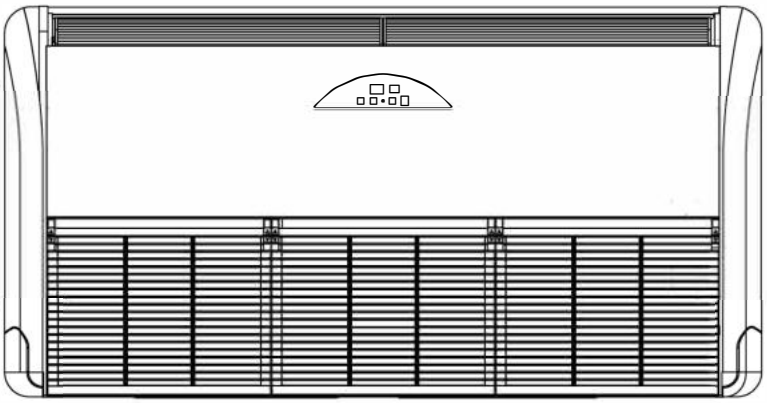
ComfortStar®

User's Manual

Indoor Unit : NEI32



⚠ 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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Contents

CAUTION Statements

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℃**
  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 CO_2 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

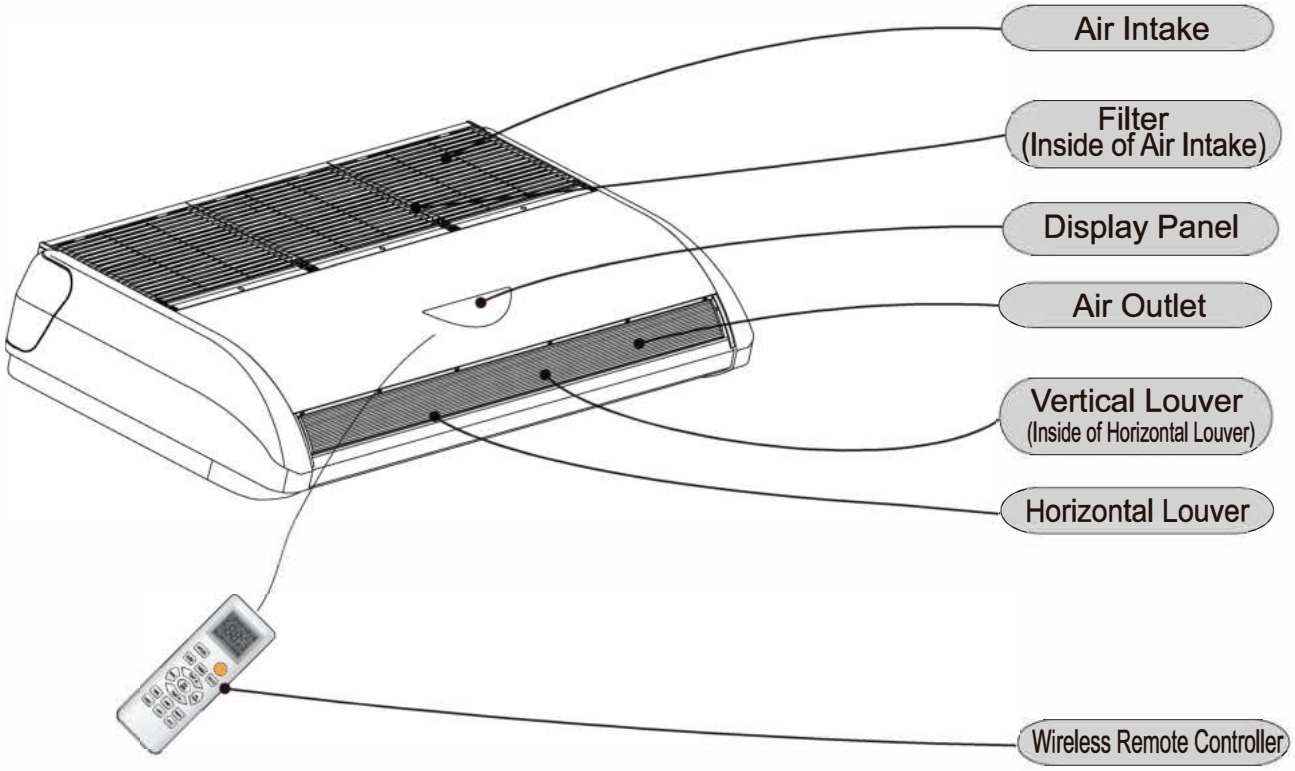
•Appliance shall be installed, operated and stored in a room with a floor area larger than X (X see below).
•The installation of pipe-work shall be kept to a a room with a floor area larger than X (X see below).
•The pipe-work shall be compliance with national gas regulations.
• When moving or relocating 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 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 authoriaes 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.

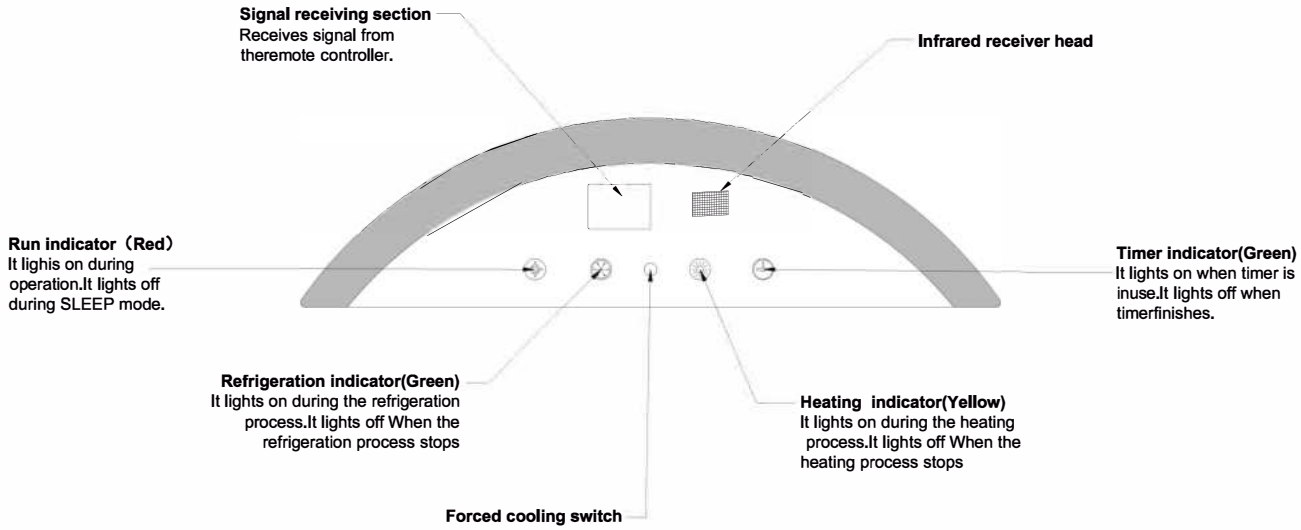
	**WARNING**	This symbol shows that this appliance uses a flammable refrigerant. If the refrigerant is leaked and exposed to an external ignition source, there is a risk of fire.
	**CAUTION**	This symbol shows that the operation manual should be read carefully.
	**CAUTION**	This symbol shows that a service 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



Display Panel



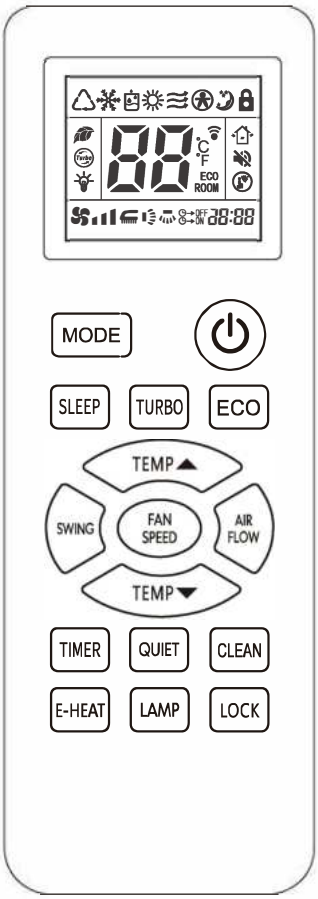
Notes:

Figures in the manual are only simple representation of the appliance, it may not comply with the appearance of the air conditioner you purchased.

Vertical adjustment louver swing automatically function is only available for some models.

For multi-split type, the unit will not be started when emergency switch is pressed.

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 used to control the auxiliary electric heating funcion, and the button 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
QUIET	Press this button to make the AC keep quiet.
LAMP	Press this button to turn off the indications on the device.
CLEAN	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.
LOCK	Press this button to lock or unlock the keyboard.
TURBO + TEMP▲	℃/℉ function: Press TURBO button and TEMP▲ button at the same time to switch to Fahrenheit or Celsius temperature display on the remote control.
TURBO + TEMP▼	10℃ HEAT function: Press TURBO button and TEMP▼ button at the same time to start or stop the 10℃ 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.

Special Remarks

- **3-minute protection after compressor stop**
  To protect compressor, it will be off continuously for at least 3 minutes once it has stopped.
- **5- minute protection**
  Compressor must run for at least 5 minutes once it has operated. During the 5 minutes, compressor will not stop even that the room temperature reaches the set temperature point unless you use remote controller to turn off the unit (all indoor units can be turned off by user).
- **Cooling operation**
  The fan of the indoor unit will never stop running in cooling operation. It continues to operate even if the compressor stops working.
- **Heating operation**
  Heating capacity depends on external factors like outdoor unit temperature. Heating capacity might decrease if outdoor ambient temperature is too low.
- **Anti-freezing function during cooling**
  When the temperature of the air from the indoor outlet is too low, the unit will run for some time under the ventilating mode, to avoid frost or ice forming on the indoor heat exchanger.
- **Cold air prevention**
  During several minutes after the heating mode is started, the fan of the indoor unit will run with low speed or stop until the heat exchanger of the indoor unit reaches a certain temperature to prevent cold draft.
- **Defrosting**
  When the outdoor temperature is too low, frost or ice may form on the outdoor heat exchanger, reducing heating performance. When this happens, the defrosting system of the air conditioner will operate. At the same time the fan in the indoor unit stops (or runs at a very low speed in some cases), to prevent cold draft. After defrosting is over, the heating operation and the fan speed resume.
- **Blowing out the residual heating air**
  When stopping the air conditioner in normal operation, the fan motor will run with low speed for a while to blow out the residual heating air.
- **Auto restart from power break**
  When the power supply is recovered after power break, all presets are still effective and the air conditioner will run according to the previous setting.

Trouble Shooting

⚠ CAUTION

If the trouble still exists even after checking the following, contact your dealer and inform them of the following items.

1. If Trouble still exists

(1) Unit Model Name
(2) Content of Trouble

2. No Operation

Check whether the SET TEMP is set at the correct temperature.

3. Not Cooling or Heating Properly

- Check for obstruction of air flow in outdoor or indoor units.
- Check if there are too many heating sources in the room.
- Check if the air filter is clogged with dust.
- Check if the doors or windows are open.
- Check if the temperature condition is within the operation range.

4. This is Not Abnormal

- **Odour from Indoor Unit**
  Unpleasant odour diffuses from indoor unit after a long period of time. Clean the air filter and panels or allow a good ventilation.
- **Sound from Deforming Parts**
  During system starting or stopping, a sound might be heard. However, this is due to thermal deformation of plastic parts. It is not abnormal.
- **Steam from Outdoor Heat Exchanger**
  During defrosting operation, ice on the outdoor heat exchanger melts resulting in steam.
- **Dew on Air Panel**
  When the cooling operation continues for a long period of time under high humidity conditions, dew can form on the air panel.
- **Refrigerant Flow Sound**
  While the system is being started or stopped, the refrigerant flow sound may be heard.

5. Mode Interfere

Multi-zone outdoor units can only support a single mode at one time (cooling or heating).
When the mode set at one or more indoor unit is different from the mode that outdoor unit is using, mode interfere will occur.

	Cooling	Dry	Heating	Fan
Cooling	√	√	×	√
Dry	√	√	×	√
Heating	×	×	√	×
Fan	√	√	×	√

√ --- Normal
× --- Mode interfere

Outdoor unit always run with the mode of first indoor unit that turned on. When the setting mode of following indoor unit is interfered with it, 3 beeps would be heard, and the indoor unit interfered with the normal running units would turn off automatically.
If auto mode is selected, the actual running mode of the unit will be dominated by the unit of which first select auto mode. (Auto mode is invalid for some models.)

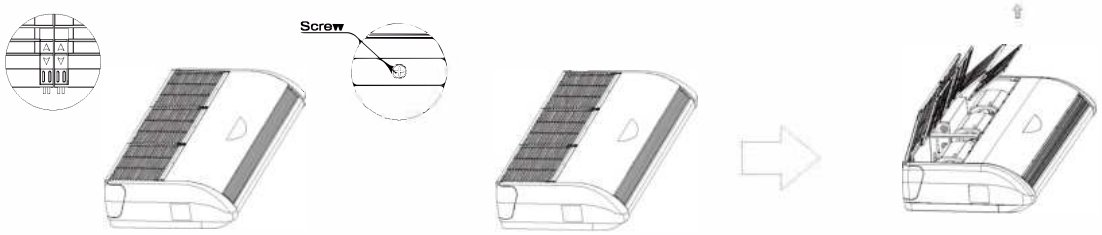
6. Filter removing and installing

⚠ CAUTION

Turn off the main power switch before taking the filter.
Operations should be performed by professional staff. Or, it can be operated under the supervision and guidance of professionals.

● **Removing filter from air return grille**

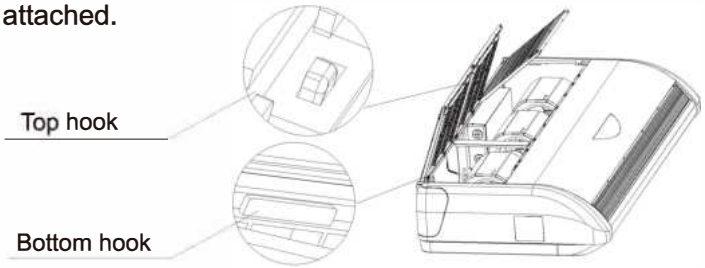
Take out the air filter according the following steps.
Step1
Slide the air return grille holding knobs(6 places), then remove the holding screws (6 places) as shown by the arrow mark.
Step2
Open the air return grille at an angle of more than 45°and take out the air filter from the air inlet grille by holding the air grille and lifting the air filter after detaching the filter from the hinges.



Step 1 Step 2

● **Installing the filter**

Step1:
Insert the filter to the grille and aim the bottom hooks. Pay attention to grille as top hooks are locked.
Step2: Fix screws.
Step3: The inlet grille is attached.



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. The Tools and Instruments for Installation

Number	Tool	Number	Tool
1	Standard screwdriver	8	Knife or wire stripper
2	Refrigerant vacuum pump	9	Level
3	Charge hose	10	Hammer
4	Pipe bender	11	Drill
5	Adjustable wrench	12	Flaring kit
6	Pipe cutter	13	Inner hexagon spanner and torque wrench
7	Cross head screwdriver	14	Measuring Tape

3. The Installation of the Indoor Unit

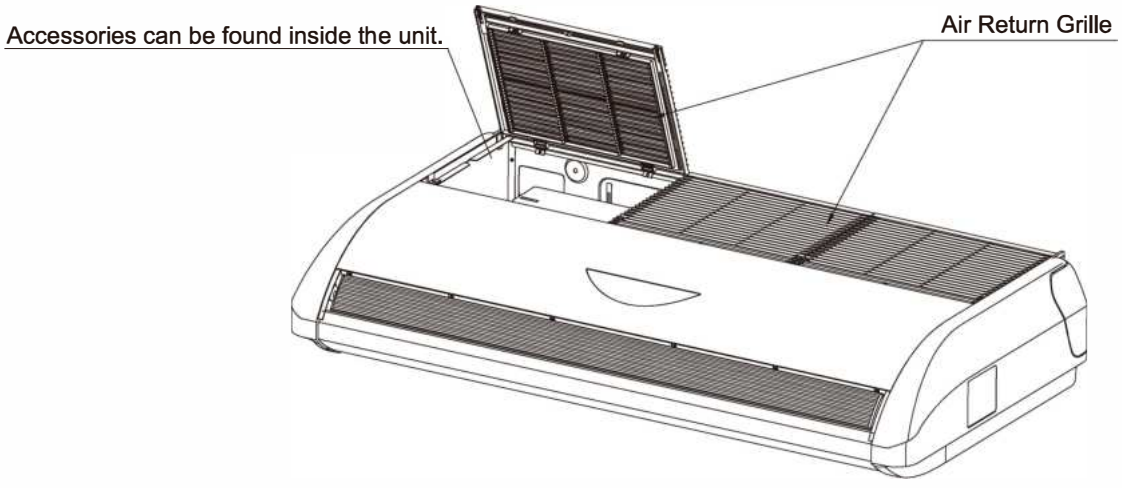
⚠ CAUTION

During installation, do not damage the insulation material on the surface of the indoor unit.

3.1 Before installation

- Wear protective gears when installing the unit.
- Install correctly according to the installation manual.
- Confirm the following points:

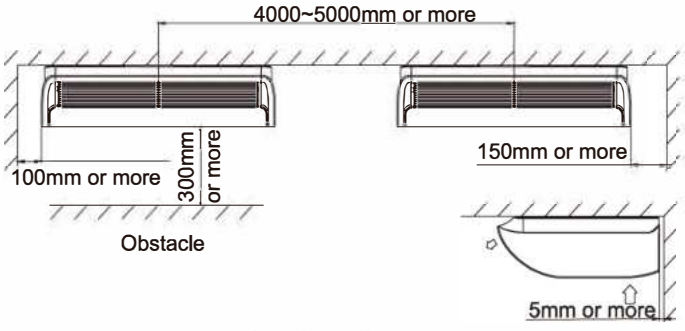
○ Unit type/Power supply specification
○ Pipes/Wires/Small parts
○ Accessory items



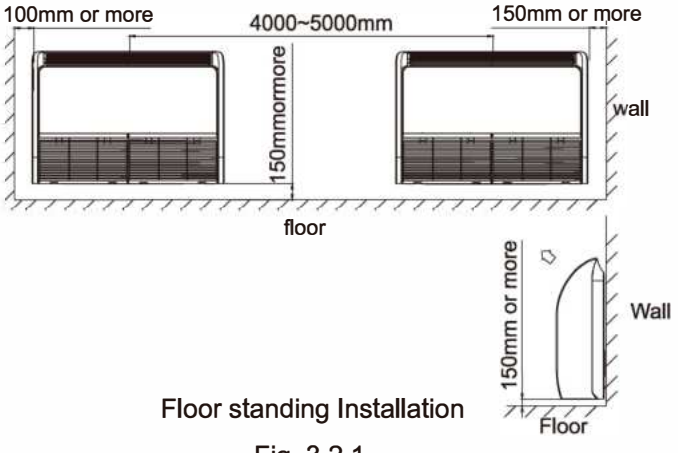
3.2 Installation location

- Select the suitable areas to install the unit with approval of the user.
- Ensure that the air path is not blocked.
- Ensure that condensate can drain properly.
- Ensure that the ceiling is strong enough to bear the weight of the indoor unit.
- Sufficient clearance for maintenance and servicing is ensured. (See Fig.3.2.1)
- Piping between the indoor and outdoor units is within the allowable limits. (Refer to the installation of the outdoor unit)
- The indoor unit, outdoor unit, power supply wiring and transmission wiring should be at least 1 meter away from televisions and radio, to prevent interference and noise in those electrical appliances. (Noise may be generated depending on the conditions under which the electric wave is generated, even if one-meter distance is maintained.)
- Use suspension bolts to install the unit, check whether or not the ceiling is strong enough to support the weight of the unit. If there is a risk that the ceiling is not strong enough, reinforce the ceiling before installing the unit.
- If there are 2 units of wireless type, keep them at least 6 m away to avoid malfunction due to cross communication.
- When plural indoor units are installed nearby, keep them away for more than 4-5m.

Space for installation and service



Ceiling Installation



Floor standing Installation

Fig. 3.2.1

3.3 Installation

According to the actual installation space, installation can be done at the ceiling or on the floor.

3.3.1 Suspension bolts

(1) Consider the pipe direction, wiring and maintenance access carefully, and choose the proper direction and location for installation.

(2) Install the suspension bolts as shown in Fig. 3.3.1 below.

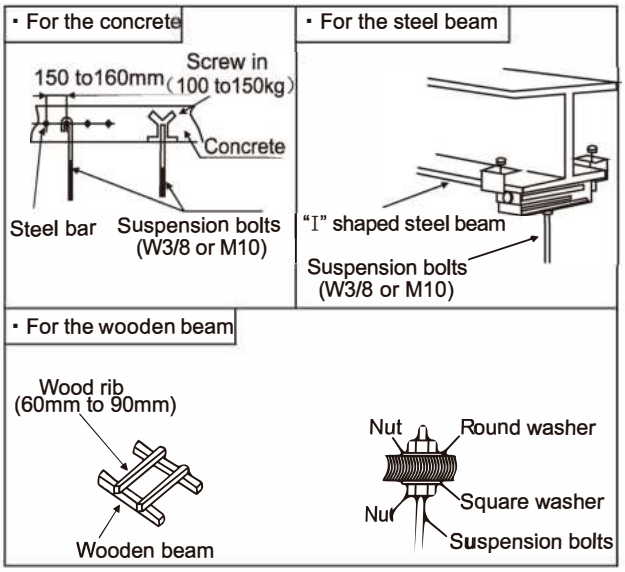
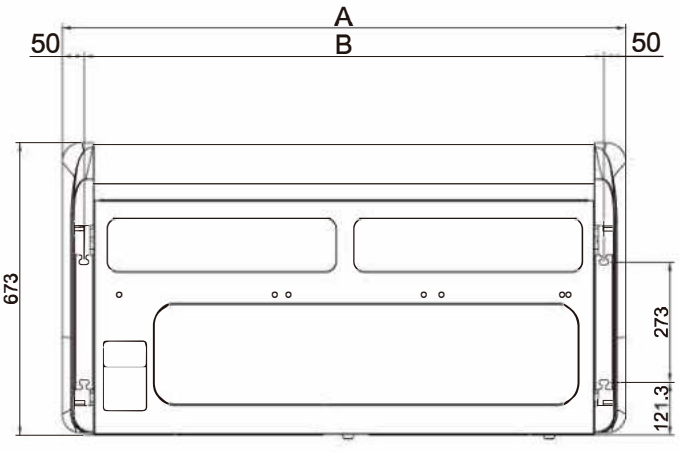


Fig. 3.3.1 Fixing the suspension bolts

3.3.2 The position of the suspension bolts and the pipes

(1) Mark the positions of the suspension bolts, the positions of the refrigerant pipes and the drain pipes.

(2) The dimensions are shown below.



(Unit:mm)

Capacity(Btu/h)	A	B
24K/36K	1305	1203
48K/60K	1690	1588

Fig. 3.3.2 Suspension bolts

※ The outlet through which the pipes are taken out is available in three directions.
※ Pipes can be taken out in 3 directions (rear, right or top). (See Fig.3.3.3)
Make holes using nippers or needle-nose pliers.
Make holes for the pipes along the cutoff line on the rear cover.
Cut the top face cover aligning to the piping position.
When taking out the pipe to right-hand side, make a hole along the groove inside the side panel.
After installing pipes and wires, seal clearances around pipes and wires with putty to make them dust proof.
Make sure to install the covers at rear and top to protect the inside of unit from intrusion of dust and to prevent wire damage by sharp edges.
When taking them out to the right-hand side, remove burrs or sharp edges from the cutout.

UNIT: mm

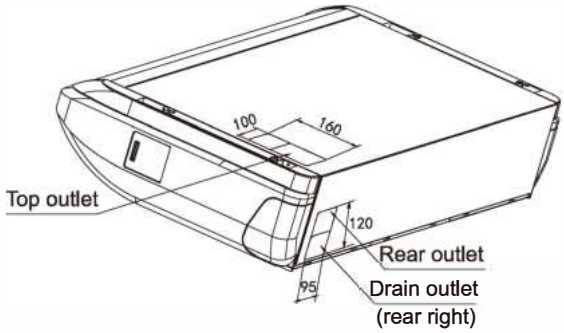


Fig. 3.3.3

3.3.3 Indoor unit preparation

(1) Remove the air return grille.
Slide stoppers (6 places) from the catches, then remove the screws.

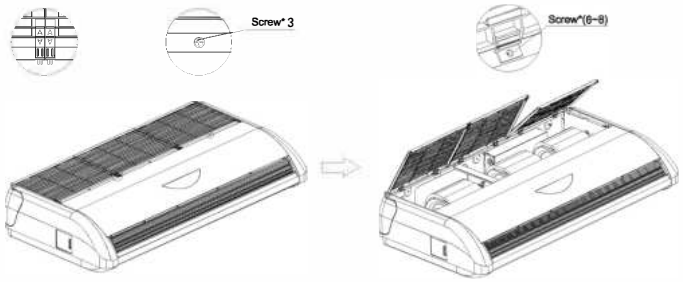


Fig. 3.3.4

(2) Remove side panel.
Remove the screw and detach the side panel by sliding it towards the direction indicated by the arrow mark.

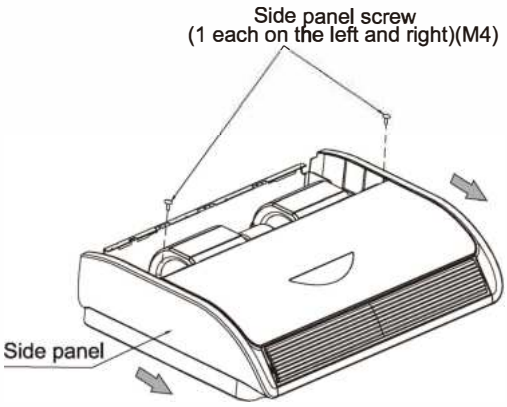


Fig. 3.3.5

(3) Remove the hanging plate.
Remove the screw and then fixing bolts.

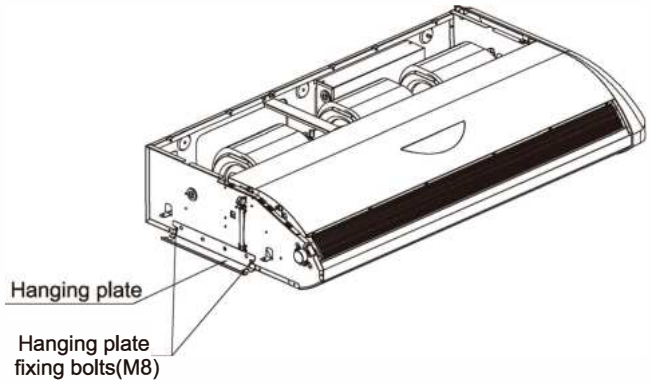


Fig. 3.3.6 Suspension bolts and nuts

3.3.4 Install the indoor unit

Ceiling type installation

(1) Select the suspension bolt locations and the pipe hole location.
I. Use enclosed paper pattern as a reference, and drill the holes for the suspension bolts and pipe.
Note:
Decide the locations based on the direct measurements.
ii. Once the locations are properly placed, the paper pattern can be removed.
2) Install the suspension bolts in place.

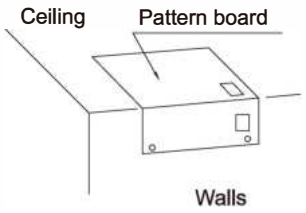


Fig. 3.3.7

(2) • Place the left hanger bracket on the nuts and washers of the suspension bolts.
• Make sure that the left hanger bracket is fixed on the nuts and washers securely, install the right hanger bracket suspension hook on the nuts and washers.
(When installing the indoor unit, you can slightly remove the suspension bolts.)

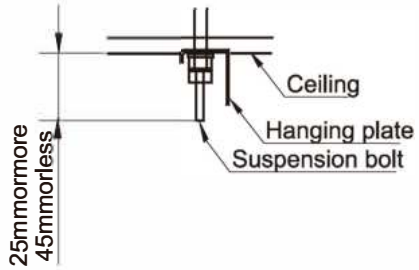


Fig. 3.3.8

(3) Fix with 4 suspension bolts, which can endure load of 530N.
(4) Check the measurements of the length of the suspension bolts.
(5) Fasten the hanging plate onto the suspension bolts.
(6) Install the unit to the hanging plate.
I. Slide the unit from front side to hang on the hanging plate with bolts.
ii. Fasten the four fixing bolts (M8:2 each on the left and right sides) firmly.
iii. Fasten the two screws (M5:1 each on the left and right sides).

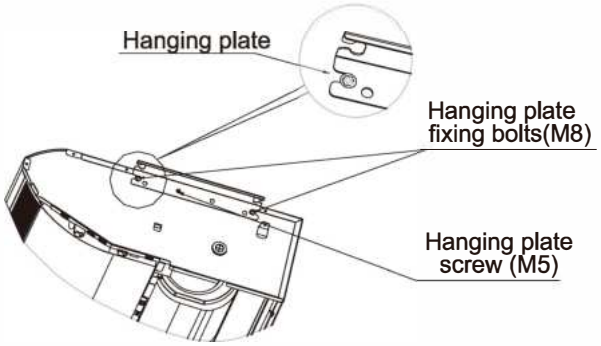


Fig. 3.3.9

Floor standing type installation
(1) Select the suspension bolt locations and the pipe hole location.
I. Use enclosed paper pattern as a reference, and drill the holes for the suspension bolts and pipe.
Note:
Decide the locations based on the direct measurements.
ii. After the locations are properly placed, the paper pattern can be removed.
(2) Install the suspension bolts in place.

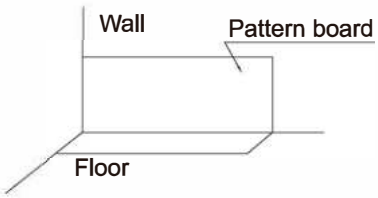


Fig. 3.3.10

(3) Fix with 4 suspension bolts, and fasten the four fixing bolts (M8:2 each on the left and right sides) firmly.
(4) Fasten the two screws (M5:1 each on the left and right sides).
3.3.5 The horizontal adjustment of the indoor unit
(1) Make sure that the hanger bracket is fixed by the nut and the washer.
(2) Adjust the height of the unit.
(3) Check if the unit is positioned horizontally.
*To ensure smooth drain flow, install the unit with a descending slope (0-3mm) towards the drain outlet.
(4) After the adjustment, tighten the nut and smear the thread locker on the suspension to prevent the nuts from loosening.

⚠ CAUTION

During the installation, please cover the unit with the plastic cloth to keep it clean.

4. Refrigerant Pipe

⚠ DANGER

Use the R32 refrigerant. During leakage check and test, do not mix oxygen, acetylene and other flammable or reactive gases. These gases are quite dangerous, and may possibly cause explosion. Use compressed nitrogen to perform these experiments.

4.1 The Pipe Material

(1) Prepare the copper pipe on the spot.
(2) Choose dustless, non-humid, and clean copper pipe. Before installing the pipe, use nitrogen or dry air to blow away the tube dust and impurity.
(3) Choose the copper pipe according to Fig. 4.2.

4.2 Piping Connection

(1) The connection positions of the pipe are shown in Fig. 4.1 and Fig. 4.2.

unit:(mm)

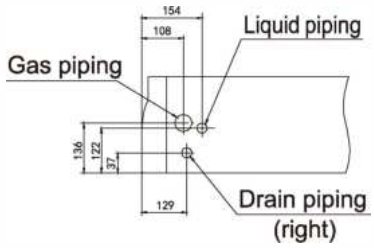


Fig. 4.1 The connection positions of the pipe

Capacity (Btu/h)	Gas pipe(mm)	Liquid pipe(mm)
24K	Φ 12.7	Φ 6.35
36K ~ 60K	Φ 15.88	Φ 9.52

Fig. 4.2 The pipe diameter

The pipe can be connected from three different directions. (rear, right, top).
If the pipe is routed from the back side, remove the brackets for easier piping work. After piping, reinstall the removed bracket.

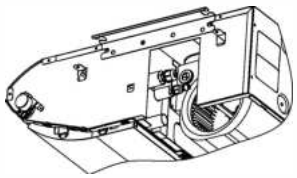
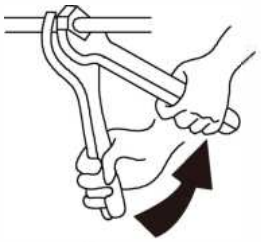


Fig. 4.3

If the pipe is routed from the back side.
Cut the removed top cover, and install on the rear panel instead of rear cover.

(2) As shown in Fig. 4.4, screw up the nuts with 2 spanners.



Pipe size	Torque (N.m)
Φ 6.35mm	20
Φ 9.52mm	40
Φ 12.7mm	60
Φ 15.88mm	80

Fig. 4.4

(3) After completing refrigerant pipe connection, keep it warm with the insulation material.

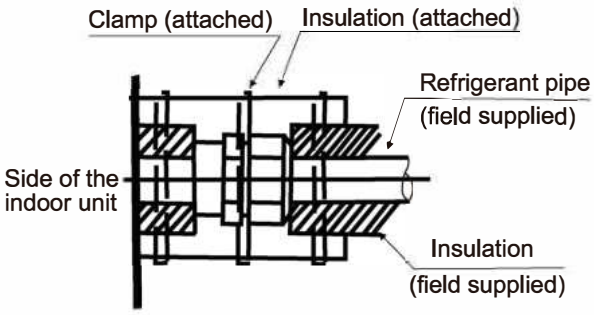
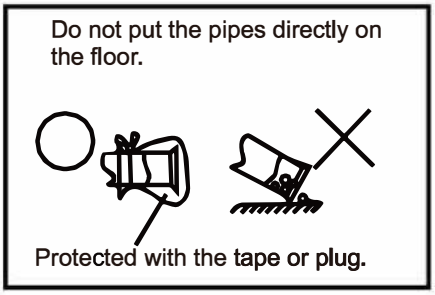


Fig. 4.5 Piping insulation procedure

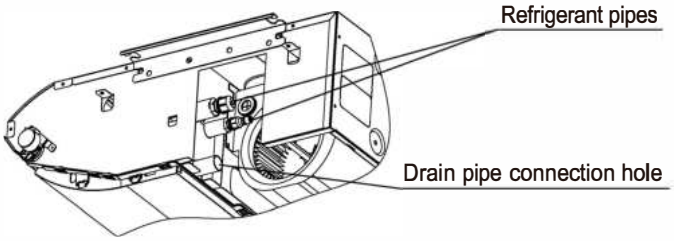
⚠CAUTION

- The pipe should pass through the hole with a seal.
- Do not place the pipes directly on the floor.



5. Drain piping

• Install the drain piping



- Prepare a polyvinyl chloride pipe with a 25mm outer diameter.
- Make sure the drain works properly.
- The diameter of drain pipe connection hole should be the same as that of the drain pipe.
- Keep the drain pipe short and sloping downwards at a gradient of at least 1/100 to prevent air bubbles.100 to prevent air pockets from forming.

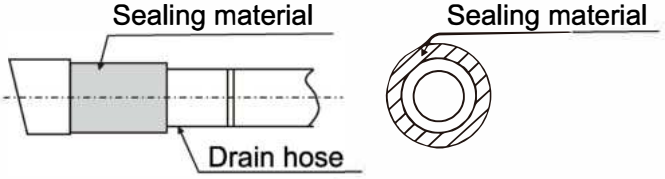
⚠ CAUTION

Water accumulation in the drain piping causes drain clog.

To keep the drain pipe from sagging, fix space hanging wires at an interval of 1 to 1.5m.

- Use the drain hose and the clamp. Insert the drain hose fully into the drain socket and firmly tighten the drain hose and insulation material with the clamp.
- The below areas should be insulated to prevent condensation causing water leakage.
- Drain piping passing indoors
- Drain sockets.

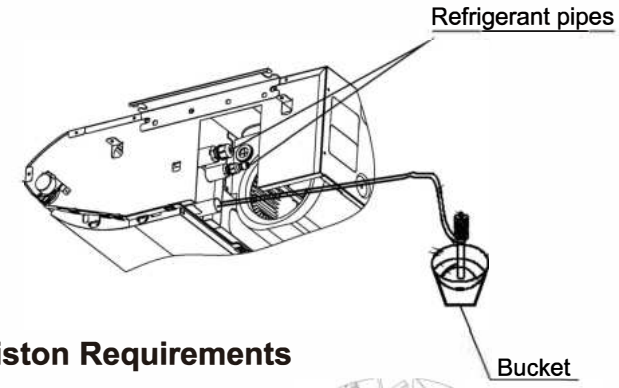
Referring to the figure below, insulate the drain socket and drain hose using the large sealing pad (provided as an accessory).



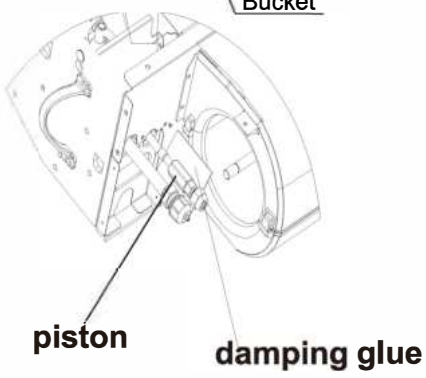
⚠ CAUTION

Drain piping connections

- Do not connect the drain directly to sewage pipes have a smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.
- Do not twist or bend the drain hose, so that excessive force is not applied to it. This type of treatment may cause leaking.
- After piping work is finished, check drainage flows smoothly.
- Gradually insert approximately 1000 cc of water into the drain pan to check drainage in the manner described below.
- Gradually pour approximately 1000 cc of water from the outlet hole into the drain pan to check drainage.
- Check the drainage.



Piston Requirements



Note: The piston can be replaced with a different model according to the requirements. please ensure that the piston is fixed reliably.

Note: For the piston structure used by the unit, damping glue needs to be added here to prevent abnormal sound, please refer to this figure

6. Electrical Wiring

6.1 General Check

⚠ CAUTION

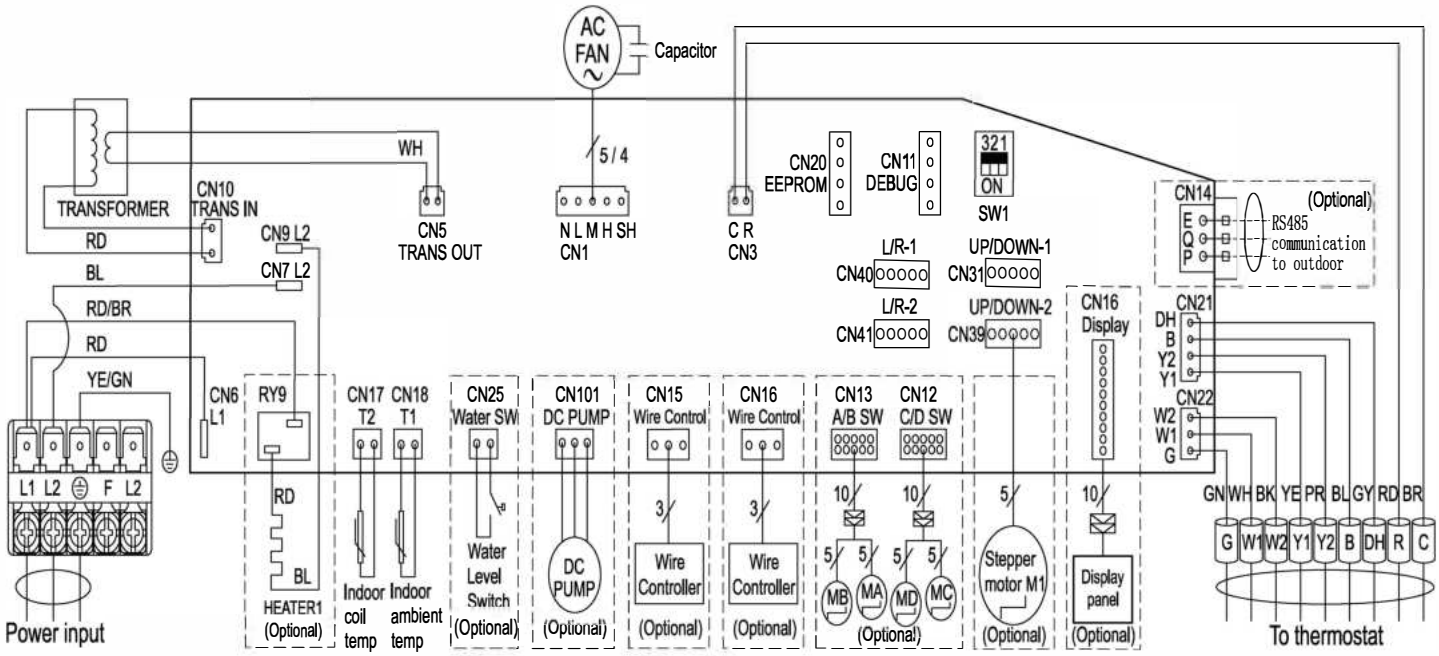
- When clamping the wiring, to prevent external pressure being exerted on the wiring connections, use the clamping material and fix firmly.
- When performing the wiring work, ensure that the wiring is proper and does not cause the control box lid to open up, if so close the cover firmly. When attaching 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.

⚠ WARNING

- 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.

6.2 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

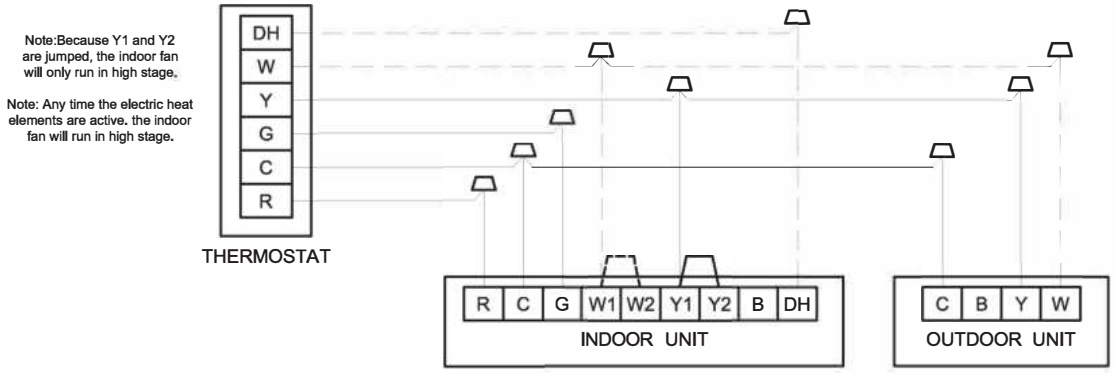
6.3 SPECIFIC WIRING METHODS

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

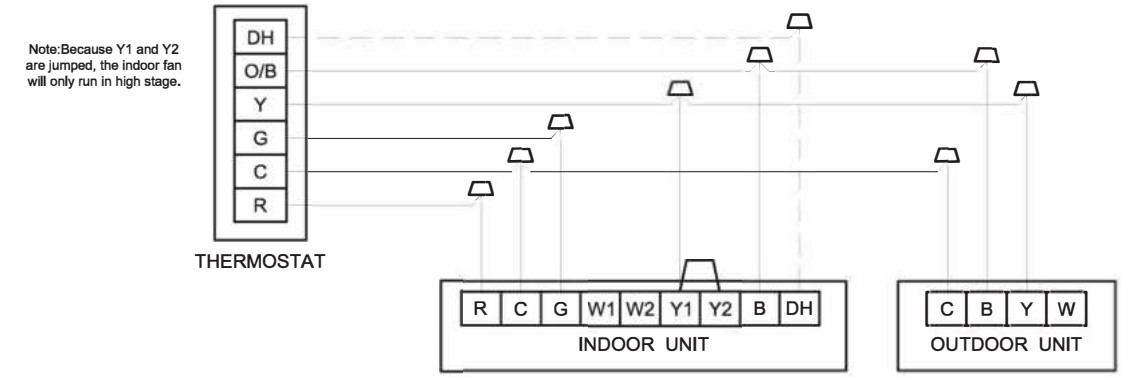
Connection method

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

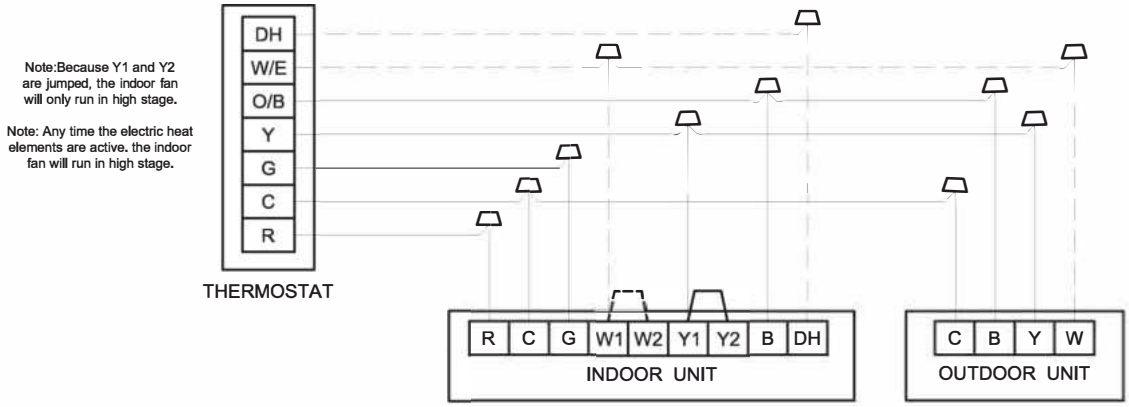
Wiring for 1H and 1C thermostat



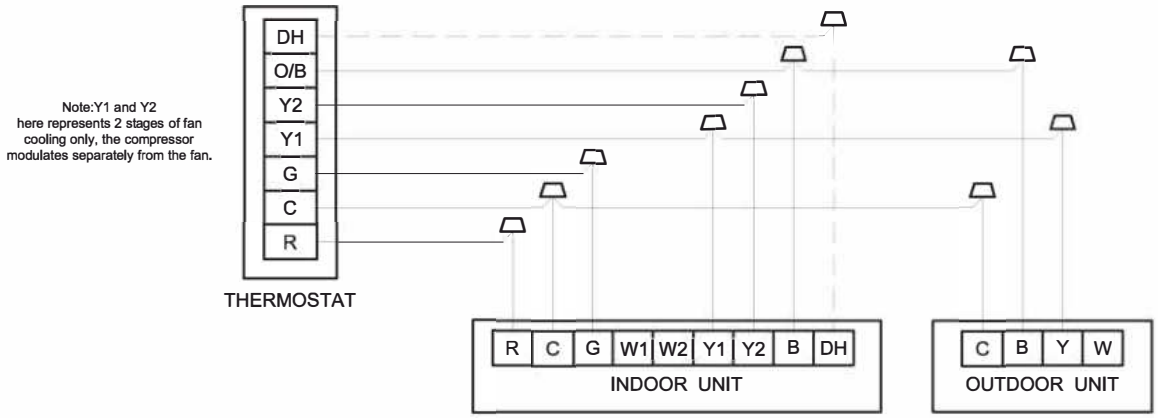
Wiring for 1H and 1C thermostat



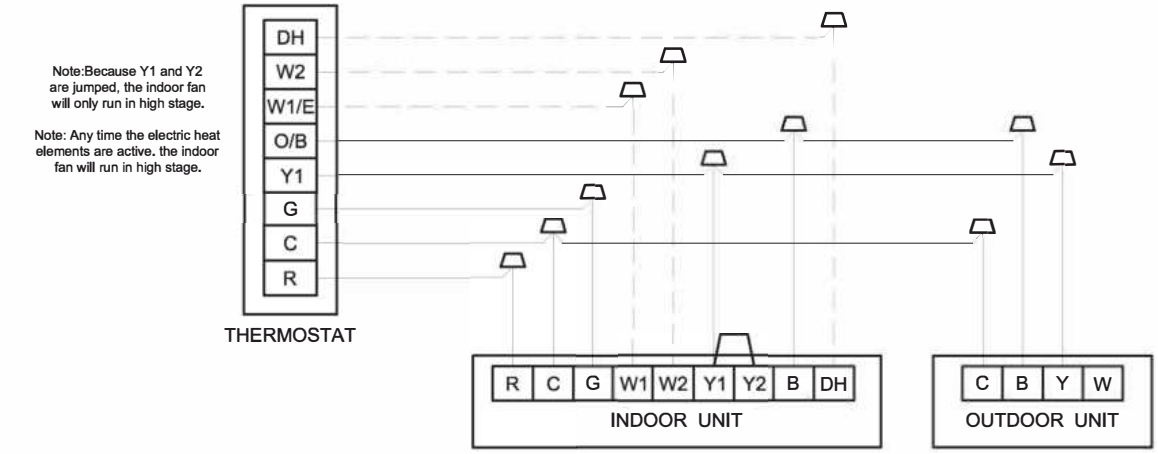
Wiring for 2H and 1C thermostat



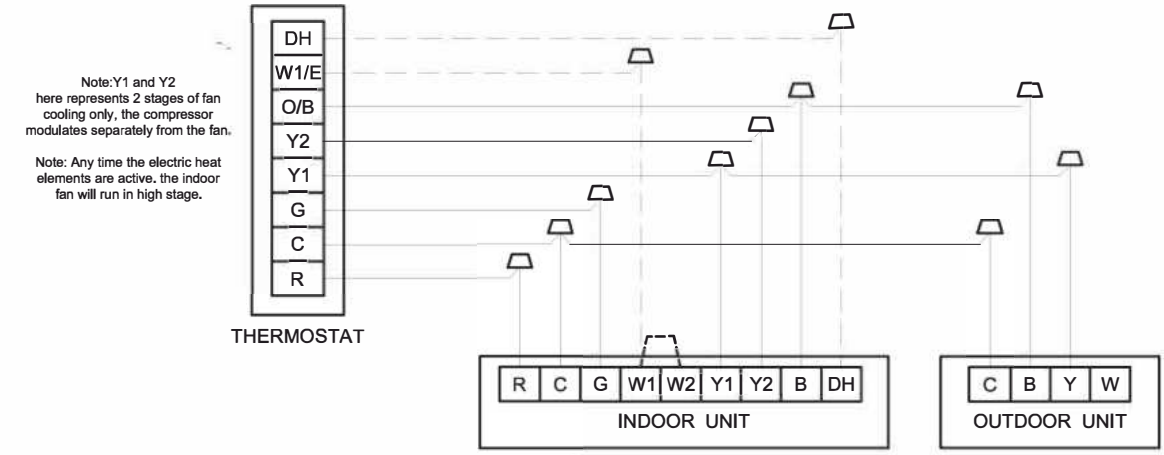
Wiring for 2H and 2C thermostat



Wiring for 3H and 1C thermostat



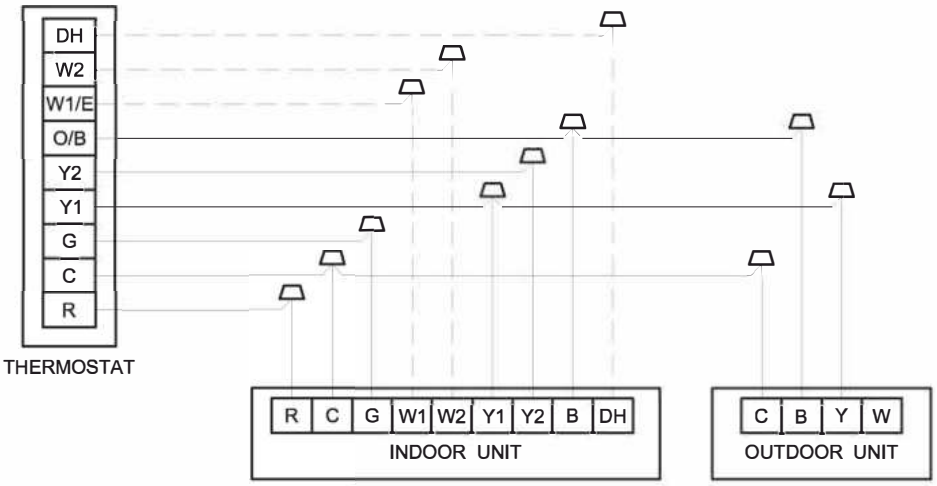
Wiring for 3H and 2C thermostat



Wiring for 4H and 2C thermostat

Note:Y1 and Y2 here represents 2 stages of fan cooling only, the compressor modulates separately from the fan.

Note: Any time the electric heat elements are active. the indoor fan will run in high stage.



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

6.4 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

6.5 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

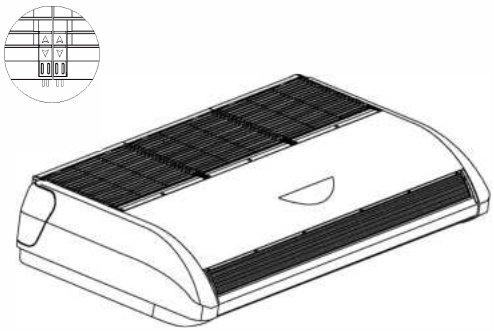
7. Attaching the Air Return Grille

•The air return grille must be attached when electric cabling work is completed.

(1) Fix the air return grille onto the indoor unit with screws supplied as accessories (4 pieces).

(2) Close the air return grille.

This completes the unit installation work.



8. Test Run

Please perform trial run according to outdoor unit installation manual.

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.

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