



DC Inverter ceiling-mounted cassette type air conditioner

Instruction Manual



1. Original instructions
2. This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.
3. GWP: R410A: 2087.5 or GWP: R407C: 1773.9 .
4. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
5. Children should be supervised to ensure that they do not play with the appliance.
6. The appliance shall be installed in accordance with national wiring regulations.
7. 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.
8. Children shall not play with the appliance.
9. Cleaning and user maintenance shall not be made by children without supervision.
10. Disconnect the appliance from its power source during service and when replacing parts.
11. The appliance must be installed 2,3m above floor.
12. Warning: before obtaining access to terminals, all supply circuits must be disconnected.
13. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or a similarly qualified person in order to avoid a hazard.
14. An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
15. Disconnect the power supply before cleaning and maintenance.
16. The appliance shall not be installed in the laundry.
- 17.



	Correct Disposal of this product
	<p>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.</p>

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Appendix: *Unit Packing List*

1. Notice for User

Safety Notice

Safety Notice provides the most important safety-related and unit operation key points. Be sure to operate accordingly. Meanings of symbols in documents:



Warning

It may lead to death, serious injury or major accidents due to mistaken operation.



Notice

It may lead to safety accident, machine damage or impair the unit operation effect due to improper operation.

Please carefully read the label on main machine; if any abnormal conditions detected such as abnormal noise, odor, smog, temperature rise, electric leak or fire, please immediately cut off the power supply and contact local customer service center or dealer of our company rather than automatic repairing. Immediately contact local fire control and first aid department if necessary.



Warning

1. The unit must not be mounted by own. it must be mounted by the dealer or professional installation company authorized by our company; otherwise it may lead to safety accident and impair the operation effect.
2. Unless operation instructed by professional staff, the non-professional staff must not remove the unit at will; otherwise it may lead to accident or damage the unit.
3. Do not operate or store inflammable or explosive articles around or below the unit; otherwise it may lead to fire hazard.
4. The main power supply switch of unit shall be placed in the location unavailable by the child so as not to cause hazard.
5. Do not sprinkle the water or other fluid on the unit; otherwise it may lead to electric leak risk.
6. Do not touch this unit with wet hand; otherwise it may lead to electric shock.
7. In stormy weather, please cut off the unit main power supply switch; otherwise it may lead to lightning risk and therefore damage the unit due to lightning.
8. Before long time out-of-work of unit, please cut off the main supply switch so as to avoid accident.
9. The unit shall use independent power supply switch and special power circuit to avoid common circuit with other electric appliances; use the power supply wire with specified section area to supply for the unit and equip with the circuit breaker of related specifications (with electric leak protection function).
10. The unit must be mounted with the grounding wire with specified section area and reliably mounted; do not connect the grounding wire with the earth wire of gas pipelines, water pipeline, arrester conductor or phone so as not to cause accident electric shock.
11. Do not forcibly cut off the power supply during normal operation of unit so as not to cause accident.

1. Notice for User



Notice

1. Do not extend the hand or foreign matters into the unit air outlet; otherwise the fan running at high speed may put your safety in hazard.
2. Avoid moisture of unit electric control system; otherwise it may lead to short circuit or damage the machine.
3. After cleaning the screen, install as origin state as quick as possible; do not operate the unit without screen; otherwise it may affect the operation effect.
4. Please properly adjust the temperature in the room, especially when there is the elder, child or patient in the room.
5. The lightning and other electromagnetic radiation sources may influence the unit; if so confirmed, please cut off the power supply and then power on after eliminated the influence.
6. Do not use sundries to block or cover the air inlet and outlet of unit.

General precautions

1. The outdoor unit must be mounted in the field with sunshade and rainproof facilities; otherwise our company will not be liable to the problem due to improper field.
2. The operation parameters and protection device settings of unit have been set when the machine leaves the factory; the user must not change the settings at will, and not short circuit the line of unit protection unit; otherwise it may lead to unit damage due to improper protection.
3. During operation of unit, any one except the professional staff must not touch any electric appliance and button; otherwise it may lead to serious accident.
4. In case of failure of unit, the user shall timely report to the service center of our company for consultation and repair rather than repairing by himself; the repairing of unit by non-professional staff may lead to personal injury or unit damage.
5. When cleaning the unit, do not use benzene, diluent or chemical cloth to wipe the operation panel, otherwise it may lead to fading or failure of button; do not directly spray the unit with water or cleaning agent; wipe with the cloth dipped with water or neutral cleaning agent if necessary.
6. To extend the air conditioner service life, do not frequently start the compressor (no more than 5times in 1 hour).
7. The refrigerant used by the unit shall be non-inflammable and non-poisonous, but it will cause ill if inhaled too much; if any leak detected, immediately open the room window for ventilation so as to avoid asphyxia.
8. In case of leak of refrigerant, the stress meter shall stop the operation of unit, and contact the maintenance staff timely; in case of open fire on site, the refrigerant may discompose into harmful gas due to contact open fire.
9. Please carry out periodical maintenance of unit according to requirements in instruction to ensure normal hoperation conditions of unit.

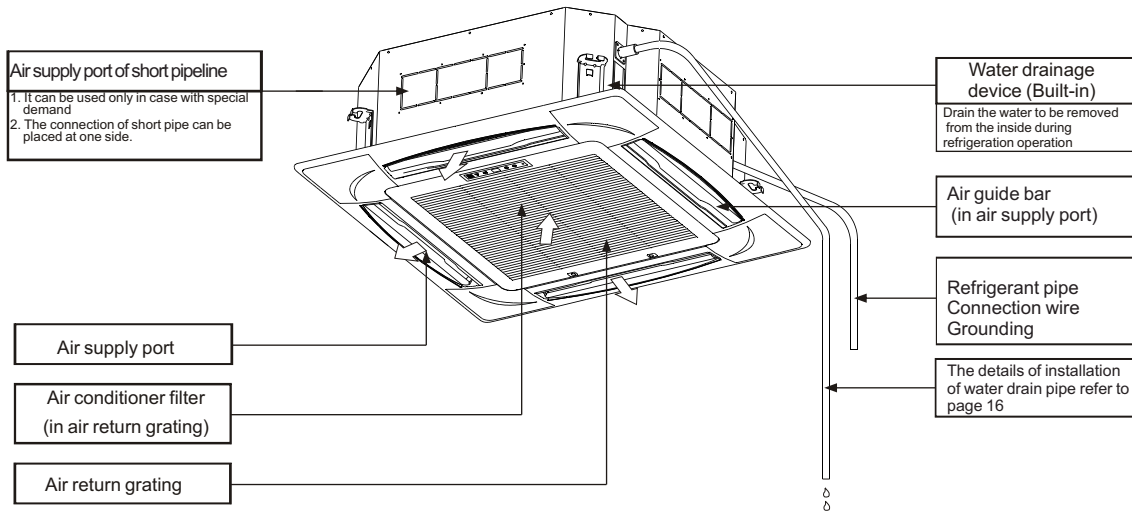
1. Notice for User

Other Safety Notice

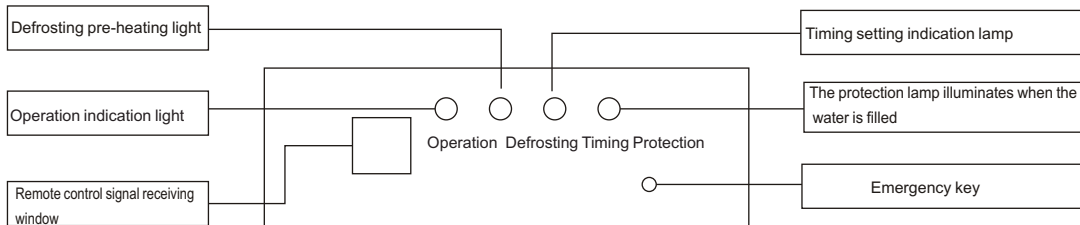
1. The fuse of specified capacity must be used and no iron wire or copper wire must not be used.
2. The unit operation environment shall be far from fire hazard location. In case of fire due to short circuit, immediately turn off the power supply master switch and extinguish the fire with dry powder fire extinguisher.
3. It is necessary to cut off the power supply before maintenance of unit.
4. Do not touch the exhaust side pipe fittings to avoid scalding since the temperature may be more than 100Centigrade.
5. The sharp edge and fin surfaces are harmful, which must not be touched.
6. Do not move the unit at will if no instruction of professional staff so as to accident and device damage.
7. Do not touch the rotating fan blade with water or other articles so as to avoid personal injury and device damage.
8. Do not place any article on unit to avoid risk due to article drop-off.

2.Name of air conditioner components

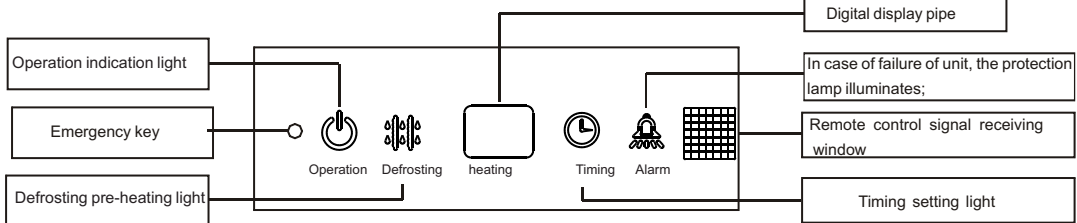
Indoor unit



Indication lamp board

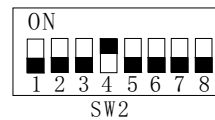


LED display light board

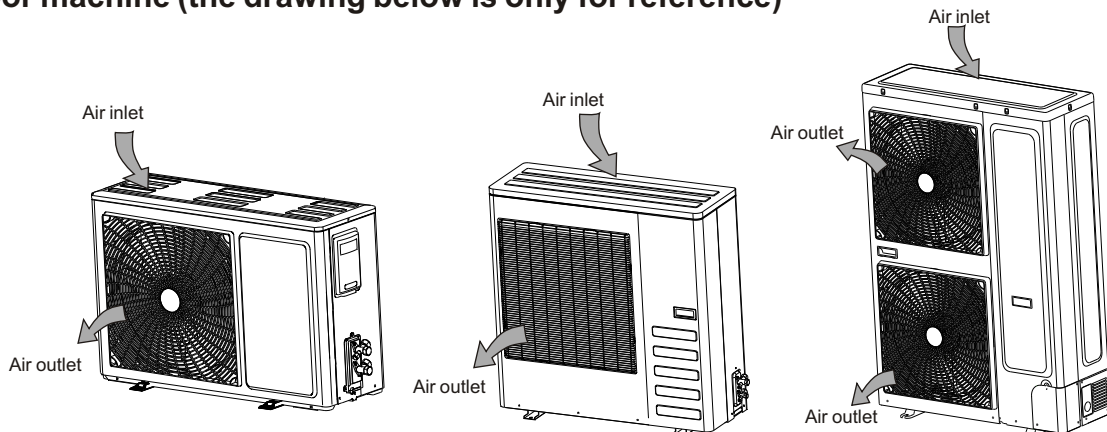


Digital pipe display light board

Note: When using digital code display board, the 3th position of dialing SW2 on the electronic controller shall be turned to ON position (as shown in right figure); in case of failure of remote controller, press emergency key for emergency operation.

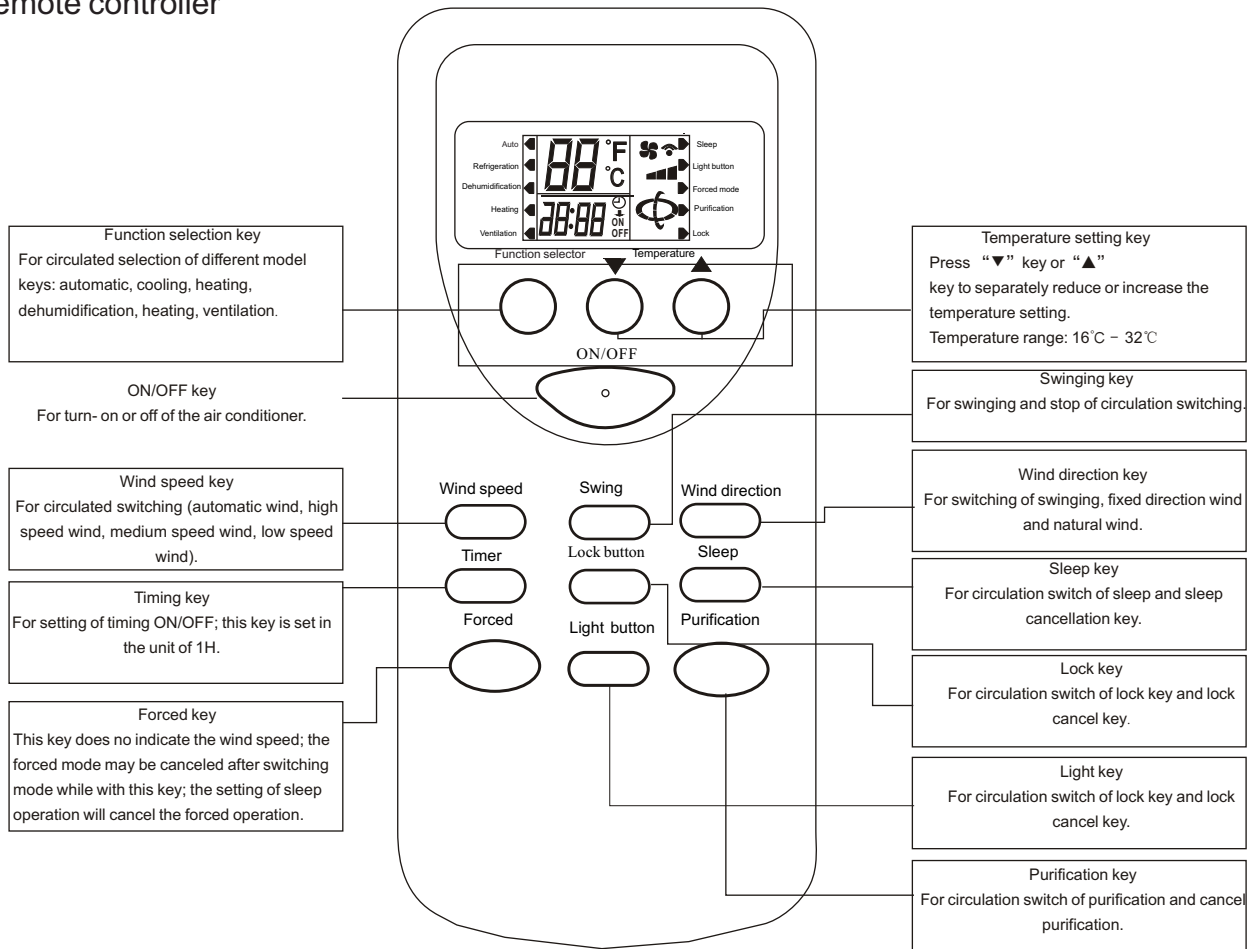


Outdoor machine (the drawing below is only for reference)



2.Name of air conditioner components

Remote controller



Function description:

ON/OFF key:When pressing the key, the remote controller circulates in sequence of "ON→OFF→ON". During OFF→ON for first power on, the default setting of working status (temperature setting 25°C, automatic mode, automatic wind speed, automatic swinging, automatic throttle, without light, without force, without purification, without sleep, without timing, without lock key). During OFF→ON for non-first power-on, the working status is that before power off. The lamp, purification, cancel, forced and timing functions will be canceled after power off.

Mode key:When pressing the mode key, the remote controller with circulate in sequence of "Automatic → Cooling → Dehumidification → Heating → Ventilation → Automatic".

Minus key:When pressing this key in dehumidification mode and automatic mode, the temperature will not change. In other modes, press this key once and the temperature setting will decrease by 1 in the sequence of "32°C→31°C→...→17°C→16°C".

Plus key: When pressing this key in dehumidification mode and automatic mode, the temperature will not change. In other modes, press this key once and the temperature setting will increase by 1 in the sequence of "16°C→17°C→...→31°C→32°C".

Swinging key: In dehumidification mode, the winging will be fixed and unadjustable. In other modes, when pressing the swinging key, the remote controller will circulate in the sequence of "Swinging wind → fixed direction wind → natural wind → swinging wind".

2.Name of air conditioner components

Wind direction key: The wind direction is set as winging state in default during first time power on; press this key and it will circulate in sequence of "Swing → Stop → Swing".

Wind speed key: The wind speed is set at automatic wind speed in default during first time power on; in dehumidification mode, the speed wind is fixed as low speed and can not be adjusted; it will have no response when pressing the wind speed key. In other modes, press this key and it will circulate in sequence of "Automatic wind → High speed wind → Medium speed wind → Low speed wind → automatic wind".

Timing key: Set at non-timing state in default; press this key for timing setting in unit of 1 hour in the sequence of "1 H→2 H→...→24 H→cancellation →1 H...". In power off state, press timing setting key to set power on setting; press timing setting key to set the timing switch in power ON state. After setting of timing function, decrease every 1 hour till reached the setting time when it will power on or off, and cancel the timing display. If the timing is activated, the timing will not be canceled if pressed mode key. If the timing is activated, pressing of other key will send the setting time.

Forced key: The remote controller is set of non-forced state in default; in automatic, dehumidification and ventilation modes, the forced key does no function (no display and no code emitted for force). When pressing this key in other mode, the forced mode will circulate between ON and OFF. The wind speed does not display if the forced mode is activated; the forced mode will be deactivated after switching the mode if it is activated; the forced mode will be canceled when setting the sleep operation.

Sleep switch: When pressing the sleep key, circulate in sequence of "sleep → cancel sleep → sleep"; if the sleep mode is activated, it will not be canceled after changed the mode. When pressing the sleep key to sleep, the wind speed will automatically switch to low speed, but the pressing of wind speed key can adjust the wind speed (except dehumidification mode)

Lock key: It is set as non-lock state in default; when pressing this key, the remote controller circulates in sequence of "Lock→Cancel lock→Lock". If the lock key is activated, all keys of remote controller other than lock key does no function. (Note: when the lock key is activated, the keys on cabinet unit remote controller and air conditioner operation panel will automatically lock; when pressing the key again, the remote controller and air conditioner will automatically unlock. In discrete unit, only the remote controller is locked, the emergency button will not be locked, but the main plate response.)

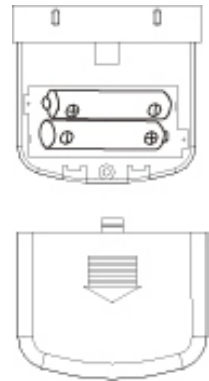
Light key: The split unit only locks the remote controller, but does not lock the emergency lock; the main board will response. It is set as non-lamp state in default; when pressing this key, the remote controller circulates in sequence of "Lamp→Cancel lamp→Lamp". If the lamp key is activated, after pressed the mode key, the lamp key indication will not be canceled.

Purification key: Set as non-purification state in default; when pressing this key, the remote controller will circulate in sequence of "Purification → Cancel purification → Purification". If the purification is activated, the purification will not be canceled after pressing the mode key. When pressing this key in power-off mode of remote controller, it will circulate in sequence of "Purification → Cancel purification → Purification". When open the purification separately during power-off, swing wind is fixed, wind door is unadjustable, wind speed is adjustable .

2.Name of air conditioner components

Notices for remote controller:

- ① Do not place the remote controller near the high temperature heat sources such as electric carpet or heating oven.
- ② Do not put the remote controller at the position directly exposed to the sunshine.
- ③ Be careful not to drop off from high position; otherwise it may be damaged.
- ④ There must have no barrier between signal receiver and remote controller of air conditioner which may affect the receiving and transmitting of signal.
- ⑤ Do not splash the liquid such as water onto the remote controller.
- ⑥ Do not place the weight onto the remote controller.



Note: In case of operation failure of remote controller, please replace with new battery and repeat the operation; if the failure still exists, please run the air conditioner in emergency operation method, and contact the dealer or special maintenance points.

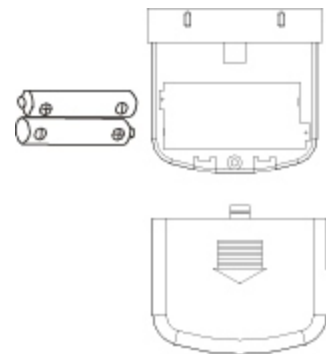
Replacement of remote controller battery

In case of following conditions, it indicates the battery is used up; take out the used battery and replace with new one.

- ① There is no air conditioner receiving sound after transmitted the signal.
- ② The display screen becomes obscure.

In case of above conditions, it indicates the battery is used up; take out the used battery and replace with new one.

- A. Remove rear cover and take out the used battery.
- B. Replace the battery; notice the "+" and "-" electrode marks of battery.
- C. Close the rear cover.



Note:

1. The new and used batteries must not be mixed.
2. Please take out the battery if the remote controller is not used for long time.

Notice aligning the electrodes "+" and "-"

3.Preparation before installation

⚠ Notice: The installation of unit must be done by professional staff; the improper installation may lead to water leak, electric shock or fire hazard.

Field selection

1. Indoor unit

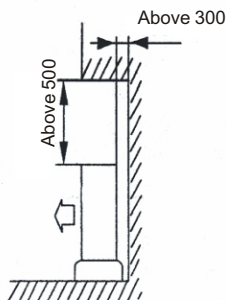
- 1) It shall be installed at the place whether the air blown out can quickly spread the entire room and with certain maintenance space.
- 2) The air inlet and outlet of indoor unit will not be obstructed and affected by heat and vapor generated hereby.
- 3) Avoid installing at the place with large amount 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. Outdoor unit

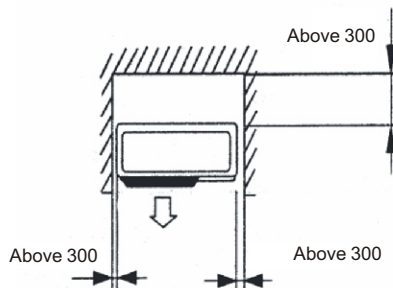
- 1) Install at the place where can not be directly exposed to the sunshine (if inevitable, please mount the sunshade facility to avoid direct exposure to the sunshine).
- 2) The noise and air flow generated by the unit will not affect the neighbor.
- 3) Convenient connection of indoor and outdoor unit and for ease of connection of power supply.
- 4) Do not install at the place where the inflammable gas may generate, flow, stagnate and leak.
- 5) During heating, the condensation drained out of outdoor unit chassis will not affect the neighbors or passer-by.

Installation requirements and maintenance space (outdoor unit)

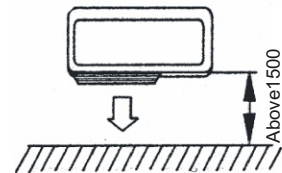
1. Single unit installation (unit: mm)



When there is barrier at upward side, if possible to keep the space shown in the figure, it does not matter even if there is barrier at back.

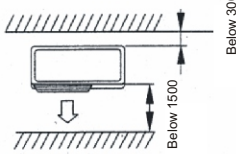


When the front side (outlet for exhaust) is open, if it can keep the space shown in the figure, it does not matter even if there are barriers at three sides. (Open above)



If there is barrier at the front side, the back, both sides and upward side shall be kept open.

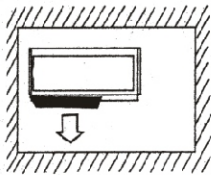
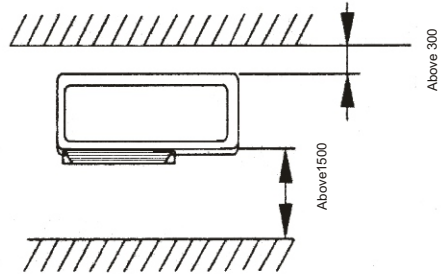
3.Preparation before installation



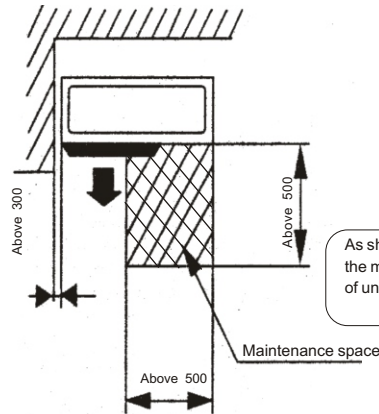
When there are barriers at front side and both sides, do not use the dimensions shown in the figure. Please refer to the right figure

When there are barriers at front side and back side, at the location with barrier and poor air ventilation, to avoid short circuit of outdoor unit inlet and outlet, the heights and widths of barriers shall be within following range. (If its front side and back side can meet the condition, it will be no special limit for both sides.)

- A. Barrier width is 1.5 times less than outdoor units
- B. Barrier height is 1.0 times less than outdoor units



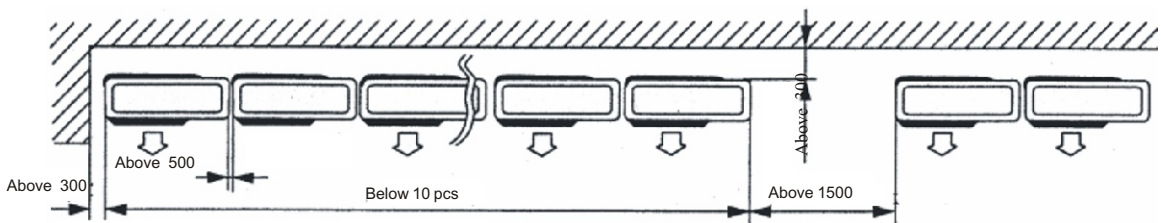
When there are barriers around, even if the upward side is open, it can not installed.



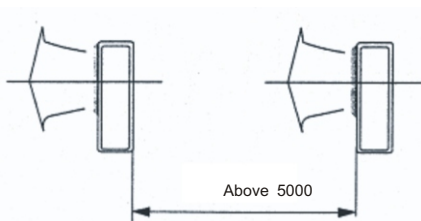
As shown in the figure, ensure the maintenance space at front of unit

2. Multi unit installation (unit: mm)

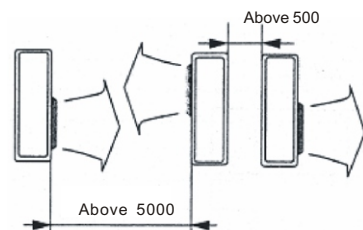
A. Parallel setting



B. Multi-row arrangement



C. Blowing arrangement



3.Preparation before installation

3. Mounting at roof or other windy position

When the outdoor unit is to be mounted on the roof or place around which there is no building, it is necessary to avoid the strong force directly blowing into the air outlet of outdoor unit. To avoid impairing the heating or cooling effect and failure due of outdoor unit heat exchanger due to inadequate air flow.

A. When there is wall nearby, please locate the air exhaust facing the wall and keep about 500mm distance from the wall.

B. When the air exhaust is affected by strong wind or wind direction, it is necessary to change the air intake unit position to make the exhaust port perpendicular to the wind direction.

4. Installation of unit

Install the indoor unit

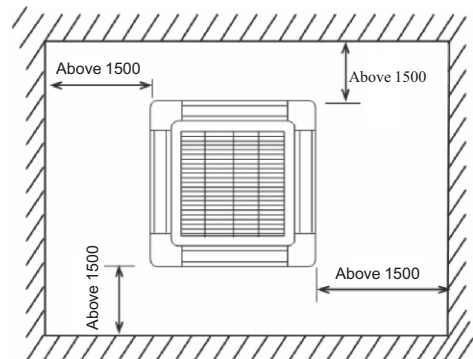
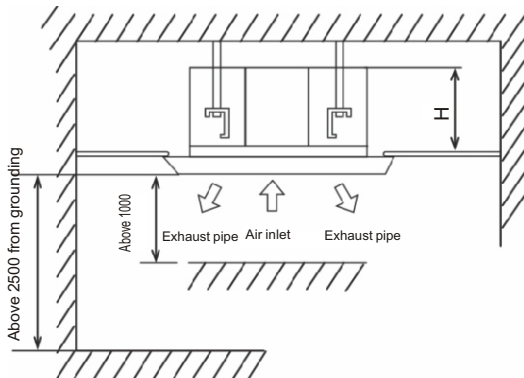
1. Installation position

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 sued 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

Unit: (mm)



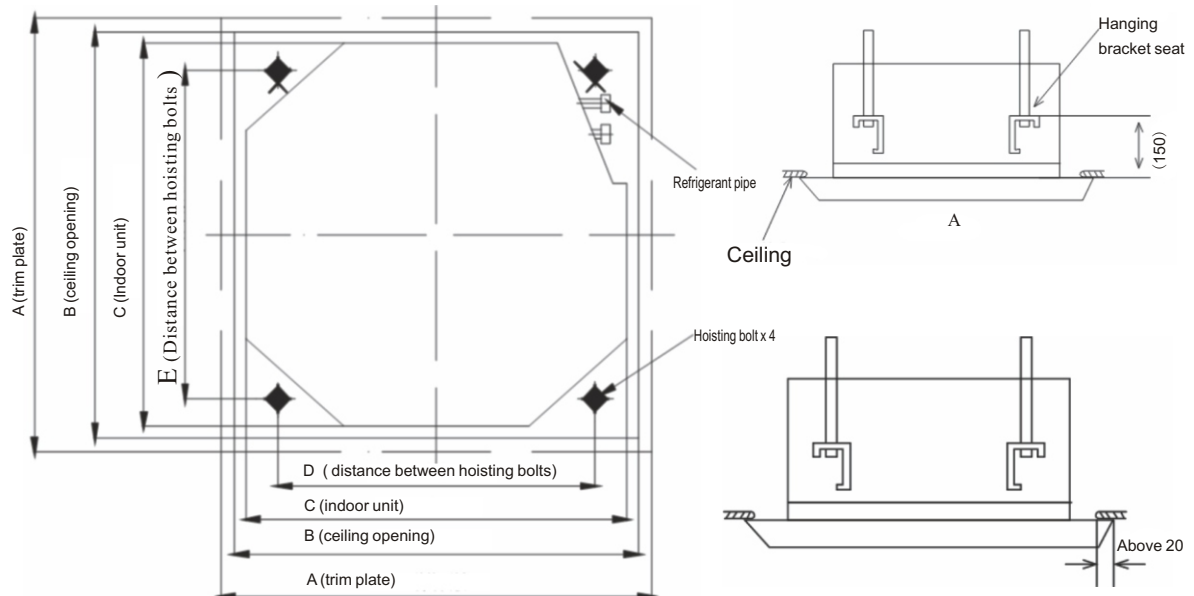
Model	Machine body height (H)
5.3kW, 7.0kW	230
10.5kW 14kW 16kW	285

Note: The actual dimensions refer to the actual product.

4. Installation of unit

2. Preparation before installation

1) Position relationship among ceiling opening, unit and hoisting bolt



Unit: (mm)

Model	Size				
	A	B	C	D	E
5.3kW、7.0kW、 10.5kW、14kW、16kW	890	890	840	680	780

Description:

1. The overlapping section of ceiling and trimming plate shall be kept as more than 2.0mm.
2. If necessary, open the opening on the ceiling required for installation. (In case the ceiling is mounted)
 - a. The dimensions of ceiling opening please refer to installation drawing.
 - b. Firstly complete all pipelines connecting with indoor unit (refrigerant pipe and drain pipe) and electric wires (connection pipes of indoor and outdoor units) before installation for ease of connection with the indoor unit after installation.
 - c. Reinforce the ceiling from the ceiling opening to keep the ceiling level and avoid vibration of ceiling.

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.

4. Installation of unit

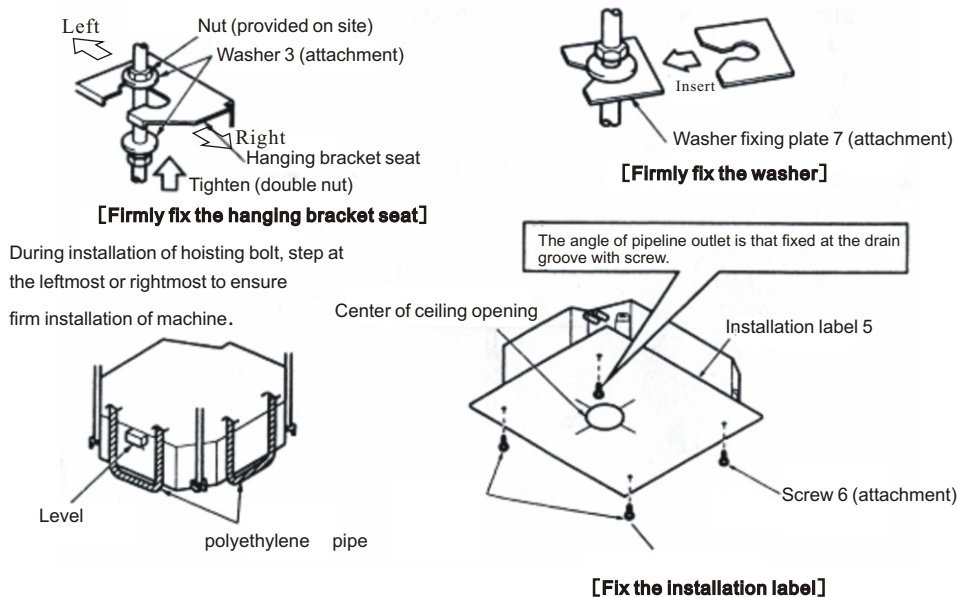
3. Installation

A. 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.

B. 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.



4. Installation of unit

4. Preparation of trim panel

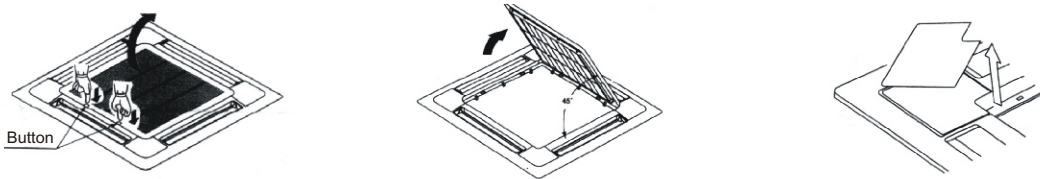
A. Install the trim panel

- 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

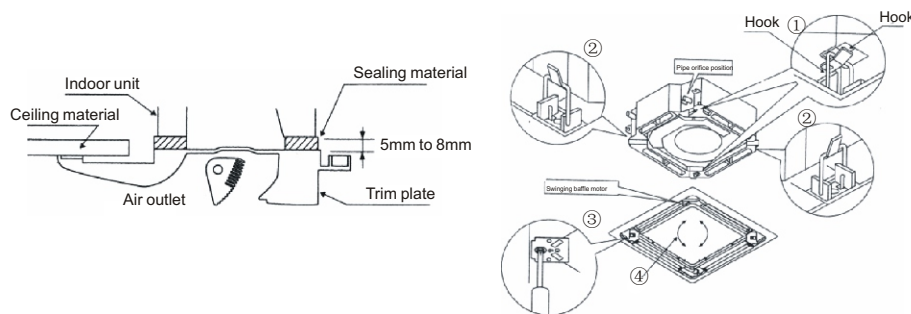
1. First pull down the air return grating and then pull up the other end of button. (See the figure below)
2. Pull up the grating for about 45 degrees and take down the air return grating on trim panel. (See the figure below)

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



B. Install the trim panel on indoor unit

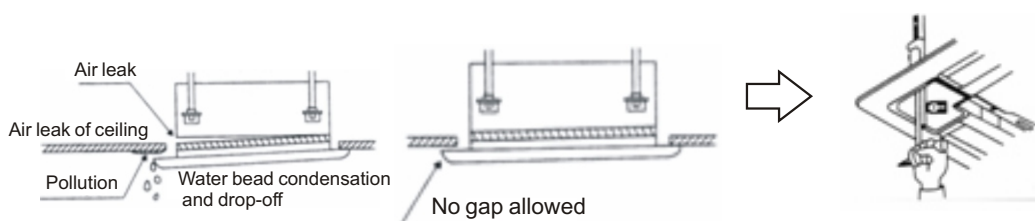
- ① As shown in the figure below, align the position of swinging baffle motor on trim panel with the pipe opening position of indoor unit for ease of installation of trim panel onto the indoor unit.
- ② Install the trim panel
 - a. Temporarily install the trim panel onto the indoor unit; during installation, 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.

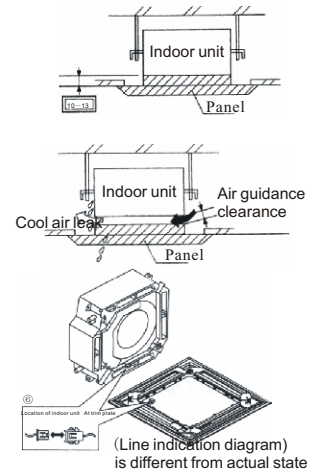


4. Installation of unit

C. 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.

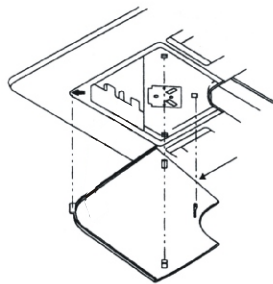


(Line indication diagram) is different from actual state
When installing the air return grating, do not wind in the conductor of swinging baffle motor.

5. Installation of air return grating and cap

A. Install the air return grating

B. Install in reverse sequences to "Preparation of trim panel". While



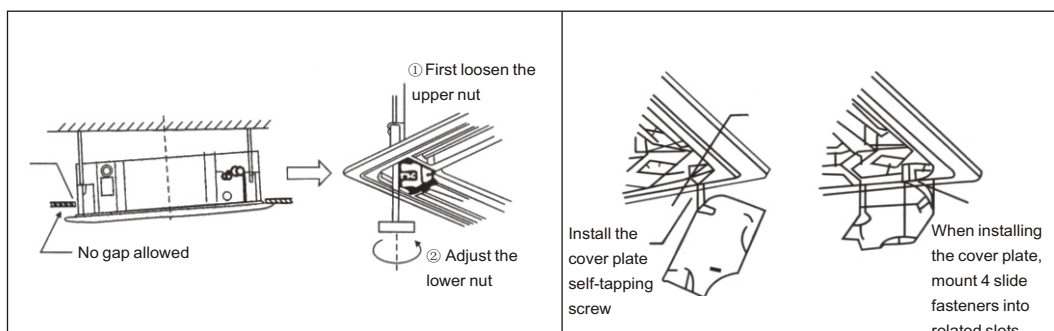
Install in reverse sequences to "Preparation of trim panel". While rotating the air return grating, it can be installed in 4 directions. If necessary to adjust the installation direction of air return grating or required by the user, the installation direction can be changed.

C. 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.

D. Re-install the air inlet grating in reverse sequence to those when removing the air inlet grating;

E. Re-install the mounting cover plate.

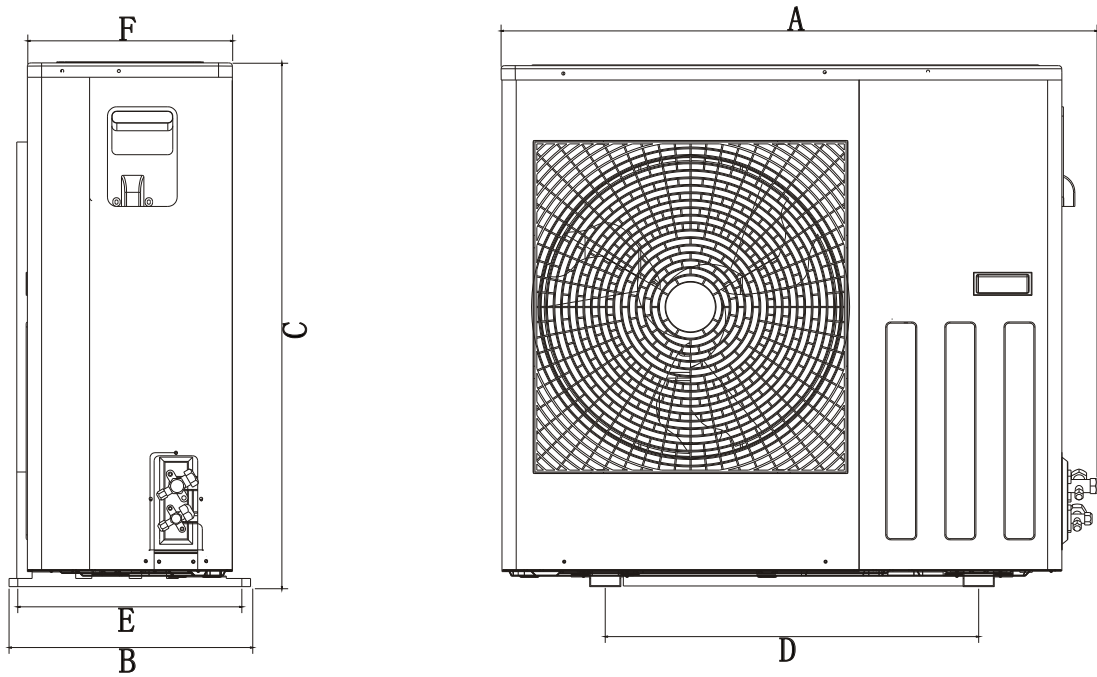
- ① Fix the mounting cover plate rope onto the lug (see the right figure);
- ② Gently press the mounting cover plate in the panel.



4. Installation of unit

Installation of outdoor unit

A. Overall dimensions diagram for the outdoor unit

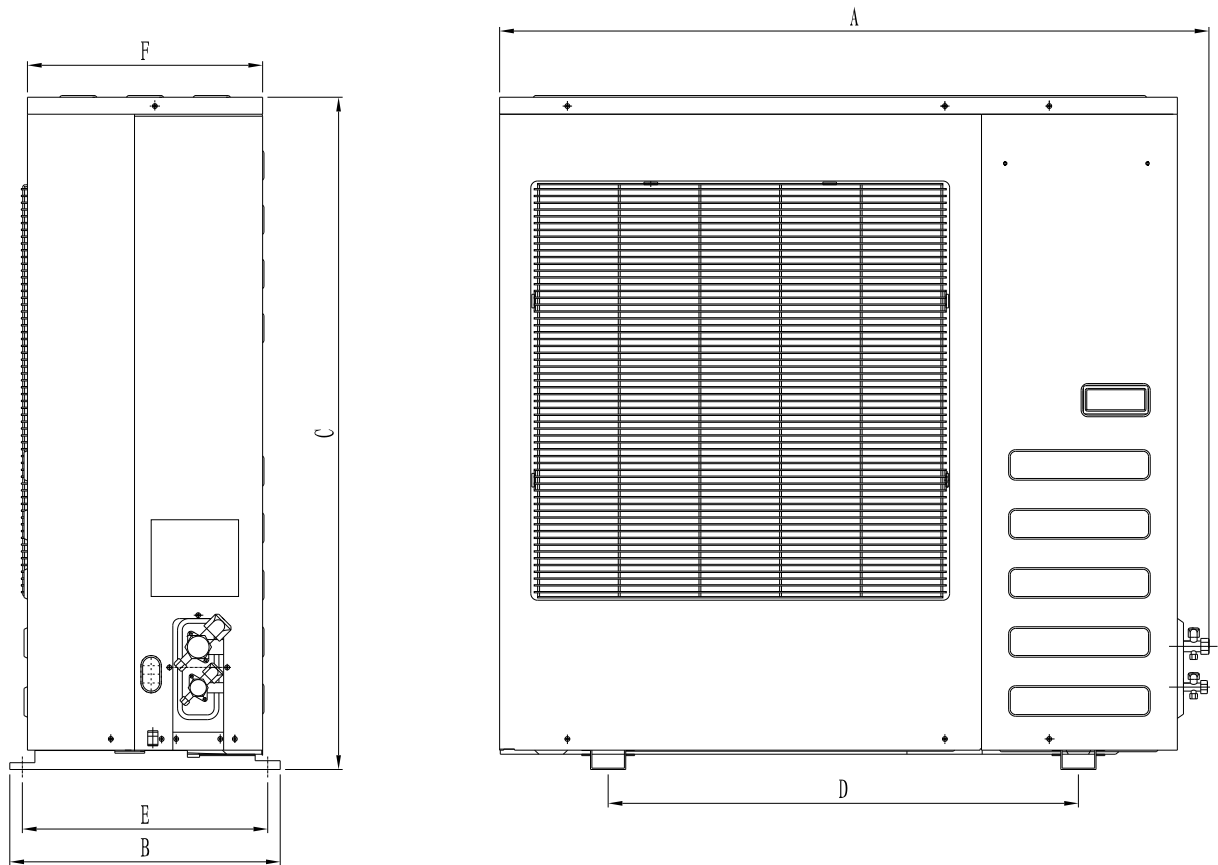


Unit: mm

Project	A	B	C	D	E	F
Machine capacity						
10.5KW	1030	432	788	707	389	370

4. Installation of unit

B. Overall dimensions diagram for the outdoor unit

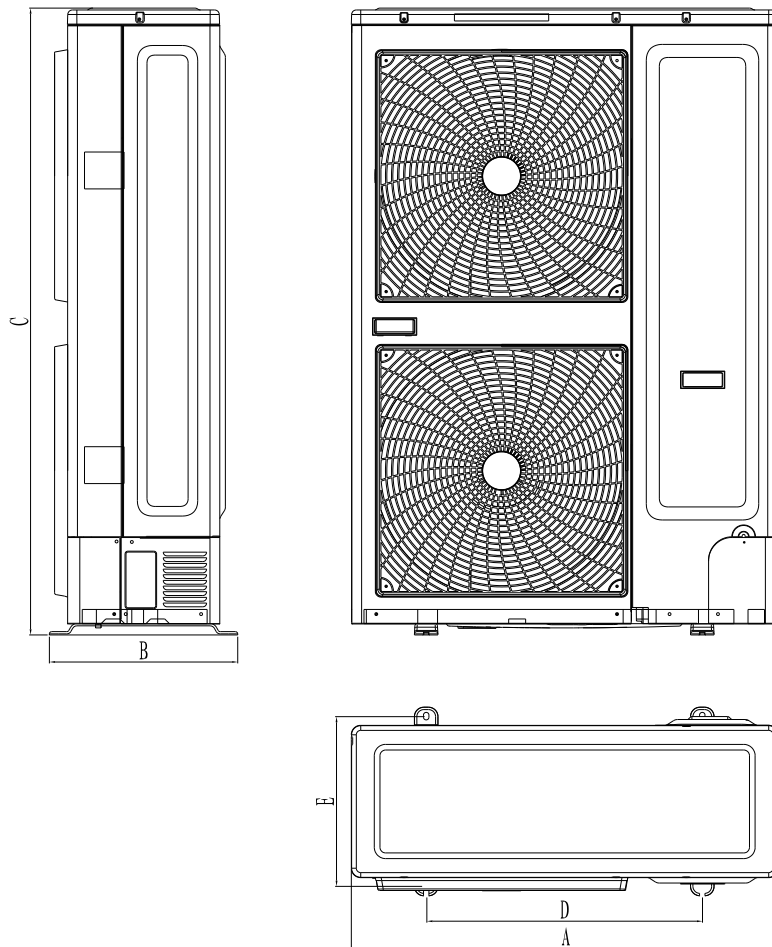


Unit: mm

Project	A	B	C	D	E	F
Machine capacity						
14KW	1055	400	995	694	372	347

4. Installation of unit

C. Overall dimensions diagram for the outdoor unit



Unit: mm

Project	A	B	C	D	E
Machine capacity					
16kW	907	400	1330	585	362

4. Installation of unit

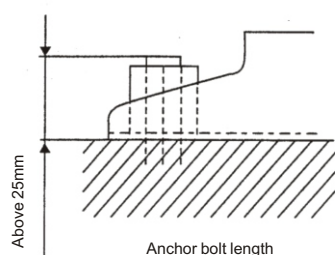
Install the outdoor fan

1. Installation notice:

- A. Transport the machine parts in origin package state to installation location.
- B. Since the outdoor unit weight deflects from center position, take care when lifting the machine parts with sling.
- C. The inclination of outdoor unit during transportation must not exceed 45°C (do not store in horizontal state).

2. Installation

- A. When installing the outdoor unit, use bolt to fix the unit footing. (Anchor bolt will be prepared on site)



Note: Keep the maximum anchor bolt length as 25mm calculated from bottom installation foundation.

Install the refrigerant pipe and drain pipe

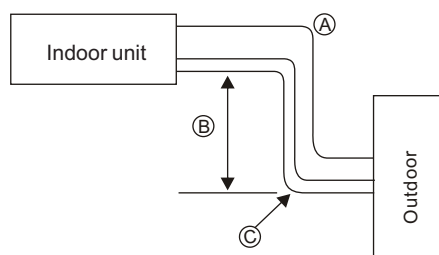
Note:

- ① If no special conditions, select the pipe fittings of our company.
- ② Due to special conditions, the thermal insulation sleeve of more than 9mm thick and with favorable thermal insulation performance to avoid condensation when otherwise procuring the refrigerant pipe.
- ③ When installing the drainage hose (accessory), additionally procure the cable tray connection exhaust pipe with inner diameter of $\phi 16$, and bind up with the thermal insulation sleeve of 9mm thick to avoid condensation.

1. Dimension of refrigerant pipe

Model	Refrigerant liquid pipe	Refrigerant gas pipe
5.3 kW series	External diameter $\phi 6.35 (1/4")$	External diameter $\phi 12.7 (1/2")$
7.0 kW series	External diameter $\phi 9.52 (3/8")$	External diameter $\phi 15.88 (5/8")$
≥ 10.5 kW series	External diameter $\phi 9.52 (3/8")$	External diameter $\phi 15.88 (5/8")$

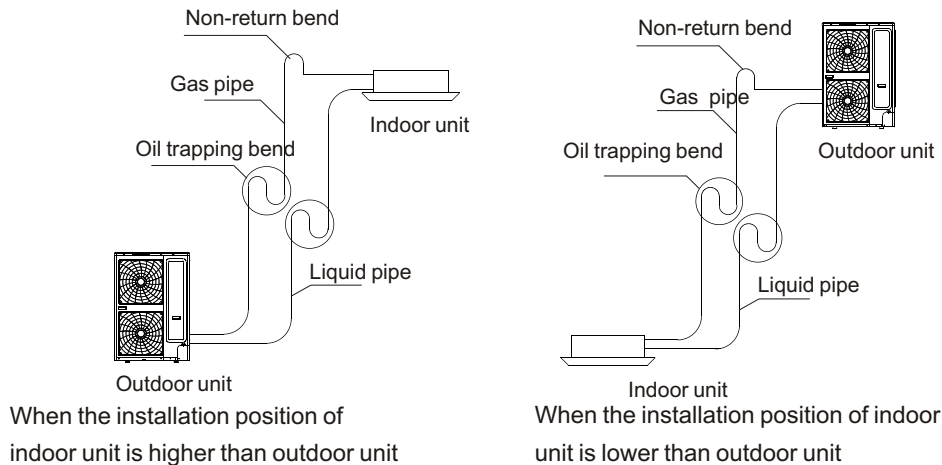
2. Length and height difference of ultra-long piping of air conditioning unit



Rated refrigerating capacity Value	Rated refrigerating capacity		
	<6.5kW	6.5~7.2kW	≥ 10.5 kW
A Pipeline length (one-way)	Maximum length 15m	Maximum length 20m	Maximum length 50m
B Height difference (one-way)	Maximum length 8m	Maximum length 10m	Maximum length 20m
C Pipeline bends quantity	Up to 10	Up to 10	Up to 15

4. Installation of unit

Note: When the height is more than 5m, set the oil trapping bend and non-return bend according to relative positions of outdoor unit and indoor unit.

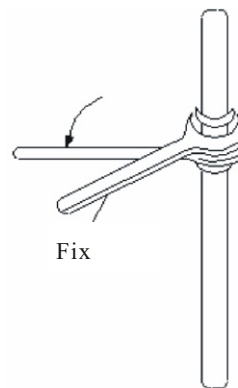


3. Piping sequence

A. Keep the check valve or ball valve of outdoor unit closed (factory delivery specification) and separately remove the nuts, dustproof cap and piping screw plugs of indoor and outdoor pipelines.

- ① Quickly fulfill the bell mouth connection operation; if placed for long time, the dust, moisture and foreign matter may ingress and therefore lead to the failure.
- ② Before tightening the bell mouth, apply a thin layer of refrigeration oil on the sealing fitting surface of pipe

Pipe diameter φ (mm)	Tightening torque (kgfm)
6.35	1.4~1.7
9.52	1.4~1.7
12.7	4.8~6.2
15.88	4.8~6.2
19.05	6.9~9.9



Notice:
Use two wrenches,
one as common wrench
and the other is torque
wrench.

B. Conduct the bell mouth connection operations in sequence and connect all refrigerant pipeline.

After connection of pipe, it must be filled with nitrogen or refrigerant; check the air leak with leak detector or soap water.

C. Vacuumize the overhaul port of check valve or ball valve of outdoor unit and discharge the air.
(Operate by professional installation)

4. Installation of unit

Notice:

- ① When the connection pipe length is more than 5m, it must be evacuated with vacuum pump; 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 or refrigerant.

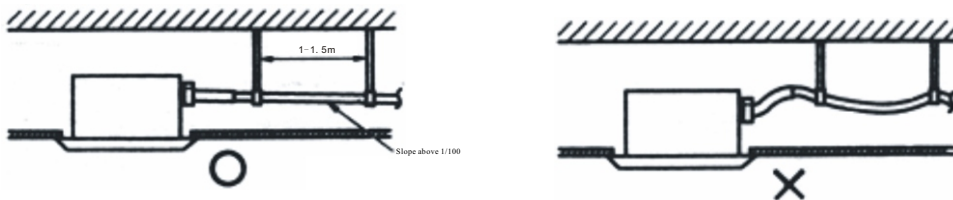
D. After completed above operation, it is necessary to fully open the check valve or ball valve of outdoor unit. Pressure test, vacuumizing and leak test of connecting pipe and indoor unit pipeline:

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:
 $R = (L_1 * 0.030 \text{ kg/m}) + (L_2 * 0.065 \text{ kg/m})$ Where: L1-Total actual length of $\phi 6.4$ liquid pipe (m).
 L2-Total actual length of $\phi 9.5$ liquid pipe (m). When refilling the refrigerant, use the needle valve on low pressure valve body of outdoor unit in refrigeration mode.

4. 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)

- A. 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
- B. If impossible to ensure adequate slope for drainage hose, the drainage lift pipe shall be installed.
- C. To avoid bending of drainage hose, it will keep 1 to 1.5m distance between hanging bracket.

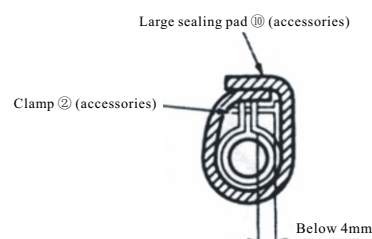
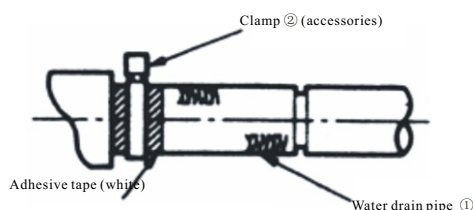


D. Use the attached drainage pipe ① and clamp ②.

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.

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

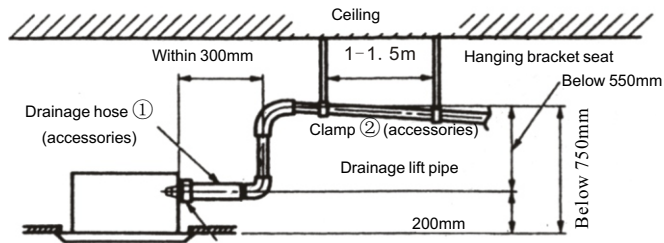
1. Drainage pipe in room;
2. The drainage socket refers to the figure below; insulate the thermal for clamp and drainage pipe with attached large sealing pad ⑩.



4. Installation of unit

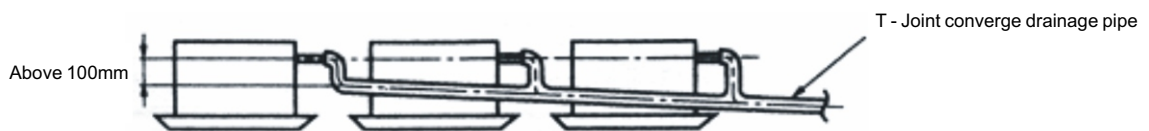
Notice for the drainage lift pipe:

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.



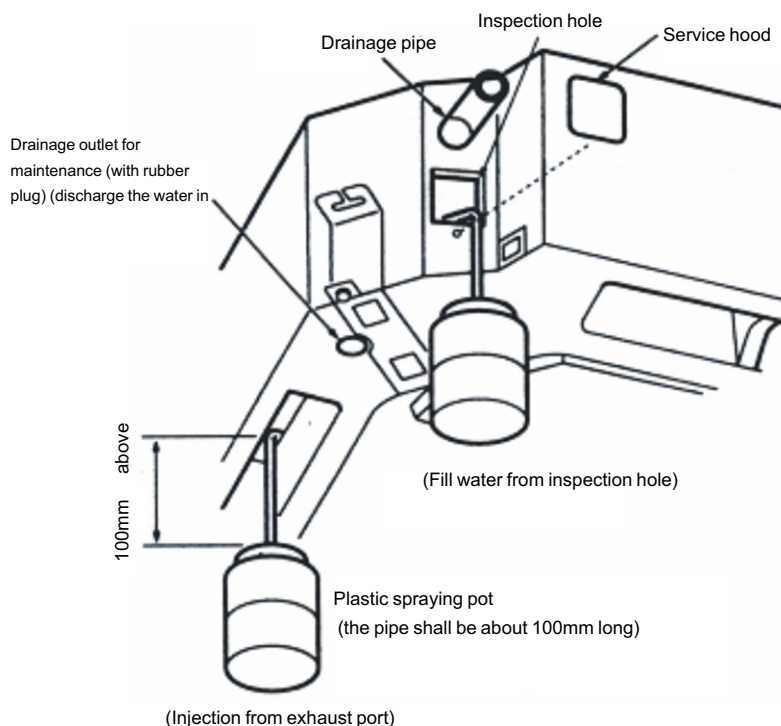
Notice:

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
Access hole



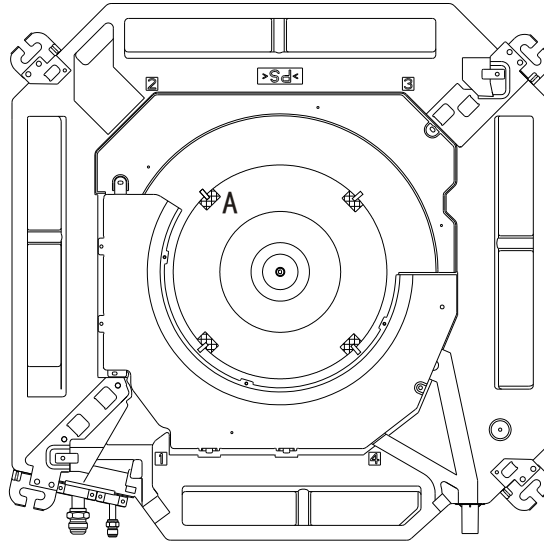
5. Test run

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.

Note: Before test run, be sure to take out 4 air wheel damper blocks (A) and fixing tape!



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.
 - A. Press "mode" key and select "air supply" mode; check whether there is air blowing out from the air conditioner.
 - B. Press "mode" key and select refrigeration mode; check whether there is cool air blowing out of the air conditioner.
 - C. 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)
 - D. Press "wind speed" mode and select high speed mode; check whether there is strong wind blowing out of the air conditioner.
 - E. Press the "swing" mode, and observe if wind grate is normal swing.

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.

6.Maintenance and service

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.,

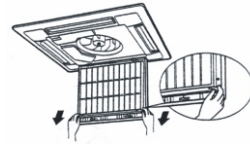
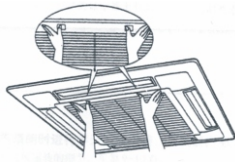
Cleaning procedures:

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.

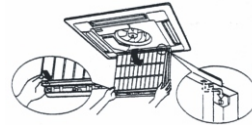
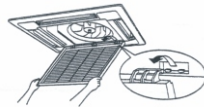
Notice: 1. Do not use more than 50°C hot water cleaning, so as not to fade or deformation .

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

1. 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:
2. 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:



3. Take out the air return grating and open the grating for 45 degrees, and lift up as shown in the figure below:
4. After cleaning, install the filter screen and air return grating as shown in the figure below (operation in reverse)



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 increasement of temperature setting.

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.

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.

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.

6.Maintenance and service

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.

7.Symptom analysis and treatment

Failure analysis

When the air conditioner can not normally operate, in case of any doubt, please read following contents before communicating the maintenance department so as to save valuable time and energy.

Problems	Phenomenon	Reason	Handling method
No operation of air conditioning	Press the "ON/OFF" key of remote controller ON/OFF" key No "Bee" sound heard; OFF of operation indication lamp	Outage	Press "ON/OFF" key after recovery of power supply
		Not connect the power supply	Connect the power supply
		Fuse blown of power supply	Replace with new fuse
		The electric leak switch is in OFF state	Turn on the electric leak switch
		The remote controller operates out of operation range	Operate the remote controller in operation range
		Use up of battery in remote controller (The indication on screen display becomes	Replace with new battery
The air conditioner can not immediately start up.	The remote controller indicates the unit is running.	Protection of compressor	Wait for automatic release of compressor protection or call the dealer for drop-in service
The air conditioner stops operation shortly after startup.		The air inlet or outlet of indoor or outdoor unit is blocked.	Remove the blockage
		The filter screen is blocked by dust or mud	Clean the filter screen
The air conditioner can deliver the air, but the air is not cool or not hot	The remote controller indicates the unit is running.	The temperature setting is too high during refrigeration. The temperature setting is too low during heating	Check the temperature setting on remote controller and re-set proper temperature
		The filter screen is blocked by dust or mud	Clean the filter screen
		The air inlet or outlet of indoor or outdoor unit is blocked.	Remove the blockage
		Open the door and windows	Close the door and windows

Once the unit stops operation due to outage, the unit will not restart even if recovery of power supply; to restart, press the "ON/OFF" key on remote controller.

The following cases are not of failure:

- 1.Sometimes odor: air conditioner collects the odors of smoke, cosmetics, wall and furnitures in room and blows them out.
- 2.Sometimes the "hiss" sound will be heard during or after operation, which is due to flowing out of refrigerant inside the air conditioner;
- 3.During startup or stop of operation, the "Pi-Pa" sound will be heard sometimes, which is the sound from

7.Symptom analysis and treatment

Self diagnosis function

Our company provides considerate service for the customer and install various judgment systems to indicate following abnormalities.

Table 1: Failure code list of indoor unit

Fault Description	4LED fault indication	Digital display	Wired remote display
Three-phase power phase sequence fault		E0	E0
Indoor and outdoor unit communication failure	Timing lights flash	E1	E1
Temperature sensor (T1) fault	Running lights flash	E2	E2
Pipe temperature sensor in the evaporator (T2) fault	Running lights flash	E3	E3
Pipe temperature sensor in the evaporator (T2B) fault	Running lights flash	E4	E4
Outdoor unit failure	Warning lights flash slowly	E5	E5
The indoor unit EEPROM fault	Defrost lights flash slowly	E7	E7
Water over protection	Warning lights flash	EE	EE
Indoor unit with line controller communication failure		E9	E9
Note: The flash frequency for each of the above indicator is 2.5Hz, slow flashing frequency is 1Hz			

Table 2: Parameter table for spot inspection of outdoor unit

The digital tube display the indoor unit amount connected and communicated with during standby

The digital tube displays the frequency value during operation of compressor; the digital tube displays"dF" during defrosting;

No.		Display content	Remark
0	Normal display	Current frequency/indoor unit amount	Display the starting amount when standby
1	1-	Outdoor unit local capacity	
2	2-	Total capacity needs of indoor unit	
3	3-	Total capacity demands after outdoor Unit	
4	4-	Operation mode	0: Power OFF/air supply;2: Cooling;3: Heating;4: Forced cooling
5	5-	Actual running ability of outdoor unit	
6	6-	Fan status	0-7
7	7-	T2/T2B on average	
8	8-	T3 pipe temperature	
9	9-	T4 environmental temperature	
10	10-	T5 exhaust temperature	
11	11-	Opening of the electronic expansion valve	Actual value = spot inspection display value x 8
12	12-	Primary side current	
13	13-	Secondary circuit current	
14	14-	Primary side voltage	
15	15-	Secondary side voltage	Actual value = spot inspection display value x 4
16	16-	Sets of indoor units	
17	17-	Number of working indoor units	
18	18-	Last fault or protection code	No protection or fault display
19	19-	---	Spot check over

7.Symptom analysis and treatment


Table 3: Failure code list of outdoor unit

Display content	Definition of fault or protection	Remark:
E1	Three-phase power phase sequence fault	
E2	Communication fault between the outdoor unit and the mast	Communication is interrupted for more than 2 minutes 20 minutes after the initial power-on or within 20 minutes
E4	Temperature sensor fault	
E6	Condenser tube temperature sensor fault	
E9	AC over-voltage / under-voltage protection	
E10	EEPROM fault	
H0	0513 and DSP communication fault	
H4	Display P6 protection for 3 times within 30 minutes	Unable to restore unless a second power-on
H5	Display P2 protection for 3 times within 30 minutes	Unable to restore unless a second power-on
H6	Display P4 protection for 3 times within 100 minutes	Unable to restore unless a second power-on
H9	Display P9 protection for 2 times within 10 minutes	Unable to restore unless a second power-on
H10	3 times of P3 protection occurs within 60 minutes	Unable to restore unless a second power-on
P1	High pressure protection	
P2	Low pressure protection	Display H5 after 3 times of P2 protection within 30 minutes
P3	Primary / secondary overcurrent protection	
P4	Exhaust overheating protection	3 time of P4 protection appears within 100 minutes and then H6 occurs
P5	High tube temperature protection	
P6	Module protection	3 times of P6 protection appears within 30 minutes and then H4 occurs
P9	DC fan fault	Display H9 after 2 times of P9 protection within 10 minutes
P10	Anti-typhoon protection	
P11	Refrigeration T2 overheating protection	
P12	5 minutes continuous fault on hot air system at area A	
L0	DC compressor module fault	
L1	DC bus low voltage protection	
L2	DC bus high voltage protection	
L4	MCE fault / sync / closed loop	
L5	Zero speed protection	
L7	Phase sequence error protection	
L8	15Hz protection	
L9	Hz Protection	

8. Electric installation

Notice:

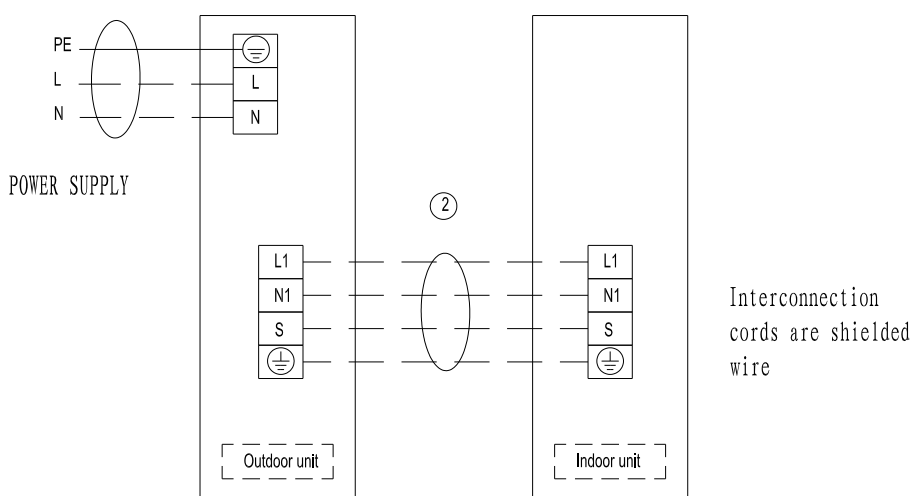
1. The machine unit shall be installed according to national wiring regulations, and also for the use of power supply, assembly of electric leak protection switch; the switch rated working current shall be no less than 1.5-3 times of complete machine rated working current (the complete machine rated working current refers to the attached *Instructions for Use and Operation*; please refer to the unit nameplate identification).
2. Firstly determine the voltage used by the machine model and related wires before wiring.
3. The connection method of unit and power supply, connection methods and electric works of each independent unit refer to the wiring diagram attached on the unit.
4. Please clearly comply with the wiring indication at terminal; do not mistakenly connect.
5. The signal line terminal stand of indoor and outdoor units must not connect with the power supply; otherwise it may lead to severe failure. The indoor unit is marked with the wiring codes and they shall be connected correspondingly.
6. For the connection of electric conductors, the screw shall be tightened according to drawing requirements to avoid coming-off.
7. The unit with auxiliary electric heating is normally installed at outside of indoor unit evaporator; the minimum clearance with the inflammable surface shall be 5mm.
8. Necessary spacial dimensions necessary for correct installation of unit; the minimum distance allowed for neighboring structure shall comply with installation dimensions in instruction.
9. The air conditioner must be reliably grounded.



Warning

1. It must be reliably grounded!
2. The screw fixing the conductor must be tightened and it must be replaced if any thread slipping!
3. The external conductor must be fixed with clamp; otherwise it may lead to personal injury or death and fire hazard!

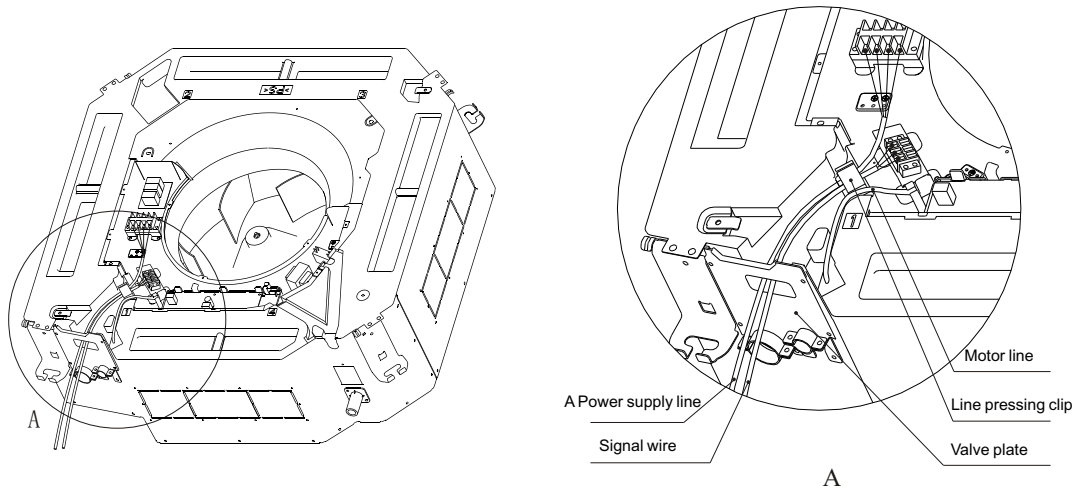
Schematic wiring diagram of power supply (according to user power supply conditions and different models, execute wiring according to the schematic diagram shown in the figure below)



8. Electric installation

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.



Note: Only the wiring methods of signal line and power supply line are shown in the figure; the wiring methods please refer to the wiring schematic diagram of power supply.

Power supply line specifications

Name Model	Outdoor power supply line (quantity, diameter) H05RN-F	Indoor /outdoor connection line(quantity, diameter)	Power supply method
Single phase 10.5kW model	$3 \times 4\text{mm}^2$	$4 \times 1\text{mm}^2$	Outdoor Power Supply
Single phase 14 kW model	$3 \times 6\text{mm}^2$	$4 \times 1\text{mm}^2$	Outdoor Power Supply
Single phase 16 kW model	$3 \times 6\text{mm}^2$	$4 \times 1\text{mm}^2$	Outdoor Power Supply

Annex: Unit Package List

I	Indoor unit paper box	
1	Indoor unit	1 set
2	Install the paper board	1 piece
3	Attachment package 1: 8 hexagon nuts; 8 washer; 1 drainage hose, 2 hose clamps; 5 ribbons, 4 hoisting rods. Note: The details refer to the actual article.	1 group
4	Attachment package 2: 1 Installation and Operation Instruction (including the product after-sales service card), 1 remote controller, 1 pair of 7# batteries (Cooling/heating machine, additional: 1 water plug, 1 drainage bent pipe)	1 group
5	Attachment package 3: a single joint thermal insulation pipe each for high and low pressure pipe; a gasket each for large, medium and small size(available for model of higher than 7.0)	1 group
II	Outdoor unit paper box	
1	Outdoor unit	1 set
III	Indoor unit panel paper box	
1	Indoor unit panel	1 pcs

Packing _____ Inspection _____

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