

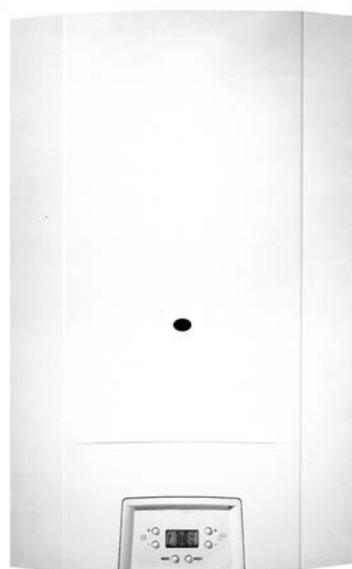


# WALL HUNG BOILERS INSTRUCTIONS MANUAL

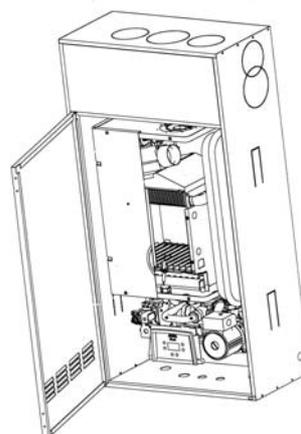
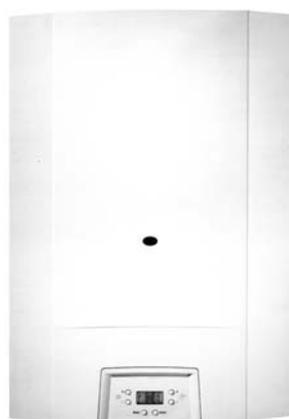
To be used for  
INSTALLATION, USE AND MAINTENANCE

**PIXEL 25 N**  
**PIXEL 25 NR**  
**PIXEL 29 F**  
**PIXEL 29 FR**

**NEW**



**PIXEL 25 F**  
**PIXEL 25 FR**  
**PIXEL IN 25 F**  
**PIXEL IN 25 FR**  
**PIXEL ES 25 F**  
**PIXEL ES 25 FR**



## IMPORTANT

The first boiler ignition and the warranty have to be carried out by an authorised personnel

# GENERAL RULES

This instruction book is an integrant and essential part of our product and it is delivered together with our heater. Read carefully the information about safety, installation and maintenance that are shown in it. The heater installation is to be carried out by qualified personnel according to the present law and the producer instructions.

After having removed the packaging it is better to control the good state of the product. Don't use the heater if you have any doubt about this just call your supplier.

**IMPORTANT:** this heater is aimed to warm water at an inferior temperature than that of the boiling at an atmospheric pressure; it has to be linked to an heating system and/or a hot water distribution net proper to its capacity and power.

This heater has to be used only according to the usage it was planned for. Every kind of other usage has to be considered unproper and dangerous. The producer is not to be considered responsible for possible damages caused by this wrong, unproper and unreasonable usage.

Cut the heater from its supply net off before doing every kind of service operations.

Don't obstruct heater aspiration or dissipation grills.

Put the heater out of work if there is any damage or malfunctioning. The repairing must be carried out by an authorized service operation centre and it has to use only original spare parts.

In order to grant the highest heater efficiency and for its good functioning it is indispensable to follow the producer instructions.

If you decide not to use the heater any more make all the dangerous parts became harmless.

Don't wet the heater neither with water nor with other liquid substances.

Don't put other items on the surface of the heater.

Before starting every kind of service operation which foresees the burner dismantling or the opening of inspection holes you have to cut off the electrical supply and close gas cocks.

If there are chimney service operations turn the heater off. After having finished the operation you should call your qualified personnel and make the relief duct efficiency control.

Don't clean the heater with inflammable substances.

Don't leave recipients of inflammable substances near the heater.

The electrical safety of the heater is assured only if it is linked to an ground system which is respectful of present laws.

Your qualified personnel must control the efficiency of your net because if there are any problems the producer is not responsible for damages caused by the lacking of a proper ground system.

Control your electrical system capacity which is to be proper to the power required by your heater.

As far as the heater supply is concerned you cannot use adaptators, multiple plugs and extensions.

The use of electrical items implies the careful observation of fundamental rules such as:

- 1 do not touch the heater with wet hands;
- 2 do not tear electrical cables;
- 3 give not allow children or unused persons to use the heater.

All the following instructions that macaws to be take in mind by the technician on the products of the firm ARCA S.r.l.

The ordinary maintenance and the possible reparation of the products must have made by a center assistance authorized from the ARCA S.r.l., exclusively using original pspare parts..

## **Use only flue gas ducts and electric accessories and furnished by ARCA S.r.l.**

Do not replace the supply pipe by your own but only by a qualified person.

You have to assure that safety discharge tubes are linked to a relief valve.

Otherwise, there can be an overflow of the heater site caused by the valves safety action and therefore the producer is not responsible.

System pipes have not to be used as ground plugs for other systems; not only are they unproper to this use but they can cause serious problems to the appliances which are linked to them.

Please control:

- 1 the good functioning of the gas inlet system;
- 2 the correct gas capacity is the one required by the heater power;
- 3 that the type of gas used is that the heater was projected for.
- 4 that the gas supply pressure is within the required values of the heater.
- 5 that the gas inlet system is proper and has all the required safety characteristics which are forseen by law.

If you feel gas odour do not turn electrical switches on just open your windows and close gas cocks.

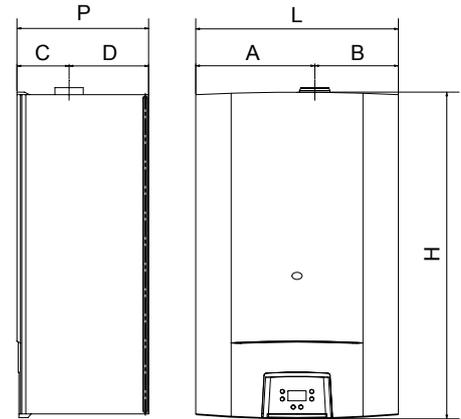
# SUMMARY

GENERAL RULES	2
<b>1. TECHNICAL DATA</b>	<b>4</b>
1.1 Dimensions	4
1.2 Hydraulic scheme	4
1.3 Available head	4
1.4 General layout of the main components of models PIXEL 25 N	5
1.5 General layout of the main components of models PIXEL 25 F, PIXEL ES 25, PIXEL IN 25 F	6
1.6 General layout of the main components of models PIXEL 29 F	7
1.7 Technical data	8
1.8 Electrical scheme of PIXEL 25 N	9
1.9 Electrical scheme of PIXEL 25 NR	10
1.10 Electrical scheme of PIXEL 25 F, PIXEL ES 25 F, PIXEL IN 25 F, PIXEL 29 F	11
1.12 Electrical scheme of PIXEL 25 FR, PIXEL ES 25 FR, PIXEL IN 25 FR, PIXEL 29 FR	12
<b>2. INSTALLATION INSTRUCTIONS</b>	<b>13</b>
2.1 Combustion product discharge: PIXEL 25 F, PIXEL ES 25 F, PIXEL IN 25 F, PIXEL 29 F	13
2.1.1 Different venting options - Flue venting	13
2.1.2 Length of discharge ducts: PIXEL 25 F, PIXEL ES 25 F, PIXEL IN 25 F	14
2.1.2.1 Split flue (Ø 80 mm)	14
2.1.2.2 Coaxial flue (Ø 60 x 100 mm)	14
2.1.3 Length of discharge ducts: PIXEL 29 F	15
2.1.3.1 Split flue (Ø 80 mm)	15
2.1.3.2 Coaxial flue (Ø 60 x 100 mm)	15
2.2 Combustion product discharge: PIXEL 25 N	16
2.2.1 Connection with a chimney	16
2.2.2 Outdoor direct discharge	16
2.2.3 Venting of the rooms	17
2.3 Boiler placing	17
2.4 Hydraulic connections	18
2.5 Electric connections	18
2.6 Gas connection	19
2.7 Setting of control panel	20
2.8 Adjustment instructions: nominal heat and minimal heat	21
2.8.1 Nominal heat adjustment	21
2.8.2 Minimal heat adjustment	21
2.9 Slow ignition and nominal heat adjustment	21
2.9.1 Slow ignition adjustment	21
2.9.2 Nominal heat adjustment	22
2.10 Different gases	22
2.11 Injectors - pressure table: PIXEL 25 N	22
2.11.1 Gas pressure - Heat diagram	22
2.12 Injectors - pressure table: PIXEL 25 F, PIXEL ES 25 F, PIXEL IN 25 F	23
2.12.1 Gas pressure - Heat diagram	23
2.13 Injectors - pressure table: PIXEL 29 F	24
2.13.1 Gas pressure - Heat diagram	24
<b>3. MAINTENANCE INSTRUCTIONS</b>	<b>25</b>
3.1 Introduction	25
3.2 Circulation deblocking	25
<b>4. USER'S INSTRUCTIONS</b>	<b>26</b>
4.1 Control panel	26
4.2 Ignition	27
4.3 Summer functioning	27
4.4 Winter functioning	27
4.5 Break down signals	27
4.6 Temporary shut down	27
4.7 Long term shut down	27
4.8 Suggestions	27
4.9 Functioning problems	28
Declaration of conformity	29

# 1. TECHNICAL DATA

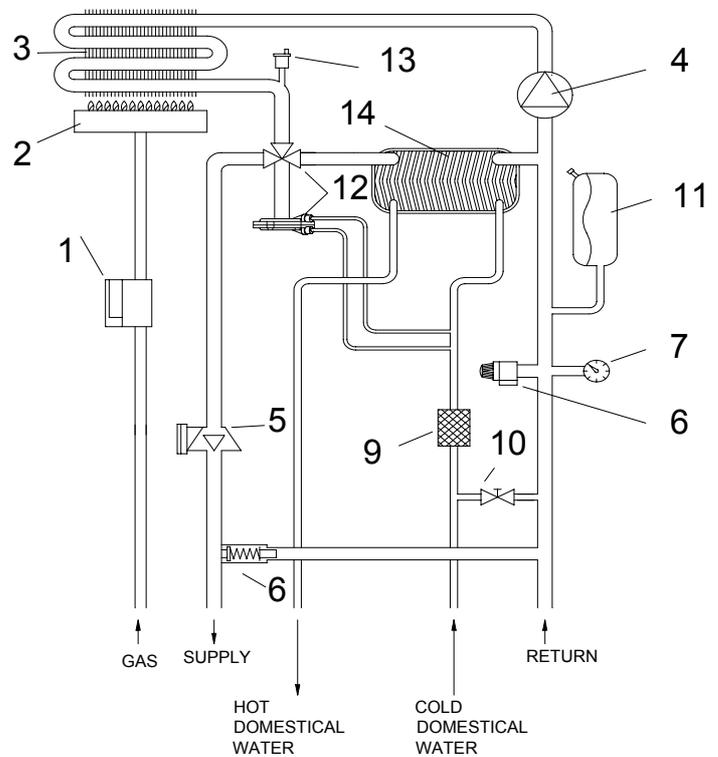
## 1.1 DIMENSIONS

BOILER	L (mm)	H (mm)	P (mm)	A (mm)	B (mm)	C (mm)	D (mm)
PIXEL 25 N	400	720	300	200	200	182	118
PIXEL 25 F	400	650	260	235	165	103	157
PIXEL 29 F	400	720	300	200	200	182	118

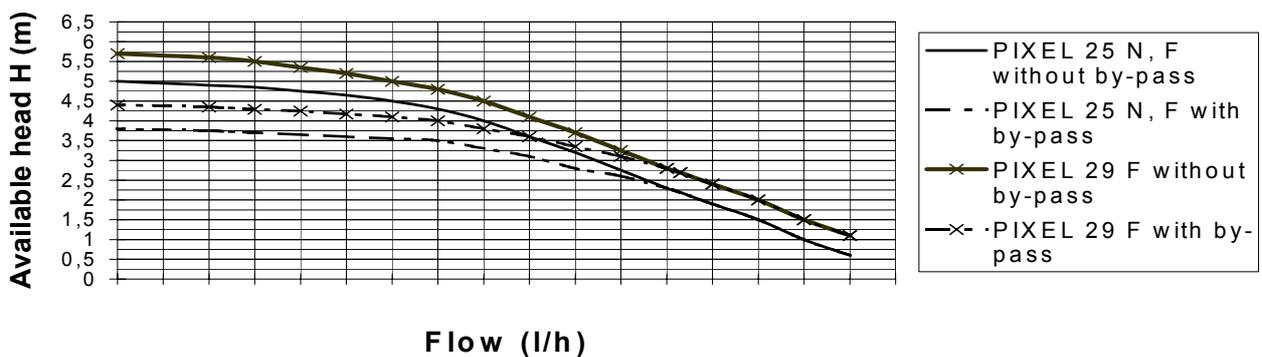


## 1.2 HYDRAULIC SCHEME

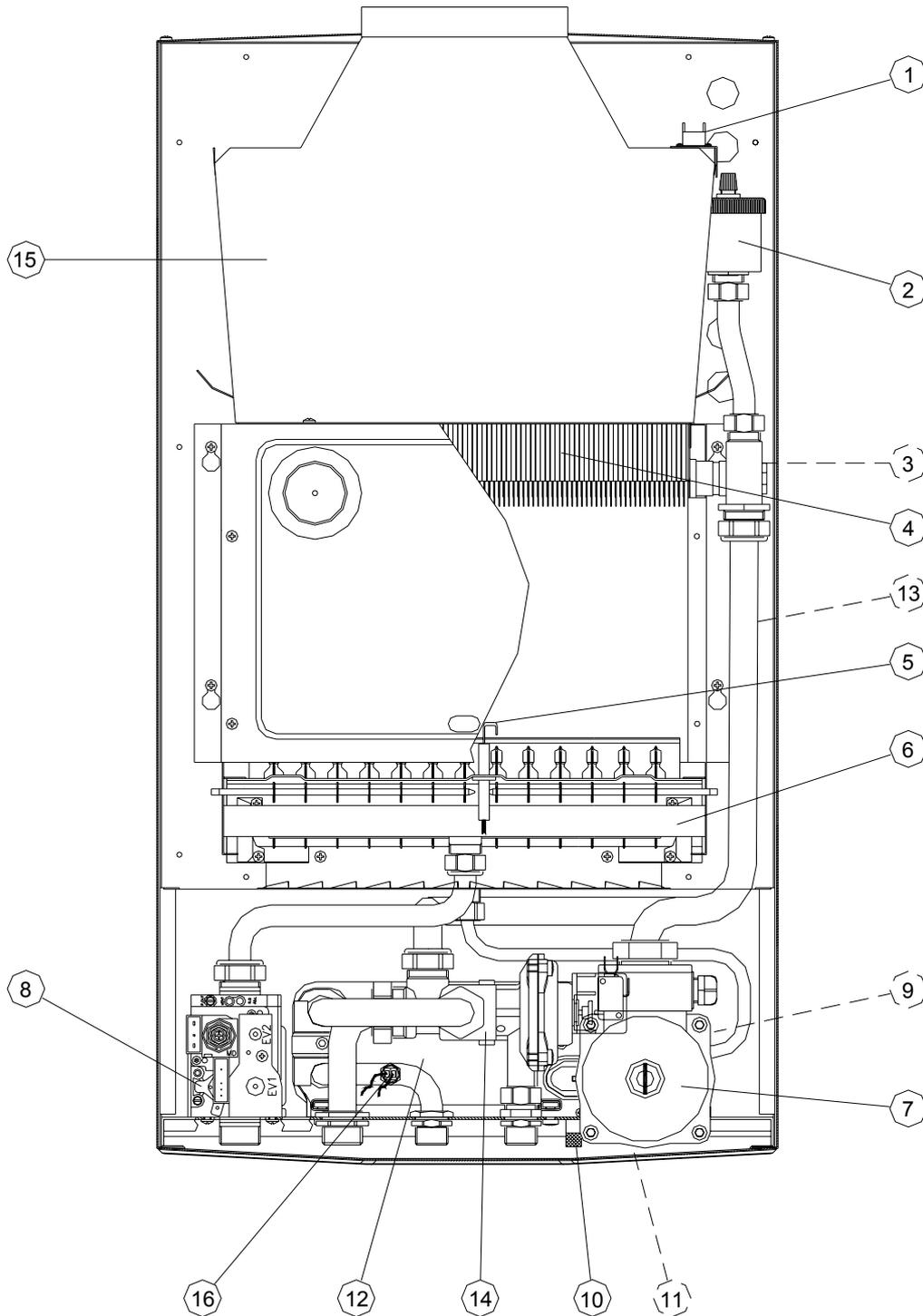
- 1 - gas valve
- 2 - burner
- 3 - primary exchanger
- 4 - circulator
- 5 - flussostat
- 6 - bypass supply
- 7 - manometer
- 8 - safety valve (set to 3 bar)
- 9 - filter
- 10 - valve of charging supply
- 11 - vase of expansion
- 12 - valve in three streets flussostatica
- 13 - valve I discharging air
- 14 - sanitary exchanger



## 1.3 AVAILABLE HEAD

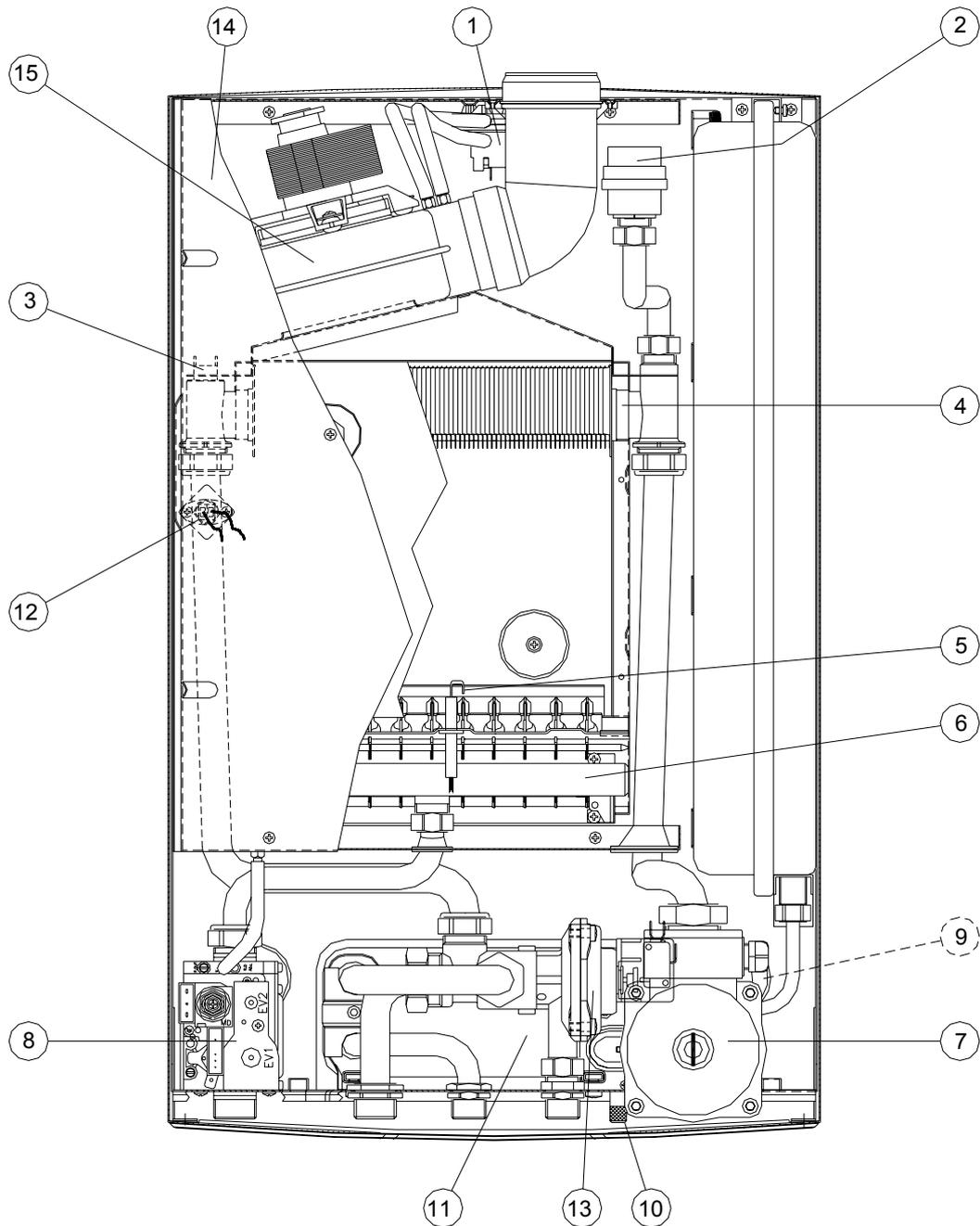


## 1.4 General layout of the main components of model PIXEL 25 N



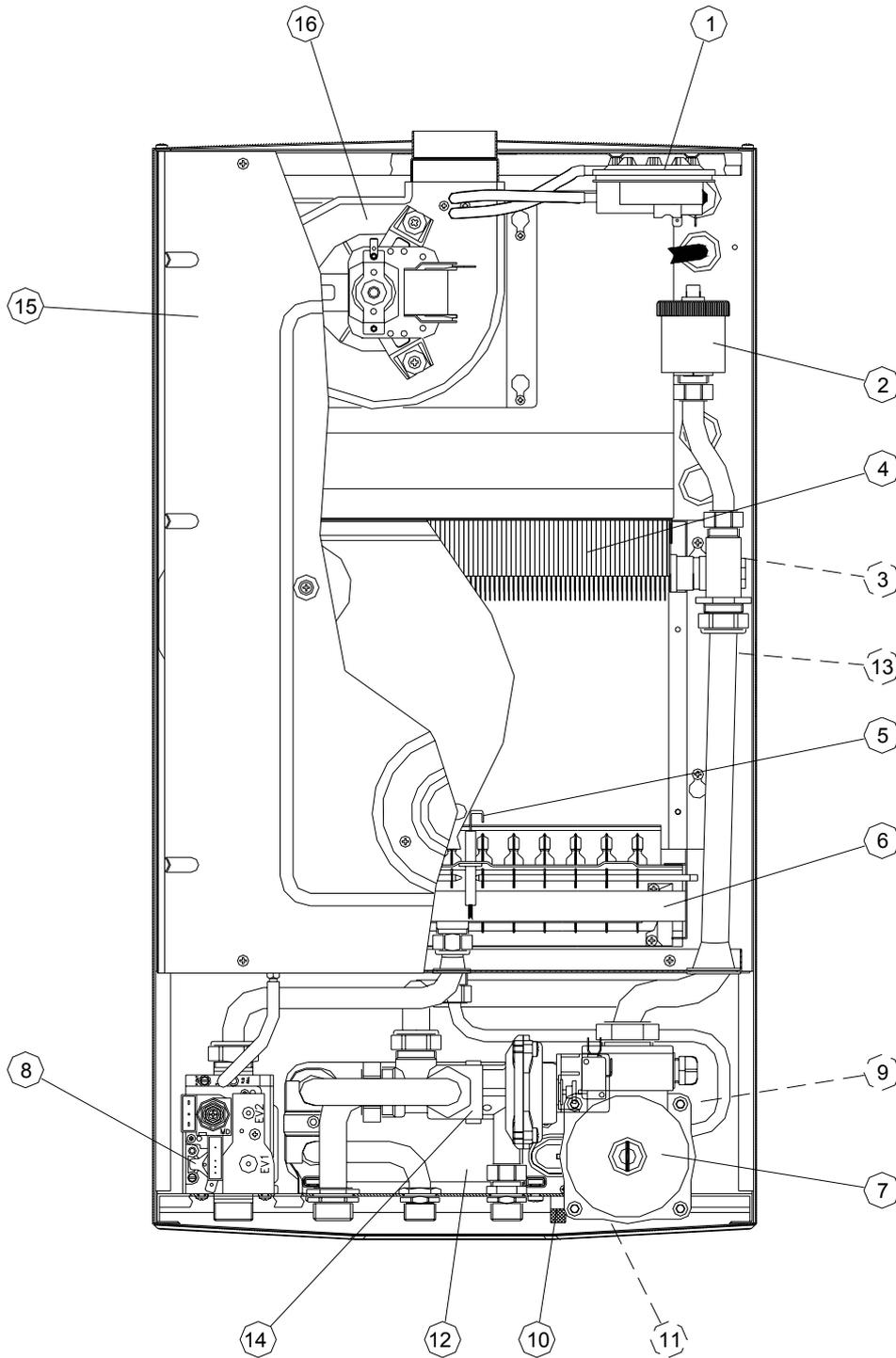
- |                                     |                            |
|-------------------------------------|----------------------------|
| 1. Flue gas thermostat              | 9. Safety valve (3 bar)    |
| 2. Discharge air valve              | 10. Supply charge valve    |
| 3. Limit thermostat (105°C)         | 11. Supply discharge valve |
| 4. Copper Primary Exchanger         | 12. DHW exchanger          |
| 5. Electrode of lighting and survey | 13. Supply sensor          |
| 6. Burner                           | 14. Hydraulic valve        |
| 7. Circulator                       | 15. Flue gas cap           |
| 8. Gas valve                        | 16. DHW sensor             |

## 1.5 General layout of the main components of models: PIXEL 25 F, PIXEL ES 25 F, PIXEL IN 25 F



- |                                     |                              |
|-------------------------------------|------------------------------|
| 1. Air Pressostat                   | 9. Safety valve (3 bar)      |
| 2. Discharge air valve              | 10. Supply charge valve      |
| 3. Limit thermostat (105°C)         | 11. Sanitary water exchanger |
| 4. Copper Primary Exchanger         | 12. Supply sensor            |
| 5. Electrode of lighting and survey | 13. Hydraulic valve          |
| 6. Burner                           | 14. Proof chamber            |
| 7. Circulator                       | 15. Fan                      |
| 8. Gas valve                        |                              |

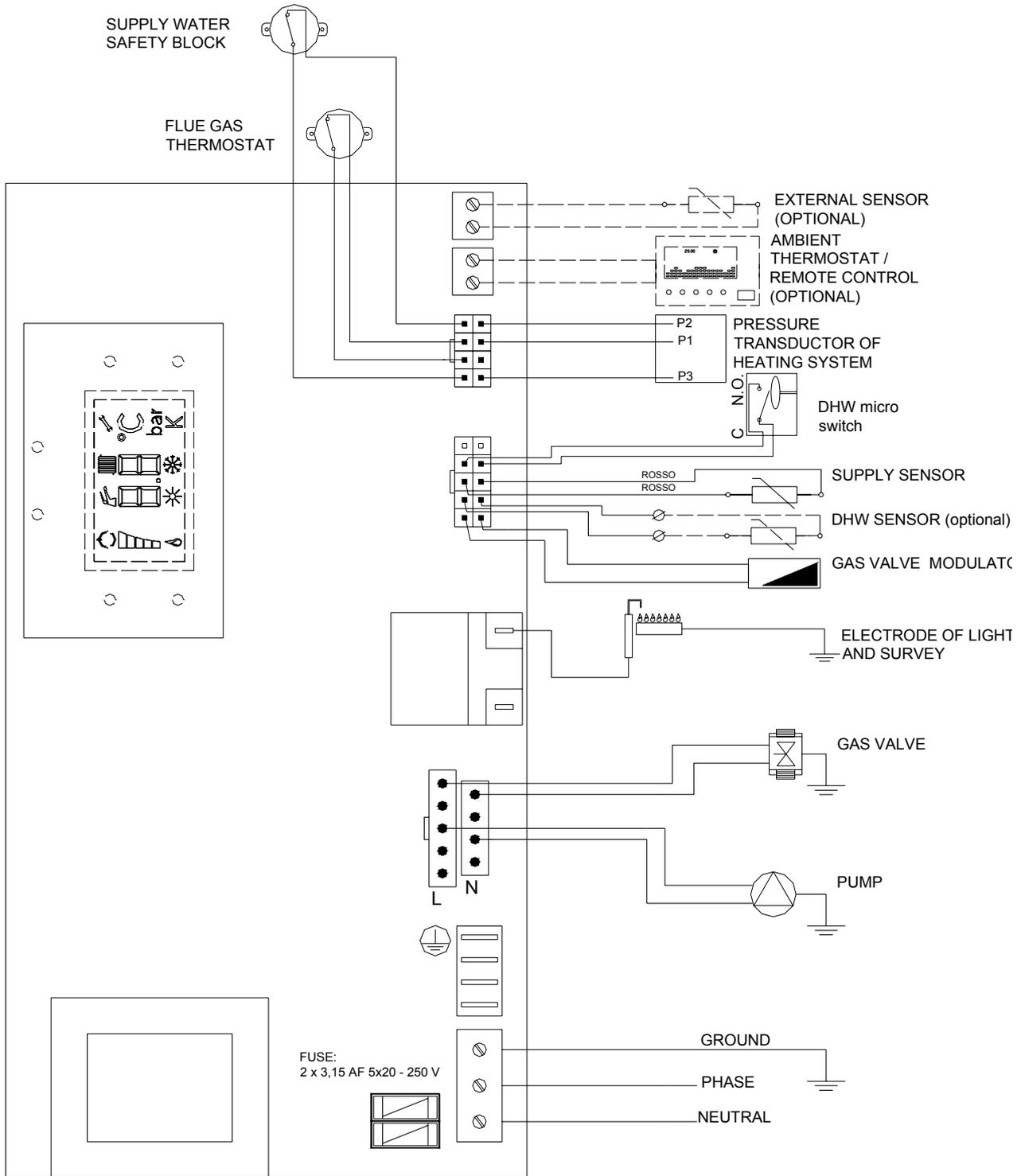
## 1.6 General layout of the main components of model PIXEL 29 F



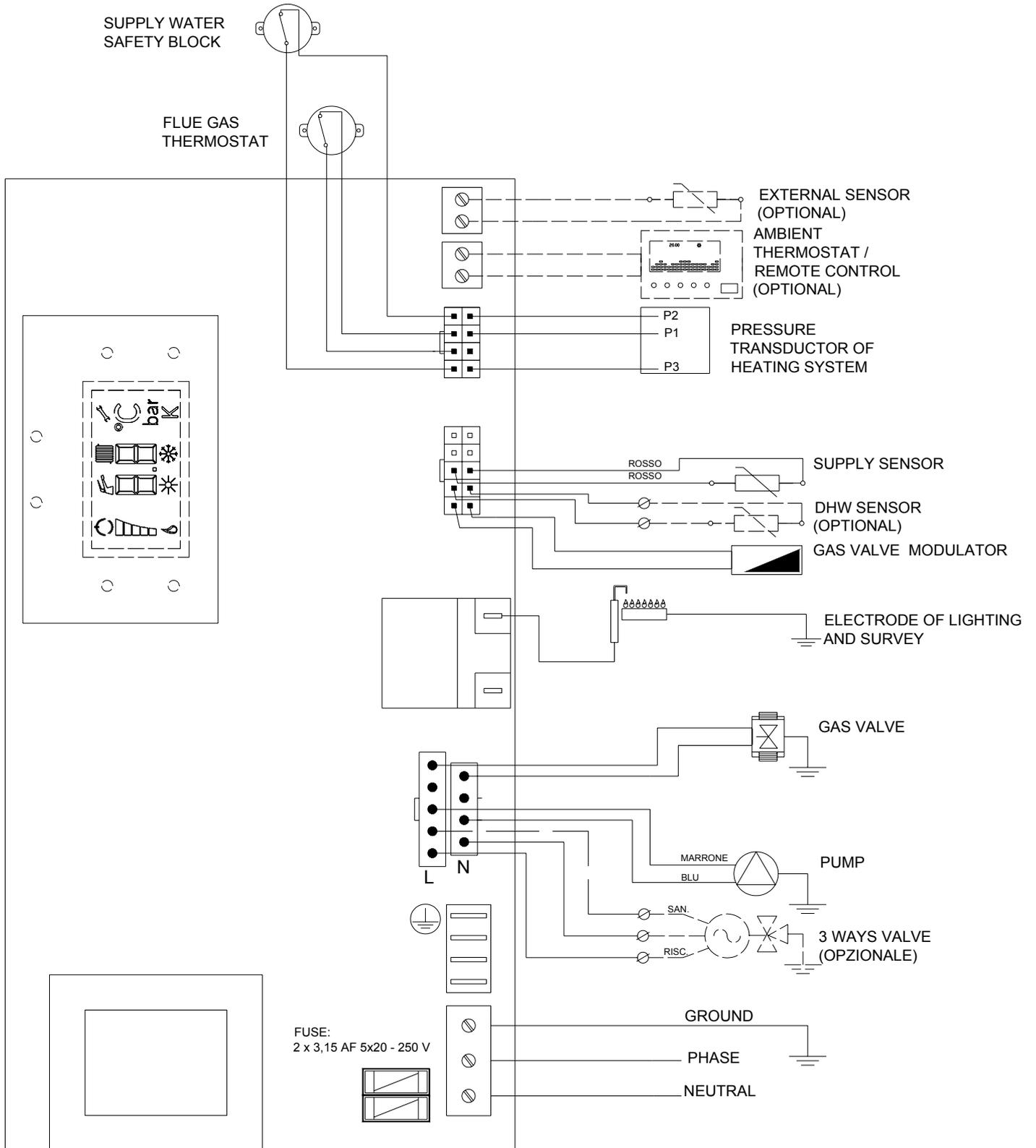
- |   |                                  |    |                          |
|---|----------------------------------|----|--------------------------|
| 1 | Air Pressostat                   | 10 | Supply charge valve      |
| 2 | Discharge air valve              | 11 | Supply discharge valve   |
| 3 | Limit thermostat (105°C)         | 12 | Sanitary water exchanger |
| 4 | Copper Primary Exchanger         | 13 | Sonda riscaldamento      |
| 5 | Electrode of lighting and survey | 14 | Hydraulic valve          |
| 6 | Burner                           | 15 | Proof chamber            |
| 7 | Circulator                       | 16 | Fan                      |
| 8 | Gas valve                        |    |                          |
| 9 | Valvola di sicurezza (3 bar)     |    |                          |

<b>1.7 TECNICAL DATA</b>		<b>Size</b>	<b>PIXEL 25 N</b>	<b>PIXEL 25 F, ES 25 F, IN 25 F</b>	<b>PIXEL 29 F</b>
Type			B11BS	C12-C32-C42-C52	C12-C32-C42-C52
Nominal Heat	KW		27	27	31,5
Nominal Heat	Kcal/h		23220	23220	27090
Useful Heat	KW		24,7	25,1	29,3
Useful Heat	Kcal/h		21200	21734	25194
Efficiency	%		91,3	92,9	93
Minimal Heat	KW		10,5	10,5	12,4
Minimal Useful Heat	KW		9,4	9,5	11,3
Efficiency at 30 % of Nominal Heat	%		89,5	90,7	91,2
<b>Nominal Heat Gas Flow</b>	Metano G20 (2E+)	m <sup>3</sup> /h	2,855	2,855	3,331
	Metano G25 (2ELL)	m <sup>3</sup> /h	3,320	3,320	3,874
	GPL G30 (3+)	kg/h	2,128	2,128	2,482
	GPL G31 (3P)	kg/h	2,096	2,096	2,445
<b>Inlet pressure</b>	Metano G20 (2E+)	mbar	20/25	20/25	20/25
	Metano G25 (2ELL)	mbar	20	20	20
	GPL G30 (3+)	mbar	29	29	29
	GPL G31 (3P)	mbar	37	37	37
Flue gas temperature	°C		115,3	126,7	131,4
CO <sub>2</sub> (G20)	%		6	7,7	7,6
Pondered NOx (according to EN 483 pars 6.2.2)	mg/KWh		----	119 (classe 3)	----
Losses of heat to the cover with burner ignited	%		6,8	6,6	6,5
Losses of heat to the cover with burnernot ignited	%		0,2	0,2	0,1
Losses of heat to the cover ((T = 50 °Cs)	%		1,9	0,3	0,5
Gas flow rate	Nm3/h		58,7	47,0	55,5
<b>CENTRAL HEATING</b>					
C.H. Minimum Set point	°C		35	35	35
C.H. Maximum Set point	°C		90	90	90
Volume of water in the boiler	l		1,2	1,2	1,2
Volume of water of the expansion vessel	l		7,5	7,5	7,5
Pressure of the expansion vessel	bar		0,7	0,7	0,7
Least pressure in the primary circuit	bar		0,4	0,4	0,4
Maximum pressure in the primary circuit	bar		3	3	3
Maximum content of heating water	l		150	150	150
Available head at 1000 l/h of flow rate	mbar		230	230	330
<b>Domestical hot water</b>					
Minimum set point	°C		30	30	30
Maximum set point	°C		60	60	60
Production continuous warm water (t = 25 °C)	l/min		14,1	14,4	16,8
Production continuous warm water (t = 35 °C)	l/min		10,1	10,3	12,0
Volume water (t = 30 °C in the first 10 minutes)	l		117,8	120	140
Minimum flow	l/min		2,5	2,5	2,5
Maximum pressure	bar		8	8	8
Minimum pressure	bar		0,5	0,5	0,5
Voltage	l		----	----	----
Frequency	V/Hz		230/50	230/50	230/50
Absorbed eletric power	W		90	120	120
<b>CONNECTIONS</b>					
Heating	Inch		3/4"	3/4"	3/4"
Sanitary water	Inch		1/2"	1/2"	1/2"
Gas	Inch		1/2"	3/4"	3/4"
Height	mm		720	650	720
Depth	mm		300	260	300
Width	mm		400	400	400
<b>Lenght of flue gas ducts</b>					
Coaxial Ø 60 xes 100 mms	m		3	4	4
Doubled Ø 80 mms	m		16	30	30
Doubled Ø 60 mms	m		----	----	----
Weight	Kg		43	40	43
Degree of protection	IP		44	IP4X	44
Homologation CE			0068 ★★	0068 ★★★	0068 ★★★

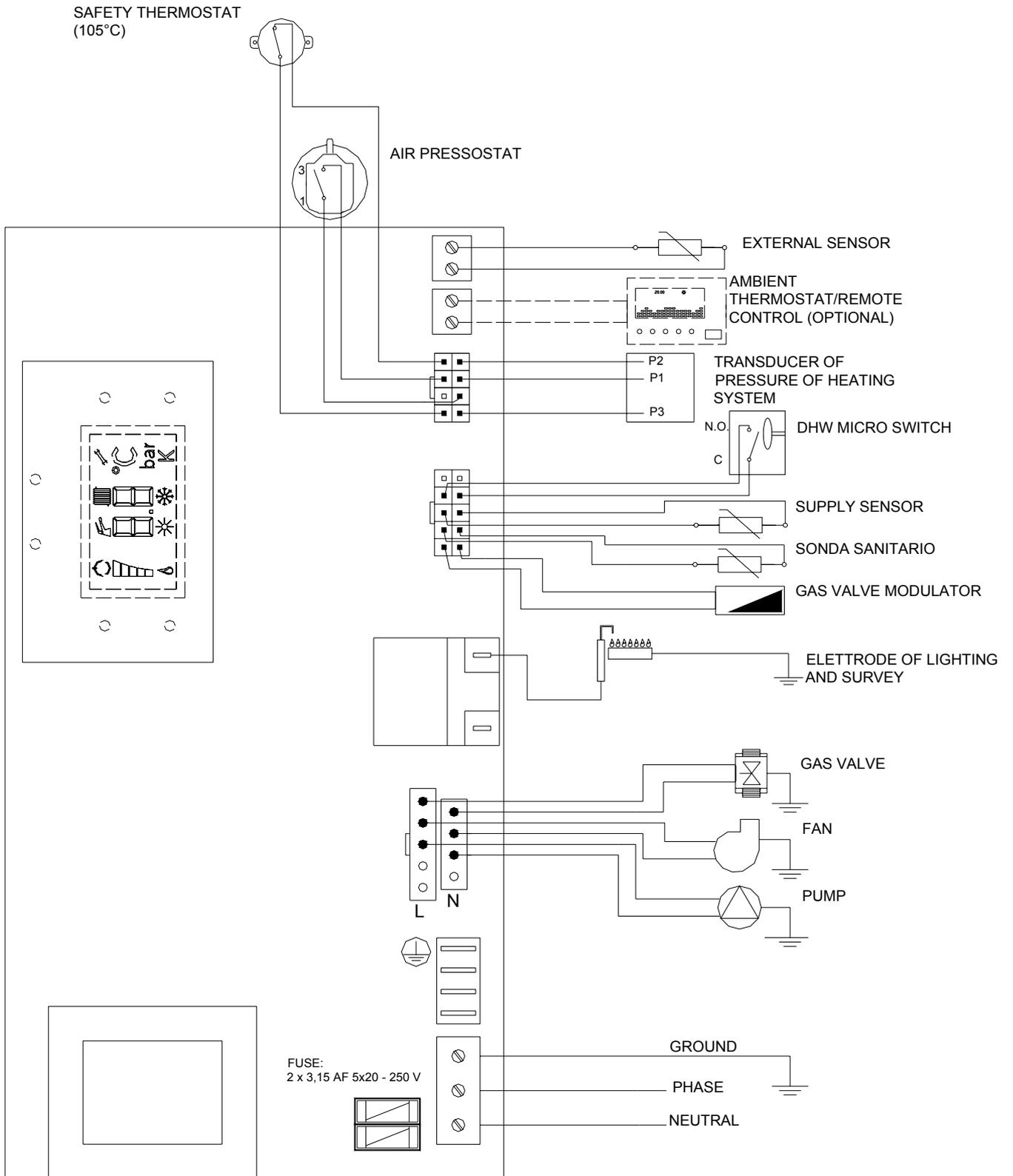
# 1.6 ELECTRICAL SCHEME of PIXEL 25 N



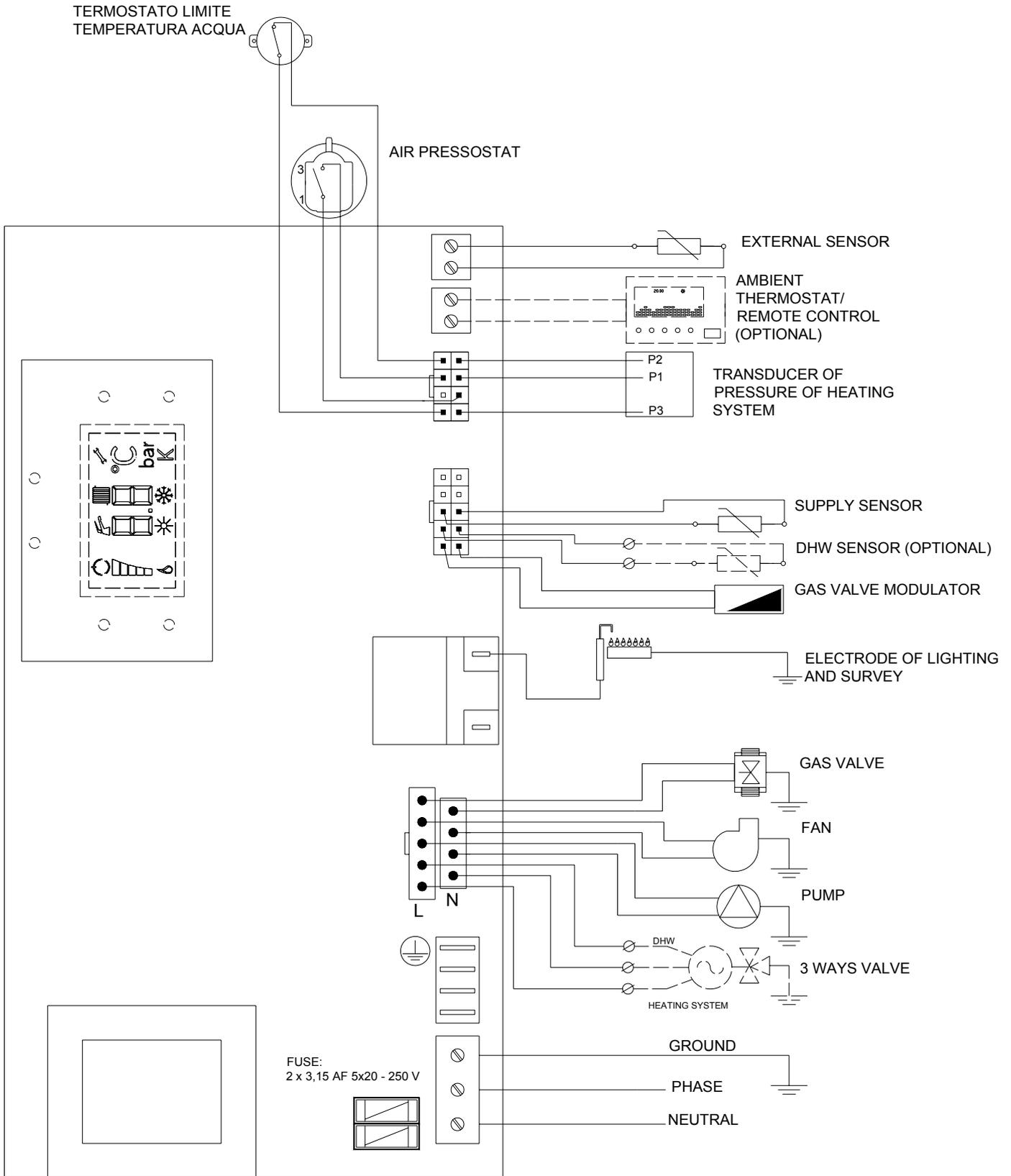
# 1.7 ELECTRICAL SCHEME of PIXEL 25 NR



# 1.8 ELECTRICAL SCHEME of PIXEL 25 F, PIXEL ES 25 F, PIXEL IN 25 F, PIXEL 29 F



# 1.8 ELECTRICAL SCHEME of PIXEL 25 FR, PIXEL ES 25 FR, PIXEL IN 25 FR, PIXEL 29 FR



## 2 INSTALLATION INSTRUCTIONS

### 2.1 DIFFERENT VENTING OPTIONS: PIXEL 25 F, PIXEL ES 25 F, PIXEL IN 25 F, PIXEL 29 F

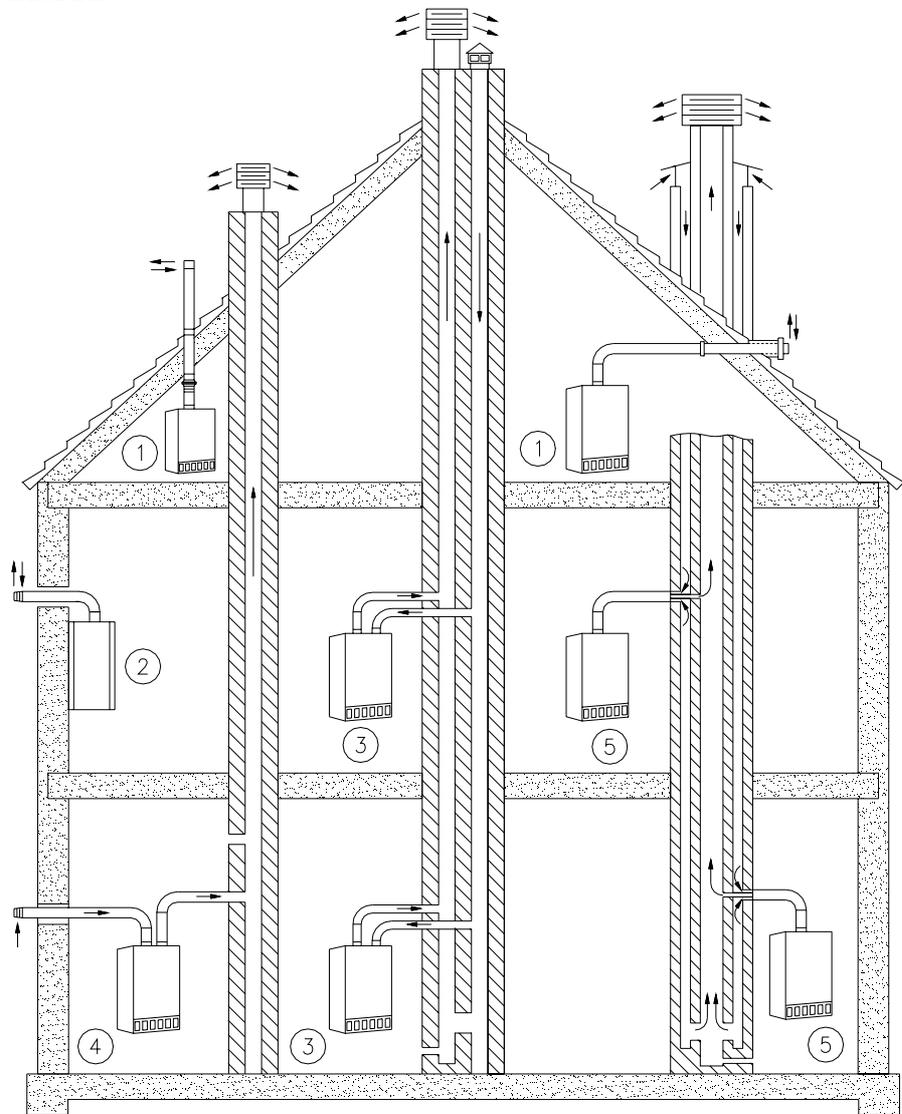
Proof chamber heaters do not require particular characteristics as for siting and installation are concerned.

Take particular attention to discharge and aspiration unions in order to avoid combustion product leakage.

Use only original spare parts.

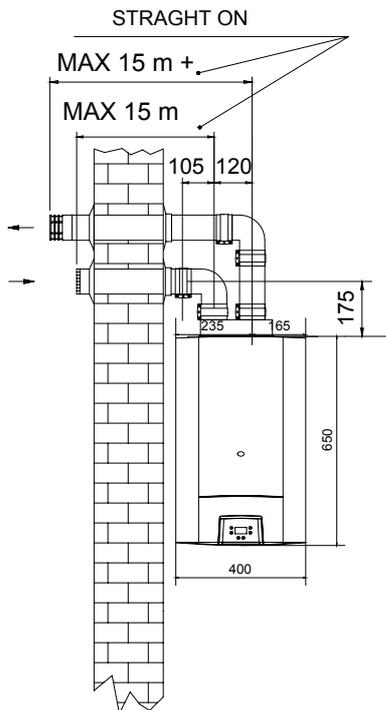
#### 2.1.1 Different venting options - Flue Venting

1. Coaxial vent through the roof
2. Coaxial through the wall
3. Split type venting between two chimneys
4. Split type, discharge into a chimney, fresh air from outdoor wall
5. Coaxial, connection with coaxial chimney



**CAUTION!** - Follow local regulations concerning draught terminals location from windows and doors.

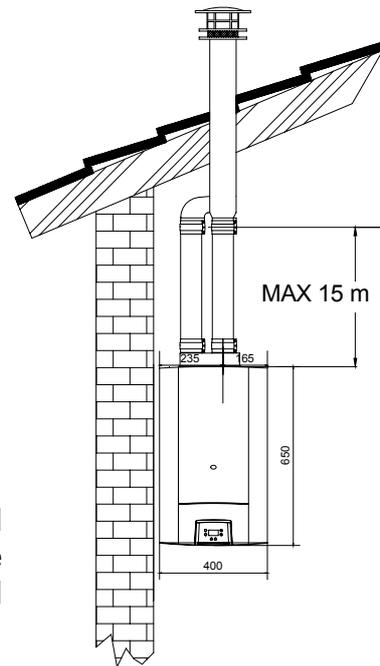
## 2.1.2 LENGTH OF FLUE GAS DUCT: PIXEL 25 F, PIXEL ES 25 F, PIXEL IN 25 F



### 2.1.2.1 SPLIT FLUE Ø 80 mm

N.B.: The flue and aspiration duct length has not to exceed 16 m. For every added 90° elbow the maximum allowable length is to be diminished by 2 m.

Horizontal aspiration and discharge duct are to be placed slightly inclined towards the outside.



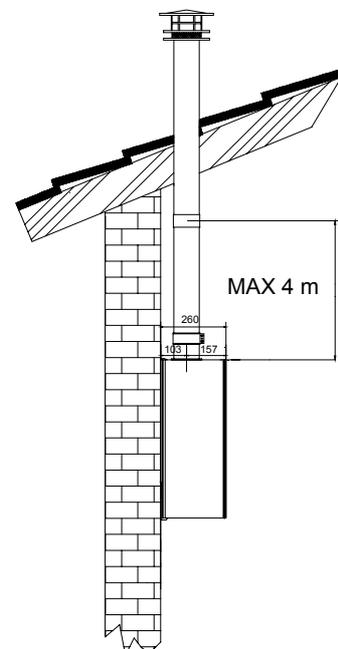
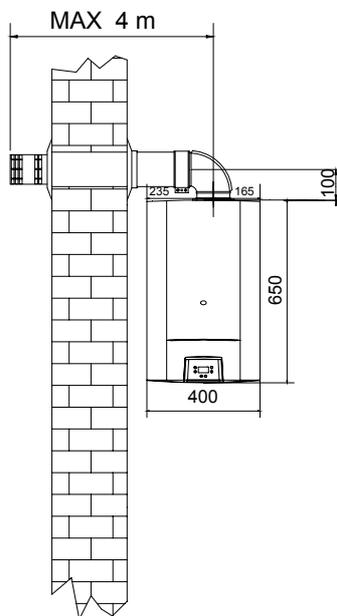
### 2.1.3.2 COAXIAL FLUE Ø 60 x 100 mm

N.B.: The allowed length of coaxial ducts varies between to 0,5 ms minimal length and to 4 ms maximal length.

By 0 to 1 meters length the presence is necessary of a diaphragm Ø 44 in the outlet of the fan.

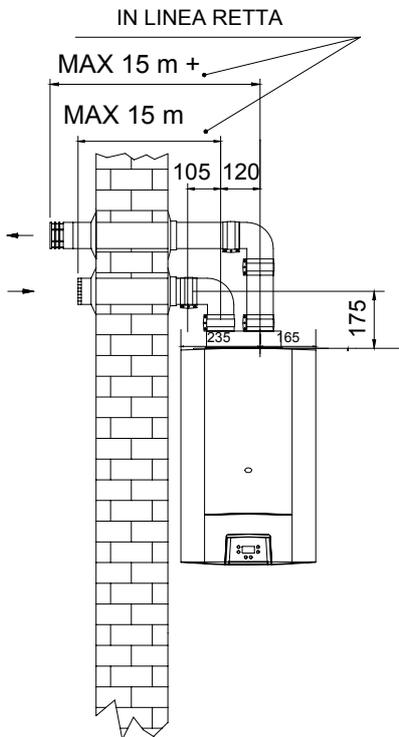
By 2 to 3 meters length the presence is necessary of a diaphragm Ø 46 in the outlet of the fan.

Horizontal aspiration and discharge duct are to be placed slightly inclined towards the outside.



## 2.1.3 LENGTH OF FLUE GAS DUCT: PIXEL 29 F

### 2.1.3.1 SPLIT FLUE Ø 80 mm



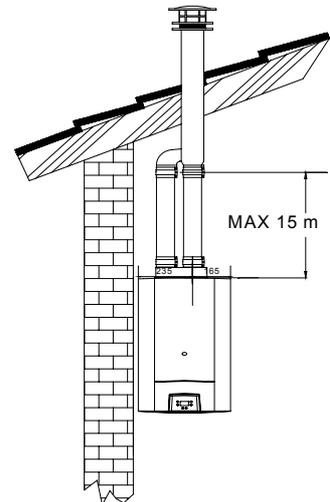
N.B.: The flue and aspiration duct length has not to exceed 30 m.

For every added 90° elbow the maximum allowable length is to be diminished by 2 m.

By 0 to 4 m of length you must insert in the outlet of the fan a Ø 44 mm diaphragm.

By 5 to 15 m of length you must insert in the outlet of the fan a Ø 44 mm diaphragm.

The pipe of aspiration and flue gas must be climbed on with light inclination toward the outside.



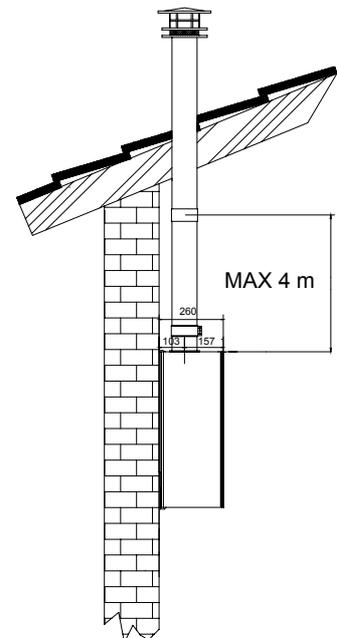
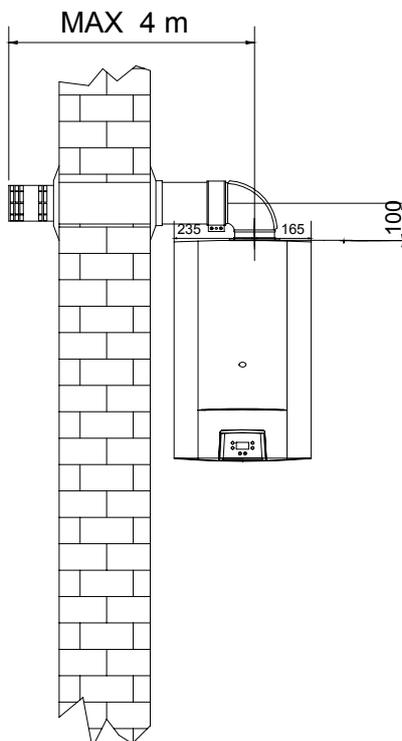
### 2.1.3.2 COAXIAL FLUE Ø 60 x 100 mm

N.B.: The allowed length of coaxial ducts varies between to 0,5 ms minimal length and to 4 ms maximal length.

By 0 to 1 meters length the presence is necessary of a diaphragm Ø 44 in the outlet of the fan.

By 2 to 3 meters length the presence is necessary of a diaphragm Ø 46 in the outlet of the fan.

Horizontal aspiration and discharge duct are to be placed slightly inclined towards the outside.



## 2.2 COMBUSTION PRODUCT DISCHARGE: PIXEL 25 N

### 2.2.1 CONNECTION WITH A CHEMINEY

The chimney has a great importance for the well running of the boiler; It must be done according to these requests:

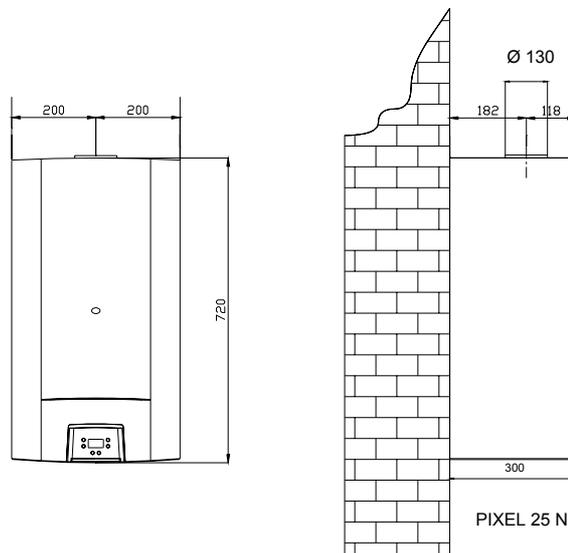
- Must be built with a resistant water material and must be resistant
- must be in material impermeable and resistant to the temperature of the smokes and to their condensation;
- must have a sufficient mechanical resistance and a weak [conduttività termica];
- must be perfectly proof;
- must have a most possible vertical and straight course and the terminal part must be equipped with a static aspirator that assures an efficient and constant evacuation of the smokes;
- for avoid that the wind could create around the chimney pot of the zones of such pressure from prevail on the ascensional strength of the gases of unloaded it is necessary that the orifice of evacuation overhangs of at least 0,4 mt. any adjacent to structure the same fireplace (inclusive the height of the roof of the building) if distant less of 8mt.;
- the chimney must have a diameter not inferior to that of cloak of the boiler to square or rectangular section the inside section must be plus then 10% as regards that of exit of the same cloak;
- beginning from the cloak, the link must have a vertical pull of length not inferior to two turned the diameter before the chimney

### 2.2.2 OUTDOOR DIRECT DISCHARGE

The natural draught boilers could unload the smokes directly to the outside through the building wall ; a terminal of draught to the extremity of the duct must be applied.

The duct must satisfy the followings requisite:

- the horizontal inside part to the building must be reduced to the minimum (1mt.) and have an inclination in equal slope at 3 o'clock% toward the outside;
  - must not have more than two changes of direction;
  - must receive the unloading of an only apparatus;
  - must be protected;
  - the pull external ending before the terminal of draught must stick out from the wall of at least two diameters;
  - the vertical leaving pull from the cloak must be along at least a meter;
  - the terminal of draught must overhang of at least 1,5mt. the attack of the duct on the cloak of the boiler.
- la parte orizzontale interna all'edificio deve essere ridotta al minimo (max. 1mt.) ed avere un'inclinazione



### 2.2.3 VENTING OF THE ROOMS

The natural draught boilers are of open combustion to room and are scheduled for have laced the chimney: the combustive air has withdrawn directly from the environment in which the boiler is installed.

The rooms in which the boiler is placed will be able to have a ventilation of direct type (with taking of air in the same place where the boiler is installed), or have an indirect ventilation (with taking of air in the adjoining places) provided that they come respect the conditions under suitable:

#### DIRECT AIRING

- the place must have an opening of equal airing to 6 cm<sup>2</sup> for each installed [kW] and in all the cases never inferior to 100cm<sup>2</sup>, practiced directly on the wall toward the outside;
- the opening must be nearest possible to the floor;



## 2.4 HYDRAULIC CONNECTIONS

### Domestic water

Supply net pressure is to vary from 1 to 6 bar. Install a reduction in case of higher pressure. Supply water strength influences the cleaning frequency of the exchange serpentine pipe. The possibility of installing water treatment adequate appliances depends on water characteristics.

### System loading

Slowly open the loading cock up to reaching about 1 bar system pressure, which can be controlled through the pressure gauge situated on the facial panel. Close the evacuation cock again.

Make the radiator air bleed using the proper manual valves.

When the system is cold set the system temperature at 1 bar.

In case of installation of the boiler in local where the temperature environment can go down below 0°C, we recommends you to fill the heating system with antifreeze solution.

You advises to use solutions of glicole already diluted for avoiding the risk of uncontrolled dilutions.

ETHILIC GLYCOLE (%)	FREEZING TEMPERATURE (°C)
6	0,00
10	-3,90
15	-6,10
20	-8,90
25	-11,70
30	-15,60
40	-23,40
50	-35,50

### Suggestions and advice to avoid system vibrations and noises.

- avoid the use of pipes with reduced diametres;
- avoid the use of bends with reduced radius;
- it is better to have a hot system cleaning in order to eliminate all the impurities coming from pipes and radiators - particularly oil and fat substances - which might damage the circulating pump. e dai radiatori (in particolare oli e grassi) che rischierebbero di danneggiare il circolatore.

## 2.5 ELECTRIC CONNECTIONS

The boiler is set to work with a 230V / 50Hz single-phase tension. Connections have to be effectuated by means of proper cables which come out of the boiler.

There is also an external cable for the ambient thermostat. Connect the thermostat after having eliminated the jumper on the T.A cable terminal.. ( ATTENTION: *the T.A. connection works by net tension; therefore, you should use plastic models or if they are made by metal you should connect them to an efficient earth system*).

The boiler connection has to be protected by means of a 2 pole isolator and a proper fuse (1A).

The appliance has to be connected to an efficient earth system.

Follow present local regulations about safety.

N.B.: respect the phase and neutral position: an eventual inversion of these two positions results in a block of the ignition panel.

N.B.: ARCA srl declines every kind of responsibility for damages to persons, animals or things caused by the lack of a proper earth system connection and local regulation attention.

## 2.6 GAS CONNECTION

Effect it I lace respecting the norms of the country meticulously.

Making sure that the pipeline of the gas has an adequate in operation section of his length.

Before effect the connection check that the characteristics of the distributed gas are equal you to those bring on the dataplate of the boilerif these differs is necessary new regulations.

Insert a faucet of interception between the net of feeding of the gas and the boiler.

Open doors and windows and avoid the presence of free flames.

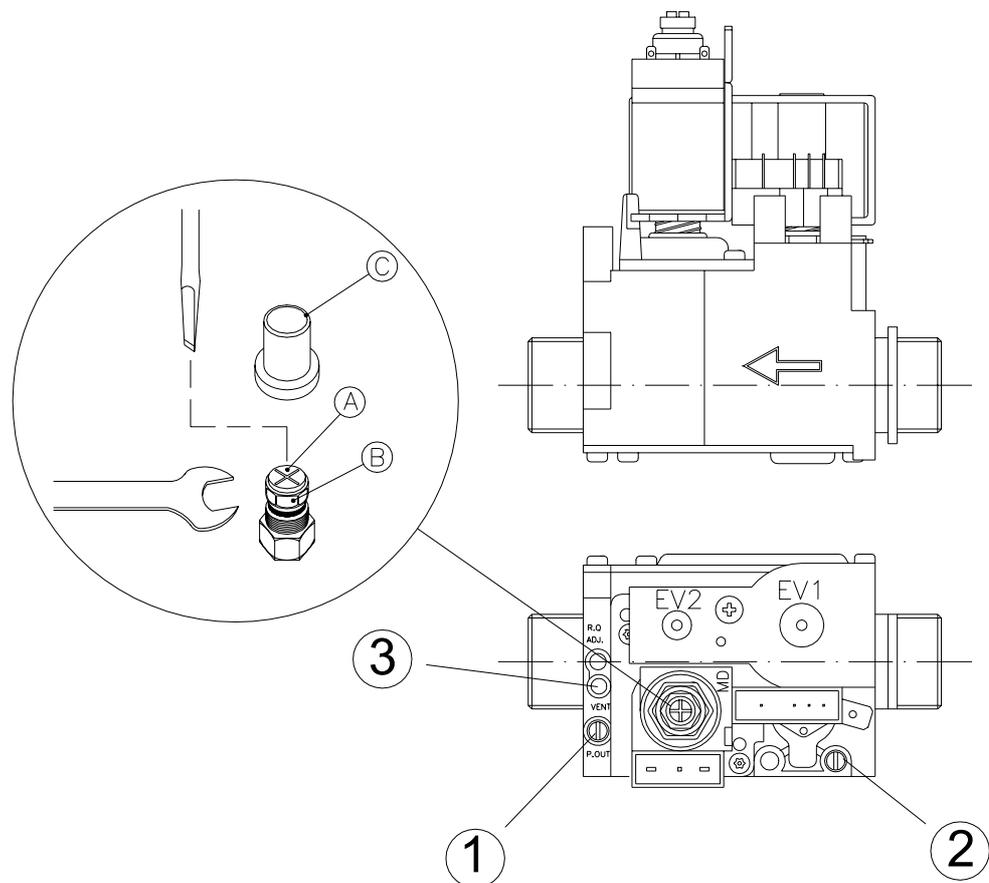
Clean the air contained in the plant tuba-uncle-ni-apparatus.

With the out boiler check that they there are not escapes of gas.

In these conditions observe the gas meter counter for at least 10 minutes for verify that it doesn't signal any pas-wise of gas.

Verify, in each case, all the line of gas with a solution or equivalent product.

**CAUTION!** For running with LPG is necessary the installation of a reduction gear of pressure awry of the boiler.

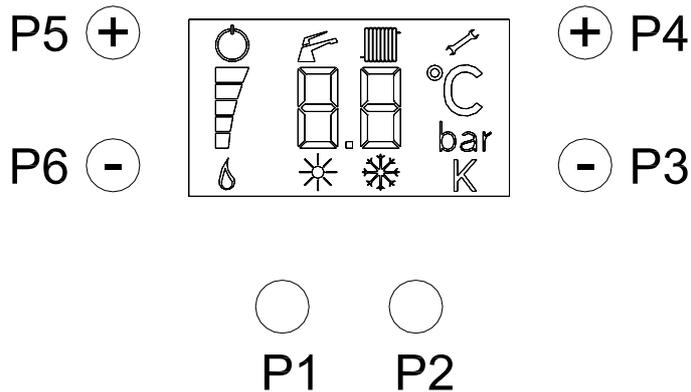


- 1 -Presa pressione  
bruciatore
- 2 - Presa pressione gas di  
rete
- 3 -Vent
- A -Vite regolazione  
pressione minima
- B - Dado regolazione  
pressione massima
- C- Cappuccio di  
Protezione

To perform the control of the pressures to the burner, to insert the probes of the manometer in the available takings of pressure on the valve gas (you see fig.).

**N.B. check that the pressure and the course of the gas of net are enough to guarantee the correct operation of the instrument to perform the measure to power on burner.**

## 2.7 SETTING OF CONTROL PANEL



You can set 4 ways of operation:

a) Normal way:

Mode of functioning of the boiler, temperature of supply, level of gas modulation and presence of flame are visualised. Possible anomalies are visualized as besides from coding at page 27.

b) Mode of visualization of boiler parameters:

It is activated by pushing P1+P2 for 6s. You can visualize in order:

Heating set

- supply temperature

Domestical hot water set

- domestical hot water temperature

- water supply pressure

- heat of ignition

- nominal heat output

c) Mode of parameters setting:

It is activated by pushing P1+P2 for 9s. You visualise alternatively the number of the parameter Px and the current value. Pushing the keys P3 and P4 is possible to see in sequence the modifiable parameters, otherwise with the keys P5 and P6 it is possible to modify its value.

Pressing P3+P4 you can go out of the function without memorizing the changes.

Pressing P2 for 5s you go out the menu and you memorize the changes.

The available parameters are:

- P1 Power of ignition (by 0 % to 99 % of maximum value of range of regulation)
- P2 Power of heating (by 0 % to 99 % of maximum value of range of regulation)
- P3 Anti heating cycling timer (by 0 % to 99 % of 6 minutes)
- P4 oF = post-ventilation of fan off / on = post ventilation of fan on
- P5 Off = metano / on = GPL
- P6 Not available
- P6 oF = water's lack: boiler stops / on = water's lack: boiler doesn't stop, but you have to call to call service assistance.
- P7 Minimum heating input (0 ÷ 100 %)
- P8 oF = external sensor off / on = external sensor on
- P9 K OTC (0 ÷ 6)

- Pa type of boiler (0 = domestical hot water and heating system boiler **without tank** and with **2 sensor**/ 1 = domestical hot water and heating system boiler **with tank** and with **2 sensor** or only heating system boiler with tank/ 2 = domestical hot water and heating system boiler **without tank** or only heating system boiler **without tank** and with **1 sensor**)
- Pb type of DHW exchanger (oF = with plates /on = with little tank)
- Pc minimum of heating supply temperature. (+15 ÷ +50) °C

d) Mode of visualisation of historical failure.

It is activated by pushing P1+P2 for 12s. You visualize alternatively the number of index failure(look at page 20).

By pushing P3+P4 you go out of the function.

By pushing P2 for 5s you can delete the historical of failure.

## 2.8. ADJUSTMENT INSTRUCTIONS: NOMINAL HEAT AND MINIMUM HEAT

The boilers are set you set in our factory and they are predisposed for working with the type of gas of the data plate.

Check the values of pressure min/max however in how much not all the nets distribute the pressure nominal gas, value on which the instrument has been regulated in factory.

Check and eventually correct the thresholds of setting to proceed in the following way.

- Insert a manometer for gas on the taking of pressure" 1";
- Turn on the boiler withdrawing the maximum course of sanitary water;
- Make sure that the spool of modulation is fed.

### 2.8.1 NOMINAL HEAT ADJUSTMENT

1. Turn on the boiler withdrawing the maximum flow of domestical water;
2. Make sure yourself that the spool of modulation is fed;
3. Remove the hood of protection" C";
4. Adjust the maximum pressure acting on the die" B" with the aid of a key from 10 mms; rotating clockwise the pressure increases, rotating counterclockwise in sense the pressure decreases;

### 2.8.2 MINIMUM HEAT ADJUSTMENT

1. Set the boiler on "Winter" position (see at page 26);
2. Close the contact of ambient thermostat if you have it;
3. Set heating regulation at maximum;
4. Set heating power at maximum (see at page 26).
5. Rotate the red die" Á." up to the attainment of the suitable least pressure on the book (clockwise it increases, in sense counterclockwise it decreases);
6. Put again the hood of protection" C."
7. For the values of regulation of the heating power of the boiler see at pages 23,34
8. Withdraw the maximum flow of sanitary water to verify the pressure of the maximum heat.

**Remember to always close the takings of pressure after the use and to verify its correct estate**

## 2.9 SLOW IGNITION AND NOMINAL HEAT ADJUSTMENT

### 2.9.1 SLOW IGNITION ADJUSTMENT

The boiler is delivered already set to the following values:

MET = 30 mm H<sub>2</sub>O

LPG = 80 mm H<sub>2</sub>O

Follow these instructions if you have to change these values:

- open the domestic water to its maximal level and turn the boiler off;
- turn the boiler on;
- check the pressure of the gas to the burner during the cycle of ignition (the pressure of slow ignition is actually maintained to the relevation of the flame).

- push for 9 sec P1 and P2 and see c) "Mode of parameters setting" (look at page 20)

Set P2 as you need.

- To reset the value of slow ignition you need to turn off the boiler, to again act on the parameters and to remake ignitionr verifying the attainment value of desired pressure.

ATTENTION: the slow ignition time for its adjustment is 5 seconds after which the nozzle pressure will increase or decrease according to the energetical need. If a further change is needed repeate this operation by turning the boiler on and off.

## 2.9.2 NOMINAL HEAT ADJUSTMENT

The greatest heating power has to be adjusted according to system needs.

Gas pressure values are shown at pages 23,24 in the table "INJECTORS PRESSURE TABLE".

For the adjustment of the burner gas pressure follow these indications:

- Set the boiler on "Winter" position;
- create a jumper on the ambient thermostat in order to start the boiler;
- push for 9 sec P1 and P2 and see c) "Mode of parameters setting" (look at page 20)

Set P1 as you need.

N.B.: wait about 10 seconds to allow the pressure stabilisation after the slow ignition.

## 2.10 DIFFERENT GASES

This is a LPG or natural gas boiler as well. The transformation from one gas type to the other one has to be carried out as follows:

*Transformation from methane to LPG gas*

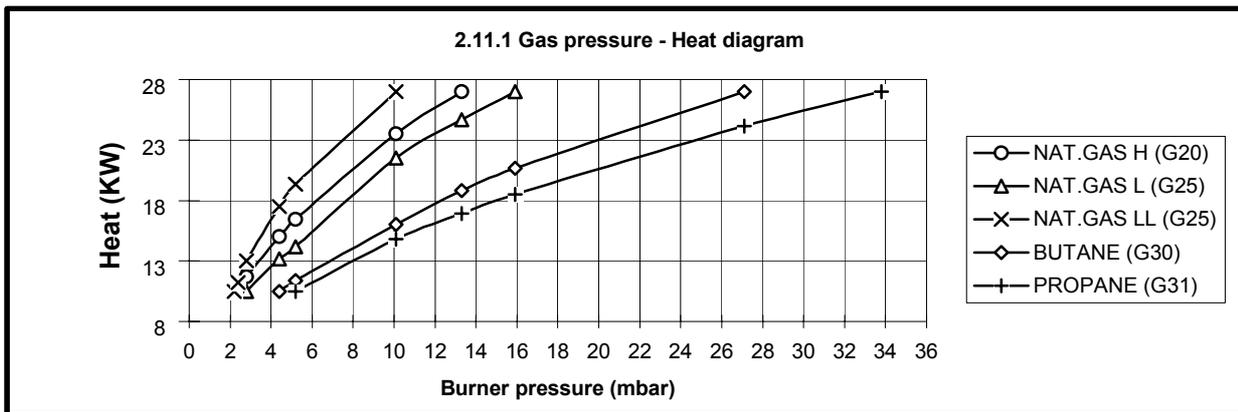
- replace burner injectors
- change the JP1 jumper position and set it to "LPG" position (see the electrical scheme);
- adjust MIN/MAX pressure levels keeping in mind the above shown instructions;
- as far as the injectors diametres and the burner gas pressure are concerned, see the above table;
- after this seal the valve regulator by means of a coat drop.

*Transformation from LPG to methane*

- replace burner injectors;
- change the JP1 jumper position and set it to "METHANE" position (see the electrical scheme);
- adjust MIN/MAX pressure levels keeping in mind the above shown instructions;
- as far as the injector diametres and the burner gas pressure are concerned, see the above table;
- after this seal the valve regulator by means of a coat drop.

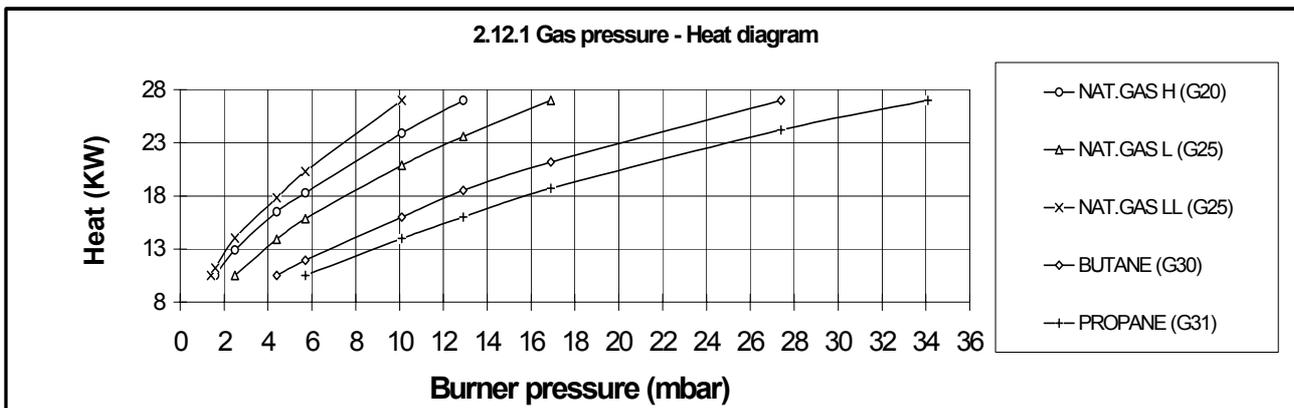
## 2.11 INJECTORS PRESSURE TABLE: PIXEL 25 N

PIXEL 25 N			Injectors diameters		Gas diaph.	Burner pressure	
Type of gas	P.C.I	Inlet pressure	Quantity	$\Phi$	$\Phi$	Min. Heat = 10,5 KW	Nom. Heat. = 27 KW
	MJ/m3	mbar	n°	mm	mm	mbar	mbar
Metano G20 (2H+)	34,02	20	13	1,20	5,9	2,3	13,3
Metano G25 (2H+)	29,25	25	13	1,20	5,9	2,8	15,9
Metano G25 (2LL)	29,25	20	13	1,40	-----	2,2	10,1
Butano G30	116,09	28/30	13	0,75	-----	4,4	27,1
Propano G31	88	37	13	0,75	-----	5,2	33,8



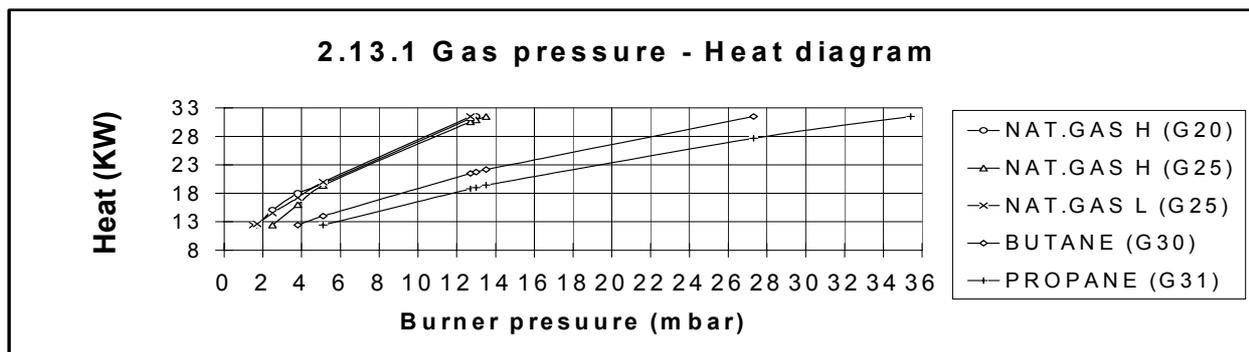
## 2.12 INJECTORS PRESSURE TABLE: PIXEL 25 F, PIXEL ES 25 F, PIXEL IN 25 F

PIXEL 25 F			Injectors diameters		Gas diaph.	Burner pressure	
Type of gas	P.C.I	Inlet pressure	Quantity	$\Phi$	$\Phi$	Min. Heat = 10,5 KW	Nom. Heat. = 27 KW
	MJ/m3	mbar	n°	mm	mm	mbar	mbar
Metano G20 (2H+)	34,02	20	11	1,30	6,5	2,3	14,4
Metano G25 (2H+)	29,25	25	11	1,30	6,5	2,3	14,4
Metano G25 (2LL)	29,25	20	11	1,45	-----	1,6	10,1
Butano G30	116,09	28/30	11	0,8	-----	4,3	28,1
Propano G31	88	37	11	0,8	-----	5,7	35,3



## 2.13 INJECTORS PRESSURE TABLE: PIXEL 29 F

PIXEL 29 F			Injectors diameters		Gas diaph.	Burner pressure	
Type of gas	P.C.I	Inlet pressure	Quantity	$\Phi$	$\Phi$	Min. Heat = 12,4 KW	Nom. Heat. = 31,5 KW
	MJ/m <sup>3</sup>	mbar	n°	mm	mm	mbar	mbar
Metano G20 (2H+)	34,02	20	n°	mm	mm	mbar	mbar
Metano G25 (2H+)	29,25	25	13	1,30	5,9	1,5	12,7
Metano G25 (2LL)	29,25	20	13	1,30	5,9	2,5	13,5
Butano G30	116,09	28/30	13	1,45	-----	1,7	13,5
Propano G31	88	37	13	0,8	-----	3,8	27,3



- only for Francia and Belgio

## 3. MAINTENANCE INSTRUCTIONS

### 3.1 INTRODUCTION

All the maintenance and gas transformation operations have to be carried out by **qualified personnel**.

Moreover, MAINTENANCE operations have to be made at least once a year and according to local regulations.

Before winter it is necessary to make the boiler be controlled by authorised personnel to have an always working system.

Control:

- verify the exchanger cleaning;
- verify the burner cleaning;
- verify the hydraulic system pressure;
- verify the expansion vessel heating system efficiency;
- verify the correct functioning of adjustment and safety thermostats;
- verify the cleaning and integrity of sensor and ignition electrodes;
- control the good circulator running;
- control there are no spills (water, gas smoke evacuation);
- control the gas burner pressure;
- control the combustion output;
- control the emission levels of CO, CO<sub>2</sub> and NO<sub>x</sub>;
- in case of a boiler spare part replacement you should use only original spare parts by ARCA.

Arca refuses every kind of responsibility about every damage caused by the installation of a non original spare part.

**ATTENTION:** this boiler has a safety thermostat linked to the chimney draught which starts to work when there is a combustion product coming back in the ambient. This appliance has never to be placed out of work. If combustion products come back in the ambient, they can cause severe intoxications with even death risks.

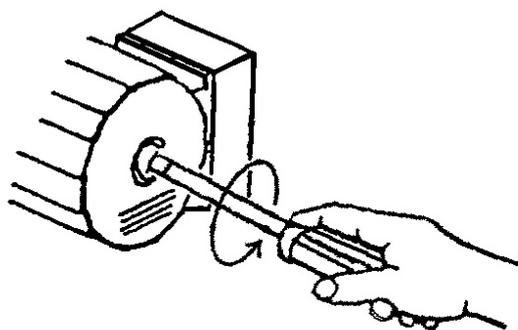
**ATTENTION:** after any boiler service regarding the gas pipe system it is absolutely necessary to control that unions are perfectly running and there are no gas spills.

### 3.2 CIRCULATION DEBLOCKING

When the boiler is new or after a long standstill period you may have a circulator block.

You can comply with this problem as follows:

- unscrew and remove the circulator cap;
  - insert the screwdriver and turn it to deblock the circulator;
- replace the cap.



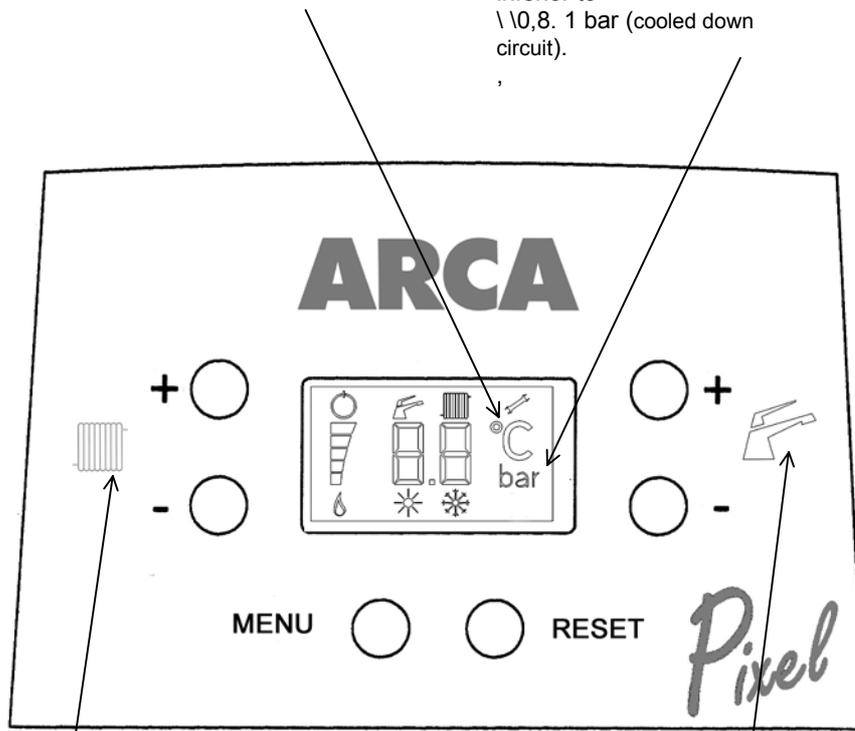
# 4. USER'S INSTRUCTIONS

## 4.1 CONTROL PANEL

**Thermometer:**  
Through the thermometer it is possible to verify the temperature of run of the circuit of heating, previously planned through the relative regulator.

**Manometer:**  
It visualizes the pressure of the heating water; the value of such pressure doesn't have to be inferior to 0,8. 1 bar (cooled down circuit).  
If the pressure had to be inferior to \ 0,8. 1 bar (cooled down circuit).

it is necessary to handle the restoration of the correct value acting on the charge valve. This operation must be performed cooling down circuit.



**Regulator temperature domestical water:**  
The function of this handle grip is to fix the value of the temperature of use of the domestical water; acting counterclockwise in sense the lowest value of the temperature impostabile is gotten



**Regulator temperature of heating:**  
Through this handle grip it is possible to plan the temperature desired of the circuit of heating; acting counterclockwise in sense the lowest value of the available temperature is gotten



**Summer**

With the changer in position Summer the boiler is predisposed to run for the onlyproduction of domestical water.



**Winter**

With the changer in position Winter the boiler is predisposed to run both for the heating that for the production of domestical water.

**Reset**

Bring the selector in position of Rearmament to reactivate the operation of the boiler after the intervention of the device of block of the burner.

## 4.2 IGNITION

Open the manual gas supply line cock, located outside of the boiler. Push to the SUMMER or WINTER position: the boiler should ignite automatically. If the boiler does not ignite you will see a failure in the display.

## 4.3 SUMMER MODE

For domestic hot water only.

Push MENU to SUMMER position. Set the domestic water temperature adjustment to the desired setting. The domestic hot water production is activated.

## 4.4 WINTER MODE

For heat and domestic hot water.

Push MENU to WINTER position. Set the heating temperature adjustment to the desired setting. Room thermostat will keep the desired value.

## 4.5 BREAK DOWN SIGNALS

CODE	DESCRIPTION
01	LOCKOUT due to not ignition
02	Failure of heating system pressure <sup>1</sup>
03	Failure of external sensor
04	Failure of heating sensor
05	Failure of DHW sensor
06	LOCKOUT due to high temperature
08	Air pressostat failure/flue gas thermostat
09	Not water circulation

## 4.6 TEMPORARILY TURNING BOILER OFF

You can achieve it by means of:

- the room thermostat ;
- the MENU on the instrument panel;

## 4.7 LONG TERM SHUT DOWN

If the boiler is to remain off for a long period of time, close the gas cock to the boiler. Before start- up, manually turn the rotating part of the circulator pump in case it froze (slightly stuck) during the down time.

## 4.8 SUGGESTIONS

Once a year the boiler should be cleaned and checked to make sure that all components are working properly. Do not adjust the gas valve, this is to be done only by a licensed authorized technician.

If there is a lockout, turn knob to reset position. If the problem happens often, call a licensed authorized technician.

---

<sup>1</sup> Anomaly is visualized and prevented the starting the burner for  $P < 0,25$  bar. The starting of the burner is allowed for  $P > 0,4$  burner

Subsequently to anomaly the burner starts correctly working after the pressure of heating system is corrected. To return to the normal visualization press the P2 button.

Through parameter P6 is possible to start the burner however even if it foresees anomaly pressure plant, that comes all the same visualized.

## 4.9 FUNCTIONING PROBLEMS

### SITUATION

1 The burner flame does not sparkle

### POSSIBLE CAUSES

- A. The water temperature is higher than that of the adjustment thermostat;
- B. The gas cock is closed;
- C. Out of working button;
- D. Lack of flame
- E. Lack of the ignition electrode sparkle;
- F. Air in the pipe system;
- G. The safety thermostat has started working;
- H. There is no system pressure .

### REMEDIES

- A. Bring the adjustment thermostat to an higher temperature;
- B. Open the gas cock;
- C. Reset it;
- D. Call an expert;
- E. Call an expert;
- F. Repete the ignition procedure;
- G. Call an expert;
- H. Open the charge cock and re-establish the pressure level.

### SITUATION

2 Violent ignition

### POSSIBLE CAUSES

- A. Flame instability;
- B. Insufficient gas flow;
- C. Uncorrectly placed ignition electrodes.

### REMEDIES

- A. .Call an expert;
- B. Call an expert;
- C. Call an expert.

### SITUATION

3 Gas odour

### POSSIBLE CAUSES

- A. Gas system leakage ( of both the internal and external pipe system).

### REMEDIES

- A. Close the main gas cock and call an expert.

### SITUATION

4 Boiler condensation

### POSSIBLE CAUSES

- A. The boiler temperature is too low.

### REMEDIES

- A. Adjust the boiler thermostat to an higher temperature.

### SITUATION

5 Cold radiators in winter

### POSSIBLE CAUSES

- A. The selector is to "SUMMER" position;
- B. The ambient thermostat is out of working or it has been adjusted to a too low temperature;
- C. Closed radiator system;
- D. Misfunctioning three ways valve.

### REMEDIES

- A. Bring it to "WINTER" position;
- B. Turn the ambient thermostat on and set an higher temperature;
- C. Open system or radiators valves;
- D. Call an expert.

### SITUATION

6 Domestic warm water little production.

### POSSIBLE CAUSES

- A. The domestic thermostat temperature is too low;
- B. Too many warm water samples;
- C. The burner gas adjustment is not correct.

### REMEDIES

- A. Increase in the domestic thermostat temperature;
- B. Partially close the warm water cock;
- C. Call an expert.



TECNOLOGIE PER L'AMBIENTE

Via Giovanni XXIII, 105 - 20070 S.Rocco al Porto (LODI)  
Tel.: 0377/569677 - Fax.: 0377 569456

# DECLARATION OF CONFORMITY

The undersigned Michael Cavallini managing director of the ARCA S.r.l. with registered office 1° May, 16, San Giorgio –Mantova - Italy

declares

that he boilers

BASEL 21 N, BASEL 21 N R, BASEL B 21 N, ECOS 21 N, ECOS 21 N R, ECOS B 21 N, ECOS B 21 N INOX, POCKET 24 N, POCKET 24 N R, ECOS 120/21 N, ECOfast 25 N, ECOfast 25 N R, ECOfast B 25 N, ECOfast B 25 N INOX, ECOfast 120/25 N, PIXEL 25 N, PIXEL 25 NR (**PIN CODE: 0068AT020**),

BASEL 21 F, BASEL 21 F R, BASEL B 21 F, ECOS 21 F, ECOS 21 F R, ECOS B 21 F, ECOS B 21 F INOX, INOXA 21 F, POCKET 24 F, POCKET 24 F R, ECOfast 25 F, ECOfast 25 F R, ECOfast B 25 F, ECOfast B 25 F INOX (**PIN CODE: 0068AT018**),

ECOS 30 F, ECOS 30 F R, ECOS 120/30 F, ECOfast 32 F, ECOfast 32 F R, ECOfast 120/32 F, MULTIPLA 32 F TR, MULTIPLA 32 F (**PIN CODE: 0068AT021**),

BASEL 21 F cg, BASEL 21 F R cg, BASEL B 21 F cg, ECOS 21 F cg, ECOS 21 F R cg, ECOS B 21 F cg, ECOS B 21 F, INOXA 21 F cg, ECOS 120/21 F, STYLO IN 21 F, STYLO ES 21 F, ECOfast 25 F cg, ECOfast 25 F R cg, ECOfast B 25 F cg, ECOfast 120/25 F, STYLOfast IN 25 F, STYLOfast ES 25 F (**PIN CODE: 0068AT019**),

BASEL 21 F SUPER, BASEL 21 F R SUPER, BASEL B 21 F SUPER, ECOS 21 F SUPER, ECOS 21 F R SUPER, ECOS B 21 F SUPER, ECOS B 21 F INOX SUPER, INOXA 21 F SUPER, ECOS 120/21 F SUPER, STYLO ES 21 F SUPER, STYLO IN 21 F SUPER, POCKET 24 F SUPER, POCKET 24 F R SUPER, ECOfast 25 F SUPER, ECOfast 25 F R SUPER, ECOfast B 25 F SUPER, ECOfast B 25 F INOX SUPER, ECOfast 120/25 F SUPER, STYLOfast ES 25 F SUPER, STYLOfast IN 25 F SUPER, PIXEL 25 F SUPER, PIXEL 25 FR SUPER (**PIN CODE: 0068AT025**),

BASEL 24 F, BASEL 24 F R, BASEL B 24 F, ECOS 24 F, ECOS 24 F R, ECOS B 24 F, ECOS B 24 F INOX, INOXA 24 F, ECOS 120/24 F, PANELfast 29 F, PANELfast 29 F R, STYLO ES 24 F, STYLO IN 24 F, POCKET 28 F, POCKET 28 F R, ECOfast 29 F, ECOfast 29 F R, ECOfast B 29 F, ECOfast B 29 F INOX, ECOfast 120/29 F, STYLOfast ES 29 F, STYLOfast IN 29 F, PIXEL 29 F, PIXEL 29 FR (**PIN CODE: 0068AT026**).

PIXEL 25 F, PIXEL 25 FR, PIXEL ES 25 F, PIXEL ES 25 FR, PIXEL IN 25 F, PIXEL IN 25 FR (**PIN CODE: 0068BO058**)

Part number **aaBBBxxxxxx**

where aa means the year of production,  
BBB is ARF and means per ARCA FRANCE,  
TRK for Turkish market;  
ARC for all the other country,  
xxxxxx means a progressive number,

prodotte e commercializzate dall'azienda

ARCA Srl in via Giovanni XXIII, 105, S.Rocco al Porto (LODI) con marchio **ARCA**

**Are produced in conformity with the following European Directive:**

**90/396/CEE (Gas Appliance Directive),**

**92/42/CEE (Useful output Directive)**

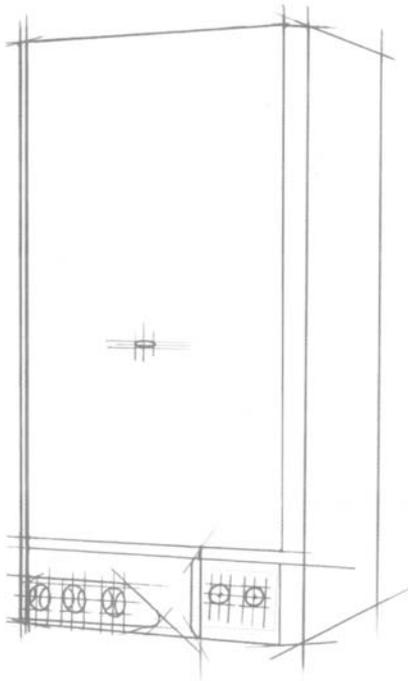
**73/23/CEE (Low Voltage Directive)**

**89/336/CEE (Electromagnetic noise)**

S.Rocco al Porto, 8 Marzo 2005







**CE**

**ARCA**  
**caldaie**



Legal center: Via I° Maggio, 16  
46030 S. Giorgio (Mantova)  
(0376) 372206 Fax (0376) 374646

Factory: Via S. Giovanni XXIII, 105  
26865 S. Rocco al Porto (LODI)  
(0377) 569677  
(0377) 569456