

INSTALLATION, USER AND SERVICE MANUAL

Wallcon

WALL HUNG GAS FIRED CONDENSING BOILER

115
125B
160B

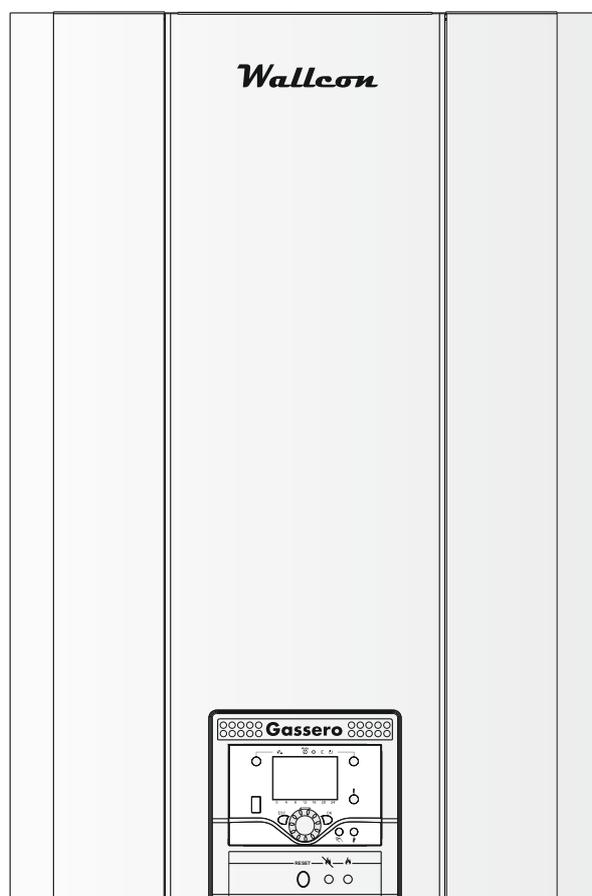


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IMPORTANT

When carrying out commissioning of the boiler, you are highly recommended to perform the following checks:

- Make sure that there are no liquids or inflammable materials in the immediate vicinity of the boiler.
- Make sure that the electrical connections have been made correctly and the earth wire is connected to a well done earthing system.
- Open the gas tap and check the soundness of the connections, including the burner.
- Make sure that the boiler is set for operation for the type of gas supplied.
- Check that the flue pipe for the outlet of the products of the combustion is unobstructed and has been properly installed.
- Make sure that any shutoff valves are open.
- Make sure that the system is charged with water and is thoroughly vented.
- Check that the circulation pump is not locked.
- Purge the system, bleeding off the air present in the gas pipe by operating the pressure relief valve on the gas valve inlet.
- The installer must provide the user with instruction in operation of the boiler and safety devices and hand over the instruction booklet to the user.
- The images shown in this manual are a simplified representation of the product. In this representation there may be slight, unimportant differences with the supplied product.

1 MEANING OF THE SYMBOLS AND SAFETY INSTRUCTIONS

1.1 MEANING OF THE SYMBOLS

WARNINGS



Warnings in this document are framed and identified with a warning icon which is shown on the left figure.



Electrical hazards are identified by a lightning icon surrounded by a warning triangle.



Actions that absolutely must not be carry out identified by the figure on left

Keywords indicate the seriousness of the hazard in terms of the consequences of not following the safety instructions.

- NOTE indicates that material damage may occur.
- CAUTION indicates that injuries may occur.
- WARNING indicates that serious injury may occur.
- DANGER indicates potentially risk to life.

IMPORTANT INFORMATION



Important information in cases where there is no risk of injury material losses is identified by the symbol shown on the left. It is bordered by horizontal lines above and below the text.

THIS APPLIANCE MUST BE INSTALLED BY A GAS SAFE REGISTERED, AUTHORIZED PERSON. FAILURE TO INSTALL CORRECTLY COULD LEAD TO PROSECUTION.

IF YOU HAVE ANY QUESTION CONTACT THE GASSERO TECHNICAL SERVICE. (technical.service@gassero.com, +90 216 394 09 85)

PLEASE LEAVE THESE INSTRUCTIONS WITH THE COMPLETED INSTALLATION CHECKLIST, AND USER USER MANUAL WITH THE OWNER OR AT THE GAS METER AFTER INSTALLATION OR SERVICING.

THE INSTALLATION AND COMMISSIONING CHECKLIST CAN BE FOUND IN BACK PAGES THE MANUAL.

PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE STARTING INSTALLATION.

THESE INSTRUCTIONS ARE APPLICABLE TO THE GASSERO BOILER MODELS WRITTEN ON THE FRONT COVER OF MANUAL ONLY AND MUST NOT BE USED WITH ANY OTHER BOILER MODELS.

1.2 GENERAL WARNINGS



After having removed the packaging, check that the material supplied is intact and complete; if this is not the case, contact with GASSERO or dealers.



The WALLCON Series boilers must be installed by authorized person as detailed under any current standards and law applicable and with the instructions provided by Gassero in the manual given with the appliance.



The boiler must be used for the purposes it has been expressly manufactured. Gassero declines all contractual and extra-contractual liability for damage caused to persons, animals or things, due to errors in installation, control, servicing or improper use.



In case of the water leakage, disconnect the boiler from the mains power supply, close the water supply and promptly notify Gassero or other authorized qualified personnel.



Periodically check that the condensate drain is free of blockages.



Periodically check that the operating pressure of the water circuit when cold is **1.5 bar** and less than the maximum limit specified for the appliance. If this is not the case, contact with Gassero or other authorized qualified personnel.



If the boiler is not used for an extended period, the following operations must be completed:
 - move the main system switch to "off"
 - close the fuel cock and the water cocks on the central heating system
 - empty the central heating system if there is the risk of frost.



This manual is an integral part of the boiler and as a consequence must be kept with care. If the manual is damaged or lost, contact with Gassero to supply a new copy.



Maintenance and servicing must be done once a year.

1.3 SAFETY INSTRUCTIONS



The boiler must not be used by children or invalid persons without supervision.



Electrical devices or appliances, such as switches, household appliances, etc. must not be used if there is the smell of gas or unburned fuel. In this case :

- ventilate the room by opening doors and windows;
- close the fuel stopcock;
- promptly contact Gassero, your gas supplier or other professionally qualified personnel.



Do not touch the boiler when bare feet or with wet parts of the body.



No service or cleaning operations may be performed without first having disconnected the boiler from the mains power supply, moving the main system switch to "off".



The safety or control devices must not be adjusted without the authorisation and written instructions from the manufacturer of the boiler.



Do not pull, remove or twist the electrical cables coming out of the boiler, even if the appliance is disconnected from the mains power supply.



The ventilation openings in the room where the appliance is installed must not be plugged or reduced in size and must comply with any current standards and law applicable.



Do not switch off the boiler if the outside temperature may decrease below ZERO (risk of freezing).



Do not leave flammable substances in the room where the boiler is installed.



The packaging material must not be dispersed in the environment or left within the reach of children as it is a potential source of hazard. It must be disposed of according to the legislation in force.

Alterations to parts connected to the appliance

Do not carry out any alterations for following parts:

- the boiler
- to the gas, air, water supply pipes and electrical
- to the flue pipe, safety valve and its drain pipe
- to the constructive components which influence the appliance's safe operation



When tightening or loosening the screw connections, use only adequate tool. The improper use and/or the use of inadequate equipment can cause damages (for example water or gas leakages).

If you smell gas :

If you smell gas follow these safety indications:

- Do not turn on or turn off electrical switches
- Do not smoke
- Do not use the telephone
- Close the mains gas tap
- Open all windows and doors where the gas leakage
- Contact the gas society or a company specialized in installing and servicing heating systems



Indications for appliances operating with propane gas ensure yourself that before installing the appliance the gas tank has been purged.

For a correct purging of the tank contact the liquid gas supplier or a legalley authorized person .

If the tank has not been correctly purged problems could occur during ignition. If this occurs contact the liquid gas tank's supplier.

1.4 REGULATIONS AND STANDARTS

Current Gas Safety (Installation & Use) Regulations:

All gas appliances must be installed by a competent person in accordance with the above regulations;

The appliance must be installed in accordance with, and comply to, the current: Gas Safety Regulations, IEE Regulations, Building Regulations, Building Standards and any other local requirements.

Directives:

- 2009/142/EEC gas appliance directive
- 92/42/EEC boiler efficiency directive
- 73/23/EEC low voltage directive
- 89/336/EEC EMC directive
- 97/23/EC pressure equipment directive
- any relevant requirement of the local authority.

Installation of rated input greater than 70 kW

EN 15417 Gas-fired central heating boilers.

Specific requirements for condensing boilers with a nominal heat input greater than 70 kW but not exceeding 1000 kW.

EN 15420 Gas-fired central heating boilers. Type C boilers of nominal heat input exceeding 70 kW, but not exceeding 1000 kW.

2 GENERAL

These installation and maintenance instructions apply to the following wall-mounted condensing gas boilers:

- Wallcon 115-125B-160B

The Wallcon 115-125B-160B is suitable for use as a single boiler or as part of a cascade system.

CE LABEL



The appliance complies with the basic requirements of the relevant European directives.

Conformity has been substantiated by the proper documents which, together with the declaration of conformity, are filed with the manufacturer.

2.1 DESIGNED TO USE

The boiler may only be used to heat up water for heating systems as standard and/or domestic hot water (DHW) systems with the connection of DHW tank.

The boiler can be installed either as a single system or as part of a multiple system (cascade system). A cascade system enables several boilers of this type to be connected together, where maximum of 16 boilers with a total capacity of 1.840 kW can be connected together.

Special cascade units (accessories) have been developed to enable this boiler to be installed in a cascade system. Every cascade unit includes an installation frame, horizontal headers, connection pipes for the boiler, main gas pipe and vertical low loss header.

Also, cascade units are available for installing the boilers inline or back-to-back. These cascade units make installing a cascade system easier and less labour intensive. Please contact your dealer or the manufacturer for further information about cascade systems.

2.2 DESCRIPTION OF THE APPLIANCE

The **WALLCON** is a wall-hung condensing boiler, for CH and DHW (with DHW tank) purposes, with pre-mix burner, made up of stainless steel heat exchanger.

The **WALLCON** boilers can be combined in a cascade configuration with other heat generators to create modular heating plants made up of boilers connected to the same water circuit and with electronic controllers communicating via bus. The heat output of each boiler unit reaches 116.1 kW (100%, 50 °C / 30 °C) modulated from 30% to 100%. The efficiency reaches 107% and the low flue gas outlet temperature 64 °C.

The individual heating units in cascading configuration can be activated, as well as by simple rotation, in such a way that when a certain percentage of output is reached by the first unit, the other units start automatically, all with the same load factor.

The main features of the **WALLCON** Boilers are:

- fiber coated premix burner
- output from 29.3 to 116.1 kW (models 115 M and 115 S)
- heat output up to 1.840 kW, by connecting up to 16 boilers in a cascading configuration.
- quick connection of the water and gas headers (optional)
- microprocessor control with self-diagnosis, shown on LED and the display
- frost protection function activated according to the outside temperature and/or the temperature of the boiler
- fitted for room thermostat in the high and low temperature zones
- outside probe to enable the climate control function
- post-circulation function for the central heating and DHW circuits
- priority settable on the DHW, high or low temperature circuit
- solar system & swimming pool control functions
- chimney sweep function
- low investment costs for cascade operations (slave models can be controlled by Master models, without using any display modules in slave units)

2.3 BOILER ROOM & VENTILATION



CAUTION:

Damage to the installation due to frost.
Install the heating system in a room which is free from frost.



WARNING:

Fire hazard due to flammable materials or liquids.

Do not store any flammable materials or liquids in the direct vicinity of the boiler.



CAUTION:

Boiler damage due to contaminated combustion air or contaminated air in the boiler room.

Never use the boiler in an environment which contains lots of dust or aggressive chemicals. Such as spray shops, hairdresser's shops, locations where trichlorethylene or hydrogen halides (e.g. contained in aerosols, certain adhesives, solvents or detergents, paints) and other aggressive chemicals are used or stored.

The Wallcon condensing boilers must be installed in rooms used exclusively for this purpose, provided with adequately sized ventilation openings, in compliance with any current standards and low applicable. If the combustion air is taken from outside the room where the boiler is installed, Wallcon boilers operates as a room-sealed appliance (type C).

When installing and operating the boilers it is necessary to keep a safe 200 mm distance from combustibile materials with combustibility degrees B,C1,C2 .

For easily flammable materials with combustibility degree C3 which burn quickly and by themselves also after the ignition source removal the safe distance is doubled it means 400 mm.



Provide enough clearance to access the safety and control devices and to carry out the servicing operations.



Check that the index of protection of the boiler is suitable for the characteristics of the room where the appliance is installed.



If the boilers operate on gas fuel with a higher specific weight than air, the electrical parts must be located at least 500 mm from the floor.



The boilers cannot be installed outside as they are not designed for outdoor operation.

2.4 PACKAGING LABEL

Product Model : Wallcon J	
Heat Output : Y	
Gas Type : 2H G20-20 mbar-N.Gas	Countries of Destination
Product Code : MASTER <input type="checkbox"/> SLAVE <input type="checkbox"/>	
Serial Number : 	

2.5 WARNING LABEL

WARNINGS !

- Read the technical instructions before installing the boiler.
- Installation and comissioning must be done by authorized qualified technicians.
- Read the user instructions before operating the boiler.
- The boiler may only be installed in a room which complies with the appropriate ventilation requirements and which is seperated from living rooms.

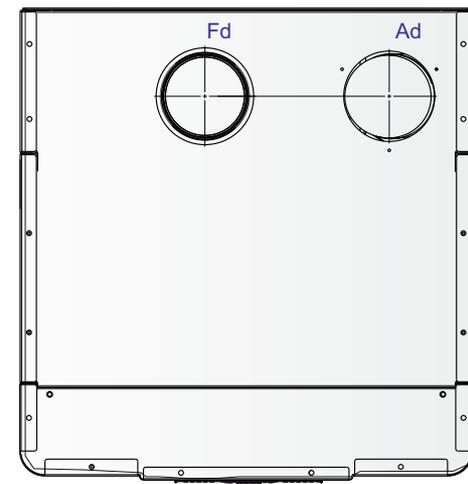
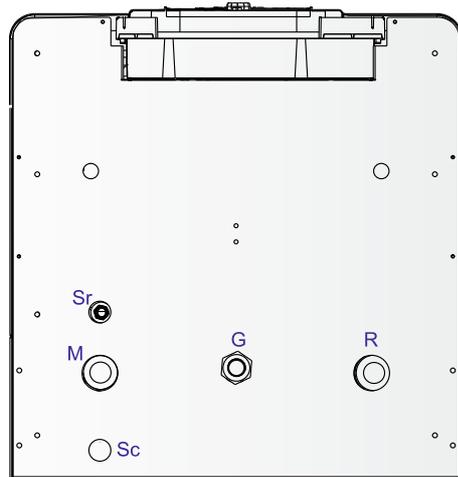
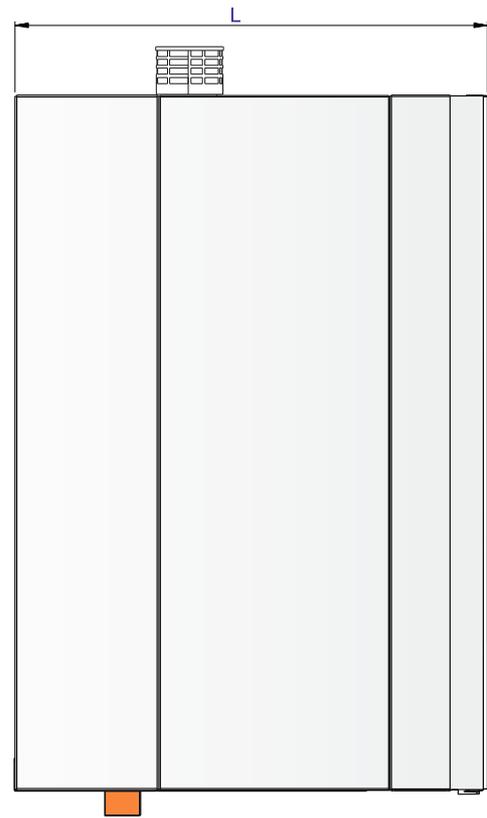
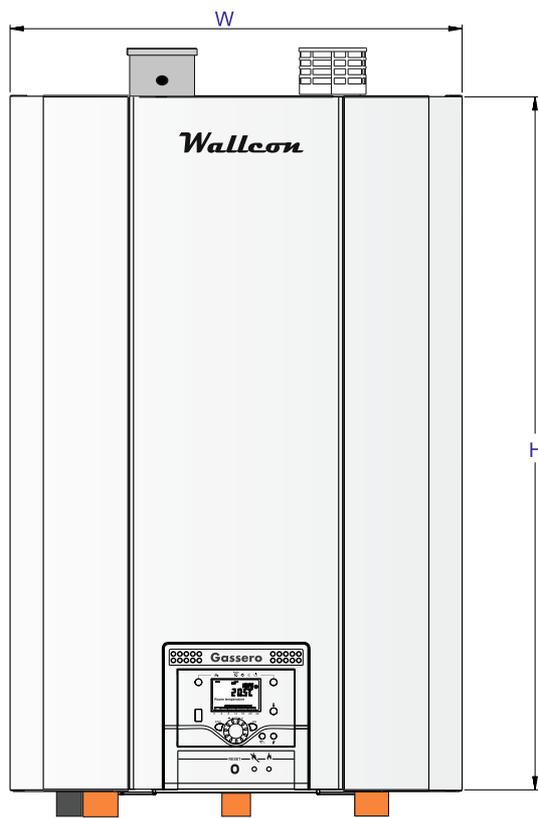
2.6 DATA LABEL

Wallcon <i>Wall Hung Gas Condensing Boilers</i>			
Model : Wallcon J		Nominal Heat Input Qn	
Efficiency Level : ☆☆☆☆		Qn Max. (kW) : C	
Standards : EN 15417 / EN 15420		Qn Min. (kW) : D	
Production Year :		Nominal Useful Output at (80/60 C)	
NO _x Class : Z		Pn Max. (kW) : E	
Power Supply : 230V / 50 Hz		Pn Min. (kW) : F	
Power Consumption : A		Nominal Useful Output at (50/30 C)	
IP Class : X4D		Pn Max. (kW) : G	
Max. Working Pressure(PMS) : 6bar		Pn Min. (kW) : H	
Max. Working Temperature : 90 C		Product Code : 	
Flue (appliance) Types : B			
Serial Number : 		Countries of Destination	Gas Pressure
ATTENTION : The boiler is adjusted in the Factory to Gas Pressure of G20 - 20 mbar . technology for your comfort Istanbul Endustri ve Ticaret Serbest Bolgesi (FREE ZONE) , 4. Sok. Parsel 110 34957 , Tuzla, Istanbul, TURKEY www.gassero.com		Gas Category	

H	Y	Z	A	B	C	D	E	F	G	H
115	116,1	5	300 W	B23,C13,C33,C43,C53,C63,C83	27	108,5	26,1	105,4	29,3	116,1
125B	126	5	300 W	B23,C43,C53,C63,C83	17	121	16,4	116,2	18,4	126
160B	158,8	4	400 W	B23,C43,C53,C63,C83	21,5	152	20,9	146	23,4	158,8

3 TECHNICAL FEATURES

3.1 WALLCON 115-125B-160B DIMENSIONS



WALLCON 115-125B-160B

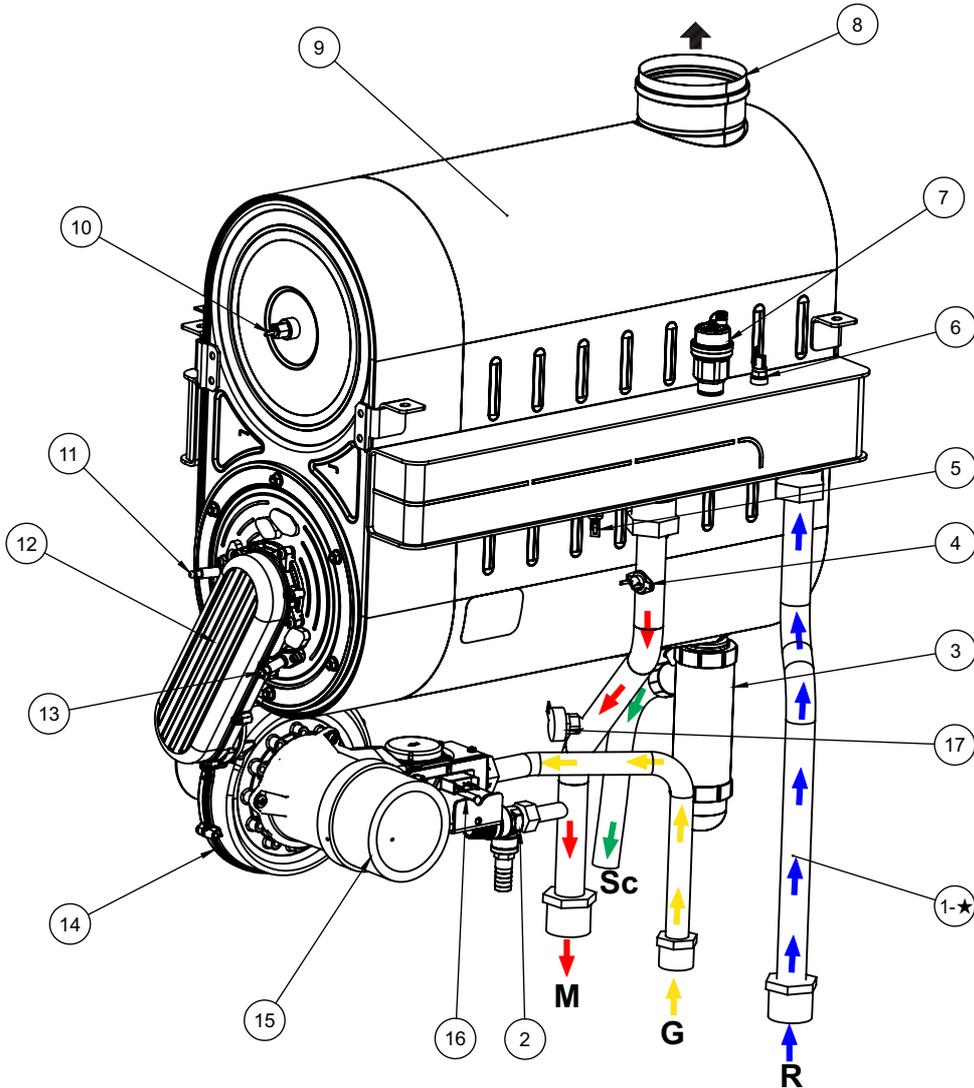
CONNECTIONS

- M:** System flow - 1 1/4"
- R:** System return - 1 1/4"
- G:** Gas supply - 1"
- Fd:** Flue outlet - Ø100 mm
- Ad:** Air intake - Ø100 mm
- Sr:** Safety drain - Ø25 mm
- Sc:** Condensate discharge - Ø25 mm

DIMENSIONS

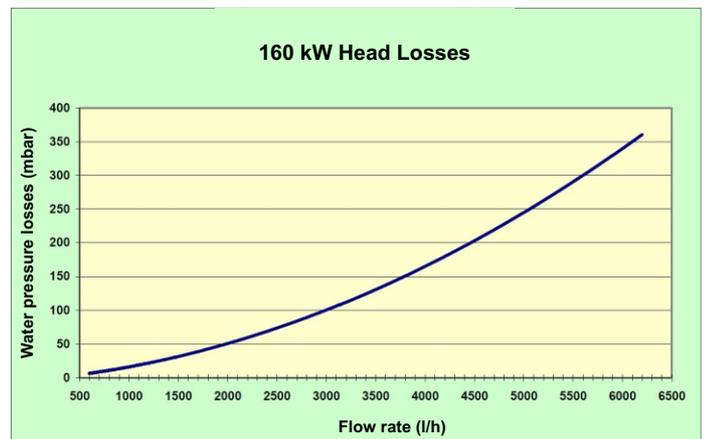
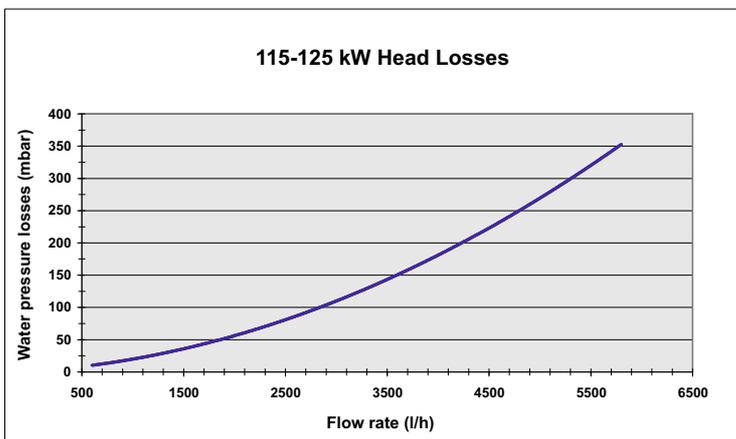
- 115 - W:557 mm L:580 mm H:865 mm**
- 125B - W:557 mm L:580 mm H:865 mm**
- 160B - W:557 mm L:690 mm H:865 mm**

3.2 WALLCON 115-125B-160B HYDRAULIC DIAGRAM

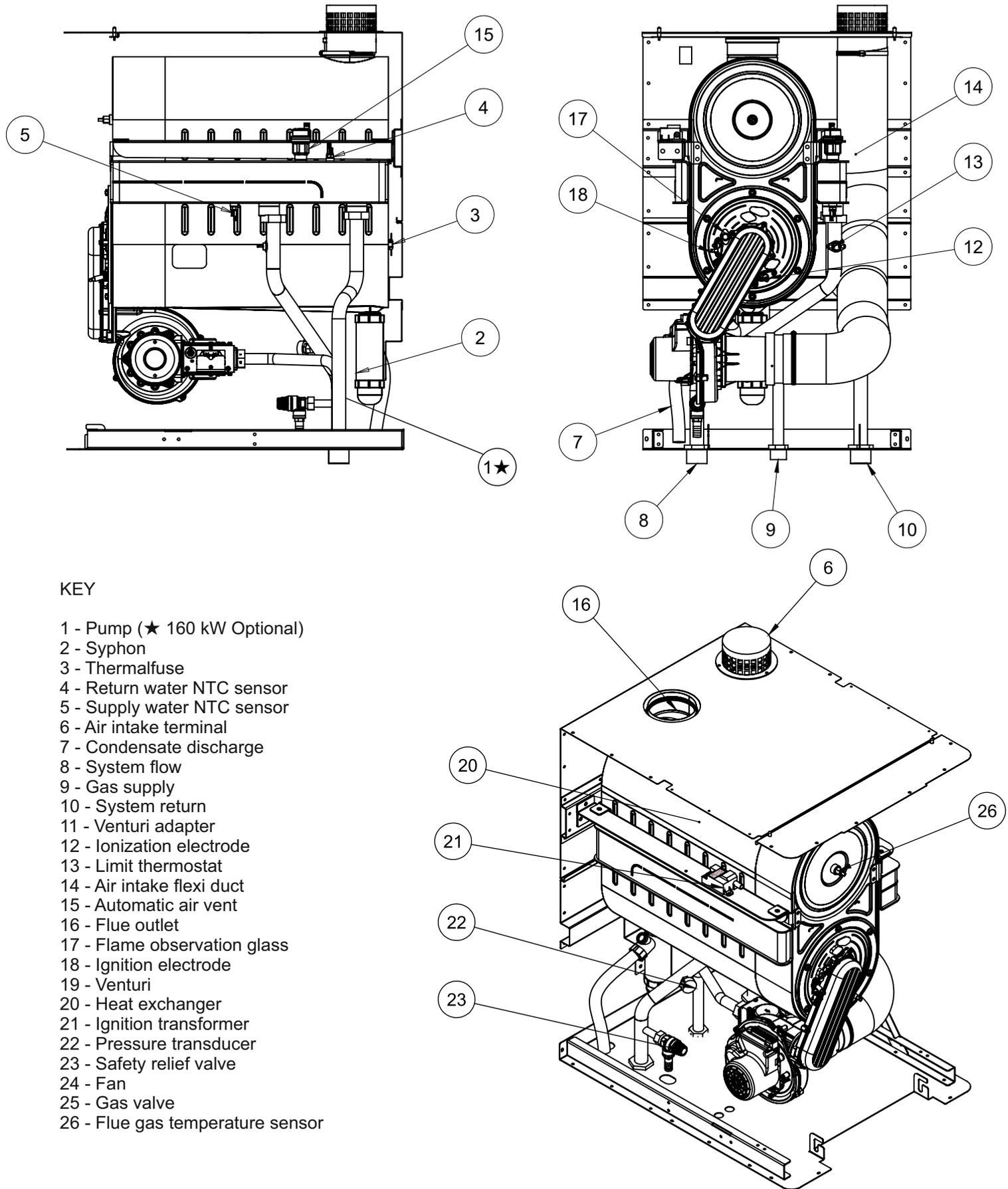


KEY

- 1 - Pump (★ 160 kW Optional)
- 2 - Safety relief valve
- 3 - Syphon
- 4 - Limit thermostat
- 5 - Flow temperature sensor
- 6 - Return temperature sensor
- 7 - Automatic air vent
- 8 - Flue outlet
- 9 - Heat exchanger
- 10 - Flue gas temperature sensor
- 11 - Ignition electrode
- 12 - Manifold
- 13 - Ionization electrode
- 14 - Fan
- 15 - Venturi adapter
- 16 - Gas valve
- 17 - Pressure transducer



3.3 WALLCON 115-125B-160B MAIN COMPONENTS



3.4 TECHNICAL DATA

Model		115		125B		160B	
		min.	max.	min.	max.	min.	max.
Type Of Flue Installation		B23,C13,C33,C53 C43,C63,C83		B23,C43,C53,C63,C83			
Gas category		2H,2E,2LL,3+ ,3B/P					
Fuel type		Doğalgaz / LPG					
Nominal Heat Input Qn	kW	27	108,5	17	121	21,5	152
Nominal Heat Output Pn at (80 - 60 °C)	kW	26,1	105,4	16,4	116,2	20,9	146
Nominal Heat Output Pn at (50 - 30 °C)	kW	29,3	116,1	18,4	126	23,4	158,8
Water Operating Pressure	bar	0,8	6	0,8	6	0,8	6
Maximum Operation Temperature	°C	90		90		90	
Water Content	l	11,7		11,7		14,9	
Condensing Water Mass	kg/h	16		17,5		22,4	
Efficiency & Emissions							
Heating Efficiency Q _{min} (80 - 60 °C)	%	96,8		96,4		97,2	
Heating Efficiency Q _{max} (80 - 60 °C)	%	97,1		96		96,1	
Heating Efficiency Q _{min} (50 - 30 °C)	%	108,4		108,2		109,0	
Heating Efficiency Q _{max} (50 - 30 °C)	%	107,0		104,1		104,5	
Partial Load, Return 30°C (Direct Method)	%	107,6		109,2		109,1	
Flue Gas Temperature (50 - 30 °C)	°C	33	64	31,5	64,8	32,4	62,6
Flue Gas Temperature (80 - 60 °C)	°C	59	77	56,3	88	59,4	82,5
Gas Diaphragm (G20 -G25)	mm	10,7		-		-	
Gas Diaphragm (G31)	mm	7		9,5		9,5	
CO ₂ Emissions (G20)	%	8,8	9,3	8,7	9,4	9,2	9,4
CO ₂ Emissions (G25)	%	8,7	9,2	8,8	9,6	-	-
CO ₂ Emissions (G30)	%	10,3	10,9	11,1	11,2	10,3	10,7
NO _x Emissions (G20)	mg/kWh	17,1		51,72		98,76	
NO _x Emissions (G25)	mg/kWh	26,43		54,83		102,64	
NO _x Emissions (G30)	mg/kWh	38,61		98,97		-	
NO _x Class		5		5		4	
Flue Gas Mass (G20)	g/sec	12,60	48,40	8,03	53,53	9,69	67,24
Flue Gas Mass (G25)	g/sec	12,70	48,90	7,96	52,61	-	-
Flue Gas Mass (G30)	g/sec	12,20	46,30	7,13	50,14	9,64	65,90
Gas Consumption (G20)	m³/h	2,90	11,50	1,77	12,52	2,26	15,61
Gas Consumption (G25)	m³/h	3,30	13,40	2,10	14,61	-	-
Gas Consumption (G30)	m³/h	0,80	3,40	0,67	4,91	0,89	6,14
Fan Speed (G20)	rpm	1650	5850	1300	6400	1400	7250
Fan Speed (G25)	rpm	1650	5850	1300	6400	-	-
Fan Speed (G30)	rpm	1500	5350	1150	6150	1400	7250
Boiler Connections							
Boiler Flow Connection	"	1 1/4"		1 1/4"		1 1/4"	
Boiler Return Connection	"	1 1/4"		1 1/4"		1 1/4"	
Gas Supply G 20	"	1"		1"		1"	
Safety Relief Valve Connection	"	1/2"		1/2"		1/2"	
Siphon Connection for Condens Water	Ø	25		25		25	
Flue Gas Pipe Diameter	Ø	100		100		100	
Fresh Air Connection	Ø	100		100		100	
Electrical Connections							
Power Supply	V/Hz	230-50		230-50		230-50	
Electrical Power	W	300		300		400	
IP Class	IP	X4D		X4D		X4D	
Boiler Dimensions & Weight							
Dimensions WxLxH	mm	557x580x865		557x580x865		557x690x865	
Weight	kg	92		92		98	

4 INSTRUCTIONS FOR THE INSTALLER

4.1 INSTALLATION

4.1.1 PACKING

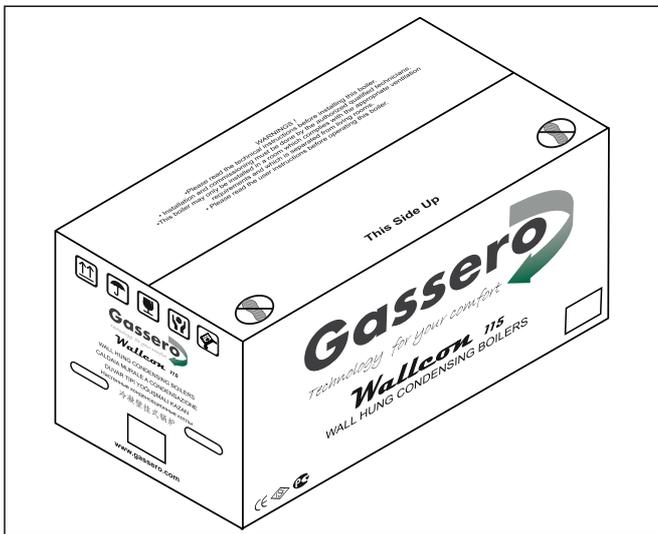
The **Wallcon** boilers are supplied fully assembled in a strong cardboard box.

After having unpacked the boiler check that it is intact and undamaged.



Keep the packaging material (cardboard box, plastic bags, polyester protection etc .) **out of the reach of children as they can be dangerous.**

GASSERO refuses all liability for injury to persons, animals or damage to property deriving from not having respected the above mentioned recommendations.



In the packaging, in addition to the boiler, you can also find the following contents:

- Installation and service manual
- Warranty card
- Flue adapter for smoke evacuation
- Wall hanging brackets

4.1.2 TRANSPORT



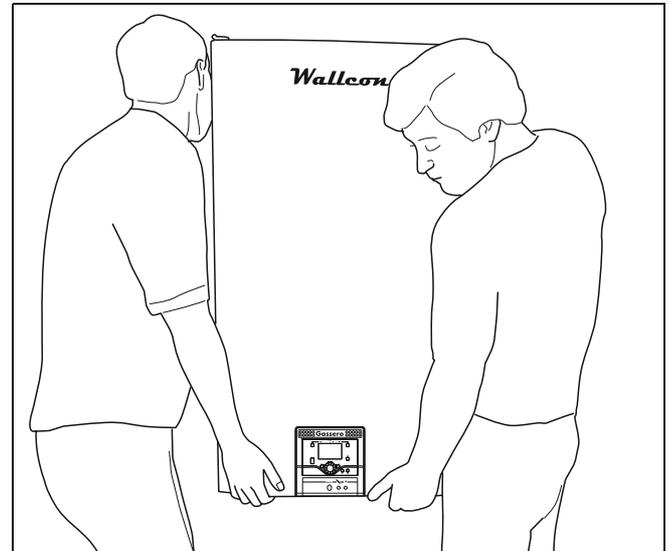
CAUTION: Damage to the installation due to impacts.

The boiler contains parts which can be damaged by impacts.

During further transport all parts must be protected against impacts.

Obey the transport symbols and instructions on the packaging.

To lift and carry the boiler, place one hand at the bottom of the boiler and the other hand on its top.



CAUTION: Damage to the unit due to it being lifted and carried incorrectly.

Do not hold the boiler over the control panel to lift and carry it.

Place the boiler in its packaging on the handtruck and secure it with a strap if necessary.

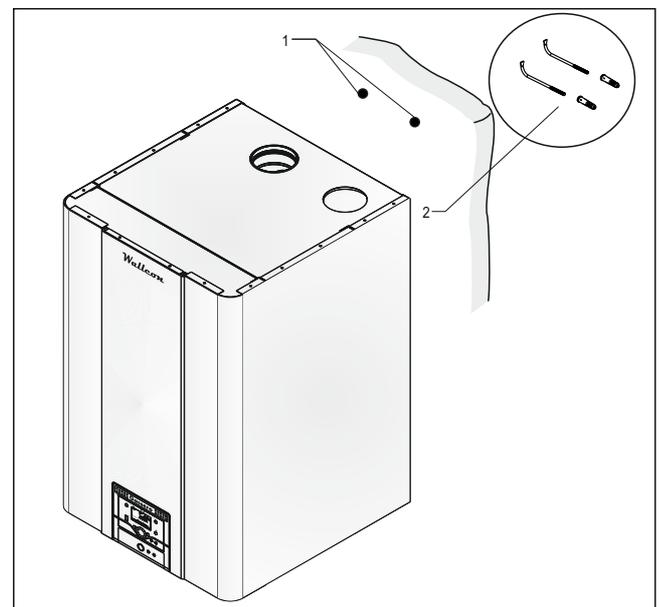
Carefully transport the boiler to the installation place.

4.1.3 MOUNTING

The **Wallcon** Boiler must be secured to a solid brick or concrete wall using the wall hanging brackets.

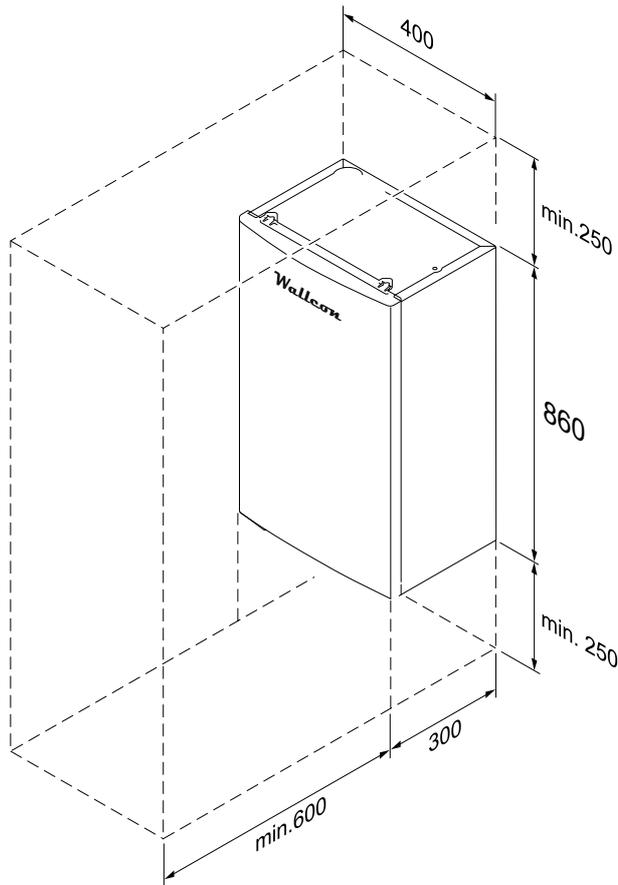
For installation:

- Position the bracket on the wall using correct level to make sure that the holes are perfectly horizontal(1)
- Mark the fastening holes on the wall (1)
- Drill the holes and insert the expansion plugs(2)
- Fasten the bracket to the wall using the screws
- Hook the boiler to the bracket.



4.1.4 CLEARANCES

The gas and water connections are located on the bottom of the boiler whilst the air intake and flue outlet is located on the top of the boiler. The boiler is supplied as standard with pipe-work tails to allow connections facing downwards. For installation, servicing and inspection min. 600 mm in front of the boiler is required. If this free space is obtained by opening a door or removing a panel, the boiler may be installed for instance in a closed cupboard. For ease of installation we recommend clearances of 0.5 cm at the side so that the unit is easy to open, with a free space of 25 cm under the appliance and 25 cm above the appliance, as the minimum requirement.



4.1.5 WATER QUALITY AND TREATMENT

The pH value of the water must fall within the following limits: $7 < \text{pH} < 9$ in non-treated water. This pH value is achievable after steady conditions when after filling the mains network water (pH around 7) inside the installation and the air elimination operation has been done. Treated water hardness must within limits $7 < \text{pH} < 8,5$

If the water might contain aluminium particles, this should be maximum 8,5 ppm. If there is any doubt of the water staying free of any kind of debris/contamination in the period after installing, one should install a plate heat exchanger to separate the boiler circuit from the heating circuit. To avoid to the maximum any presence of oxygen in the system, we recommend to prevent as much as possible air intake and water leakage during installation. Power flush the pipes and radiators thoroughly to remove all fluxes and debris before connecting the boiler to the central heating system in accordance with local regulations.



CAUTION:

Boiler damage due to corrosion.



NOTE:

Damage to the installation due to insufficient or improper cleaning and maintenance.

Inspect and clean the heating system as required once a year.



Carry out maintenance as required.

Immediately remedy faults. This will avoid further damage to the system!

DO NOT treat the water with antifreeze.

Suitable chemicals and their use should be discussed with a specialist water treatment company prior to carrying out any work (environmental aspects, health aspects). The specification of the system and manufacturers recommendations must be taken into account, along with the age and condition of the system. New systems should be flushed thoroughly to regulations to remove all traces of flux, debris, grease and metal swarf generated during installation. Care to be taken with old systems to ensure any black metallic iron oxide sludge and other corrosive residues are removed, again by power flushing, ensuring that the system is drained completely from all low points. It is important to check the inhibitor concentration after installation, system modifications, filling the system and every service in accordance with these instructions. For the correct dosage and the suitability of inhibitors for use with our boilers and for further information on water treatment or system cleaning we advise direct contact with Gassero service.

The manufacturer declines any liability for damage caused to the boiler by failure to install or inadequate installation of this filter. Before switch on the boiler, water must be circulate at least 2 hours for elimination the impurities from the system trough the micro impurity seperator. In the end of the operation, safety drain valve must be opened for removing the impurities. It is also possible to use plate heat exchangers according the system characteristics. In any case, micro impurity separators must be used in the system in the boiler. Before installation, carefully wash all the pipes of the system to remove any residuals or impurities that could affect proper operation of the unit. Filter must also be installed on the system return piping to prevent impurities or sludge from the system clogging and damaging the boiler.

The plumbing system must be cleaned using with suitable - registered products before starting the installation of the boiler. Neutral, non-acidic and non-alkali cleaners(SENTINEL X300, X400, FERNOX) must be used for preventing the metal, plastic and rubber parts in the installation system. Please obey the instructions of the manufacturer, when using these type of cleaners.

Note: Rust particles and impurities in the heating system can caused problems.(overheating, un-efficient and noisy work) Problems and damages due to wrong installations and wrong plumbing systems is out of warranty.

4.1.6 WATER SIDE CONNECTION INSTRUCTIONS

The heating capacity of the unit must be previously established by calculating the building's heat requirement according to current regulations. The system must be provided with all the components for correct and regular operation. In particular, provide for all the protection and safety devices prescribed by current regulations for the complete system.



We strongly recommend to install two ball valves under the boiler, so the boiler can be isolated from the heating system when needed.

4.1.7 EXPANSION VESSEL

Wallcon 115 is not supplied with an expansion vessel; therefore its connection must be carried out by the qualified installer. The capacity of the expansion vessel must be chosen and installed to match the capacity of the central heating system and the static pressure. We suggest you install the expansion vessel in the return line of the central heating system. It can be combined with the drain valve for servicing.

4.1.8 SAFETY VALVE

Safety valve outlet must be connected to collection pipe to prevent water spurting onto the floor in case of overpressure in the heating circuit. Otherwise, if the discharge valve cuts in and floods the room, the boiler manufacturer cannot be held liable.

4.1.9 CONDANSATE DISCHARGE

The condensate drain is in the left side at the bottom of the boiler and has a 25mm hose discharge. Connect this flexible hose to the sewer system. Use only plastic parts with the condensate drain. Metal lines are not allowed. Blockage of this drain may cause damage to the boiler. The drain connection is correct when the condensate can be seen flowing away, e.g. using a funnel. Any damage that may occur is not covered by the warranty of the boiler. There should be an open connection between the condensate hose from the boiler, to the sewage system. An under pressure in the sewage system should never be able to suck on the boiler condensate drain hose. The condensate drain must be connected in accordance with current regulations.



Do not use the water system pipes to earth electrical appliances.

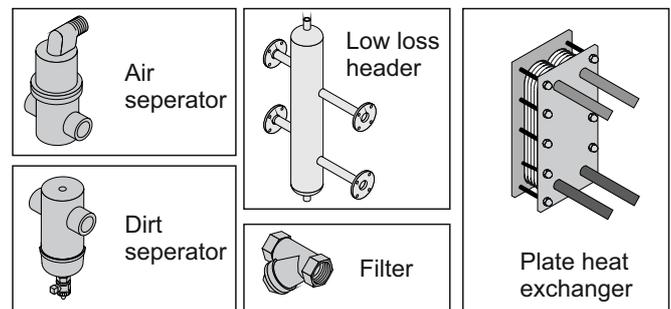
4.1.10 FROST PROTECTION

Wallcon series boiler has built-in frost protection, automatically activating the central heating pump when the boiler return water temperature drops below 5°C. The pump and/or burner will shut down as soon as the return temperature has reached demanded point. The above-mentioned temperatures relates to the temperature measured with the RETURN sensor of the boiler. This Frost Protection provision is for the boiler only and not for the all system.

4.1.11 DIRT SEPERATION

Always install a strainer (water filter) and /or a dirt separator in the return of the boiler is such a way that the boiler water is free of any debris/particles. When using a water filter one should check weekly after installation to determine the strainer cleaning interval.

We advise to mount valves before and after the strainer including an air bleed valve so the strainer can be isolated from the heating circuit for servicing. Clean water is important, blocked heat exchangers do not fall under warranty. The filter should be installed when replacing boilers in existing systems. The manufacturer declines any liability for damage caused to the boiler by failure to install or inadequate installation of this filter. Before switch on the boiler, water must be circulate at least 2 hours for elimination the impurities from the system trough the micro impurity separator. In the end of the operation, safety drain valve must be opened for removing the impurities. It is also possible to use plate heat exchangers according the system characteristics. In any case, micro impurity seperators must be used in the system in the boiler. Before installation, carefully wash all the pipes of the system to remove any residuals or impurities that could affect proper operation of the unit. Filter must also be installed on the system return piping to prevent impurities or sludge from the system clogging and damaging the boiler.

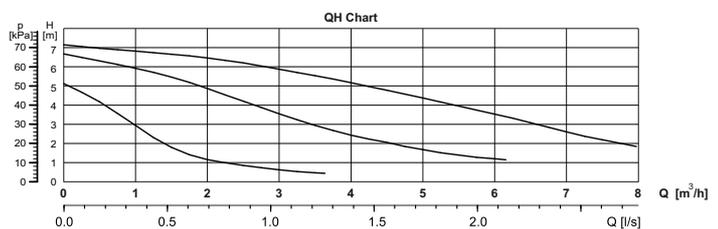


4.1.12 AUTOMATIC AIR VENT

There is an automatic air vent mounted in the boiler to remove air from the water circuit. This automatic air vent is only for eliminate the air in the heat exchanger of the boiler. One or more external automatic air vent(s) and/or air separators should always be installed in the heating system to eliminate air trapped in the heating circuit.

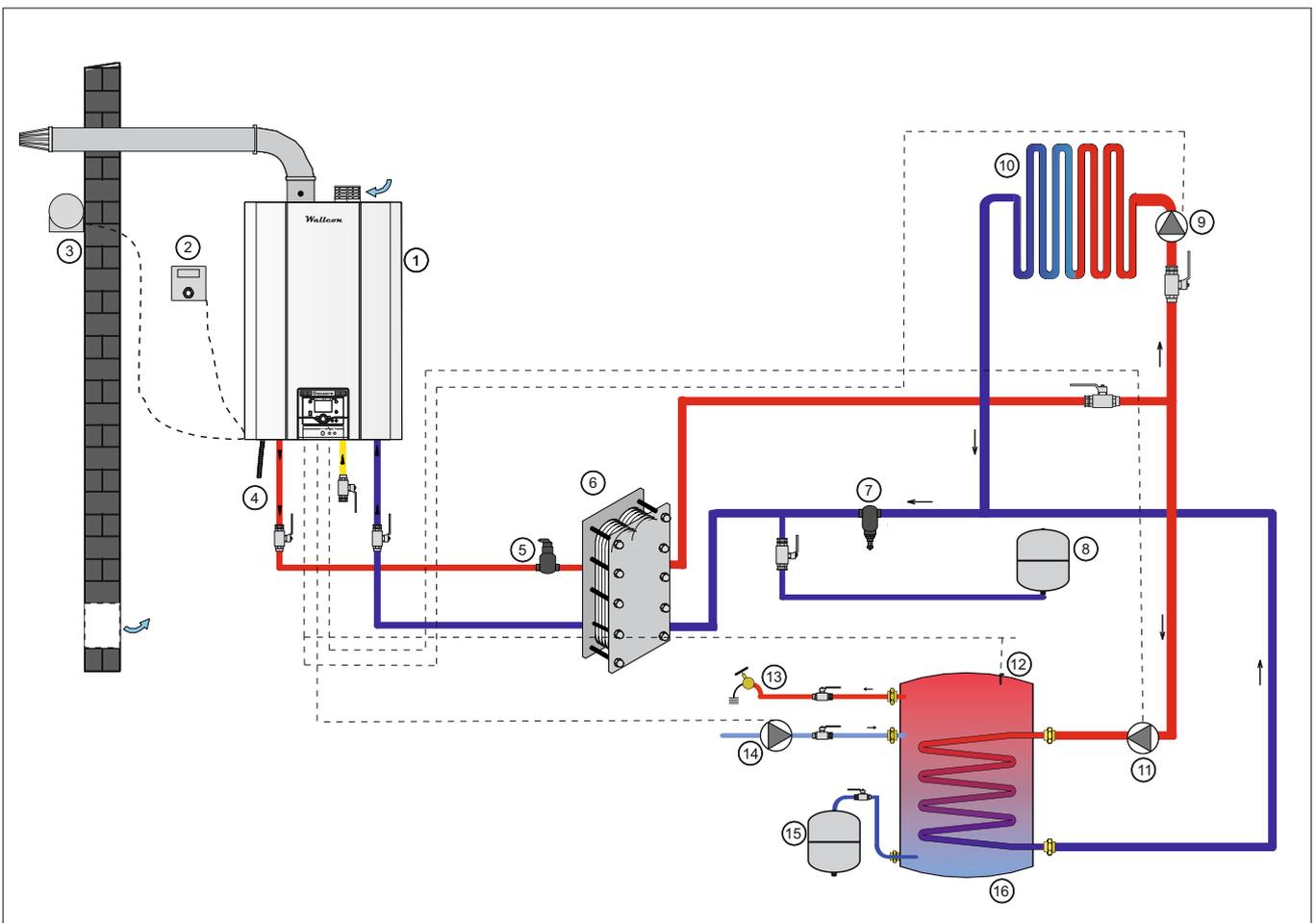
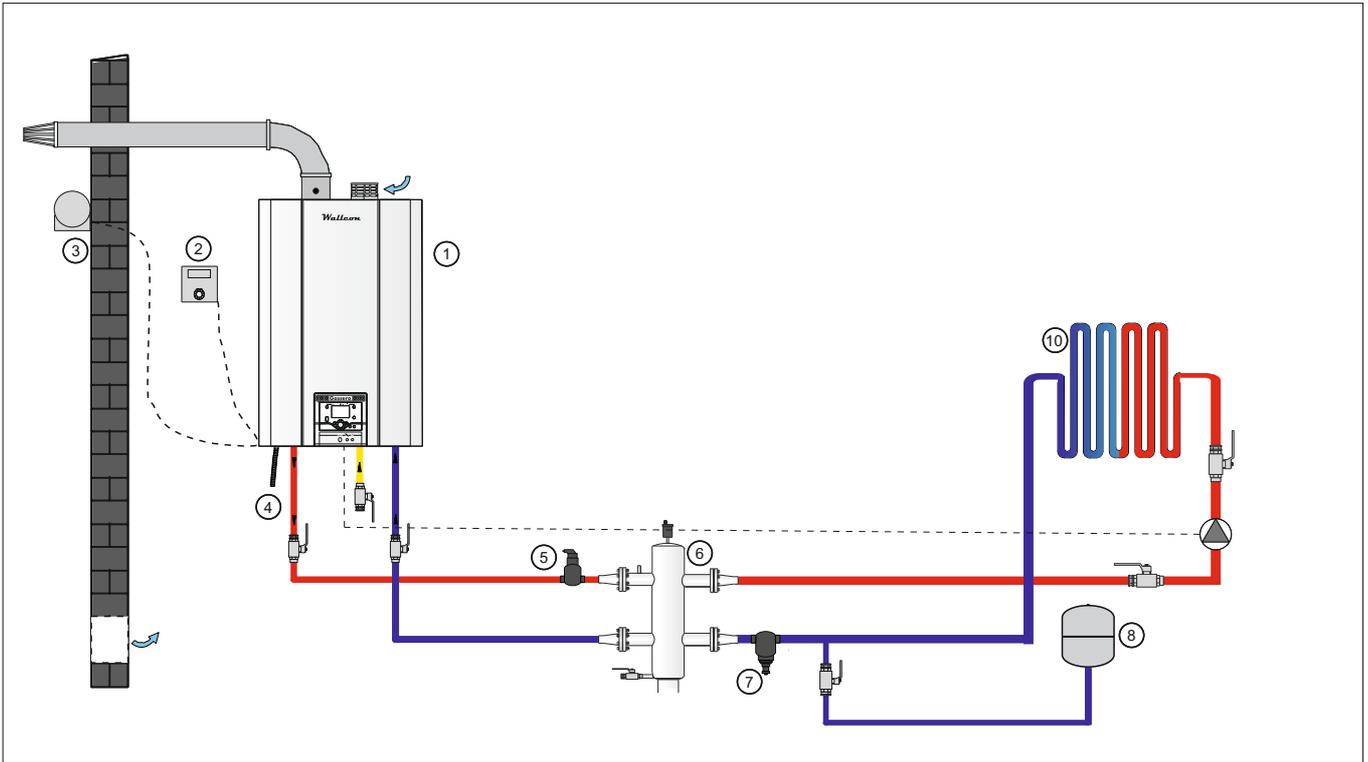
4.1.13 PUMP

The WALLCON 115 boilers are supplied with a built-in circulation pump with 3-position electric speed control. The pump is the single-phase type (230 V - 50 Hz). To ensure optimal boiler operation, in the case of new systems (single pipe and module) it is recommended to use the pump at maximum speed. The pump runs when heat is required. When heat is no longer required, the pump will continue to run for another 3 minutes before it stops. The 24-hour cycle starts as soon as the power supply to the boiler is activated.

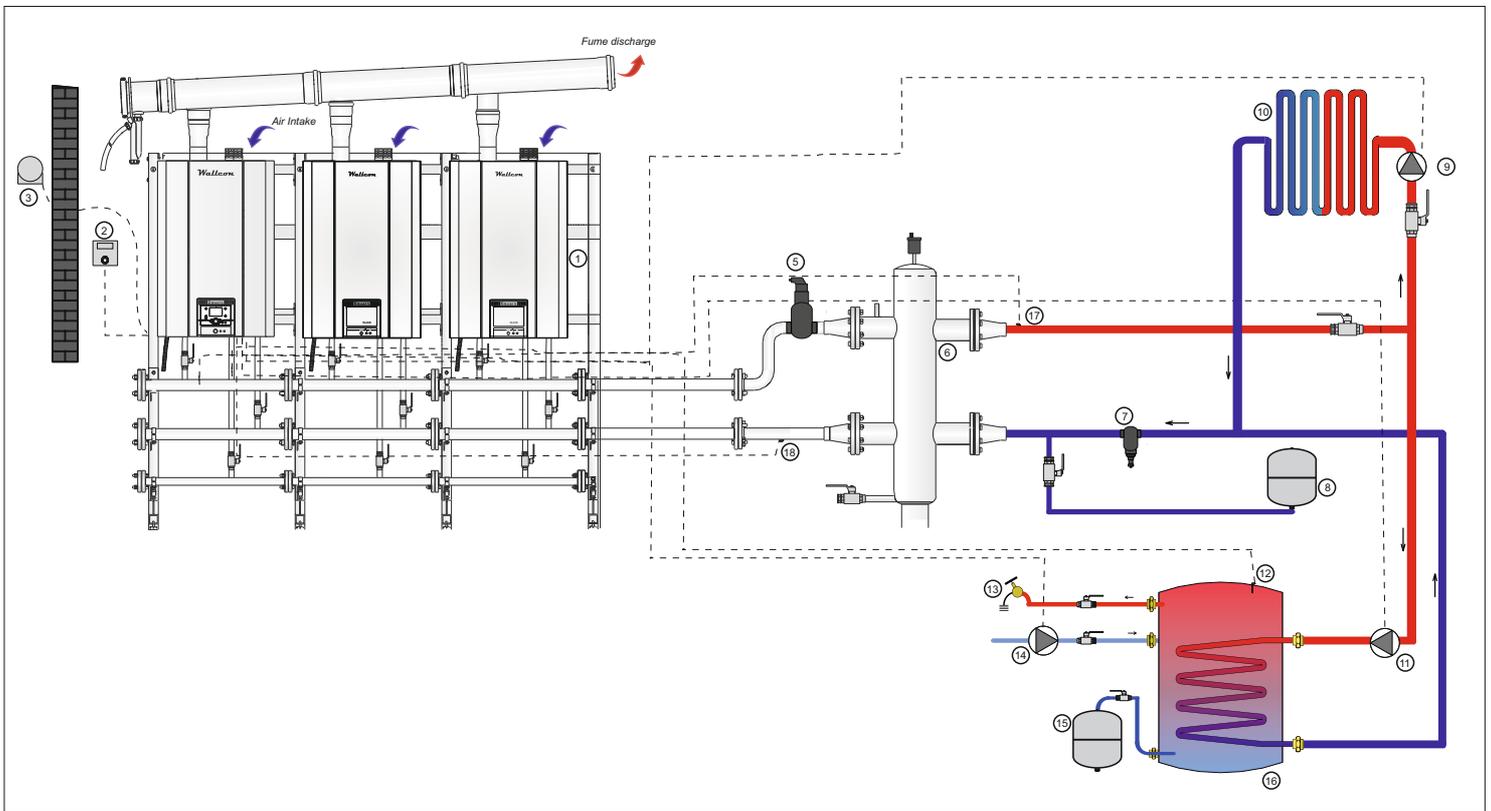
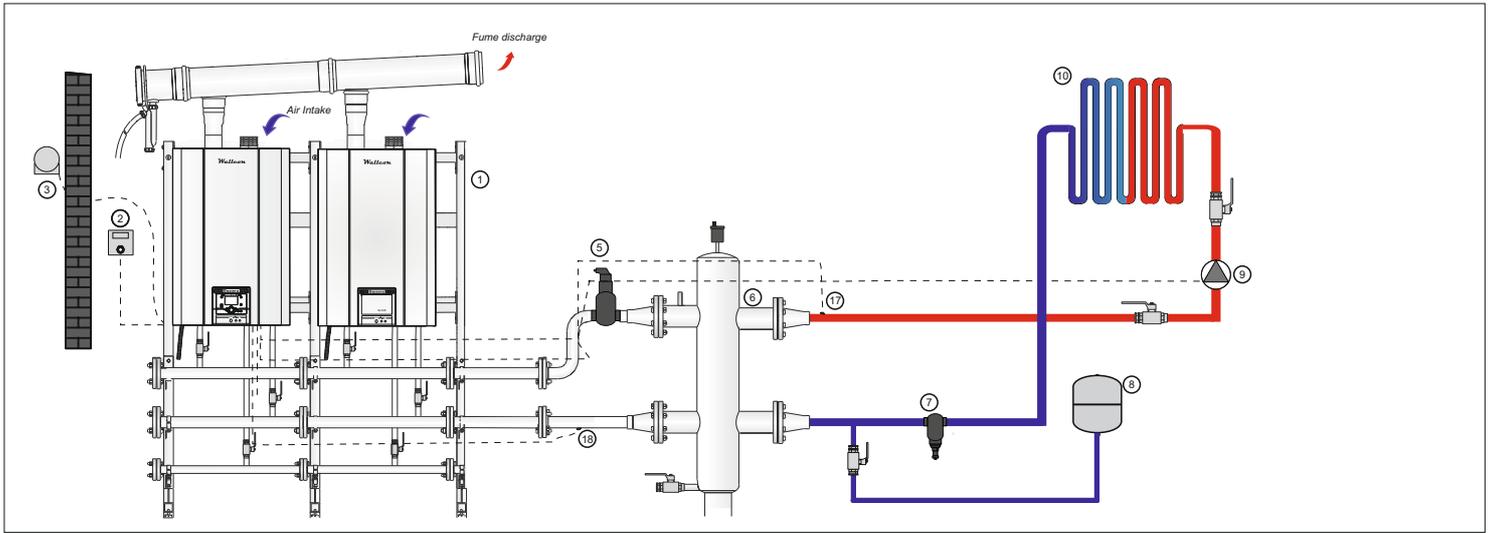


4.2 BOILER INSTALLATION SYSTEM EXAMPLES

4.2.1 SINGLE BOILER INSTALLATIONS



4.2.2 CASCADE INSTALLATIONS



Key

- | | |
|--|--|
| 1 - Wallcon condensing boiler | 10 - Heating system(radiator/underfloor) |
| 2 - Room thermostat (QAA55) | 11 - DHW tank pump |
| 3 - Outside probe (QAC34) | 12 - DHW tank sensor (QAZ36) |
| 4 - Condansate discharge | 13 - Hot water |
| 5 - Air seperator | 14 - DHW re-circulation pump |
| 6 - Plate heat exchanger / Low loss header | 15 - DHW tank expansion vessel |
| 7 - Dirt seperator | 16 - DHW tank |
| 8 - Expansion vessel | 17 - Cascade supply sensor (QAD36) |
| 9 - Radiator pump | 18 - Cascade return sensor (QAD36) |

4.3 ADJUSTMENT OF THE GAS RATE

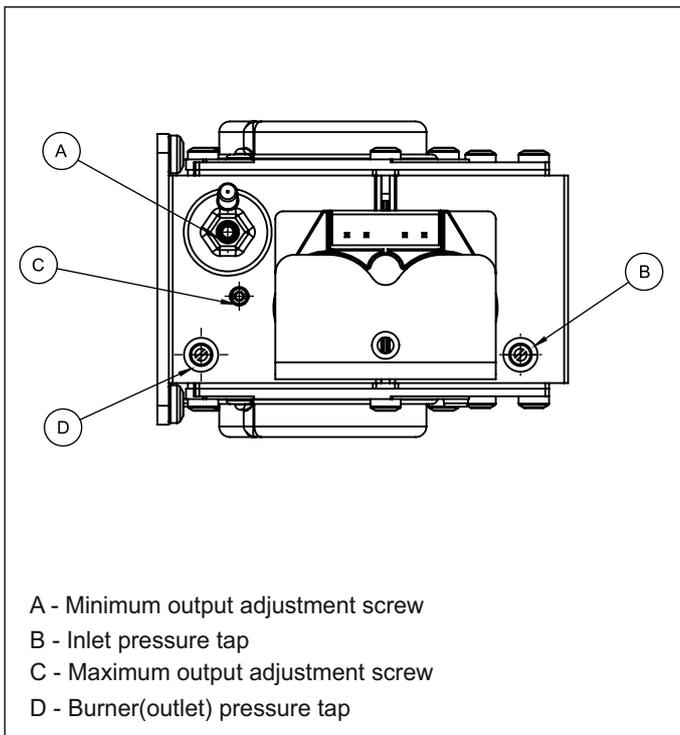


All the instructions written below are for the exclusive use of qualified service technicians or installers. All the boilers are supplied already calibrated and tested. Adjustments are only be made with special tools.



Adjustments must be done by Gassero authorized services.

4.3.1 Description of the adjustment points

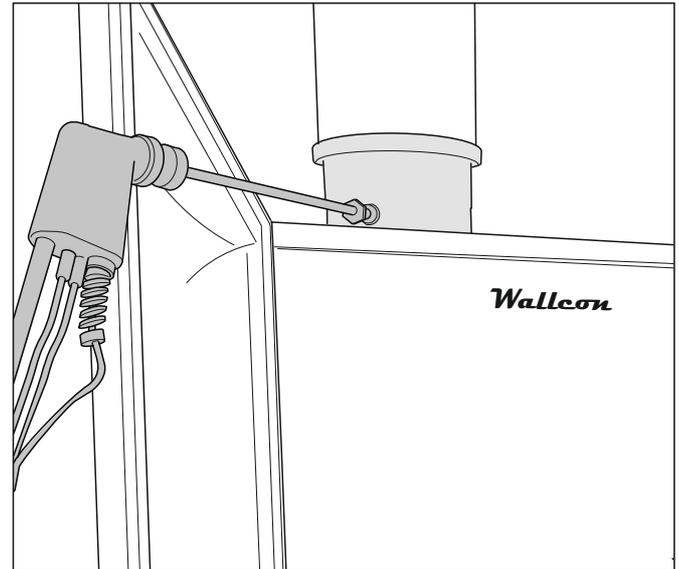


4.3.2 Combustion values adjustment table

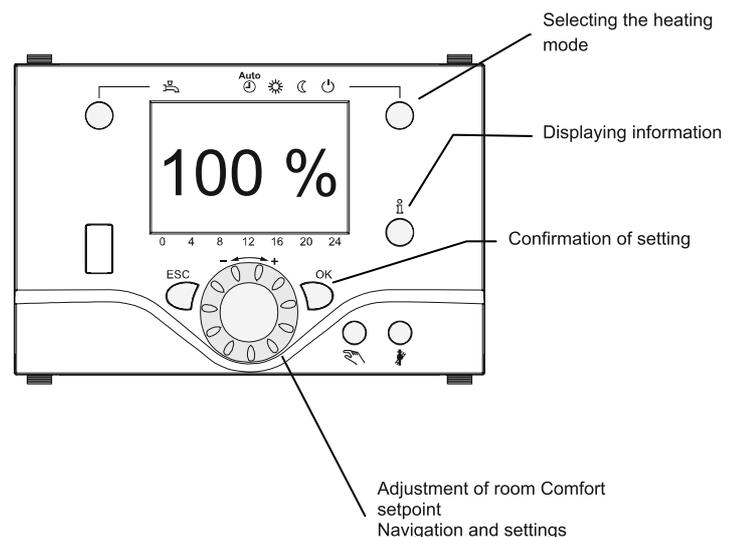
Model		115		125B		160B	
		min.	max.	min.	max.	min.	max.
CO ₂ Emission (G20)	%	8,8	9,3	8,7	9,4	9,2	9,4
CO Emission (G20)	ppm	1	98	1	144	1	174
Gas Consumption (G20)	m ³ /h	2,9	11,5	1,77	12,52	2,26	15,61
Fan Speed (G20)	rpm	1650	5850	1300	6400	1400	7250
Combustion Mass Flow (G20)	g/sec	12,6	48,4	8,03	53,53	9,69	67,25
Gas Diaphragm (G20)	mm	10,7		-		-	
Model		115		125B		160B	
CO ₂ Emission (G25)	%	8,7	9,2	8,8	9,6	-	-
CO Emission (G25)	ppm	2	110	1	186	1	-
Gas Consumption (G25)	m ³ /h	3,3	13,4	2,1	14,61	-	-
Fan Speed (G25)	rpm	1650	5850	1300	6400	-	-
Combustion Mass Flow (G25)	g/sec	12,7	48,9	7,96	52,61	-	-
Gas Diaphragm (G25)	mm	10,7		-		-	

4.3.3 Maximum output adjustment

1 - Connect the gas analyser probe to the sampling test point on the flue adapter.



2 - For operating in the max. output, press at least 3 seconds to heating mode when the boiler in mode. Controller function stop will appear on the screen. Then press information button, it will indicate the modulation rate (%) on the screen. Adjust the rate to 100% for max. output setting with using of navigation button. Then press OK . Thus, boiler will operate in maximum power.

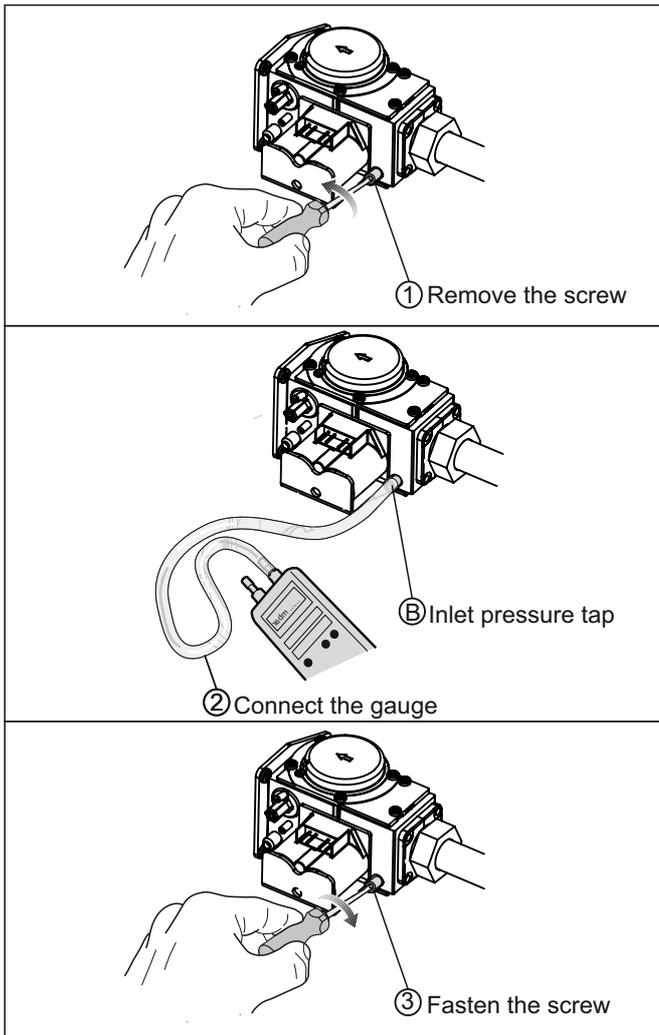


WARNING:

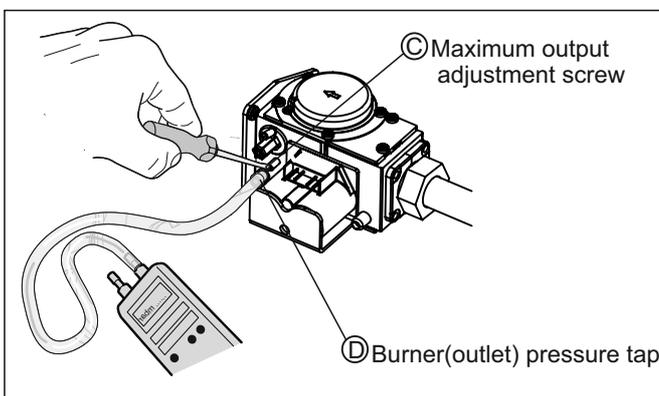
Damage to the boiler by incorrect adjustment of the gas/air-ratio.

To ensure correct operation the values have to be adjusted with extreme care respecting the values indicated in the table.

- 3 - Connect the pressure gauge connection tube to the positive port of the testing nipple and check the gas supply pressure.

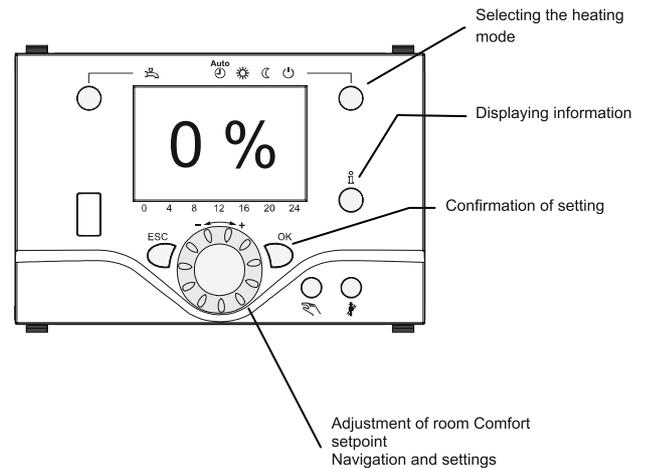


- 4 - Connect the pressure gauge connection tube to the burner pressure tap and check the burner supply pressure. Burner pressure must be adjust according to the table. Check that the CO₂ values are within the values indicated in the table. Correct the value by turning the adjustment screw (C) in clockwise direction to decrease the value and in an anti-clockwise direction in order to increase the value.

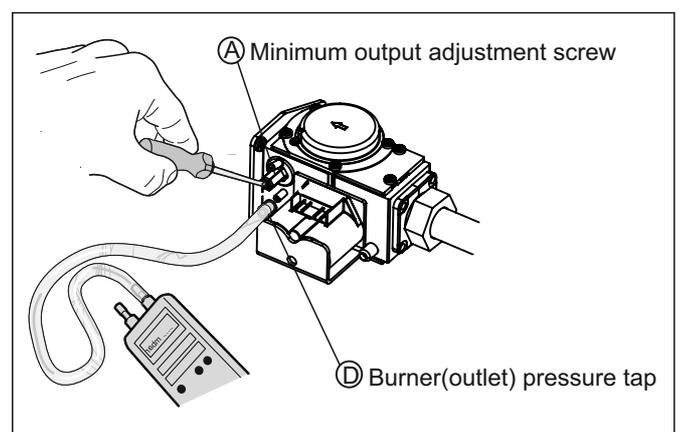


4.3.4 Minimum output adjustment

- 1 - For operating in the min. output, press at least 3 seconds to heating mode when the boiler in mode. Controller function stop will appear on the screen. Than press information button, it will indicate the modulation rate (%) on the screen. Adjust the rate to 0% for min. output setting with using of navigation button. Then press OK . Thus, boiler will operate in minimum power.



- 2 - Connect the pressure gauge connection tube to the burner pressure tap and check the burner supply pressure. Burner pressure must be adjust according to the table. Check that the CO₂ values are within the values indicated in the table. Correct the value by turning the adjustment screw (A) in clockwise direction to increase the value and in an anti-clockwise direction in order to decrease the value.



- 3 - Check the CO₂ values at the minimum and maximum output. Make the required adjustments if necessary. CO₂ values have to be adjusted with extreme care respecting the values indicated in the table. When the adjustments have done, close sampling test point in the flue adapter with the cap.

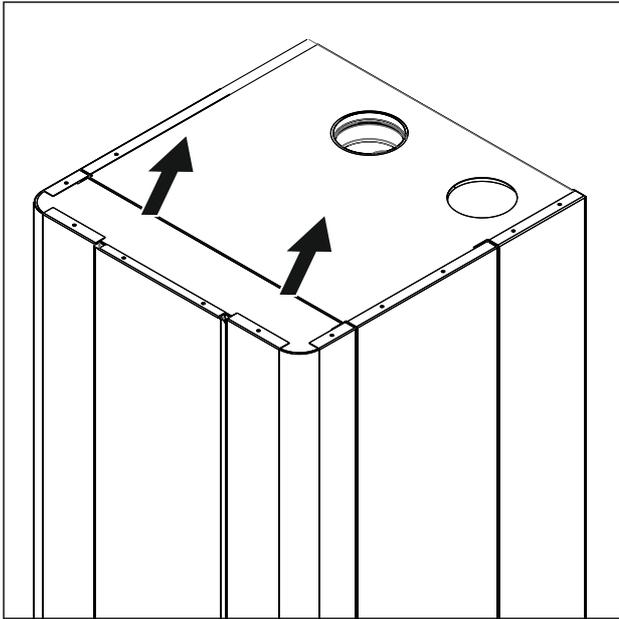
4.4 GAS CONVERSION INSTRUCTIONS



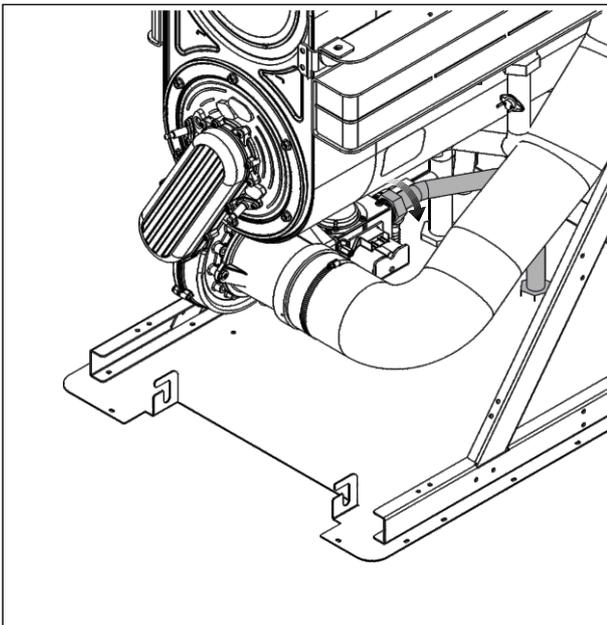
All the instructions written below are for the exclusive use of qualified service technicians or installers.

The unit can operate on natural gas or LPG and is factory-set for use with one of these two gases, as clearly shown on the packing and on the dataplate. If a gas different from that for which the unit is arranged has to be used, a conversion kit will be required, proceeding as follows:

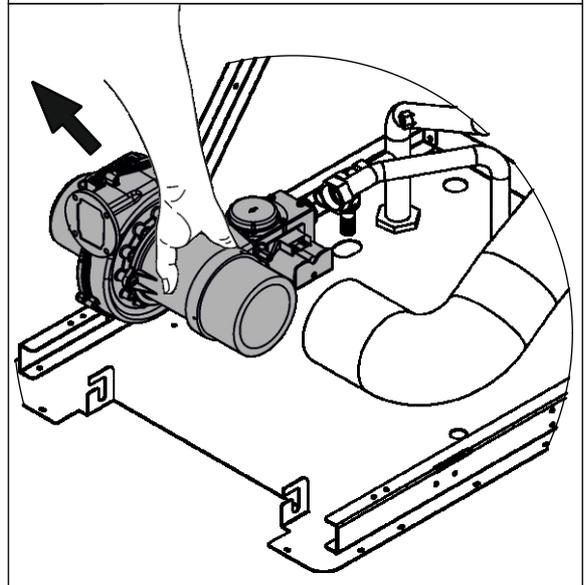
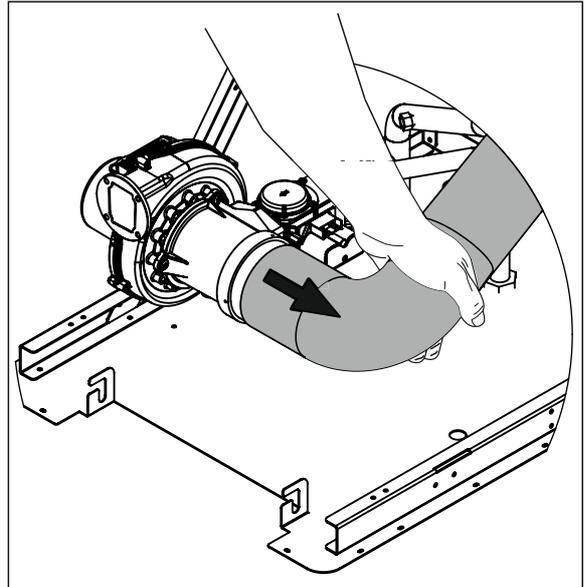
- 1 - Close the gas valve and gas supply pipe to the boiler.
- 2 - Remove the front cover of the boiler.



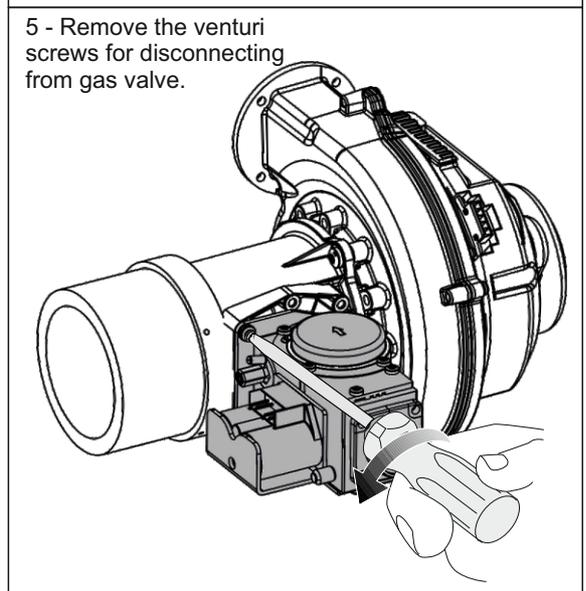
- 3 - Remove the gas supply pipe from gas valve.



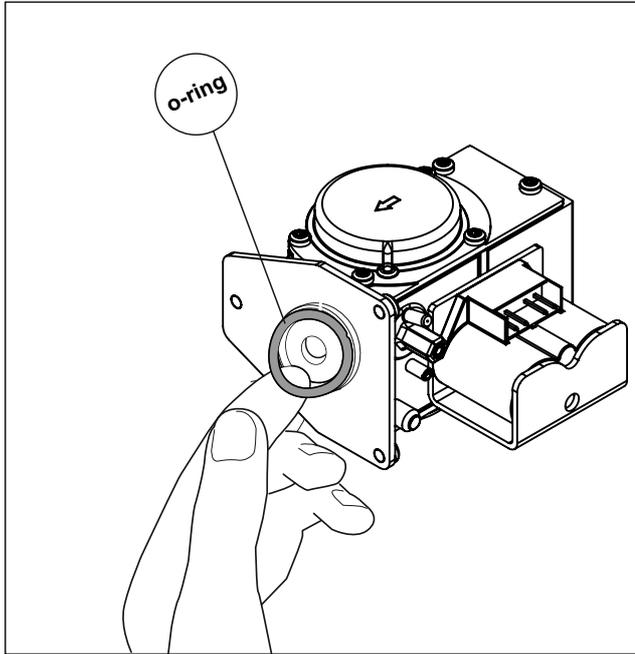
- 4 - Remove the air intake pipe from venturi.



- 5 - Remove the venturi screws for disconnecting from gas valve.

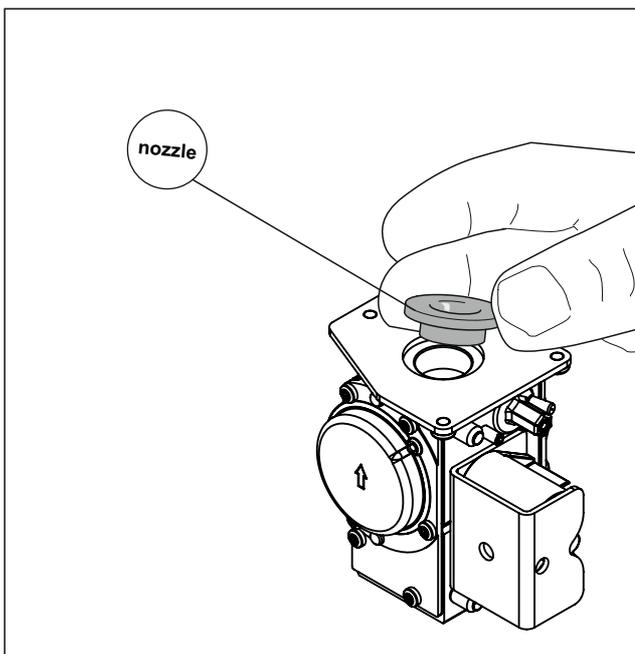


7 - Remove the o-ring.



8 - Remove the current gas nozzle than install the right gas nozzle including the enclosed O-ring for the type of gas supply.

G20 / G25 nozzle diameter : 10.7 mm
G30 butane/G31 propane nozzle diameter : 7.0 mm



WARNING:

Please contact with Gassero services for nozzle types. Gas conversions must be done by authorized qualified service technicians.

***Lower calorific powers at 15°C, 1013mbar:

N.Gas G20 : Hi = 34,02 MJ/m³
N.Gas G25 : Hi = 29,25 MJ/m³
Butane G30 : Hi = 116,09 MJ/m³
Propane G31 : Hi = 88,0 MJ/m³

Model		115		125B		160B	
		min.	max.	min.	max.	min.	max.
CO ₂ Emission (G31)	%	10,3	10,9	11,1	11,2	10,3	10,7
CO Emission (G31)	ppm	2	168	1	125	1	210
Gas Consumption (G31)	m ³ /h	0,8	3,4	0,67	4,91	0,89	6,14
Fan Speed (G31)	rpm	1500	5350	1150	6150	1400	7250
Combustion Mass Flow (G31)	g/sec	12,2	46,3	7,13	50,14	9,64	65,9
Gas Diaphragm (G31)	mm	7		9,5		9,5	

4.5 FLUE INSTALLATION INSTRUCTIONS

The flue and the fitting to the flue must be made in compliance with the standards and the legislation in force, as well as with local regulations. The pipes used must be rigid and resistant to temperature, condensate and mechanical stress, and airtight.



Non-insulated flues are potential sources of danger.

If the lowest part of the terminal is less than 2 metres above the level of the ground, balcony, flat roof or place to which any person has access, the terminal must be protected by a guard. The flue assembly shall be so placed or shielded as to prevent ignition or damage to any part of the building. The flue outlet duct and the terminal of the boiler MUST NOT be closer than to combustible material.

IMPORTANT INFORMATION



It is very important to ensure, that products of combustion discharging from the terminal cannot re-enter the building or any other adjacent building. Through ventilators, windows, doors, other sources of natural air infiltration, or forced ventilation / air-conditioning. If this could occur the appliance MUST be turned off, and signed as unsafe until corrective action can be taken.

4.5.1 FLUE APPLIANCE TYPES

- B₂₃ = Smoke evacuation duct connected to outside from room where the boiler is installed. The combustion air is intaken directly from the room where the boiler is installed.
- C₁₃ = Concentric and closely placed ducts connected to a horizontal terminal for fresh air intake and fume discharge.
- C₃₃ = Concentric and closely placed ducts connected to a vertical terminal for fresh air intake and fume discharge.
- C₄₃ = Two connecting ducts and two collecting flue ; one for fresh air intake and other one is for fume discharge.

C_{53} = Two ducts connected to the corresponding air intake and fume discharge terminals in different pressure zones.



Note: The terminal for the supply of combustion air and for the evacuation of combustion products shall not be installed on opposite walls of the building.

C_{63} = Air intake and fume discharge ducts and/or terminals are not delivered by the manufacturers and supplied with their own certificates.



Note: The boiler shall only be installed with a terminal that complies with the requirements of EN 1856-1 (see Annex N).

C_{83} = Ducts to be connected to a terminal and independent or shared flue by means an adapter.

Model	115-125B-160B	115	115	115-125B-160B
Type Of Installation	B23	C13	C33	C43,C53,C63,C83
Fresh Air Connection (mm)	100	150	150	150
Flue Gas Pipe Diameter (mm)	100	100	100	100
Maks. Lenght (m)	25	2	2	25
p Maks. Qn (Pa)	200	200	200	200



Only use original GASSERO flue gas discharging systems.

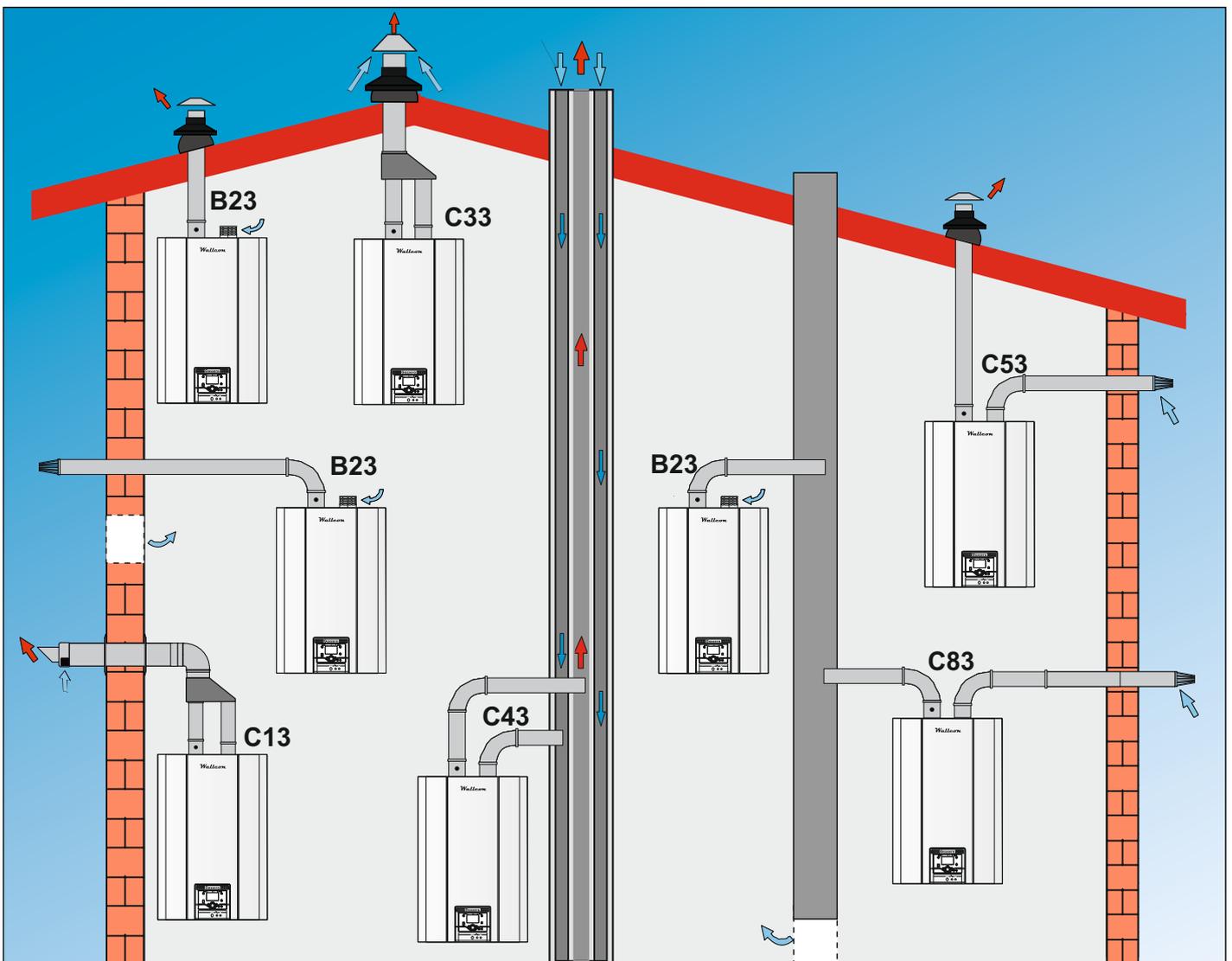


Flue installations must be done by authorized person.



Flue installations must be done according to local ventilation requirements.

4.5.2 FLUE INSTALLATION TYPES



4.5.3 FLUE KIT ACCESORIES

Accessory	Description
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Code : 746600961
87°coaxial elbow Ø100/150

Code : 746600962
87°elbow Ø100

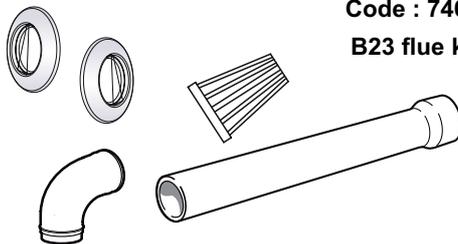
Accessory	Description
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Code : 746600963
45°coaxial elbow Ø100/150

Code : 746600964
45°elbow Ø100

Accessory	Description
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Code : 746600965
B23 flue kit (1m)

Accessory	Description
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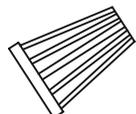
Code : 746600966
Wall rosette Ø100

Accessory	Description
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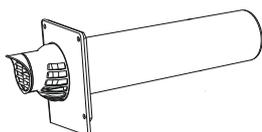
Code : 746600967
Flat weather collar

Accessory	Description
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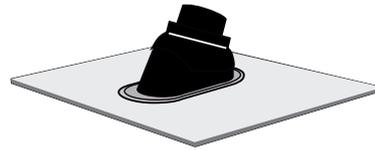
Code : 746600968
Bird guard Ø100

Accessory	Description
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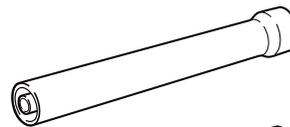
Code : 746600969
Horizontal flue terminal
Ø100/150

Accessory	Description
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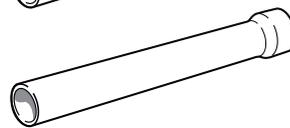


Code : 746600970
Pitched weather collar

Accessory	Description
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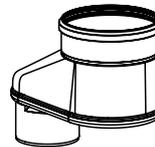


Code : 746600971
Coaxial extension Ø100/150



Code : 746600972
Extension Ø100

Accessory	Description
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Code : 746600973
Coaxial adapter
Ø100/100 - Ø100/150

Accessory	Description
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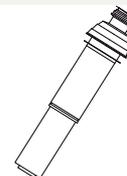
Code : 746600974
Air intake terminal Ø100

Accessory	Description
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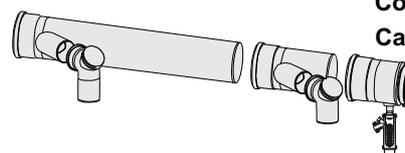
Code : 746600975
Air intake adapter Ø100
for twin flue

Accessory	Description
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Code : 746600976
Vertical flue terminal
Ø100/150

Accessory	Description
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Code : 746600977 (*)
Cascade flue kit

(*) This flue kit is for two-boiler cascade system. For larger cascades please contact your Gassero dealer.

4.6 ELECTRICAL INSTALLATION

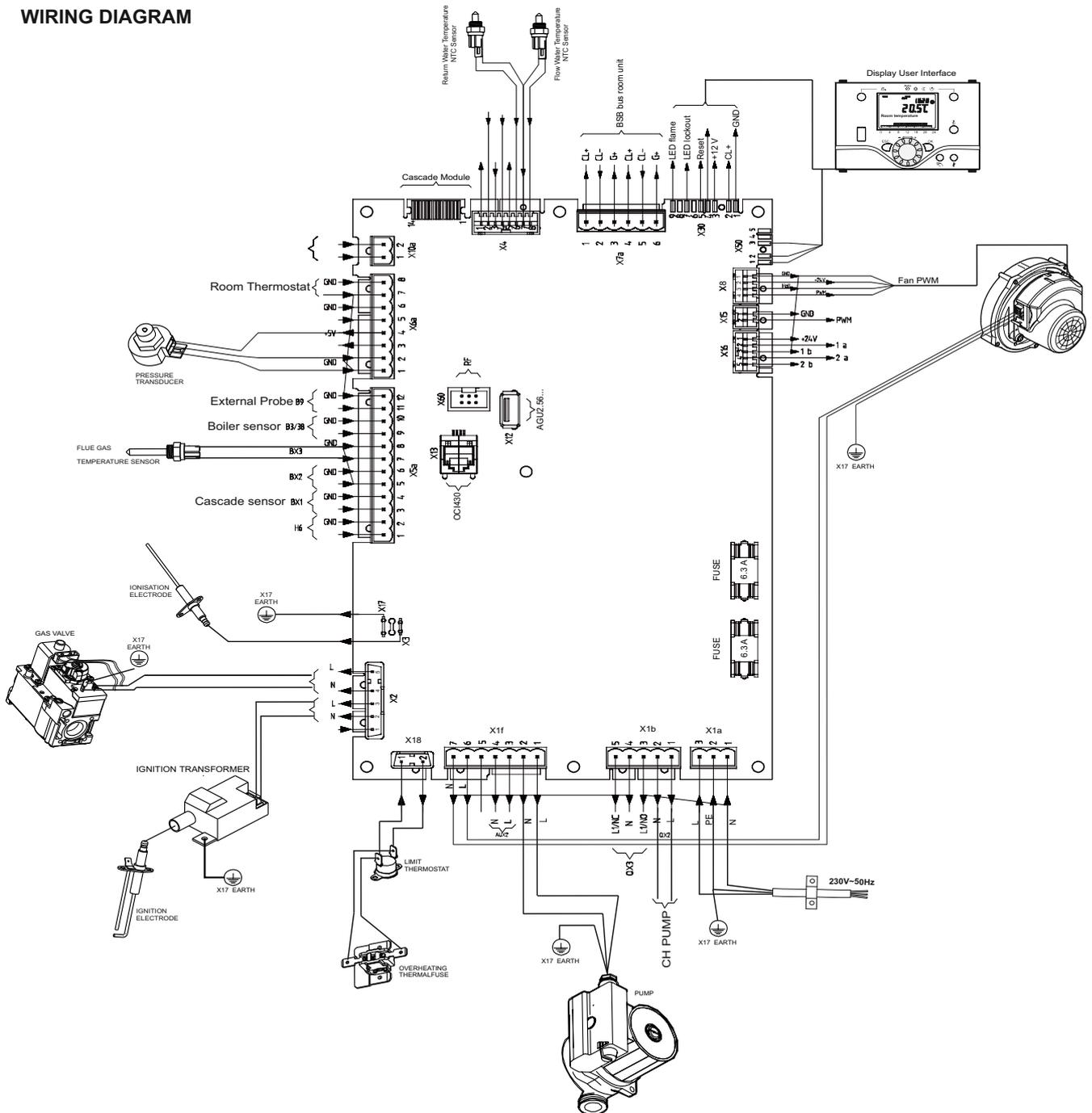
All the wiring is connected to connectors that is fitted in a socket. The connectors can be taken from the sockets on the PCB without loosening the wiring. The connections are placed in the back of the display, and can be reach by removing the front panel of the boiler and the connector protection cover. For operation the boiler needs a power supply of 230VAC 50Hz with earth. Power supply must be removed when you are working on the boiler. Electrical wiring should be done according to national, local or other special standards. Electrical works must be done by a qualified service engineer that is skilled in electrical installation according to the standards.

- 1 - Respect the connection L (Line) - N (Neutral) and earth (ground) connections.
- 2 - Use wires with a cross-section greater than or equal to 1.5 mm², complete with pointed end terminals;
- 3 - Refer to the wiring diagrams in this manual for any operations on the electrical system;
- 4 - Connect the appliance to an effective earth system.
- 5 - Power supply and room thermostat cables must not run near hot surfaces (outlet pipes).



The manufacturer is not liable for any damage due to the failure to earth the appliance and to observe the information provided on the wiring diagrams.

4.6.1 WIRING DIAGRAM



4.6.2 EXTERNAL PROBE INSTALLATION

The correct positioning of the outside probe is fundamental for the correct operation of the climate control function. The probe must be installed outside of the building being heated, at a height of around 1/2 of the wall facing NORTH or NORTH-WEST and away from flues, doors, windows and areas exposed to direct sunlight.



The probe should be placed on a smooth section of the wall; in the event of exposed brick walls or uneven walls, a smooth contact area should be used.



The maximum length of the connection between the outside probe and the control panel is 50 m.



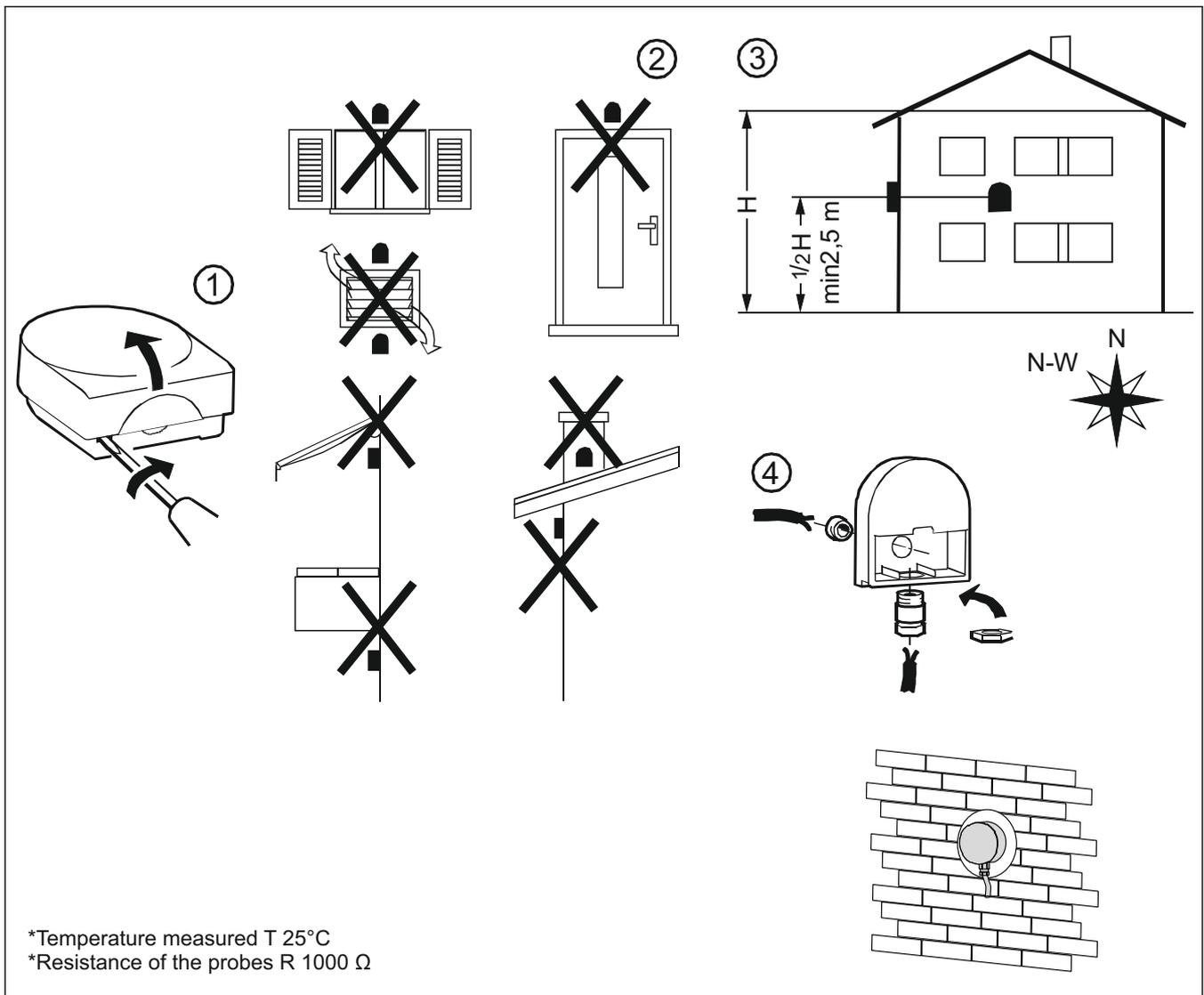
Any conduits used for the connection cable must be separate from the power cables (230V).



The connection cable between the probe and control panel must not have junctions; if required, these must be sealed and adequately protected.

Fastening the outside probe to the wall

- Unscrew the cover on the probe protection box, turning it anticlockwise to access the terminal block and the fastening holes
- Trace the fastening points using the protection box as the template
- Remove the box and drill the holes for the expansion plugs
- Fasten the box to the wall using the two plugs supplied
- Connect the two wires on the cable to the terminal block, without needing to identify the polarity
- Tighten the nut on the cable gland and close the cover on the protection box.



4.6.3 OUTDOOR TEMPERATURE CONTROL (OTC)

The heating curve generates the flow temperature setpoint, which is used to maintain a certain flow temperature level depending on the prevailing weather conditions. The heating curve can be adjusted in different ways, thus matching the heat output and the room temperature to individual needs. When the heating curve slope is raised, the flow temperature increases as the outside temperature drops. Or, in other words, if the room temperature is not correct at low outside temperatures but correct at higher outside temperatures, the heating curve slope must be readjusted.

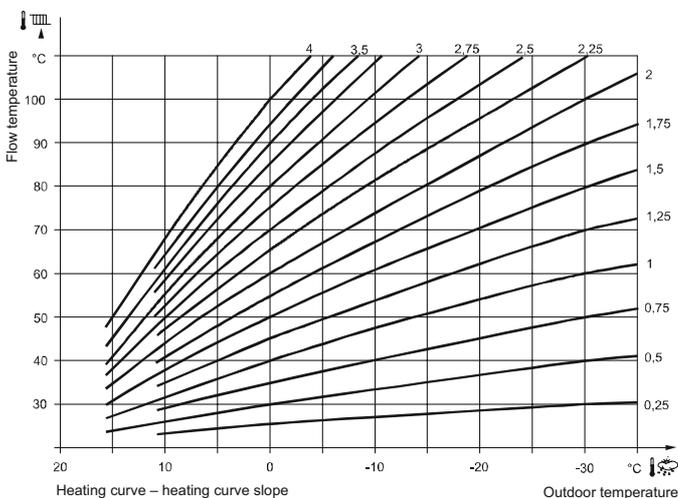
Increasing the slope: Raises the flow temperature, especially when the outside temperature is low.

Decreasing the slope: Lowers the flow temperature, especially when the outside temperature is low.

IMPORTANT INFORMATION



The set heating curve is based on a room temperature setpoint of 20 °C. If this setpoint is changed, the heating curve adapts automatically to the new value.



Parallel displacement of the heating curve is used to change the flow temperature evenly across the entire outside temperature range or, in other words, if the room temperature is always too high or too low, a readjustment must be made with parallel displacement. Adaption of the heating curve is used by the controller to automatically adapt the heating curve to the prevailing weather conditions. In that case, a readjustment of heating curve slope and parallel displacement is not required. It can only be switched on or off.

IMPORTANT INFORMATION



- To provide this function, following must be observed:
- A room sensor must be connected
 - The Room influence setting must be selected between 1 and 99
 - No thermostatic radiator valves should be used in the reference room, where the room sensor is located (if installed, such valves must be fully opened and locked in that position)

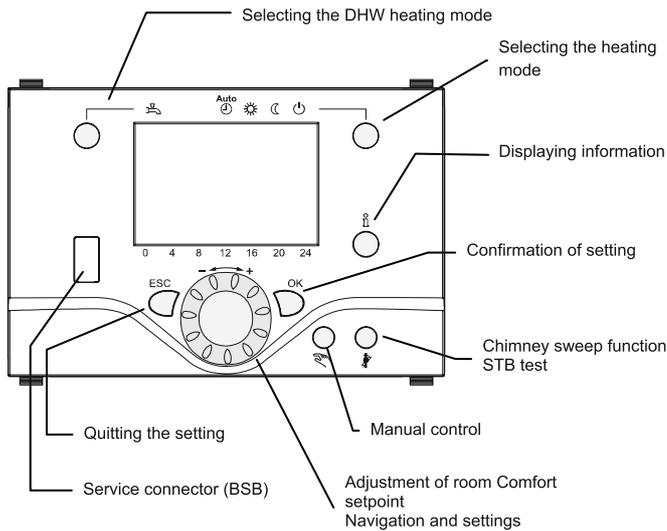
The function is activated with parameter, provided a room sensor is used and the compensation variant is weather compensation with room influence. If the required flow temperature is exceeded or is not reached for more than 2 hours, no adaption is made for that day. With pump heating circuits, the boiler temperature is used in place of the flow temperature. Heating curve adaption readjusts the heating curve's slope and the parallel displacement (heat gains). In Comfort mode (nominal operating level), the function integrates the room temperature control deviation and readjusts at midnight the parameters for calculating the heating curve, depending on the attenuated outside temperature and the learning sensitivity. During boost heating, the deviation of room temperature control is not taken into consideration. When readjusting the heating curve or the heat gains, the sensitivity is automatically set to the maximum. A certain minimum sensitivity is always maintained. If the attenuated outside temperature is below 4 °C, the heating curve slope is readjusted through the learning process. If the attenuated outside temperature lies between 4 °C and 12 °C, heating curve slope and parallel displacement are readjusted through learning. If the attenuated outside temperature exceeds 12 °C, the learning process is stopped. These basic values apply to a Comfort setpoint of 20 °C, heat gains of 0 K and a heating curve displacement of 0 K.

5 OPERATION

5.1 GENERAL

The WALLCON boilers are fitted with SIEMENS control unit as standart. This controller can be used to control of heating system, with 3 different zones and building automatization.

The boiler controller consists of the following components:

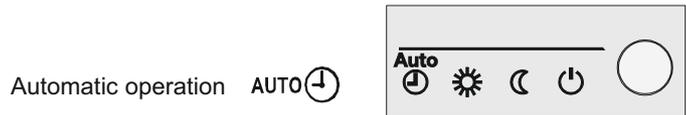


Display choices

- Heating to the Comfort setpoint
- Heating to the Reduced setpoint
- Heating to the frost protection setpoint
- Process running – please wait
- Change battery
- Burner in operation (only oil / gas burner)
- INFO** Info level activated
- PROG** Programming activated
- ECO** ECO function active
- Heating system temporarily off
- Holiday function active
- Reference to heating circuit
- Maintenance / special mode
- Error messages

Selection of space heating mode

Press the button to switch between the different operating. The choice made is indicated by a bar which appears below the symbols.



Automatic operation controls the room temperature according to the time program.

Characteristics of automatic operation:

- Heating mode according to the time program
- Temperature setpoints according to heating program
- “Comfort setpoint“ or
- “Reduced setpoint“
- Protective functions active
- Automatic summer / winter changeover (ECO functions)

Continuous operation or

Continuous operation maintains the room temperature at the selected operating level.

- Heating to the Comfort setpoint
- Heating to the Reduced setpoint

Characteristics of continuous operation:

- Heating mode with no time program
- Protective functions active
- Summer/winter heating limit and automatic
- 24-hour heating limit (ECO functions)
- During continuous operation with comfort setpoint: not active
- During continuous operation with reduced setpoint: Active

Protective mode

When using Protection, the heating system is off. But it remains protected against frost (frost protection temperature), provided there is no power failure.

Characteristics of Protection:

- Heating off
- Temperature according to frost protection
- Protective functions active
- Automatic summer / winter changeover (ECO functions) and automatic 24-hour heating limit active

Selecting DHW heating

The button is used to switch DHW heating mode on and off. The choice made is indicated by a bar which appears below the symbols.



On

The DHW is heated according to the selected switching program.

Off

No DHW heating, but the protective function is active.

DHW push

To do this, keep the DHW operating mode button on the operator or room unit depressed for at least 3 seconds.

The DHW push can also be started when:

- The operating mode is "Off"
- Operating mode changeover acts via H1 or centrally
- All heating circuits have assumed the holiday mode

Available information

Certain information lines are hidden, depending on the type of unit, unit configuration and operating state.

Possible displays:

Depending on the type of unit, configuration and operating state, some of the info lines listed below may not appear.

Displays:

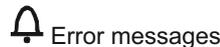
- Possible error messages from the error code are listed in the manual.
- Possible maintenance alarms from the maintenance code are listed in the manual.
- Possible special mode messages

Other displays:

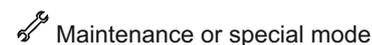
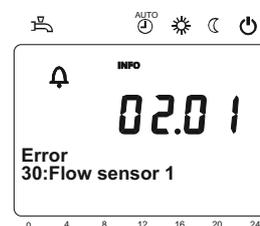
- Room temperature
- Room temperature minimum
- Room temperature maximum
- Boiler temp
- Outside temperature
- Outside temp min
- Outside temp max
- DHW temp 1
- State heating circuit 1
- State heating circuit 2
- State heating circuit P
- State DHW
- State boiler
- State solar
- State solid fuel boiler
- State buffer storage tank
- Date and time of day
- Telephone customer service

Exceptional cases

In exceptional cases, display shows one of the following symbols.



If this symbol appears, a plant fault occurred. In that case, press the Info button to obtain more information.



If this symbol appears, a maintenance alarm is delivered or the plant has changed to special mode. In that case, press the Info button to obtain more information.



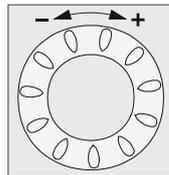
A list of possible displays is given in the manual.

Adjusting the room temperature setpoint

Turn the setting knob to increase or decrease the **Comfort** setpoint .

For the **Reduced setpoint** 

- Press the OK button
- Select operating page "Heating circuit" and
- Adjust the "Reduced" setpoint



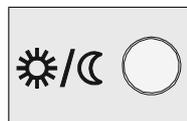
 Each time you make a readjustment, wait at least 2 hours, allowing the room temperature to adapt.

Presence button

If the rooms are not used for a certain period of time, you can press the occupancy button to reduce the room temperature, thus saving heating energy.

When the rooms are occupied again, press again the occupancy button to resume heating operation.

-  Heating to the Comfort setpoint
-  Heating to the Reduced setpoint



 The occupancy button is only active in automatic operation

The current selection is active until the next switching action according to the heating program occurs.

Displaying information

The Info button is used to display information.



Reset function

The reset function for meters and the resettable parameters appears on the bottom line of the display, provided a reset is permitted on the current operating line (enduser/commissioning / heating engineer).

After activation of the OK button, display shows a flashing “Yes“



After confirmation with the OK button, the relevant parameter or parameters will be reset.

Manual Control

When manual control is active, the relays are no longer energized and deenergized according to the control state, but are set to a predefined manual operating state depending on their function. The burner relay energized in manual control can be deenergized by the electronic temperature controller (TR).

After manual control has been activated, a change to the basic display must be made. There, the maintenance / special mode symbol  appears. Press the Info button to switch to info display “Manual mode“, where the setpoint can be adjusted.

Chimney sweep function

The chimney sweep function is activated by a short press (maximum 3 seconds) on the chimney sweep button. It produces the operating state required for making flue gas measurements.

SLT test

The SLT test (SLT = safety limit thermostat) is activated by a long press (longer than 3 seconds) on the chimney sweep button. The button must be kept depressed during the entire test. If released, the test will be aborted. The SLT test is shown on the display.



The test must be made by qualified technicians since the boiler temperature will be raised above the maximum limitations.

5.2 PROGRAMMING

Setting principle

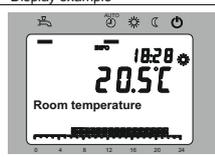
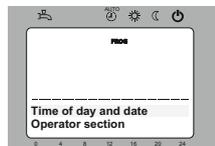
Settings that cannot be made directly with the help of operating elements are made through programming. For this purpose, the individual settings are structured in the form of operating pages and operating lines, thus forming practical groups of settings. The following example which shows the setting of the time of day and date shall explain this.

Example “Setting the time of day“

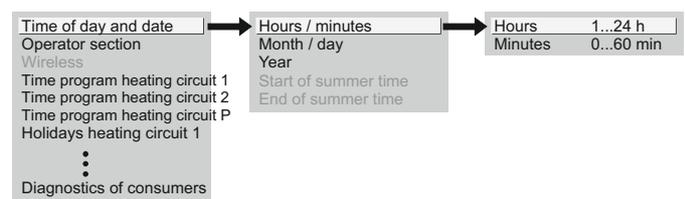
When pressing the ESC button, you go back one step; adjusted values will not be adopted

If any setting is made for 8 minutes, the unit will automatically return to the basic display

Operating lines may be hidden, depending on the type of unit, the configuration and user level

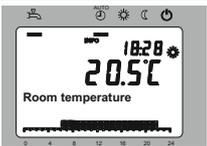
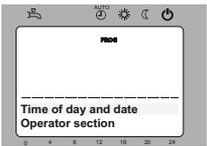
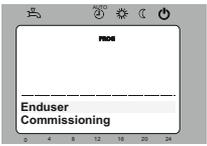
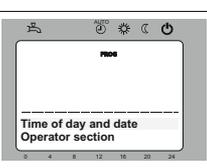
operation	Display example	Description
1  		You will see the basic display. If the basic display is not shown, press the ESC button to return to it. Press the OK button.
2  		The bottom section of the display shows a number of operating pages. Turn the setting knob until operating page “Time of day and date“ appears. To confirm, press the OK button.
3  		In the bottom section of the display, the first operating line of operating page “Time of day and date“ appears. Turn the setting knob until operating line “Hours / minutes“ appears. To confirm, press the OK button.
4  		The display shows the hours flashing. Turn the setting knob until the hours of the time of day are correct. To confirm, press the OK button.
5  		The display shows the minutes flashing. Turn the setting knob until the minutes of the time of day are correct. To confirm, press the OK button.
6  		The settings are saved, the display stops flashing. You can continue to make other settings, or you press the operating mode button to return to the basic display.
7		Now, you have returned to the basic display.

Example of menu structure



USER LEVELS

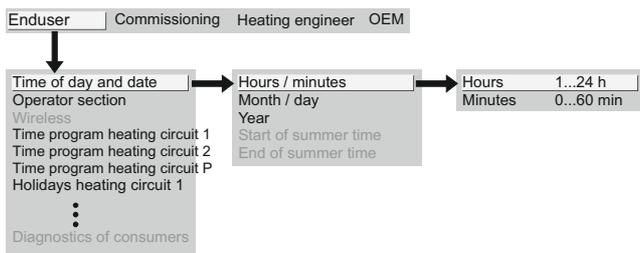
Certain user levels only allow certain user groups to make settings. To reach the required user level, proceed as follows:

operation	Display example	Description
1		You see the basic display. If the basic display is not shown, press the ESC button to return to it. Press the OK button.
2		You are on user level "Enduser". Press the Info button for 3 seconds.
3		You are given a choice of user levels. Turn the setting knob until the required user level is reached. Press the OK button.
4		You are now on the required user level.

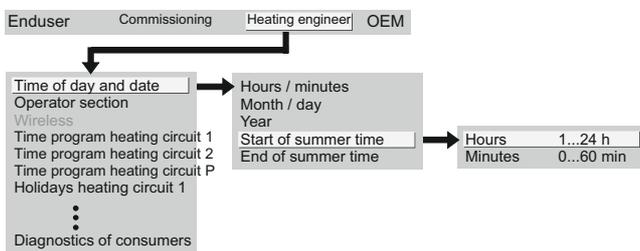
To reach the OEM level, enter the relevant code.

Setting structure for "Enduser"

The example given here shows that certain user levels do not allow certain settings to be made. The example shows them highlighted. On the unit, they are hidden.



Setting structure for "Heating engineer"



5.3 ERROR CODES

The boiler control unit supports a 16-bit error code. Older types of operator units might display 8-bit error codes. If different from the 16-bit error code, the corresponding 8-bit error code is indicated in parentheses.

Error Code	LPB code	Description of error code
10		Outside temperature, sensor error
20		Boiler temperature 1, sensor error
25		Boiler temperature, solid fuel, sensor error
26		Common flow temperature, sensor error
28		Flue gas temperature, sensor error
30		Flow temperature 1, sensor error
38		Flow temperature, primary controller, sensor error
40		Return temperature 1, sensor error
46		Cascade return temperature, sensor error
47		Common return temperature, sensor error
50		DHW temperature 1 sensor error
52		DHW temperature 2 sensor error
54		Flow temperature DHW, sensor error
57		DHW, circulation sensor error
60		Room temperature 1, sensor error
65		Room temperature 2, sensor error
68		Room temperature 3, sensor error
70		Storage tank temperature 1 (top), sensor error
71		Storage tank temperature 2 (bottom), sensor error
72		Storage tank temperature 3 (center), sensor error
73		Collector temperature 1, sensor error
78		Water pressure, sensor error
82		LPB address collision
83		BSB wire cross-sectional/no communication
84		BSB wire address collision
85		BSB RF communication error
91		Data overrun in EEPROM
98		Extension module 1, error
99		Extension module 2, error
100		2 clock time masters
102		Clock time master without backup
103		Communication error
105		Maintenance message
109		Supervision boiler temperature
110		STB (SLT) lockout
111		Temperature limiter safety shutdown
117		Water pressure too high
118		Water pressure too low
119		Water pressure switch has cut out
121		Flow temperature heating circuit 1 not reached
122		Flow temperature heating circuit 2 not reached
125		Maximum boiler temperature exceeded
126		DHW charging temperature not reached
127		DHW legionella temperature not reached
128		Loss of flame during operation
129		Wrong air supply
130		Flue gas temperature limit exceeded
132		Gas pressure switch safety shutdown
133		Safety time for establishment of flame exceeded
146		Configuration error sensor/controlling elements
151		LMS14... error, internally
152		Parameterization error
153		Unit manually locked
160		Fan speed threshold not reached
162		Air pressure switch does not close
164		Flow/pressure switch, heating circuit error
166		Air pressure switch error, does not open
169		Sitherm Pro system error
170		Error water pressure sensor, primary side
171		Alarm contact 1 active
172		Alarm contact 2 active

173		Alarm contact 3 active
174		Alarm contact 4 active
176		Water pressure 2 too high
177		Water pressure 2 too low
178		Temperature limiter heating circuit 1
179		Temperature limiter heating circuit 2
183		Unit in parameterization mode
195		Maximum duration of the refill per charging exceeded
196		Maximum duration of the refill per week exceeded
209		Fault heating circuit
214		Monitoring of motor
215		Fault fan air diverting valve
216		Fault boiler
217		Sensor error
218		Pressure supervision
241		Flow sensor for yield measurement, error
242		Return sensor for yield measurement, error
243		Swimming pool sensor, error
260	217	Flow temperature 3, sensor error
270	215	Temperature difference, heat exchanger too large
317	214	Mains frequency outside permissible range
320	217	DHW charging temperature, sensor error
321	217	DHW outlet temperature, sensor error
322	218	Water pressure 3 too high
323	218	Water pressure 3 too low
324	146	Input BX, same sensors
325	146	Input BX/extension module, same sensors
326	146	Input BX/mixing group, same sensors
327	146	Extension module, same function
328	146	Mixing group, same function
329	146	Extension module/mixing group, same function
330	146	Sensor input BX1 without function
331	146	Sensor input BX2 without function
332	146	Sensor input BX3 without function
333	146	Sensor input BX4 without function
335	146	Sensor input BX21 without function
336	146	Sensor input BX22 without function
339	146	Collector pump Q5 missing
340	146	Collector pump Q16 missing
341	146	Sensor B6 missing
342	146	Solar charging sensor B31 missing
343	146	Solar integration missing
344	146	Solar controlling element buffer K8 missing
345	146	Solar controlling element swimming pool K18 missing
346	146	Solid fuel boiler pump Q10 missing
347	146	Solid fuel boiler comparative sensor missing
348	146	Solid fuel boiler address error
349	146	Buffer storage tank return valve Y15 missing
350	146	Buffer storage tank address error
351	146	Primary controller/system pump, address error
352	146	Pressureless header, address error
353	146	Sensor B10 missing
371	209	Flow temperature heating circuit 3
372	209	Temperature limiter heating circuit 3
373	103	Extension module 3
374	169	Sitherm Pro calculation
375	169	BV stepper motor
376	169	Drift test limit value
377	169	Drift test prevented
378	151	Internal repetition
382	129	Repetition speed
384	151	Extraneous light
385	151	Mains undervoltage
386	129	Fan speed tolerance
387	129	Air pressure tolerance
388	146	DHW sensor no function
426	151	Feedback flue gas damper
427	152	Configuration flue gas damper
429	218	Dynamic water pressure too high
430	218	Dynamic water pressure too low
431	217	Sensor primary heat exchanger
432	151	Function earth not connected
433	216	Temperature primary heat exchanger too high

Maintenance code

Maintenance code	Description of maintenance	Priority
1	Number of burner hours run exceeded	6
2	Number of burner starts exceeded	6
3	Maintenance interval exceeded	6
5	Water pressure heating circuit too low (dropped below lower pressure limit 1)	9
10	Change batteries of outside sensor	6
18	Water pressure 2 heating circuit too low (dropped below lower pressure limit 2)	9
10	Change batteries of outside sensor	6
22	Water pressure 3 heating circuit too low (dropped below lower pressure limit 3)	9
25	Automatic filling of water activated	3

6 MAINTENANCE

6.1 GENERAL



WARNING: Damage to the installation due to insufficient or improper cleaning and maintenance.

Inspect and clean the heating system once a year.

Carry out maintenance as required. Immediately remedy faults. This will avoid further damage to the system!

Generally, the normal service period is one year. Each year the boiler should be cleaned and checked according to the maintenance procedure and instructions. If there is any doubt whether the boiler will operate with the correct water or combustion air quality, it is advisable that a first check is done after half a year to determine future service period.

6.2 MAINTENANCE PROCEDURE

Inspection, maintenance and the replacement of parts should be done by Gassero technical service. Besides doing maintenance we advise to create a log chart belonging to each boiler on which at least the following should be written:

- Serial number of the boiler
- Maintenance date
- Responsible personnel of maintenance.
- Parts and/or settings changed during maintenance.
- Special remarks
- Important points in the future.

During maintenance the following points should be checked and/or parts must be inspected and maintained.

Before doing any work on the boiler:

- Switch off the power to the boiler by service switch or pull out plug from wall socket
- Close the gas valve

Customer comments

Comments and notes from the customer should be taken seriously and an effort should be made to find the cause of any problems.

Service history

Faults and working history can be read from boiler interface or with a computer in combination with the software and interface cable of the PCB.

Water leakage

The pressure of the installation must be higher than 0,8 bar, and maximum 6 bar. Find possible leaks in the system and have these fixed.

Flue gas leakage

The flue gas discharge and air intake piping need to be checked for gas leakage. Also check if the piping is properly mounted and not damaged. Inspect the top of the boiler housing for traces of water leakage or traces of water from the air vent, or leaking condensate from the flue gas piping.

Gas lines/-connections

The gas lines need to be checked for gas leakage. Also check if the piping is properly mounted and not damaged.

Un-assembling the Burner

Un-assembling the burner unit: Remove the 6 x M6 nuts and the electrode cables, and move the burner unit forward. Remove the plug of the fan cable from the fan when the burner has been pulled half-way from the heat exchanger. Dismantle the air gas mixing box on the intake side of the fan and check the blade wheel of the fan.

Insulation

The insulation of the heat exchanger (located on the rear wall inside in the heat exchanger) must be inspected. If this insulation disk shows any sign of damage or impairment it should be replaced with a new one. Also check if there are any signs of a too high condensate level (caused by a blocked siphon) that might have wetted the insulation several times. When these signs can be seen, the rear wall insulation should be replaced. Only use the burner door insulation that is supplied by the manufacturer.

The same procedure must be applied on the insulation and gaskets fitted on the burner door.

Burner- and burner door gaskets

When these show any signs of damage they must be replaced.

Siphon

Dis-assemble the bottom cover siphon and clean it. Check if the siphon connection on the heat exchanger is not blocked, and clean if necessary. Check afterwards if the siphon functions properly. This can be done by pouring clean tap water in the furnace (when burner door is removed) so it will exit the heat exchanger through the siphon. Make sure the insulation is not wetted.

Heat exchanger/combustion room

Check if there is any debris/deposit in the heat exchanger. The heat exchanger coils can be cleaned by using a non metallic brush. Afterwards the loose particles may be removed with a vacuum cleaner and/or flushing with water. Check flow of water out of siphon, and clean siphon if necessary. Any cleaning of the combustion chamber with acid or alkali products is prohibited!

Gas/air ratio

Always check the gas/air ratio by checking the combustion figure CO₂ on maximum and minimum input. If necessary adjust these figures.

Pump

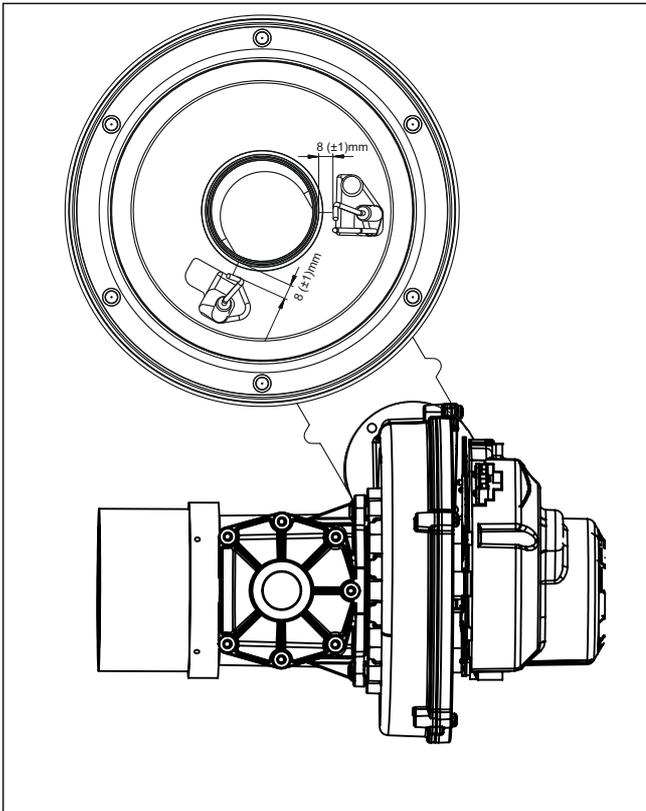
If the pump is becoming noisy (certainly when the pump has been working for more than five years) it is recommended to replace the pump as a precaution.

Fan

If deposits have been building up on the fan blades, carefully clean the blades one by one with a soft brush until the material of the blades is visible again. Work consistently in cleaning the blades, and do not use too much force or else the fan may get out of balance and run irregularly.

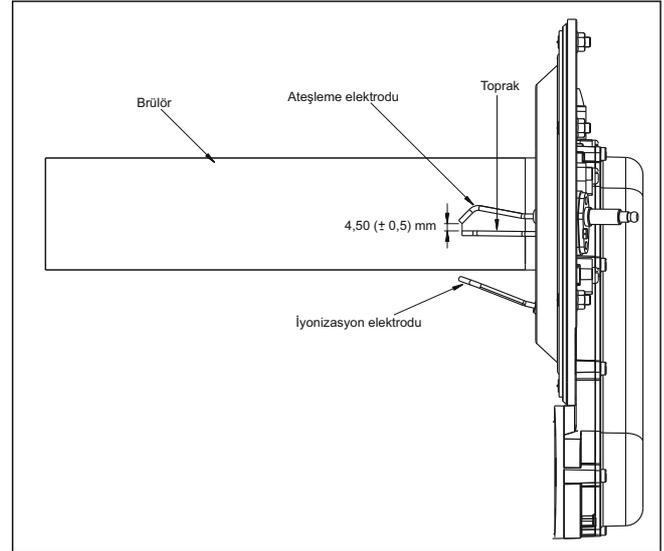
Burner

The burner can be cleaned using a soft (non metallic) brush. The dust can be removed with a vacuum cleaner or pressurized air. Check if the burner surface shows any signs of damage. If the burner surface is damaged (example: cracks in the surface) the burner must be replaced.



Ignition / ionisation electrode

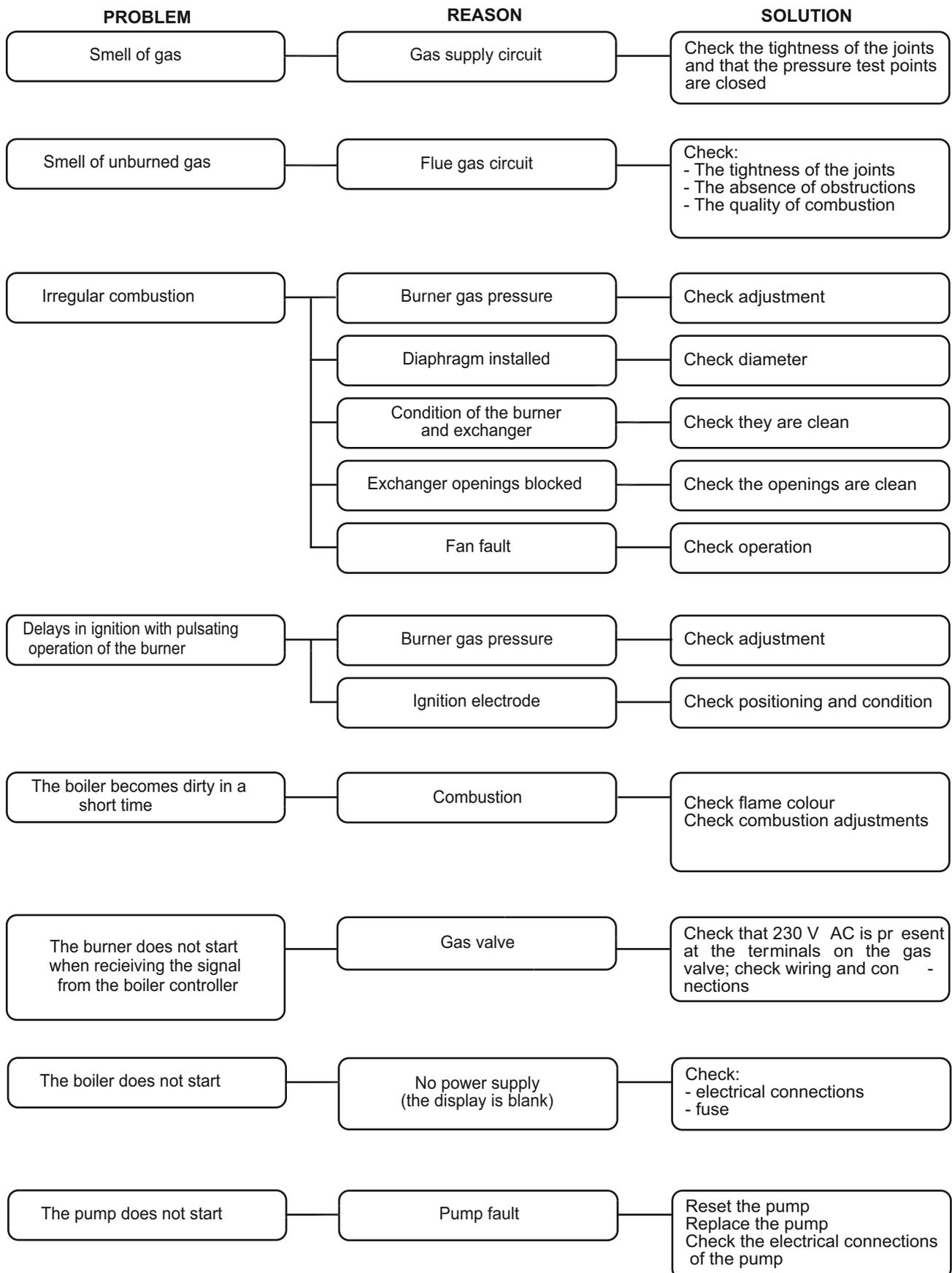
Check if the distances between the electrodes and between electrodes and burner are OK. If not try to bend the electrodes in the right position. The electrodes are working under high temperature. Therefore the electrodes become hard and are difficult to bend. When bending used electrodes there is a risk of breaking or tearing the electrode. Check if there are any tears/ cracks in the electrodes after bending them. If so then replace the electrode with a new one. Also change the electrode if any cracks can be seen in the ceramic electrode insulation. If the electrode is changed the gasket should also be replaced.

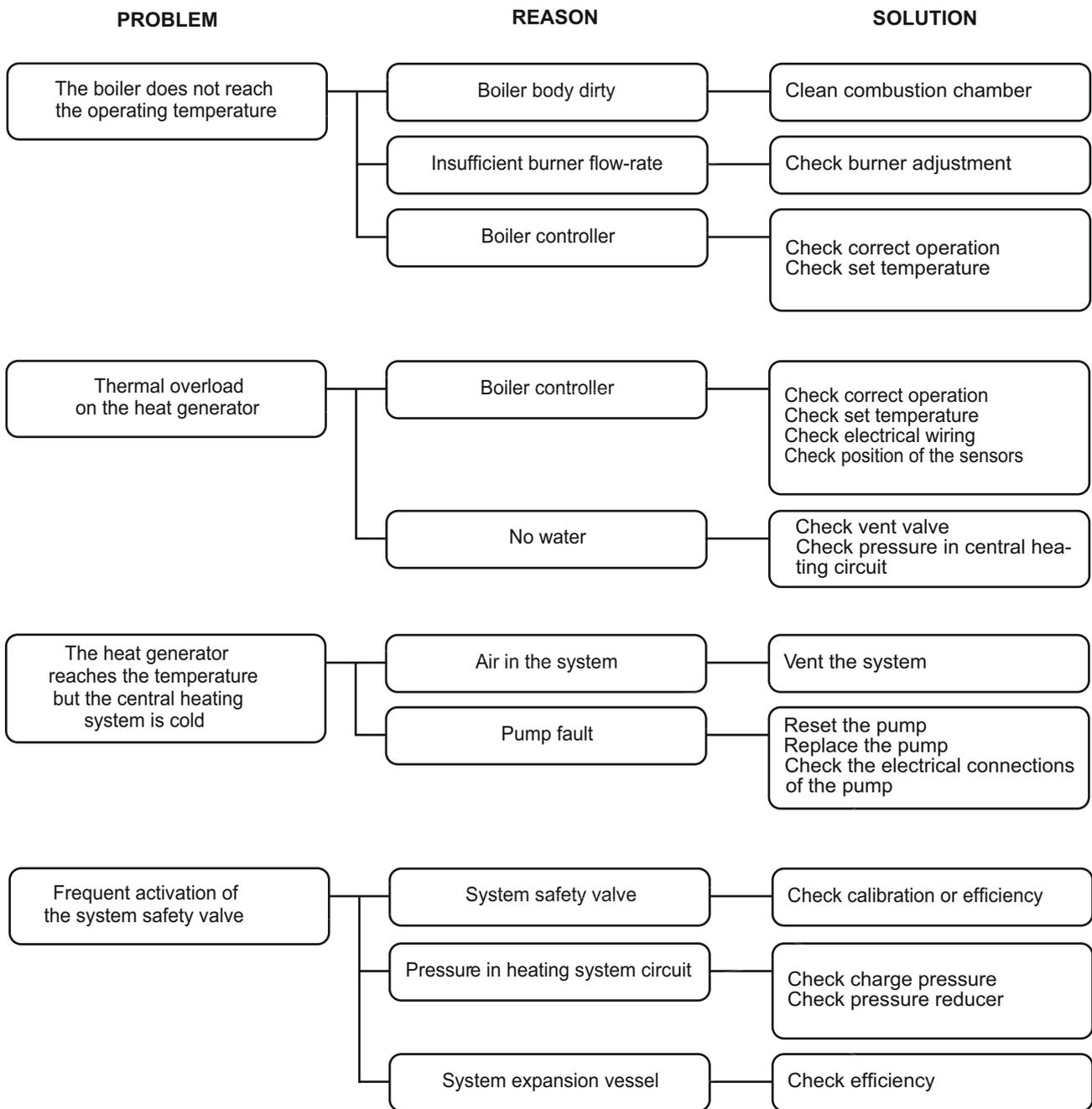


When defects are found that cannot be fixed by the service engineer, he has to inform the end user about the defects, and should advise the end user to have them fixed.



This should also be mentioned on the service report of the boiler. During maintenance gas, air, flue gas and condensate connections are loosened and remounted. Make sure all the components are mounted gas-/water tight before recommissioning the boiler.





GAS BOILER COMMISSIONING CHECKLIST

BOILER SERIAL No: _____ **BOILER MODEL:** _____

CONTROLS To comply with the Building Regulations, each section must have a tick in one or other of the boxes

TIME & TEMPERATURE CONTROL TO HEATING	ROOM T/STAT & PROGRAMMER/TIMER <input type="checkbox"/>	PROGRAMMABLE ROOMSTAT <input type="checkbox"/>
TIME & TEMPERATURE CONTROL TO HOTWATER	CYLINDER T/STAT & PROGRAMMER/TIMER <input type="checkbox"/>	COMBI BOILER <input type="checkbox"/>
HEATING ZONE VALVES	FITTED <input type="checkbox"/>	NOT REQUIRED <input type="checkbox"/>
HOTWATER ZONE VALVES	FITTED <input type="checkbox"/>	NOT REQUIRED <input type="checkbox"/>
THERMOSTATIC RADIATOR VALVES	FITTED <input type="checkbox"/>	
AUTOMATIC BYPASS TO SYSTEM	FITTED <input type="checkbox"/>	NOT REQUIRED <input type="checkbox"/>

FOR ALL BOILERS CONFIRM THE FOLLOWING

THE SYSTEM HAS BEEN FLUSHED IN ACCORDANCE WITH THE BOILER MANUFACTURER'S INSTRUCTIONS?

THE SYSTEM CLEANER USED _____

THE INHIBITOR USED _____

FOR THE CENTRAL HEATING MODE, MEASURE & RECORD

GAS RATE m³/hr ft³/hr

BURNER OPERATING PRESSURE (IF APPLICABLE) N/A mbar

CENTRAL HEATING FLOW TEMPERATURE °C

CENTRAL HEATING RETURN TEMPERATURE °C

FOR COMBINATION BOILERS ONLY

HAS A WATER SCALE REDUCER BEEN FITTED? YES NO

WHAT TYPE OF SCALE REDUCER HAS BEEN FITTED? _____

FOR THE DOMESTIC HOT WATER MODE, MEASURE & RECORD

GAS RATE m³/hr ft³/hr

MAXIMUM BURNER OPERATING PRESSURE (IF APPLICABLE) N/A mbar

COLD WATER INLET TEMPERATURE °C

HOT WATER OUTLET TEMPERATURE °C

WATER FLOW RATE lts/min

FOR CONDENSING BOILERS ONLY CONFIRM THE FOLLOWING

THE CONDENSATE DRAIN HAS BEEN INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS? YES

FOR ALL INSTALLATIONS CONFIRM THE FOLLOWING

THE HEATING AND HOT WATER SYSTEM COMPLIES WITH CURRENT BUILDING REGULATIONS

THE APPLIANCE AND ASSOCIATED EQUIPMENT HAS BEEN INSTALLED AND COMMISSIONED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS

IF REQUIRED BY THE MANUFACTURER, HAVE YOU RECORDED A CO/CO₂ RATIO READING? N/A YES CO/CO₂ RATIO _____

THE OPERATION OF THE APPLIANCE AND SYSTEM CONTROLS HAVE BEEN DEMONSTRATED TO THE CUSTOMER

THE MANUFACTURER'S LITERATURE HAS BEEN LEFT WITH THE CUSTOMER

COMMISSIONING ENG'S NAME PRINT _____ DATE _____

SIGN _____

SERVICE INTERVAL RECORD

It is recommended that your heating system is serviced regularly and that you complete the appropriate Service Interval Record Below.

Service Provider. Before completing the appropriate Service Interval Record below, please ensure you have carried out the service as described in the boiler manufacturer's instructions. Always use the manufacturer's specified spare part when replacing all controls

SERVICE 1 DATE

ENGINEER NAME

COMPANYNAME

TELNo.

CORGI ID CARD SERIALNo.

COMMENTS

SIGNATURE

SERVICE 2 DATE

ENGINEER NAME

COMPANYNAME

TELNo.

CORGI ID CARD SERIALNo.

COMMENTS

SIGNATURE

SERVICE 3 DATE

ENGINEER NAME

COMPANYNAME

TELNo.

CORGI ID CARD SERIALNo.

COMMENTS

SIGNATURE

SERVICE 4 DATE

ENGINEER NAME

COMPANYNAME

TELNo.

CORGI ID CARD SERIALNo.

COMMENTS

SIGNATURE

SERVICE 5 DATE

ENGINEER NAME

COMPANYNAME

TELNo.

CORGI ID CARD SERIALNo.

COMMENTS

SIGNATURE

SERVICE 6 DATE

ENGINEER NAME

COMPANYNAME

TELNo.

CORGI ID CARD SERIALNo.

COMMENTS

SIGNATURE

SERVICE 7 DATE

ENGINEER NAME

COMPANYNAME

TELNo.

CORGI ID CARD SERIALNo.

COMMENTS

SIGNATURE

SERVICE 8 DATE

ENGINEER NAME

COMPANYNAME

TELNo.

CORGI ID CARD SERIALNo.

COMMENTS

SIGNATURE

SERVICE 9 DATE

ENGINEER NAME

COMPANYNAME

TELNo.

CORGI ID CARD SERIALNo.

COMMENTS

SIGNATURE

SERVICE 10 DATE

ENGINEER NAME

COMPANYNAME

TELNo.

CORGI ID CARD SERIALNo.

COMMENTS

SIGNATURE

Gassero
technology for your comfort

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Gassero reserves the right to change specification without prior notice. Consumers statutory rights are not affected.

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