ARISTON

TRAINING MANUAL

FAMILY: Wall Hang boiler

UNIT: Conventional Compact

MODELS: ALTEAS X FF/CF
GENUS X FF/CF

RELEASE: 1V2 29.11.2016

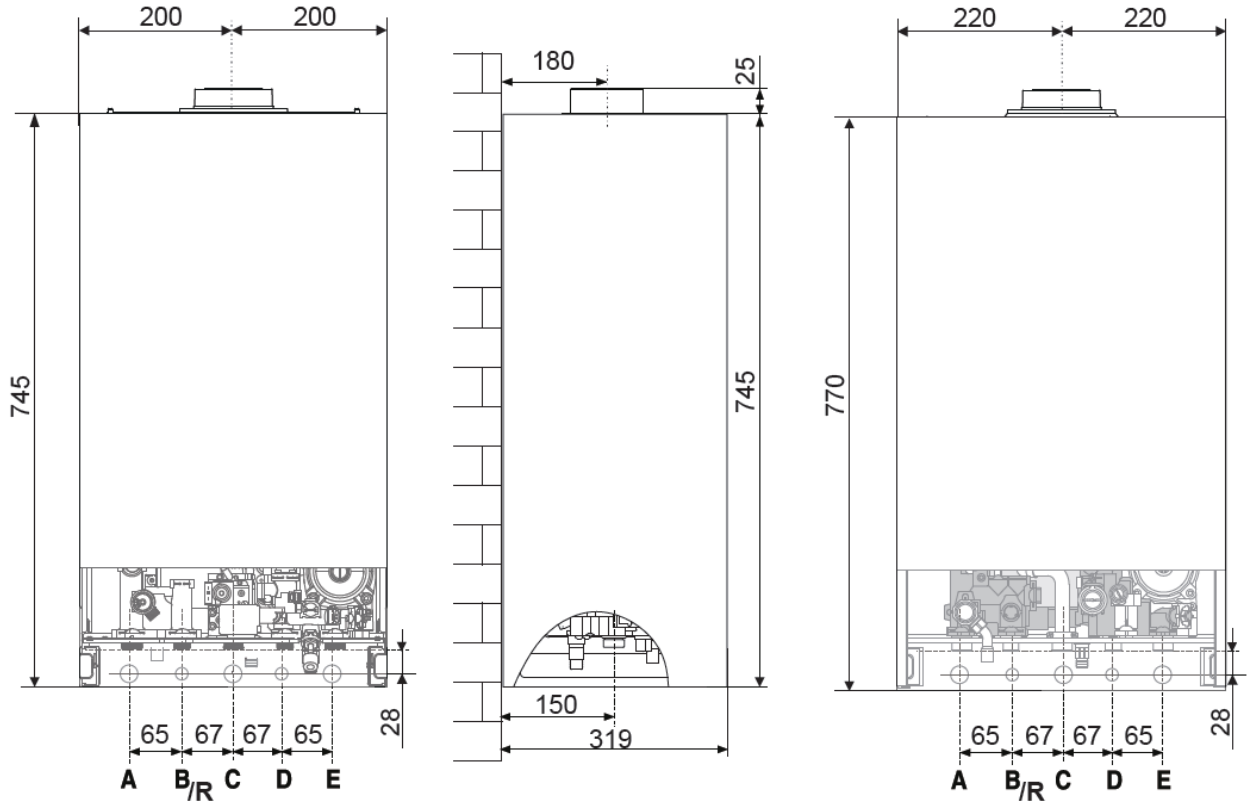
UPDATE

1V2	29/11/2016	MTL	Modified fan management and parameter 222 (error fixing)
1V1	05/09/2016	MTL	External by-pass
1V0	12/07/2016	MTL	Document creation
VERSION	**DATA**	**NAME**	**MODIFICATION**

INDEX

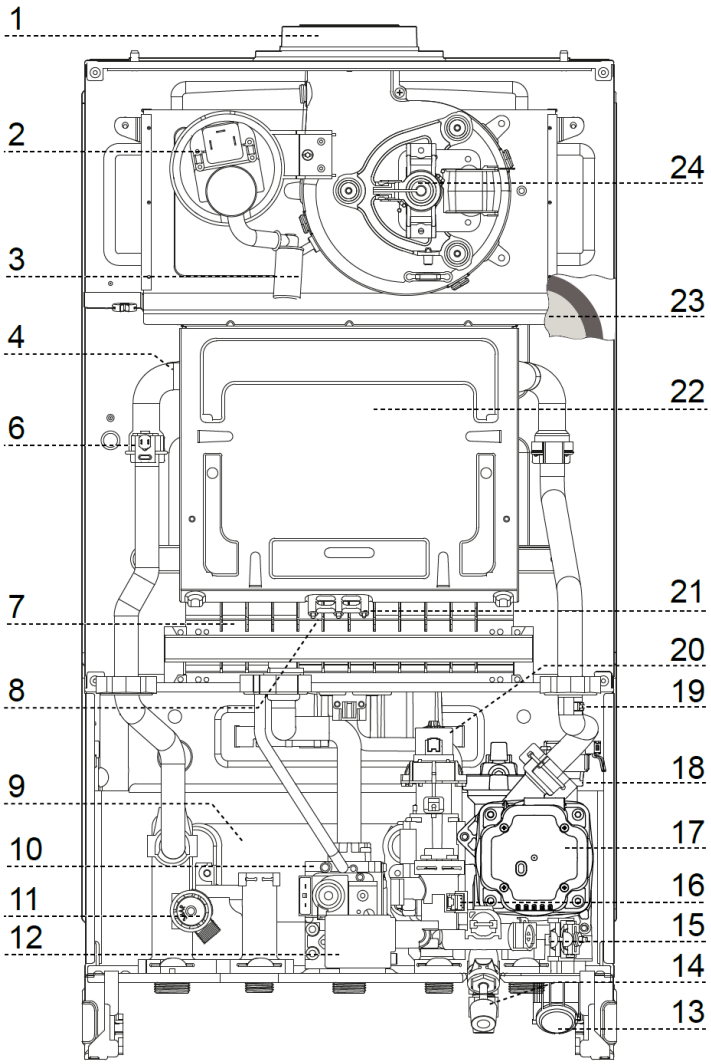
1 GENERAL INFORMATION

1.1 SIZES AND DIMENSIONS



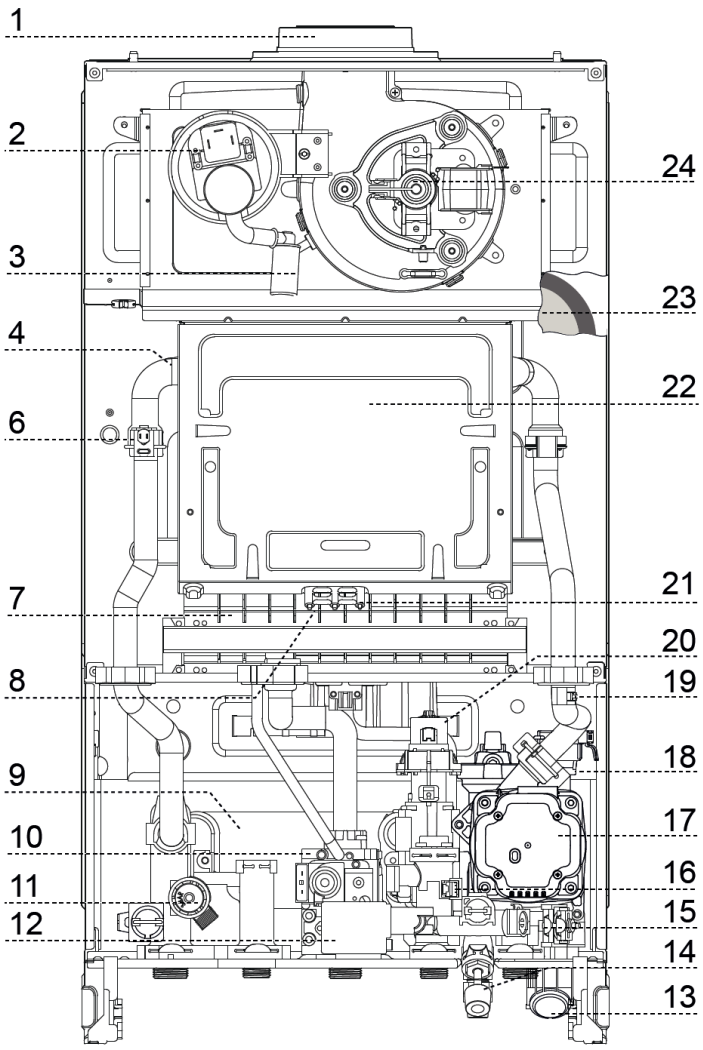
CAPTION	
A	System delivery
B	Hot water outlet
C	Gas inlet
D	Cold water inlet
E	Heating system return
S	Safety valve (3bar)
T	Drain valve

1.2 SEALED CHAMBER ASSEMBLY VIEW (FF) – TILL JULY 2016



CAPTION			
1	Flue connector	**14**	Filling Tap
2	Air pressure switch	**15**	CH Filter
3	Air pressure switch pressure intake condensate exhaust	**16**	Sanitary flow switch
4	Main Heat Exchanger	**17**	Pump
6	NTC1 heating delivery temperature probe	**18**	Heating minimum pressure sensor
7	Burner	**19**	NTC2 heating return temperature probe
8	Ignition electrodes	**20**	3 Way Valve
9	Secondary Heat Exchanger	**21**	Detection electrode
10	Gas valve	**22**	Combustion Chamber
11	3 bar safety valve	**23**	Expansion Vessel
12	Spark generator	**24**	Fan
13	Pressure gauge		

1.3 SEALED CHAMBER ASSEMBLY VIEW (FF) – FROM AUGUST 2016



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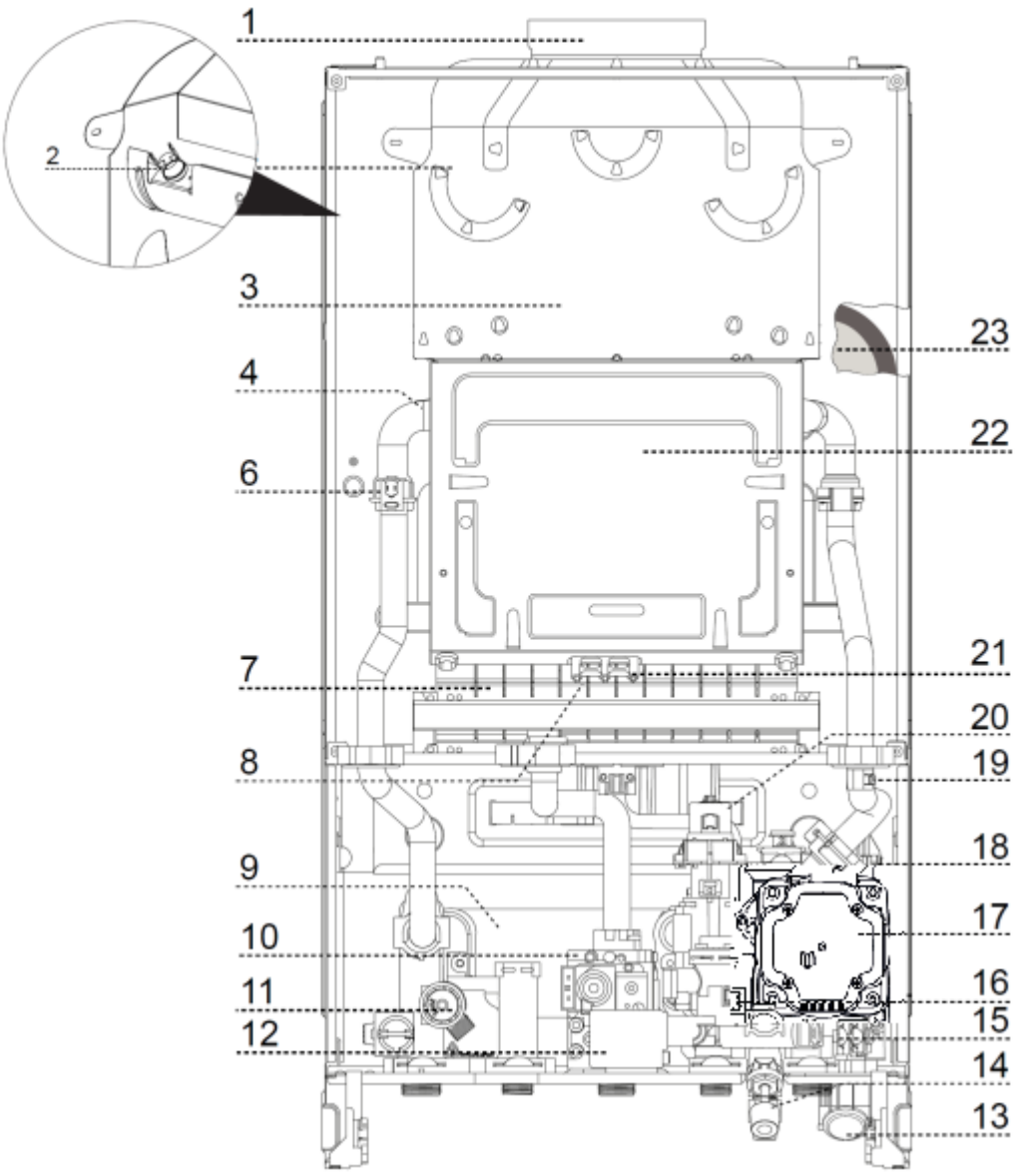
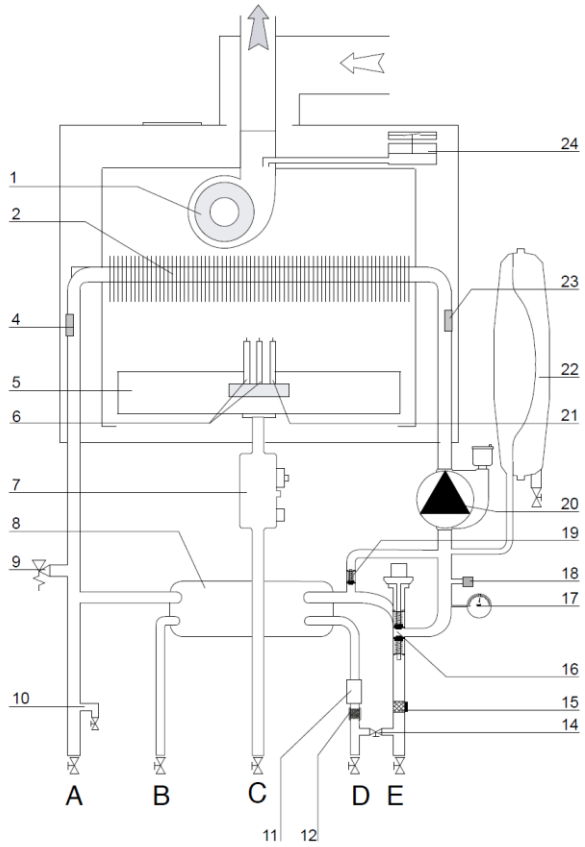
11	3 bar safety valve	**23**	Expansion Vessel
12	Spark generator	**24**	Fan
13	Pressure gauge		

1.4 OPEN CHAMBER ASSEMBLY VIEW (CF)



LEGENDA			
1	Flue Manifold	**13**	Pressure gauge
2	Flue Control Thermostat	**14**	Filling Tap
3	Flue Hood	**15**	CH Filter
4	Main Heat exchanger	**16**	Sanitary flow switch
6	NTC1heating delivery temperature probe	**17**	Pump
7	Burner	**18**	Minimum pressure switch
8	Ignition electrodes	**19**	NTC2 heating return temperature probe
9	Secondary Heat Exchanger	**20**	3 Way Valve
10	Spark generator	**21**	Detection electrode
11	3 bar safety valve	**22**	Combustion Chamber
12	Gas valve	**23**	Expansion Vessel

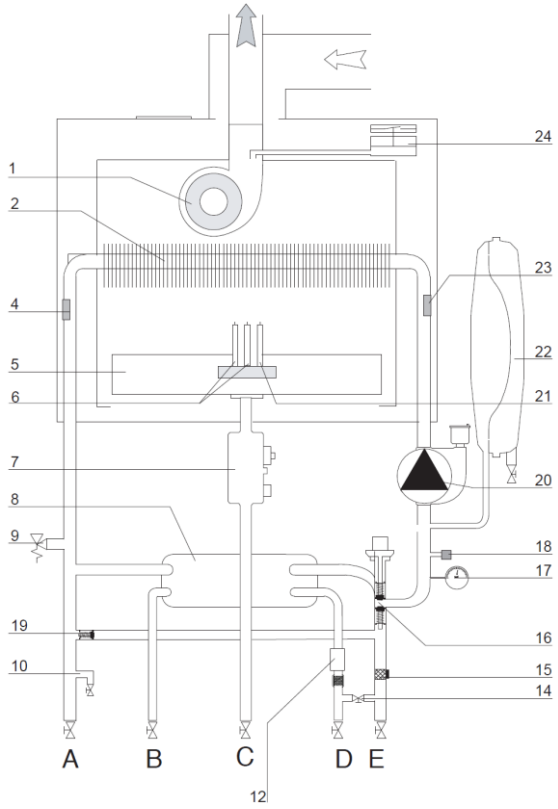
1.5 HYDRAULIC SCHEMES – TILL JULY 2016



Legend:

1. Fan
2. Main Heat Exchanger
4. Central Heating Flow Temperature Probe
5. Burner
6. Ignition Electrodes
7. Gas Valve
8. Secondary exchanger
9. Safety valve
10. Drain valve
11. D.H.W. Flow Switch
12. D.H.W. circuit filter
14. Inlet valve
15. C.H. Filter
16. Diverter valve
17. Pressure Gauge
18. Water pressure switch
19. Automatic By-pass
20. Circulation Pump with air release valve
21. Detection electrode
22. Expansion vessel
23. Central Heating Return Temperature Probe
24. Air Pressure Switch

1.6 HYDRAULIC SCHEMES – FROM AUGUST 2016



Legend:

1. Fan
2. Main Heat Exchanger
4. Central Heating Flow Temperature Probe
5. Burner
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7. Gas Valve
8. Secondary exchanger
9. Safety valve
10. Drain valve
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12. D.H.W. circuit filter
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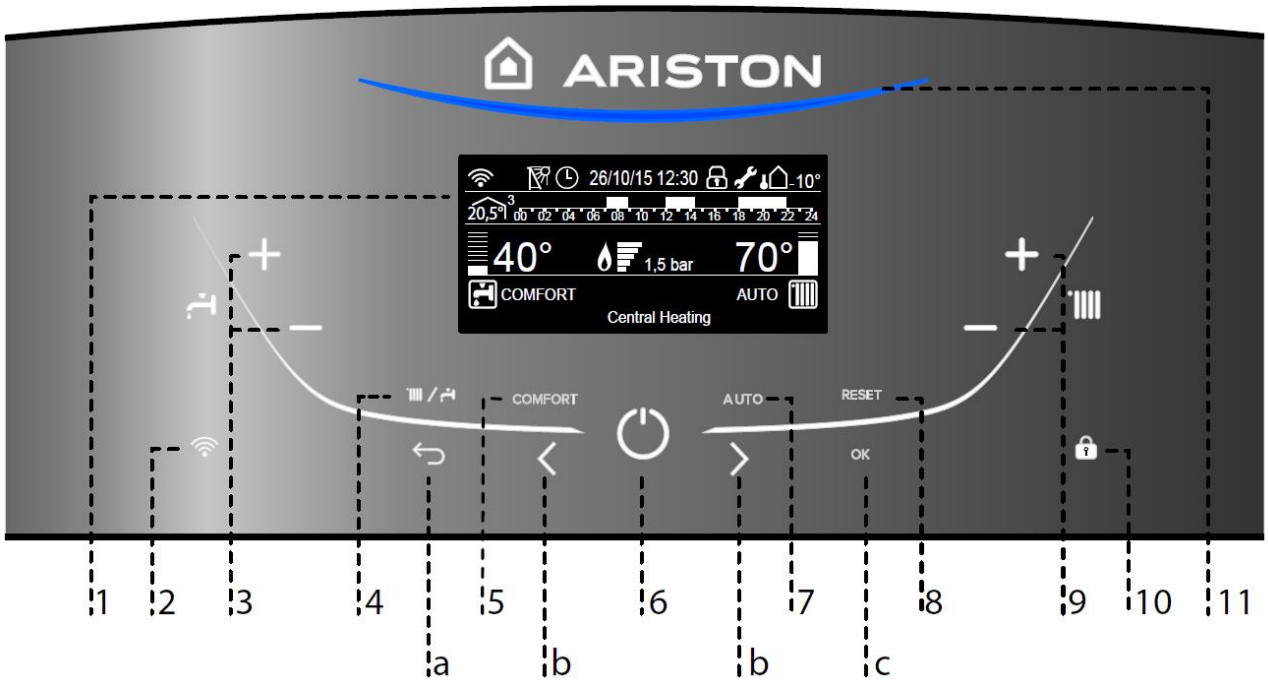
18. Water pressure switch
19. Automatic By-pass
20. Circulation Pump with air release valve
21. Detection electrode
22. Expansion vessel
23. Central Heating Return Temperature Probe
24. Air Pressure Switch

1.7 CONTROL PANEL



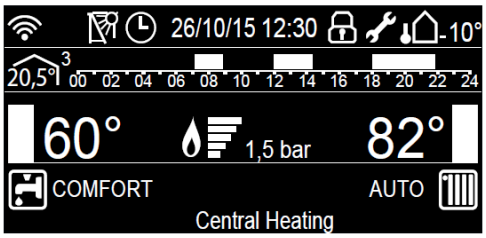
LEGENDA			
1	Display	**9**	CH temperature adjustment buttons zone 1 or offset of thermoregulation slope with Auto-function enabled.
2	Wi-Fi button (enable/disable/configure)	**10**	Key lock
3	DHW Temperature control button	**11**	Flame presence
4	Summer/ Winter button		
5	Comfort button	**a**	Esc button
6	On/Off button	**b**	Navigation keys
7	Auto button	**c**	OK button
8	Reset button		

1.8 DISPLAY

Boiler Base
(default)

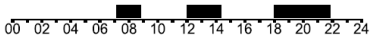
Time & Date
Mode
Set temperature
Comfort function
Auto function
External temperature
CH water pressure

Boiler complete



Time & Date
Mode
Set temperature
Comfort function
Auto function
External temperature
CH water pressure
Description boiler status
Burner power level
Solar
Wi-Fi
Time program
Room temperature

ICON	DESCRIPTION
26/10/15 12:30	Date and time
	Key lock active
42°	Sanitary set temperature and set temperature level
70°	Heating set temperature and set temperature level
	Warning scheduled maintenance
	Heating mode ON (without request)
	Heating mode ON (with request)
	Sanitary mode ON (without request)
	Sanitary mode ON (with request)
	Flame ON and Burner power level
1,5 bar	Heating circuit pressure
ALERT	Error message
AUTO	Auto function ON
COMFORT	Comfort function ON
20,5° 3	Room temperature and zone number
-10°	External temperature (with external probe connected)
	Wi-Fi active
	Wi-Fi waiting configuration

	Solar manager connected
	Heating scheduled time program

2 OPERATION

2.1 HEATING MODE: OPERATING LOGIC

OPERATION RANGE	40°C ÷ 82°C *By pushing the buttons "+" o "-",you can see on the display (for 4 seconds) the set temperature.*

Through the parameters ***425*** (min) and ***426*** (max) is possible to set the maximum and the minimum heating temperature.

The heating request can be performed by: room thermostat 1, room thermostat 2, programming clock, REMOCON and room sensor. Icon and set temperature will be displayed.

HEATING REQUEST

When the boiler is at rest the valve is on the "sanitary" position. When heating is turned on the motor is supplied (inside shaft in), that closed the outlet of the secondary exchanger and puts pump intake in communication with the heating circuit

Three-way valve **ON**

7 secondi

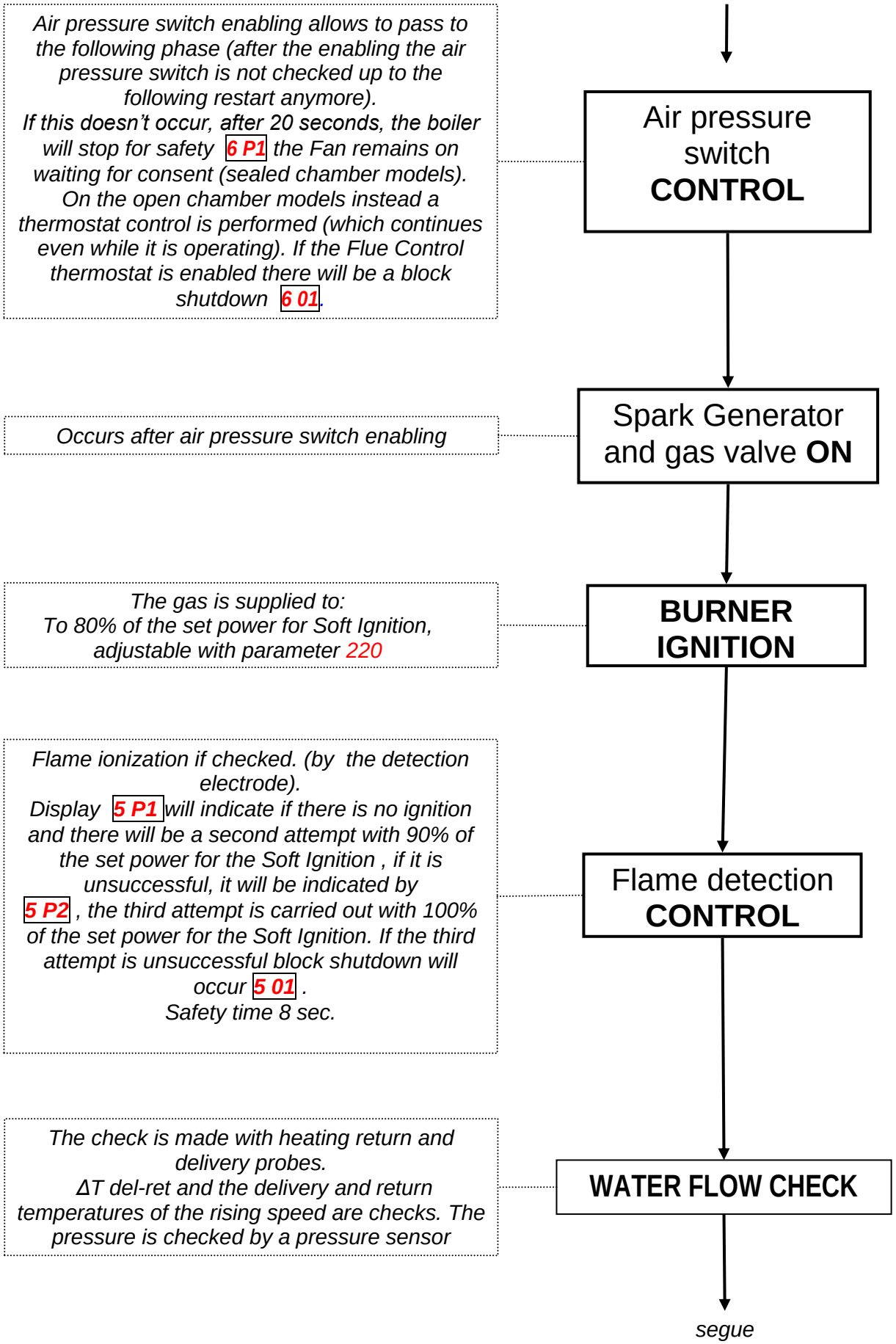
The circulating device start is delayed 7 seconds after heating request in order to allow switching the 3 way valve; when it starts, the circulating device intakes the water coming from the heating system backflow and sends it to the primary exchanger

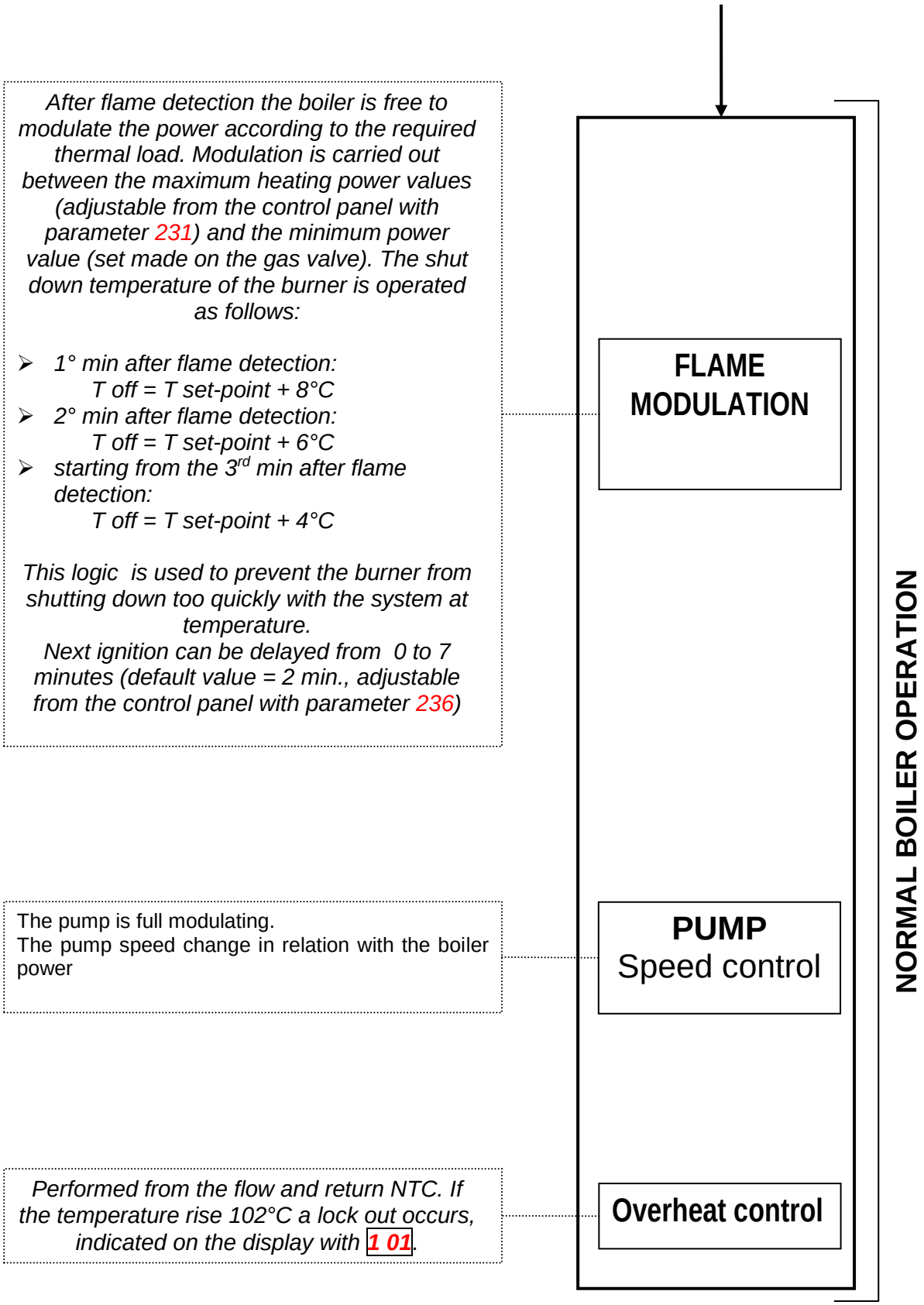
Pump ON

The Fan is supplied (sealed chamber models)

Fan ON

segue


Air pressure switch enabling allows to pass to the following phase (after the enabling the air pressure switch is not checked up to the following restart anymore).
If this doesn't occur, after 20 seconds, the boiler will stop for safety 6 P1 the Fan remains on waiting for consent (sealed chamber models).
On the open chamber models instead a thermostat control is performed (which continues even while it is operating). If the Flue Control thermostat is enabled there will be a block shutdown 6 01.
Air pressure switch CONTROL
Occurs after air pressure switch enabling
Spark Generator and gas valve ON
The gas is supplied to:
To 80% of the set power for Soft Ignition, adjustable with parameter 220
BURNER IGNITION
Flame ionization if checked. (by the detection electrode).
Display 5 P1 will indicate if there is no ignition and there will be a second attempt with 90% of the set power for the Soft Ignition , if it is unsuccessful, it will be indicated by 5 P2 , the third attempt is carried out with 100% of the set power for the Soft Ignition. If the third attempt is unsuccessful block shutdown will occur 5 01 .
Safety time 8 sec.
Flame detection CONTROL
The check is made with heating return and delivery probes.
ΔT del-ret and the delivery and return temperatures of the rising speed are checks. The pressure is checked by a pressure sensor
WATER FLOW CHECK
segue



N.B. Starting from heating request, the **"limit temperature"** (88°C, not adjustable fixed value) remains on executed by the primary exchanger outlet probe (NTC 1).

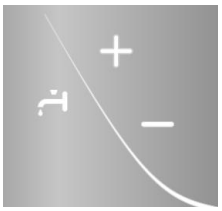
If there is a bad circulation through the heating system, the **automatic by-pass** can be opened (max capacity 350 l/h).

2.2 SANITARY MODE: OPERATING LOGIC

OPERATING RANGE

36°C ÷ 60°C

By pushing the buttons "+" o "-",you can see on the display (for 4 seconds) the set temperature



A demand for Domestic hot water, is detected by the flow switch.
Now the boiler will be working on the SANITARY mode. The display will show icon with the set temperature for sanitary.

DEMAND FOR DOMESTIC HOT WATER

When the boiler is on stand-by the valve is already on the SANITARY position.
If there is a demand while the boiler is operating on HEATING mode, the three- way valve will be switched on SANITARY.
During this passage the circulating device and the burner remain on.
The outlet of the plate exchanger will be in communication with the pump intake directed towards the primary exchanger.

three-way valve

Heating **ON**	Heating **OFF**
Switch shaft position	Shaft position is OK

The pump (max speed), intakes water coming from the outlet of the secondary and sends it to the primary exchanger

Pump **ON**

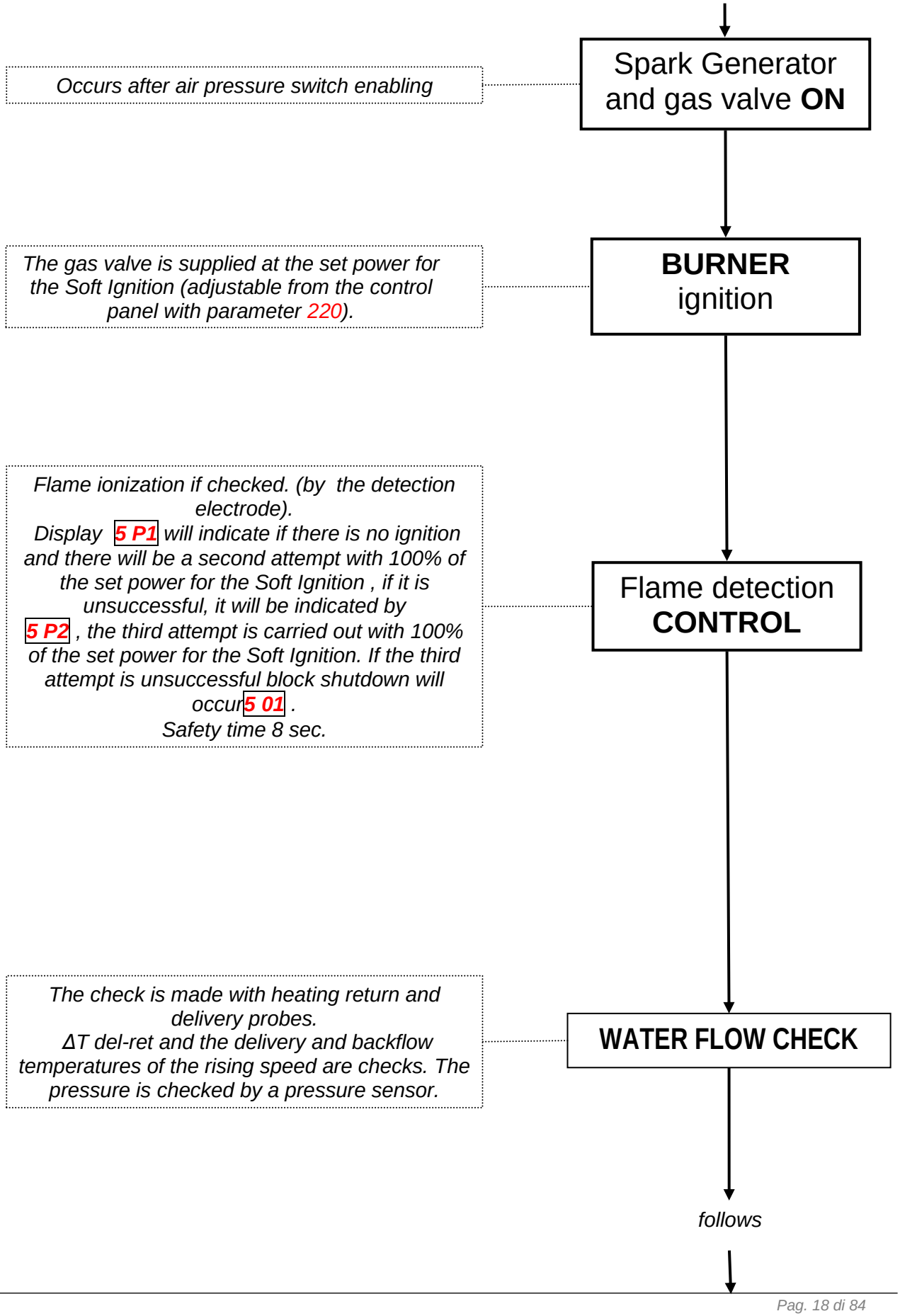
The Fan is supplied (sealed chamber models)

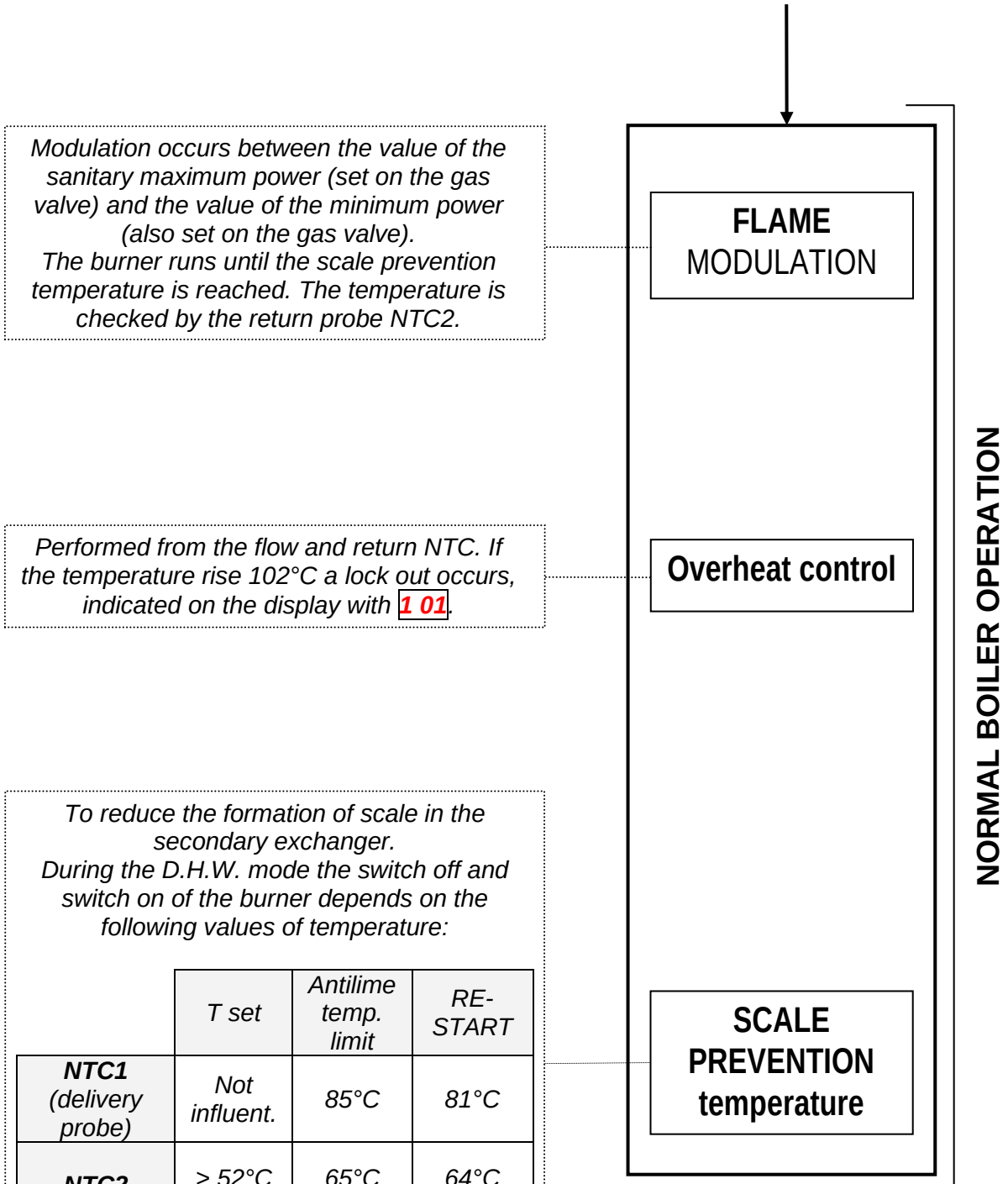
Fan **ON**

Air pressure switch enabling allows to pass to the following phase.
If this doesn't occur, after 20 seconds, the boiler will stop for safety ***6 P1*** *the Fan remains on waiting for consent (sealed chamber models).*
On the open chamber models instead a thermostat control is performed (which continues even while it is operating). If the Flue Control thermostat is enabled there will be a block shutdown ***6 01***.

Air pressure switch **CONTROL**

follows


Occurs after air pressure switch enabling
Spark Generator and gas valve ON
The gas valve is supplied at the set power for the Soft Ignition (adjustable from the control panel with parameter 220).
BURNER ignition
Flame ionization if checked. (by the detection electrode).
Display 5 P1 will indicate if there is no ignition and there will be a second attempt with 100% of the set power for the Soft Ignition , if it is unsuccessful, it will be indicated by 5 P2 , the third attempt is carried out with 100% of the set power for the Soft Ignition. If the third attempt is unsuccessful block shutdown will occur 5 01 .
Safety time 8 sec.
Flame detection CONTROL
The check is made with heating return and delivery probes.
ΔT del-ret and the delivery and backflow temperatures of the rising speed are checks. The pressure is checked by a pressure sensor.
WATER FLOW CHECK
follows



Modulation occurs between the value of the sanitary maximum power (set on the gas valve) and the value of the minimum power (also set on the gas valve).
The burner runs until the scale prevention temperature is reached. The temperature is checked by the return probe NTC2.

Performed from the flow and return NTC. If the temperature rise 102°C a lock out occurs, indicated on the display with ***1 01****.*

To reduce the formation of scale in the secondary exchanger.
During the D.H.W. mode the switch off and switch on of the burner depends on the following values of temperature:

	T set	*Antilime temp. limit*	*RE-START*
NTC1 *(delivery probe)*	*Not influent.*	*85°C*	*81°C*
NTC2 *(return probe)*	*> 52°C*	*65°C*	*64°C*
	<52°C	*62°C*	*61°C*

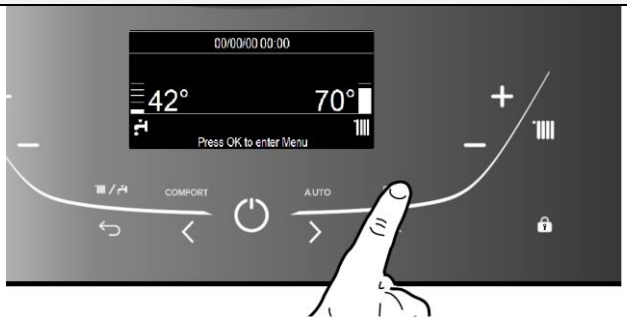
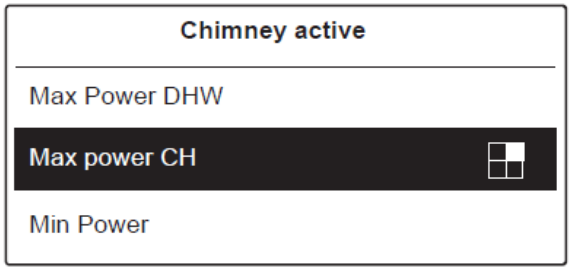
N.B.: *The sanitary switch-off logic could be changed by the parameter 2 53:*

- *0 : Anti-scale (62 o 65°C) ⇨ default*
- *1 : Set-point + 4°C*

3 SPECIAL FUNCTIONS.

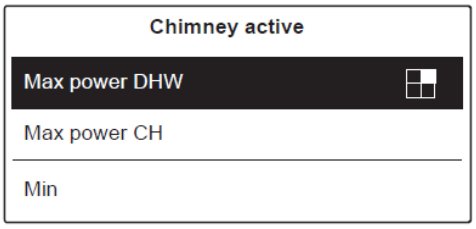
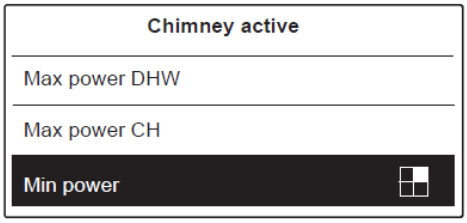
3.1 FLUE CLEANER" Function.

This function is used to perform proper boiler combustion analysis and maximum and minimum gas calibration.
Follow the instructions below to enable it:

PRESS	DISPLAY
 *Press Reset button for 5 continuous seconds*	 *The display will show this indication*

- With the boiler on "Winter" mode, the 3-way valves is positioned on "heating" and the burner turns on even without heating requested.
- With the boiler on "summer" mode:
  - without sanitary demand the burner turns on in heating;
  - with sanitary demand the burner turns on in sanitary.
- The delivery temperature (NTC1) is checked during the "Flue cleaner" function, as follows:
  - "summer" mode → Off: 86°C; On: 81°C;
  - "winter" mode → Off: 89°C; On: 84°C.

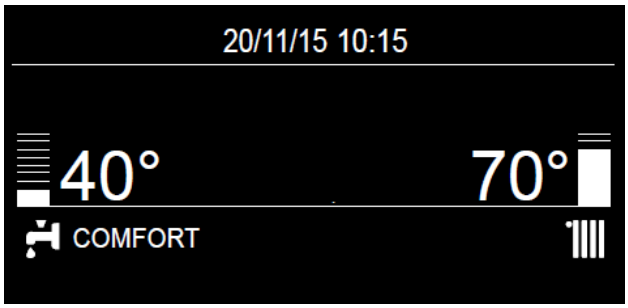
Three different powers can be selected when the function is enabled, after the activation of the function the boiler goes at the maximum heating power, after that is possible change it:

PRESS		DISPLAY	POWER
Push the button ">"			Max sanitary
Push the button ">"			Minimum

To exit the "Flue cleaner" function press the RESET button. However after 30 minutes the function will be disabled automatically.

3.2 “COMFORT” Function.

This function reduces the hot sanitary water output time. The objective is reached by keeping the primary circuit in the boiler hot. To enable this function push the comfort button.



Moreover, by means of parameter 2 50 you can set comfort function as follows:
0:disabled;
1: enabled for 30 minutes after sanitary request;
2: always enabled;

The operating range is variable and depends on the temperature set for the sanitary mode:

TEMP. SET FOR SANITARY MODE	OFF TEMPERATURE	ON TEMPERATURE
36	40	34
37	41	35
38	42	36
39	44	38
40	45	39
41	46	40
42	47	41
43	49	43
44	50	44
45	51	45
46	53	47
47	54	48
48	56	50
49	58	52
50	59	53
51	61	55
52	63	57
53	64	58
54	66	60
55	68	62
56	70	64
57	71	65
58	72	66
59	73	67
60	74	68

3.3 "ANTIFREEZE" Function

This function is enabled only if the ON/OFF selector is turned on position ON. It is operated by means of the temperature detected by the heating delivery probe (NTC1).

	CONDITION	EVENTS	TIME
1ST CASE	The temperature detected by probe NTC1: Ranges between 3°C and 8°C	- The **PUMP** is supplied on speed III - The **3-WAY VALVE** alternatively switches the position of the shaft from 1 minute on "heating" to 1 minute on "sanitary" mode - The **DISPLAY** shows the icon ❄	Until the NTC1 temperature is ≥ 9°C
	⬇ If, after 20 minutes, the **CONDITIONS** described in the 1st CASE are still present (3°C<NTC1<8°C) automatically check the **EVENTS** of the 2nd CASE ⬇		
	CONDITION	**EVENTS**	**T TIME**
2nd CASE	The temperature detected by probe NTC1: Is below 3°C	- The **BURNER** turns on, supplied with minimum power; - The **3-WAY VALE** is positioned on "sanitary" and switch every 30 s DHW/CH - When the temperature is ≥ 40°C the burner turn OFF. For 15 minutes the boiler maintain the temperature between 35°C and 40°C - After 15 minutes there is 2 minutes of post circulation in heating - Into 90 minutes if the temperature decreases again less than 8°C the burner switch on immediately. - The **DISPLAY** shows the icon ❄.	Until the NTC1 temperature is ≥ 40°C

If the NTC1 delivery probe is not working (open or short circuit) the "antifreeze" function check is followed by the NTC2 heating return probe but in these cases only the pump works (the burner doesn't light). The display doesn't show the antifreeze enabling code, but the error code of the NTC1 open or short circuit ***1 10***.

The antifreeze is enabled even if the NTC2 return probe is not working (open or short circuit) but only the pump works (the burner doesn't light). In this case the display doesn't show the antifreeze enabling code, but the error code of the NTC2 open or short circuit ***1 12*** .

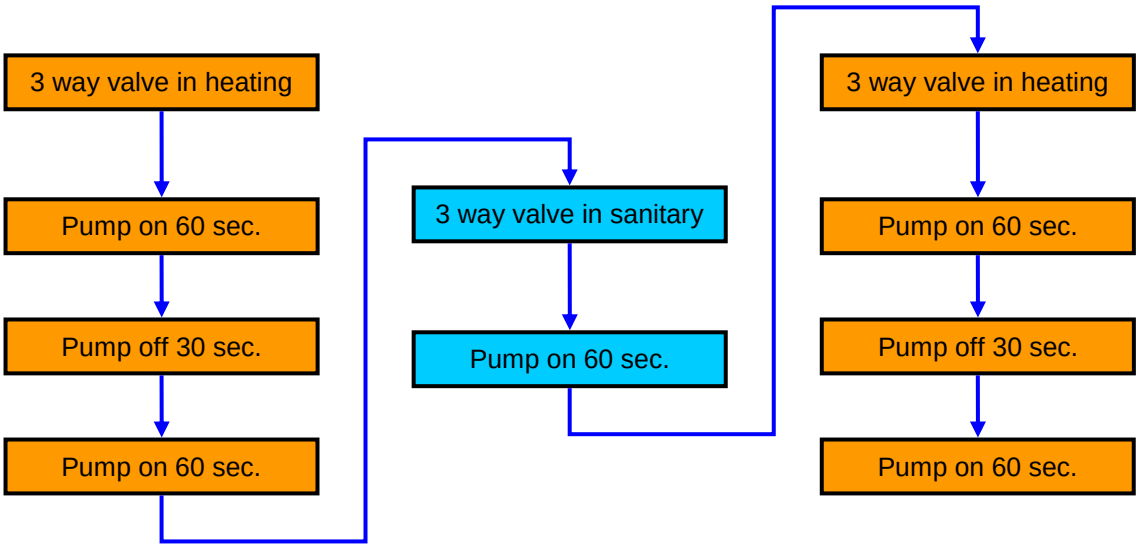
The antifreeze is enabled even if the boiler is shutdown due to no flame detection ***5 01*** or blocked for over heat ***1 01***, but in these cases only the pump works (the burner doesn't light), and the display shows the error code of blocking and not the antifreeze enabling one.
If there is an interruption of the power supply, the boiler maintains in memory all the setting and when the power supply is on the boiler returns in the condition that had before the turning off.

3.4 " WATER FLOW CHECK "

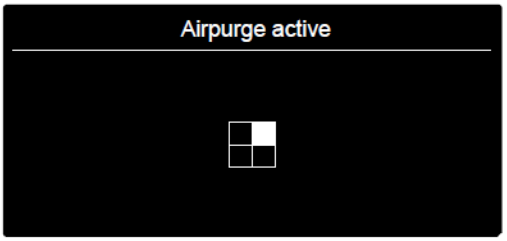
Check	When	What happens
Gradient Tdel > 7°C/sec (checked every 100ms)	Check always with the flame on, except during the first 4 seconds after flame detection.	1. Immediate safety shutdown ***1 P1***: *- 10sec of post-circulation* *- 10 sec of post-ventilation* The boiler restarts after 10sec. 2. If the error occurs other 2 times within the following 4 minutes it will be shutdown ***1 03*** : *- 20sec of post ventilation* *- 1min of post circulation*.
Gradient Tdel > 20°C/sec or **Gradient Tret > 20°C/sec** (checked every 100ms)	Check always with the flame on, and up to 7 sec after each turn off for temperature set or safety shutdown.	1. Shutdown ***1 04***: *- 20sec of post ventilation* *- 1min of post-circulation*.
Tdel – Tret > 55°C	Check always with the flame on, and up to 7 sec after each turn off for temperature set or safety shutdown.	1. Immediate safety shutdown ***1 P2***: *- 10sec of post-circulation;* *- 10sec of post ventilation.* After 10sec the boiler restarts. *2.* If within 4 minutes from the first safety shutdown the defect occurs again there will be a safety shutdown ***1 P2*** : *- 10sec of post-circulation;* *- 10sec of post ventilation.* After 10sec the boiler restarts but the timer is zeroed. *3.* If within 4 minutes from the first safety shutdown the defect occurs again it will be shutdown ***1 05*** : *- 20sec of post ventilation* *- 1min of post circulation*.
Tret > Tdel + 10°C	Check always with the flame on.	1. If the defect occurs for 20 continuous seconds there will be a safety shutdown ***1 P3*** : *- 10sec of post-circulation;* *- 10sec of post ventilation.* After 10sec the boiler restarts. 2. If the defect occurs for 20 continuous seconds another 2 times within 4 minutes it will shutdown ***1 06*** : *- 20sec of post ventilation;* *- 1min of post circulation*.
Tret > Tdel + 30°C	Check always with the flame on.	. Shutdown ***1 07***: *20sec of post ventilation;* *- 1min of post circulation*

3.5 "COMFORT" Function.

This function can be activated by the installer by the parameter 271 (premendo il tasto "Menù/OK") or pressing of the key Winter/Summer (mode) for 5 sec (continues till to the finish (about 6') or pressing of the key Winter/Summer).
Its aim is to help to purge the residual air inside the primary circuit after a filling cycle. At the activation the following cycle is begun:



This cycle can be repeated several times, till the boiler and the heating system are completely purged from air.



3.6 "SELF ADAPTIVE HEATING RESTART DELAY"

With the parameter 2 35 it is possible chose the heating restart delay type:
- 0: manual;
- 1: automatic.

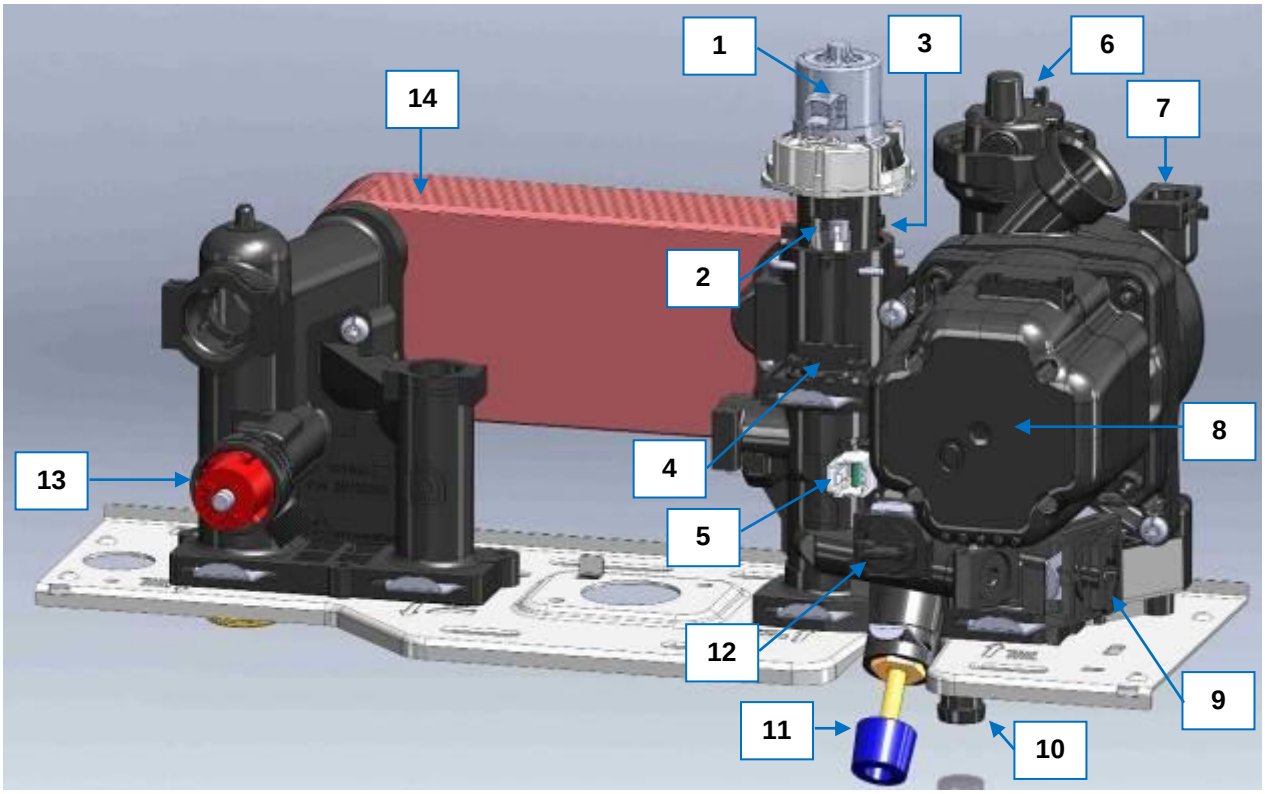
MANUAL: with the parameter 2 36 it is possible set the heating restart delay between 0 and 7 min.

AUTOMATIC: the heating restart delay is calculated in base of the heating set-point temperature, see table below:

Set-point riscaldamento	< 50°C	51-60°C	61-70°C	71-80°C	> 80°C
Ritardo alla riaccensione (minuti)	5	4	3	2	1

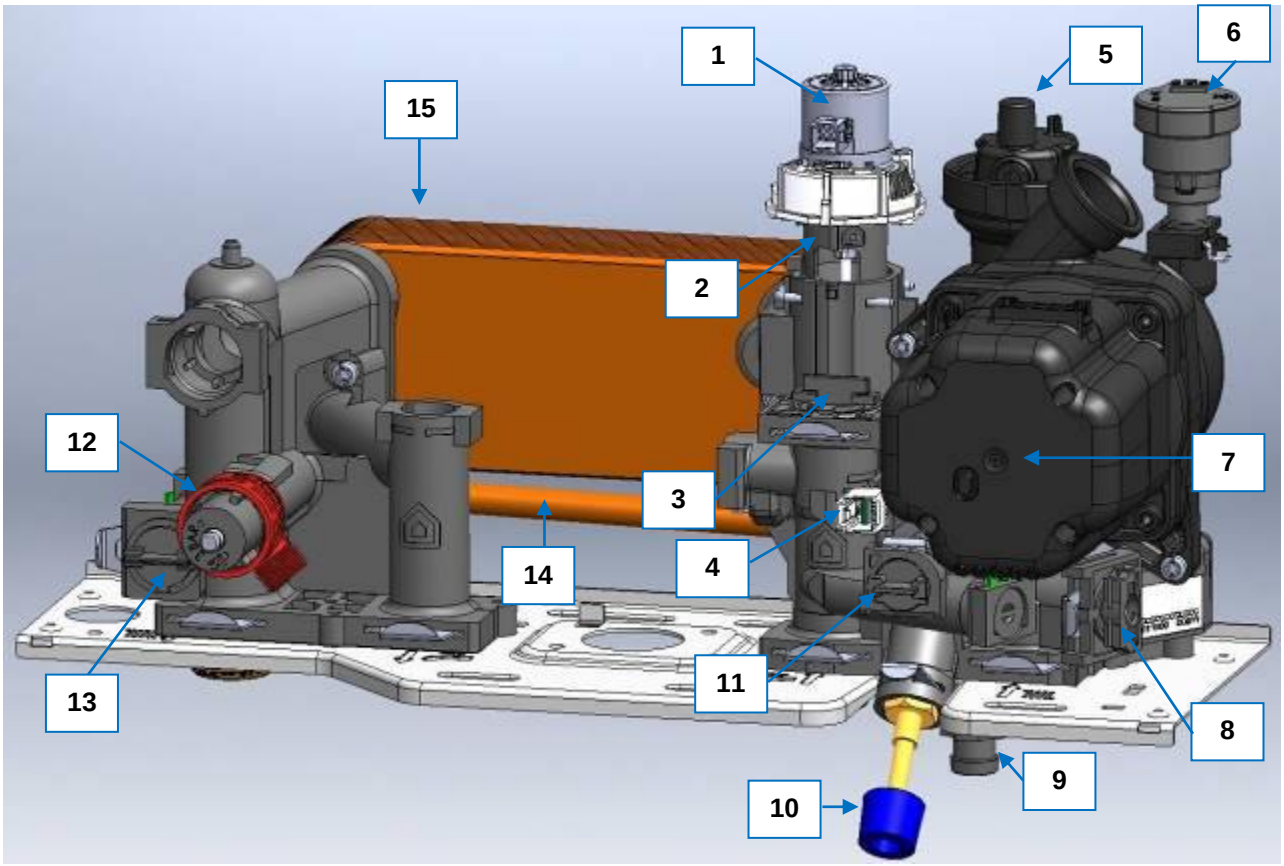
4 HYDRAULIC BLOCK

4.1 COMBI HYDRAULIC BLOCK – TILL JULY



CAPTION			
1	3 way valve motor	8	Pump
2	3 way valve	9	Heating filter and pressure gauge connection
3	By-pass	10	Drain tap
4	Sanitary flow switch	11	Filling tap
5	Reed sensor	12	No back-flow valve
6	Automatic air valve	13	3 bar safety valve
7	Pressure sensor connection	14	Sanitary plate heat exchanger

4.2 COMBI HYDRAULIC BLOCK – FROM AUGUST 2016



CAPTION			
1	3 way valve motor	9	Drain tap
2	3 way valve	10	Filling tap
3	Sanitary flow switch	11	No back-flow valve
4	Reed sensor	12	3 bar safety valve
5	Automatic air valve	13	By-pass
6	Pressure sensor	14	By-pass pipe
7	Pump	15	Sanitary plate heat exchanger
8	Heating filter and pressure gauge connection		

4.3 3-WAY VALVE

The boiler uses a 3-way to change the water distribution (heating system side or secondary exchanger side). It's managed by the PCB that drive the stepper motor. It is formed by a composite material body and an electric stepper motor.
With the boiler on stand-by the 3-way valve is positioned on sanitary mode.
The 3 way valve can have 3 different positions:

- Heating;
- Domestic hot water (DHW);
- Stand-by (position similar to DHW, but with the gasket uncompressed).

Every time that the boiler is supplied the 3 way valve motor does a reset procedure, it does 3 complete switching (DHW → Heating → DHW), after that the position is related to the boiler working mode.
After DHW request (if there is not heating request), the e way valve remains in DHW position for 10 minutes, after that it goes in stand-by position.
At the end of the heating request (if there is not DHW request), after the post-circulation, the 3 way valve goes on DHW position and after 10 minutes it goes in stand-by position.
If the boiler is switched off through the ON/OFF button, the 3 way valve goes immediately in stand-by (if post-circulation is in progress, the 3 way valve goes in stand-by position at the end of the post-circulation).

HEATING POSTITION	DHW POSITION
	

The anti-sticking function of the 3 way valve is performed every 21 h after the last request.

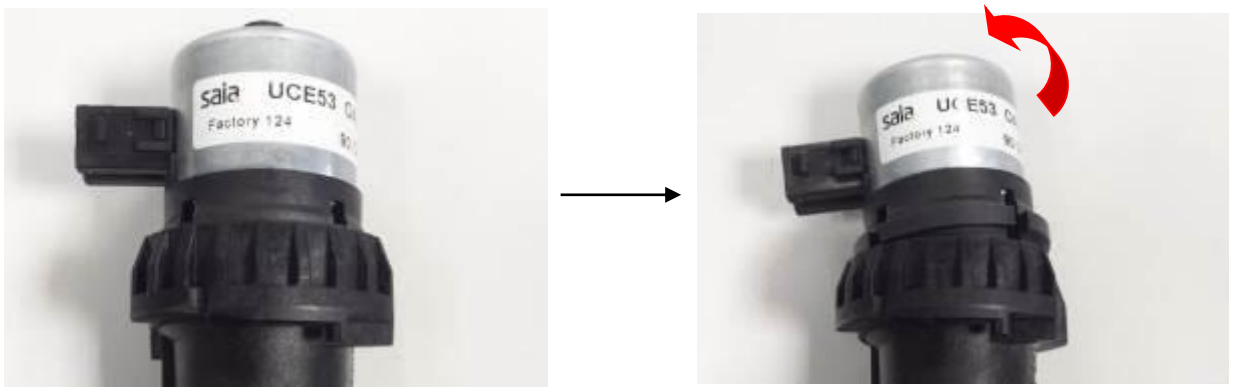
3 WAY VALVE MOTOR DISASSEMBLY:

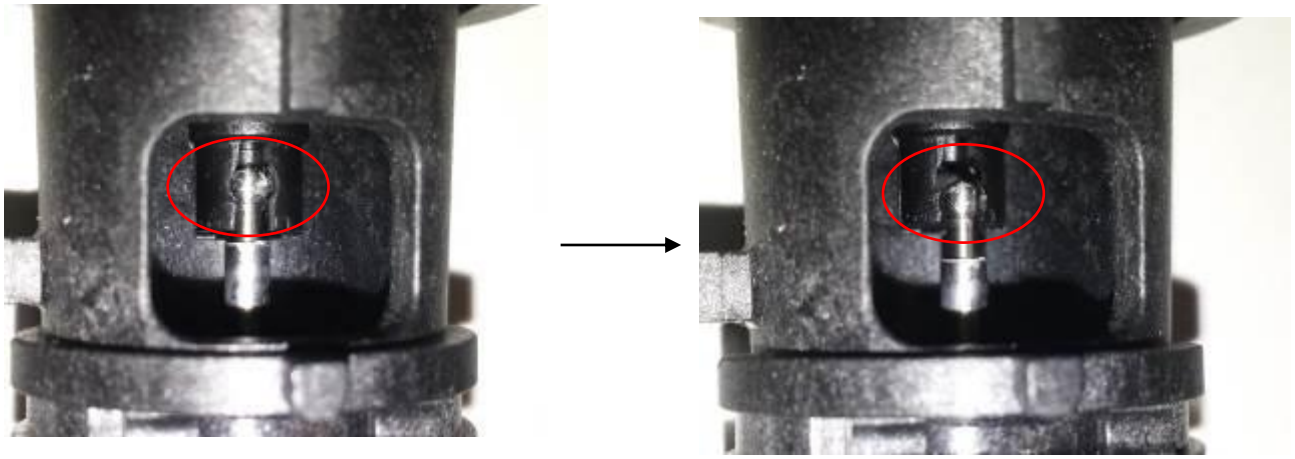
Before disassembly the 3 way valve is mandatory remove the stepper motor.
To remove the stepper motor the 3 way valve must be in DHW or stand-by position, otherwise it is not possible remove it. To do this it is enough switch off the boiler throught the ON/OFF button.

- Remove the motor blocking ring, rotating clockwise.

- Unblock the stepper motor

BLOCKED **UNBLOCKED**



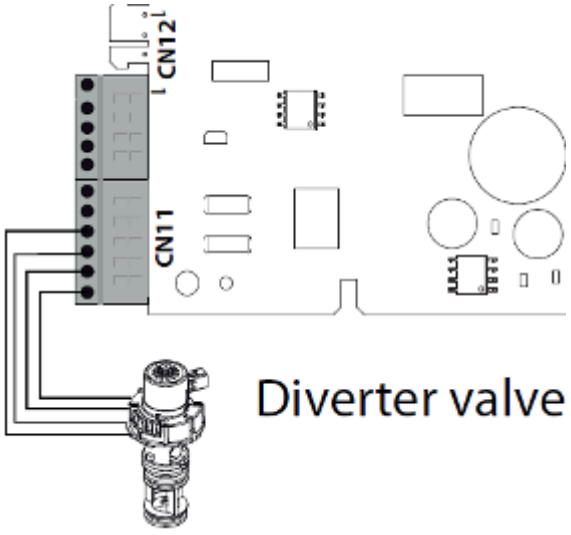


- Remove the stepper motor.

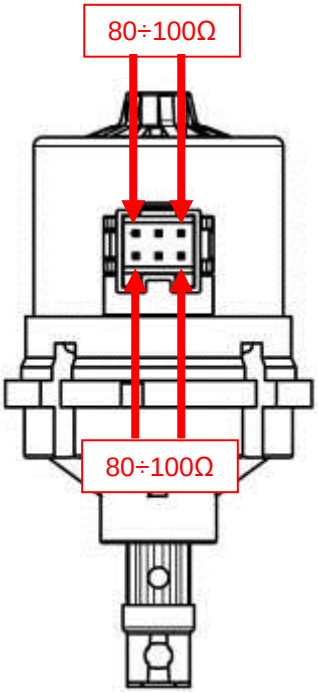
- Remove the 3 way valve (to do it easier it is possible use a flat screwdriver).

4.3.1 Stepper motor

The stepper motor is managed from the PCB.
Switching time (Heating → DHW or DHW → Heating) : about 3sec,.



To check the stepper motor is possible measure the resistance between the following pins. If it is between 80 and 100 Ohm it means that the coils of the stepper motor are ok.



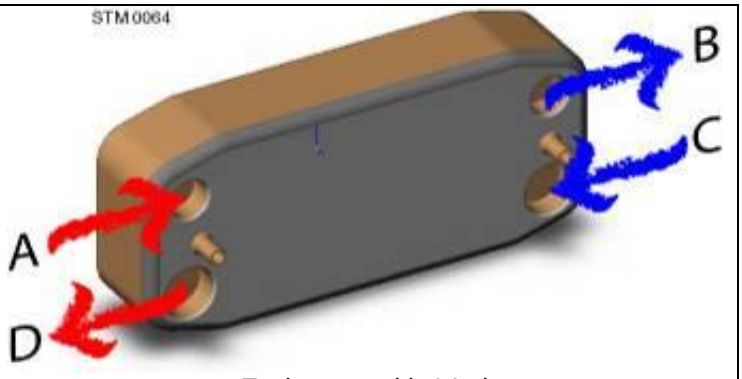
4.4 SECONDARY EXCHANGER

The secondary exchanger is fixed to the hydraulic unit with two screws.
The two points where the screws are fixed are asymmetric with the body of the exchanger so that it can be assembled only in the proper position.

HEAT EXCHANGER

*Hot water from the main exchanger, flows into **A,** transferring its heat and flows out through **B***

*The cold water from the domestic hot water mains, passes through the domestic proportional flow meter (thus starting up the boiler in domestic hot water mode) flows into **C**, heat up and flows out through **D,** ready for use in the distribution network.*



Exchanger with 14 plates

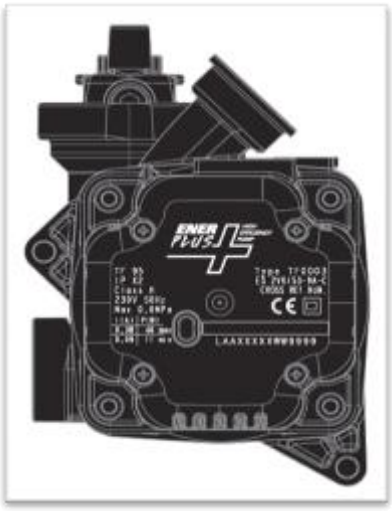
4.4.1 Antiscale limit temperature

Reduces the formation of scale in the secondary exchanger. During SANITARY MODE operation the burner turn off and restart depends on the temperature values detected by probes NTC1 and NTCs indicated here on the right.

	T set	*Antiscale limit temp.*	*START*
NTC1 *(delivery probe)*	*Not influent*	*85°C*	*81°C*
NTC2 *(return probe)*	*> 52°C*	*65°C*	*64°C*
	<52°C	*62°C*	*61°C*

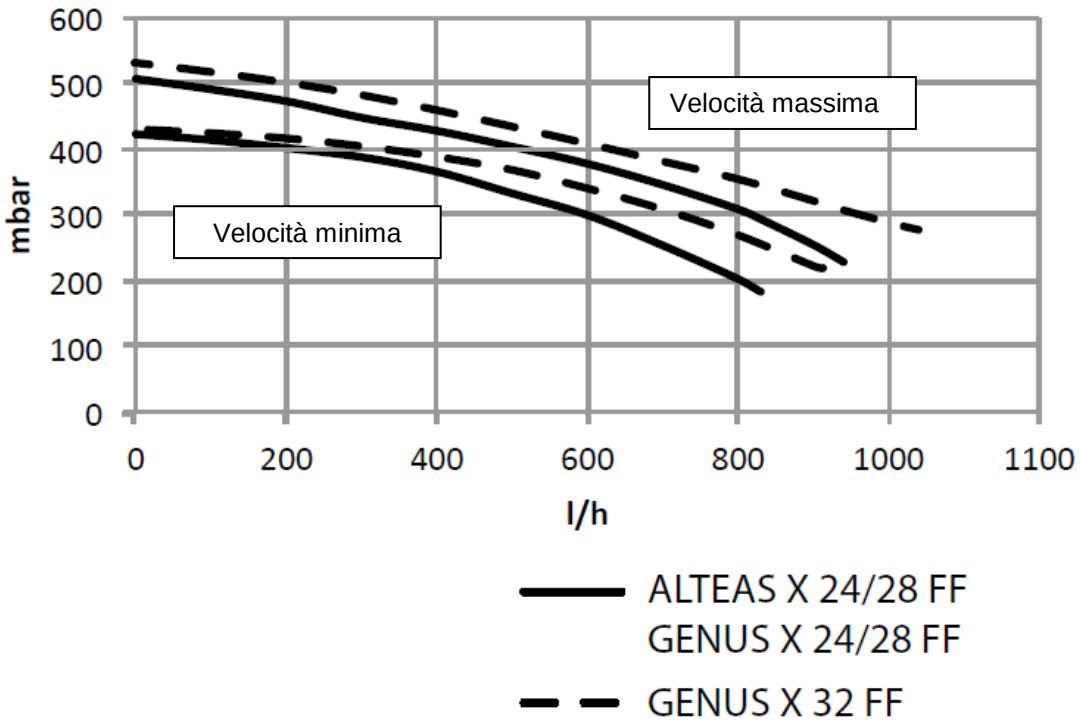
4.5 PUMP UNIT

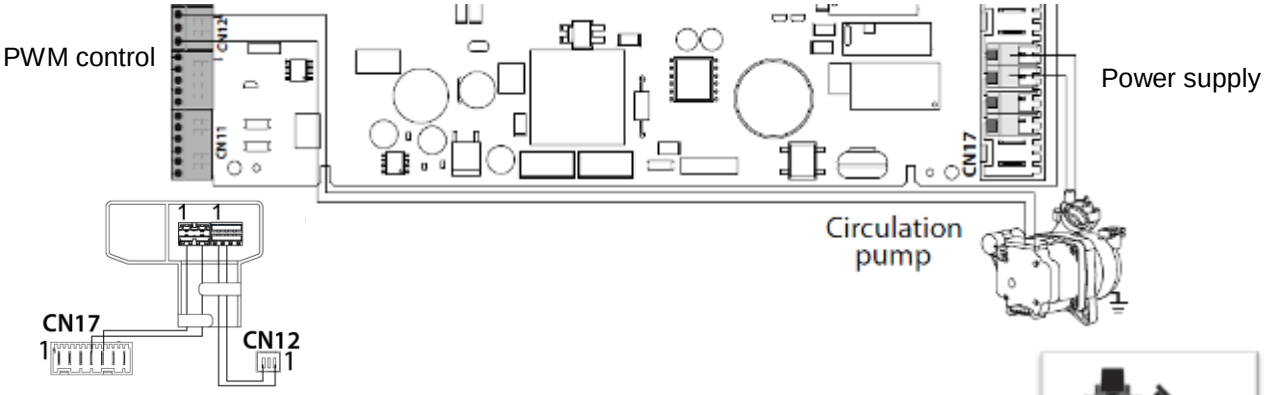
The pump is full modulating. The modulation is according to the boiler power in heating..
In sanitary the pump goes always at the maximum speed.
Pump model: 1Waf ES 2VK/53-9A-C.
Electrical power supply: 230Vac.
Electrical consumption:46W (max speed).

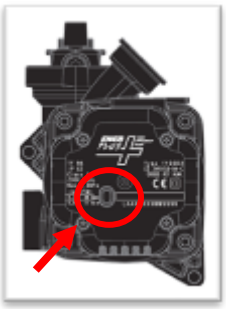


PAR.	NOTE
245	Max pump speed (settable between 75 and 100)
246	Min pump speed (settable between 40 and par. 245

Setting the parameter 246 like the parameter 245 the pump works always at fixed speed.
Setting the parameter 246 and 247 to 75 the pump works at the speed that is like the low speed in the pump modulating in 2 step, at this speed is guaranteed the by-pass working.







There is one bicolor led (green and red) in the frontal part of the pump:

- Led off: pump off or not supplied;
- Led green on fix: pump on with stable speed;
- Led green on blinking: pump on with speed changing;
- Led red on fix: pump blocked; with the system empty or with air inside the system switch-on alternatively the red led and the green blinking.

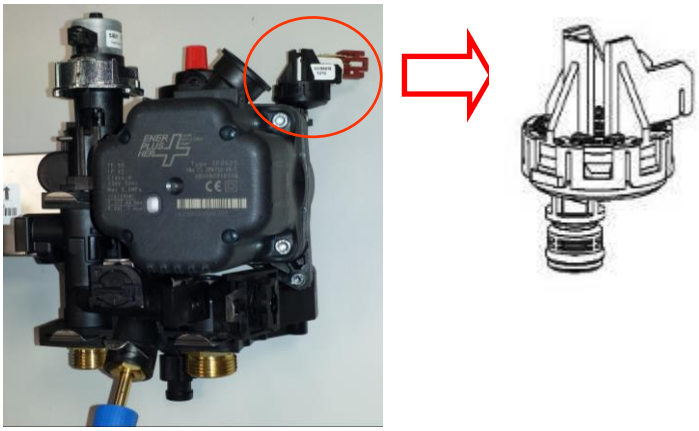
With the PWM wire disconnected (main PCB connector CN12) the pump goes at the maximum speed.

4.5.1 Types of post-circulation

Post-circulation after:	3 way valve position	Time of post circulation	Speed pump
Switching off due to:			
Room thermostat opening	Heating	3 min *(set by parameter 237 beetwen 0 e 15')*	Min/Mean
Heating Off by Summer/Winter button	Heating	3 min *(set by parameter 237 beetwen 0 e 15')*	Min/Mean
NTC delivery > T set +4	Heating	continuasly	Min/Mean
NTC return > 62°C or 67°C	Sanitary	continuasly	Max
End of sanitary demand	Sanitary	Par. 254=0 → 30 sec if:Tdel<75°C ; 3 min if Tdel>75°C; Post circulation: 30sec	Max
		Par. 254=1 → 3 min	
End of comfort cycle	Sanitary	30 sec	Max
End of antifreeze function	Heating / Sanitary	2 min	Max
End of chimney sweeping function	Heating	1 min	Min
Solar sensor	Sanitary	30 sec	Min
Errors			
Pressure sensor (102), Low pressure (108, 111)	Heating	40 sec	Min
No circulation (103, 104, 105, 106, 107)	Heating	1 min	Max
Flame missing, flame lift (501, 504)	Heating	2 min	Min
Overheat (101), Thermo fuse opening (610)	Heating	2 min	Min
No circulation (1P1, 1P2, 1P3)	Heating	10 sec	Max
Floor thermostat opened (116)	Heating	90 sec	Min

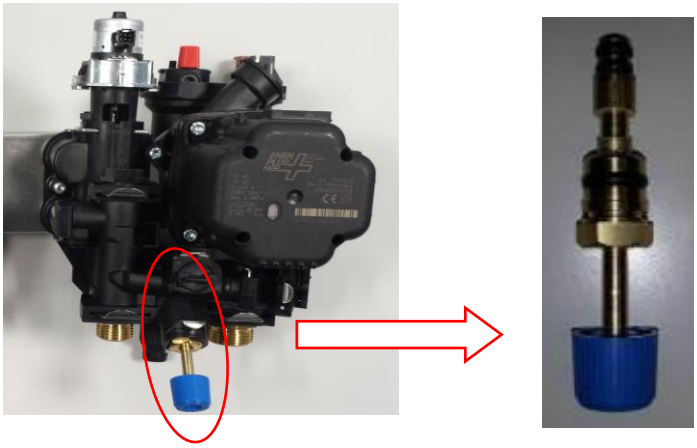
4.6 HEATING PRESSURE SENSOR

The proportional pressure sensor measures the pressure of the primary circuit, which is shown on the display.
If the pressure decreases below the value set by parameter 241 (default : 0,6bar) occur a warning (**1 P4**), but the boiler continues to operate normally; If the pressure decreases below the value set by parameter 240 (default : 0,4bar) occur a safety shout down **1 11**.



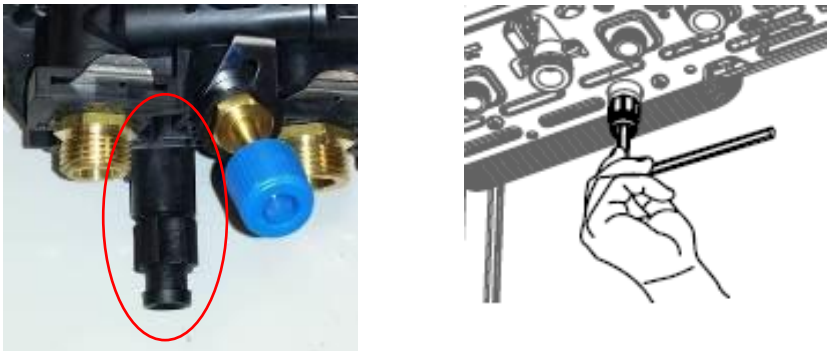
4.7 FILLING TAP.

To fill the heating circuit use the tap positioned under the hydraulic group support, pull down the handlebar and after rotate in anticlockwise.



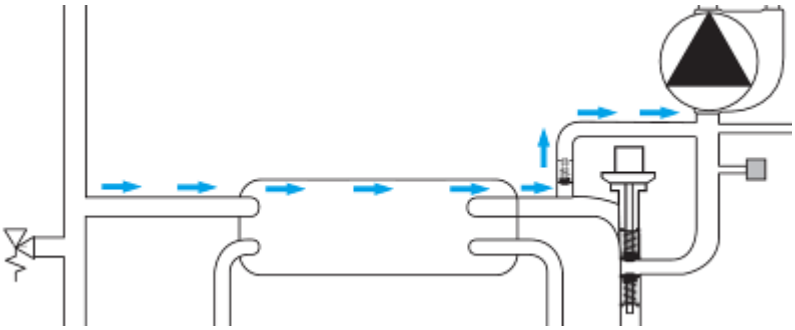
4.8 DRAIN VALVE.

To empty the system turn the proper tap positioned on the lower part of the boiler anti-clockwise



4.9 BY-PASS – TILL JULY 2016

The boiler has an automatic by-pass and, therefore no regulation is required. In the case of load losses in the system caused for example by the intervention of thermostat or area valves, the by-pass guarantees a flow in the condensing main exchanger of at least 350l/h (on the combi boiler this circulation is done through the DHW plate heat exchanger).
The by-pass is therefore designed to protect the condensing main exchanger from overheating in the case of poor or insufficient water circulation.
If this condition occurs, the system regulates the power normally and then switches off the main burner when the set-point temperature is reached.
In the combi boiler the by-pass is positioned in the return group and behind the 3 way valve.



In the Combi boiler to remove the by-pass it needs to remove before the ring that fix the 3 way valve motor.

By-pass

4.10 BY-PASS – FROM AUGUST 2016

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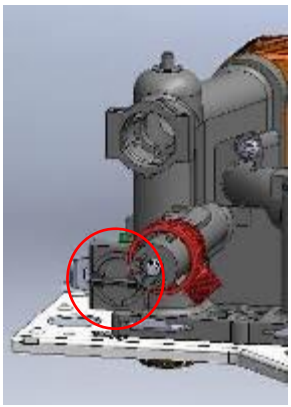
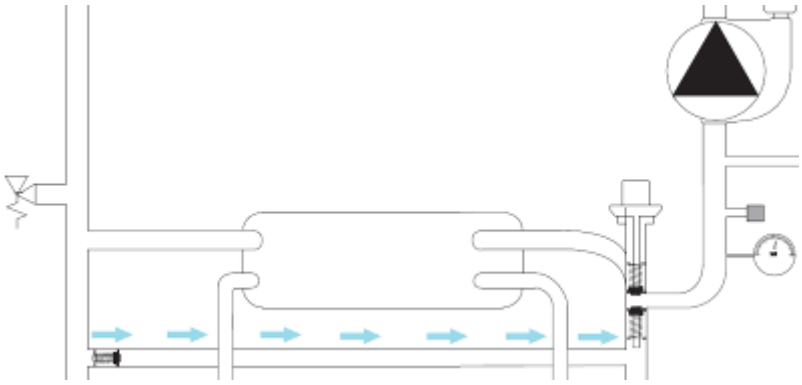




By-pass

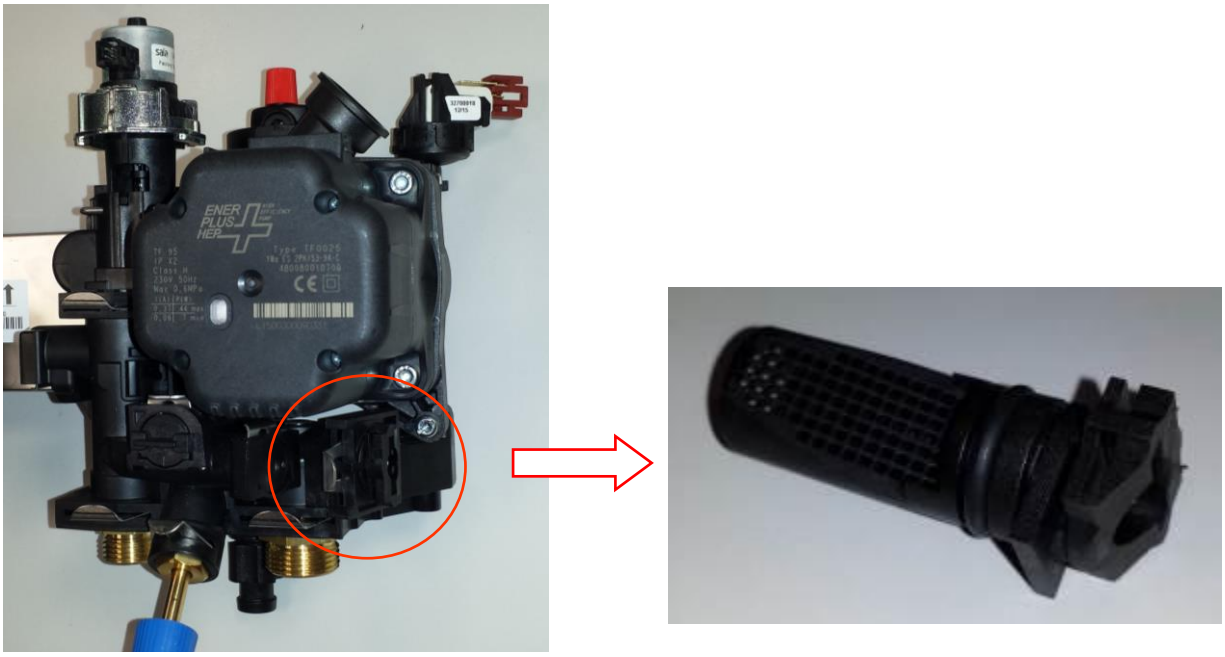
4.11 PRIMARY HEAT EXCHANGER

The heat exchanger transmits heat of the combustion products to the primary circuit water.

Model	Dimensions
24 kW CF	260 x 180 mm
30 kW CF	300 x 180 mm
24 kW FF	220 x 180 mm
30 kW FF	260 x 180 mm
32 and 35 kW FF	300 x 180 mm
24 kW CF	300 x 180 mm

4.12 HEATING FILTER

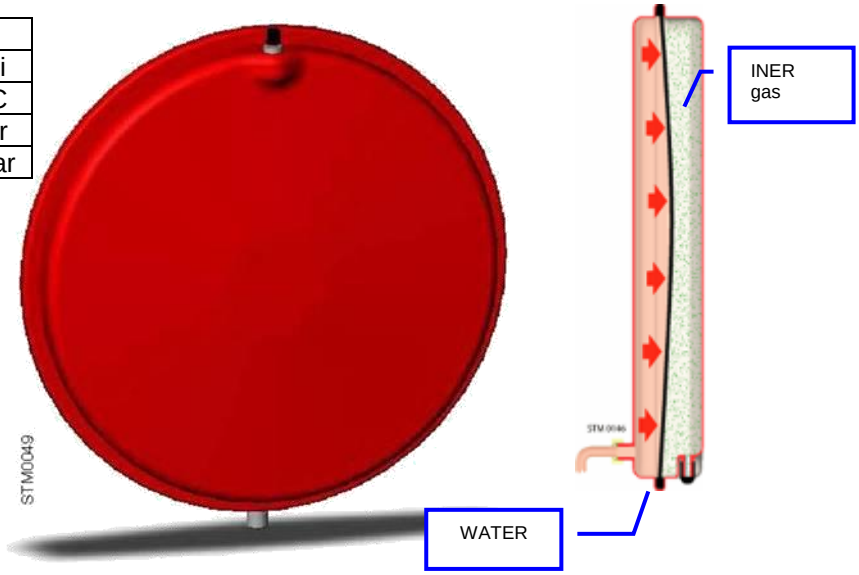
On the heating return unit there is a filter that can be reached from the front side of the boiler. To inspect and clean the filter follow the instructions shown below.

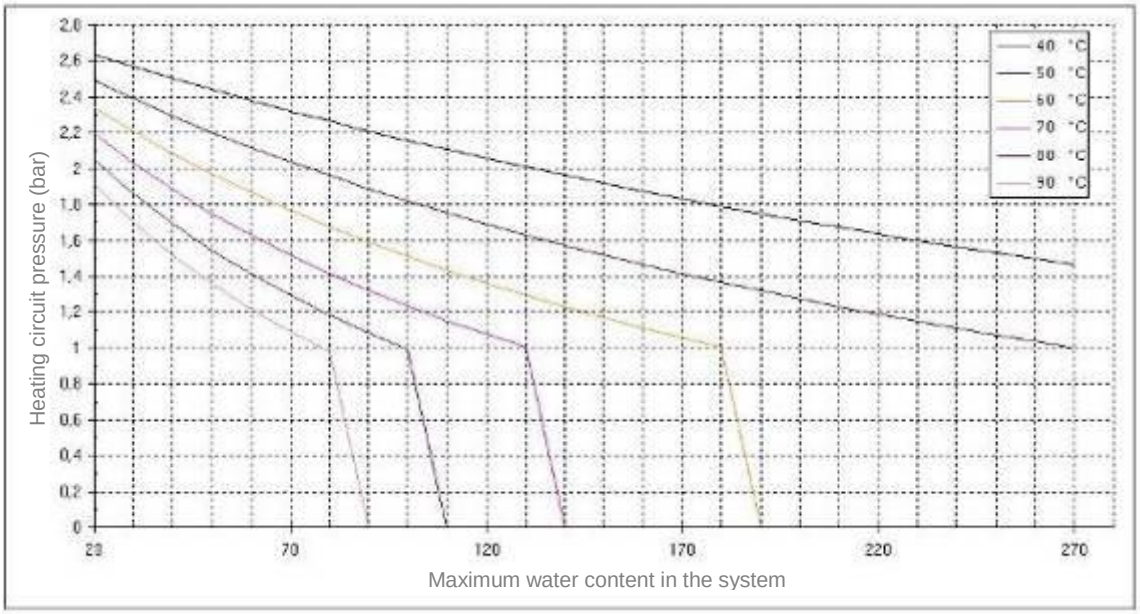


4.13 EXPANSION VESSEL.

The expansion vessel absorbs primary circuit water expansion when there is a boiler temperature raise.
It is constituted by two parts separated by a SBR rubber membrane. On one side nitrogen on the other water of the primary circuit. The nitrogen chamber (which can be compressed) absorbs the water volume increased because of temperature raise.

Technical features	
Capacity	8 litri
Maximum operating temperature	90°C
Nitrogen pressure	1 bar
Maximum operating pressure	3,0bar





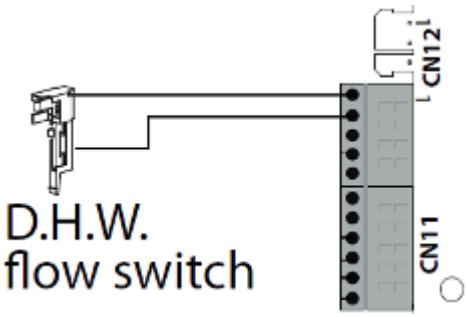
4.14 SANITARY PROPORTIONAL FLOW METER.

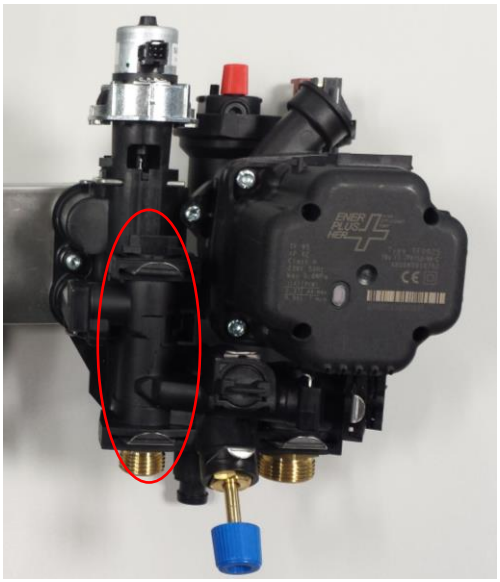
The DHW flow meter is positioned in front of e way valve.
When turned on sanitary mode, the flow of water passes through the flow switch (on/off), the float moves upwards and through the magnet close the reed sensor contact and the PCB know that the tapping is in progress.
A cold water inlet filter is built-in the sanitary flow meter to stop impurities from getting in.
There is also an anti-hammer device (through the PCB) that can be set by parameter 2 52 between 0.5 sec and 20 sec (default 0.5 sec).

It is possible check if the contact is open or closed through the connector CN11.

Flow capacity on: 2 l/min

Flow capacity off: 1,4 l/min

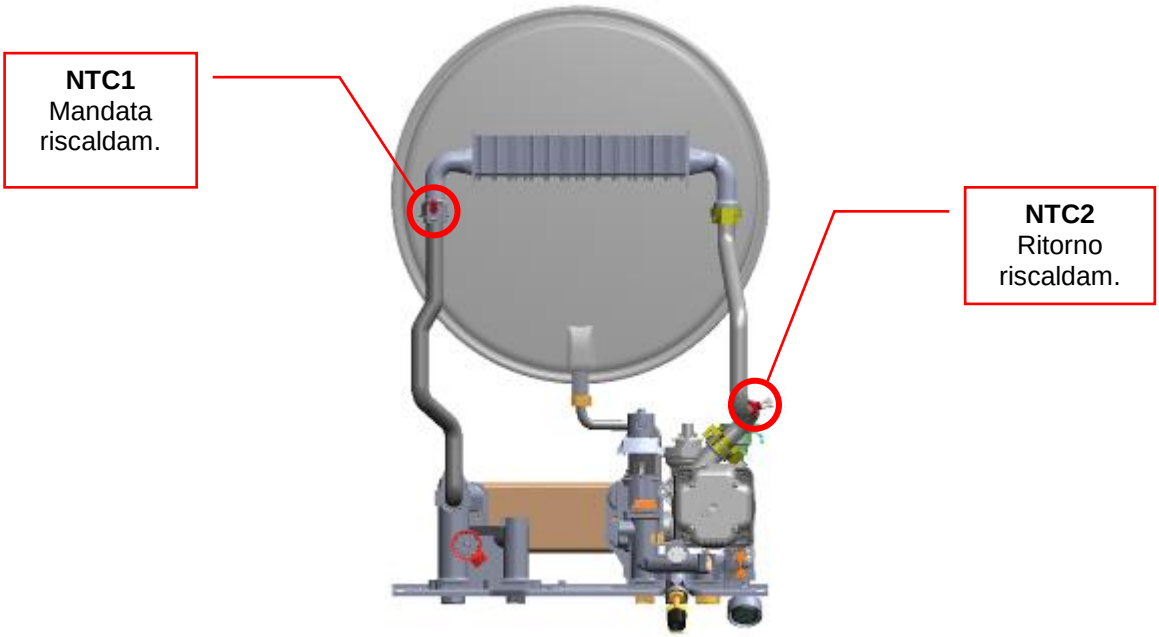




4.15 TEMPERATURE PROBE

To check the delivery and return temperature use the two contact sensor. To read the sanitary water temperature the NTC1 heating delivery is used.

IMPORTANT!!!! Do not use conducting paste for the contact sensors because they alter the resistance value.



PROBE ERROR CODES	
1 10	**NTC1** heating delivery probe open or short circuit
1 12	**NTC2** heating return probe open or short circuit

TEMPERATURE (°C)	RESISTANCE (kOmh)
0	27
10	17
20	12
30	8
40	5
50	4
60	3
70	2
80	1,5

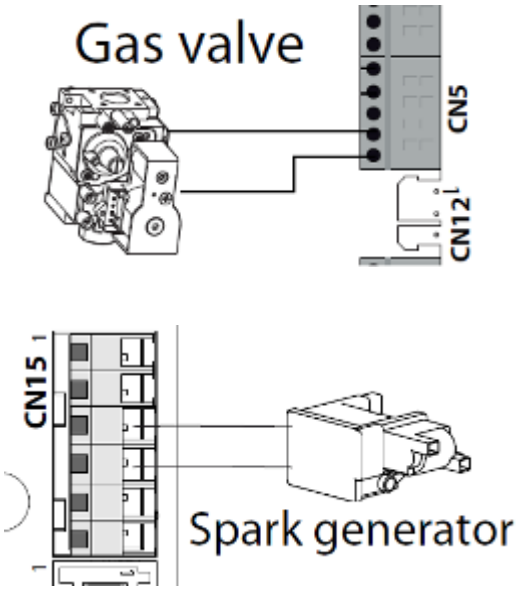
5 GAS UNIT

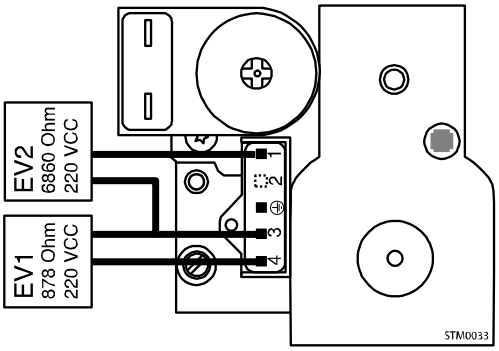
5.1 SIT 845 SIGMA GAS VALVE.

The gas valve mounted is a SIT 845 SIGMA valve fitted with two operators supplied at 220VCA that consent or cut off the gas supply to the main burner. A low voltage (24V) modulator is mounted on the valve to regulate the outgoing gas pressure of the valve according to the readings detected by the electronic P.C.B. via the temperature probes. The modular is used for both natural and liquid gas. The valve is also fitted with component NAC504 that has the function of powering both the main burner ignition transformer and valve.
The valve is prearranged to work with different types of gas without having to replace any part, but need only to change the nozzle. The maximum inlet pressure with which the gas valve can work is 60mbar.

1	inlet pressure gauge
2	outlet pressure gauge
3	min power adjusting screw
4	max power adjusting nut

5.2 SOLENOID VALVE ELECTROPNIC CONNECTION DIAGRAM.

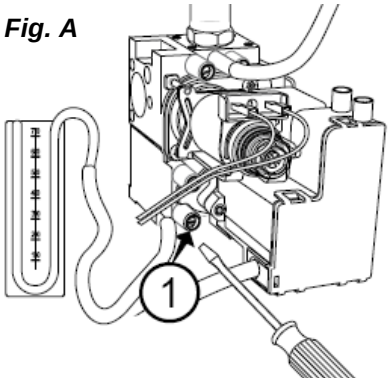




5.3 GAS REGULATIONS.

5.3.1 SUPPLY PRESSURE CHECK.

Fig. A



SUPPLY PRESSURE CHECK

.

1. Loosen screw "1" (fig. A) and insert the pressure gauge fitting pipe in the pressure intake.
2. Put the boiler on maximum operating power (hot water tap open). The supply pressure must correspond with the one foreseen for the type of gas for which the boiler has been prearranged (refer to table below).
3. After checking tighten screw "1" and check the seal.

MINIMUM SUPPLY PRESSURE		
METHANE G 20	**BUTHANE G 30**	**PROPANE G 31**
17 mbar	25 mbar	25 mbar

5.3.2 MAXIMUM SANITARY POWER CHECK.

Fig. B

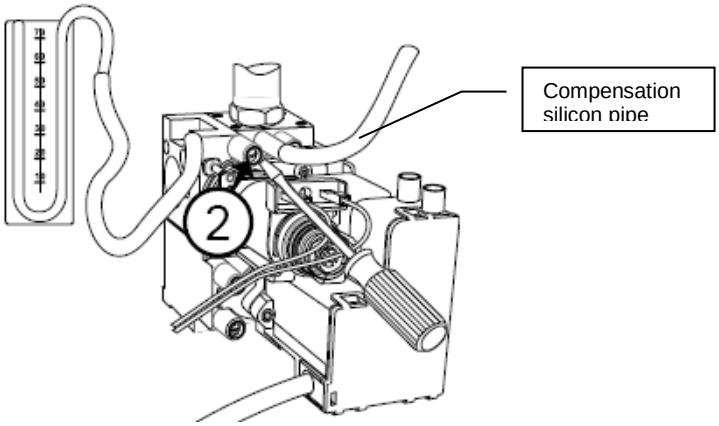
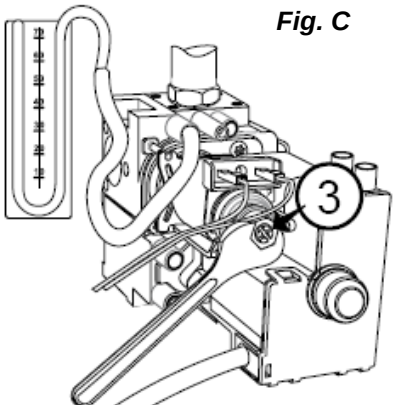


Fig. C



1. To check maximum power, loosen screw "2" (fig.B) and insert the pressure gauge fitting pipe in the pressure intake.
2. Disconnect the compensation pipe of the air chamber (fig.B).
3. Start the boiler at maximum power with the flue cleaner function (press Reset button for 5 sec.).
4. The supply pressure must correspond with the one foreseen for the type of gas for which the boiler has been prearranged (refer to table below). If it does not, remove the protection cap and act on adjusting hexagon nut "3" (fig. C).
5. After checking tighten screw "2" and check the seal.
6. Reassemble the protection cap of the modulator.
7. Reconnected the compensation pipe.

OUTLET PRESSURE SANITARY MAX POWER (mbar)		
	G20	G31
24 kW CF	11.9	34
28 kW CF	11.2	36
24 kW FF	12.2	35.5
30 kW FF	12.3	35.3
32 kW FF	10.8	33
35 kW FF	10.8	33

5.3.3 MINIMUM POWER CHECK.

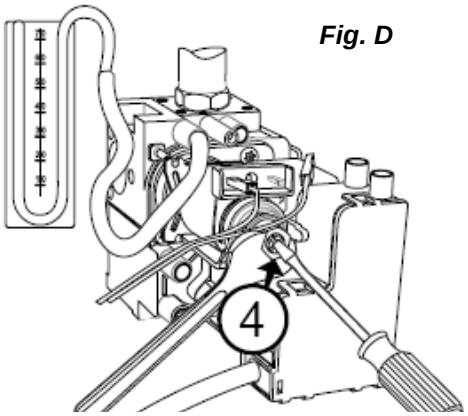


Fig. D

1. To check the minimum power loosen screw “2” (fig.B) and insert the pressure gauge fitting pipe in the pressure intake.
2. Disconnect the compensation pipe of the air chamber (fig.B).
3. Have the boiler work on minimum power and disconnect a cable from the modulator (fig.D). The supply pressure must correspond with the one foreseen for the type of gas for which the boiler has been prearranged (refer to table below). If it does not correspond, act on adjusting screw “4” (fig.D) while holding the hexagon nut steady “3”(fig.C).
4. After checking tighten screw “2” and check sealing.
5. Reconnect the cable of the modulator.
6. Reconnect the compensation pipe

OUTLET PRESSURE MIN POWER (mbar)		
	G20	G31
24 kW CF	2.2	6
28 kW CF	2.2	7.2
24 kW FF	2.3	6.8
30 kW FF	2.4	7
32 kW FF	2.1	6.8
35 kW FF	2.1	6.8

5.3.4 SOFT IGNITION POWER CHECKING

Regulation carried out on parameter 2 20

1. To check the slow ignition power, loosen screw “2” (fig.B) and insert the pipe of the pressure gauge in the pressure intake.
2. Disconnect the air chamber compensation pipe (fig.B)(sealed chamber).
3. Open the tap of the hot water, the burner turns on, disconnect the detection electrode in order to have the slow ignition pressure for 8 seconds before safety block.
4. Change parameter 2 20 (see paragraph 6.2 and 6.3).

OUTLET PRESSURE SOFT IGNITION (mbar)		
	G20	G31
24 kW CF	2.2	6
28 kW CF	2.2	7.2
24 kW FF	4.5	6.8
30 kW FF	5.6	7
32 kW FF	4.9	8.6
35 kW FF	4.9	8.4

5.3.5 HEATING DELAY REGULATION.

- Regulation carried out on parameter 2 36

- This boiler has a regulation that allows to change the delay time between the heating request and the burner ignition choosing between 0 and 7 minutes. This regulation is carried out on parameter 2 36 .

5.3.6 HEATING MAXIMUM POWER REGULATION.

The boiler has two different maximum power: one for sanitary and one lower for heating (absolute maximum heating power).
The absolute maximum heating power is set by parameter 2 30. This parameter must be verified and eventually modified only and exclusively in the case of a gas change.

UTLET PRESSURE ABSOLUTE MAXIMUM HEATING POWER (mbar)		
	G20	G31
24 kW CF	11	31.2
28 kW CF	10.4	34.2
24 kW FF	12.2	35.5
30 kW FF	12.3	35.3
32 kW FF	9.4	34.5
35 kW FF	10.8	33

To adjust the heating power at the heating circuit there is maximum heating power regulation (between minimum heating and absolute maximum heating power).

- - **Regulation carried out on parameter 2 31**

- This boiler has a regulation that allows to change the maximum heating power by means of parameter 2 31.

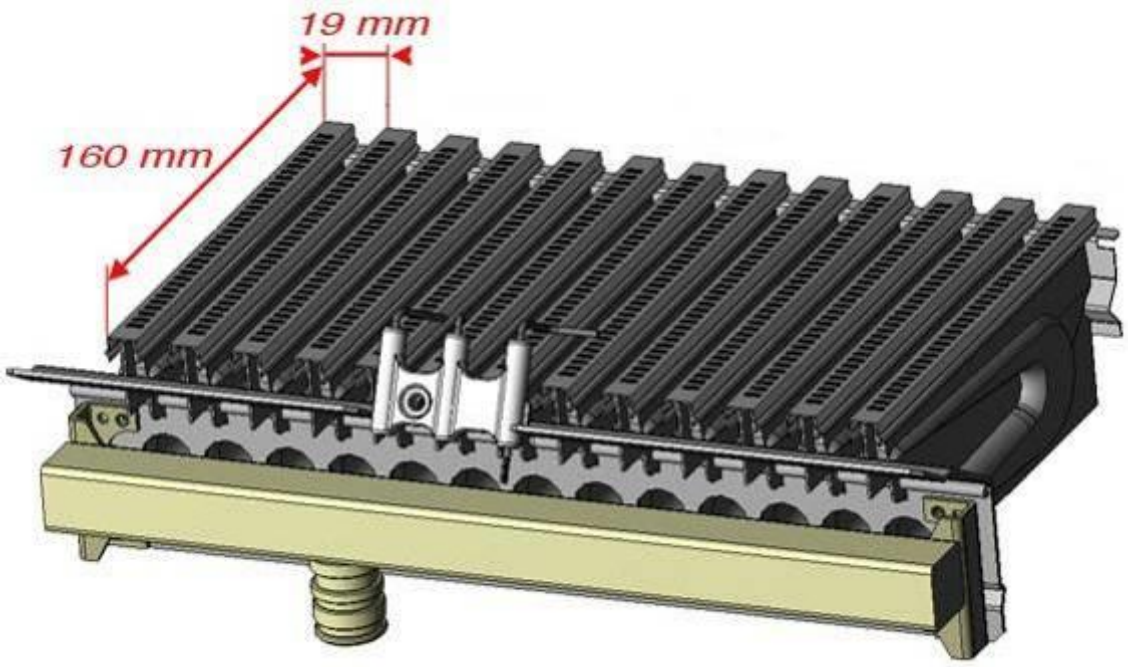
5.3.7 TABELLA RIEPILOGATIVA GAS

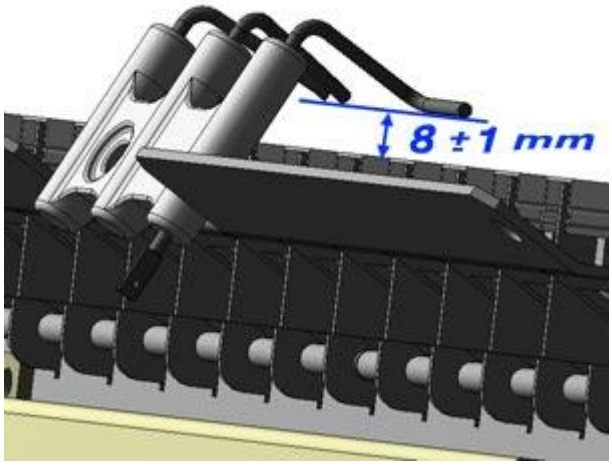
			ALTEAS X 24 FF GENUS X		ALTEAS X 30 FF GENUS X		ALTEAS X 32 FF GENUS X		ALTEAS X 35 FF GENUS X	
			G20	G31	G20	G31	G20	G31	G20	G31
Lower Wobbe index (15°C, 1013 mbar) (MJ/m^3)		MJ/m^3	45,67	70,69	45,67	70,69	45,67	70,69	45,67	70,69
Gas inlet pressure		mbar	20	37	20	37	20	37	20	37
Gas Burner Pressure	Maximum d.H.W.	mbar	12,2	35,5	12,3	35,3	10,8	33,0	10,8	33,0
	Maximum heating-absolute (parameter **230**)	mbar	12,2 (100)	35,5 (100)	12,3 (100)	35,3 (100)	9,4 (57)	34,5 (82)	10,8 (100)	33,0 (100)
	Minimum	mbar	2,3	6,8	2,4	7,0	2,1	6,8	2,1	6,8
Soft light (Parameter **220**)		mbar	4,5 (43)	6,8 (5)	5,6 (48)	7,0 (5)	4,9 (44)	8,6 (54)	4,9 (44)	8,4 (54)
Maximum heating power adjustment - Paraìmetro **231**			50	71	47	71	75	80	44	69
Ignition delay - Parameter **235**			automatic							
Main Burner jets		nr.	11		13		16		16	
Ø burner jets		mm	1,32	0,8	1,32	0,8	1,32	0,78	1,32	0,78
Gas flow max/min (15°C, 1013 mbar) (nat - m3/h) (GPL - kg/h)	max D.H.W		2,73	2,00	3,17	2,33	3,65	2,68	3,65	2,68
	max C.H		2,73	2,00	3,17	2,33	3,44	2,52	3,65	2,68
	min		1,16	0,85	1,38	1,01	1,59	1,17	1,59	1,17

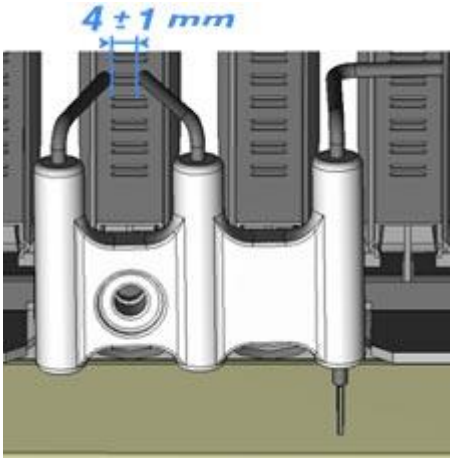
			GENUS X 24		GENUS X 30	
			G20	**G31**	**G20**	**G31**
Lower Wobbe index (15°C, 1013 mbar) (MJ/m3)		MJ/m³	45,67	70,69	45,67	70,69
Gas inlet pressure		mbar	20	37	20	37
Gas Burner Pressure	Maximum d.H.W.	mbar	11,9	34,0	11,2	36,0
	Maximum heating-absolute (parameter **230**)	mbar	11,0 (62)	31,2 (89)	10,4 (62)	34,2 (91)
	Minimum	mbar	2,2	6,0	2,2	7,2
Soft light (Parameter **220**)		mbar	2,2 (0)	6,0 (0)	2,2 (0)	7,2 (0)
Maximum heating power adjustment - Paraìmetro **231**			75	78	77	80
Ignition delay - Parameter **235**			automatic			
Main Burner jets		nr.	13		15	
Ø burner jets		mm	1,25	0,75	1,25	0,75
Gas flow max/min (15°C, 1013 mbar) (nat - m3/h) (GPL - kg/h)	max D.H.W		2,86	2,10	3,23	2,37
	max C.H		2,73	2,00	3,12	2,29
	min		1,16	0,85	1,38	1,01

5.4 BURNER

The same 19.0 mm pitch Polidoro burner is used on all the models. The electrodes (two ignition and one for flame detection) are constituted by one part. The ignition electrodes have to be kept a t a **4±1mm** distance from the burner **8±1mm** ramp. The detection electrode must be at least **8±1mm** away from the burner. Any missed ignition of the burner after the safety time is displayed on the control panel with code ***5 01.***
The minimum ionisation current is equal to 1microAmp. The ionisation voltage on the ground is equal to 110Vac.







DIAMETER OF THE NOZZLES				
	Number	G20	G30	G31
24 kW CF	13	1,25 mm	0,76 mm	0,76 mm
30 kW CF	15	1,25 mm	0,75 mm	0,75 mm
24 kW FF	11	1,32 mm	0,80 mm	0,80 mm
30 kW FF	13	1,32 mm	0,80 mm	0,80 mm
32 kW FF	16	1,32 mm	0,78 mm	0,78 mm
35 kW FF	16	1,32 mm	0,78 mm	0,78 mm

5.5 IGNITION CYCLE.

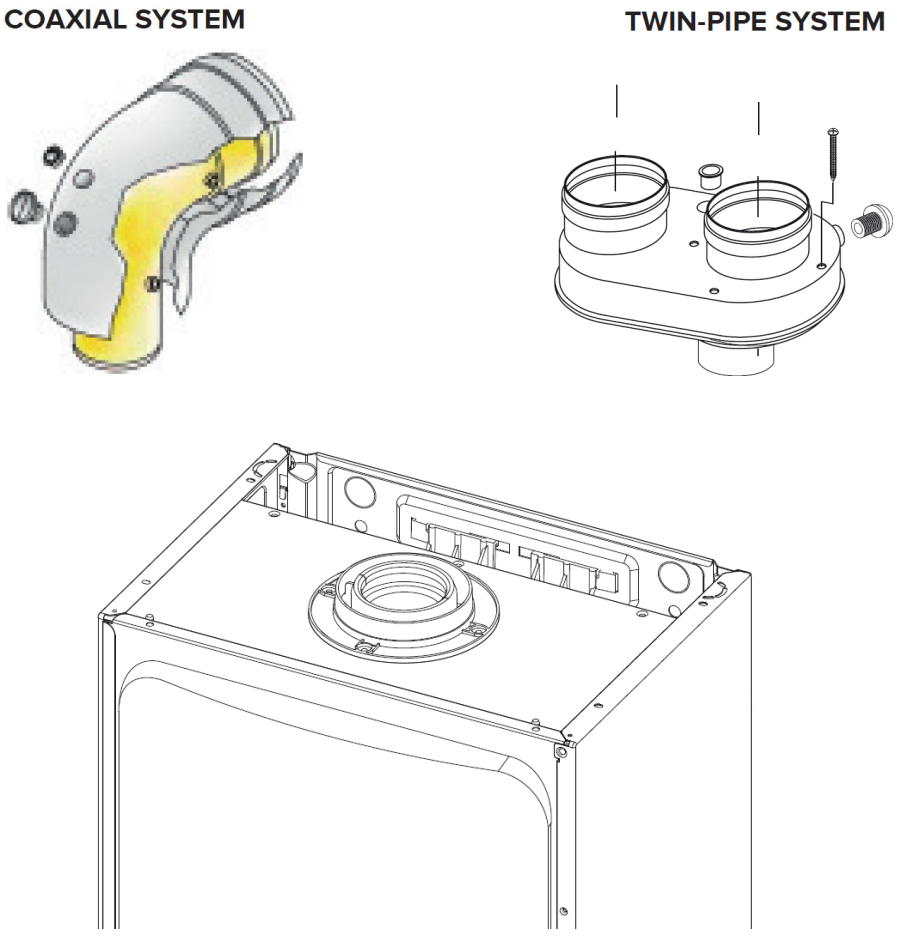
The ignition sequence is carried out in two different ways depends if it is working on sanitary or heating mode:

- *SANITARY* if required the ignition cycle is repeated 3 times:
  1st attempt with the power of slow ignition, if at the end of the safety time (8 sec) the flame has not been detected it will be signalled **5 P1** and a second attempt will be made;
  2nd attempt with the power of slow ignition, if at the end of the safety time (8 sec) the flame has not been detected it will be signalled **5 P2** 3rd attempt will be made ;
  3rd attempt with the power of slow ignition, if at the end of the safety time (8 sec) the flame has not been detected it will be shutdown **5 01** c with 40 seconds of post-ventilation at maximum speed and 2 minutes of post-circulation at minimum speed.

- *HEATING* if required the ignition cycle is repeated 3 times:
  1st attempt with 80% of the power of slow ignition, if at the end of the safety time (8 sec) the flame has not been detected it will be signalled **5 P1** and a second attempt will be made;
  2nd attempt with 90% the power of slow ignition, if at the end of the safety time (8 sec) the flame has not been detected it will be signalled **5 P2** 3rd attempt will be made;
  3rd attempt with the power of slow ignition, if at the end of the safety time (8 sec) the flame has not been detected it will be shutdown **5 01** with 40 seconds of post-ventilation at maximum speed and 2 minutes of post-circulation at minimum speed.

5.6 THE FUME DISCHARGE SYSTEM

On the external part of the boiler there is a fume discharge collector.



5.7 AIR PRESSURE SWITCH

The boiler uses a differential pressure switch to check correct evacuation of the fume:

- 24kW: Off= 50Pa/0,50mbar; On= 60Pa/0,60mbar;
- 30kW: Off= 74Pa/0,74mbar; On= 89Pa/0,89mbar.
- 32kW: Off= 74Pa/0,74mbar; On= 89Pa/0,89mbar;
- 35kW: Off= 74Pa/0,74mbar; On= 89Pa/0,89mbar.

The first pressure value is taken on the fan (intake "L" on the air pressure switch).
The second pressure values is taken inside the combustion chamber (intake "H" on the air pressure switch).
Actually two negative pressure values are used (in relation to the atmospheric pressure) but that counts most of all for the air pressure switch, is that there is an appropriate pressure difference (which can be measured with a differential pressure gauge connected to the two pressure intakes located on the upper side of the boiler).
Air pressure switch is not carried out during operation. Any "opening" during operation is not detected.
6 07 : Pressure switch enabled already before the ignition sequence.
6 P1 : Pressure switch enabling missed with fan turned on.

5.8 FAN (fix speed).

The following fans are used:

- 24kW: 30W motor;
- 30kW: 60W motor;
- 32kW: 60W motor;
- 35kW: 60W motor

5.8.1 Post-ventilation

Switch Off	**Post-ventilation time**
CH burning off Winter to Summer commutation CH Temp Reached burner off	**Par 243=0**→5sec **Par 243=1**→3min
DHW burning off DHW Antiscale off Storage Loading burner off (Tank) Storage Loading burner off (System) (par.228=2) Storage Loading burner off (Antilegionella)	**Par.254=0** Tflow>75°C→3min Tflow<75°C→ 5sec **Par.254=1** always 3 min
Comfort Pre-heating burner off	5 sec
Chimney function end burner off Chimney function Temp reached burner off	1 min
Antifreeze Temp Reached burner off (Tflow > 40°C) Antifreeze burner off (end 15 min timer)	5 sec
Fault	**Post-ventilation time**
No Flame error (5P1 - 5P2) Flame lift error (5P3)	10 sec (ATM)
Water Flow Check Shutdown (1P1 – 1P2 – 1P3)	10 sec
No Flame Error (501) Overtemp Error (101)	40 sec
Water Flow Check Shutdown Error (103 – 104 – 105 – 106 – 107)	40 sec
T Flow probe error (110) T Ret probe error (112)	5 sec
Water Pressure error (108)	40 sec
False Flame (502)	Always on
APS Warning (6P1-6P2)	Always On

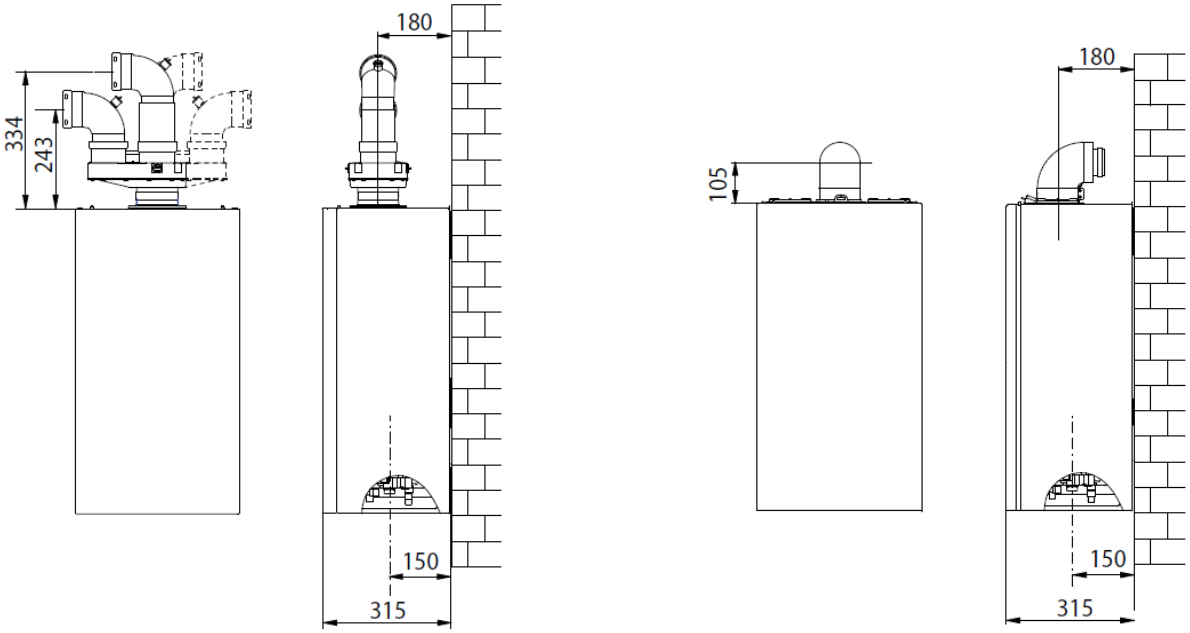
5.9 EXHAUSTIC CONTROL (CF open chamber)

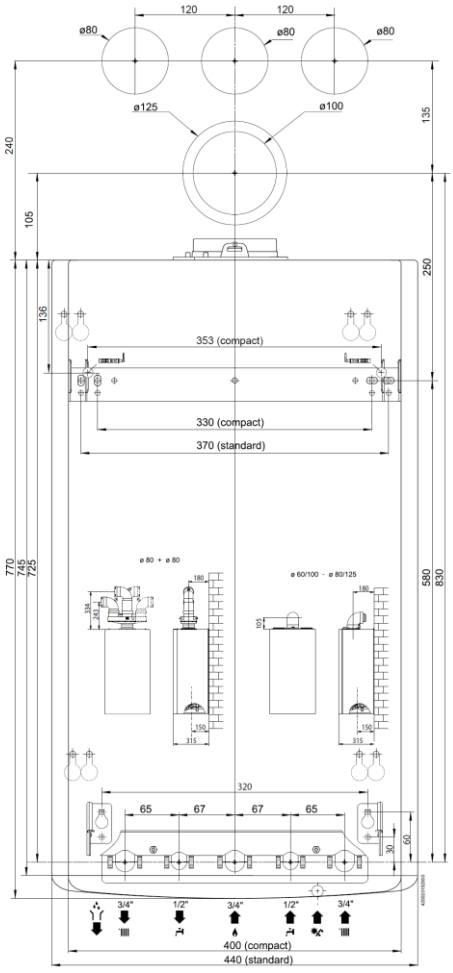
Supplying the card, the control system of proper combusted smoke exhaust is carried out by means of an automatic reset thermostat. “Fume protection” enabling stops the boiler on safety and it will be displayed on the control panel with the relevant error code ***6 01***
This intervention can be caused by:
A thermostat temperature raise, the fume enabling threshold is 75±3°C.
After 12 minutes after restoring the fumes thermostat the protection will be automatically disabled.
Timing can be zeroed by the ON/OFF electric supply of the card.

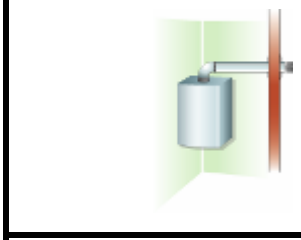
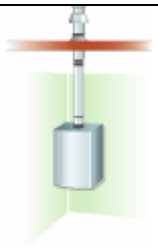
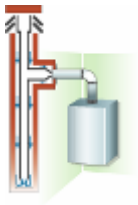
Automatic thermostat reset

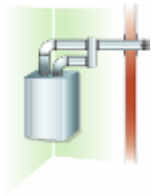
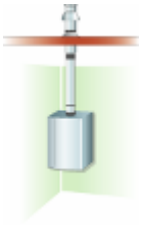
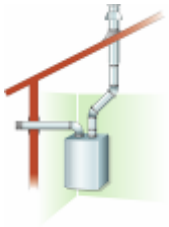
5.10 EXHAUST SYSTEMS (sealed chamber FF)

The boiler is arranged smoke exhaust 60/100mm. For 80/80mm it needs to use one adapter. Combustion analysis intakes are built-in the smoke exhaust slope (60/100) or in the adapter (80/80)**.**





COAXIAL 80/100 e 80/125		
C12	C32	C42
		

TWIN PIPE 80/80				
C12	C32	C42	C52	C82
				

Type		Maximum Extension Exhaust-air (m) GENUS X 24 FF ALTEAS X 24 FF						Diameter of pipe (mm)
		reduction ø 41		reduction ø 44		without reduction		
		MIN	MAX	MIN	MAX	MIN	MAX	
Coaxial System	C12 C32 C42			0,5	0,75	0,75	4	ø 60/100
	B32			0,5	0,75	0,75	4	
Twin-pipe System	C12 C32 C42	S1 =S2						
		0,5/0,5	5/5	5/5	13/13	13/13	20/20	ø 80/80
	C52	S1+S2						
	C82	1	14	14	30	30	45	ø 80/80
	B22	1	14	14	30	30	45	ø 80

Type		Maximum Extension Exhaust-air (m) ALTEAS X 30 FF GENUS X 30 FF						Diameter of pipe (mm)
		reduction ø 41		reduction ø 44		without reduction		
		MIN	MAX	MIN	MAX	MIN	MAX	
Coaxial System	C12 C32 C42			0,5	0,75	0,75	4	ø 60/100
	B32			0,5	0,75	0,75	4	
Twin-pipe System	C12 C32 C42	S1 =S2						
		0,5/0,5	5/5	5/5	11/11	11/11	24/24	ø 80/80
	C52	S1+S2						
	C82	1	14	14	30	30	50	ø 80/80
	B22	1	14	14	30	30	50	ø 80

Type		Maximum Extension Exhaust-air (m) ALTEAS X 32/35 FF GENUS X 32/35 FF						Diameter of pipe (mm)
		reduction ø 44		reduction ø 47		without reduction		
		MIN	MAX	MIN	MAX	MIN	MAX	
Coaxial System	C12 C32 C42			0,5	0,75	0,75	2	ø 60/100
	B32			0,5	0,75	0,75	2	
Twin-pipe System	C12 C32 C42	S1 = S2						
		0,5/0,5	1/1	1/1	5,5/5,5	5,5/5,5	14/14	ø 80/80
	C52	S1 + S2						
	C82	1	3	3	16	16	33	ø 80/80
	B22	1	3	3	16	16	33	ø 80

5.11 EXHAUST SYSTEMS (CF open chamber)

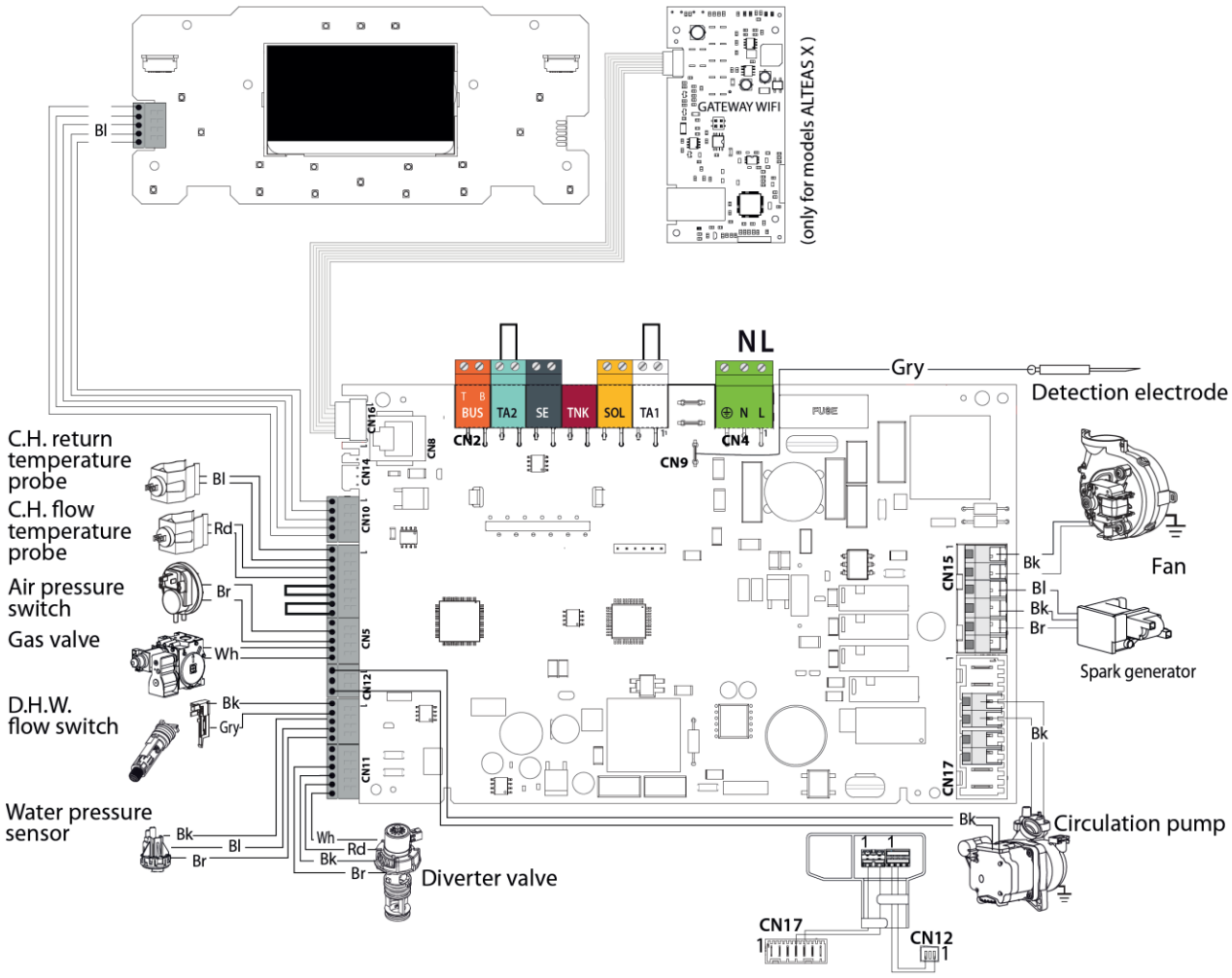
The boiler so that both Ø130mm and Ø125mm smoke exhausts can be assembled on it (without any adapters). With both diameters the minimum length of the smoke exhaust is equal to 1 meter.

6 ELECTRIC AND ELECTRONIC SYSTEM

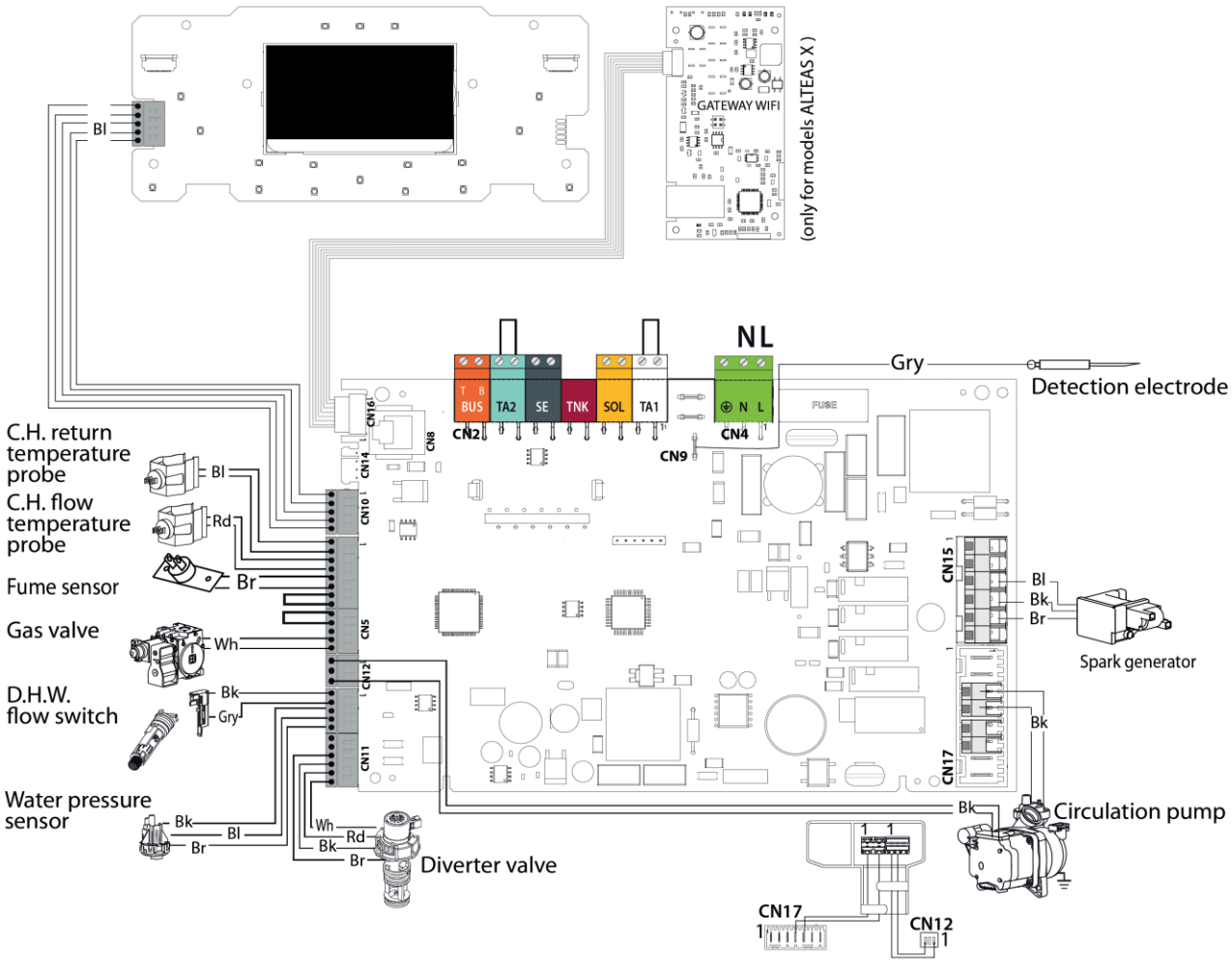
6.1 MAIN CARD

The boiler uses a **GALEVO2 SE** electronic card for complete checking of the boiler and one users interfaces display LCD;
The **GALEVO2 SE** electronic card is protected by two 2A, 250 VAC fuses and a VDR protects the card against supply voltage peaks up to 275VAC. The supply voltage tolerance is 230 Vac +10% -15% and does not have to comply with the phase and with neutral.

6.1.1 ELECTRIC DIAGRAM FF.

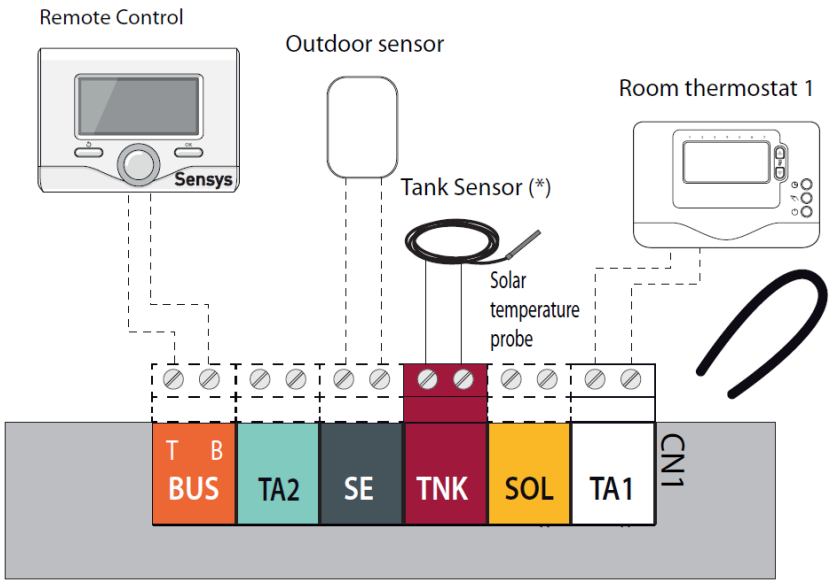


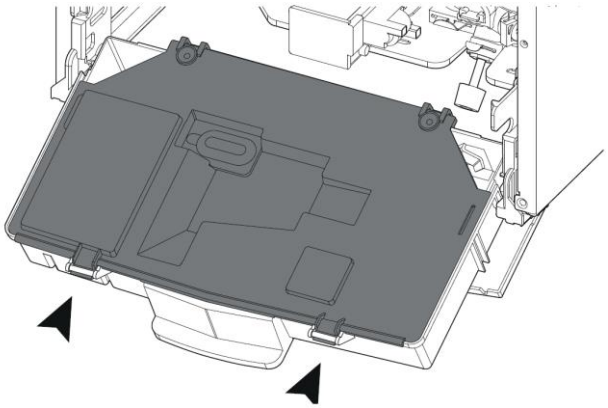
6.1.2 ELECTRIC DIAGRAM CF.

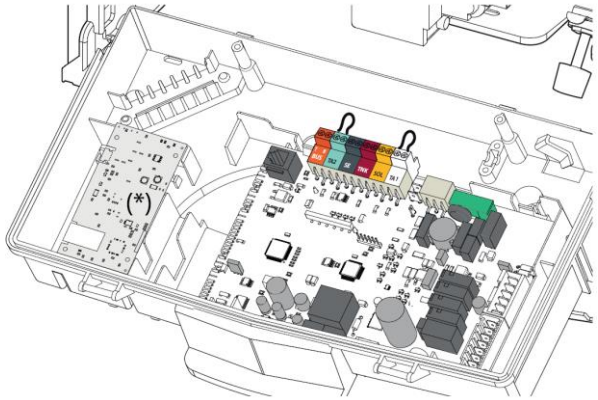


6.2 PERIPHERALS CONNECTION

- Room thermostat 1 (Crono thermostat available also wireless version);
- Room thermostat 2 (Crono thermostat available also wireless version);
- Room sensor ;
- Outdoor sensor;
- All Bus-Bridgenet devices.





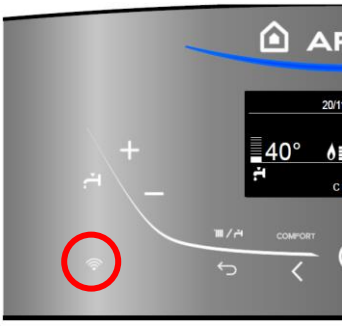


7 WI-FI (only Alteas and Genus Wi-Fi)

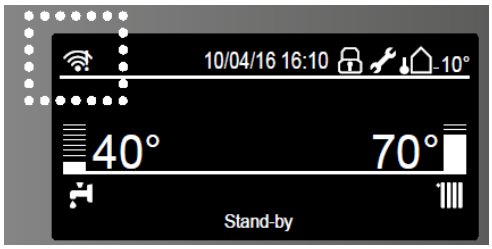
In the boilers Alteas and Genus Wi-Fi the Wi-Fi module in embedded.

7.1 CONNECTION TO INTERNET

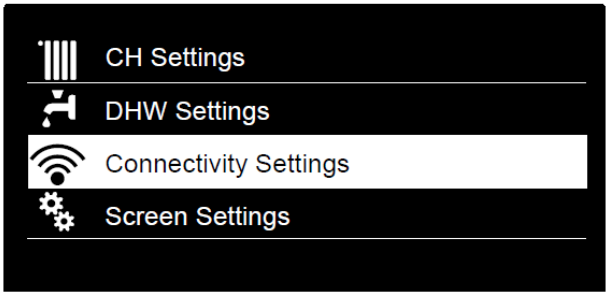
a) With the boiler on the Wi-Fi button is backlighted (see picture below) and it indicates that the Wi-Fi module is switched on.



b) With the boiler on the Wi-Fi icon is on (see picture below) and it indicates that the Wi-Fi module is not yet connected with home Wi-Fi network.



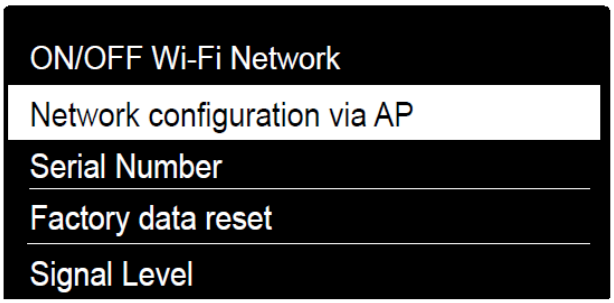
c) Push the button “OK” to enter in the menu, through the button “>” select “Connectivity Settings” and push the button “OK” 2 times.



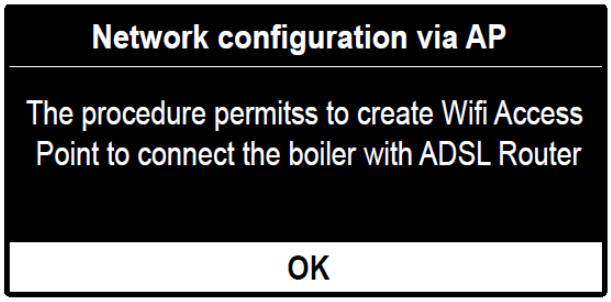
d) Make sure that home Wi-Fi network is ON, select “Network configuration via AP” and push the button “OK”.

WARNING !
The compatible Wi-Fi encryptions are:

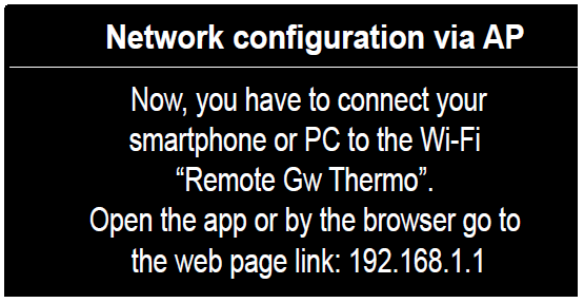
- ***WEP***
- ***WPA/WPA2 Personal***

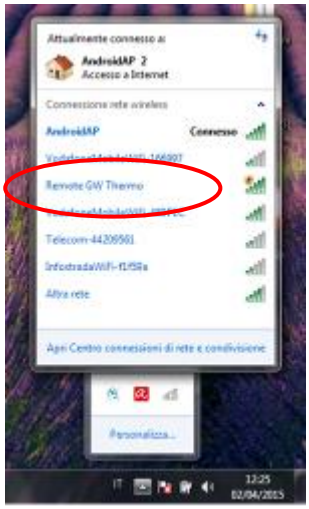


e) Push the button “OK”, the product will create a new Access Point to start the Wi-Fi network configuration that remains active for 10 minutes.



f) Open the network settings of your internet device (smartphone, tablet, PC) and search for available Wi-Fi network. Select **“Remote Gw Thermo”** network.

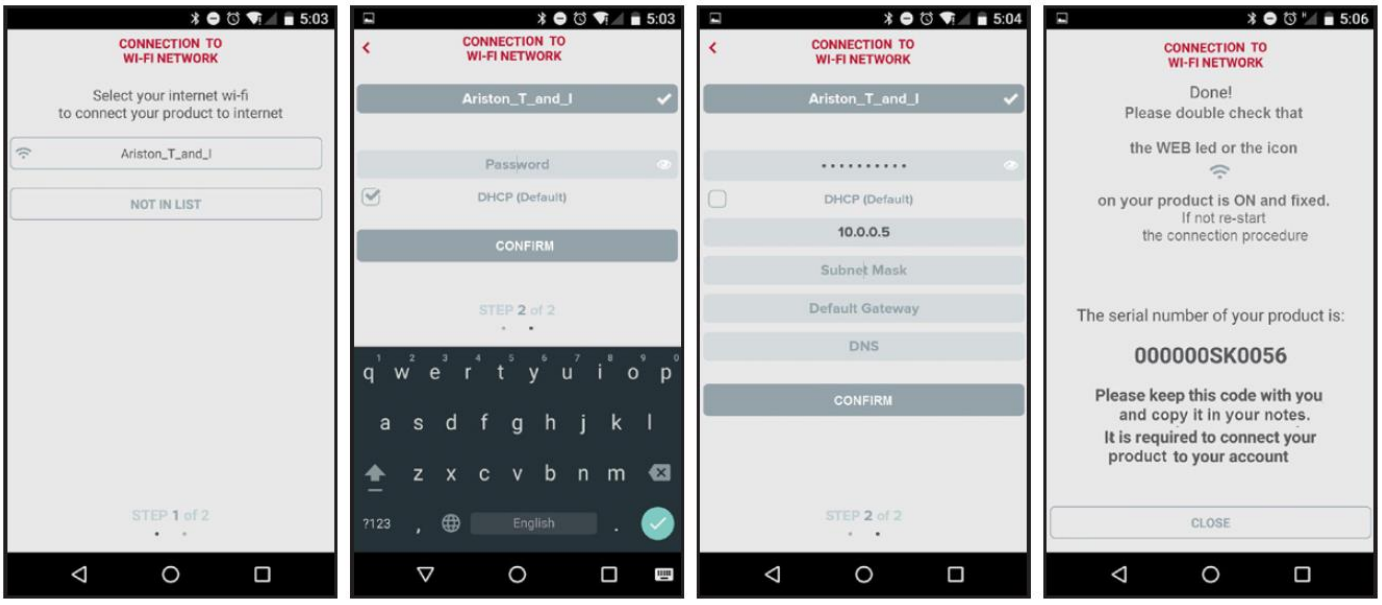




g) Wi- Fi Configuration (is possible via App or via Browser)

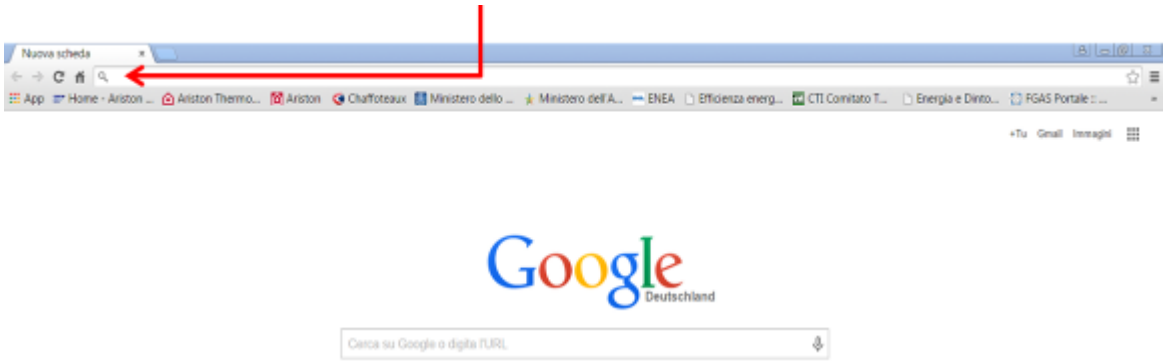
- ***Wi-Fi configuration via App***

Download and start the App according to the configuration wizard.



- ***Wi-Fi configuration via Browser***

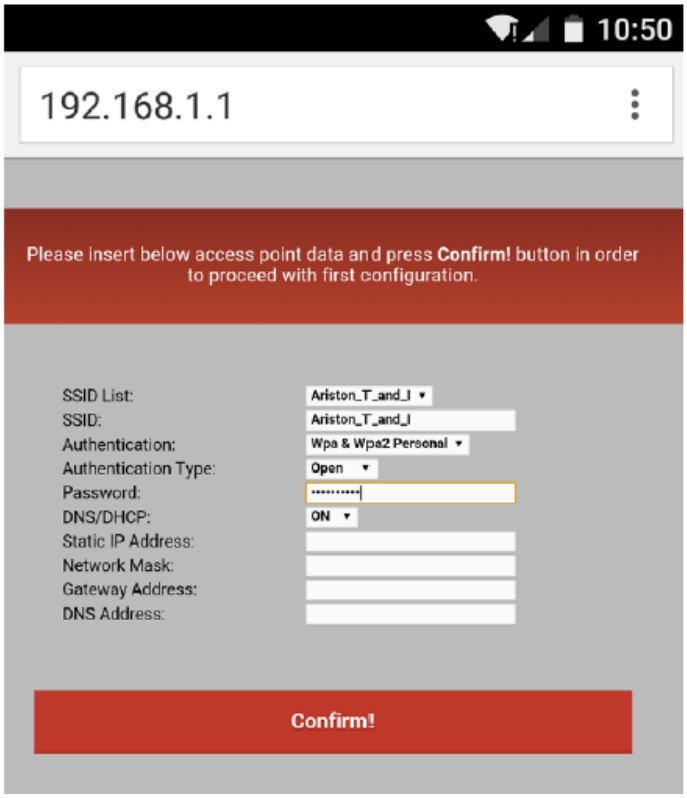
Otherwise, open the web browser (Internet Explorer, Safari, Chrome, etc.) and enter the link **192.168.1.1** in the address bar.



There are two possibility:

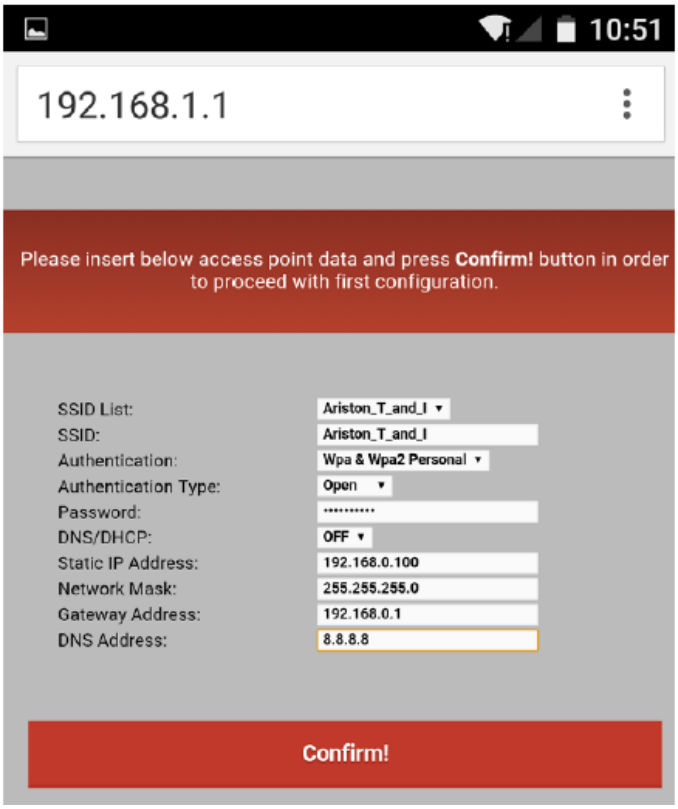
a) AUTOMATIC (recommended)

- Select your own wireless (SSID) network and enter the password
- Leave the default setting DHCP=ON
- Click Confirm

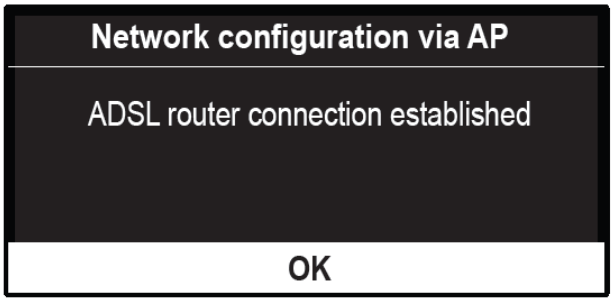


b) MANUAL

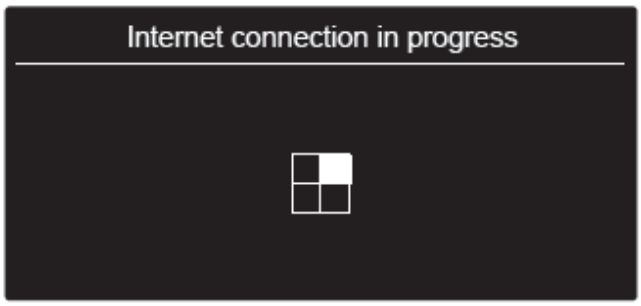
- Keep the selection SSID=Manual
- Write the name of the Wi-Fi network in the “SSID” field. State the type of authentication used in the “Authentication” and “Authentication Type” fields and enter the password
- Select DHCP=OFF
- Enter the static IP address assigned to the gateway
- Enter the network mask
- Enter the Ips of the router and of the DNS
- Click Confirm



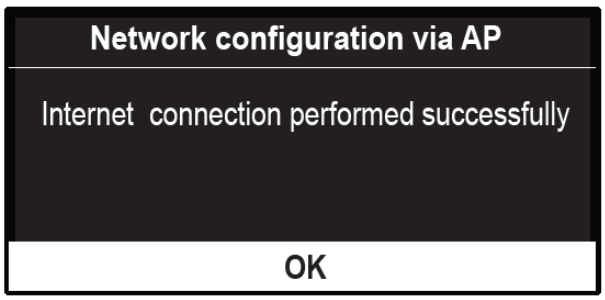
h) After some seconds, the display will show the following message, meaning that the connection to the router has been established: push the “OK” button.

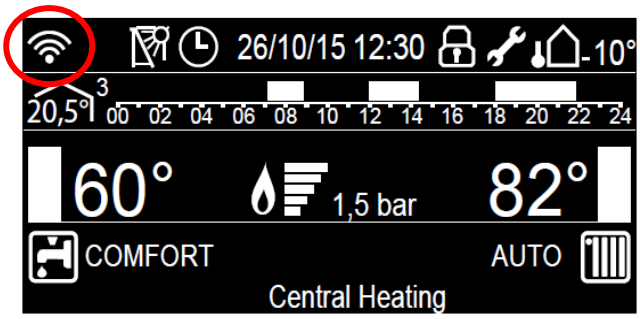


i) The display shows the following message, while it try to reach the Internet provider.



j) If the connection is performed successfully the display will shows that the connection is ready. Pressing “OK”, in the home screen the WiFi icon will appear on the top.





k) If the local Wi-Fi network configuration is unsuccessful (the display shows that the connection to the router cannot be accomplished), repeat the previous procedure starting from point “e”. This procedure must be repeated each time the home Wi-Fi network is modified (i.e., router replacement or changes in the Wi-Fi network settings).
The procedure can fail if:
- The Wi-Fi signal is weak;
- The inserted password is wrong;
- The router is switched off.
In this case, the Wi-Fi icon in the home screen is the same of point “b”.

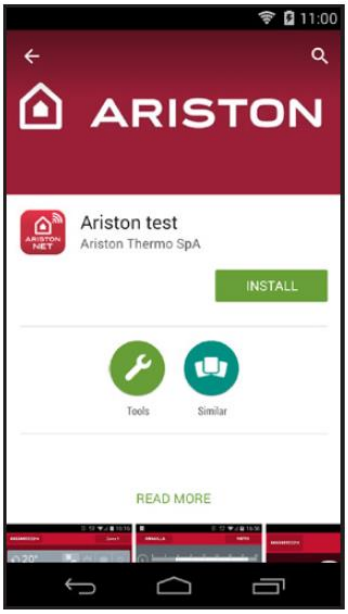
7.2 INTERNET SERVICES ACTIVATION

7.2.1 Remote control (RC) – End user

The functions of remote control for end user are reachable through App or Web App.

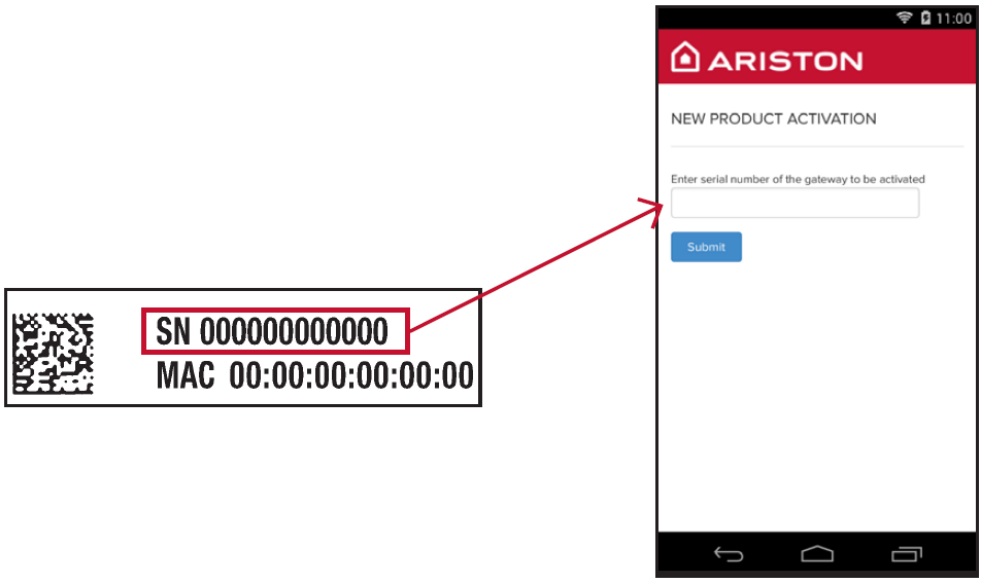
- ***App***

- Download the official App Ariston Net

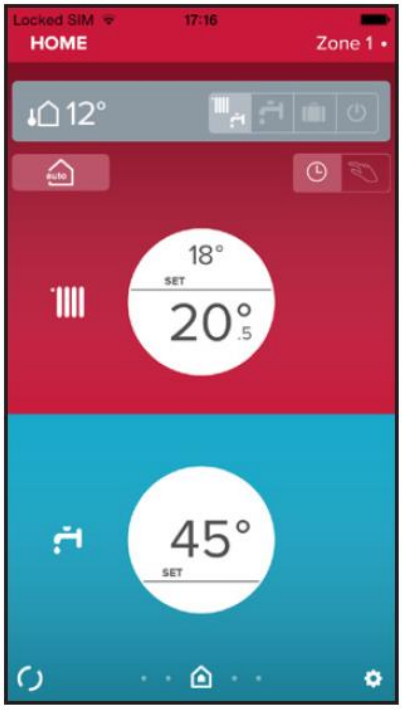


- Register your account by entering your details (you can register your account and product only after connecting the device to Internet).
  You will be sent an e-mail with an e-mail address confirmation link.

- Click on the link and enter the serial code found in the bottom part of the boiler control box.



- Start control your system.

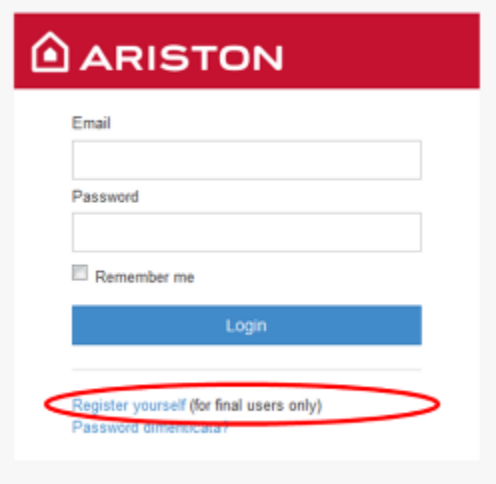


IMPORTANT:
You can control your system with several devices at once, simply use the same credentials to log in.
The App includes an option for registering more than one gateway with a single user account.

- ***Web App***

Access from web browser to Ariston Net: https://www.ariston-net.remotethermo.com

Make the registration:



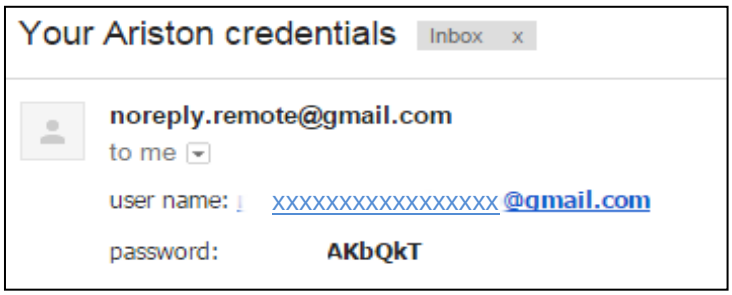
7.2.2 Remote diagnostics (RD) – After sales service

The After sales services can access on platform of remote diagnostic through web browser on Ariston Net: https://www.ariston-net.remotethermo.com

Ariston Thermo will create the account for the After sales service **with the *e-mail provided from the same assistance***.

Then the After sales service will receive one e-mail where there are written the credentials for the access:

- The username is **the *e-mail provided from the same assistance***
- The password is on the e-mail received and can be changed after the access.



➢ ***For major details and information, is possible to download (on the dedicated area on site Ariston) the following guides:***

- ***web App for After sales service***
- ***web App and App for the user***

7.3 ERRORS

The errors of boiler (and all components of the system connected through the Bus connection) are acquired from the Gateway and can be visualized through Ariston Net, from the After sales service and from the end user in different mode.

7.3.1 Remote control (RC) errors management – End user

The end user can **only view the errors blockers for the boiler**.
Is not possible to reset any error from remote (by App or by Web App).
While the error is active, the App is usable but is not allow any operation till the error will be solved.
On the Web App, when appears the error, contemporaneously appears also one notification.

Errors table viewable by the end user:

1	**01**	Overheat
1	**02**	Pressure Sens Error
1	**03**	Flow Check Failed
1	**04**	Flow Check Failed
1	**05**	Flow Check Failed
1	**06**	Flow Check Failed
1	**07**	Flow Check Failed
1	**08**	Filling Needed
1	**11**	Filling Needed
1	**10**	Send Probe Damaged
1	**12**	Return Probe Damaged
1	**16**	Floor Stat Open Circuit
1	**18**	Primary Probes Test Fail
2	**01**	DHW Probe Damaged
2	**03**	Tank Probe Damaged
2	**05**	DHW In Probe Open Circuit
2	**51**	DHW out sensor damaged
2	**52**	DHW in sensor damaged
3	**01**	Display EEPR err
3	**06**	PCB Fault
3	**08**	Config type mismatch
3	**09**	Gas Relais check Failed
4	**11**	Room Sensor not available Z1
4	**12**	Room Sensor not available Z2
4	**13**	Room Sensor not available Z3
4	**14**	Room Sensor not available Z4
4	**15**	Room Sensor not available Z5
4	**16**	Room Sensor not available Z6
4	**30**	MF Function not defined
4	**31**	MF Temp sensor 1 damaged
4	**32**	MF Temp sensor 2 damaged
4	**33**	MF Temp sensor 3 damaged
5	**01**	No flame detected
5	**02**	Flame Sensed with Gas Valve Closed
5	**04**	Flame lift
6	**01**	Fumes Overflow
6	**02**	Fumes Overflow
6	**04**	Low fan speed
6	**05**	Flue Sensor Open Circuit
6	**07**	APS on FAN off
6	**08**	APS off FAN on
6	**10**	Exchanger Probe Open Circuit
6	**12**	Fan Error
6	**P1**	APS late closing
6	**P2**	APS close-open
6	**P4**	Low fan speed
7	**02**	Zone2 Send Probe Damaged
7	**03**	Zone3 Send Probe Damaged
7	**05**	Zone5 Send Probe Damaged
7	**06**	Zone6 Send Probe Damaged
7	**22**	Zone2 Overheat
7	**23**	Zone3 Overheat
7	**25**	Zone5 Overheat
7	**26**	Zone6 Overheat

7.3.2 Remote diagnostics (RD) errors management – After sales service

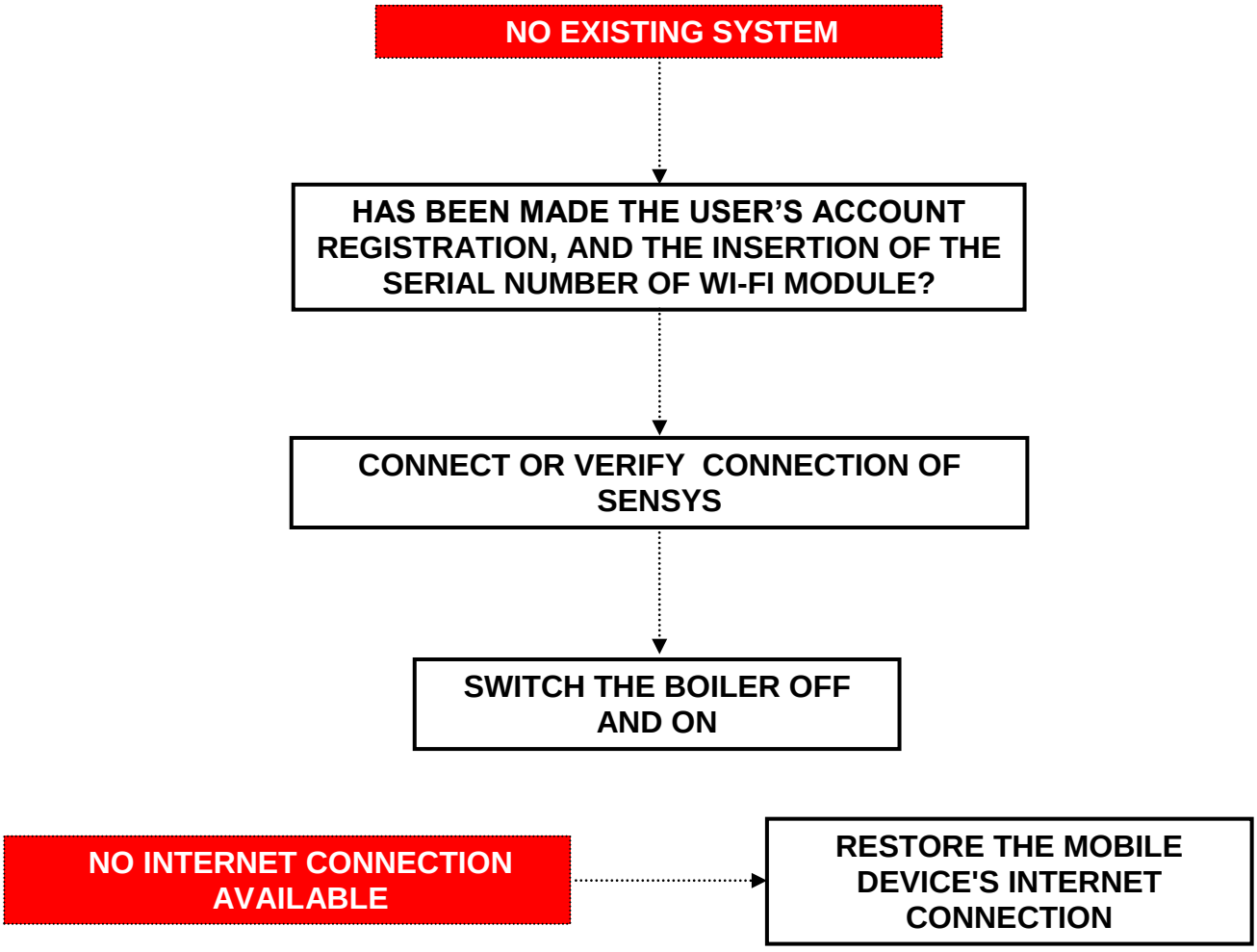
The After sales service can visualize through Web App **all errors generated from system** and contemporaneously when appears the error, **he receive one mail only for blockers errors.**
He can also reset some errors from remote (the errors regarding the gas, are not resettable for security reasons)

Errors table resettable from remote:

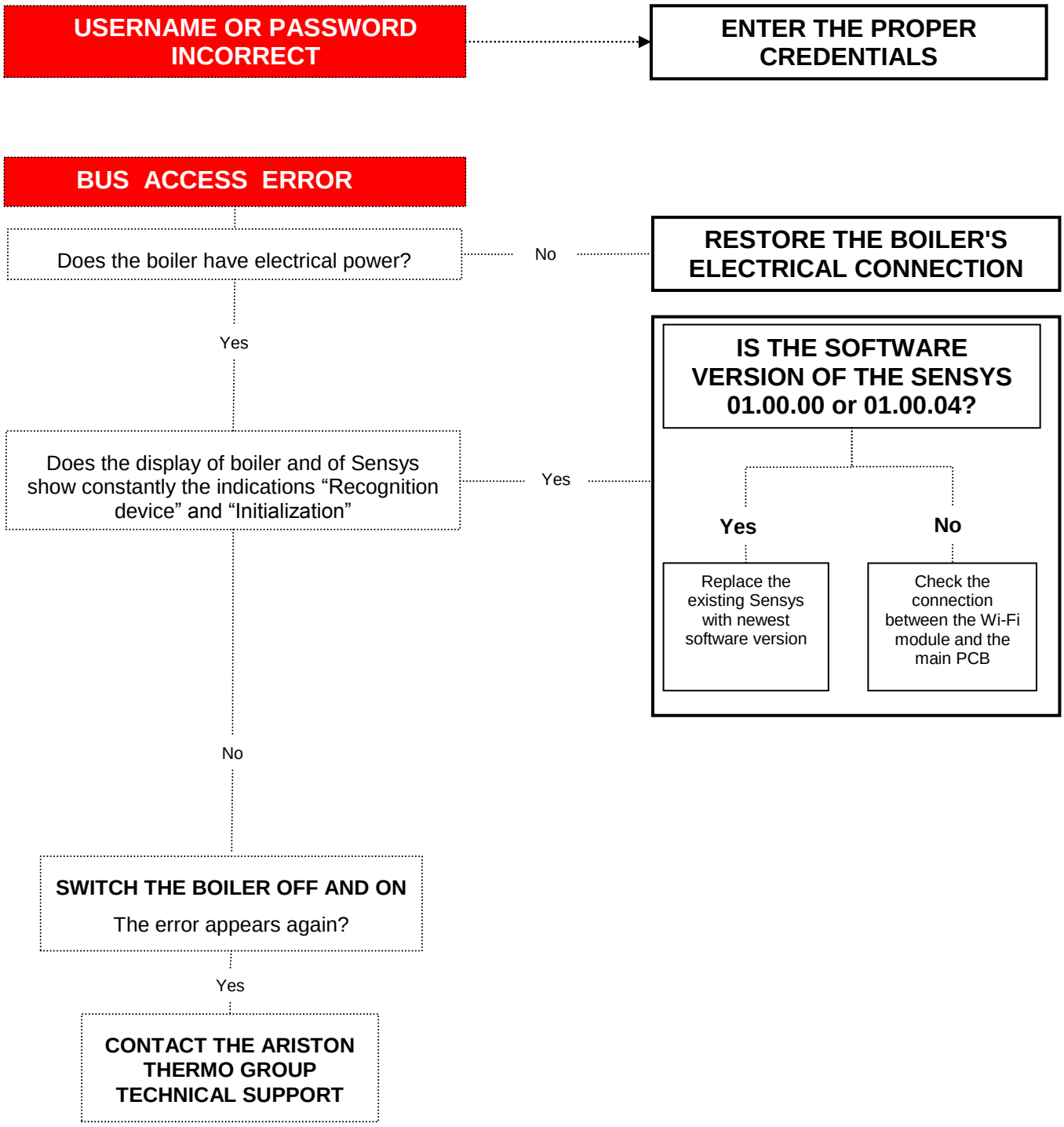
1	**01**	Overheat
1	**03**	Flow Check Failed
1	**04**	Flow Check Failed
1	**05**	Flow Check Failed
1	**06**	Flow Check Failed
1	**07**	Flow Check Failed
6	**04**	Low fan speed
6	**12**	Fan Error

7.4 TROUBLESHOOTING

7.4.1 Only for App



7.4.2 For App and Web App



COMMUNICATION ERROR

Does the boiler have electrical power?

No → **RESTORE THE BOILER'S ELECTRICAL CONNECTION**

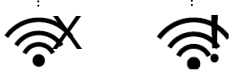
Yes

Is Wi-Fi module properly connected to the boiler PCB?

No → **CHECK THE CONNECTION OF THE WI-FI MODULE ON THE BOILER PCB AND THAT THE CABLE IS NOT DAMAGED**

Yes

The Wi-Fi icon is



→ 

SWITCH THE BOILER OFF AND ON

The Wi-Fi icon is (NORMALE)

Yes

IF THE PROBLEM HASN'T BEEN SOLVED, MAKE AGAIN THE CONFIGURATION PROCEDURE

Check the router internet connection by using smartphone or tablet

Yes → Platform server undergoing maintenance.

WAIT FOR AUTOMATIC RESET

No

Reset the router or contact the internet provider

Has been done the configuration procedure?

No → **MAKE THE CONFIGURATION PROCEDURE**

Yes

Is the ADSL router ON and connected to the Internet?

No → **RESTORE THE ADSL ROUTER'S CONNECTION TO THE INTERNET**

Yes

CONTINUED ON THE NEXT PAGE

CONTINUED FROM THE PREVIOUS PAGE

Is the Wi-Fi signal strength adequate?

(Verify with smartphone or tablet in exactly the same position of the gateway as a comparison)

No

INSTALL A WI-FI SIGNAL REPEATER

Yes

Make again the configuration procedure making sure that have been inserted correctly the credentials of the reference Wi-Fi network, verifying their accuracy even with another mobile device.

The W-Fi icon is:

SWITCH THE BOILER OFF AND ON

The Wi-Fi icon is (NORMALE)

Yes

IF THE PROBLEM HASN'T BEEN SOLVED, CONTACT THE ARISTON THERMO GROUP TECHNICAL SUPPORT

Reset the router or contact the internet provider

Platform server undergoing maintenance.

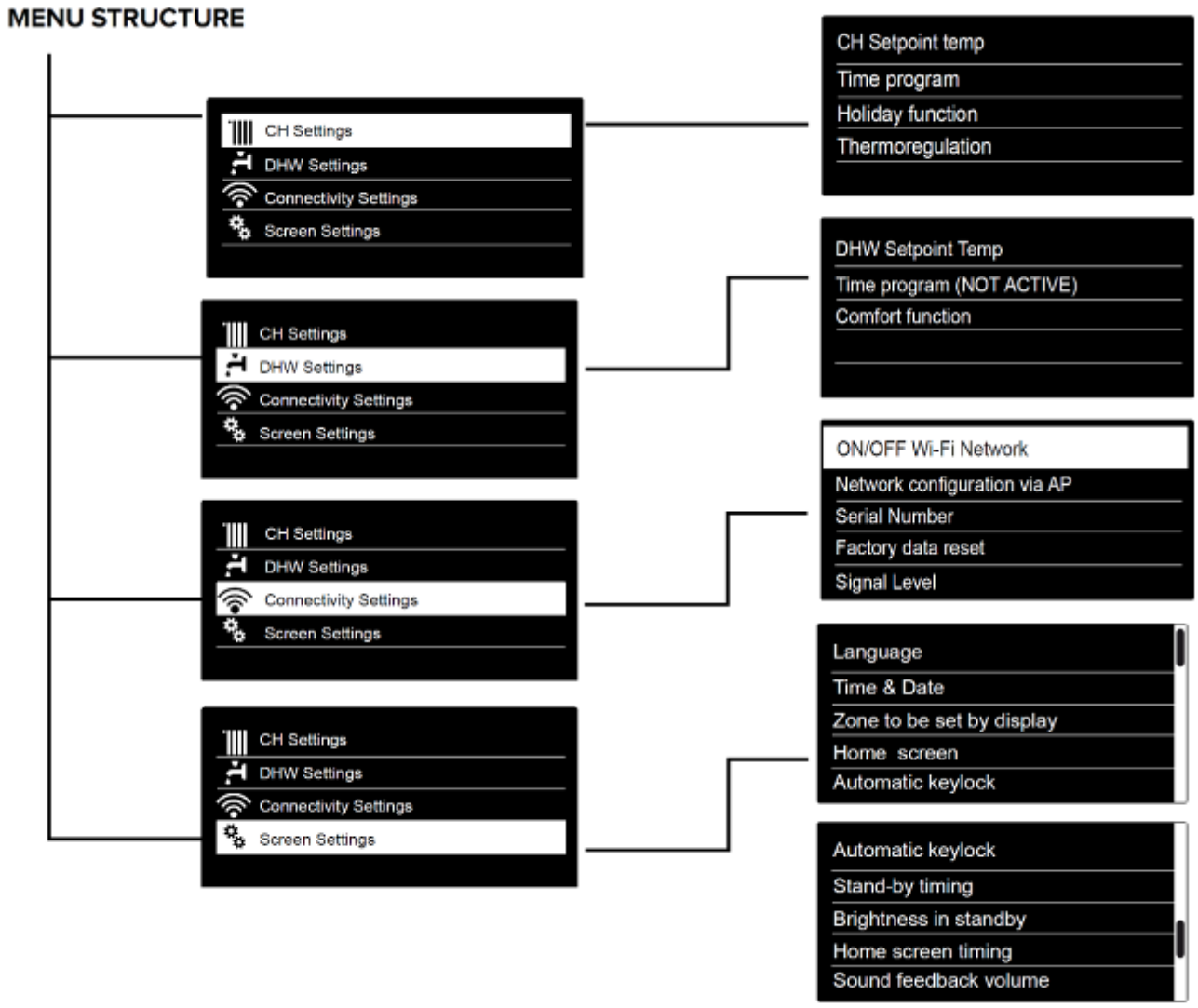
WAIT FOR AUTOMATIC RESET

8 MENU AND SETTINGS

In the boiler there are 2 different menu, one for the end-user and one for the technician.

8.1 USER MENU

To enter in the user menu push the button OK.



8.2 TECHNICIAN MENU

To enter in the in the technician menu push for 5 second the buttons  and  , and after set the access code “234” and push the button “OK”.

Access code (only fot technician) – Through the knob set “234” and push “OK” button

- **Language, date and time.**
- **Complete menu** - (In the following page there are all parameters available)
- **Configuration wizard**
  - Boilers
    - Parameters
      - Gas setting - (Parameters 220 - 230 - 231 - 232 - 233 - 234 – 270)
      - Settings – (Parameters 220 - 231 – 223 - 238 - 245 – 246)
      - Visualization – (Parameters 821 – 822 – 823 – 824 - 824 - 82**5** - 827 - 830 - 831 - 832 - 833 - 840 – 835 - 874)
      - Zone – (Parameters 402 - 502 - 602 - 420 - 520 - 620 - 434 - 534 - 634 – 830)
    - Guided procedures
      - System filling
      - System air purge
      - Exhaust fumes analysis
    - Service options
      - Service centre data
      - Enable service warnings
      - Service warnings reset
      - Months remaining before service
    - Test mode
      - Pump test
      - 3 way valve test
      - Fan test
- **Service**
  - Boiler
    - Parameters
      - Gas setting – (Parameters 220 - 230 - 231 - 232 - 233 - 234 – 270)
      - Visualization – (Parameters 821 – 822 – 823 – 824 - 824 - 82**5** - 827 - 830 - 831 - 832 - 833 - 840 – 835 - 874)
      - Boiler PCB change – (Parameters 220 - 226 - 228 -229 - 231 - 232 - 233 - 234 - 247 - 250 – 253)
- **Faults – (Last 10 errors: code, description, date. Turn the knob to visualize the errors).**

8.3 COMPLETE MENU

8.3.1 Menù 0 : Network

Menù	Sub Menù	Parameter	Function	Range	Default setting
0	2		***BUS NETWORK***		
0	2	0	Network presence in the bus	(only visualization)	/
0	4		***USER INTERFACE***		
0	4	0	Zone to be set by display	1: heating zone 1 2: heating zone 2 3: heating zone 3	1
0	4	1	Backlight time (min)	1 ÷ 10 ; 24h	10min
0	4	2	Thermoregulation button deactivation	0: OFF 1: ON	0

8.3.2 Menù 2 : Boiler parameter

Menù	Sub Menù	Parameter	Function	Range	Default setting
2	0		***GENERAL***		
2	0	0	DHW setpoint temperature	36 ÷ 60	/
2	1		***FREEPARAMETERS***		
2	1	4	Boiler circulator type	0: Standard efficiency 1: High efficiency	1
2	2		***GENERAL***		
2	2	0	Slow ignition as % of the maximum heating power	0 ÷ 100	See gas table
2	2	2	Fan modulation	0: disabled 1: enabled	0
2	2	4	Thermoregulation	0: disabled 1: enabled	0
2	2	5	Heating delay restart	0: disabled 1: 10 seconds 2: 90 seconds 3: 210 seconds	0
2	2	6	Conventional boiler configuration	0: Monothermic open chamber 1: Monothermic open chamber VMC 2: Monothermic sealed chamber fan fix speed 3: Monothermic sealed chamber fan modulating speed 4 Bithermic open chamber 5 Bithermic sealed chamber	Depend on the boiler version
2	2	8	Boiler version	0: combi 1: Storage with NTC (tank) 2: only heating or storage with thermostat 3: micro-storage	Depend on the boiler version
2	2	9	Boiler nominal power	0 ÷ 100 kW	Depend on

					the boiler
2	**3**		***CENTRAL HEATING-1***		
2	**3**	**0**	Absolute maximum heating power	0 ÷ 100	See gas table
2	**3**	**1**	Maximum heating power (heating absolute maximum power percentage) (%)	0 ÷ 100	See gas table
2	**3**	**5**	Select of heating delay manage	0: manual (set with par. 2 36) 1: automatic	1
2	**3**	**6**	Heating delay (min), enabled by par. 2 35= 0	0 ÷ 7	3
2	**3**	**7**	Heating post-circulation (min)	0 ÷ 15 CO: non stop	3
2	**3**	**8**	Pump modulation on heating	0: speed 2 steady 1: speed 3 steady 2: modulating	2
2	**3**	**9**	ΔT for pump modulation (°C)	10 ÷ 30	20
2	**4**		***CENTRAL HEATING-2***		
2	**4**	**0**	Heating circuit minimum pressure (0,x bar)	3 ÷ 4	4
2	**4**	**1**	Heating circuit pressure required to request filling (error message) (0,x bar)	Par. 240 ÷ 8	6
2	**4**	**3**	Heating post-ventilation	0: 5 sec 1: 3 min	0
2	**4**	**4**	Boost time (min)	0 ÷ 60 (with Auto function working)	16
2	**4**	**5**	Max PWM pump	75 ÷ 100	100
2	**4**	**6**	Min PWM pump	40 ÷ Par.245	40
2	**4**	**7**	Heating water pressure detection device	0: temperature probes only 1: pressure switch 2: pressure sensor	2
2	**4**	**9**	External temperature correction (°C)	-3 ÷ 3	0
2	**5**		***DOMESTIC HOT WATER***		
2	**5**	**0**	Sanitary comfort function	0: disabled 1: enabled for 30 minutes after a heating request 2: always enabled	0
2	**5**	**1**	Comfort anticycle (min)	0 ÷ 120	0
2	**5**	**2**	Sanitary delay start (anti water hammering) (dec)	5 ÷ 200	5
2	**5**	**3**	Sanitary switch off logic	0: anti-scale (62 o 65°C). 1: set-point+4°C	0
2	**5**	**4**	Sanitary post-circulation and post-ventilation	0: Post-ventilation: Tflow<75°C = no post-ventilation; Tflow>75°C = 3 min (minimum speed); Post-circulation: 30sec 1: Post-ventilation: 3min Post-circulation: 3min	0
2	**5**	**5**	Heating start delay after sanitary (min)	0 ÷ 30	0
2	**6**		***BOILER MANUAL SETTING***		
2	**6**	**0**	Manual mode activation	0: Off 1: On	0
2	**6**	**1**	Boiler pump control (set parameter 260 =1)	0: Off 1: On (timed 10 min)	0

2	**6**	**2**	Fan control (set parameter 260 =1)	0: Off 1: On (timed 10 min)	0
2	**6**	**3**	Diverter valve control (set parameter 260 =1)	0: Sanitary 1: Heating (timed 10 min)	0
2	**7**		***TEST & UTILITIES***		
2	**7**	**0**	Flue cleaning function	0: Off 1: On (select desired power)	0
2	**7**	**1**	Air Purge function	0: Off 1: On	0
2	**8**		***RESET MENU'***		
2	**8**	**0**	Reset menu 2 factory setting	YES: press button "OK" NO: press button "ESC"	/

8.3.3 Menù 4 : Zone 1 parameters

Menù	Sub Menù	Parameter	Function	Range	Default setting
4	**0**		***SETPOINT***		
4	**0**	**2**	Temperature setpoint zone 1	Par 425 ÷ Par 426	/
4	**2**		***ZONE 1 SETTING***		
4	**2**	**0**	Select high or low temperature for zone 1 (only with zone module)	0: low temperature 1: high temperature	1
4	**2**	**1**	Thermoregulation mode selection	0: fixed delivery temperature 1: basic thermoregulation 2: only room probe 3: only outside probe 4: room probe + external probe	1
4	**2**	**2**	Select thermoregulation curve	0_2 ÷ 1_0 (par. 420=0) 1_0 ÷ 3_5 (par. 420=1) (with Auto function enabled)	0_6 (par 420=0) 1_5 (par 420=1)
4	**2**	**3**	Select thermoregulation curve parallel shifting	-7 ÷ 7 (par. 420=0) -14 ÷ 14 (par. 420=1) (with Auto function enabled)	0
4	**2**	**4**	Influence of the room probe on thermoregulation	0 ÷ 20 (with Auto function enabled)	20
4	**2**	**5**	Zone 1 maximum heating temperature (°C)	20 ÷ 45 (par. 420=0) 35 ÷ 82 (par. 420=1)	45 (par. 420=0) 82 (par. 420=1)
4	**2**	**6**	Zone 1 minimum heating temperature (°C)	20 ÷ 45 (par. 420=0) 35 ÷ 82 (par. 420=1)	20 (par. 420=0) 35 (par. 420=1)
4	**3**		***DIAGNOSTICS***		
4	**3**	**2**	Zone 1 delivery temperature (°C)	(only visualization)	/
4	**3**	**3**	Zone 1 return temperature (°C)	(only visualization)	/
4	**3**	**4**	Heating request by zone 1	OFF: no ON: yes (only visualization)	/
4	**3**	**5**	Zone 1 pump status	OFF: switch-off ON: switch-on (only visualization)	/

4	**4**		***ZONE 1 ZONE MODULE SETTINGS*** (visible only with zone module connected)		
4	**4**	**0**	Zone 1 pump modulation	0: Fix 1: Modulating (ΔT)	1
4	**4**	**1**	ΔT for pump modulation	4 ÷ 25	7 (par. 420=0) 20 (par. 420=1)
4	**4**	**2**	Pump fixed speed setting (with par. 440 = 0)	20 ÷ 100	100

8.3.4 Menù 5 : Zone 2 parameters

Menù	Sub Menù	Parameter	Function	Range	Default setting
5	**0**		***SETPOINT***		
5	**0**	**2**	Temperature setpoint zone 2	Par 525 ÷ Par 526	/
5	**2**		***ZONE 2 SETTING***		
5	**2**	**0**	Select high or low temperature for zone 2 (only with zone module)	0: low temperature 1: high temperature	1
5	**2**	**1**	Thermoregulation mode selection	0: fixed delivery temperature 1: basic thermoregulation 2: only room probe 3: only outside probe 4: room probe + external probe	1
5	**2**	**2**	Select thermoregulation curve	0_2 ÷ 1_0 (par. 520=0) 1_0 ÷ 3_5 (par. 520=1) (with Auto function enabled)	0_6 (par 520=0) 1_5 (par 520=1)
5	**2**	**3**	Select thermoregulation curve parallel shifting	-7 ÷ 7 (par. 520=0) -14 ÷ 14 (par. 520=1) (with Auto function enabled)	0
5	**2**	**4**	Influence of the room probe on thermoregulation	0 ÷ 20 (with Auto function enabled)	20
5	**2**	**5**	Zone 2 maximum heating temperature (°C)	20 ÷ 45 (par. 520=0) 35 ÷ 82 (par. 520=1)	45 (par. 520=0) 82 (par. 520=1)
5	**2**	**6**	Zone 2 minimum heating temperature (°C)	20 ÷ 45 (par. 520=0) 35 ÷ 82 (par. 520=1)	20 (par. 520=0) 35 (par. 520=1)
5	**3**		***DIAGNOSTICS***		
5	**3**	**2**	Zone 2 delivery temperature (°C)	(only visualization)	/
5	**3**	**3**	Zone 2 return temperature (°C)	(only visualization)	/
5	**3**	**4**	Heating request by zone 2	OFF: no ON: yes (only visualization)	/
5	**3**	**5**	Zone 2 pump status	OFF: switch-off ON: switch-on (only visualization)	/
5	**4**		***ZONE 2 ZONE MODULE SETTINGS*** (visible only with zone module connected)		
5	**4**	**0**	Zone 2 pump modulation	0: Fix 1: Modulating (ΔT)	1
5	**4**	**1**	ΔT for pump modulationa	4 ÷ 25	7 (par. 520=0) 20 (par. 520=1)
5	**4**	**2**	Pump fixed speed setting (with par. 440 = 0)	20 ÷ 100	100

8.3.5 Menù 6 : Zone 3 parameters

Menù	Sub Menù	Parameter	Function	Range	Default setting
6	0		***SETPOINT***		
6	0	2	Temperature setpoint zone 3	Par 425 ÷ Par 426	/
6	2		***ZONE 2 SETTING***		
6	2	0	Select high or low temperature for zone 3 (only with zone module)	0: low temperature 1: high temperature	1
6	2	1	Thermoregulation mode selection	0: fixed delivery temperature 1: basic thermoregulation 2: only room probe 3: only outside probe 4: room probe + external probe	1
6	2	2	Select thermoregulation curve	0_2 ÷ 1_0 (par. 420=0) 1_0 ÷ 3_5 (par. 420=1) (with Auto function enabled)	0_6 (par 420=0) 1_5 (par 420=1)
6	2	3	Select thermoregulation curve parallel shifting	-7 ÷ 7 (par. 420=0) -14 ÷ 14 (par. 420=1) (with Auto function enabled)	0
6	2	4	Influence of the room probe on thermoregulation	0 ÷ 20 (with Auto function enabled)	20
6	2	5	Zone 3 maximum heating temperature (°C)	20 ÷ 45 (par. 420=0) 35 ÷ 82 (par. 420=1)	45 (par. 420=0) 82 (par. 420=1)
6	2	6	Zone 3 minimum heating temperature (°C)	20 ÷ 45 (par. 420=0) 35 ÷ 82 (par. 420=1)	20 (par. 420=0) 35 (par. 420=1)
6	3		***DIAGNOSTICS***		
6	3	2	Zone 3 delivery temperature (°C)	(only visualization)	/
6	3	3	Zone 3 return temperature (°C)	(only visualization)	/
6	3	4	Heating request by zone 3	OFF: no ON: yes (only visualization)	/
6	3	5	Zone 3 pump status	OFF: switch-off ON: switch-on (only visualization)	/
6	4		***ZONE 3 ZONE MODULE SETTINGS*** (visible only with zone module connected)		
6	4	0	Zone 3 pump modulation	0: Fix 1: Modulating (ΔT)	1
6	4	1	ΔT for pump modulationa	4 ÷ 25	7 (par. 420=0) 20 (par. 420=1)
6	4	2	Pump fixed speed setting (with par. 440 = 0)	20 ÷ 100	100

8.3.6 Menù 7 : Zone module

Menù	Sub Menù	Parameter	Function	Range	Default setting
7	1		***MANUAL MODE***		
7	1	0	Manula mode activation	0: Off 1: On	0
7	1	1	Zone 1 pump control (set parameter 710 =1)	0: Off 1: On (timed 10 min)	0
7	1	2	Zone 2 pump control (set parameter 710 =1)	0: Off 1: On (timed 10 min)	0
7	1	3	Zone 3 pump control (set parameter 710 =1)	0: Off 1: On (timed 10 min)	0
7	1	4	Zone 2 mix valve control (set parameter 710 =1)	0: Off 1: Open (timed o 10 min) 2: Close (timed 10 min)	0
7	1	5	Zone 3 mix valve control (set parameter 710 =1)	0: Off 1: Open (timed 10 min) 2: Close (timed 10 min)	0
7	2		***GENERAL ZONE MODULE***		
7	2	0	Hydraulic scheme	0: not defined 1: MCD 2: MGM II 3: MGM III 4: MGZ I 5: MGZ II 6: MGZ III	0
7	2	1	ΔT between zone delivery and boiler delivery (°C)	0 ÷ 40 (0= ΔT varible according the number of zones that require heat; HT = +7°C each zone; LT = +5°C each zone)	0
7	2	2	Auxiliary output setting	0: Heat request (to do a heat request to a generic boiler) 1: External pump management 2: Alarm (the contact close if there is an error regarding the zone module)	0
7	2	3	External temperature correction	-3 ÷ 3	0
7	8		***ERROR HISTORY***		
7	8	0	Last 10 errors	/	/
7	8	1	Reset error list	SI: push button “OK” NO: push button “ESC”	/
7	9		***RESET MENU’***		
7	9	0	Reset menu 2 factory setting	YES: push button “OK” NO: push button “ESC”	/

8.3.7 Menù 8 : Service parameters

Menù	Sub Menù	Parameter	Function	Range	Default setting
8	**0**		***BOILER STATISTICS***		
8	**0**	**0**	Diverter valve cycles (nr x 10)	(only visualization)	/
8	**0**	**1**	Time of circulator on (h x 10)	(only visualization)	/
8	**0**	**2**	Boiler circulator cycles (nr x 10)	(only visualization)	/
8	**0**	**3**	Boiler Life Time (h x 10)	(only visualization)	/
8	**0**	**4**	Time of fan ON (h x 10)	(only visualization)	/
8	**0**	**5**	Number of fan cycles (nr x10)	(only visualization)	/
8	**0**	**6**	Number of flame detection in CH (nr x10)	(only visualization)	/
8	**0**	**7**	Number of flame detection in DHW (nr x10)	(only visualization)	/
8	**1**		***BOILER STATISTICS***		
8	**1**	**0**	Hours burner on in heating (h x 10)	(only visualization)	/
8	**1**	**1**	Hours burner on in sanitary (h x 10)	(only visualization)	/
8	**1**	**2**	Number of flam lifts (n x 10)	(only visualization)	/
8	**1**	**3**	Number of ignition cycles (n x 10)	(only visualization)	/
8	**1**	**4**	Average heat request duration (h x 10)	(only visualization)	/
8	**2**		***BOLILER***		
8	**2**	**0**	Burner modulation	0 ÷ 255 (only visualization)	/
8	**2**	**1**	Fan state	0: Off ; 1: On (only visualization)	/
8	**2**	**4**	3-way valve position	0= sanitary; 1= heating ((only visualization)	/
8	**2**	**5**	Sanitary flow meter (l/min)	(not active)	/
8	**2**	**6**	APS Status	0: open; 1: closed (only visualization)	/
8	**2**	**7**	Pump Modulation (%)	(only visualization)	/
8	**2**	**8**	Gas power (kW)	(only visualization)	/
8	**3**		***BOILER TEMPERATURE***		
8	**3**	**0**	Temperature set on heating (°C)	(only visualization)	/
8	**3**	**1**	Temperature measured on heating delivery (°C)	(only visualization)	/
8	**3**	**2**	Heating return measured temperature (°C)	(only visualization)	/
8	**3**	**3**	Sanitary measured temperature (°C)	(not active)	/
8	**3**	**5**	External temperature (°C)	(only visualization)	/
8	**4**		***STORAGE AND SOLAR (if present)***		
8	**4**	**2**	Sanitary inlet temperature (°C) (only with solar inlet sensor connected)	(only visualization)	

8	**5**		***SERVICE***		
8	**5**	**0**	Month to next maintenance	0 ÷ 60	24
8	**5**	**1**	Maintenance on days act	0: Off 1: On	0
8	**5**	**2**	Maintenance warning reset	YES: push button “OK” NO: push button “ESC”	/
8	**5**	**4**	Display software version	(only visualization)	/
8	**5**	**5**	Main PCB software version	(only visualization)	/
8	**6**		***ERROR HISTORY***		
8	**6**	**0**	Last 10 errors	/	/
8	**6**	**1**	Reset error list	YES: push button “OK” NO: push button “ESC”	/
8	**7**		***FREE PARAMETERS***		
8	**7**	**4**	Boiler flow switch	0: open; 1: closed (only visualization)	/

8.3.8 Menù 19 : Wi-Fi (only Alteas and Genus Wi-Fi)

Menù	Sub Menù	Parameter	Function	Range	Default setting
19	**0**		***BOILER STATISTICS***		
19	**0**	**0**	Wi-Fi activation	0: Off 1: On	0
19	**0**	**1**	Configuration by AP	0: Off 1: On	0
19	**0**	**3**	Internet time	0: Off 1: On	1
19	**1**		***BOILER STATISTICS***		
19	**1**	**0**	Connectivity Status	(only visualization)	/
19	**1**	**1**	Signal level	(only visualization)	/
19	**1**	**2**	Active Status	(only visualization)	/
19	**1**	**4**	Serial number	(only visualization)	/
19	**1**	**5**	SW Upgrade Status	(only visualization)	/
19	**2**		***RESET MENU’***		
19	**2**	**0**	Reset menu 2 factory setting	Reset menu 2 factory setting	/

9 ERROR CODES.

9.1 BOILER PROTECTION SYSTEMS.

There are two types of errors for malfunctions:
- Shutdown (solved by resetting);
- Safety stop (No Reset: the boiler will start working again properly when the cause is removed).
There is a third type of error code that is used to indicate a malfunction that does not stop the boiler which continues to work properly (Indication).

9.1.1 Error code

The error codes are divided in seven different functional units, in other words the first figure indicates which functional unit of the boiler is involved in the error:

1. Primary circuit;
2. Sanitary circuit;
3. Electronic PCB;
4. Communication with peripherals;
5. Ignition and detection;
6. Air inlet / Fume outlet.
7. Zones

Display	Description	Ripristino
	PRIMARY CIRCUIT	
1 01	Overheat	Reset
1 02	Heating proportional pressure short circuit or open circuit	No Reset
1 03	Circulation or presence of water: Gradient Tman > 7°C/sec for 3 times	Reset
1 04	Circulation or presence of water: Gradient Tman > 20°C/sec or Gradient Trit > 20°C/sec	Reset
1 05	Circulation or presence of water: Tman – Trit> 55°C for 3 times	Reset
1 06	Circulation or presence of water: Trit > Tman + 10°C for 3 times	Reset
1 07	Circulation or presence of water: Trit > Tman + 30°C	Reset
1 08	Water missing on the primary circuit (P<Pmin) for boiler with minimum pressure switch on/off (par.247=1)	No Reset
1 09	High primary circuit pressure (P>3bar)	No Reset
1 10	Heating delivery probe open or short circuit (NTC1)	No Reset
1 11	Water missing on the primary circuit (P<Pmin) for boiler with pressure sensor(par. 247=2)	No Reset
1 12	Heating return probe open or short circuit (NTC2)	No Reset
1 14	Outdoor probe open or short circuit	No Reset
1 16	Floor thermostat opened	No Reset
1 P1	Circulation or presence of water: Gradient Tman > 7°C/sec	Warning
1 P2	Circulation or presence of water: Tman – Trit> 55°C	Warning
1 P3	Circulation or presence of water: Trit > Tman + 10°C	Warning
1 P4	Low primary circuit pressure($P<P_{SIGNALLING}$): fill up	Warning

	SANITARY CIRCUIT	
2 02	Storage low probe open or short circuit (solar)	No Reset
2 03	Storage probe open or short circuit	No Reset
2 04	Solar collector probe open or short circuit	No Reset
2 05	Sanitary inlet probe open or short circuit (solar)	No Reset
2 07	Solar manifold overheat	No Reset
2 08	Solar manifold temperature low (anti-freeze)	No Reset
2 09	Storage overheat	Warning
	PCB	
3 01	Eeprom display error	No Reset
3 02	GP – GIU communication error	No Reset
3 03	PCB internal error	No Reset
3 04	More than 5 resets executed in 15 minutes	No Reset
3 05	PCB internal error	Reset
3 06	PCB card internal error	Reset
3 07	PCB card internal error	Reset
	COMMUNICATION WITH PERIPHERALS	
4 07	Room probe open or short circuit	No Reset
	IGNITION AND DETECTION	
5 01	Flame missing	Reset
5 02	Flame detected with gas valve closed	No Reset
5 04	Flame lift during operation (10 flame lift in the same heat request)	Reset
5 P1	First ignition attempt failed	Warning
5 P2	Second ignition attempt failed	Warning
5 P3	Flame lift during operation	Warning
	AIR INLET / FUME OUTLET	
6 01	Fume thermostat enabling (only on open chamber)	No Reset
6 04	Fan turns too slow (<1775Rpm-100Rpm) or Hall sensor malfunction	Reset
6 07	Air pressure switch enabled before ignition sequence	No Reset
6 P1	Air pressure switch closing delayed	No Reset
	ZONE	
7 01	Heating delivery probe zone 1 open or short circuit	No Reset
7 02	Heating delivery probe zone 2 open or short circuit	No Reset
7 03	Heating delivery probe zone 3 open or short circuit	No Reset
7 11	Heating return probe zone 1 open or short circuit	No Reset
7 12	Heating return probe zone 2 open or short circuit	No Reset
7 13	Heating return probe zone 3 open or short circuit	No Reset
7 22	Zone 2 overheating	No Reset
7 23	Zone 3 overheating	No Reset
7 50	Hydraulic scheme not defined	No Reset

10 TECHNICAL DATA TABLE

	Model Name		ALTEAS X / GENUS X	
			24 FF	**30 FF**
GEN. NOTES	Certification (pin)		044 M	
	Boiler type		C12-C32-C42-C52-C62-C82-B22-B22p-B32	
ELECTRICAL PERFORMANCE	Max/min nominal heat input(Hi)	kW	25,8 / 11,0	30,0 / 13,0
	Max/min nominal heat input (Hs)	kW	28,7 / 12,2	33,3 / 14,4
	Max/min nominal heat input for hot water (Hi)	kW	25,8 / 11,0	30,0 / 13,0
	Max/min nominal heat input for hot water (Hs)	kW	28,7 / 12,2	33,3 / 14,4
	Heat output: max/min	kW	24,0 / 9,5	28,1 / 11,6
	D.H.W. Heat output: max/min	kW	23,6 / 10,0	27,4 / 11,9
	Combustion efficiency (at flue) Hi/Hs	%	93,7	93,8
	Gross efficiency of nominal heat input (60/80 °C) Hi/Hs	%	93,1 / 83,8	93,6 / 84,3
	Gross efficiency at 30 % at 47°C Hi/Hs	%	93,3 / 84,0	93,7 / 84,4
	Gross efficiency at minimum power Hi/Hs	%	86,7 / 78,1	89,3 / 80,4
	Number of efficiency stars (Directive 92/42/EEC)	stars	☆☆☆	
	Ma. heat loss to the casing (ΔT = 50°C)	%	0,6	0,2
	Heat loss through the flue when burner on	%	6,3	6,2
	Heat loss through the flue when burner off	%	0,4	0,4
EMISSIONS	Residual discharge head	Pa	120	145
	Nox class	class	3	
	Flue fumes temperature (G20)	°C	117	110
	$CO2$ content$_2$ (G20)	%	6,5	6,1
	CO content (0 %0_2)	ppm	60	111
	O2 content2 (G20)	%	8,8	9,5
	Max capacity fumes (G20)	kg/h	56,9	71,2
	Excess air	%	72	83
HEATING	Expansion vessel pre-charged pressure	Mpa (bar)	0,1 (1)	
	Maximum central heating circuit pressure	Mpa (bar)	0,3 (3)	
	Expansion vessel capacity	l	8	
	Central heating temperature: max/min	°C	82 / 35	
DOMESTIC HOT WATER CIRCUIT	Domestic hot water temperature max/min	°C	60 / 36	
	Specific flow rate of domestic hot water system (10 min. with ΔT=30°C)) instant boilers	l/min	11,2	13,2
	D.H.W. flow rate ΔT=25°C	l/min	13,5	15,7
	D.H.W. flow rater ΔT=35°C	l/min	9,6	11,2
	Hot water comfort stars (EN13203)	stars	☆☆	
	D.H.W. minimum flow rate	l/min	1,7	
	Domestic hot water pressure max/min	Mpa (bar)	0,7 / 0,1 (7 / 1)	
ROOMELECTRICAL	Power supply voltage/frequency	V/Hz	220 / 50	
	Power consumption	W	84	101
	Minimum operating room temperature	°C	+5	
	Electric system grades of protection	IP	X5D	
	Weight	kg	31	32

	Model Name		ALTEAS X / GENUS X	
			32 FF	**35 FF**
GEN. NOTES	Certification (pin)		045 M	
	Boiler type		C12-C32-C42-C52-C62-C82-B22-B22p-B32	
ELECTRICAL PERFORMANCE	Max/min nominal heat input(Hi)	kW	32,5 / 15,0	34,5 / 15,0
	Max/min nominal heat input (Hs)	kW	36,1 / 16,7	38,3 / 16,7
	Max/min nominal heat input for hot water (Hi)	kW	34,5 / 15,0	34,5 / 15,0
	Max/min nominal heat input for hot water (Hs)	kW	38,3 / 16,7	38,3 / 16,7
	Heat output: max/min	kW	29,6 / 12,8	32,3 / 13,2
	D.H.W. Heat output: max/min	kW	32,2 / 14,0	32,2 / 14,0
	Combustion efficiency (at flue) Hi/Hs	%	93,1	93,9
	Gross efficiency of nominal heat input (60/80 °C) Hi/Hs	%	91,1 / 82,0	93,6 / 84,3
	Gross efficiency at 30 % at 47°C Hi/Hs	%	89,8 / 80,9	92,6 / 83,4
	Gross efficiency at minimum power Hi/Hs	%	85,0 / 76,5	88,2 / 79,4
	Number of efficiency stars (Directive 92/42/EEC)	stars	☆☆☆	
	Ma. heat loss to the casing (ΔT = 50°C)	%	2,0	0,3
	Heat loss through the flue when burner on	%	6,9	6,1
	Heat loss through the flue when burner off	%	0,4	0,4
EMISSIONS	Residual discharge head	Pa	130	130
	Nox class	class	3	
	Flue fumes temperature (G20)	°C	125	112
	CO2 content$_2$ (G20)	%	6,4	6,4
	CO content (0 %0$_2$)	ppm	141	159
	O2 content2 (G20)	%	9,0	9,0
	Max capacity fumes (G20)	kg/h	77,2	77,2
	Excess air	%	75	75
HEATING	Expansion vessel pre-charged pressure	Mpa (bar)	1	
	Maximum central heating circuit pressure	Mpa (bar)	3	
	Expansion vessel capacity	l	8	
	Central heating temperature: max/min	°C	82 / 35	
DOMESTIC HOT WATER CIRCUIT	Domestic hot water temperature max/min	°C	60 / 36	
	Specific flow rate of domestic hot water system (10 min. with ΔT=30°C)) instant boilers	l/min	15,1	15,1
	D.H.W. flow rate ΔT=25°C	l/min	18,5	18,5
	D.H.W. flow rater ΔT=35°C	l/min	13,2	13,2
	Hot water comfort stars (EN13203)	stars	☆☆☆	
	D.H.W. minimum flow rate	l/min	1,7	
	Domestic hot water pressure max/min	Mpa (bar)	7	
ROOMELECTRICAL	Power supply voltage/frequency	V/Hz	220/50	
	Power consumption	W	101	101
	Minimum operating room temperature	°C	+5	+5
	Electric system grades of protection	IP	X5D	X5D
	Weight	kg	30	31

	Model Name		ALTEAS X / GENUS X	
			24 CF	**30 CF**
GEN. NOTES	Certification (pin)		046 M	047 M
	Boiler type		B11 - B11bs	
ELECTRICAL PERFORMANCE	Max/min nominal heat input(Hi)	kW	25,8 / 11,0	29,5 / 13,0
	Max/min nominal heat input (Hs)	kW	28,7 / 12,2	32,8 / 14,4
	Max/min nominal heat input for hot water (Hi)	kW	27,0 / 11,0	30,5 / 13,0
	Max/min nominal heat input for hot water (Hs)	kW	30,0 / 12,2	33,9 / 14,4
	Heat output: max/min	kW	23,7 / 9,9	26,5 / 11,2
	D.H.W. Heat output: max/min	kW	25,0 / 10,2	27,9 / 11,9
	Combustion efficiency (at flue) Hi/Hs	%	92,7	92,8
	Gross efficiency of nominal heat input (60/80 °C) Hi/Hs	%	91,9 / 82,8	89,9 / 81,0
	Gross efficiency at 30 % at 47°C Hi/Hs	%	91,2 / 82,1	89,7 / 80,8
	Gross efficiency at minimum power Hi/Hs	%	90,2 / 81,2	86,5 / 77,9
	Number of efficiency stars (Directive 92/42/EEC)	stars	☆☆	
	Ma. heat loss to the casing (ΔT = 50°C)	%	0,8	2,9
	Heat loss through the flue when burner on	%	7,3	7,2
	Heat loss through the flue when burner off	%	0 ,4	0,4
	Tiraggio minimo (CF)		4,1	4,3
	Nox class	class	2	
	Flue fumes temperature (G20)	°C	116	125
	$CO2$ content$_2$ (G20)	%	5,4	6,1
	CO content (0 %0_2)	ppm	54	44
	O2 content2 (G20)	%	10,8	9,5
	Max capacity fumes (G20)	kg/h	67,2	70,2
	Excess air	%	105	83
HEATING	Expansion vessel pre-charged pressure	Mpa (bar)	0,1 (1)	
	Maximum central heating circuit pressure	Mpa (bar)	0,3 (3)	
	Expansion vessel capacity	l	8	
	Central heating temperature: max/min	°C	82 / 35	
DOMESTIC HOT WATER CIRCUIT	Domestic hot water temperature max/min	°C	60 / 36	
	Specific flow rate of domestic hot water system (10 min. with ΔT=30°C)) instant boilers	l/min	11,8	13,2
	D.H.W. flow rate ΔT=25°C	l/min	14,3	16,0
	D.H.W. flow rater ΔT=35°C	l/min	10,2	11,4
	Hot water comfort stars (EN13203)	stars	☆☆	
	D.H.W. minimum flow rate	l/min	< 2	
	Domestic hot water pressure max/min	Mpa (bar)	0,7 / 0,1 (7 / 1)	
ROOMELECTRICAL	Power supply voltage/frequency	V/Hz	220 / 50	
	Power consumption	W	50	50
	Minimum operating room temperature	°C	+5	
	Electric system grades of protection	IP	X5D	
	Weight	kg	27	28