SDV6

FULL DC INVERTER SYSTEMS

USER MANUAL

INDOOR UNITS SDV6-HFxxS

COMMERCIAL AIR CONDITIONERS SDV6

sinclair

Original instructions

IMPORTANT NOTE:
Read this manual carefully before installing or operating your new air conditioning unit. Make sure to save this manual for future reference.

Preface

Dear users,

Thank you for purchasing and using our product. Please read this manual carefully before you install, use, maintain or troubleshoot this product so that you can familiarize yourself with the product and use it correctly.

For ODUs or other IDUs, please refer to the applicable installation & owner's manuals provided with them.

For detailed operation of auxiliary control devices, such as wired, remote and centralized controllers, please refer to their instructions.

To ensure the correct installation and operation of the product, the following instructions are provided:

- To ensure the correct and safe operation of the product, please strictly follow the requirements listed in this manual.
- All figures and contents in this manual are for reference only. Due to continuing product improvement, the specifications are subject to change without notice.
- Regular cleaning and maintenance of the product are required for intended performance and long service life. Each year before using the air conditioner, please contact your local dealer, and we will assign professionals to provide paid services of cleaning, maintenance, and inspection.
- Please retain this manual for future reference.

Contents

Please thoroughly read and ensure that you fully understand the safety precautions (including the signs and symbols) in this manual, and follow relevant instructions during use to prevent damage to health or property.

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 Warning Signs

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

[Danger]	Failure to observe the warning will result in severe personal injury or death.
[Warning]	Failure to observe the warning could result in severe personal injury or death, property damage, or electrical or fire hazards.
[Caution]	Failure to observe the warning could result in minor personal injury, product or property damage, or other unsafe situations.
[Note]	Useful operation and maintenance information.

⚠ Warning contents

Ensure Proper Grounding

Professional Only

⊘ Prohibition signs

No Flammable Materials

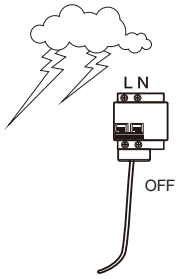
No Strong Current

No Open Fire

No Acid or Alkali Materials

2 Safety Precautions

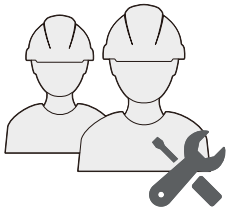
⊘ [Danger]

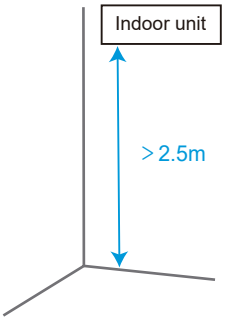


During thunderstorms, disconnect the main power switch. Otherwise, lightning may damage the unit.

In the event of refrigerant leakage, smoking and open flames are prohibited. Disconnect the main power switch immediately, open windows to allow ventilation, keep away from the leakage point, and contact your local dealer or technical support to request a professional repair.

⚠ [Warning]





Air conditioner installation must comply with local standards and electrical codes, and relevant instructions in this manual.

Do not use any liquid cleanser, liquefied cleanser, or corrosive cleanser to wipe this unit or spray water or other liquids on the unit. Otherwise, the plastic parts of the unit will become damaged and an electrical shock may occur. Disconnect the main power switch before cleaning and maintenance to avoid accidents.

Ask a professional to remove and reinstall the air conditioner.

Ask a professional for maintenance and repair assistance.

The IDU shall be placed at a height not accessible to children, at least 2.5m above the ground.

[Caution]

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Children shall not play with the appliance.

Cleaning and user maintenance shall not be made by children without supervision.

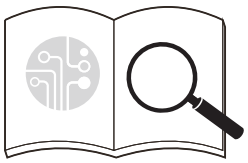
This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.

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 the local wiring specifications.

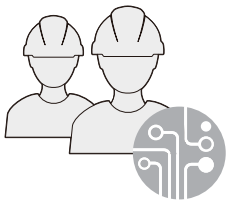
Wiring work must be completed by qualified electricians.

All wiring work must comply with electrical safety specifications.

The air conditioner must be well grounded. Specifically, the main switch of the air conditioner must have a reliable grounding cable.

Before contacting wiring devices, cut off all the power supplies.

The user MAY NOT disassemble or repair the air conditioner. Doing so can be dangerous. In the event of a fault, immediately cut off the power and contact your local dealer or technical support.



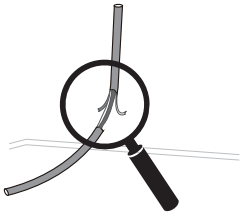
A separate power supply that meets the rated parameter values must be provided for the air conditioner.

The fixed wiring to which the air conditioner is connected must be equipped with a power cut-off device that meets the wiring requirements.

To avoid danger, a damaged power cable must be replaced by professionals from the maintenance department or a similar department of the manufacturer.

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]



Always ground the main power switch.

Do not use a damaged power cable and replace it if it is damaged.

When the air conditioner is used for the first time or is in a power-off state for a long time, it needs to be connected to the power supply and warmed up for at least 12 hours before use.

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.

Operation

1 Operation Precautions

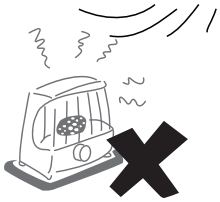
⚠ [Warning]

If the unit will be not used for a long time, disconnect the main power switch. Otherwise, an accident may occur.

The installation height of the air conditioner shall be at least 2.5m above the ground to avoid the following risks:

1. Touching of moving or live parts, such as fans, motors, or louvers, by a non professional. Running parts may cause harm to you or transmission assemblies may become damaged.

2. Getting too close to the air conditioner may reduce the level of comfort.



When the product is used with a burning appliance, the room must be ventilated regularly. Otherwise, it may cause an insufficient oxygen supply.

Do not let children play with the air conditioner. Otherwise, an accident may occur.

Do not expose the IDUs or controller to moisture or water as this may cause short circuiting or fire.

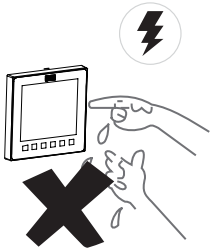
Do not place any appliance that uses an open flame in the direct air supply of the air conditioner as it could interfere with the combustion of the appliance.

Do not use or store flammable gases or liquids such as natural gas, hair spray, paint or gasoline near the air conditioner. Otherwise, a fire may occur.

To avoid causing harm, do not place animals or plants directly in front of the air conditioner's air supply.

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

Do not place flammable sprayers near the air conditioner or spray it directly at the air conditioner. Otherwise, a fire may occur.



Do not place a container of water on the air conditioner. If immersed in water, the air conditioner's electrical insulation will weaken, resulting in electrical shock.

After long-term use, confirm whether the installation platform has become worn. If it is worn, the unit could fall, causing injury.

Do not operate the switch with wet hands, as this may result in electric shock.

When servicing the air conditioner, be sure to turn off the air conditioner and cut off the power supply. Otherwise, the high-speed operation of the internal fan will cause injury.

The air conditioner cannot be used to preserve food, animals and plants, precision instruments and works of art, etc.; otherwise, quality degradation could occur.

Do not use fuses like iron or copper wire other than those with the specified capacity. Otherwise, a malfunction or fire may occur. The power supply must use the special circuit of the air conditioner at the rated voltage.

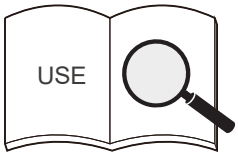
Do not place valuables under the air conditioner. Air conditioner condensation problems may damage the valuables.

When the air conditioner needs to be moved and re-installed, please entrust the local dealer or a professional technician to operate it.

⚠ CAUTION

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.

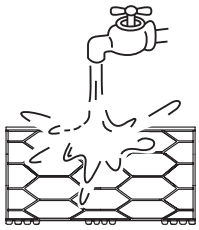
[Caution]



To use the unit normally, please follow the "Operation" section in this manual. Otherwise, the internal protection may be triggered, the unit may begin to drip, or the unit's cooling and heating effects may be impacted.

The room temperature should be set properly, especially when there are elderly, children, or patients in the room.

Lightning or the starting and stopping of large electrical equipment in nearby factories may cause misoperation of the air conditioner. Please turn off the main power switch for a few seconds, and then restart the air conditioner.



To avoid accidental resetting of the thermal circuit breaker, the air conditioner cannot be powered by an external switching device such as a timer or connected to a circuit that is turned on and off by a common component timer.

Check whether the air filter is installed properly. Confirm that the inlet and outlet ports of the IDU/ODU are not blocked.

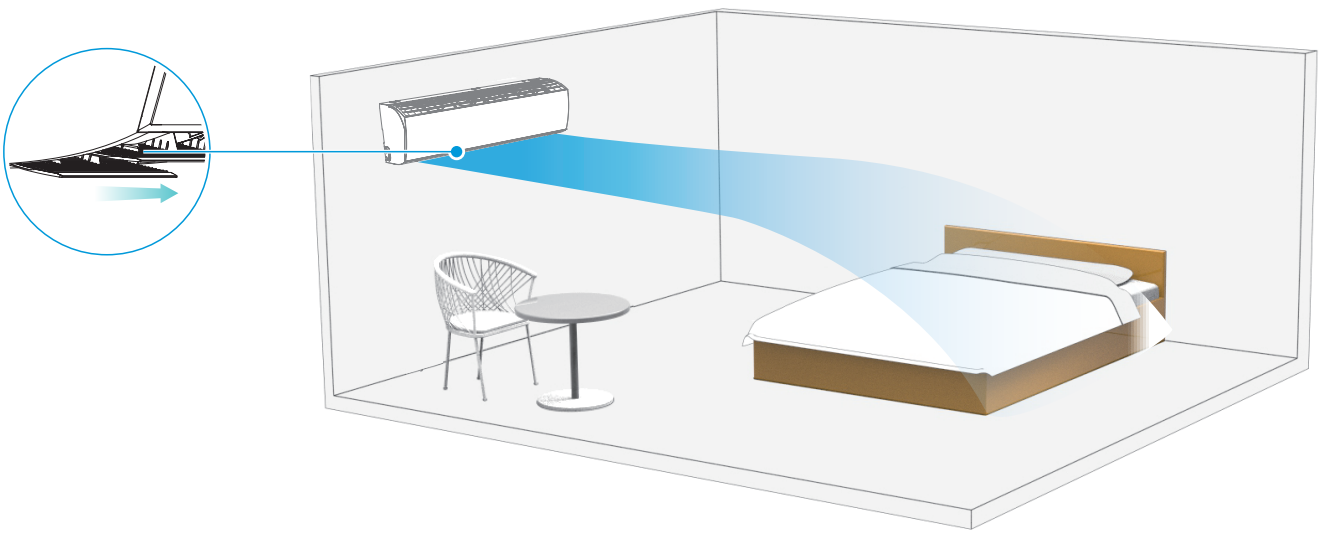
If the air conditioner will not be used for a long time, please clean the air filter before starting the air conditioner. Otherwise, dust and mold on the filter could contaminate the air or produce an unpleasant smell. For more details, please refer to the section "Cleaning and Maintenance".

2 Optimum Operation

As cold air sinks and hot air rises, adjust the direction of louvers respectively in cooling and heating modes to ensure good cooling and heating effects.

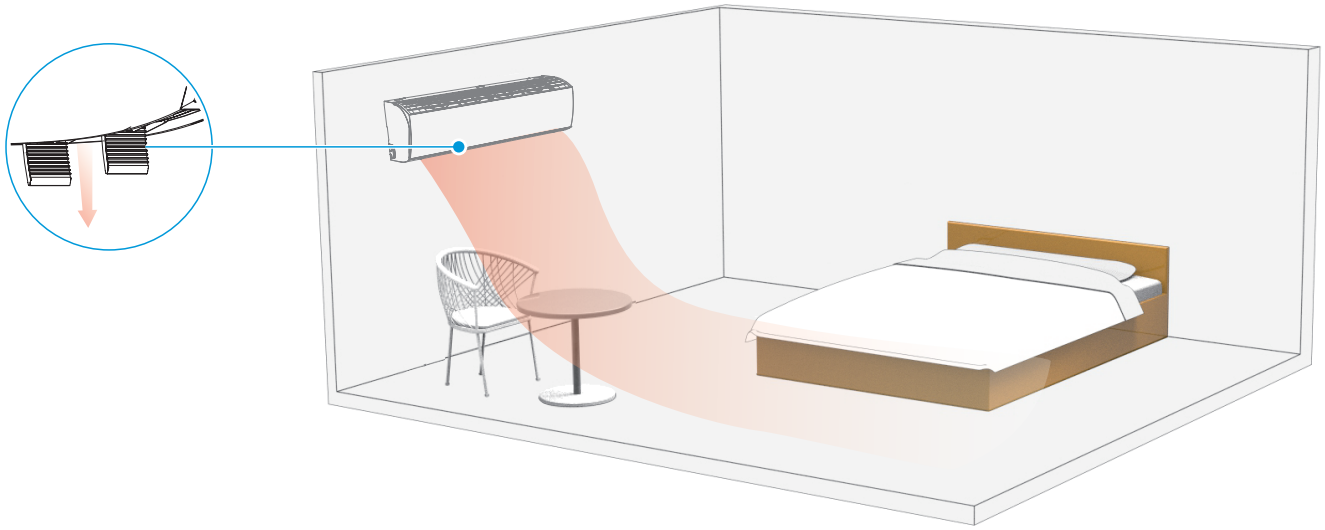
In Cooling Mode

To improve the cooling effect in the entire room, adjust the louvers of the air outlet grille horizontally.



In Heating Mode

To improve the heating effect in the lower parts of a room, adjust the louvers of air outlet grille downwards.



Operating Range

To maintain good performance, operate the air conditioner under the following temperature conditions:

Cooling	Indoor temperature	16~32°C
	Indoor humidity	≤80% (When the humidity exceeds 80%, long-time operation of the IDU may cause dew condensation on the surface of the IDU or generate mist-like cold air from the air outlet.)
Heating	Indoor temperature	15~30°C

[Caution]

The IDU operates stably within the temperature range given in the table above. If it exceeds this normal operating range, the IDU may stop running.

3 Symptoms That Are Not Faults

Normal Protection of the Air Conditioner

During operation, the following phenomena are normal and do not require maintenance.

Protection	When the power switch is on, if you start the system right after it is stopped, it is normal that the ODU does not operate for about four minutes as frequent compressor start/stop is not supported.
Anti-cold air protection (Heat pump type)	In heating mode (including heating in automatic mode), when the indoor heat exchanger does not reach a certain temperature, the indoor fan temporarily shuts off, or runs in Low mode until the heat exchanger heats up to prevent the blowing of cold air.
Defrosting (Heat pump type)	When the outdoor temperature is low and the humidity is high, frost may build up on the ODU's heat exchanger, which may reduce the heating capacity of the air conditioner. In this case, the air conditioner will stop heating, enter automatic defrosting mode, and return to heating mode after defrosting has been completed. During the defrosting, the outdoor fan stops running and the indoor fan runs using the anti-cold air protection function. The defrosting operation time varies depending on the outdoor temperature and the degree of frosting. It generally takes 2 to 10 minutes. During the defrosting process, the ODU may emit steam due to the rapid defrosting, which is normal.
Anti-condensation	When the IDU detects high humidity, the air conditioner will adjust the louver angle and the fan speed to prevent condensation and avoid dripping.

Normal Phenomena that Are Not Air Conditioner Faults

The following phenomena are normal during operation of the air conditioner. They can be solved according to the instructions below or do not need to be solved.

The IDU emits white mist

1. In an environment where the indoor relative humidity is too high, when the IDU runs in cooling mode, white mist may appear due to the humidity and the temperature difference between the air inlet and outlet.
2. When the air conditioner is switched to heating mode after defrosting, the IDU discharges the moisture generated from defrosting as steam.

The IDU blows dust

When the air conditioner has not been used for a long time or is used for the first time, the air filter should be cleaned. Otherwise, dust that has entered the IDU will be blown out.

The IDU emits odor

The IDU absorbs the odors of rooms, furniture or cigarettes, etc., and disperses the odors during operation. It is advised to have the air conditioner cleaned and maintained regularly by professional technicians.

Water drips on the air conditioner surface

When the indoor relative humidity is high, it is normal for condensation or slight water blowing to occur on the surface of the air conditioner.

"Self-cleaning" sound of icing

During self-cleaning, there may be a slight clicking sound for about 10 minutes, indicating that the IDU is freezing, which is normal.

The air conditioner makes low noise

1. When the air conditioner is in "Auto", "Cool", "Dry", and "Heat" modes, it may emit a low continuous "hissing" sound, which is caused by the refrigerant flowing between the IDU and the ODU.
2. A "hissing" sound may be heard for a short time after the air conditioner stops operation or during "defrosting", which is caused when the refrigerant stops flowing or changes its flow.
3. When the air conditioner is in Cool mode or Dry mode, a small and continuous rustling sound can be heard, which is caused by the drain pump.
4. When the air conditioner starts or stops running, you may hear a squeaking sound which is produced by the expansion or shrinkage of parts or surrounding aesthetic materials due to temperature change. The sound will disappear when the air conditioner is running normally.

Switching from cooling/heating (not available for cooling only units) mode to fan only mode

When the IDU reaches the set temperature, the air conditioner compressor automatically stops operation and switches to the fan only mode. When the room temperature rises (in cooling mode) or falls (in heating mode) to a certain level, the compressor is restarted and cooling or heating operation is resumed.

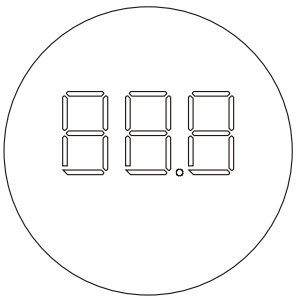
In winter, the outdoor temperature is low, and heating effects may be decreased

1. During the heating operation of the heat pump type air conditioner, the air conditioner absorbs heat from the outdoor air and releases it to heat the indoor air. This is the heat pump heating principle of the air conditioner.
2. When the heat pump runs in heating mode, the ODU blows out cold air, causing the outdoor temperature to drop. When the outdoor temperature is extremely low, the heating capability of the air conditioner drops gradually. You are advised to use other heating devices for heating.

No heating or cooling options

All IDUs in the same air conditioning system can only operate in the same mode, for example, cooling, heating, or others. Conflict may occur if IDUs are set to different modes. Only the IDU that is first started up can determine the operating mode, and those started after it can only follow the operating mode of the first IDU. To change the operating mode, you need to turn off all the IDUs. The operating mode of all IDUs must be the same.

4 Display Panel



Display functions:

① In Standby mode, the main interface displays "---".

② When starting up in Cooling or Heating mode, the main interface displays the set temperature. In Fan mode, the main interface displays the indoor temperature. In Dry mode, the main interface displays the set temperature, and when the humidity is set, the set humidity value is displayed on the wired controller.

③ The light display on the main interface can be turned on or off through the light button on the remote controller.

④ When the system fails or runs in a special mode, the main interface displays the error code or the special mode running code. For more information, see the "Installation - Application Control - Error Codes and Meanings" section.

[Caution]

Some display functions are available only for certain IDU and ODU models, wired controllers, and display panels. For further details, please consult your local dealer or technical support staff.

3 Electrical Connection

[Danger]

The power supply must be cut off before any electrical work is carried out. Do not conduct electrical work when the power is on; otherwise, it may cause serious personal injury.

The air conditioning unit must be grounded reliably and must meet the requirements of the local country/region. If the grounding is not reliable, serious personal injury due to electric leakage may occur.

[Warning]

Installation, inspection or maintenance operations must be completed by professional technicians. All parts and materials must comply with the relevant regulations of the local country/region.

The air conditioning unit must be equipped with a special power supply, and the power supply voltage should conform to the nominal working voltage range of the air conditioning unit.

The power supply of the air conditioning unit must be equipped with a power disconnect device that conforms to the requirements of relevant local technical standards for electrical equipment. The power disconnecting device must have the functions of short circuit protection, overload protection and electric leakage protection. The clearance between open contacts of the power disconnecting device shall be at least 3mm.

The core of the power cable must be made of copper, and the wire diameter should meet the current-carrying requirements. For details, refer to the "Power Cable Diameter and Electric Leakage Protector Selection". A wire diameter that is too small may cause the power cable to heat up, resulting in a fire.

The power cable and the ground wire should be secured reliably to avoid stress on the terminals. Do not pull the power cable forcibly; otherwise, the wiring may become loosened or the terminal blocks may be damaged.

Strong current wires such as power cables cannot be connected to weak current wires such as communication lines; otherwise, the product may become seriously damaged.

Do not bond and connect the power cable. Bonding and connecting the power cable may cause it to heat up, resulting in a fire.

[Caution]

Bonding and connecting the communication line should be avoided, but if it is used, at the very least, ensure a reliable connection by crimping or soldering and make sure the copper wire at the connection is not exposed; otherwise, communication failure may occur.

The power cable and communication line must be routed separately, with a distance of over 5 cm. Otherwise, communication failure may occur.

Keep the vicinity of the air conditioning unit as clean as possible to avoid small animals from nesting and biting the cables. If a small animal touches or bites the cables, short circuiting or electric leakage may occur.

Do not connect the ground wire to the gas pipe, water pipe, lightning rod ground wire or telephone ground wire.

Gas pipe: Risk of explosion and fire when gas leaks.

Water pipe: If rigid plastic pipes are used, there will be no grounding effect.

Lightning rod ground wire or telephone ground wire: In the event of lightning strikes, abnormal ground potential may rise.

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

4 Application Control

Error Codes and Definitions

In the following circumstances (warning failures excluded), 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.

Error	Error code	Digital display
Emergency stop	A01	
R32 refrigerant leaks, requiring shutdown immediately	A11	
ODU fault	A51	
The fault of the linked FAPU is transmitted to the master IDU (series setting)	A71	
The fault of the linked humidifying IDU is transmitted to the master IDU	A72	
The fault of the linked FAPU is transmitted to the master IDU (non-series setting)	A73	
The fault of the AHU Kit slave unit is sent to the master unit	A74	
Self-check fault	A81	
MS (refrigerant flow direction switching device) fault	A82	
Mode conflict (SDV5 communication protocol adopted)	A91	
1# EEV coil fault	b11	
1# EEV body fault	b12	
2# EEV coil fault	b13	
2# EEV body fault	b14	
Stall protection on 1# water pump	b34	
Stall protection on 2# water pump	b35	
Water level switch alarm	b36	
Reheating electric heater fault	b71	
Preprocessing electric heater fault	b72	
Humidifier fault	b81	
Duplicate IDU address code	C11	

Error	Error code	Digital display
Abnormal communication between the IDU and ODU	C21	
Abnormal communication between the IDU main control board and fan drive board	C41	
Abnormal communication between the IDU and wired controller	C51	
Abnormal communication between the IDU and Wi-Fi Kit	C52	
Abnormal communication between the IDU main control board and display board	C61	
Abnormal communication between the AHU Kit slave unit and master unit	C71	
Number of AHU Kits is not the same as the set number	C72	
Abnormal communication between the linked humidifying IDU and master IDU	C73	
Abnormal communication between the linked FAPU and master IDU (series setting)	C74	
Abnormal communication between the linked FAPU and master IDU (non-series setting)	C75	
Abnormal communication between the main wired controller and secondary wired controller	C76	
Abnormal communication between the IDU main control board and 1# function expansion board	C77	
Abnormal communication between the IDU main control board and 2# function expansion board	C78	
Abnormal communication between the IDU main control board and adapter board	C79	
Air inlet temperature of the IDU is too low in heating mode	d16	
Air inlet temperature of the IDU is too high in cooling mode	d17	
Alarm for exceeding temperature and humidity range	d81	
Sensor control board fault	dE1	
PM2.5 sensor fault	dE2	
CO2 sensor fault	dE3	
Formaldehyde sensor fault	dE4	
INTELLECTUAL EYE sensor fault	dE5	
T0 (fresh inlet air temperature sensor) short-circuits or cuts off	E21	
The upper dry bulb temperature sensor short-circuits or cuts off	E22	
The lower dry bulb temperature sensor short-circuits or cuts off	E23	
T1 (IDU return air temperature sensor) short-circuits or cuts off	E24	

Error	Error code	Digital display
The built-in room temperature sensor of the wired controller short-circuits or cuts off	E31	
The wireless temperature sensor short-circuits or cuts off	E32	
The external room temperature sensor short-circuits or cuts off	E33	
Tcp (pre-cooled fresh air temperature sensor) short-circuits or cuts off	E61	
Tph (pre-heated fresh air temperature sensor) short-circuits or cuts off	E62	
TA (outlet air temperature sensor) short-circuits or cuts off	E81	
Outlet air humidity sensor fault	EA1	
Return air humidity sensor fault	EA2	
Upper wet bulb sensor fault	EA3	
Lower wet bulb sensor fault	EA4	
R32 refrigerant leakage sensor fault	EC1	
T2A (heat exchanger inlet temperature sensor) short-circuits or cuts off	F01	
T2 (heat exchanger middle temperature sensor) short-circuits or cuts off	F11	
T2 (heat exchanger middle temperature sensor) overtemperature protection	F12	
T2B (heat exchanger outlet temperature sensor) short-circuits or cuts off	F21	
Main control board EEPROM fault	P71	
IDU display control board EEPROM fault	P72	
Locked (electronic lock)	U01	
Unit model code not set	U11	
Horsepower code not set	U12	
Horsepower code setting error	U14	
AHU Kit fan control input signal DIP setting error	U15	
Address code not detected	U38	
Motor failed more than once	J01	
IPM (fan module) overcurrent protection	J1E	
Instantaneous overcurrent protection for phase current	J11	

Error	Error code	Digital display
Low bus voltage fault	J3E	
High bus voltage fault	J31	
Phase current sample bias error	J43	
Motor and IDU are unmatched	J45	
IPM and IDU are unmatched	J47	
Motor startup failure	J5E	
Motor blocking protection	J52	
Speed control mode setting error	J55	
Phase lack protection of motor	J6E	

Operating Status Codes and Definitions (Non-Error)

Definition	Code	Digital display
Oil return or preheating operation	d0	
Self-cleaning	dC	
Mode conflict (SDV6 communication protocol adopted)	dd	
Defrosting	dF	
Static pressure detection	d51	
Remote shutdown	d61	
IDU backup operation	d71	
ODU backup operation	d72	
Main control program upgrading	OTA	

[Caution]

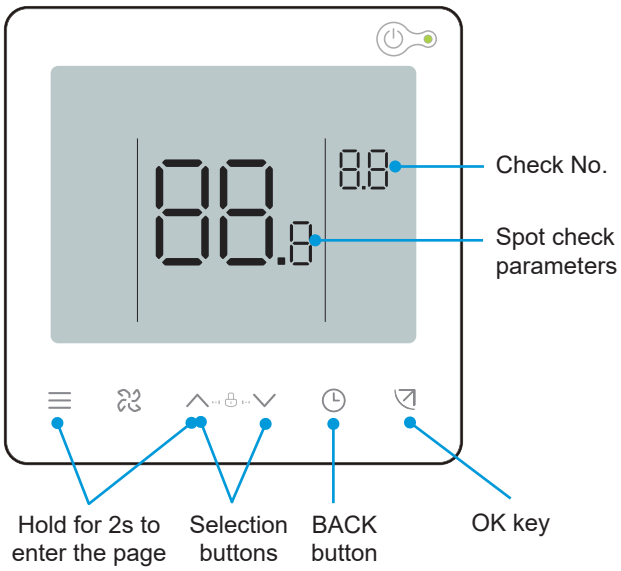
Error codes are displayed only for certain ODU models and IDU configurations (including the wired controller and display panel).

When the main control program is being upgraded, make sure that the IDU and ODU remain powered on. Otherwise, the upgrading process will stop.

Spot Check Description

Use the bi-directional communication wired controller (for example, WDC3-86S) to activate the spot check function in the following steps:

1. On the main page, hold " ☰ " and "▲" for 2s to enter the query page. The ODU displays u00-u03, the IDU displays n00-n63 (the last two digits show the IDU address), and the wired controller displays CC. Press the "▲" or "▼" key to select the IDU, and press the " ⏎ " key to enter the parameter query page.
2. Press the "▲" or "▼" key to query the parameters, and the parameters can be queried cyclically. See the spot check list below for details.
3. Press the " 🕒 " key to exit the query function.
4. On the top of the query page, the "Timing area" displays the spot check serial number, and the "Temperature area" displays the content of the spot check parameters.



No.	Displayed content	No.	Displayed content
1	IDU and ODU communication address (current IDU addresses are displayed every 0.5s)	13	Compressor discharge temperature
2	Capacity HP of IDU	14	Target overheating
3	Actual set temperature Ts	15	EEV opening (actual opening/8)
4	Current running set temperature Ts	16	Software version No.
5	Actual T1 indoor temperature	17	Display board version No.
6	Modified indoor temperature T1_modify	18	Fan drive version No.
7	T2 heat exchanger intermediate temperature	19	Historical error code (recent)
8	T2A heat exchanger liquid pipe temperature	20	Historical error code (sub-recent)
9	T2B heat exchanger gas pipe temperature	21	IDU network address display
10	Actual set humidity RHs	22	IDU expansion board address display
11	Actual RH indoor humidity	23	[———] is displayed
12	Real-time static pressure		

Cleaning, Maintenance and After-Sales Service

1 Safety Warning

[Warning]

For safety reasons, always turn off the air conditioner and turn off the power before cleaning the air conditioner.

Do not disassemble or repair the air conditioner by yourself; otherwise, it may cause fire or other hazards.

Only professional service personnel can carry out the maintenance.

Do not use flammable or explosive materials (such as hair styling agents or pesticides) near the product.

Do not use organic solvents such as paint thinner to clean this product; otherwise, it may cause cracks, electric shock or fire.

Only qualified dealers and professionally qualified electricians can install the optional accessories.

Be sure to use the optional accessories specified by our company.

Improper installation by yourself may result in water leakage, electric shock or fire.

Do not wash the air conditioner with water; otherwise, it may cause an electric shock.

Use a stable standing platform.

2 Cleaning and Maintenance

Cleaning the Louver and Unit Surface

① Clean the cloth in water, wring out the cloth, and gently wipe the unit body.

② If a stain is hard to remove, dip a cloth into neutral detergent and clean the stain.

[Caution]

Do not use gasoline, benzene, volatile agents, decontamination powder or liquid insecticides. Otherwise, the air outlet or panel may become discolored or deformed.

Do not expose the inside of the IDU to moisture, as it may result in electric shock or fire.

When cleaning the louver with water, do not scrub it violently.

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

Cleaning the Air Filter

[Caution]

Air filters can be used to remove dust or other particles from the air, and if clogged, the effectiveness of the air conditioner will be greatly reduced.

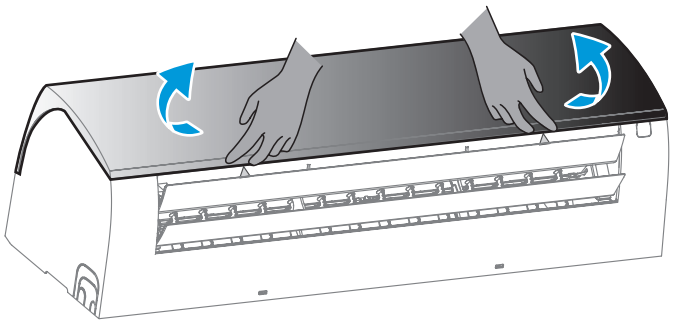
Therefore, be sure to clean the air filter frequently when using it for an extended period. If the unit is installed in a place with a lot of dust, it is recommended that you clean the filter once a month.

If excess dirt makes the filter difficult to clean, replace the filter.

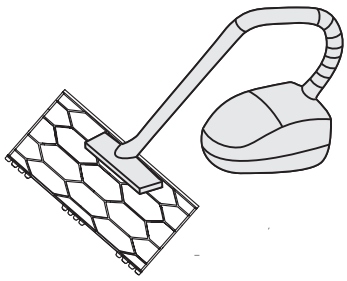
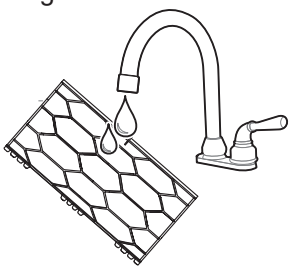
Do not remove the air filter unless it is being cleaned; otherwise, it may cause malfunction.

1 Procedure diagram

① Use two hands to hold the panel above theair outlet, open it in the direction of the arrow, and use one hand to hold the panel and the other hand to lift the middle convex part of the filter and pull the filter out downwards.



② Clean the filter and dry it in a cool place.

Clean the filter with a vacuum cleaner, with the air inlet side of the filter facing upwards.	Clean the filter with clean water (except for the activated carbon module), with the air inlet side of the filter facing downwards.
	

[Caution]

To avoid deformation of the filter, do not use fire or a burning appliance to dry the filter.

If the filter is heavily soiled, use a soft brush and neutral detergent to clean it, then shake off the water and dry it in a cool place.

Non-professionals should not disassemble, replace or repair the filter.

③ Reinstall the filter in the reverse order of the steps above and put the panel back.

Maintenance

During in-depth maintenance, the air conditioner should be cleaned and maintained by professional technicians every 2 to 3 years.

Clean the filter regularly.

When operating in a dusty environment, the air flow and capacity of the filter will decrease. The filter may even become blocked, and the air conditioner performance and indoor air compromised.

Preheat the unit in advance.

When the heating season comes, power on the ODU master unit for preheating more than 4 hours before use. The preheating time depends on the weather temperature. This can make the air conditioner operate more stably and help the refrigeration oil in the air conditioner compressor to maintain the best lubrication state, which can prolong the service life of the compressor.

Complete the following steps before the air conditioner is put out of use for a long period:

1. If the air conditioner is not in use for a long time due to seasonal changes, keep the unit running for 4-5 hours in fan mode until the unit becomes completely dry. Otherwise, it may grow mold indoors and have negative health effects.
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. Turn on the power switch 12 hours before using the air conditioner again. In addition, in seasons when air conditioners are frequently used, keep the power switch on. Otherwise, failures may occur.

[Caution]

Before the air conditioner is idle for a long time, the internal components of the ODUs should be checked and cleaned regularly. For more details, please contact the local air conditioner customer service center or special technical service department.

Check the return air inlet and outlet of the ODU and IDU after long periods of use to see if they are blocked; if an inlet/outlet is blocked, clean it immediately.

3 Maintenance of Conventional Parts

Disassembly and Installation of Panel and IDU Wiring

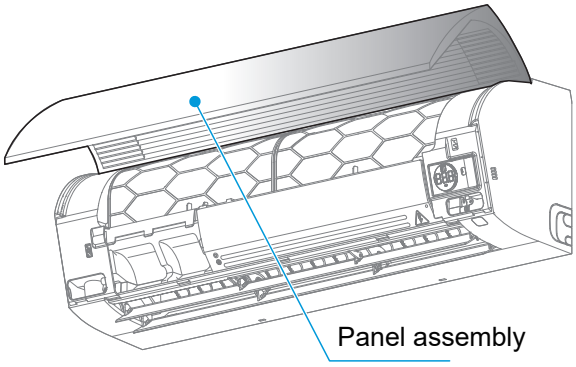
1 Disassembly of the Front Panel

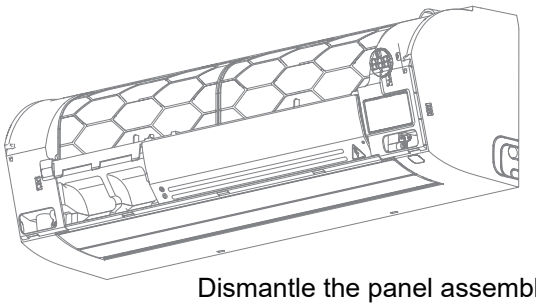
There is no need to disassemble the panel frame when confirming the electrical cable distribution and condensed water drainage.

① Pull out slightly on the panel from the buckle position on both sides of the unit body.

② Take the panel off the buckles along the gap between the panel and the unit body. Remove the panel obliquely upward.

③ Hold the two lower ends of the front panel, gently pull the panel and then push the panel upward to remove it.




Dismantle the panel assembly

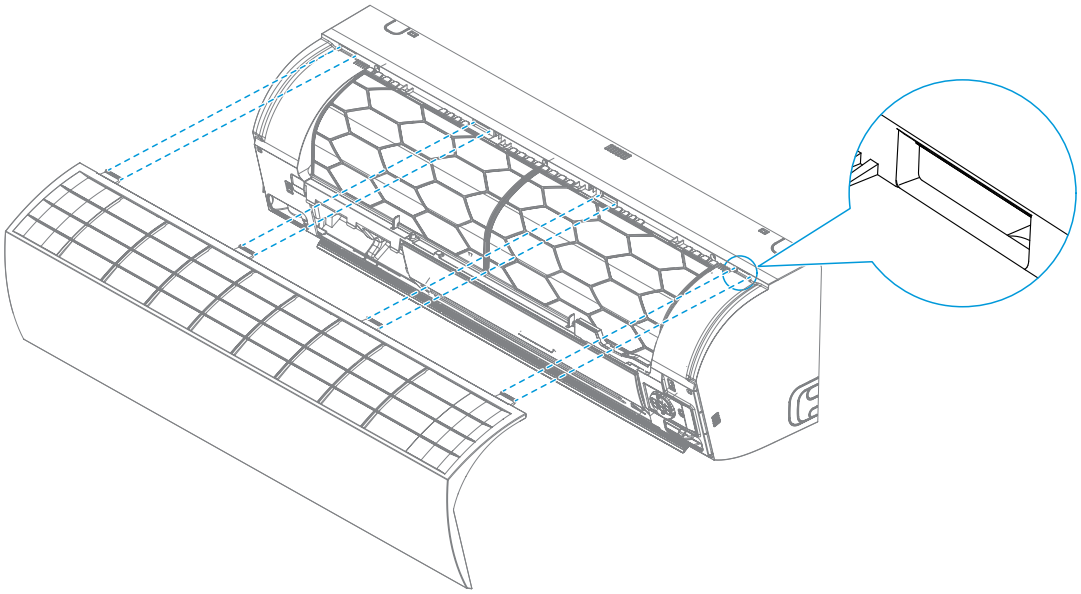
2 IDU wiring

Lead the power cable, ground wire, and signal cable from the back of the indoor unit to the front. For detailed wiring steps, refer to section "Installation Instructions - Electrical Connection".

3 Installation of Front Panel

① Insert the upper buckles of the panel into the buckles on the panel frame.

② Place the panel and press the buckles.

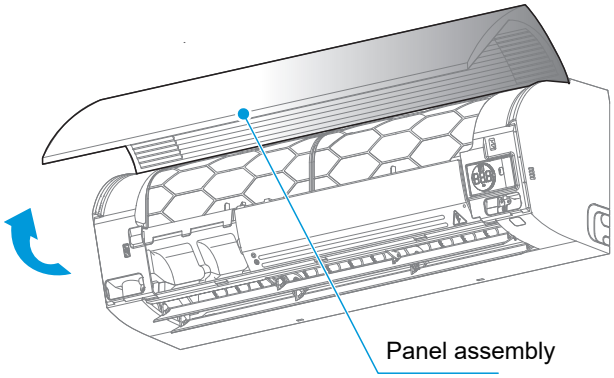


[Caution]

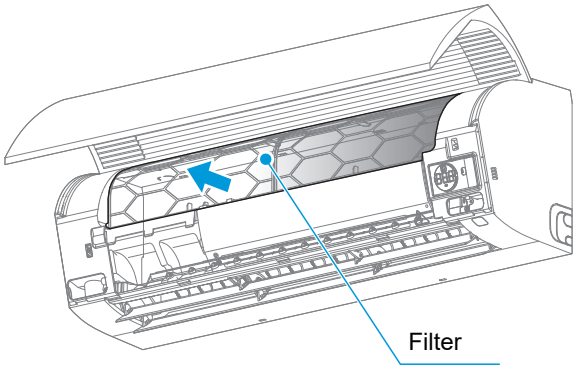
Make sure that the front buckles of the panel fit the unit well, otherwise condensation and other risks may occur.

Replacement of the Filter

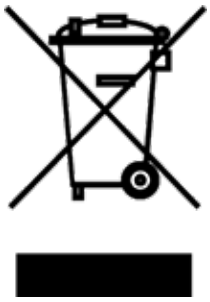
1 Open the panel assembly.



2 Remove and replace the filter.



NOTE CONCERNING PROTECTION OF ENVIRONMENT



This product must not be disposed of via normal household waste after its service life, but must be taken to a collection station for the recycling of electrical and electronic devices. The symbol on the product, the operating instructions or the packaging indicate such disposal procedures. The materials are recyclable in accordance with their respective symbols. By means of re-use, material recycling or any other form of recycling old appliances you are making an important contribution to the protection of our environment. Please ask your local council where your nearest disposal station is located.

INFORMATION CONCERNING USED REFRIGERANT MEDIUM

This unit is containing fluorinated gases included in the Kyoto protocol.
The maintenance and the liquidation must be carried out by qualified personnel.
Type of refrigerant: R32/R410a
The composition of the cooling medium R32: (100% HFC-32)
The composition of the cooling medium R410a: (50% HFC-32, 50% HFC-125)
The quantity of the refrigerant: Please see the unit label.
The value GWP of R32: 675 (1 kg R32 = 0,675 t CO_2 eq)
The value GWP of R410a: 2088 (1kg R410a=2,088t CO_2 eq)
GWP = Global Warming Potential
NOTE: Indoor unit can use R32 and R410a, it depence on outdoor unit.

 Appliance filled with flammable gas R32.

In case of quality problem or other please contact your local supplier or authorized service center.
Emergency number: 112

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