USER'S MANUAL

IMMERGAS

Instruction booklet and warning **IE**

HYDRO IN

1.043501ENG

We would first of all like to thank you for having chosen one of our products.

We are sure you will be happy with it because it represents the state of the art in the technology of home air conditioning.

By following the suggestions contained in this manual, the product you have purchased will operate without problems, giving you optimum room temperatures with minimum energy costs.

Symbols

The pictograms in the next chapter provide the necessary information for correct, safe use of the appliance in a rapid, unmistakable way.

Safety pictograms

Warning
The operation described may cause physical harm if not carried out in accordance with safety regulations.

Dangerous electrical current
Make personnel aware that the operation described may lead to electrical shocks if not carried out in accordance with safety regulations.

High temperature danger
Of safety regulations, the risk of burns caused by contact with components with high temperatures.

Prohibition
Refers to prohibited actions.

Summary

1. GENERAL

1.1 General warnings

- ⚠ This instruction is an integral part of the booklet of the appliance on which the kit is installed. Please consult this booklet for general warnings and fundamental safety rules.

- ⚠ This manual is designed only for the qualified and authorised installation technician, who must be sufficiently trained and in possession of all psycho-physical requirements as per the law.
- All operations must be carried out with care and according to best practices, and in compliance with workplace safety regulations.

- ⚠ The appliances must be installed by an authorised installer who, on completion of the work, will release a declaration of conformity to the client in respect of the laws in force and the indications given by the manufacturer in the instructions leaflet supplied together with the appliance.

- ⚠ Installation must be carried out by qualified personnel equipped with the necessary PERSONAL PROTECTIVE EQUIPMENT.

- ⚠ After unpacking, check that the contents are intact and that all parts are included. If not, contact the agent who sold the appliance to you.

- ⚠ It is forbidden to modify the safety or adjustment devices without authorisation from and indications of the manufacturer.

- ⚠ It is forbidden to dispose of, or leave in the reach of children, the packaging materials which could become a source of danger.

- ⚠ Repairs or maintenance must be performed by the Technical Assistance Service or by qualified personnel in accordance with this manual. Do not modify or tamper with the appliance as this could create dangerous situations and the manufacturer will not be liable for any damage caused.

- ⚠ These appliances have been designed both for conditioning and/or heating environments and must be destined for this use only and compatibly with their performance characteristics.
  The producer accepts no responsibility, either contractual or extra-contractual, for any damage caused to persons, animals of property as a result of incorrect installation, adjustment or maintenance or improper use.

- ⚠ In case of water leaks, turn the master switch of the system to "OFF" and close the water taps.
- As soon as possible, call the Technical service department or else professionally qualified personnel and do not intervene personally on the appliance.

- ⚠ The imbedded HYDRO IN do not have a grill or covering plate. Provide safety guards and air inlet/outlet grills to prevent accidental contact with the device.

- ⚠ If the appliance is not used for a log period of time, the following operations should be performed:
- Turn the master switch of the system to "OFF".
- Close the water taps.
- If there is the risk of freezing, make sure that anti-freeze has been added to the system otherwise empty the system.

- ⚠ If the room temperature is too low ot too high it is damaging for the health and is also a useless waste of energy.
  Avoid prolonged contact with the direct air flow.

- ⚠ Do not leave the room closed for long periods. Periodically open the windows to ensure a correct change of air.

- ⚠ This instruction leaflet is an integral part of the appliance and consequently must be kept carefully and must ALWAYS accompany the appliance, even when it is passed to a new owner or user or transferred onto another system. If it is lost or damaged, please contact the local Technical service centre.

- ⚠ Danger from burns - take care when touching.

1.2 Fundamental safety rules

⚠ Remember that some fundamental safety rules should be followed when using a product that uses electricity and water, such as:

⚠ Do not allow children or unassisted disabled people to use the unit.

⚠ This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

⚠ Do not open the access covers and carry out technical or cleaning activities before disconnecting the unit from the power grid by positioning the system's main switch in the "off" position.

⚠ It is forbidden to modify the safety or regulation devices without the authorisation and directions of the manufacturer.

⚠ Do not stand, sit and/or place objects on the unit.

⚠ The external parts of the appliance can reach temperatures of more than 70°C.

⚠ Do not pull, detach or twist the electrical wires coming out of the unit, even when the unit is disconnected from the power grid.

⚠ It is forbidden to poke objects or anything else through the inlet or outlet grills.

⚠ Do not spray or throw water directly on the unit.

⚠ It is forbidden to dispose of or leave in the reach of children the packaging materials which could become a source of danger.

⚠ It is strictly forbidden to touch any moving parts, interfere with them or introduce pointed objects through the grids.

⚠ Do not touch the unit while barefoot and/or partially wet.

⚠ It is forbidden to carry out any cleaning before having disconnected the appliance from the electricity mains supply by turning the system master switch to "OFF".

2. 3.029896

2.1 Assembly, set-up and connection of 3.029896 control panels

The controllers have two independent clean contacts for controlling a refrigerator unit, a boiler and a presence input. The 2 tube versions have a 230V output to power the summer and winter solenoid valve.
The 10 kΩ water temperature probe positioned in the compartment on the battery regulations the minimum level when heating (30°C) and the maximum level when cooling (20°C).
The board also has a function when there is no water probe, in such cases the fan stop thresholds are ignored.

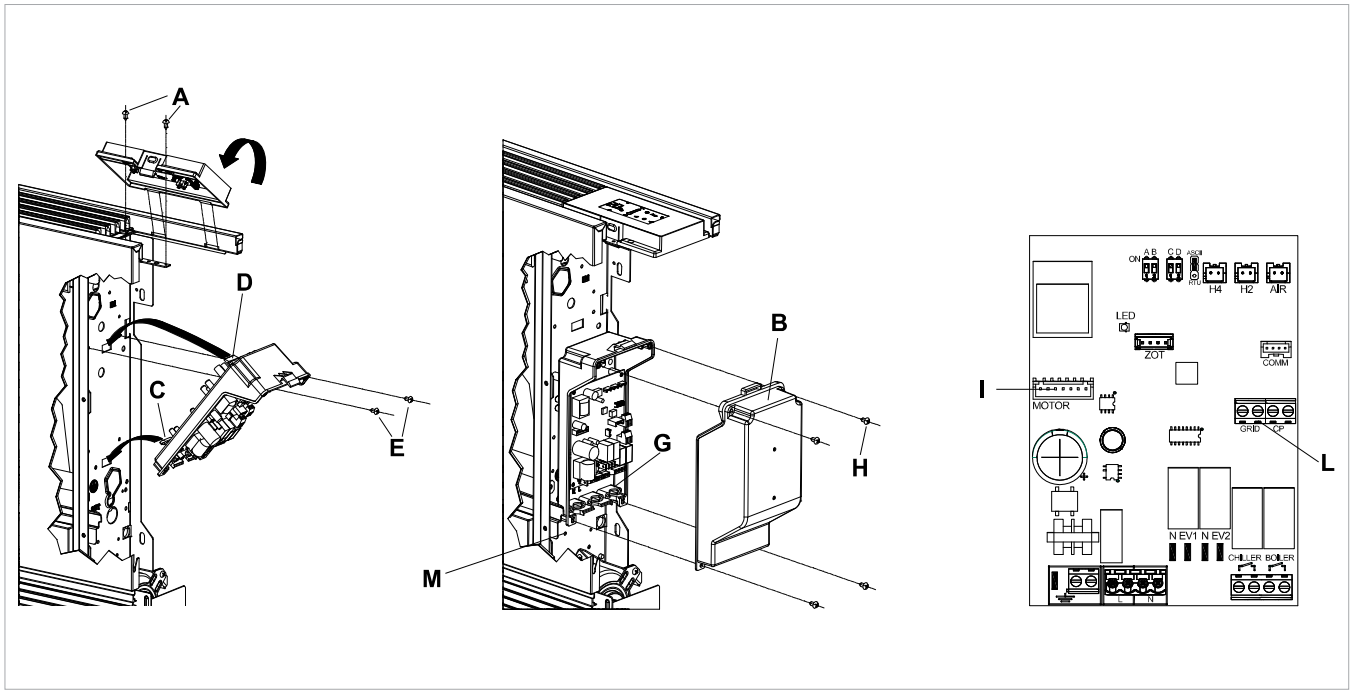
2.2 Assembly

Slide the control panel into its housing in the upper part of the device and fix it with the two fixing screws (ref. A).
To install the connection box:

- open the box (ref. B);
- lock the lower tooth into its hole (ref. C) on the side of the device;
- hook the upper part of the box to the side (ref. D);
- fix it with the two fixing screws (ref. E);
- connect the grounding cable to the fan coil body (ref. M) using the fixing screws (the minimum force that must be applied for tightening screws must be around 2N);
- connect the fast connector of the MOTOR to the other on the board (ref. I) *;
- on the two GRID block terminals (ref. L) there is a bridge that allows the versions to work without a microswitch.
- For other versions, remove the bridge and connect the two terminals originating on the grill safety microswitch*;
- connect the water probe to the H2 connector on the device.
  The water temperature probe controls the temperature inside the batteries and determines when the fan starts according to pre-set parameters (minimum operation in winder and maximum in summer).**
  Check that they are correctly inserted into the compartment on the battery.
- Connect the electrics, tidy cables and fix them with the three clevises supplied (ref. G);
- close the box with the 4 screws (ref. H);
- refit the vanity plate on the side of the unit;
- tighten the upper screws on the control panel;
- place the screw head covers in their housing on the control panel;

* For versions with hydraulic connections on the right, refer to the relevant paragraph

** The regulation also works without a water probe connected



2.3 Set-up of auxiliary dip-switch functions B and C

There are two dip switches on the controller circuit board for configuring unit operation as per requirements.

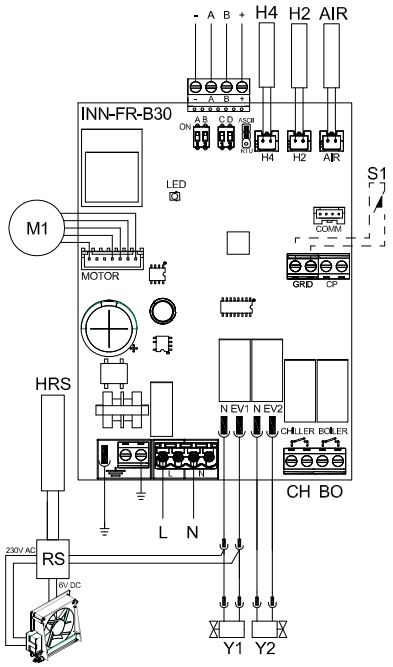
- The night-time heating operation logic is modified by using dip switch C:
- in the ON position, the fan is always off, and heats the room using radiation and natural convection, as with traditional radiators; in the off position it operates as a normal fan.
- By positioning dip switch B to ON, when cooling, the fan operates at the minimum speed even after having reached the set point, to allow for more uniform operation of the temperature probe and to avoid layering in the air. With the cursor in the OFF position, the functions are cycled (4 minutes ON, 10 minutes OFF).

2.4 3.029896 connections

-AB+	serial connection for 3.029897/3.029898 wall-mounted remote control (respect AB polarity)
H2**	hot water temperature probe (10 kΩ)
H4**	cold water temperature probe (10 kΩ) (648 only)
M1	DC inverter fan motor
S1	grill safety micro-switch
Y1	hot water solenoid valve (230V/ 50Hz 1A output voltage)
Y2	Flap mobile (3.029896). (230V/ 50Hz 1A output voltage)
L-N	230V/50Hz electrical power supply
BO	boiler consent output (free contact max 1A)
CH	chiller consent output (free contact max 1A)
CP	not used in this version

HRS	RS water probe (10 kΩ) (3.029896 only)
AIR	Air probe optional (*)
RS	RS version cabling (3.029896 only)
******	If after switching the power on the board detects the H2 probe, start-up occurs in normal conditions with the minimum water temperature when heating (30°C) and maximum when cooling (20°C). The board also has a function when there is no probe, in such cases the fan stop minimum and maximum thresholds are ignored.

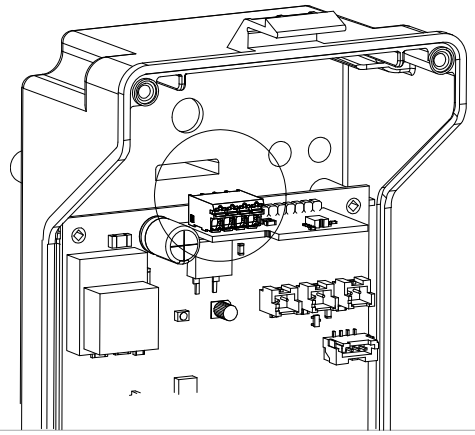
3.029896

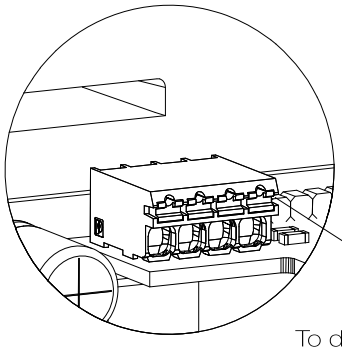


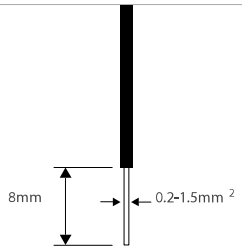
Rigid or flexible wires with a 0.2 to 1.5 mm² cross-section (0.75 mm² if two wires are connected to the same terminal block) can be inserted in the 4 spring-loaded terminal blocks (ref. A) for connection of the wall-mounted controller 3.029897/3.029898. If the wires have wire end ferrules with a plastic collar, the maximum cross-section is 0.75 mm².

Strip 8 mm of the wire, then if the wire is rigid, you can insert it easily whereas, if it is flexible, it is advisable to use long nose pliers.

Push the wire completely in and check that it is anchored by pulling it gently.



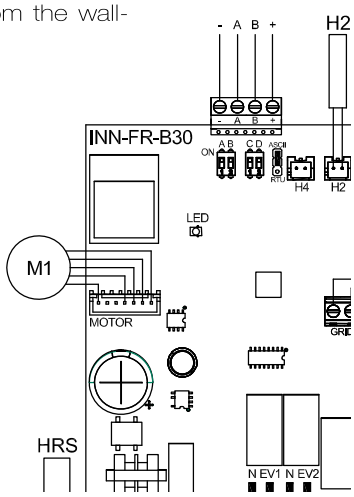




To disconnect the cables, press the corresponding white indent (ref. A) with a screwdriver and remove the conductor.

2.5 Continuous modulation circuit board for connecting remote thermostat

- The circuit board for remote control is for all functions of the fan coil system from the wall-mounted remote control 3.029897/3.029898.
- A remote control can be connected to a maximum of 30 fan coils that will be controlled in broadcast mode (simultaneous commands to all fan coils).
- It can be installed on all versions, the board has a green LED that indicates the operational state and any anomalies.
- The main operational parameters, the set point and the room temperature are transmitted from the wall-mounted remote control 3.029897/3.029898 to all terminals connected to the network, allowing unified operation.
- Refer to the instructions for this control for use of the fan coils.
- The 10 kΩ water temperature probe positioned in the device battery regulations the minimum level when heating (30°C) and the maximum level when cooling (20°C).



2.6 LED Indications (ref.A)

●	Green LED: Indicates that the unit is operational. Flashing indicates an anomaly.	●	LED off: unit is off or has no power.

Error messages

Error	Display
Communication error. The circuit board expects continuous information exchange on the serial line with the wall-mounted control 3.029897/3.029898. If this exchange is lost for more than 5 minutes, an error warning is displayed and the unit deactivated.	6 flashes + pause
Problem with fan motor (e.g. blockage caused by foreign objects, faulty rotation sensor).	2 flashes + pause
Water temperature probe fault for 2-tube versions (H2). In this case, ensure that the probe installed is 10 kΩ.	3 flashes + pause
Engaging of grille microswitch S1 due to filter cleaning operation.	Continuous rapid flashing
Water demand detected by probe H2 insufficient (above 20°C when cooling, below 30°C when heating). Stops the fan until the temperature returns to a suitable level to satisfy the demand*.	1 flash + pause

- * If after having powered the board the water probe is detected, start-up takes place with the minimum and maximum water temperature thresholds.
- The board also has a function when there is no probe, in such cases the fan stop thresholds are ignored.

3. 3.029897/3.029898

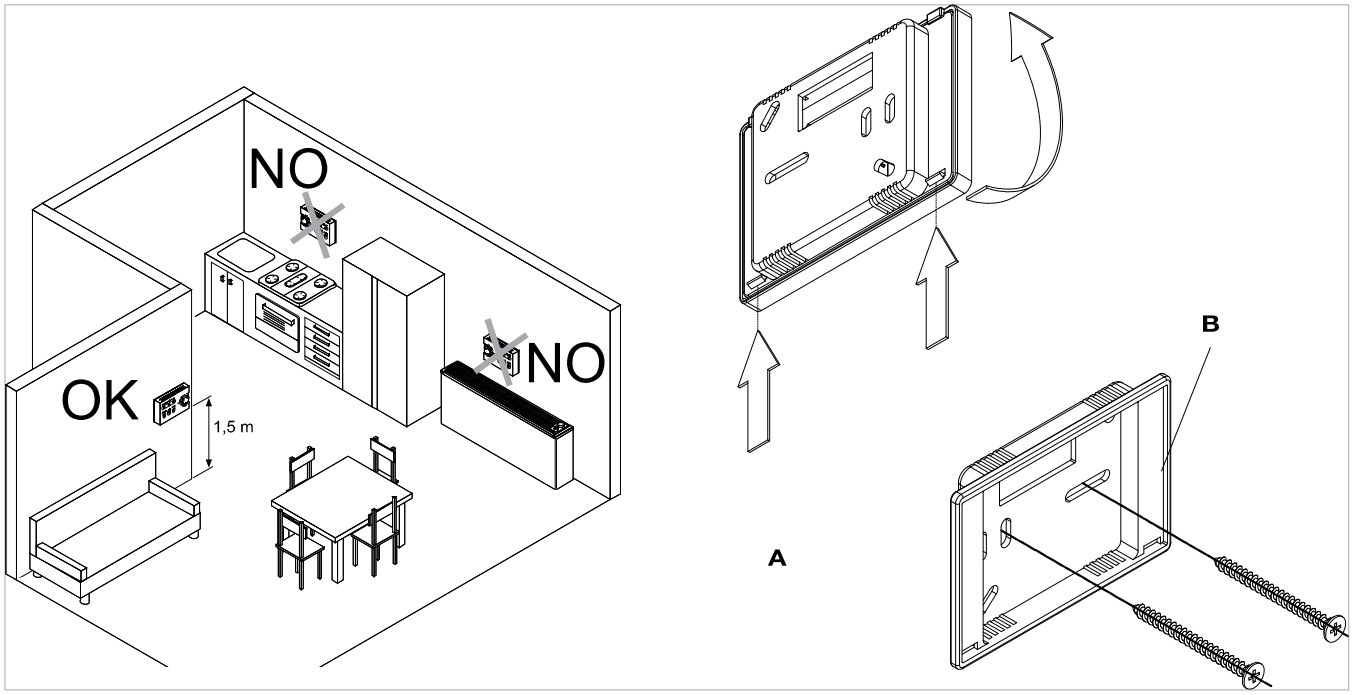
3.1 3.029897/3.029898 wall-mounted remote control panel assembly

3.029897/3.029898 wall-mounted remote control is an electronic thermostat (fitted with an optional temperature probe which can be remotely installed in one of the fan coils connected to it) with the possibility to control one or more units (up to max. 30) fitted with an electronic controller for remote control 3.029896.

- Install the wall-mounted remote control 3.029897/3.029898 away from doors and/or windows and from heat sources (radiators, fan coils, hobs, direct sunlight), on internal walls and around 1.5m from the floor.

The wall-mounted remote control is inside the pre-assembled package, therefore prior to affixing to the wall, the two parts should be separated by unhooking the two protruding teeth on the rear (A).

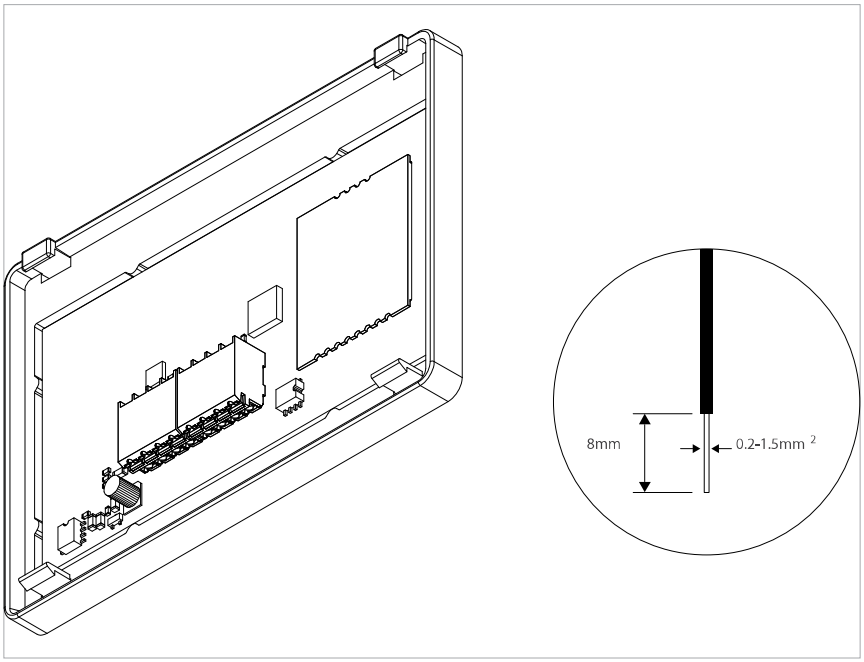
- Use the base of the controller (ref. B in diagram) to trace the fixing points on to the wall (use two opposing holes).
- Then proceed with the following operations:
- drill holes in the wall;
- pass the cables through the window on the base;
- fix the base of the controller to the wall using suitable screws and wall plugs;
- make the electrical connections then close the controller taking care not to crush the conducting wires.



3.2 -AB+ and CP spring-loaded terminal connections

Rigid or flexible wires with a 0.2 to 1.5 mm² cross-section can be inserted in the spring-loaded terminal blocks for the serial connection. If the wires have wire end ferrules with a plastic collar, the maximum cross-section reduced to 0.75 mm².
For correct and safe connection, carry out the following operations:

- Strip back the wires by 8mm as shown below;
- if the cable is rigid the end of the wire can be inserted easily, whereas with flexible cable it may be easier to use a long pointed pair of pliers to insert correctly.
- Push the wire completely in and check that it is anchored by pulling it gently.
- To disconnect the cables, press the corresponding white indent (ref. C) with a screwdriver and remove the conductor.



3.3 CP occupancy contact input connection

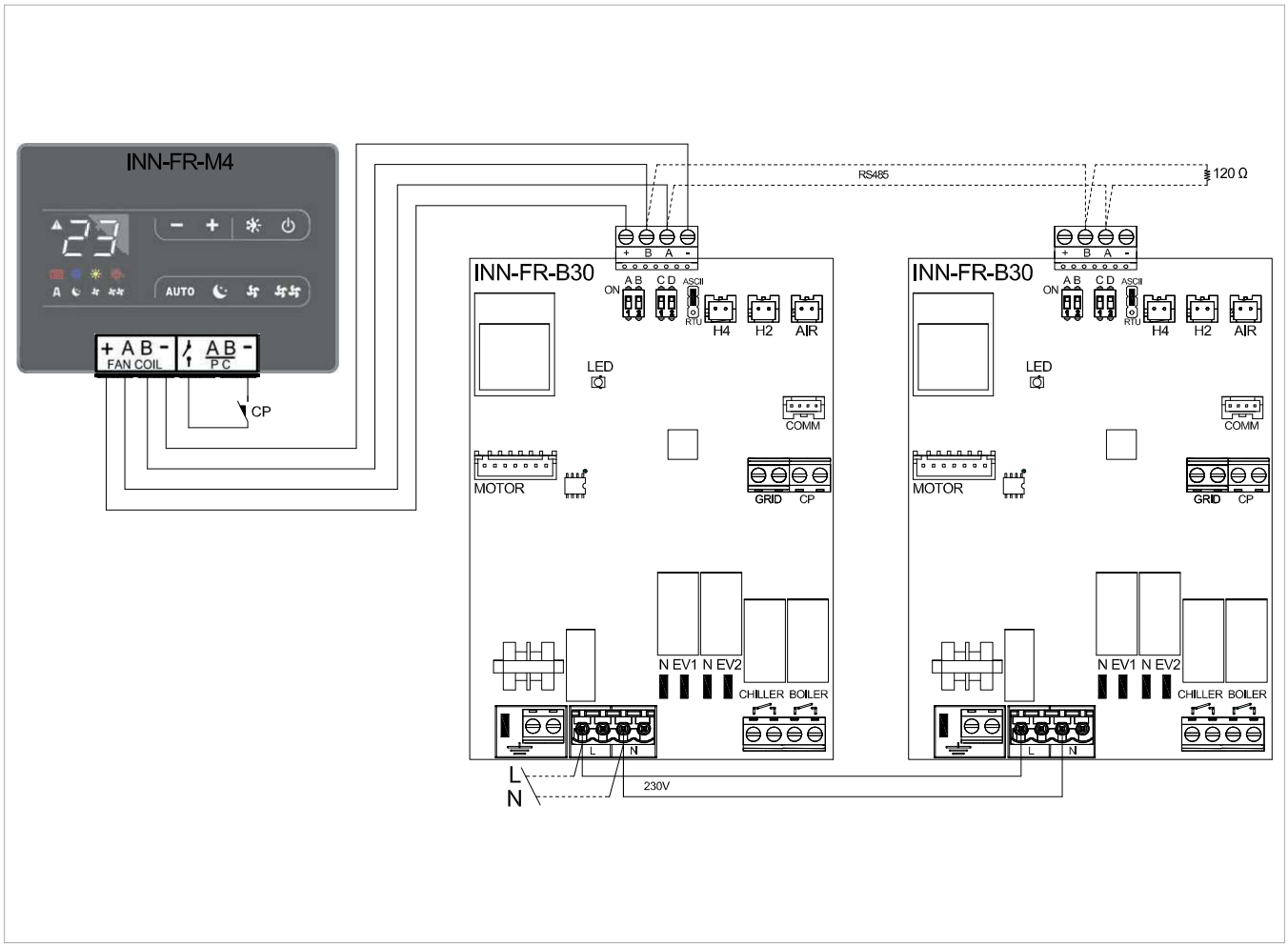
On closing the contact connected to the CP input (ref. A) the panels are placed into stand-by. If the contact is open the units are active, if the contact is closed they are deactivated when a key is pressed ⚠ symbol flashes.

N.B.: the input cannot be connected in parallel to that of other electronic boards (use separate contacts).

3.4 Connections

Connect the RS485 line of the wall-mounted remote control to one or more (up ot a maximum of 30) devices fitted with electronics for remote control 3.029896 using a suitable two-core cable for serial connections RS485 keeping the power supply cables separate.

- Chase out the wall in order to minimise the length of the leads;
- complete the line with the supplied 120 Ω heating element;
- do not make "star" connections;
- The RS485 cable connection is polarised, respect the "A" and "B" indications on every periphery connected (for connecting, it is preferable to use a shielded two-core cable with a minimum thickness of 0.35 mm^2);
- connect the + and - power terminals on the wall mounted terminal block, 5V DC, to one of the boards 3.029896, respecting polarity.



4. UNIVERSAL CARD KIT FOR COMMERCIAL TEMPERATURE CONTROLLER

4.1 Assembly and connections

Assembled on-board the unit, this card allows the regulation of the motor with fixed speeds; it can be combined with control panels with thermostat and with all control panels available in the market.

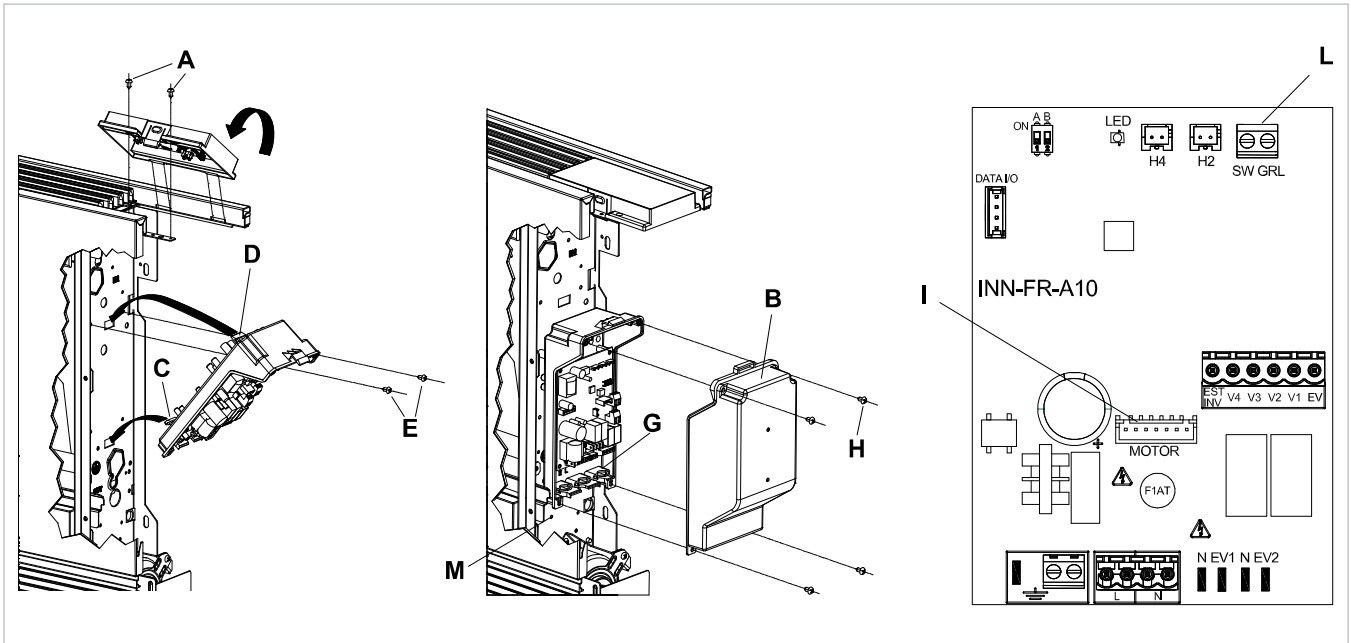
It has a 230 V output to pilot the summer and winter solenoid valve.

4.2 Assembly

Slide the blanking panel into its housing in the upper part of the device and fix it with the two fixing screws (ref. A).
To install the connection box:

- open the box (ref. B);
- lock the lower tooth into its hole (ref. C) on the side of the device;
- hook the upper part of the box to the side (ref. D);
- fix it with the two fixing screws (ref. E);
- connect the grounding cable to the unit body (ref. M) using the fixing screws (the minimum force that must be applied for tightening screws must be around 2N);
- on the two SW GRL block terminals (ref. L) there is a bridge which must not be removed.
- For other versions, remove the bridge and connect the two terminals originating on the grill safety microswitch*;
- connect the fast connector of the MOTOR to the other on the board (ref. I);
- Connect the electrics, tidy cables and fix them with the three clevises supplied (ref. G);
- close the box with the 4 screws (ref. H);
- refit the vanity plate on the side of the unit;
- tighten the upper screw on the blanking panel;
- place the screw head cover in its housing on the blanking panel;

* For versions with hydraulic connections on the right, refer to the relevant paragraph.

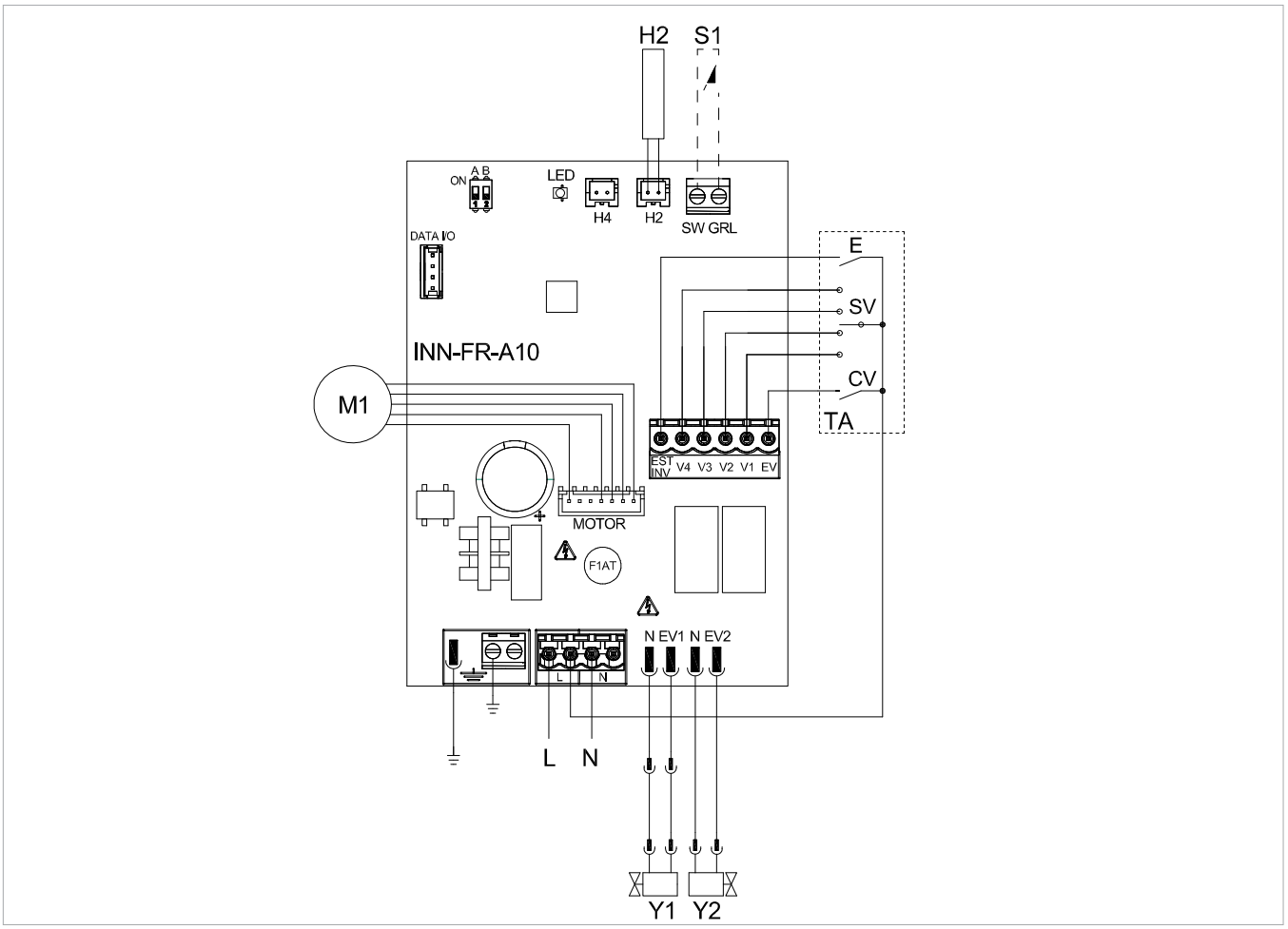


4.3 Connection diagram with 3-speed thermostat

Make the electrical connections to a thermostat fit for use according to the diagram.

L-N	electrical supply 230V-50Hz
EV	solenoid valve permission input
V1	maximum fan speed
V2	medium fan speed
V3	minimum fan speed
V4	supersilent speed
E	heating selection input, cooling See paragraph on Water Probe Management
Y2	output for mobile suction panel servo (power output 230V/ 50Hz 1A)
Y1	water solenoid valve (230 V/ 50 Hz 1A output voltage)

M1	DC inverter fan motor
S1	safety micro-switch for grill
TA	3-speed room thermostat (to be purchased, installation and connection to be made by installer)
CV	thermostat permission
SV	speed selector
H2*	water temperature probe (10 kΩ)
*	positioned in the on-board battery. See paragraph on Water Probe Management



4.4 Connections with 3-speed thermostats

The CV input is the board ON/OFF which when open puts the board in stand-by. It must be bridged to the L terminal on the 230V power supply to activate solenoid valve Y1.
The 4 speed inputs V1, V2, V3 and V4, when bridged to the L terminal on the 230V power supply, activate the fan if the S1 input to which the grill safety microswitch is connected is closed. The sequence is: maximum speed (1400 rpm on terminal V1), medium speed (1100 rpm on terminal V2), minimum speed (680 rpm on terminal V3) and supersilent speed (400 rpm on terminal V4).
Connect the three thermostat speeds to 3 out of the 4 available inputs as per the characteristics and use of the room: connect, for example, medium speed V2, minimum V3 and supersilent V4 for residential applications, when greater silence is required, whereas V1, V2 and V3 can be connected for commercial applications where the thermal yield is more important.
If multiple inputs are simultaneously closed, the motor will run at a number of revs equal to that of the connection with the highest speed.
Multiple cards can be connected in parallel to a single thermostat, also using different speeds.

4.5 LED signals

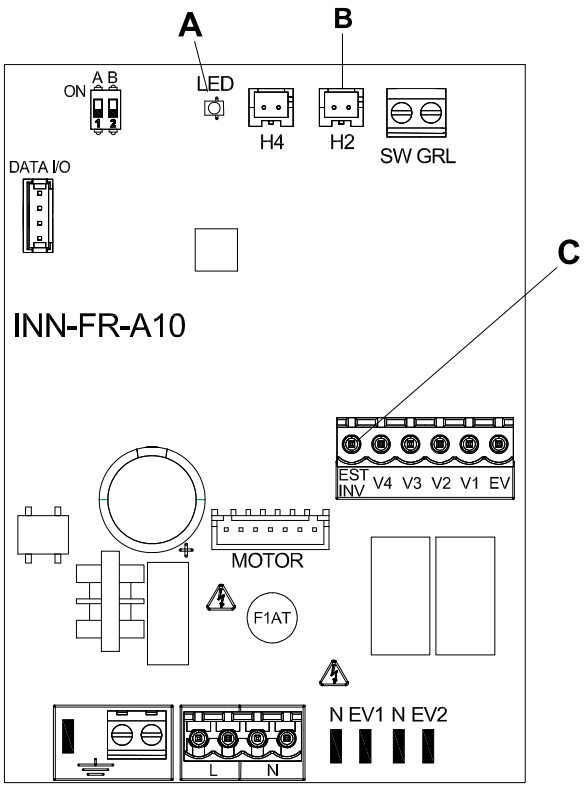
The LED (ref. A) is off if the CV input is not closed (stand-by condition).
It turns on when the CV contact is closed and indicates normal operation.

- Flashes frequently if the grille microswitch S1 is activated due to the filter cleaning operation
- 1 flash + pause indicates a fan stoppage alarm due to unsuitable water (with H2 water probe connected).
- 2 flashes + pause due to a motor alarm (e.g. blockage caused by foreign objects, faulty rotation sensor).
- 3 flashes + pause indicates a disconnected or faulty water probe alarm.

4.6 Water probe management with 3-speed thermostat

If the board is used with electromechanical thermostats, or with other commercial controllers with water probe, the on-board probe H2 should not be connected and the fan is controlled by the remote control.
If on the other hand the controller is not set up for managing the water probe, this function can be performed by the board, by connecting the 10 kΩ probe on the battery to the H2 connector on the board (ref. B).
In this case the board carries out the minimum temperature function for heating operations and maximum temperature function for cooling. Therefore, if the water temperature is not suitable for active operation (above 20°C when cooling, under 30°C when heating) the fan is stopped and the anomaly is signalled by a single flash + pause of the LED (ref. A).

The discrimination between heating/cooling is actuated via the Summer-Winter (ref. C) input of the board: leaving it open the board activates heating, closed activates cooling.
If after having connected the probe it is disconnected or measures incorrect values (e.g. installation of 2 kΩ probe in the place of the 10 kΩ probe) the anomaly is signalled by 3 flashes + pause of the LED (ref. A) and operation is stopped.
To confirm operation without a probe, turn the power to the board off and then on again.
This condition is saved by the board for future start-ups.
In any case, as and when the probe is connected, the unit returns to normal operation with temperature thresholds.



5. 0-10 V DEMAND BOARD KIT

5.1 Assembly and connections

When fitted on board the machine it allows for managing the motor, with modulated speed; motor regulation can be made using an analogue 0-10V DC input with 25 kΩ impedance.

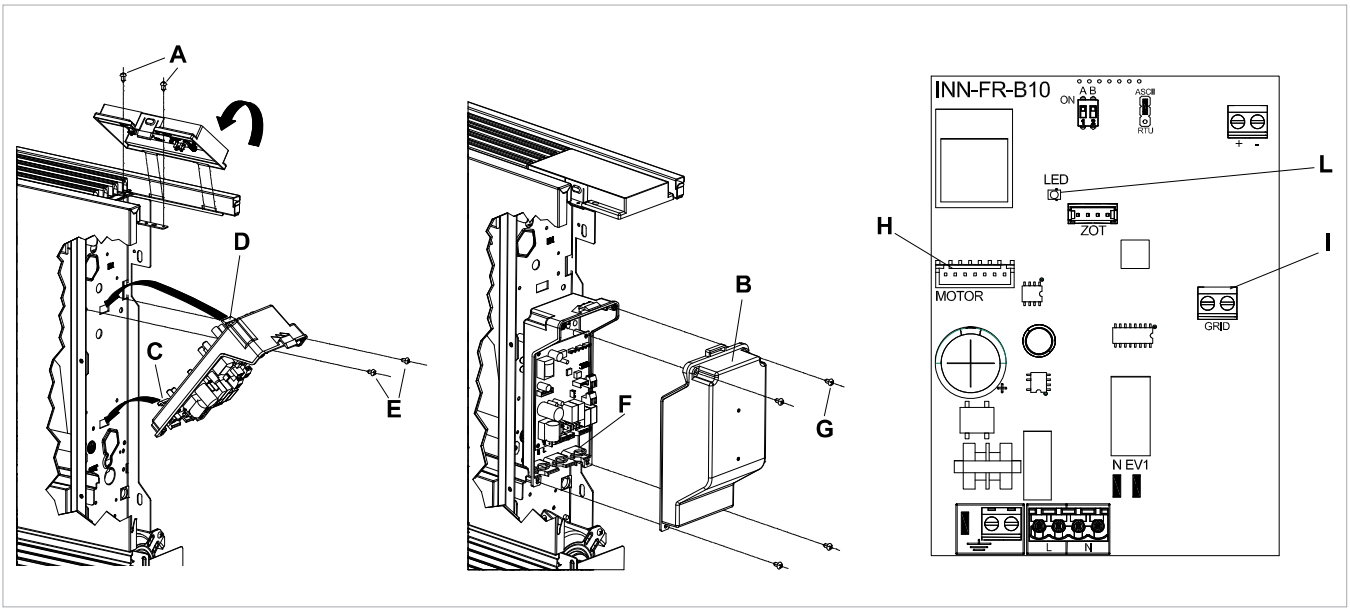
For board control outputs these impedance values must be considered, especially when controlling more than one unit in parallel.
It has a 230 V output to pilot the solenoid valve.

5.2 Assembly

Slide the blanking panel into its housing in the upper part of the device and fix it with the two fixing screws (ref. A).
To install the connection box:

- open the box (ref. B);
- lock the lower tooth into its hole (ref. C) on the side of the device;
- hook the upper part of the box to the side (ref. D);
- fix it with the two fixing screws (ref. E);
- connect the grounding cable to the unit structure using the fixing screws (the minimum force that must be applied for tightening screws must be around 2N);
- on the two GRID block terminals (ref. I) there is a bridge which must not be removed.
- connect the fast connector of the MOTOR to the other on the board (ref. H);
- Connect the electrics, tidy cables and fix them with the three clevises supplied (ref. F);
- close the box with the 4 screws (ref. G);
- refit the vanity plate on the side of the unit;
- tighten the upper screws on the blanking panel;
- place the screw head covers in their housing on the blanking panel;

* For versions with hydraulic connections on the right, refer to the relevant paragraph.



5.3 LED signals

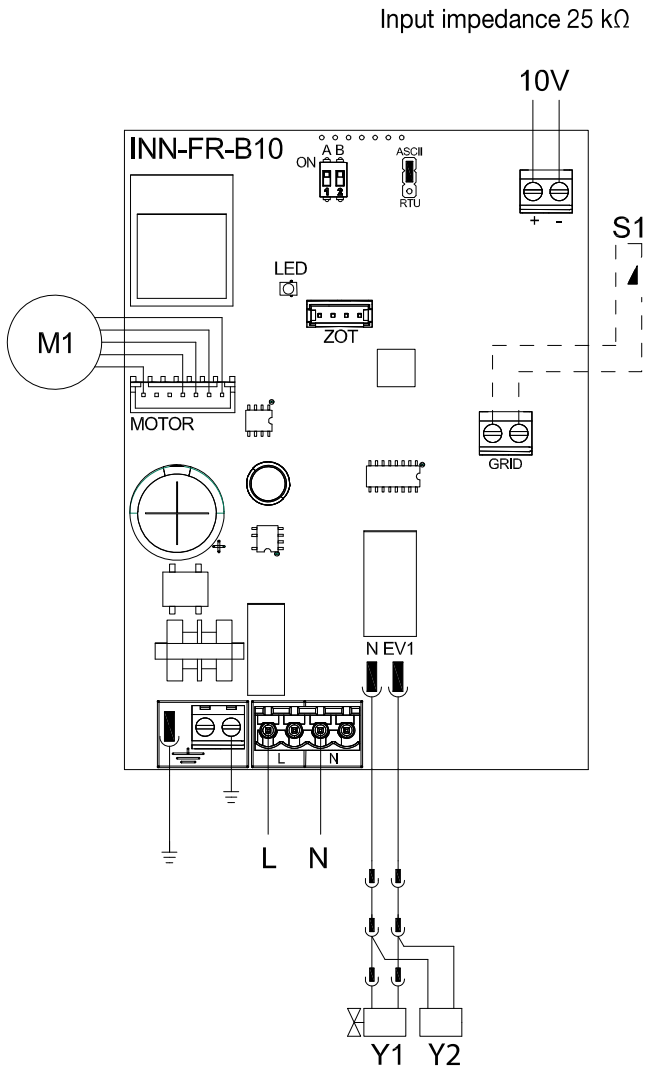
The LED (ref. L) is off is the input signal is less than 0.9V.
It turns on with values greater than 1V and indicates normal operation.

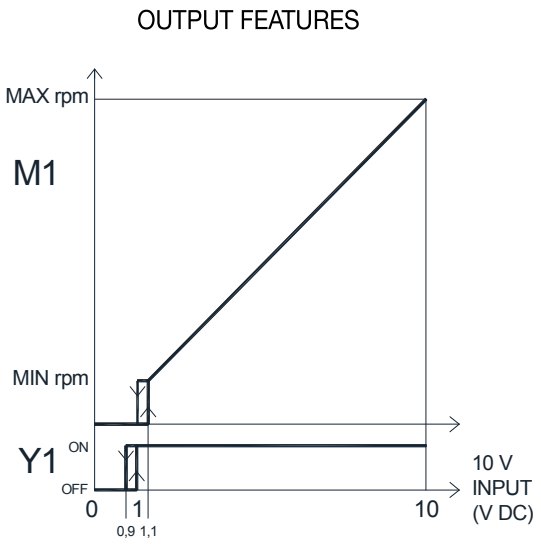
- Flashes frequently if the grille microswitch S1 is activated due to the filter cleaning operation
- 2 flashes + pause due to a motor alarm (e.g. blockage caused by foreign objects, faulty rotation sensor).

5.4 Connection diagram with 0-10V DC thermostats / signals

Make the electrical connections to a thermostat fit for use according to the diagram

L-N	Electrical power supply 230V-50 Hz
10V	Appliance piloting input 0÷10 V
Y1	water solenoid valve (230V/ 50Hz 1A output voltage)
Y2	output for mobile suction panel servo (power output 230 V/ 50Hz 1A)
M1	DC inverter fan motor
S1	safety micro-switch for grill





5.5 Connections with 0-10V thermostats

The 10V input, if the S1 input which the grill safety micro switch is connected to is closed, activates solenoid valve Y1 and regulations fan revolutions.
The speed "ramp" provides for linear regulation from the minimum value (400 rpm) to the maximum value (1,400 rpm) for voltage values ≥ 1.1V÷10 V DC.

The motor is off when values are lower than 1V DC.
The Y1 solenoid valve is activated for power values > 1V DC and switches off then the power drops below 0.9V DC.

6. DECORATIVE PANEL KIT WITH RECESSED INSTALLATION WITH FREE FLOW 3.029882÷85

6.1 Assembly

N.B.: this kit can be installed in VERTICAL POSITION WITH HORIZONTAL FREE FLOW and in HORIZONTAL POSITION WITH VERTICAL FREE FLOW. For installation in HORIZONTAL POSITION WITH DUCTED FLOW, one of the DECORATIVE PANEL KITS FOR CEILING RECESSED INSTALLATION WITH DUCTED FLOW 3.029886÷90 is required.

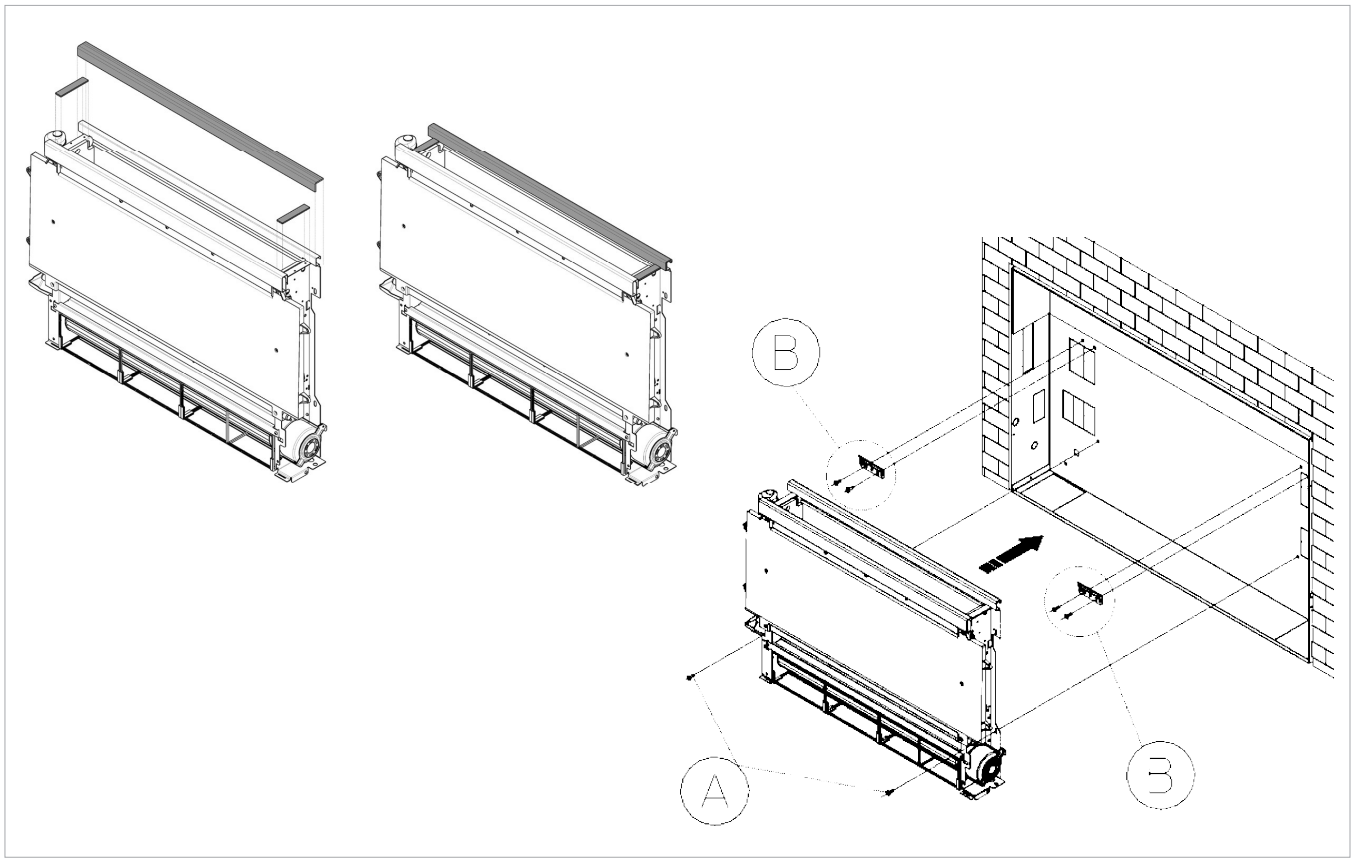
N.B.: before installing the appliance, check that the hydraulic and electrical connections have been made inside the metal structure.

Appliance assembly

- Apply the 3 insulating materials supplied to the upper part of the appliance;
- Make 4 Ø 8mm holes at the B openings and insert the dowels (2 for each bracket) into the wall ;
- Mount the 2 support brackets supplied with the appliance by using the screws and washers provided with the dowels;
- Check the correct locking by manually moving the brackets to the right and left, up and down;
- Mount the appliance in the metal structure, checking it is correctly hooked on the brackets and is stable.

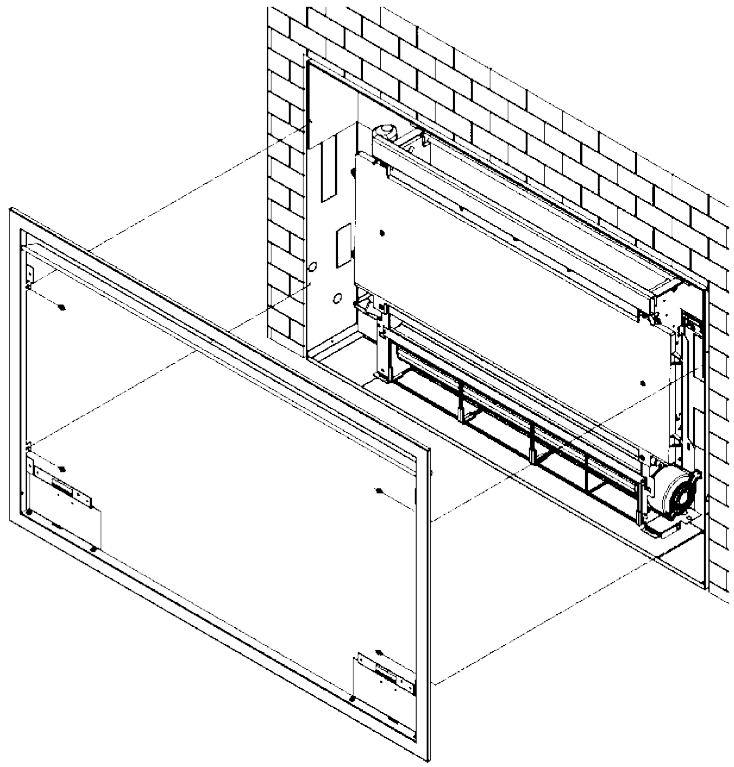
N.B.: for the horizontal ceiling version, lock the appliance through the 2 A holes by using the screws and washers supplied with the dowels.

N.B.: before proceeding with the assembly of the kit it is required to disassemble the GRID, FILTER BLOCK and FRONT PANEL components by unscrewing the 6 fixing screws in the lower part of the FRONT PANEL.



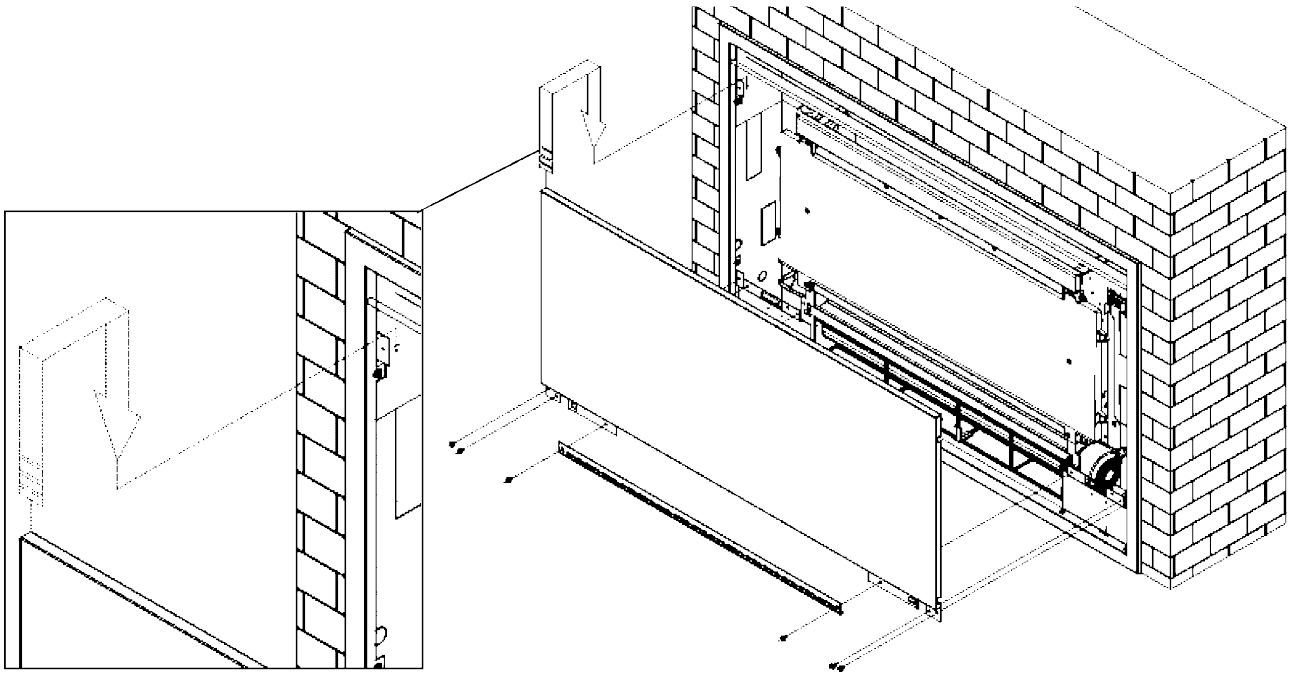
Decorative frame assembly

- Move the decorative frame next to the recessed structure;
- place it so that it adheres to the wall;
- fix it from the sides to the recessed structure by means of the 4 screws supplied.



Decorative front panel and filter block assembly

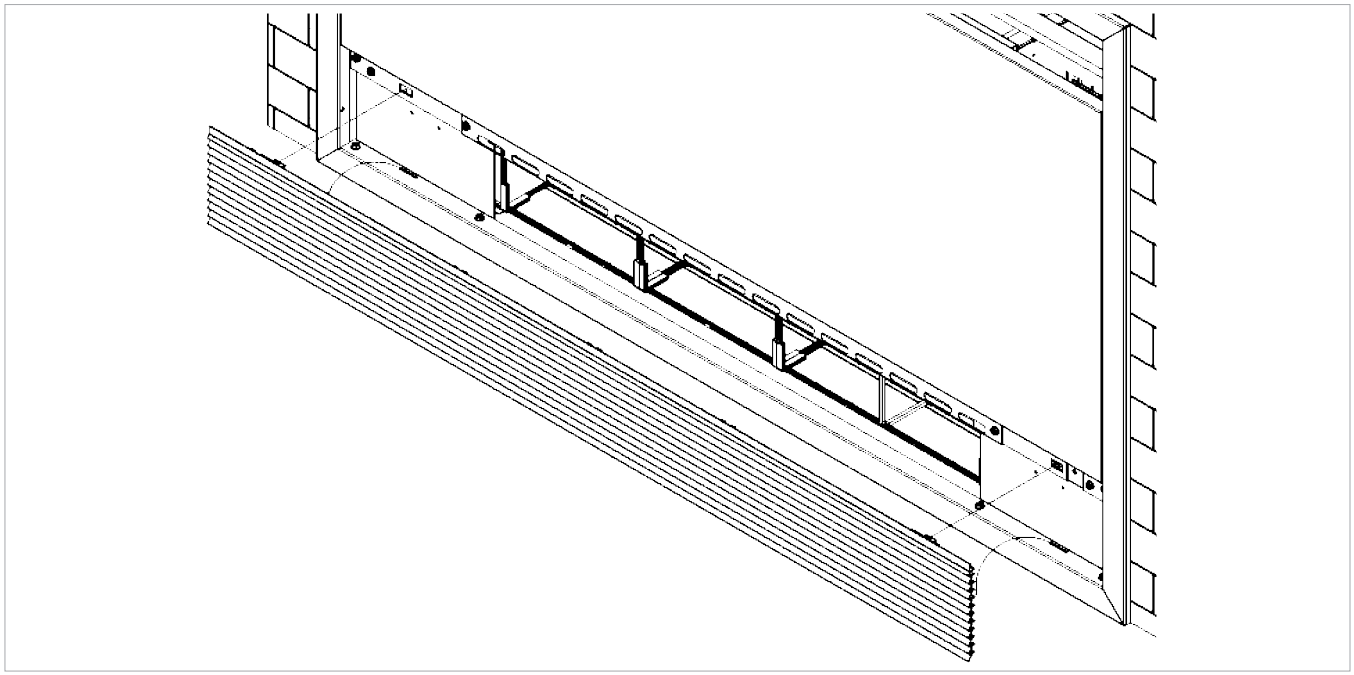
- Place the front panel next to the recessed structure;
- make sure that the upper part of the front panel hooks onto the flaps on the frame;
- fit the FILTER BLOCK crosspiece and fix the front panel by screwing the 6 screws previously removed from the lower part of the panel again.



Lower grid assembly

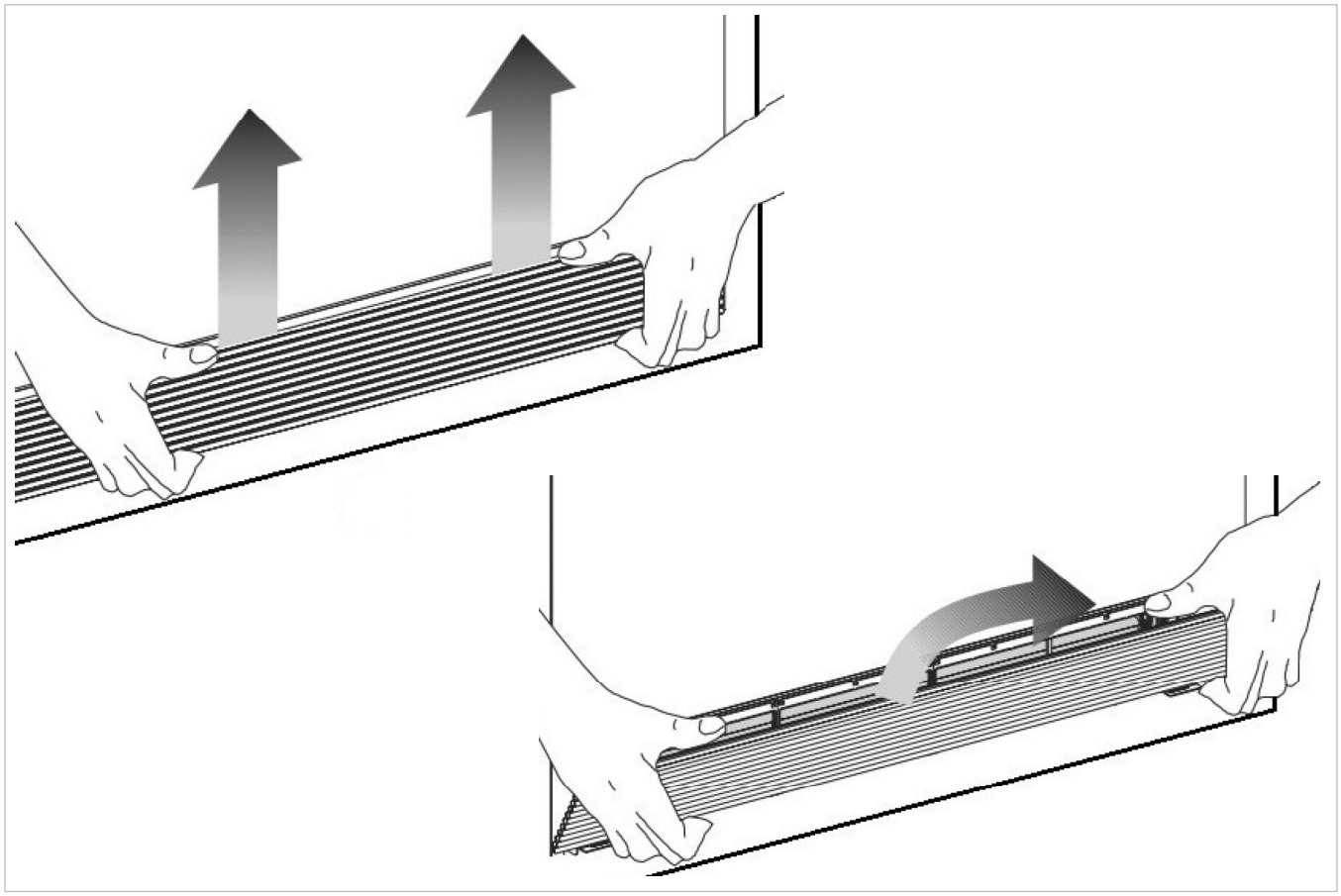
⚠ In case of horizontal ceiling installation, fit the front grid safety supports by following the instructions provided in the specific paragraph of the booklet supplied with the appliance.

- Move the intake grid close to the recessed structure;
- place the two flaps into the specific slots of the lower part of the frame;
- close the grid by rotating it until the upper teeth lock.

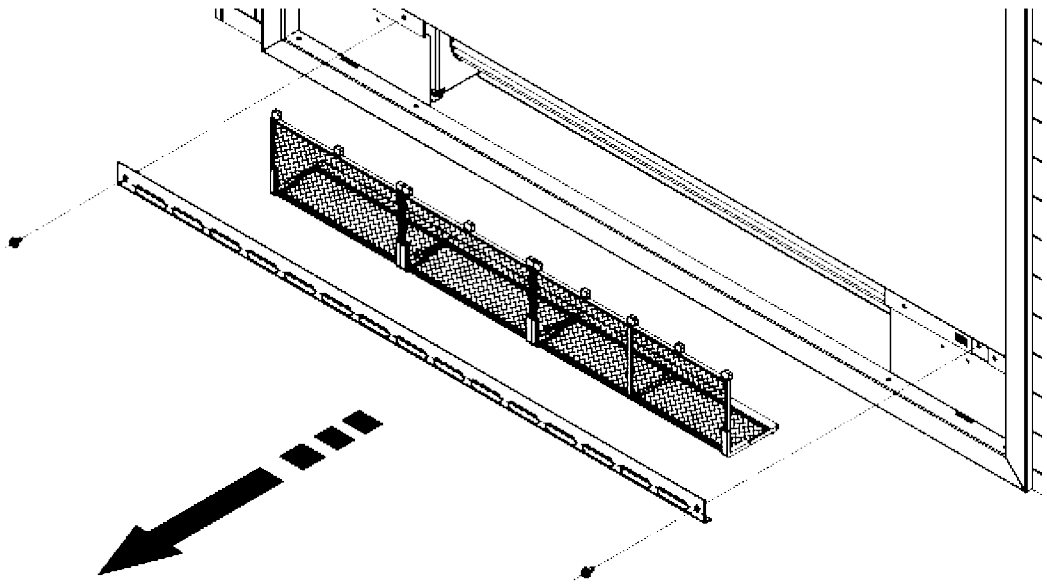


Mesh filter cleaning

- Remove the front grid by lifting it slightly;
- rotate it until it fully comes out of its seat;



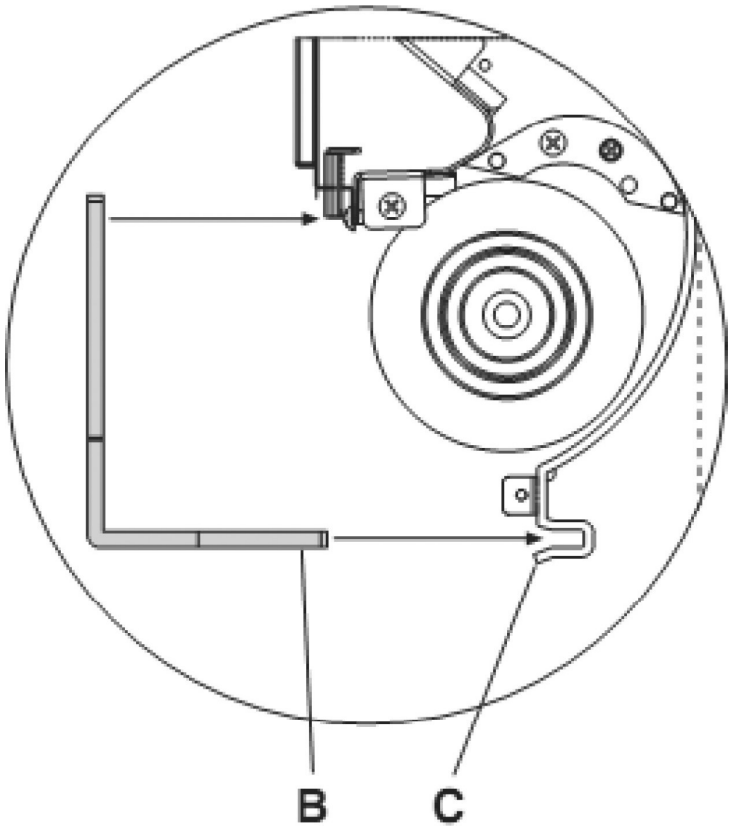
- disassemble the FILTER BLOCK by unscrewing the 2 screws using a suitable tool;
- remove the filters horizontally outwards and proceed with the cleaning operations as indicated in the maintenance instructions supplied with the appliance;



- reposition the filters paying particular attention to inserting the lower flap (B) in its seat (C).

⚠ Mount the FILTER BLOCK crosspiece again by fixing it with the 2 previously unscrewed screws so as to ensure the appliance is secured.

- Close the grid again by rotating it until the upper teeth lock.



7. DECORATIVE PANEL KIT WITH CEILING RECESSED INSTALLATION WITH DUCTED FLOW 3.029886÷90

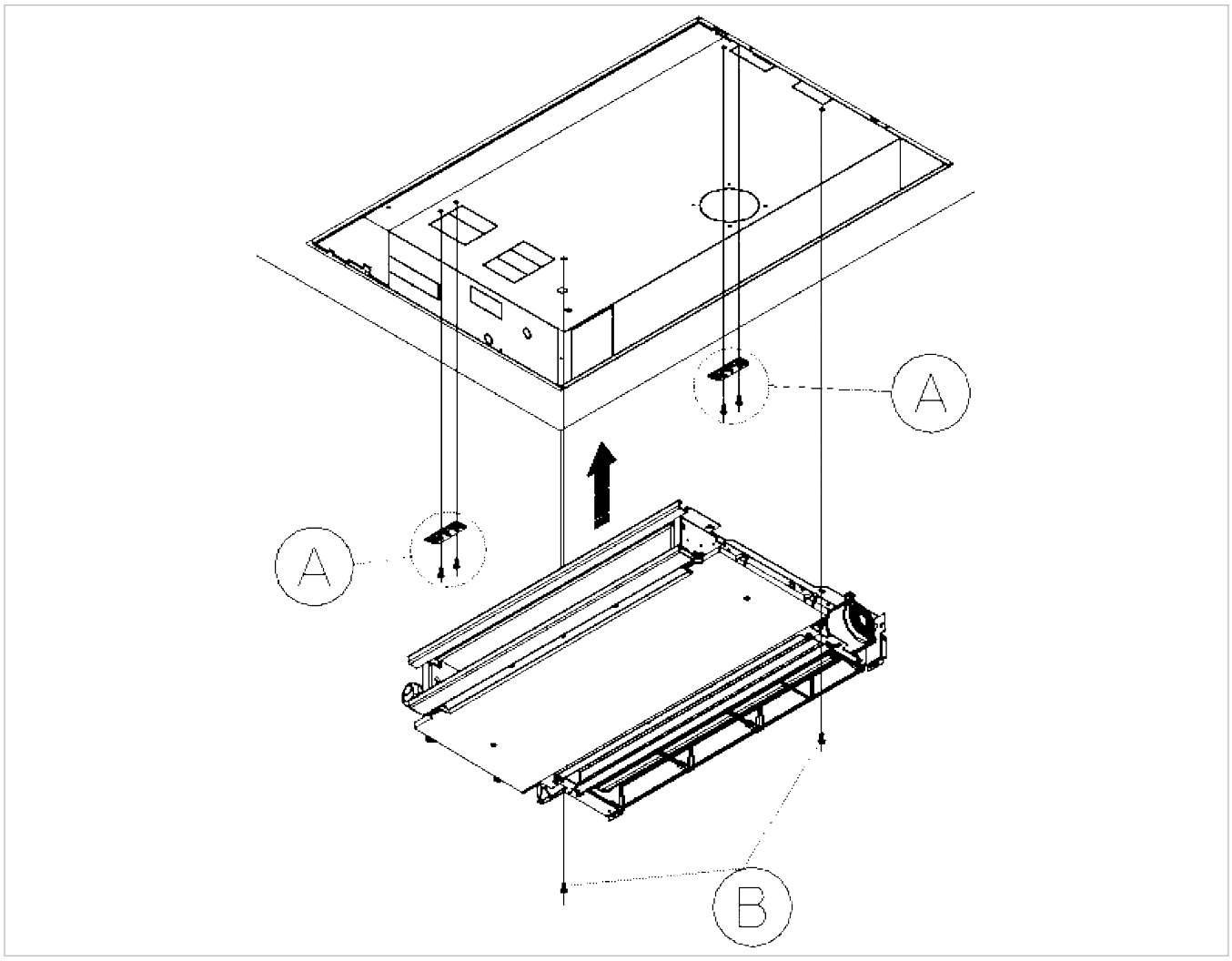
7.1 Assembly

N.B.: the kit can only be installed in HORIZONTAL POSITION WITH DUCTED FLOW. For installation in VERTICAL OR HORIZONTAL POSITION WITH FREE FLOW, one of the DECORATIVE PANEL KITS FOR RECESSED INSTALLATION WITH FREE FLOW 3.029882÷85 is required.

N.B.: before installing the appliance, check that the hydraulic and electrical connections have been made inside the metal structure.

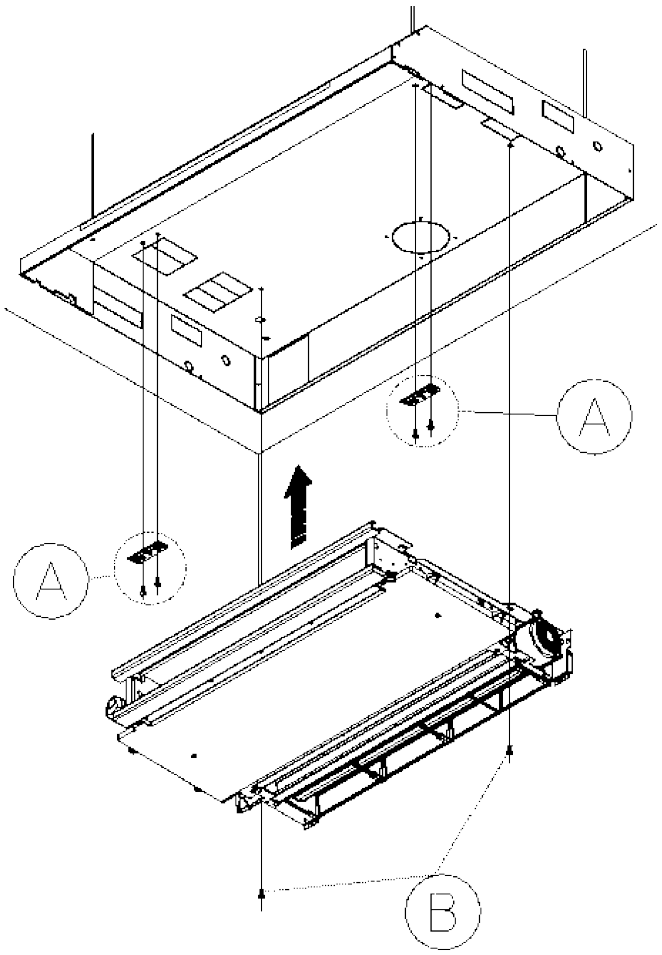
Mounting the appliance into the metal structure directly fixed to the ceiling

- Ø 8mm dowels must be located at the openings A and B, installed when the metal structure is assembled. Mount the 2 fixing brackets supplied with the appliance and lock them via the 4 A holes by using the screws and washers provided with the dowels;
- check the correct locking by manually moving the brackets to the right and left, up and down;
- mount the appliance to the metal structure and hook it to the brackets;
- lock the appliance through the 2 B holes by using the screws and washers supplied with the dowels;
- check appliance stability.



Mounting the appliance into the metal structure fixed with anchors detached from the ceiling

- On the metal structure, M6 CAGE NUTS must be located at the openings A and B, installed when the structure is installed. Mount the 2 fixing brackets supplied with the appliance and lock them via the 4 A holes by using the M6 screws, Grower elastic washers and the washers provided with the RECESSED INSTALLATION KITS 3.029876÷80;
- check the correct locking by manually moving the brackets to the right and left, up and down;
- mount the appliance to the metal structure and hook it to the brackets;
- lock the appliance via the 2 B holes by using the M6 screws, Grower elastic washers and the washers provided with the RECESSED INSTALLATION KITS 3.029876÷80;
- check appliance stability.

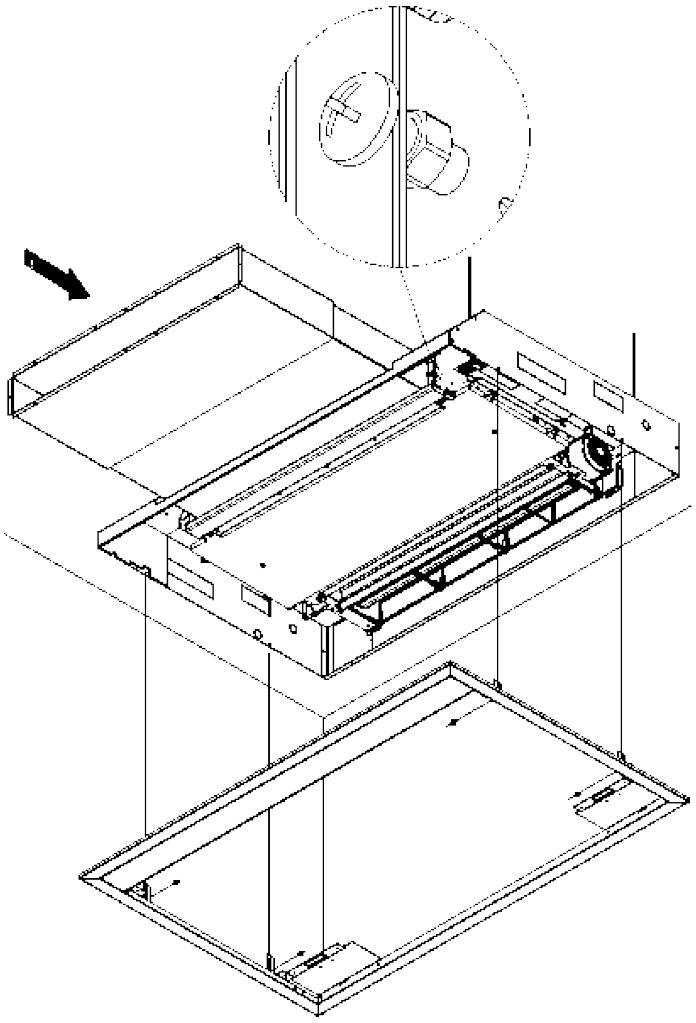


Telescopic air flow duct kit assembly 3.029851÷55

- Insert the telescopic air duct into the opening of the metal structure;
- fasten the duct to the appliance by using the M3 screws and nuts supplied.

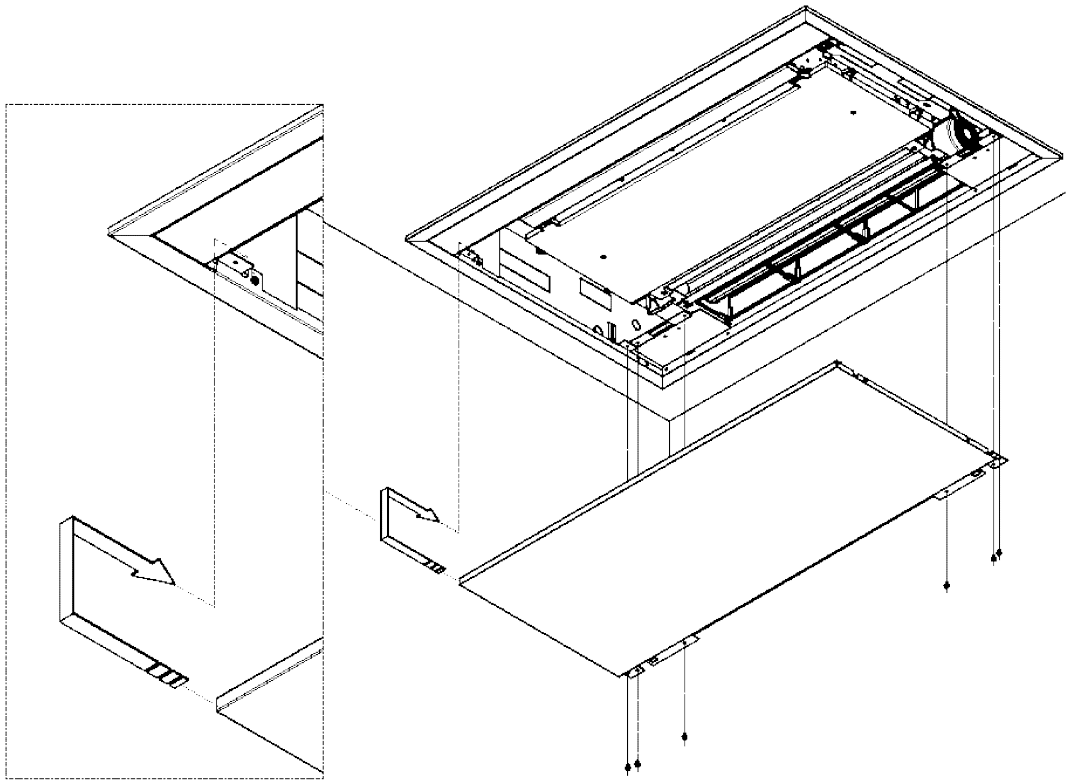
Decorative frame assembly

- Move the decorative frame next to the recessed structure;
- place it so that it adheres to the wall ;
- fix it from the sides to the recessed structure by means of the 4 self-threading screws supplied.



Decorative front panel assembly

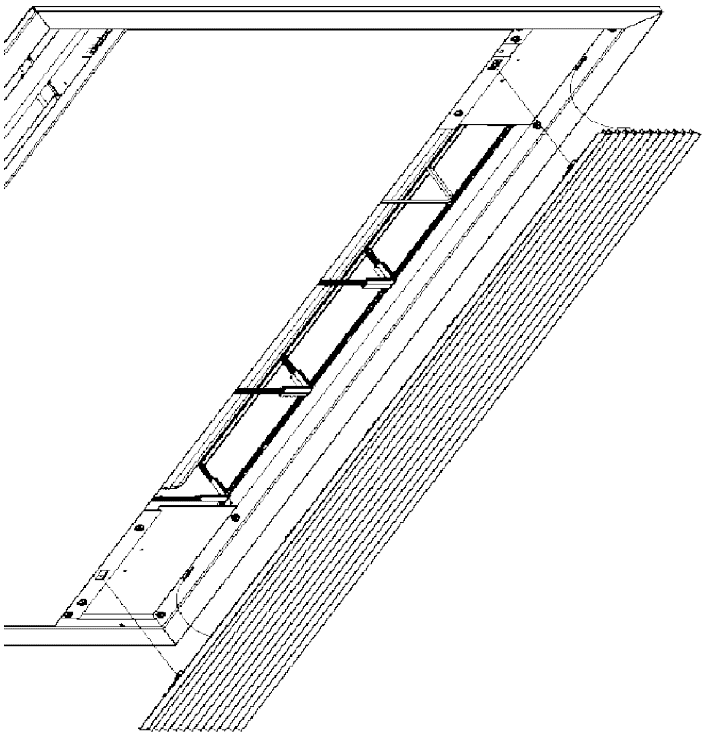
- Place the front panel next to the recessed structure ;
- make sure that the upper part of the front panel hooks onto the flaps on the frame;
- screw the lower part of the panel by using the 6 self-threading screws supplied.



Intake grid assembly

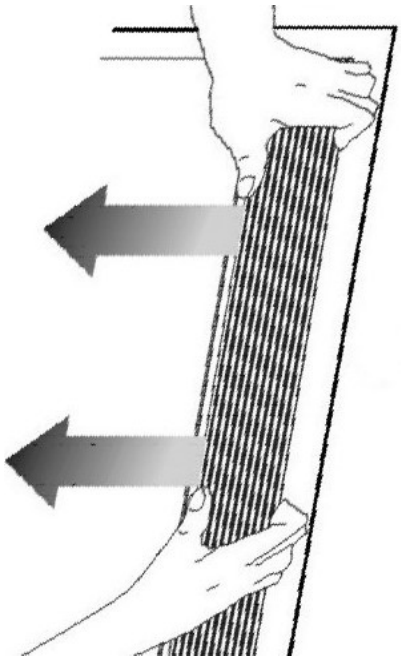
⚠ Mount the front grid safety supports by following the instructions provided in the specific paragraph of the booklet supplied with the appliance.

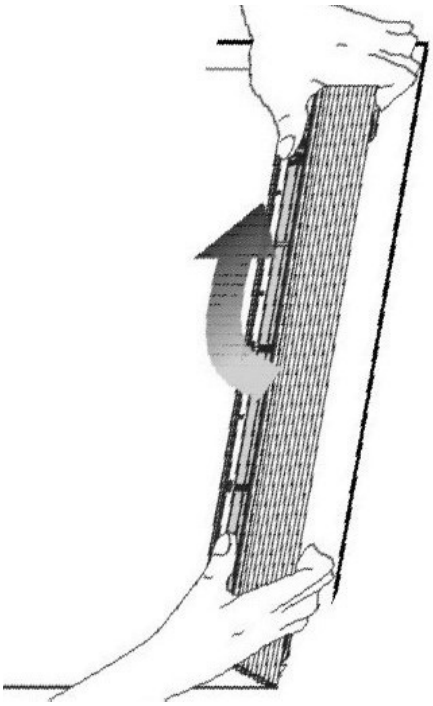
- move the intake grid close to the recessed structure;
- place the two flaps into the specific slots of the lower part of the frame;
- close the grid by rotating it until the upper teeth lock.



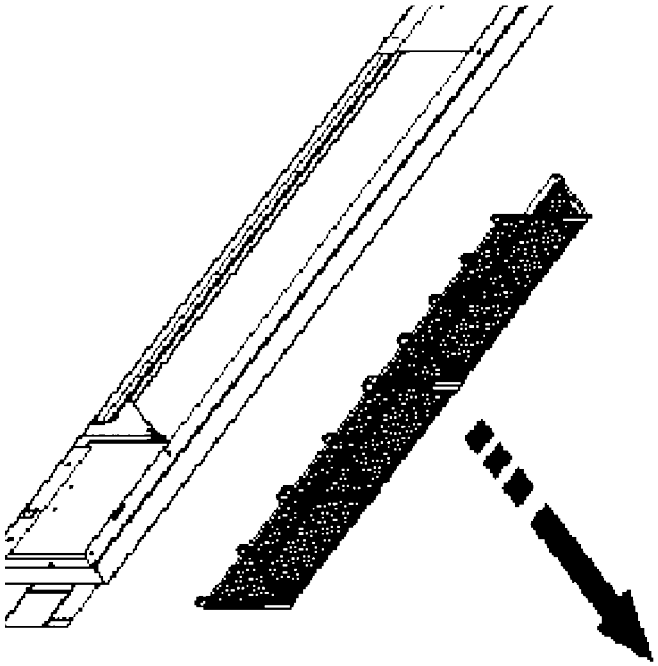
Mesh filter cleaning

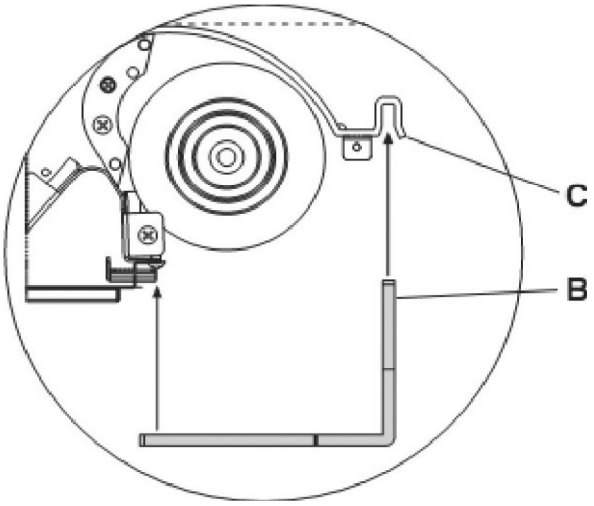
- Remove the front grid by lifting it slightly;
- rotate it until it fully comes out of its seat;





- remove the filters vertically downwards and proceed with the cleaning operations as indicated in the maintenance instructions supplied with the appliance;
- reposition the filters paying particular attention to inserting the lower flap (B) in its seat (C);
- close the grid again by rotating it until the upper teeth lock.





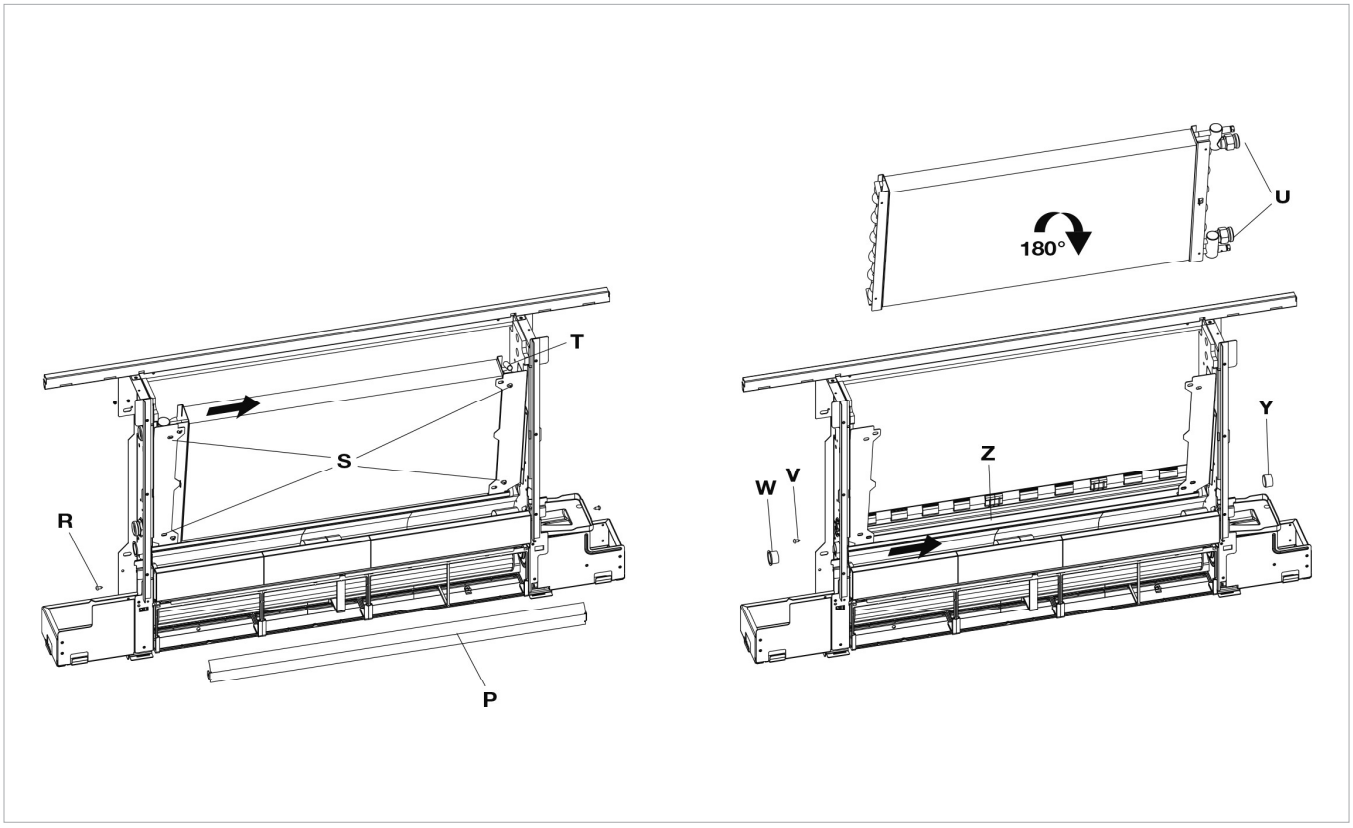
8. WATER CONNECTIONS ROTATION

Hydro IN are ready for the inversion of the water connections on the field.
In the event one needs to invert the position of the hydraulic battery connections from the left side to the right side of the device, the electric connections box is also inverted, but since the fan motor and the grid safety microswitch are constrained in the original position, one must use the special kit 3.029834, available as an accessory.

- Access internal parts as described in related chapter.
- Remove the air interceptor (fixed to the shoulders with a screw on each side).
- Loosen the four screws that fix the coil to the front brackets support.
- Remove the water probe from the hole on the coil.
- Open the pre-cut hexagonal holes on the right side insulation.
- Move the coil to the right to remove it from the shoulder's hex attacks, then pull it out.
- Turn of 180° the coil, insert it again in the frame and translate it to the right to introduce the connections inthe hexagonal holes of the shoulder. Then fix it with the screws previously removed.
- Close the hexagons holes on the left side with a common insulating adhesive.
- Remove the screw of the central drain pan.
- Translating drain pan to the right side, taking care to remove the cap from the right hole for evacuation and extension drip from the left reversing them to each other.
- Fix the pan on the right shoulder with the screw previously removed.
- Remount the air interceptor.
- Insert the coil water probe into the hole on the water coil.
- Remount the front panel taking care to correctly insert the coil upper insulating so as to avoid air bypass.
- Reassemble the valve access flap on the right part of the unit with the two screws previously removed.
- Make sure you have reassembled all the components and hydraulic and electrical accessories then close also the left and right side panels.

N.B.: the water connections must always be positioned on the opposite side of the control panel.

P	Air interceptor
R	Air interceptor fixing screws
S	Coil fixing screwsl
T	Water probe coil
U	Coil connections
V	Central drain pan fixing screw
Y	Central drain pan cap
W	Extension drip
Z	Central drain pan



9. 2-WAY/3-WAY VALVE UNIT KIT

N.B.: to avoid penalising the performance of the system the water inlet and outlet must be as indicated in the various figures.

N.B.: for a rapid and correct assembly of the components follow carefully the sequences described in the various sections.

9.1 List of hydraulic accessories

- 2-way valve unit with thermo-electric head kit.
- 3-way deviator valve unit with thermo-electric head deviator valve kit.

9.2 Pipeline diameter

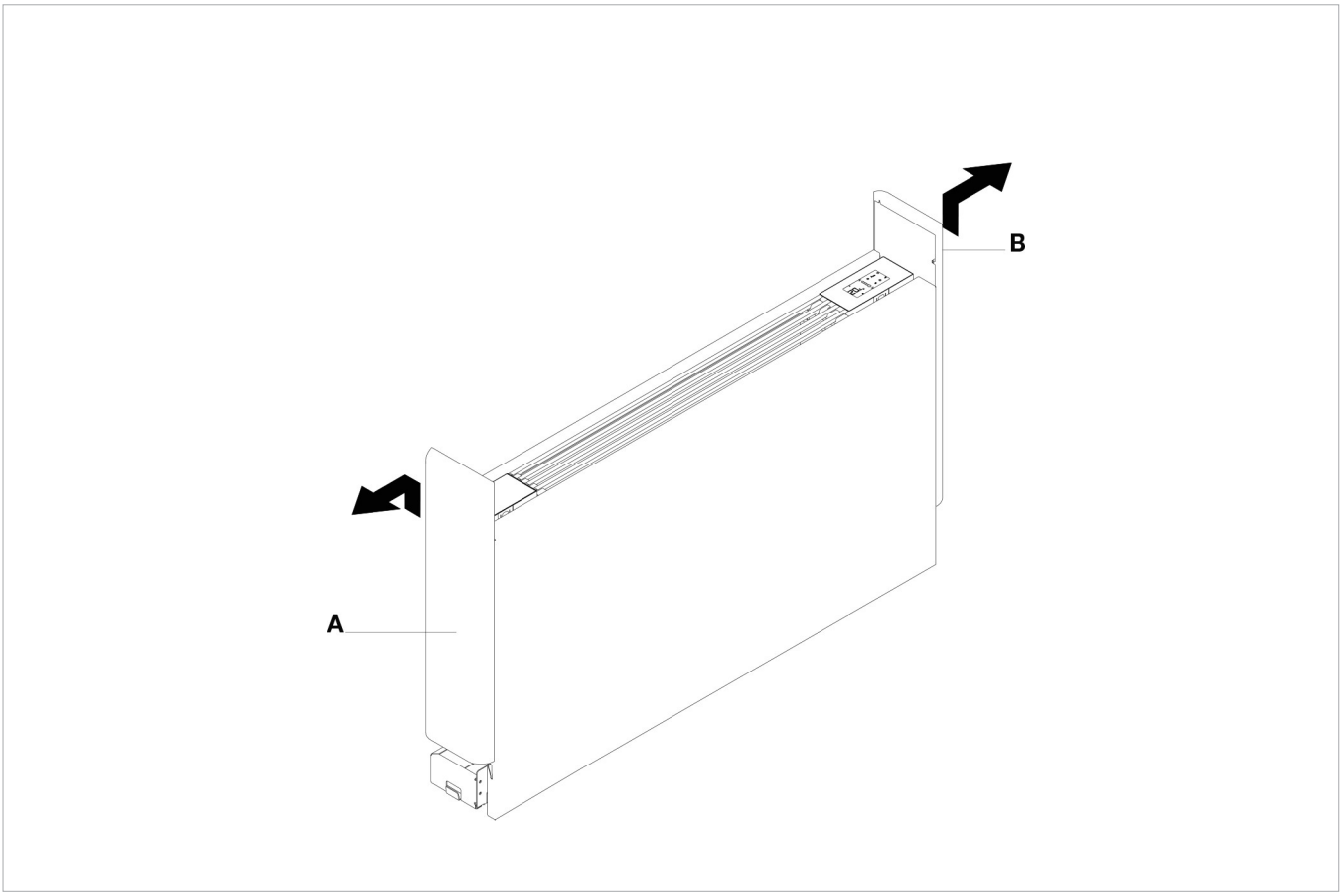
The minimum internal diameter that must be respected for the pipelines of the hydraulic connections varies according to the model:

	U.M.	200	400	600	800	1000
Support covers	mm	12	14	16	18	20

9.3 Access to inner parts

- Lift it up the side panels.
- Move orizzontally to remove.

A	Left panel
B	Right panel



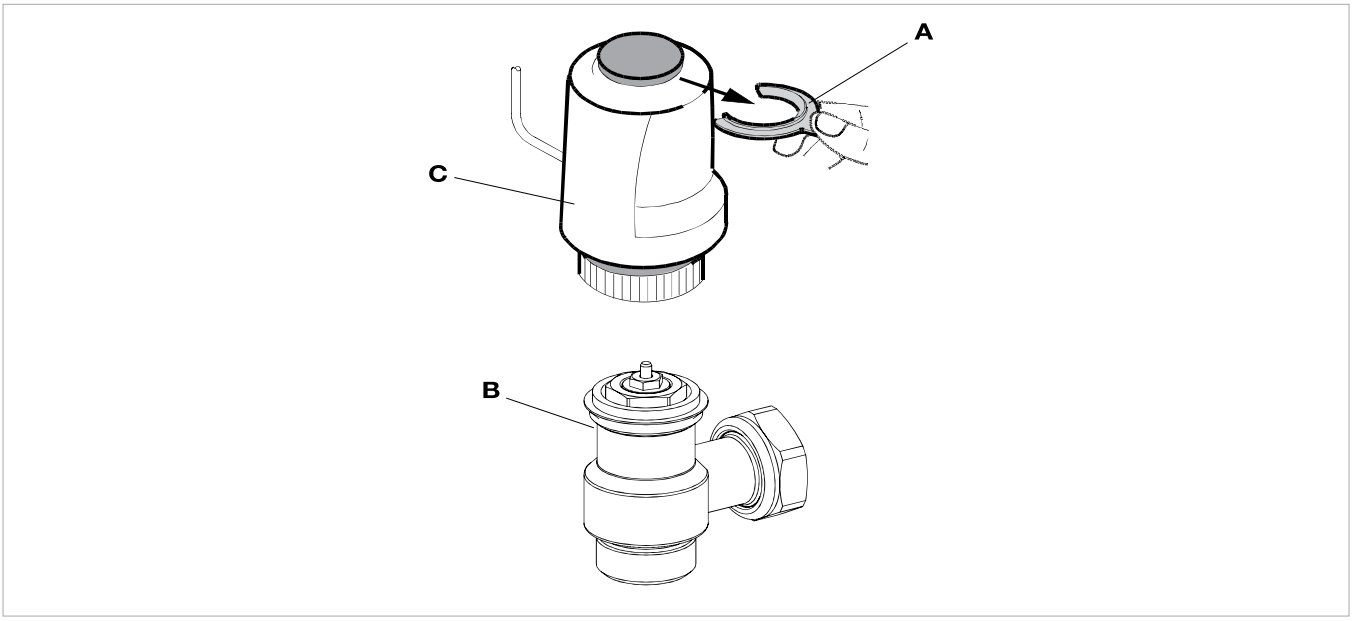
9.4 Mounting the thermostatic head

Tighten the plastic disc to the valve body. Attach the head to the valve body.
To facilitate the system mounting, filling and venting operations, even without electric power, the thermostatic head is supplied with a tool that keep it open.

N.B.: remove the tool from the thermostatic head before starting the system.

A	plastic tool
B	valve body

C	thermostatic head



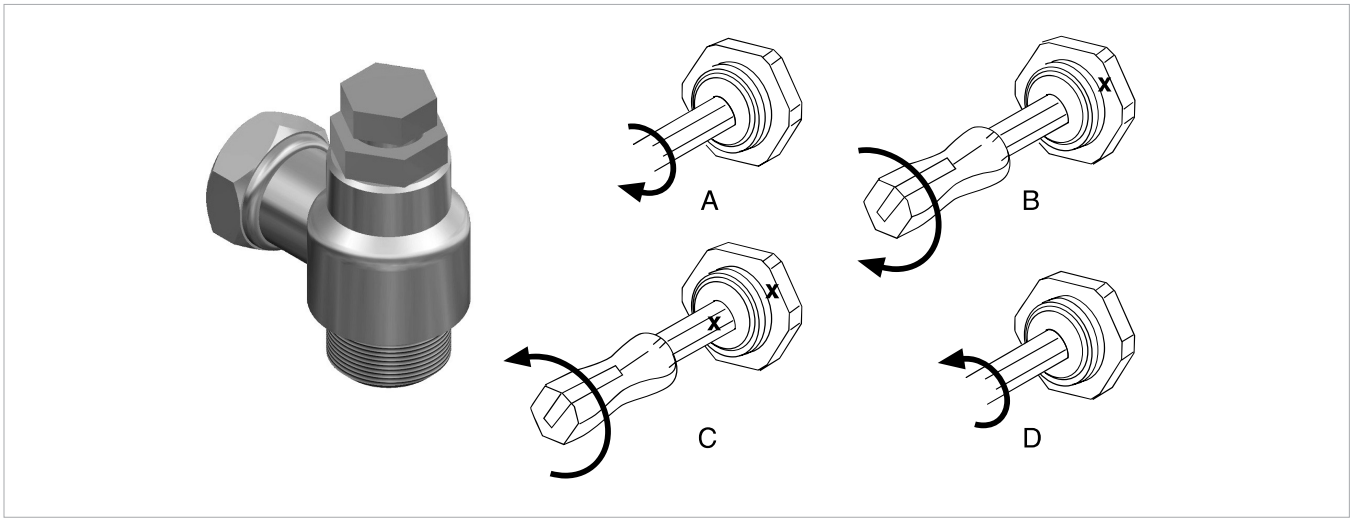
9.5 Lockshield adjustment

The lockshields supplied with the hydraulic kits provide an adjustment that balances the system load losses. To ensure a correct adjustment and balancing of the circuit, follow the procedure indicated below:

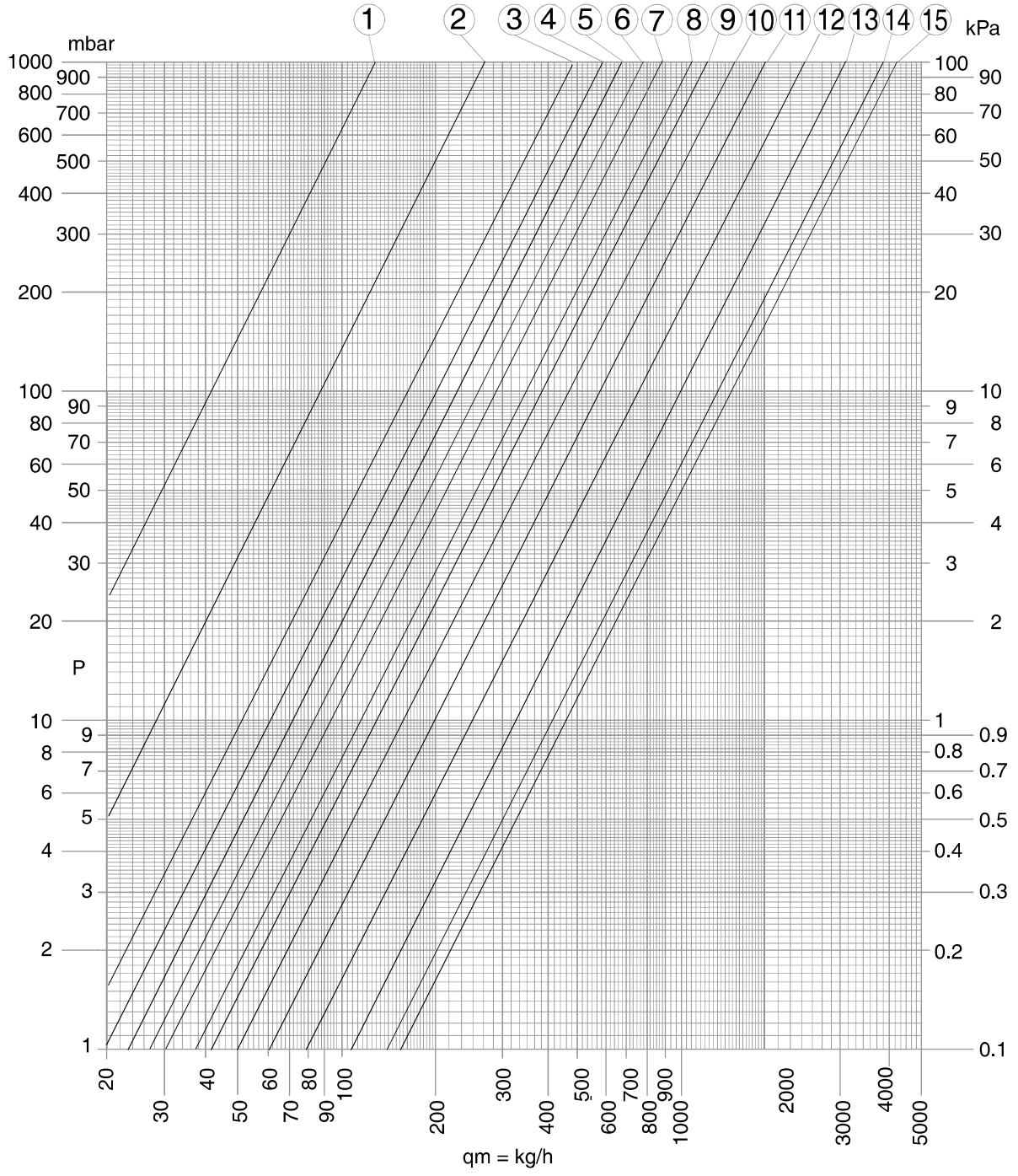
- With a screwdriver, loosen and remove the slotted grub screw inside the hexagonal head.
- Close the adjustment screw using a 5 mm Allen key (A)
- Re-tighten the slotted grub screw then mark the reference point for the adjustment with an "x" (B).
- Align the screwdriver with the "x", then open with a number of turns (C) according to diagram Äp-Q shown on page 32.

N.B.: the number of turns refers to the micrometric screw

Then fully open the screw (D). Now the pre-adjustment has been set and will not change if there are repeated openings or closings with the Allen key.



Load losses based on the adjustment of the lockshield present in all kits.



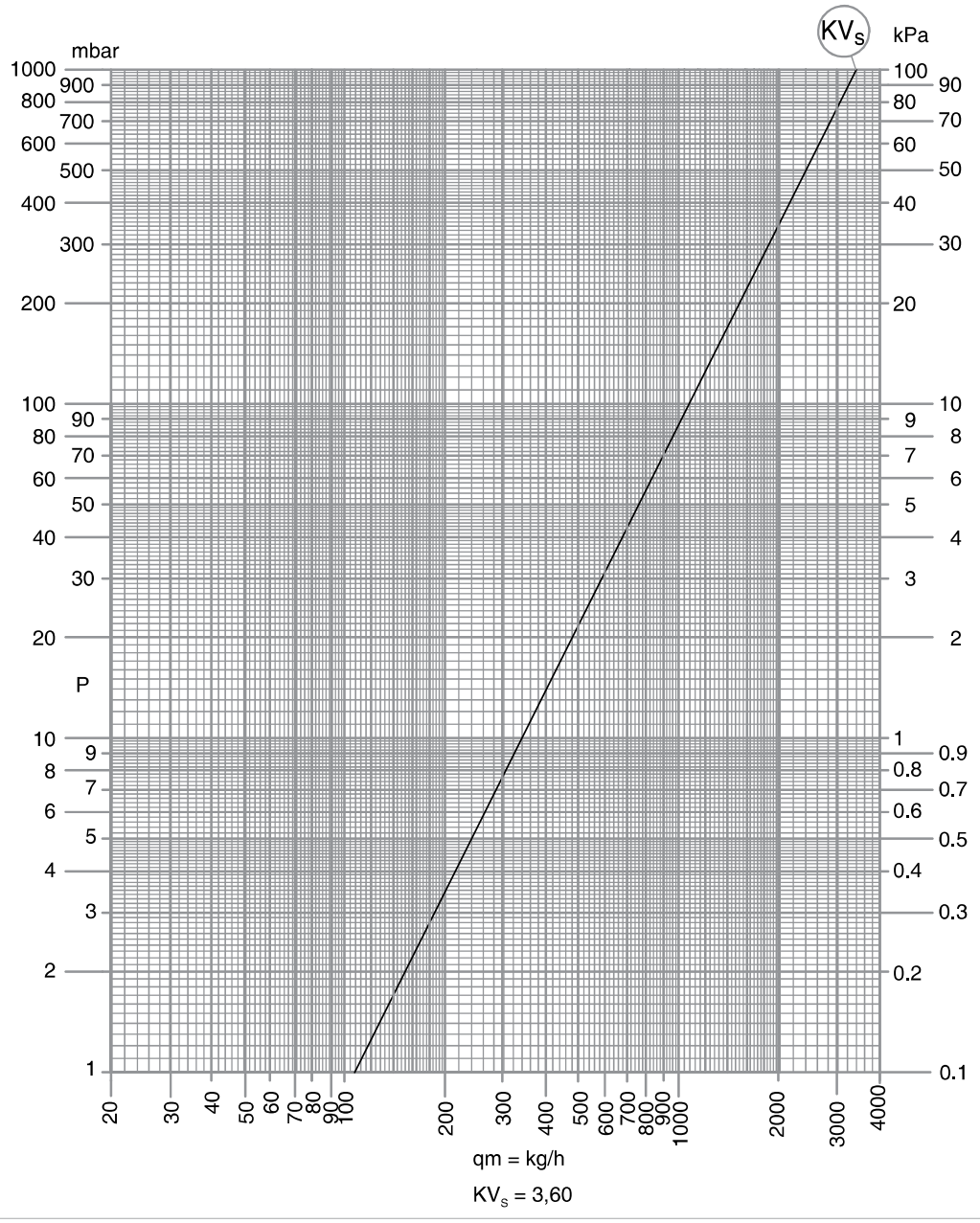
POS.	1	2	3	4	5	6	7	8	10	11	12	13	14	15
ADJ	1 2/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 2/4	4	4 1/2	5	6	8	T.A.
Kv	0.13	0.28	0.49	0.62	0.70	0,82	0,95	1,33	1,57	1,95	2,47	3,34	4,18	4,52

9.6 2-way valve with thermo-electric head kit

Consists of an automatic valve with thermo-electric head and a lockshield, fitted with micrometric adjustment, capable of balancing the system load losses.

The kit contains the insulation to be mounted on the valve and on the lockshield.

load losses in completely open position of 2-way valve present in kits.



9.7 3-way valve with thermo-electric head deviator valve kit

Consists of a 3-way deviator valve with thermo-electric head and a lockshield, fitted with micrometric adjustment, capable of balancing the system load losses).

The kit contains the insulation to be mounted on the valve and on the lockshield.

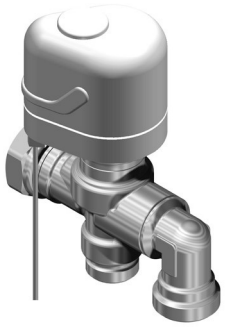


Diagram of load losses of deviator valve, present in kit, in completely open position.

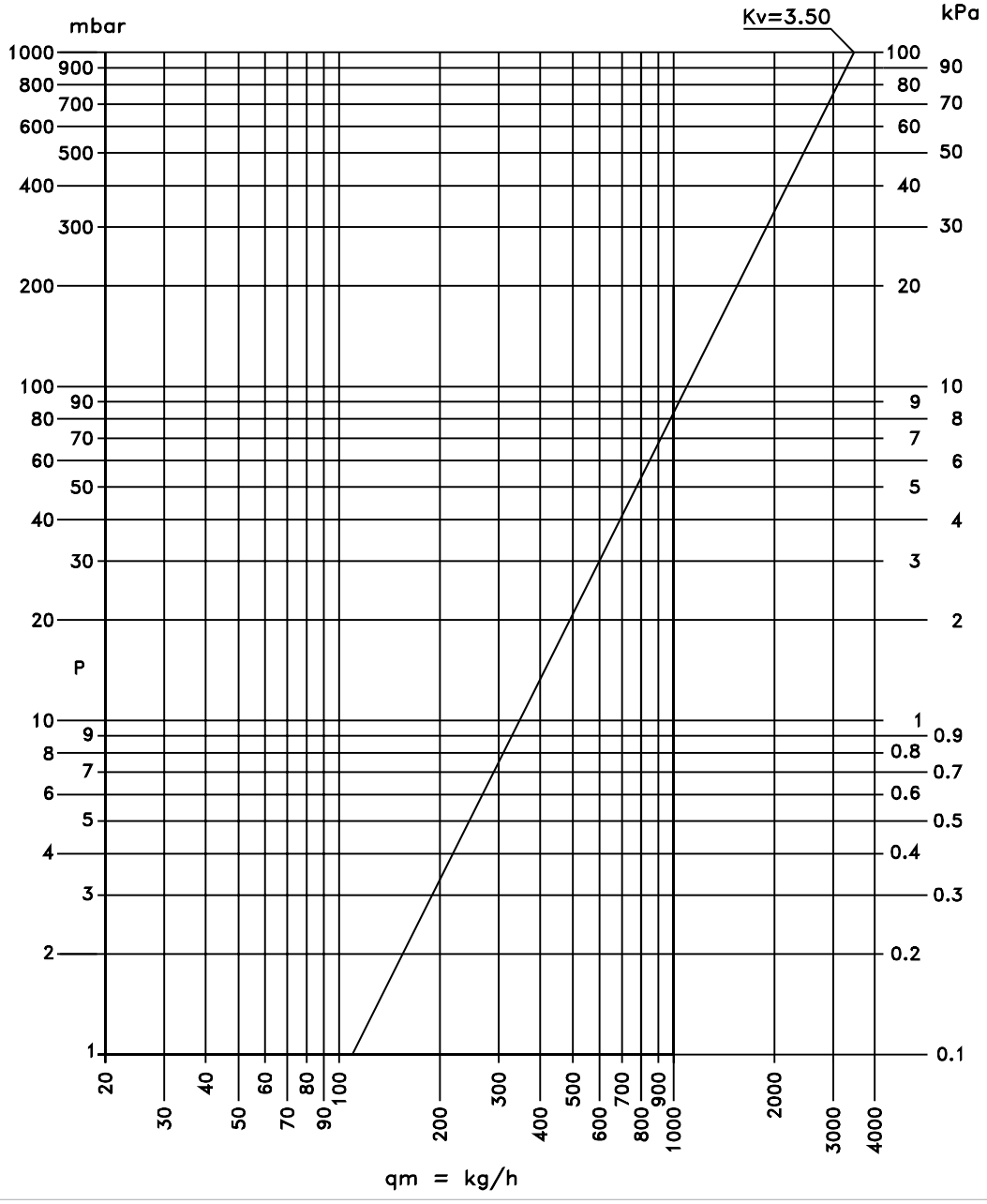
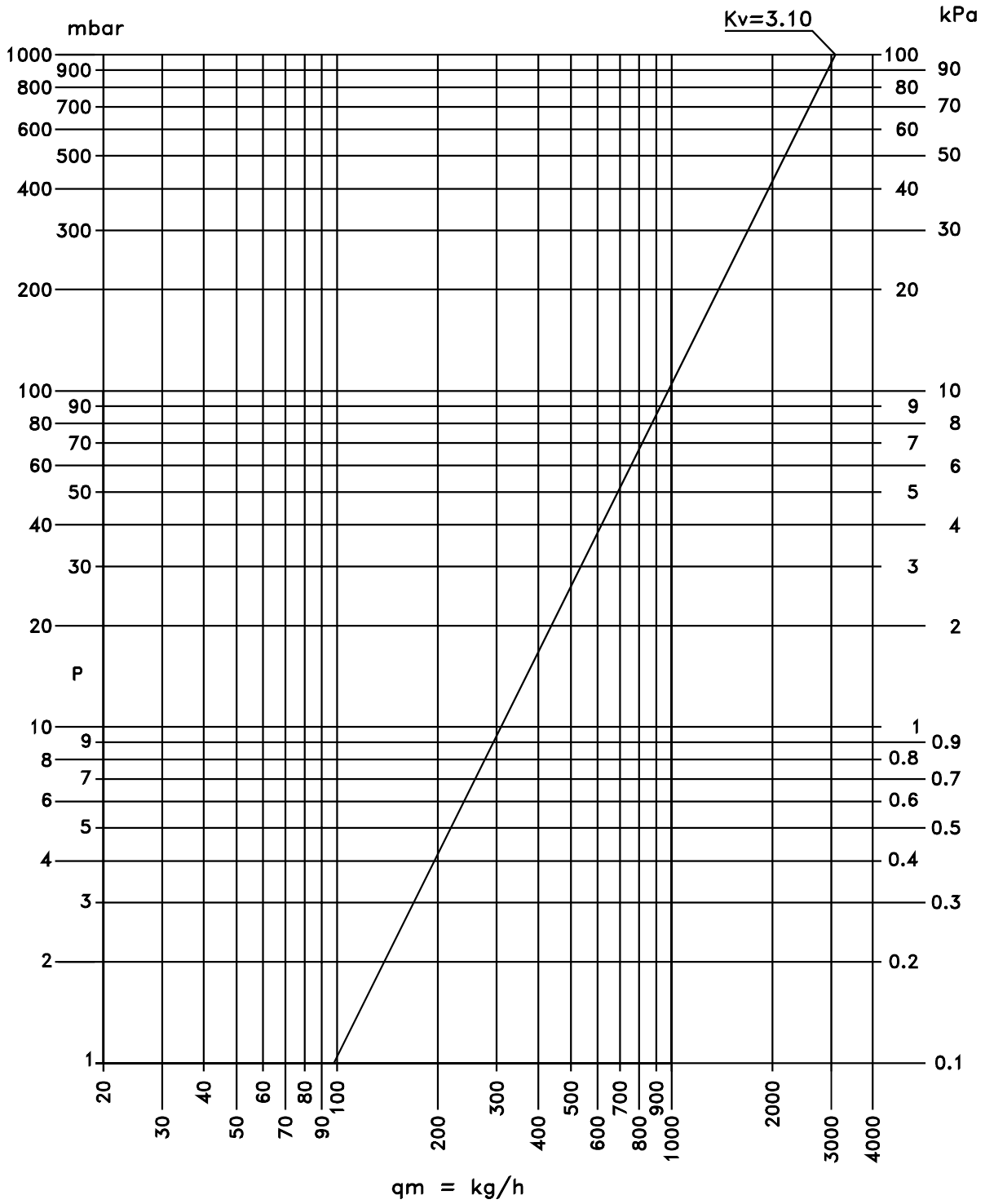


Diagram of load losses of deviator valve, present in kit, in completely closed position.



9.8 Connections

The choice and sizing of the hydraulic lines must be made by an expert who must operate according to the rules of good technique and the laws in force.

To make the connections:
- position the hydraulic lines
- tighten the connections using the “spanner and counter spanner” method
- check for any leaks of liquid
- coat the connections with insulating material

The hydraulic lines and joints must be thermally insulated.

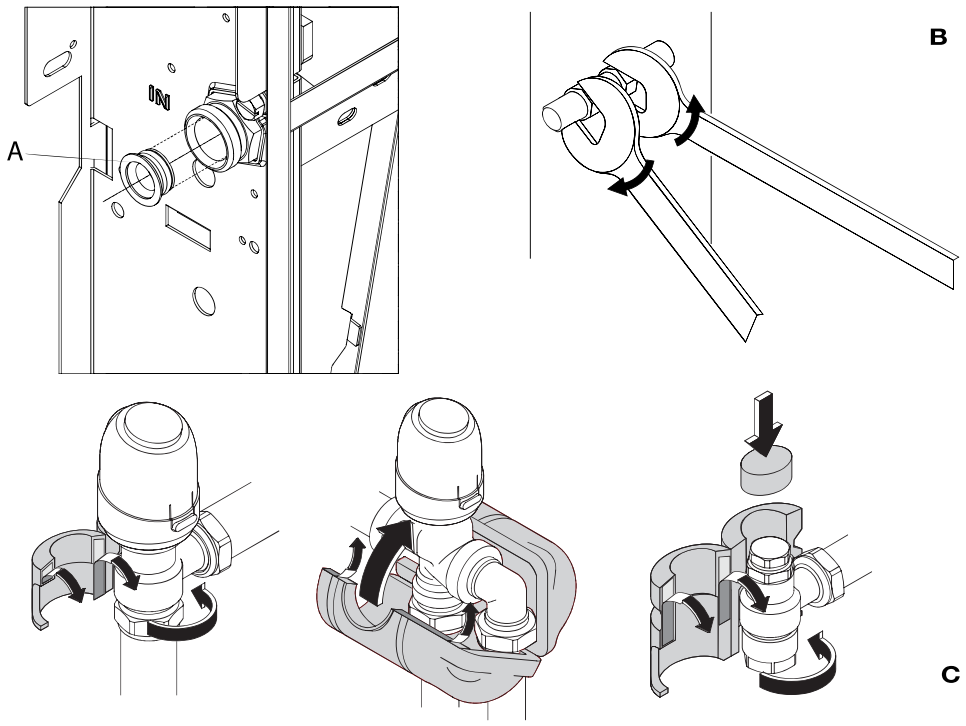
Avoid partially insulating the pipes.

Do not over-tighten to avoid damaging the insulation.

Use hemp and green paste to seal the threaded connections; the use of Teflon is advised when there is anti-freeze in the hydraulic circuit.

A	Eurokonus adapter
B	Spanner and counter spanner

C	Coat the connections with insulating material



9.9 2-way valve unit kit

Consists of an automatic valve with thermo-electric head and a lockshield, fitted with micrometric adjustment, capable of balancing the system load losses.

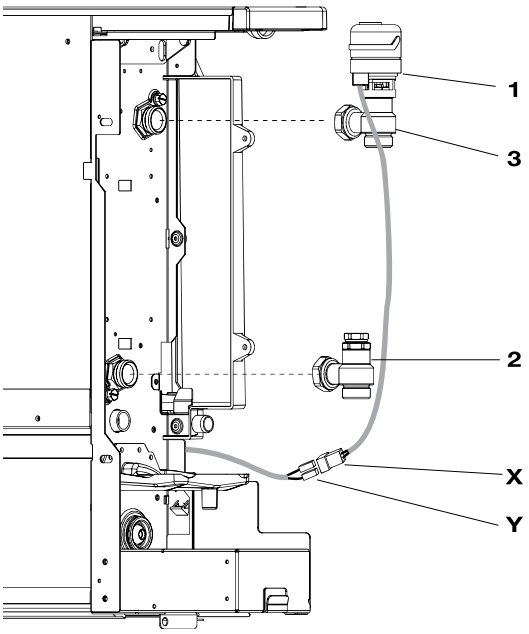
- Remove the side panel as indicated in paragraph Side opening.
- Assemble the components as indicated in figure
- Apply the supplied insulation.

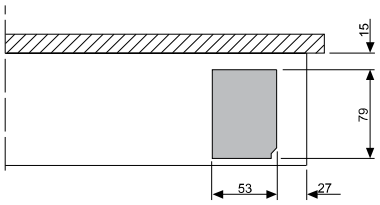
1	thermo-electric head (n.1)
2	lockshield (n.1)
3	2-way valve (n.1)

The kit contains the insulation to be mounted on the valve and on the lockshield.

N.B.: when the hydraulic components have been mounted, connect the thermo-electric head connectors with the wiring connectors on the machine.

X	thermo-electric head connectors
Y	wiring connectors





9.10 3-way valve unit kit

Consists of an automatic 3-way diverter valve with thermo-electric head and a lockshield, fitted with micrometric adjustment, capable of balancing the system load losses. The kit contains the insulation to be mounted on the valve and on the lockshield.

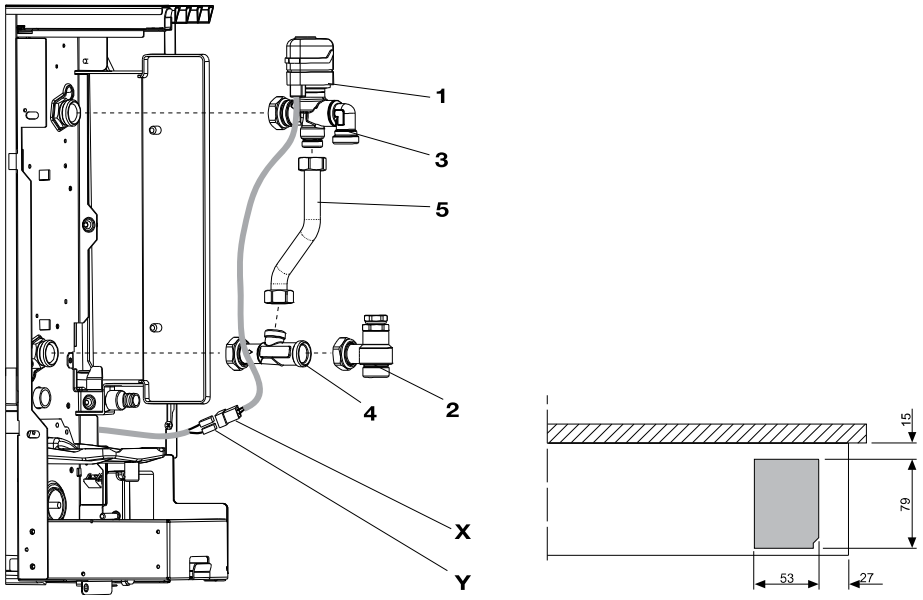
- Remove the side panel as indicated in paragraph 9.3 "Access to inner parts".
- Assemble the components as indicated in figure
- Apply the supplied insulation.

N.B.: when the hydraulic components have been mounted, connect the thermo-electric head connectors with the wiring connectors on the machine.

Floor mounted version

1	thermo-electric head (n.1)
2	lockshield (n.1)
3	3-way valve (n.1)
4	outlet union (n.1)

5	1/2" flexible tube 230 (n.1)
X	thermo-electric head connectors
Y	wiring connectors



10. COOLER-CONVECTOR, HEATING, COOLING AND DEUMIDIFICATION

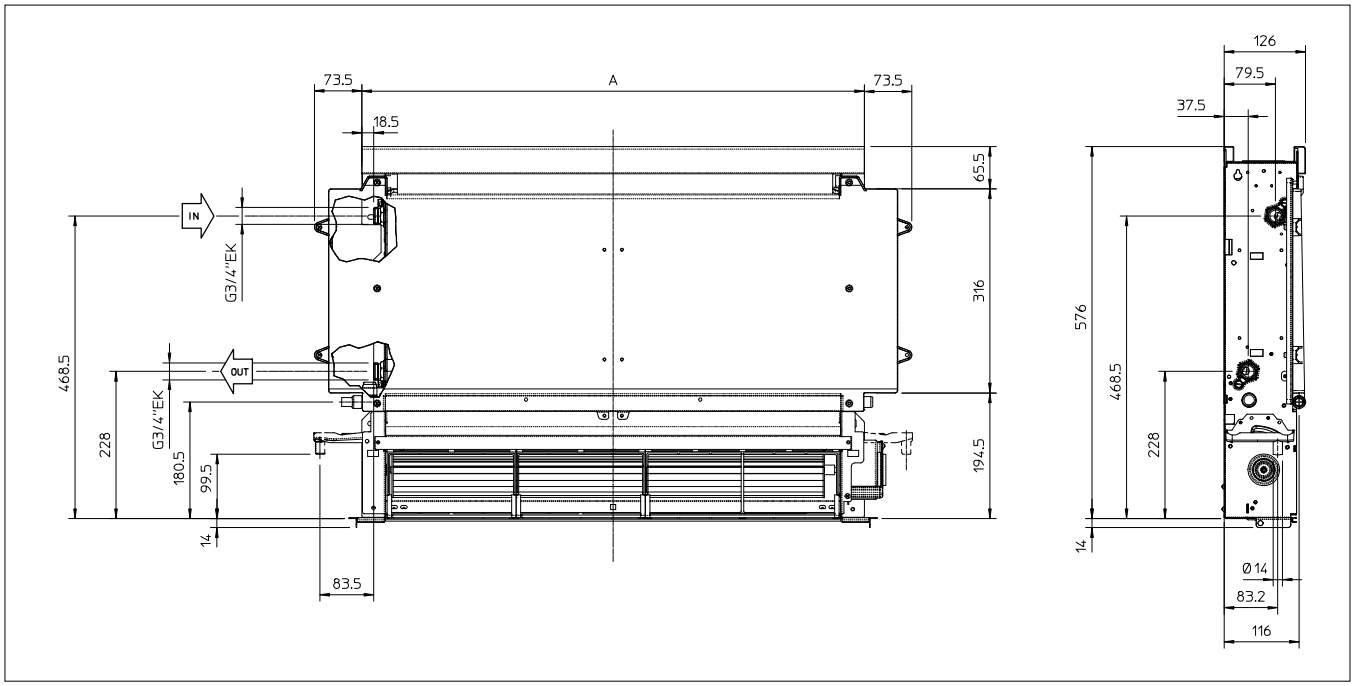
10.1 Nominal technical features

TECHNICAL DATA (DC)						
POWER		**200**	**400**	**600**	**800**	**1000**
Total output in cooling [a]	kW	0,76	1,77	2,89	3,20	3,73
Sensible output in cooling	kW	0,67	1,33	2,09	2,65	3,01
Water flow rate	L/h	130	304	497	551	642
Water head loss	kPa	4,7	2,9	27,0	24,0	31,0
Output in heating with water at 45/40 °C [b]	kW	0,97	2,17	3,11	3,88	4,37
Water flow rate (45/40 °C)	L/h	168	374	535	668	752
Water head loss (45/40 °C)	kPa	7,8	7,2	11,5	21,3	20,4
Output in heating without ventilation (45/40 °C)	W	185	236	285	358	436
Output in heating with water at 70/60 °C [c]	kW	1,89	3,99	5,47	6,98	8,30
Water flow rate (70/60 °C)	L/h	162	343	471	600	714
Water head loss (70/60 °C)	kPa	6,7	7,6	16,1	14	19,8
Output in heating without ventilation (70 °C)	W	322	379	447	563	690
Maximum water inlet temperature	°C	80	80	80	80	80
Minimum inlet water temperature	°C	4	4	4	4	4
HYDRAULIC FEATURES						
Battery water contents	L	0,47	0,8	1,13	1,46	1,8
Maximum working pressure	bar	10	10	10	10	10
Hydraulic fixtures	Inches	Eurokonus 3/4	Eurokonus 3/4	Eurokonus 3/4	Eurokonus 3/4	Eurokonus 3/4
AERAULIC DATA						
Maximum air flow rate [d]	m^3/h	146	294	438	567	663
Air flow rate at medium speed (AUTO mode)	m^3/h	90	210	318	410	479
Air flow rate at ventilation speed	m^3/h	49	118	180	247	262
maximum available static pressure	Pa	10	10	13	13	13
ELECTRICAL DATA						
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Maximum power absorbed	W	11	19	20	29	30
Maximum current absorbed	A	0,11	0,16	0,18	0,26	0,28
Electrical power absorbed at minimum speed	W	3	3	4	5	6
SOUND LEVEL						
Sound power at maximum speed	dB(A)	50	51	53	55	56
Sound power at maximum air flow rate [g]	dB(A)	41	42	44	46	47
Sound pressure at average air flow rate [g]	dB(A)	33	34	34	35	38
Sound pressure at minimum air flow rate [g]	dB(A)	24	25	26	26	28
Sound pressure at temperature setpoint [g]	dB(A)	19	20	22	23	24
DIMENSIONS AND WEIGHTS						
Total height (without support feet)	mm	576	576	576	576	576
Total depth	mm	126	126	126	126	126
Net weight	kg	9	12	15	18	21

(a) Battery water temperature 7/12°C, room air temperature 27°C d.b. and 19 ° C w.b. (EU regulation 2016/2281)
(b) Battery water temperature 45/40°C, room air temperature 20°C (EU regulation 2016/2281)
(c) Battery water temperature 70/60°C, room air temperature 20°C
(d) Air flow rate measured with clean filters
(g) Sound pressure measured in a semi-anechoic chamber according to ISO standard 7779 (distance 1 m)

10.2 Dimensions

	U.M.	HYDRO IN 200	HYDRO IN 400	HYDRO IN 600	HYDRO IN 800	HYDRO IN 1000
Dimensions						
A	mm	525	725	925	1125	1325



10.3 Installation

Positioning the unit

N.B.: avoid installing the unit in proximity to:
- positions subject to exposure to direct sunlight;
- in proximity to sources of heat;
- in damp areas or places with probable contact with water;
- in places with oil fumes
- places subject to high frequencies.

N.B.: Make sure that:
- the wall on which the unit is to be installed is strong enough to support the weight;
- the part of the wall interested does not have pipes or electric wires passing through;
- the interested wall is perfectly flat;
- there is an area free of obstacles which could interfere with the inlet and outlet air flow;
- the installation wall is preferably an outside perimeter wall to allow the discharge of the condensation outside;
- in case of ceiling installation the airflow is not directed towards persons.

10.4 Installation modes

To ensure that the installation is performed correctly and that the appliance will perform perfectly carefully follow the instructions indicated in this manual. Failure to respect the rules indicated not only can cause malfunctions of the appliance but will also invalidate the warranty and hence the manufacturer shall not respond for any damage to persons, animals or property.

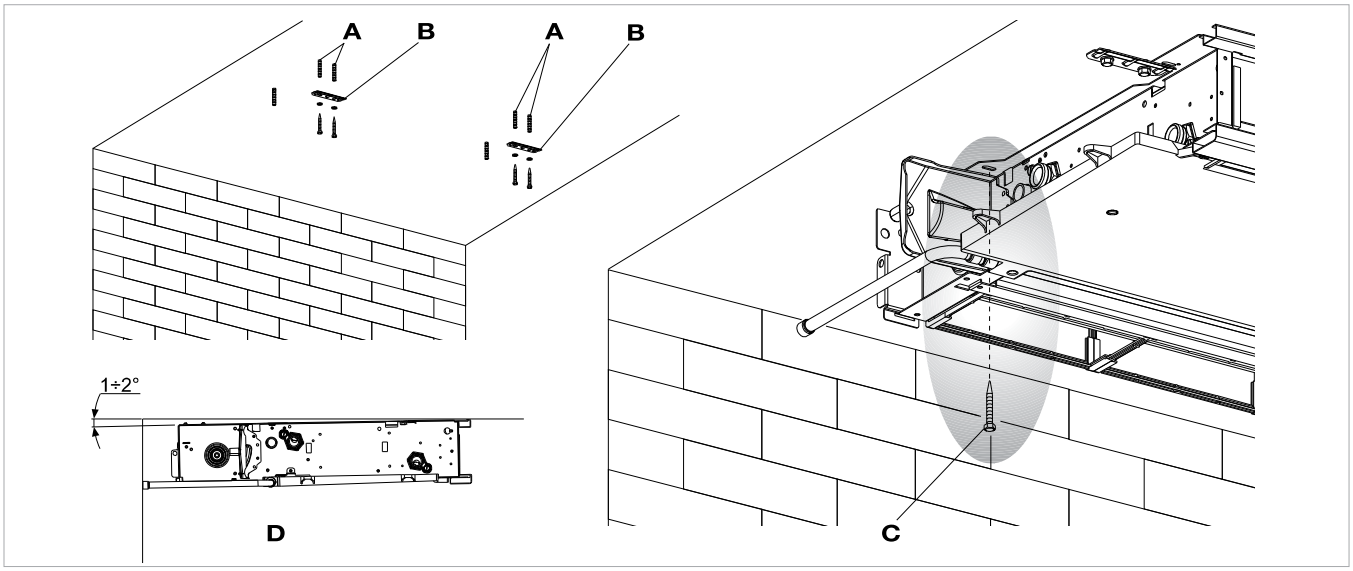
10.5 Horizontal or ceiling installation

- Using the paper template, trace on the ceiling the position of the two fixing brackets and the two rear screws. Using a suitable drill, make the holes and insert the toggle bolts (2 for each bracket); fix the two brackets. Do not over-tighten the screws.
- Position the machine on the two brackets, keeping it in position and then fix the two screws into the rear toggle bolts, one on each side.
- Make sure that there is sufficient inclination of the unit towards the drainage pipe to facilitate the water drainage.
- Fully tighten all 6 fixing screws.

N.B.: carefully check the inclination of the exhaust pipe. Any counterslope of the discharge line can cause water leakage

A	toggle bolts
B	brackets

C	screws
D	drainage pipe



10.6 Hydraulic connections

	U.M.	200	400	600	800	1000
Pipeline min. rated diameter	mm	14	14	16	18	20

N.B.: the nominal diameter, unless otherwise indicated, always refers to the internal diameter.

To prevent the formation of surface condensation, it is always recommended to install electric valve kits, except in the case where an electrical control (e.g. electrothermal head) is provided upstream of the appliance.

The choice and sizing of the hydraulic lines must be made by an expert who must operate according to the rules of good technique and the laws in force, taking into account that undersized pipes cause a malfunction.

To make the connections:
- position the hydraulic lines
- tighten the connections using the "spanner and counter spanner" method
- check for any leaks of liquid
- coat the connections with insulating material.

N.B.: the hydraulic lines and joints must be thermally insulated.

N.B.: avoid partially insulating the pipes.

N.B.: do not over-tighten to avoid damaging the insulation.

N.B.: use hemp and green paste to seal the threaded connections; the use of Teflon is advised when there is anti-freeze in the hydraulic circuit.

10.7 Condensation discharge

The condensation discharge network must be suitably sized (minimum inside pipe diameter 16 mm) and the pipeline positioned so that it keeps a constant inclination, never less than 1° or 1%.

In the vertical installation, the discharge pipe is connected directly to the discharge tray, positioned at the bottom of the side shoulder underneath the hydraulic fixtures. In a horizontal installation the discharge tube is connected to the one already present on the machine.

- If possible, make the condensation liquid flow directly in a gutter or a "rainwater" discharge.
- When discharging directly into the main drains, it is advisable to make a siphon to prevent bad smells returning up the pipe towards the room. The curve of the siphon must be lower than the condensation collection bowl.
- If the condensation needs to be discharged into a container, it must be open to the atmosphere and the tube must not be immerged in water to avoid problems of adhesiveness and counter-pressure that would interfere with the normal outflow.
- If there is a height difference that could interfere with the outflow of the condensation, a pump must be mounted:
- in a vertical installation mount the pump under the lateral drainage tray;
- in a horizontal installation the pump position must be decided according to the specific requirements.

Such pumps are commonly found in commerce.

However, on completion of the installation it is advisable to check the correct outflow of the condensation liquid by slowly pouring about ½ l of water into the collection tray in about 5-10 minutes.

Mounting the condensation discharge pipe in the vertical version

Connect to the condensation collection tray discharge union a pipe for the outflow of the liquid blocking it adequately. Check that the drip-collector extension is present and correctly installed.

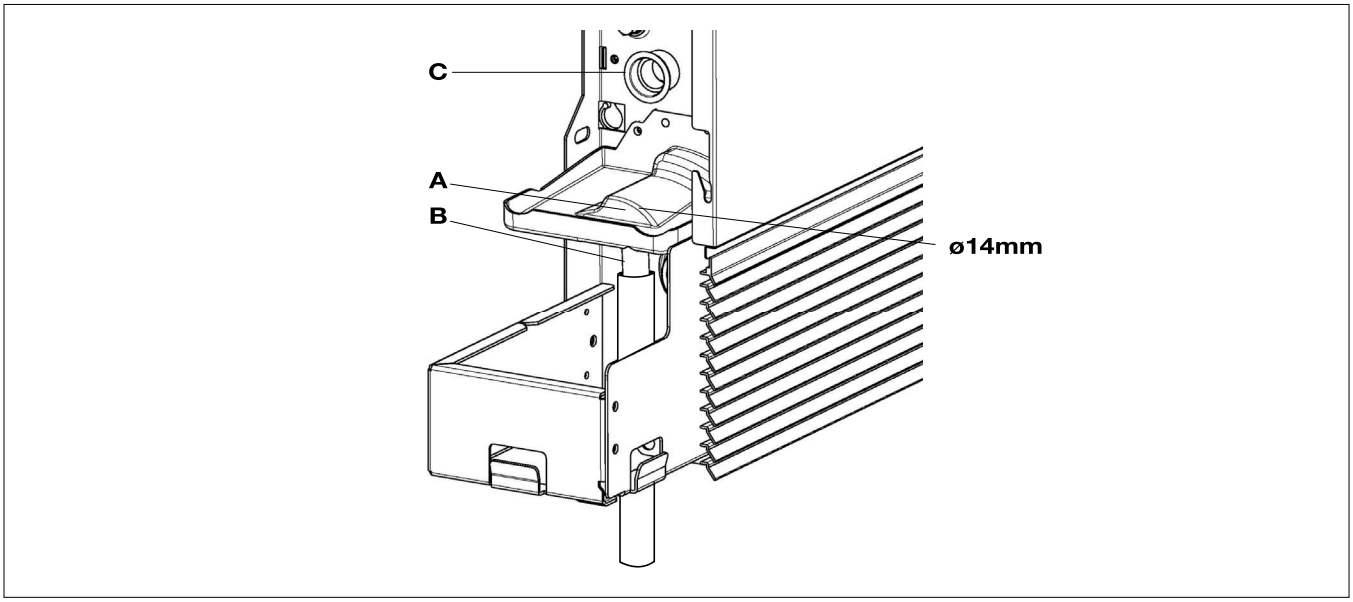
N.B.: make sure that the machine is installed perfectly level or with a slight inclination towards the condensation discharge;

N.B.: insulate carefully the inflow and outflow pipes up to the machine union to prevent any drops of condensation outside the same collection bowl;

N.B.: insulate the bowl condensation discharge pipe along all of its length.

A	Discharge fitting
B	Tube for the outflow of the liquid

C	Extension drip



Mounting the condensation discharge pipe in the horizontal version

- check that the "L" pipe and the flexible rubber hose are correctly connected to the bowl.
- slide in the side of the machine keeping the pipe in position up against the front grill.
- fully close the side checking that the pipe remains blocked in the special grove on the side.

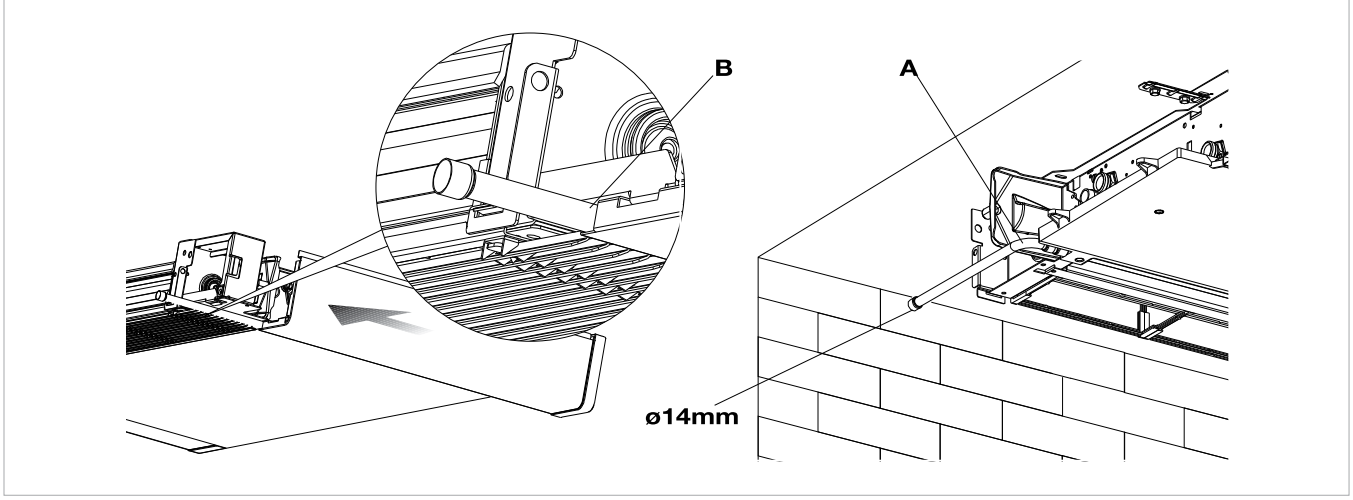
N.B.: make sure that the machine is installed perfectly level or with a slight inclination towards the condensation discharge;

N.B.: insulate carefully the inflow and outflow pipes up to the machine union to prevent any drops of condensation outside the same collection bowl;

N.B.: insulate the bowl condensation discharge pipe along all of its length.

A	Pipe connection

B	Burglary



10.8 Filling the system

When starting up the system, make sure that the hydraulic unit lockshield is open. If there is no electric power and the thermo-valve has already been powered use the special cap to press the valve stopper to open it.

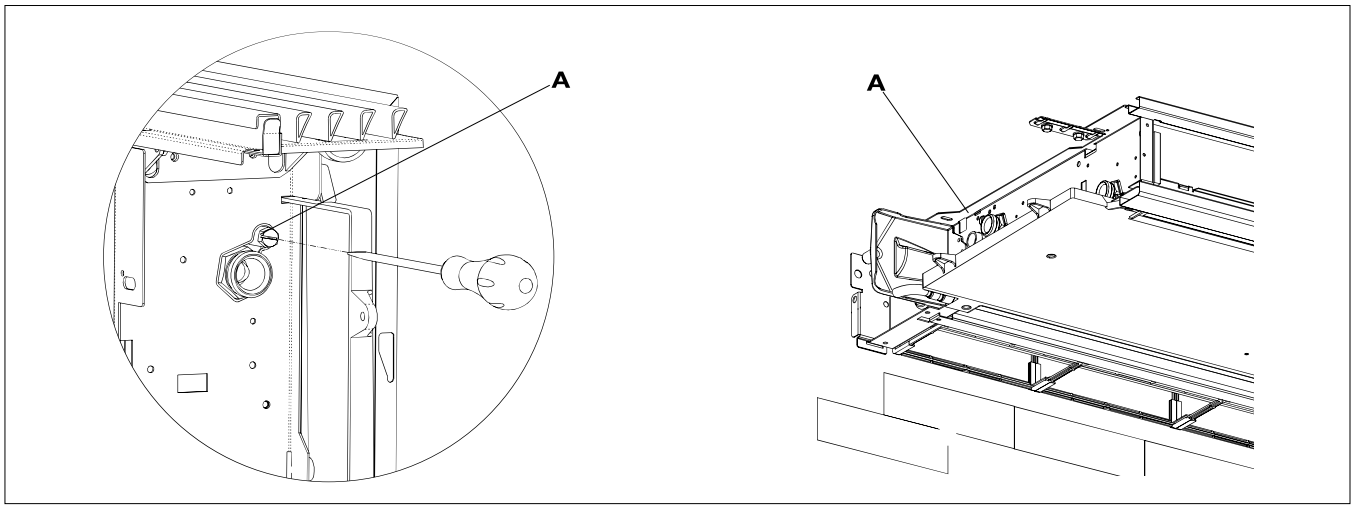
10.9 Evacuating air while filling the system

- Open all the system interception devices (manual or automatic);
- Start the filling by slowly opening the system water filling tap;
- For the models installed in a vertical position, take a screwdriver and act on the highest breather of the battery; for appliances installed in a horizontal position, act on the highest positioned breather.
- When water starts coming out of the breather valves of the appliance, close them and continue filling until reaching the nominal value for the system.

N.B.: check the hydraulic seal of the gaskets.

N.B.: it is advisable to repeat these operations after the appliance has been running for a few hours and periodically check the pressure of the system.

A	Venting of the battery



10.10 Electrical connections

N.B.: make electrical connections according to the requirements set out in sections General Warnings and Foundamental Safety Rules by reference to the patterns present in the installation and accessories manuals.

N.B.: the unit must be connected to the mains through a multipolar switch with minimum contact opening of at least 3 mm or with a device that allows the complete disconnection from the device under the overvoltage conditions category III.

11. 3.029897/3.029898

11.1 Wall-mounted SMART TOUCH electronic control panel with room probe

The 3.029897/98 remote wall-mounted control is an electronic thermostat with a room temperature probe for controlling one or more (up to a maximum of 30) fan coils / cooler-radiators in broadcast mode (with simultaneous control transmission) equipped with electronic control for 3.029896 remote operation .
The control panel has a memory, so settings will not be lost if the appliance is switched off or in the power supply is cut.

N.B.: any anomalies on individual connected terminal are not indicated on the wall panel.

N.B.: anti-freeze protection is guaranteed via the temperature probe when in stand-by.

N.B.: after 20 seconds from the last action, the panel brightness will be reduced and the room temperature will appear on the display. Press any key to restore maximum brightness.

A	Display
B	Keys

11.2 Display

Any statuses and alarms are also shown on the display by using 8 specific symbols:

A	Automatic operation
	Silent operation
	Maximum ventilation speed
	Night-time operation
	Heating on

	Cooling on
	Supervision on Flashing with presence switch CP closed.
	Alarm indicator (solid light)
	Panel off indicator
	Resistance active indicator

11.3 Key function

The various functions are set using 8 backlit keys:

	Temp + is for increasing the set temperature
	Temp - is for decreasing the set temperature
	Heating / Cooling: for changing the operation mode between heating and cooling
AUTO	Sets the regulation ventilation speed between a minimum and maximum value to an entirely automatic mode

	Night-time operation: limits ventilation speed to a contained level and the set temperature is adjusted automatically.
	Maximum speed operation: Allows for the maximum ventilation speed to be set
	ON/Stand-By: for activating the device or for putting it in stand-by.
	Silent: limits ventilation speed to a more contained value

11.4 General On Switch

Per la gestione dell'apparecchio attraverso il pannello di controllo questo deve essere collegata alla rete elettrica.
Nel caso sia stato previsto un interruttore generale sulla linea elettrica di alimentazione, questo deve essere inserito.

- Accendere l'impianto inserendo l'interruttore generale

11.5 Activation

To activate the device

Key	Operation	Display
	Press the ON Stand-by key	From off to on
AUTO	Select one of the 4 operating modes by pressing the relative key.	A

11.6 Heating/cooling operation modes setting

Key	Operation	Display
	Keep the Heating / Cooling key pressed for approx. 2 seconds to change the mode between heating and cooling, which is indicated by the 2 symbols that appear if heating or cooling is active.	
	When heating, the symbol displays when the set point is higher than ambient temperature, both are off when the set point is lower.	
	When cooling, the symbol displays when the set point is lower than ambient temperature, both are off when the set point is higher.	

11.7 Stand By

Key	Operation	Display
	Press and hold the ON Stand-By key for approx. 2 seconds. No illuminated signals on the display at all means that the system is in stand-by (no operation).	Spento

When the control is in this operating mode, anti freezing is in any case guaranteed. If the ambient temperature drops below 5°C, the solenoid valves on the hot water output and the boiler are opened.

11.8 Temperature selection

Key	Operation	Display
+ / −	Set the required room temperature using the two increase/decrease keys to set the temperature value on the 3-digit display.	20.5

The adjustment range is from 16 to 28°C in intervals of 0.5°C, but out-of-range values are also accepted, from 5°C to 40°C (unless in auto mode).
Only set these values for brief periods, and then set a intermediate value.
The controller is very precise - set it to the required value and wait for the controller to regulate itself according to the actual room temperature detected.

11.9 Automatic operation

Key	Operation	Display
AUTO	Press and hold the AUTO key. The function being activated is indicated by the relevant symbol appearing on the display.	A

Ventilation speed adjustment is carried out automatically between the minimum and maximum values, according to the distance of the actual room temperature from the set point, according to a PI-type algorithm.

11.10 Silent operation

Key	Operation	Display
	Press and hold the Silent key. The function being activated is indicated by the relevant symbol appearing on the display.	

Ventilation speed is limited to a contained maximum value.

11.11 Night-time operation

Key	Operation	Display
	Press and hold the Night-time operation key. The function being activated is indicated by the relevant symbol appearing on the display.	

By selecting this mode, ventilation speed is limited to a very contained level and the set temperature is adjusted automatically, as follows:

- decreases by 1°C after one hour and by another degree after two hours in heating mode;
- increases by 1°C after one hour and by another degree after two hours in cooling mode;

11.12 Operation at maximum ventilation speed

Key	Operation	Display
	Press and hold the Max Operation key. The function being activated is indicated by the relevant symbol appearing on the display.	

In this operation mode, the maximum possible power level is activated whether heating or cooling.
Once the desired room temperature is reached, we recommend selecting one of the other 3 operation modes for increased comfort and sound levels.

11.13 Key lock

Key	Operation	Display
	By pressing both the + and - keys for 3 seconds, all keys are locked locally, and this is indicated by "bL" appearing on the display. All actions are disabled to the user and whenever any key is pressed, "LOC" will appear. To unlock the keys, repeat the sequence.	

11.14 Reduce brightness to minimum

After 20 seconds from the last action, the panel brightness will be reduced for improved night-time comfort, and the room temperature will appear on the display.

If this brightness is still disturbing, the display can be switched off completely.

Key	Operation	Display
+	With the display off, press and hold the + key for 5 seconds until "01" is displayed. Use the - key to change the value to 00 and wait 20 seconds to check the setting has been accepted.	00

11.15 Deactivation

Key	Operation	Display
⏻	Press and hold the ON Stand-By key for approx. 2 seconds. No illuminated signals on the display at all means that the system is in stand-by (no operation).	Off

The controller also ensures anti freezing when in stand-by.

11.16 Room temperature probe regulation offset

As the detection probe is towards the bottom of the device, the temperature detected may at times differ from the actual room temperature.
By using this function, the value displayed can be adjusted in a range from -9 to +12 K in intervals of 0.1°C.
Use this adjustment with care, and only after having actually detected a discrepancy compared with the actual room temperature using a reliable device!

Key	Operation	Display
−	With the display off, press and hold the - key for 5 seconds to access the menu which allows adjustment (using the + and - keys) of the AIR probe offset displayed, from -9 to +12 K in 0.1 K intervals. After 20 seconds from the last action, the panel switches off and the setting is stored.	00.0

11.17 Switching off for long periods

When switching off for a season or for holidays, proceed as follows:
- Deactivate the device
- Turn the general unit switch to off.
- ⚠ The antifreeze function is not active.

11.18 Error signals

Error	Display
Room temperature probe fault (on the thermostat).	⚠ E1
Fault or connection of a double remote room probe on board one of the fan coil units connected.	⚠ E2

12. MAINTENANCE

Routine maintenance is indispensable to keep the Hydro IN cooler-convector in perfect working condition, safe and reliable over the years. This can be done every six months for some interventions and annually for others, by the Technical Service Assistance, technically authorised and prepared, using always original spare parts.

12.1 Cleaning filtering seats

- Suck up the powder with a vacuum cleaner
- Wash the filter with running water without using detergents or solvents, and leave to dry.
- Remount the filter on the cooler-convector, taking care to insert the lower flap into its seat.

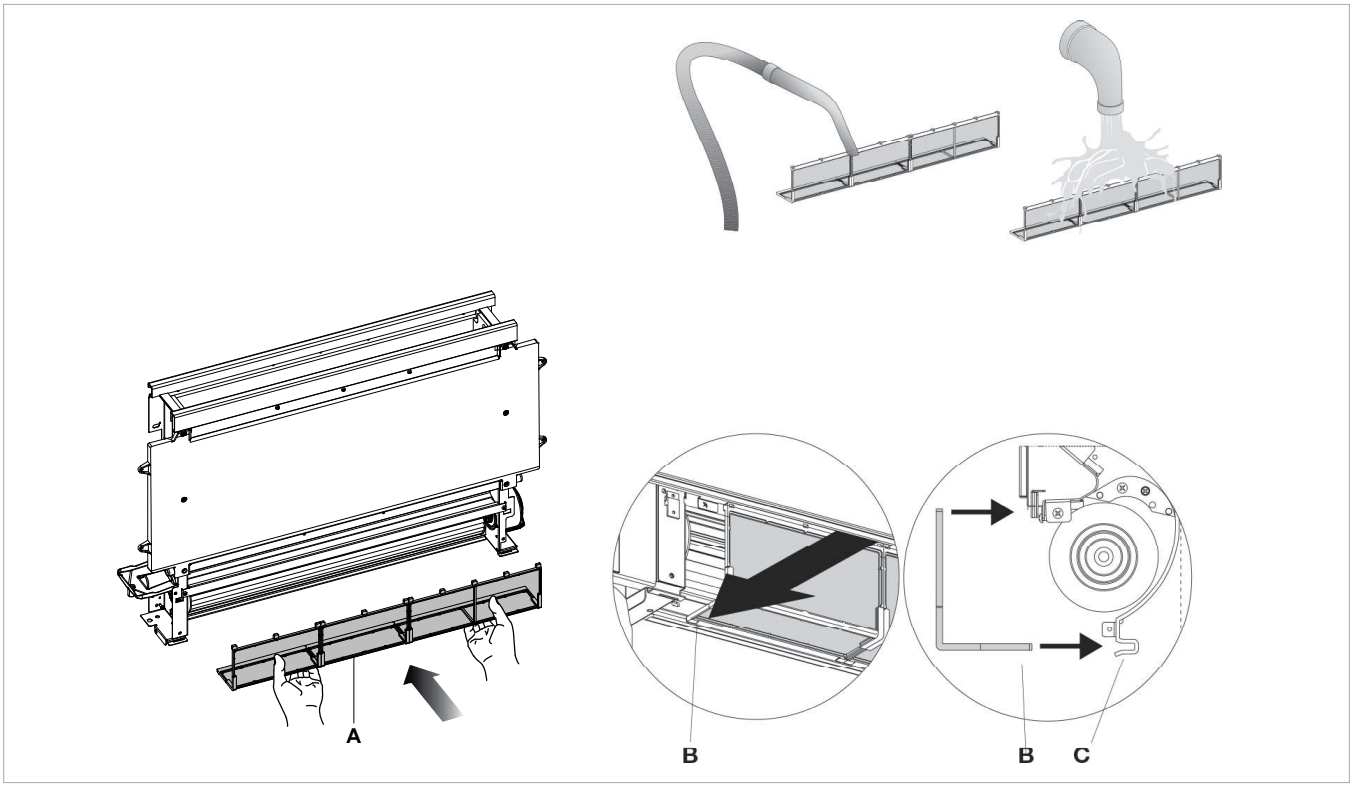
It is forbidden to use the unit without the net filters.

N.B.: the appliance is fitted with a safety switch that prevents the operation of the cooler with the mobile panel missing or out of position.

N.B.: after finishing the cleaning of the filter, check that the panel is mounted correctly.

A	Filter
B	Lower edge

C	Filter housing



12.2 Energy saving tips

- Always keep the filters clean;
- when possible, keep the doors and windows closed in the room being conditioned;
- limit where possible the effect of direct sun rays in the rooms being conditioned (use curtains, shutters etc.)

13. TROUBLESHOOTING

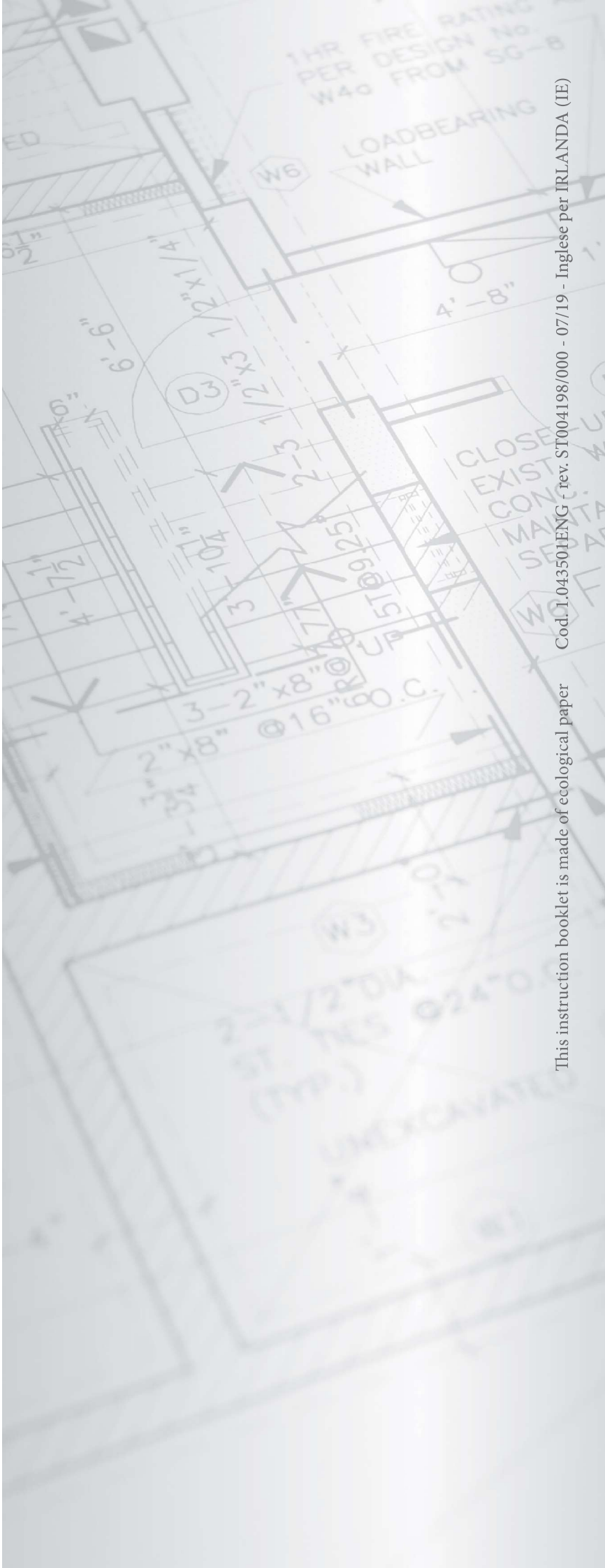
N.B.: in case of water leaks or anomalous functioning immediately cut off the power supply and close the water taps.
N.B.: should one of the following anomalies occur, contact an authorised service centre or an authorised qualified person, but do not intervene personally.

- The ventilation does not activate even if there is hot or cold water in the hydraulic circuit.
- The appliance leaks water during the heating function.
- The appliance leaks water only during the cooling function.
- The appliance makes an excessive noise.
- There are formations of dew on the front panel.

13.1 Table of anomalies and remedies

The interventions must be carried out by a qualified installer or by a specialised service centre.

EFFECT	CAUSE	REMEDY
A delayed activation of the ventilation respect to the new temperature or function settings.	The circuit valve needs some time to open and as a result the hot or cold water takes time to circulate in the appliance.	Wait for 2 or 3 minutes to open the circuit valve.
The appliance does not activate the ventilation.	No hot or cold water in the system.	Check that the water boiler or cooler are functioning correctly.
The ventilation does not activate even if there is hot or cold water in the hydraulic circuit.	The hydraulic valve remains closed.	Dismount the valve body and check if the water circulation is restored.
		Check the working efficiency of the valve by powering it separately with 230V. If it activates the problem could be the electronic control.
	The fan motor is blocked or burnt out.	Check the windings of the motor and thefree rotation of the fan.
	The micro-switch that stops the ventilation when the filter grill is opened does not close correctly.	Check that by closing the grill the micro-switch contact is activated.
	The electrical connections are not correct.	Check the electrical connections.
The appliance leaks water during the heating function.	Leaks in the hydraulic connections of the system.	Check the leak and fully tighten the connections.
	Leaks in the valve unit.	Check the state of the gaskets.
There are formations of dew on the front panel.	Thermal insulation unstuck.	Check the correct positioning of the thermo-acoustic insulation paying attention to that in the front above the finned battery.
There are drops of water on the air outlet grill.	In situations of high humidity (>60%) condensation could form, especially at the minimum ventilation speeds.	As soon as the humidity starts falling the phenomenon disappears. In any case the presence of a few drops of water in the appliance does not indicate a malfunction.
The appliance leaks water only during the cooling function.	The condensation bowl is blocked.	Slowly pour a bottle of water in the low part of the battery to check the drainage; if necessary, clean the bowl and/or increase the inclination of the drainage pipe.
	The condensation discharge does not need an inclination for correct drainage.	
	The connection pipes and the valve unit are not insulated well.	Check the insulation of the pipes.
The appliance makes a strange noise.	The fan touches the structure.	Check the clogging of filters and clean them if necessary
	The fan is unbalanced.	The unbalancing causes excessive vibrations of the machine; replace the fan.
	Check the clogging of filters and clean them if necessary	Clean the filters



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