BAXI

LUNA HT1.850

LUNA HT1.1000

EN AUS

Wall-mounted condensing boilers

Installer's and User's instructions

Hydroheat Supplies Pty Ltd
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CE 0085

Dear Customer,
We are sure your new boiler will comply with all your requirements.
Purchasing one of the **BAXI** products satisfies your expectations: good functioning, simplicity and ease of use.
Do not dispose of this booklet without reading it: you can find here some very useful information, which will help you to run your boiler correctly and efficiently.

Do not leave any packaging (plastic bags, polystyrene, etc.) within the reach of children as they are a potential source of danger.

BAXI S.p.A. declares that these models of boiler bear the CE mark in compliance with the basic requirements of the following Directives:
- Gas Directive 2009/142/EC
- Efficiency Directive 92/42/EEC
- Electromagnetic Compatibility Directive 2004/108/EC
- Low Voltage Directive 2006/95/EC

CE

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INSTRUCTIONS PERTAINING TO THE INSTALLER

ISO 9001 - ISO 14001 - OHSAS 18001 Qualità Ambiente Sicurezza

BAXI S.p.A., a leading European manufacturer of hi-tech boilers and heating systems, has developed CSQ-certified quality management (ISO 9001), environmental (ISO 14001) and health and safety (OHSAS 18001) systems. This means that BAXI S.p.A. includes among its objectives the safeguard of the environment, the reliability and quality of its products, and the health and safety of its employees.
Through its organisation, the company is constantly committed to implementing and improving these aspects in favour of customer satisfaction.

CSQ

1. INSTRUCTIONS PRIOR TO INSTALLATION

This appliance shall be installed in accordance with the manufacturer's installation instructions, local gas fitting, electrical and water authority regulations, municipal building codes, AS5601 - Gas Installations and any other relevant statutory regulations. This boiler is designed to heat water at a lower than boiling temperature at atmospheric pressure. The boiler must be connected to a central heating system and to a domestic hot water supply system in compliance with its performances and output power.
Have the boiler installed by a Qualified Service Engineer and ensure the following operations are accomplished:

a) careful checking that the boiler is fit for operation with the type of gas available. For more details see the notice on the packaging and the label on the appliance itself.
b) careful checking that the flue terminal draft is appropriate; that the terminal is not obstructed and that no other appliance exhaust gases are expelled through the same flue duct, unless the flue is especially designed to collect the exhaust gas coming from more than one appliance, in conformity with the laws and regulations in force.
c) careful checking that, in case the flue has been connected to pre-existing flue ducts, thorough cleaning has been carried out in that residual combustion products may come off during operation of the boiler and obstruct the flue duct.
d) to ensure correct operation of the appliance and avoid invalidating the guarantee, observe the following precautions:

1. Heating circuit

1.1. new system

Before proceeding with installation of the boiler, the system must be cleaned and flushed out thoroughly to eliminate residual thread-cutting swarf, solder and solvents if any, using suitable proprietary products.
To avoid damaging metal, plastic and rubber parts, use only neutral cleaners, i.e. non-acid and non alkaline. The recommended products for cleaning are:
SENTINEL X300 or X400 and FERNOX heating circuit restore. To use this product proceeding strictly in accordance with the maker's directions.

1.2. existing system

Before proceeding with installation of the boiler, the system must be cleaned and flushed out to remove sludge and contaminants, using suitable proprietary products as described in section 1.1.
To avoid damaging metal, plastic and rubber parts, use only neutral cleaners, i.e. non-acid and non-alkaline such as SENTINEL X100 and FERNOX heating circuit protective. To use this product proceeding strictly in accordance with the maker's directions.
Remember that the presence of foreign matter in the heating system can adversely affect the operation of the boiler (e.g. overheating and noisy operation of the heat exchanger).

Failure to observe the above will render the guarantee null and void.

WARNING - This appliance is not suitable as a pool heater.

2. INSTRUCTIONS PRIOR TO COMMISSIONING

Initial lighting of the boiler must be carried out by a licensed technician. Ensure the following operations are carried out:

a) compliance of boiler parameters with (electricity, water, gas) supply systems settings.
b) compliance of installation with the laws and regulations in force.
c) appropriate connection to the power supply and grounding of the appliance.

The names of authorized Service Centres are listed on the accompanying sheet.
Failure to observe the above will render the guarantee null and void.
Prior to commissioning remove the protective plastic coating from the unit. Do not use any tools or abrasive detergents as you may spoil the painted surfaces.

The instructions shall state the substance of the following:
This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
Children should be supervised to ensure that they do not play with the appliance.

3. COMMISSIONING OF THE BOILER

To correctly light the burner proceed as follows:
1) provide power supply to the boiler;
2) open the gas cock;
3) follow the directions given below regarding the adjustments to be made at the boiler control panel.

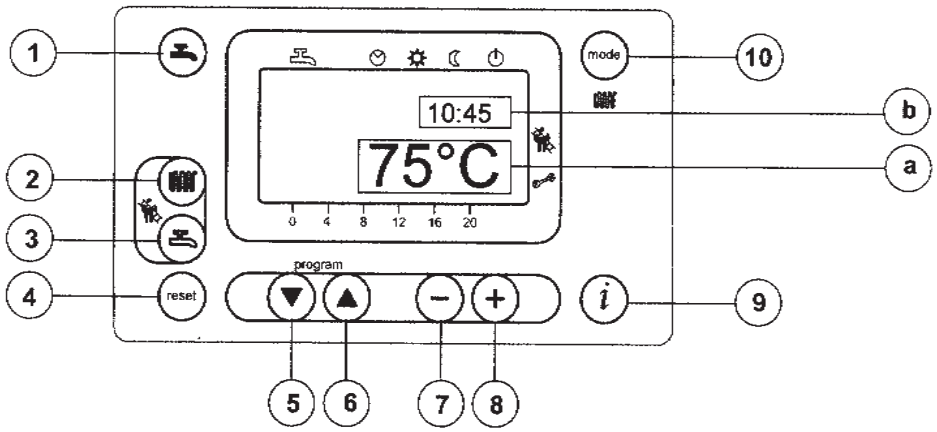

Figure 1

IMPORTANT: The instructions contained in this manual relating to the operation of the hot water circuit are relevant only if the appliance is actually connected to a domestic hot water system.

KEYS

- Domestic hot water on/off key
- Central heating water temperature setting key
- Domestic hot water temperature setting key
- Reset key
- Program access and scroll keys
- Program access and scroll keys
- Parameter setting key (decrease value)
- Parameter setting key (increase value)
- Data display reset key
- Central heating mode setting key

DISPLAY SYMBOLS

- Operation in domestic hot water mode
- Operation in central heating mode
- Operation in automatic mode
- Operation in manual mode at the maximum temperature set
- Operation in manual mode at minimum temperature
- Standby (off)
- Outdoor temperature
- Flame present (on)
- Resettable alarm warning

a) **MAIN display**
b) **SECONDARY display**

3.1 DESCRIPTION OF KEYS

(2) This key can be pressed to set the central heating water output temperature as described in point 3-3.

(3) This key can be pressed to set the domestic hot water temperature as described in point 3-4.

(10) Central heating mode operating key

The mode key can be pressed to activate four boiler central heating operating modes; these modes are identified by a black cursor line underneath the relative symbol on the display, and are as follows:

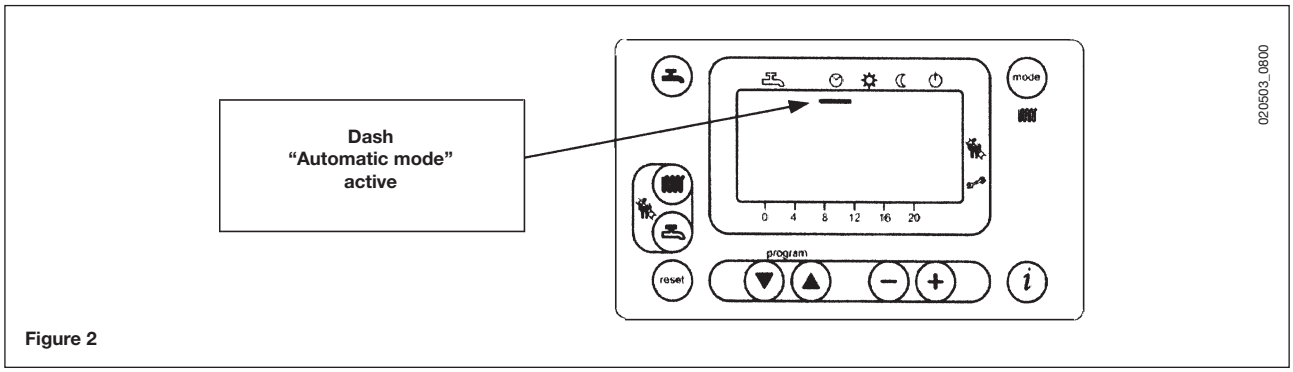

Figure 2

a) **Automatic operation**. Operation of the boiler is controlled by the timed program as described in point 3-5.1 "Daily timed program for operation of the central heating system";

b) **Manual operation at the maximum temperature set**. The boiler comes into operation regardless of the timed program set. The operating temperature is that set using the key (point 3-3: "Setting the maximum central heating temperature");

c) **Manual operation at minimum temperature**. The operating temperature is that set in point 3-6: "setting the minimum central heating temperature".
The manual transition from positions a) and b) to position c) involves shut-down of the burner and disconnection of the pump after the post-circulation delay interval (the factory setting for this parameter is 10 minutes).

d) **standby.** The boiler does not work in central heating mode, although the antifreeze function is still enabled.

(1) Domestic hot water on/off key: Press this key to activate or inhibit this function, which is identified by the appearance on the display of two black dashes under the symbol.

(4) Reset key. In case of a fault, referred to in point 3-7 "Faults and resetting the boiler", the boiler can be restarted by pressing this key for at least two seconds.
If this key is pressed with no fault present, the display will show the message "**E153**", and the same key has to be pressed again (for at least two seconds) to restart the boiler.

(9) Data key. This key can be pressed repeatedly to display the following information:
- Temperature (°C) of the domestic hot water ();
- outdoor temperature (°C) (); only provided with the outdoor temperature sensor probe connected.

Press either of the mode keys to return to the main menu.

3.2 SETTING THE TIME

a) Press either of the ▼ ▲ keys to access the programming function;
the display will show the letter **P** followed by a number (program line);

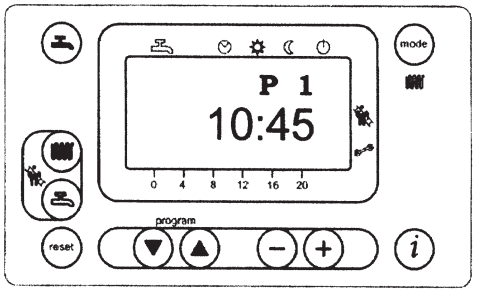

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Figure 3

b) press the ▼ ▲ keys until the display shows P1, referring to the time to be set;

c) press the − + keys to set the time; on the display, the letter P will start to flash;

d) press the *i* key to save and exit the programming function

3.3 SETTING THE MAXIMUM CENTRAL HEATING TEMPERATURE

- Press the key (2-figure 1) to set the central heating water temperature;
- Press the − + keys to set the temperature required;
- press either of the mode keys (1 or 10 - figure 1) to save and return to the main menu.

NOTE – With the outdoor sensor probe connected, the key (2 - figure 1) can be used to shift the central heating curve. Press the − + keys to decrease or increase the room temperature in the premises to be heated.

3.4 SETTING THE MAXIMUM DOMESTIC HOT WATER TEMPERATURE

- Press the key (3-figure 1) to set the maximum domestic hot water temperature;
- Press the − + keys to set the temperature required;
- press either of the mode keys (1 or 10 - figure 1) to save and return to the main menu.

3.5 SETTING THE DAILY PROGRAM FOR OPERATION IN CENTRAL HEATING AND DOMESTIC HOT WATER MODES

3.5.1 Setting the daily times for central heating mode operation

- Press either of the ▼ ▲ keys to access the programming function;
  a) press these keys until the display shows **P11**, referring to the program start time;
  b) press the − + keys to set the time;
- press the ▼ key; the display will show **P12**, referring to the program end time;
- repeat the operations described in points a and b until the third and last cycle is reached (program line **P16**);
- press the *i* key to save and exit from the programming function.

3.5.2 Setting the daily times for domestic hot water mode operation

- As supplied by the factory the appliance is set up with the domestic hot water function always enabled and the domestic hot water programming function disabled.
  The instructions for enabling this program are given in chapter **15**, which is addressed specifically to installers (parameter H91).
  If the program is enabled program lines from 31 to 36 must be set up as described in heading 3-5.1.

3.6 SETTING THE MINIMUM CENTRAL HEATING TEMPERATURE

- press either of the ▼ ▲ keys to access the programming function;
- press these keys until the display shows **P5**, referring to the temperature to be set;
- press the − + keys to set the temperature required.

This operating mode is enabled when minimum temperature central heating mode "☾" is activated or when the daily central heating program does not require heat.

NOTE – With the outdoor sensor probe connected, parameter P5 can be used to set the minimum room temperature in the premises to be heated.

3.7 TABLE OF USER-SETTABLE PARAMETERS

Parameter N.	Parameter description	Factory setting	Range
P1	Time of day setting	———-	0…23:59
P5	Minimum central heating temperature setting (°C)	25	25..80
P11	Start of first daily period of automatic central heating	6:00	00:00…24:00
P12	End of first daily period of automatic central heating	22:00	00:00…24:00
P13	Start of second daily period of automatic central heating	0:00	00:00…24:00
P14	End of second daily period of automatic central heating	0:00	00:00…24:00
P15	Start of third daily period of automatic heating	0:00	00:00…24:00
P16	End of third daily period of automatic central heating	0:00	00:00…24:00
P31	Start of first daily period of domestic hot water production (*)	0:00	00:00…24:00
P32	End of first daily period of domestic hot water production (*)	24:00	00:00…24:00
P33	Start of second daily period of domestic hot water production (*)	0:00	00:00…24:00
P34	End of second daily period of domestic hot water production (*)	0:00	00:00…24:00
P35	Start of third daily period of domestic hot water production (*)	0:00	00:00…24:00
P36	Fine End of third daily period of domestic hot water production (*)	0:00	00:00…24:00
P45	Reset of daily central heating and domestic hot water production programs (factory settings). Press the - + keys together for about 3 seconds; the number 1 appears on the display. Confirm by pressing either of the reset keys	0	0...1

NOTE: Parameters from **P31** to **P36** can be displayed only if the domestic hot water program has been enabled as described in chapter 15 for the attention of the installer (parameter H91).

3.8 FAULT WARNINGS AND RESETTING THE BOILER

If a fault occurs, a flashing warning code appears on the display.
The fault warnings appear on the main display (figure 1 **a**) together with the symbol (Figure 4).
To reset, press the reset button for at least two seconds.

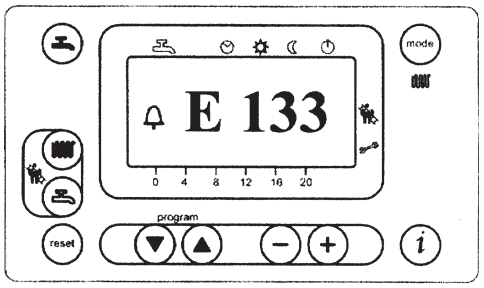


Figure 4

Fault warnings appear on the secondary display (figure 1 **b**) alternating with the time, both of them flashing (figure 4.1). It is not possible to reset malfunction warnings which appear on the secondary display as the cause of the alarm has first to be removed.

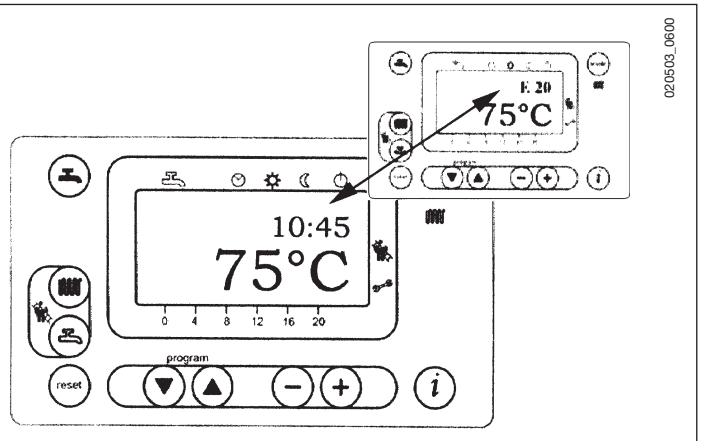


Figure 4.1

3.9 FAULT WARNINGS TABLE

Fault code	Fault description	action required
E10	outdoor temperature probe sensor failure	call the authorised service centre.
E20	NTC output sensor failure	call the authorised service centre
E40	NTC return heating probe faulty	call the authorised service centre
E50	domestic hot water ntc sensor failure	call the authorised service centre
E110	Safety or fumes thermostat or heating return temperature probe tripped	press the reset key (for about 2 seconds: if this device is triggered repeatedly, call the authorised service centre)
E111	Delivery temperature higher than 95°C	If this fault persists, call the authorised service centre
E128	Loss of flame during operation (the ionization current has fallen below the limit)	Call an authorised service centre.
E129	Minimum fan speed limit is hurt	Call an authorised service centre.
E132	floor thermostat tripped	call the authorised service centre
E133	no gas	press the reset key (for about 2 seconds); if the fault persists, call the authorised service centre)
E151	boiler circuit board error	Press the reset button if the display presents the (🔔) symbol, otherwise switch off the boiler at the mains and switch it on again after 10 seconds. If the fault persists, call an authorised service centre. Check the position of the ignition electrodes (chapter 17).
E153	the reset key has been pressed inappropriately	press the key again (about 2 seconds)
E154	**No circulation or reverse flow**	**call the authorised service centre**
E160	fan speed threshold not reached	call the authorised service centre.
E164	no hydraulic pressure switch enabling signal	check that the system is at the rated pressure. (refer to the section on filling the system). if the fault persists, call the authorised service centre.

All the faults are displayed in order of importance; if several faults occur simultaneously, the first to be displayed is the one with highest priority. After the cause of the first fault has been removed, the second one will be displayed, and so on. If any given fault occurs frequently, contact the authorised Service Centre.

WARNING: POWER SUPPLY FAULTS

In case of electrical power supply faults when the boiler is in operation, no gas leakage will occurr, as the gas valve will turn off leaving the gas duct closed. The boiler will not signal any failure (lockout error will not appear), and, in case the heating request is still pending after the electrical power supply resumes, it restart to light on the burner starting a new heating cycle.

4. FILLING THE BOILER

IMPORTANT: Regularly check that the pressure displayed by the pressure gauge is 1 to 1.5 bar, with boiler not operating.
In case the pressure is lower open the boiler filling tap.
We recommend you open the tap very slowly in order to let off the air.
In case pressure drops occur frequently have the boiler checked by a Qualified Service Engineer.

N.B.: Take special care when filling the heating system. In particular, open any thermostat valves in the system, ensure the water enters slowly in order to prevent the formation of air inside the primary circuit until operating pressure is reached. Lastly, vent any radiators in the system. **BAXI** declines all liability for damage deriving from the presence of air bubbles in the primary exchanger due to the incorrect or imprecise observance of the above.

5. TURNING OFF THE BOILER

To shut down the boiler switch off the electrical supply to the appliance.

6. PROLONGED STANDSTILL OF THE SYSTEM. FROST PROTECTION

We recommend you avoid draining the whole system as water replacements engender purposeless and harmful limestone deposits inside the boiler and on the heating elements.
In case the boiler is not operated during wintertime and is therefore exposed to danger of frost we suggest you add some specific-purpose anti-freeze to the water contained in the system (e.g.: propylene glycole coupled with corrosion and scaling inhibitors).
The electronic management of boilers includes a 'frost protection' function which operates the burner to reach a heating flow temperature of 30° C when the system heating flow temperature drops below 5°C.

The frost protection function is enabled if:

* electrical supply to the boiler is on;
* the gas service cock is open;
* the system pressure is as required;
* the boiler is not blocked.

7. SERVICING INSTRUCTIONS AND GAS CHANGE

To maintain efficient and safe operation of your boiler have it checked by a Qualified Service Engineer at the end of every operating period. Careful servicing will ensure economical operation of the system.
Do not clean the outer casing of the appliance with abrasive, aggressive and/or easily flammable cleaners (i.e.: gasoline, alcohol, and so on). Always isolate the electrical supply to the appliance before cleaning it (see section 5 Turning off the boiler).

These boilers produced for natural gas can be converted to work with LPG.
Any gas change should be performed by an authorised person.

Servicing shall be carried out only by authorised personnel.

For service and spare parts contact Hydroheat Supplies on (03) 9588 1299.

8. GENERAL INFORMATION

The following remarks and instructions are addressed to Service Engineers to help them carry out a faultless installation. Instructions regarding lighting and operation of the boiler are contained in the 'Instructions pertaining to the user' section. Note that installation, maintenance and operation of the domestic gas appliances must be performed exclusively by qualified personnel in compliance with current standards.
Please note the following:

* This boiler can be connected to any type of convector plates, radiators, thermoconvectors. Design the system sections as usual though taking into account the available output / pump head performances.
* Do not leave any packaging components (plastic bags, polystyrene, etc.) within children's reach as they are a potential source of danger.
* Initial lighting of the boiler must be effected by a Qualified Service Engineer.

Failure to observe the above will render the guarantee null and void.

This appliance shall be installed in accordance with the manufacturer's installation instructions, local gas fitting, electrical and water authority regulations, municipal building codes, AS5601 - Gas Installations and any other relevant statutory regulations.

WARNING - Before Leaving
Test the operation of the appliance after installation is complete. Check all connections for gas leaks with soap and water. **DO NOT** use a naked flame for detecting leaks. When satisfied with the boiler, please instruct the user on the correct method of operation. In case the appliance fails to operate correctly after all checks have been carried out, refer to the authorised service provider in your area".

9. INSTRUCTIONS PRIOR TO INSTALLATION

This boiler is designed to heat water at a lower than boiling temperature at atmospheric pressure. The boiler must be connected to a central heating system and, on models withis option, to a domestic hot water supply system in compliance with its performances and output power.

IMPORTANT! The gas boiler is supplied without the following components witch must be performed exclusively by qualified personnel:

- **Expansion vessel;**
- **Pressure relief valve;**
- **Circulating pump;**
- **Boiler filling tap;**
- **Low loss header.**

Before connecting the boiler have the following operations effected:

a) careful checking that the boiler is fit for operation with the type of gas available. For more details see the notice on the packaging and the label on the appliance itself.

b) careful checking that the flue terminal draft is appropriate; that the terminal is not obstructed and that no other appliance exhaust gases are expelled through the same flue duct, unless the flue is especially designed to collect the exhaust gas coming from more than one appliance, in conformity with the laws and regulations in force.

c) careful checking that, in case the flue has been connected to pre-existing flue ducts, thorough cleaning has been carried out in that residual combustion products may come off during operation of the boiler and obstruct the flue duct.

To ensure correct operation of the appliance and avoid invalidating the guarantee, observe the following precautions:

1. **Heating circuit**

1.1. new system

Before proceeding with installation of the boiler, the system must be cleaned and flushed out thoroughly to eliminate residual thread-cutting swarf, solder and solvents if any, using suitable proprietary products.
To avoid damaging metal, plastic and rubber parts, use only neutral cleaners, i.e. non-acid and non alkaline. The recommended products for cleaning are:
SENTINEL X300 or X400 and FERNOX heating circuit restore. To use this product proceeding strictly in accordance with the maker's directions.

1.2. existing system

Before proceeding with installation of the boiler, the system must be cleaned and flushed out to remove sludge and contaminants, using suitable proprietary products as described in section 1.1.

To avoid damaging metal, plastic and rubber parts, use only neutral cleaners, i.e. non-acid and non-alkaline such us SENTINEL X100 and FERNOX heating circuit protective. To use this product proceeding strictly in accordance with the maker's directions.
Remember that the presence of foreign matter in the heating system can adversely affect the operation of the boiler (e.g. overheating and noisy operation of the heat exchanger).

Failure to observe the above will render the guarantee null and void.

10. BOILER INSTALLATION

Decide upon the boiler location, then tape the template on the wall.
Connect the pipework to the gas and water inlets prearranged on the template lower bar.
If you are either installing the boiler on a pre-existent system or substituting it, we suggest you also fit settling tanks on the system return pipework and under the boiler to collect the deposits and scaling which may remain and be circulated in the system after the purge.
When the boiler is fixed on the template connect the flue and air ducts (fittings supplied by the manufacturer) according to the instructions given in the following sections.
Connect the condensate outlet to the siphon supplied with the boiler. Connect the siphon to a drain, making sure there is a continuous slope. Horizontal sections must be avoided.
The boiler unit is fitted for connection to an external boiler. For this purpose, unscrew the two plugs on the heating system delivery/return fittings if a hydraulic separator is not used (see fig. 12).

- The boiler MUST be installed within the building.

- The boiler must be installed on a flat vertical wall which is capable of supporting the weight of the boiler.

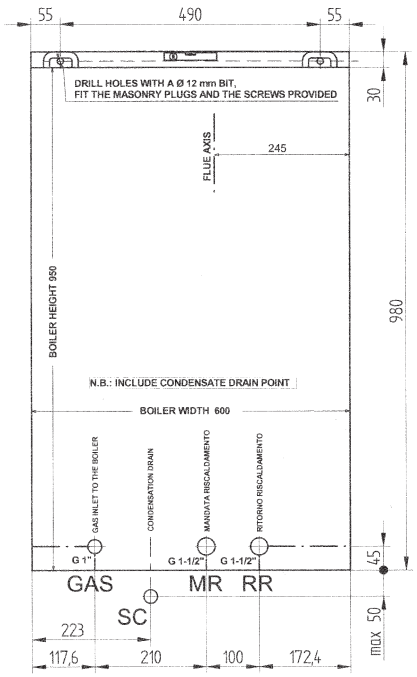
- There must be a minimum distance of 20mm between the boilers when they are installed side by side.

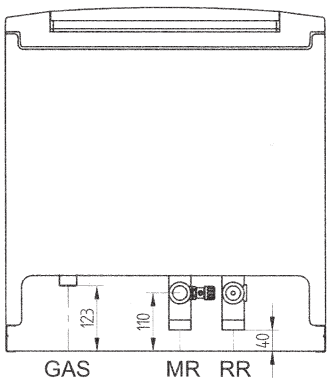
- There must be a minimum clearance of 450mm between the top edge of the boiler and any horizontal surface above the boiler. There must be a minimum distance of 45mm between the side of the boiler and any combustible material. A clear space of at least 600mm must be provided in front of the boiler, to allow access for service purposes.

- Refer to AS5601 for gas pipe size details.

N.B.: Take special care when filling the heating system. In particular, open any thermostat valves in the system, ensure the water enters slowly in order to prevent the formation of air inside the primary circuit until operating pressure is reached. Lastly, vent any radiators in the system. **BAXI** declines all liability for damage deriving from the presence of air bubbles in the primary exchanger due to the incorrect or imprecise observance of the above.

11. BOILER SIZE





MR: G 1-1/2” heating flow
RR: G 1-1/2” heating return
GAS: G 1” gas inlet to the boiler
SC: condensation drain

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Figure 5

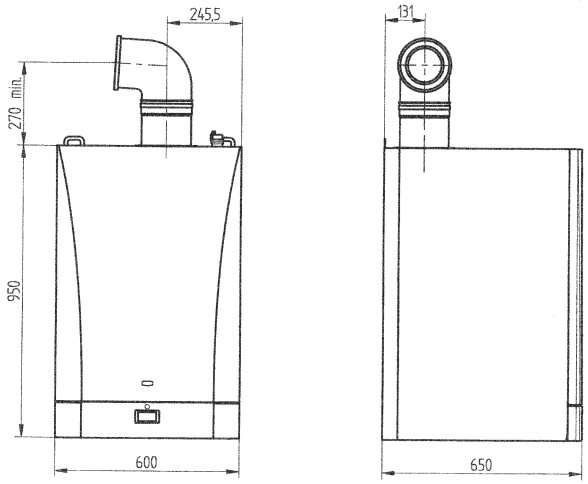

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Figure 6

12. INSTALLATION OF FLUE AND AIR DUCTS

We guarantee ease and flexibility of installation for a gas-fired forced draft boiler thanks to the fittings and fixtures supplied (described below).
The boiler is especially designed for connection to an exhaust flue / air ducting, with either coaxial, vertical or horizontal terminal. By means of a splitting kit a two-pipe system may also be installed.

In case exhaust and intake flues not supplied by BAXI S.p.A. have been installed, these must be certified for the type of use and must have a maximum pressure drop in according to the values reported in the table (par 12.1).

Warnings for the following types of installation:

C_{13}, C_{33} The terminals for the split flue must be provided for within a square with 50 cm sides. Detailed instructions are given together with each accessory.

C_{53} The terminals for combustion air intake and for the expulsion of combustion products must not be provided for on opposite walls of the building.

C_{63} The maximum pressure drop of the ducts must not exceed the values reported in the table. The ducts must be certified for the specific use and for a temperature of over 100°C. The chimney flue must be certified in accordance with the prEN 1856-1 Regulation.

C_{43}, C_{83} The chimney or flue used must be suitable for the use.

WARNING : To guarantee more operating insurance it is necessary to assure the flue pipes to the wall using the apposite clamps.

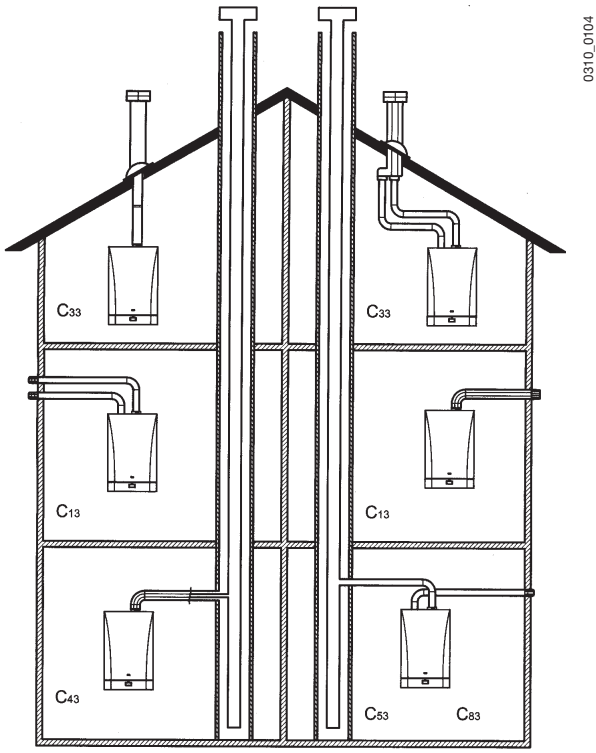


Figure 7

Flue duct terminal	Max. length of flue duct	Each 90° bend reduces the duct max. length by	Each 45° bend reduces the duct max. length by	Flue terminal diameter	Outer terminal diameter
Coaxial Ø 110/160 mm	10 m	1 m	0,5 m	163 mm	160 mm
Vertical two-pipe	27 m	0,5 m	0,25 m	163 mm	110 mm
Horizontal two-pipe	27 m	0,5 m	0,25 m	-	110 mm

… coaxial flue - air duct (concentric)

This type of duct allows to disengage exhaust gases and to draw combustion air both outside the building and in case a LAS flue is fitted.
The 90° coaxial bend allows to connect the boiler to a flue-air duct in any direction as it can rotate by 360°. It can moreover be used as a supplementary bend and be coupled with a coaxial duct or a 45° bend.

If the flue outlet is placed outside, the flue-air ducting must protrude at least 18mm out of the wall to allow alluminium weathering tile to be fitted and sealed to avoid water leakages.
Make sure there is a minimum downward slope of 1 cm per metre of duct towards the boiler.

- A 90° bend reduces the total duct length by 1 metre.
- A 45° bend reduces the total duct length by 0.5 metre.

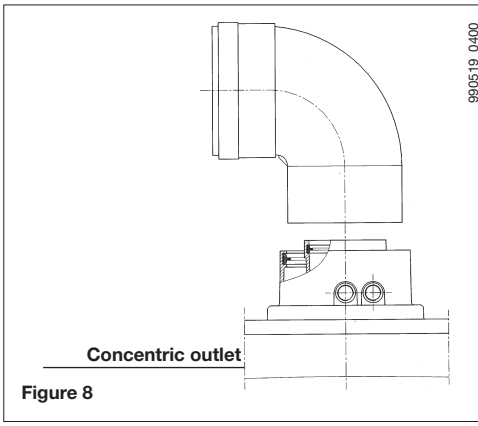
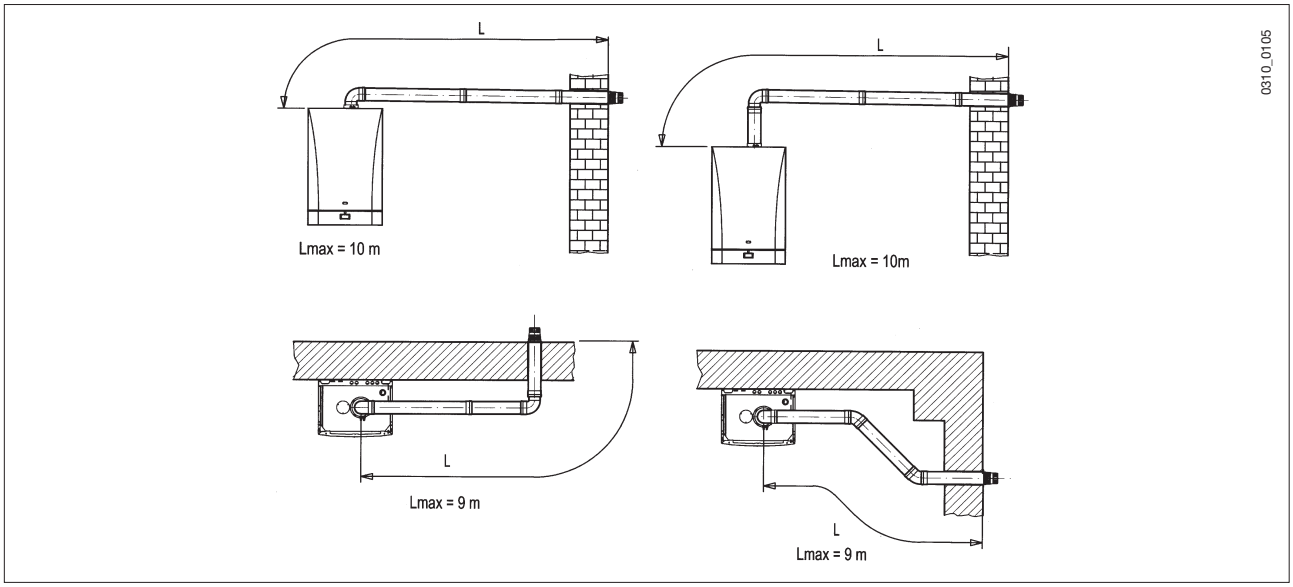
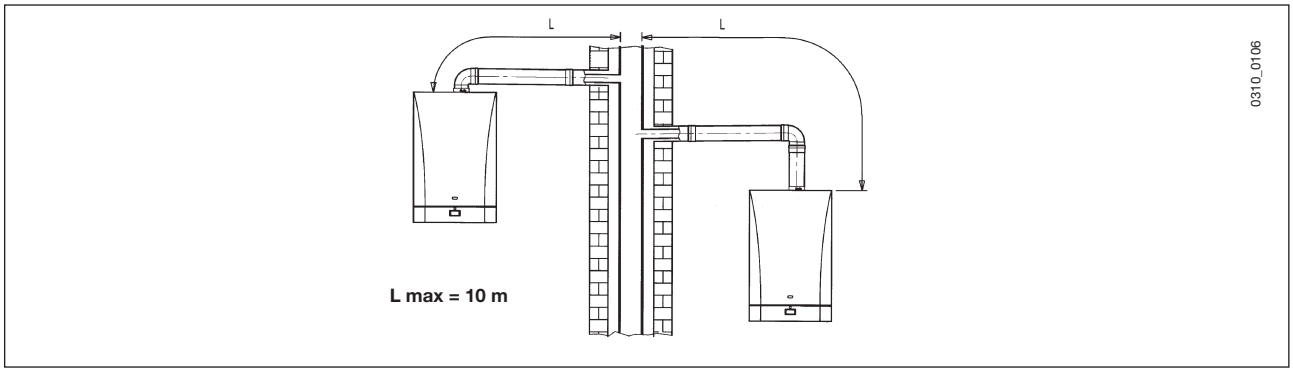


Figure 8

Horizontal flue terminal Ø 110/160 mm installation options

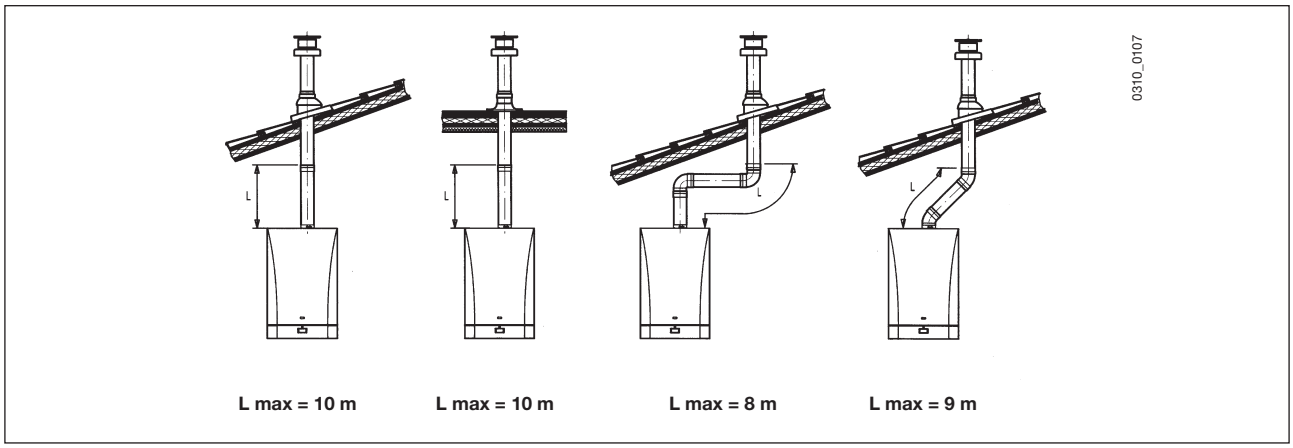


LAS flue duct Ø 110/160 mm installation options



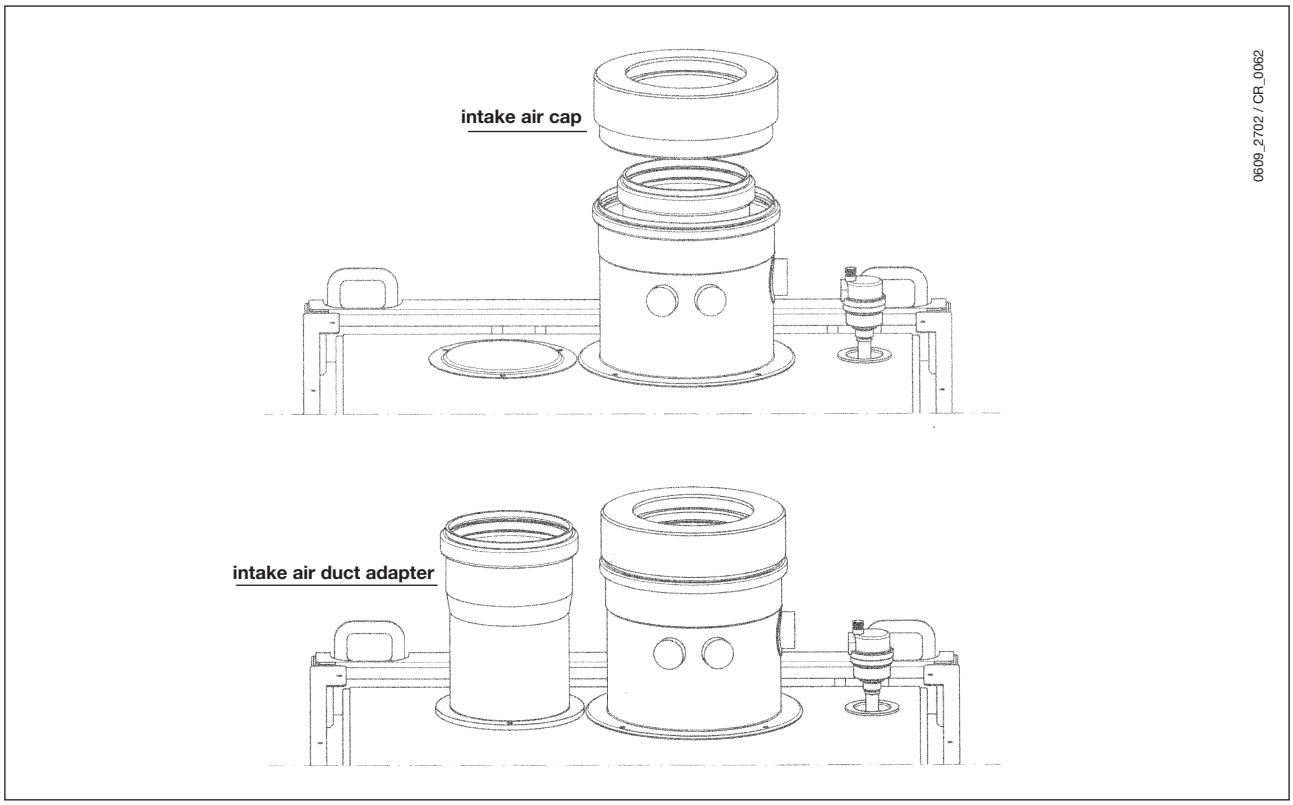
Vertical flue terminal Ø 110/160 mm installation options

This type of installation can be carried out both on a flat or pitched roof by fitting a terminal, an appropriate weathering tile and sleeve, (supplementary fittings supplied on demand).

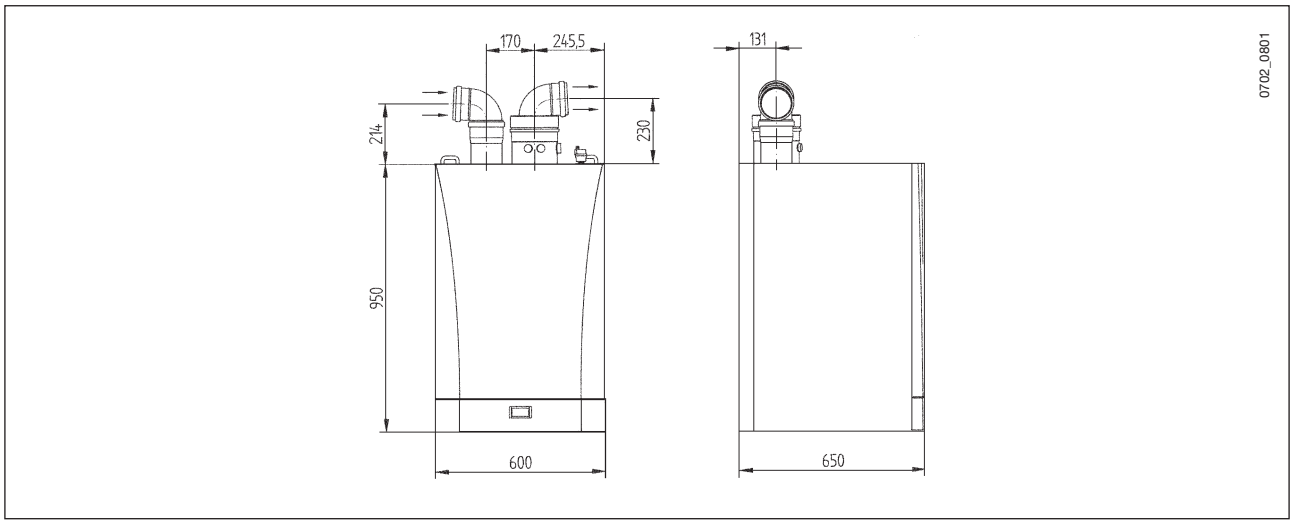


... separated flue-air ducting

This type of ducting allows to disengage exhaust flue gases both outside the building and into single flue ducts.
Comburant air may be drawn in at a different site from where the flue terminal is located.
The splitting kit consists of an air cap (160/110) and of an air duct adaptor.
For the air duct adaptor fit the screws and seals previously removed from the cap.

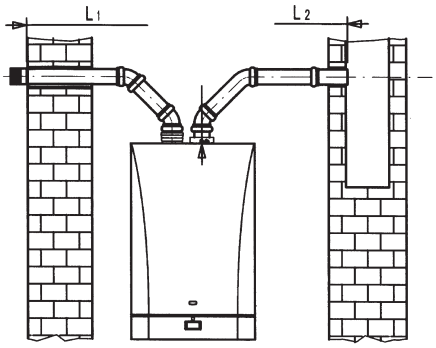


The 90° bend allows to connect the boiler to flue-air ducting regardless of direction as it can be rotated by 360°. It can moreover be used as a supplementary bend to be coupled with the duct or with a 45° bend.



- A **90°** bend reduces the total duct length by 0.5 metre.
- A **45°** bend reduces the total duct length by 0.25 metre.

IMPORTANT - Make sure there is a minimum downward slope of **1 cm per metre** of duct towards the boiler. Make sure the flue and air ducts are firmly fixed to the wall with suitable brackets.



(L1 + L2) max = 27 m

The maximum length of the suction duct must be 7 metres.

IMPORTANT: if fitting a single exhaust flue duct, ensure it is adequately insulated (e.g.: with glass wool) wherever the duct passes through building walls.
For detailed instructions concerning the installation of fittings refer to the technical data accompanying the fittings.

12.1 FAN RPM UPDATING DEPEND OF PIPES LENGHT (E.G. FIGURE 7)

To ensure the correct rated heat input to the maximum and minimum heat input, it is necessary to update the speed (rpm) of the fan, it depends on the lenght of the pipes (par. 12), in accordance with the installation of flue and air pipes as indicated in the tables below. The factory-set value is referred to the minimum length of flue pipe (0÷2 m for concentric, 0÷6 m for twin). To carry such updating, changing the speed of the fan (rpm) at the maximum and minimum heat input, refer to par. 15.

LUNA HT 1.850

CONCENTRIC PIPE Ø 110/160
(C13 – C33 – C43)

GAS	PIPES LENGTH L (m)	PARAMETERS						ΔP
		MAX HEAT OUTPUT		MIN HEAT OUTPUT		IGNITION LOAD		
		H536-H613 (rpm)	H541-H610 (pwm%)	H612 (rpm)	H609 (pwm%)	H611 (rpm)	H608 (pwm%)	(Pa)
G20	0 m ÷ 2 m	5500	100	1750	14	2400	20	140
	2 m ÷ 6 m	5850	100	1850	14,5	3450	30	300
	6 m ÷ 10 m	6200	100	2000	15	4300	45	400
G31	0 m ÷ 2 m	5200	100	1650	13	3700	35	140
	2 m ÷ 6 m	5450	100	1750	13,5	3700	35	300
	6 m ÷ 10 m	5750	100	1850	14	4050	40	400

TWIN PIPE Ø 110
(C13 – C33 – C43 – C53 – C83)

GAS	PIPES LENGTH L1 + L2 (m)	PARAMETERS						ΔP
		MAX HEAT OUTPUT		MIN HEAT OUTPUT		IGNITION LOAD		
		H536-H613 (rpm)	H541-H610 (pwm%)	H612 (rpm)	H609 (pwm%)	H611 (rpm)	H608 (pwm%)	(Pa)
G20	0 m ÷ 15 m	5500	100	1750	14	2400	20	140
	15 m ÷ 27 m	5650	100	1800	14	4000	40	190
G31	0 m ÷ 15 m	5200	100	1650	13	3700	35	140
	15 m ÷ 27 m	5350	100	1700	13,5	4200	45	190

TABLE FUMES PRESSURE AVAILABLE

GAS	PARAMETERS						ΔP
	MAX HEAT OUTPUT		MIN HEAT OUTPUT		IGNITION LOAD		
	H536-H613 (rpm)	H541-H610 (pwm%)	H612 (rpm)	H609 (pwm%)	H611 (rpm)	H608 (pwm%)	(Pa)
G20	5850	100	2000	15	3000	25	230
G31	5450	100	1850	14	3700	35	230

LUNA HT 1.1000

CONCENTRIC PIPE Ø 110/160
(C13 – C33 – C43)

GAS	PIPES LENGTH L (m)	PARAMETERS						ΔP
		MAX HEAT OUTPUT		MIN HEAT OUTPUT		IGNITION LOAD		
		H536-H613 (rpm)	H541-H610 (pwm%)	H612 (rpm)	H609 (pwm%)	H611 (rpm)	H608 (pwm%)	(Pa)
G20	0 m ÷ 2 m	6400	100	1850	11	3100	20	140
	2 m ÷ 6 m	6650	100	1950	11,5	3900	25	300
	6 m ÷ 10 m	6900	100	2050	12	4300	30	400
G31	0 m ÷ 2 m	6000	80	1700	10,5	3100	20	140
	2 m ÷ 6 m	6200	80	1850	11	3900	25	300
	6 m ÷ 10 m	6400	80	1950	11,5	4300	30	400

TWIN PIPE Ø 110
(C13 – C33 – C43 – C53 – C83)

GAS	PIPES LENGTH L1 + L2 (m)	PARAMETERS						ΔP
		MAX HEAT OUTPUT		MIN HEAT OUTPUT		IGNITION LOAD		
		H536-H613 (rpm)	H541-H610 (pwm%)	H612 (rpm)	H609 (pwm%)	H611 (rpm)	H608 (pwm%)	(Pa)
G20	0 m ÷ 15 m	6400	100	1850	11	3100	20	140
	15 m ÷ 27 m	6500	100	1950	11,5	4300	30	190
G31	0 m ÷ 15 m	6000	80	1700	10,5	3100	20	140
	15 m ÷ 27 m	6100	80	1800	11	4300	30	190

TABLE FUMES PRESSURE AVAILABLE

GAS	PARAMETERS						ΔP
	MAX HEAT OUTPUT		MIN HEAT OUTPUT		IGNITION LOAD		
	H536-H613 (rpm)	H541-H610 (pwm%)	H612 (rpm)	H609 (pwm%)	H611 (rpm)	H608 (pwm%)	(Pa)
G20	6650	100	2050	12	3900	25	180
G31	6200	80	1950	11,5	3900	35	180

13. CONNECTING THE MAINS SUPPLY

Electrical safety of the appliance is only guaranteed by correct grounding, in compliance with the applicable laws and regulations.
Connect the boiler to a 230V monophase + ground power supply by means of the three-pin cable supplied with it and make sure you connect polarities correctly.
Use a double-pole switch with a contact separation of at least 3mm in both poles.
In case you replace the power supply cable fit a HAR H05 VV-F' 3x0.75mm^2 cable with an 8mm diameter max.
The fuse, a fast-acting type rated 2A, is incorporated into the power supply terminals (remove the black fuse holder to enable inspection and/or replacement).

IMPORTANT: Check that the overall current drawn by accessories connected to the appliance is less than 2 A. If the value is greater, a relay must be wired between the boiler control circuit board and the accessories drawing the higher current.

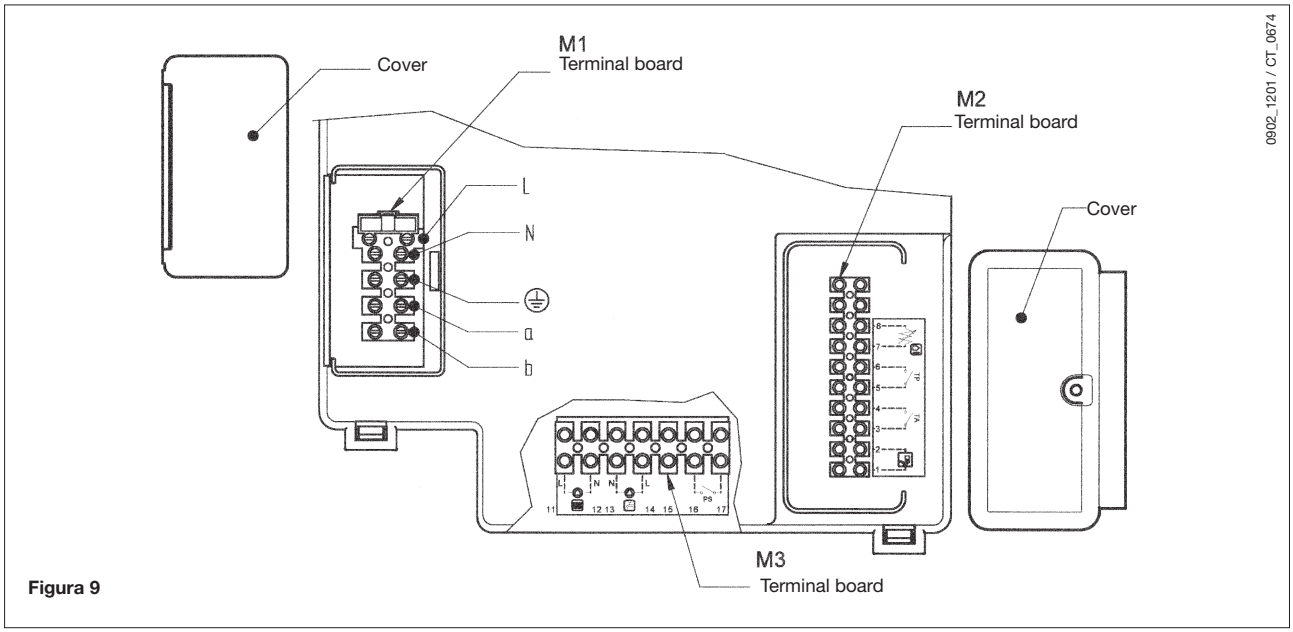


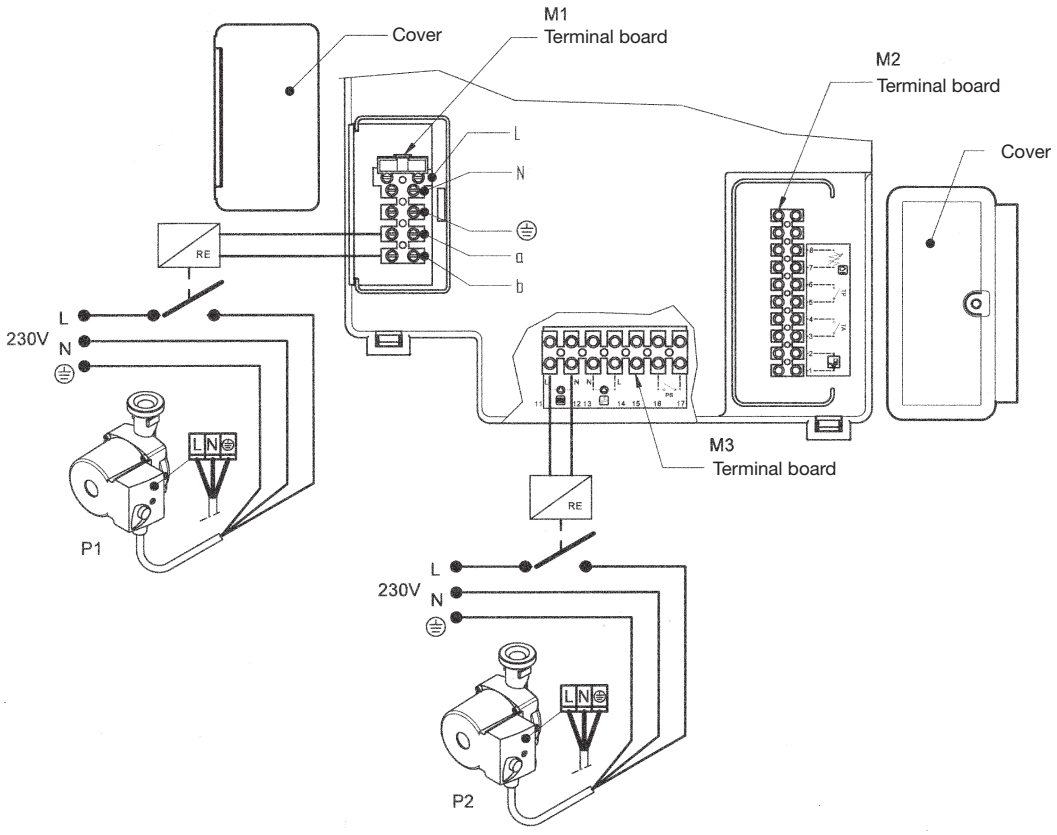
Figura 9

13.1 CONNECTING THE PUMP - HEATING SYSTEM

Turn the control box downwards and access the terminal blocks M1 and M3 by taking off the main protective cover.
The pumps of the heating system (P1 and P2) have to be connected to boiler terminal block following the wiring of figure 10, a relay must be wired between the boiler control circuit board and the pumps.
If the boiler unit's electronic card is wired up to a single pump with these characteristics

230 V AC; 50 Hz; 1 A max; cos ϕ > 0.8.

then it is not necessary to add a relay.
Check the correct size and rating of the pump by referring to graph n° 1, which shows the boiler pressure losses.



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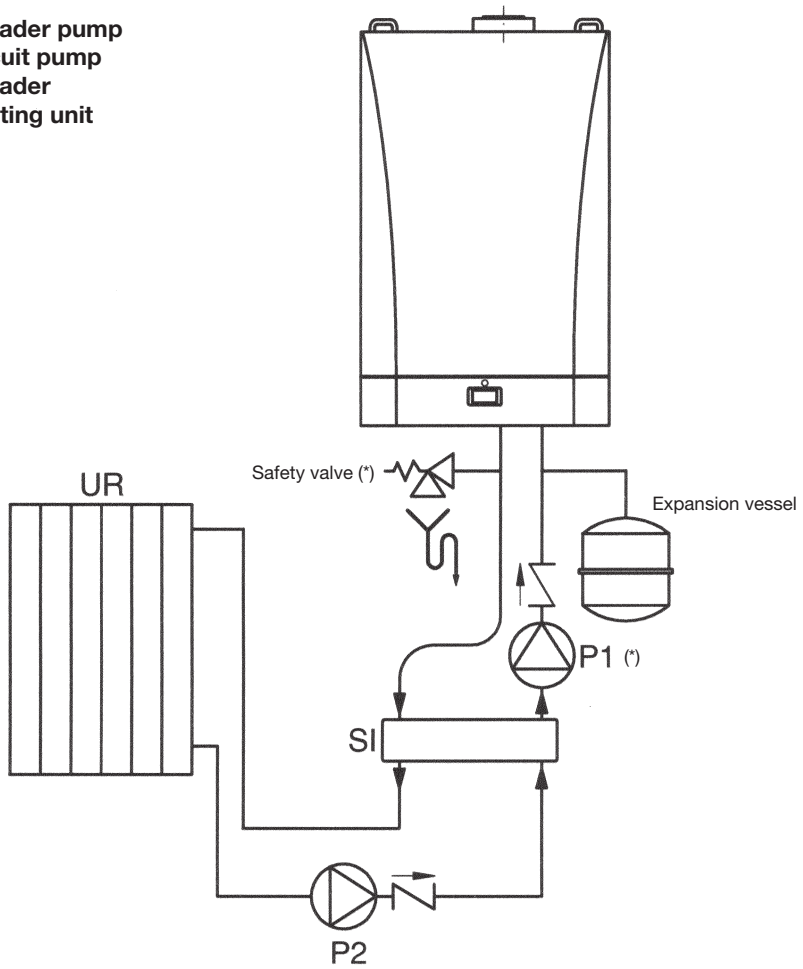
P1 = Low loss header pump
P2 = Heating circuit pump
SI = Low loss header
UR = Central heating unit



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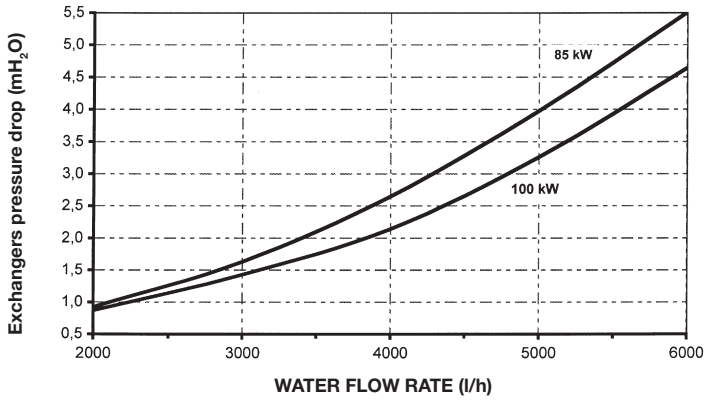
(*) available optional extra

Figure 10

- Exchangers pressure drop



Graph 1

The minimum ga boiler water flow, with at least 1 - 1,5 bar, must be as follow:

LUNA HT Model	Minimum water flow rate l/h	Water flow rate with Δt=20°K l/h
1.850	1900	3700
1.1000	2100	4300

13.2 DESCRIPTION OF THE ELECTRICAL CONNECTIONS TO BOILER TERMINAL BOARD M2

Turn the control box downward to access terminal board M2 used for the electrical connections by removing the two protective covers (see figure 9).

Terminals 1-2: connection of SIEMENS model QAA73 temperature regulator supplied as accessory. Connection polarity is irrelevant.
The jumper fitted across the "TA" terminals 3-4 must be removed.
Read the instructions supplied with this accessory for correct installation and programming procedures.
Terminals 3-4: "TA" room temperature thermostat connection. Thermostats with integral accelerator resistor must no be used. Check that there is no voltage across the ends of the two thermostat connection wires.
Terminals 5-6: "TP" floor temperature thermostat connection (commercially available device). Check that there is no voltage across the ends of the two thermostat connection wires.
Terminals 7-8: connection of SIEMENS model QAC34 outdoor temperature probe supplied as accessory.
Read the instructions supplied with this accessory for correct installation procedures.
Terminals 9-10: connection of domestic hot water precedence temperature sensor supplied as accessory for connecting heating-only boilers to an external water heater.

13.3 CONNECTING THE QAA73 ROOM TEMPERATURE REGULATOR.

The SIEMENS model **QAA73** room temperature regulator (optional accessory) must be connected to terminals 1-2 of terminal board M2 in figure 9.
The jumper across terminals 3-4, provided for connection of a room temperature thermostat, must be removed.
The settings of the domestic hot water temperature and domestic hot water production schedule must be made using this device.
The timed program of the central heating circuit must be set on the QAA73 if there is a single zone, or in relation to the zone controlled by the QAA73 device.
The timed program for the central heating circuit of the other zones can be set directly on the boiler control panel.

See the instructions provided with the QAA73 room temperature regulator for the user parameter programming procedure.

QAA73: parameters which can be set by the installation engineer (service)

By pressing the two **PROG** buttons together for at least three seconds it is possible to access the list of parameters that the installer can display and/or set.
Press either of these buttons to change the parameter to display or change.
Press the [+] or [-] key to change the value displayed.
Press either of the **PROG** buttons again to save the change.
Press the information button **(i)** to quit programming.
Here follows a list of the most commonly used parameters:

Line no.	Parameter	Range	Default value
70	HC1 gradient Selection of central heating circuit temperature curve “kt”	2.5…40	15
72	HC1 max. output Central heating system maximum output temperature	25…85	85
74	Type of building	Light, Heavy	Light
75	Room compensation Activation/deactivation of the influence of the room temperature. If it is deactivated, the outdoor temperature sensor must be installed.	on HC1 on HC2 on HC1+HC2 nil	On HC1
77	Automatic adaptation of the temperature curve “kt” in relation to the room temperature.	On - off	On
78	Opt Start Max Maximum time the boiler is switched on ahead of the timed program to optimise the temperature in the premises.	0…360 min	0
79	Opt Stop Max Maximum time the boiler is switched off ahead of the timed program to optimise the temperature in the premises.	0…360 min	0
80	HC2 gradient	2.5…40 —.- **= not active**	**—.-**
90	DHW Red Setp Minimum temperature of the domestic domestic hot water	10 or 35…58	10
91	DHW program Selection of the type of timed program for domestic hot water. 24 h/day = always on PROG HC-1h = as HC1 central heating program less one hour PROG HC = as central heating program PROG ACS = specific domestic hot water program (see also program lines 30-36)	24 h/day TSP HC-1h TSP HC TSP DHW	24 h/day

- fault messages

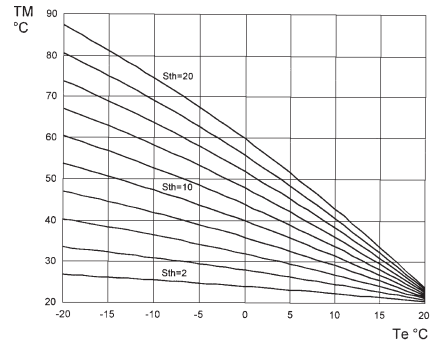
In the event of fault, the display panel on the QAA73 shows the flashing symbol 🔔. Press the information key (i) to display the error code and a description of the fault (see Fault warning tables on paragraph 3.9).

13.4 CONNECTING THE OUTDOOR TEMPERATURE SENSOR

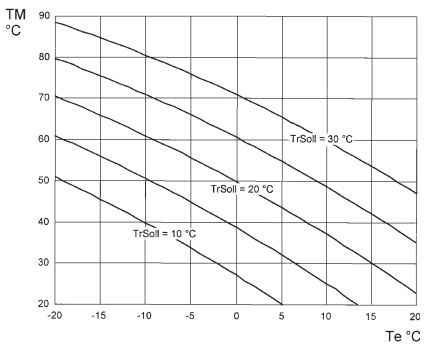
The SIEMENS model QAC34 outdoor temperature sensor (optional accessory) must be connected to terminals 7-8 of terminal board M2 in figure 9.
The procedures for setting the gradient of the temperature curve “kt” vary depending on the accessories connected to the boiler.

a) Without QAA73 room temperature control device:

The temperature curve “kt” must be selected by setting parameter H532 as described in section 15 “setting the boiler parameters”.
See graph 2 for selecting the curve referred to a room temperature of 20°C.
The chosen curve can be shifted by pressing the button (2) on the boiler control panel, and modifying the value displayed by pressing the − and + keys. See graph 3 for curve selection. (The example show in graph 3 refers to the curve Kt=15).
Increase the value displayed if the room temperature required is not reached inside the premises for central heating.



Graph 2



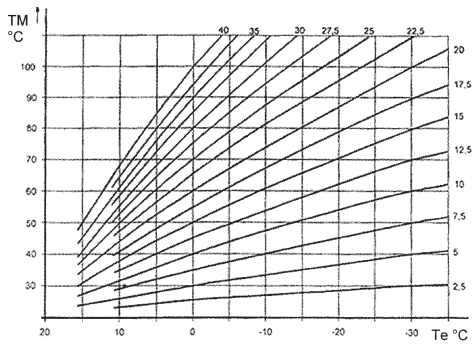
Graph 3

020523_0600

TM = Flow temperature
Te = Composite outside temperature
Sth = Kt Curve

b) with QAA73 room temperature control device:

The temperature curve “kt” must be selected by setting parameter 70 “HC1 gradient” of the QAA73 room temperature control device as described in section 13.3 “QAA73: parameters which can be set by the installation engineer (service)”.
See graph 4 for selecting the curve referred to a room temperature of 20°C.
The curve is shifted automatically on the basis of the room temperature set using the QAA73 climate control.
If the system is divided into zones, the temperature curve “kt” relating to the part of the system not controlled by the QAA73 must be selected by setting parameter H532 as described in section 15 “setting the boiler parameters”.



020523_1000

TM = Flow temperature
Te = Composite outside temperature

Graph 4

c) with AGU2.500 device for control of a low temperature system:

Refer to the instructions provided with the AGU2.500 accessories for connection and control of a low temperature zone. In this case the set of some electronic parameters have to be modified (see § 15: H552-H553-H632).
H552=50 H553=12 H632=00001111

13.5 CONNECTING A ZONED SYSTEM

The electrical connection and settings needed to control a system divided into zones vary depending on the accessories connected to the boiler.

a) Without QAA73 room temperature control device:
The contact relating to the request for operation of the various zones must be parallel-connected and connected to terminal 3-4 “TA” of terminal board M2 in figure 11. The jumper present must be removed.
The central heating temperature is selected directly on the boiler control panel in accordance with the instructions provided for the user in this manual.

b) with QAA73 room temperature control device:
The pump relating to the room controlled by the QAA73 room temperature control device must be supplied with electricity by means of terminals 11-12 of terminal board M3 in figure 11.
The contact relating to the request for operation of the other zones must be parallel-connected and connected to terminal 3-4 “TA” of terminal board M2 in figure 11. The jumper present must be removed.
The central heating temperature of the zone controlled by the QAA73 is set automatically by the QAA73 itself.
The central heating temperature of the other zones must be selected directly on the boiler control panel.

In this case the set of some electronic parameters have to be modified (see § 15: H552-H632).
H552=50 H632=00001111

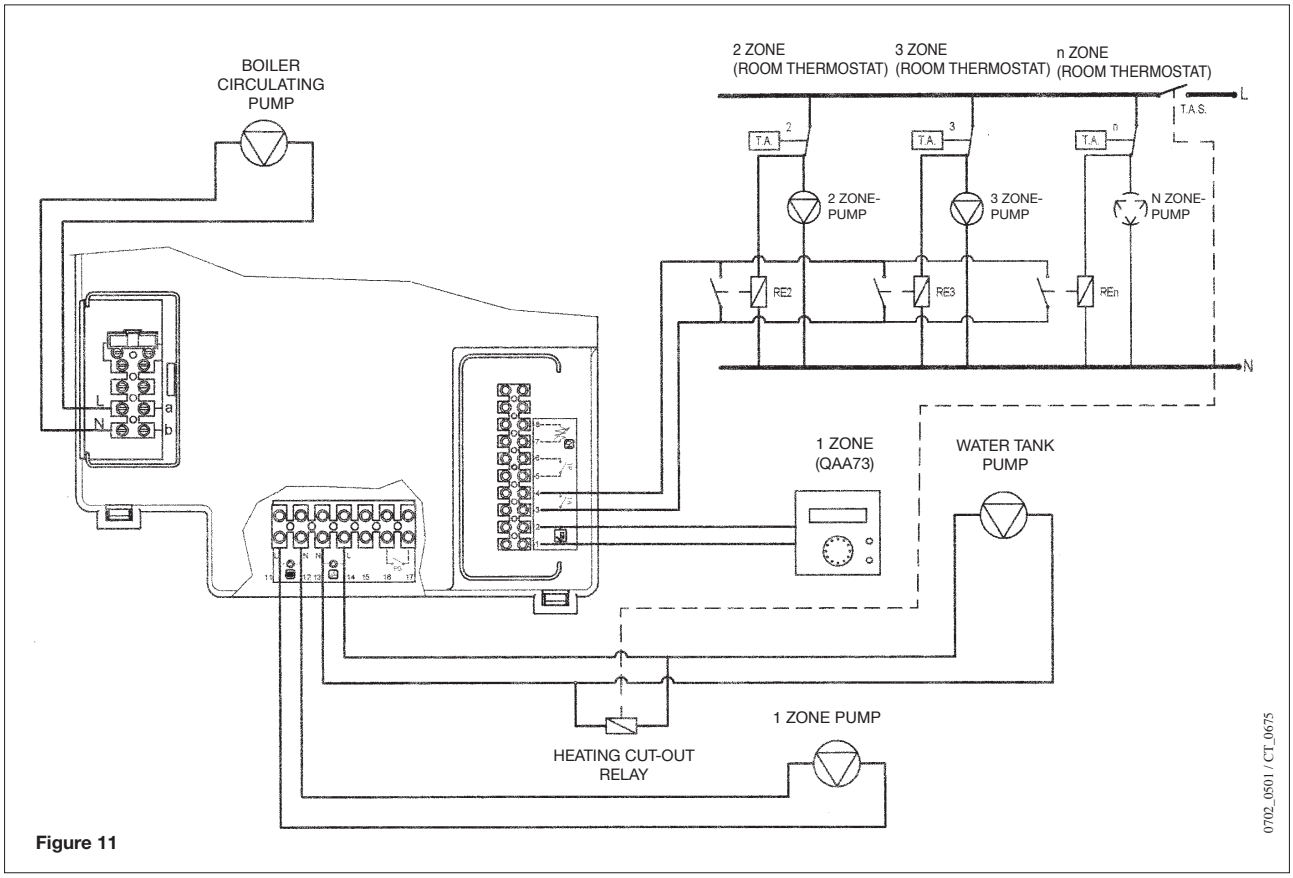


Figure 11

c) with AGU2.500 device for control of a low temperature system:

Refer to the instructions provided with the AGU2.500 accessories for connection and control of a low temperature zone. In this case the set of some electronic parameters have to be modified (see § 15: H552-H553-H632).
H552=50 H553=12 H632=00001111

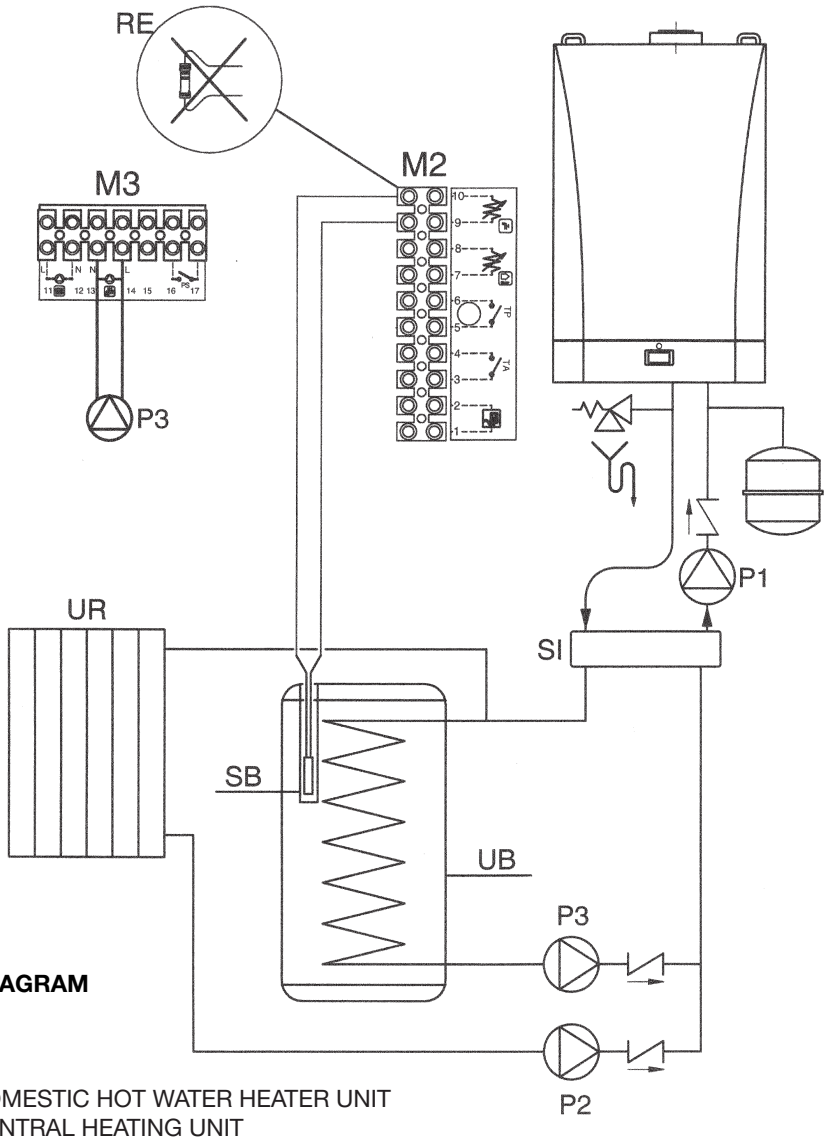
13.6 CONNECTING THE PUMP – HOT WATER CIRCUIT

The domestic hot water pump (P3), which directs flow into an eternal storage tank, is connected to terminals 13-14 of boiler terminal strip M3 (figure 12).
The electrical specifications of the pump must be as follows:

230 V AC; 50 Hz; 1 A max; cos ϕ > 0.8.

If the specifications of the installed pump are different, a relay must be wired between the boiler control circuit board and the pump.
Remove the resistor from terminals 9-10 of terminal strip M2 (figure 12), and connect the hot water priority NTC sensor, which is supplied as an accessory.
The sensing element of the NTC device must be located in the recess provided on the storage tank (figure 12).
The temperature and on-off programming of the domestic hot water supply are selected directly from the boiler control panel, as described in this manual under the user instruction headings.

In the case of a zone system it is necessary to add a relay in between to cut off the supply of the zone pumps during the DHW mode, as shown in the diagram of figure 11.



STORAGE TANK
CONNECTION DIAGRAM

KEY:

UB	- DOMESTIC HOT WATER HEATER UNIT
UR	- CENTRAL HEATING UNIT
M2 and M3	- CONNECTION TERMINAL BOARD
SB	- DOMESTIC HOT WATER SENSOR
P1	- LOW LOSS HEADER PUMP
P2	- CENTRAL HEATING PUMP
P3	- D.H.W. PUMP
SI	- LOW LOSS HEADER

Figurr 12

WARNING:

In the case of a direct coupling of the boiler coil fitting on the boiler unit's "T" fitting it is necessary to modify the control of pump P1.
Configuration of parameter for electronic card H632 = 00000100.
(See § 15).

14. GAS VALVE ADJUSTMENT

Carry out the following operations in the given sequence:

1) Calibration of the maximum heat output. Check that the CO_2 measured on the flue, with the boiler operating at the maximum heat output, is the same as that shown in table 1. Otherwise, turn the regulation screw (V) on the gas valve. Turn the screw clockwise to reduce the concentration of CO_2 and anticlockwise to increase it.

2) Calibration of reduced heat output. Check that the CO_2 measured on the flue, with the boiler operating at the minimum heat output, is the same as that shown in table 1. Otherwise, turn the offset regulation screw (K) on the gas valve. Turn the screw clockwise to decrease the concentration of CO_2 and anticlockwise to increase it.

Pi: Gas supply pressure connection point

PI: Air signal input from fan

V: Gas flow adjuster screw

K: OFFSET adjuster screw

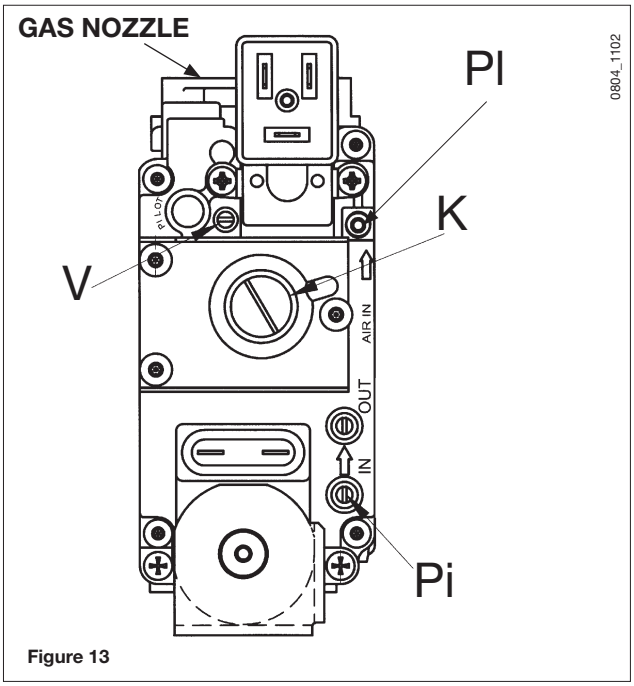


Figure 13

Caution: in the event of the boiler failing to ignite, or when replacing the gas valve, the recommended procedure is to tighten the adjuster screw (V) fully and then back off 2 1/2 turns, repeating the steps described above.

IMPORTANT: If the appliance is being converted from natural gas to propane (LPG), the following operations must be performed before calibrating the gas valve as instructed above.

- Replace the gas nozzle placed inside the gas valve (flow gas connection).
  To perform this operation it is necessary to remove the gas valve by undoing the inlet and outlet connections and unscrew the nozzle using round-nose pliers.
  Check the seal of the gas couplings removed beforehand.

- On the control panel display set ignition power parameters **H536 - H541 - H608 - H609 - H610 - H611 - H612** and **H613**. The values to be input and the diagram to use are given in table 2 or 2.1. The programming methods are described in chapter 15.

To simplify calibration of the gas valve, the "calibration function" can be set directly on the boiler control panel by proceeding as follows:

1) Press the keys (2-3) together until the display shows the pointer "▶" alongside the symbol (about 6 seconds).

2) Press the keys to set the fan speed at the minimum and maximum heat output (%PWM);

NOTE - to set the **minimum** and **maximum** heat output quickly, press the keys respectively;

3) press either of the two keys to exit the function.

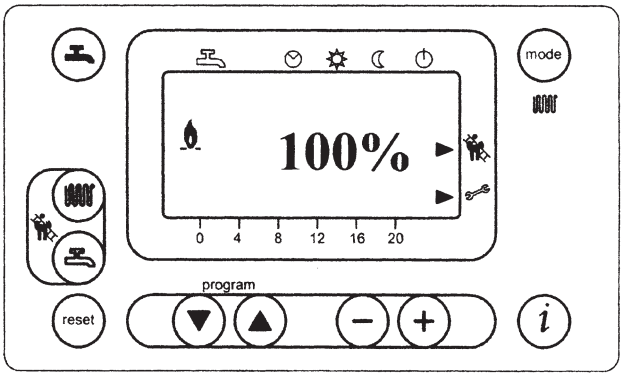


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Figure 14

	Natural Gas - 1.13kPa	Propane Gas - 2.75kPa
CO_2 max. heat output	8.7 %	10.2 %
CO_2 min. heat output	8.4 %	9.8 %

Table 1

Gas consumption at 15 °C 1013 mbar Natural Gas - 1.13kPa	**LUNA HT 1.850**	**LUNA HT 1.1000**
PCI (MJ/m³) NET	***34.02***	***34.02***
Consumption at max. heat output (m³/h)	9.22	11.10
Consumption at min. heat output (m³/h)	2.79	3.15
Gas nozzle (mm)	11.5	11.5
H536-613 parameters (rpm) at max. heat output (*)	5500	6400
H541-610 parameters (pwm%) at max. heat output (*)	100	100
H612 parameter (rpm) at min. heat output (*)	1750	1850
H609 parameter (pwm%) at min. heat output (*)	14	11
H611 parameter (rpm) at ignition load (*)	2400	3100
H608 parameter (pwm%) at ignition load (*)	20	20

Table 2

(*) In the case of outlet ducts longer than 2/6 m set the values given in the charts of § 12.1.

Gas consumption at 15 °C 1013 mbar Propane Gas - 2.75kPa	**LUNA HT 1.850**	**LUNA HT 1.1000**
PCI (MJ/Kg) NET	***46.34***	***46.34***
Consumption at max. heat output (Kg/h)	6.77	8.15
Consumption at min. heat output (Kg/h)	2.05	2.31
Gas nozzle (mm)	7.5	7.5
H536-613 parameters (rpm) at max. heat output (*)	5200	6000
H541-610 parameters (pwm%) at max. heat output (*)	100	80
H612 parameter (rpm) at min. heat output (*)	1650	1700
H609 parameter (pwm%) at min. heat output (*)	13	10.5
H611 parameter (rpm) at ignition load (*)	3700	3100
H608 parameter (pwm%) at ignition load (*)	35	20

Table 2.1

(*) In the case of outlet ducts longer than 2/6 m set the values given in the charts of § 12.1.

15. SETTING THE BOILER PARAMETERS

The boiler parameters may only be modified by professionally qualified staff proceeding as follows:
a) press the ▼ ▲, keys on the boiler's front panel together for about 3 s until the parameter H90 appears on the display;
b) press the ▼ ▲ keys to select the parameter for modification;
c) press the − and + keys to modify the parameter;
d) press the i key to exit the programming function.

The following are the parameters generally used:

N° parameters	Description	Factory setting
H90	Setting for domestic hot water reduced temperature (°C)	10
H91	D.H.W. (Domestic Hot Water) program (0 = enabled; 1 = disabled)	1
H505	Maximum temperature (°C) of the central heating circuit HC1 corresponding to: - the main circuit in systems with just one zone; - the circuit of the zone where the QAA73 temperature control device is installed in case of systems with more than one high-temperature zone; - the high temperature zone circuit in mixed systems and if the SIEMENS AGU2.500 accessory is used.	80
H507	Maximum temperature (°C) of the central heating circuit HC2 of a system with more than one zone, corresponding to the circuit of the low-temperature zone if the SIEMENS AGU2.500 accessory is used.	80
H516	Automatic Summer / Winter switching temperature (°C).	20
H532	Selection of temperature curve of central heating circuit HC1 (see Graph 1)	15
H533	Selection of temperature curve of central heating circuit HC2 (see Graph 1)	15
H536	Maximum speed at maximum output in heating mode (rpm - maximum speed limitation)	Refer to paragraph 12.1
H612	Setting value of required speed (rpm) at low-fire	
H536-H613	Setting value of required speed (rpm) at high-fire heating / domestic hot water mode	
H541-H610	PWM (%) setting: maximum output in heating / domestic hot water mode	
H544	Pump post-circulation time in central heating mode (min)	10
H545	Burner operating pause time between two start-ups (s)	180
H552	Hydraulic system setting (see instructions provided with the SIEMENS AGU2.500 accessory). H552 = 50 with AGU2.500 and with QAA73 + zones with room thermostat H552 = 80 with RVA 47	2
H553	Configuration of heating circuits H553 = 12 with AGU2.500	21
H615	Programmable function	9
H632	Configuration of system with low loss header P1 H632 = 00001111 with AGU2.500 and with QAA73 + zones with room thermostat H632 = 00000100 with storage tank without low loss header The value of Bit could be 1 or 0. Press the keys 5 and 6 to select the bit to modify (b0 is the bit on the right, b7 is the last bit on the left). To modify the Bit value press on the keys 7 and 8	00001100
H641	Fan post-purge interval (s)	10
H657	Setpoint of autonomous ANTILEGIONELLA function 60...80 °C = setting temperature range 0 = function inactive	0

Table 4

If the electronic circuit board is replaced, make sure that the parameters set are those specific to the boiler model, as indicated in the documentation available from the authorised Service Centre.

16. CONTROL AND OPERATION DEVICES

The boiler has been designed in full compliance with European reference standards and in particular is equipped with the following

- **Overheat thermostat**
  Thanks to a sensor placed on the heating flow, this thermostat interrupts the gas flow to the main burner in case the water contained in the circuit has overheated. Under these conditions the boiler locks out and you can only repeat the ignition procedure by pressing the reset button on the boiler after you have remedied the cause of the trip.

It is forbidden to disenable this safety device

- **Boiler circuit circulation test**
  The boiler electronic management unit is fitted with a “boiler circulation test” function which involves continuously checking the primary circuit delivery and return temperatures. In case of an irregular increase in the delivery and return temperature or a temperature reversal, the boiler stops and signals the error on the display (see error table).

- **Flue thermostat**
  This device, positioned on the flue inside the boiler, interrupts the flow of gas to the burner if the temperature exceeds 90 °C. After verifying the cause of the trip, press the reset button positioned on the thermostat itself, then press the release button on the boiler.

It is forbidden to disenable this safety device

- **Flame ionization detector**
  The flame sensing electrode guarantees safety of operation in case of gas failure or incomplete interlighting of the main burner.
  Under such conditions the boiler is blocked.
  You must press the reset button on the boiler to restore the normal operating conditions.

- **Supplementary running of the pump**
  The electronically-controlled supplementary running of the pump lasts 10 minutes, when the boiler is in the central heating mode, after the burner has switched off due to a room thermostat intervention.

- **Frost protection device**
  Boilers electronic management includes a “frost protection” function in the central heating system which operates the burner to reach a heating flow temperature of 30°C when the system heating flow temperature drops below 5 °C.
  This function is enabled as long as the boiler is connected to the a.c. power and gas supplies and the pressure in the system is as specified.

- **Pump-blocking prevention**
  In case there is no call for heat either from the central heating system or from the DHW system for 24 hours on end the pump will automatically switch on for 10 seconds.

- **Hydraulic pressure sensor**
  This device enables the main burner only to be switched on if the system pressure is over 0.5 bar.

17. POSITIONING OF THE IGNITION AND FLAME SENSING ELECTRODE

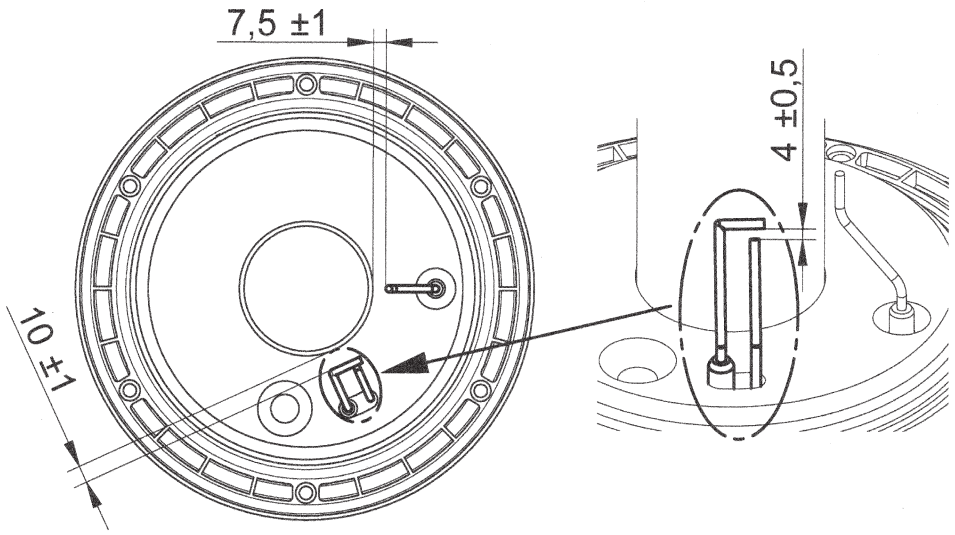

Figure 15

18. CHECK OF COMBUSTION PARAMETERS

To measure combustion performance and hygiene levels of combustion products, the forced draught boiler models are equipped with two test points on the tapered coupling specifically designed for this purpose.
One of the two test points is connected to the exhaust flue duct to allow measurements of the combustion products hygienic standards and combustion efficiency.
The second test point is connected to the comburant air inlet duct to check possible combustion products circulation in case of coaxial ducts.
The exhaust flue duct test point allows measurements of the following:

- combustion products temperature;
- concentration of oxygen (O_2) or, alternatively, of carbon dioxyde (CO_2);
- concentration of carbon monoxyde (CO).

The comburant air temperature must be measured at the test point connected to the air inlet duct.

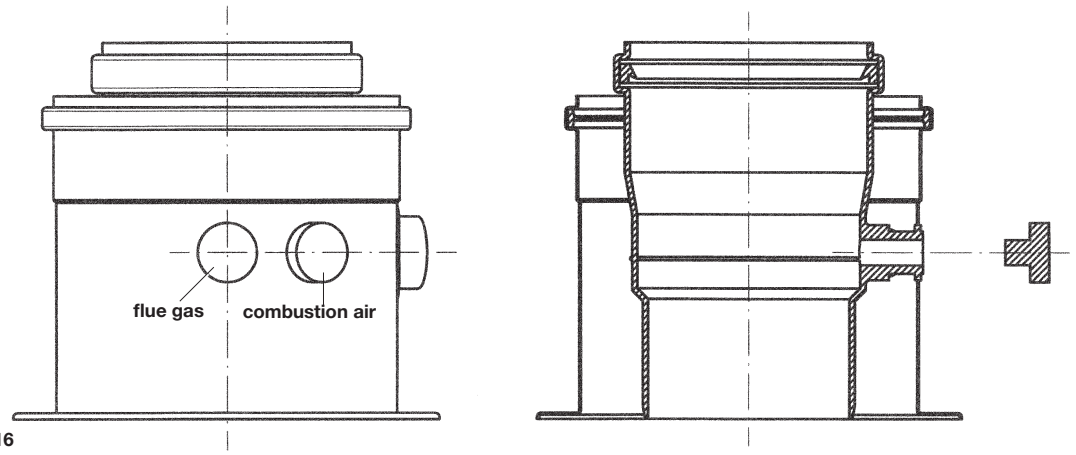

Figure 16

19. ACTIVATING THE CHIMNEY-SWEEPER FUNCTION

To facilitate measurement of the combustion efficiency and improve the cleanliness of the production products, the flue-sweeper function can be activated by proceeding as described below:

1) press the (2-3) together until the pointer "▶" appears on the display alongside the symbol (about 3 seconds but no more than 6 seconds). In these conditions, the boiler operates at the maximum heat output set for central heating.
2) press either of the buttons to exit the function

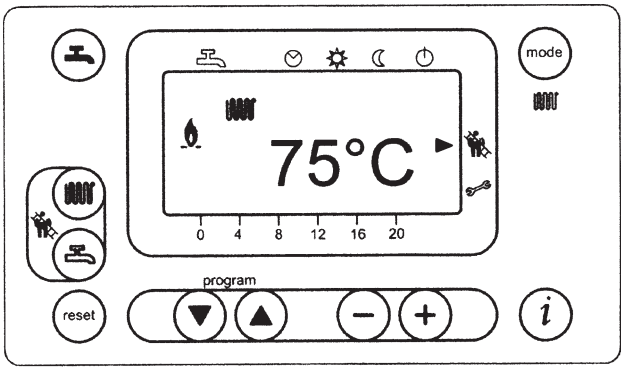

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Figure 17

20. ANNUAL MAINTENANCE

To optimise boiler efficiency, carry out the following annual controls:

- check the appearance and airtightness of the gaskets of the gas and combustion circuits;
- check the state and correct position of the ignition and flame-sensing electrodes;
- check the state of the burner and make sure it is firmly fixed;
- check for any impurities inside the combustion chamber.
  Use a vacuum cleaner to do this;
- check the gas valve is correctly calibrated;
- check the pressure of the heating system;
- check the pressure of the expansion vessel;
- check the fan works correctly;
- make sure the flue and air ducts are unobstructed;
- check for any impurities inside the siphon fitted on certain boilers;
- check the magnesium anode, where present, for boilers fitted with storage boilers.

WARNINGS

Before commencing any maintenance operations, make sure the boiler is disconnected from the power supply. Afterwards, move the knobs and/or operating parameters of the boiler to their original positions.

21. BOILER SCHEMATIC

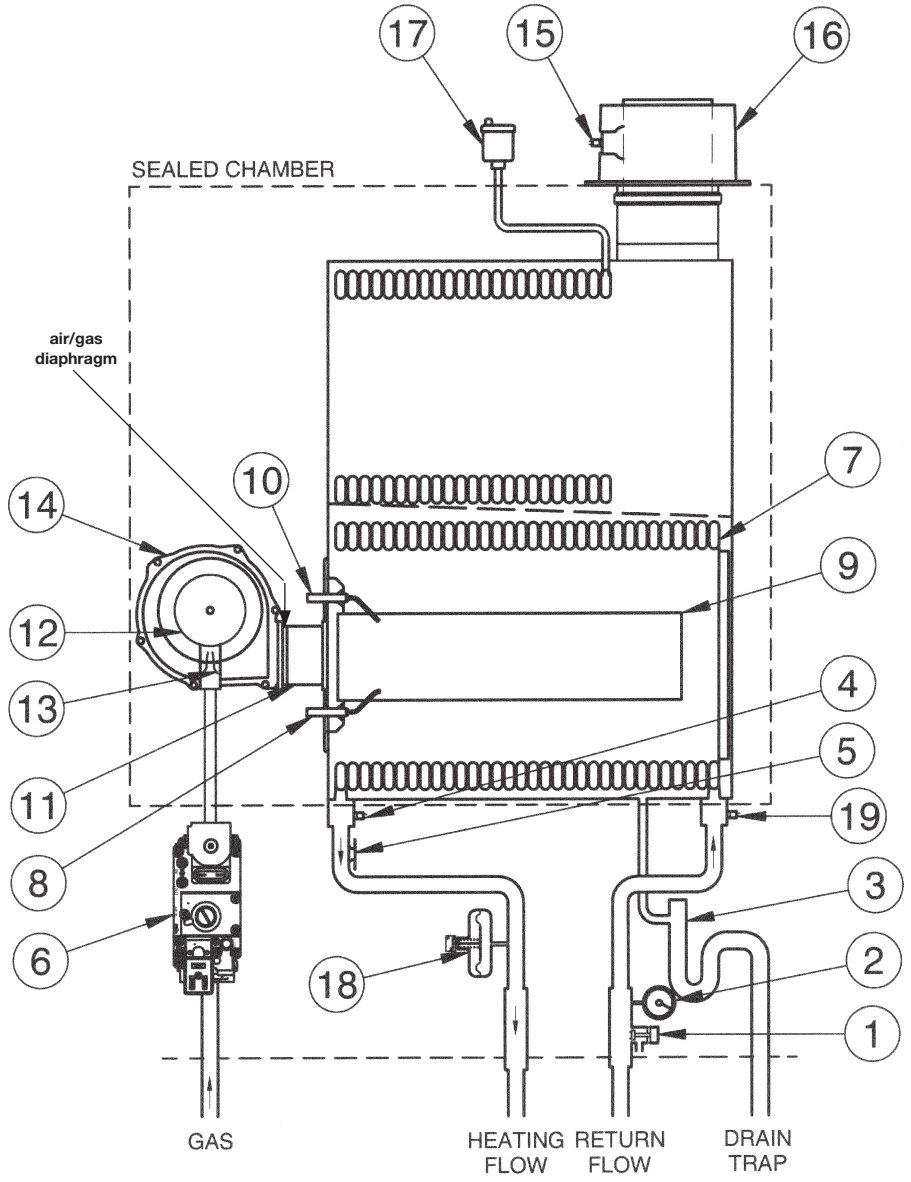

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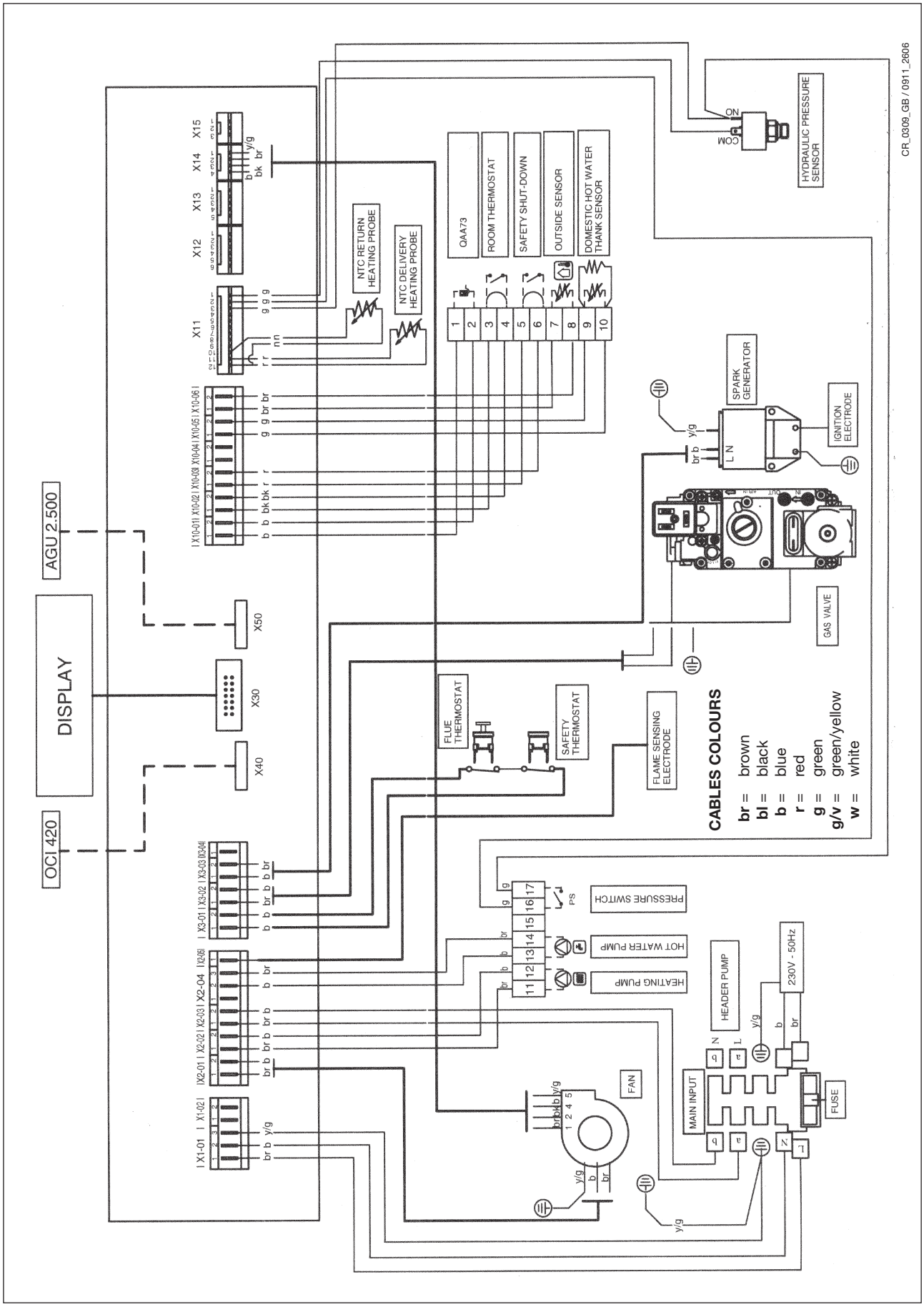
Figure 18

Legend:

1 boiler drain point
2 manometer
3 siphon
4 NTC delivery heating probe
5 105°C overheat thermostat
6 gas valve
7 flue-water exchanger
8 flame detector electrode
9 burner
10 ignition electrode
11 gas mixture header
12 mixer with venturi
13 gas diaphragm
14 fan
15 flue thermostat
16 coaxial fitting
17 automatic air vent
18 hydraulic pressure sensor
19 NTC return heating probe

22. ILLUSTRATED WIRING DIAGRAM



23. TECHNICAL DATA

Boiler model LUNA HT			**1.850**	**1.1000**
Category			**II_{2H3P}**	**II_{2H3P}**
Rated heat input		MJ/h	348.8	368.0
Reduced heat input		MJ/h	105.6	107.2
Rated heat output 75/60°C		kW	85	102
		kcal/h	73.100	87.720
Rated heat output 50/30°C		kW	91,6	110,3
		kcal/h	78.776	94.858
Reduced heat output 75/60°C		kW	25,7	29
		kcal/h	22.102	24.940
Reduced heat output 50/30°C		kW	27,8	31,4
		kcal/h	23.908	27.004
Useful efficiency according to 92/42/CEE directive		—	★★★★	★★★★
Central heating system max. pressure		bar	4	4
Water content		l	13,7	21
Heating circuit temperature range		°C	25÷80	25÷80
Type		—	C13 - C33 - C43 - C53 - C63 - C83 - B23	
Concentric flue duct diameter		mm	110	110
Concentric air duct diameter		mm	160	160
2-pipe flue duct diameter		mm	110	110
2-pipe air duct diameter		mm	110	110
Max. flue mass flow rate		kg/s	0,041	0,050
Min. flue mass flow rate		kg/s	0,013	0,015
Max. flue temperature		°C	74	79
NOx class		—	5	5
Type of gas used		—	Natural / Propane Gases	
Natural gas feeding pressure 2H		kPa	1.13	1.13
Propane gas feeding pressure		kPa	2.75	2.75
Power supply voltage		V	230	230
Power supply frequency		Hz	50	50
Rated power supply		W	150	200
Net weight		kg	94	98
Dimensions	height	mm	950	950
	width	mm	600	600
	depth	mm	650	650
Protection-limit against humidity and water leakages (**)			IPX5D	IPX5D

(**) according to EN 60529

BAXI S.p.A.

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Ed. 1 - 02/10 **codice 910.024.1**