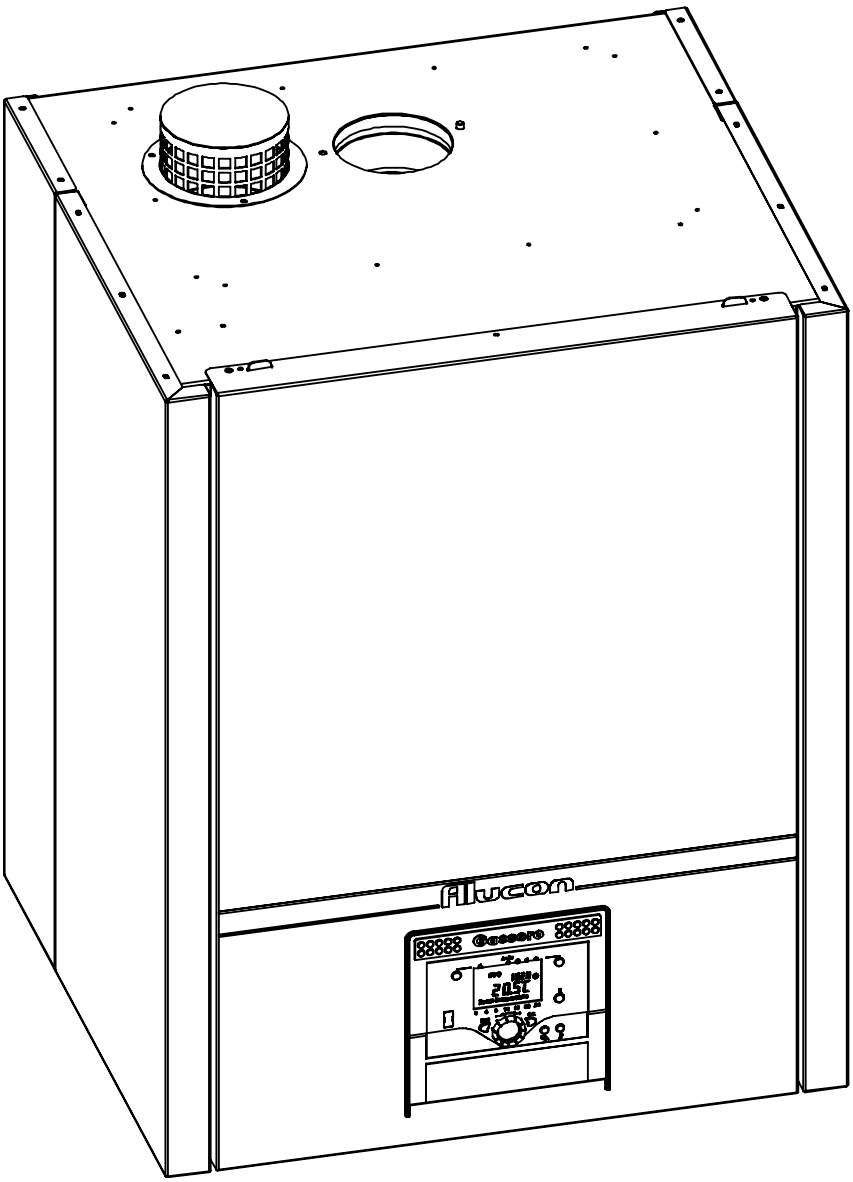
Alucon

WALL HUNG CONDENSING BOILERS

INSTALLATION, USER AND SERVICE MANUAL



These instructions are applicable to the following types:

- **Alucon 50**
- **Alucon 70**
- **Alucon 90**
- **Alucon 115**
- **Alucon 125**
- **Alucon 150**

CE

Gassero
technology for your comfort

1. MEANING OF THE SYMBOLS AND SAFETY INSTRUCTIONS

1.1 Meaning of The Symbols

WARNINGS:

When reading this manual, pay attention to the parts marked with this sembols

İndicades a situation of possible danger which can lead to serious or fatal injuries if not avoided

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.

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.

- 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.

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 GASSEROTECHNICAL 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 COMISSIONING 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

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.

Ultrabox boilers must be installed by professionally qualified personnel, in conformity with current national and local standards and the instructions in the manual supplied with the product by Gassero

The appliance must be used solely for the purpose for which it has been designed and manufactured

The manufacturer declines all liability for physical injury or damage to animals or objects caused by errors in installation, adjustments, maintenance or improper use of the appliance.

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

Periodically check that the condensate drain is free of blockages.

Periodically check that the hydraulic system operating pressure, in cool conditions, is approx. 2 bar. Otherwise contact the Technical Services department or other professionally 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.

Manually controlled gas valve shall be placed before the boiler.

1.3 Safety İnstructions

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 wetparts of the body.

No service or cleaning operations may be perfor-med without first having disconnected the boilerf rom 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 theappliance is installed must not be plugged or redu-ced in size and must comply with any current stan-dards and law applicable.

Do not switch off the boiler if the outside temperatu-re 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 bedisposed 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/orthe use of inadequate equipment can cause damages (for example water or gas leakages).

It is strictly forbidden to interference with anysealed components.

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

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

Precautions to be taken to limit the level of operating noise of the installation;

Observe any unusual noises or operating conditions and make the necessary corrections. Notify responsible individuals for required corrective action or repair.

If frost or corrosion preventative is added to the heatingwater this can cause changes in the seals and cancause noises to be created during heating.

A heating boiler noise deadening or similar installationcan be used to provide noise deadening. Gassero recommends to install the unit on a boiler support foundation 10mm thick.

1.4 Regulation and Standarts

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/EC Gas appliance directive
- 92/42/EEC Boiler efficiency
- 2006/95/EC Low voltage
- 2004/108/EC Electromagnetic compatabilitiy

Standards

EN 15502-1:2013 : Gas-fired heating boilers - Part 1:General requirements and tests

EN 15502-2-1:2013 : Gas-fired central heating boilers Part 2-1: Specific standard for type C appliances and type B2, B3 and B5 appliances of a nominal heat input not exceeding 1 000 kW

2. GENERAL

These installation and maintenance instructions apply to following floor standing condensing gas boiler:

- **Alucon 50**
- **Alucon 70**
- **Alucon 90**
- **Alucon 115**
- **Alucon 125**
- **Alucon 150**

The Ultrabox series is suitable for use as a single boiler or as part of a cascade system.

CE LABEL

CE 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 connected together.

2.2 Description of The Appliance

The **Alucon** is a compact, low pollution, wall-hung condensing boiler with pre-mix burner for CH and DHW (with optional storage). Alucon condensing boilers consist of fully cast aluminum heat exchangers that is suitable to resist the corrosive gases caused from flue gas condensation.

The **Alucon Series** 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.

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

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

- full pre-mix microflame fiber coated burner in stainless steel, to guarantee high modulation ratios, combustion stability and extremely low NOx emissions,

- a cast aluminum heat exchanger, considerable resistance corrosion and generously sized exchange surface to optimise energy efficiency and heating output,

- the boiler shall have low resistance to water flow and have no minimum flow rate,

-microprocessor control with self-diagnosis, shown on LED and the display

-frost protection function activated according to the out-side 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-priority settable on the DHW, high or low temperaturecircuit-

-chimney sweep function

-low investment costs for cascade operations (slave - models can be controlled by Master models, withoutusing 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 tricholorethylene or hydrogen halides (e.g. contained in aerosols, certain adhesives, solvents or detergents, paints) and other aggressive chemicals are used or stored.

The Alucon condensing boilers must be installed in rooms used exclusively for this purpose, provided with adequately sized ventilation openings, in complaince with any current standarts and low applicable.

If the combustion air is taken from outside the room where the boiler is installed, Alucon boilers operates as a room-sealed appliance (type C).

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

For easliy 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 : **Alucon J** *Floor Standing Gas Condensing Boilers*

Heat Output : **Y**

Gas Type: I2E,I2H G20 - 20-25 mbar-N.Gas

Product Code :

MASTER ☐
SLAVE ☐

Countries of Destination
TURKEY(TR)
20-25 mbar
2H - G20

Serial Number :

All labels are compatible with national and local regulations.

2.5 Warning Label

Warnings labels is placed on the boiler and package.

WARNINGS !

- Read the technical instructions before installing the boiler.
- Installation and comissioning must be done by authorized qualified technicians.
- Read the user instructions before lighting 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

ALUCON CE

Floor Standing Gas Condensing Boilers

Model : **Alucon J**
Efficiency Level : ☆☆☆☆
Standard : EN 15502
Production year :
NO_x **Class** : Z
Power Supply : ~ 230VAC / 50 Hz
Power Consumption : A
IP Class : X4D
Max. Working Pressure(PMS) : 6 bar
Max. Working Temperature : 85 °C
Flue (appliance) Type : B23,C13,C33,C43,C53,C63,C83

Nominal Heat Input Qn
Qn Max. (kW): C
Qn Min. (kW) : D

Nominal Useful Output at (80/60 °C)
Pn Max. (kW) : E
Pn Min. (kW) : F

Nominal Condensing Output at (50/30 °C)
Pn Max. (kW) : H
Pn Min. (kW) : G

Product Code :

Serial Number :

ATTENTION : The boiler is adjusted in the Factory to Gas Pressure of **G20 - 20-25 mbar**

Gassero
technology for your comfort

Istanbul Endustri ve Ticaret Serbest Bolgesi
(FREE ZONE) , 4. Sok. Parsel 110
34957 , Tuzla, Istanbul, TURKEY
www.gassero.com

Countries of Destination	Gas Pressure	Gas Category
TURKEY(TR)	20-25 mbar	I2H,I2E G20

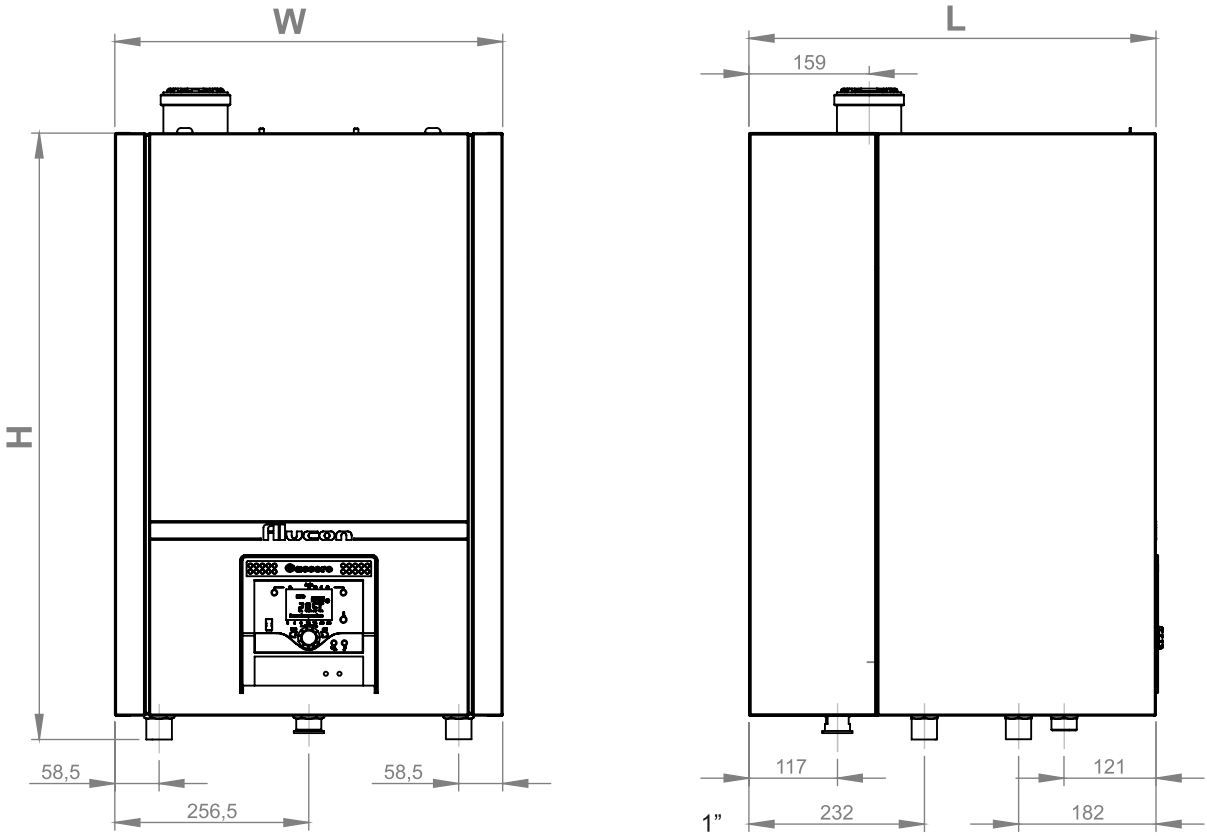
.Data label may be changed according to the boiler model.

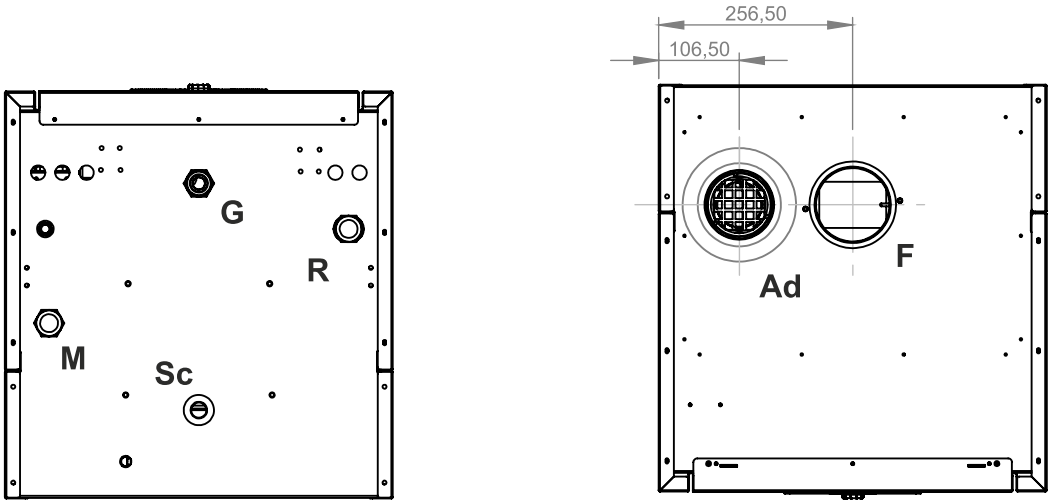
Y	Z	A	D	C	F	E	H	G
47,8	5	52	7,6	49,2	7,3	47,8	51,4	8,4
63,5	5	97	11,6	65,6	10,7	63,4	68,5	11,6
86,3	5	116	14,9	88,3	14,3	86,3	91	15,1

J	Y	Z	A	D	C	F	E	H	G
115	112	5	203	14,9	112	14,3	110	118	15,1
125	124	5	212	19,9	124	19,2	121	128	22,3
150	143	5	313	19,9	143	19,2	140	149	22,3

3 TECHNICAL FEATURES

3.1 Alucon 60 - 70 - 90 - 115 Series Dimensions





CONNECTIONS :

M : Water outlet connection : 1”

R : Water inlet connection : 1”

G : Gas supply : 1"

F : Flue outlet: Ø100 mm

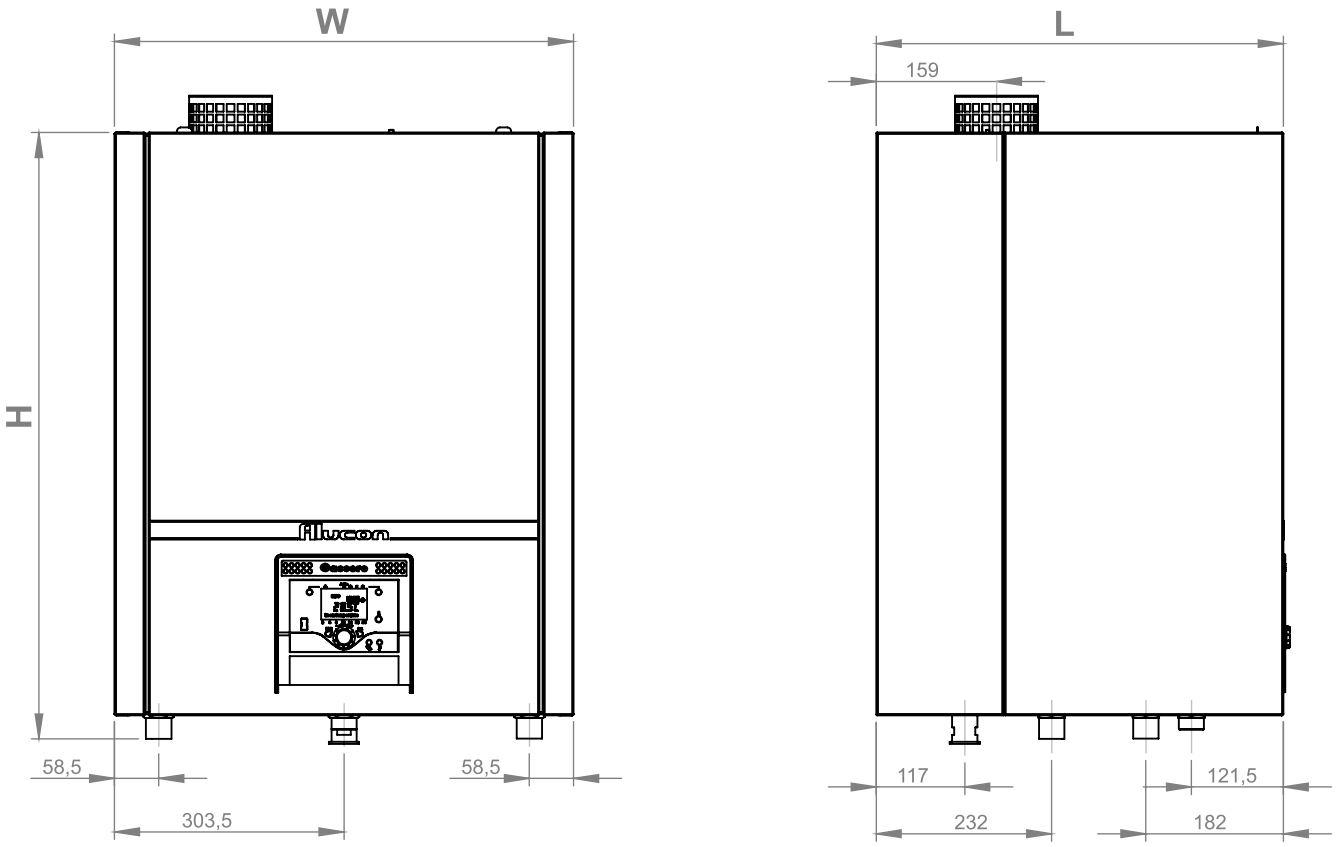
W : 513mm L : 535 mm H : 770 mm

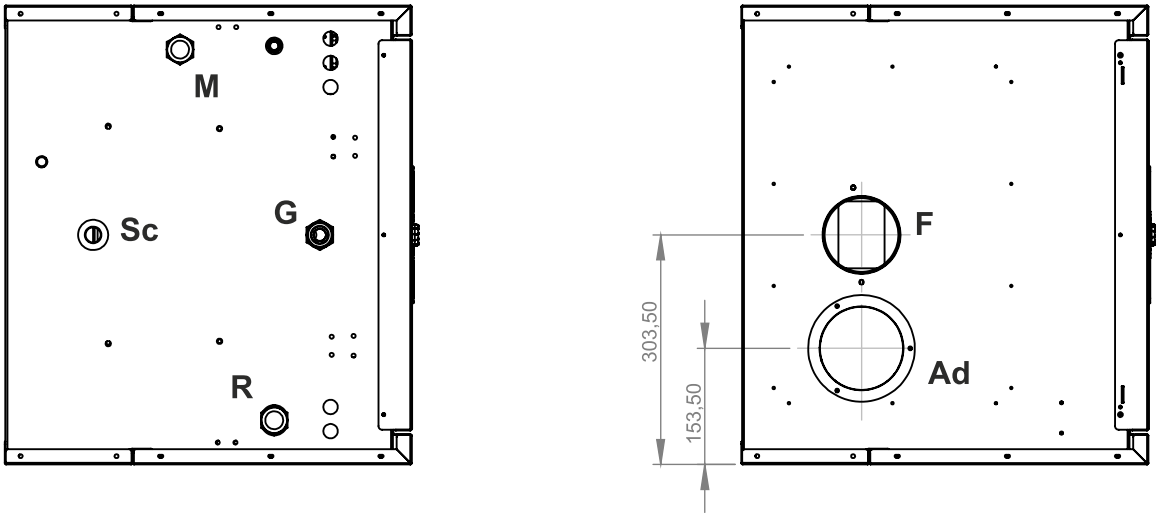
Ad : Air intake : Ø80

Sc : Condansate drain : Ø25

Counter-flanges and sealing gaskets will be delivered together with the boiler (gas and water connections).

3.2 Alucon 125 - 150 Series Dimensions





CONNECTIONS :

M : Water outlet connection : 1”

R : Water inlet connection : 1”

G : Gas supply : 1"

F : Flue outlet: Ø100 mm

W : 607 mm L : 536 mm H : 770 mm

Ad : Air intake : Ø110

Sc : Condansate drain : Ø25

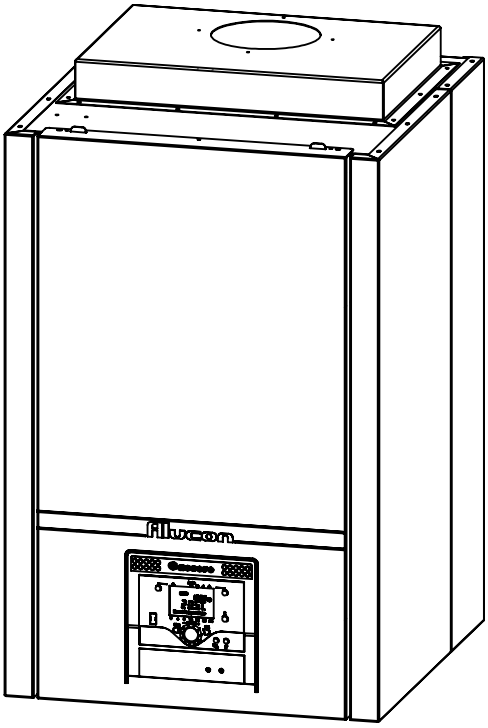
Counter-flanges and sealing gaskets will be delivered together with the boiler (gas and water connections).

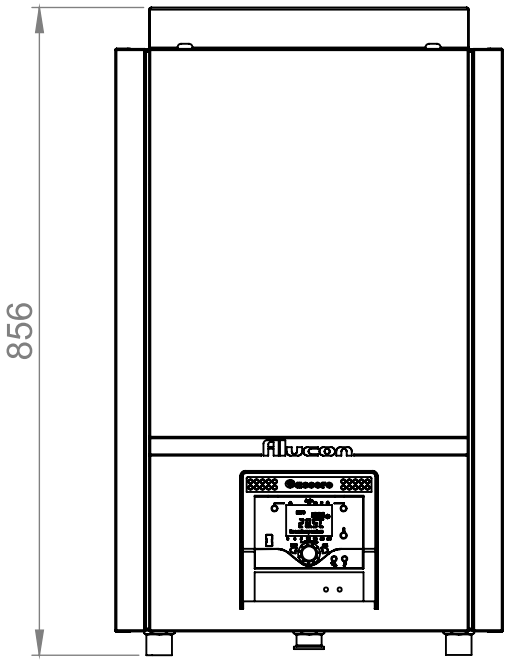
3.5 Dİmensions with Concentric Kit

The concentric kit is designed for C type chimney and it will be added according to customer request.

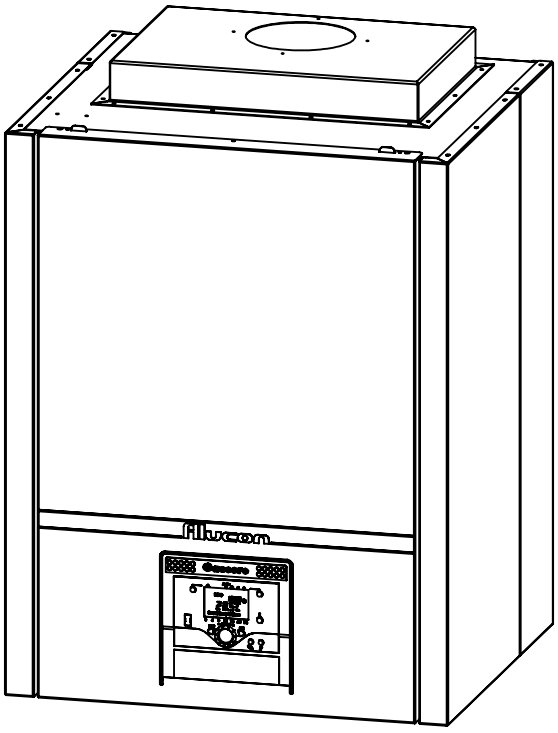
The following drawings are presented to show dimension of the boilers in C13, C33 flue applicatons

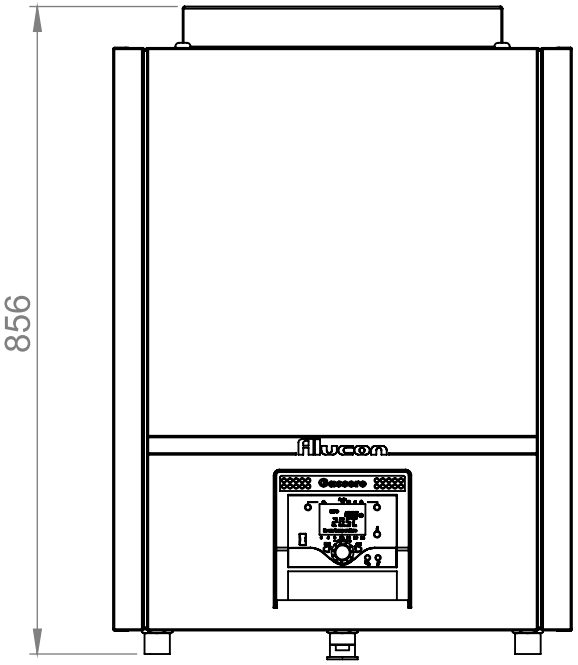
Alucon 60 - 70 - 90 - 115





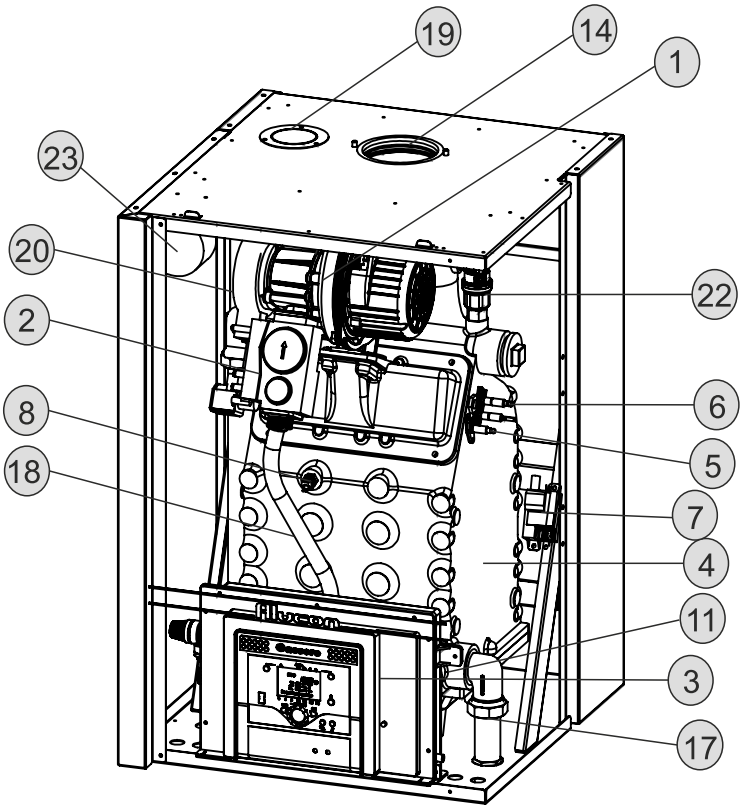
Alucon 125 - 150

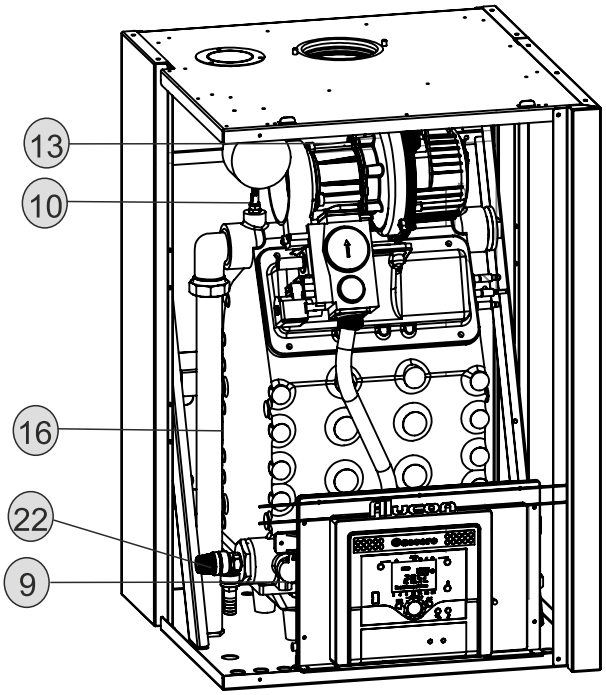




3.4 Alucon Main Component List

(With Sit Gas Application)

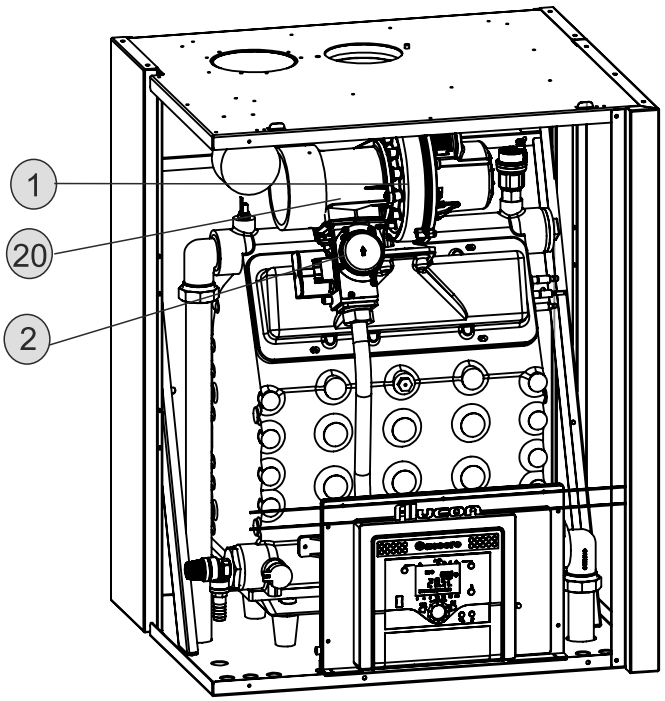




(With EBM Gas Appliance)

KEY

1- Fan
2- Gas Valve
3- Control panel
4- Heat Exchanger
5- Ionization electrode
6- Ignition electrode
7- Ignition transformer
8- Limit thermostat
9- Pressure sensor
10- Flow NTC sensor
11- Return NTC sensor
12- Automatic air vent
13- Flue gas sensor
14- Flue gas outlet
15- Syphon
16- Water outlet connection
17- Water inlet connection
18- Gas inlet
19- Air intake
20- Venturi
21- Syphon switch
22- Drain hose and Safety valve



3.5 Technical Data

Alucon		50		70		90		115		125		150	
Type Of Flue Installation		B23,C13,C33,C43,C53,C83											
Gas category		I2H,I2E											
Fuel type		N.G G20-20-25 mbar											
Nominal Heat İnput Qn at 80/60 °C	kW	7,6	49,2	11,6	65,6	14,9	88,3	14,9	112,3	19,9	123,5	19,9	143,1
Nominal Heat İnput Qn at 50/30 °C	kW	7,8	48,8	10,7	66,3	14	87,2	14	113,1	20,8	118	20,8	145,1
Nominal Heat Output Pn at 80/60 °C	kW	7,3	47,8	10,7	63,4	14,3	86,3	14,3	109,5	19,2	120,8	19,2	139,8
Nominal Heat Output Pn at 50/30 °C	kW	8,4	51,4	11,6	68,5	15,1	91	15,1	118,1	22,3	128	22,3	149,1
Working Pressure	bar	0,8	6	0,8	6	0,8	6	0,8	6	0,8	6	0,8	6
Boiler Water Capacity	lt	3,2		3,2		4,6		4,6		6		6	
Maximum Working Temperature	°C	85		85		85		85		85		85	
Limit Thermostat Shut Down Temperature	°C	95		95		95		95		95		95	
Efficiecy & Emissions													
Heating Efficiency 80/60 °C	%	97,7		97,2		98,4		98,2		98,3		98,2	
Heating Efficiency 50/30 °C	%	105,9		103,9		105		104,8		104,4		103,2	
Annual Efficiency % (DIN 4702 part 8)	%	110		110		110		110		110		110	
Useful efficiency at 30% (return 30°C)	%	108,6		108,4		108,4		108,6		108,5		108,4	
Flue Gas Temperature 50/30 °C	°C	29,5 - 45,1		30,1 - 52,3		30,2 - 44,8		30,2 - 53,3		30,5 - 44,9		30,5 - 47,1	
Flue Gas Temperature 80/60 °C	°C	54,7 - 65,6		55,4 - 72,1		56,8 - 61,4		56,8 - 64,9		56,9 - 61,8		56,9 - 70,3	
CO_2 Emissions	%	9,2	9,3	9,2	9,6	9,3	9,4	9,4	9,4	9,5	9,5	9,5	9,5
CO Emissions	ppm	89	44	27	152	27	120	27	156	24	140	24	169
NOx Class		5											
Flue gas mass flow rate	g/s	3	22	5	28	7	39	7	51	9	54	9	63
Gas Consumption	m^3/h	0,8	5,1	1,1	6,8	1,5	9,1	1,5	11,7	2,1	12,8	2,1	14,9
Boiler Connections													
Boiler Flow Connection	"	1		1		1		1		1		1	
Boiler Return Connectioni	"	1		1		1		1		1		1	
Gas İnlet	"	1		1		1		1		1		1	
Condensate Drain	Ø	25		25		25		25		25		25	
Flue Gas Pipe Diameter	Ø	100		100		100		100		100		100	
Fresh Air Connection	Ø	80		80		80		80		110		110	
Residual Draught, Fan	Pa	100		130		170		200		220		330	
Electrical Connections													
Power Suppy	V/Hz	230/50		230/50		230/50		230/50		230/50		230/50	
Max. Electrical Consumption	W	52		97		116		203		212		313	
Stand By Electrical Consumption	W	3		3		3		3		3		3	
IP Class	IP	X4D		X4D		X4D		X4D		X4D		X4D	
Boiler Dimensions & Weight													
Dimensions WxLxH	mm	513x535x770		513x535x770		513x535x770		513x535x770		607x536x770		607x536x770	
Weight	kg	60		60		70		70		82		82	

4. İNSTRUCTİON FOR THE İNSTALLER

4.1 İnstalation

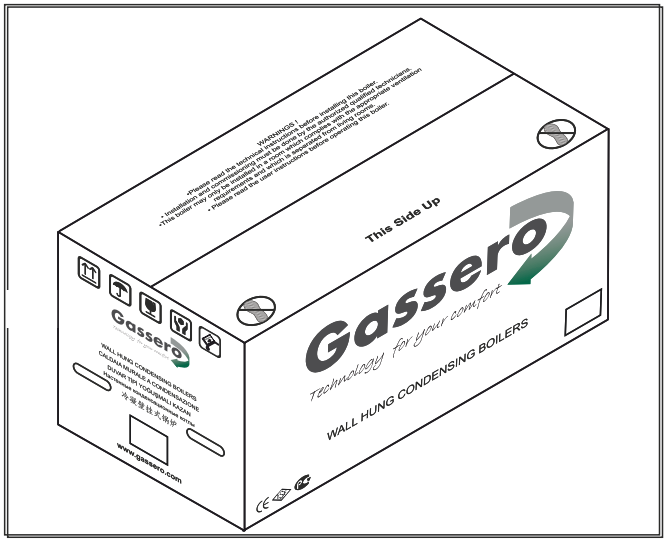
4.1.1 Packing

The **Alucon** boilers are supplied fully assembled in astrong 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 ofthe 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.



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

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

İn the packaging, in addition the boiler, you can also find the following materials;

- Installation, operation and maintenance manual
- Warranty certificate and adhesive labels with bar code
-Outdoor Sensor
-Cascade sensor with cable
-Air Filter (optional)
-Cncentric Kit (optional for C type chimney design)

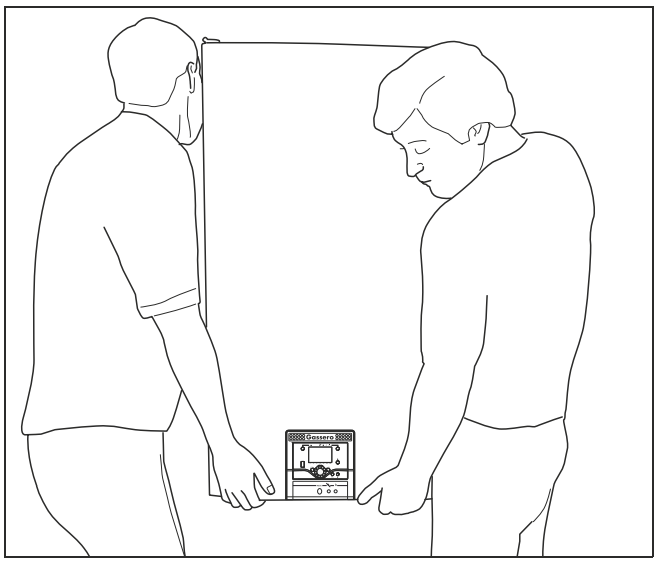
4.1.2 Transport

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.

Carefully transport the boiler to the installation place.

we advise you to follow steps for correct transportation;

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



Before mounting the boiler, decide on the ideal position for mounting according to relevant directives and the dimensions of the appliance in mind.

Fix the appliance to a solid wall capable of bearing the weight of the appliance when full of water and fully equipped.

It is forbidden to save inflammable products and materials in the boiler room or close to the boiler,

4.1.3 Mounting

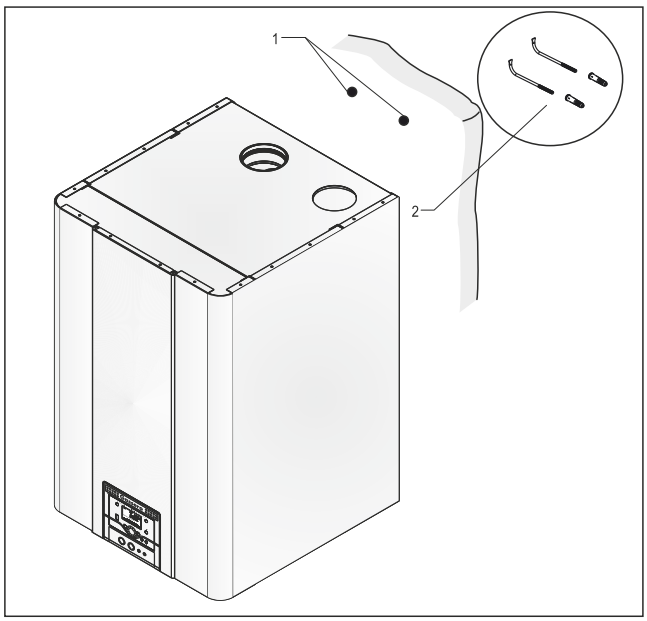
The **Alucon** Boiler must be secured to a solid brickor concrete wall using the wall hanging brackets.

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.

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.

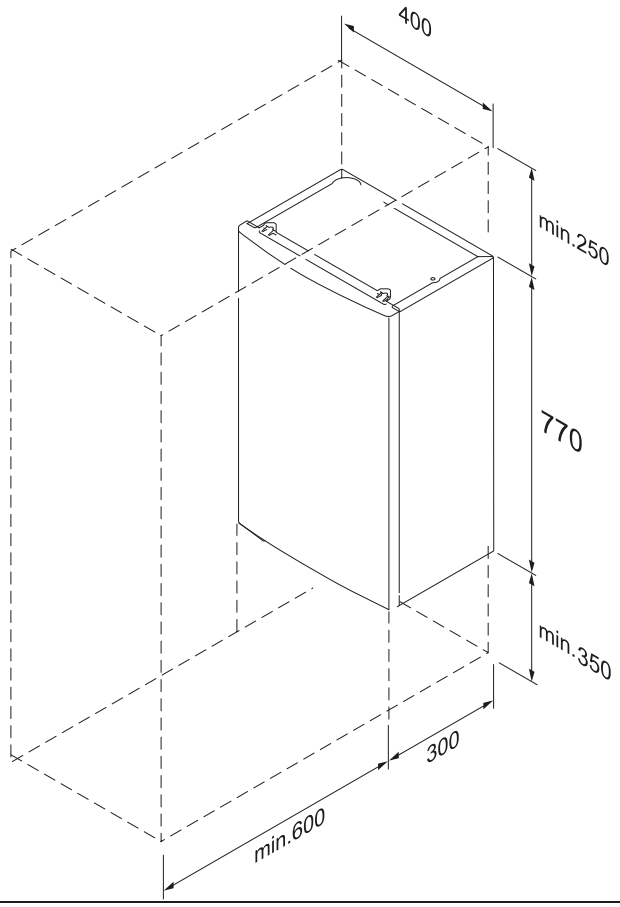


4.1.4 Clearences

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.



4.1.5 Water quality and threatment

Treating the supply water allows you to prevent problems and maintain the functionality and efficiency of the generator over time. The purpose of this treatment is to eliminate or significantly reduce problems

In particular, attention must be paid to the following conditions;

Before installing the appliance,thoroughly clean all pipelines and heating elements.

Alucon boiler heat exchanger is made of cast aluminum alloy. The heat exchanger requires proper water conditions to remain efficient and function properly.

- The chemical supplier for use must certify glycol or other treatment chemicals added to the system in multi-metal systems that include cast aluminum boilers.

- Under no circumstances should the hydronic system be flushed while the boiler is attached to the system since the debris or corrosion products may accumulate in the boiler and plug the boiler heat exchanger

- If the piping system attached to this unit will be chemically cleaned, the boiler must be disconnected from the system and a bypass installed so that the chemical cleaning solution does not circulate through the boiler.

- Following chemical cleaning, the system should be thoroughly rinsed to remove cleaning agents prior to reconnecting the boiler to the system.

Properties of water to be used when filling the system;

The following type of water must be used to fill the system:

Proper cleaning and surface preparation must be completed prior to system startup

Initial Start Up of the appliance

Total Alkalinity (ppm)	:100 < $CaCO_3$ < 500
Hardness of the filling w.	: from 0,5 to 20 dºH
Acidity (pH)	: 7 < pH < 8,5
Suspended Solids	:<10 ppm
Chloride	:<125 mg/l
Al	:<0,25 MPY
Steel	:<3 MPY
Cu	:<0,1 MPY

the following values should be provided during controls and precautions that are performed by an authorized service in yearly service inspections

Working conditions of the appliance

Total Alkalinity (ppm)	: 100 < $CaCO_3$ < 500
Hardness of the filling w.	: from 0,5 to 20 dºH
Acidity (pH)	: 7 < pH < 8,5
Suspended Solids	:<10 ppm
Chloride	:<125 mg/l
Al	:<0,25 MPY
Steel	:<3 MPY
Cu	:<0,1 MPY

4.1.6 Water Side Connection İnstructions

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

Ultrabox Series are 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 Frost Protection

Ultrabox boilers have built-in frost protection, automatically activating the central heating pump when the boiler return water temperature drops below 5°C.

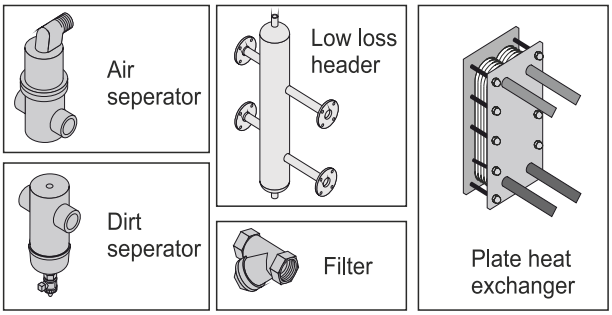
The pump and/or burner will shut down as soon as the return temperature has reached demanded point. The above-mentioned temperatures relates to the temperature measured with the RETURN sensor of the boiler. This Frost Protection provision is for the boiler only and not for the all system.

4.1.10 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 ofthis 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 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.

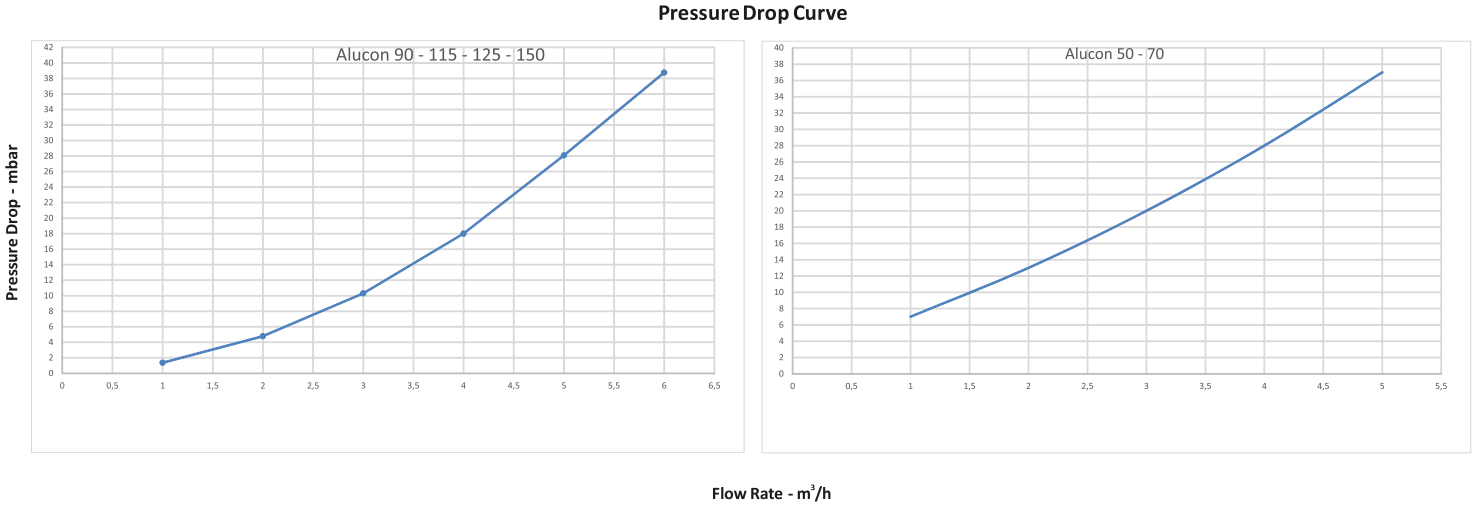


4.1.11 Automatic Air Vent

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.

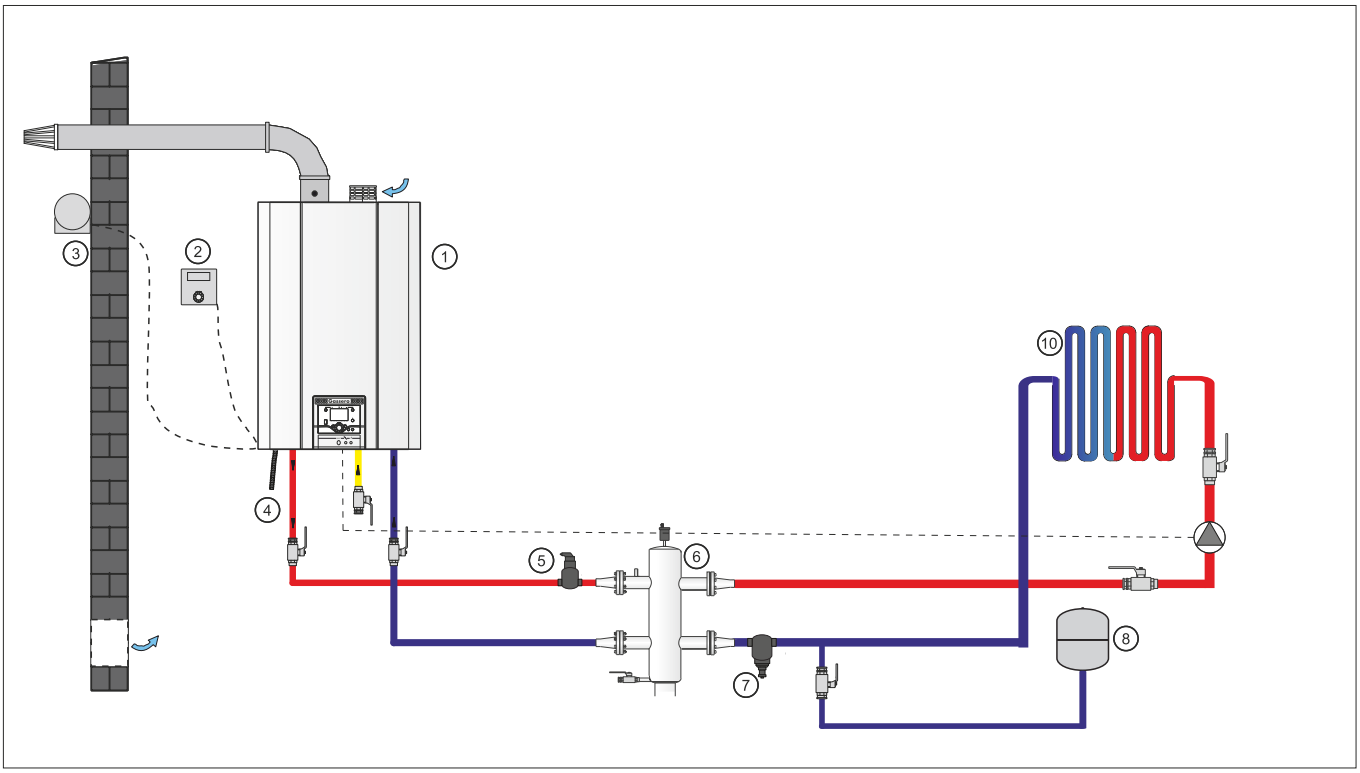
4.1.12 Pressure Drop Curve

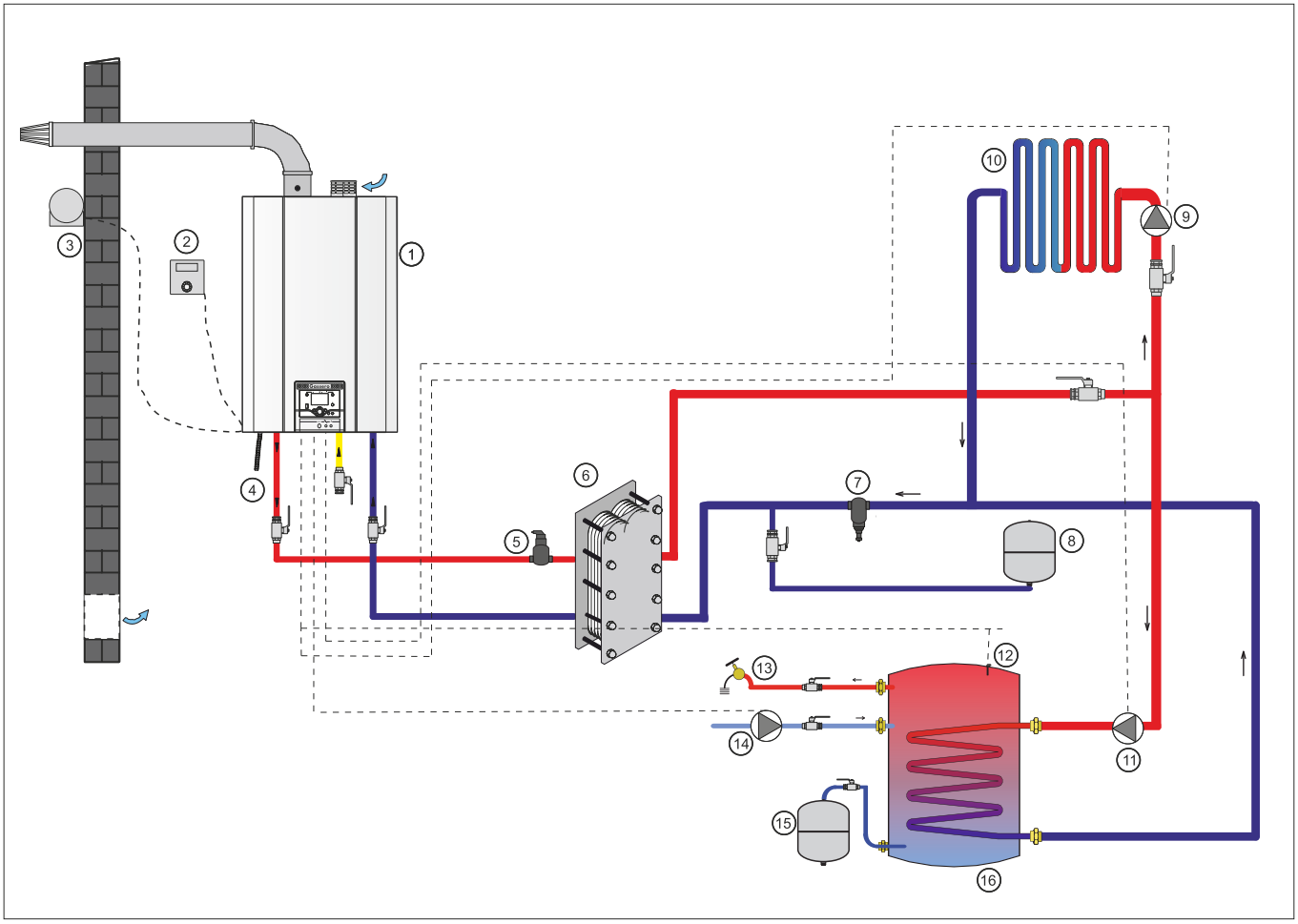
Select a pump that is compatible with the hydraulic resistance of the heating unit and system.The graph shows the pressure drop curves of the heating units.



4.2 BOILER INSTALLATION SYSTEM EXAMPLES

4.2.1 Single Boiler İsntalation

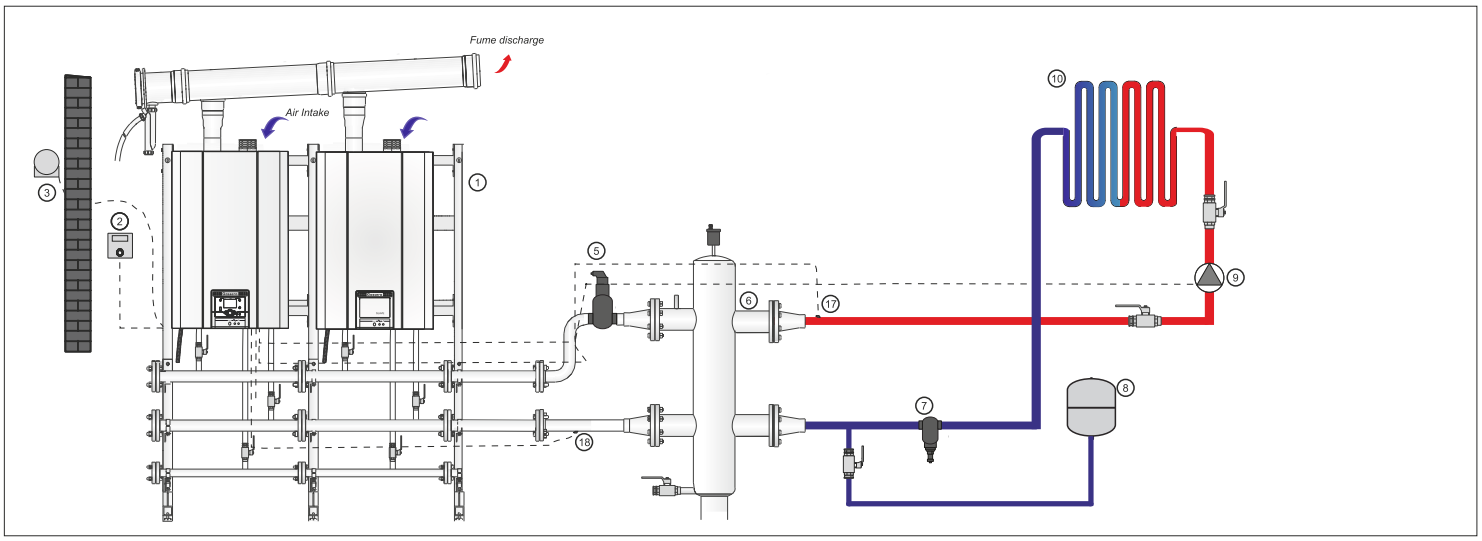


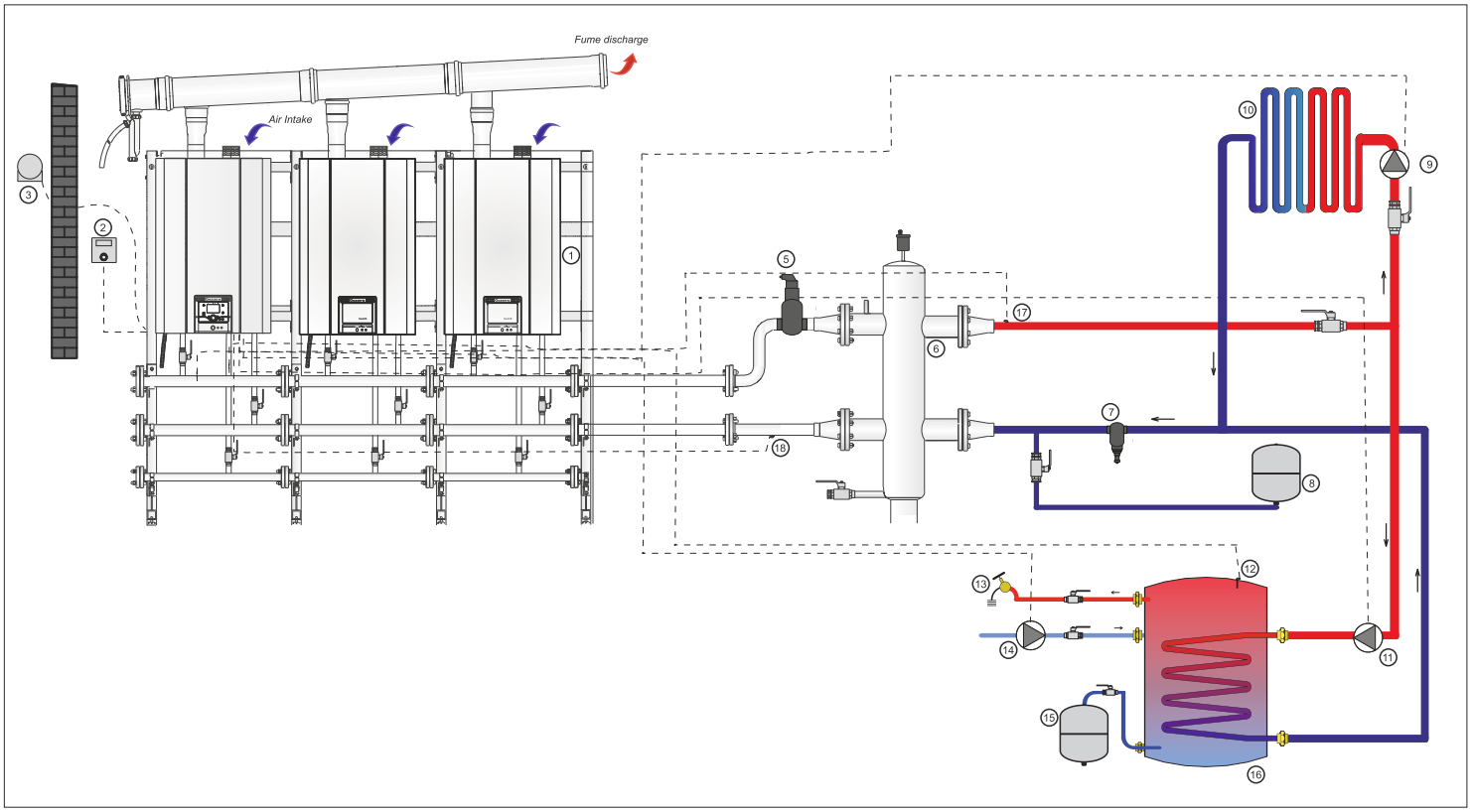


Key

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

4.2.2 Cascade İnstallations





Key

1 - Wallcon condensing boiler
2 - Room thermostat (QAA55)
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7 - Dirt seperator
8 - Expansion vessel
9 - Radiator pump
10 - Heating system(radiator/underfloor)
11 - DHW tank pump
12 - DHW tank sensor (QAZ36)
13 - Hot water
14 - DHW re-circulation pump
15 - DHW tank expansion vessel
16 - DHW tank
17 - Cascade supply sensor (QAD36)
18 - Cascade return sensor (QAD36)

4.3 Adjustment of The Gas Rate

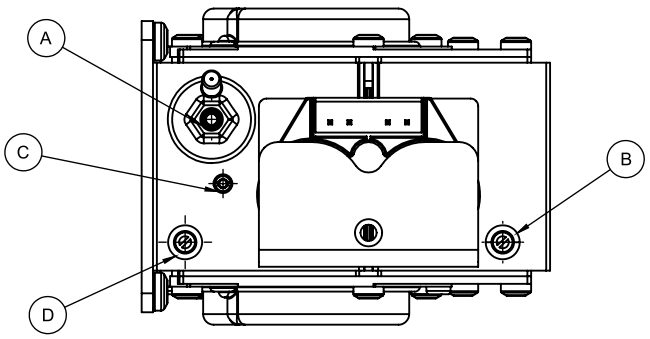
All the instructions written below are for the exclusive use of qualified service technicians or installers. All the boilers are supplied already calibrated and tested.

Adjustments are only be made with special tools.

Alucon Series include two different gas valve control systems.

Adjustments must be done by Gassero authorized services.

4.3.1 Gas Adjustment Points at Dungs



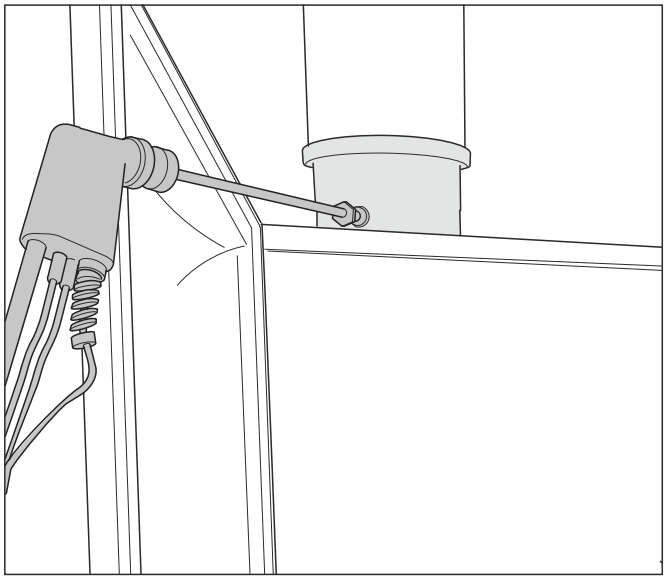
A - Minimum output adjustment screw
B - Inlet pressure tap
C - Maximum output adjustment screw
D - Burner(outlet) pressure tap

4.3.2 Table of Combastion Values

Boiler type	Alucon 50		Alucon 70		Alucon 90	
	min.	*max.*	*min.*	*max.*	*min.*	*max.*
CO_2 %	9,2	9,3	9,2	9,6	9,3	9,4
Gas flow rate (m ³/h)	0,8	5,1	1,1	6,8	1,5	9,1
Fan speed(rpm)	1000	5100	1250	6200	1000	5600

Boiler type	Alucon 115		Alucon 125		Alucon 150	
	min.	*max.*	*min.*	*max.*	*min.*	*max.*
CO_2 %	9,4	9,4	9,5	9,5	9,5	9,5
Gas flow rate (m ³/h)	1,5	11,7	2,1	12,8	2,1	14,9
Fan speed(rpm)	1000	6100	1300	6750	1300	7500

4.3.3 Max. Output Setting for Dungs

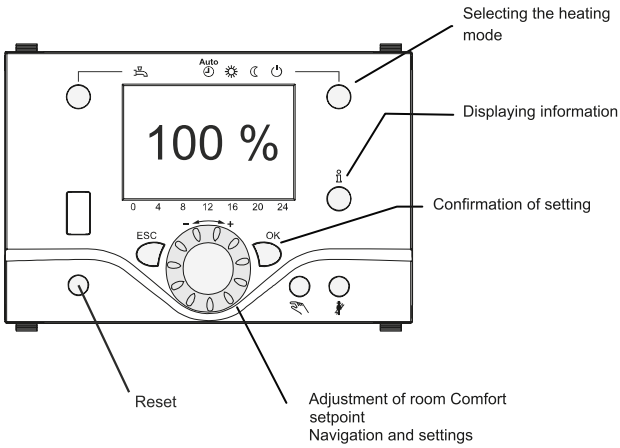


1 - Connect the gas analyser probe to the sampling test point on the flue.

2 - İf the flue gas value in maximum load needs to be adjusted

- Be sure that the boiler is running in full load (Qmax).
- Specify the required flue gas value if neccessary (see the technical table) by turning the screw of the main throttle (see below).

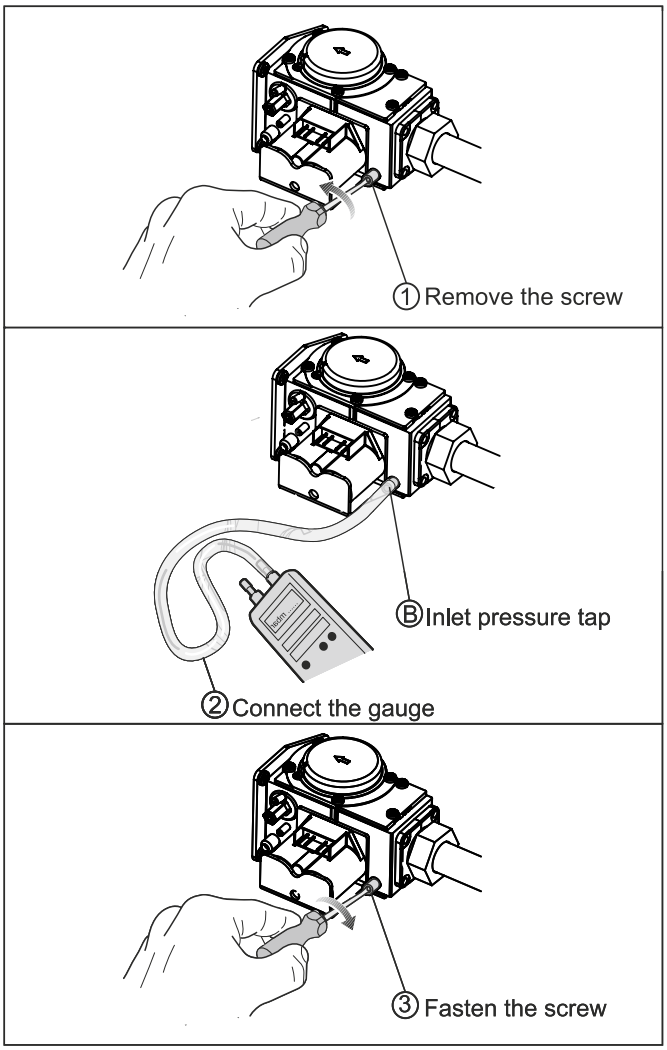
3 - For operating in the max. output, press at least 3 seconds to heating mode when the boiler in mode. Controller function stop will appear on the screen. Than press information button, it will indicate the modulation rate (%) on the screen. Adjust the rate to 100 % for max. output setting with using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



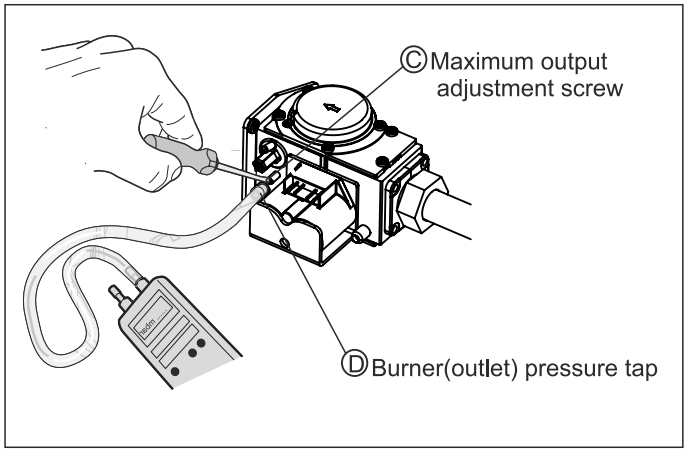
Damage to the boiler by incorrect adjustment of the gas/air-ratio.

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.

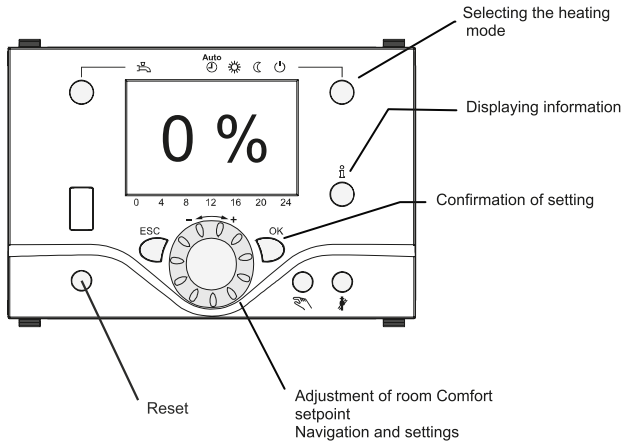


4 - Connect the pressure gauge connection tube to the burner pressure tap and check the burner supply pressure. Burner pressure must be adjust according to the table. Check that the CO_2 values are within the values indicated in the table. Correct the value by turning the adjustment screw (C) in clockwise direction to decrease the value and in an anti- clockwise direction in order to increase the value.

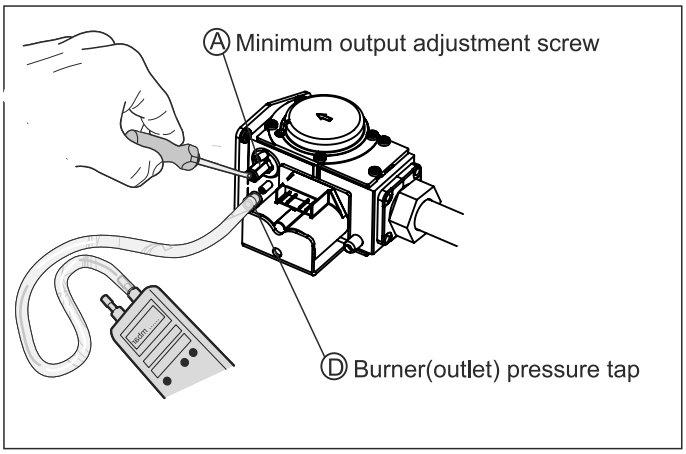


4.3.4 Min. Output Setting for Dungs

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, İt 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.

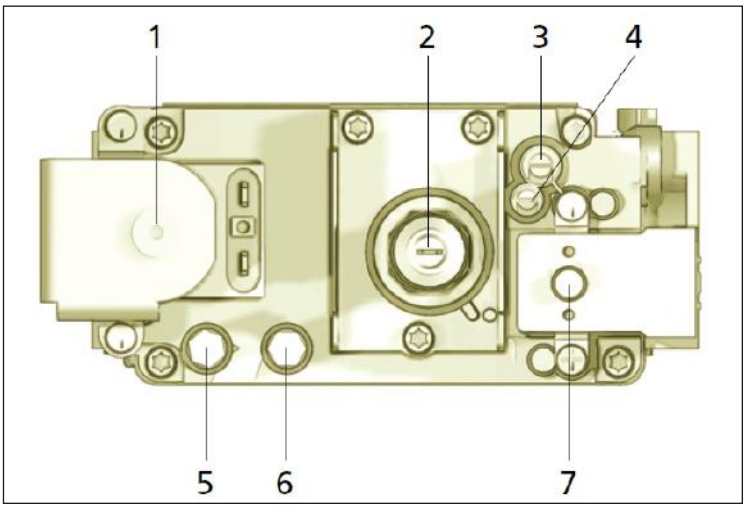


2 - Connect the pressure gauge connection tube to the burner pressure tap and check the burner supply pressure. Burner pressure must be adjust according to the table. Check that the CO values are within the values indicated in the table.$_2$ Correct the value by turning the adjustment screw (A) in clockwise direction to increase the value and in an anti-clockwise direction in order to decrease the value.



3 - Check the values at the minimum and maximum output.CO_2 Make the required adjustments if necessary. valuesCO_2 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.

4.3.5 Gas Adjustment Points at Sit



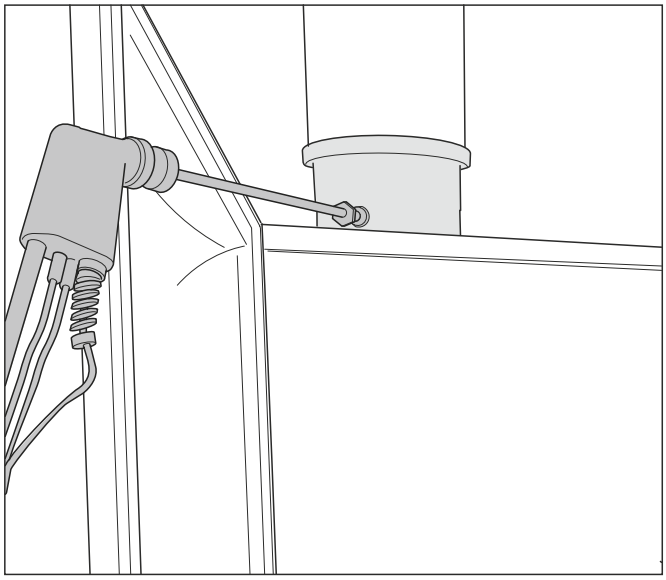
1. Shutt of selenoid valve EV1
2. Ofset adjustment screw (Min adjustment)
3. Pilot gas flow restrictor
4. Gas/Air adjustment screw
5. İnlet pressure test point
6. Outlet pressure test point
7. Shutt of selenoid valve EV2

4.3.6 Table of Combastion Values

Boiler type	Alucon 50		Alucon 70		Alucon 90	
	min.	*max.*	*min.*	*max.*	*min.*	*max.*
CO_2 %	9,2	9,3	9,2	9,6	9,3	9,4
Gas flow rate (m ³/h)	0,8	5,1	1,1	6,8	1,5	9,1
Fan speed(rpm)	1000	5100	1250	6200	1000	5600

Boiler type	Alucon 115		Alucon 125		Alucon 150	
	min.	*max.*	*min.*	*max.*	*min.*	*max.*
CO_2 %	9,4	9,4	9,5	9,5	9,5	9,5
Gas flow rate (m ³/h)	1,5	11,7	2,1	12,8	2,1	14,9
Fan speed(rpm)	1000	6100	1300	6750	1300	7500

4.3.7 Max. Output Setting for Sit

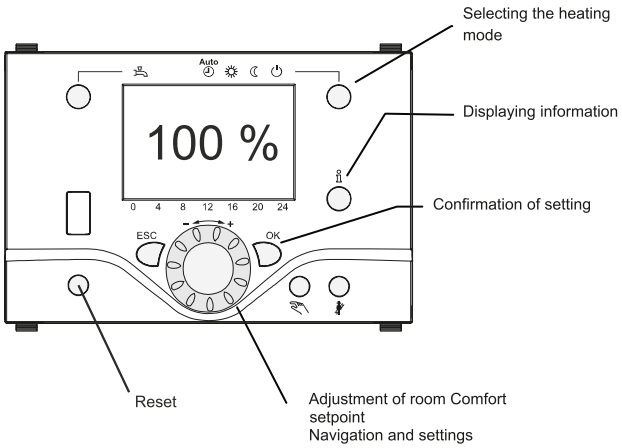


1 - Connect the gas analyser probe to the sampling test point on the flue.

2 - İf the flue gas value in maximum load needs to be adjusted

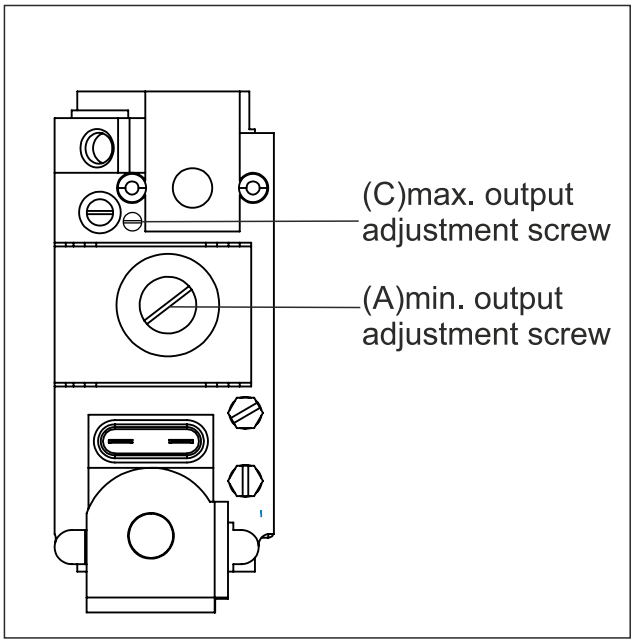
- Be sure that the boiler is running in full load (Qmax).
- Specify the required flue gas value if neccessary (see the technical table) by turning the screw of the main throttle (see below).

3 - 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. Than 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.



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

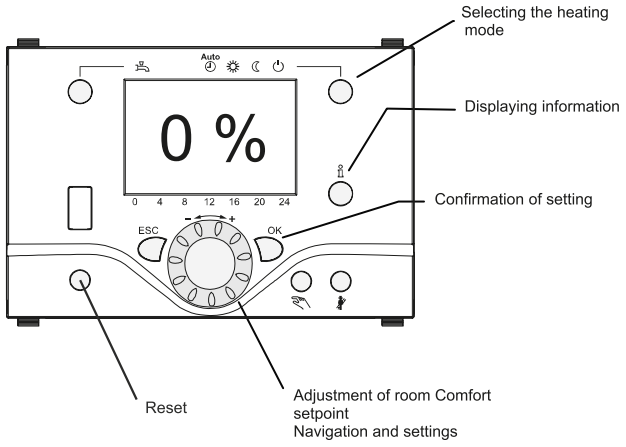
To ensure correct operation the values have to be adjusted with extreme care respecting the values indicated in the table.



Check that the CO_2 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.

4.3.8 Min. Output Setting for Sit

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, İt 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.



Check that the CO values are within the values indicated in the table.$_2$ 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.

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.

4.4 Gas Conversion İnstructions

Gas Category	I2H	I2E
Natural Gas	G20	G20
Gas Press. (mbar)	20/25	20

4.5 Flue İnstalation İnstructions

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.

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.

İt 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.

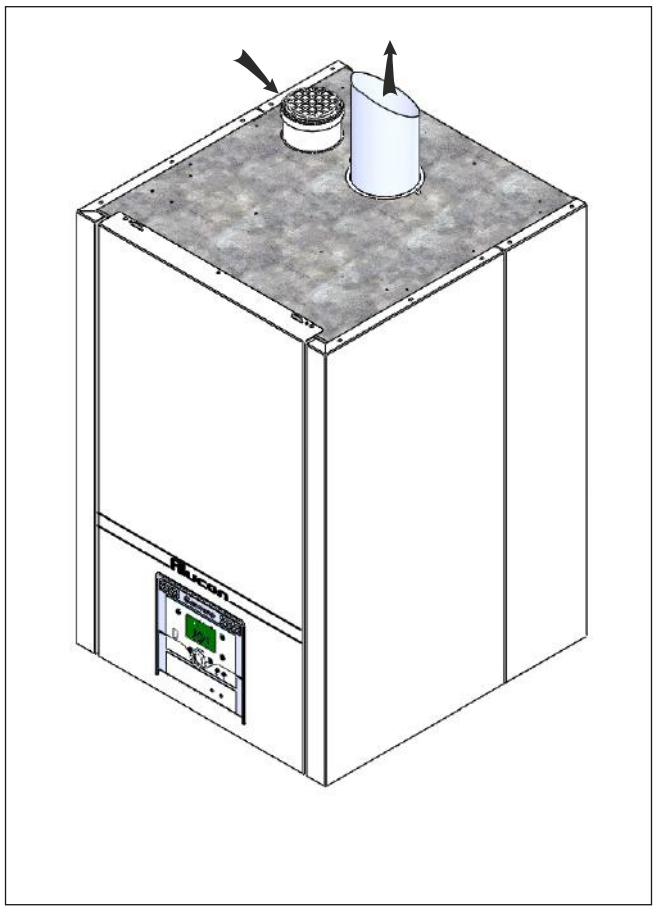
4.5.1 Flue Appliance Type

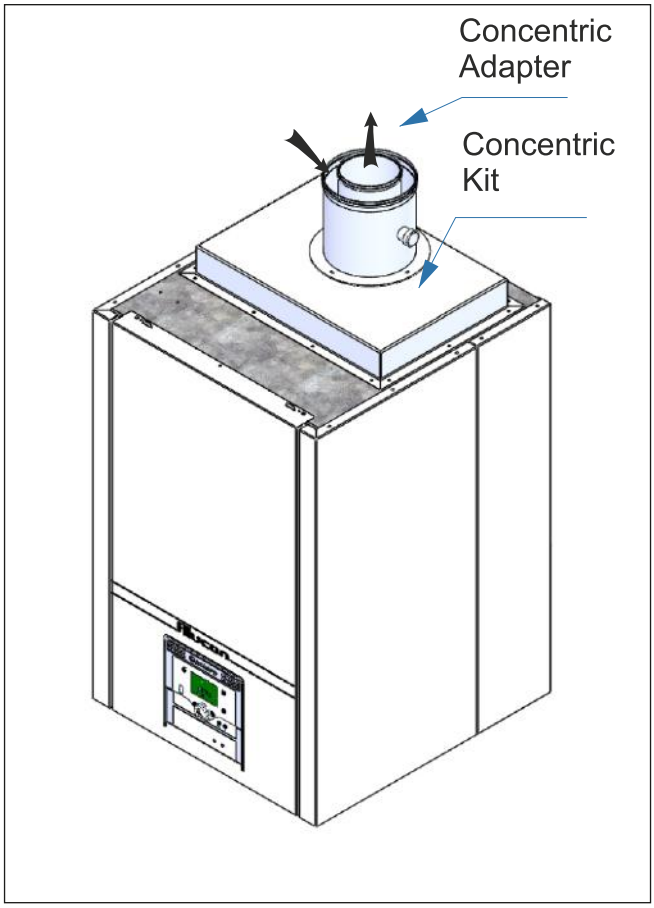
The table specifies this classification in detail according to CE

Type	Description
B23	The combustion air is intaken directly from the room where the boiler is installed. Smoke evacuation duct connected to outside from 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 ?ue ; one for fresh air intake and other one is for fume discharge.
C53	Two ducts connected to the corresponding air intake and fume discharge terminals in different pressure zones.
C63	Air intake and fume discharge ducts and/or terminals are not delivered by the manufacturers and supplied with their own certi?cates.
C83	Ducts to be connected to a terminal and independent or shared ?ue by means an adapter.

Open flue (B23)

If using an open version, the air supply opening remains open; Only the exhaust (combustion gas) is connected. The boiler then takes in the fresh air required directly from the premises in which it is installed.





Diameter (mm)	Max. ΔP Pressure (PA)					
	50	70	90	115	125	150
100	100	130	170	200	220	330

Room sealed flue (C13, C33, C43, C63)

If using a room sealed version, both the combustion gas exhaust opening and the air supply opening must be connected

Diameter 100/150	Alucon Max. Lenght (HORİZONTAL)					
	50	70	90	115	125	150
	20m	20m	20m	20m	18m	10m

Diameter 100/150	Alucon Max. Lenght (VERTİCAL)					
	50	70	90	115	125	150
	22m	22m	22m	22m	20m	12m

it is possible to ensure installation conditions of C13, C33 types with **concentric kit and concentric adapter,**

Concentric kit and concentric adapter are optional components

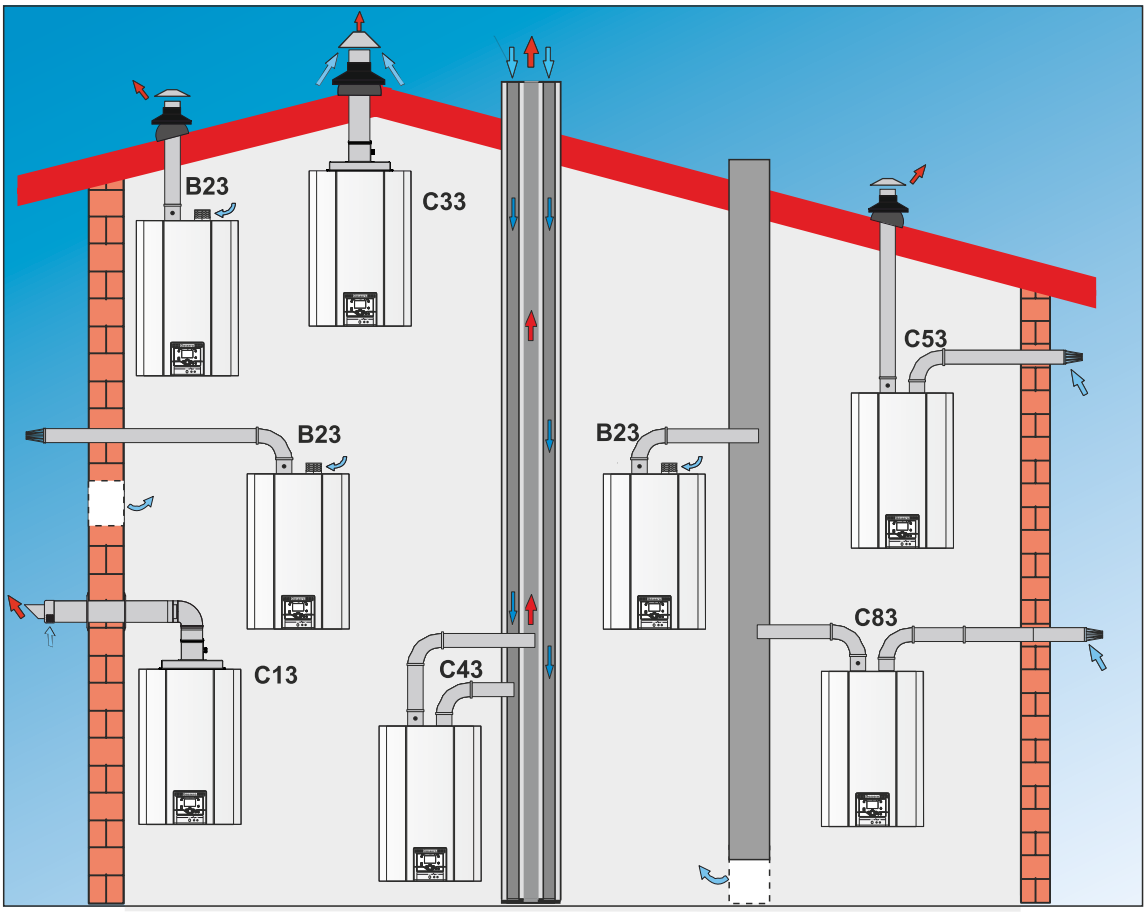
Concentric kit and concentric adapter will be suppiled by Gassero according to customer request

To define the maximum final length, you must remove the pipe length in accordance with the reduction table.

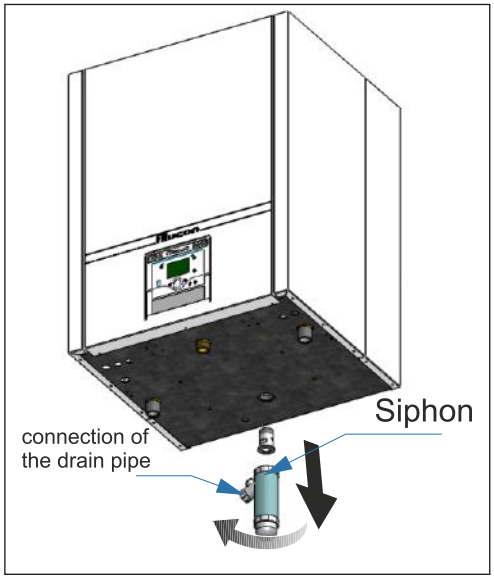
Pipe reductions per element used		
Diamemter 100/150 mm	Elbow 45°	Elbow 90°
	1 m	2 m

Connection in areas of different pressure (C53, C83)

Combustion air supply and combustion gas discharge are possible in various pressure zones, semi-CLV systems. With the exception of coastal areas.



4.6 Condensate Drain



The condensate trap is sized for 25 mm outlet connection pipe.

The condensate line should remain unobstructed, allowing free flow of condensate. If condensate is allowed to freeze in the line or if the line is obstructed in any other manner, condensate can cause potential water damages.

Fit the condensate drain hose and the syphon of the boiler: these are supplied separately.

the siphon should be cleaned at least once bimonthly

the cleaning should be performed according to maintenance description

Condensate Switch

Alucon Boilers are be equipped with Condensate switch as an additional safety to prevent suden overflow for keep the heat

The neutralization box (NB) :
The neutralization box (NB) have to be located in a place protected from frost and atmospheric agent
• Temperature of ambiet: +1 + 40
• It's better to allocated the NB near the boiler in a level ground in order to guarantee the correct position of the material inside it;
• it' must not enter in the NB gas or particles that could damage it (perhaps by inserting a siphon before);
• make sure there are no puddles or air bubbles in pipes installation of the NB in the most appropriate to regulate condensate drain (it is recommended to at least 9/10 cm from the top)

Functioning of NB:
The condensate passing through the granulate reduces the acidity by increasing the pH . Acidity is to occur with the litmus test , which is bought in a pharmacy or grocery store

Maintenance of NB:
The pH have to be between 5.5 and 9.5. If the pH is less need to charge the box with the new calcite.

4.7 Electrical İnstallation

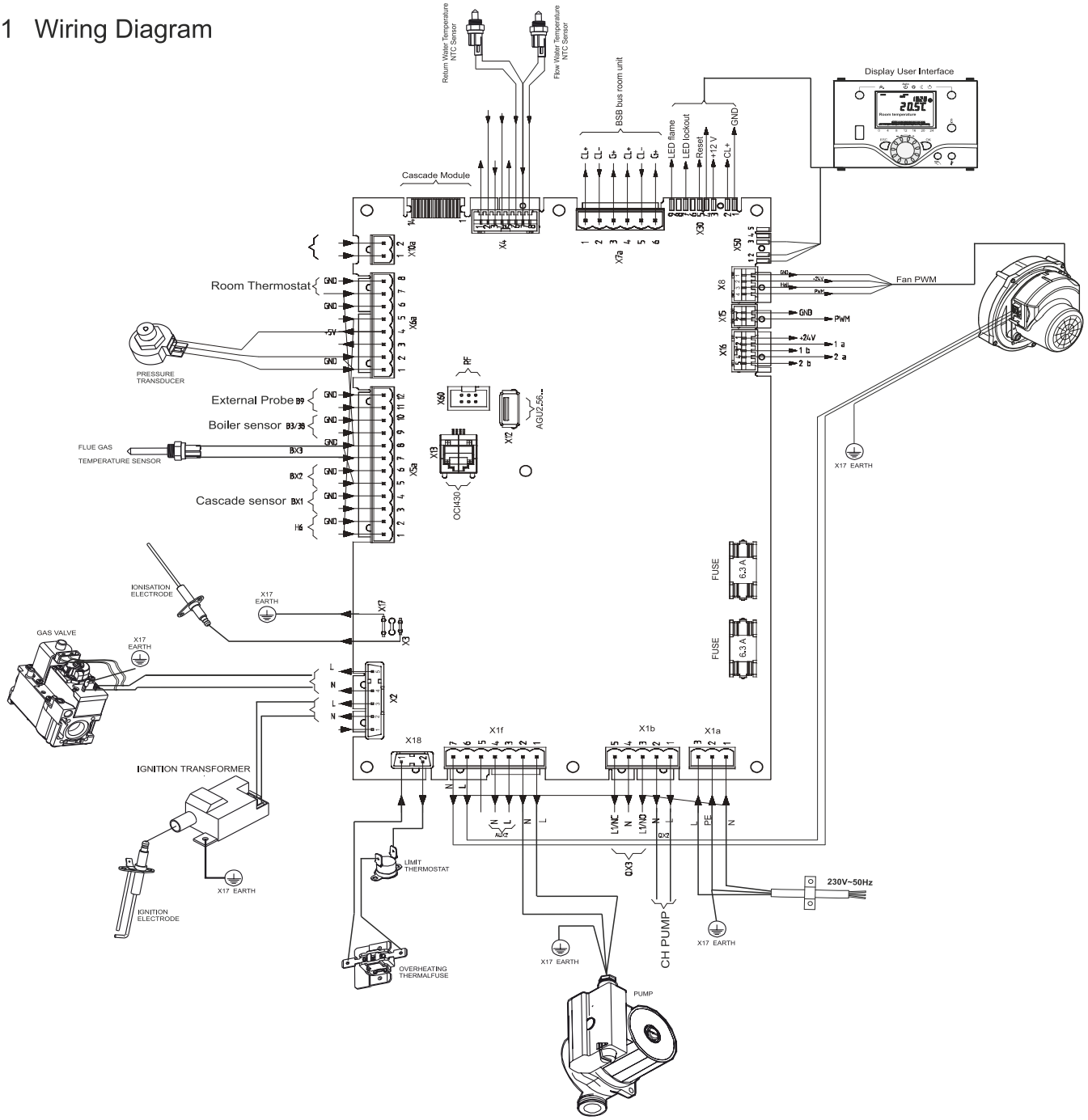
All the wiring is connected to connectors that is fitted in a socket. The connectors can be taken from the sockets on the PCB withoutloosening the wiring. The connections are placed in the back of the display, and can be reach by removing the front panel of the boilerand the connector protection cover. 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 mm^2, 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.

Power supply should be 230 VAC 50 Hz, according to relevant directives toleransce limits are defined (-15 % and +10 %)

4.7.1 Wiring Diagram



4.7.2 External Probe İnstallation

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-WESTand away from flues, doors, windows and areas exposed to direct sunlight.

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

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

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

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

Fastening the outside probe to the wall

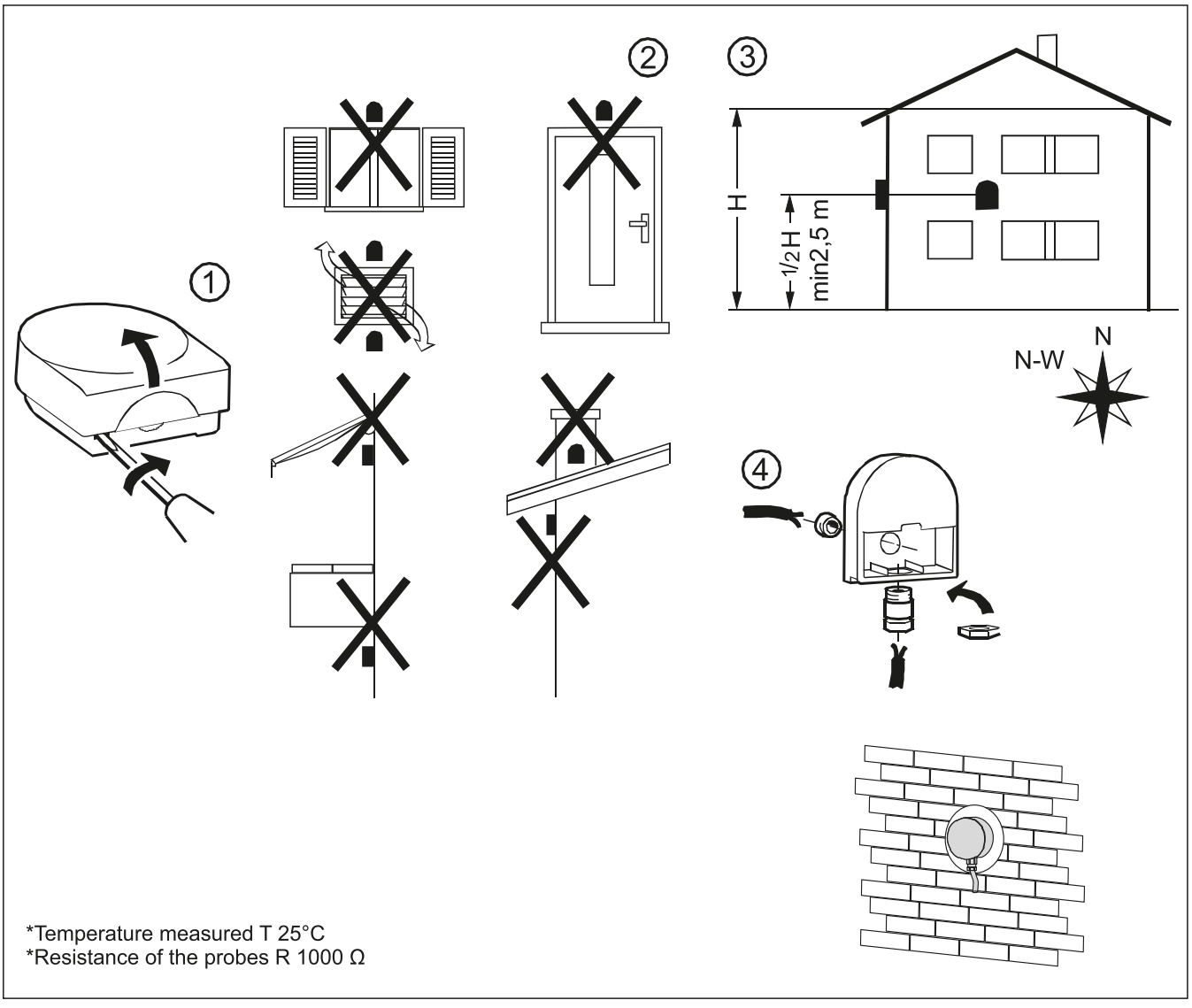
-Unscrew the cover on the probe protection box, turningit anticlockwise to access the terminal block and thefastening holes

-Trace the fastening points using the protection box asthe template

-Remove the box and drill the holes for the expansionplugs

-Fasten the box to the wall using the two plugs supplied-Connect the two wires on the cable to the terminalblock, without needing to identify the polarity

-Tighten the nut on the cable gland and close the coveron the protection box.



*Temperature measured T 25°C
*Resistance of the probes R 1000 Ω

4.7.3 Outdoor Temparature Control (OTC)

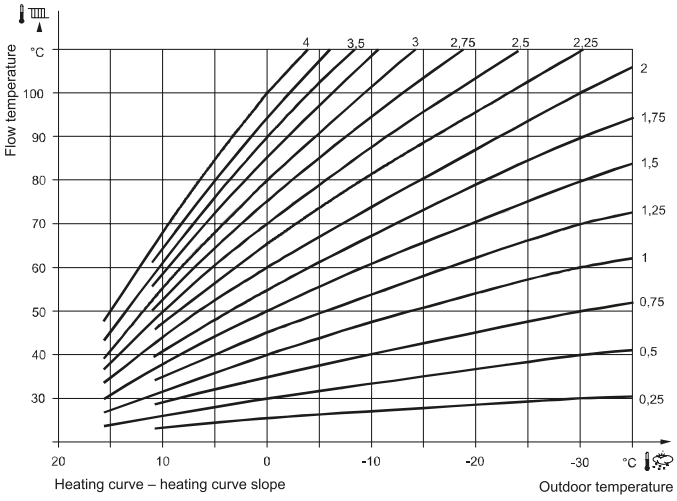
The heating curve generates the flow temperature setpoint, which is used to maintain a certain flow temperature level depending on the prevailing weather conditions. The heating curve can be adjusted in different ways, thus matching the heat output and the room temperature to individual needs. When the 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 temperaturesetpoint 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 theflow 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.

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 exceededor 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.

To provide this function, following must be observed:

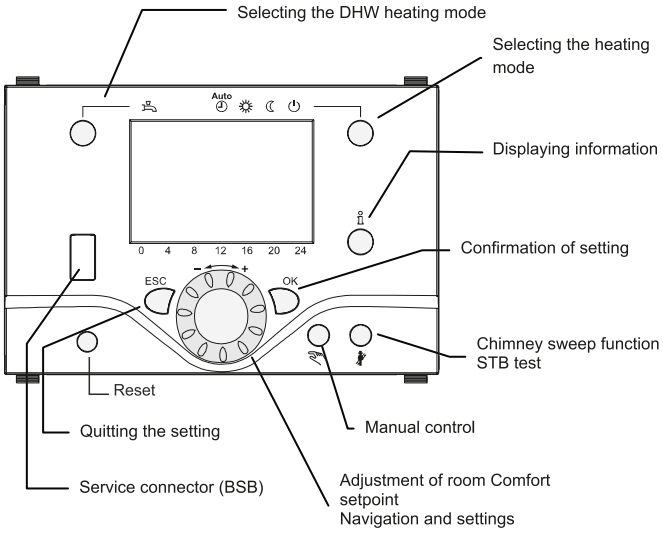
- A room sensor must be connected
- The Room influence setting must be selected between 1 and 99
- No thermostatic radiator valves should be used in the reference room, where the room sensor is located (if installed, such valves must be fully opened and locked in that position)

5. OPERATİON

5.1 General

The Ultrabox 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 operatingThe choice made is indicated by a bar which appears below the symbols.

Automatic operation AUTO 

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

Charactersitics 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 temperatureat the selected operating level.

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. temperature), provided there is no power failure.
But it remains protected against frost(frost protection temparature), provided there is no power failure.

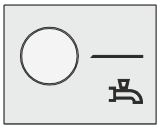
Characteristics of Protection:

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.

DHW heating mode



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.

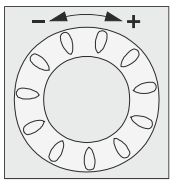
The DHW push can also be started when:

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

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



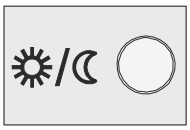
Each time you make a readjustment, wait at least 2 hours, allowing the room temperature to adapt.

Presence button

If the rooms are not used for a certain period of time, you canpress 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 aoutomatic 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.

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 in the manual.

- Possible maintenance alarms from the maintenance code are listed in the manual.

- Possible special mode messages

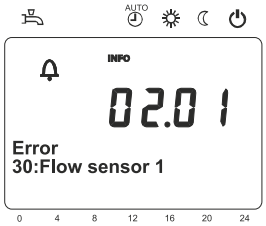
Other displays:

- 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

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

Error messages

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



Maintenance or special mode
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.

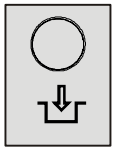
A list of possible displays is given in the manual.

Reset function

Some errors result in a lock of LMS14/15...

The display shows an code, which will help you to identify the potential cause.

The “RESET” button needs to be pressed after eliminating the reason for the failure, then the boiler will go back to normal operation. Reset button is defined the below symbols.



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 apprears.

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 sincethe boiler temperature will be raised above the maximum limitations.

5.2 Programing

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.

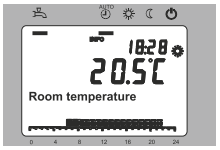
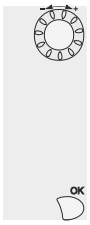
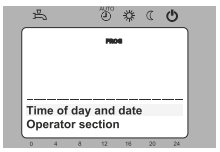
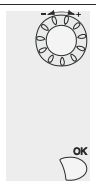
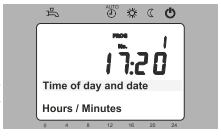
The following example which shows the setting of the time of day and date shall explain this.

Example “Setting the time of day“

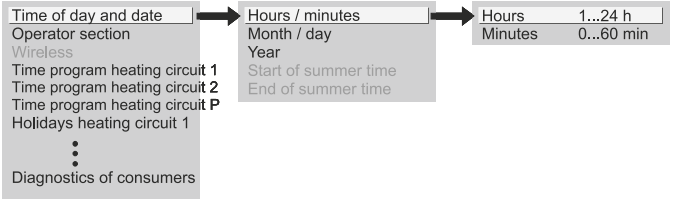
When pressing the ESC button, you go back one step; adjusted values will not be adopted

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

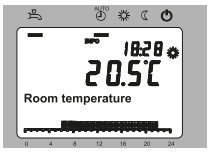
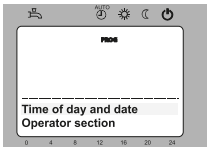
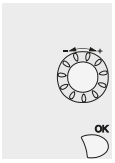
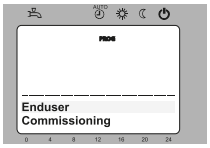
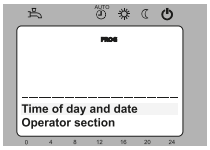
	operation	Display example	Description
1			You will see the basic display. If the basic display is not shown, press the ESC button to return to it. Press the OK button.
2			The bottom section of the display shows a number of operating pages. Turn the setting knob until operating page “Time of day and 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

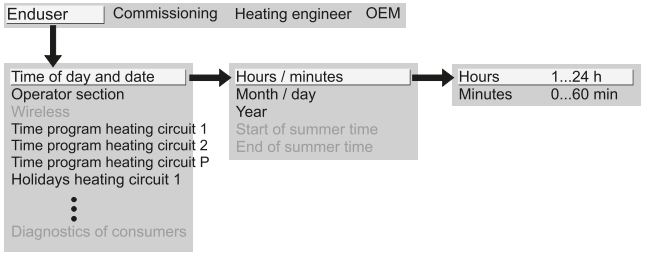
Certain user levels only allow certain user groups to make settings. To reach the required user level, proceed as follows:

	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.

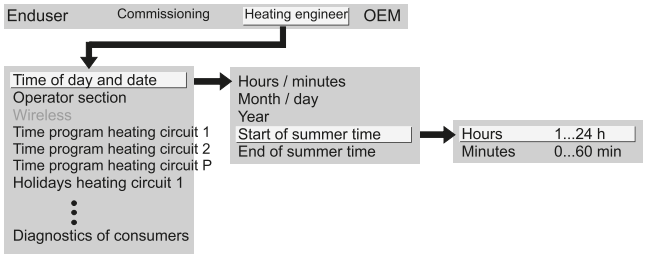
To reach the OEM level, enter the relevant code.

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

5.4 Maintenance Codes

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

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

Inspect and clean the heating system at least twice a year.

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

The boiler should be inspected only by a qualified service technician. In addition, the maintenance and care of the boiler designated and explained on the following pages must be performed to assure maximum boiler efficiency and reliability.

Failure to service and maintain the boiler and system could result in equipment failure.

6.2 Maintenance Procedure

Besides Inspection, maintenance and the replacement of parts 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.

Check expansion tank

Expansion tanks provide space for water to move in and out as the heating system water expands due to temperature increase or contracts as the water cools. Tanks may be open, closed or diaphragm or bladder type.

Clean condensate trap

Inspect the condensate drain line and condensate trap.

1.Remove cover beneath the syphon and clean accumulated scale and dirt

2. Replace the cover

3. Fill with fresh water until the water begins to pour out of the drain, then replace the syphon.

Inspect ignition and ionization electrodes

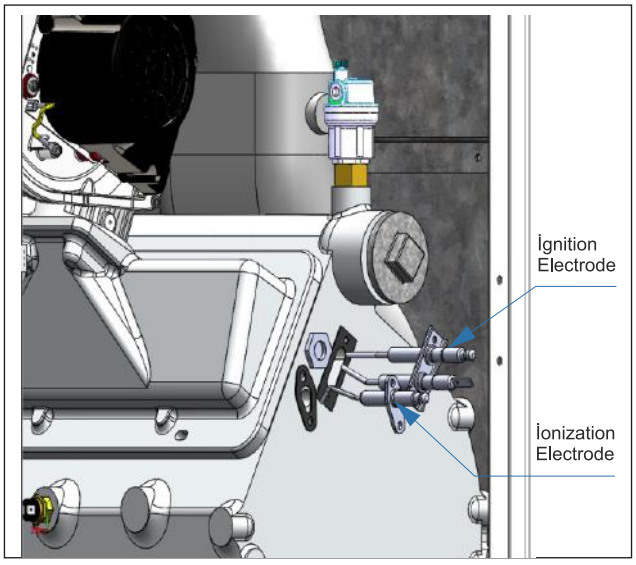
1. Remove front and right side covers of the boiler

1. Remove the ignition and ionization electrodes from side of the heat exchanger

2. Remove any deposits accumulated on the ignition/ionization electrode using sandpaper.

If the electrodes cannot be cleaned satisfactorily, replace with new ones.

3. Replace ignition/ionization electrode, making sure gasket is in good condition and correctly positioned.

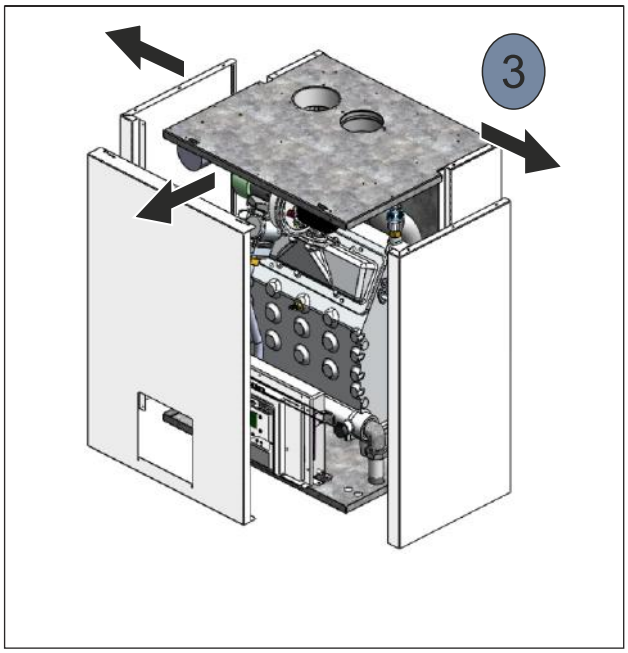


Clean Burner and Heat Exchanger

1. Lockout/tag out gas supply to the boiler.

2. Lockout/tag out electrical power to the boiler.

3. Use a proper screwdriver to open the front and both sides covers of the boiler.



4. Remove the wires/cables from the ignition electrode and flame/ionization rod and remove the electrodes

5.Use a proper wrench to remove the nut connecting the gas pipe to the gas control valve

6. Remove the four nuts connecting the blower to the burner hood

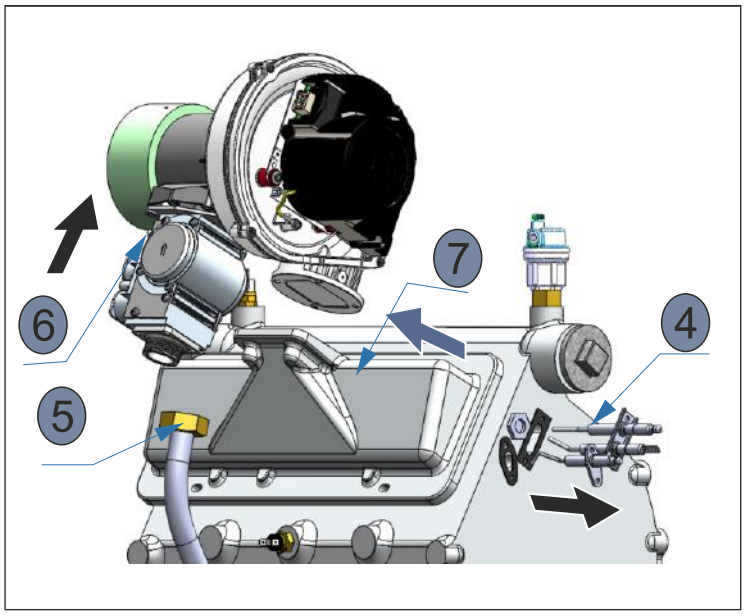
7. Remove the four flanged nuts connecting burner hood to Heat exchanger and Carefully lift the burner hood from the heat exchanger.

8. Check the burner gasket and blower gasket whether there is no any damage on the surface of the gaskets, If this is not the case, replace them.

9.clean the triangular burner using compressed air (approx. 2,5 bar) Check that there is no any defarmation on the burner. If this is not the case, replace the burner.

10.Use a vaccum cleaner to clean combustion chamber of the heat exhanger. if neccassry, clean with a small stiff bristle, brush or use the special cleaning tool (supplied optional). Compressed air can also be used but care should be taken to ensure disturbed dust etc... does not contaminate the rest of boiler and controls.

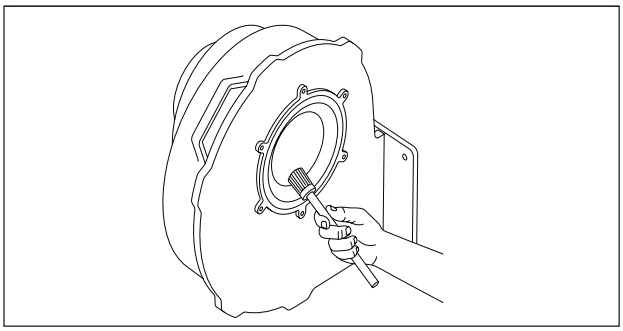
11.To re-assemble, perform the above actions that mentioned



Th e boiler contains ceramic fiber materials.
Use care when handling these materials per instructions in the Service Manual.
Failure to comply could result in severe personal injury.

Clean fan

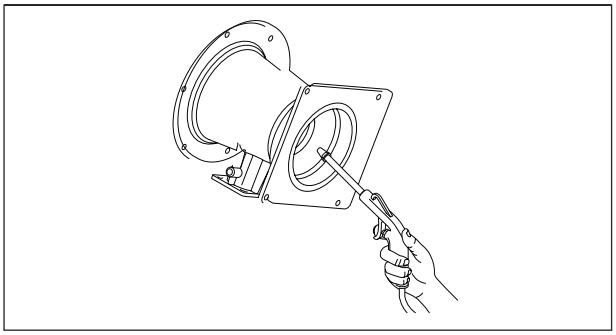
If deposits have been building up on the fan blades, carefully clean the blades one by one with a soft brush until the material of the blades is visible again. Work consistently in cleaning the blades, and do not use too much force or else the fan may get out of balance and run irregularly.



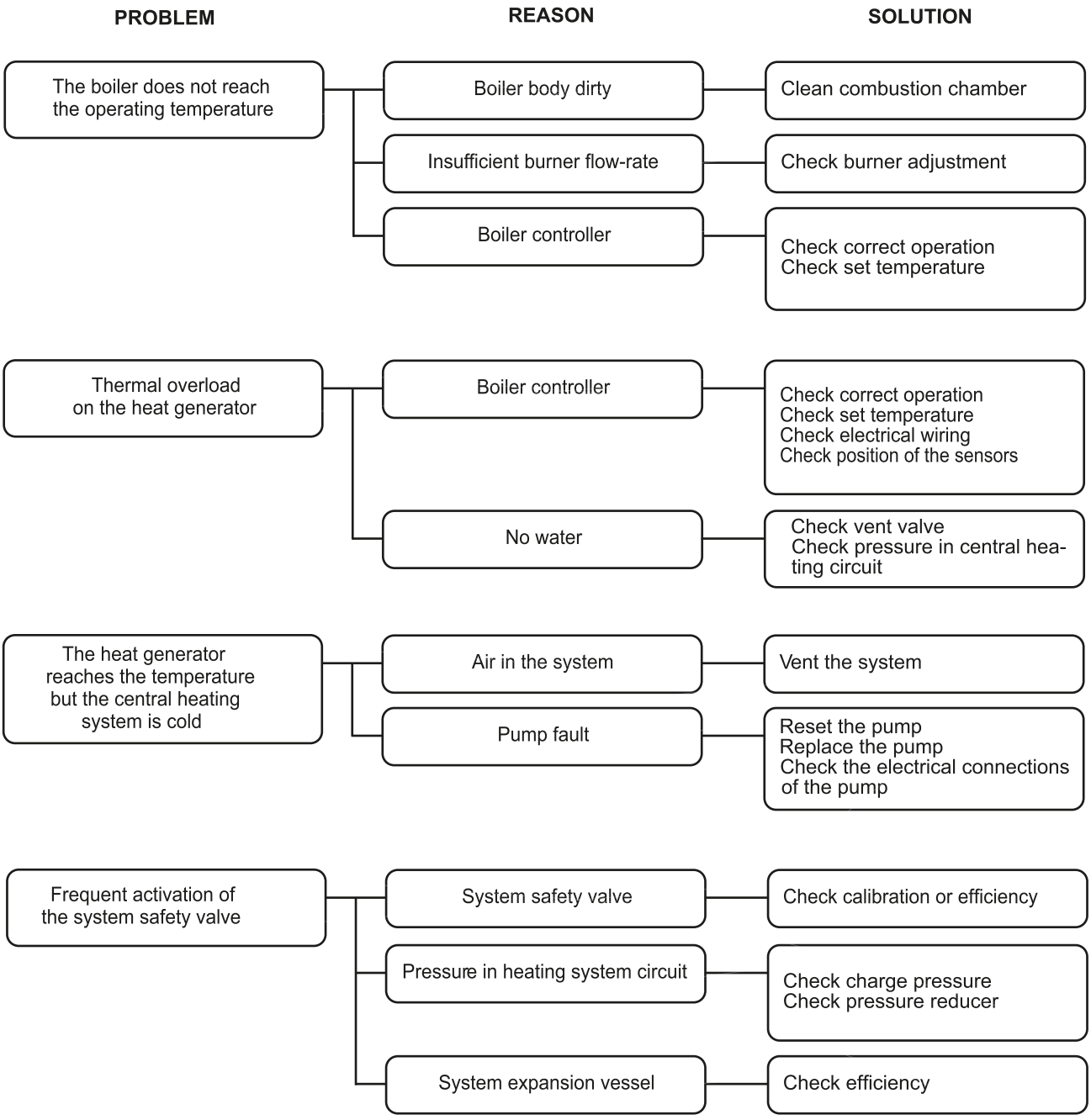
Clean the venturi

Use compressed air or a synthetic brush to clean venturi

– Make sure that the silicon hose between gas valve and venturi is clear and in good condition.



PROBLEM	REASON	SOLUTION
Smell of gas	Gas supply circuit	Check the tightness of the joints and that the pressure test points are closed
Smell of unburned gas	Flue gas circuit	Check: - The tightness of the joints - The absence of obstructions - The quality of combustion
Irregular combustion	Burner gas pressure	Check adjustment
	Diaphragm installed	Check diameter
	Condition of the burner and exchanger	Check they are clean
	Exchanger openings blocked	Check the openings are clean
	Fan fault	Check operation
Delays in ignition with pulsating operation of the burner	Burner gas pressure	Check adjustment
	Ignition electrode	Check positioning and condition
The boiler becomes dirty in a short time	Combustion	Check flame colour Check combustion adjustments
The burner does not start when recieiving the signal from the boiler controller	Gas valve	Check that 230 V AC is pr esent at the terminals on the gas valve; check wiring and con - nections
The boiler does not start	No power supply (the display is blank)	Check: - electrical connections - fuse
The pump does not start	Pump fault	Reset the pump Replace the pump Check the electrical connections of the pump


PROBLEM
REASON
SOLUTION
The boiler does not reach the operating temperature
Boiler body dirty
Clean combustion chamber
Insufficient burner flow-rate
Check burner adjustment
Boiler controller
Check correct operation
Check set temperature
Thermal overload on the heat generator
Boiler controller
Check correct operation
Check set temperature
Check electrical wiring
Check position of the sensors
No water
Check vent valve
Check pressure in central heating circuit
The heat generator reaches the temperature but the central heating system is cold
Air in the system
Vent the system
Pump fault
Reset the pump
Replace the pump
Check the electrical connections of the pump
Frequent activation of the system safety valve
System safety valve
Check calibration or efficiency
Pressure in heating system circuit
Check charge pressure
Check pressure reducer
System expansion vessel
Check efficiency

GAS BOILER COMMISSIONING CHECKLIST

BOILER SERIALNo: _____ ***BOILER MODEL:*** _____

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

TIME & TEMPERATURE CONTROLTO HEATING	ROOM T/STAT& PROGRAMMER/TIMER	☐	PROGRAMMABLE ROOMSTAT	☐
TIME & TEMPERATURE CONTROLTO HOTWATER	CYLINDER T/STAT& PROGRAMMER/TIMER	☐	COMBI BOILER	☐
HEATING ZONE VALVES	FITTED	☐	NOTREQUIRED	☐
HOTWATER ZONE VALVES	FITTED	☐	NOTREQUIRED	☐
THERMOSTATIC RADIATOR VALVES	FITTED	☐		
AUTOMATIC BYPASS TO SYSTEM	FITTED	☐	NOTREQUIRED	☐

FOR ALLBOILERS 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 CENTRALHEATING MODE, MEASURE & RECORD

GAS RATE		m^3/hr		ft^3/hr
BURNER OPERATING PRESSURE (IF APPLICABLE)	☐ N/A			mbar
CENTRALHEATING FLOW TEMPERATURE				°C
CENTRALHEATING RETURN TEMPERATURE				°C

FOR COMBINATION BOILERS ONLY

HAS AWATER SCALE REDUCER BEEN FITTED? YES ☐ NO ☐

WHATTYPE OF SCALE REDUCER HAS BEEN FITTED?

FOR THE DOMESTIC HOT WATER MODE, MEASURE & RECORD

GAS RATE		m^3/hr		ft^3/hr
MAXIMUM BURNER OPERATING PRESSURE (IF APPLICABLE)	☐ N/A			mbar
COLD WATER INLETTEMPERA TURE				°C
HOTWATER OUTLETTEMPERATURE				°C
WATER FLOW RATE				lts/min

FOR CONDENSING BOILERS ONLYCONFIRM THE FOLLOWING

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

FOR ALLINSTALLATIONS CONFIRM THE FOLLOWING

THE HEATING AND HOTWATER SYSTEM COMPLIES WITH CURRENTBUILDING REGULATIONS ☐

THE APPLIANCE AND ASSOCIATED EQUIPMENTHAS BEEN INSTALLED AND COMMISSIONED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS ☐

IF REQUIRED BYTHE MANUFACTURER, HAVE YOU RECORDED A CO/CO_2 RATIO READING? N/A ☐ YES _____ CO/CO_2 RATIO

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

THE MANUFACTURER'S LITERATURE HAS BEEN LEFTWITH 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 c ontrols

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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