

Installation manual **EN**



AirLeaf
DC Inverter

SL-SLI-SLSI-RS-SLS -RSI

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 water-water heat pump that you have purchased will operate without problems giving you optimum room temperatures with minimum energy costs.

Innova S.r.l

Conformity

This unit complies with European directives:

- Low tension directive 2014/35/UE
- Electro-magnetic compatibility 2014/30/UE;

Symbols

The pictograms in the next chapter provide the necessary information for correct, safe use of the machine in a rapid,

unmistakable way

Editorial pictograms

- | | |
|--|--|
| U User | S Service |
| - Refers to pages containing instructions or information for the user. | - Refers to pages containing instructions or information for the installer TECHNICAL CUSTOMER SERVICE. |
| I Installer | |
| - Refers to pages containing instructions or information for the installer | |

Safety pictograms

- | | |
|---|---|
|  Generic danger |  Danger due to heat |
| - Signals to the personnel that the operation described could cause physical injury if not performed according to the safety rules. | - Signals to the personnel that the operation described could cause burns if not performed according to the safety rules. |
|  Danger of high voltage |  Do Not |
| - Signals to the personnel that the operation described could cause electrocution if not performed according to the safety rules. | - Refers to actions that absolutely must not be performed. |

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GENERAL

1.1 General warnings

- ⚠ After unpacking, make sure that all the components are present. If not, contact the INNOVA agent who sold the appliance to you.
- ⚠ INNOVA 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 INNOVA in the instructions leaflet supplied together with the appliance.
- ⚠ 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.
INNOVA accepts no responsibility, either contractual or extra-contractual, for any damage caused to persons, animals or 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 INNOVA technical service department or else professionally qualified personnel and do not intervene personally on the appliance.
- ⚠ The imbedded Air Leaf SLI, RSI and SLSI series 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 long 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 or 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 INNOVA technical service centre.
- ⚠ All repair or maintenance interventions must be performed by the technical service department or by professionally qualified personnel as foreseen in this booklet. Do not modify or intervene on the appliance as this could create dangerous situations and the manufacturer will not be responsible for any damage caused.
- ⚠ 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:
 - ⊖ It is forbidden for the appliance to be used by children or unassisted disabled persons.
 - ⊖ It is forbidden to touch the appliance with wet hands or body when barefoot.
 - ⊖ 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".
 - ⊖ It is forbidden to modify the safety or adjustment devices or adjust without authorisation and indications of the manufacturer.
 - ⊖ It is forbidden to pull, cut or knot the electrical cables coming out of the appliance, even if it is disconnected from the mains supply.
 - ⊖ It is forbidden to poke objects or anything else through the inlet or outlet grills.
 - ⊖ It is forbidden to open the doors which access the internal parts of the appliance without first turning the system master switch to "OFF".

- ⊖ 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 forbidden to climb onto the appliance or rest any object on it.
- ⊖ The external parts of the appliance can reach temperatures of more than 70°C.

1.3 Product range

There are three types of Air Leaf cooler-radiators/cooler-convectors, SL, SLI and RS, each of which is offered in five sizes with different performances and dimensions.

SL

cooler-convactor with metal cabinet (suitable for horizontal or vertical installations).

SLI

Imbedded cooler-convactor without panels (suitable for horizontal or vertical installations).

SLS

fan with metal furniture low height (only suitable for vertical installations)

SLSI

Imbedded cooler-convactor without panels, low height (suitable only for vertical installations)

RS

cooler-convactor with metal cabinet and radiant effect (suitable for vertical installations).

RSI

Imbedded cooler-convactor without panels and radiant effect (suitable only for vertical installations).

NOTE

Also available are specific SL and SLI versions with 4 pipes with additional heating battery.
4 pipes RS, RSI and SLS version are not available.

1.4 Nominal technical features

2 pipes

TECHNICAL DATA (DC)

Air Leaf		200	400	600	800	1000
Battery water contents SLS	L	0,24	0,4	0,57	0,73	0,9
Battery water contents SL-SLI-RS	L	0,47	0,8	1,13	1,46	1,8
Maximum working pressure	bar	10	10	10	10	10
Maximum water inlet temperature	°C	80	80	80	80	80
Minimum inlet water temperature	°C	4	4	4	4	4
Hydraulic fixtures	"	Eurokonus 3/4				
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Maximum current absorbed	A	0,11	0,16	0,18	0,26	0,28
Maximum power absorbed	W	11,9	17,6	19,8	26,5	29,7
Weight SLI	kg	9	12	15	18	21
Weight SL	kg	17	20	23	26	29
Weight RS	kg	17,3	20,4	23,4	26,4	29,4
Weight SLS	kg	12	14	16	19	23

4 pipes

TECHNICAL DATA (DC)

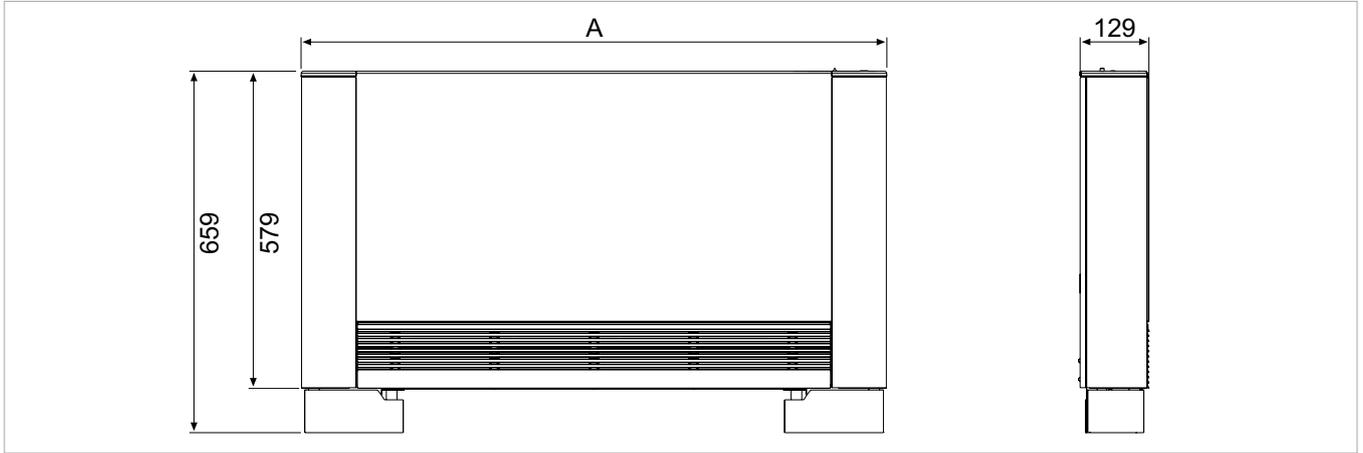
Air Leaf		200	400	600	800	1000
Cooling battery water contents	L	0,47	0,8	1,13	1,46	1,8
Heating battery water contents	L	0,16	0,27	0,38	0,49	0,6
Maximum working pressure	bar	10	10	10	10	10
Maximum water inlet temperature	°C	80	80	80	80	80
Minimum inlet water temperature	°C	4	4	4	4	4
Hydraulic fixtures	"	Eurokonus 3/4				
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Maximum current absorbed	A	0,11	0,16	0,18	0,26	0,28
Maximum power absorbed	W	11,9	17,6	19,8	26,5	29,7
Weight SLI	kg	10	13	17	20	24
Weight SL	kg	18	21	25	28	32

1.5 Overall dimensions Air Leaf

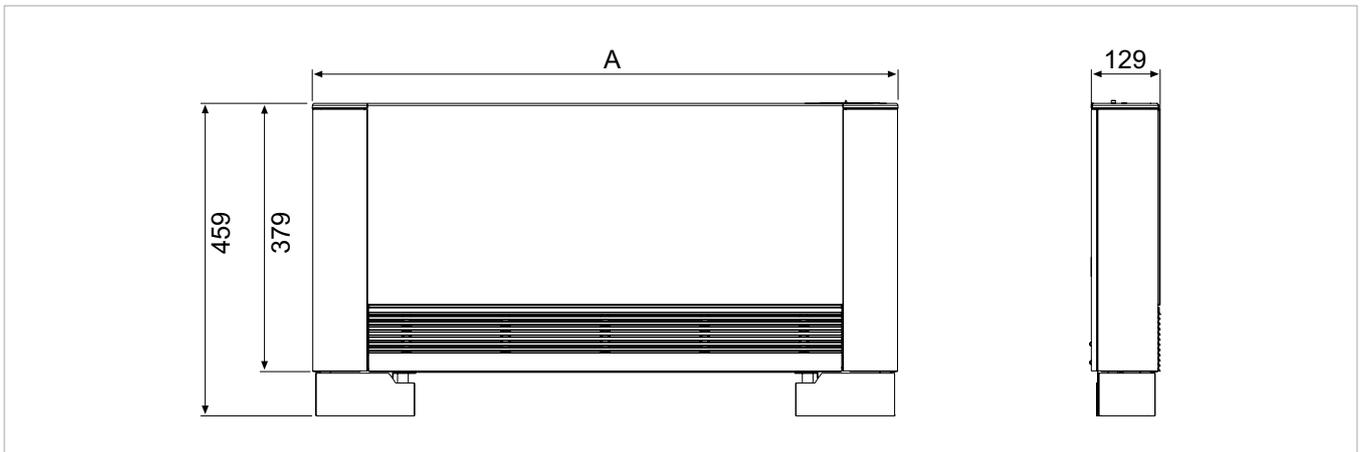
2 pipes

	U.M.	SL/RS/SLS 200	SL/RS/SLS 400	SL/RS/SLS 600	SL/RS/SLS 800	SL/RS/SLS 1000
Dimensions						
A	mm	735	935	1135	1335	1535

SL / RS

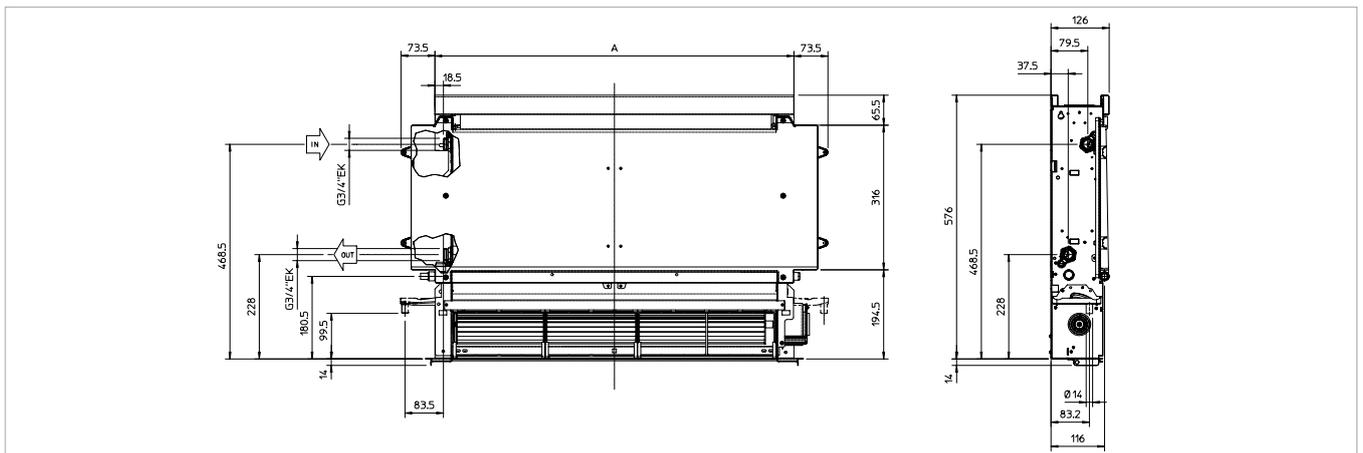


SLS



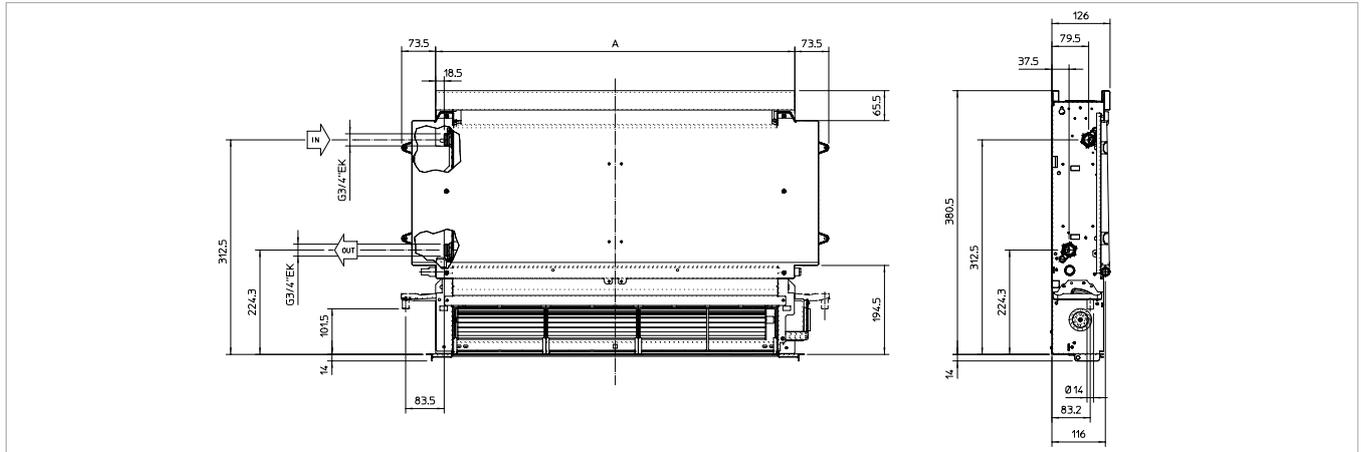
	U.M.	RSI/SLI/SLSI 200	RSI/SLI/SLSI 400	RSI/SLI/SLSI 600	RSI/SLI/SLSI 800	RSI/SLI/SLSI 1000
Dimensions						
A	mm	525	725	925	1125	1325

SLI



Dimensions	U.M.	RSI/SLI/SLSI 200	RSI/SLI/SLSI 400	RSI/SLI/SLSI 600	RSI/SLI/SLSI 800	RSI/SLI/SLSI 1000
A	mm	525	725	925	1125	1325

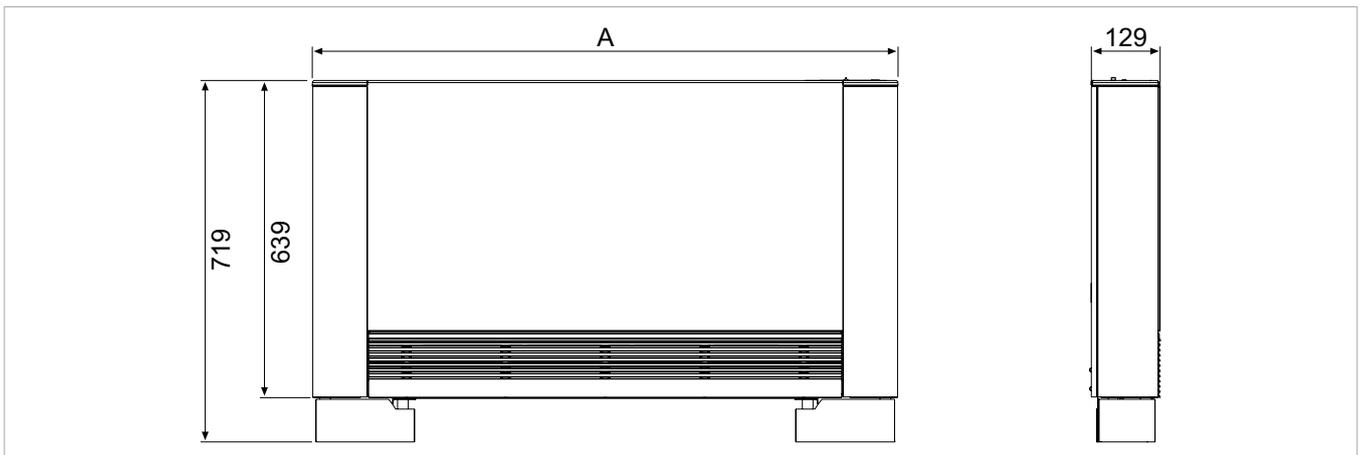
SLSI



4 pipes

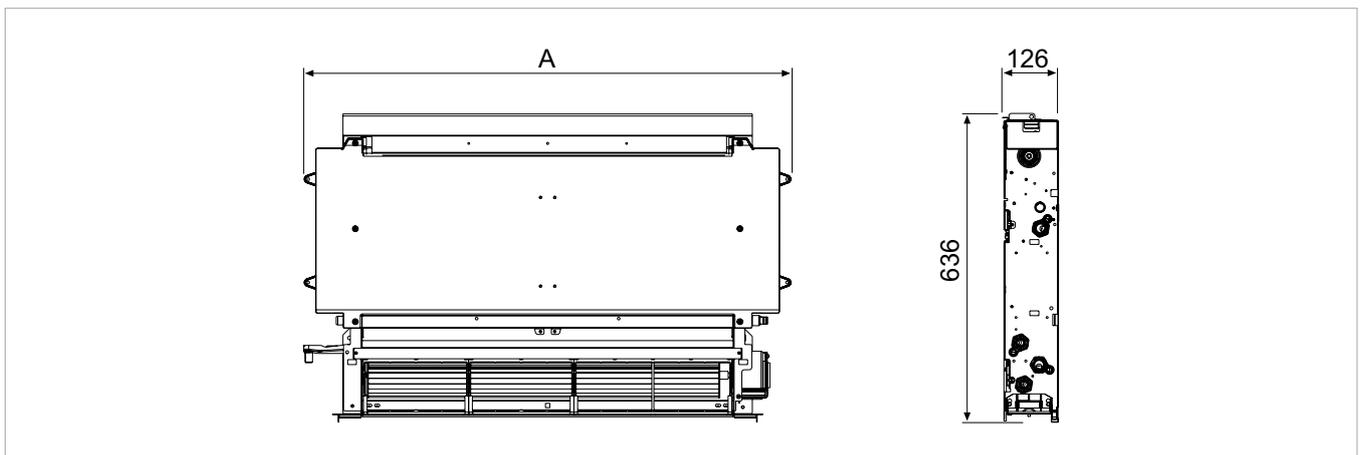
Dimensions	U.M.	SL 200	SL 400	SL 600	SL 800	SL 1000
A	mm	735	935	1135	1335	1535

SL 4T



Dimensions	U.M.	SLI200	SLI400	SLI600	SLI800	SLI1000
A	mm	525	725	925	1125	1325

SLI 4T



INSTALLATION

2.1 Positioning the unit

- ⚠ 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.
- ⚠ 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 (SL or SLI version) the airflow is not directed towards persons.

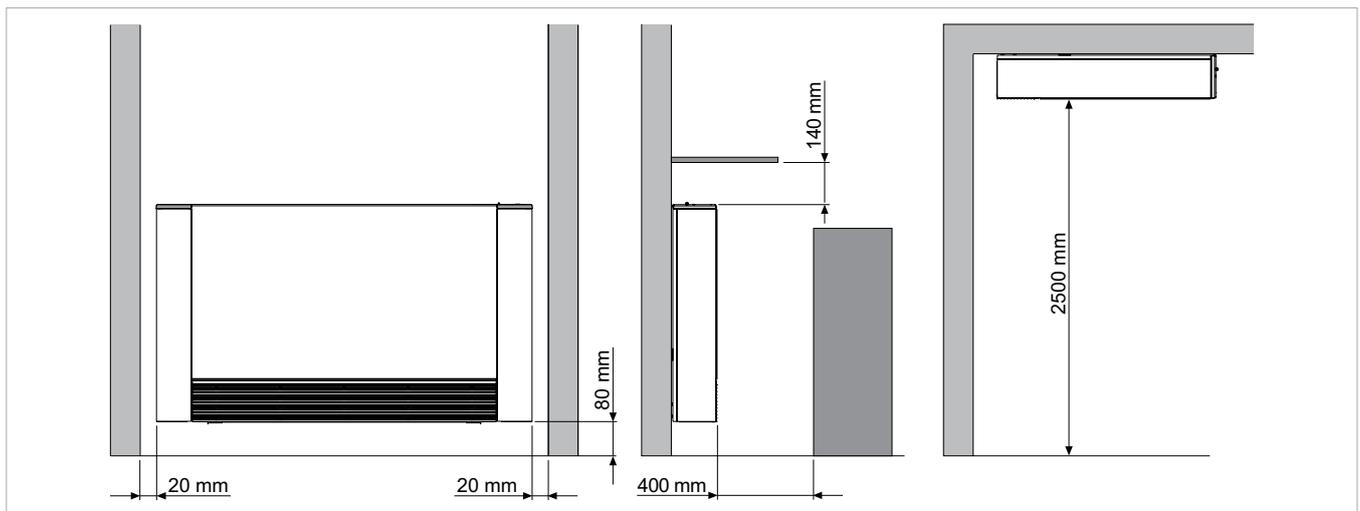
2.2 Installation modes

The following descriptions of the various mounting phase and the relative designs refer to a version of the machine with fixtures on the left. The operations for the mounting of machines with fixtures on the right are exactly the same. Only the images are to be considered as a mirror image. 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 INNOVA shall not respond for any damage to persons, animals or property.

2.3 Minimum installation distances

Figure indicates the minimum mounting distances between the wall-mounted cooler-convector and furniture present in the room.

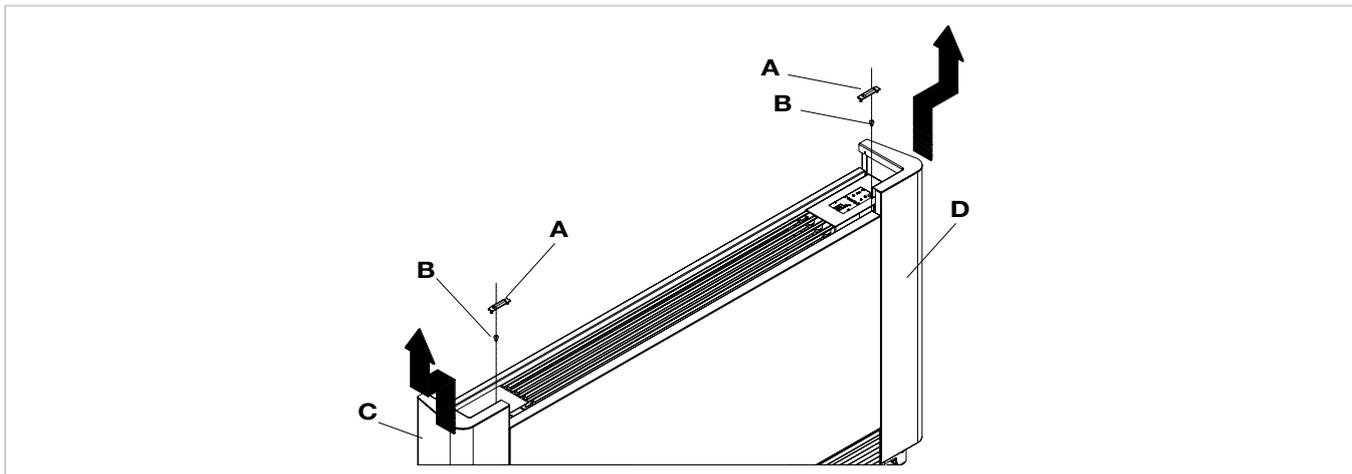


2.4 Side opening

- On the left-hand side lift the cover that protects the screw, loosen the screw that fixes the left panel, then move it slightly to the left and lift it up.
- On the opposite side, lift the cover that protects the screw and unscrew it.
- Move the side panel slightly to the right and lift it out.

A	cover
B	fixing screws

C	left panel
D	right panel



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2.5 Vertical floor or wall installation

When mounting on the floor with support feet, refer to the individual instructions leaflets supplied and the relative manual for the mounting of the feet.

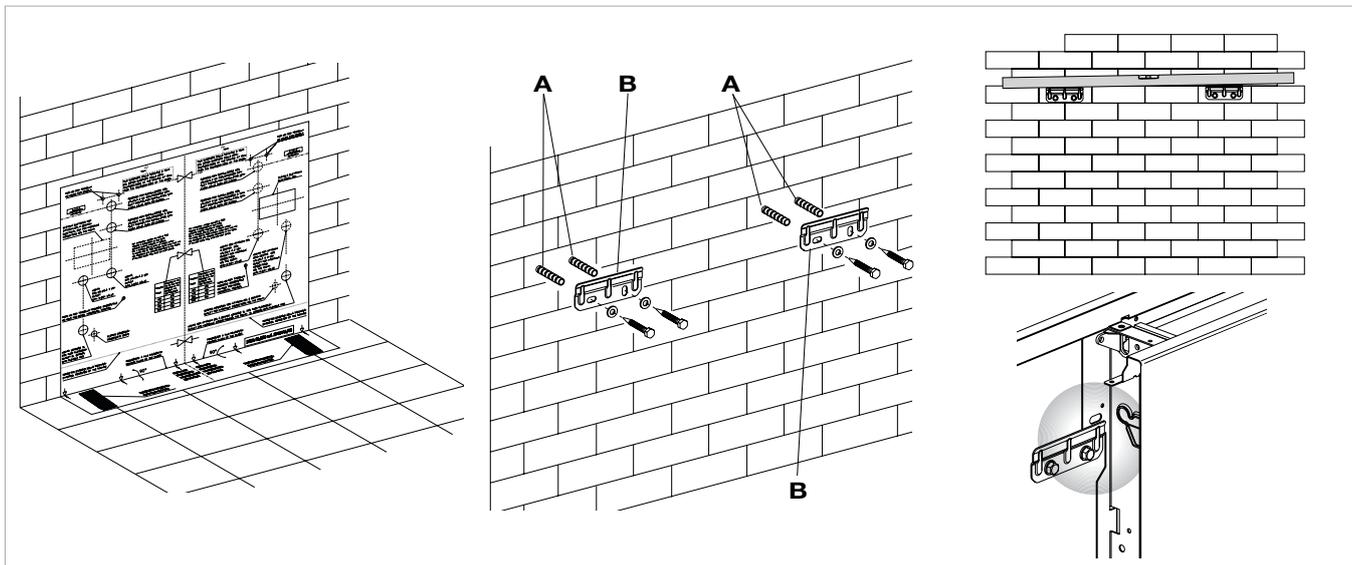
Using the paper template, trace the position of the two fixing brackets on the wall. Use a suitable drill to make the holes with and insert the toggle bolts (2 for each bracket); fix the two brackets. Do not over-tighten the screws so that the brackets can be adjusted with a spirit level.

Fully tighten the four screws to block the two brackets. Check the stability by manually moving the brackets to the right and to the left, up and down.

Mount the unit, checking that it fits correctly onto the brackets and checking that it is stable.

A	toggle bolts
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B	brackets
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2.6 Horizontal or ceiling installation (SL, SLI)

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.

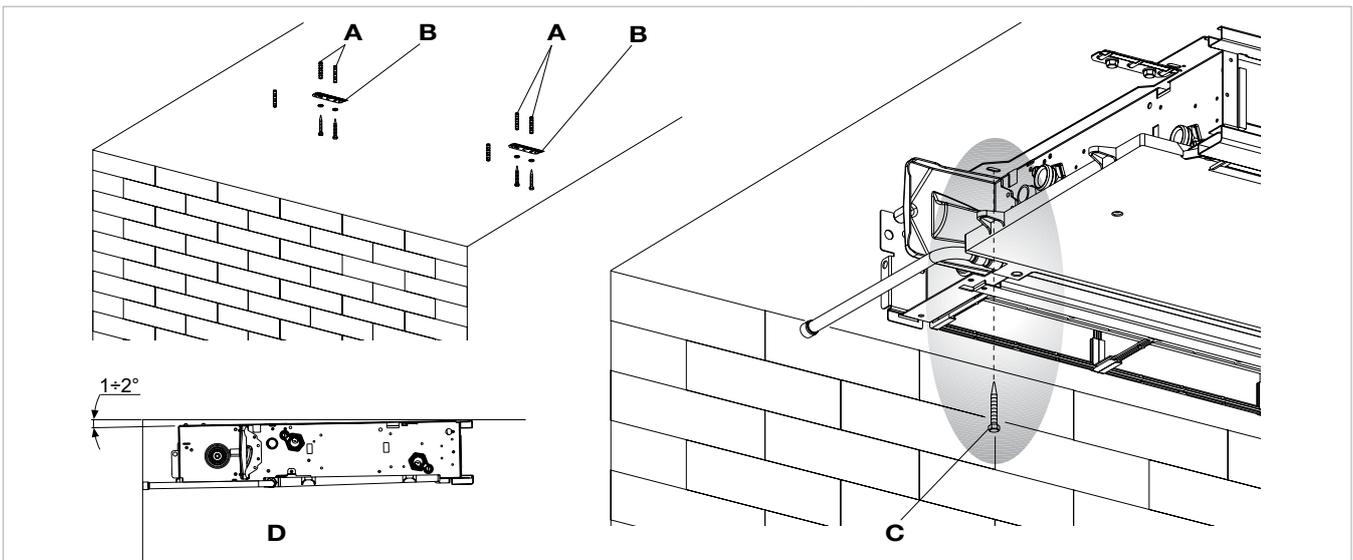
For installation of the SL versions, horizontal condensation collection basin accessory kits are available GB0520/GB0524.

The installation of RS, RSI, SLS units in horizontal position is prohibited.

⚠ 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



2.7 Mounting front grill safety support (SL)

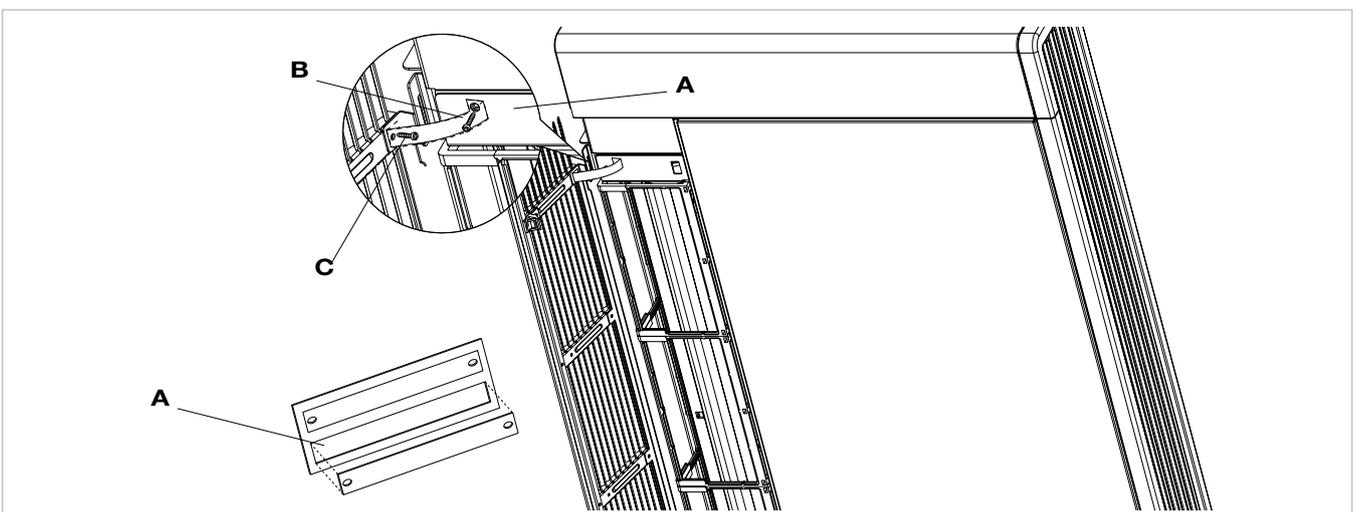
In the case in which the cooler-convector is installed in a horizontal position, to guarantee the safety of the cleaning/filter replacement operations it is obligatory that the two clamps, in the supplied bag together with the instruction manual and the accessories, are mounted by the installer.

⚠ Install braces to prevent the fall of the grid.

- Separate the two clamps;
- open the front grill and completely unscrew the fixing screws on the springs;
- fix the two clamps, blocking them by retightening the screws;
- fix the other part of the clamp to the grill using the supplied screw;
- close the grill.

A	Ties
B	Screws fixing springs

C	grid
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2.8 Hydraulic connections

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

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.

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.

2.9 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%. 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.

For installation of the SL versions in a horizontal position, horizontal condensation collection basin accessory kits are available GB0520/GB0524.

- 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 immersed 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.

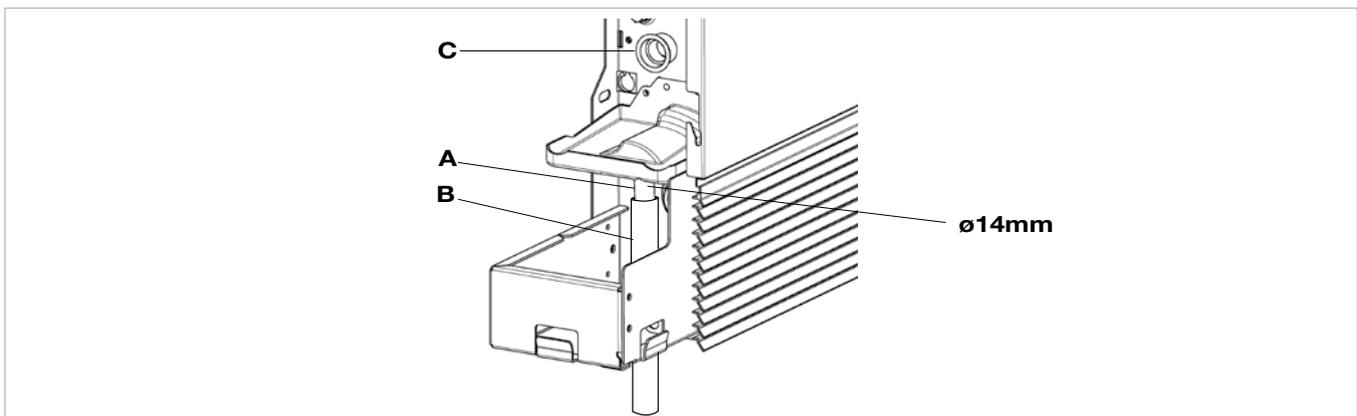
Mounting the condensation discharge pipe in the vertical version

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.

A	discharge fitting
B	tube for the outflow of the liquid

C	extension drip
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Mounting the condensation discharge pipe in the horizontal version (SL, SLI)

To mount the horizontal bowl on the SL versions refer to the instructions in kits GB0520/GB0524.

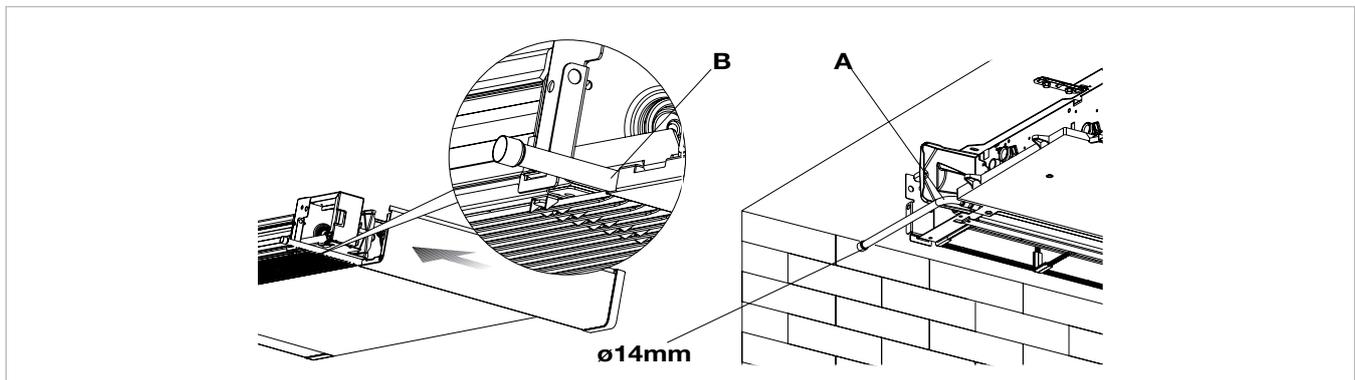
- check that the "L" pipe and the flexible rubber hose are correctly connected to the bowl.
- slide in the side of the machine keeping the pipe in position up against the front grill.
- fully close the side checking that the pipe remains blocked in the special groove on the side.

N.B. for the horizontal installation carefully note the following precautions:

- make sure that the machine is installed perfectly level or with a slight inclination towards the condensation discharge;
- insulate carefully the inflow and outflow pipes up to the machine union to prevent any drops of condensation outside the same collection bowl;
- insulate the bowl condensation discharge pipe along all of its length.

A connection pipes

B burglary



2.10 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.

2.11 Evacuating air while filling the system

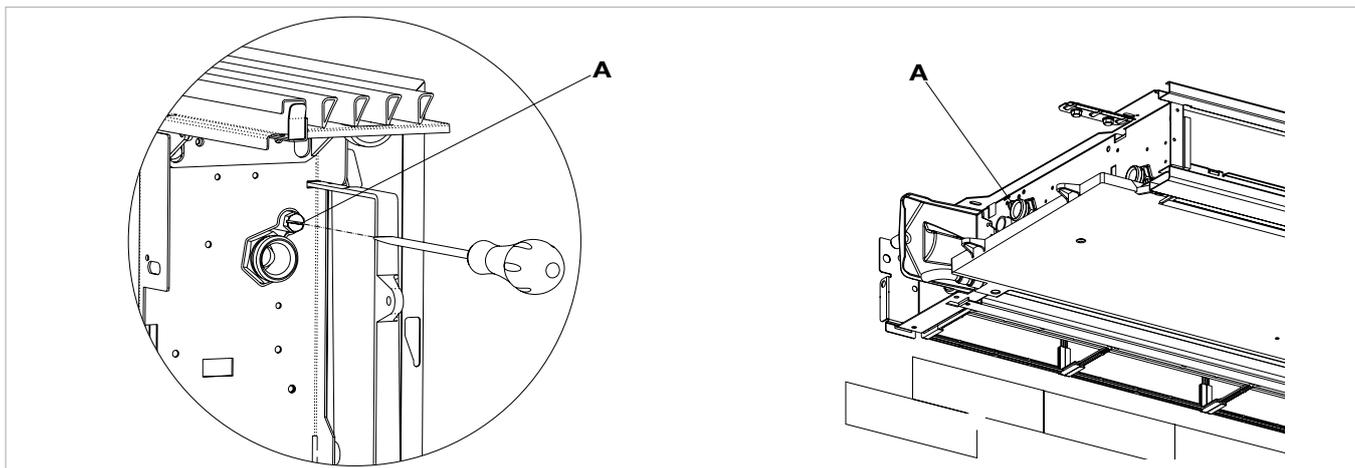
- Open all the system interception devices (manual or automatic);
- Start the filling by slowly opening the system water filling tap;
- For the installed in a vertical position, take a screwdriver and act on the highest breather of the battery; for appliances installed in a horizontal position, act on the highest positioned breather; for the 4-pipe versions act on the highest breathers on both batteries.

- 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.

Check the hydraulic seal of the gaskets.

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



2.12 Electrical connections

Make electrical connections according to the requirements set out in sections General Warnings and Fundamental Safety Rules by reference to the patterns present in the installation and accessories manuals.

Before doing any work, make sure the power is switched off.

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

2.13 Maintenance

Routine maintenance is indispensable to keep the Air Leaf 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.

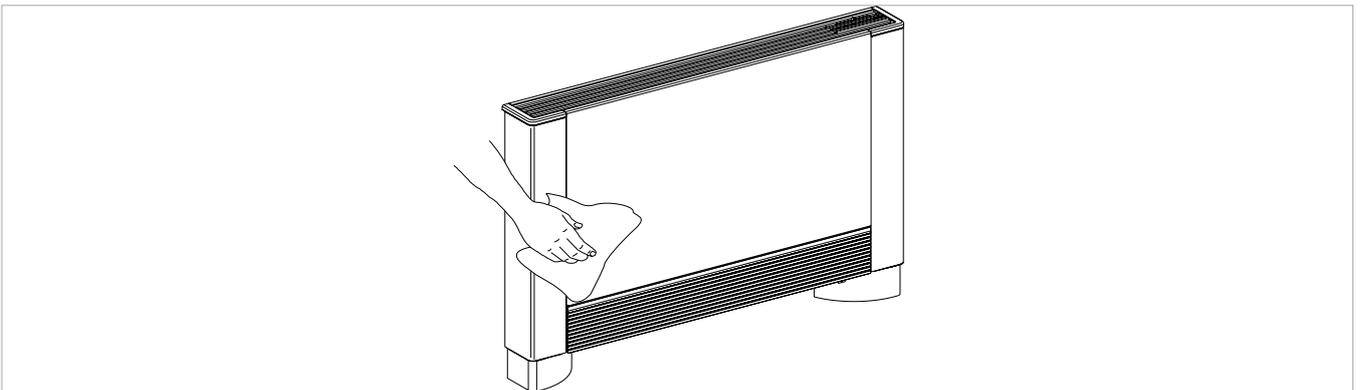
2.14 Cleaning the outside

⚠ Before every cleaning and maintenance intervention, disconnect the appliance from the mains by switching off the master switch.

⚠ Wait until the parts have cooled down to avoid the risk of burns.

⚠ Do not use abrasive sponges or abrasive or corrosive detergents to avoid damaging the painted surfaces.

When necessary, clean the outer surfaces of the Air Leaf cooler-convector with a soft cloth damp cloth.



2.15 Cleaning air suction filter

After a period of continuous operation and in consideration of the concentration of impurities in the air, or when he

intends to restart the plant after a period of inactivity, proceed as described.

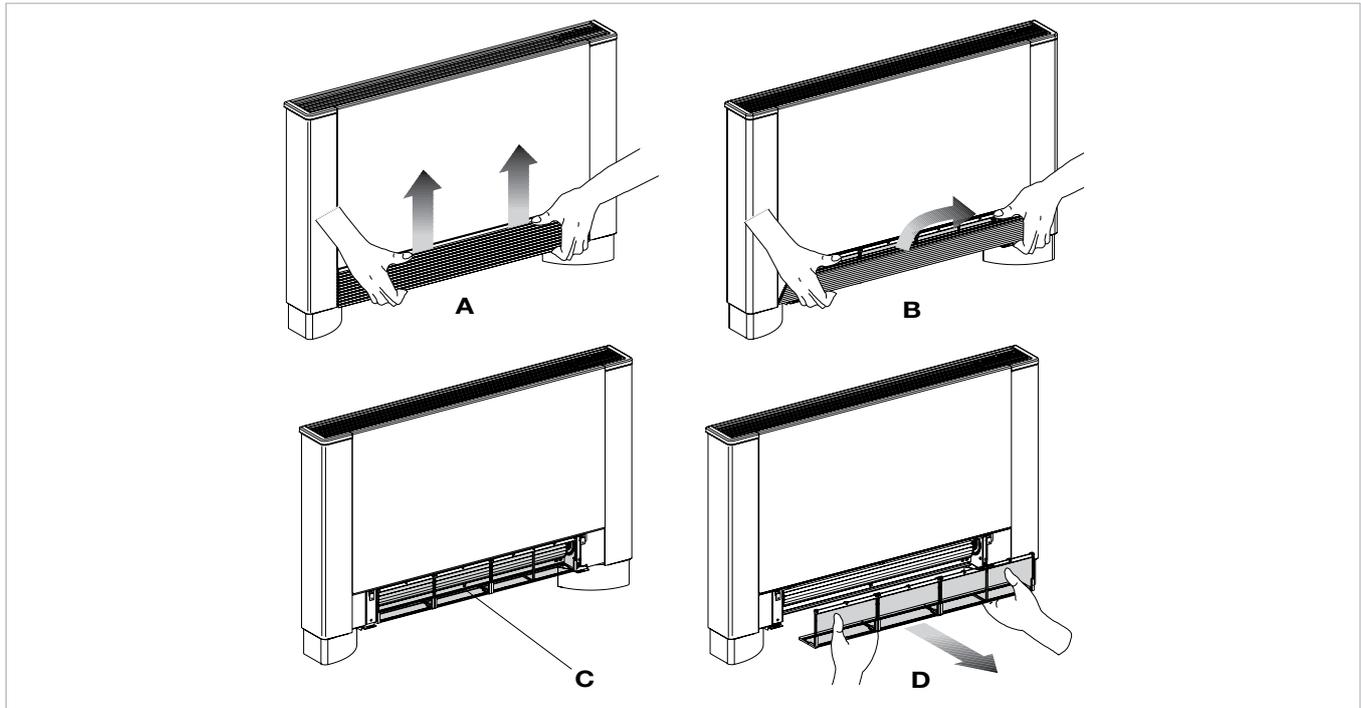
Extraction of filter cells in the versions with aspiration grill with flaps

- extract the front grille by lifting it slightly and turn it until it comes right out of its seat;

- extract the filter, pulling it horizontally outwards.

A	front grille
B	See grid

C	filter
D	extraction filter



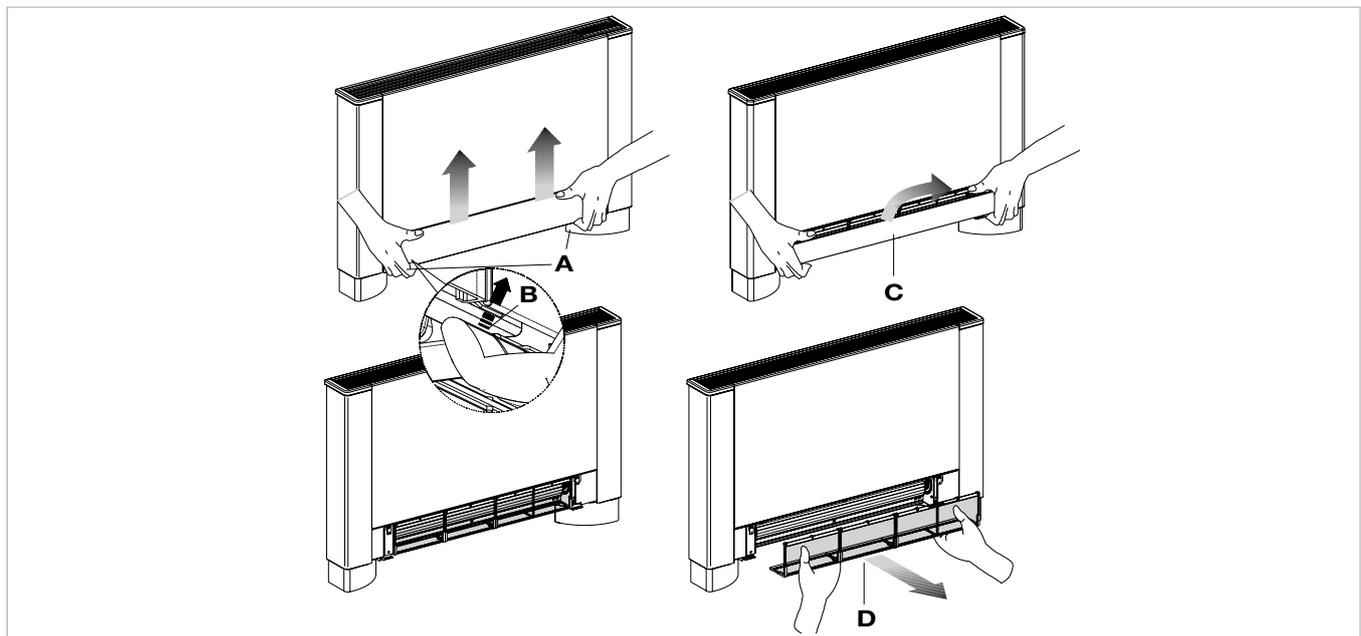
Extraction of filter cells in the versions with mobile aspiration panel

- Insert your hands under the end of mobile panel
- Press the plastic lug

- Lift and extract the mobile panel
- Extract the filter

A	flap
B	Plastic tabs

C	filter
D	extraction filter



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 (fig. 32 ref. A), taking care to insert the lower flap into its seat.

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

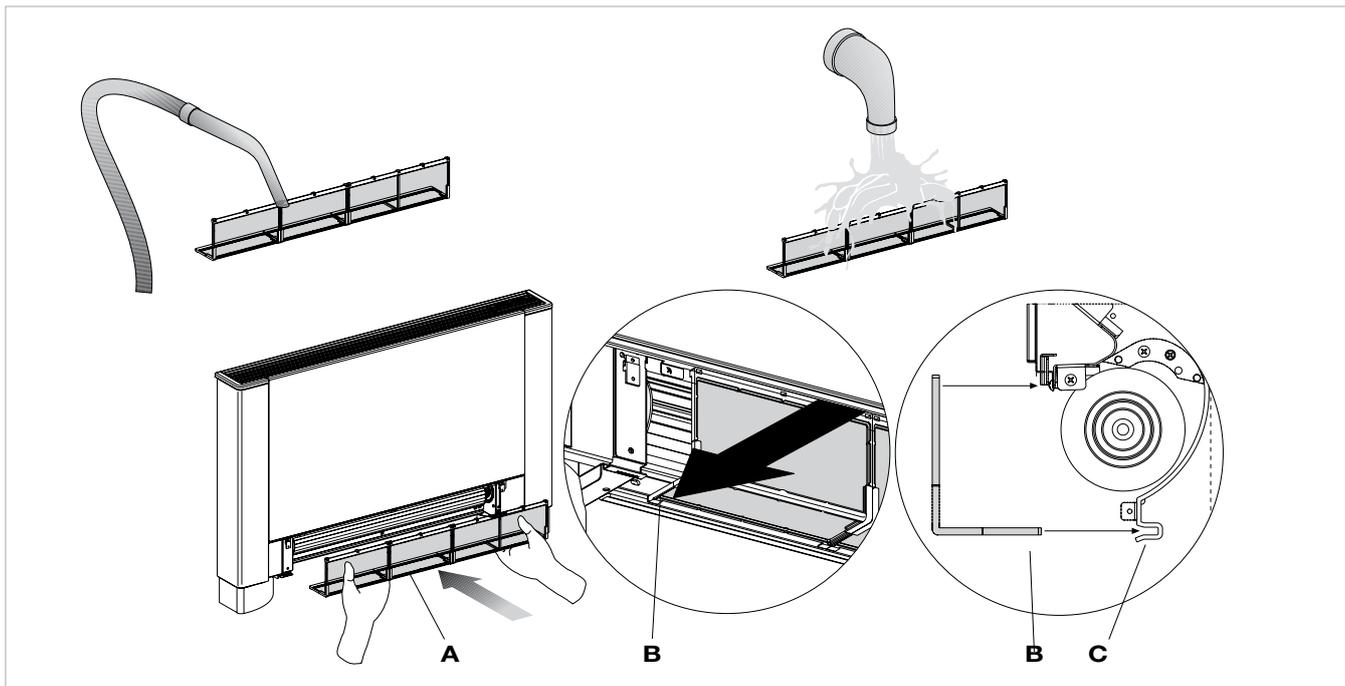
⚠ The appliance is fitted with a safety switch that prevents the operation of the cooler with the mobile panel missing or out of position.

⚠ After finishing the cleaning of the filter, check that the panel is mounted correctly.

A	filter
B	lower edge

C	The filter housing
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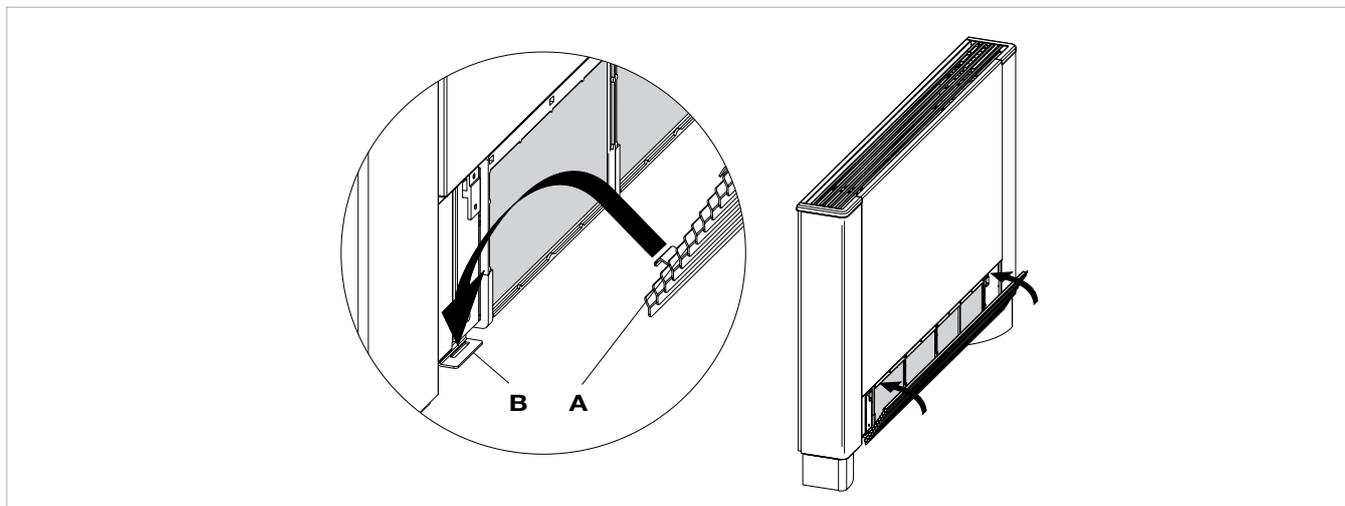


Ending Cleaning Operations

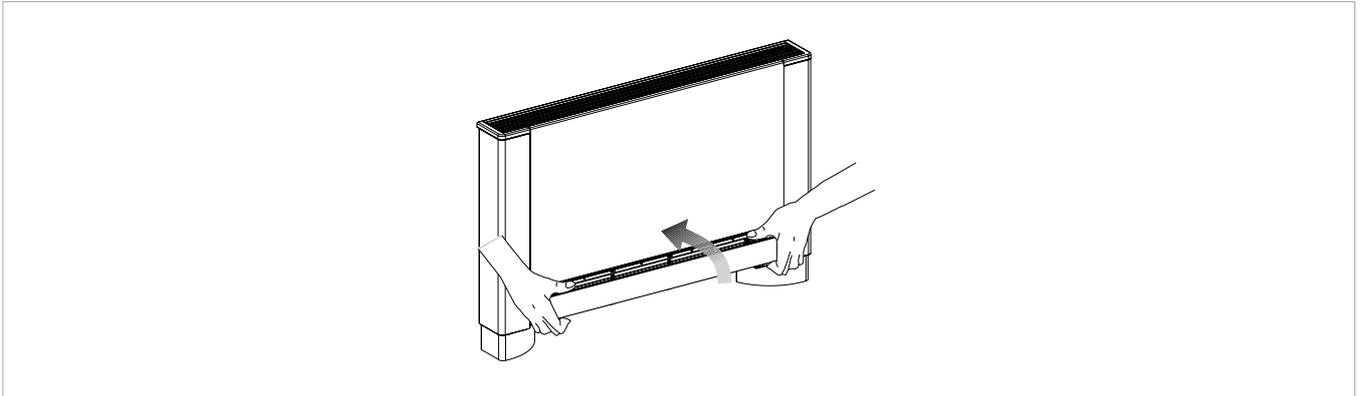
- For the versions with a grill with flaps, insert the two lugs into the special slots, turn it and hook it up with a slight tap on the upper part.

A	tabs
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B	slots
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- For the versions with a mobile panel, rest it in its position, parallel to the front panel and press until it is blocked.



2.16 Energy saving tips

- Always keep the filters clean;
- when far 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.)

TROUBLESHOOTING

3.1 Troubleshooting

- ⚠ In case of water leaks or anomalous functioning immediately cut off the power supply and close the water taps.
- ⚠ 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.

3.2 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 the free 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.

Effect	Cause	Remedy
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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