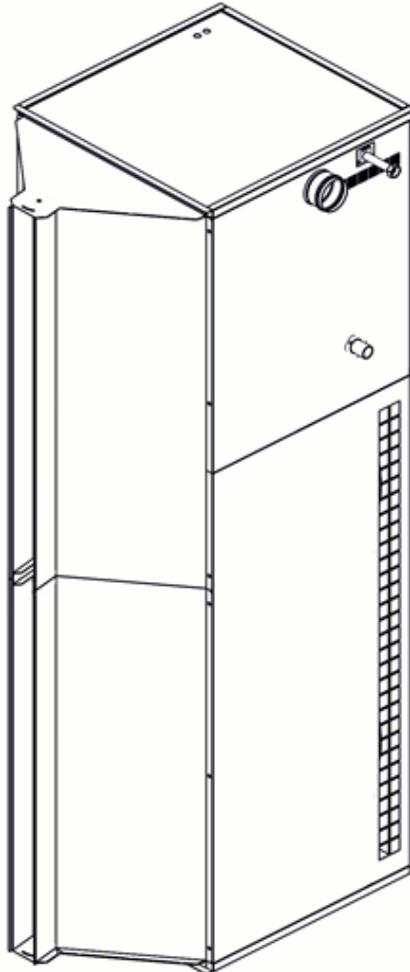


Condensation gas air curtain

# MRX 50



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# 1. Introduction

---

## 1.1. Symbols

---

In this manual, the warnings are used to point to specific information. We want to ensure the user safety, to avoid any problem and to ensure proper operation of the appliance.



### **WARNING**

Indicates a potential hazard which can cause bodily injuries and/or material damage



Indicates important information



Indicates a reference to other notices or other pages of the manual.



Before installation and commissioning the device, read carefully all manuals

## 1.2. Abbreviations

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- PWM : Pulse Width Modulation (fans control in variable speed)

## 1.3. General

---

### 1.3.1. Manufacturer's liability

---

Our products are manufactured in compliance with various applicable European directives requirements. They are thus supplied with EC markings and all necessary documents. With our commitment to quality products, we constantly seek to improve them. We therefore reserve the right at any time to modify the characteristics stated in this document.

Our liability as a manufacturer does not apply in the following cases:

- Failure to follow operating instructions for the appliance.
- Failure to maintain or insufficiently maintain the appliance.
- Failure to follow installation instructions for the appliance.



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### 1.3.2. Installer's liability

---

The installer is responsible for installation and first commissioning of the device. The installer must observe the following:

- Read and follow the instructions given in the instruction manuals provided with the device.
- Carry out installation in accordance with the applicable legislation and standards.
- Carry out the first commissioning and carry out all necessary controls.
- Explain the installation to the user.
- Inform the user that he cannot make changes in the appliance's design and to the installation by himself. The slightest modification (change, removal...) of security components or parts automatically results in the appliance's CE marking becoming invalid.
- Alert the user about the obligation to control and maintain the device.
- Hand all documents to the user.

### 1.3.3. User's liability

---

To ensure correct operation of the appliance, the user must observe the following:

- Read and follow the instructions given in the instructions manuals provided with the device.
- Call in a qualified technician to carry out the installation and perform the initial commissioning.
- Obtain explanations about the installation by the installer.
- Carry out checks and required maintenance.
- Keep all documents in good condition and near the appliance.

## 1.4. Certifications

---

Appliance	Gas air curtain, with condensation and warm water heat exchanger
Directive	2009/142/CEE «Gas appliances»
NOx class	5 (EN 1020)
Flue type	Evacuation : B23
	Sealed : C13, C33, C53



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## 2. Safety instructions and recommendations

### 2.1. Safety instructions



#### WARNING

The air curtain is an energized device and must be grounded during installation.



#### WARNING

It is not necessary to open the heating appliance's casing during normal operating. This operation is needed only during installation and/or servicing by authorised personnel.

- It is not allowed to obstruct and/or reduce the space reserved for the room or the appliance vents,
- Do not obstruct flue pipes or air intake pipes
- Do not make any change in the settings made by the qualified technician,
- Do not spray water on the curtain, or touch this appliance with wet body parts or bare feet,
- Do not touch the hot parts of the heating appliance, and/or moving parts,
- Do not place or hang anything on the appliance,
- Any work on the appliance is prohibited before unplugging it from the mains and closing the gas supply.
- Do not change the used gas type, security systems or control settings, as this could lead to dangerous situations.
- Do not swallow the fluid

Call a qualified technician in the case of gas replacement, change of gas pressure or modification of power supply.

If the appliance is not operated for a long period, disconnect the power supply of the appliance. When commissioning, it is advisable to use the service of a professional technician. Generally, all repair or maintenance works must be carried out exclusively by authorised and qualified personal.



Subscribing to a maintenance agreement is strongly recommended



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## 2.2. Recommendations

---

Condensation air curtains are engineered for heating industrial and tertiary premises.



### WARNING

Only qualified professionals are authorised to modify and install the appliance.

- Read all instructions in order to benefit all the functions of the appliance
- This information forms an integral part of the appliance and must always be kept always with the appliance, even in the event of transfer to another owner or user.
- Do not remove or cover the labels and material safety data plates fixed to the devices. Labels and material safety data plates must be readable throughout the device life.
- Install the device in a sufficiently ventilated room, except if it has a sealed combustion
- Please contact us for any application other than those described in this document

### DON'Ts

- Do not install condensation air curtains:
  - Outdoors
  - In environments with explosive risks,
  - In premises containing vapours of chlorinated products
  - In extremely wet premises (electrical shock hazard).

## 3. Description

---

### 3.1. Operating principle

---

Air curtains are composed of condensation gas boiler and a warm water battery positioned in the air flow, serial linked in a heat transfer fluid loop.



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### 3.1.1. Boiler

The low NOx pre-mixed modulating burner heats the water that circulates through the heating body.

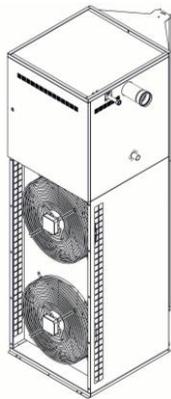
Combustion air, drawn by a variable speed fan, goes through a venturi system, which provides an air quantity proportional to the gas flow.

The air/gas mixture is led to the burner in the centre of heating stage, where it is burned.

Flue gases pass twice through a stainless steel exchanger, in order to dissipate the maximum heat. This technology allows reaching a 98% minimum efficiency at maximum power and 108 % in power modulation.

When flue gas temperature is below the dew point, steam in the flue gas condenses in the lower part of the heating body. Cooled flue gases are evacuated through evacuation flue pipes. The condensation water is evacuated through drain siphon.

### 3.1.2. Ventilation



The fans blow air through the battery to increase its temperature. This technique allows a perfect homogeneity of the air temperature.

Unlike traditional exchanger, the partial or total reduction of the air flow or an interruption of the power supply during operation does not affect the appliance.

The combustion section is completely insulated from the air circuit, which ensures that pollution of the heated air flow is impossible.

The condensing air curtains are equipped with fans that meet the requirements of the new European Directive 2009/125/EC.

### 3.1.3. Heat transfer fluid loop

The fluid loop is achieved in copper pipes.

The tightness is maximum :

- Thanks to the serial production of the whole piping. Especially all elbows are bent
- Thanks to the minimum number of fittings and tappings.

### 3.1.4. Regulation

Optimising a condensation system performance is related to its control.

The lower is the appliance power modulation, the more condensation will be important.



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Modulation range of condensing air curtains is 30% to 100% of rated power.

The curtain internal PLC, combined with independent regulator, allows continuous modulation of the thermal output between minimum and maximum values. Modulating operation of the curtain guarantees perfect adaptation to the premises real needs.

### 3.1.5. Vertical arrangement

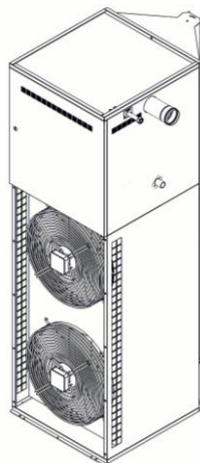
Vertical model of the gas condensing air curtain will blow its warm air to cover the opening of the door.

At most three air curtains can be mounted on top of each other, following these rules:

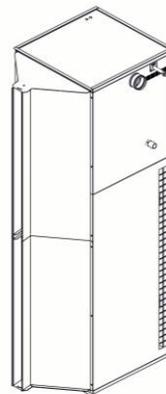
- 2 warm air curtains + 1 ambient air curtain
- 1 warm air curtain+ 2 ambient air curtains
- 3 ambient air curtain

Right and left versions are available inside the same casing, select your side for flue exhaust, gas inlet and condensate drain.

Always use mounting part on every air curtain to make sure it is well mounted to the wall and cannot fall over.



**DOOR on the RIGHT**



**DOOR on the LEFT**



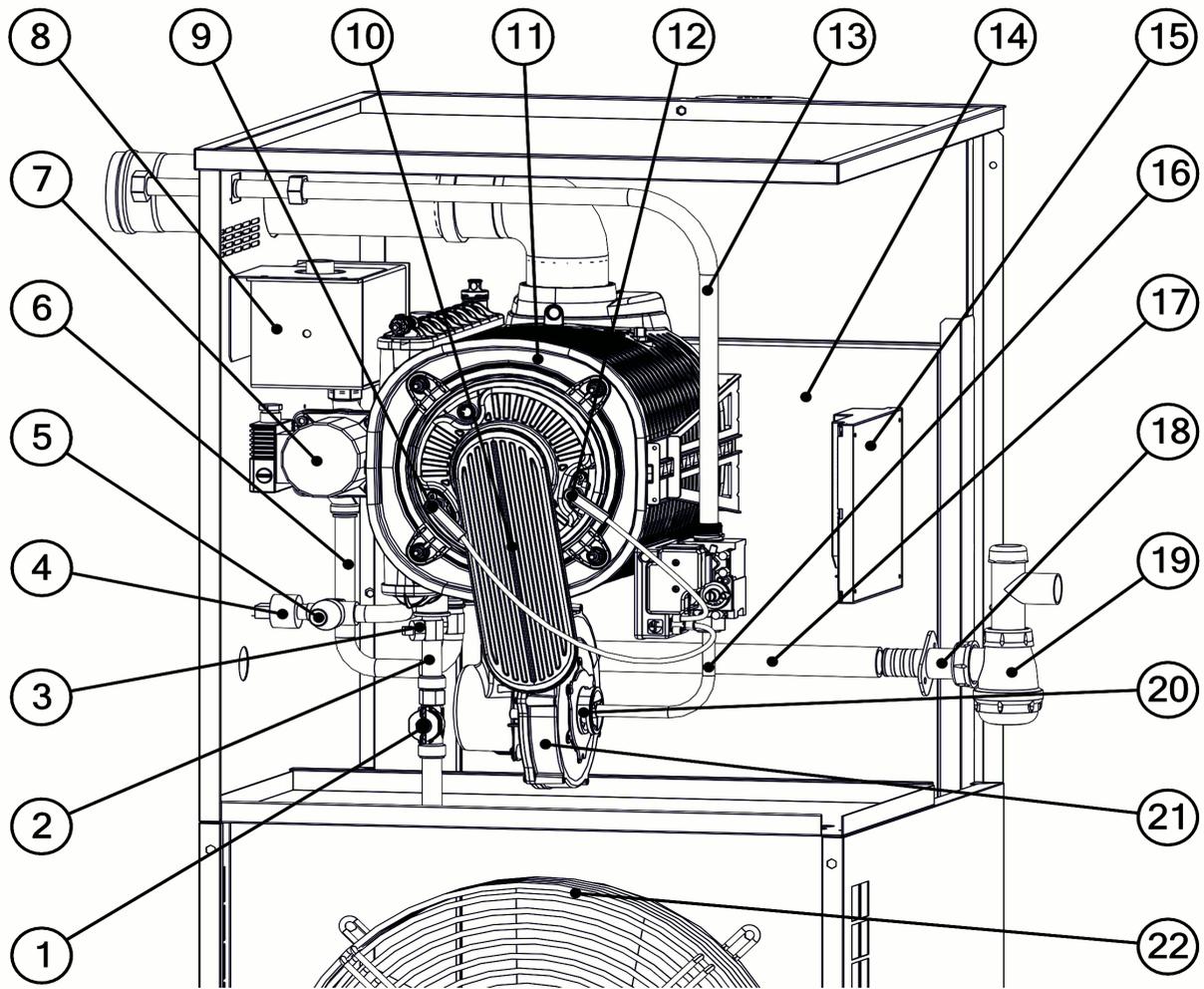
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### 3.2. Main components



- |    |                                 |    |                            |
|----|---------------------------------|----|----------------------------|
| 1  | Fluid flow meter                | 12 | Ignition electrode         |
| 2  | Outlet pipe                     | 13 | Inlet gas pipe             |
| 3  | Outlet temperature sensor       | 14 | Heat exchanger             |
| 4  | Pressure sensor                 | 15 | PLC                        |
| 5  | Safety valve 3 bar              | 16 | Injection gas pipe         |
| 6  | Inlet pipe                      | 17 | Condensate pipe            |
| 7  | Circulator                      | 18 | Condensate drain connexion |
| 8  | Expansion vessel                | 19 | Siphon                     |
| 9  | Ionisation electrode            | 20 | Venturi                    |
| 10 | Burner door                     | 21 | Burner fan                 |
| 11 | Stainless steel heating element | 22 | Axial fan                  |



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### 3.3. Technical characteristics

Condensation air curtain	Unit	MRX50
<b>General</b>		
Nominal heat input	kW NHV	11 – 45
Nominal heat output	kW	11,9– 43,7
Efficiency at full load	%	98
Efficiency at minimum load	%	107
Air flow	m <sup>3</sup> /h (16°C)	6000
ΔTair	°C	8 – 24
<b>Gas and flue gas data</b>		
Gas flow (15°C)		
H (G20 20 mbar)	m <sup>3</sup> /h	4,77
L (G25 – 25 mbar)	m <sup>3</sup> /h	5,23
Propane (G31 – 37 mbar)	kg/h	3,51
Minimum fresh air flow rate	m <sup>3</sup> /h	100
Condensate flow rate	litre/h	2,5
Flue gas temperature	°C	50-100
<b>Electric data</b>		
Power supply voltage		230V 1N ~ 50Hz
Extreme working temperatures		-15°C / +40°C

Condensation air curtain	Unit	MRX50
<b>General</b>		
Air intake diameter	mm	80
Flue pipe diameter	mm	80
Condensate drain diameter	mm	32
Venturi ring		Red
Diaphragm washer		No
Gas connection		1/2" male
Fan power	W	420
Fan speed	rpm	1400
Electric power	W	640
Fluid circuit volume (water + glycol -15°C)	litre	12
Weight	kg	120



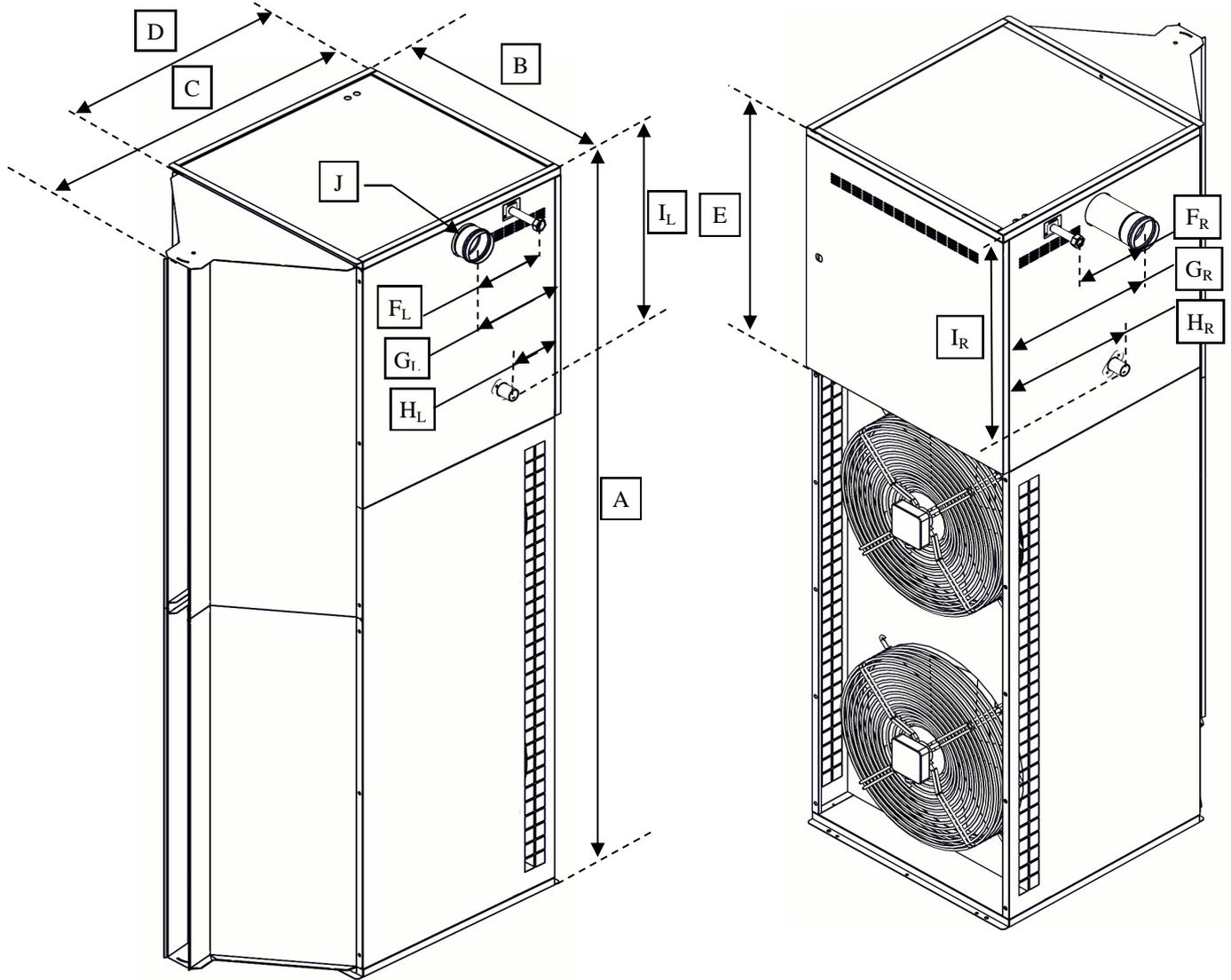
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### 3.4. Overall dimensions (vertical)



Dimension	MRX50
A	2080 mm
B	650 mm
C	866 mm
D	566 mm
E	718 mm
FL	112 mm
GL	234 mm
HL	103 mm
IL	670 mm
FR	112 mm
GR	234 mm
HR	288 mm
IR	643 mm
J(Ø exhaust)	80 mm

## 4. Appliance installation

---

**i** Installation of gas appliances must be carried out by qualified personnel, it is determined the premises volume and location characteristics, equipment vent or ventilation device which may be installed on those premises.

### Scope of delivery :

- Condensation air curtain
- Technical instructions
- Cable for power supply (1 m length)
- Siphon
- Gas fitting
- Gasket

### Reception – Storage

The gas condensation air curtain is delivered on a wooden pallet, protected by a cardboard and plastic film. It is essential to check the delivered material status (even if the packaging is intact) and its compliance with the purchase order.

In the event of damage or missing parts, report comments on the carrier's receipt as accurately as possible, the words "subject to unpacking" has no legal value, and then confirm the prejudice by letter within 48h to the carrier. The buyer is responsible to check the goods delivered, no appeal is possible if this procedure is not followed.

Store the material in a clean, dry place, protected from shock, vibration, temperature variations and a room humidity less than 90 %.

### Handling

Unpack the appliance using adequate protective equipment. Handling must be performed by a person equipped with the proper equipment.

### 4.1. General rules

---

Condensing air curtains can be installed directly into the premises to be heated.

However, this facility is subject to the national security rules depending on the fuel type used and the installation country. If in doubt, check with safety and inspection bodies.



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#### Ventilation :

Premises receiving gas appliances should be provided with permanent ventilation in accordance with the applicable rules in the country of installation.

#### Condensate draining:

The appliance is supplied with a siphon for condensate evacuating. The siphon is an integral part of the device, it is a safety system component, and replacement by another type is strictly prohibited.

The condensate drain must be in accordance with existing rules in the country of installation.

#### Gas connection :

Before installing the appliance, it is necessary to check that the local distribution conditions (gas type, pressure) are compatible with settings of the appliance to be installed.

## 4.2. Connecting flue pipes

---

The flue systems represented in this manual are those commonly used in the market. However, some of them are not usable in all countries. It is up to the installer or the building owners to ensure that the chosen flue system complies with the local installation rules.

Connection of the flue pipe/air supply pipe, can be achieved:

- with combustion air supply sealed with respect to the premises (C type)
- with combustion air drawn from inside the premises (B type)

The condensing air curtain is certified for : C13-C33-C53-B23.

Flue pipes, terminals and flue elements must be manufactured from a material resistant to condensate contained in cold flues, between 50 and 100 °C, resulting from condensation. Only polypropylene PP or stainless steel 316 ducts are allowed.

**i** Flue pipes, terminals and accessories used must compulsorily be approved, use only suction and discharge terminals referenced by SOLARONICS CHAUFFAGE, the use of non-approved equipment results in cancelling of the warranty.



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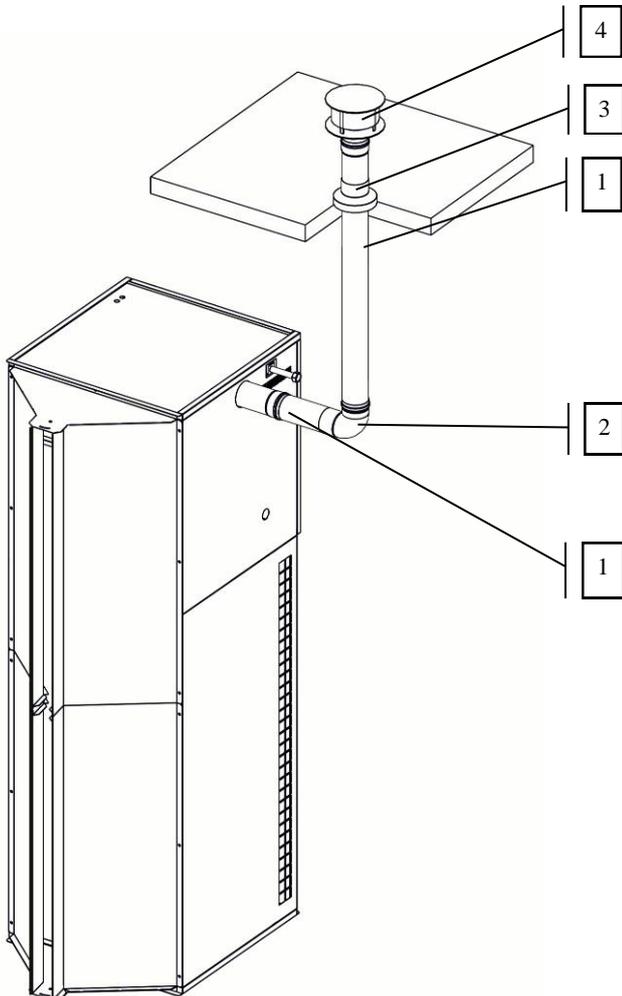
## 4.2.1. B23 type evacuation flue connection

Combustion circuit not sealed from the premise.

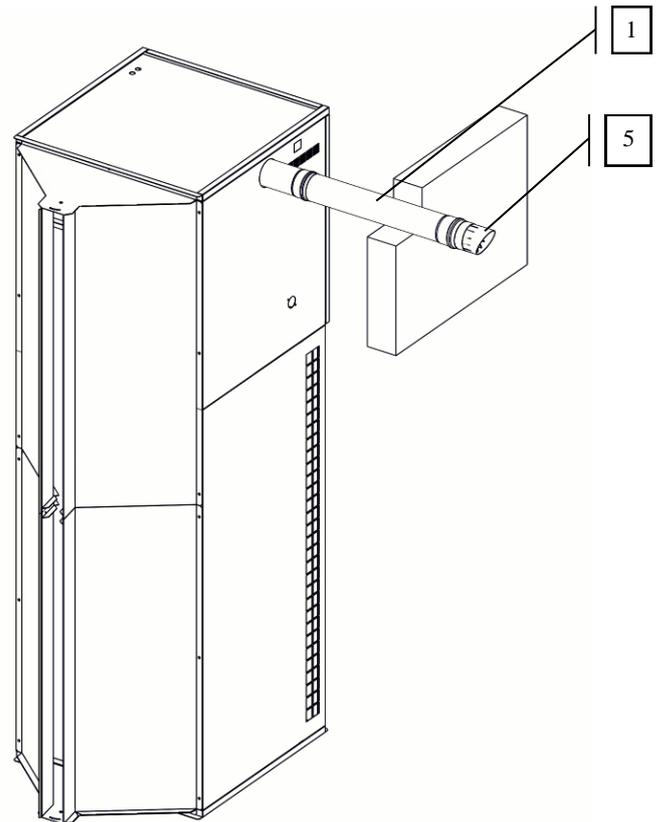
The combustion air is drawn directly from the premise and the flue is evacuated vertically, through the roof, or horizontally, through the wall.

Flue pipes must cross no other premise than the one in which the appliance is installed.

### B23 vertical (roof)



### B23 horizontal (wall)



#### List of components :

- (1) Extension Ø80mm PP
- (2) Elbow 90°
- (3) Flat flashing plate (sliding moulding is not supplied)
- (4) Roof terminal
- (5) Wall terminal

It is possible to extend or to change the direction of the air vent using approved accessories. The sections of the pipes must be at least equal to the departure diameter from the appliance. Never reduce the diameter of the pipe or block the aerations of the room. It's advised to use the elbows 45°.

Do not place wall evacuation at less than 2 metres from a vent or an opening from the ground or in an area where persons pass by.



#### **WARNING**

Junctions must be sealed and rigid: ensure the presence of seals.

Flue pipes mounted horizontally must be installed with a slight slope, 3 ° to the curtain to allow recovery of condensates formed in ducts



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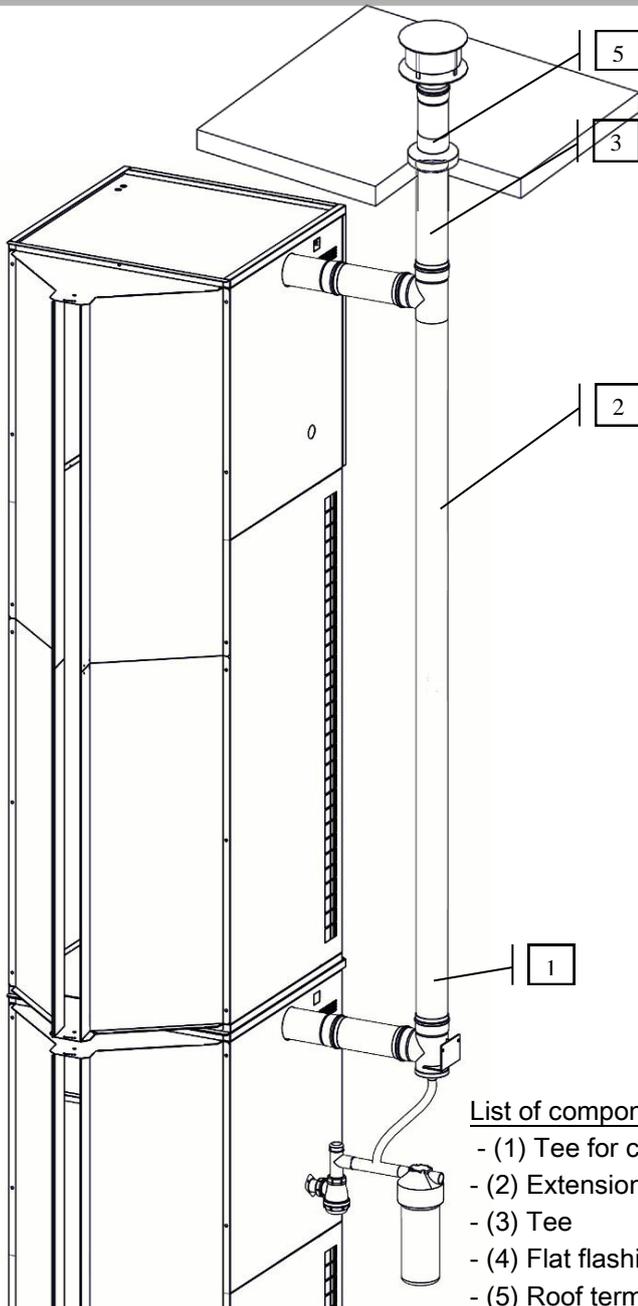
## 4.2.2. C33 and C13 type evacuation flue connection

Combustion circuit sealed from the premise.

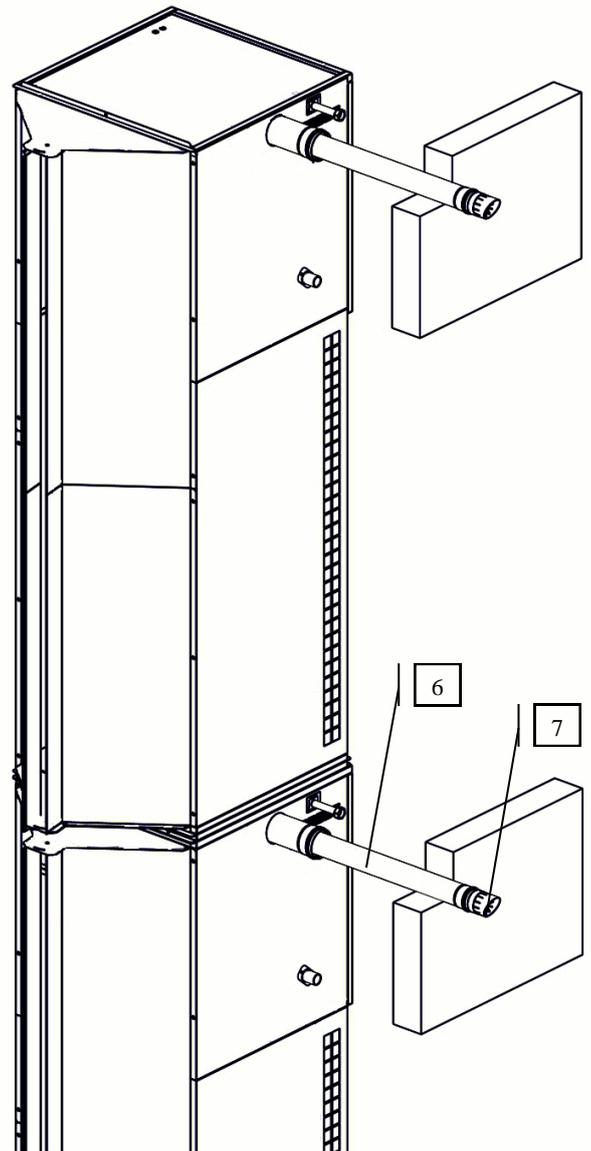
The combustion air intake and the flue evacuation are made vertically, through the roof, or horizontally, through the wall.

Flue pipes must cross no other premise than the one in which the appliance is installed.

***B23 vertical (roof)***



***B23 horizontal (wall)***



List of components :

- (1) Tee for condensate
- (2) Extension Ø150mm PP
- (3) Tee
- (4) Flat flashing plate (sliding moulding is not supplied)
- (5) Roof terminal
- (6) Wall terminal
- (7) Extension Ø80mm PP

**Note:**

In case air curtain's exhaust pipe are connected together, make sure it's always in negative pressure so the flue cannot flow back in the boiler. Use Ø150mm pipe when connected together.

Contact the after sales service for further information.



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#### **WARNING**

Junctions must be sealed and rigid: ensure the presence of seals.

Flue pipes mounted horizontally must be installed with a slight slope, 3 ° to the curtain to allow recovery of condensates formed in ducts

### **4.3. Condensate drain**

---

Condensation air curtains are equipped with a siphon which allows condensing water flow from the back of the device, siphon delivered separately, to mount during installation.



#### **WARNING**

Draining must be carried out with acid water resistant materials.

Do not use copper or galvanized pipes.

- For condensate drain system, use PVC pipes of diameter at least equal to the appliance pipe (Ø 32 PVC). Make sure that the drain piping is always positioned below the siphon top point.
- Check tightness of condensation water drain piping
- Before using the appliance, fill the siphon with water through the filling cap. This prevents the release of flues into the water or atmosphere.

#### Frost protection

The condensate draining, including the siphon, must be protected from frost. It is best to keep the drain piping inside a frost protected premise. If it is outside of the building, the part of the pipe behind the siphon must be open to avoid any eventual ice from closing the drain. Take all necessary measures to prevent such incident, it may cause irreversible damage to the appliance.

#### Neutralisation of condensation water

The water generated by the combustion of the natural gas acidity is pH = 3.5 to 3.8. Some regulations on pollutant discharges require neutralisation of these condensates. In this case, prepare a condensate neutralisation kit (accessory not supplied). Contact customer service for more information.

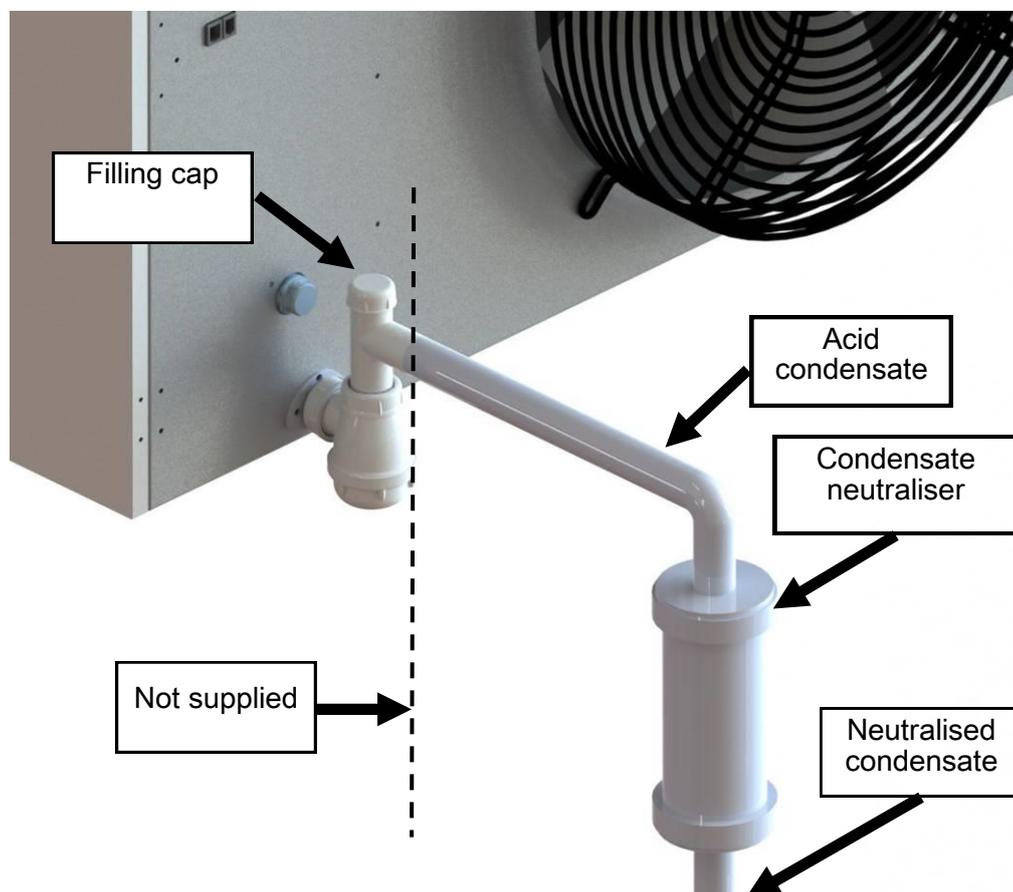


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*Assembly suggestion for condensate draining*

#### 4.4. Gas connection

Firstly, you should check that the appliance you have received is consistent with the distributed gas nature. To do this, you should refer to the information given on the curtain rating plate.

The gas supply must match the curtain output and be equipped with all safety and control devices requested by standards.

A detailed study will be carried out on gas pipe diameters depending on the nature of gas flow and the pipes length. It should ensure that pipes pressure drop does not exceed 5% of the supply pressure. The gas connections must be performed in accordance with indoor installations requirements regardless the type of gas, by qualified personnel having the applicable approvals. Before commissioning, ensure that the gas line is tight and clean all residues caused by the work.



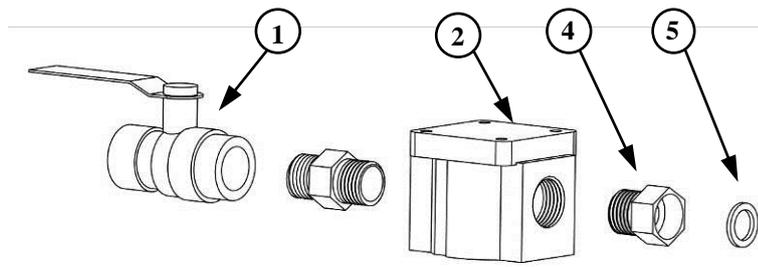
#### **WARNING**

Before opening the gas network, check the valve tightness to the appliance

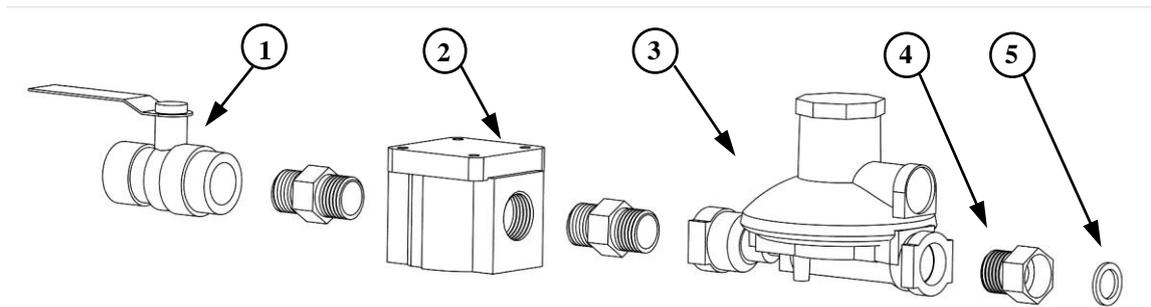


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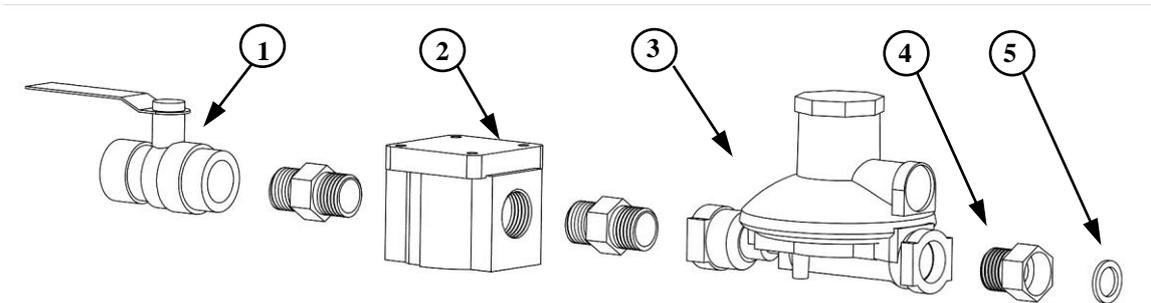
Natural gas supply pressure below 50 mbar



Natural gas supply pressure above 50 mbar



Propane gas



(1) Manual gas valve - (2) Gas filter - (3) Pressure reducer - (4) Fitting (enclosed) - (5) Gasket (enclosed)

*Examples of gas connection*

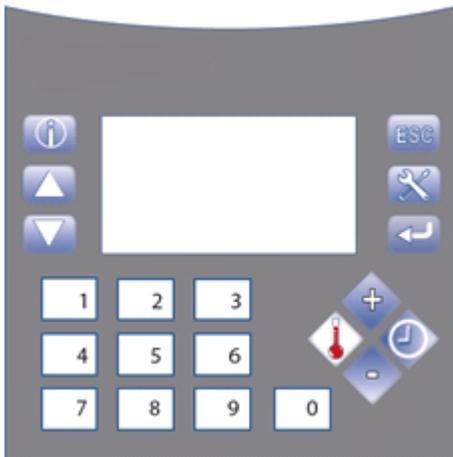


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## 5. Temperature control – Electric connection

### 5.1. Temperature control

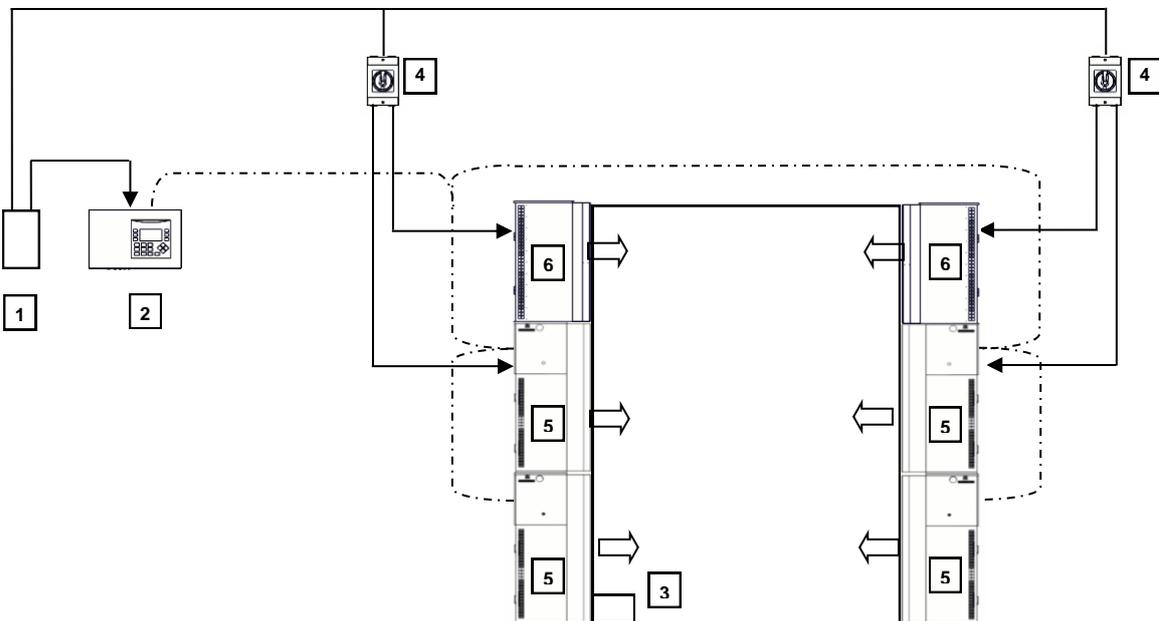


The condensation air curtains must be controlled by a specific regulation allowing their power modulation.

The independent regulator for curtains connects directly to the curtains by a 300 metres maximum length shielded cable.

It allows the premise temperature regulation in accordance with a local temperature sensor connected to one curtain. The weekly schedule allows adjustment of two temperature setpoints per day. The controller has the following features:

- Displaying appliance status
- Program selection



- 1– Main circuit breaker
- 2– Controller
- 3– Door sensor
- 4– Manual switch
- 5– Vertical warm air curtain
- 6– Ambient air curtain

- Power supply 230V)
- - - - - Sensor cable (24 V)
- ..... Bus cable

The controller can manage up to **6** doors and **16** air curtains.

Door opening is driven by an optional sensor connected to one of the warm air curtains of the given door.

The area in front of each door can be heated once closed, if a temperature sensor is connected to one of the warm air curtain of the given door.

Vertical ambient air curtain can be put on top of warm air curtain as long as the rule is respected. It will get power supply from the warm air curtain below. No bus is required for the ambient air curtain.

Bus cable maximum length is set to 300 meters. Do not exceed this length as it may not operate well.

#### *Example of air curtain arrangement and control*



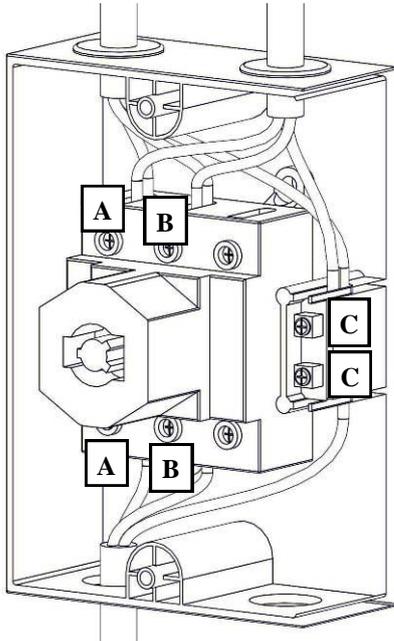
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## 5.2. Electric connection

### 5.2.1. Description

#### 1 : Manual disconnecting switch



In order to ensure safety for people and equipment it is advised to install manual disconnecting switches.

Cabling shall be performed as per herebefore figure by a certified installer.

A: Phase

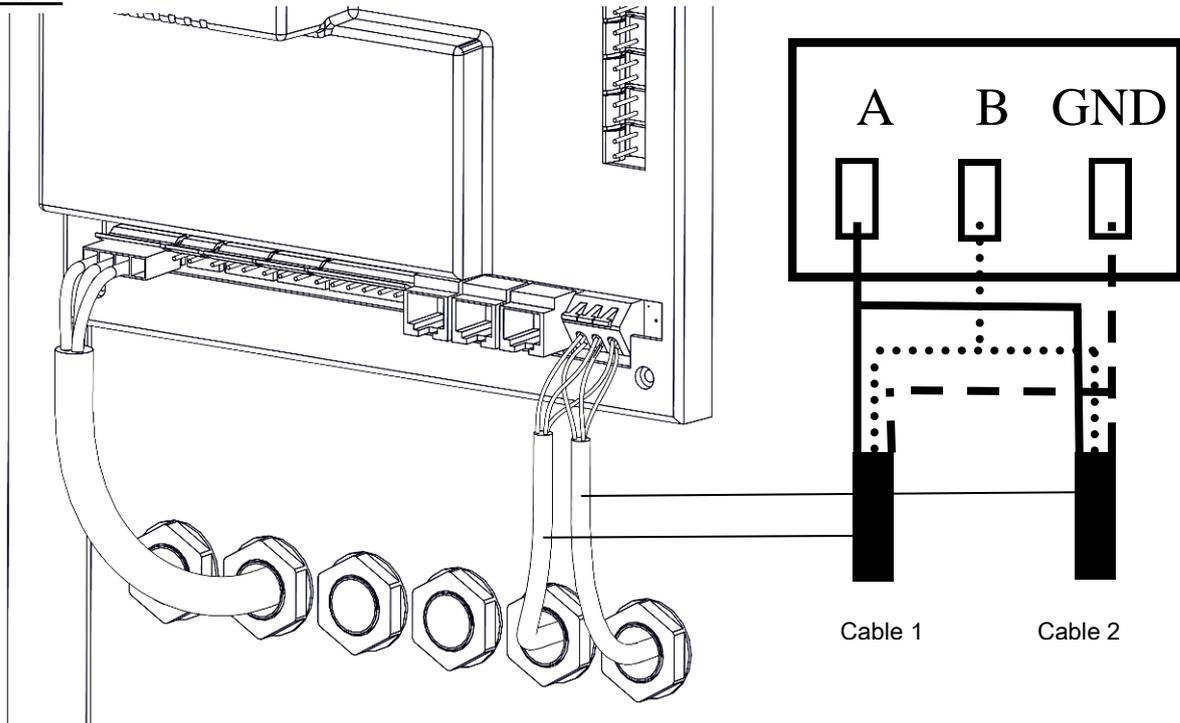
B: Neutral

C: Ground

**Warning :** Make sure that the power supply is cut before any electric connection operation.

#### 2 : Connecting the regulator to the curtain

*Figure 2a*



The communication between the regulator and the appliances is performed through a shielded cable.

This cable shall be connected as per Fig 2a

Cable (1) from the regulator, cable connection (2) towards the next curtain



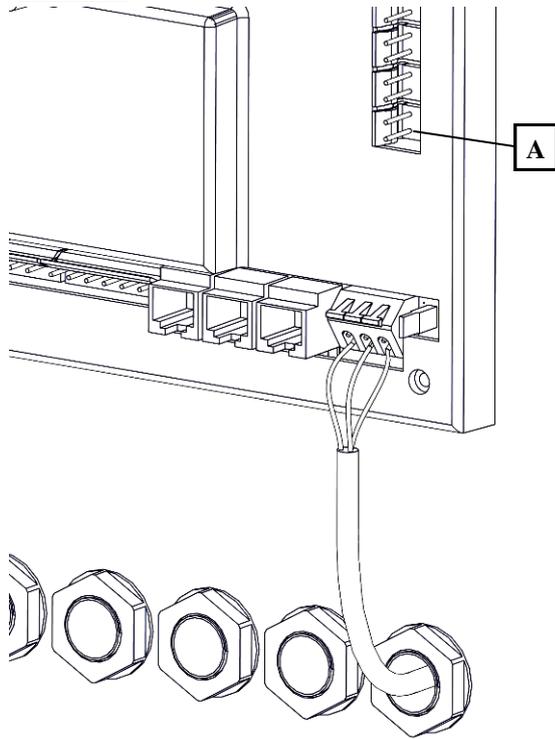
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**Figure 2b**



### 3/ Temperature sensor connexion

Plug the sensor on JP10 connector, position A (Fig. 2b)

Maximum cable length : 50 m

## 5.2.2. Connexion

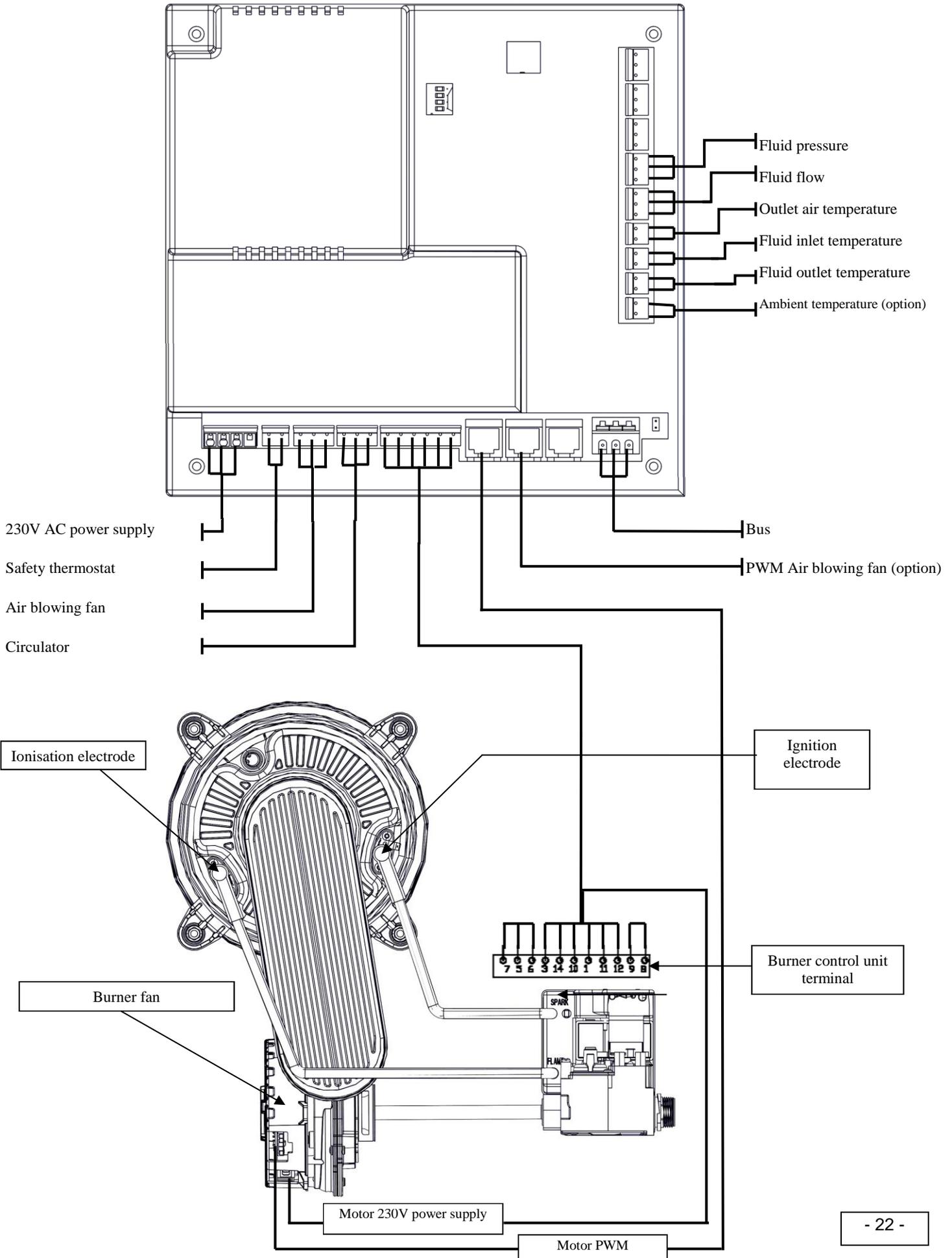
- Check available power supply: 230V 50 Hz, TT (neutral to ground). In the case of unearthed neutral (IT), install an insulation transformer.
- Connect the manual disconnecting switch to the air curtains supply line
- Connect the 3 x 1 mm<sup>2</sup> power cable between the manual disconnecting switch and the air curtain PLC: connector JP6 - terminals L, T and N (use the cable supplied with the appliance).
- Connect the bus cable to the « A B GND » connector of the appliance PLC
- Connect the optional room sensor on the appliance PLC: connector JP10 "amb". This probe is not polarized: the connection sense is irrelevant. The probe comes with a 5 metre cable set to the proper connector. If necessary it is possible to replace this cable by a shielded cable 2 x 1 mm<sup>2</sup> with a maximum length 50 metres (not supplied)



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### 5.2.3. Internal wiring diagram



## 6. Commissioning

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### 6.1. Start

---

1- Before commissioning and turning on the curtain, check that all connections have been carried out as defined above:

- § "Flues connection"
- § "Condensate connection"
- § "Gas connection"
- § "Electrical connection"

Fill the siphon with clear water

Also check:

- That protective film on the panels is removed
- That all electrical components connections are made
- That earth connection is effective

2- Check that the power supply is switched on. Check the supply voltage at the curtain terminals. The voltage value must be between 210 V and 230 V (AC). Attention to the correct polarity phase neutral.

3- According to the temperature regulator type and user's manual affect a unique code number **and** a door number to the air curtain. Beware that the code number must be different for each curtain connected to the centralised regulator (otherwise bus communication is faulty).

4- Check that the gas type and supply pressure comply with the appliance, maximum pressure 50 mbar. Check that the general gas valve is open, purge the gas line. Open valve upstream of each appliance.

5- Check that the temperature controller communicates with the air curtain and that no sensor is faulty.

6- Switch on the air curtains.

- On the regulator, switch to day mode and adjust the setpoint 2°C above actual temperature.

- All curtains start at full power.

Nota : The appliances are factory preset, however the setting values can be corrected. This correction may be necessary when the appliances are installed at altitudes above 500 metres. Indeed, the



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atmospheric pressure is lower, the quality of combustion is affected. For this operation, refer to § "Burner Setting"

7- Set the regulator (  refer to the specific manual)

## 6.2. Burner setting

This operation must be performed by a qualified professional, equipped with a combustion analyser.

Before any work, disconnect the power and gas supplies.

NB: When changing gas, the label "setting gas" located inside the appliance door must be modified to indicate the new setting.



### WARNING

Check for gas leaks after each intervention

#### Needed tools :

- Hexagonal head key "BTR" 2.5 mm (High air flow gas ratio adjustment)
- Hexagonal head key "BTR" 4 mm (Low air flow gas ratio adjustment)
- Combustion analyzer (CO<sub>2</sub> - CO – Flue gas temperature) set to the type of supply gas
- Gas pressure meter (max pressure 50 mbar)

#### Premix burner control and setting process:

1) Calibrate the combustion analyser and place the rod in the flue.

2) Check the gas pressure before ignition, in Off and in On mode (see table).

3) Start the burner at full power (  refer to the regulator user's manual)

- After 2 minutes of operation, check the of O<sub>2</sub> ratio
- Adjust the value of O<sub>2</sub> with screw A according to the table below. Turn in clockwise direction to **increase** O<sub>2</sub> and counter clockwise to decrease it.
- Once the full power setting made, switch to minimum power (  refer to the regulator user's manual)
- Adjust the value of O<sub>2</sub> with screw B according to the table below. Turn in clockwise direction to **decrease** O<sub>2</sub> and counter clockwise to increase it.



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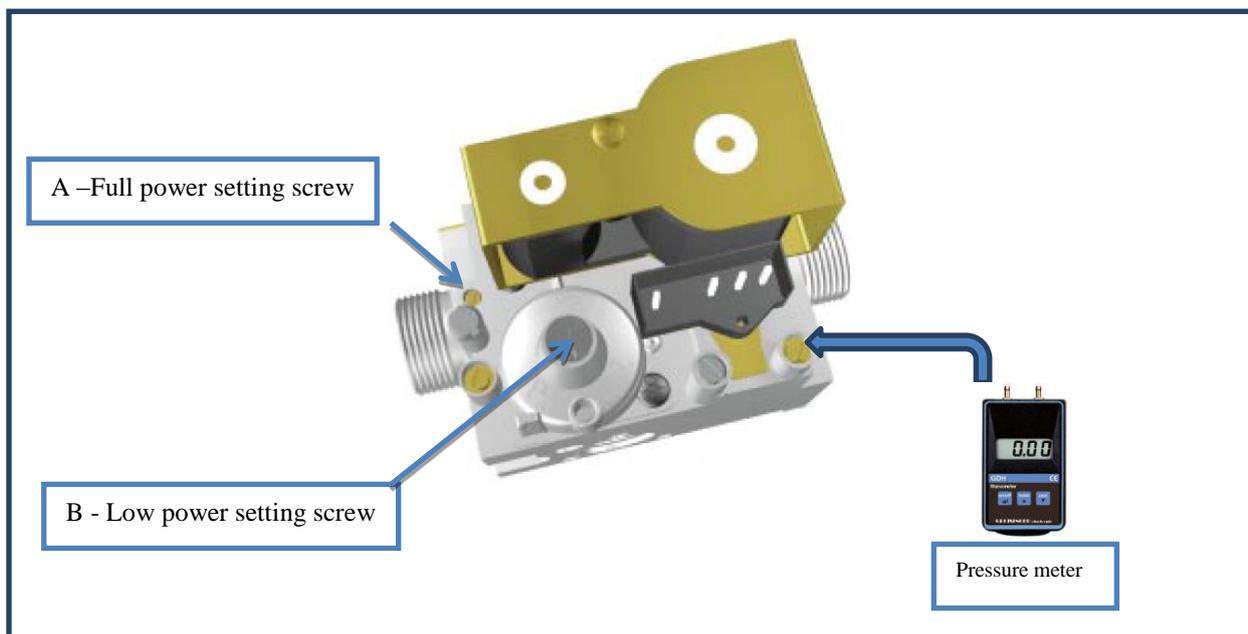
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Screw B is located behind a first protection screw.

This brass screw is for low power setting. Do not forget to put it back in place after setting.

- Once the low power setting done, return to normal control



Gas type	Off pressure	Minimum operating pressure	O2 at full power A screw	O2 at low power B screw
G20 (natural gas)	20 to 50 mbar	18 mbar	4,5 % <math>O_2</math> <math>< 5,5 \text{ \%}</math>	5,5 % <math>O_2</math> <math>< 6,5 \text{ \%}</math>
G25 (natural gas)	25 to 50 mbar	20 mbar	4,5 % <math>O_2</math> <math>< 5,5 \text{ \%}</math>	5,5 % <math>O_2</math> <math>< 6,5 \text{ \%}</math>
G31 (LPG)	28 to 50 mbar	25 mbar	4,5 % <math>O_2</math> <math>< 5,5 \text{ \%}</math>	5,5 % <math>O_2</math> <math>< 6,5 \text{ \%}</math>

## 7. Troubleshooting

### 7.1. Troubleshooting

In case of problems, the prerequisites for the proper functioning of the curtain § "Start" must be met.

If the burner control unit is locked, rearm the burner.



#### WARNING

All electrical or mechanical interventions should be made when the power is turned off and the gas supply closed.



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Failures	Causes	Corrections
Unit does not start	<ul style="list-style-type: none"> <li>- Main switch of curtain is OFF</li> <li>- Regulator is OFF</li> </ul>	<ul style="list-style-type: none"> <li>- Turn the switch ON</li> <li>- Check the power supply</li> </ul>
	<ul style="list-style-type: none"> <li>- Burner fan damaged</li> <li>- Regulator is set wrong</li> </ul>	<ul style="list-style-type: none"> <li>- Replace it</li> <li>- Set the regulator</li> </ul>
	<ul style="list-style-type: none"> <li>- Regulator indicates a failure</li> </ul>	<ul style="list-style-type: none"> <li>- Check circulator, pressure switch or liquid level. The level must be at cap level. If necessary complete with adequate fluid.</li> </ul>
The burner blower starts several times without flames and the burner control unit locks (burner failure)	<ul style="list-style-type: none"> <li>- Regulator indicates burner failure</li> <li>- No gas</li> <li>- Air in the pipes</li> <li>- Wrong air/gas ratio</li> <li>- Faulty gas valve</li> <li>- Wrong set or defective ignition electrode</li> <li>- Faulty burner control unit</li> </ul>	<ul style="list-style-type: none"> <li>- Rearm the burner</li> <li>- Control the pressure</li> <li>- Purge the piping</li> <li>- Set the burner</li> <li>- Replace</li> <li>- Set it or replace it</li> <li>- Replace it</li> </ul>
The burner fan is at its maximum speed but the power is not at maximum.	<ul style="list-style-type: none"> <li>- Flue pipe is too long</li> <li>- Air intake or exhaust flue is clogged</li> <li>- Wrong air/gas ratio</li> <li>- Return air too warm</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce the length (or validate the performance of the appliance)</li> <li>- Unclog and clean the flue pipes</li> <li>- Set the burner</li> <li>- Reduce the setpoint</li> </ul>
Burner does not modulate and the burner fan speed is at maximum.	<ul style="list-style-type: none"> <li>- Regulator indicates température TA = -33,6°C</li> <li>- Regulator is set wrong</li> <li>- PWM control cable is disconnected</li> <li>- Faulty burner fan</li> <li>- Faulty PLC</li> </ul>	<ul style="list-style-type: none"> <li>- Test / replace the ambient air temperature</li> <li>- Set the regulator</li> <li>- Check the connexion</li> <li>- Replace it</li> <li>- Replace it</li> </ul>
The burner starts, the flame grows and the burner control unit locks.	<ul style="list-style-type: none"> <li>- Phase and neutral are reversed</li> <li>- Power supply is without neutral</li> <li>- Faulty ionisation electrode</li> </ul>	<ul style="list-style-type: none"> <li>- Check and correct the connexion</li> <li>- Add an insulating transformer</li> <li>- Replace it</li> </ul>
For variable air flow versions only : The fan does not modulate.	<ul style="list-style-type: none"> <li>- Variable speed not set</li> <li>- PWM control cable is disconnected</li> <li>- Faulty air fan</li> </ul>	<ul style="list-style-type: none"> <li>- Set the regulator</li> <li>- Check the connexion</li> <li>- Replace it</li> </ul>



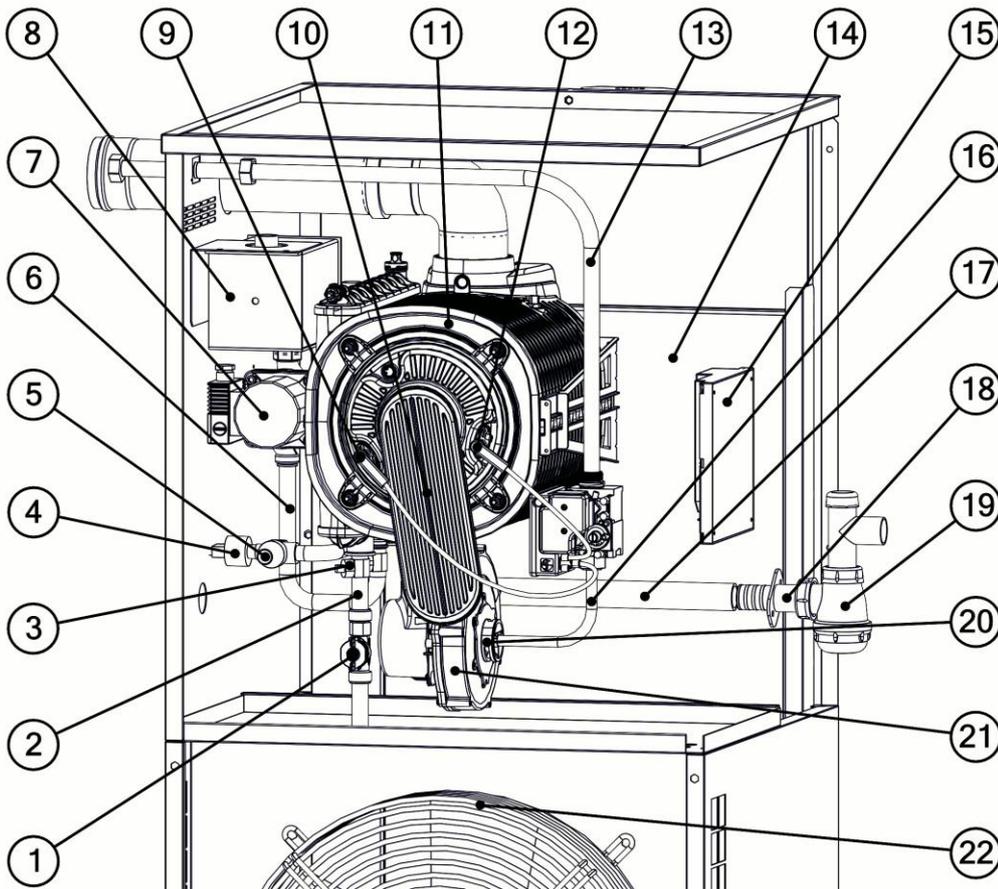
#### WARNING

Only genuine manufacturer parts ensure product and people safety. The use of parts other than genuine invokes the responsibility of the individual and will void the product warranty.



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## 7.2. Spares



Nb	Désignation	Référence
		MRX50
1	Fluid flow meter	3510264
2	Inlet fluid pipe	On request
3	Inlet fluid temperature probe	3510262
4	Pressure sensor	3510261
5	Safety valve 3 bar	3510263
6	Outlet fluid pipe	On request
7	Circulator	3510260
8	Expansion vessel	On request
9	Ionisation electrode	3510270
10	Premix burner	On request
11	Stainless steel heating element	Nous consulter
12	Ignition electrode	3510269
13	Alimentation gaz	Nous consulter
14	Heat exchanger	Nous consulter

Nb	Désignation	Référence
		MRX50
15	Automate	3510273
16	Gas pipe	On request r
17	Condensate pipe	On request
18	Condensate drain, T, cap)	On request
19	Siphon	On request
20	Venturi	On request
21	Burner fan	3510265
22	Ventilateurs hélicoides	On request



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## 8. Maintenance

A proper and regular maintenance, at least once a year, determine an efficient and effective functioning, a minimum consumption and an important longevity.



### WARNING

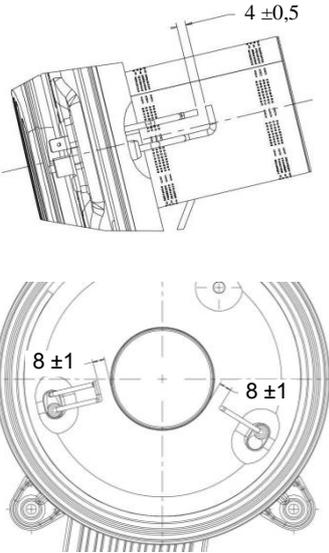
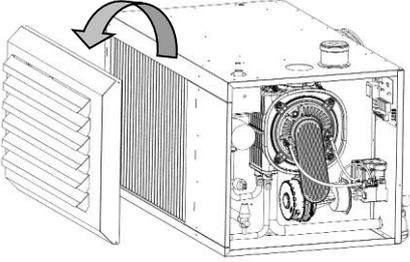
The gas appliance must be maintained cold and with electric power cut  
These works can be performed only by a qualified technician

Components	Maintenance operations
Condensation air curtain	Check the proper functioning of all safety systems and check that all screws are tightened.
Flue pipes	Check the air intake and flue pipes. Flue pipes shall be tight and corrosion-resistant.
Condensate drain (siphon)	In order to guarantee the safe functioning of the appliance : Check and clean yearly the siphon and the condensate drain pipes. The siphon must be filled with clean water. Without maintenance, the siphon may clog, the condensate will not flow and will fill the heating element, leading to malfunction.
Burner 	Disconnect the electrodes, the electrical connection of the burner fan, the pressure venturi tube / gas block. Remove the gas injector from the gas block. Remove the front plate assembly / fan / combustion chamber and venturi. Clean the burner using a brush, vacuum cleaner or compressed air. Inspect the burner for any damage or cracks on the surface. In case of damage, replace the burner.   <b>WARNING</b> During reassembly of the injector on the gas block use a new gasket.



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Components	Maintenance operations
<p data-bbox="196 136 421 165">Ignition / Ionisation</p> 	<p data-bbox="810 136 1410 210">Check the clogging state and clean the electrodes if required.</p> <p data-bbox="810 230 1410 349">Check ignition electrode spacing (4 +/-0.5 mm) and spacing between electrodes and burner (8 +/-1 mm).</p> <p data-bbox="810 369 1410 398">Check the sealing gasket. Replace, if necessary.</p> <p data-bbox="810 418 1410 537">Check the ionisation current value. If the ionisation current is less than 3µA, check ignition / ionisation electrode, ignition line and connection to earth.</p>
<p data-bbox="196 779 395 808">Heating element</p> 	<p data-bbox="810 779 1114 808">Check the front plate seal.</p> <p data-bbox="810 828 1390 902">Check insulating part between the front plate and rear heat exchanger.</p> <p data-bbox="810 922 1369 996">Handle with care heat exchanger front and rear insulation plates.</p> <p data-bbox="810 1016 1345 1090">A hardened or damaged seal must always be replaced.</p> <p data-bbox="810 1111 1350 1140">Clean inside the heat exchanger with a brush.</p>
<p data-bbox="196 1182 387 1211">Heat exchanger</p> 	<p data-bbox="810 1182 1394 1256">Remove the air flow louvers, and then clean the battery with a vacuum cleaner or compressed air.</p>
<p data-bbox="196 1563 316 1592">Circulator</p>	<p data-bbox="810 1563 1410 1637">Check that the pump is working, any pump failure is indicated by the pressure sensor.</p> <p data-bbox="810 1657 1410 1915">In case of a prolonged shutdown, it may be necessary, in very rare cases, to proceed to a "motoring", that is manually forcing the circulator rotation. In this case: switch off the appliance, unscrew the pump plug, use a flat screwdriver to rotate the pump until "motoring" the full body.</p>



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Components	Maintenance operations
<p><b>Combustion</b></p>	<p>Measuring the O<sub>2</sub>/CO<sub>2</sub> rate as well as flue temperature.</p> <p>Attention, the regulations may require to respect maximum values, contact your distributor or local agencies.</p> <p>If the values of § "Burner setting" are not met, a full servicing of the device is necessary.</p> <p>Control the flame through the sightglass, it must be stable, its colour should be blue with orange particles around the edge of the burner (at full power).</p> <p>During the combustion analysis, check that the rod is sealed at the level of the sampling point, the tip of the probe is at the centre of the flue pipe.</p>



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## 9. Warranty

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Your appliance has a contractual guaranty against any manufacturing defect.

Solaronics Chauffage is not responsible for improper use of the device, failure or insufficient maintenance, or improper installation of the appliance (it is your responsibility to ensure that it is carried out by a qualified professional).

In particular, Solaronics Chauffage will not be liable for any damage, loss or injury caused by improper installation that does not comply:

- with legal and regulatory provisions or imposed by the local authorities,
- with national, or even local and specific guidelines governing the installation,
- with our manuals and installation instructions, in particular, for maintenance of the appliance,
- with the engineering practice

Solaronics Chauffage warranty is limited to replacement or repair of defective parts only by our services excluding labour costs, travel and transport.

Our warranty does not cover replacement or repair of parts damaged by normal wear and tear, misuse, unskilled third party interventions, defect or failure in monitoring or maintenance, non-compliant power supply or use of an inappropriate gas or of poor quality gas.

Components, such as motors, pumps, electric valves, etc ... are only guaranteed if they have never been removed. Rights established by the European Directive 1999/44/CEE remain valid.



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## APPENDIX

### END OF LIFE OF EQUIPMENT

This device contains electrical and / or electronic components and should not be considered as household waste. Ensure compliance with applicable standards and regulations for waste disposal when dismantling.

### THE RIGHT THING FOR THE SAFETY

- Keep ventilation in good condition:
- Keep free and clear air inlets and outlets (grills, vents ...)
- Check annually flue pipes. Maintain equipment:
- Maintain or have the equipment maintained by a competent person at appropriate intervals, following the manufacturer's recommendations
- Check the gas appliance by a competent person in case of triggering of a safety device

### SMELL GAS? GOOD REACTIONS

Flammable but non toxic, gas has been odorized to allow discovering any leak, even small.

This smell allows you to react fast. If you smell gas, close the gas valve and check the equipment. If everything is normal and the smell persists, you have good reflexes

### **DO NOT PROVOKE ANY FLAME OR SPARK ... AND DO NOT USE ELECTRICAL APPLIANCES.**

- Do not call an elevator, use a phone, even mobile, press an electric switch, in order not to create a spark.

Whatever the room where the gas smell is perceived, ventilate this room as much as possible by opening windows and doors.

"Gas troubleshooting" service is at your disposal 24/24 and 7/7 at the gas distributor. This service reacts free of charge and as soon as possible in case of gas leak or smell.

- The phone number is: ....., it is noted on the invoices

The number of the emergency services (fire) is: .....



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