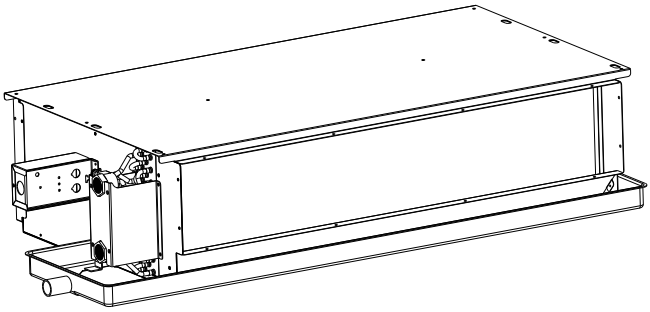
USE AND INSTALLATION MANUAL
FOR
CEILING CONCEAL DUCT
FAN COIL UNIT



- The installation should be completed by qualified technicians.
- For your convenient use, please read this manual and operate the fan coil by following the steps indicated in the manual.
- Please keep this manual in good condition for your reference in the future

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1. PRECAUTIONS

Be sure to be in conformity with the local, national and international laws and regulations.
Read "PRECAUTIONS" carefully before installation.
The following precautions include important safty items. Observe them and never forget.
Keep this manual in a handy place for future reference.
Before out from factory, Fan Coil Unit has passed Fan coil Overpressure Resistant Test, Statically and Dynamically BalancedAdjustment, Noise Test, Air(cool) Volume Test, Electric Property Test, Outline Quality Detection.

The safety precautions listed here are divided into two categories.
In either case, important safety information is listed which must be read carefully.

WARNING Failure to observe a warning may result in death.

CAUTION Failure to observe a caution may result in injury or damage to the equipment.

After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained.

WARNING

Be sure only trained and qualified service personnel to install, repair or service the equipment. Improper installation, repair, and maintenance may result in electric shocks, short-circuit, leaks, fire or other damage to the equipment.
Install according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrica shock and fire.
Use the attached accessories parts and specified parts for installation.
Otherwise, it might cause the set to fall, water leakage, electrical shock and fire.
The appliance shall not be installed in the laundry.
Before obtaining access to terminals, all supply circuits must be disconnected.
The appliance must be positioned so that the plug isaccessible.
The enclosure of the appliance shall be marked by word, or by symbols, with the direction of the fluid flow.
For electrical work, follow the local national wiring standard, regulation and this installation instructions. Anindependent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect in electrical work, it will cause electrical shock fire.
Use the specified cable and connect tightly and clamp the cable so that no external force will be acted on the terminal. If connection or fixing is not perfect, it will cause heat-up or fire at the connection.
Wiring routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will cause heat up at connection point of terminal, fire or electrical shock.
If the supply cord is damaged, it must be replaced by the manufacture or its service agent or a similarly qualified person in order to avoid a hazard.
An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
Do not modify the length of the power supply cord or use of extension cord, and do not share the single outlet with other electrical appliances.
Otherwise, it will cause fire or electrical shock.
After completing the installation work,check that the water do not leak.
The cool water in the unit can not lower than 3℃, hot water can not higher than 65℃. Water in the unit must clean, air quality must meet to the standard of PH=6.5~7.5.

CAUTION

Ground the Fan coil unit. Do not connect the ground wire to gas or water pipes,lightning rod or a telephone ground wire.Incomplete grounding may result in electric shocks.
Be sure to install an earth leakage breaker. Failure to install an earth leakage breaker may result in electric shocks.
You are not allow to connect the Fan coil unit with the power source until wiring and piping the fan coil unit done.
While following the instructions in this installation manual, install drain piping in order to ensure proper drainage and insulate piping in order to prevent condensation. Improper drain piping may result in water leakage and property damage.
Install the Fan coil units, power supply wiring and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise. Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.

DISPOSAL：Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.

Don't install the Fan coil unit in the following locations:
Other special conditions.
There is acid or alkaline liquid evaporating.
There are inflammable materials or gas.
There is strong electromagnetic wave existing.
In kitchen where it is full of oil gas.
In buses or cabinets.
The Volt vibrates violently (in the factories).
There is caustic gas (the sulfide, for example) existing in the air (near a hot spring).
■ There is salty air surrounding (near the coast).
■ There is petrolatum existing.

2. USER

2. 1 Machine description

The fan coil unit for the threatment of air in indoor environments, available in versions with casing,versions for building-in.For with casing style, standing leg and thermostat is optional.The unit can be installed by Horizontal or Vertical.

2. 1. 1 Standard conditions of use

The fan-coil unit is intended for the treatment of air(summer and winter climatisation) inside buildings used for domestic or similar purposes. The unit is not designed for installation in rooms used for laundry purposes.

CAUTION

DANGER!

The machines are designed for indoor installation for use in domestic or similar environments.

DANGER!

Do not introduce objects through the air intate or delivery grilles.

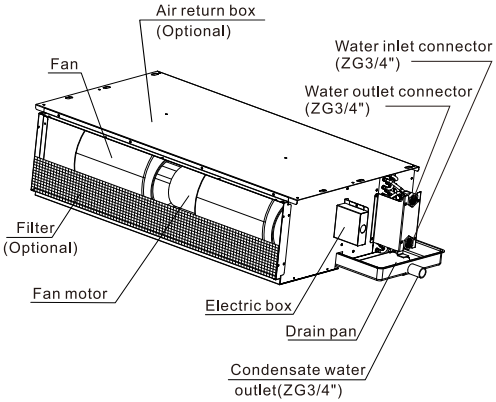
IMPORTANT!

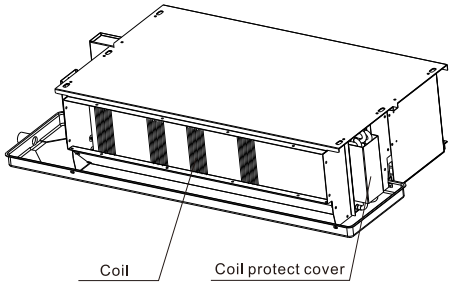
The unit will function correctly only if the instructions for use are scrupulously followed, if the specified clearances are complied with during installation and if the operating restrictions indicated in this manual are strictly adhered to.

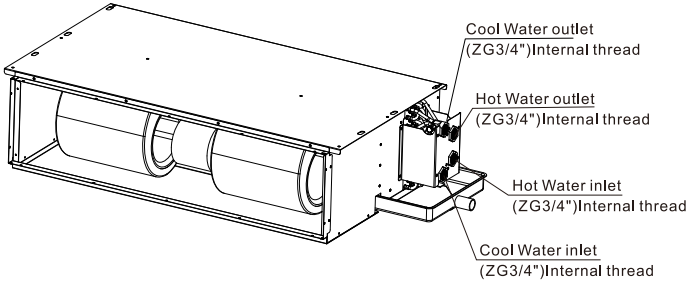
IMPORTANT!

If clearance distances are not maintained at installation, it could cause maintenance difficulties and reduction in performance.

2. 1. 2 Construction features

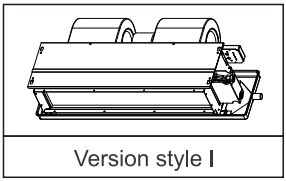




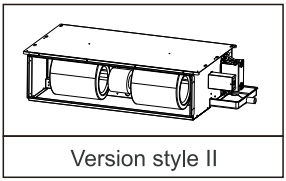


2. 1. 3 Version Description

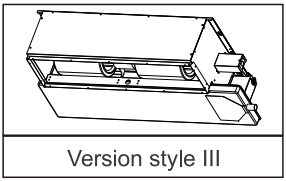
Version style	Air return box	Filter	Air return direction
Version style I			
Version style II	■	Optional	Side
Version style III	■	Optional	Bottom



Version style I



Version style II



Version style III

2. 1. 4 Description of fan coil unit

Finned coil type heat-exchanger consisting of copper tubes and aluminium fins, with connections on the left reversible to fit on the right.
Three-speed centrifugal blower with aluminium blades statically and dynamically babanced.
Directly-coupled motor equipped with internal thermal protection and condenser permanently in circuit.
Casing in galvanised steel sheet.
Condensation collection tray with natural drainage, completewith steel sheet and with anti-condensation insulation.
Mesh filter in regenerable polypropylence(optional).

2. 1. 5 Restrictions on use

CAUTION

The machine has been designed and built solely and exclusively to function as a ceiling(floor)-mounted termina,supplied through ducting or panelling;any other use is expressly prohibited.
Installation of the machine in an explosive envionment is also forbidden.

2. 1. 6 Operation range

Use the system in the following temperature for safe and effective operation.

Mode \ Temperature	Room temperature	water inlet temperature
Cooling	17C°～32C°	3C°～20C°
Heating	5C°～30C°	30C°～70C°

CAUTION

If fan coil unit is used outside the above conditions, it may cause the unit to function abnormally.
The phenomenon is normal that the surface of fan coil unit may condense water when the relative larger humidity in room, please close the door and window.
Optimum performance will be achieved within these operating temperature range.
Water system operating pressuer: Max: 1.6MPa, Min:0.15MPa.

2.1.7Information about further risks and unavoidable hazards

CAUTION

Pay the most attention to the signs and symbols located on the appliance.
If any risks remain is spite of the provisions adopted,or if there are any potential or hidden risks, there are indicated by adhesive labels attached to the machine.
Only use original spare parts and accessories.The company shall not be held liable for damage caused by tampering or work carried out by unauthorised personnel or malfunctions caused by the use of non-original spare parts or accessories.
In the case of awater supply with aparticularly high content of hard water salts, it is advisable to fit a wayer softener.

2.2 Operation

2. 2. 1 Prolonged shutdown

CAUTION

If the unit is not used during the winter period, the water contained in the system may freeze which might cause the coil broken and water leaking.
If the machine is going to be out of use for long periods of time, it is necessary to disconnect the unit from the mains by opening the main switch (which is required to be fitted by the installer).
If the unit is not used during the winter period ,the water contained in undertaken in good time.Alternatively,a suitable quantity of anti-freeze should be mixed with the water.

2. 2. 2 Startup after prolonged shutdown

Before starting up the unit again:
- Clean or change the airfilters:
- Clean the heat-exchanger.
- Clean the condensation collector tray drain tube or make sure it is clear.
- Bleed any air from the water system.
- It is advisable to run the unit at maximum speed for several hours.

2.2.3 The following operations can be carried out using the optional control panels:

- Start / Stop the unit.
- Select between the three blower speeds.
- Thermostat adjustment and maintenance of the desired ambient temperature.
- Switching between operationg modes:cooling and heating.
- Constant ventilation control.
- Specific instructions for use are supplied with the controllers themselves.

2. 3 Thermostat

- Fan coil unit needs a thermostat to control fan speed, temperature setting and other functions.
- Temperature controllers can be selected by users or contractors.
- Please check the manual of the thermostat for introduction.

2.4 Cleaning the unit

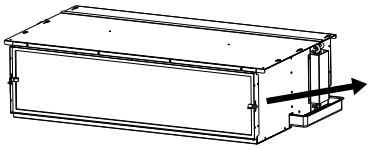
WARNING

Always switch off the electric power before beginning cleaning or maintenance operations. Do not spill water on the unit.

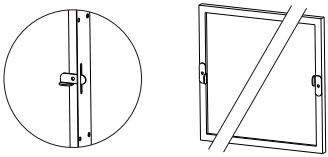
2. 4. 1 Cleaning the air filter (Optional filter)

To ensure correct air intake, the air filter must be cleaned at least once a month, or more frequently if the unit is being used in very dusty environments. The filter must always be removed from the unit for cleaning.
To remove the filter as following indicated.

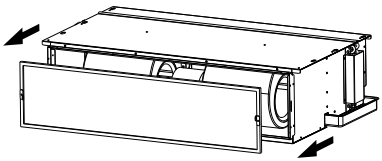
2.4.1.1 Fixed state of unit filter



2.4.1.2 Rotate the fixed button on the filter net 90 degrees



2.4.1.3 The filter is taken out in the direction of the arrow shown below.



The air filter must be cleaned by blowing it out with compressed air or washing it in water. Before refitting the filter, make sure it is clean and completely dry. If the filter is damaged, it must be replaced with a genuine corresponding filter.

2.5 Warning and suggestions

Always avoid obstructing the flow of air, or using the unit as a surface to lean on, The use of water or aerosol sprays in proximity to the unit can cause electric shocks and malfunctions.

3.INSTALLATION AND MAINTENANCE

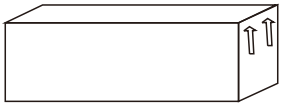
3.1 Transport and handling

3. 1. 1 Packaging and components

WARNING

DO NOT OPEN OR TAMPER WITH THE PACKAGING BEFORE INSTALLATION.
The units should only be moved and lifted by prefessional personnel trained in these operations.
Check on arrival that the unit has not been damaged
during transport and that it is complete with all its parts.

To remove the packaging , follow these instructions:
Check for visible damage
Open the packaging.
Check that the packet containing the manual for use and maintenance is inside.
Dispose of the packaging material in accordance with current legislation, at the appropriate waste reception or recycling site.



Pls keep the carton stacked
abide by the stacking direction

WARNING

Do not leave the packagig within reach of children.

PRESERVE THE ENVIRONMENT!
Dispose of the packaging materials in compliance
with the national or local legislation in force in yourcountry.

3.1.2 Handling

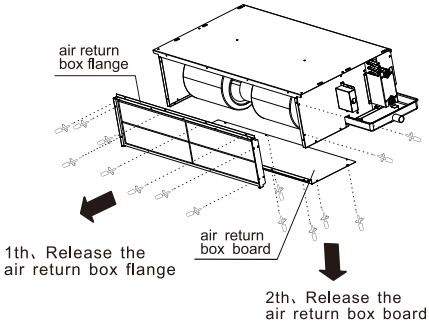
Movement of the unit should be performent with care, in order to avoid damage to the external structure and to the internal mechanical and electrical components.
Also make sure that there are no obstacles or people along the route, to avoid the danger of collisions or crushing and to prevent the lifting or handling device from turning over.
All the operations listed below must be carried out in
accordanAce with current health and safety regulations, both as regards the equipment used and as regards the procedure followed. Before commencing moving operations, check that the lifting apparatus has the required capacity for the unit in question.
The units may be moved or lifted either by hand or by means of a suitable trolley. If the weight of the unit is more than 30kg, moving units need to be moved at the same time, it is advisable to put the machines in a container and lift them by means of a crane or something similar.

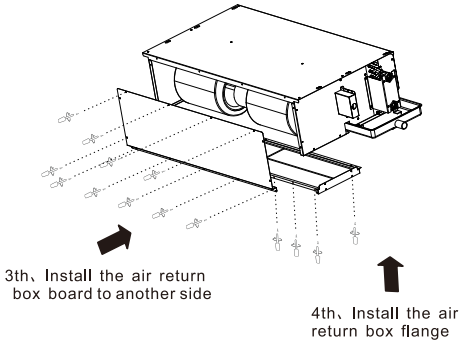
3.1.3 Storage conditions

Units in their packaging may be stacked not more than four layer, and must be kept under cover.

3.2 Change the air flowing inlet direction(Only aim at Version style II Version style III And)

The air return box flange and air return box board can be released , so that the air return inlet can be change between side return and bottom return;





3.3 Installation space limited

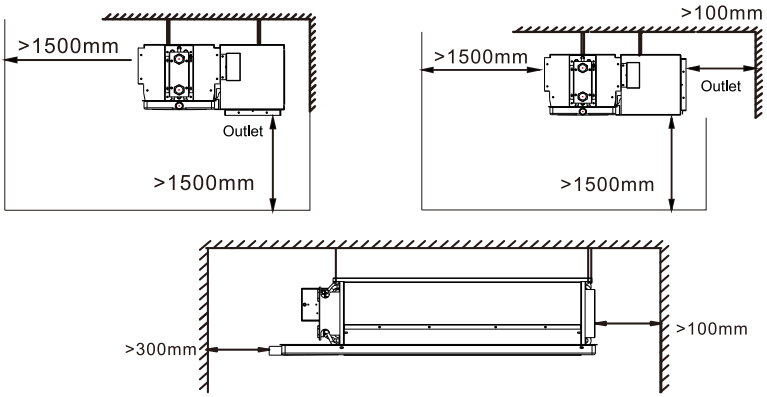
WARNING

IMPORTANT

Incorrect positioning or installation of the unit may amplify noise levels and vibrations generated during operation.

- The units must be mounted horizontally,provided that the correct clearances for positioning are maintained.

3.3.1 Horizontal installation



3.4 Installation

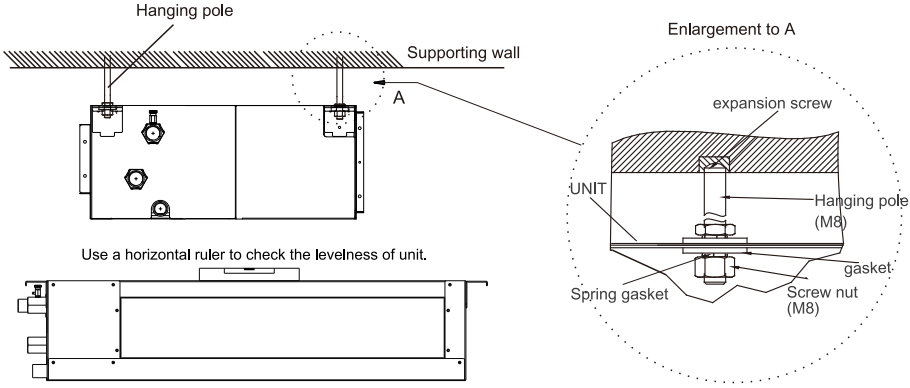
WARNING

Installation must only be carried out by qualified technicians, trained to work with fan coil unit system. Incorrect installation could lead to unit malfunctioning and a consequent deterioration in performance. The unit must be installed according to national or local rules in force at the time of installation.

3.4.1 Fixed the unit to celing

Select the suspension foundation.

- The suspension foundation must be firm and reliable, and can support the wooden frame and reinforced concrete structure that weigh more than 200kg.
- It is necessary to select the structure able to resist against certain vibration and keep firmness and supporting capacity for a long time as the suspension foundation.
- Before construction, please consult the construction contractor and indoor decoration contractor and obtain their recognition.
- Mark out the fixing points on the ceiling, either by marking through the drillings in the unit itself, or by referring to the measurements given in "DIMENSIONS". Use expansion screw as the hanging pole, hang the unit to it and then tighten the nut, make sure the unit will not loose.



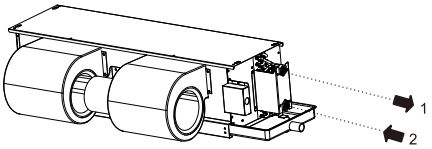
3. 4. 2 HYDRAULIC CONNECTIONS

3.4.2.1 Connect the water in/out pipe

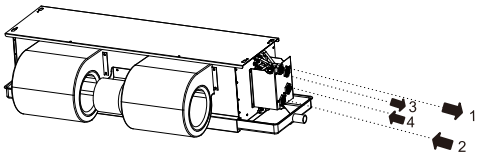
CAUTION

It is most important that the hydraulic connections are made with great care by specialised fitters.
Aviolence installation will cause the coil leaking.
Connect the unit to the water system by means of the fittings which are marked Flow and Return.
All the water coils, including the optional extras, are equipped with air bleed-valves next to the upper union, and (optional) with water drain valves need to the lower union.
All the valves can be opened and closed by manual.

The water coils can be partially drained through the drain valves.
To drain them completely, they should be blown out with an air-jet.



1 : water outlet (ZG3/4") internal thread
2 : water inlet (ZG3/4") internal thread



1:Cool Water outlet (ZG3/4") Internal thread
2:Cool Water inlet (ZG3/4") Internal thread
3:Hot Water outlet (ZG3/4") Internal thread
4:Hot Water inlet (ZG3/4") Internal thread

CAUTION

The water coils can be partially drained through the drain valves.
To drain them completely, they should be blown out with an air-jet.

3.4.2.2 Insulation and checkingWhen installation is complete, it is necessary to :

When the installation is complete, see the following program:

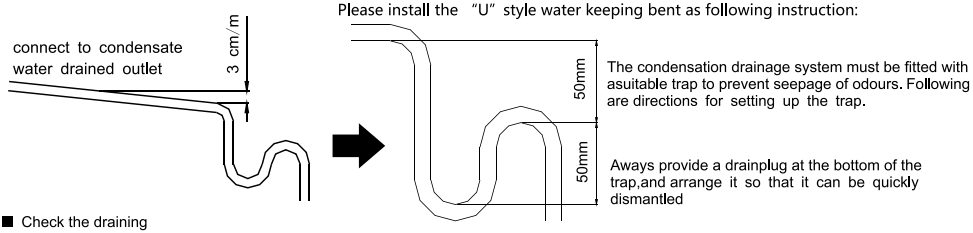
- Bleed the air contained in the circuit.
- Lag the connection pipes and any valves titted with anti-condensation material 10 mm thick and install the auxiliary drain pan.
- Installation of auxiliary water supply pan (optional accessories) The auxiliary water supply pan is installed vertically by default.

3. 4. 3 Condensate drainage system connections

CAUTION

Incorrect installation of drainage works may lead to leakage.
The condensation drainage system must be set up with an adequate fall, to ensure that the water escapes properly.
Following are directions for setting up a proper condensation

Please install the "U" style water keeping bent as following instruction:



The condensation drainage system must be fitted with asuitable trap to prevent seepage of odours. Following are directions for setting up the trap.

Aways provide a drainplug at the bottom of the trap,and arrange it so that it can be quickly dismantled

- Check the draining

Pour water into the drain tray and check that the liquid drains properly, following it right through to the exit of the draintube. If it does not, check the fall and look for possible blockages.

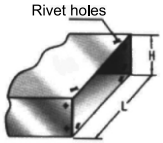
3. 4. 4Duct connection

CAUTION

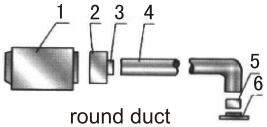
IMPORTANT
Pls use non-combustible material to act as the duct.

3.4.4.1 Duct of air sending

Use round or rectangular duct to do connecting.The Max. length of duct can be connected is decided tothe static pressure of fan coil unit and also the pressure dropping of duct, pls do not install too long duct;



rectangular duct

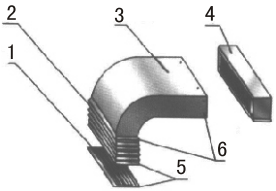


round duct

item	name	item	name
1	FCU	4	round duct
2	plenum chamber	5	air outlet connector
3	transition duct	6	air outlet grill

3.4.4.2 Duct of air return

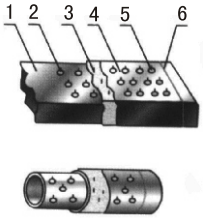
- Use insulated duct to connect the FCU and air return grill.
- Use soft canvas contacts to act as the transition duct.



item	name	item	name
1	air return grill	4	Fan coil unit
2	canvas lose	5	rivet holes
3	air return duct	6	rivet holes

3.4.4.3 Insulation of duct

All the duct must have enough insulation to prevent from condensate water, use the plastic nail stuck on the duct surface, then paste the insulation with aluminum foil cover,and use plastic nail cover to fix, then use aluminum foil sticker to seal the connector;



item	name	item	name
1	galvanized sheet	4	aluminum foil cover
2	plastic nail	5	plastic nail cover
3	insulation	6	aluminum foil sticker

3. 4.5 Antifrost protection

CAUTION

When the unit is out of service, remember to arrange in good time for the entire water content in the circuit to be drained down.
Mixing the water with glycol modifies the performance of the unit.
Pay attention to the safety instructions regarding ethylene glycol which are printed on the container.

Draining the water circuit needs to be under taken in good time. However, if the operation of draining the systemis felt to be too laborious, a suitable quantity of antifreeze may be mixed with the water instead.

3. 4. 6 ELECTRICAL CONNECTIONS

CAUTION

IMPORTANT!

POWER	PHASE	1-phase
	FREQUENCY AND VOLT	220-240V~50/60Hz
CIRCUIT BREAKER/FUSE(A)		10/10

Electrical connection of the unit must be carried out by qualified personnel in compliance with the regulations in effect in the country where the unit is installed. The company shall not be held liable for damage to persons or property caused by incorrect electrical connection.

An all-pole disconnection device which has at least 3mm separation distance in all pole and a residual current device(RCD) with the rating of above 10mA shall be incorporated in the fixed wiring according to the national rule.

The appliance shall be installed in accordance with national wiring regulations.

3. 4. 7 WIRING

Correspond to 220~240V single phase at 50Hz; that the available power is suffcient for the running the equipment; and that the supply cables are of adequate section for the maximum current which will be required.
Make sure that the electrical supply systemeomplies with current national &regulations.
Electrical connections mustbe made in accordance with the wiring @supplied with the machine. For connection to the electrical supply network, use double-insulated flexible cable, twin pole + earth, section 1. 5mm2 , type H05RN-F.
Pass the supply cable through the slot beside the air filter.
Use the cable clamp provided on the inner side of the panel to secure the supply cable and the connecting cables, and strip only the length of cable needed to go into the connector block.
In the event that the unit is mounted on a metal surface, earth connections must be made in compliance with local regulations.
If the optional extra electric heating element is fitted, a separate power supply must be provided. Use doubleinsulated flexible cable, twin pole + earth, section 2. 5mm2, type H05RN-F.

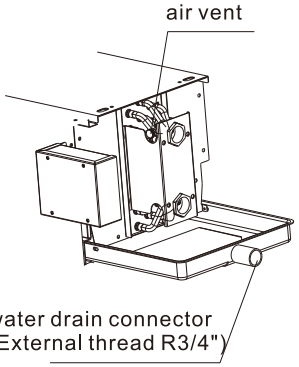
3. 4. 8 Startup instructions

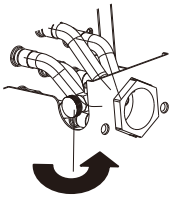
CAUTION

Machine commissioning or the first start up must be carried out by skilled personnel qualified to work on this type of product.
Before starting up, makesure that the installation and electrical connections have been carried out in accordance with the instructions in this manual. Also make sure that there are no unauthorised persons in the vicinity of the machine during these operations.

3.4.8.1 Exclude the air inside the fan coil

Start up the water pump to circulate the pipeline water ;
Loose the air vent screw, exclude air inside the coil until there have water flow out from the air vent valve.(If there have air inside coil, we can sound the "ZiZi" sound from the air vent.
After the air had been exclude, then tighten the air vent valve again.





Counterclockwise rotation to open the air vent valve;
Clockwise rotation to close the air vent valve;

3.4.8.2 Checking before the starting up

- the unit is positioned correctly;
- the unit do not inclined;
- the unit will not leaking under a test by 1.0MPa pressure;
- the flow and return pipes of the water system are correctly connected;
- the pipes are clean and free of air;
- the unit falls correctly towards the drainage outlet and the trap;
- the heat-exchangers are clean;
- the electrical connections are correct;
- the screws holding the cables are well tightened;
- the supply voltage is as required;
- the power consumption of the blower is correct and does
- not exceed the maximum permitted.

3.4.8.3 Starting up the fan coil unit

Power on the unit, use controller to start up the machine;
To check the following items:
The air flowing under high/medium/low speed is comfortable and different in each speed;
There have no abnormal noise during the running;
The condensate water can be drained smoothly and have nocondensate water fall down when the fan coil unit is running under cooling mode;

3.5 Maintenance

WARNING

Maintenance work must only be carried out by qualified technicians authorised to work on air-conditioning and refrigeration systems.
Use suitable work gloves.
Do not introduce pointed objects through the air intake grilles.
Disconnect the power supply before cleaning and maintenance.
Always disconnect the unit from the mains power supply at the main isolator switch before carrying out maintenance work or checks. Make sure that no one accidentally supplies power to the machine, lock the main switch in the Off position.

3.5.1 SCHEDULED MAINTENANCE

■ Once a month

Check the state of cleanliness of the air filters.
The air filters are made of fibre and are washable in water. The state of cleanliness of the filters must be checked regularly at the start of the operating season and on a monthly basis.

■ Every six months

Check the state of cleanliness of the heat-exchanger and the condensation drain-tube. With the unit switched off, remove the casing of the machine and check the state of the heat-exchanger and the condensation drain-tube. If necessary:
Remove any foreign bodies from the finned surface which may obstruct air flow; Clean off the dust with a jet of compressed air; wash and brush, gently, with water; Dry with a jet of compressed air;
Check that there are no obstructions in the condensation drain tube which could prevent the normal flow of water.
Check for the presence of air in the water system.
Start the system and run for a few minutes; stop the system;

Exclude the air inside the system abide by the item 3. 3. 7. 1

■ At the end of the season drain the water system (for all coils).

To avoid the risk of rupture due to freezing, it is advisable to drain the water from the system at the end of every season.

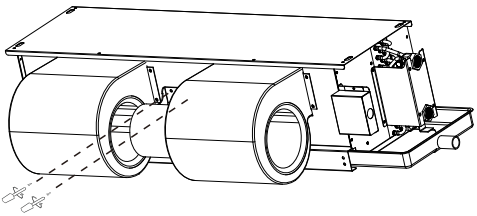
■ Electric system

Check the electric wire conenction with terminal , please light it if the connection is loose.

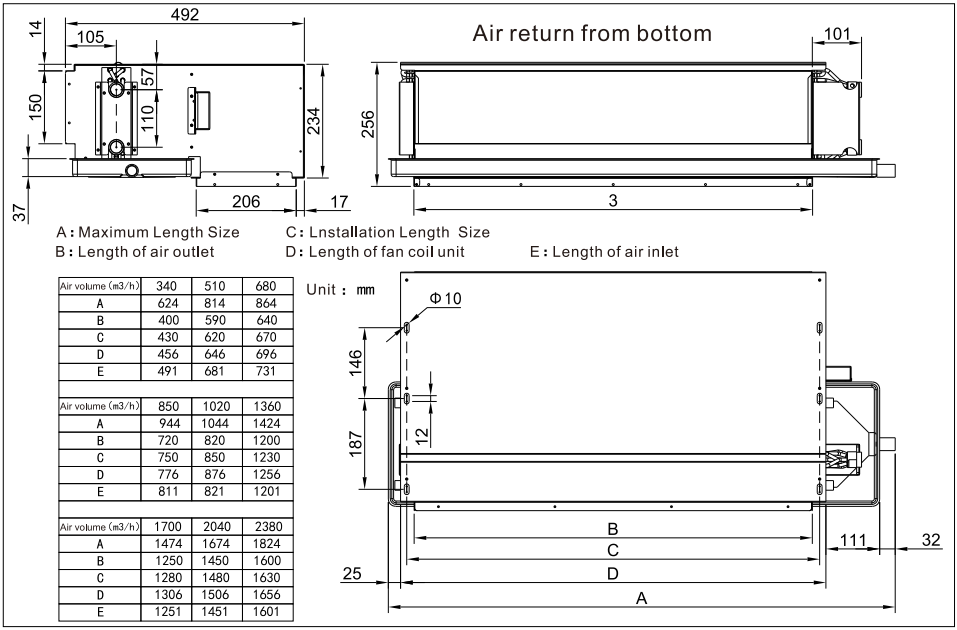
3.5.2 MAINTENANCE

Replacement of fan assembly
If the motor or fan is damaged or malfunction, the whole fan assembly needs to be removed when it is replaced.:

- ■ Remove the connection between motor and terminal,
- ■ Remove the screw for fixing the fan assembly,
- ■ Remove the wind wheel fixed on the motor shaft,
- ■ Remove the motor fixed screw on the fan plate,
- ■ Remove motor replacement,
- ■ Reverse Step Loading Back to Motor and Fan Components.



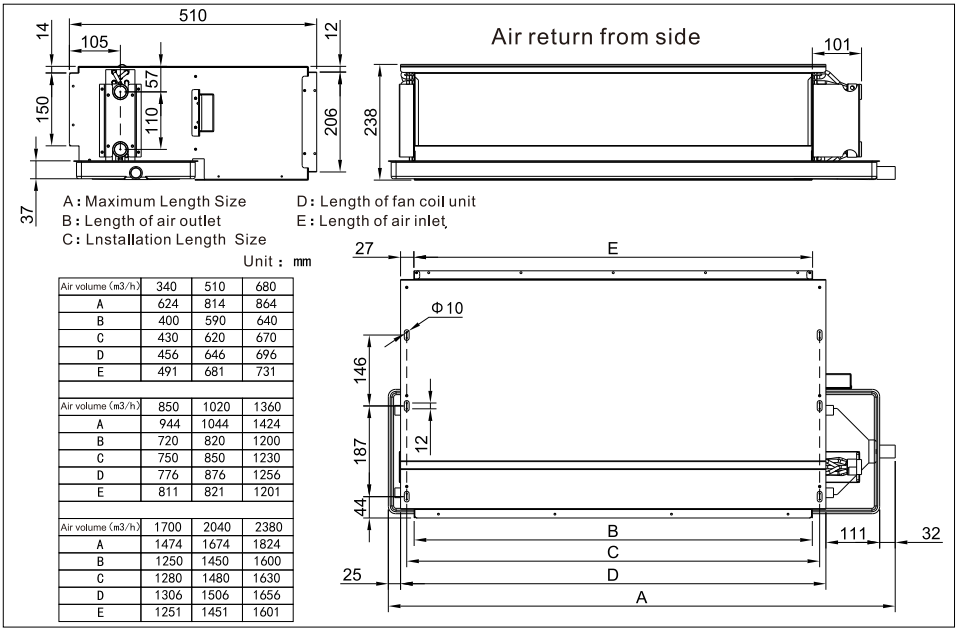
4. DIMENSION



Air volume (m3/h)	340	510	680
A	624	814	864
B	400	590	640
C	430	620	670
D	456	646	696
E	491	681	731

Air volume (m3/h)	850	1020	1360
A	944	1044	1424
B	720	820	1200
C	750	850	1230
D	776	876	1256
E	811	821	1201

Air volume (m3/h)	1700	2040	2380
A	1474	1674	1824
B	1250	1450	1600
C	1280	1480	1630
D	1306	1506	1656
E	1251	1451	1601

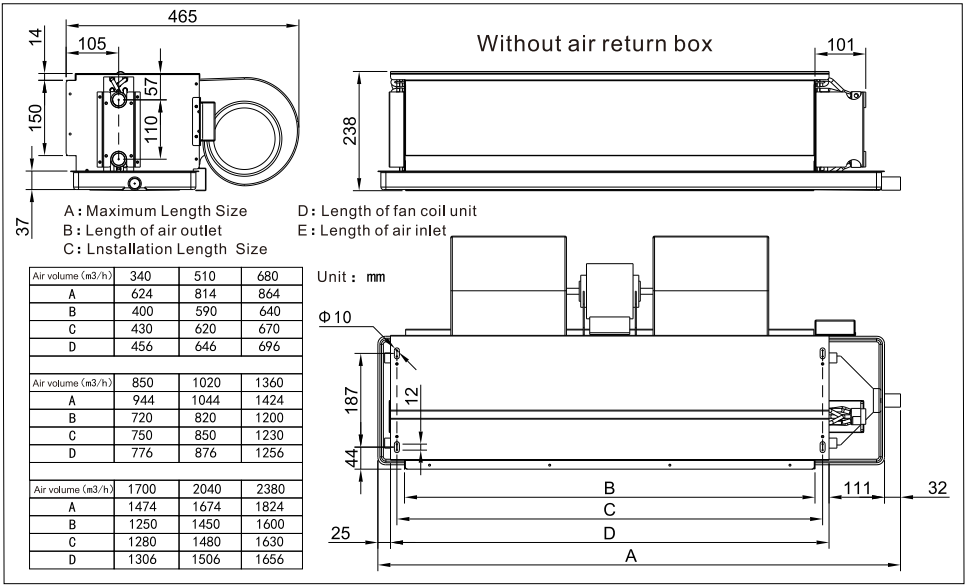


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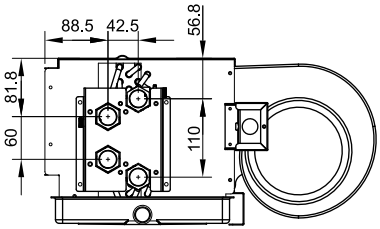


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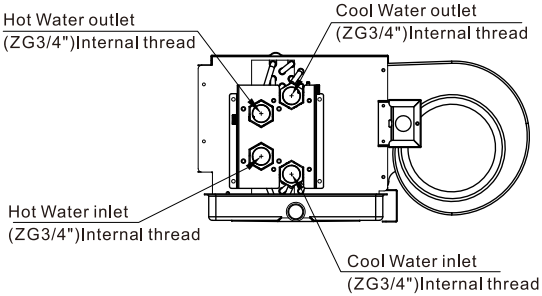
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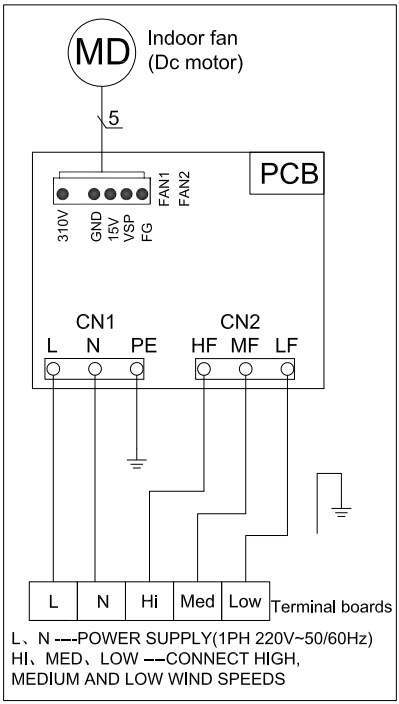
Relative position diagram of all four-pipe system



Water inlet/outlet instructions for all four-pipe system models

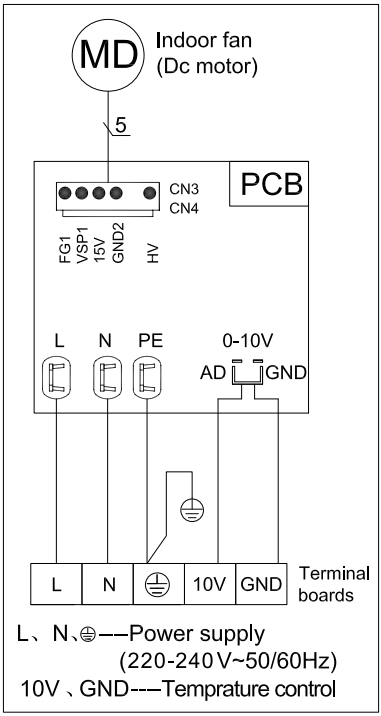


Three-speed Control Circuit Diagram of DC Motor



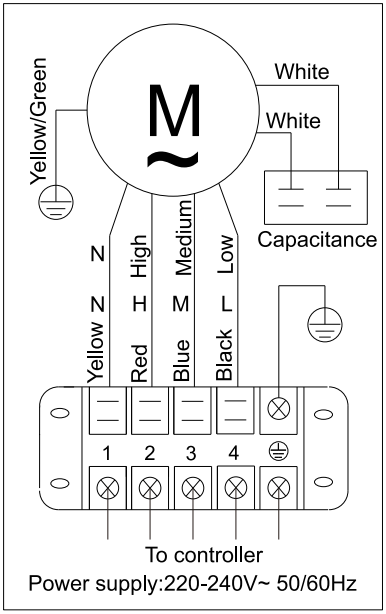
L、N ----POWER SUPPLY(1PH 220V~50/60Hz)
HI、MED、LOW ---CONNECT HIGH,
MEDIUM AND LOW WIND SPEEDS

DC Motor 0-10V Control Circuit Diagram



L、N、⏚---Power supply
(220-240V~50/60Hz)
10V、GND----Temprature control

AC Electric Circuit Diagram



Power supply:220-240V~ 50/60Hz