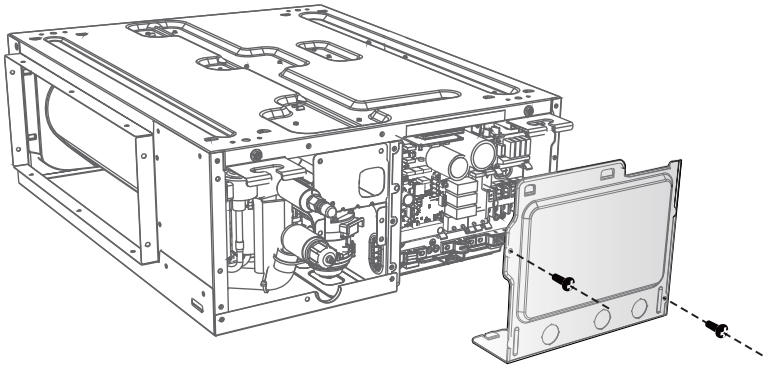
During assembly, the clamp tongue of the piping pressure plate shall be clamped under the water pump cover plate.

Repair of electronic controller board

1 Remove the screws from the electric control box cover.

2 Check the circuit, components, etc., or replace the mainboard.

3 After replacing the mainboard, scan the QR code on the electric control box with the after-sales service tooling, and reset the machine model and capacity.After replacing the mainboard, scan the QR code on the electric control box with the after-sales service tooling, and reset the machine model and capacity.

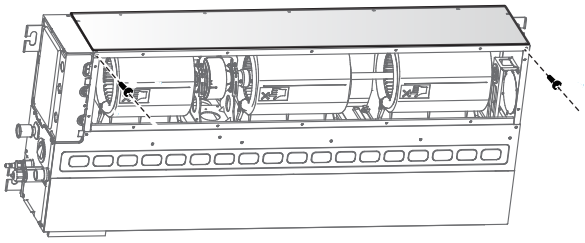


[Note]

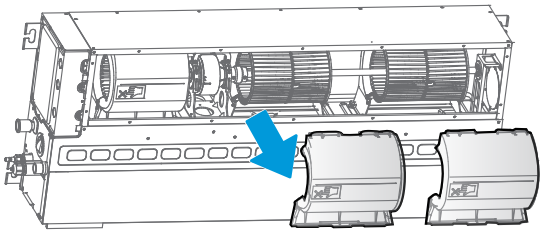
It is forbidden to interchange the electronic control boards of different internal machines.

Repair of motor shaft and coupling (three-rotor model)

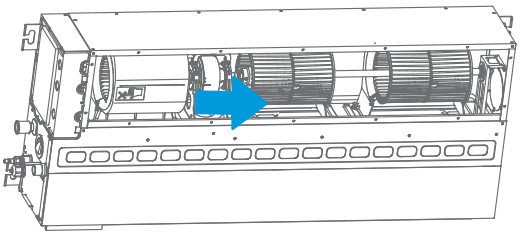
1 **Remove the two screws below the return air cover plate.**
Take the lower return air model as an example.
Remove the filter screen first if any.



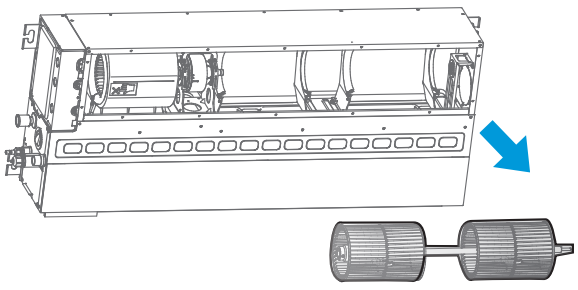
2 **Refer to the repair steps of the volute, remove the lower volute with coupling side, and loosen the fastening screws on the coupling.**



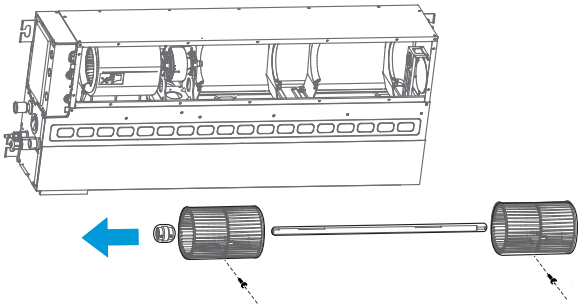
3 **Push the c.oupling to one side of the rotor.**



4 **Remove the rotor, connecting shaft and coupling together.**

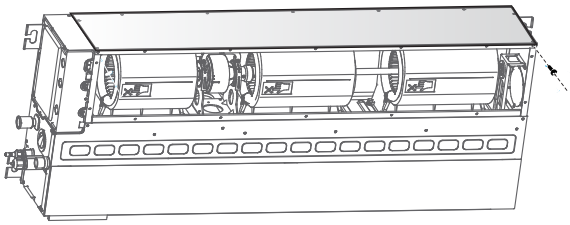


5 **Loosen the rotor fastening screw, and remove the coupling and motor shaft.**

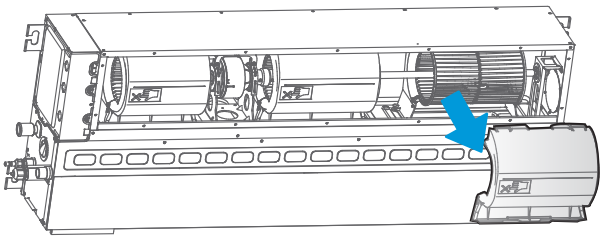


Repair of bearing pedestal (three-rotor model)

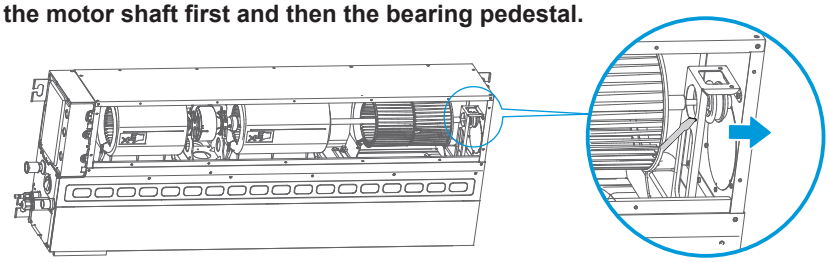
1 **Remove the two screws below the return air cover plate.**
(Take the lower return air model as an example.
Remove the filter screen first if any.)



2 **Remove the lower volute near the bearing pedestal side by referring to the repair steps of the volute.**



3 **Use a tool to push out the bearing pedestal to the right and remove the bearing pedestal. Or refer to the disassembly steps of motor shaft and coupling, remove the motor shaft first and then the bearing pedestal.**



DECLARATION OF CONFORMITY UE

DICHIARAZIONE DI CONFORMITÀ EU
KONFORMITÄTSERKLÄRUNG UE
DECLARATION DE CONFORMITE UE
DECLARACIÓN DE CONFORMIDAD UE

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	
CNT3-3-XY D15	CNT3-3-XY D22
CNT3-3-XY D28	CNT3-3-XY D36
CNT3-3-XY D45	CNT3-3-XY D56
CNT3-3-XY D71	CNT3-3-XY D80
CNT3-3-XY D90	CNT3-3-XY D112

- **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 geprüftes 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 º 00708410253 registrada en la Cámara de Comercio de Belluno Italia

FELTRE, 19/04/2023

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