

# Technical Manual



## *GAS AIR CURTAIN*

**YAC35H / YAC45H / YAC45V**



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## NOTICE

### **CE marking**

Concerning the technical demands that are required, the CE marking is the official recognition of the quality of design, manufacture and performance of this device. Its long lifetime and its performance will be at optimum level if its use and its maintenance are properly carried out and the regulations in force.

### **Responsibility**

This equipment must be used expressly for the purpose for which **ALETRA** has designed and manufactured it. Any contractual liability of **ALETRA** is therefore excluded in case of damage undergone by persons, animals or goods, following errors in installation, settings, maintenance and inappropriate use.

The devices must be equipped exclusively with genuine accessories. **ALETRA** will not be held responsible for any damage whatsoever arising from the use of an accessory which is inappropriate to the device.

The devices must be installed by qualified professional workers, respecting the regulations and decrees in force, and in accordance with the instructions shown in this instruction manual. The installer is required to establish installation conformity certificates produced by the ministries responsible for the construction and safety of gas. References to standards, rules and directives mentioned in this manual are given for information purposes and are only valid at the date of printing this manual.

**ALETRA** is responsible for the conformity of the device to the rules, directives and standards of construction in force at the time of marketing. Knowledge and respect for the legal provisions as well as the standards inherent in the design, implantation, installation, commissioning and maintenance are exclusively the responsibility of the study bureau, of the installer and of the user.

### **Reception – Storage**

The gas air curtain is delivered on a wooden pallet, protected by cardboard packing and a plastic film. It is essential to check the condition of the equipment delivered (even if the packing is intact) and its conformity compared to the order.

In case of damage or missing parts, you must report the observations on the transport company's receipt form in the most precise way possible, "subject to unpacking" has no legal value, and then you must confirm those reservations by registered letter within 48h to the transport company. We remind you that it is the responsibility of the buyer to check the delivered merchandise, no recourse will be possible if this procedure is not respected.

Store the equipment in a clean and dry room, away from shocks, vibration, divergences in temperature and in an ambient environment with a rate of hygrometry lower than 90%.

### **Handling**

Use all necessary protections of accident preventing while unpacking the device. The handling must be carried out by a professional person.

# **1-GENERAL RECOMMENDATIONS**

These devices can only be installed in rooms which are sufficiently ventilated, unless the device has a sealed connection.

The correct operation of the unit heater depends on correct installation and commissioning.

If these rules are not observed, the manufacturer will immediately be exempt from any liability.

The installation and maintenance must be carried out in conformity with the regulation text and the current rules of the trade and by qualified personnel.

## **DO NOT INSTAL THE GAS UNIT HEATER IN:**

- Rooms which have a risk of explosion,
- Rooms containing chlorinated combination vapours,
- Rooms with a high content of combustible dust,
- Very humid rooms (electrical danger).
- Domestic rooms.

## **RECOMMENDATIONS FOR INSTALLATION :**

- Provide a minimum distance of 200 mm at the rear of the device "fan side".
- Provide sufficient clearance for opening the burner door.
- The unit heater must be placed at a minimum of 200 mm from the ceiling and 2000 mm from the floor.

**After verifying that the assembly respects the requirements of these instructions, it is the responsibility of the installer:**

### **1°) to inform the user :**

- that he cannot carry out any modifications himself to the design of the devices .
- that it is essential to carry out the required cleaning and maintenance operations by a qualified professional person. The frequency of the maintenance operations depends on the environment in which the device is installed. In particular, more regular inspection must be carried out in dusty locations.

### **2°) to give the user these instructions**

ALETRA, with the agreement of the organisation which has notified the CE marking, reserves the right to update these technical instructions. Only the instructions which accompany the product at its shipment can be considered as contractual; keep the instructions carefully near the device.

## **1.1 - Description of the device**

Gas air curtains YAC is a generator of a hot air operating with natural gas and propane ; it is in conformity with the 1020 EEC European directive applicable to gas devices .

Gas air curtains YAC operating with different gas types indicated on the identification plate of the device.

## **1.2. Instruction for use**

- Please read the instructions in this manual carefully for the operation and maintenance of this device.
- Regularly verify that there is no damage to the device, to the chimney or to the gas conduit.
- Regularly verify that the air openings in the building and around the device are not obstructed.
- Verify that the hot air can circulate normally in the room, and therefore that there is no obstacle in front of the blowing outlet of the device, and that the grille is indeed open.

## **1.3. Operating**

Two available functions according to the selected mode on the thermostat :

- "Gas heater" position : the air curtain operate as a gas heater and do not depend on the door opening.

Note: Ventilation starts when heat exchanger reach a certain temperature. It can takes few minutes.

- "Air curtain mode": the functioning depends on the door contact. It means that the air curtains will work only when the door is opened.

Note : The unit starts when the ambient temperature is below the thermostat set point temperature. When closing the door, the fan continue to operate during about 1 minute to cold down the heat exchanger.

#### **1.4. Safety**

- If there is no flame, this is detected by an ionization sensor and the gas valves are immediately closed.
- The thermal protection of the heat exchanger is ensured by two thermostats. The first, which is automatically reset, protects against insufficient air flow (obstructions, fan failure). The second, which has to be manually reset, is set to a higher threshold than the first one. It protects the device against high excess heating due to an operating problem or unsuitable use.  
If the operation shows any difficulty whatsoever, please contact us.  
Make sure that the device can be supplied normally with combustion air at atmospheric pressure (any modification of the building after the installation of the device must be carried out taking this into account). Excessively low pressure inside the room can harm the correct functioning of the device by depriving it of the air necessary for combustion.  
The lowest temperature for device functioning is - 10 °C.

#### **1.5. Cut-off**

- To cut the device off during a short period, it is necessary only to cut off the thermostatic line (this means turning the thermostat to a minimum setting point or turning off the thermostat switch) .
- For a prolonged stoppage, switch off the thermostatic line, close the gas valve and cut off the electrical supply, taking care to wait for the fan to stop turning.

Gas and electricity must only be cut off in case of emergency or for long stoppage periods.

#### **1.6. Guarantee (An extract from the general sales condition, section GUARANTEE) :**

The devices must be installed by qualified professional personnel, in conformity with current regulations, with the rules of the trade and the instructions which are found in our assembly instructions.

The devices are guaranteed 1 year against any manufacturing failure and 5 years for the heat exchangers as long as they are operated using the normal user instructions.

The guarantee takes effect on the date of manufacture by our company and on condition that the guarantee form is returned completed and signed. We decline any responsibility and no guarantee will be applicable in case of negligence of the customer, of defective installation, or installation which is unsuitable or not in conformity with current standards. Only defects in manufacture or raw materials are concerned.

The guarantee is limited to the replacement of parts which are found to be defective by identical parts; costs of labour, travel, transport and excess to the equipment are excluded.

Any replacement which takes place during the guarantee period, even if it necessitates the immobilization of the equipment, cannot in any circumstances extend the duration of the guarantee. No damages or interest can be claimed for direct or indirect prejudice.

It is imperative that the installation, maintenance and any trouble shooting is carried out by qualified professional personnel. Any servicing must be carried out using the rules of the trade and therefore in accordance with current standards and the indications supplied by our company in this manual. The correct operation of the device depends on correct installation and commissioning. Non-respect of the rules will immediately cause our company to refuse any liability.

The devices must only be equipped with the original smoke system and air intake.  
In case of use of accessories other than those proposed by our company, check that they are indeed compatible with the devices. Our company will not be responsible for any damage or prejudice resulting from improper use of the devices.

**The engineering studies office, the installer and the user are solely responsible for being aware of and respecting the legal provisions as well as the standards which are inherent in the design, location, installation, commissioning and maintenance.**

## 2 - TECHNICAL PERFORMANCES OF GAS-FIRED AIR CURTAINS

Gas-fired air curtains YAC are specially elaborated for protection against uncontrolled external airflow through the doors or building openings in such places as warehouses, industrial buildings, supermarkets, public places etc.

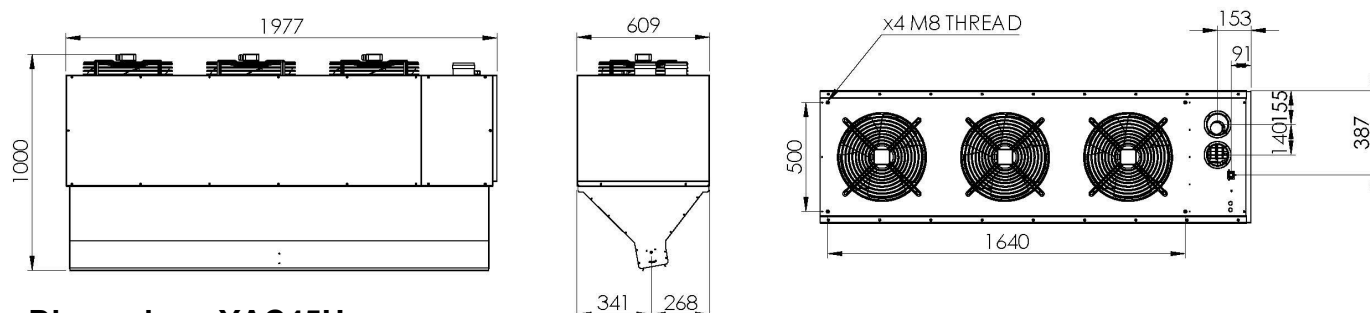
The range includes 2 models with a diffuser 1.96 m and 2.5 m. According to the height of the door and the power of the wind outside, it will be necessary to choose the right air curtain.

Gas-fired air curtains YAC are regulated by a door contact.

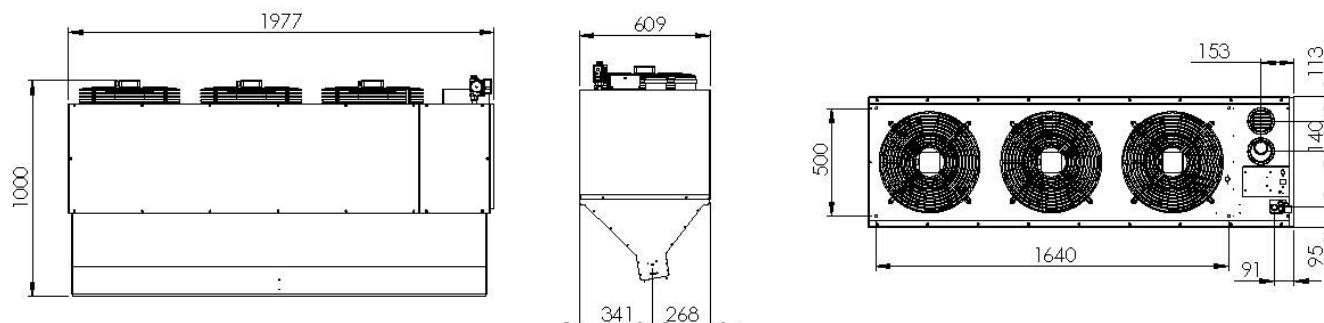
### Performances of gas air curtains

<b>Références ALETRA</b>		<b>YAC 35 H</b>	<b>YAC 45 H</b>	<b>YAC 45 V</b>
Gas input	kW	35	44	44
Nominal output ( $P_{rated,h}$ )	kW	31.5	40.5	40.5
Efficiency at Nominal heat output ( $\eta_{nom}$ )	%	91	91	91
Gas flow G20 at 15°C	m <sup>3</sup> /h	4.02	4.63	4.63
Gas flow en G25 at 15°C	m <sup>3</sup> /h	4.46	5.17	5.17
Gas flow en G31 at 15°C	kg/h	2.96	3.52	3.52
Quantity of fans		3 * 380	3 * 450	3 * 450
Rotation speed	Tr/m	1 350 / 1 200	1 350 / 1 050	1 350 / 1 050
Air flow at 15 °C, high speed	m <sup>3</sup> /h	6 500	10 500	10 500
Air flow 15 °C, low speed	m <sup>3</sup> /h	5 000	8 200	8 200
Delta T° of air	° C	16 / 21	12 / 15	12 / 15
Diameter air / fumes	mm	100 / 100	100 / 100	100 / 100
Supply voltage		Single-phase 230V		
Electrical power	kW	0.55	1.35	1.35
Electrical consumption (Blow fan excluded)				
At Nominal heat output (elmax)	kW	0.055	0.055	0.055
Seasonal energy efficiency for space heating ( $\eta_{s,h}$ )	%	73.1	73.9	73.9
Diameter of gas connection		3/4" M	3/4" M	3/4" M
Weight without diffuser	kg	134	154	154
Weight with diffuser	kg	151	173	173

### Dimensions YAC35H



### Dimensions YAC45H



### **3- GAS-FIRED AIR CURTAINS INSTALLATION**

YAC35/45H gas air curtains must be installed horizontally above the door opening . YAC45V gas air curtains must be installed vertically on one of both sides of the door.

#### **3-1 Horizontal installation for YAC35H and YAC45H**

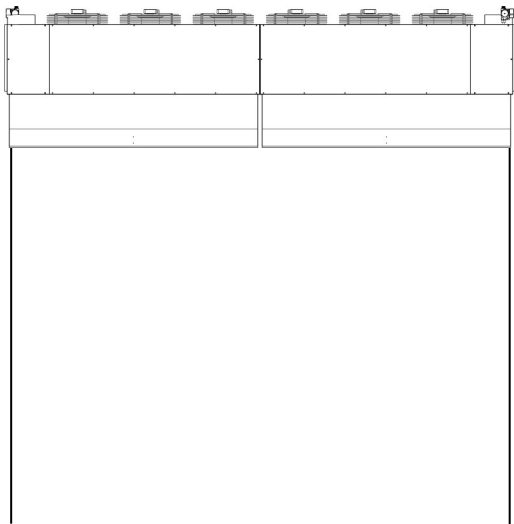
The air curtain must be fixed using brackets, M8 fixation nuts and threaded rods (not supplied). Make sure that the fixation is strong enough and adapted to the weight of the gas air curtain.

While mounting the air curtain, the burner section can be on the right side (picture 1) or on the left side (picture 2) where it is the most accessible. For the installation of two air curtains, placed the burner section from each end, not at the centre.

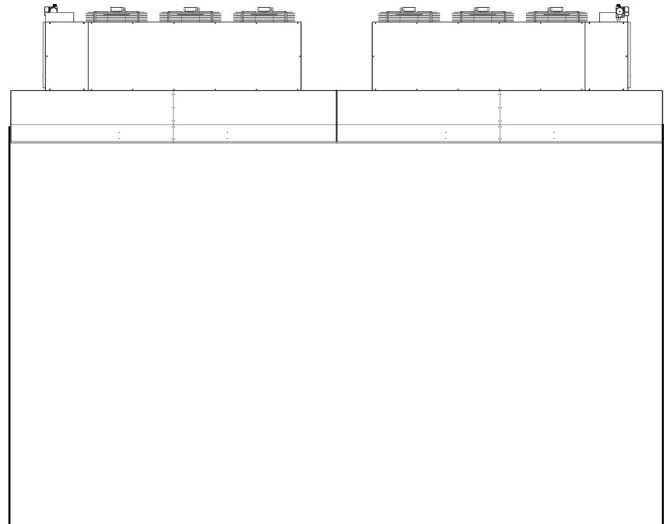
The gap above and on the side of the air curtain must be at least 60 cm.

Installation types depending on diffuser length:

**Picture 1:**  
**Installation of an air curtain with a diffuser of 2 m**



**Picture 2:**  
**Installation of an air curtain with a diffuser of 2.5 m**

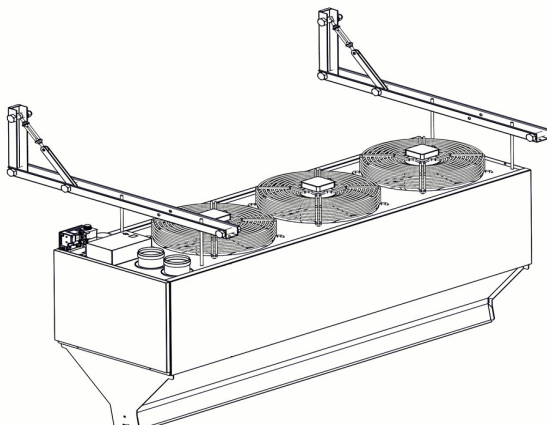


#### **Brackets**

Fix the brackets on the wall using nuts M8 or another adapted fixation.

**Caution : Make sure that fixation is strong enough and adapted to the weight of the gas air curtain.**

**Fix the air curtain under the brackets using chains or rods (not supplied).**

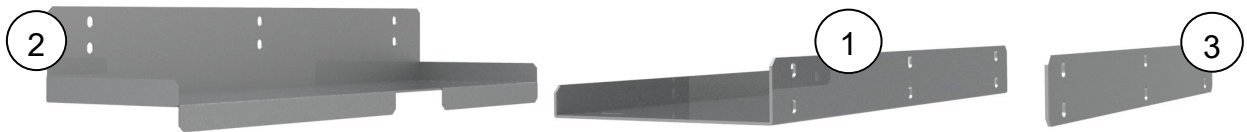


### **3-2 Vertical installation for YAC45V**

It is required to fix the vertical air curtains on the ground and against the wall to secure the installation.  
It is possible to overlay two gas / ambient air curtain maximum (a door of 4m high)

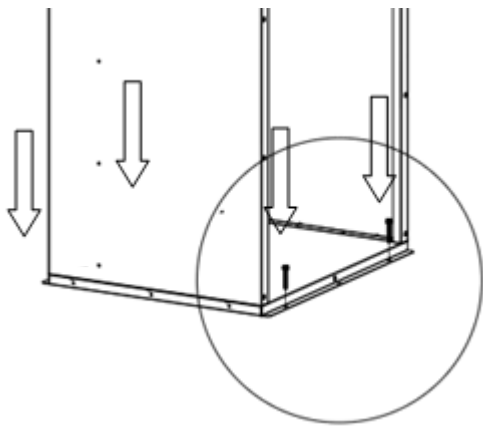
The fixing kit KYACV sets vertically the ambient and gas air curtains. The kit is composed of a side plate (N°3) to maintain both units together. It includes also 2 wall mounting brackets (N°1 and N°2) that allows to fix the unit on the wall.

#### **Fixing kit KYACV**



Please follow step to step instruction for safety.

#### **STEP 1 : Place unit & Remove diffuser of ground air curtain**



1) Temporarily place the air curtain into position, the edge of the diffuser needs to be protected and not in the doorway.

The distance between air curtain side near the wall and wall has to be between 170mm and 280mm.

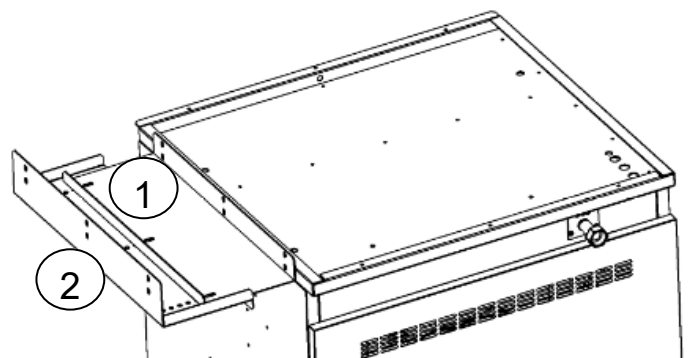
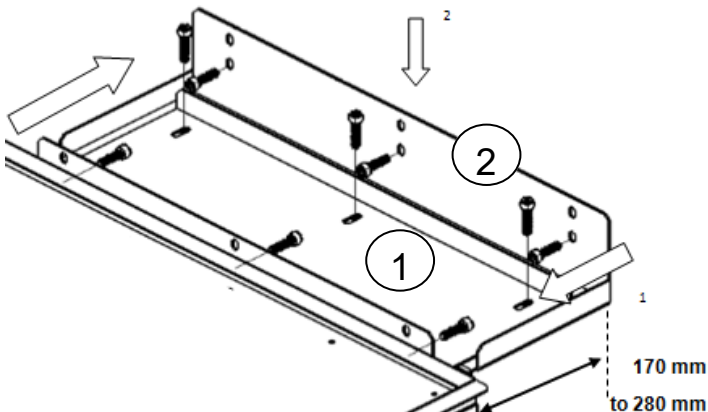
2) Remove diffuser from all the air door curtains.

With the air curtain into position and diffuser removed, fix the bottom plate with omega shape on the ground by using the four holes. Use appropriate method and screws to do the job

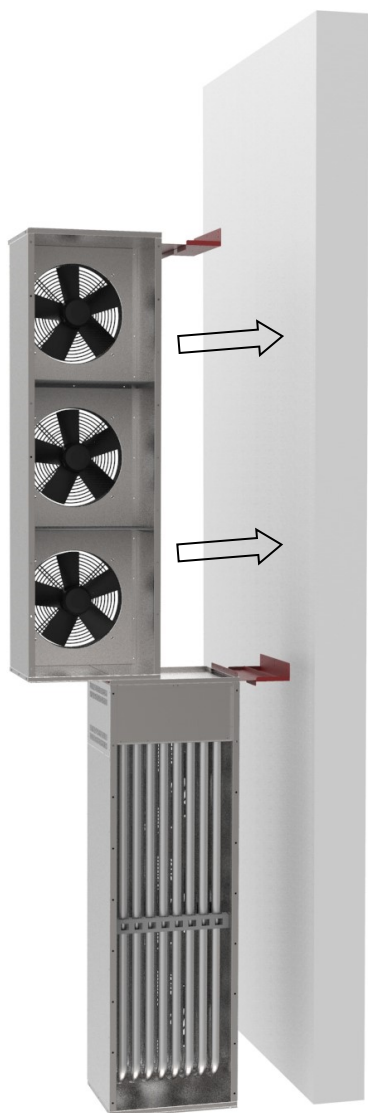
4) Once the bottom of the unit is well fixed on the ground, secure the top by using the fixing steel plates supplied in the kit.

Place the first steel plate (N°1) on the air curtain by using the M6 screws and washers .

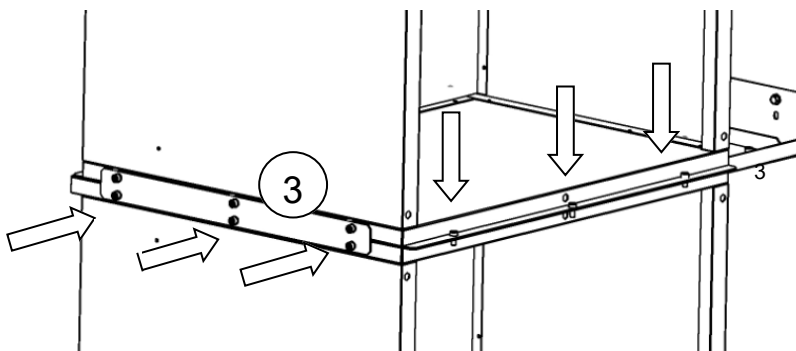
Then, place the second steel plate (N°2) to fix to the wall. Fix it on the first plate (N°1) with M6 screws and nuts. Then fix to the wall by using the appropriate method and screws to do the job.



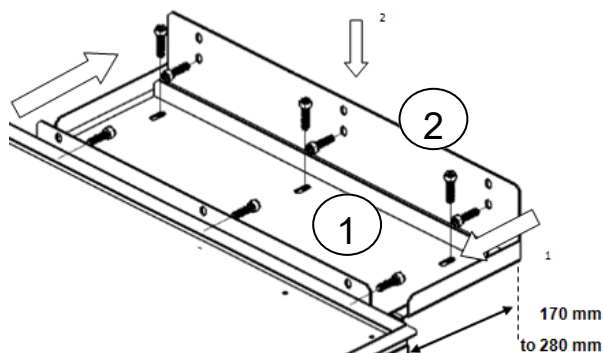
**STEP 2 : Place the second door curtain**



- 1) Bring the second air curtain using appropriate means for safety purposes
- 2) Once the bottom plate firmly hold on the previous air curtain, secure the second air curtain at the top of the first one using provided bracket (N°3)

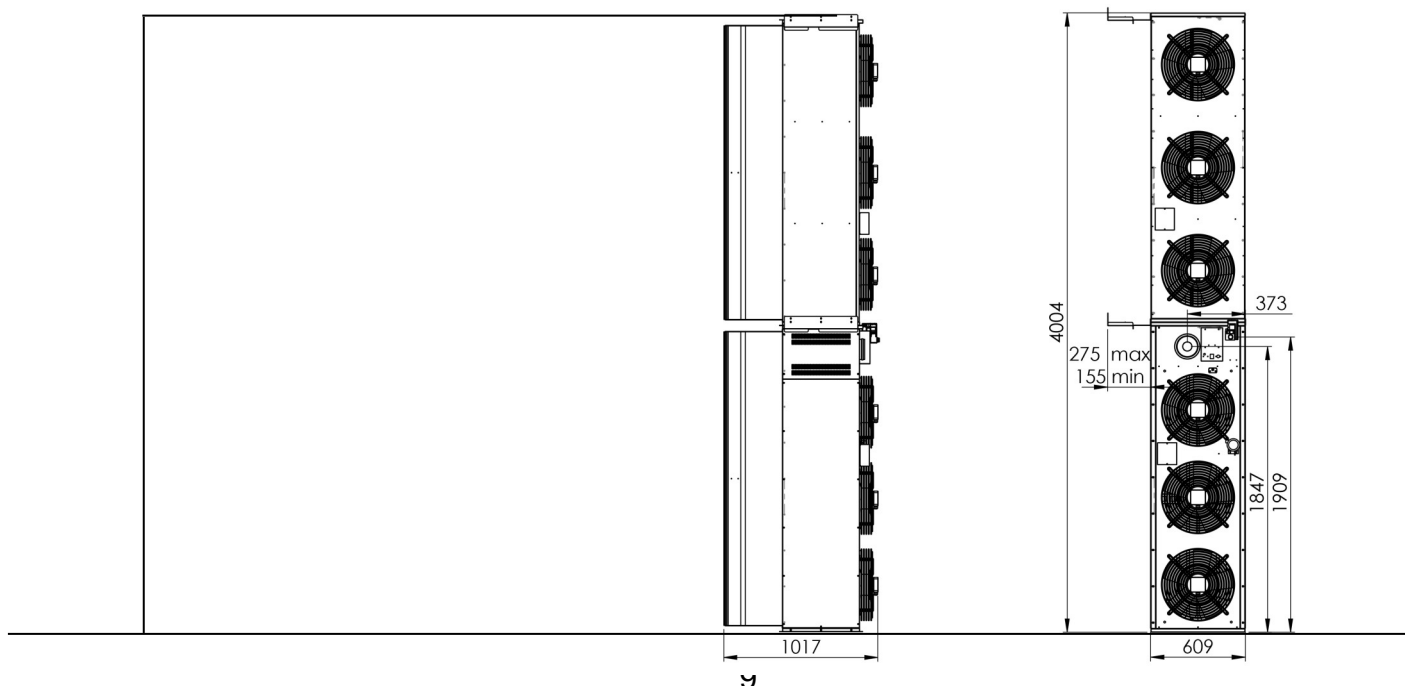


- 3) Repeat the same operation as for the first air curtain.



**STEP 3 : Replace the diffuser in the right direction. Refer to chapter « 3-3 Inversion of the diffuser ».**

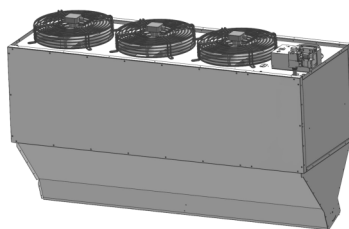
YAC45V superimposed with ambient air curtain YAC45V2.0



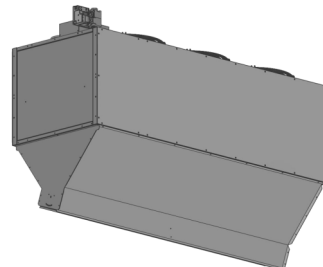
### **3-3 Inversion of the diffuser**

Depending on the mounting it can be necessary to inverse the diffuser.  
In this case, put off the screws, inverse the diffuser and fixe it back using the screws.

**schéma 1**



**schéma 2**



## **4- FLUE CONNECTION**

### **4-1 General information**

During the installation and maintenance you must be sure that :

- Combustion air inlet and fumes evacuation are not blocked.
- While installing a concentric fumes evacuation check that the concentric pipes (fresh air inlet and fumes evacuation) are separate and sealed. The junctions must be sealed and rigid.
- Make sure not to damage the connector seals when assembling the pipes onto the device, check the sealing after assembly.
- No water can penetrate into the device through the pipe to prevent against electrical risk. For this purpose, please use a purge T-piece and a condensate collector.
- For longer length, it is necessary to provide a condensate collector; this also applies for concentric pipes.

### **4-2 Connection of sealed roof chimney type B22**

The combustion air is taken directly from the room and the evacuation of fumes is made vertically through the roof.

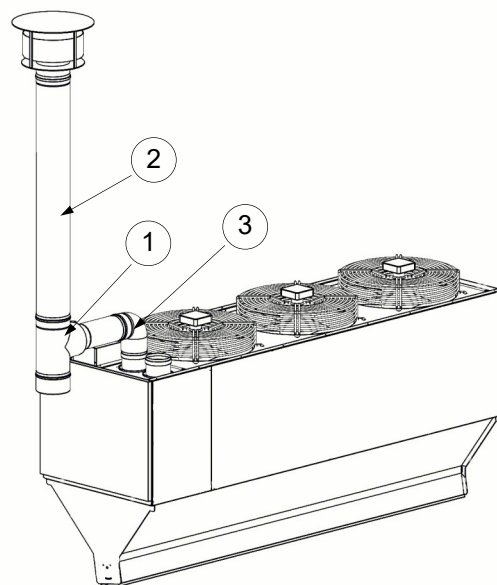
**Standard connection :**

- 1 T-piece with a sealed plug (1)
- 1 roof terminal (2)
- 1 sealed elbow

**The minimum height of the roof chimney must be same as the ridge of the roof.**

**- For model YAC H 35 and 45** the standard connection is made in diameter 100.

**It's possible to extend or deviate the roof chimney using accessories such as elbows and additional lengths (0.5m or 1m).**



### **CAUTION**

The local of the installation must be well ventilated, fresh air required for combustion must be minimum 100 m<sup>3</sup>/h per unit. The diameter of smoke pipe must be at least equal to the outlet diameter of the gas unit (use only approved connection elements). Smoke pipe can be only vertical or at a maximum of 45 °. Total length of the roof chimney must not exceed 6 m, taking into account that an elbow 90° or 45° = 1 m of length. If the outside part of conduit is more than 2 meters it must be insulated.

### **4-3 Concentric connection**

#### **Wall duct type C12 :**

The air inlet and the smoke exhaust pipes are horizontal towards the outside.

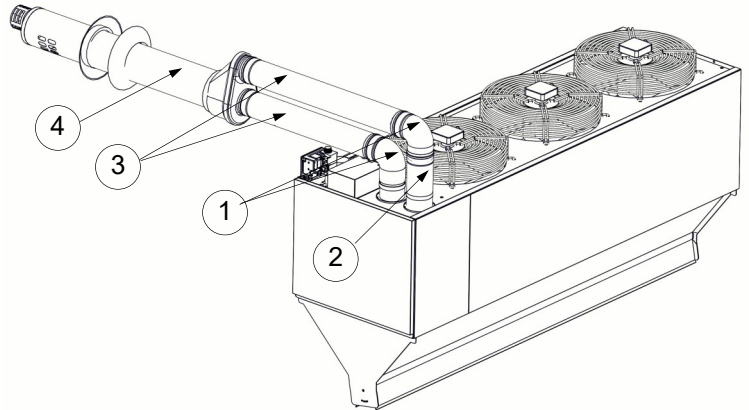
Caution: **for concentric wall connection, the mounting must be realized with a 2° slope away from the unit.**

##### **Standard connection :**

- 2 Sealed elbows of 90° (1)
- 1 Mono-tube sealed extension (2),
- 2 Mono-tube sealed extensions (3),
- 1 wall terminal (4)

**For model YAC H 35 and 45** the diameter of a standard connection is 100/150 mm

**It is possible to extend or deviate the roof chimney using accessories such as elbows and additional lengths (0.5m or 1m).**



#### **Roof duct type C32 :**

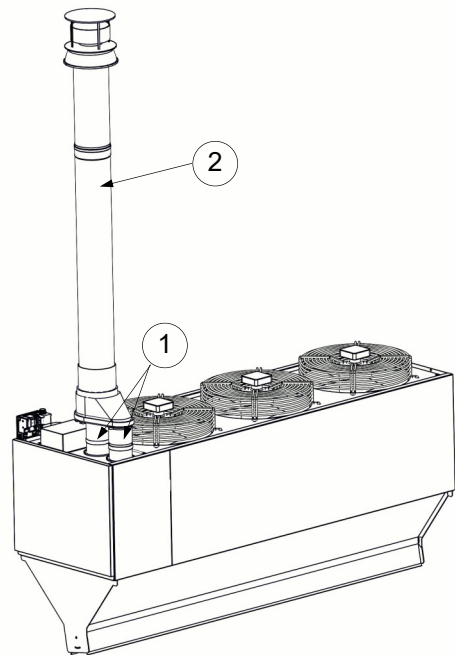
The air inlet and the smoke exhaust pipes are vertical towards the outside

##### **Standard connection :**

- 2 Sealed extensions (1)
- 1 roof terminal (2).

**- For model YAC H 35 and 45** the diameter of a standard connection is 100/150.

**It's possible to extend or deviate the roof chimney using accessories such as elbows and additional lengths (0.5m or 1m).**



**For perfect sealing of fume conduit pipes and for easy assembling it's necessary to use a lubricant (not aggressive, for a sealed gasket, for ex., soapy water).**

#### **CAUTION**

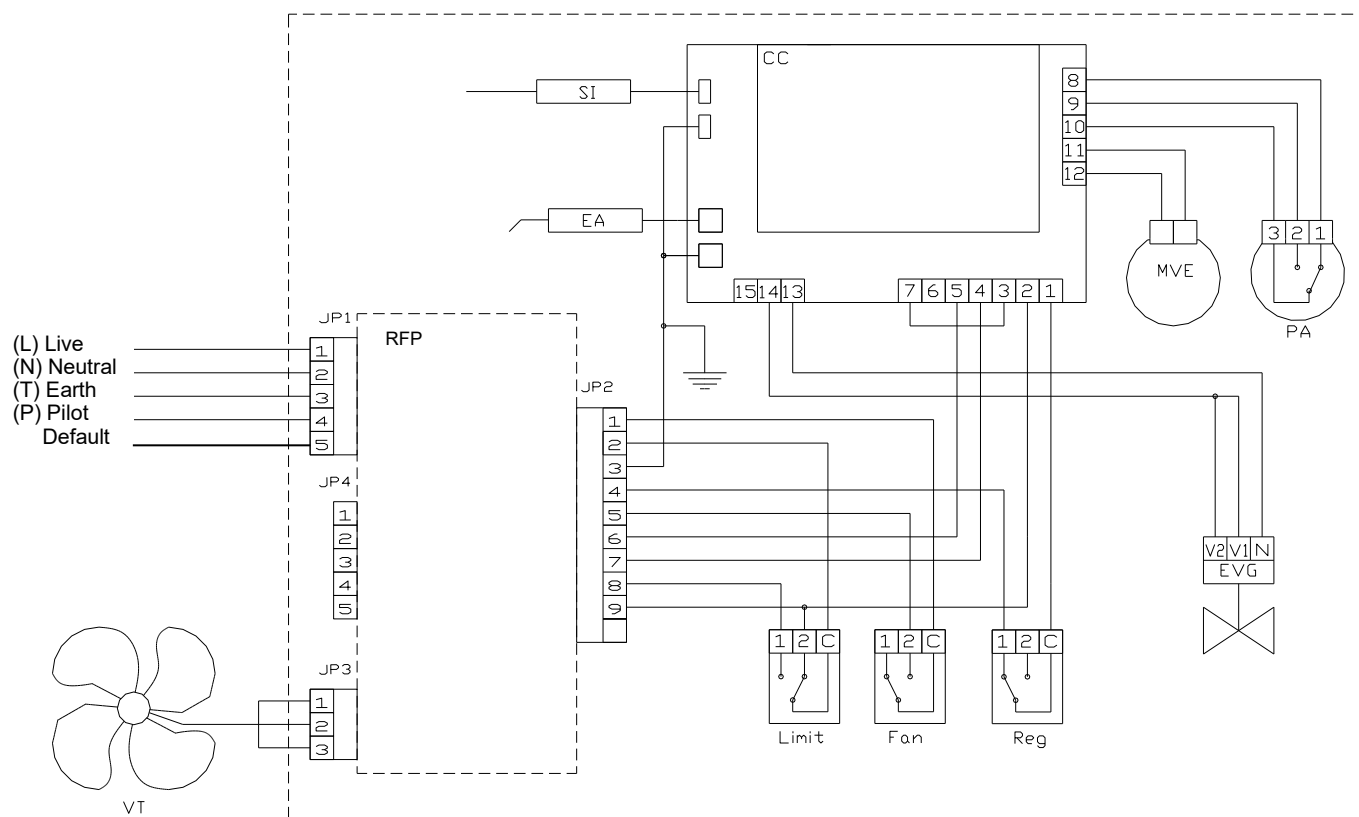
The connections must be sealed and rigid. The diameter of smoke pipe must be at least equal to the outlet diameter of the gas unit (use only approved connection elements). Total length of the roof chimney must not exceed 6 m, taking into account that an elbow 90° or 45° = 1 m of length. If the outside part of conduit is more than 2 meters it must be insulated.

## 5- ELECTRICAL WIRING

Electrical connection must be carried out by a qualified professional person in accordance with all norms and rules of the country.

- The gas air curtain must be grounded according to the security norms and rules (see norms C15-100). It must be absolutely done as it's a fundamental rule of security. In the case of doubts, a qualified professional person must control the electrical connection. It's not the responsibility of the producer if there are damages because of wrong electrical wiring or if the devices are not grounded.
- A professional person must control that the electrical connection is in accordance with a maximum absorbed power per unit (check the data on the mark plate of the unit). Take care of a diameter of cables which must be adapted to the adsorbed power of the unit.

### 5-1 Electrical diagram for YAC35H

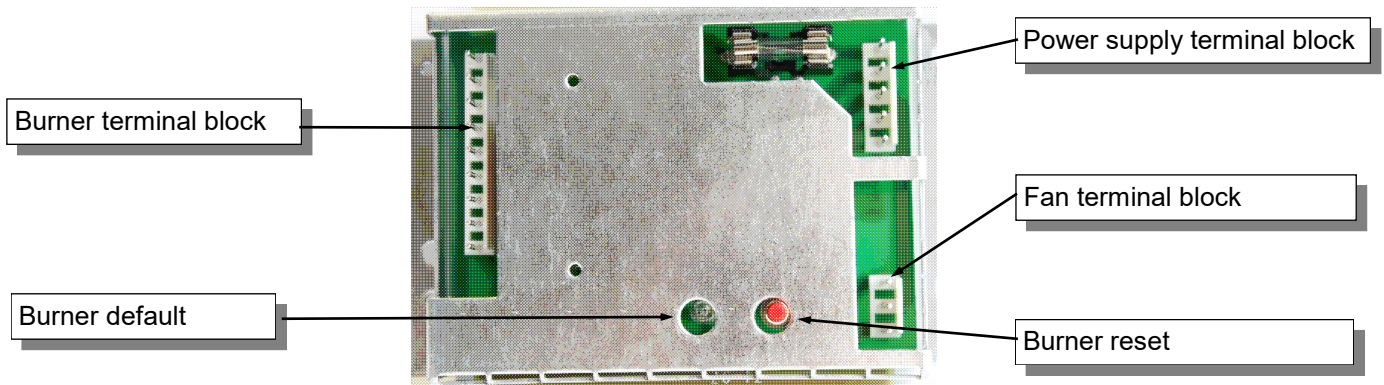


VT	Blowing fan
RFP	Pilot wire receiver
Limit	Overheat airstat with reset
Fan	Fan airstat
Reg	Burner regulation airstat
CC	Control box

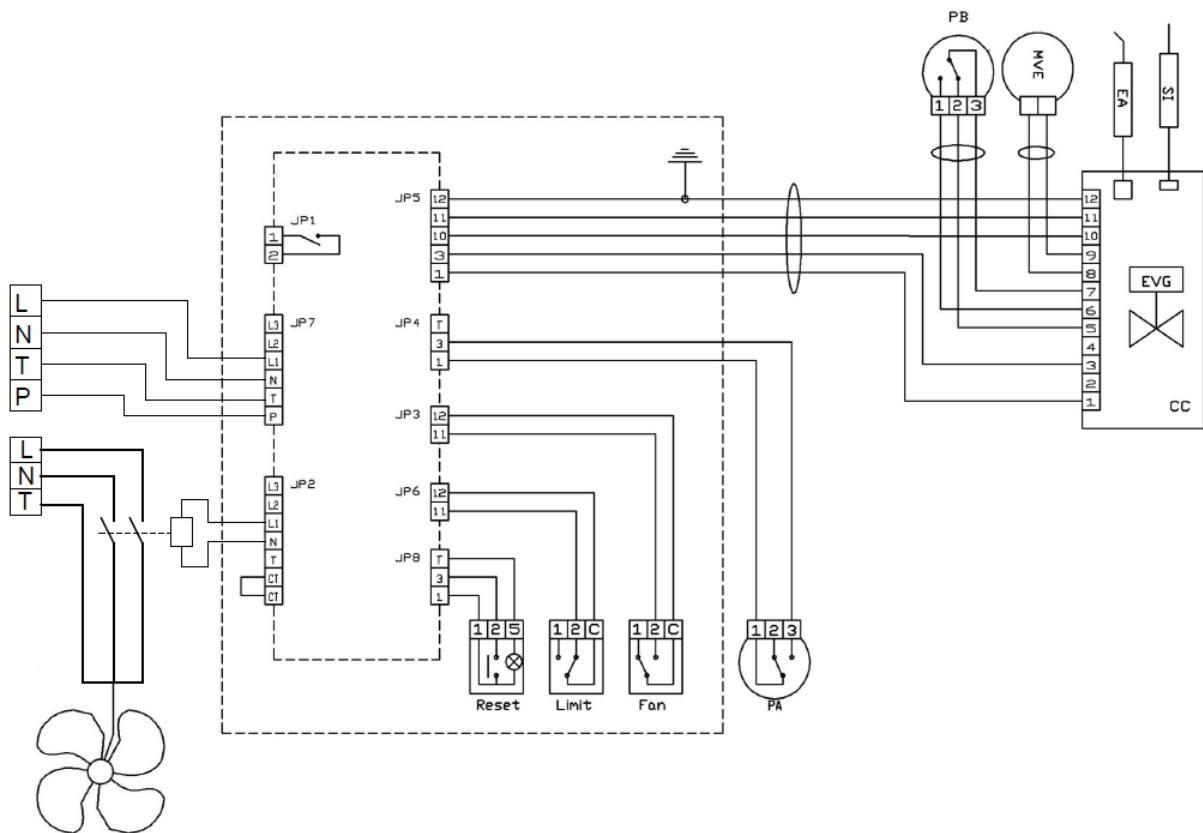
MVE	Smoke extractor
PA	Burner air pressure switch
SI	Ionization sensor
EA	Ignition electrode
EVG	Gas valve

In normal operation, never stop the unit by cutting off the power supply, wait the shutdown of the fan.

## Pilot wire card (RFP5)



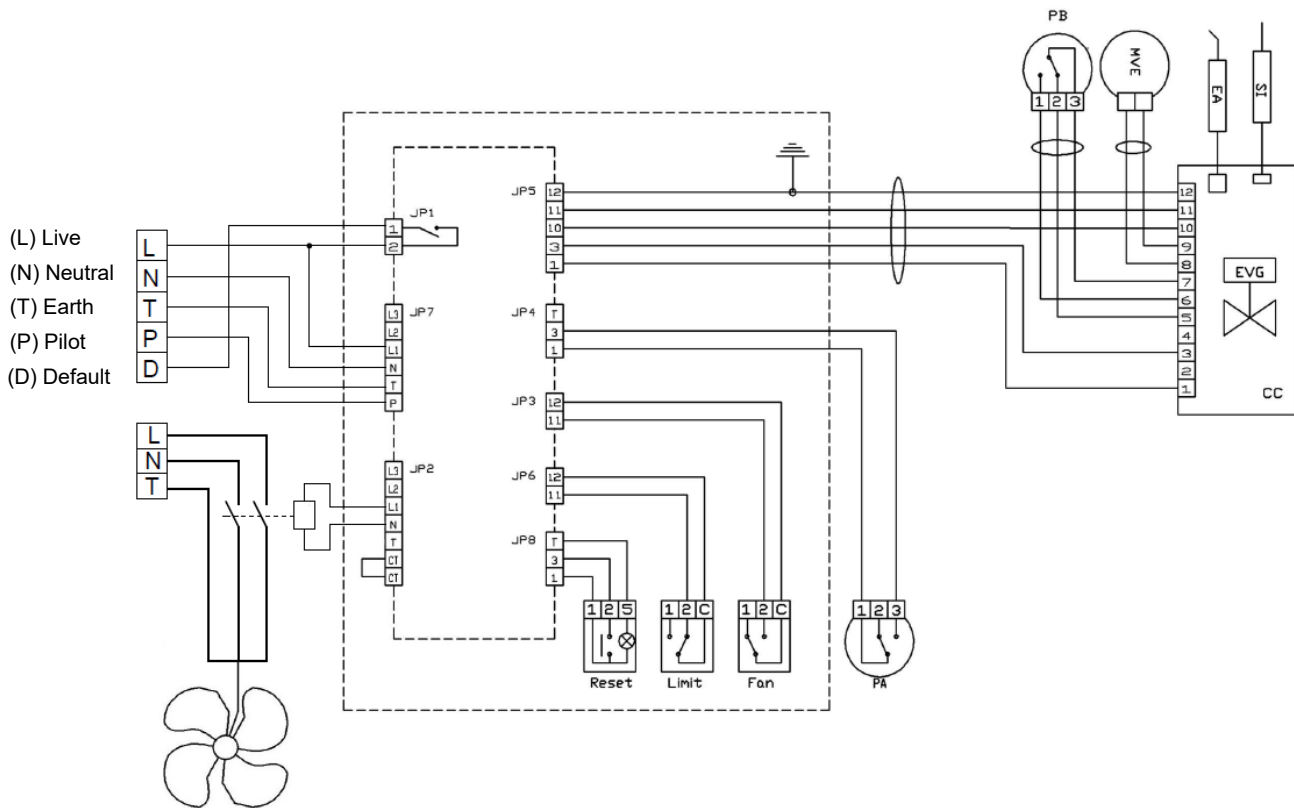
## 5-2 Electrical diagram for YAC45H/V with 4-wires cable



VT	Blowing fan
RFP	Pilot wire receiver
Limit	Overheat airstat with reset
Fan	Fan airstat
Reset	Burner reset
CC	Control box

MVE	Smoke extractor
PA	Burner air pressure switch
SI	Ionization sensor
EA	Ignition electrode
EVG	Gas valve
PB	Fan pressure switch

### **5-3 Electrical diagram for YAC45H/V with 5-wires cable**

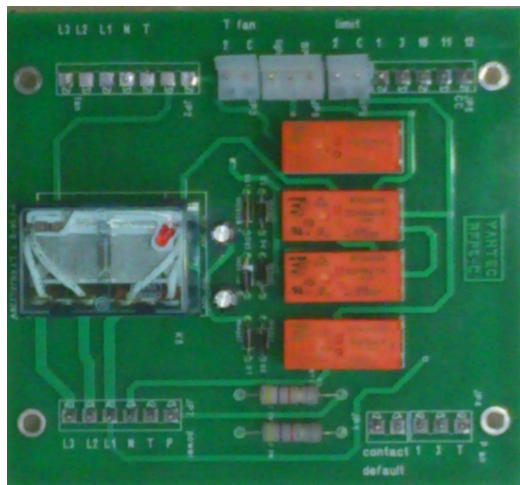


VT	Blowing fan
RFP	Pilot wire receiver
Limit	Overheat airstat with reset
Fan	Fan airstat
Reset	Burner reset
CC	Control box

MVE	Smoke extractor
PA	Burner air pressure switch
SI	Ionization sensor
EA	Ignition electrode
EVG	Gas valve
PB	Fan pressure switch

**In normal operation, never stop the unit by cutting off the power supply, wait the shutdown of the fan.**

### Electrical connection card (RFP6)



## 5-4 Thermostat connection

The thermostat type TFP1-ET85P2 is designed to control the gas air curtains. It has 2 functions :

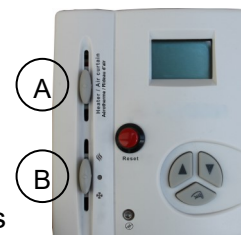
1) On "Gas heater" position : it maintains the requested temperature in the room where the unit is installed, whatever if the door is closed or opened.

- Switch the unit selector (A) on "Gas heater" mode.

2) On "Air curtain" position : control is enslaved by the door opening.

- Switch the unit selector (A) on "Air curtain" mode.
- Switch the operating selector (B) on "Heating" mode.
- Door contact initiates the ventilation of the air curtain.

If the ambient temperature is below the thermostat set point temperature, the unit starts heating. When the set point temperature is reached , the unit stops heating, but ventilation continues until the door is closed (fans stop definitively about 1 min before closing, to cold down the heat exchanger).



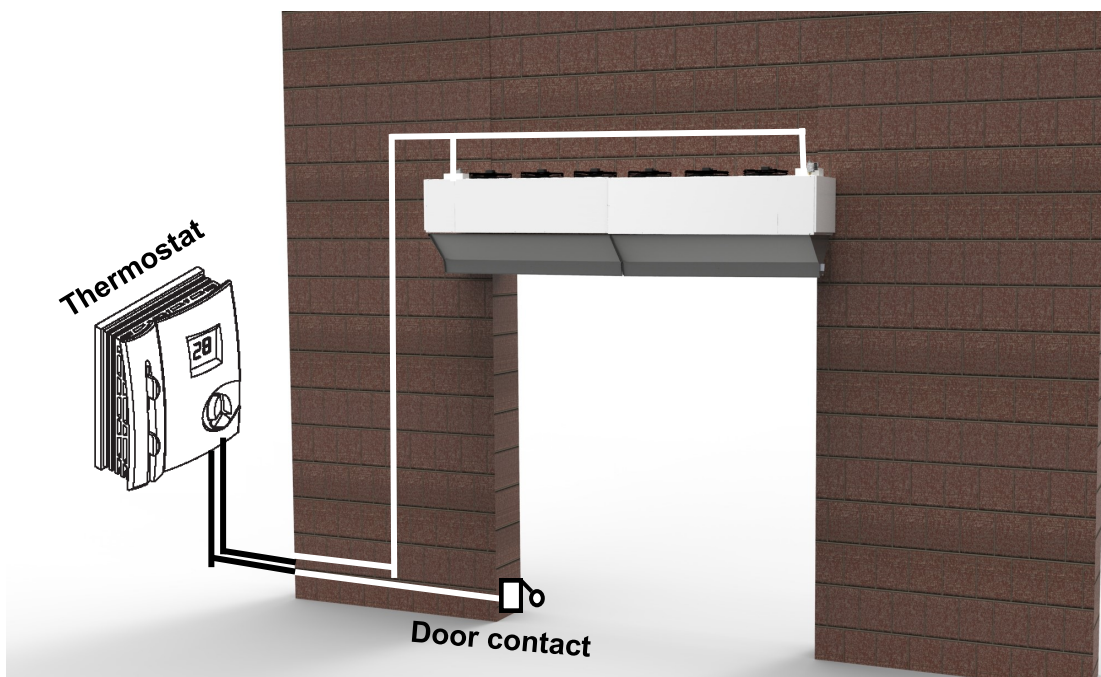
YAC35H : Ventilation starts only when the heat exchanger is hot.

YAC45H/V : Ventilation starts once the door is opened, at the same time as the burner.

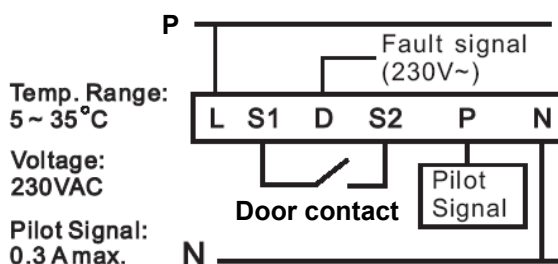
Note : If the thermostat is on "Ventilation" mode only the fans operate (no heating).

This thermostat is made for indoor use. It must be fixed on the wall at about 1.5 m from the ground and in a clear location which allows to sense the ambient temperature. Do not install it on warm surfaces, exposed to the sun, on a wall with current of air, in a room different of where the unit is installed, below the air throw of the unit... Do not install it in humid room, or with projection risk. Do not immerse the thermostat in the water to avoid electrical risk. For more detail, refer to the notice delivered with the thermostat.

### Schematic drawing :



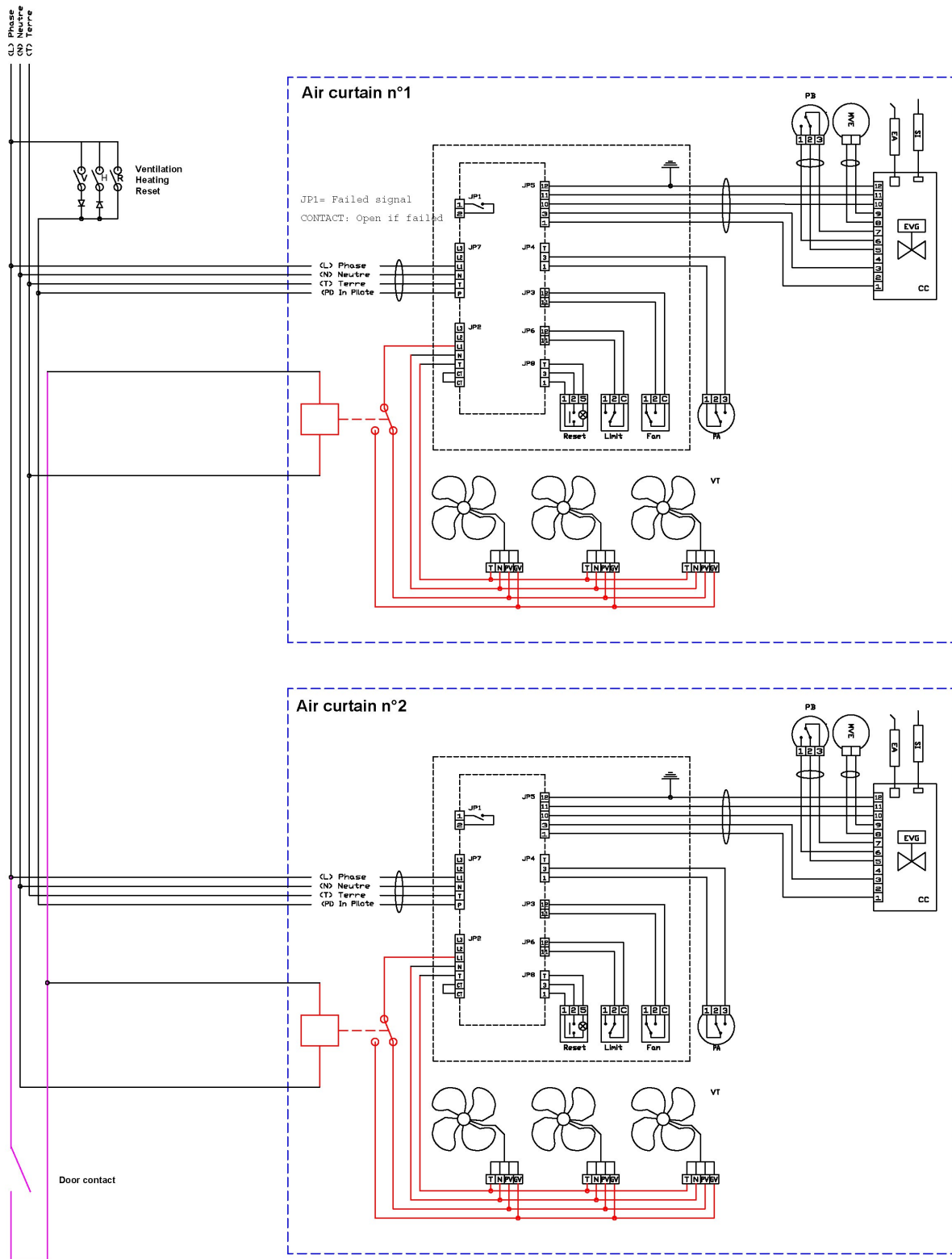
### Thermostat electrical diagram :



**CAUTION, the installation must be realized by a qualified person.**

## 5-5 Connection with 2-speed ventilation option

The YAC45H/V can be equipped as standard with a 2-speed ventilation option, this option must be requested when manufacturing the devices.



The regulation is ensured by a pilot wire thermostat, identical to the thermostat for gas air heater.  
Operation:

- When the thermostat is in heating demand, the appliance is operating in a small ventilation mode with the door closed and switches to high ventilation when the door opens.
- This option allows hot air blow-out instantaneously at the door opening, avoiding the temperature rise time of the exchanger.



## 6- GAS CIRCUIT

### 6-1 Changing of gas

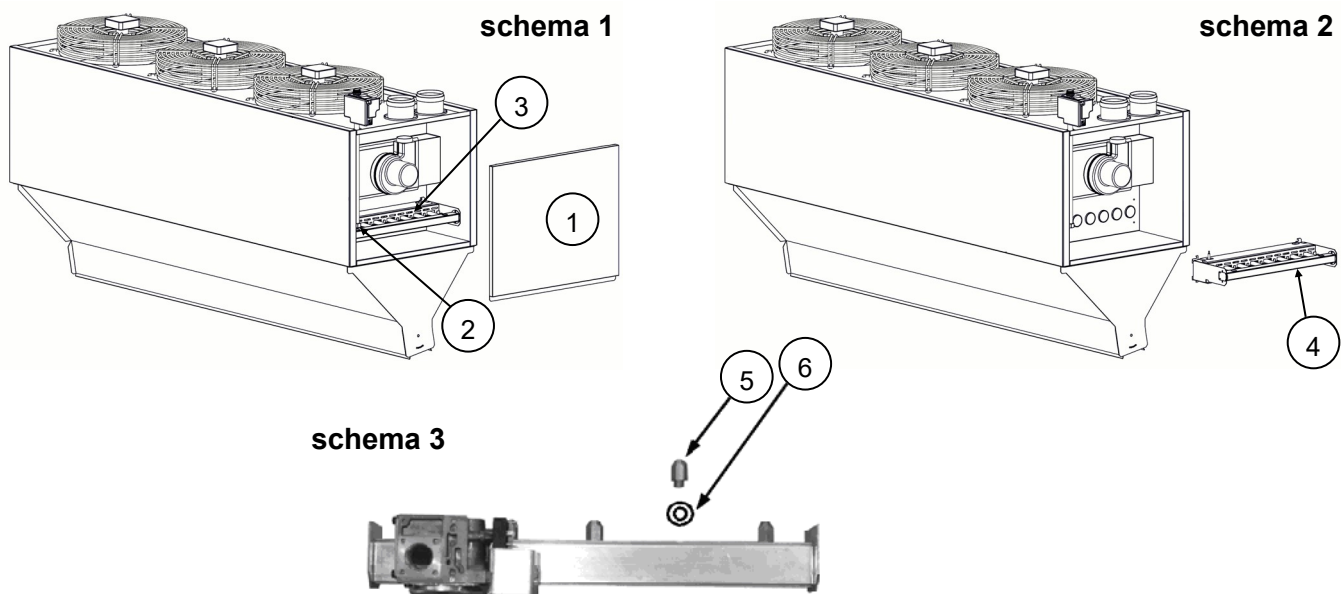
The unit heaters are equipped with atmospheric gas torch burners, permitting the use of Natural gas G20, Natural gas G25 and Propane.

The combustion ports are engineered so as to ensure very good stability of the flame without separation or return towards the injectors.

#### **THE SERVICE VISITS MUST BE CARRIED OUT BY A QUALIFIED PROFESSIONAL PERSON**

Changing of gas is carried out in the following manner :

- 1– Disconnect the electrical supply connector and close the gas inlet.
- 2– Remove the door of a burner compartment, after that unscrew the gas line fixing nut of a ramp (Rep. 2). Unscrew four fixing screws of a burner block (Rep.3).
- 3– Get out the burner block, then dismantle an injectors ramp (Rep.4) maintained by 3 screws.
- 4- Change the injectors (check the adjustment table).
- 5– Put new injectors (Rep.5) by replacing the seals (Rep.6) and ensuring the sealing, **the injectors must be installed dry.**
- 6 - Reassemble the ramp of injectors onto the burner block, connect the gas line to the burner block , **replacing the seal.**
- 7– **Check the sealing after assembly.**
- 8– Adjust the gas ramp pressure on the regulator.



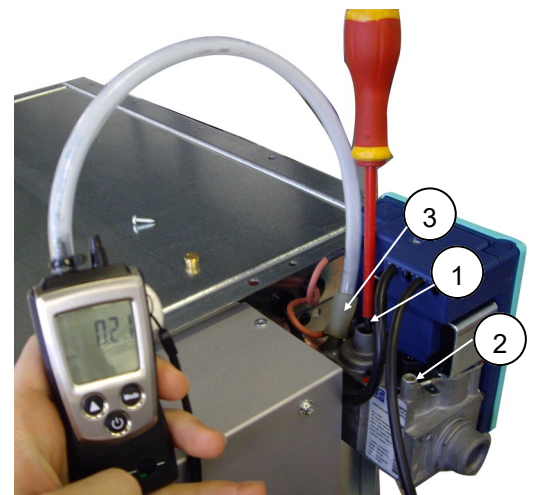
**CAUTION : This operation must be done with the gas and electricity supplies cut off.**

The adjustment of the gas pressure is made with the burner running.

Adjusting the gas pressure is done in the following manner :

- 1– Open the solenoid valve pressure regulating protection screw(1)
- 2– Unscrew the pressure alimentation test point (2) and control.
- 3- Unscrew the pressure injectors test point (3), connect the pressure gauge
- 4- Adjust the ramp pressure (3) in accordance with the adjusting table ( page 11)
- 5– After adjustment, do not forget to put the protective screw pressure and close the pressure test point.

**Attention : always check for sealing after adjusting**



## 6-2 Valve adjustment table

Types	Adjustment for G20			Adjustment for G25			Adjustment for G31		
	Regulator pressure	Gas ramp injectors	Washer extractor	Regulator pressure	Gas ramp injectors	Washer extractor	Regulator pressure	Gas ramp injectors	Washer extractor
<b>YAC 35 H</b>	9.5 mBar	8 x AL 2.20	30	12.6 mBar	8 x AL 2.20	30	27 mBar	8 x AL 1.10	30
<b>YAC 45 H</b>	9.5 mbar	8 x AL 2.20	30	12.6 mBar	8 x AL 2.20	30	27 mBar	8 x AL 1.30	30

The gas pressure of injectors can change according to the pressure supply.  
It's to control the outlet gas valve pressure and adjust it according to the valve adjustment table (here above).

## 6-3 Gas connection

A precise engineering study must be carried out on the diameters of the piping depending on the nature of the gas flow and the length of the piping.

Make sure that the pressure drops in the piping do not exceed 5 % of the supply pressure.

The gas connections must be carried out in conformity with the requirements concerning interior installations regardless of the type of gas.

Gas air curtains functioning on the inlet pressure from 20 to 50 mBar for Natural gas and from 37 to 50 mBar for Propane gas (pressure supply can change according to the country).

### 1/ The gas supply network pressure corresponds to the entry pressure of the device:

- in this case, connect each device with a dam valve item 1 and the gas filter item 2.

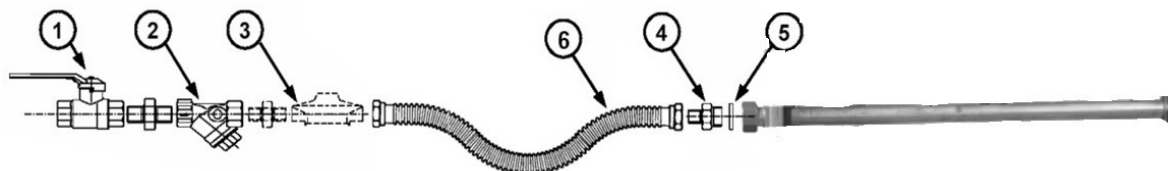
### 2/ The gas supply network pressure is higher than the intake pressure of the device:

- in this case, connect each device with a dam valve item 1, a gas filter item 2 and a pressure regulator item 2, to reduce the supply pressure to the unit heater.

**CAUTION** Any supply pressure which is higher than the maximum intake pressure tolerated by the gas solenoid valve will cause irreparable damage to that solenoid valve.

To connect the unit heater to the gas network, use the union item 4 with the seal item 5 delivered with the device. **Tighten the union onto the network before connecting it to the unit heater.**

**Check that the gas supply circuit is correctly sealed up to the gas solenoid valve.** (see schematic).



**Check the sealing up to the gas solenoid valve input**

## **7– COMMISSIONING OF GAS AIR CURTAIN**

### **7-1 Operating principal**

1– For the commissioning of the device, turn on the thermostat and switch the door sensor on.

The control and safety box check the contact of the air pressure switch after that the smoke extractor goes into operation. Its functioning is controlled by the differential air pressure switch (PA) which will prevent the functioning of the control and safety box in the case of the lack of air.

2- During the commissioning of the air curtain the fans start and their air flow is controlled by the air pressure switch (PV). If the air flow is sufficient a burner control and safety box is powered.

3– If the mix of air/gas is not ignited and the flame is not detected by the ionization sensor the control and safety box makes the second attempt then changes to safety position.

5– In the case of a fan malfunctioning or air inlet obstruction the air pressure switch (PV) cuts off the burner of the gas air curtain.

If the temperature exceeds 90 °C the excess heat safety thermostat cuts off burner of the gas air curtain.

6– When the air curtain is cut off the fan airstat can trigger the fans if the air temperature around the heat exchanger is higher than the fan airstat set up (set up at 35°C) .

#### **CAUTION :**

***Never stop the device before the fan has totally stopped. The lack of cooling can necessitate the excess heating airstat to be reset and can damage the heat exchanger over the long term.***

### **7-2 Commissioning**

1– Before commissioning and powering up the air curtain, control that the different connections has been well carried out as defined on following chapters :

- « Flue connection », pages 8-9
- « Gas connection », page 13
- « Electrical wiring », pages 10 à 11

Check also :

- The protective film on the plates is removed
- Safety gaps around the units are respected
- Electrical connections of components are well done.
- The connection to the ground is well done.

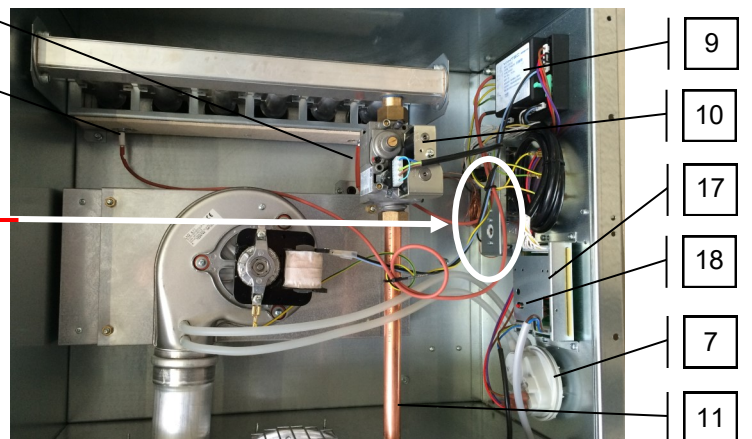
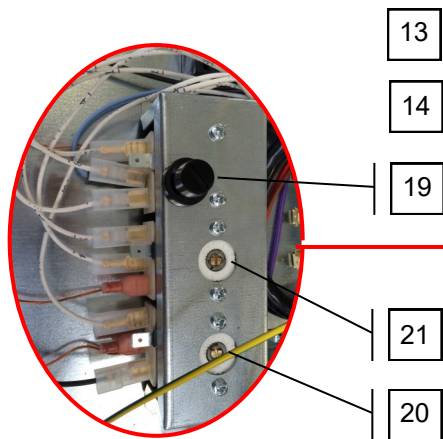
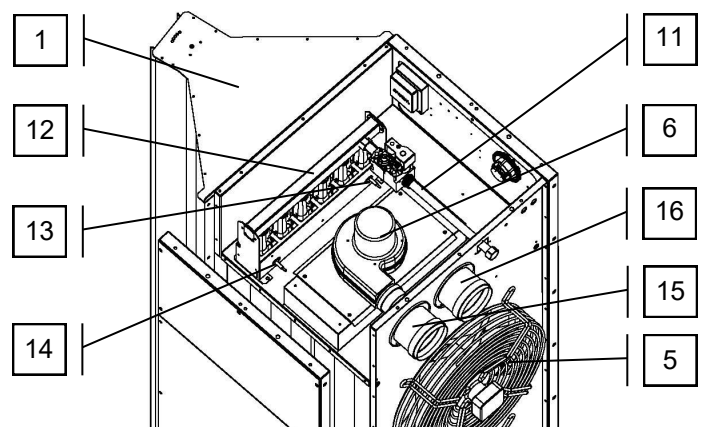
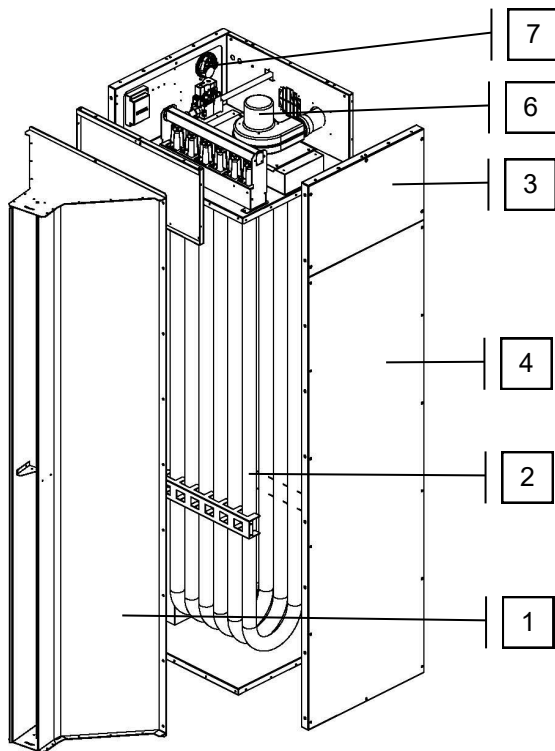
2– Check the voltage supply to the terminals of the air curtain. It must be between 210 V and 230 V in alternating current. Respect carefully the polarity Live Neutral. In case of impendent neutral, foresee an isolating transformer (Ask the producer for more information).

3– Check that the type of gas and the pressure supply match with the device, maximum pressure 50 mbar, refer to the valve adjustment table page 13.

4– Commissioning of the air curtain

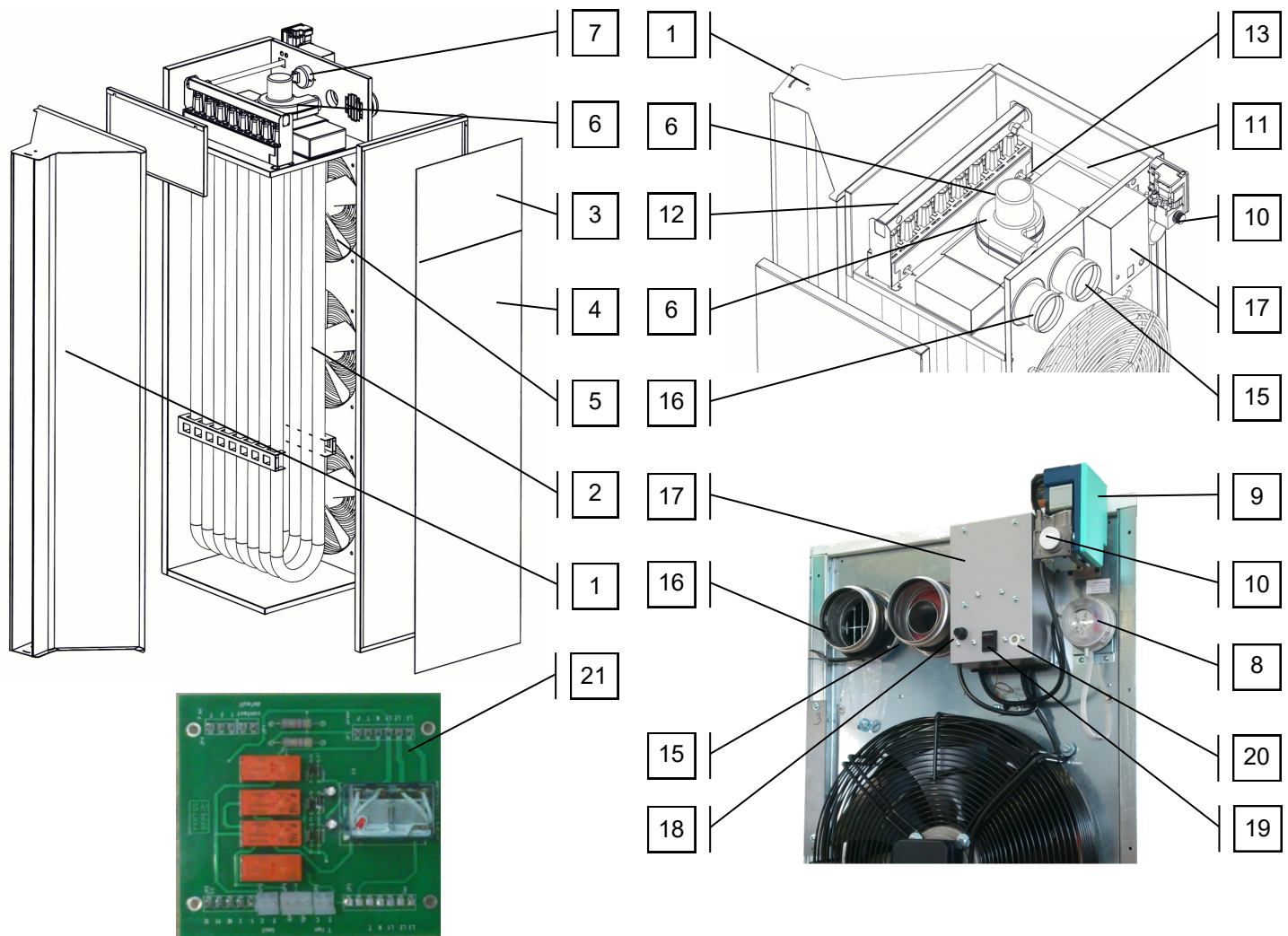
- Check that the main gas valve is opened and purge the gas pipeline. Open the shutoff valve upstream each unit.
- Check electrical disconnecter of the units are well switched.
- Check that the diffusor of the air curtain is well opened and non obstructed.
- On the thermostat, switch on the air curtain or heating mode, raise the set point temperature to 1°C more that the ambient temperature inside the room.
- Open the door to switch on the air curtain.
- The ventilation starts, then when the temperature is reached, the burner stats. The ventilation stops when the door closes.
- Repeat the test on ventilation mode, in that case the air curtain does not heat, only blows ambient air (summer use).

## 7-2 Bill of material—YAC35H



Nº	Description	YAC35H
1	Diffuser	-
2	Tubular heat exchanger	SEECHYAC154230
3	Burner body sheet metal	YN22-V-T00-L00
4	Body sheet metal	YN20-C-T00-L20
5	Blowing fan	ATE802S
6	Smoke extractor	ATE013
7	Lack of air pressure switch	ATE204
8	Fan safety pressure switch (blowing control)	ATE328
9	Control box	ATE332
10	Gas valve	GAZ0011
11	Gas pipe	GAZ0109
12	Gas burner	-
13	Ignition electrode	ATE021
14	Ionization sensor	ATE022
15	Fumes outlet	ATE004
16	Combustion air inlet	ATE004
17	Pilot wire card RFP5	ATE521
18	Burner reset	-
19	Overheating safety thermostat	ATE147
20	Burner regulation thermostat	ATE146
21	Fan thermostat	ATE146

## 7-2 Bill of material YAC45H/V



Nº	Description	YAC45H/V
1	Diffuser	-
2	Tubular heat exchanger	-
3	Burner body sheet metal	-
4	Body sheet metal	-
5	Blowing fan	ATE804S
6	Smoke extractor	ATE013
7	Lack of air pressure switch	ATE204
8	Fan safety pressure switch (blowing control)	ATE328
9	Control box	UTC0410
10	Gas valve	GAZ0011
11	Gas pipe	GAZ0109
12	Gas burner	-
13	Ignition electrode	ATE021
14	Ionization sensor	ATE022
15	Fumes outlet	ATE004
16	Combustion air inlet	ATE004
17	Electrical box	SECEYAC156050
18	Overheating safety thermostat	ATE147
19	Burner reset	-
20	Burner regulation thermostat	ATE146
21	Electrical connection card RFP6	ATE500

## **8– TROUBLESHOOTING**

In case of problems, make sure that the conditions required prior to operating the unit heater are present. If the control box is in the safety position (with the burner defect indicator lamp lighted up), reset it.

**CAUTION : All electrical or mechanical operations must be carried out when the electrical supply is cut off and the gas supply is closed.**

<b>Defects</b>	<b>Causes</b>	<b>Solutions</b>
The device doesn't start	<ul style="list-style-type: none"> <li>- Incorrect wiring</li> <li>- No voltage</li> <li>-The ambient thermostat is not triggered</li> <li>- The pilot wire receiver switch is not in the automatic position</li> <li>-Excess heat safety astat triggered.</li> </ul>	<ul style="list-style-type: none"> <li>- Check the wiring</li> <li>- Verify the electrical supply</li> <li>- Increase the setting point of the ambient thermostat</li> <li>- Check the position of the receiver switch in the unit heater</li> <li>- Reset the astat</li> </ul>
The burner preventilates continuously	<ul style="list-style-type: none"> <li>-Extractor defective</li> <li>-Air pressure switch disconnected</li> <li>-Air pressure switch defective</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the extractor</li> <li>- Reconnect the pressure air pipes</li> <li>- Replace the air pressure switch</li> </ul>
The ignition electrode is making sparks, the burner lights, the control box goes into safety position (burner defect indicator lamp lighted up)	<ul style="list-style-type: none"> <li>-Gas solenoid valve defective</li> <li>-Control box defective</li> <li>-Ionisation sensor out of adjustment or defective</li> <li>-Air in the piping</li> <li>-No gas</li> </ul>	<ul style="list-style-type: none"> <li>- Replace it</li> <li>- Replace it</li> <li>- Adjust it or replace it</li> <li>- Bleed the piping</li> <li>- Check the pressure</li> </ul>
The device goes into safety position during operation (red light comes on)	<ul style="list-style-type: none"> <li>-Gas supply interrupted</li> </ul>	<ul style="list-style-type: none"> <li>- Reset by pressing the red push button on the control box</li> </ul>
Cold air when starting	<ul style="list-style-type: none"> <li>-Incorrect adjustment of internal thermostat</li> </ul>	<ul style="list-style-type: none"> <li>- Check the adjustment of the ventilation thermostat (adjustment 35°C)</li> </ul>
The device doesn't heat sufficiently	<ul style="list-style-type: none"> <li>-Incorrect placing of the thermostat</li> <li>-Incorrect adjustment of the thermostat</li> <li>-Insufficient gas pressure</li> <li>-Injectors are unsuitable</li> </ul>	<ul style="list-style-type: none"> <li>- Modify its location</li> <li>- Check the thermostat</li> <li>- Check the gas supply pressure</li> <li>- Check that the injectors are correctly selected and replace them if necessary.</li> </ul>

## **9- RECOMMENDATIONS FOR THE USER**

### **9-1 Maintenance**

Correct and regular use and maintenance of the unit heater will determine rational and efficient operation, minimum consumption as well as long life.

The maintenance must be done with the device cold, with the gas and electricity supplies cut off.

**These service visits must be carried out by a qualified professional person**

<b>Parts</b>	<b>Maintenance operations</b>
Gas air curtain	Check the correct functioning of all the safety devices.
Heat exchanger, smoke extractor and venturi	Get access to the heat exchanger by disassembling the burner and smoke boxes, clean it. Clean the extractor and the venturi via the rear smoke connection.
Fan	Clean with compressed air
Smoke conduit	Disassemble the conduit and sweep it out.
Bodywork and diffuser	Clean using a duster
Burner torches	Disassemble the burner ramp, check their condition and clean them
Injectors	Clean the gas injectors
Ionisation sensor and electrodes	Check their condition, change them if necessary.
Gas filter	Disassemble the dirty cartridge and clean it with compressed air

### **9-2 Specific instructions :**

- Never obstruct the evacuation of the smoke and the intake of new air.
  - Never cut off the electricity before the complete cooling of the heat exchange of the gas air curtain.
  - Never make any modifications to the adjustments which have been carried out by the qualified professional person.
  - Warn the after-sales technician when there is a change of gas, of gas pressure or a modification of the power supply voltage.
- You are strongly recommended to take out a maintenance contract: "see with your installer".

### **What should be done in case of problems ?**

<b>PROBLEMS</b>	<b>SOLUTION</b>
<b><i>Smell of gas</i></b>	<b><i>- Close the external gas valve and the electrical supply then warn the maintenance technician.</i></b>
<b><i>The burner stays in safety position</i></b>	<b><i>- Press the reset button of the burner located on the thermostat control box. - If the problem persists, contact the after-sales technician.</i></b>





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