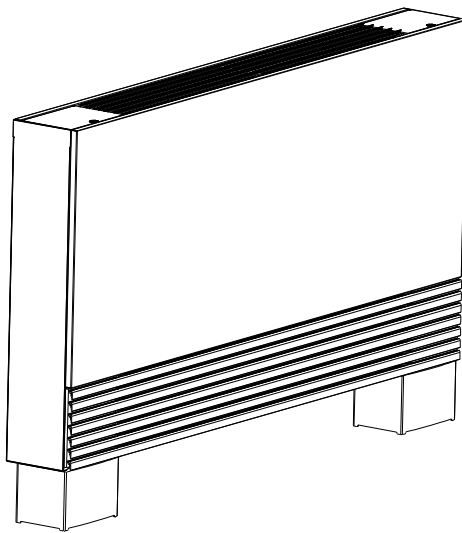


USE AND INSTALLATION MANUAL FOR ULTRA THIN VERTICAL FAN COIL UNIT



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 safety 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 Balanced Adjustment, 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.



Failure to observe a warning may result in death.



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.



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, electrical 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 is accessible.

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. An independent 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°C, hot water can not higher than 85°C.

Water in the unit must clean, air quality must meet to the standard of PH=6.5~7.5.



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 connect -ing 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.



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.



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:

- There is petrolatum existing.
- There is salty air surrounding (near the coast).
- There is caustic gas (the sulfide, for example) existing in the air (near a hot spring).
- The Volt vibrates violently (in the factories).
- In buses or cabinets.
- In kitchen where it is full of oil gas.
- There is strong electromagnetic wave existing.
- There are inflammable materials or gas.
- There is acid or alkaline liquid evaporating.
- Other special conditions.

2. USER

2.1 Machine description

The fan-coil unit for the treatment 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.



DANGER!

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

DANGER!

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

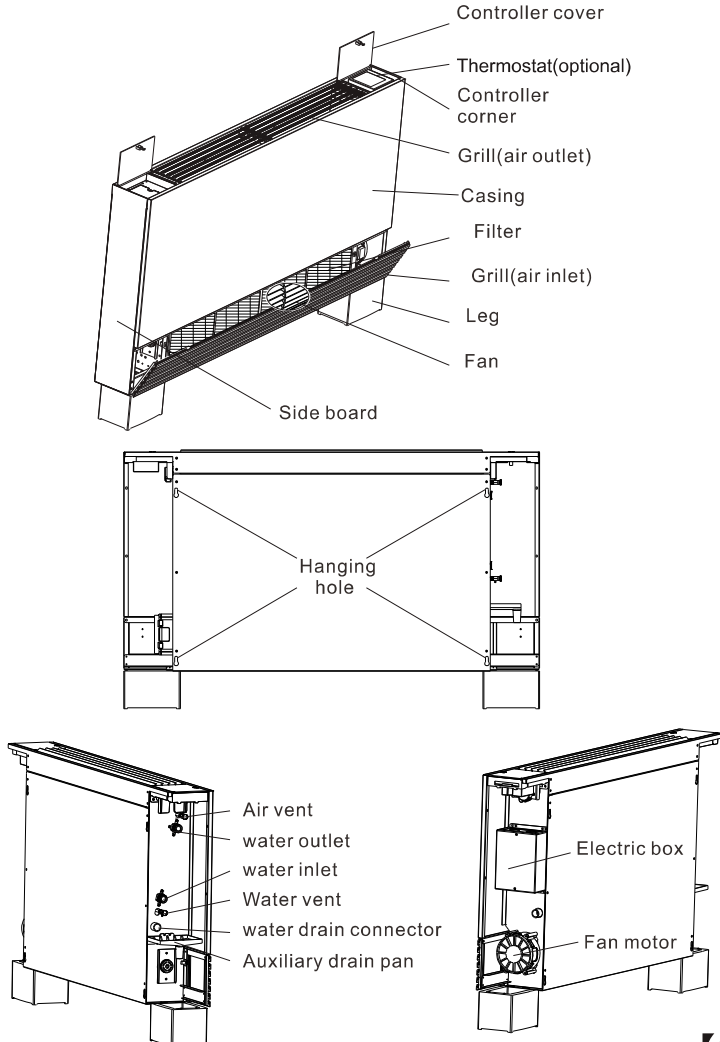
IMPORTANT!

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 Restrictions on use



IMPORTANT

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

2.1.4 Operation range

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

Temperature Mode	Room temperature	water inlet temperature
Cooling	17°C ~ 32°C	3°C ~ 20°C
Heating	5°C ~ 30°C	30°C ~ 85°C

NOTE

- 1 If fan coil unit is used outside the above conditions, it may cause the unit to function abnormally.
- 2 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.
- 3 Optimum performance will be achieved within these operating temperature range.
- 4 Water system operating pressure: Max: 1.6MPa, Min: 0.15MPa.

2.1.5 Information about further risks and unavoidable hazards



IMPORTANT

Pay the most attention to the signs and symbols located on the appliance.

If any risks remain in spite of the provisions adopted, or if there are any potential or hidden risks, they are indicated by adhesive labels attached to the machine.



IMPORTANT

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.

IMPORTANT!

In the case of a water supply with a particularly high content of hard water salts, it is advisable to fit a water softener.

2.2 Operation

2.2.1 Prolonged shutdown



IMPORTANT!

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 control panels:

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

2.3 Controller

The fan coil unit need to use a thermostat to do controlling for the fan speed, temp setting, etc.

The thermostat is always selected by the user or the contractor, while the thermostat is optional to be pre-installed inside the FCU too.

Pls check the manual of selected thermostat to get the introduction of using.

2.4 Cleaning the unit



DANGER

Always switch off the electric power before beginning cleaning or maintenance operations.

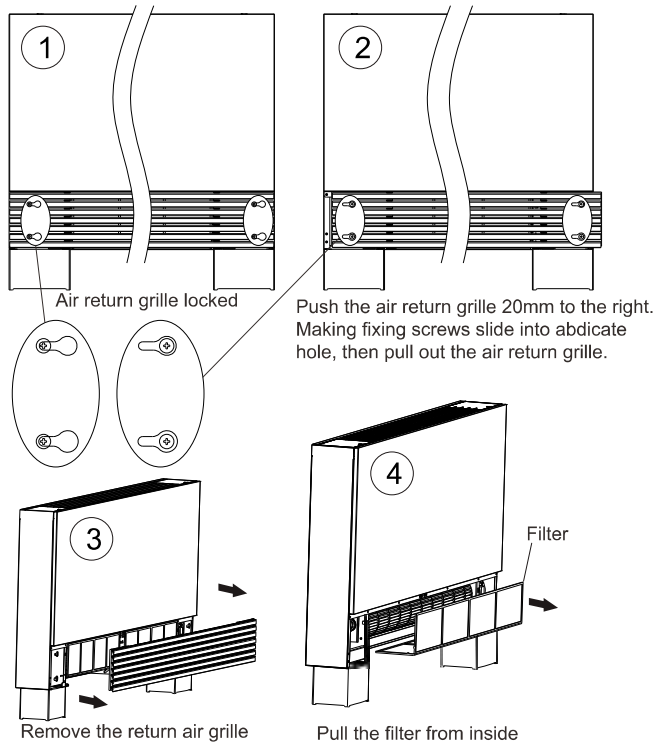
Do not spill water on the unit.

For cleaning, use a soft cloth dampened with water and alcohol. Do not use hot water, solvents or abrasives, or corrosive substances.

2.4.1 Cleaning the air 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.

The filter is housed in the bottom part of the unit. To remove the filter proceed as following indicated.



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



DANGER

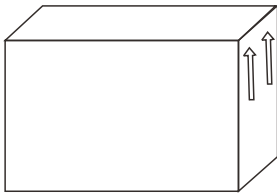
DO NOT OPEN OR TAMPER WITH THE PACKAGING BEFORE INSTALLATION.

The units should only be moved and lifted by professional 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



DANGER

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 your country.

3.1.2 Handling



DANGER

Movement of the unit should be performed 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 accordance 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.

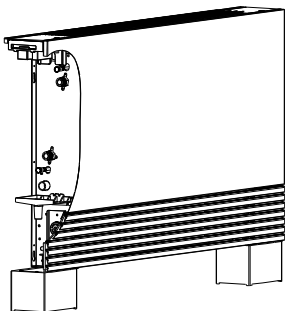
The units may be moved or lifted either by hand or by means of a suitable trolley. If the weight of the unit is more than 30kg, moving units need to be moved at the same time, it is advisable to put the machines in a container and lift them by means of a crane or something similar.

3.1.3 Storage conditions

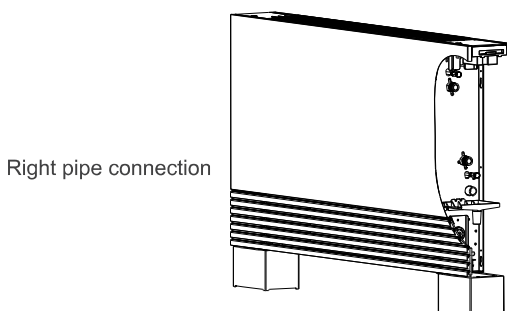
Units in their packaging may be stacked not more than four layer, and must be kept under cover.

3.2 Water in/out pipe direction

3.2.1 Proper direction of water in/out pipe connection will help to simplify installation, saving space and installation materials.



Left pipe connection



Right pipe connection

3.2.2 The unit is supplied as standard with connections to the coil on the left. It is difficult to change the coil direction after the FCU was left factory, please make sure the water in/out let direction before purchase the fan coil unit .

3.3 Clearance and positioning

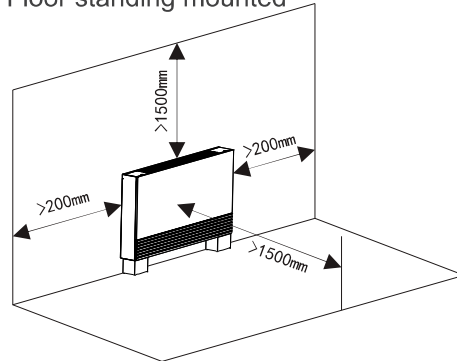


IMPORTANT

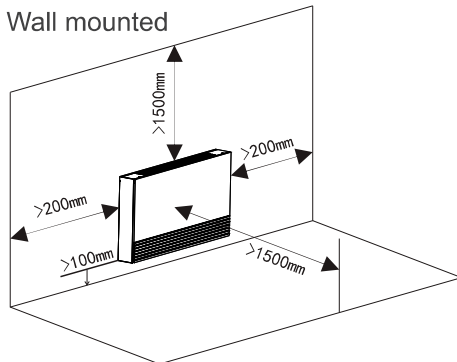
Incorrect positioning or installation of the unit may amplify noise levels and vibrations generated during operation.

- The units can be mounted vertically only, it can be installed by floor standing or wall mounted, please make sure there have enough space for installed the FCU.

Floor standing mounted



Wall mounted



3.4 Installation



DANGER!

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.

DANGER!

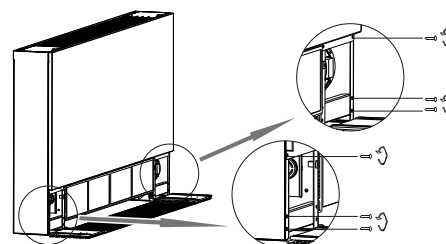
The unit must be installed according to national or local rules in force at the time of installation.

3.4.1 Remove the side board :

For standard FCU, the water in/out let connector are located at the right of unit and electric box located at the left of unit.

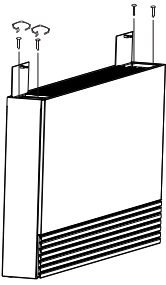
Remove the side board to do the water piping and electric wiring.

- Remove the side board .
 - Open the air inlet grill

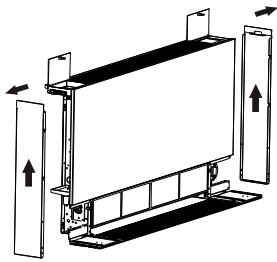


b. Take out the screw which connect the side board with casing and bottom frame

c. Take out the screw which connect the side board with controller corner



d. Push the side board to top direction for about 6mm.



e. Pull the side board to side direction and take out the side board from unit

3.4.2 Fixed the unit to wall or floor

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.

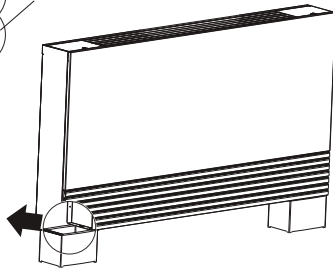
3.4.2.1 Fixed the unit to Floor

Select the place where can support the weight of 200kg, and benefit to the room air distribution; The support surface must be horizontal, to ensure that the unit will not tilted; Use suitable material (pad) to support surface until it keep horizontally; Put the unit which removed the side board outside the support surface, use a horizontal ruler to check horizon. And adjust the height of the pad to maintain the level of unit. In order to have a solid fixing, we suggest add the fixing bolt to connect the FCU and wall, which refer to the item 3.4.2.2

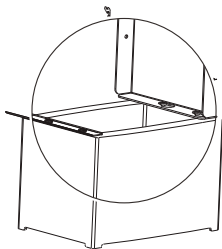
Original position of hole in casing



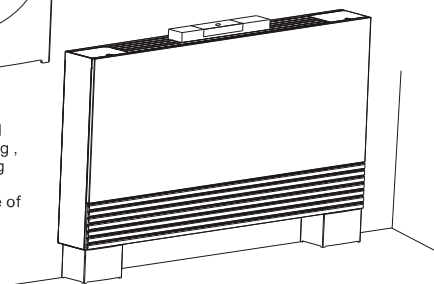
Limited screw of leg



Position of hole after pull out 10mm

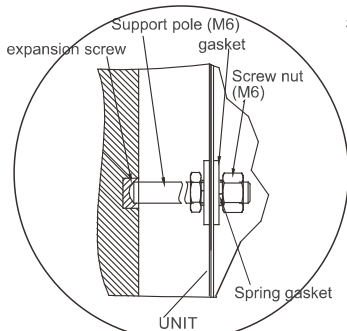


Put the frame board of unit inside the leg, make sure the fixing screw of leg can be stretch into the hole of frame board

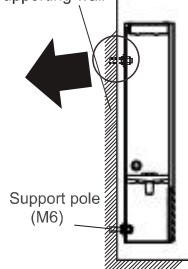


3.4.2.2 Fixed the unit to Wall

Mark out the fixing points on the wall, either by marking through the drillings in the unit itself, or by referring to the measurements given in "DIMENSIONS". Use expansion screw as the support pole, hang the unit to it and then tighten the nut, make sure the unit will not loose.

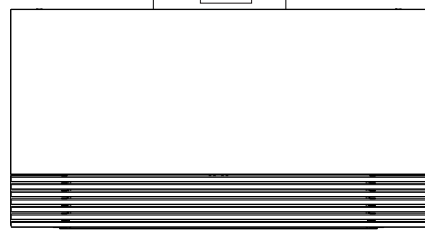


Supporting wall



Support pole (M6)

Use a horizontal ruler to check the levelness of unit.



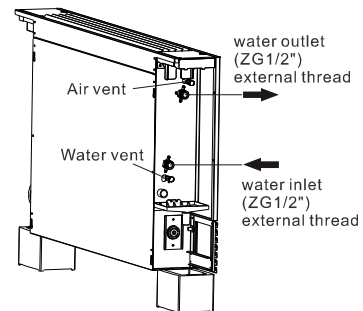
3.4.3 HYDRAULIC CONNECTIONS

3.4.3.1 Connection to the system



IMPORTANT

It is most important that the hydraulic connections are made with great care by specialised fitters. A violence 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 a screwdriver.



IMPORTANT!

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

3.4.3.2 Insulation and checking

When installation is complete, it is necessary to :

- Bleed the air contained in the circuit.
- Lag the connection pipes and any valves fitted with anti-condensation material 10 mm thick and install the auxiliary drain pan.

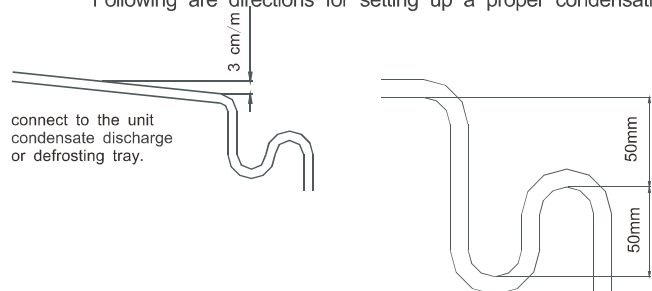
3.4.4 Condensate drainage system connections



IMPORTANT

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



Creation of the trap

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

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

3. 4. 5 Antifrost protection



IMPORTANT

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 system is felt to be too laborious, a suitable quantity of antifreeze may be mixed with the water instead.

3. 4. 6 ELECTRICAL CONNECTIONS



IMPORTANT!

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.

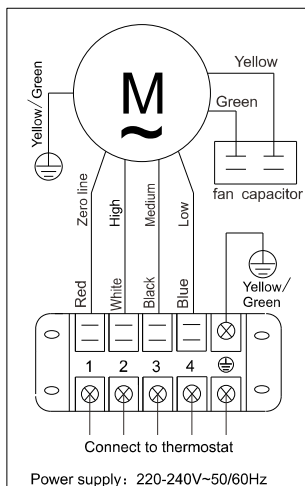
DANGER!

Always install a general automatic switch in a protected area near the appliance with an adequate capacity characteristic delayed curve with sufficient breaking power. There should be a minimum distance of 3mm between the contacts.

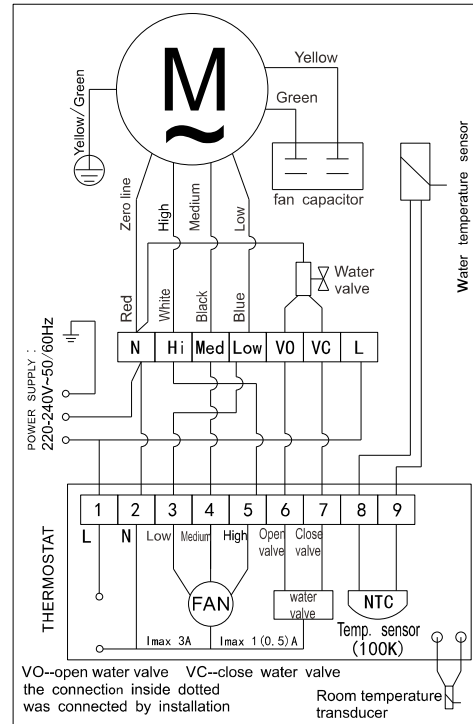
Earth connection is compulsory by law to ensure user safety while the machine is in use.

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

■ WIRING(without thermostat)



■ WIRING(with standard thermostat built-in)



- correspond to 220-240V single phase at 50/60Hz; that the available power is sufficient 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 system complies with current national safety regulations.
- Electrical connections must be made in accordance with the wiring diagrams 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 double-insulated flexible cable, twin pole + earth, section 2.5mm², type H05RN-F.

3. 4. 7 Install the side board

Install the side board abide by the reverse process comparing to item 3.4.1; Make sure all the screws have been fixed and the board is not loose;

3. 4. 8 Startup instructions



IMPORTANT!

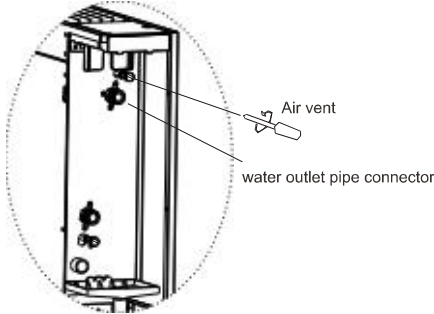
Machine commissioning or the first start up must be carried out by skilled personnel qualified to work on this type of product.

DANGER!

Before starting up, make sure 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

- Open the side board of water connection pipe side;
- Start up the water pump to circulate the pipeline water ;
- Use cross screwdriver to loose the air vent screw, exclude air inside the coil until there have water flow out from the water outlet 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 screw again.



3.4.8.2 Checking before the starting up

Before starting up the unit, make sure that:

- 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 no condensate water fall down when the fan coil unit is running under cooling mode;

3.5 Maintenance



DANGER!

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 3.4.8.1

■ 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.

■ Electrical Circuit

The following operations are recommended for the maintenance of the electrical circuit:

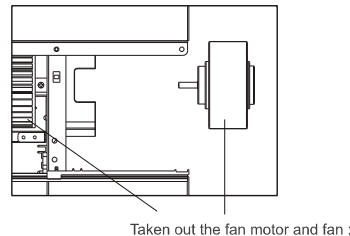
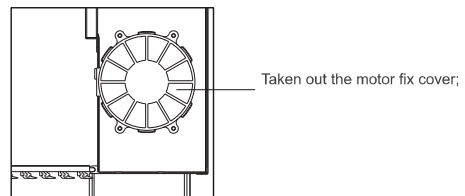
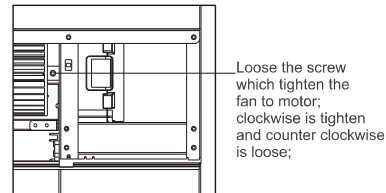
- Check the unit 's power absorption using a clip-on ammeter and compare the reading with the values shown on the documentation;
- Inspect and, if necessary tighten the electrical contacts and terminals.

3.5.2 NON-SCHEDULED MAINTENANCE

■ Replacement of the blower assembly

In the case of burnout of the blower electric motor, it is necessary to replace the entire blower assembly.

- Cut off the power supply, release the side board from unit
- Disconnect the electrical connection between the terminal and fan motor;
- Open the air inlet grill and take out the filter;
- Loose the screw which tighten the fan to motor; clockwise is tighten and counter clockwise is loose;
- Taken out the motor fix cover;
- Taken out the fan motor and fan ;



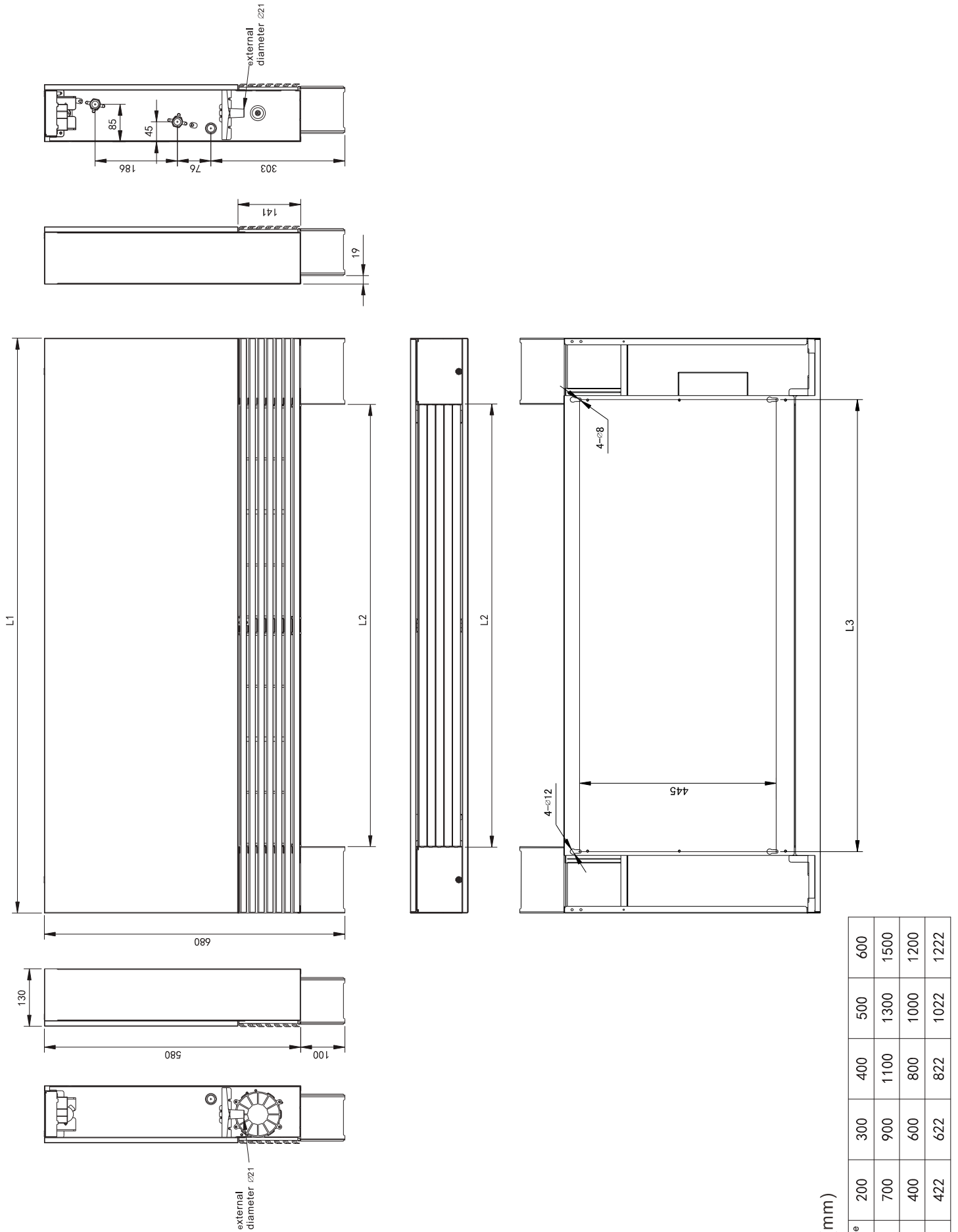
■ Dismantling the unit and disposal of Harmful substances



The unit should only be dismantled by a firm authorized for the disposal of scrap machinery. The unit as a whole is composed of materials considered as secondary raw materials and the following conditions

- If the system has antifreeze as an additive, it must not be just dumped, because it causes pollution. It should be collected and suitably disposed of.
- The electronic components (electrolytic condensers) should be considered special waste, and as such they should be delivered to a firm authorised to collect them.
- The expanded polyurethane rubber insulation on the pipes and the expanded polyethylene mesh, the expanded polyurethane and sound-absorbent spong lining the bodywork must be removed and processed as urban refuse.

4. DIMENSION



Unit: (mm)

Air volume (m ³ /h)	200	300	400	500	600
L1	700	900	1100	1300	1500
L2	400	600	800	1000	1200
L3	422	622	822	1022	1222

