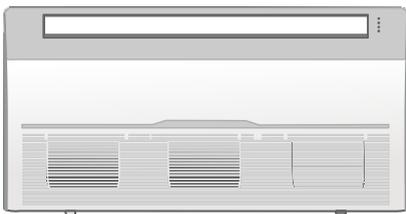
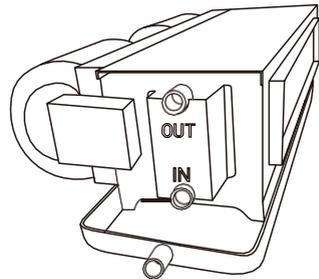
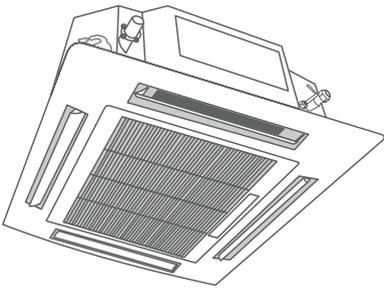




# Installation Operation Instruction Manual

## Fan Coil Unit

- ◆ Installation should only be carried out by qualified technicians.
- ◆ For your convenience, please read this manual carefully and carry out all instructions in full.
- ◆ Please keep this manual in good condition for your reference.





# Safety precautions

In order to prevent the risk of death, serious injury or damage to property please comply with the following important safety instructions.

The extent of possible harm is described by the following symbols.

	This symbol indicates danger of death or serious injury.
	This symbol indicates danger of death or damage to property.

The unit must be operated in accordance with the following symbols.

	This symbol indicates something which is strictly forbidden.
---	--

It is important that the unit is correctly commissioned after the installation is complete to ensure it is operating correctly.

After commissioning you should use this manual to explain to the user the correct method of operating the unit and its maintenance requirements.

## Protective measure

### Warning

- 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.  
(Only for the FCU with CE-MARKING)
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.  
(Except for the FCU with CE-MARKING)
- Do not operate the compressor unit the pipe work has been correctly made, leak tested and evacuated.
- While performing installation or maintenance ensure that no foreign objects can enter the either the unit or pipe work.
- Do not extend the power cable or use multiple power cables.

 **Warning**

- **Do not attempt to install , repair or move this unit yourself.**  
Incorrect installation can cause refrigerant or water leakage, electric shock, fire or other to health and safety or property.
- **Where the unit is installed must be solid enough to withstand the weight of the unit.**  
If it is not then there is the danger of the structure collapsing or the unit falling creating a danger of serious injury or death.
- **The installation should be mindful of potential damage by strong winds, earthquakes or other natural phenomena.**  
These should not be able to cause the unit to fall over and cause an accident.
- The electrical installation should be in accordance with local and national specifications and only be carried out by qualified personnel in accordance with installation instructions. THE FCU should have its own dedicated power supply.
- Ensure the power supply is of sufficient capacity for the unit or there is a risk of fire, electric shock or other failure.
- **The wiring should be made correctly using the specified cable and properly secured to avoid the risk of external forces causing the connections to come loose.**  
Failure to do this runs the risks of electric shock or fire.
- **Ensure the water pipe work is fully evacuated and leak tested and do not over charge with water.**  
Over charging with water can cause a leak to occur after installation.
- Do not carry out any electrical work unless the power supply has been disconnected.
- **When making pipe connections be sure to use a torque wrench and tighten the flare nuts to the correct torque.**  
Over and under tightened nuts can cause water to leak.
- The FCU should be mounted at least 2.5 meters above the ground to prevent people from interfering with it.
- **Ensure the electrical supply cable is properly protected and connections are made properly.**
- Bad connections will cause the cable to overheat and potentially cause electric shocks or fire.
- Before cleaning the FCU, cut off the power.

### Warning

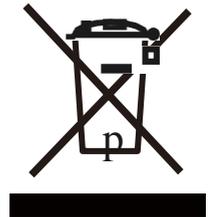
- An Earth leakage protector must be installed. The entire electrical installation should be checked by a qualified electrician to avoid the potential for electrical shocks or fire.
- **The unit must be adequately earthed.**  
Never connect the earth wire to gas or water pipes, lighting rods or telephone cables. Inadequate grounding of the earth cable may lead to the danger of serious injury or death by electric shock. Check the FCU regularly to ensure correct operation and that nothing has become loose.
- IF there are some abnormalities (such as the smell of scorching), please shut down and cut off power supply.

### Caution

- Ensure the drain pipe is installed in accordance with the installation instructions and adequately insulated to protect against condensation forming. Badly installed drain pipe work can cause expensive damage due to water leaks.
- Your FCU contains sophisticated electronic controls which may be subject to interference from radios, televisions, mobile telephones or other electronic goods. Do not operate these items near to the FCU or they may cause the unit to fail. We suggest maintaining a distance from these items to indoor unit at least 1 meter and to the outdoor unit of at least 2 meter.
- Depending upon the type and frequency of the electromagnetic signal you may need to leave a longer distance than this.

### WEEE Warning

Meaning of crossed out wheeled dustbin:  
Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being. When replacing old appliances with new ones, the retailer is legally obligated to take back your old appliance for disposals at least free of charge.



## Forbidden

THE FCU is designed for comfort cooling or heating. It is not designed for any other purpose and specifically should not be used for storing food, animals, plants, precision instruments, art or antiques, nor any other special item.



Don't use flammable sprays or open flame near the FCU.

Ensure the room properly ventilated.

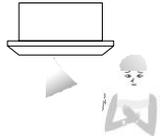
Do not clean the FCU with water.



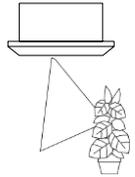
Before cleaning the FCU cut off the power.



Do not sit in in the cold air stream directly for long periods.



Do not direct the air from the unit directly onto animals or plants as this may be harmful to them.

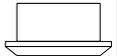


Don't put fingers or other objects into the air conditioner. Don't touch metal parts of the heat exchanger.

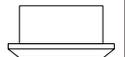


Do not mount this system in a vehicle, ship, aircraft or other place which will move while the unit is in operation.

THE FCu contains water and may also drip if the humidity of the room is too high. Do not, therefore, place any object under the unit which could be damaged in the event of water dripping on it.



Do not use naked flames where the air flow from the unit can reach directly. The air from the unit will interrupt the combustion process and either extinguish the flame or misdirect it. Either is a danger of fire or explosion.



# Installation

## Unpacking Inspection

1. Open the box and check the FCU in area with good ventilation (open the door and window) and without ignition source. (Note: Operators are required to wear anti-static devices)
2. The fire prevention equipment and anti-static precautions shall be prepared well before checking.

## Safety Principles for Installing FCU

1. Fire prevention device shall be prepared before installation.
2. Keep installing site ventilated. (open the door and window)
3. Anti-static precautions in necessary for installing air conditioner, e.g. wear pure cotton clothes and gloves.
4. Keep leak detector in working state during the installation
5. Keep electric appliance, power switch, plug, socket, high temperature heat source and high static away from the area underneath sidelines of the unit.
6. The FCU shall be installed in an accessible location to installation and maintenance, without obstacles that may block air inlets or outlets of indoor/outdoor units, and shall keep away from heat source, inflammable or explosive conditions.
7. When installing or repairing the FCU and the connecting line is not long enough, the entire connecting line shall be replaced with the connecting line of the original specification, extension is not allowed.
8. Use new connection pipe, unless re-flaring the pipe,

## Requirements For Installation Position

1. Avoid places of inflammable or explosive gas leakage or where there are strongly aggressive gases.
2. Avoid places subject to strong artificial electric/magnetic fields.
3. Avoid places subject to noise and resonance.
4. Avoid severe natural conditions (e.g. heavy lampblack, strong sandy wind, direct sunshine or high temperature heat sources).
5. Avoid places within the reach of children.
6. Select where it is easy to perform service and repair and where the ventilation good.

## Installation environment inspection

When using electric drill to make holes in the wall, check first whether there is pre-buried pipeline for Water, electricity and gas. It is suggested to use the reserved hole in the roof of the wall.

# Cassette Fan Coil Unit

## The dimension of unit

Cassette fan coil unit have three kinds of shapes, Fig A, Fig B and Fig C. The actual shape shall prevail.

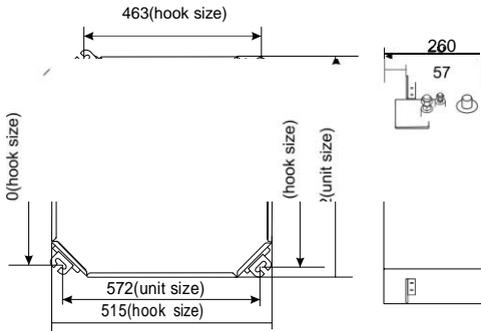


Fig A

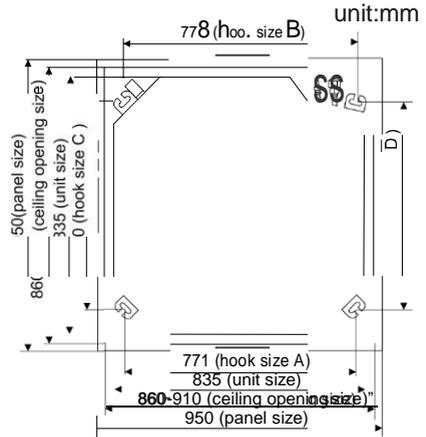


Fig B

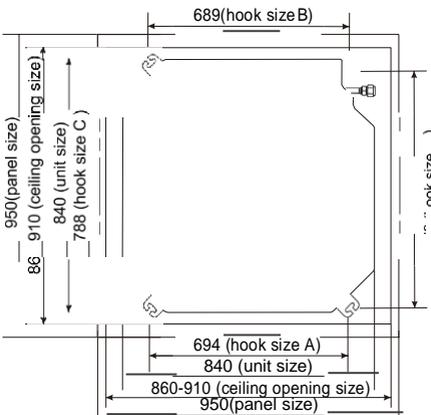
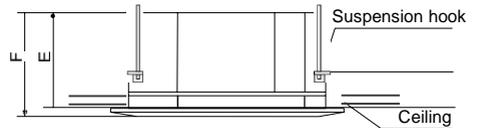
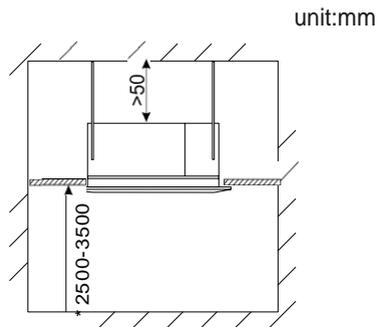
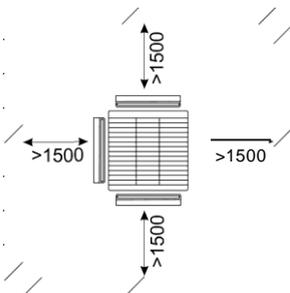


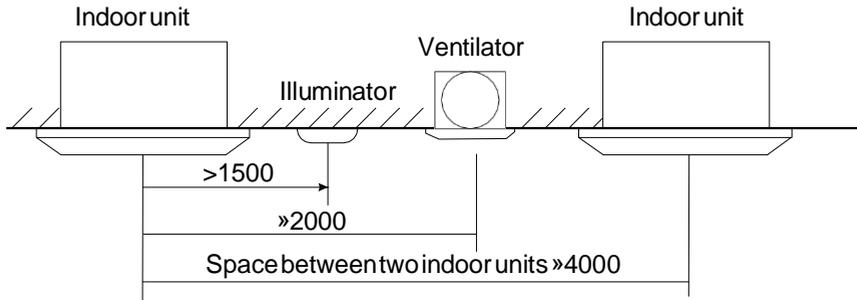
Fig C



Type	E	F
510/680/850	260	315
1020/1360	250	305
1700/2040/2380	290	345

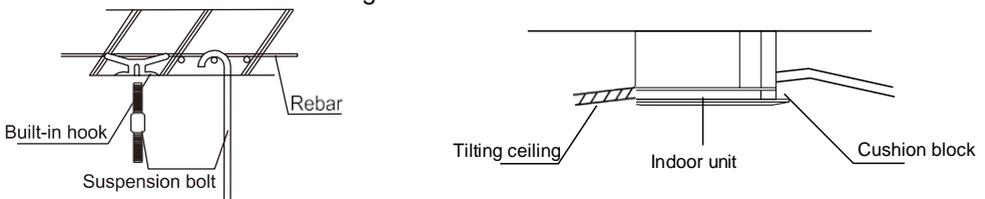
## Select installation site





### Suspension foundation of the indoor unit

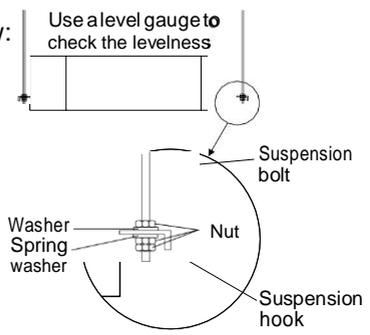
1. Select the suspension foundation  
The suspension foundation is a structure of either wooden frame or reinforced concrete. It must be firm and reliable to bear the weight of more than 200kg and capable of bearing vibration for long periods.
2. Fixing of suspension foundation  
Fix the suspension bolts as shown on the right either by a steel or by wooden bracket. If this unit is installed on a sloping ceiling, a cushion block should be installed between the ceiling and the air outlet panel, in order to ensure that the unit is installed on a level surface.  
This is as shown in the drawing as follow.



### Suspension of the FCU

The FCU should be suspended as shown in the sketch below:

1. Adjust the relative position of the suspension hook on the suspension bolt.
2. Tighten the bolt and ensure that four hooks are in close contact with the nuts and washers, and the unit is suspended firmly and reliably onto the hooks.
3. Ensure it is secure and does not shake or sway after the unit is installed.
4. Ensure that the center of the unit is in alignment with that of the opening in the ceiling.



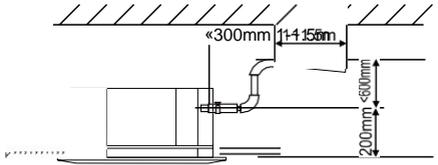
### Installation of drainage pipe

1. The drain pipe should be properly insulated to prevent the generation of condensation. It should be installed with a downward gradient(1/100-150).

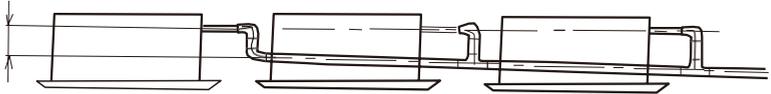
## Caution

**In order to ensure the drainage water come out successfully, the unit must be horizontal or declined to drain hose when finished installation.**

2. The unit has a drain pump which will lift up to 1200mm. However after the pump stops, the water still in the pipe will drain back and may overflow the drain tray causing a protective stop. For this reason please install the drain pipe as shown on the right.



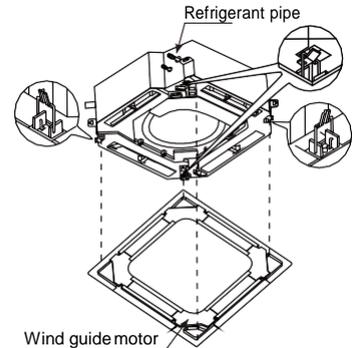
3. When draining multiple units into a common drain line, this common drain should be installed about 100mm below each unit drain outlet, as shown in the drawing on the right.



## Grille Installation

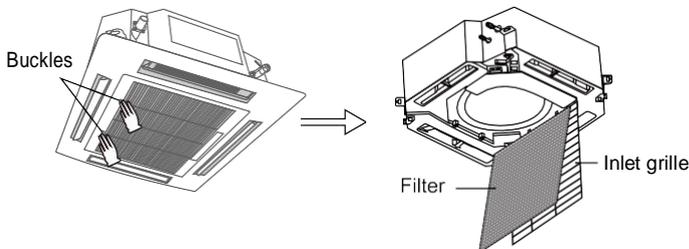
1. Please refer to the picture on the right.
2. The grille has four clips which attach to corresponding hangers on the unit and the grille should be positioned using these first.
3. The grille is then fixed into the position by four bolts which are accessed through the four corner panels on the grille.
4. The four connection bolts are located inside the inlet panel of the grille.

**Note:** During installation please ensure that the air vane motor in the grille corresponds to the position of the water pipe entry into the unit.



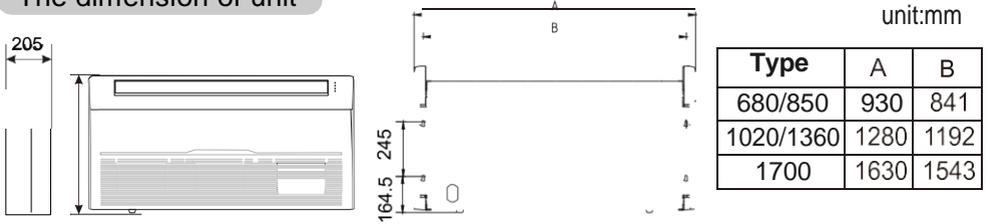
## Removing the air filter

1. Ensure the unit is switched off and the power is off.
2. Each unit has two retention clips on the grille. These must be pressed and then pushed to the open position.
3. The filter access panel may now be lowered allowing you to remove the filter from its four retaining clips.
4. Ensure the filter is fully clean and dry before replacing.
5. Ensure the retention clips on the grille are fastened position after replacing the filter.



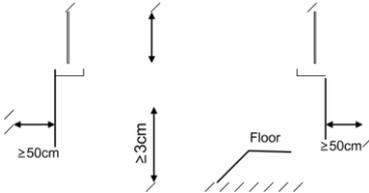
# Ceiling&Floor Fan Coil Unit

## The dimension of unit

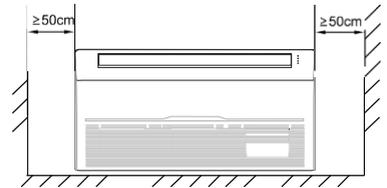


## Select installation site

### 1.Ceiling installation



### 2.Wall-Mounted installation



## Ceiling installation

### 1. Select the suspension foundation

The suspension foundation is a structure of either wooden frame or reinforced concrete. It must be firm and reliable to bear the weight of more than 200kg and capable of bearing vibration for long periods.

### 2. Fixing of suspension foundation

Fix the suspension foundation bolts either as shown on the right or by a steel or wooden bracket.

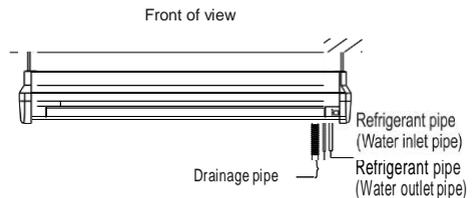
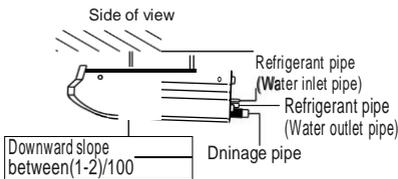
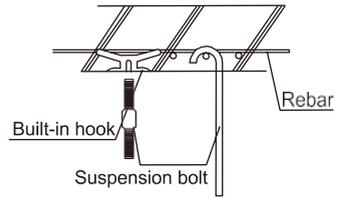
### 3. The suspension of FCU

the FCU should be suspension as shown below:

○ Adjust the relative positions of the suspension hooks .

@ Tighten the nuts and ensure that the hooks are tightly connected to the nuts and shims.

@ After the unit is installed ensure it is secure and does not shake or sway.



## Caution

- 1. In order to ensure the drainage water come out successfully, the unit must be declined to the bottom side of unit when finished installation.**
- 2. Please make sure the front side higher, otherwise it may cause drainage come out from the air outlet.**

### 4. Installation of drainage pipe

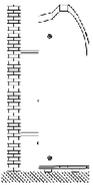
The drain pipe should be properly insulated to prevent the generation of condensation.

2 Pipes it should be installed with a downward gradient to allow the water to drain away.

0 The pipe should not rise at any point.



## Wall-Mounted installation

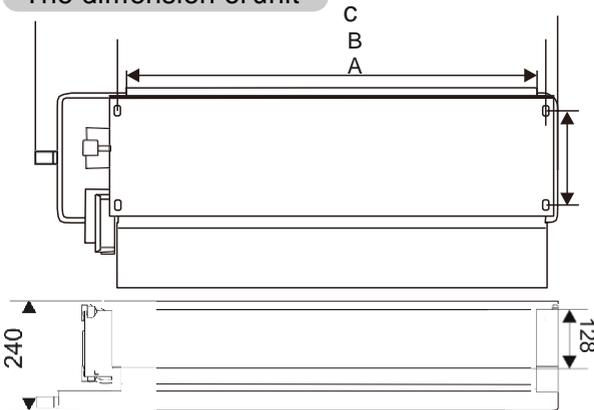


## Caution

**The unit must be horizontal or declined to drain hose when finished installation.**

## Horizontal concealed fan coil unit

### The dimension of unit



unit. mm

Type	A	B	C
340	487	523	694
510/680	687	723	894
850	832	868	1039
1020	922	958	1129
1360	1112	1148	1319
1700	1412	1448	1619
2040	1512	1548	1719
2380	1702	1738	1909

## Unit preparation

1. The unit shall be installed above the artificial ceiling; The suspension foundation must be firm and reliable, able to bear the wood frame and reinforced concrete structure of 4 times more weight of the unit body, and can withstand certain vibration for a long time.

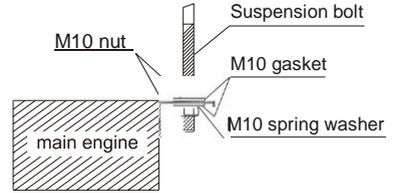
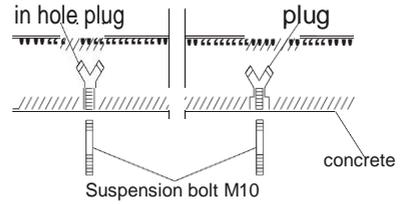
2. Drill four fixing screw holes on the ceiling according to the size of the unit. The openings may be reinforced to keep the ceiling flat and prevent the ceiling from vibration.

3. Four sets of nuts with diameter of 10mm and washers shall be clamped and fixed on the screw.

4. Adjust the position of nuts to ensure horizontal installation;

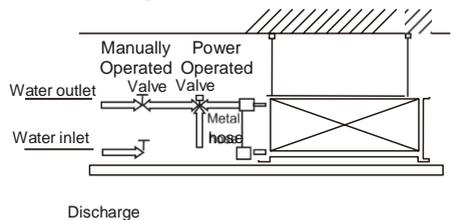
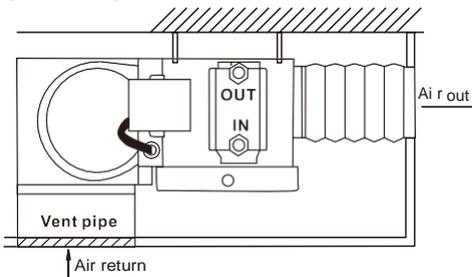
5. Please confirm whether the connection position of chilled water, condensate pipe and wire is correct.

6. The gap between the unit and the lower ceiling shall be  $>10\text{mm}$  to prevent resonance noise caused by contact.

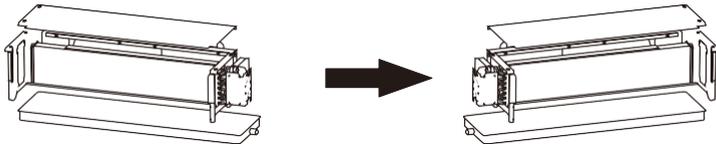


## Installation

1. It is not allowed to handling the unit by taking fan impeller or volute with hands during mounting.
2. The water supply and discharge of all units are lower supply and upper discharge, and it is recommended that water pipe connecting to the unit shall adopt metal hose; don't use too much force to avoid damage to pipe connections; the main water pipe needs the setting of support devices at intervals, which shall be sufficient to withstand the amount of pipeline dead weight plus the weight of water in it.
3. The inlet pipeline of unit shall be provided with a water filter to prevent dirt from plugging Coil; the outlet pipeline of unit shall be equipped with a valve to adjust water flow and cut off water at the time of maintenance.
4. The pipeline shall be kept warm to avoid the leakage of condensed water; The unit must be equipped with a solenoid valve at water inlet, and the valve body shall be kept warm, so as to avoid the phenomenon when the unit stops running and the system is still working, unit temperature would be lower than ambient temperature, which may occur condensation.
5. Unit outlet should be provided with a flexible pipe connection (canvas soft connection) with a length of 150 - 300mm to prevent the hard connection between air duct and unit from generating resonance and noise effect; the installation diagram of unit is as follows:



6. The judgment of pipe connection direction: While facing unit air outlet, if water pipe is on left side, it is left type, on the contrary, right type. If right unit is to be supplied, the pipe connection in reverse direction is required on site, please follow the steps below:

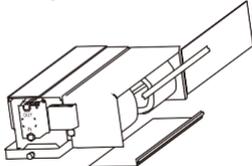


### Right Side Unit is Changed to be Left Side

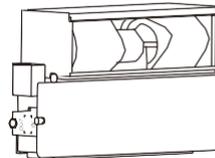
- ① Remove electrical control box assembly, and install it on the other side of volute fixing plate assembly (on the same side as the final pipe connection direction).
- ② Remove water-containing pan and turn 180 ° horizontally.
- ③ Remove top cover plate;
- ④ Remove heat exchanger and valve plate, turn 180 ° horizontally.
- ⑤ Assemble the unit according to reverse sequence of above disassembly.
- ⑥ Requirements for pipe connection :  
Water supply and return pipes are R3/4 internal thread, drain pipe is R3/4 external thread, please select appropriate fitting pipes. Threaded joints should adopt sealing measures, such as thread seal tape, as well as insulation materials for heat preservation.

**Note: Before the normal running of unit, the air release valve should be opened to exhaust the air inside the Coil, otherwise it will affect the heat exchange performance of the unit and generate abnormal noise.**

- The unit with an air return box is defaulted to be rear air return unit after delivery; if it is necessary to use lower return air, follow the steps below:



**Rear Air Return Unit**



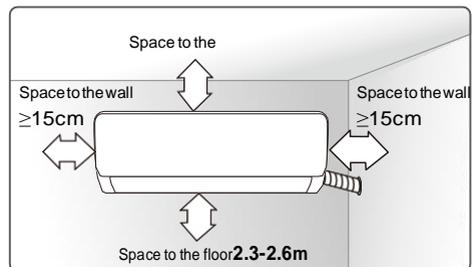
**Lower Air Return Unit**

- Remove upper chute and remove filtering screen;
- Remove closure plate (together with lower chute) and turn it 180 ° and fix it on the rear side of the unit;
- Snap filtering screen fixture into lower chute;
- Turn upper chute 180 ° and fix it under the unit.

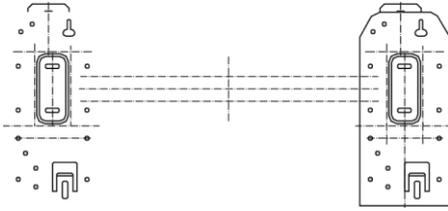
## Wall-mounted Fan Coil Unit

### Select installation site

1. There should be nothing that will block the air circulation;
2. Good air circulation inside the room should be ensured;
3. Easy to avoid noise;
4. Choose connection tube can be derived.  
The position of outdoor convenient
5. Don't install the product near the porch;
6. Allow maintenance and installation space;
7. To ensure the distance between the product the ceiling and other decorations as illustrated in the picture;
8. The distance between the product and the floor should be about **2.3-2.6** m.

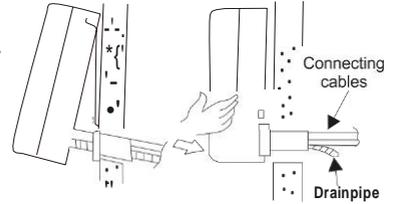
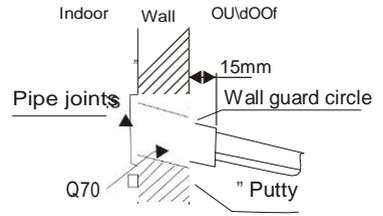


## Installation



**Note: this is just an illustration for reference.**

1. Fix the hanging board on the wall with 4 "+" type bolts. Ensure that the board is wall positioned both horizontally and vertically. The wall should be hard enough to avoid vibration.
2. Drill a hole on the bottom left or right of the board of 70mm in diameter. Note that the hole should lean outwards a bit.
3. Hang the indoor unit on the board; Ensure that the clasps on the indoor unit are in the right slots on the board,
4. There is a stand for the anti-bacterial net on the wind intake. Open the lid on the top of the stand and put the net in. Close the lid,
5. Pushing the machine towards the left down and right down side of the installation board until the hangers enter tightly the grooves (it produces "click" sound).



## Drainage checking

1. Take down the grid from the indoor unit. The grid should be taken down during maintenance as follows:
  - @ Take off the two bolts on the two sides of the front grid as illustrated in the picture;
  - @ Hold the bottom of the grid and pull it towards yourself; Repeat the above operations from (2) to (1) and you can put back the grid. Please ensure that the grid is installed properly after that. (There is slight difference in grid installation among different models)
2. **drainage checking**
  - @ Pour a cup of water into the plastic drainage slot;
  - @ Confirm that the water runs through the drainage hole of the unit.

## Connection method

### 1. Connection method of indoor unit

Open the cover the terminal box cover. Connect the cables according to the electric connection diagram.

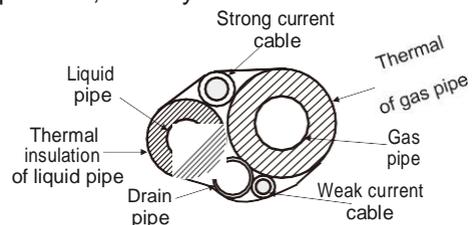
Note: line on the wiring terminal must be pressed, not any shake.

### 2. Please pay attentions to it while connecting power cable.

After cables are connected correctly, bind connecting tubing, connecting line and drain pipes with binding tapes

The cross section is as shown in the figure below after binding.

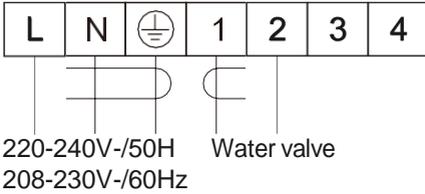
Caution: never squash the drain pipe during binding operation!



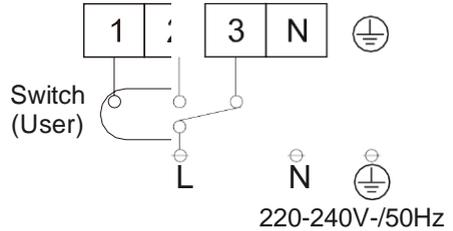
# Electrical connections

## Wiring diagram

### Cassette/Ceiling&Floor Fan Coil Unit



### \* Horizontal concealed fan coil unit



## Cable specifications

### Note:

1. The yellow cable and the green wire should be connected with the terminal signed with " "
2. Please check the number on the terminal board of outdoor and indoor unit ,while connecting the indoor unit cable to the outdoor unit. The terminals that have the same number should be connected by a cable.
3. Some electrical equipments may not work well, if there are incorrect cable connecting.
4. Power cable connecting as Y connecting, if power cable is destroyed, it is necessary to change cables by qualified technicians.

Type	Power supply	Power cable	water valve control wire
510	220-240V-/50Hz (208-230V-/60Hz)	3 x 1mm*	2 x 1mm <sup>2</sup>
680			
850			
1020			
1360			
1700			
2040			
2380			

### Note:

1. Power cable is the power supply cable from indoor air switch to the indoor unit .
2. Above-mentioned is the specifications of power supply, power cables and power connecting. Cables for units.
3. The cross-section area of power core cable is min. size, and when the power cable is long, Cross-section area of power core cable should be increased by one size, in order to avoid voltage drop.

## Fault code

Fault code	Fault	Fault code	Fault
E1	Failuer of indoor ambient temperature sensor	E4	Failuer of drainage system
E5	Failuer of communication	F4	Failuer of indoor fan

# System testing and leaking

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Fan coil air conditioning system before testing system the first to formulate hydraulic test plan, choose appropriate try Pressure pump and formulate the water pressure. In the test the process to test the situation seriously records. and monitor the system. The changes of pressure, hydraulic test scheme formulated to pay attention to the following:

1. add water to coil must open set before the water head put air valve, to offer the best air pipe line after close the valve.
2. Water pressure test should be done on the temperature conditions above 5°C , otherwise should take anti-freeze measures.
3. The hydrostatic test to block the boost when the boost slow even, to stop the pump pressure after stability by carefully. Check the connection is leaking. Shall not take water pressure to repair work.
4. in the system to add water must be layered adding water, layered exhaust, the test operation step by step.
5. Pipeline check the system without leakage, a final according to the design plan for the thermal insulation pipe to deal with.

Bend the plan to make the system pressure should be followed by low to high flow, the principle of excessive enters step by stop, and be at follow all of the above, or is likely to fan coil units and system pipeline caused structural damage.

# Use and maintenance

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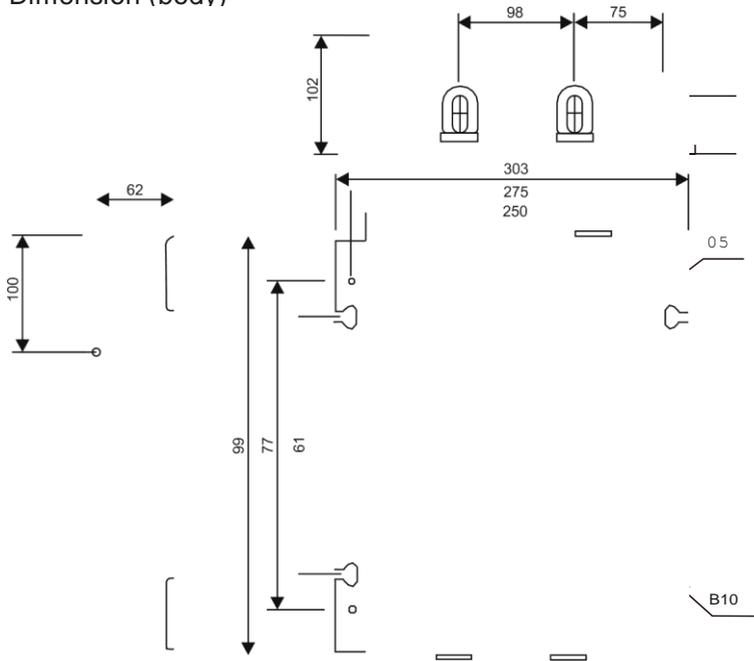
1. Installation ends, shall carefully check whether fan motor operation is normal after electrify. If any abnormal must immediately find reason after cut off power supply.
2. During the time chiller stop working, the system should be filled with water to reduce pipeline corrosion; but in winter should take ant freezing measures to avoid heat exchanger copper tube cracking.
3. Chiller using cold water temperature should be not less than 6 °C, hot water temperature no higher than 65 °C, requires clean water, preferably demineralized water.
4. To achieve the best heat transfer effect of the chiller, we advise you to open the exhaust valve on the system pipeline when your first time uses, in order to remove the air inside the pipe.
5. Air filter should be cleaned regularly according to the using environment clean level, so as not to affect the heat transfer performance and ventilation.
6. After two years operation, you should take a comprehensive maintenance for the whole system of the chiller. You can clean pipes and heat exchanger to remove dirt with chemical methods. Our factory can provide professional services.

# Control bOX(suitable for horizontal concealed fan coil unit)

## Installation of control box

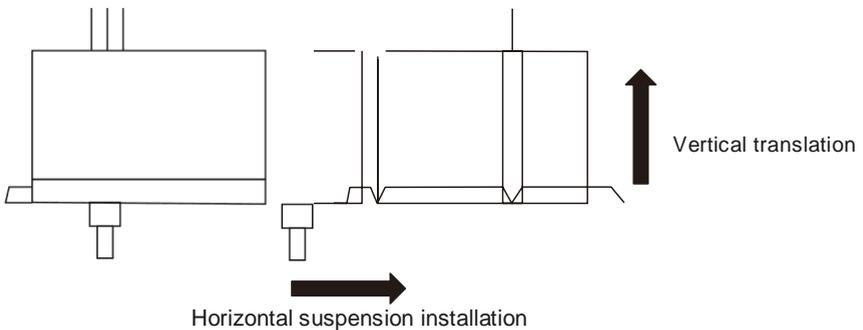
Dimension (body)

unit:mm



## Installation caution diagram

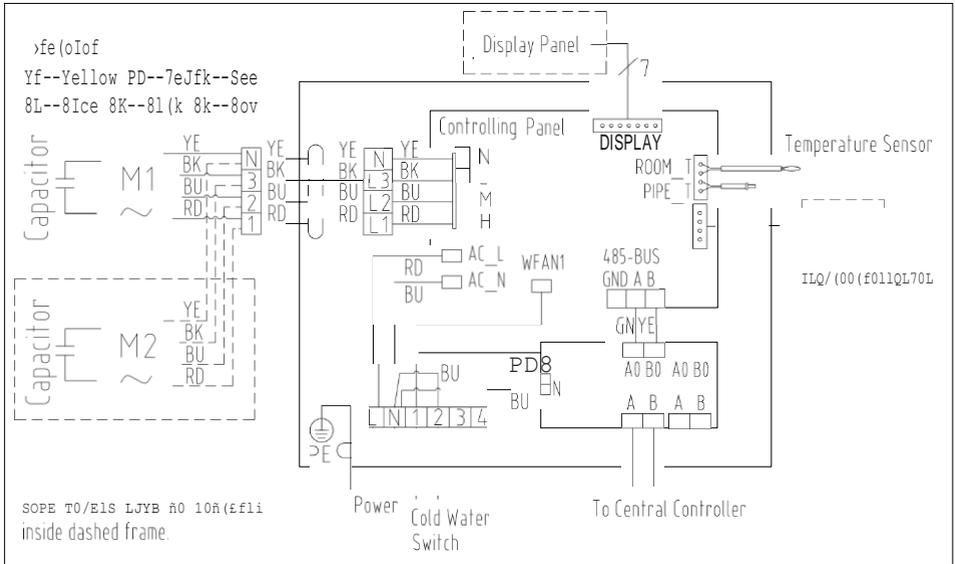
1. Make sure far away from flammable gas leaks.
2. Make sure far away from heavy smoke environment.
3. Avoid being with water and direct sunlight.
4. Limited operation temperature range 0-39°C.



The temperature sensor shall be tied on the cover of the electronic control box.

## Wiring diagram

Make sure that electrical connection is performed by professional personnel.



## DE-COMMISSIONING, DISMANTLING & DISPOSAL

This product contains refrigerant under pressure, rotating parts, and electrical connections which may be a danger & cause injury. All work must only be carried out by competent persons using suitable protective clothing and safety precautions.



Read the Manual



Risk of Electric Shock

**RoHS**



Unit is Remotely controlled  
& may start without warning



1. Isolate all sources of electrical supply to the unit including any control system supplies switched by the unit. Ensure that all points of electrical and gas isolation are secured in the OFF position. The supply cables and gas pipe work may then be disconnected and removed. For points of connection refer to unit installation instructions.
2. Remove all refrigerant from each system of the unit into a suitable container using a refrigerant reclaim or recovery unit. This refrigerant may then be reused, if appropriate, or returned to the manufacturer for disposal. Under NO circumstances should refrigerant be vented to atmosphere. Where appropriate, drain the refrigerant oil from each system into a suitable container and dispose of according to local laws and regulations governing disposal of oily wastes.
3. Packaged units can generally be removed in one piece after disconnection as above. Any fixing down bolts should be removed and then unit lifted from position using the points provided and equipment of adequate lifting capacity. Reference MUST be made to the unit installation instructions for unit weight and correct methods of lifting. Note that any residual or spilt refrigerant oil should be mopped up and disposed of as described above.
4. After removal from position the unit parts may be disposed of according to local laws and regulations.
5. Meaning of crossed Out wheeled dustbin: Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well being. When replacing old appliances with new ones, the retailer is legally obligated to take back your old appliance for disposals at least free of charge.