



User's Manual

Indoor Unit

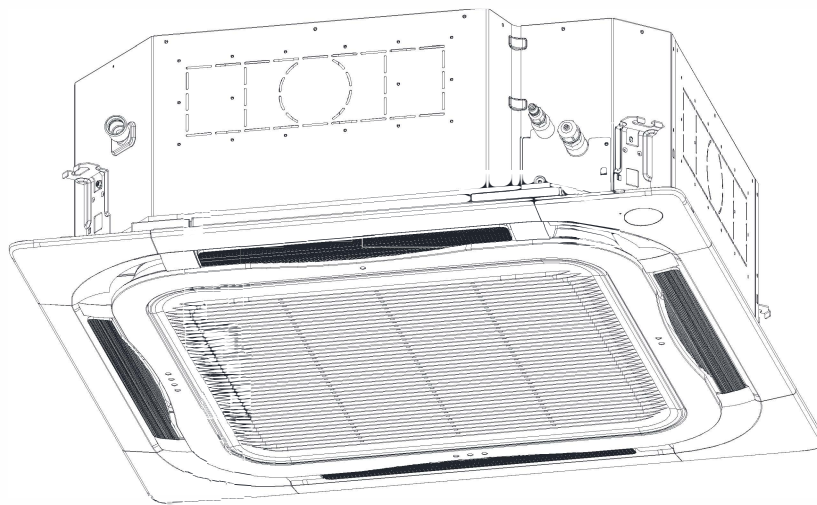
CCT32-18(327)

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CCT32-60(30H)



RECOGNIZE THIS SYMBOL AS A SAFETY PRECAUTION

ATTENTION INSTALLING PERSONNEL

Prior to installation, thoroughly familiarize yourself with this Installation Manual. Observe all safety warnings.

During installation or repair, caution is to be observed

It is your responsibility to install the product safely and to educate the customer on its safe use

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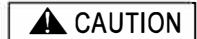
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Installation And Maintenance

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Alert Symbols:

-  **DANGER** : The symbol refers to a hazard which can result in severe personal injury or death.
-  **WARNING** : The symbol refers to a hazard or an unsafe practice which may result in severe personal injury or death.
-  **CAUTION** : The symbol refers to a hazard or an unsafe practice which may result in personal injury, product or property damage.
- NOTE** : It refers to the remarks and instruction to the operation, maintenance, and service.

- This air-conditioner should be installed properly by qualified personnel in accordance with the installation instructions provided with the unit.
- Before installation, check if the voltage of the power supply at installation site is the same as the voltage shown on the nameplate.

DANGER

- You must not carry on any transformation to this product, otherwise, it may cause water leakage, breakdown, short-circuit, electric shock, fire, and so on.
- Piping, welding and other such works should be carried out far away from the flammable explosive material vessels, including the air-conditioner refrigerant, to guarantee the security of the site.
- To protect the air-conditioner from heavy corrosion, avoid installing the outdoor unit where sea water can splash directly onto it or in sulphurous air near a spa. Do not install the air-conditioner where excessively high heat-generating objects are placed.

WARNING

- If the supply cord is damaged, it must be replaced by the factory or its service department in case of danger.
- The place where this product is installed must have the reliable electrical grounding facility and protection. Please do not connect the grounding of this product to various kinds of air-feeding ducts, drain piping, lightning protection facility as well as other piping lines to avoid receiving an electric shock and damages caused by other factors.
- Wiring must be done by a qualified electrician. All the wiring must comply with the local electrical codes.
- Consider the capacity of the electric current of your electrical meter and socket before installation.
- The power wire where this product is installed is supposed to have the independent leakage protective device and the electric current over-load protection device which are provided for this product.
- 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.
- Means for disconnection, which can provide full disconnection in all poles, must be incorporated in the fixed wiring in accordance with the wiring rules .

- **Read this manual carefully before using this air-conditioner. If you still have any difficulties or problems, consult your dealer for help.**
- **The air-conditioner is designed to provide you with comfortable room conditions. Use this unit only for its intended purpose as described in this instruction manual.**

Caution Statements

WARNING

- Never use gasoline or other inflammable gas near the air-conditioner, which is very dangerous.
- When the air conditioner operation is abnormal, such as burnt smell, deformation, fire, smoke, and so on, it is forbidden to continue using the air conditioner, the main power switch of the air conditioner must be cut off immediately and the agent must be contacted.

CAUTION

- Do not turn the air-conditioner on or off from the main power switch. Use the ON/OFF operation button.
- Do not stick anything into the air inlet and air outlet of both the indoor and outdoor units. This is dangerous because the fan is rotating at a high speed.
- Do not cool or heat the room too much if babies or invalids are present.
- The method of connection of the appliance to the electrical supply and interconnection of separate components, and the wiring diagram with a clear indication of the connections and wiring to external control devices and supply cord are detailed in below parts.
- The cord of the H07RN-F type or the electrically equivalent type must be used for power connection and interconnection between outdoor unit and indoor unit. The size of the cord is detailed in outdoor instruction manual.
- Type and rating of circuit breakers / ELB are detailed in outdoor instruction manual.
- The information of dimensions of the space necessary for correct installation of the appliance including the minimum permissible distances to adjacent structures is detailed in below parts.

NOTE:

- **Storage condition:** Temperature -25~60°C (-13 ~140)
Humidity 30%~80%
- Heating and electric heater function are not available for cooling only models.

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:

WARNING

1. Transport of equipment containing flammable refrigerants.

Attention is drawn 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. Marking of equipment using 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 connection 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 using flammable refrigerants

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 such that mechanical damage to the equipment inside the package will not cause a leak of the refrigerant charge.
- 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. For repair to 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 under a controlled procedure so as to minimise the risk of flammable gas or vapour being present while the work is being performed.

6-3 General work area

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

6-4 Checking for presence of refrigerant

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

6-5 Presence of fire extinguisher

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

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 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.

6-7 Ventilated area

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

6-8 Checks to the refrigeration equipment

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

WARNING

- 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.

6-9 Checks to electrical devices

- 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 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 to sealed components

- During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc.
 - If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.
 - Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected.
 - This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, 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. Repair to intrinsically safe components

- Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.
- Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.
- Replace components only with parts specified by the manufacturer.
- Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

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.

WARNING

10. Detection of flammable refrigerants

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

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 (25 % maximum) 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 then 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 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.

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 it shall be pressure 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 good practice that all refrigerants are recovered safely.

WARNING

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.

15. Labelling

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.

16. Recovery

- When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.
- When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed.
- Ensure that the correct number of cylinders for holding the total system charge 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 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

- 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 complied 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 corresponds to the room area 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 who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorises their competence to handle refrigerants safely in accordance with an industry recognized assessment specification.
- Servicing 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 from occurring.
- 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.

Explanation of symbols displayed on the indoor unit or outdoor unit.

	WARNING	This symbol shows that this appliance uses 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.

Composition Of The Air-conditioner

Indoor Unit

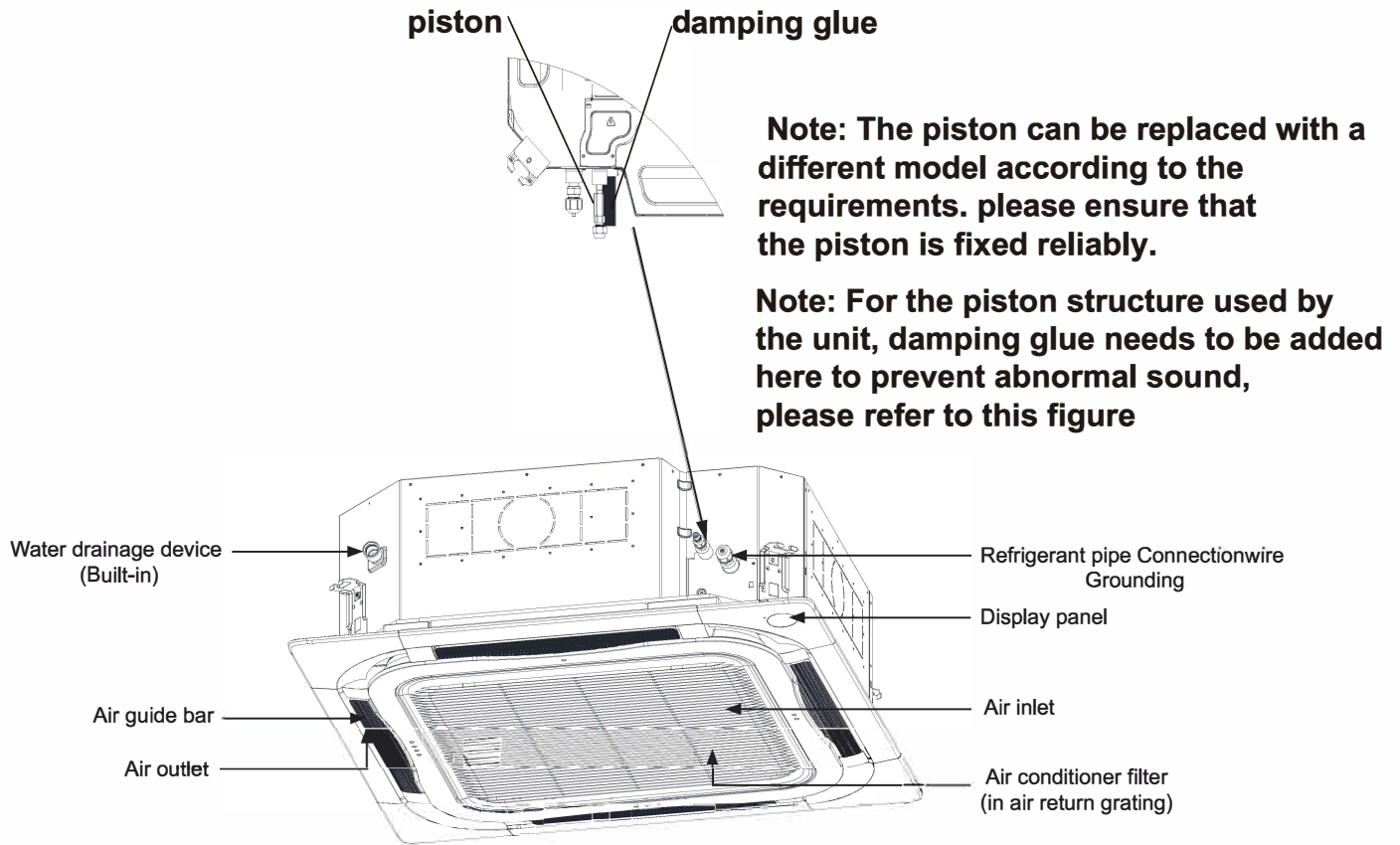


Figure 1

Display panel:

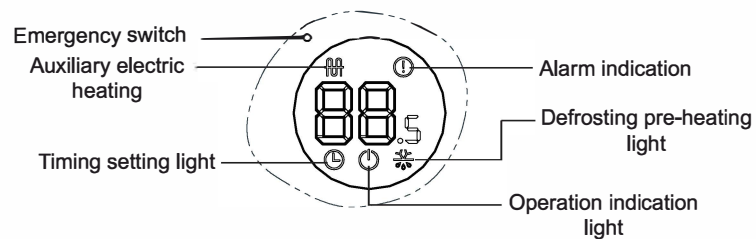
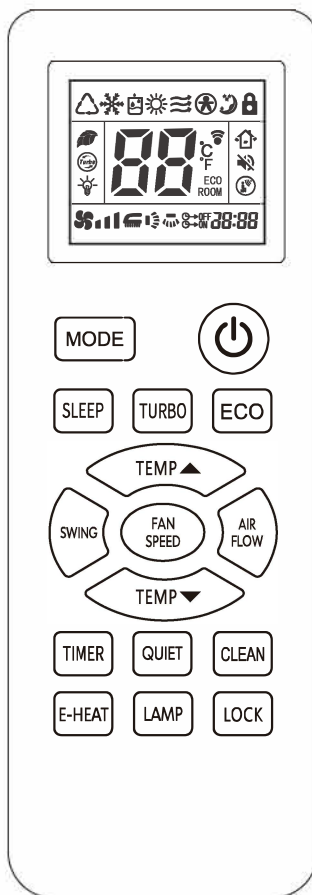


Figure 2

Composition Of The Air-conditioner

Remote controller (RS485 Comm. Mode)



Button	Function Description
MODE	This button changes the operation mode: AUTO, COOL, DRY, HEAT, FAN.
	This button, when pressed starts operation and stops when repressed.
SLEEP	This button changes to SLEEP operation.
TURBO	This button changes to TURBO operation (It does not work in AUTO, DRY, and FAN mode.)
ECO	This button is used to open and close the ECO (energy saving) operation function, which can only be entered when the remote control is set to power on, and the ECO mode switches between 0, 1, 2, 3. Every time change the ECO mode, the remote control shows the corresponding ECO mode for 10s (0 is not displayed, ECO1 shows C1, ECO2 shows C2, ECO3 shows C3).
TEMP ▲ TEMP ▼	This button sets the room temperature.
SWING	This button changes the flap mode: swing or fixed wind.
FAN SPEED	This button set air rate.
AIR FLOW	This button used for selection of the left/right air flow direction, whenever pressed the in flap will swing or fix (It just works on three-dimensional air flow model.)
TIMER	This button is used to set the switch-on or switch-off and the timer time.
E-HEAT	Only for models with electrical auxiliary heater. This button is used to control the auxiliary electric heating function, and the button is only valid in the HEAT mode. Press the button to switch the auxiliary heating function between "auxiliary heat on → auxiliary heat off → automatic auxiliary heating".

Button	Function Description
	Press this button to make the AC keep quiet.
	Press this button to turn off the indications on the device.
	Press this button to CLEAN when the device and remote control are OFF, and the cleaning icon will be displayed on the remote control. The cleaning icon shows that it will disappear automatically in 6 minutes, and the air conditioner will enter standby mode after the cleaning is completed logically. Press this button during the cleaning process to cancel the cleaning function. If the user implements the mode change and shutdown operation during the cleaning mode, the cleaning function will be terminated and the air conditioner will run according to the new mode.
	Press this button to lock or unlock the keyboard.
	°C/°F function: Press TURBO button and TEMP▲ button at the same time to switch to Fahrenheit or Celsius temperature display on the remote control.
	10°C HEAT function: Press TURBO button and TEMP▼ button at the same time to start or stop the 10°C HEAT function.

NOTE: When RS485 Comm. Mode can choose and use the remote!

- Above figure shows all indications for the purpose of explanation, but practically only the pertinent parts are indicated. When air-conditioner is cooling-only model, the "Heat" mode is for Fan only.
- When TURBO operation is selected, room temperature is not controlled with operation being continually. If you feel the room temperature is too cool or too hot, please cancel the TURBO operation.
- Buttons design might be slightly different from the actual one.

1. Safety Notice

WARNING

- Installation should be performed by a qualified personnel. (Improper installation may cause water leakage, electrical shock or fire.)
- Install the unit according to the instructions given in this manual. (Incomplete installation may cause water leakage, electrical shock or fire).
- Be sure to use the supplied or specified installation parts. (Use of other parts may cause the unit to loosen, water leakage, electrical shock or fire).
- Install the air conditioner on a solid base that can support the unit weight. (An inadequate base or incomplete installation may cause injury if it falls off the base).
- Electrical work should be carried out in accordance with the installation manual along with local and national electrical wiring rules or code of practice.
(Insufficient capacity or incomplete electrical work may cause electrical shock or fire).
- Be sure to use a dedicated power circuit. (Never use a power supply shared by another appliance).
- For wiring, use a cable long enough to cover the entire distance, do not use an extension cord.
- Do not put other loads on the power supply, use a dedicated power circuit.
- Use the specified types of wires for electrical connections between the indoor and outdoor units. (Firmly clamp the interconnecting wires so that the terminals receive no external stress).
- Incomplete connections or clamping may cause terminal overheating or fire.
- After establishing connection between all the wires be sure to fix the cables so that they do not put undue force on the electrical covers or panels. (Install covers over the wires, incomplete cover installation may cause terminal overheating, electrical shock or fire).
- When installing or relocating the system, be sure to keep the refrigerant circuit free from substances (such as air) other than the specified refrigerant. (Any presence of air or other foreign substance in the refrigerant circuit causes an abnormal pressure rise or rupture, resulting in injury).
- If any refrigerant has leaked out during the installation work, ventilate the room.
- After all installation is complete, check to make sure that there is no refrigerant leakage. (The refrigerant produces a toxic gas if exposed to flames).
- When carrying out piping connection, do not to let air substances other than the specified refrigerant enter the refrigeration cycle. (Otherwise, it will cause lower performance, abnormal high pressure in the refrigeration cycle, explosion and injury).
- Make sure the installation has a proper earth connection. Do not earth the unit to a utility pipe, arrester, or telephone grounding. Incomplete grounding may cause electrical shock. (A high surge current from lightning or other sources may damage the air conditioner).
- An earth leakage circuit breaker may be required depending on the site condition to prevent electrical shock.
- Disconnect the power supply before wiring, piping, or checking the unit.
- When moving the indoor unit and outdoor unit, please be careful, do not make the outdoor unit incline over 45 degree. Pay attention to the sharp edges of the air conditioner to avoid any injury.
- During wired controller installation, ensure that the length of the wire between the indoor unit and wired controller is within 40 meters.

CAUTION

- Do not install the air conditioner in a place where there is danger of exposure to inflammable gas leakage. (If the gas leaks and builds up around the unit, it may catch fire).
- Establish drain piping according to the instructions in this manual. (Inadequate piping may cause flooding).
- Tighten the flare nut according to the torque specifications with a torque wrench. (If the flare nut is tightened too hard, the flare nut may crack after a long time and cause refrigerant leakage).

2. Install the indoor unit:

2.1. Installation position:

if the humidity and temperature on ceiling separately exceed 30°C and RH80%, please affix the thermal insulation materials on machine. please use the glass wool or foaming polyethylene with the thickness of more than 10mm. (If more than 10mm, please collect them at the position of inlet of ceiling.)

1) This indoor unit can be mounted on the ceiling of 2.5-3.5m high; but, when the ceiling height is higher than 2.7m, the tape must be used for site setting.

2) Install and use the hoisting bolt; check whether the installation position can support the unit weight. If not security, please fasten before installation of unit. The hole distance is marked on installation paper model; refer to the mounting paper model and find the points to be reinforced.

3) There must have no barrier in 1000mm from the air outlet.

Space required for installation

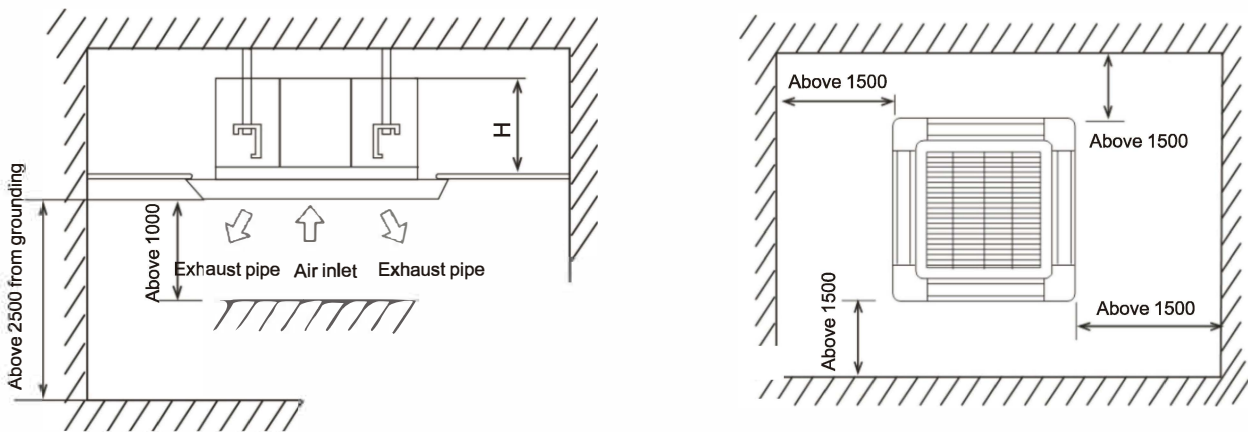


Figure 6

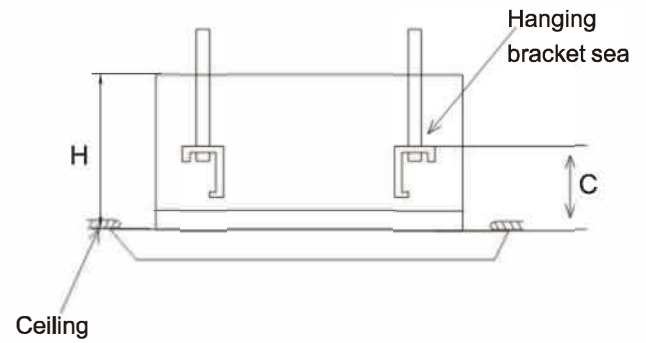
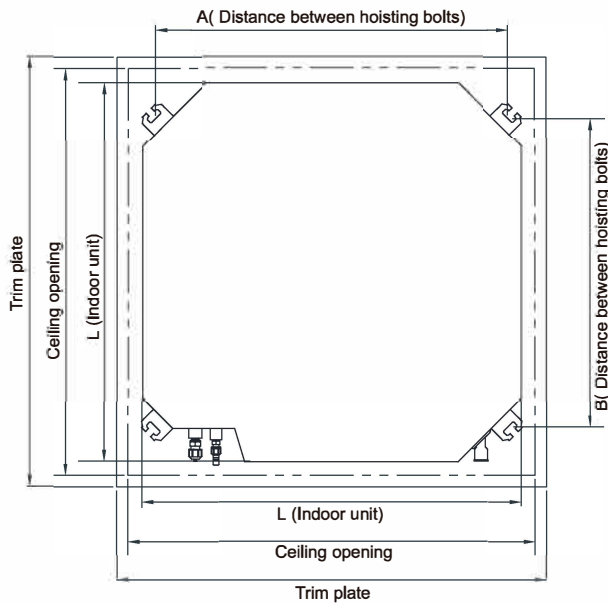
1) Indoor unit site selection

- 1) It shall be installed at the place whether the air blown out can quickly spread the entire room and with certain maintenance space.
- 2) The air inlet and outlet of indoor unit will not be obstructed and affected by heat and vapor generated hereby.
- 3) Avoid installing at the place with large amount of fumes and vapors.
- 4) Avoid installing at the place with may generate, flow, stagnate or leak the inflammable gas.
- 5) Avoid installing near the devices which may generate high frequency, such as high frequency electric welder.
- 6) Avoid installing the air exhaust near the fire alarm.
- 7) Avoid installing at the place where frequently use the acid solution.

2) Installation of hoisting bolt

- ① To support the weight of units, use anchor bolt for existing ceiling; use embedded bolt or other parts provided on site for the new ceiling.
- ② Before continuing the installation, adjust the clearance from the ceiling.

2.2 Overall dimensions diagram for the indoor unit



Indoor Unit Dimensions(mm) L×L×H	Mounting Dimensions		
	Distance A (mm)	Distance B (mm)	Distance C (mm)
33-5/64×33-5/64×8-5/64	30.7	26.9	5.1
33-5/64×33-5/64×11-27/64			
Ceiling Cassette Panel Dimensions	Ceiling Opening		
37-13/32×37-13/32×2-41/64	37-13/32×37-13/32		

Note: The actual dimensions refer to the actual product.

3. Indoor unit installation

1) When there is no installation position on the ceiling

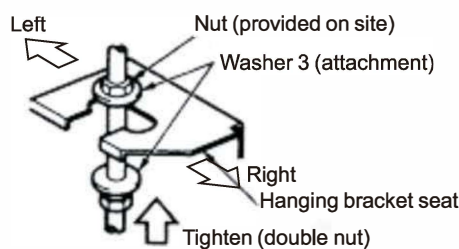
- ① Attach the hanging bracket seat to the hoisting bolt; be sure to use bolt and nut separately at upper and lower head of the hanging bracket seat to firmly fix the hanging bracket seat; use locating plate 7 to avoid the washer coming-off.
- ② The dimensions of ceiling opening please refer to installation drawing 5. The details refers to the building agent or carpenter. The indoor unit center is marked on the attached installation drawing. As shown in the figure below, the screws 6 (3 pcs) mount the installation label on the unit; fix the angle of drain channel at pipeline outlet with screw.
- ③ Adjust the unit to correct installation positions.
- ④ Check whether the unit is level. The indoor unit is equipped with embedded drain and float switch.

Check whether the four angles of unit are level with level or polyethylene pipe filled with water one by one (if the condensation water flow of unit inclines towards reverse direction, the float switch may be unable to work, which may lead to drip)

- ⑤ Remove the washer fixing plate 7 to avoid drop-off of waterproof washer and tighten the upper nut.
- ⑥ Remove the installation label.

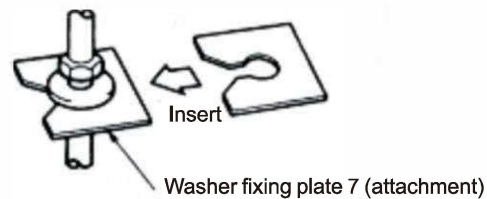
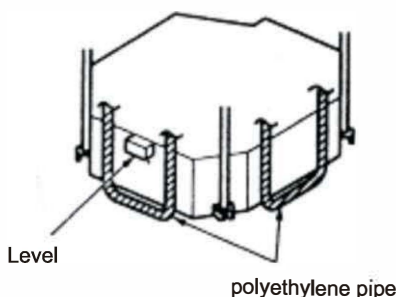
2) When there is installation position on the ceiling

- ① Temporarily install the indoor unit. Attach the hanging bracket on the hoisting bolts. Be sure to use bolt and nut separately at upper and lower head of the hanging bracket seat to firmly fix the hanging bracket seat; use locating plate 7 to avoid the washer coming-off.
- ② Adjust the height and position of unit.



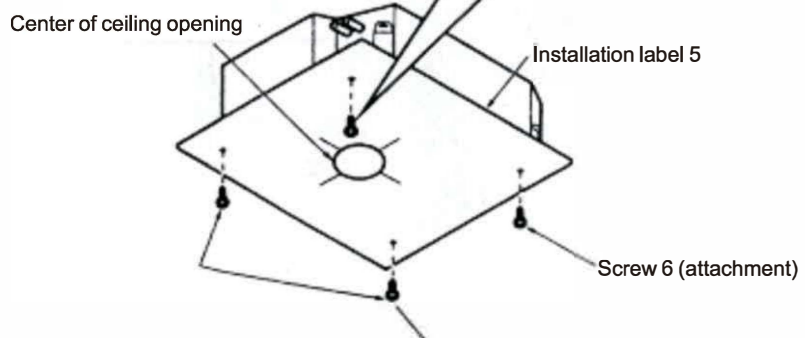
[Firmly fix the hanging bracket seat]

During installation of hoisting bolt, step at the leftmost or rightmost to ensure firm installation of machine.



[Firmly fix the washer]

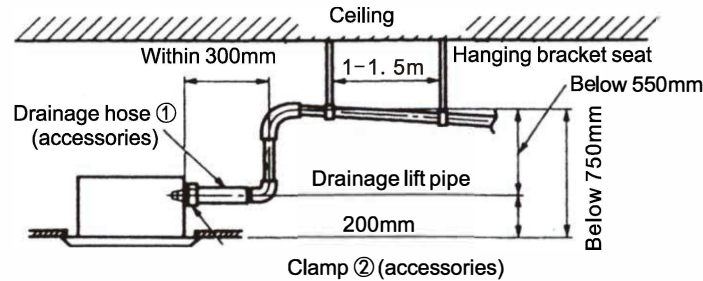
The angle of pipeline outlet is that fixed at the drain groove with screw.



Fix the installation label

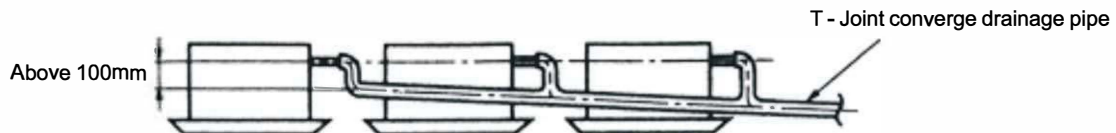
Notice for the drainage lift pipe.

1. The installation height of drainage lift pipe shall be less than 550mm.
2. The exhaust lift pipe shall be perpendicular to the unit and be no more than 300mm from the unit.



Notice:

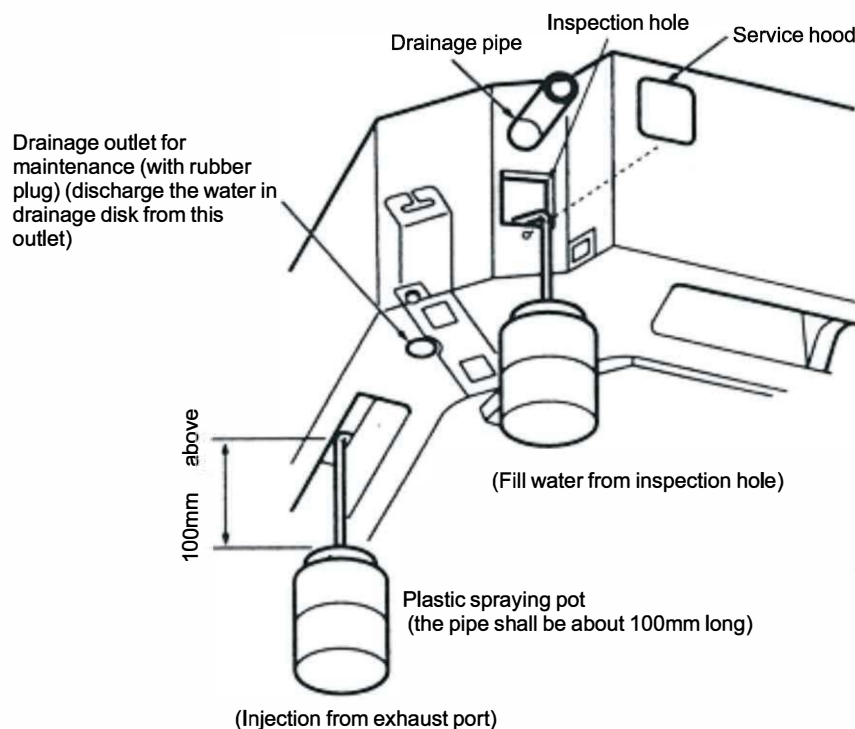
1. Do not make the attached drainage hose subjected to excess force or bending and twisting. (It may lead to water leak)
2. Please install according to following procedure if several drainage pipes converge.



The specification of selected converge drainage pipe shall be suitable for operation capacity of unit.

After completed the installation, slowly fill 2000cc water in the exhaust port or inspection hole and check whether the drainage is smooth; after installation of electric circuit, check the drainage conditions during refrigerant operation and the detailed instructions refer to "test run".

Water injection method



4 Preparation Of Trim Panel

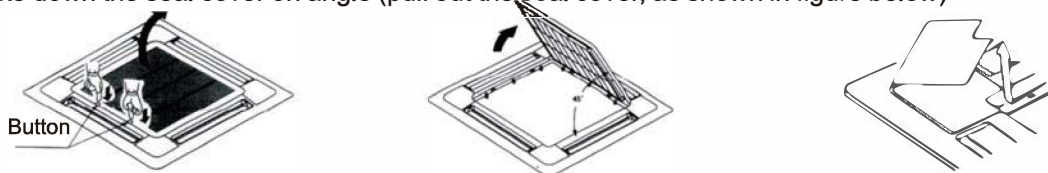
1) Install the trim panel

- ① Do not face the panel downward; do not lean against the wall or onto the protruding object.
- ② Do not knock or extrude the swinging baffle. (Otherwise it may lead to failure)

Take down the air return grating from the trim panel

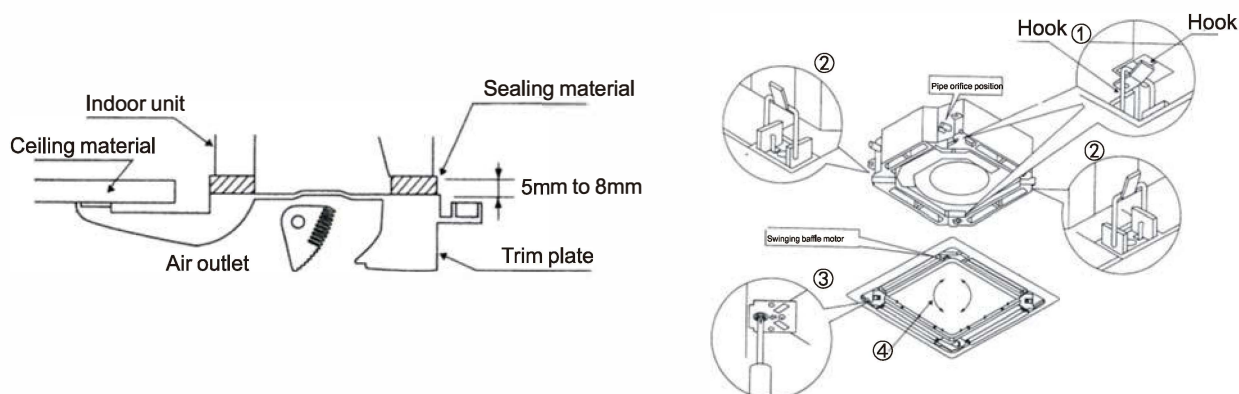
- a. First pull down the air return grating and then pull up the other end of button. (See the figure below)
- b. Pull up the grating for about 45 degrees and take down the air return grating on trim panel. (See the figure below)

Take down the seal cover on angle (pull out the seal cover, as shown in figure below)



2) Install the trim panel on indoor unit

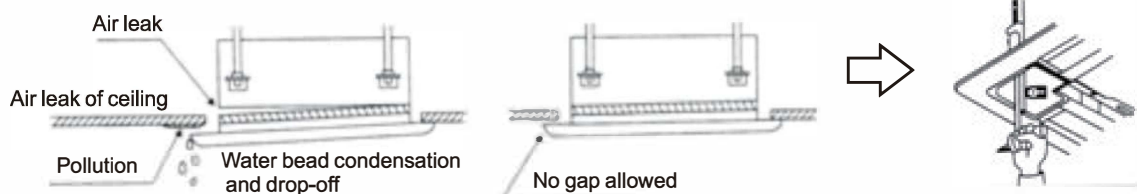
- ① As shown in the figure below, align the position of swinging baffle motor on trim panel with the pipe opening position of indoor unit for ease of installation of trim panel onto the indoor unit.
- ② Install the trim panel
 - a. Temporarily install the trim panel onto the indoor unit; during installation, hang the buckle on reverse position of swinging baffle motor of trim panel onto the hook of indoor unit (notice not winding the swinging motor conductor into sealing materials)
 - b. Temporarily hang the other 2 buckles onto the hook of indoor unit. (Notice not winding the swinging motor conductor into sealing materials.)
 - c. Screw 4 hexagon bolts under the hook in for about 5mm. (The panel will lift)
 - d. Tighten the screw till the thickness of sealing materials between trim panel and indoor unit decreases to 5-8mm.



The improper tightening of screw may lead to the failure as shown in the figure below. Re-tighten the screw to the specification requirements.

After tightening the screw, if there is still gap between ceiling and trim panel, please re-adjust the height of indoor unit.

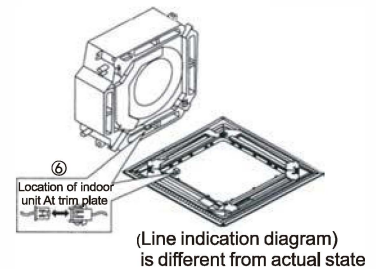
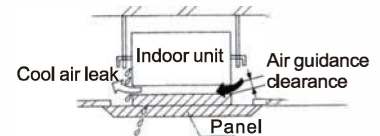
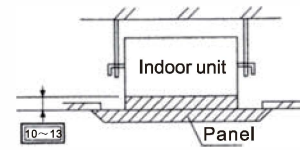
Place the indoor unit at level state; it is possible to adjust the indoor unit height through the corner core on trim panel when the water drain pipe does not discharge the water.



3) Hoisting height of indoor unit

Please adjust the hoisting height of indoor unit to make the dimensions of indoor unit under the ceiling as shown in right figure.

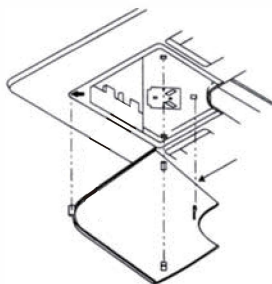
- ① When there is gap between indoor unit and panel, the condensation may occur.
- ② Line of trim panel (see right figure)
 - a. Connect the joint of swinging baffle motor conductor (on the trim panel).
 - b. If not connecting the joint, the swinging baffle will not action. Properly connect the joint.
 - c. Confirm the conductor of swinging baffle motor is not clamped between indoor unit and trim panel.



When installing the air return grating, do not wind in the conductor of swinging baffle motor.

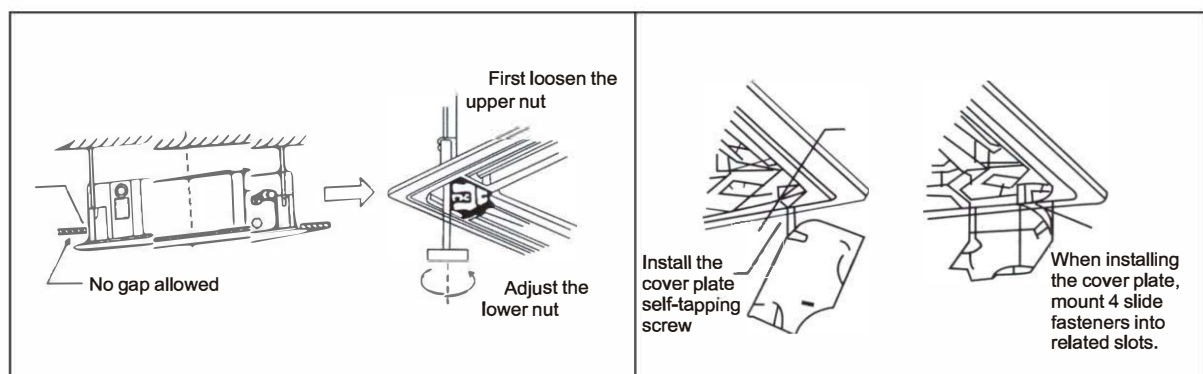
4.1 Installation of air return grating and cap

- 1) Install the air return grating
- 2) Install in reverse sequences to "Preparation of trim panel". While rotating the air return grating, it can be installed in 4 directions. If necessary to adjust the installation direction of air return grating or required by the user, the installation direction can be changed.
- 3) Install the cap onto the trim panel (see right figure)



Install in reverse sequences to "Preparation of trim panel". While rotating the air return grating, it can be installed in 4 directions. If necessary to adjust the installation direction of air return grating or required by the user, the installation direction can be changed.

- 4) Firstly hang the air inlet grating onto the panel and then separately connect the lead connectors of swinging motor and control box on panel to related connectors of body.
- 5) Re-install the air inlet grating in reverse sequence to those when removing the air inlet grating;
- 6) Re-install the mounting cover plate.
 - ① Fix the mounting cover plate rope onto the lug (see the right figure);
 - ② Gently press the mounting cover plate in the panel.



Notice:

1. It must be evacuated with vacuum pump, when the connection pipe length is more than 5m, after evaporation, it shall be refilled according to requirements of "Adjustment of refrigerant usage amount".
2. If the air conditioner is necessary to transfer to the other position, discharge the air with vacuum pump.
- 4) After completed above operation, it is necessary to fully open the check valve or ball valve of outdoor unit

Pressure test, vacuumizing and leak test of connecting pipe and indoor unit pipeline: After installed the connecting pipe and indoor unit, firstly charge the nitrogen into the connecting pipe and indoor unit pipe to 3.0Mpa and keep the pressure for 24h; at same time, check the leak with soap bubble at the connectors and welding positions; if no leak detected any more, discharge the nitrogen and vacuumize with vacuum pump (the vacuum degree shall be less than 30Pa), and then open the main machine valve for test run; if the refrigerant pipe length is more than 5m, refill the refrigerant and refer to following empirical formula:

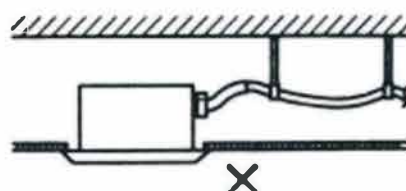
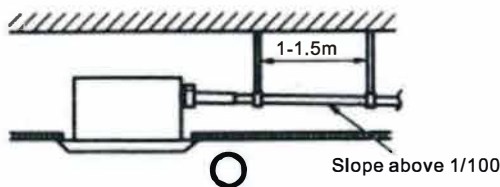
Connecting pipe length	Air elimination method	Add refrigerant dose (R410A)	
≤ 5m	With the vacuum pump	Needless	
>5m		Fluid pipe diameter: φ 6.35 or φ 6	Fluid pipe diameter: φ 9.53 or φ 9
		(Connecting pipe length - 5) × 15g	(Connecting pipe length - 5) × 30g

When refilling the refrigerant, use the needle valve on low pressure valve body of outdoor unit in refrigeration mode.

Install the drainage pipeline

Please confirm there are enough space at unit installation position to mount the drainage pipeline, and ensure the drain pipe diameter is no less than that of connection pipe. (Polyethylene pipe, dimension: 25mm; outer diameter; 32mm)

- 1) The drain pipe should be short, and the slope of sagging should be equal to and more than 1%, to ensure drainage smoothness and avoid condensate lag.
- 2) If impossible to ensure adequate slope for drainage hose, the drainage lift pipe shall be installed.
- 3) To avoid bending of drainage hose, it will keep 1 to 1.5m distance between hanging bracket.



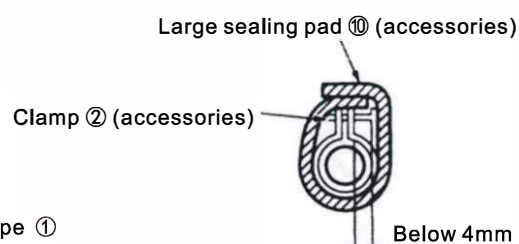
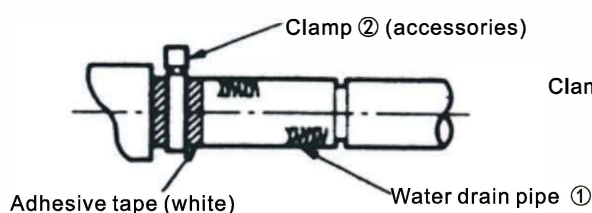
- 4) Use the attached drainage pipe ① and clamp ②.

Insert the drainage hose into drainage socket till the white rubber belt. Tighten the clamp till the distance of screw head from hose is less than 4mm.

- 5) The condensation may lead to water leak, so it is necessary to fulfill thermal insulation construction for following two components.

① Drainage pipe in room;

② The drainage socket refers to the figure below; insulate the thermal for clamp and drainage pipe with attached large sealing pad ⑩.



5. Electrical Wiring

5.1 General Check

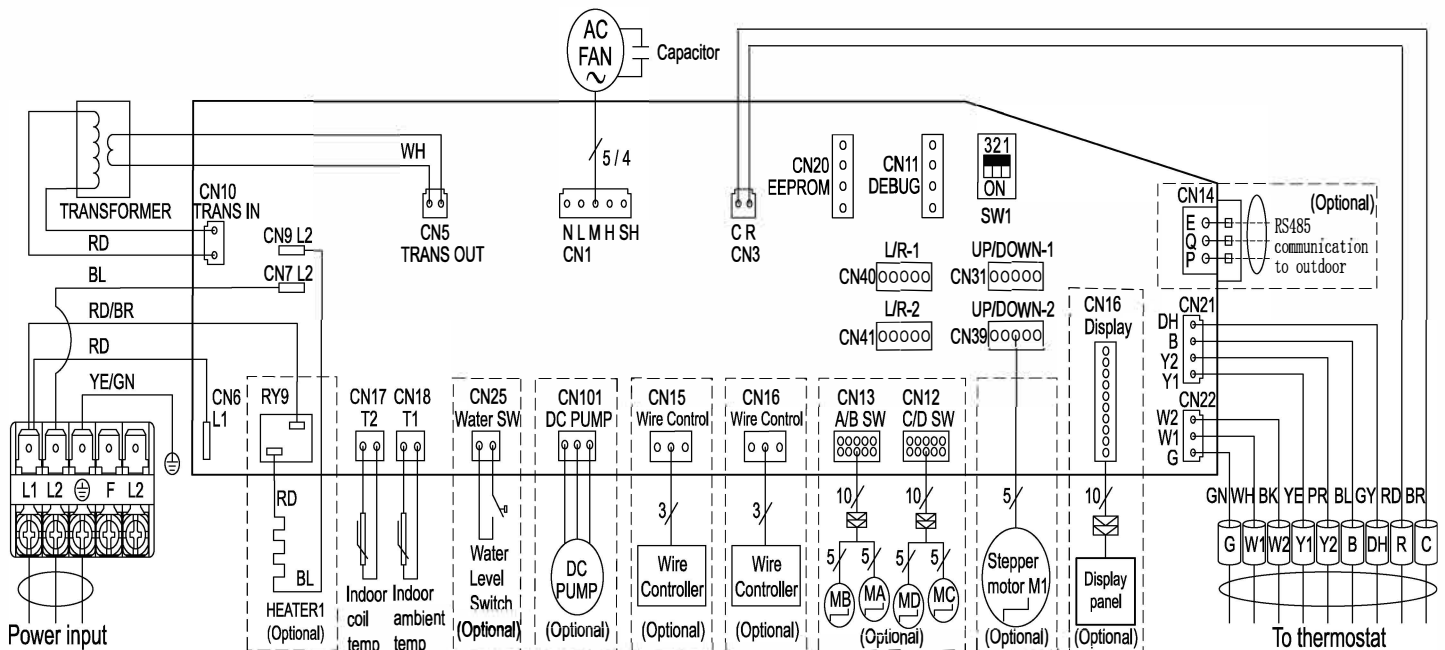


- When clamping the wiring, to prevent external pressure being exerted on the wiring connections, use the clamping material and fix firmly.
- When performing the wiring work, ensure that the wiring is proper and does not cause the control box lid to open up, if so close the cover firmly. When attaching the control lid, make sure that the wires are not affected.
- Outside the unit, keep the weak wiring (remote controller and transmission wiring) and strong wiring (earth and power supply wiring) at least 50 mm away so that they do not pass through the same place together. Proximity may cause electrical interference malfunction and breakage.



- If the fuses blow, please call the service dealer. Please do not replace them by yourself, as it may lead to electric shock and other injuries.
- (1) Remove the screws on the control box.
 - (2) Connect the power cord and earth wire to the main terminal.
 - (3) Connect the remote control wire to the subsidiary terminal box according to electric wiring diagram.
 - (4) Connect the power supply of the indoor and outdoor units to the main terminal.
 - (5) Tie the wire in the control box with the clamp tightly.
 - (6) After completing the wiring, seal the wiring hole with the sealing material (with the lid) to prevent the condensed water and insects entering the wiring space.

5.2 Wiring Diagrams



DIP switch status Indicate

ON OFF	1	This Indicate OFF(the DIP switch is dialed to the digital side)
ON OFF	1	This Indicate ON(the DIP switch is dialed to Non-digital side)

SW1 DIP switch selection

SW1.1	OFF	24V Control(Default)
	ON	RS485 Comm. Mode
SW1.2	OFF	Anti-Cold Air Delay 90S(Default)
	ON	Disable Anti-Cold Air Delay
SW1.3	OFF	T1 from main board(Default)
	ON	T1 from thermostat

Wire Color Code

RD RED	OR ORANGE
BL BLUE	GN GREEN
BR BROWN	GY GRAY
BK BLACK	YE YELLOW
WH WHITE	PR PURPLE

Line annotation

—————	Factory wiring
-----	Engineering connection
—————	Physical appearance
-----	Dashed box

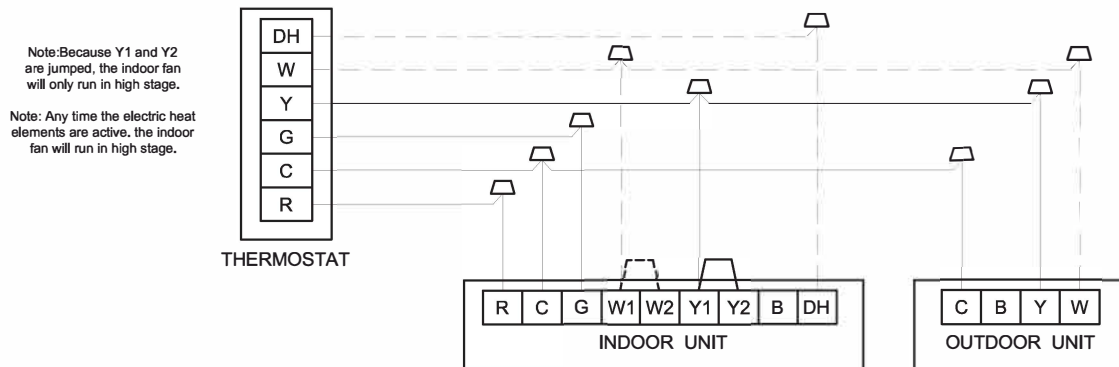
5.3 Specific Wiring Methods

When using a 24v thermostat, please refer to the non-communicating wiring diagrams that follow:

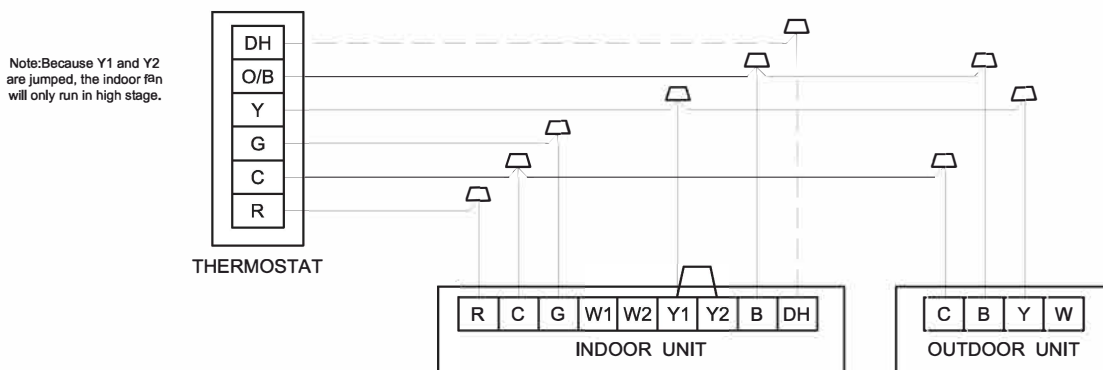
Connection method

The following wiring diagram are suitable for the AHU and ODU with 24V thermostat.

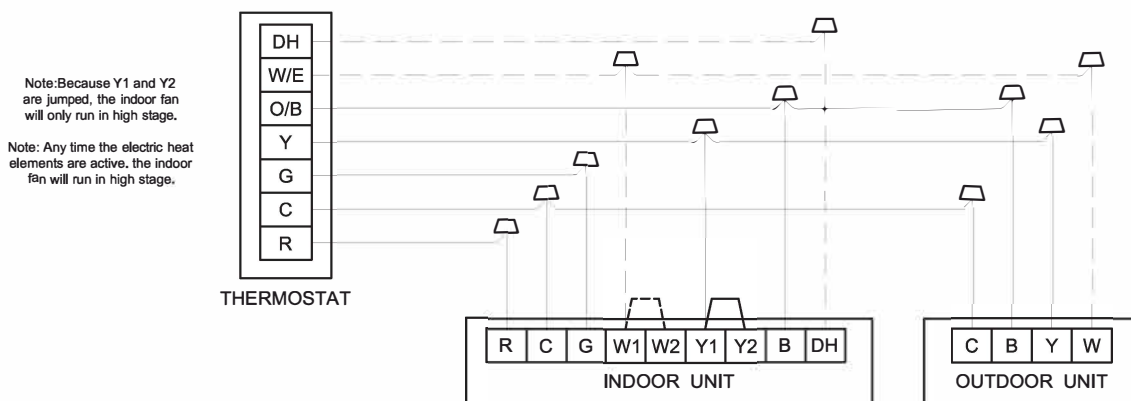
Wiring for 1H and 1C thermostat



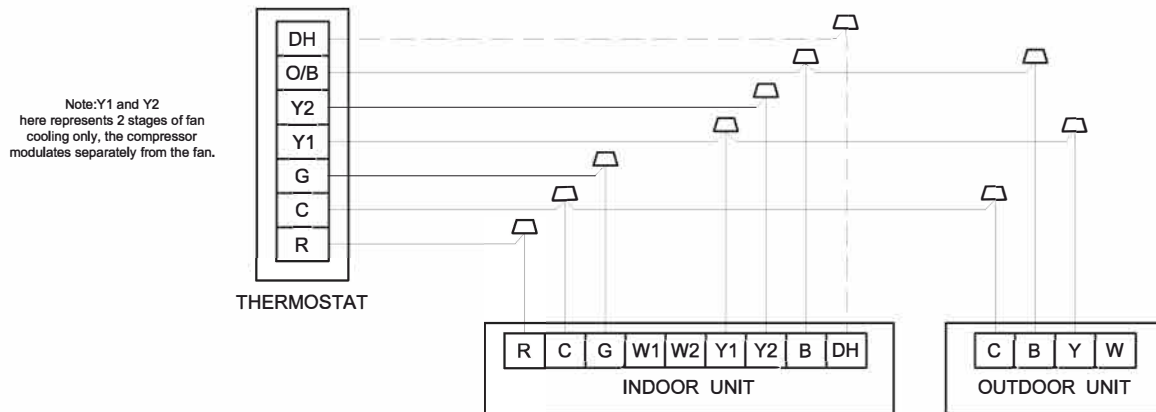
Wiring for 1H and 1C thermostat



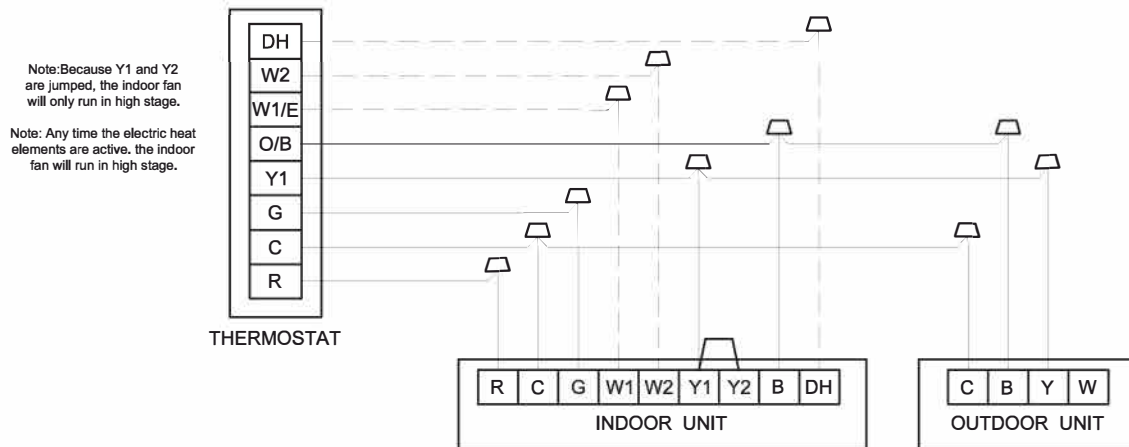
Wiring for 2H and 1C thermostat



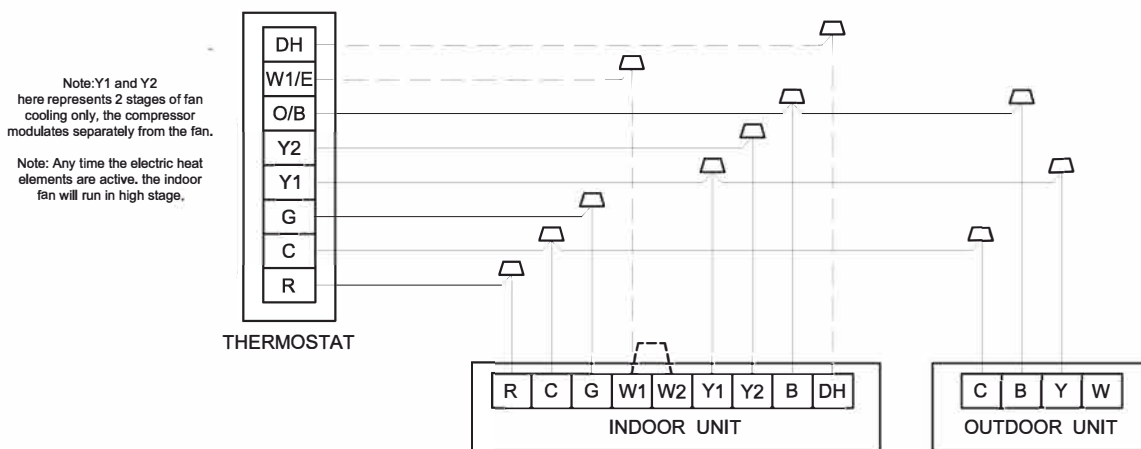
Wiring for 2H and 2C thermostat



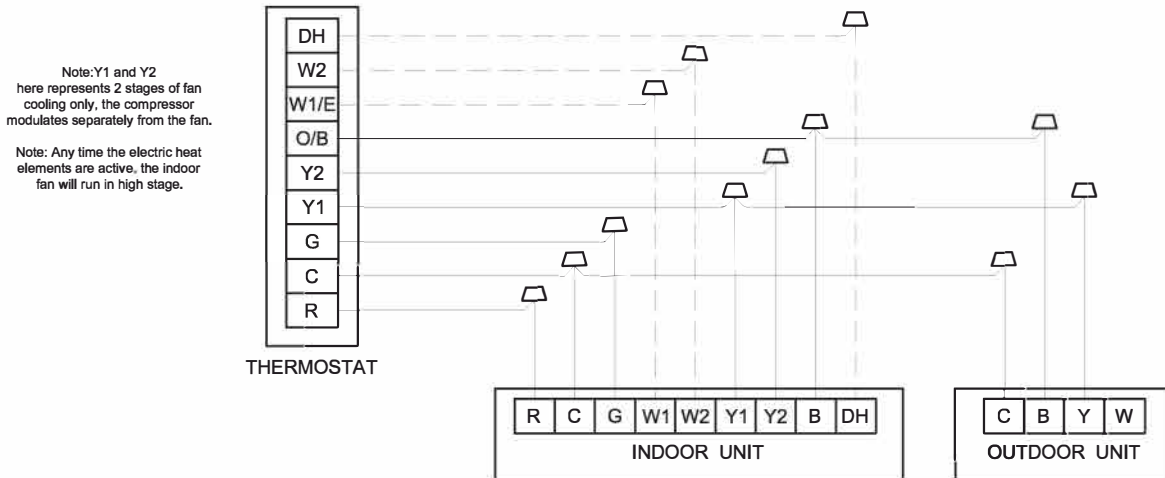
Wiring for 3H and 1C thermostat



Wiring for 3H and 2C thermostat



Wiring for 4H and 2C thermostat



Control logic

Indoor unit connector

Connector	Purpose
R	24V Power Connection
C	Common
G	Fan Control
Y1	Low Cooling
Y2	High Cooling
B	Heating Reversing Valve
W1	Stage 1 Electric Heating
W2	Stage 2 Electric Heating
DH	Dehumidification

Outdoor unit connector

Connector	Purpose
C	Common
Y	Cooling
B	Heating Reversing Valve
W	Defrost control

5.4 Low Voltage Maximum Wire Length

Table defines the maximum total length of low voltage wiring from the outdoor unit to the indoor unit and to the thermostat.

24 Volts - Wire size	Max. Wire Length
18 AWG	150 Ft.
16 AWG	225 Ft.
14 AWG	300 Ft.

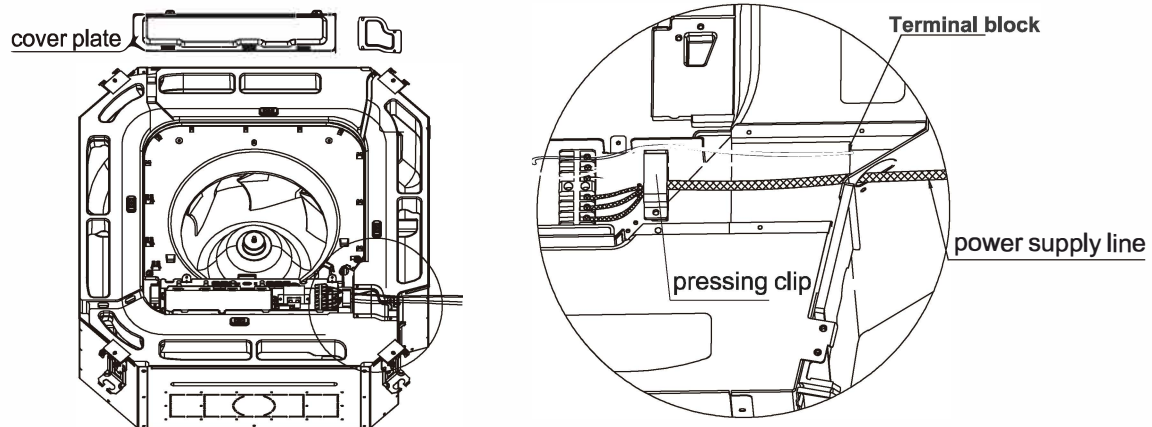
Table

5.5 Self diagnosis function Error code table (indoor unit display)

Error code	Error definition
E1	Outdoor unit and indoor unit communication error (from Indoor unit)
E2	Indoor unit T1 temperature sensor fault
E3	Indoor unit T2 temperature sensor fault
E4	Refrigerant concentration sensor fault
E6	Refrigerant leakage protection (from Indoor unit)
E8	Indoor fan motor current fault
E9	Wired controller communication fault

5.6 Electric Connection Of Indoor Unit:

1. Remove the cover plate of indoor unit electric appliance box.
2. Connect the power supply line and signal line with related terminals as shown in the figure.
3. Open the wire pressing clip, pass the power supply line and signal line through the valve plate and firmly hold in the pressing clip.
4. Install the electric appliance box board.



Warning

- It must be reliably grounded!
- The screw fixing the conductor must be tightened and it must be replaced if any thread slipping!
- The external conductor must be fixed with clamp; otherwise it may lead to personal injury or death and fire hazard!
- The indoor/outdoor unit must be supplied separately; do not supply the outdoor unit from the lead wire of the indoor unit power supply terminal stand!

6 Test Run

6.1 Confirmation Before Test Run

After installation of indoor and outdoor units, piping and wiring, , please confirm there is no refrigerant leak, loose of power supply line and signal line, and no mistaken polarity.

Note: The compressor will not run in case of mistaken connection of power supply line.

6.2 Test Run

1. Connect the main power supply of unit.
2. Press the emergency operation switch (refrigeration or heating) and the air conditioner starts; the operation indication lamp will illuminate; check whether the operation of unit is normal; when pressed the emergency operation switch once again, it will stop the operation.
3. Press the "ON/OFF" key of remote controller and confirm whether the indoor unit emits "Bee" sound; if heard, the remote controller functions and the emergency operation will be canceled; then operate the keys of remote controller to observe whether the operation modes of unit changes correspondingly.
 - 1) Press "mode" key and select "air supply" mode; check whether there is air blowing out from the air conditioner.
 - 2) Press "mode" key and select refrigeration mode; check whether there is cool air blowing out of the air conditioner.
 - 3) Press "mode" key and select heating mode; check whether there is hot air flowing out of the air conditioner (without this mode for single cold type unit)
 - 4) Press "wind speed" mode and select high speed mode; check whether there is strong wind blowing out of the air conditioner.
 - 5) Press the "swing" mode, and observe if wind grate is normal swing.

6.3 Test The Drainage Device

1. After installation of unit, it is necessary to check the drainage device.
2. During test run, it is necessary to correctly drain out and ensure no leak of connector.

After installation and test run, the installation personnel shall introduce the operation method and safety notices to the user according to the operation instructions.

7 Maintenance And Service

7.1 Frequently sweep the air filter screen

The blocked screen may reduce the air circulation volume and therefore the cooling/heating effect; the excess dirt of screen may lead to failure of air conditioner.

Please wash the screen once every two weeks.

If not used for long time, please wash the screen before used again.

1. Cleaning procedures:

- 1) Remove the filter screen;
- 2) Sweep with dust collector or clean with water;
- 3) After cleaning with water, place it in shady space for drying.

Notice: 1. Do not use more than 50°C hot water cleaning, so as not to fade or deformation .

2. Do not dry with the fire; otherwise the screen may catch fire.

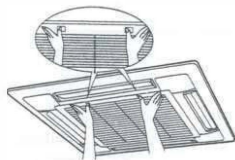
During cleaning or maintenance of unit, be sure to turn off the power supply and unplug the power supply plug; the maintenance and service shall be done by professional personnel.

2. Cleaning method of indoor unit:

- 1) Wipe the outside of unit with a clean and soft dry cloth;
- 2) Use neutral home-use cleaning agent (such as cleaning agent) to remove all oil stain or finger mark.

Removal method of air return grating and filter screen

- a. Open the air return grating: press the buttons at two positions and slowly pull down. (Adopt same procedures when closing), as shown in the figure below:
- b. Remove the filter screen: support the hook on screen and pull out below it; take down the filter screen as shown in the figure below:



- c. Take out the air return grating and open the grating for 45 degrees, and lift up as shown in the figure below:
- d. After cleaning, install the filter screen and air return grating as shown in the figure below (operation in reverse sequence to those described in above 1, 2 and 3)



7.2 The room temperature is set at comfortable temperature

During refrigeration, the temperature shall be optimal when the difference of indoor and outdoor temperatures exceeds 5°C; if the room temperature is too low, it will not do harm to the health and waste the electricity consumption; in refrigeration state, it can save about 10% electric energy for each 1°C increase of temperature setting.

1. Avoid the heat sources as possible

During refrigeration of air conditioner in room, firstly pull up the window curtain to block the direct sunlight; close the door window tight to avoid frequently opening.

2. Frequent ventilation

Regularly open the window for a time to enable the fresh air flowing into the room so as to make more comfort of air in room.

3. Start of operation season

- 1) Check whether the outdoor unit is correctly installed, the grounding wire is correctly installed, the appearance of power supply line is complete.
- 2) Check whether the air inlet and outlet of indoor unit and outdoor unit are smooth.
- 3) Check whether the filter screen is properly installed.

4. End of operation season

- 1) Start the air conditioner and set as air supply mode; after running for 3-4 hours, fully dry the inside of air conditioner;
- 2) Turn off the air conditioner and cut off the special power supply of air conditioner;
- 3) Completely clean the filter screen and indoor unit;
- 4) Take out the battery in remote controller and properly place the remote controller;
- 5) Cover the outdoor unit with protection hood to avoid ingress of dust.



Correct Disposal of this product

This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

ComfortStar®

The design and specifications are subject to change without prior notice for product improvement. Consult with the sales agency or manufacturer for details.