



## Installation, Use and Service Manual

# FAN COIL UNITS

## 13÷ 123P



## Remarks

To use the unit correctly and safely, the installer, the user and the maintenance man, for their respective competencies, must comply with what is indicated in this manual.

Para acessórios adicionais consulte a folha de instruções (As instruções são completadas pelo presente manual), o qual pedimos que consulte para mais informações.

Todos os dados técnicos sobre esta instalação, manual de utilização e instalação não é vinculativo, pelo que o fabricante reserva-se o direito de efectuar qualquer alteração (dados técnicos, desempenho, dimensões, etc.) sem aviso prévio.

A reprodução total ou parcial deste "Manual de instalação e utilização" é proibida.

Each unit is supplied with its own wiring diagram. Consult this manual only.

For technical data and electrical absorption, refer to the values/data on the unit label.

- Store this manual in a dry location to avoid deterioration, as they must be kept for any future reference.
- All the information in this manual must be carefully read and understood: as they'll be all very useful for both safe installation and proper use and maintenance operations.
- Pay particular attention to the operating norms marked with "DANGER" or "WARNING" signals as their disrespect can cause damage to the unit and /or person or objects.
- For any malfunctions not mentioned in this manual, contact the local After sales Services immediately.
- Always keep this handbook with the unit.
- This manual is an integral and essential part of the product and must be given to the user.
- Should the unit be sold or transferred to another owner, please ensure that the manual remains with the unit for use by the new owner and/ or installer.
- The Manufacturer declines all responsibility for any damage whatsoever caused by improper use of the unit, and a partial or superficial acquaintance with the information contained in this bulletin.
- The technical data, styling characteristics, components and accessories reported in this manual are not binding. The Manufacturer reserves the right to make changes, at any time, that are considered necessary to improve the product.
- The lawful references, standards or technical rules mentioned in this manual are presented merely for the sake of information and should be considered valid as of the date this manual is printed. If new regulations or amendments to current laws go into effect, this will not obligate the Manufacturer in any way with regard to others.
- The Manufacturer is responsible for ensuring that its product conforms to the laws, directives and constructive standards in force at the time the product is sold. Knowledge and compliance with legal regulations maintenance are the exclusive responsibility, for the respective competencies, of the designer, installer and user.
- **WARNING!** It is important to verify that the design and installation conform with current standards.

## **Conformity Declaration (DCF-0801-30025051-R00)**

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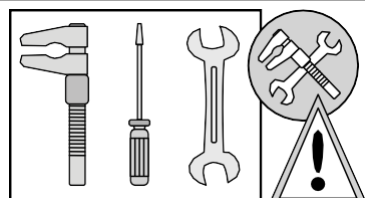
- The unit is in accordance with:
  - 2006/42/CE Machines directives (ex 98/37/CE; ex 89/392/CEE and reviews 91/368/CEE)
  - 2006/95/CE Low Voltage directives (ex 73/23/CEE)
  - 2004/108/CE Electromagnetic Compatibility directives (ex EMC/89/336/CEE)
- Manufactured and tested unit accordance with 95/59/CEE e 92/31/CEE e com  
EN/292/1 – EN/292/2 – EN/55014/1 –  
EN/55014/2 – EN/61000/3/2 – EN/6100/3/3  
– EN/6055/2 – EN/60204/1 –  
CEI/EN/60335/1-CEI/EN/60335/2/40  
standards.

 Attention  Compulsory Earthing	 <b>DANGER</b> Power Supply  Compulsory Use undercarriage	 <b>Danger:</b> Disconnect Power Line  Use protective gloves	 High Temperature  Only Qualified Personnel	 Moving Parts  Forbidden
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## Safety Measures



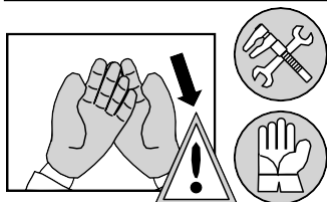
### Observe the following regulations when INSTALLING, STARTING UP, USING AND SERVICING the units:



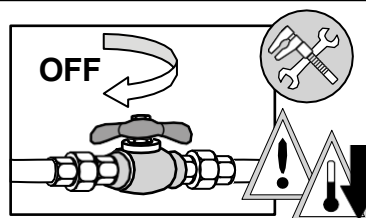
- Installation is to be carried out always strictly complying with the current standards of the country where the appliance is going to be installed.
- The installation and maintenance operations of the unit can be carried out by qualified and trained personnel only.
- Qualified service engineers are those having specific technical experience in the field of heating and cooling installation unit for home use according to CORGI Register. In any case, telephone in manufacturer office and you can receive all informations.



- According to the installation project, install the chilled water lines and the electric power lines.
- Always make sure that the unit and all its electrical parts have been correctly earthed prior to starting up the unit.

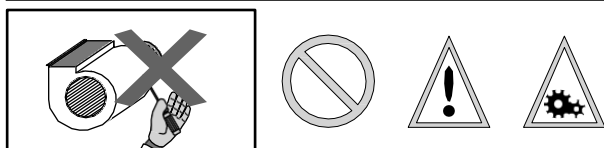


- If you have to disassemble the unit, use special protective gloves.
- Beware of roof corners of outdoor units
- Keep suction grids clear

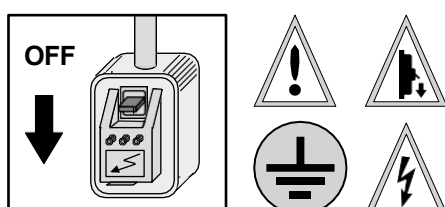


Be sure that the inlet water valve is closed.

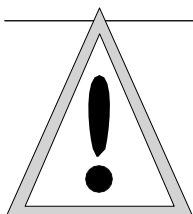
The Exchange device has cooled down.



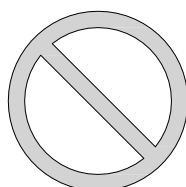
- In the unit with accessible fans (concealed versions), don't start the unit if the unit itself is not closed inside a space accessible only with the use of proper tools.
- Fans can reach a speed of 1000 rpm. Do not insert any object nor hands in the electric fan.



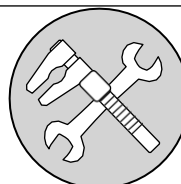
- We recommend to install a safety switch which can be easily reached to cut off the current, near the unit any cleaning and servicing operation, cut off the power line to the unit.
- Before opening the unit, make sure that all electrical parts have been switched off. In particular, make sure that the fan is off and cannot be inadvertently started prior to opening inspection panels.
- **Check the Earthing!!**



- This unit is designed to be used for heating-cooling purposes only. Any different use is not allowed as it may be dangerous.
- Should the unit work in a house where disabled people and/or children live, it must be placed safely away from their reach. Always make sure that the access door to the inside control board stay locked.
- An incorrect installation can cause damages to people, animals and property. In case of erroneous installation, the manufacturer cannot be held responsible for such damages.
- The manufacturer cannot be held responsible for such damages by improper uses, errors, etc.



- Never use the unit to support other equipment.
- Never leave tools, spare parts, etc., inside the unit.
- Make sure that all inspection panels are closed properly.
- Do not expose the unit to inflammable gases.



In case of breakdown or failure: turn unit off, do not try to repair it on your own, call operator.

If you are going to leave the generator off for a long time, first make sure that in no way this could cause harm to anyone in any way.



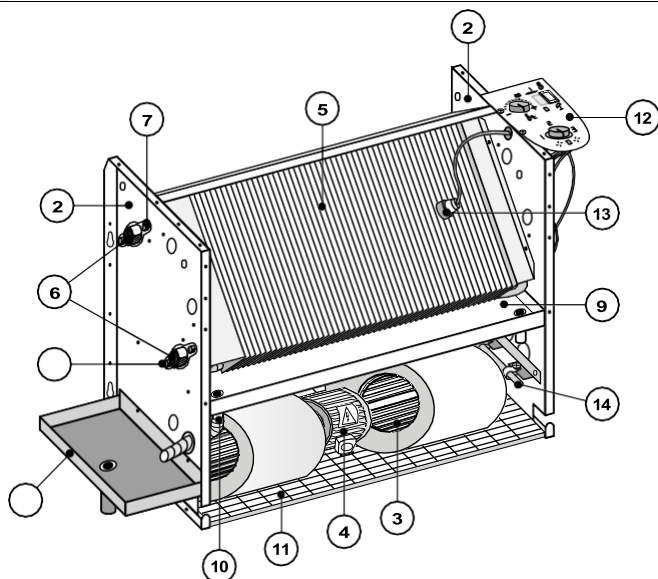
**Please do not Forget that warranty cannot be applied in case of electric, mechanical and other general modifications!!!**

## Standard

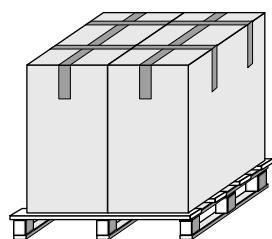
1	Cabinet made of galvanized steel pre- covered with a film of polyvinyl chloride (White colour, similar to RAL 9010) + Double bank singular adjustable louvers, made of ABS (White colour, similar to RAL 90002) – (cabinets available in diferente versions).
2	Bearing structure made of large thickness galvanized sheet-steel with holes for fixing to wall/ceiling + Thermal-acoustic internal insulation class M1)
3	Double air inlet centrifugal fan (foward curved fins)
4	Electric motor 230V – 1Ph-50Hz directly coupled to the fan
5	Coil (1 coil for a 2-pipe system unit; 2 coils for a 4-pipe system unit)
6	Water coil connections
7	Manual air vent valve
8	Manual water drain valve
9	Drain pan with drain pipes + thermal insulation (for vertical versions)
10	Drain pipe
11	Air filter (filtering efficiency G3, Class M1)

## Accessories

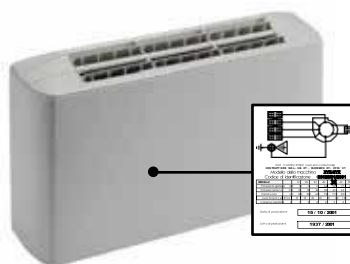
12	Control panel (The standard unit is supplied only equipped with the motor cable – without control panel and terminal boards (options), which are supplied mounted on the unit, opposite to water connection side)
13	Water low temperature thermostat sensor
14	Bulb room temperature sensor
15	Auxiliary drain pan (for vertical versions)



## Packing



Units are shipped with carton boxes on pallet as standard packing; accessories are supplied loose in packed separately or supplied mounted in the unit (on request).



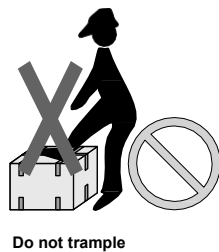
There is no envelope inside that unit containing the installation, use and maintenance manual and the warranty documents. The identification label bearing the following data is applied on each unit:

- Manufacturer's data
- Model of the unit and identification code
- Technical data and Wiring diagram

## Transport, Receipt, Handling

The transport must be done according to the following indications:

- Packages must be securely fixed at trucks floor.
- Packages must be covered.
- The unit has special safety packing for transport and delivery which must be kept in good conditions til the unit is positioned on the installation place.
- Make sure that the unit has all its parts, as specified in the order.
- Check if there are any damages and if the unit abbreviation is the same as the one of the ordered model.
- Every unit is factory tested before shipment, therefore, if there are damages, report them immediately to the carrier.
- Shipping, unloading and handling of the goods are all operations to be carried out very carefully in order not to damage goods. Try not use the unit's components as handholds.
- When lifting, bear in mind that centre of gravity of the unit may be off-centre.



## Stocking at site

**The units must be stocked inside the building!**

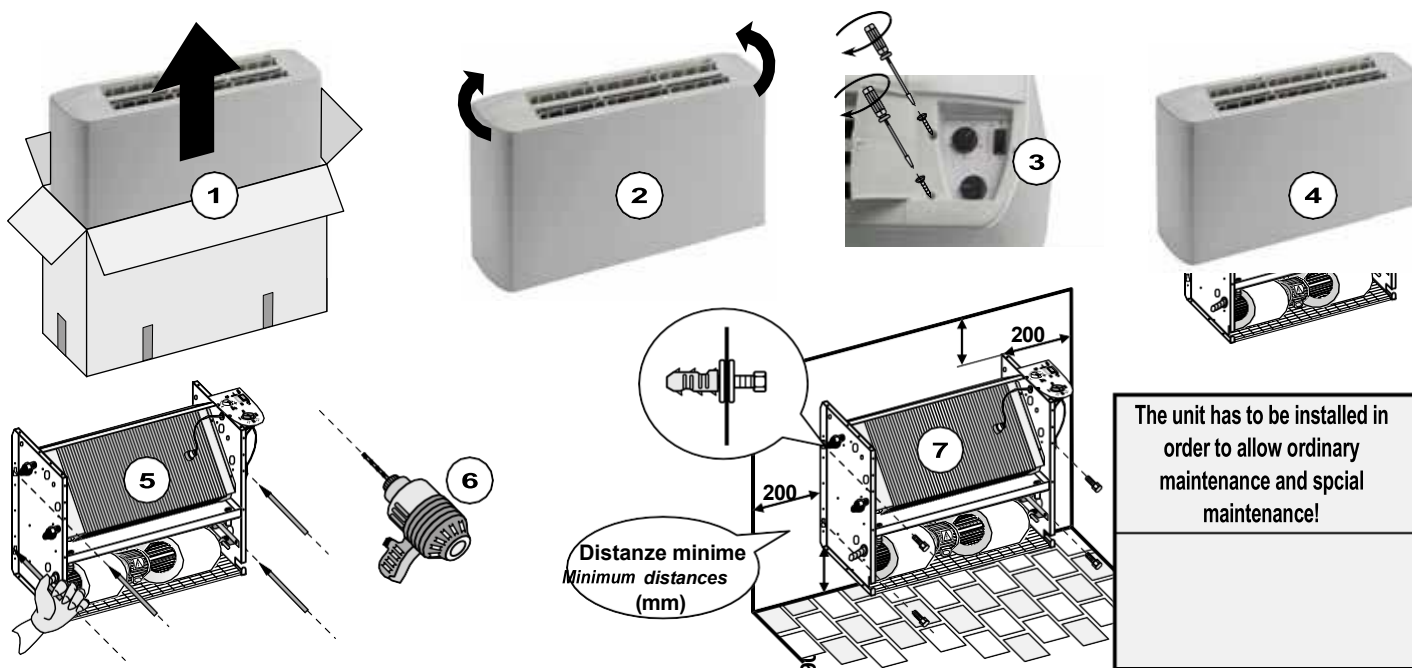
## Installation: Unit location

The installation must be always compliant with the current local laws

Versions for concealed installation:

- Check that the unit and its technical characteristics match what is indicated by the design or other documents.
- Always keep packing parts away from children reach, as they may be harmful.
- Before the unit installation, please wear suitable protective clothes. Use suitable equipments and tools to avoid any installation accident.
- Before the unit installation we recommend to mount on the unit the eventual separating optionals by following the assembly instructions contained in each single kit.
- Decide the installation position. Locate the unit on a solid structure which does not cause vibrations and is able to support the machine weight.
- Through the 4 fixing openings foreseen on the bearing structure. Sign the position of the holding expansion dowels. Do the holes for the dowels. Install the unit with no. 4 expansion screws 8 MA or threaded rod 8mm. Install the unit in mode that the intake and supply air is not compromised.

The installer has to take the necessary steps to disguise it with appropriate panels (false ceilings, false walls, panels, etc.) which also serve as FIXED PROTECTION. The protection panels have to be firmly fixed (only by tools) to prevent contact with dangerous parts (98/37/CEE) like sharp edges, electric parts, running fans, etc. But easily removable to allow total access to the unit (extraordinary maintenance).

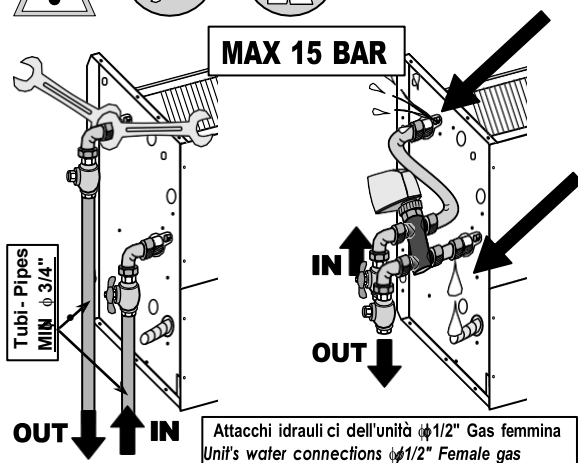


## Installation: Water supply connections

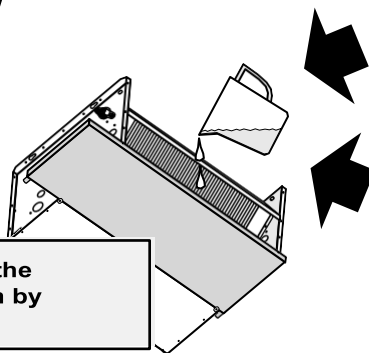
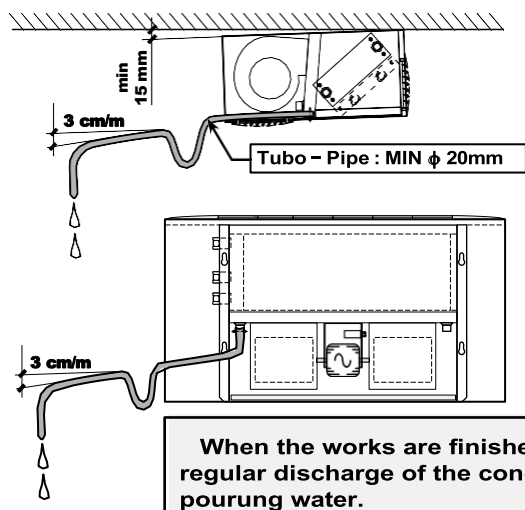


**Attention: Always use a key and second turn to connect the coil to the pipes.**

- Make hydraulic connections.
- Install shut-off valves (Min 1/2 ") to isolate the coil from the rest of the circuit in the event of a balancing valve (or installed 2 shut off valve).
- Fit a breather valve above and discharge valve below.
- The water coils are tested at a pressure of 30 Bar and therefore they can operate at a maximum of 15 Bar.
- Position and support tubes on unit exterior by brackets to relieve the coil excessive weight.



## Installation: Drain pipe



- Appropriately insulate water pipes to prevent dripping in cooling mode.
- Install an appropriate size condensate drainage system and place it to favour the discharge (min 3% slope) and must not have rising parts or stangligns in order to allow a regular downflow.
- Install a siphon in condensate drainage system.
- The drain pipe will be connected to a unloading rain network.
- Do not use White or black water (sewage system) to prevent unpleasant odour return into the room in case of evaporating of water contained in the siphon.



## Installation: Eletrical connections



Unit Manufactured according with cee 73/23 Standard



**Caution:** make sure that electrical power to the unit is turned off before making any electrical connections.  
**Caution:** wiring connections, unit installation and all accessories have to be made only by specialised installers.  
**Please do not forget that warranty cannot be applied in case of electric, mechanical and other general modification.**

- Compliance with the safety norms/laws applied in the country where the units is installed.
- Make sure that the technical data concerning the network meet the data indicated on the identification unit label.
- Unit and accessories (230V electrical heater, remote controls, etc.): power supply: Check that the line is single-phase 230V/1Ph/50Hz and that the voltage remains within the limits  $V_{min} > 195 \div V_{max} < 265$ .
- The work of the unit with voltages that are not within the above mentioned limits makes the guarantee unvalid.
- Make sure that electrical plant is able to supply in addition to the working current required by the unit also the current required to supply the domestic units already in use.

### Check the Earthing

- The electrical safety of the unit attained only when the unit itself is correctly connected and efficiently earthed according to the existing safety standards.
- When connecting, ensure that the earth wire is longer than the live wires, so that it will be the last wire to break if the supply cable is stretched, thus ensuring a good earth continuity

### Connection Cables Specifications:

- Carry out all unit connections using cables of adequate dimensions for the power used in accordance with the local laws in force. Their dimensions must be of such dimensions to cause a phase voltage drop of less 3% of the nominal voltage.
- Use H05V-K or N07V-K insulated cables with 300/500V, pipe or ducted.
- All cables have to be piped or ducted until they are not placed inside the terminal board of the unit.
- The cables coming out of the pipe/duct have not to be subjected to stretch or twist. They must be protected from weathering. Standed cables shall only be used in connection with terminating sleeves. Make sure that all individual cables are correctly inserted in the sleeve.

### Conexões el étricas:

- *The electrical safety of the unit is attained only when the unit itself is correctly connected and efficiently earthed according to the existing safety standards.*
- *When connecting, ensure that the earth wire is longer than the live wires, so that it will be the last wire to break if the supply cable is stretched, thus ensuring a good earth continuity.*

### Electrical Connections:

- Carry out the electrical connections according to the wiring diagram.

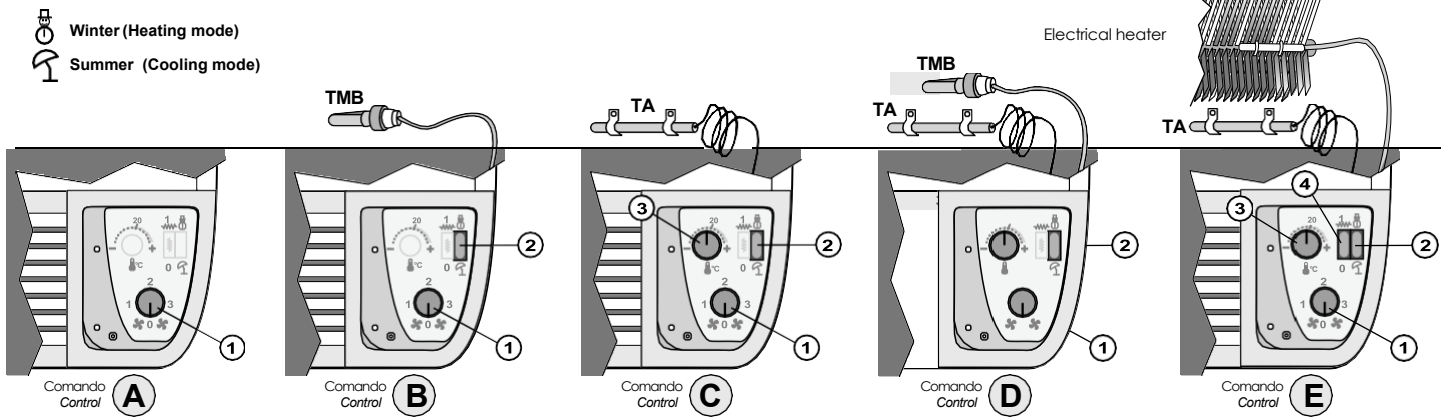
### All wiring diagrams are subjected to updatings: We suggest to make reference to the wiring diagram included in every unit.

- The use of adapters, multi-plugs and/ or extension cords is not permitted for unit main power supply.
- It is the installer's responsibility to install the unit as close as possible to the general power switch!!
- To prevent short circuits, the unit should be connected to the electric supply line by means of an omnipolar magnetothermal switch with a minimum contact opening of 3 mm (see electrical absorbing schedule to choose the right switch). An omnipolar switch is a "Double pole isolating switch", i.e. a switch capable of disconnecting both on phase and neutral. This means that when the switch is opened, both contacts are disconnected.

**Electrical Absorption: Make reference to the electrical absorption written on the unit label.**

**Each control panel can control one single unit only. Note: To control more than 1 unit ( or 1 unit with 2 motors) it is recommended to keep the electrical power supply of the different motors SEPARATE AND INDEPENDENT FROM EACH OTHER. To do so, it is recommended to install 3 relays ( one each speed) by independent contacts (one contact each motor to be controlled) or install the INTERFACE CHART (accessory): this way should any inconvenience happen to any of the fan motors, it would not involve nor interfere with the others!!**

For installation of control panel choose an area where the max and min, room temperature limit is respected  $0 \div 45^{\circ}\text{C}$ ;  $<85\%$  U.R. Do not install the control panel on metallic walls, if the metallic wall is not permanently earthed. Accessories: Water low temperature thermostat "TMB". The water low temperature thermostat automatically shuts down the ventilation when the inlet water temperature to the coil is below  $32^{\circ}\text{C}$  in heating mode (Winter mode).



**It is recommended to make the unit work at the maximum speed for a few Hours once installed or in case it hadn't been working for a long time.**

#### OPERATING IN HEATING MODE (WINTER)

- Control A, B, C, D, E:** Position the "OFF/3 speed" switch (1) on the required fan speed in order to adjust the heating capacity of the unit.
- Control B:** If the control is equipped with water low temperature thermostat "TMB", position the Winter/ Summer switch (2) on "WINTER" mode. The fan will start working when the water temperature reaches a temperature of approx. 32°C.
- Control C, D, E:** If the control is equipped with room thermostat + water low temperature thermostat "TA + TMB", position the Winter/ Summer switch (2) on "Winter" mode and work on the adjustable knob (3) and place on the required temperature. The fan will start working when the air temperature drops under the pre-set value.
- Control E:** In case that electrical heater is installed (optional), the switch (4) activates the electrical heater. Position the switch (4) on "1" (1 = OFF).

#### OPERATING IN COOLING MODE (SUMMER)

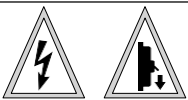
- Control A, B, C, D, E:** Position the "OFF/3 speed" switch (1) on the required fan speed in order to adjust the cooling capacity of the unit.
- Control B:** If the control is equipped with water low temperature thermostat "TMB", position the Winter/ Summer switch (2) on "Summer" mode. (by-pass of the thermostat "TMB")
- Control C, D, E:** If the control is equipped with room thermostat "TA" or is equipped with room thermostat + water low temperature thermostat "TA + TMB", position the Winter/Summer switch (2) on "summer" mode and work on the adjustable knob (3) and place on the required temperature. The fan will start working when the air temperature reaches the pre-set value.
- Control E:** In case that electrical heater is installed (optional), position the switch (4) on "0" (0 = OFF).

**Note:** To reach an exact and reliable room temperature regulation we recommend to keep the motor always running and to control the temperature through the regulation of 2-way (or 3-way) valves, or we recommend to choose a control panel provided with anti-desertification function.

A unidade funciona de um modo diferente dependendo do painel de controlo, que está conectado. Na verdade, cada painel de controlo tem funções diferentes!!

Portanto para outros controlos que não os listados, consulte as instruções fornecidas especificamente com o painel de controlo.

#### Information for the user: Improper use

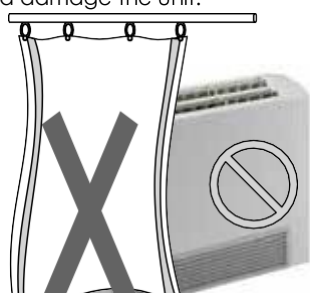


##### Never jerk or twist the power cable!!

Never pull, walk over, crush or secure the electrical power cable with nails or tacks. A damaged cable could cause short circuits or physical injury.

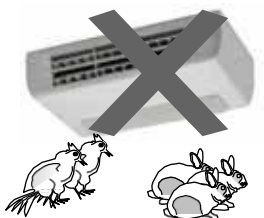


Attention: When the unit is running do not place any object or cloths to dry on the air outflow grill, they would obstruct the flow and damage the unit.



DO NOT COVER

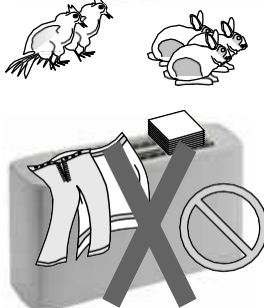
Never insert objects in the air outlet. Never insert objects in the air outlet slats. This could cause physical injury or damage the unit.



Do not sit on the unit



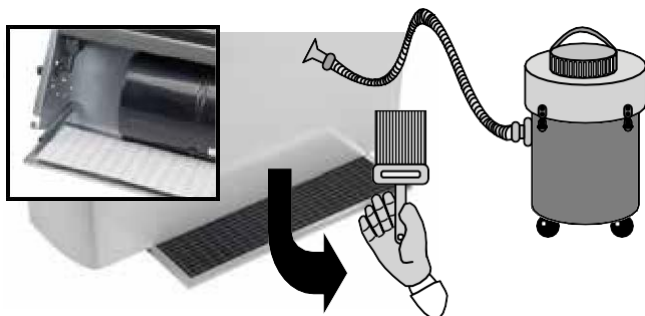
The unit is not designed for any type of animal breeding or similar applications. On request: special versions (ex. stainless steel).



To clean the unit: Do not splash water on the unit. It could result in electrical shock or damage to the unit. Do not use hot water, abrasive powders as strong solvents, to clean the unit use a soft cloth.



## Information for the use: Maintenance, Cleaning



- These units are constructed with state of the art technology that ensures long-terms efficiency and operation.
- It is essential to provide a very specific inspection and maintenance program in functions of those fluids characteristics. The following maintenance program is established by taking into consideration the unit optimal conditions relative to the air quality and the installation the unit optimal conditions relative to the air quality and the installation site characteristics. The resonance time for a correct servicing very much depends on the above conditions. The most aggressive atmospheric conditions happen when in the air there is na abnormal quantity of industrial fumes, salts, chemical fumes and airborne dust.

### Warning!

**Switch off power supply before cleaning unit.**

Do not splash water on the unit. It could result in electrical shock or damage to the unit. Do not use hot water, abrasive powders or strong solvents, to clean unit use a soft cloth. If possible avoid the working during the cleaning of the rooms.



### ROUTINE MAINTENANCE

**NOTE: Adequate maintenance e ensures safety and savings!**

It is recommended to carry out the following operations at the beginning of each cooling and heating season and then at least once every month during operation:

- Clean the external parts of the unit simply by using a damp cloth.
- **Air Filter (Cleaning: every 15 days):** The cells may ba cleaned by a simple flapping, or by washing them into water detergente, or by using compressed air blast. **IMPORTANT:** when cleaning the cells make sure that the water/air blast is crossing the media in the opposite direction of the one of normal unit operation. The blasting over the media must not be too hard or near, so to avoid possible damages of the fiterning mass. If the cells are washed with water detergent, dry them up in open air before re-installation in order not to affect the sytem efficiency.

### YEARLY CHECKS

In order to grant the unit always the best performance and upkeep, carry out timely maintenance operations at least once a year. Remember that maintenance operations are to be carried out by qualified personnel only.

- **Water Coil:** The water coil must be kept in a prefectly that the finned wall has no obstructions to airflow: if necessary, clean it and be careful not to damage the aluminium fins. To clean it use a littçe brush or a vacuum cleaner which is even better. If the uni tis installed in particularly cold rooms, fill out the water tank during long stop periods.
- **Dain Pipe:** During the summer time check that the unload of the condensation is not obstructed and that the pan is clean without dust or other things. Eventual dirt may obstruct the unload causing the overflowing of the condensations water.
- **Fan-Motor Group:** As well the motor as the fans rotate on self-lubricating bearings which do not need any lubrication. Check the weel is clean. If this is not the case clean it using compresseed air in such a way not to damage the wheel.

- Electrical equipament check: Check all the electrical apparatus and in particular the tightness of the electrical connections.
- Check the tightness of all the nuts, bolts and flanges which may have been loosened by vibrations.
- Check there are no traces of dust, dirt or other impurrities on the motor. Periodicaly check that it operates without vibrations or adnormal noise, that the ventilation circuit inlets are not obstructed, causing consequently the possibility of motor winding overheating.

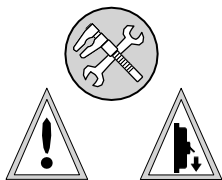


**WARNING! For all installation operations, start-up, etc. always consult a qualified service engineer.**

### After-sales Service

Before calling for service, make sure the unit technical data and manual is within reach and namely:

- Unit model and Product serial no.
- Brief description of the installation type



For safety and quality reasons, it is recommended to use original spare parts when replacing components. To order spare parts, it is recommended to always contact skilled technical personnel.

## Replacing Parts

- Since specific technical skills are required to replace the spare parts, it is recommended to always contact skilled technical personnel.

- **WARNING!** All the replace spare parts operations must be carried out while the unit is turned off, disconnected the water and electric supplies.

## Waste disposal



**At the end of its operating life the UTA serie unit must be disposed according to the regulation in force in the installation country. The units are manufactured with the following materials:**

- Aluzink plates – Stainless steel plates- Galvanized steel plates
- Copper- Aluminium – Stainless steel
- Polyester – Polyethylene- Glass fibre - Plastic

**Warning!** Before to access the unit, **CUT OUT THE POWER SUPPLY** to the unit using the omnipolar switch

For anomalies don't hesitate, contact the aftersales service immediately

Faliure	Causas Possivei- Verificação - Solução
<u>Feebie air discharge</u>	<ul style="list-style-type: none"> <li>• Wrong speed setting on the control panel: Select the right speed on the control panel</li> <li>• Obstructed air filter: Clean the air filter</li> <li>• Obstruction of the airflow (inlet and /outlet): Remove the obstruction</li> <li>• Air distribution system load loss has been underestimated: Increase fan speed</li> <li>• Sense of rotation inverted: Check wiring diagram and electrical connections.</li> </ul>
<b>Excessive air flow</b>	<ul style="list-style-type: none"> <li>• Air distribution system load loss has been overestimated. Reduce fan rotation speed and/or create load loss in ducting.</li> </ul>
<b>Insuficient static pressure</b>	<ul style="list-style-type: none"> <li>• <i>Rotation speed too low: Increase fan speed</i></li> <li>• <i>Sense of rotation inverted: Check wiring diagram and electrical connections.</i></li> </ul>
<b>Excessive noise</b>	<ul style="list-style-type: none"> <li>• <i>Air low too high: Reduce air flow</i></li> <li>• <i>Metal componentes damaged: Check state of componentes and replace damaged parts</i></li> <li>• <i>Rotation parts off balance: Balance fan impeller</i></li> </ul>
<b>The motor /fan does not work</b>	<ul style="list-style-type: none"> <li>• <i>Current lack: Control the power supply</i></li> <li>• With water low temperature thermostat "TMB" has tripped because the temperature has dropped below 32°C (in winter mode): Control the boiler</li> <li>• <i>Make sure that: The electrical power is on – Switches and/or thermostats are on the right working position</i></li> <li>• <i>Make sure that: No objects obstruct the fan rotation</i></li> </ul>
<b>The unit does not heat up as before</b>	<ul style="list-style-type: none"> <li>• <i>Hot water supply lack; Control the boiler and the hot water pump</i></li> <li>• <i>Wrong setting on control panel: See control panel settings</i></li> <li>• <i>Make sure that: The air filter and coil are clean.</i></li> <li>• <i>Make sure that: Air did not enter in the hydraulic circiut, check it using provided air vent valve</i></li> <li>• <i>Make sure that: The installation is well balance – the chiller is functioning – The chilled water pump is funtioning</i></li> </ul>
<b>The unit does not cool up as before</b>	<ul style="list-style-type: none"> <li>• <i>Chiled water supply lack: Control the chiler and the chiled water pump.</i></li> <li>• <i>Wrong setting on control panel: See control panel settings</i></li> <li>• <i>Make sure that: Their air filter and the coil are clean.</i></li> <li>• <i>Make sure that: Air did not enter in the hydraulic circuit, check it using provided air vent valve</i></li> <li>• <i>Make sure that: The instalation is well balanced – The chiller is functioning – The chilled water pump is functioning</i></li> </ul>
<b>Water entrainment</b>	<ul style="list-style-type: none"> <li>• <i>Siphon is clogged: Clean siphon – No Siphin: Fit a shiphon</i></li> </ul>
<b>Condensate on the axternal structure of the unit</b>	<ul style="list-style-type: none"> <li>• <i>Temperature and humidity limit conditions (indicated in the Technical Buletin – operating limits) have been reached: Race the water temperature over the minimum limits mentioned in the Technical Bulletin</i></li> <li>• Condensate water draining problems: Check the drain pan and the drain pipe</li> <li>• When the requested enviroment temperature is reached the fan stops while chilled water is still circulating in the coil: provide a regulation where water supply is stoppped when enviroment temperature is reached (fan stop) – (3 way valve – 2 way valve – pump OFF – Chiller OFF, etc.) etc.)</li> </ul>





