CASSETTE TYPE AIR CONDITIONER
OPERATION MANUAL AND INSTALLATION MANUAL

ABH071H5ERG

ABH105K5ERG
ABH125K5ERG
AB140S5SR1FA

English

No. 0150518818 C

- This product must only be installed or serviced by qualified personnel. Please read this manual carefully before installation.

Keep this operation manual for future reference.

Original instructions

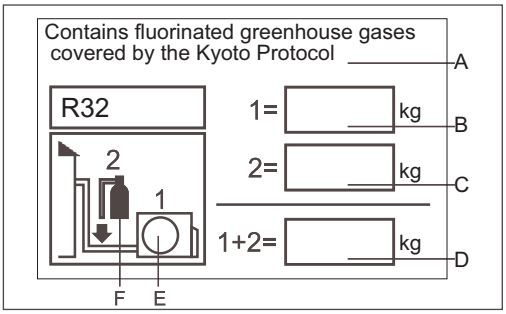
Haier

Haier Industrial Park,Qianwangang Road,Eco-Tech Development Zone,Qingdao 266555,Shandong, China.

DISPOSAL REQUIREMENTS:

Your air conditioning product is marked with this symbol.This means that electrical and electronic products shall not be mixed with unsorted household waste.Do not try to dismantle the system yourself:the dismantling of the air conditioning system,treatment of the refrigerant,of oil and of other part must be done by a qualified installer in accordance with relevant local and national legislation.Air conditioners must be treated at a specialized treatment facility for reuse, recycling and recovery.By ensuring this product is disposed of correctly,you will help to prevent potential negative consequences for the environment and human health.Please contact the installer or local authority for more information. Battery must be removed from the remote controller and disposed of separately in accordance with relevant local and national legislation.

IMPORTANT INFORMATION REGARDING THE REFRIGERANT USED



This product contains fluorinated greenhouse gases covered by the Kyoto Protocol.Do not vent into the atmosphere.
Refrigerant type: R32
GWP: 675
GWP=global warming potential
Please fill in with indelible ink,

- 1 the factory refrigerant charge of the product
- 2 the additional refrigerant amount charged in the field and
- 1+2 the total refrigerant charge

on the refrigerant charge label supplied with the product. The filled out label must be adhered in the proximity of the product charging port(e.g.onto the inside of the stop value cover).
A contains fluorinated greenhouse gases covered by the Kyoto Protocol
B factory refrigerant charge of the product:see unit name plate
C additional refrigerant amount charged in the field
D total refrigerant charge
E outdoor unit
F refrigerant cylinder and manifold for charging

⚠ WARNING

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

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.
The appliances are not intended to be operated by means of an external timer or separate remote-control system.
The A-weighted sound pressure level is below 70 dB.
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.
Air conditioner working temperature: cooling 10~46 degree, heating -15~24 degree.

WARNING!

★The area of the room in which R32 refrigerant air conditioner is installed cannot be less than the minimum area specified in the table below, to avoid potential safety problems due to out-of-limit of refrigerant concentration inside the room caused by leakage of refrigerant from refrigeration system of the indoor unit.
★Once the flare connecting lines is fastened, it may not be used again (the air tightness may be affected).
★A connector wire shall be used for indoor/outdoor unit as required in the operation specification of installation process and operation instructions.

Minimum Room Area

Type	LFL Kg/m^3	hv m	Total Mass Charged/kg Minimum Room Area/m^2						
			4	7	10	15	20	30	50
R32	0.307	0.6	0.68	0.90	1.08	1.32	1.53	1.87	2.41
		1.0	1.14	1.51	1.80	2.20	2.54	3.12	4.02
		1.8	2.05	2.71	3.24	3.97	4.58	5.61	7.24
		2.2	2.50	3.31	3.96	4.85	5.60	6.86	8.85

Safety Precautions

Precautions for Handling Units for Use with R32

⚠ Caution	
Do not use the existing refrigerant piping • The old refrigerant and refrigerant oil in the existing piping contain a large amount of chlorine, which will cause the refrigerator oil in the new unit to deteriorate. • R32 is a high-pressure refrigerant, and the use of the existing piping may result in bursting. Keep the inner and outer surfaces of the pipes clean and free of contaminants such as sulfur, oxides, dust/dirt shaving particles,oils,and moisture. • Contaminants inside the refrigerant piping will cause the refrigerant oil to deteriorate.	Use a vacuum pump with a reverse-flow check valve. • If other types of valves are used, the vacuum pump oil will flow back into the refrigerant cycle and cause the refrigerator oil to deteriorate. Do not use the following tools that have been used with the conventional refrigerants. Prepare tools that are for exclusive use with R32. (Gauge manifold, charging hose, gas leak detector, reverse-flow check valve, refrigerant charge base,vacuum gauge, and refrigerant recovery equipment.) • If refrigerant and/or refrigerant oil left on these tools are mixed in with R32, or if water is mixed with R32, it will cause the refrigerant to deteriorate. • Since R32 does not contain chlorine, gas-leak detectors for conventional refrigerators will not work.

⚠ Caution	
Store the piping to be used during installation indoors, and keep both ends of the piping sealed until immediately before brazing.(keep elbows and other joints wrapped in plastic.) • If dust, dirt, or water enters the refrigerant cycle, it may cause the oil in the unit to deteriorate or may cause the compressor to malfunction. Use a small amount of ester oil, ether oil, or alkylbenzene to coat flares and flange connections. • A large amount of mineral oil will cause the refrigerating machine oil to deteriorate. Use liquid refrigerant to charge the system. • Charge the unit with gas refrigerant will cause the refrigerant in the cylinder to change its composition and will lead to a drop in performance	Do not use a charging cylinder. • The use of charging cylinder will change the composition of the refrigerant and lead to power loss. Exercise special care when handling the tools. • An introduction of foreign objects such as dust, dirt or water into the refrigerant cycle will cause the refrigerating machine oil to deteriorate. Only use R32 refrigerant. • The use of refrigerants containing chlorine(i.e. R22) will cause the refrigerant to deteriorate.

Read Before Installation

Items to Be Checked

(1) Verify the type of refrigerant used by the unit to be serviced. Refrigerant Type: R32
(2) Check the symptom exhibited by the unit to be serviced. Look in this service handbook for symptoms relating to the refrigerant cycle.
(3) Be sure to carefully read the safety precautions at the beginning of this document.
(4) If there is a gas leak or if the remaining refrigerant is exposed to an open flame, a noxious gas hydrofluoric acid may form. Keep workplace well ventilated.

CAUTION

- Install new pipes immediately after removing old ones to keep moisture out of the refrigerant circuit.
- Chloride in some types of refrigerants such as R22 will cause the refrigerating machine oil to deteriorate.

Necessary Tools and Materials

Prepare the following tools and materials necessary for installing and servicing the unit.
Necessary tools for use with R32 (Adaptability of tools that are for use with R407C).

1. To be used exclusively with R32 (Not to be used if used with R22 or R407C)

Read Before Installation

Tools/Materials	Use	Notes
Gauge Manifold	Evacuating,refrigerant charging	5.09MPa on the High-pressure side.
Charging Hose	Evacuating, refrigerant charging	Hose diameter larger than the concentional ones.
Refrigerant Recovery Equipment	Refrigerant recovery	
Refrigerant Cylinder	Refrigerant charging	Write down the refrigerant type. Pink in color at the top of the cylinder.
Refrigerant Cylinder Charging Port	Refrigerant charging	Hose diameter larger than the conventional ones.
Flare Nut	Connecting the unit to piping	Use Type-2 Flare nuts.

2. Tools and materials that may be used with R32 with some restrictions

Tools/Materials	Use	Notes
Gas leak detector	Detection of gas leaks	The ones for HFC type refrigerant may be used.
Vacuum Pump	Vacuum drying	May be used if a reverse flow check adaptor is attached.
Flare Tool	Flare machining of piping	Chages have been made in the flare machining dimension.Refer to the next page.
Refrigerant Recovery Equipment	Recovery of refrigerant	May be used if designed for use with R32

3. Tools and materials that are used with R410A that can also be used with R32

Tools/Materials	Use	Notes
Vacuum Pump with a Check Valve	Vacuum drying	
Bender	Bending pipes	
Torque Wrench	Tightening flare nuts	Only Φ12.70 (1/2") and Φ15.88(5/8") have a larger flare machining dimension.
Pipe Cutter	Cutting pipes	
Welder and Nitrogen Cylinder	Welding pipes	
Refrigerant Charging Meter	Refrigerant charging	
Vacuum Gauze	Checking vacuum degree	

4. Tool and materials that must not used with R32

Tools/Materials	Use	Notes
Charging Cylinder	Refrigerant Charging	Must not be used with R32-type units.

Tools for R32 must be handled with special care, and keep moisture and dust from entering the cycle.

R32 leakage Test

No changes from the conventional method. Note that a refrigerant leakage detector for R22 or R410A cannot detect R32 leakage.

Halide torch

R22 or R407C leakage detector

Items to be strictly observed :

1. Pressurize the equipment with nitrogen up to the design pressure and then judge the equipment's air tightness, taking temperature variations into account.
2. When investigating leakage locations using a refrigerant, be sure to use R32.
3. Insure that R32 is in a liquid state when charging.

Reasons:

1. Use of oxygen as the pressurized gas may cause an explosion.
2. Charging with R32 gas will lead the composition of the remaining refrigerant in the cylinder to change and then this refrigerant can not be used.

Read Before Installation

Vacuuming

1. Vacuum pump with check valve

A vacuum pump with a check valve is required to prevent the vacuum pump oil from flowing back into the refrigerant circuit when the vacuum pump power is turned off (power failure). It is also possible to attach a check valve to the actual vacuum pump afterwards.

2. Standard degree of vacuum for the vacuum pump

Use a pump which reaches 65Pa or below after 5 minutes of operation.
In addition, be sure to use a vacuum pump that has been properly maintained and oiled using the specified oil. If the vacuum pump is not properly maintained, the degree of vacuum may be too low.

3. Required accuracy of the vacuum gauge

Use a vacuum gauge that can measure up to 650Pa. Do not use a general gauge manifold since it cannot measure a vacuum of 650Pa.

4. Evacuating time

Evacuate the equipment for 1 hour after 650Pa has been reached.
After envacuating, leave the equipment for 1 hour and make sure the that vacuum is not lost.

5. Operating procedure when the vacuum pump is stopped

In order to prevent a backflow of the vacuum pump oil, open the relief valve on the vacuum pump side or loosen the charge hose to drawn in air before stopping operation.The same operating procedure should be used when using a vacuum pump with a check valve.

Charging Refrigerant

Refrigerant must be in a liquid state when charging.

Reasons:

R32 is a pseudo-azeotropic refrigerant (boiling point R32= -52°C, R125= -49°C) and can roughly be handled in the same way as R410A; however, be sure to fill the refrigerant from the liquid side, for doing so from the gas side will somewhat change the composition of the refrigerant in the cylinder.

Note

- In the case of a cylinder with a syphon, liquid R32 is charged without turning the cylinder up side down. Check the type of cylinder before charging.

Remedies to be taken in case of a refrigerant leak

When refrigerant leaks, additional refrigerant may be charged. (Add the refrigerant from the liquid side)

Characteristics of the Conventional and the New Refrigerants

- Because R32 is a simulated azeotropic refrigerant, it can be handled in almost the same manner as a refrigerant such as R410A. Howerver, if the refrigerant is removed in the vapor phase, the composition of the refrigerant in the cylinder will somewhat change.
- Remove the refrigerant in the liquid phase. Additional refrigerant may be added in case of a refrigerant leak.

The breaker of the air conditioner should be all-pole switch and explosion-proof. The distance between its two contacts should not be no less than 3mm. Such means for disconnection must be incorporated in the wiring.

	Read the precautions in this manual carefully before operating the unit.		This appliance is filled with R32.

WARNING
Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater.
Do not pierce or burn.
Be aware that refrigerants may not contain an odour.

Precautions for using R32 refrigerant
The basic installation work procedures are the same as the conventional refrigerant (R22 or R410A).
However, pay attention to the following points:
1. **Transportation equipment containing flammable refrigerants.**
Pay attention to the fact that additional transportation regulations may exist with respect to equipment containing flammable gas. The maximum number of pieces of equipment or the configuration of the equipment, permitted to be transported together will be determined by the applicable transport regulations.

2. **Equipment signs**
Signs for similar appliances (containing flammable refrigerants) used in a work area generally are addressed by local regulations and give the minimum requirements for the provision of safety and/or health signs for a work location. All required signs are to be maintained and employers should ensure that employees receive suitable and sufficient instruction and training on the meaning of appropriate safety signs and the actions that need to be taken in accordance with these signs.
The effectiveness of signs should not be diminished by too many signs being placed together. Any pictograms used should be as simple as possible and contain only essential details.

3. **Disposal of equipment containing flammable refrigerants**
In compliance with national regulations.

4. **Storage of equipment/appliances**
The storage of equipment should be in accordance with the manufacturer's instructions.

5. **Storage of packed (unsold) equipment**
•Storage package protection should be constructed so that mechanical damage to the equipment inside the package will not cause a leak of the refrigerant.
•The maximum number of pieces of equipment permitted to be stored together will be determined by local regulations.

6. **Information on servicing**
6-1 **Checks to the area**
Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. To repair the refrigerating system, the following precautions should be complied with prior to conducting work on the system.
6-2 **Work procedure**
Work shall be undertaken following a controlled procedure so as to minimise the risk of flammable gas or vapour being leaked while the work is being performed.
6-3 **General working area**
•All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.
•The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by controlling flammable material.
6-4 **Checking for leakage of refrigerant**
•The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potential flammable atmospheres.
•Ensure that the leak detection equipment being used is suitable for flammable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.
6-5 **Fire extinguisher**
•If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand.

•Have a dry powder or CO fire extinguisher adjacent to the charging area. 2 6-6 **No ignition sources**
•No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion.
•All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space.
•Prior to working, the area around the equipment should be checked to make sure that there are no flammable hazards or ignition risks. “No Smoking” signs shall be displayed.
6-7 **Ventilated area**
•Ensure that the area is in the open air or that it is adequately ventilated before tearing down the system or conducting any hot work.
•A degree of ventilation shall be kept during the period that the work is carried out.
•The ventilation should safely disperse any released refrigerant and preferably discharge it externally into the atmosphere.

6-8 **Checks of the refrigeration equipment**
• Where electrical components are being changed, they shall be fit for the purpose and 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 amount 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 used, the secondary circuit shall be checked for the leak of refrigerant;
– Marking of the equipment should be visible and legible. Illegal markings and signs hall 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.
6-9 **Checks of electrical devices**
• Repair and maintenance of 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 there no live electrical components and wiring are exposed while charging, recovering or purging the system;
• That there is continuity of earth bonding.

7. **Repairs of sealed components**
• During repairs of sealed components, all electrical supplies shall be disconnected prior to any removal of sealed covers, etc.
• If it is absolutely necessary to have an electrical supply for equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn 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 apparatus is mounted securely.
• 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.
NOTE: The use of silicon sealants may inhibit the effectiveness of some types of leak detection equipment.
Intrinsically safe components do not have to be isolated prior to working on them.

8. **Repairs of intrinsically safe components**
• Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current for the equipment in use.
• Intrinsically safe components are the only types that can work 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 leaked in the atmosphere.

9. **Cabling**

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

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

11. **Leak detection methods**
The following leak detection methods are deemed acceptable for systems containing flammable refrigerants:
• Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.)
• Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used.
• Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (maximum 25%) is confirmed.
• Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.
• If a leak is suspected, all naked flames shall be removed/ extinguished.
• If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.
• Oxygen free nitrogen (OFN) shall be purged through the system both before and during the brazing process.

12. **Removal and evacuation**
• 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 for 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 working.
• 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.

13. **Charging procedures**
• In addition to conventional charging procedures, the following requirements shall be followed:
- Ensure that contamination of different refrigerants does not occur when using charging equipment.
- Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
- Cylinders shall be kept upright.
- Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the refrigeration system.
- Prior to recharging the system pressure shall be tested with OFN.
• The system shall be leak tested on completion of charging but prior to commissioning.
• A follow up leak test shall be carried out prior to leaving the site.

14. **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 that all refrigerants are recovered safely.
Prior to the task, an oil and refrigerant sample shall be taken in case that an analysis is required prior to the re-use of recovered refrigerant. It is essential that electrical power is available before the task.
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.
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.

15. **Labelling**

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

16.**Recovery**

• When removing refrigerant from a system, either for servicing or decommissioning, it is recommended that all refrigerant is 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 is 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.
• 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.
• Appliance shall be installed, operated and stored in a room with a floor area larger than X (X see below).
• The installation of pipe-work shall be kept to a room with a floor area larger than X (X see below).
• The pipe-work shall be compliance with national gas regulations.
• When moving or relocating the air conditioner, consult experienced service technicians for disconnection and reinstallation of the unit.
• Do not place any other electrical products or household belongings under indoor unit or outdoor unit. Condensation dripping from the unit might get them wet, and may cause damage or malfunction of your property.
• Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
• The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).
• Do not pierce or burn.
• Be aware that refrigerants may not contain an odour.
• To keep ventilation openings clear of obstruction.
• The appliance shall be stored in a well-ventilated area where the room size meets requirements as specified for operation.
• The appliance shall be stored in a room without continuously operating open flames (for example an operating gas appliance) and ignition sources (for example an operating electric heater).
• Any person involved with a refrigerant circuit should hold a valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with required specification.
• Service shall only be performed as recommended by the equipment manufacturer.
• Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.
• The appliance shall be installed and stored so as to prevent mechanical damage.
• Mechanical connectors used indoors shall comply with ISO 14903. When mechanical connectors are reused indoors, sealing parts shall be renewed. When flared joints are reused indoors, the flare part shall be re-fabricated.
• The installation of pipe-work shall be kept to a minimum.
• Mechanical connections shall be accessible for maintenance purposes.

Cautions

Disposal of the old air conditioner

Before disposing an old air conditioner that goes out of use, please make sure it's inoperative and safe. Unplug the air conditioner in order to avoid the risk of child entrapment.

It must be noticed that air conditioner system contains refrigerants, which require specialized waste disposal. The valuable materials contained in an air conditioner can be recycled. Contact your local waste disposal center for proper disposal of an old air conditioner and contact your local authority or your dealer if you have any question. Please ensure that the pipework of your air conditioner does not get damaged prior to being picked up by the relevant waste disposal center, and contribute to environmental awareness by insisting on an appropriate, anti-pollution method of disposal.

Disposal of the packaging of your new air conditioner

All the packaging materials employed in the package of your new air conditioner may be disposed without any danger to the environment.

The cardboard box may be broken or cut into smaller pieces and given to a waste paper disposal service. The wrapping bag made of polyethylene and the polyethylene foam pads contain no fluorochloric hydrocarbon.

All these valuable materials may be taken to a waste collecting center and used again after adequate recycling.

Consult your local authorities for the name and address of the waste materials collecting centers and waste paper disposal services nearest to your house.

Safety Instructions and Warnings

Before starting the air conditioner, read the information given in the User's Guide carefully. The User's Guide contains very important observations relating to the assembly, operation and maintenance of the air conditioner.

The manufacturer does not accept responsibility for any damages that may arise due to non-observation of the following instruction.

- Damaged air conditioners are not to be put into operation. In case of doubt, consult your supplier.
- Use of the air conditioner is to be carried out in strict compliance with the relative instructions set forth in the User's Guide.
- Installation shall be done by professional people. Don't install unit by yourself.
- For the purpose of safety, the air conditioner must be properly grounded in accordance with specifications.
- All electrical repairs must be carried out by qualified electricians. Inadequate repairs may result in a major source of danger for the user of the air conditoiner.
- Do not damage any parts of the air conditioner that carry refrigerant by piercing or perforating the air conditioner's tubes with sharp or pointed items, crushing or twisting any tubes, or scraping the coatings off the surfaces. If the refrigerant spurts out and gets into eyes, it may result in serious eye injuries.
- Do not obstruct or cover the ventilation grille of the air conditioner. Do not put fingers or any other things into the inlet/outlet and swing louver.
- Do not allow children to play with the air conditioner. In no case should children be allowed to sit on the outdoor unit. When the indoor unit is turned on, the PCB will test if swing motor is O.K., and then fan motor will start up.So there is a few seconds to wait.
- In cooling mode,the flaps will swing automatically to a fixed position for anti-condensating.
- This appliance is not intended for use by persons (including children) with reducedphysical, 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.

Specifications

The refrigerating circuit is leak-proof.
For all the models in this manual, the all-pole disconnexion connection method should be applied in the power supply.
Such means for disconnection must be incorporation in the fixed wiring.

Cooling	Indoor temperature	max. DB/WB min. DB/WB	32/23˚C 18/14˚C
	Outdoor temperature	max. DB/WB min. DB/WB	43/26˚C 10/6˚C
Heating	Indoor temperature	max. DB/WB min. DB/WB	27˚C 15˚C
	Outdoor temperature	max. DB/WB min. DB/WB	24/18˚C -15˚C

If the supply cord is damaged, it must be replaced by the manufacturer or its service agentor a similar qualified person.
If the fuse on PC board is broken please change it with the type of T 5A /250VAC.
The wiring method should be in line with the local wiring standard.
The appliance shall be installed in accordance with national wiring regulations.
The waste battery shall be disposed properly.
The indoor unit installation height is at least 2.5m.
The air breaker and the power switch should installed the conveniently reachable pleace for user.

1. Even the machine line cable should be:
H05RN-F 4G 2.5mm^2.
All the cables shall have got the European authentication certificate. During installation, when the connecting cables break off, it must be assured that the grouding wire is the last one to be broken off.
2.appliances which are intended to be maintained by qualified service personnel and located either in machine rooms and the like or at a level not less than 2,5 m or in secured rooftop areas.

Cautions

Carefully read the following information in order to operate the air conditioner correctly.
Below are listed three kinds of Safety Cautions and Suggestions.

⚠ **WARNING:** Incorrect operations may result in severe consequences of death or serious injuries.

⚠ **CAUTION:** Incorrect operations may result in injuries or machine damages; in some cases may cause serious consequences.

⚠ **INSTRUCTIONS:** These information can ensure the correct operation of the machine.

Symbols used in the illustrations

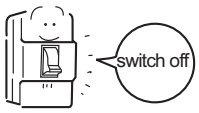
⃠ :Indicates an action that must be avoided.
❗ :Indicates that important instructions must be followed.
⏚ :Indicates a part which must be grounded.
ϟ :Beware of electric shock (This sumbol is displayed on the main unit label.)

After reading this handbook, hand it over to those who will be using the unit.
The user of the unit should keep this mamual at hand and make it available to those who will be performing repairs or relocating the unit. Also, make it available to the new user when the user changes hands.

Be sure to conform with the following important Safety Cautions.

⚠ WARNING

- If any abnormal phenomena is found (e. g.smell of firing), please cut off the power supply immediately, and contact the dealer to find out the handling method.
  In such case, to continue using the conditioner will damage the conditioner, and may cause electrical shock or fire hazard.



- Don't blow the human body with the cooling air too long, and don't let the room temperature decrease too low either. Otherwise the one will feel unpleasant or harm ones' health.

- Call the dealer to take measures to prevent the refrigerant from leaking.
  If conditioner is installed in a small room be sure to take every measure in order to prevent suffocation accident even in case of refrigerant leakage.

- When need maintenance and repairment, call dealer to handle it.
  Incorrect maintenance and repairment may cause water leak, electrical shock and fire hazard.

- Don't put fingers or any other things into the inlet/outlet and swing louver while the conditioner is in operation.
  Because the highspeed fan is very dangerous and may cause injuries.

- Please let the dealer be responsible for installing the conditioner.
  Incorrect installation may cause water leak, electrical shock and fire hazard.

- When conditioner is deinstalled or reinstalled dealer should be responsible for them.
  Incorrect installation may cause water leaking,electrical shock and fire hazard.

⚠ CAUTION

- Conditioner should not be used for any other purpose other than airconditioning.
  Don't use air-conditioner for any other special purposes,e.g. the preservation and protectionof food, animals, plants,pecision apparatus as well as work of art, otherwise the qualities of these stuffs may be damaged.

- Don't dismantle the outlet of the outdoor unit.
  The exposure of fan is very dangerous which may harm human beings.

- Don't dismantle the outlet of the outdoor unit.
  The exposure of fan is very dangerous which may harm human beings.

- When air-conditioner is co-used with other heat-radiator the frequent replacement of room atmosphere should be required.
  Inefficient ventilation may cause suffocation.

- After a long time use of air-conditioner the base should be checked for any damages.
  If the damaged base is not repaired, the unit may fall down and cause accidents.

- No goods or nobody is permitted to placed onor stand on outdoor unit.
  The falling of goods and people may cause accidents.

Cautions

⚠ CAUTION

- Don't dismantle the outlet of the outdoor unit.
  The exposure of fan is very dangerous which may harm human beings.

- Pets and plants should not be blowed directly in the air flow.
  Otherwise will suffer damage.

- Don't operate the air-conditioner with damp hands.
  Otherwise will be shocked.

- Only use correctly-typed fuse.
  May not use wire or any other materials replacing fuse, otherwise may cause faults or fire accidents.

- Air-conditioner should be cleaned only after power supply is cut off to keep from shock or hurt.

- Don't clean air-conditioner with water.
  Otherwise may cause shock.

- After a long time use of air-conditioner the base should be checked for any damages.
  If the damaged base is not repaired, the unit may fall down and cause accidents.

- No goods or nobody is permitted to placed onor stand on outdoor unit.
  The falling of goods and people may cause accidents.

- Don't place any burning unit in the air flow of air -conditioner, which may cause incomplete combustion.

- No inflammable spray fluid should be permitted to be placed or used near to air-conditioner otherwise may cause fire accidents.

- When use the fumigating insecticide don't open air-conditioner.
  Otherwise the poisonous chemicals may settle in air-conditioner which harm the health of chemical-allergic people.

⚠ INSTRUCTIONS:

Please ask the dealer or specialist to install, never try by the users themselves. After the installation please be sure of the following conditions.

⚠ WARNING:

Please call dealer to install the air-conditioner.

Incorrect installation may cause water leaking, shock and fire hazard.

⚠ CAUTION:

- Air-conditioner can't be installed in the envi-ronment with inflammable gases because the inflammable gases near to airconditioner may cause fire hazard.
- Installed electrical-leaking circuit breaker.
  It easily cause electrical shock without circuit breaker.
- Connect earthing wire.
  Earthing wire should not be con- nected to the gas pipe, water pipe, lightning rod or phone line, incorrect earthing may cause shock.

Earthing

- Use discharge pipe correctly to ensure efficientdischarge.
  Incorrect pipe use may cause water leaking.

[Location]

- Air-conditioner should be located in well-vented and easily-
- accessible place.
  Air-conditioner should not be located in the following places:
  (a) Places with machine oils or other oil vapours.
  (b) Seaside with high salt content in the air.
  (c) Near to hot spring with high content of sulfide gases.
  (d) Area with frequent fluctuation of voltage e.g. factory, etc.
  (e) In vehicles or ships.
  (f) Kitchen with heavy oil vapour or humidity.
  (g) Near to the machine emitting electric-magnetic waves.
  (h) Places with acid, alkali vapuor.TV, radio, acoustic appliances etc are at least 1 m far away to the indoor unit, outdoor unit, power supply wire, connecting wire, pipes, otherwise images may be disturbed or noises be created.

[Wiring]

Air-conditioner should be equipped with special power supply wire.

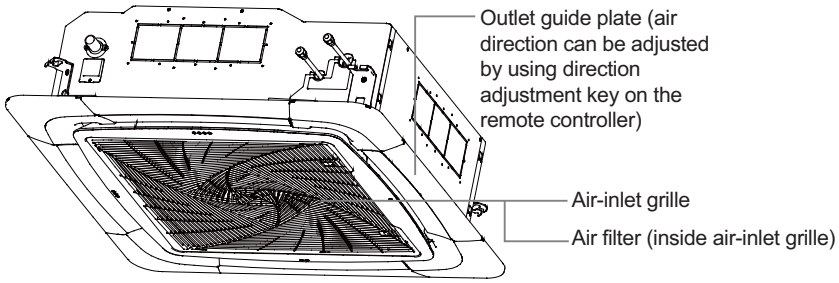
[Operating noise]

- Chose the following locations:
  (a) Capable of supporting air-conditioner weight, don't increase operating noise and vibration.
- (b) Hot vapour from outdoor unit outlet and operating noise don't disturb neighbour.
  No obstacles around the outdoor unit outlet.

Parts and Functions

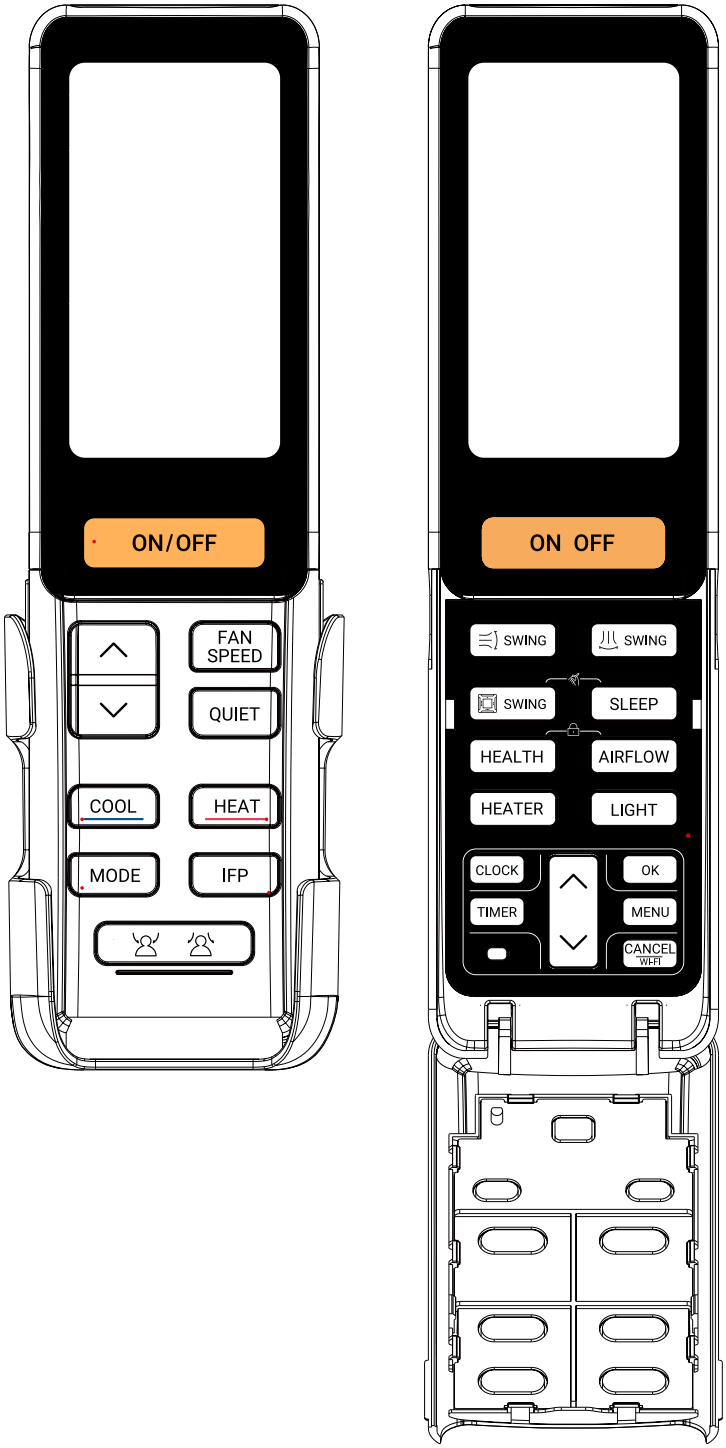
Component names and applicable models

Indoor unit



External View of Remote Controller

Remote Controller function description
This remote Controller is a general remote Controller, and some functions are valid according to the adaptable model.



Functional description

1.ON/OFF Button:

Turning on the units:Press the ON/OFF button to turning on the units.

Note: The initial default operation mode is AUTO and then will display the mode before turning off

Press ON/OFF button again to turn off the unit.

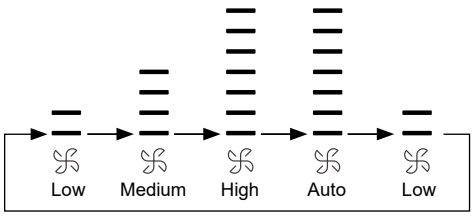
2. temperature +/- Button:

(1)This button is invalid in FAN mode;

(2)Press button once, temperature will increase or decrease by 0.5°C; pressing and holding the button will make the temperature change quickly.

3. FAN SPEED Button:

Press the FAN SPEED button, the cycle sequence is as follows:



4. QUIET

Press QUIET button, the controller screen will display " QUIET " . The fan speed in Quiet function is automatic fan speed, but the specific fan speed grade in auto depends on indoor unit.

Note: This function is valid under the mode of COOL and HEAT.

5. COOL/ HEAT

Press COOL button and HEAT button to execute COOL mode and HEAT mode .

6. MODE

Press the MODE button every time, the cycle sequence is as follows: AUTO → COOL → DRY → HEAT → FAN AUTO

7. IFP/ / /

(1) Press IFP button, display “IFP”, IFP function is set, and press IFP button again to cancel.

(2) Press button, display that expresses following; press it again, display that expresses evading. Press it the third time to cancel this function.

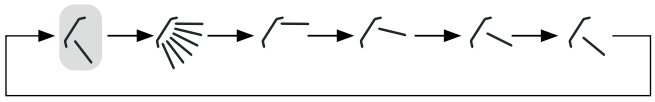
(3) Airflow angle will adjust automatically along with the location of people. At the same time, , AUTO and AUTO will disappear.

Parts and Functions

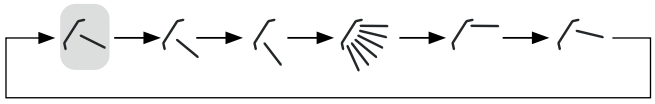
8. SWING Up-and-down SWING Angle

Each time you press the button SWING , Remote control display cycle sequence:

HEAT MODE:

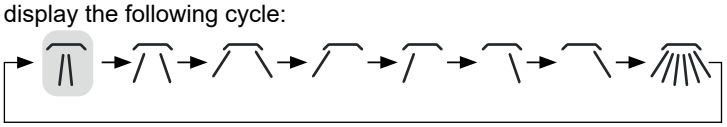


Other modes:



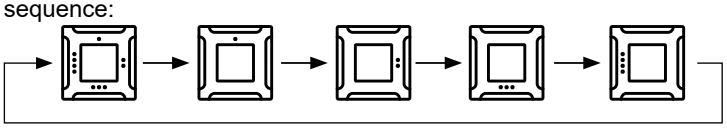
9. SWING Right-and-left SWING Angle adjustment

Each time you press the button SWING , the remote control will display the following cycle:



10. SWING Round-way cassette swing angle adjustment

Each time you press the button , Remote control display cycle sequence:



When pressing SWING button to select blade, the selected blade flashes. Press “Up-and-down Angle” button to adjust airflow angle of the selected blade.

11. SLEEP

Press the SLEEP button, and the remote controller screen will display "Sleep". The SLEEP time is fixed to 8 hours and is not adjustable. Press the SLEEP button again, and the sleep function will be cancelled.

Note:

(1) Sleep function is invalid in FAN mode.

(2) Sleep function is only valid during the units turning on.

12. HEALTH

(1) When the controller is switched on, press HEALTH button, health function is activated and the remote controller will display "HEALTH".

(2) When the controller is turned off, press the HEALTH button, the controller will be turned on, enter FAN mode and display "HEALTH".

(3) If the Health function is set and activated, Press Health button will cancel this function.

13. Health AIRFLOW

Press the AIRFLOW button and the remote controller screen displays "AIRFLOW ".

Press AIRFLOW again to cancel this function.

14. HEATER

Press the HEATER button, and the remote controller will display "HEATER ".

Press HEATER button again, the " HEATER " on the remote controller will disappear, and the HEATER function will be turned off.

Note: Heather funciton is only valid in AUTO and HEAT mode.

15. LIGHT

Press the LIGHT button to activate the light function.

Press the LIGHT button again, and the light function is off.

16.CLOCK

Press the CLOCK button, the time displayed on the remote controller flashes. Then Press the ∧/∨ button once, the time increases or decreases by one minute. Holding the button will quickly increase or decrease the time.

To complete the set time, press CLOCK / OK button again to confirm.

17.TIME

(1) When the controller is on, you can only set the TIMER OFF. And when the controller is off, you can only set the TIMER ON.

When the remote controller is off, press the TIMER button to enter the TIMER ON adjustment state.

Press the TIMER button under the starting state of the remote control to enter the TIMER OFF adjustment state.

When entering the timing adjustment process, timer ON/OFF icon and clock flash at the same time, the initial default value is: 12:00. Press the ∧/∨ button once to increase or decrease the time by 1 minutes, pressing and holding the button will speed up the adjustment.

After the time adjustment is completed, press the TIMER / OK button again to confirm. Then the time will statically display, and start the countdown.

18.MENU

Press the MENU button, Functional cycle is as follows: TURBO →FRESH→IFP AC OFF→IFP AC ECO→3D AIR(reserved)→ → →10°C heating (Only valid in HEAT mode) → °F / °C→TURBO

1. Press MENU button, the current function to be set flashes;

2. Press MENU button again to set/cancel the current setting function in the above sequence. If there is no operation in 5 seconds, it will exit automatically.

19. Wi-Fi Configuration

Press CANCEL Wi-Fi button 3S to enter Wi-Fi configuration, remote controller displays COOL mode, LOW fan speed and 30°C.

Or you can enter the Wi-Fi configuration through setting Cooling mode, Low fan speed and 30°C.

20.SELF-CLEAN

Press the combined button SWING and SLEEP , and the remote controller will display "SELF-CLEAN".

Press ON/OFF button or MODE button to exit the self-cleaning function.

Note: The "SELF-CLEAN" function is invalid under “SLEEP” function and “TIMER” function.

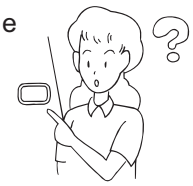
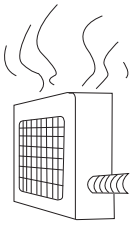
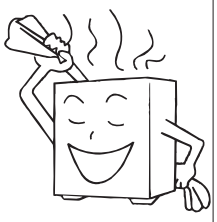
21. LOCK

Press the combination key button HEALTH and AIRFLOW , and the remote controller screen will display " 🔒 ". All buttons on the remote control are invalid.

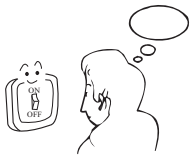
Press the combination button HEALTH and AIRFLOW again to cancel the lock, " 🔒 " disappear. All buttons on the controller will restore to be valid.

Troubleshooting

The followings are not malfuncition

Water flowing sound is heard 	When the air conditoner is started, when the compressor starts or stops during operation or when the air conditioner is stopped,it sometimes sounds “ Bi- Bi-” or “Godo-Godo”. It is the flowing sound of the refrigerant , not a malfunction.
Cracking sound is heard	This is caused by heat expansion or contraction of plastics
It smells.	Air blown out from the indoor unit sometimes smells. The smell results from smells of furniture, paint , tobacco absorbed by indoor unit.
During operation, white fog comes out of indoor unit. 	When in COOL or DRY mode, a thin water fog can be seen blown out of unit ,this is the condensed fog because the suddenly cooled indoor air is blown out.
Automatically switch into FAN mode during cooling.	To prevent frost from being accumulated on the indoor unit heat exchanger, it sometimes automatically switched into the FAN mode, but it will soon back to the cooling mode.
The air conditioner cannot be restarted soon after it stops. Air conditioner does not start? 	This is because of the self-protection function of the system, therefore, it cannot be restarted for about three minutes after it stops. Please wait for three minutes
Air does not blow or the fan speed cannot be changed during drying.	In DRY mode, when room temperature becomes 2°C higher than temperature setting, unit rill run intermittently at LO speed regardless of FAN setting
Water or vapor generated from the outdoor unit during heating. 	This happens when the frost accumulated on the outdoor unit is removed (during defrosting operation). Defrosting operation 
During heating,indoor fan is still running even unit is stopped.	To get ride of the excess heat, indoor fan will continue running for a while after unit automatically stops.

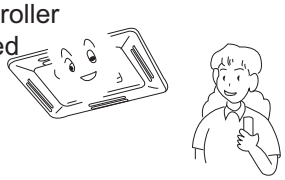
Please check the following things about your air conditioner before making a service call.

Unit fails to start.		
Is the power supply switch on ?  Power supply switch is not in ON position.	Is city supply power normal ? 	Is the earth leakage breaker in action ? Be sure to turn off the power supply switch immediately and contact the sales dealer.

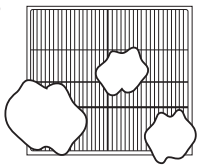
Troubleshooting

Insufficient cooling or heating

The operation controller adjusted as required

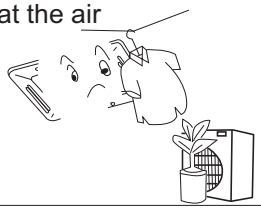


Air filter too dirty ?

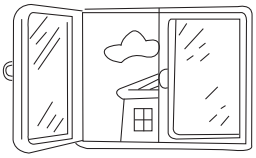


Horizontal swing louver upward ? (in HEAT mode)

Any obstacle exists at the air inlet or outlet?



Door or window left opened ?

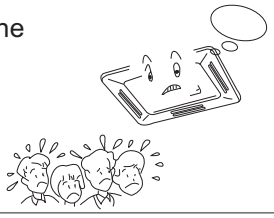


Insufficient cooling

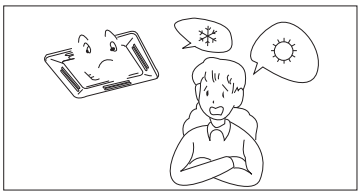
Any other heat sources in the room?

Sunlight direct into the room ?

Too crowed in the room ?



Cooled air blown out (when heating)



When the air conditioner does not operate properly after you have checked the above-mentioned items or when following phenomenon is observed,stop the operation of the air conditioner and contact your sales dealer.

1)The fuse or breaker often shuts down.

2)Water drops off during cooling or drying operation.

3)There is an irregularity in operation or abnormal sound that is audible.

Trouble shooting

LED flash times of indoor PCB		I.R .RECEIVER DIGITAL DISPLAY	Contents of Malfunction	Possible reasons
LED4	LED1			
0	1	01	Malfunction of indoor unit ambient temperature sensor	Sensor disconected,or broken, or at wrong position,or short circuit
0	2	02	Malfunction of indoor unit piping temperature sensor	Sensor disconected,or broken, or at wrong position,or short circuit
0	4	04	EEPROM wrong of indoor PCB	EEPROM chip disconected or broken or wrong programmed, or PCB broken
0	7	07	Abnormal communication between indoor and outdoor units	Wrong connection,or the wires be disconected or wrong adress setting of indoor unit or faulty power supply or faulty PCB or slave unit malfunction in MAXI system
0	8	08	Abnormal communication between wired controlleer(or I.R . RECEIVER) and indoor unit	Wrong connection or wired controller broken, orPCB faulty
0	12	0C	Malfunction of drain system	Pump motor disconnected or at wrong position, or the float switch disconnected, or at wrong position,or the short circuit bridge disconneted
0	13	0D	Zero cross sigal wrong	Zero cross sigal detected wrong
0	14	0E	Indoor unit DC fan motor abnormal	DC Fan motor disconnected or DC Fan broken or circuit broken

Note:

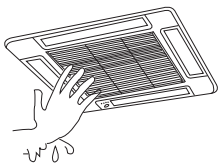
1.The outdoor failure can also be indicated by thhe indoooor unnit,the checking method as follows:
If the outdoor merror code is M(DECIMAL), the indoor unit's I.R. receiver display will show the after converted hexadecimal code of "M+20"(DECIMAL), for example,if the outdoor error code is 2,the indoor unit I.R. receiver display will flash the error code 16 (2⟶2+20=22⟶ change decimal 22 to hexadecimal code, get 16)

2.LED4 is a red one on the indoor PCB,LED1 is a yellow one.

3.To get much more details about the out door unit failure,please refer to the outdoor unit trouble shooting list.

Maintenance

Clean the unit

Turn off the power supply switch	Do not touch with wet hand.	Do not use hot water or volatile liquid
		

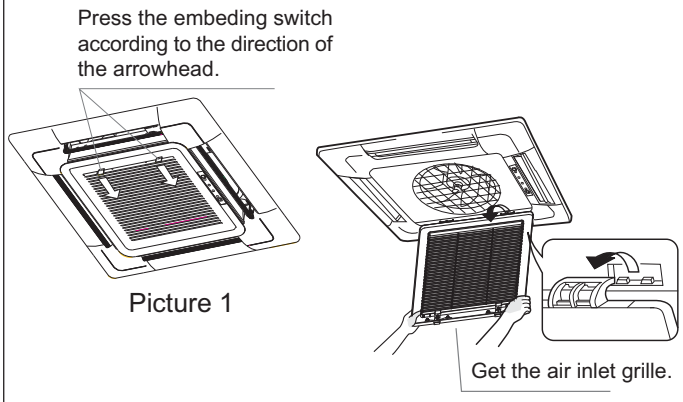
NOTE: For detailed information consult dealer.

Air filter washing

- Please don't tear down the air filter, or it may lead to trouble.
- If the environment where the aircon works is full of dust, the air filter should be wash more times than ever (it is usually twice a week).

1.Get the air inlet grille

Look at picture 1, press the two embeding switch vertically to make it close to the side grille, then raise it for about 45° to take the air inlet grille down.

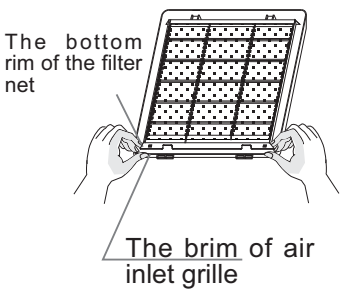


Picture 1

2. Tear down the air filter (Picture 2)

Press the outer brim of the air inlet grille with your thumb, at the same time, pull out the bottom rim of the filter net slightly with your forefinger, so the filter net can part from the embeding switch for us to get it easily.

Picture 2

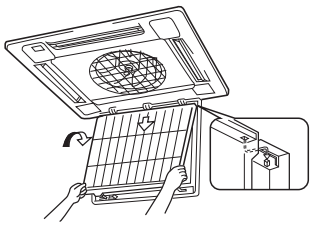


PS: the pictures above are only models, pls obey the real machinery.

Clean the air inlet grille

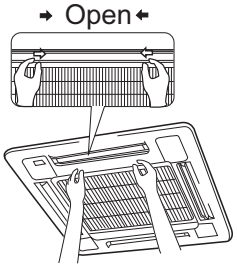
(1). Open air inlet grille

Pull the two handles at the same time, slowly draw them out. (when closing it, the procedure is reversed.)



(2). Remove air filter

Referring to “Clean the air filter”.



(3). Remove the air inlet grille

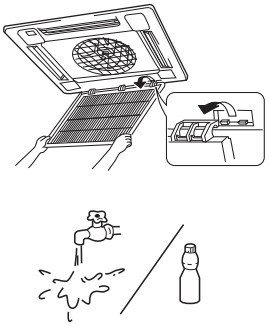
Open the air inlet grille for 45°, the lift it up.

(4). Clean

⚠ Notice

Do not use the hot water over 50℃ to clean to avoid discoloration or deformation.

Use soft brush, water and neutral detergent to clean, then throw the water off.



When there is too much dust

Use ventilation fan or directly spray the detergent special for kitchen ware on the air inlet grille, 10 minutes later use water to clean.

(5). Install air inlet grille

Referring to procedure 3.

(6). Install the air filter

Referring to “Clean the air filter”

(7). Close air inlet grille

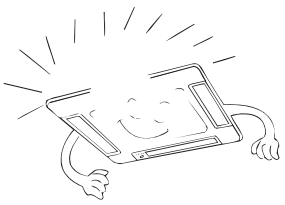
Referring to procedure 1.

Maintenance

Seasonal Reserve

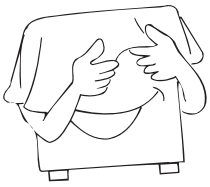
Post-season Care

Operate the unit with FAN mode on a fair day for about half a day to dry the inside of the unit well.



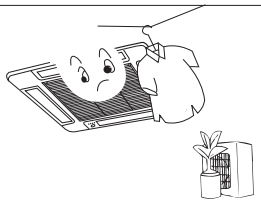
Stop operation and turn off the power supply switch .Electric power is consumed even the air conditioner is in stop.

Clean the air filter, indoor unit and outdoor unit,and cover the unit with dustcoat.



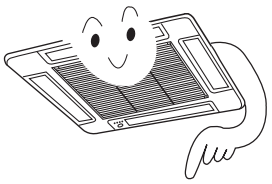
Pre-season Care

See that there is no obstacles blocking the air inlet and air outlet of both indoor and outdoor unit to avoid reduce the working efficiency.



Be sure to install the air filter, ensure that the air filter is not dirty. Otherwise may result in machine damages or cause malfunciton due the dust inside the unit

To prevent compressor when start in HEAT mode, please cut in the power supply switch 12 hours before starting run,furthermore, always keep the power supply switch on during the using senson.



NOTE:

The inner part of indoor unit must be cleaned. Consult dealer, because clean must be done by technician.
In cooling operation, discharging system discharge water in room.

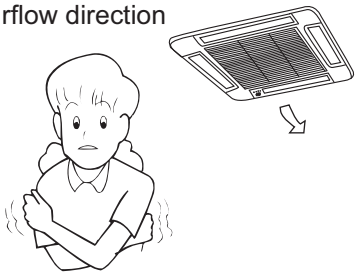
Customer Need-to-know

Customer Need-to-know

- Please install the air conditioner according to the requirements specified in this manual to ensure the air conditioner work well.
- Be careful not to scratch the surface of the case during moving the air conditioner.
- Please keep the installation manual for future reference when maintenance and changing installation place.
- After installation ,please use the air conditioner according to the specification in the operation manual.

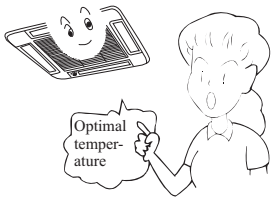
Using Directions

Adjust suitable airflow direction



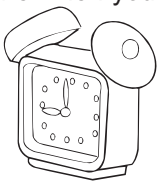
Avoid direct sunlight and airflow

Keep the proper indoor temperature.
Too cool or hot is not good for your health.
Furthermore,it will result in excessive consumption of electric power.



Effectively use timer.

Using TIMER mode, you can make the room temperature reach a suitable temperature when you wake up or back home.



Installation Procedure

CAUTIONS:

To ensure proper installation, read "Cautions" carefully before working. After installation, start the unit correctly and show customers how to operate and maintain the unit.

Meanings of Warning and Cautions:

⚠ **WARNING:** Serious injury or even death might happen, if it is not observed.

⚠ **CAUTION:** Injury to people of damages to machine might happen, if it is not observed.

⚠ **WARNING:**

- Installation shall be done by professional people, don't install unit by yourself. Incorrect installation will cause water leakage, electric shock or fire.
- Install unit as per the Manual. Incorrect installation will cause water leakage, electric shock or fire accident.
- Be sure to use specified accessaries and parts. Otherwise, water leakage, electric shock, fire accident or unit falling down may happen.
- Unit should be placed on a place strong enough to hold the unit. Or, unit will fall down causing injuries.
- When install the unit, take in consideration of storms, typhoom, earthquake. Incorrect installation may cause unit to fall down.
- All electric work shall be done by experienced people as per eocal code, regulations and this Manual.
- Use exclusive wire for the unit. Incorrect installation or undersized electric wire may cause electric shock or fire accident.
- All the wires and circuit shall be safe. Use exclusive wire firmly fixed. Be sure that external force will not affect terminal bolck and electric wire. Poor contact and installation may cause fire accident.
- Arrange wire correctly when connectin indoor and outdoor power supply. Fix terminal cover firmly to avoid overheat, electric shock or even fire accident.
- In case retrigerant leakage occurred during unit installation, keep a good ventilation in the room.
- Poisonous gas will occur when meet with fire.
- Check the unit upon installation. Be sure there is no leakage. Refrigerant will induce poisonous gas when meet heat source as heater, oven, etc.
- Cut power supply before touching terminal bolck.

⚠ **CAUTION:**

- Unit shall be grounded. But grounding shall not be connected to gas pipe water pipe, telephone line. Poor grounding will cause electric shock.
- Be sure to install a leakage breaker to avoid electric shock.
- Arrange water drainage according to this Manual. Cover pipe with insulation materials in case dew may occur. Unproper installation of water drainage will cause water leakage and wer your furniture.
- To maintain good picture or reduce noise, keep at least 1 m from T.V. radio, when install indoor and outdoor unit, connecting wire and power line. (If the radio wave is relatively strong, 1 m is not enough to reduce noise).
- Don't install unit in following places:
  (a) Oil mist or oil gas exists, such as kitchen, or, plastic parts may got aged, or water leakage.
  (b) Where there is corrosive gas. Copper tube and welded part may be damaged due to corrosion, causing leakage.
  (c) Where there is strong radiation. This will affect unit's control system, causing malfunction of the unit
  (d) Where flamable gas, dirt, and volatile matter (thinner, gasoline) exist, These matter might cause fire accident.
- Refer to paper pattern when installing unit.

Earthing

Cautions for the installation personnel

Don't fail to show customers how to operate unit.

Installation Procedure

❶ BEFORE INSTALLATION <Don't discard any accessories until comp>

- Determine the way to carry unit to installation place.
- Don't remove packing until unit reaches installation place.
- If unpacking is unkavoidable, protect unit properly.

❷ SELECTION OF INSTALLATION PLACE

(1) Installation place shall meet the following and agreed by customers:

- Place where proper air flow can be ensured.
- No block to air flow.
- Water drainage is smpoth.
- Place strong enough to support unit weight.
- Place where inclination is not evident on ceiling.
- Enough space for mainenance.
- Indoor and outdoor unit piping length is within limit. (Refer to Installation Manual for outdoor unit.)
- Indoor and outdoor unit, power cable, inter unit cable are at least 1 m away fromT.V. radop. This is helpful to avoid picture disturbance and noise. (Even if 1 m iskept, noise can still appear if radio wave is strong)

(2) Ceiling height

Indoor unit can be installed on ceiling of 2.5-3m in height. (Refer to Foeld setting and Installation Manual of ornament panel.)

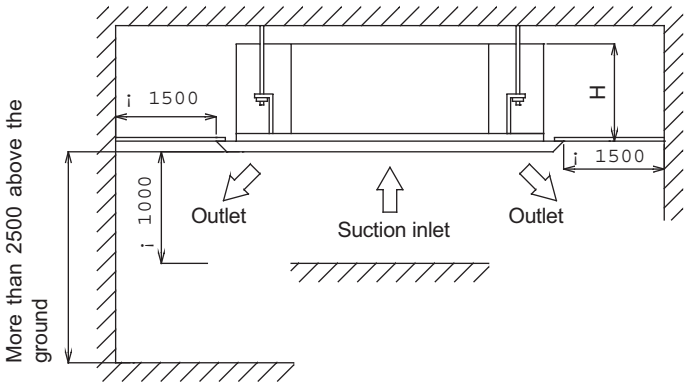
(3) Install suspending bolt.

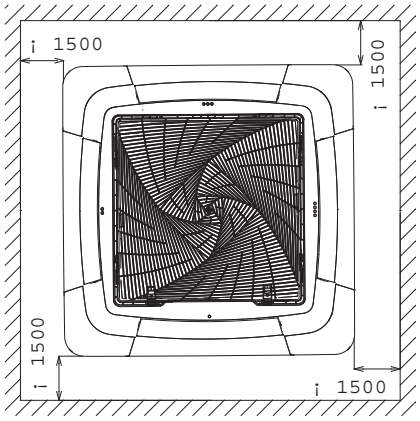
Check if the installation place is strong enough to hold weight. Take necessary measures in case it is not safe. (Distance between holes are marked on paper pattern. Refer to paper pattern for place need be reinforced)

(4) Selection of installation location of outdoor

With consent from the user, installation location shall:

- Be sufficient to bear weight of the units, with air circulation.
- Avoid direct radiation from heat sources or other heat sources.
- Facilitate the drainage of condensate. Holes in wall shall also facilitate drainage.
- Be such that noise and heat air will not disturb neighbors.
- Be free of heavy snow in winter.
- Allow air inlets and outlets to be free of barriers.
- Not allow air outlet to directly face strong airflow.
- Facilitate installation at four corners, with 1m space above the unit.
- Be convenient for maintenance and repair.
- For installation of multiple units, sufficient space shall be ensured to avoid short circuit.
- The air conditioner shall not be mounted on a non-dedicated metal frame (e.g. burglar mesh).
- When the outdoor unit is installed on a street side, its height shall not be less than 2.5m.





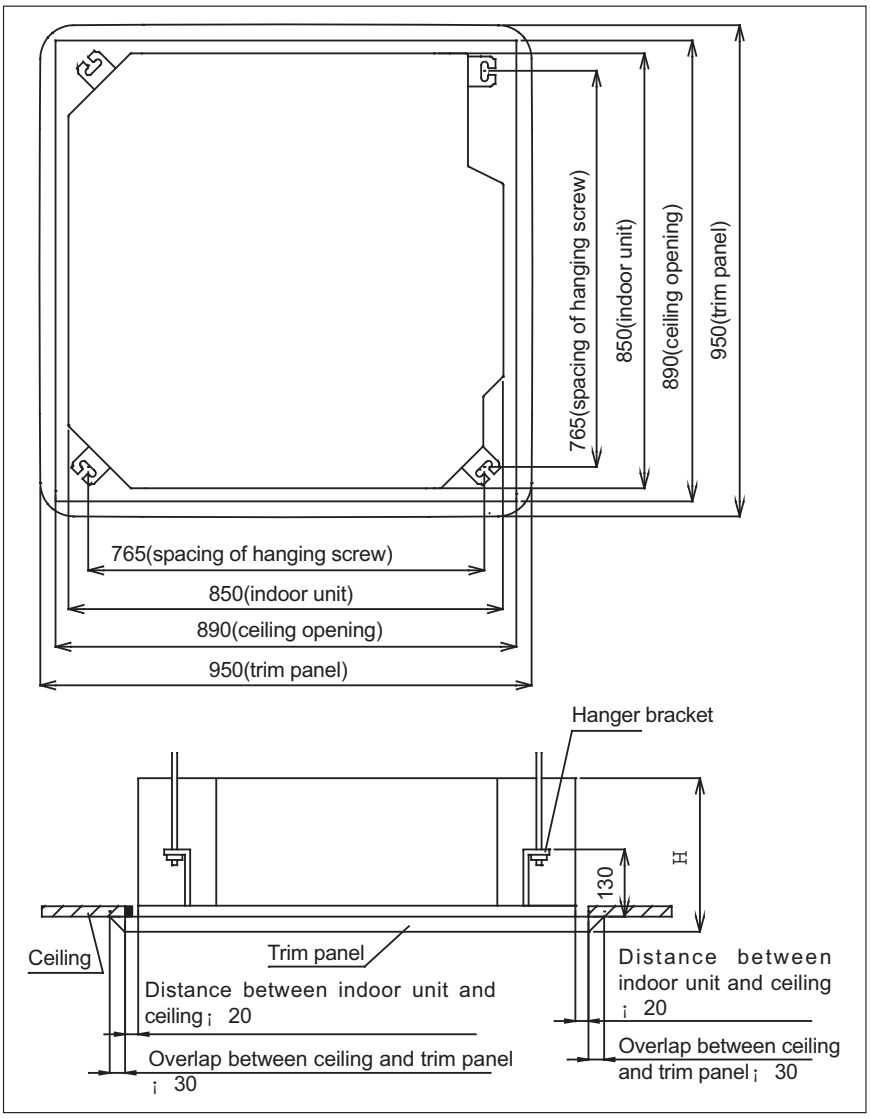
Space required for installation (unit: mm)

Model	H
ABH071H5ERG	246
ABH105K5ERG ABH125K5ERG AB140S5SR1FA	288

Installation Procedure

❸ Preparation before installation

(1) Location relationships between ceiling opening and hanging screw



Model	H
ABH071H5ERG	299
ABH105K5ERG ABH125K5ERG AB140S5SR1FA	341

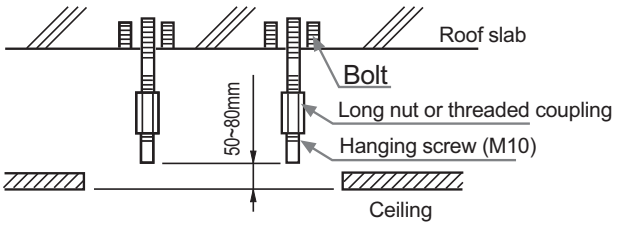
Note:
Overlap between the ceiling and decorative panel shall be 30mm or more. The distance between indoor unit and ceiling shall be 20mm or less. If it's more than 20mm, add ceiling materials at ¡ or repair the ceiling.

(2) Complete all pipes (for refrigerants and drainage) and wires (for connection of indoor and outdoor units) to be connected to indoor unit before installation so that they can be connected to indoor unit immediately after installation.

(3) Install hanging screws

- To bearing the unit weight, use foundation bolts on existing ceilings, or embedded bolts, buried bolts or other parts that is provided on site on new ceilings. Before installation is continued, adjust the distance from ceiling.

<Installation example>



Note: All the above parts are to be provided on installation sites.
Diameter of hanging screws is M10.

Installation Procedure

❹ Installation of indoor unit

Installation sequence on new ceiling: (1)➔(2)➔(3)➔(4)➔(5)➔(6)
Installation sequence on new ceiling: (1)➔(3)➔(4)➔ (5)

(1) Temporary installation of indoor unit
• Attach hangers to hanging screws, and make sure to use nuts and washers on both upper and lower ends of hangers so as to fix them firmly. A washer fixing plate (to be provided on site) can prevent the washer from dropping off.

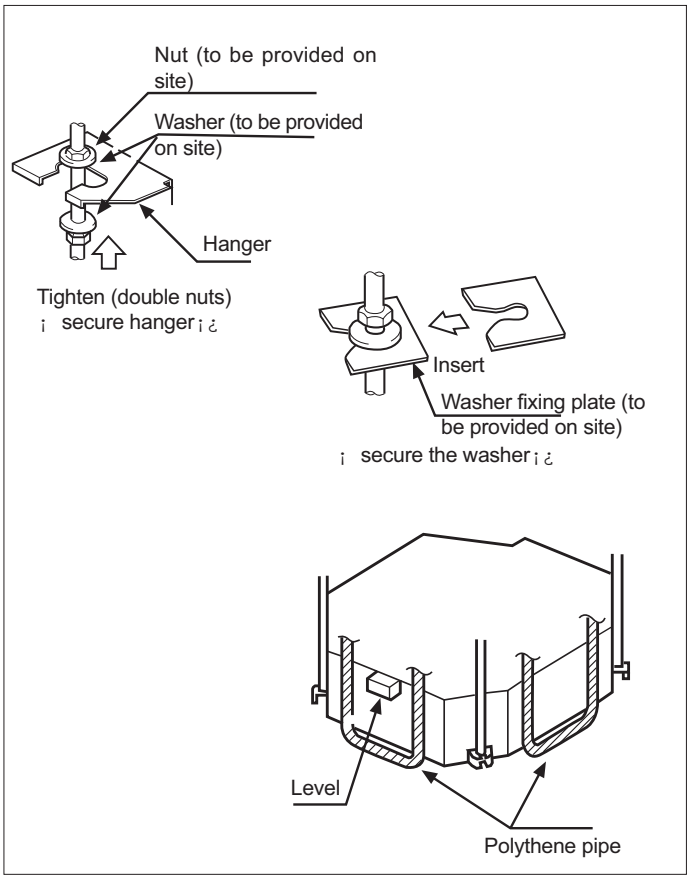
<Work at ceilings>
(2) Adjust units to appropriate installation locations.
Refer to "(3)Preparation before installation."

(3) Correct levelness of air conditioner units.
• The indoor unit is equipped with a built-in drainage pump and a float switch. Correct levelness with a level or water-filled polyethylene pipe.

Note: if the unit inclines towards reverse direction of condensate flow, the float switch can not work normally and water leakage will be resulted.

(4) Pull out the original fixing plate that prevents the washer from dropping off, and tighten nuts.

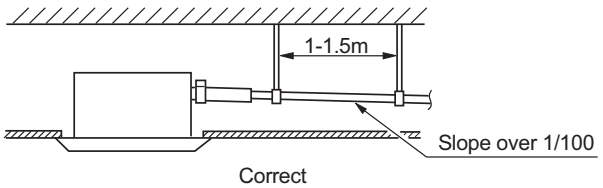
(5) Remove the installation cardboard.

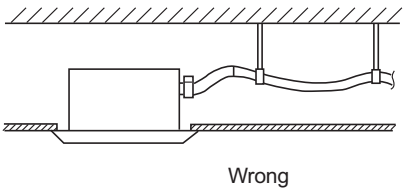


❺ Installation of drain pipe

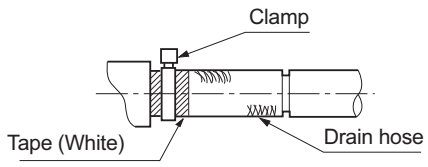
(1) Install drain pipe

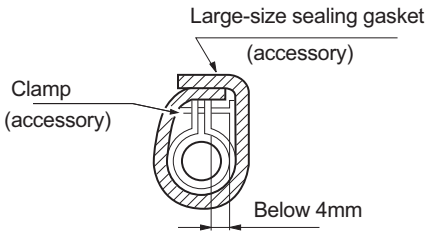
- Diameter of the drain pipe shall be greater than or equal to that of the connecting pipe. (PE pipe: size: 25mm; O.D.: 32mm)
- The drain pipe shall be short and have a downward slope of at least 1/100 to prevent pockets.
- If it is impossible to provide sufficient slope to the drain pipe, a drain lift pipe shall be installed.
- To avoid bending of the drain pipe, hangers shall be kept 1-1.5m away from each other.





Use a drain hose and clamp.
Insert the drain hose into the drainage outlet until it reaches the white tape. Then tighten the clamp.
For heat insulation, wind the drain hose with sealing gaskets. Provide heat insulation to indoor drain hose.

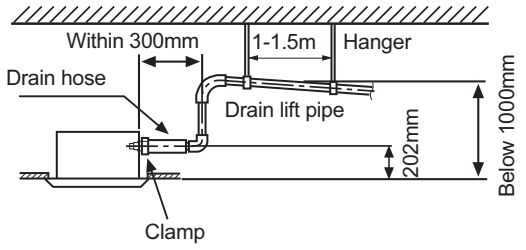


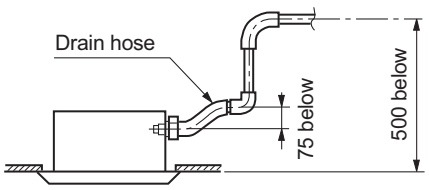


<Precautions for drain lift pipe>

The drain lift pipe shall be installed as low as possible.

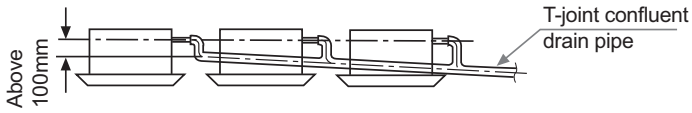
The drain lift pipe shall be perpendicular to the unit and not more than 300mm away from the unit





Note:

- The slope of accessory drain pipe shall be within 75mm so that the drainage outlet does not necessarily bear excessive external force.
- If multiple drain pipes join together, install them as follows.



The size of confluent drain pipe selected shall be suitable for operating capacity of the units.

(2) Check drainage is smooth after installation.

- Check drainage by filling in 1200cc water slowly from air outlet or inspection hole.

⑥ Installation Instruction for Embedded Air-Conditioning Panel

1.Before installation

Warning

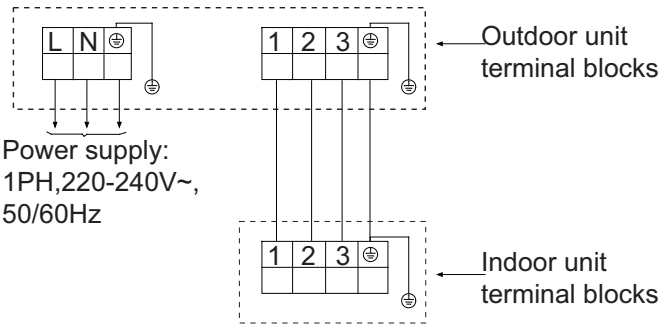
The trim panel shall be put on buffer materials when unpacked to prevent being scratched by hard objects.

Please confirm the following accessories delivered with the product:

Bolt (M5*25) Qty: 4

Washer Qty: 4

Connect and fix the power supply cable, indoor-outdoor connection cable as following:

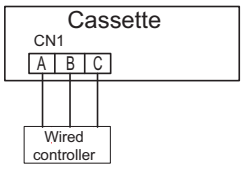


For single phase power supply models:
1U71S2SS5FA,1U100S2SN5FA,1U105S5SN5FA,
1U125S2SP5FA,1U140S2SP5FA
Power supply cable: H05RN-F 3G 4.0mm^2
Indoor and outdoor connection cable: H05RN-F 4G 2.5mm^2

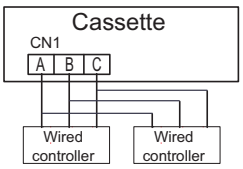
Wired controller wiring instruction

Alert! Ensure do any of the operating during power off.

A. One Wired controller controls one indoor unit



B: Double wired controllers control one indoor unit

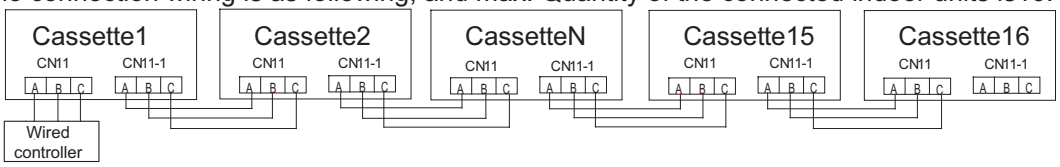


C. Connection method for ONE wired controller with MULTIPLE indoor units

For wired controller connect with cassette

Step1: The wiring connection between 1.wired controller-the master unit(directly connected to the wired controller), 2.master unit-slave unit, 3.slave unit-slave unit should be one to one match of all three lines.

The connection wiring is as following, and max. Quantity of the connected indoor units is16.



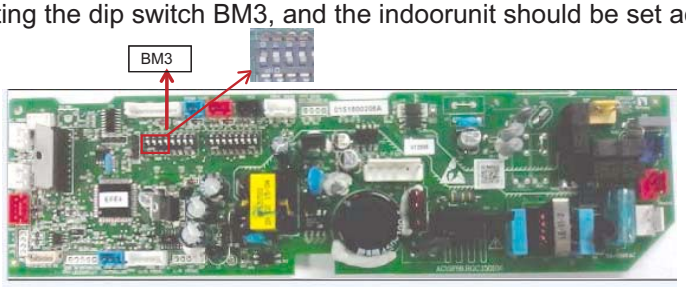
Note:

1) Shielded lays of the communication line should be connected as a daisy chain from the first master unit to the last slave unit.

2)The shielding lay of the communication line must be grounded at the end of the last slave unit.

Step2

Setting the dip switch BM3, and the indoorunit should be set according to the following table:



Wired controller address	BM3-8	BM3-7	BM3-6	BM3-5
Master indoor unit	0	0	0	0
Slave unit1	0	0	0	1
Slave unit2	0	0	1	0
Slave unit3	0	0	1	1
Slave unit4	0	1	0	0
Slave unit5	0	1	0	1
Slave unit6	0	1	1	0
Slave unit7	0	1	1	1
Slave unit8	1	0	0	0
Slave unit9	1	0	0	1
Slave unit10	1	0	1	0
Slave unit11	1	0	1	1
Slave unit12	1	1	0	0
Slave unit13	1	1	0	1
Slave unit14	1	1	1	0
Slave unit15	1	1	1	1

"1" stands for ON," 0" stands for OFF.

Note:

The above step 1, step 2, and step 3 must be operated in power off status.

The power supply terminals L1 L2 of all the outdoor units must be in the same phase sequence.

Installation Procedure

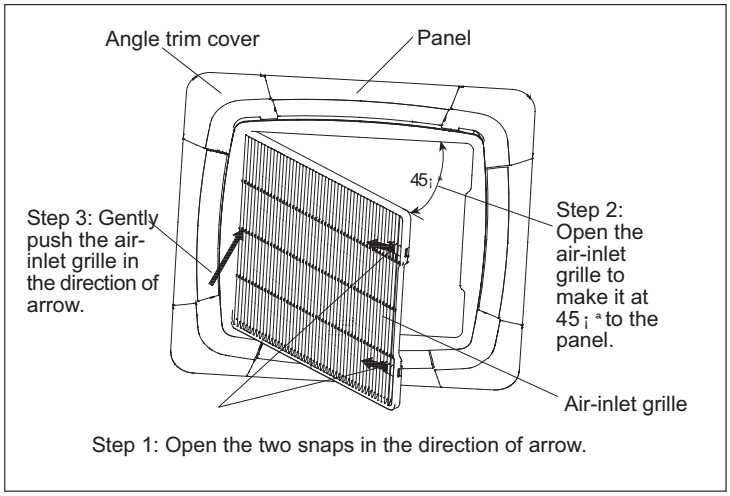
1.Installation

(1) Confirming the position of unit hanger

Please confirm the installation position of the hanger for indoor unit is about 130mm above the ceiling. For details, please refer to the Instructions for Installation and Maintenance of indoor unit.

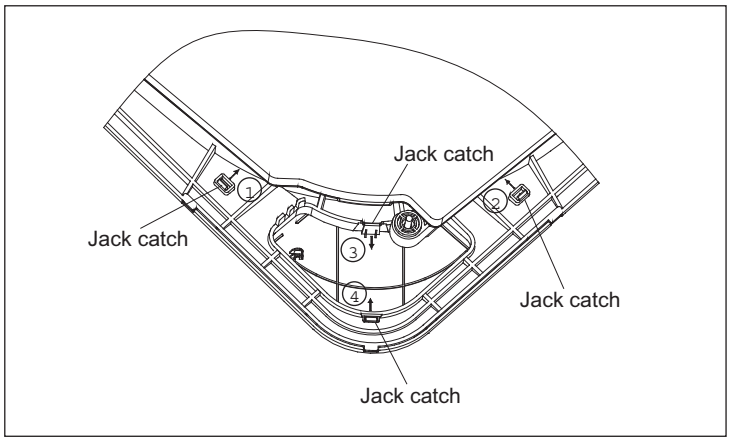
(2) Removing the air-inlet grille

Open the air-inlet grille to make it at an angle of 45¡ã to the trim panel. As shown in the following figure, please remove the air-inlet grille as per the operation requirements.



(3) Installing the panel

1) Please remove the four (4) angle trim panels. Removal method: Flip the jack catches of the angle trim panel in the order of ¢ ¢ ¢ ¢ , as shown in the following figure. The flipping direction is indicated by the arrows. Then the angle trim panel can be removed.

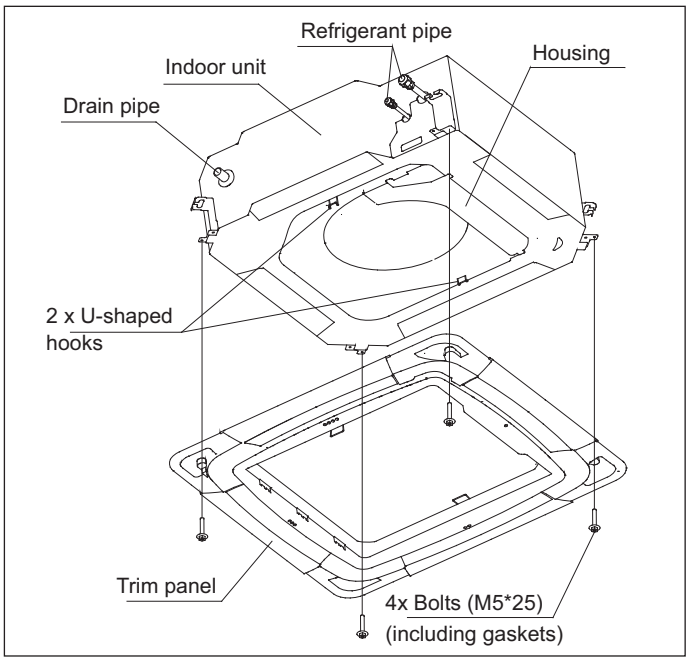


2) Pull out the two (2) U-shaped hooks on the indoor unit from below.

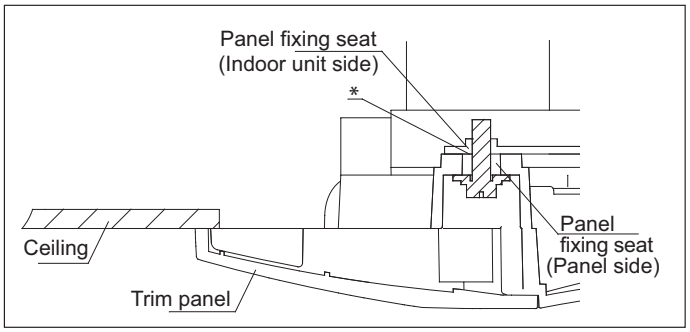
3)Adjust the panel direction to make the angle side engraved with"Pipe side" consistent with the refrigerant pipe of the indoor unit, and make the angle side engraved with "Drain side" consistent with the drain side of the indoor unit. Then hang the 2 hooks in the inner side of the panel on the 2 U-shaped hooks of the indoor unit.

4) Finally fix the panel on the indoor unit with the bolts (M5*25) and gaskets delivered with the unit.

Caution: Gaskets must be used for fixing, or else the panel would be easy to fall off.

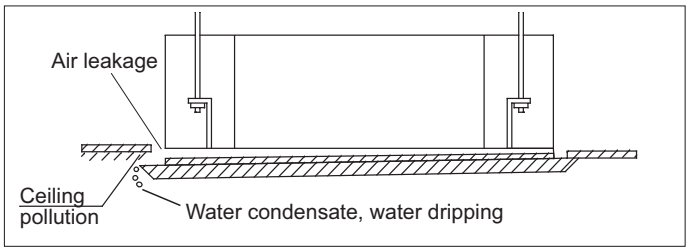


5) When tightening the four (4) bolts, please make sure there is no clearance between the panel fixing seat on the side of the indoor unit and the panel fixing seat on the side of the panel. That is to say: the bolts shall be fully tightened (see * in the figure). If there is a clearance, air leakage or water leakage is likely to occur.

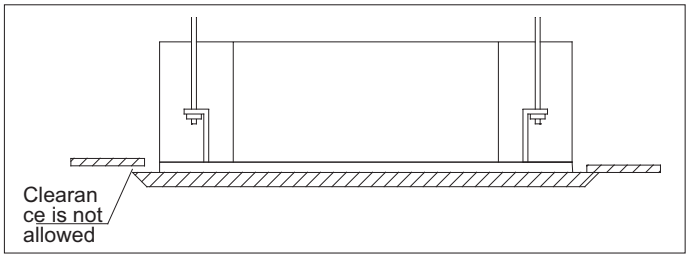


Caution:

- Improper tightening of bolts would lead to the faults shown in the following figure.

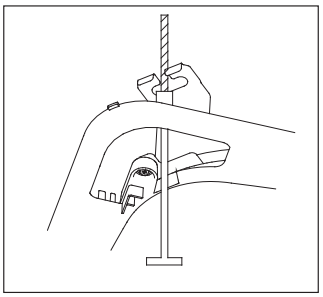


- After tightening the bolts, if there is a clearance between the ceiling and the trim panel, please readjust the height of the indoor unit.



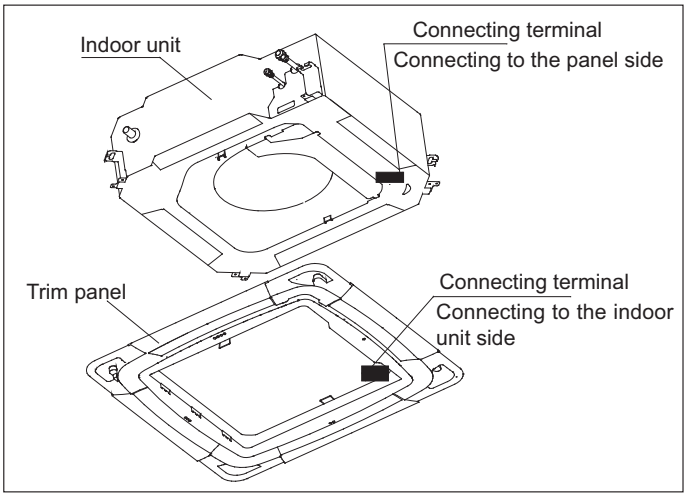
Installation Procedure

If the elevation level of the indoor unit and drain pipe are not affected, you can adjust the height of the indoor unit through the corner pore on the trim panel. Please keep the unit horizontal in the process of adjustment, or else water leakage is easy to occur.



- Please do not swing the louver blade by hand, or else the blade mechanism would be damaged.

6) Connection of trim panel. Connect the black lead-out terminal of the panel to the black lead-out terminal of the indoor unit housing.



7) When the installation of panel is complete, please fix the four (4) angle trim panels.

- Hang and tighten the strap of the angle trim panel on the shackle of the trim panel, as shown in the figure.
- Fix the angle trim panel on the trim panel.

8) Installing the air-inlet grille.

Install the air-inlet grille with the steps opposite to that for removing.

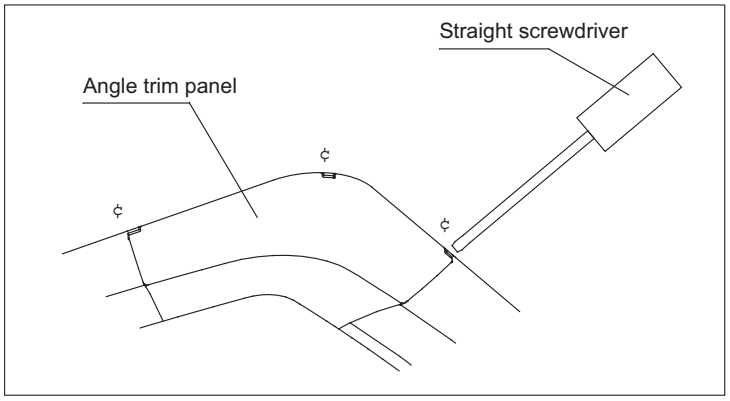
For reference

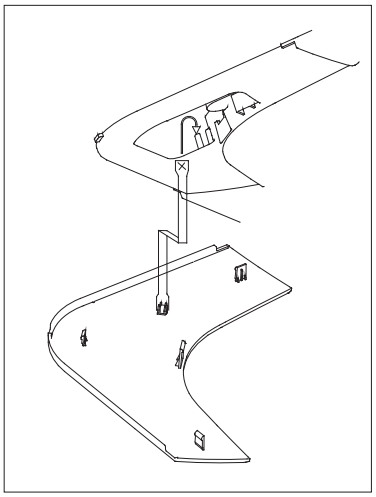
The method for removing angle trim panels when the installation of trim panel is complete:

1)Insert a straight screwdriver in the notch¢ . Gently turn the screwdriver downward, and slowly insert it in, and then move it up and down to make the angle fall off.

2)Make the angle ¢ and ¢ fall off in the same way.

3)Take off the angle trim panel by hand.





Test Run

Check items

1. Indoor unit

- Is operation of each button on the remote control unit normal?
- Does each lamp light normally?
- Do not air flow direction louvers operate normally?
- Is the drain normal?

2. Outdoor unit

- Is there any abnormal noise and vibration during operation?
- Will noise, wind, or drain water from the unit disturb the neighbors?
- Is there any gas leakage?

Cusllmer guidalce

Explai n thi followi ng to thi customiri n accordanci wi th thi opirati on manual:

(1) Starting and stopping mithod, opiration switching, timpiraturi adjustmint, timir, air flow switching, and othir rimoti control unit opirations.

(2) Air filtir rimoval and clianing, and how to usi ai r louvirs.

(3)i i vi thi op rati on andi nstallati on manuals to thi customir.

Test run

⚠ CAUTION

THIS UNIT WILL BE STARTED INSTANTLY WITHOUT "ON" OPERATION WHEN ELECTRIC POWER IS SUPPLIED.BE SURE TO EXECUTE "OFF" OPERATION BEFORE ELECTRIC POWER IS DISCONNECTED FOR SERVICING.

- This unit has a function of automatic restart system after recovering power stoppage.

1. Before starting test run (for Heat pump models)

Confirm whether the power source breaker (main switch) of the unit has been turned on for over 12 hrs to energize the crankcase heater in advance of operation.

2. Test run

Run the unit continuously for about 30 minutes, and check the following.

- Suction pressure at check joint of service valve for gas pipe.
- Discharge pressure at check joint on the compressor discharge pipe.
- Temperature difference between return air and supply air for indoor unit.

Accessories

Accessories supplied with the indoor unit:

No.	Name of parts	Quantity	Descriptions
1	Battery	2	Used for remote controller
2	Remote controller	1	For Air conditioner operation
3	3/8 Brass nut (liquid side)	1	For tightenning the Connecting pipe
4	5/8 Brass nut (gas side)	1	
5	Coupler heat insulation(gas side)	1	For indoor side pipe joint(gas side)
6	Coupler heat insulation(liquid side)	1	For indoor side pipe joint(liquid side)
7	Accessories group	1	Drainage fittings group
8	Instructions	1	Air conditioner operation
9	Sticky tape	1	Used to wrap the pipes
10	Cable tie(Large)	4	For fixing the heat insulation
11	Cable tie(Small)	6	For fixing the remote controller cable and connecting cable

Customer Care

Visit the website for technical data

Australia: https://www.haier.com.au/air-conditioning/

New Zealand: https://www.haier.co.nz/air-conditioning/

24/7 customer support and service booking

Australia: 1300 729 948

New Zealand: 0800 424 372

24/7

5 YEAR WARRANTY

 The product dimensions and specifications in this document apply to the specific products and models described at the date of issue. Under our policy of continuous product improvement, these dimensions and specifications may change at any time. You should therefore check with your dealer or Fisher & Paykel's Customer Care Centre to ensure this document correctly describes the products currently available.

Manufacturer's warranty information: You receive a 5 year Manufacturer's Warranty. Fisher & Paykel Appliances Ltd will repair (or at its option replace) any part which is found to be defective within five years from date of purchase, without cost to you for either parts or labour. Retention of your original proof of purchase is recommended. To make a claim under any Manufacturer's Warranty, call Customer Care. Service under any Manufacturer's Warranty must be provided by an authorised Fisher & Paykel Appliances Service provider. Use other than in accordance with the product's user guide and other than for human comfort use may invalidate any Manufacturer's Warranty. This Manufacturer's Warranty is an extra benefit and does not affect your legal rights. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to a replacement or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. To view full terms and conditions, visit www.haier.com.au/warranty or www.haier.co.nz/warranty.

The warrantor is:

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