# INSTALLATION, USE AND MAINTENANCE MANUAL

## LOW PROFILE CENTRIFUGAL FAN COIL UNIT

2009-0

CE

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FOR THE INSTALLER

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## INTRODUCTION

This installation, operation and maintenance booklet should always accompany the fancoil ready consultation by the installer or user if necessary. The appliance should be installed in compliance with regulations in force in each country and according to the manufacturer's or qualified installer' instruction. The manufacturer cannot be held liable for any damage to property or injury to persons and animals caused by incorrect installation of the appliance. Only qualified persons should install the appliance and connect it to the mains electricity supply. Before carrying out any work on the appliance, ensure that it disconnected from the electricity supply. Read this instruction booklet before installing the appliance.

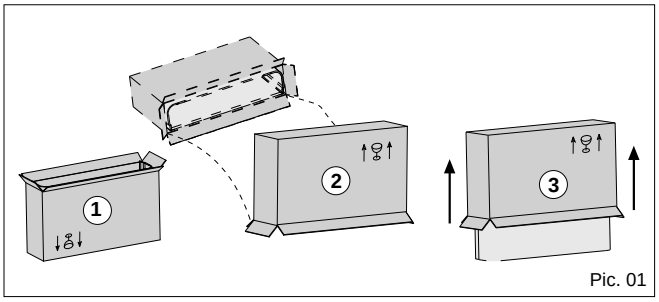
## RECOMMENDATIONS

The appliance is easy to use, ut it is important to read this guide completely before using for the first time.
This will help you:
**- use the appliance in all safety;**
**- obtain best performance;**
**- avoid errors;**
**- respect the environment.**
- Do not allow children or unassisted handicapped persons to use the appliance.
- Do not touch the appliance with wet parts of the body or if barefoot.
- Do not tug, pull or twist electrical cables attached to the appliance, even when disconnected from the electricity supply.
- Do not open the flaps giving access to the internal parts of the appliance without having first put the system on-off switch to "off".
- Do not introduce sharp pointed objects through the air intake and outlet grilles.
- Do not leave packing material (cardboard, staples, plastic bags, etc.) within reach of children since they could be a source of danger.
- Dispose of correctly.
- Do not sit or climb on the appliance or rest any type of object on it.
- Do not spray or throw water directly on the appliance.
- Do not use the appliance in places with suspended dust/powder or in potentially explosive atmospheres, in very damp environments or in the presence of oil in suspension or in particularly aggressive atmospheres.
- Do not cover the appliance with objects or drapes that even partially obstruct the air flow.
- The appliance works by electricity at mains voltage (230 Vac, 50 Hz). Always bear in mind that mains voltage is potentially dangerous and any appliance connected to it should be used with caution. Before carrying out any work on the appliance, disconnect it from the electricity supply (by pulling out the plug from the mains socket or isolating the supply line by putting the on-off switch to off).
- If the appliance is not to be used for long periods, make sure that the controls are in the position 0 (off). If the appliance is not going to be used in winter when temperatures are near to freezing, drain the system and ensure that the appliance heat exchanger has no water in it in order to prevent the formation of ice and consequent breakage.
- To make the appliance inoperable, disconnect it totally from the electricity supply.
- It is unsafe to alter or try to alter the characteristics of this product. Any tampering or alteration renders the warranty null and void.
- In the event of malfunction or failure, do not try to repair the appliance yourself; contact a qualified technician. Repairs carried out by unqualified persons could cause damage or accidents.
- Always keep the appliance clean. In particular clean the air filter periodically (at least once a month).

**FAILURE TO COMPLY WITH THE ASSEMBLY INSTRUCTIONS GIVEN IN THIS GUIDE RELIEVES THE MANUFACTURER OF ALL AND ANY LIABILITY. INCORRECT INSTALLATION COULD CAUSE MALFUNCTIONING OR FAILURE OF THE APPLIANCE. COULD ALSO REPRESENT A HAZARD FOR THE USER.**

## TRASPORTATION, RECEIVING, HANDLING

The appliance is dispatched enclosed in special protective packaging, which should be kept intact until the appliance is positioned in the final place of installation.
The appliance should be handled with extreme care, always keeping it in its original packaging.
To take the appliance out of the packaging, proceed as Pic. 1:
1. Turn the fan coil box upside down and open the bottom.
2. Remove the polystyrene filling and keep it.
3. Keeping the bottom of the box open, turn the pack 180°, taking care that the contents are firmly hald before resting it gently on the ground. Lift off the packaging from the appliance.



Pic. 01

## SAFETY RULES


Secure packs during transportation.


Do not expose to the elements.

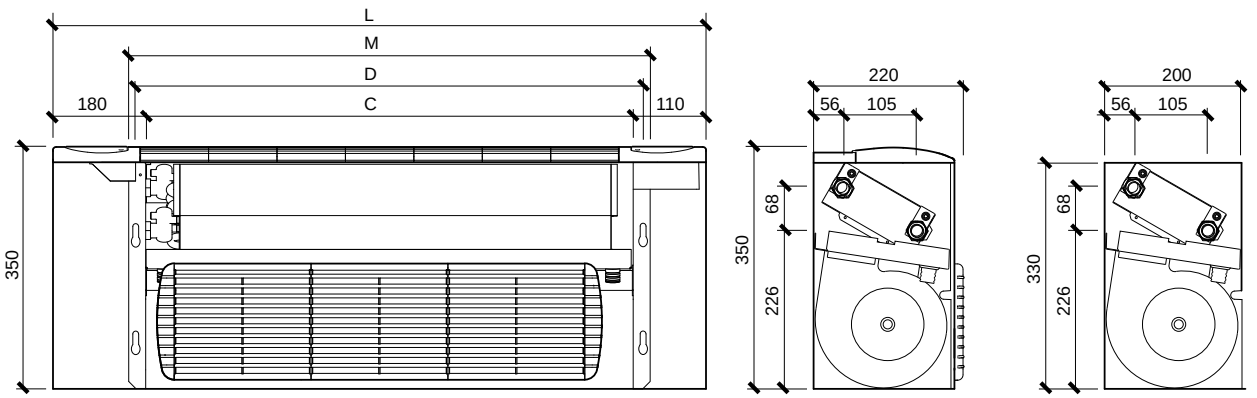

Do not tread on packs.


Protect hands with work gloves when dismantling the appliance.



Work in PAIRS if the applinance weighs more than 25 kg.

## GENERAL DIMENSIONS




Pic. 02

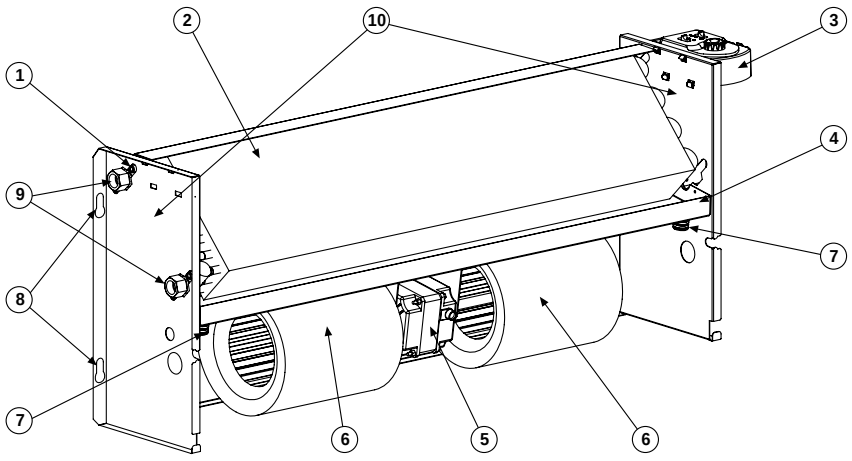
## GENERAL TECHNICAL DATA

| MODELS | | | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Fans | | n° | 1 | 1 | 2 | 2 | 2 |
| Coil | Row | n° | 3 | 3 | 3 | 3 | 3 |
| | Fitting | Ø | 1/2” | 1/2” | 1/2” | 1/2” | 1/2” |
| Condensate drain fitting | | Ø mm | 16 | 16 | 16 | 16 | 16 |
| | (L) | mm | 560 | 760 | 960 | 1160 | 1360 |
| | (M) | mm | 362 | 562 | 762 | 962 | 1162 |
| | (C) | mm | 310 | 510 | 710 | 910 | 1110 |
| | (D) | mm | 342 | 542 | 752 | 952 | 1152 |
| Net weight (max) | | kg | 15 | 16 | 21 | 26 | 30 |

**Power supply 230V / 1 / 50Hz**

Tab. 1

## MAIN PARTS

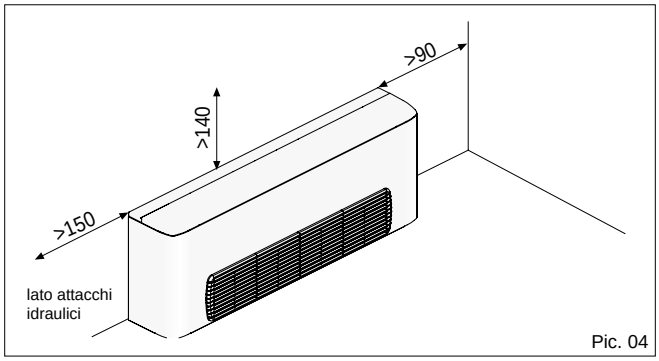



Pic. 03

| | | | |
|---|---|---|---|
| **1** | Air valve | **6** | Centrifugal fan |
| **2** | Exchange coil | **7** | Condensate drain |
| **3** | Control panel | **8** | Wall-mounting slots |
| **4** | Condensate drain pan | **9** | Coil fixing screws |
| **5** | Electric motor | **10** | Load-bearing structure |

## RECOMMENDATIONS FOR INSTALLATION

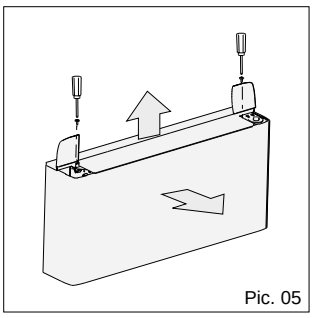
Before installing the appliance, ensure that:
1) the place of installation has sufficient space for carrying out installation as well as routine and extraordinary maintenance work (see Pic. 4).
2) There are no obstructions for air intake and delivery.
3) The water connections are of the sizes, in the position and spaced apart as required by the appliance (see Dimension).
4) The system pressure does not exceed 8 bar for the water versions.
5) The electricity supply corresponds to the data on the appliance rating plate and that there is a afety switch readily accessible to the user to cut off the power supply whenever necessary.
6) The safety switch is in the OFF position so that there is no voltage on the appliance supply line.

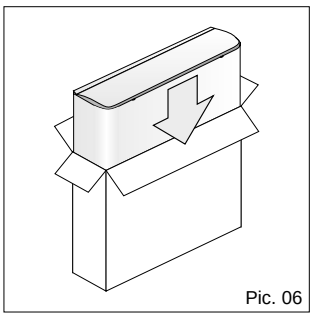


Pic. 04

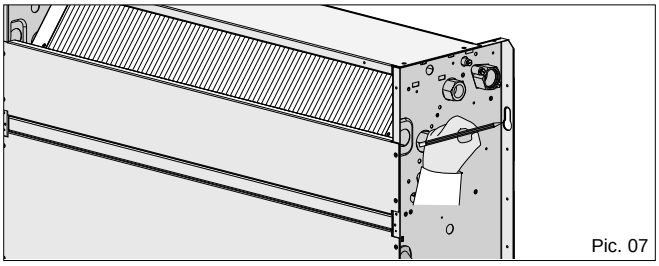
## FAN COIL INSTALLATION

Before installing the appliance, remove the housing (if present). Raise the flaps covering the control panel and the water connections. Remove the two screws fixing the housing to the fan coil load-bearing structure. Gipping the rear of the housing, remove it as shown in the Pic. 5 (NOTE: be careful of the lugs on the front part of the load-bearing structure, as shown in Pic.10).
Put the cabinet in the packing box to prevent it from being soiled or damaged (Pic.6)

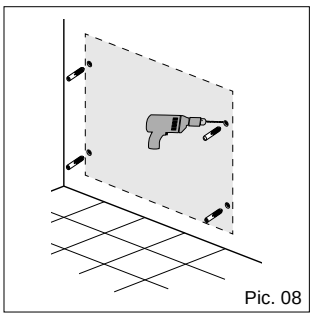

Pic. 05

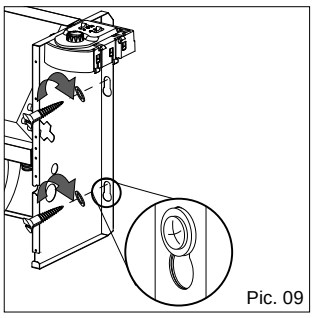

Pic. 06

Offer the appliance up to the required point of installation and mark, through the fixing holes, the points on the wall where the holes should be driller for the 4 screw anchors, as shown in Pic. 7.


Pic. 07

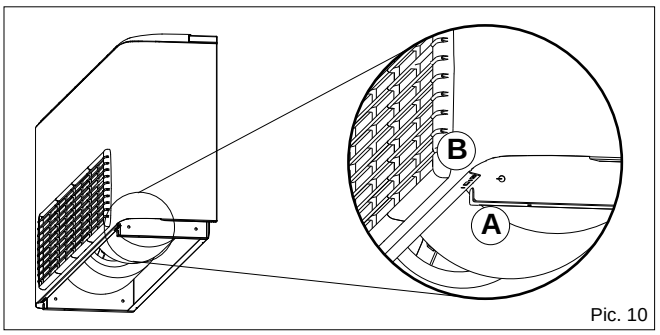
Remove the appliance from the point of installation, drill the holes where merked on the wall (see Pic. 8) and insert the screw anchors. Place the appliance against the wall and fix it by tightening the screws into the anchors see (Pic. 9). Carry out the water and electrical connections as described in the relevant paragraphs.


Pic. 08


Pic. 09

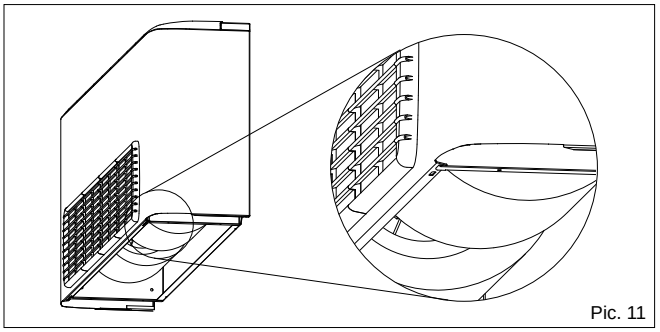
To replace the housing.

Take the cabinet from the packing box. Standing in front of the fancoil, lift cabinet, holding it by the sides, and tilt it (Pic. 10).



Pic. 10

Insert the lugs A into the relative slots B (Pic.11). Pivot the cabinet on its base until it is aligned with the wall. Raise the flaps covering the control panel and water connections and tighten the two fixing screws (Pic.5).


Pic. 11

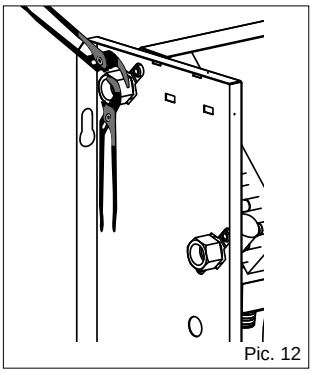
## WATER CONNECTIONS

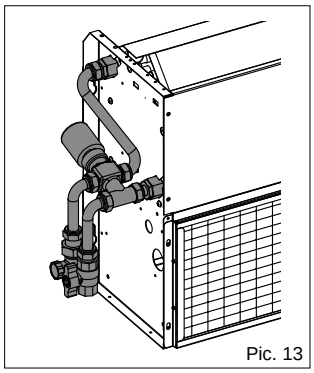
**CONNECTION TO THE WATER MAINS**

**CAUTION! Always use a wrench and nose key for connection of the coil to the pipes (Pic. 12). If the solenoid valve is installed, suitably insulate the valve body with insulating material (Pic. 13).**

Connect the water inlet and outlet pipes, observing the indications given on the side of the appliance. Correctly insulate the water supply pipes to prevent dripping during the cooling mode of operation. An shutoff valve should be inserted on the water supply pipe and balancing valve on the outlet pipe. The valve body and balancing valve should also be properly insulated to prevent dripping. It is the installer's responsibility to insulate properly and the manufacturer cannot be held liable for any insulation work.

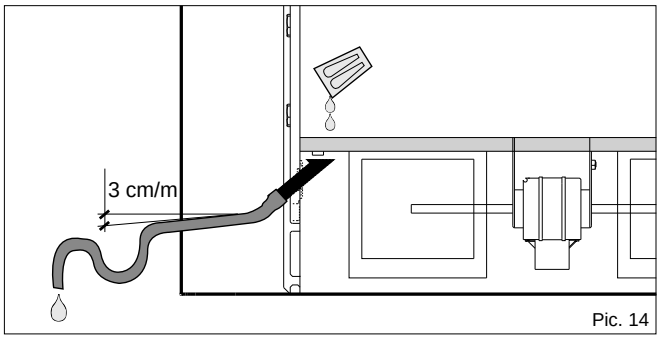
**NOTE: it is always advisable to install the solenoid valve. In the heating mode of operation the solenoid valve reduces consumption because upon reaching the set temperature the circulation of water is stopped to avoid wasting energy (the fan coil would otherwise continue to heat like a radiator, even with the motor at a standstill). In the cooling mode of operation the solenoid valve stops the circulation of water when the set temperature is reached, this stopiing the internal exchanger**
**from continuing to condense water with possible undersirable dripping into the floor. It also reduces chiller operation with consequent energy saving.**


Pic. 12


Pic. 13

**CONDENSATE WATER DRAINAGE**

The condensate drain pipe should slope downwards by at least 3 cm/m and should not have ascending or throttled section in order to ensure a regular flow of water. It is advisable for a trap to be fitted. The condensate drain pipe should be connected to a rainwater drainage system. Do not use sewage system to avoid possible odours in the event of evaporation of the water in the trap. Upon completion of work, check that the condensate flows out properly by pouring water into the tray (see Pic. 14). The condensate water drainage system should be fabricated
in a workmanlike manner and should be periodically checked. The manufacturer cannot be held liable for any damage caused by dripping in the absence of a solenoid valve or of periodic maintenance of the drainage system.

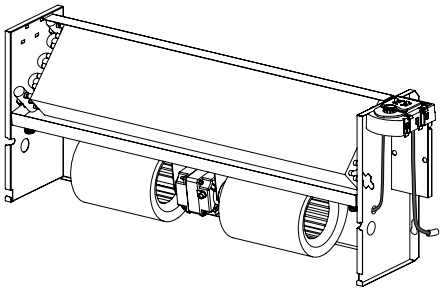


Pic. 14

## ELECTRICAL CONNECTIONS

**RECOMMENDATIONS!**

Before carrying out electrical connections, ensure that the electricity supply to the supply line has been cut off, checking that the on-off switch is in the OFF position. Only qualified electricians should carry out the electrical connections. Check that the mains supply is single-phase 230 Vac/1/50 Hz (± 10%).
Operating the appliance with voltages outside the above limits could cause malfunction and renders the warranty null and void.
The fan coil power supply line should be fitted with at least a switch isolator in conformity with European standard EN60947-3. Make sure that the electrical system is suitable for providing not only the working current required by the appliance, but also the necessary current for powering household and other electrical appliances already in use.
Any electrical and mechanical alterations or tampering render the warranty null and void. The motor and accessories power cables in channels or ducts should remain inside the same until they are inside the appliances.
The cables should be sufficiently long so that they are not permanently taut or create throttling or pressure on metal parts (see Pic. 15). The power cables should be sufficiently long so that in the event of accidental tugging the active wires are subjected to stress before the earth wire. Connect the earth wire to the relative terminal marked with the symbol ⏚.
Check the earth connection. Comply with the safety regulations in force in the country of installation.


Pic. 15

## CONNECTIONS TO THE TERMINAL BLOCKS

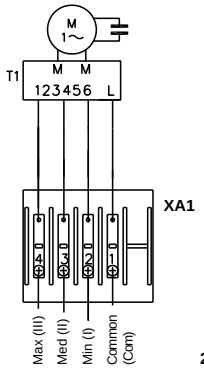
**WITHOUT CONTROL PANEL**

The electrical connections should be made to the terminal block on the side of the appliance (Pic. 16).
Each terminal is identified by the label to be found on the terminal block.

**WITH CONTROL PANEL**

The electrical connections should be made directly to the control panel, as shown by the relative wiring diagram. If the control panel has an electronic temperature sensor (NTC) this sensor will be powered by mains voltage (230Vac/1/50 Hz) and is therefore provided with double insulation.

**CAUTION: FAILURE TO COMPLY WITH THE INDICATED CONNECTIONS MAY CAUSE MOTOR BURNOUT!**




| | |
|---|---|
| **M** | Fan motor |
| **T1** | Autotransformer (not installed in all models) |
| **XA1** | Fan motor terminal board |

Pic. 16

## TESTING THE FANCOIL

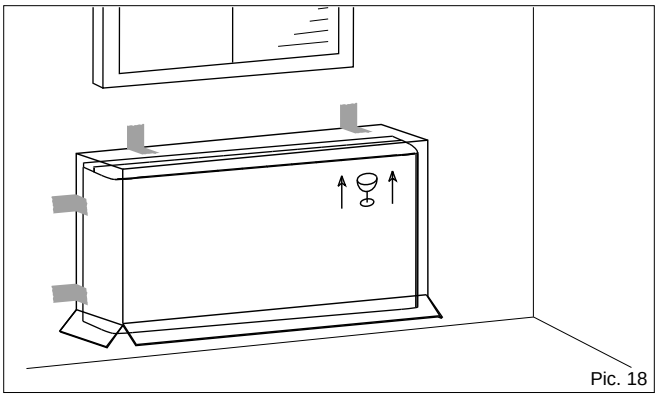
Upon completion of installation, scrupulously check both the water and the electrical connections before switching on the appliance.

**Before mounting the housing (if present)**, fill the system, bring it up to pressure and bleed. Make the water circulate and check for leaks.

**Check correct operation of the fan coil at the 3 speeds, of the solenoid valves and of the minimum temperature thermostat (if installed). The cabinet is covered by a protective film: remove it before fixing the housing to the appliance.**

**Remount the housing (if present)**, otherwise the customer has the responsibility of concealing the appliance.

**CAUTION! Protect the appliance with a cardboard box if building works are still being carried out (Pic. 18).**



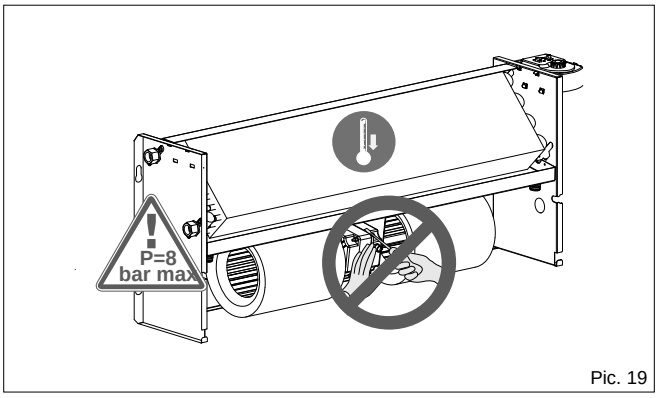
Pic. 18

## TURNING THE COIL

**CAUTION!**

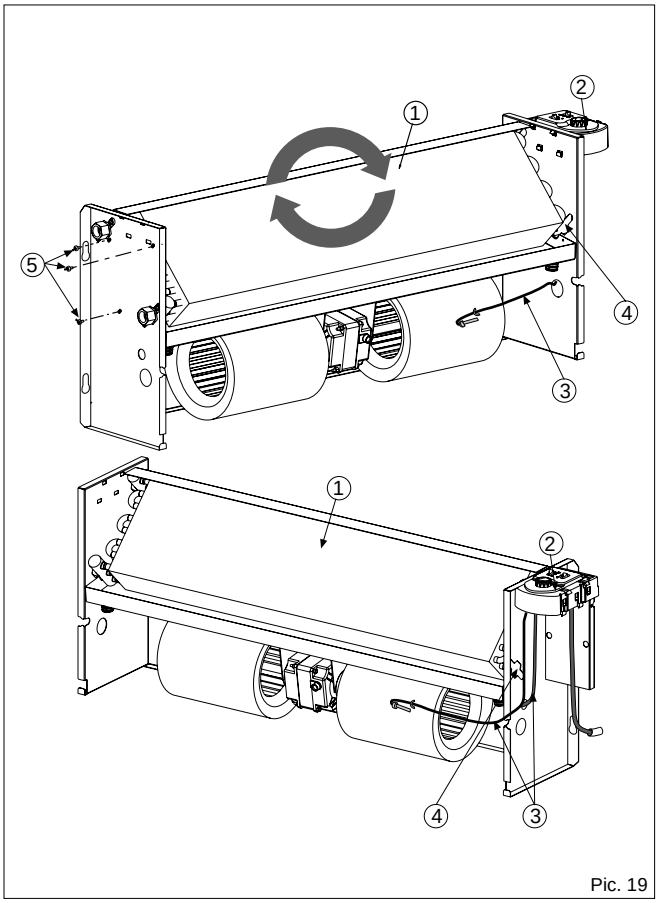
The fan may reach the speed of 1,000 rpm. Do not insert objects or hands into the electric fan. The motor becomes hot during operation; wait for it to cool before touching it. During the heating mode of operation the exchanger and the connecting pipes may become very hot (80°C).

**Wait for the exchanger to cool before touching it or protect hands with suitable gloves. The heat exchange water coils are suitable for working up to ma maximum pressure of 8 bar.**




Pic. 19

To turn the coil, proceed as follows:




Pic. 19

1. Remove the housing (if present).
2. Disconnect the terminal block or the control panel (2), if present, from the side of the appliance.
3. Remove the galvanised panels (4).
4. Remove the coil fixing screws (5).
5. Take out the coil (1), being careful not to be cut by the fins and not to damage them.
6. Remove the knockouts on the opposite side of the fan coil (using a screwdriver), to allow the coil connections to pass through.
7. Position the coil, turning it without tipping it upside down, so that the fittings are in line with the holes left by the knockouts.
8. Fix the coil using the previously removed screws (5).
9. Shift the control panel (2), if present, or the terminal block (fixing it to the side opposite the water fittings), the motor and sensor cables (3), if present, fixing them with their grips. Ensure that the cables pass through the hole in the side of the appliance, protecting them with the relative grommet. If it proves easier to carry out this operation by separating the wires from the terminal blocks, mark the positions of the wires to avoid making mistakes when reconnecting.
10. Reconnect the wires to the relative terminal blocks or control panel (2), taking care that they are correctly positioned.
11. Replace the galvanised panels.
12. Remount the housing (if present).

## USING THE APPLIANCE

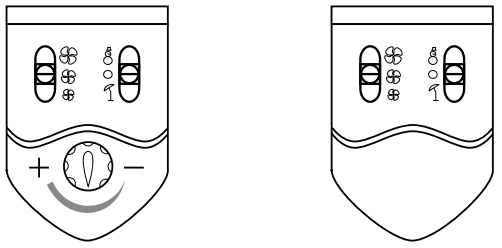
**CAUTION!**

This appliance should only be used by adults. Make sure that children do not touch the controls or play with the appliance. This appliance has been designed for use as a heating and cooling appliance in rooms that are clean and frequented by persons (with normal pollution). Avoid using for any other purpose. This appliance should not be used in places with suspended dust/powder or in potentially explosive atmospheres, in very damp environments or in the presence of oil in suspension or in particularly aggressive atmospheres.



**USING THE CONTROL PANEL**

If the appliance has a built-in control panel, raise the flap and proceed as follows.



**CONTROL PANEL WITH THERMOSTAT** — **BASE CONTROL PANEL**

Pic. 20

**Heating mode**

Put the season selector switch from the off position (○) to the winter position (☃).

The fan starts.

In models with minimum temperature thermostat (optional), the fan starts when the internal heat exchanger is sufficiently hot. If the water is not hot enough, the fan does not start.

**Cooling mode**

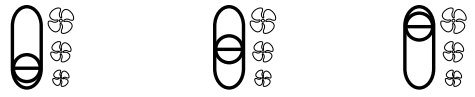
Put the season selector switch from the off position (○) to the summer position (1).

The fan starts immediately.

**Selecting the fan speed**

Put the selector switch to the required speed.

The higher the speed the quicker the room will be heated/cooled, although appliance operation will be noisier (Pic. 21).



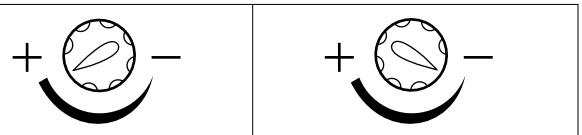
**Min. speed** — **Med. speed** — **Max speed**

Pic. 21

**Automatic temperature adjustment**
**(for control panel with built-in thermostat)**

This control panel has a built-in temperature sensor, which measures the room air temperature. This information is used for the automatic control of the fan or introduction of water into the internal exchanger through the solenoid valve (optional).

The appliance this keeps the room at the temperature set by the user.



Turn the knob towards the symbol + to raise the temperature

Turn the knob towards the symbol - to lower the temperature

Pic. 22

**The room temperature may be set approx. between 10°C and 30°C. If the appliance does not have a built-in control panel, but is controlled by a wall-mounted thermostat, refer to the thermostat instructions for use.**

## CLEANING AND MAINTENANCE

The appliance requires no periodic maintenance. Simple checks by the user to keep it in perfect working order are, however, necessary.

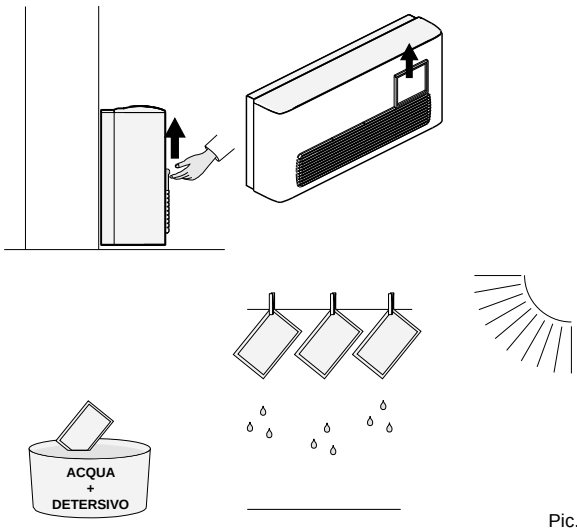
**CAUTION! Before carrying out any cleaning or maintenance work, disconnect the appliance from the mains electricity supply!**

**CLEANING THE AIR FILTER**

The appliance is fitted with an air filter on the fan inlet. During normal operation the filter withholds impurities in the air. The filter should be cleaned periodically to keep its filtering properties and the airflow to the fan unchanged. It is advisable to clean the filter at least once a month, proceeding as follows.

1. Take out the filter.
2. Place the filter on a flat, dry surface and remove the accumulated dust with a vacuum cleaner.
3. Wash the filter with water and detergent (no solvents).
4. Leave the filter to dry in a ventilated place in the sun.
5. Replace the filter when it is perfectly dry.

Clean the filter at the beginning and end of every season.




Pic. 24

Description Pic. 25: Cleaning the filter for the front intake version

**NOTE**

**The procedure for ceiling-mounted horizontal version is the same.**

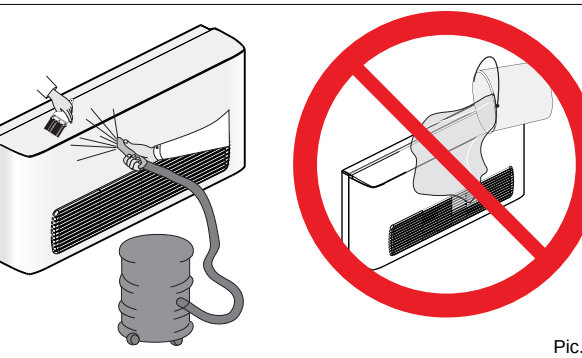
**CLEANING THE HOUSING AND THE CONTROL PANEL**

To clean the housing, use a dry soft cloth to avoid scratching the enamel.

To clean the control panel and the air outlet louvres, use a vacuum cleaner fitted with a soft dusting tool or use a separate brush.

Delicately clean the louvres and the controls by removing dust from the cracks and corners.

Under no circumstances use water.



Pic. 25

## WHAT TO DO IF...

| | |
|---|---|
| **The fan does not work** | |
| Possible cause: | power failure |
| Possible remedy: | check the on/off switch |
| Possible cause: | switch in position “0” |
| Possible remedy: | change position on the control panel |
| Possible cause: | water in the system not hot enought |
| Possible remedy: | check that the outlet temperature is above 40°C |
| **Little outflowing air** | |
| Possible cause: | clogged filter |
| Possible remedy: | clean the filter |
| **The appliance does not heat** | |
| Possible cause: | no hot water in the system |
| Possible remedy: | check that the boiler and circulating pump are working |
| Possible cause: | Incorrectly positioned hot/cold switch |
| Possible remedy: | check that the switch is on for heating and for cooling. |
| **The appliance does not cool** | |
| Possible cause: | no cold water in the system |
| Possible remedy: | check that the chiller and the circulating pump are working |
| **The appliance heat/cool very little** | |
| Possible cause: | incorrectly regulated thermostat |
| Possible remedy: | turn the thermostat knob (if installed) left/right |
| Possible cause: | air in the pipes |
| Possible remedy: | bleed by loosening the valve at the heat exchanger inlet |
| **Water on the floor during cooling** | |
| Possible cause: | blocked condensate drain |
| Possible remedy: | switch off the appliance and contact the installer to check condensate drainage |

## DISMANTLING THE APPLIANCE

This appliance is made to last for many years. Qualified personnel are needed to dismantle it in all safety. The first operation to be carried out before dismantling the appliance is to disconnect it totally from the electricity supply.
This appliance has been made using recyclable materials (copper, aluminium, brass, plastic) assembled by screws and push-fits to make separation of the parts easy.
Contact a firm specialised in differentiated waste disposal; it is the only way to be certain of correct recycling and thereby contribute to protection of the environment.



## NOTES

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With the perspective of improvement, and against the continuous action of research and development,
the Manufacturer might modify, even without any prior notice, the given technical data.