

INSTRUCTION MANUAL

INSTALLATION AND OPERATION

Gas condensing boiler to support heat pump operation

type:

EXTRA POWER 5

EXTRA POWER 8

EXTRA POWER 12

EXTRA POWER 16

EXTRA POWER 20

DEAR CUSTOMER

Congratulations on choosing a boiler made by **termet**.

We pass on to you a modern, economical, environmentally friendly product that meets the high quality requirements of European standards.

Please read these instructions carefully, as knowledge of the boiler operating instructions and the manufacturer's recommendations is a prerequisite for reliable, economical and safe use of the boiler.

This manual should be kept for the entire lifetime of the boiler.

We wish you satisfaction with our product.

termet

IMPORTANT TIPS

- Read the instruction manual before you install and use the boiler •
- This instruction manual is an integral and essential piece of equipment of the boiler. It should be kept through the entire lifetime of the boiler and read carefully, as it contains all safety information and warnings during installation, use and maintenance which must be observed.
- The boiler is a highly complex appliance. It features a range of precision mechanisms.
- Reliable operation of the boiler depends mainly on appropriate performance of systems that boiler cooperates with such as:
 - gas system,
 - flue gas-air system,
 - central heating system
- The balanced flue system for type C boilers must meet the technical conditions specified in point 3.8 of this manual. Adapters connecting the boiler to the piping system must be provided with test connections.
- Flue gas-air system must be tight. Leaks at flue pipe connections can cause condensate to flood the inside of the boiler. Manufacturer is not liable for damage and malfunction of the boiler arising out from above mentioned reason.
- **Have the boiler installed by a suitably qualified person¹⁾. Ensure that the installer has confirmed in writing the tightness of the gas installation had been checked after connecting the boiler to the system.** The installation and startup of the boiler can only be performed after the completion of construction and installation work in the room where the boiler is to be installed. It is not allowed to install or startup the boiler in a room where construction work is ongoing.
- The air quality and cleanliness of the room where the boiler is to be installed must meet the standards applicable to rooms intended for human habitation.
- Appropriate filters, which are not included in the boiler equipment, must be installed on the central heating and gas systems.
- An example of how to connect the boiler to the system is given in Fig. 3.5.1.
- Defects caused by missing filters on the central heating system and the gas supply will not be rectified under the warranty.
- The central heating system must be thoroughly cleaned and rinsed, as described in point 3.5.2.
- To avoid damaging fossilisation of the flue gas - water heat exchanger and to reduce the risk of failure of other boiler components:
 - prepare the water in the central heating system in accordance with the guidelines described in point 3.5.2. Adequate preparation of the water in the central heating system allows the boiler to operate for many years while maintaining its high efficiency, resulting in lower gas consumption costs.
 - Ensure proper tightness of the central heating system, avoiding the need for frequent refilling with water.
- The initial start-up of the boiler as well as repairs, adjustments and maintenance may only be carried out by an **AUTHORISED SERVICE**.
- The boiler must only be operated by an adult person,
- Do not carry out any repairs or modifications to the boiler yourself.
- Do not cover any supply and exhaust vents.
- Do not store containers with flammable, aggressive substances - highly corrosive - near the boiler.
- Defects in the boiler caused by operation which does not comply with the instructions in this manual cannot be the subject of warranty claims.
- The manufacturer accepts no liability for damages caused by installation or operation errors resulting from failure to follow the manufacturer's instructions and applicable regulations.
- Strict adherence to the instructions in the manual will ensure long-term, safe and reliable operation of the boiler.

NOTICE!

When you smell gas:

- do not use any electrical switches that could cause any spark,
- open the door and windows,
- shut down the main gas valve,
- immediately contact your gas supplier.

In case of any failure you should:

- disconnect the boiler from a power source,
- shut down the gas supply valve,
- cut off a water supply and drain a water from the boiler and also whole central heating system (when there is any risk of freezing of the system),
- drain the water from the system in any case of leakage that could cause a flood,
- contact the nearest **AUTHORIZED SERVICE** or the producer.

¹⁾ A qualified person is understood to be a person who is technically qualified in the field of domestic installation activities necessary for the connection of appliances to the gas, central heating and flue gas installation as stipulated by the applicable regulations and standards.

CAUTION!

Instructions on how to proceed with the initial start-up of condensing boilers.
These instructions should also be followed each time the boiler is drained of water,
e.g. during heating system maintenance or boiler repairs.

**Before proceeding with the procedure for filling the boiler with water
read the installation and operating instructions in detail!**

1. Before starting up the boiler, fill the heating system with water, bleed the radiators and other system components.
2. Check the correctness of connection the electrical cords of boiler (network 230 V/50 Hz) to the network:
L - brown; N - blue; PE - yellow-green. **Do not interchange the L and N cords.**
In case of interchanging the cords, the boiler will enter in failure state, an error code E01 will occur on display.
Mark the cords properly when connected directly to the electrical box, to eliminate the possibility of interchange.
3. **Close the gas cut-off valve!**
4. **Open the isolating valves between the boiler and the heating system**
5. Remove the boiler containment vessel by unscrewing the relevant fixing screws (Fig. 1). Remove the front cover of the boiler by unscrewing the relevant fixing screws (fig. 1).
6. Remove the front cover of the combustion chamber (fig. 2).
7. Close the flow control plug valve (fig.3).
8. Fill the boiler system with water, using the fill valve (mounted on the central heating system).
Open the filling valve slowly to protect boiler and central heating system components from the effects of hydraulic hammer.
9. Run several litres of water through the boiler water system and heat exchanger.
10. Slowly turn off the filling valve.
The gas valve must remain closed!
11. Open the flow control plug valve.
12. Turn on the boiler power supply. Wait for the control unit to go through the start-up procedure, including internal components testing and ventilation of the combustion chamber (time approx. 10 - 30 sec.).
13. According to the boiler manual, set the operating mode to HEAT. Ensure adequate flow of heating water flowing through the boiler (force external circulating pump to operate, and H1 to be energised).
The flow sensor will switch on at values above 5.0 l/min.
14. Because the gas cut-off valve is closed, the boiler controller will display E01 error code (no gas).
However, this will allow the removal of incoming air with the water from the system and the continuous flow of water through the heat exchanger. Leave the boiler in this state for 2-3 min.
15. Clear the E01 error code with the "reset" button.
16. **Turn off the gas** and reset the E01 error code.
17. According to the operating instructions, set the desired boiler operating parameters.

* Depending on the size of the central heating system, the time required to fill the boiler and the system with water may vary, so it is recommended to fill the central heating system in advance.

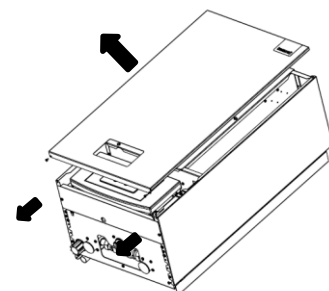


Fig. 1

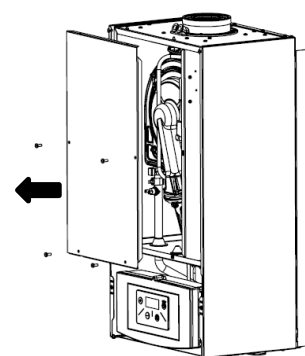


Fig. 2

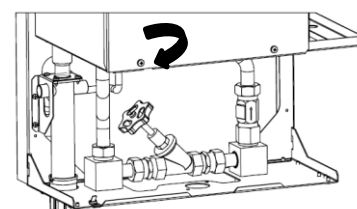


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1. INTRODUCTION

The **EXTRA POWER** type gas-fired condensing boiler is designed for use with a heat pump as a peak load unit. The boiler switches on and reheats the CH buffer when the outside air temperature falls below the bivalent point. In these situations, the heating capacity of the heat pump is less than the building's demand load and the missing heating capacity is supplied by a gas boiler. The boiler also has support for rapid reheating of the DHW buffer in situations of increased demand load for sanitary hot water.

Note:

The **EXTRA POWER** boiler does not have its own circulation pump and 3-way valve and is designed to work with a heat pump installation. The boiler cannot be used in typical central heating installations.

The boiler is equipped with a manifold assembly (so-called BY-PASS) fitted with a flow control plug valve that regulates the heating water flow. Depending on the position of the valve, the heating water flow can be through the appliance only (valve fully closed), or partly through the appliance and partly through the manifold bank. This allows adjustment of the unit's operation for a given heat pump installation.

The **EXTRA POWER** boilers take the air for combustion process from outside the room (in which combustion circuit is sealed) with respect to the residential area of the building in which it is installed - type of installation: C₁₃, C₃₃, C₄₃, C₅₃, C₆₃, C₈₃, C₉₃ or take the air for combustion process from the room that meets appropriate conditions (required by law) - type of installation: B₂₃.

Further information regarding the type – according section 3.7 and EN 15502-2-1:2022+A1:2023.

Note:

EXTRA POWER can work with devices from other manufacturers that have an output for an additional heater (currentless contact). In the case of 230V at the output of an external device, an intermediary relay must be used, the currentless contact of which will override the operation of the **EXTRA POWER**.

2. BOILER DESCRIPTION

2.1. Technical specification

2.1.1. Technical features

- Electronic smooth flame modulation of the burner ;
- Electronic ignition with ionisation flame control;
- Regulation of heating capacity in H1 mode;
- Soft ignition function;
- Gas inlet pressure stabilization

2.2. Design and technical specifications of the boiler

2.2.1. Main units of the boiler

Descriptions of figures 2.2.1.1. ÷ 2.2.1.3.

- 5. Fan,
- 8. Gas unit
- 10. Ignition/flame control electrode
- 11. Burner,
- 13. Flue gas-water heat exchanger
- 15. Temperature limiter as a protection against exceeding the upper limit of heating water temperature,

- 16. Flue gas thermal fuse,
- 18. NTC temperature sensor CH - supply
- 19. Water flow sensor
- 29. Siphon
- 30. Mixing unit
- 31. Flow control valve

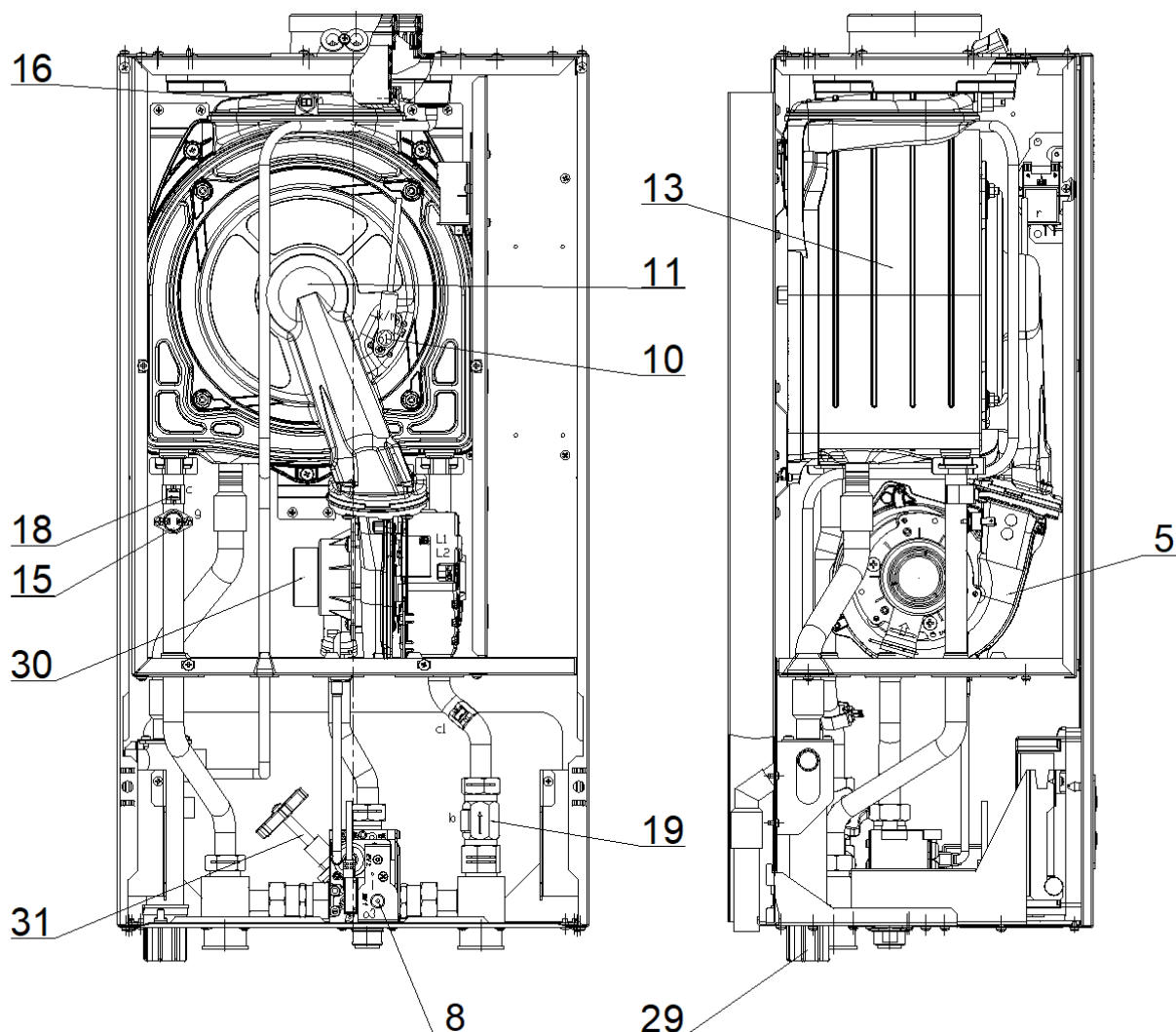


Fig.2.2.1.1. Location of the components in the **EXTRA POWER** boiler

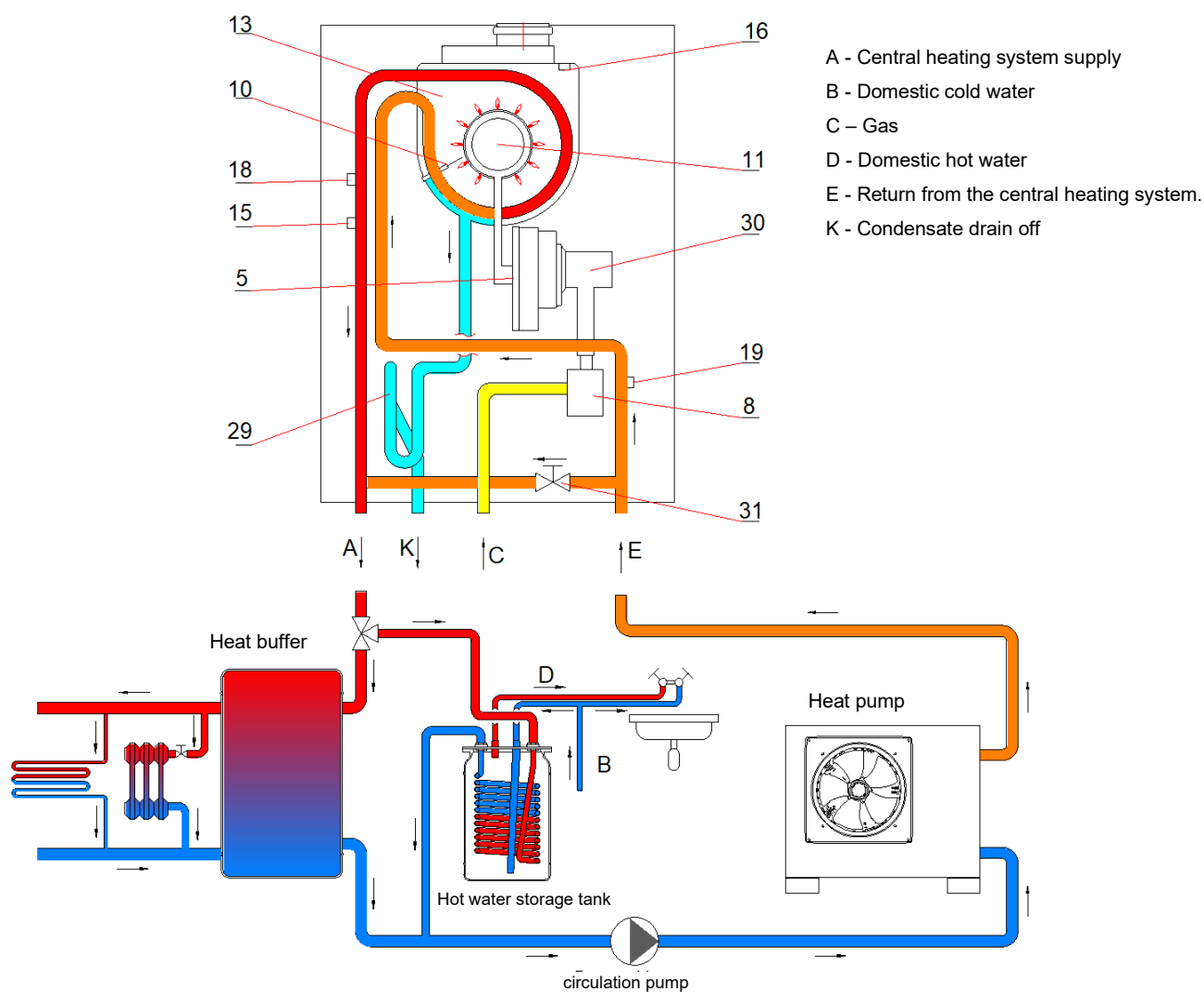


Fig.2.2.1.2. Scheme of boiler operation.

2.2.2. Technical data

Parameter	Unit	EXTRA POWER				
		5	8	12	16	20
		Size H1/H2				
Energetic parameters						
Heating water circuit (H1)						
Boiler thermal output at 80/60°C (modulated)	kW	3.3 ÷ 4.5	3.3 ÷ 7.8	3.3 ÷ 11.8	3.3 ÷ 15.7	3.3 ÷ 19.1
Boiler thermal output at 50/30°C (modulated)	kW	3.7 ÷ 5.0	3.7 ÷ 8.6	3.7 ÷ 13,0	3.7 ÷ 17,3	3.7 ÷ 21.0
Heat load	kW	3.4 ÷ 4.6	3.4 ÷ 8.0	3.4 ÷ 12.0	3.4 ÷ 16.0	3.4 ÷ 19.5
Modulation range	%	74-100	42-100	28-100	21-100	17-100
Boiler efficiency at nominal loads and an average boiler water temperature of 70°C	%	98				
Utility efficiency of the boiler for partial loads and a return water temperature of 30°C	%	108				
Seasonal energy efficiency of space heating η_s	%	93,9	95,5	94,8	95,4	95,3
Seasonal energy efficiency rating for room heating		A				
Utility heat generated: - at rated heat output P_4 .	kW	4,4	7,8	11,7	15,6	19,1
-at 30% of rated capacity P_1	kW	1,5	2,6	3,9	5,2	6,3
Utility efficiency: - η_4	%	88,6	89,9	89,9	89,9	90,4
- η_1		99,5	100,7	99,6	100,2	100,0
Nominal kinetic pressure in front of the boiler for gas: 2E-G20, 2H-G20; 3P-G31, 3B/P-G30	Pa (mbar)	2000 (20); 2500 (25); 3000 (30)				
Maximum water pressure	MPa (bar)	0,3 (3)				
Max heating water temperature	°C	95				
Standard adjustable temperature	°C	40 ÷ 80				
Reduced adjustable temperature		25 ÷ 55				

Heating water circuit with increased capacity (H2)						
Boiler thermal output at 80/60°C (modulated)	kW	3.3 ÷ 19.1				
Heat load	kW	3.4 ÷ 19.5				
Boiler efficiency at nominal loads and an average boiler water temperature of 70 °C	%	98				
Gas consumption ⁽¹⁾ : natural: 2E-G20 – 20mbar liquefied: 3P-G31 – 30mbar	m³/h	0,36 ÷ 2,08				
	kg/h	0,25 ÷ 1,46				
Adjustable temperature	°C	50 ÷ 80				
Environmental protection						
Emissions of nitrogen oxides	mg/kWh	21	24	28	29	35
Emissions of NO _x (natural gas)	class	6				
Ph factor of the condensate		natural gas - 5				
Sound power level L _{WA}	dB	40,6	41,2	42,9	44,6	48,0
Maximum CO level indicating that immediate maintenance, servicing and/or repair is required.		0,10%				
If this issue cannot be resolved immediately, the appliance must be taken out of service. The concentration of CO in the flue gas must always comply with local regulations of the country where boiler is installed.						
Electric parameters						
Type and voltage of electric current	V	~ 230 ±10%/ 50Hz				
Protection rating		IPX4D				
Power consumption (max.)	W	70				
Standby power consumption P _{SB}	kW	0,002	kW	0,002	kW	0,002
Electric power consumption: - at full loads e _{lmax} - at partial loads of e _{lmin} .	kW kW	0,052 0,070	kW kW	0,052 0,070	kW kW	0,052 0,070
Controller classification according to EN 298		B-M-C-L-X-N				
Type of flame sensor		ionization				
The parameters of flue gas						
Fan characteristics						
Exhaust mass flow at full loads	kg/h	8,3	13,3	19,9	26,6	33,2
Exhaust gas mass flow at partial loads	kg/h	2,8	3,6	4,1	4,6	5,0
Minimum flue gas temperature at minimum capacity	°C	38,4	38,8	40,2	44,1	44,3
Maximum flue gas temperature at maximum capacity	°C	84,7	85,5	87,6	89,8	91,2
Time parameters						
Standstill time to prevent cycling of the boiler	minutes	3				
Assembly dimensions						
Connection to the chimney duct (section 3.7 and Table 7.1)	mm	Coaxial Ø80/Ø125, Coaxial Ø60/Ø100 or 2 separate Ø80 x Ø80 (with TWIN flue adapter)				
Gas connection	inch	G3/4				
Water connection	inch	G1				
Overall dimensions	mm	775x400x 310				
Boiler weight	kg	29				

⁽¹⁾The consumption is given for a reference gas at normal conditions (15°C, pressure 1013 mbar) taking into account the useful efficiency of the boiler at a return water temperature of 30°C. The values given are indicative.
The manufacturer reserves the right to make changes in the construction of the boiler, which are not mentioned herein and have no influence on the technical and functional characteristics of the product.

2.3. Protection equipment

- Protection against gas outflow,
- Protection against explosive gas switching on,
- Protection against exceeding the maximum operating temperature in the heating water system,
- Protection against exceeding the upper limit temperature of the heating water,
- Monitoring of correct fan operation. Fan failure is recognised when the current fan speed is different from that expected by the boiler controller..
- Protection against exceeding the upper flue gas temperature (115°C).

Errors that do not require manual resetting will cause the boiler to return to normal operation once the fault has self-actuated, see section 5.8 boiler diagnostics.

Note:
In case of noticing repeated emergency boiler shut-down by any of the protection it is necessary to contact an Authorized Service in order to check the reason of boiler switching off and to repair it.

It is forbidden to make any unauthorized modifications in the protection system.

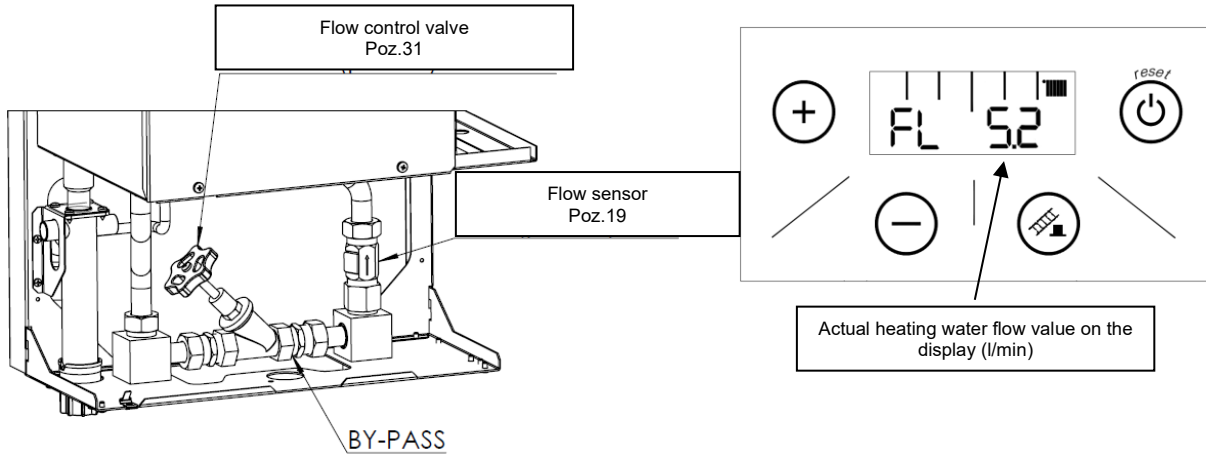
2.4. Operation description

2.4.1. Way of heating the water for central heating system

The boiler switches on the burner when a heating request signal appears at the H1 or H2 input (with priority). The following series of actions then follows:

- inspection of the heating water flow - (the flow is provided by an external pump which is not boiler equipment),
- in order to startup the peak unit it is necessary to ensure a heating water flow of min **5.0 ÷ 6.0 l/min**; the flow is controlled by a flow sensor built in the unit (item 19),

Note:
In the case of inadequate heating water flow, throttle the flow in the by-pass system by tightening the flow control valve (item 31) until the appropriate value is reached (the flow control valve is factory set in the open position).
To inspect the value of the current heating water flow rate (symbol "FL" on the display) in the unit, briefly press the reset button to display additional operating parameters of the unit.



- fan power supply (item 5),
- ignition sequence follows,
- The boiler then begins to regulate the fan speed so as to achieve the desired heating capacity H1 or H2.

When the H1 signal is active the boiler heats with the capacity set using the buttons (p.5.5) in the range from the minimum capacity to the capacity specified by parameter P3. During operation, the boiler does not maintain a constant heating water temperature. When the heating water temperature rises to the temperature specified by parameter P29, the boiler gradually reduces its capacity to the minimum output. If the heating water temperature exceeds the value set by parameter P29 by the hysteresis value set by parameter P20 (not more than 85°C if P8=0 or P8=2 or 60°C if P8=1), the burner is shutdown. The burner will restart after the time set by parameter P25 and if the heating water temperature drops by 5°C below the temperature set by parameter P29.

When signal H2 is active the boiler heats at the capacity specified by parameter P2. During operation, the boiler does not maintain a constant heating water temperature. When the heating water temperature rises to the temperature specified by parameter P21, the boiler gradually reduces its capacity up to the minimum output. If the heating water temperature exceeds the value set by parameter P21 by 5°C, the burner is shutdown. The burner will be switched on again when the heating water temperature falls by 5°C below the value set by parameter P21.

The boiler switches off the burner when the heating request signal disappears from inputs H1 and H2. When the burner is shutdown, the fan runs for about 15s.

3. BOILER INSTALLATION

The boiler must be installed by an authorized service company accordingly with local regulations. After the boiler installation check the tightness of all connections of gas, water and flue gas system. Service company is responsible for the proper installation of the boiler.

Installation of the boiler must be made so as not to cause any tension of the installation that may cause increased volume of work.

After exploitation of the boiler, disassembled product transfer to a specialized unit for utilization.

3.1. Requirements of boiler installation

3.1.1. The regulations on the water installation, gas and the flue gas system

Water, gas and flue gas systems must meet local regulations as well as use of the gas, ventilation and flue gas installation.

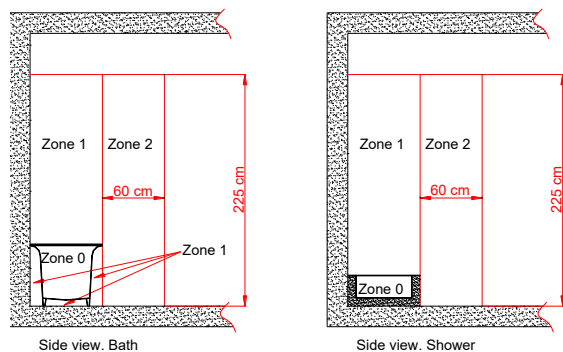
Using of gas appliances, flues and ventilation by the user should be consistent with local requirements relating to the technical conditions of use the residential buildings.

Before installing the boiler the consent from the District Department of Gas, Chimney Sweep Company and Building Administration must be obtained.

Gas appliances supplied with liquefied gas must not be installed in room where floor is below ground level.

If you use liquefied gas 3B/P it is recommended that the temperature in a room where a gas cylinder will be operated is not less than 15°C.

3.1.2. Regulations related to the room



Requirements for premises where gas appliances are installed shall be in accordance with local regulations. The room where the boiler is to be installed should ensure the air supply and venting system necessary for gas combustion in accordance with local regulations. The location of ventilation should not cause the water freezing. The temperature in the room where the boiler is installed should be higher than 6°C.

The room should be protected against freezing, free from dust and aggressive gases. It is forbidden to install the device in a laundry rooms, drying rooms and in varnish, cleaners, solvents and sprays storages.

Boiler with a thermal capacity above 30 kW should be installed in a technical room.

Place of installing a boiler in a room equipped with bath or shower with a pool and the way of connecting it to the electrical system- in accordance with the requirements of HD 60364-7-701:2007. The device covered by this instruction has a degree of electrical protection provided by the housing IPX4D. Boiler equipped with power cord with a plug can be installed in zone 2 or further - must not be installed in zone 1.

In zone 1 can be installed only if it is permanently connected to a power source in accordance with HD 60364-7-701:2007.

Fig. 3.1.2.1. Dimensions of zones in rooms containing a bathtub or shower with a pool

3.1.3. Requirements for the electrical installation

The boiler has been designed for operation with single-phase alternating current with rated voltage of 230 V/50 Hz.

The boiler has been designed as a "class I" device and must be connected to an electrical outlet with ground terminal in accordance with HD 60364-4-41:2007.

The main socket from which boiler is powered must complies with HD 60364-6-61:2016

Pay attention on correctly connecting the power cord. If power cord is connected incorrectly:

- the boiler enters in failure state
 - on display occurs E01 (→section 5.8.4)
- In this case change cords "L" and "N" in the socket.

When the correct connection is detected, the boiler unlocks automatically.

The boiler has a degree of electrical protection provided by the housing - IPX4D.

In case the boiler is permanently connected to the power supply the electrical installation should be equipped with means of disconnecting the boiler from the power source, it should be execute by junction box. The junction box must be equipped with protection degree appropriate for the defined assembly zone.

In order to connect the boiler to the junction box, it is recommended to:

- cut the power cord to a suitable length for connection to the box
 - pull off cable insulation
 - put the cable-end sleeve with the appropriate diameter
- This prepared cables connect according to the following diagram

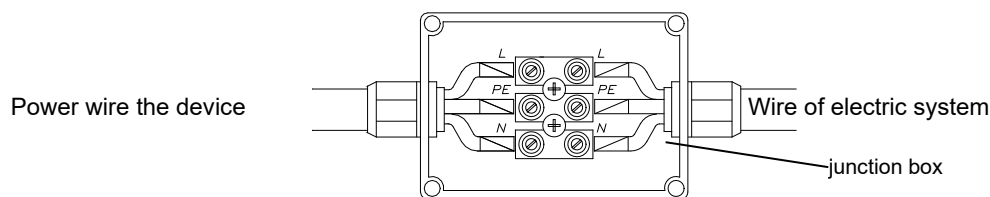


Fig. 3.1.3.1. Wire colours: L - brown; N - blue; PE - yellow-green

3.2. Preliminary check activities

Before starting the installation work, check:

- whether the boiler is factory designed for the type of gas supplied from the gas system. The type of gas which the boiler is adjusted to is specified on the rating plate on the cover of the boiler;
- whether the water system and radiators have been properly rinsed with water in order to remove rust, fillings scale, sand and other dusts that could disturb the proper operation of the boiler (for example increase the water flow resistance in central heating system) or to pollute the heat exchanger,
- whether the mains voltage has a value of 230V and that the socket has an efficient safety contact (complies with HD 60364-6-61:2016).

3.3. Mounting the boiler on the wall

Hang the boiler on hooks fastened durably in the wall using a beam placed in upper part of the boiler. The boiler shall be so located as to permit the eventual repair without any need to dismantling from the installation.

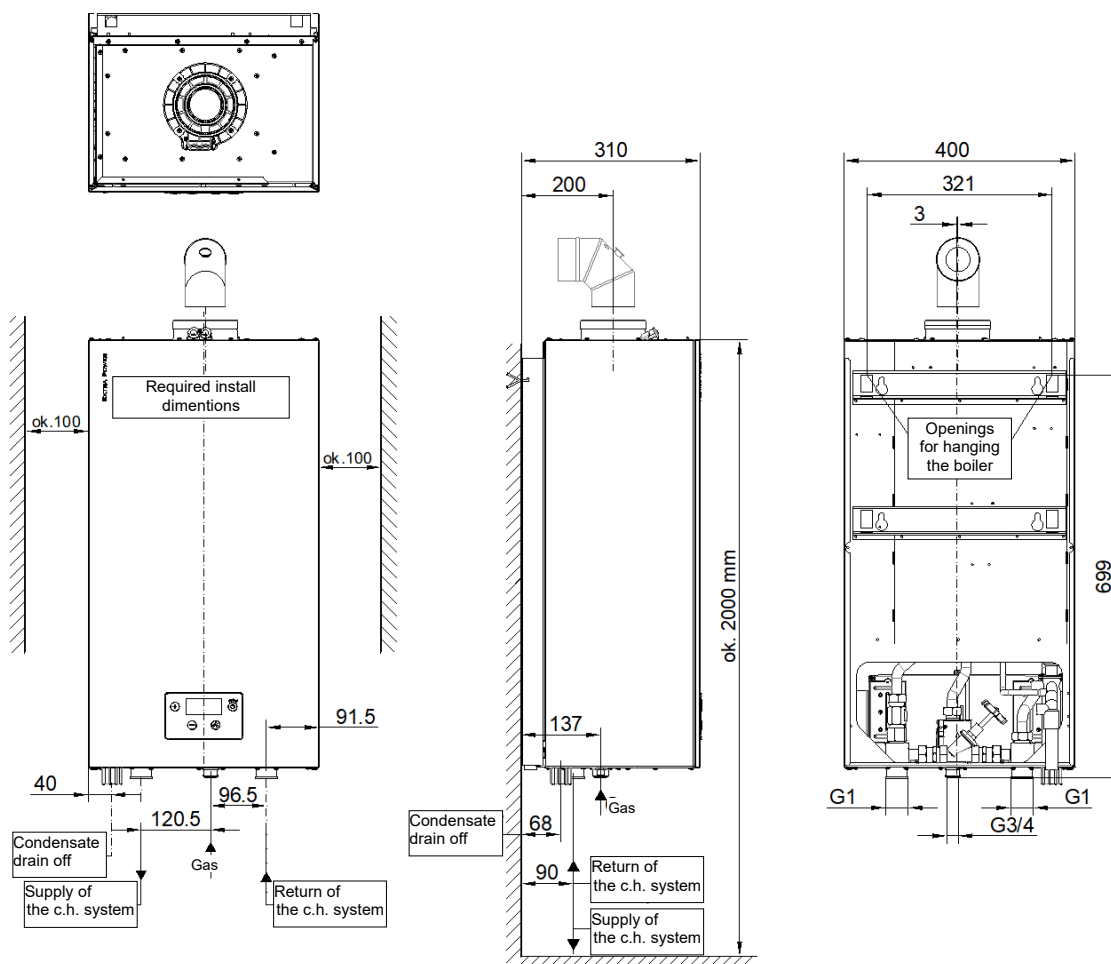


Fig. 3.3 1. Boiler installation dimensions

3.4. Connection to the gas installation

Connect a gas supply pipe directly to the connector of the boiler gas unit using of connector subassembly no 0696.00.00.00 (in boiler equipment).

It is necessary to install a gas filter on the gas supply pipe. This filter is not included in the standard boiler equipment. The gas filter is necessary for a proper operation of a gas unit and a burner.

Install a cut-off valve on the gas pipe in an accessible place.

3.5. Connection of the boiler to the heating system.

- Power supply and return connectors of the central heating boiler should be screwed to the installation. Location of the connectors → Figure 3.3.1.
- **Install a water filter on a water return from central heating system (in front of the connection with the pump). The filter is not included in standard boiler equipment.**
- The central heating system should be thoroughly rinsed out before the boiler is connected.

- In the central heating system it is permitted to use as a heat carrier any antifreeze fluids which can be used in central heating systems.
- The cut-off valves needs to be installed between the boiler and central heating system so that the boiler could be dismantled without draining the system.

After boiler installation:

- Fill the heating system with water,
- Vent the installation of central heating and boiler,
- Check the tightness of boiler connections in central heating system.

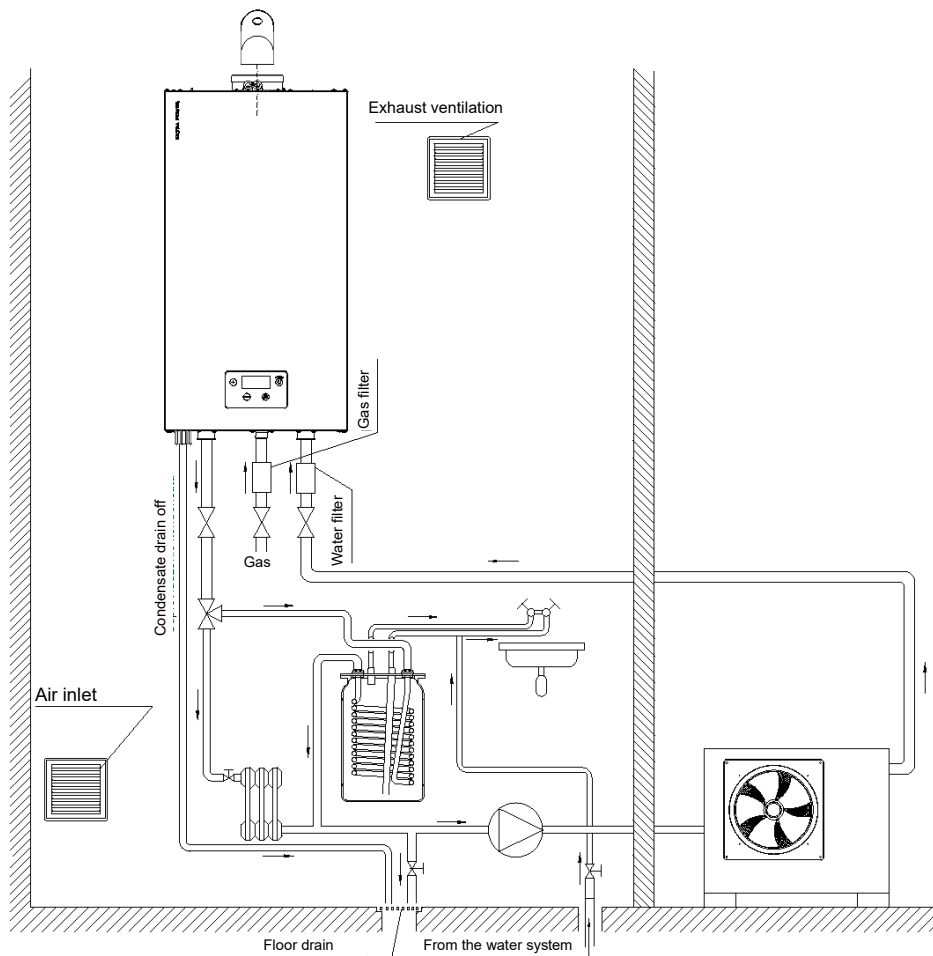


Fig. 3.5 1. Boiler installation requirements

3.5.2. System cleaning and water treatment for filling heating systems

Every component of C.H. system is threatened by limestone deposits, corrosion and other dangerous processes. Boiler is the most expensive part of C.H. system and it is necessary to protect its components like heat exchanger and other parts against harmful processes. Correct C.H. circuit preparation for using relies on making two operations: cleaning the CH system and treating the water that fills the system.

System cleaning

In new installation it is possible to find some remains of industrial process soldering and welding remains, flux, oil and grease residue among others. Older installations usually have products of corrosion in them. It necessary to clean up the systems with a water to remove the remains before boiler is mounted. Afterwards, system should be cleaned with appropriate chemicals. After that it is necessary to rinse the installation with water.

Water treatment to fill the system

For filling the system, it is recommended to use water with parameters: pH 6,5- 8,5, hardness < 10 °n (~ 18°F). Do not use demineralised or distilled water. To ensure protection against rocks despositing, corrosion, it is recommended to use a special inhibitor. Antifreeze liquid can also be used.

Low-temperature circuits

In the low-temperature area, it is recommended to treat the water.

Filtration technique

Additionally, in order to ensure the quality of operation heating system, it is recommended to mount a modern filters, which works on the principle of the magnetic and cyclone effect.

Notice:

- method and amount of use specific products for system cleaning and water treatment should be in accordance to the product manufacturer's instruction.
- above steps should be made by the authorized installer or service technician.

3.6. Condensate outlet

Condensate formed during the combustion process must be drained according the following conditions:

- The condensate drainage system must be made of corrosion-resistant material.
- The connection to the condensation drain must not be blocked.
- In order for condensate to drain along the flue gas path, all horizontal flue pipes must be installed with a slope of 3° (52mm/m).

The EXTRA POWER boilers can be installed as type C or B equipment, whereas:

- Type C – it is equipment in which the combustion system (air supply, combustion chamber, heat exchanger and combustion products discharge) is sealed in relation to the room where the equipment is installed.
 - C13 – equipment designed to be connected with ducts through a horizontal terminal that simultaneously supplies air to the burner and discharges combustion products to the outside through openings that are concentric or close enough so that wind conditions do not affect them.
 - C33 – equipment connected with two ducts to a vertical terminal that supplies combustion air and discharges combustion products through openings that are either concentric or close enough so that wind conditions do not affect them.
 - C43 – equipment connected by two ducts to a common chimney system designed for more than one piece of equipment. This common system consists of two ducts connected to a terminal that simultaneously supplies combustion air and discharges the combustion products to the outside through openings that are concentric or close enough so that wind conditions do not affect them.
 - C53 – equipment connected by separate ducts to separate terminals that supply combustion air and discharge combustion products. These ducts may terminate in zones with different pressures.
 - C63 – equipment designed for connection to a separately approved and sold air supply and combustion products discharge system. The appliance is not intended for connection to common overpressure duct system (with more than one appliance connected to a single flue duct).
 - C83 – equipment connected by one duct to a single or common chimney system. The chimney system consists of a single duct with a natural draught that discharges the combustion products. The equipment is connected by a second duct to a terminal that supplies combustion air from outside the building.
 - C93 – equipment designed for connection of the flue pipe to a vertical terminal and the air duct to an existing vertical pipe. The terminal simultaneously supplies fresh air to the burner and discharges combustion products to the outside through openings that are concentric or close enough so that wind conditions do not affect them.
- Type B – it is equipment to be connected to a flue gas discharge duct that discharges the combustion products outside the room in which the equipment is installed. Combustion air is drawn from the room.
 - B23 – an equipment designed to be connected to a flue gas discharge duct that discharges the combustion products outside the room in which the equipment is installed. Combustion air is drawn from the room.

Caution:

When using concentric coaxial pipes Ø80/Ø125, it is necessary to use a concentric reducer Ø60/Ø100 x Ø80/Ø125 to the boiler adapter Ø60/100 or replace the installed adapter Ø60/100 and reduction ring Ø60/80 with an adapter Ø80/Ø125 (insert the flue pipe Ø80 as far as it will go to the heat exchanger). Adapters connecting the boiler to the piping system must be provided with test connections.

The methods of connecting the boiler to the balanced flue system are shown in example figures 3.7.

Individual components of the balanced flue systems are consistent with table 7.1.

The balanced flue kits are sold according to the current TERMET offer. Kit components are not included in the boiler equipment.

To ensure proper operation of the boiler with a balanced flue system, it is necessary to:

- maintain a distance of no more than 1.5m between two supports of the horizontal installation of the balanced flue system,
- limit the maximum length of the external terminal ducts to the length not exceeding 10 times their diameter, maximum 1 m,
- use the balanced flue systems with plastic flue pipe only inside the building,
- use appropriate duct dimensions (diameter, max length, elbow resistance) depending on the flue gas system used. The dimensions of the ducts used should be compliant with those specified in table 3.8. as appropriate.

Table 3.7.a

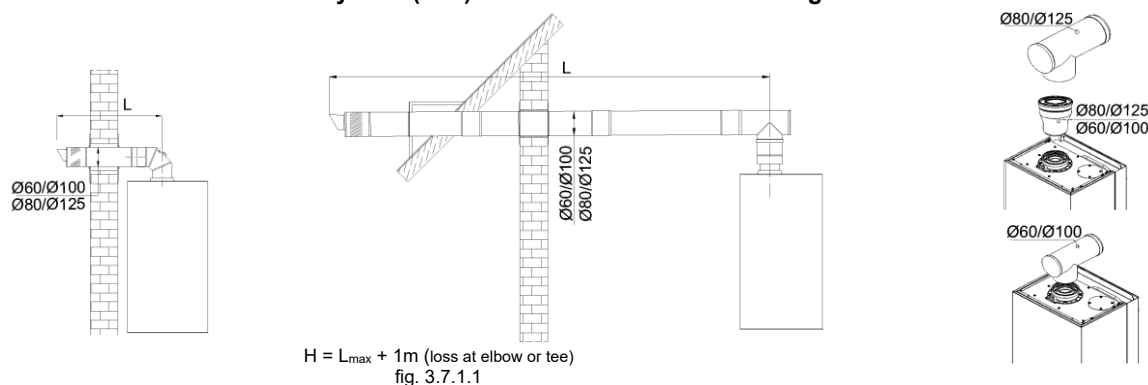
Type of boiler	Concentric system		Separate ducts system
	Ø60/Ø100	Ø80/Ø125	Ø80xØ80
	Flue duct length H		
EXTRA POWER	18 m	25 m	50 m

The resistance of flue gas flow at each elbow depending on the bend angle and the associated reduction in maximum duct length is shown in the table below.

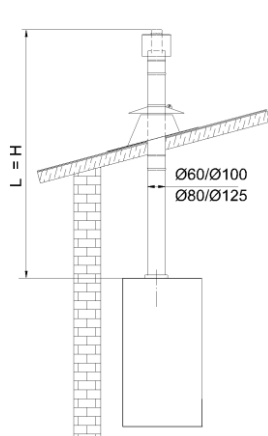
Table 3.7.b

Reduction of the maximum length of the balanced flue system depending on the elbow used.		
15° elbow	45° elbow	90° elbow
0.25 m	0.5 m	1 m

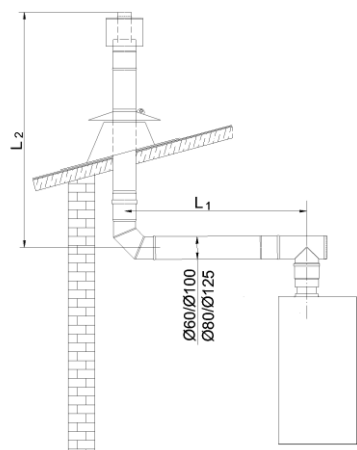
3.7.1 Concentric balanced flue system (C13) with a horizontal outlet through an external wall or roof.



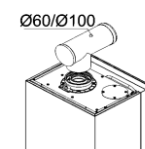
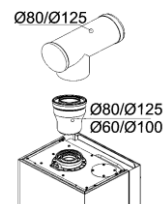
3.7.2 Concentric balanced flue system (C33) with a vertical outlet through flat and sloping roofs.



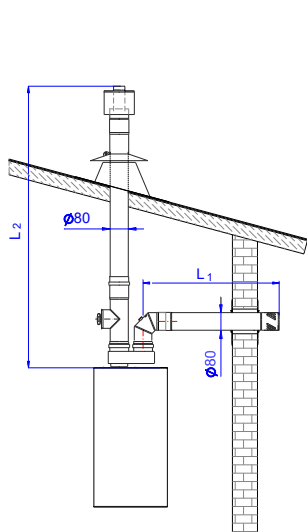
$H = L$
fig. 3.7.2.1



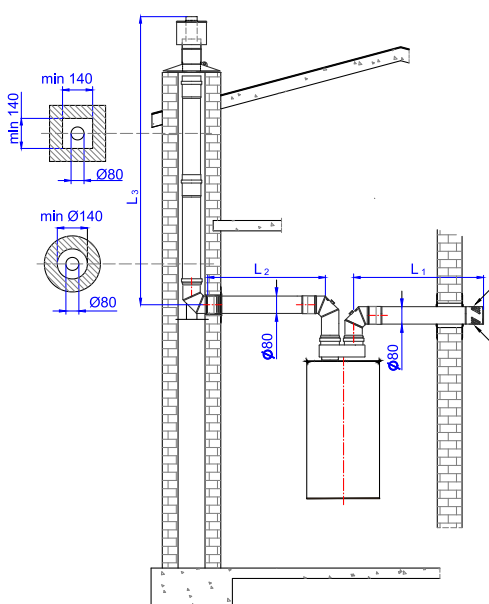
$H = L_1 + L_2 + (1\text{m (loss at elbow)} + 1\text{m (loss at tee)})$
fig. 3.7.2.2



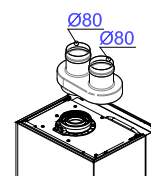
3.7.3 Balanced flue system (C53) with separate flue gas discharge ducts and air supply ducts



$H = L_1 + L_2 + 1\text{m (loss at elbow)}$
fig. 3.7.3.1

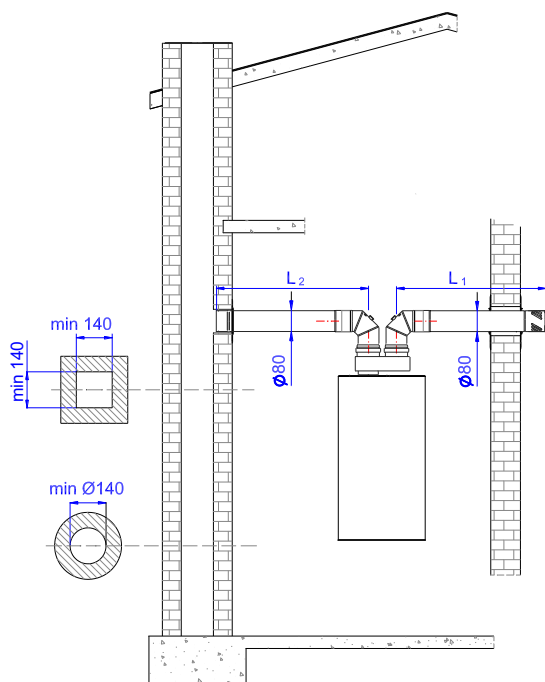


$H_{\max} = L_1 + L_2 + L_3 + (1\text{m} + 1\text{m} + 1\text{m}) \text{ (loss at elbows)}$
fig. 3.7.3.2



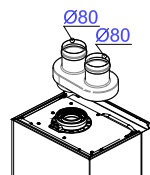
NOTE:
Install the horizontal air pipe at a $\sim 3^\circ$
inclination angle toward the boiler.

3.7.4 Balanced flue system (C83) with separate ducts, flue gas discharge to be connected to a single or common chimney system with a natural draught that discharges the combustion products and supplies air from outside the building.



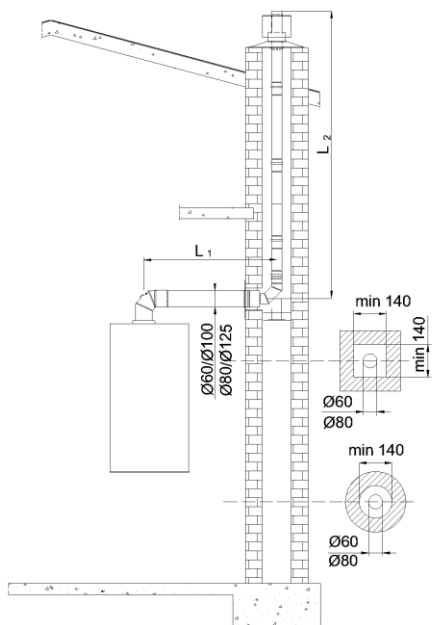
$$H = L_1 + L_2 + (1\text{m} + 1\text{m}) \text{ (loss at elbows)}$$

fig. 3.7.4.1



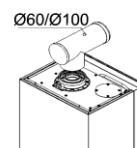
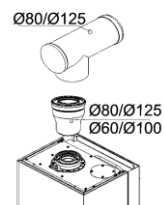
NOTE:
Install the horizontal air pipe at a ~3°
inclination angle toward the boiler

3.7.5 Concentric balanced flue system (C93) to be connected to a flue gas discharge duct laid in a shaft. Combustion air is supplied through a shaft.



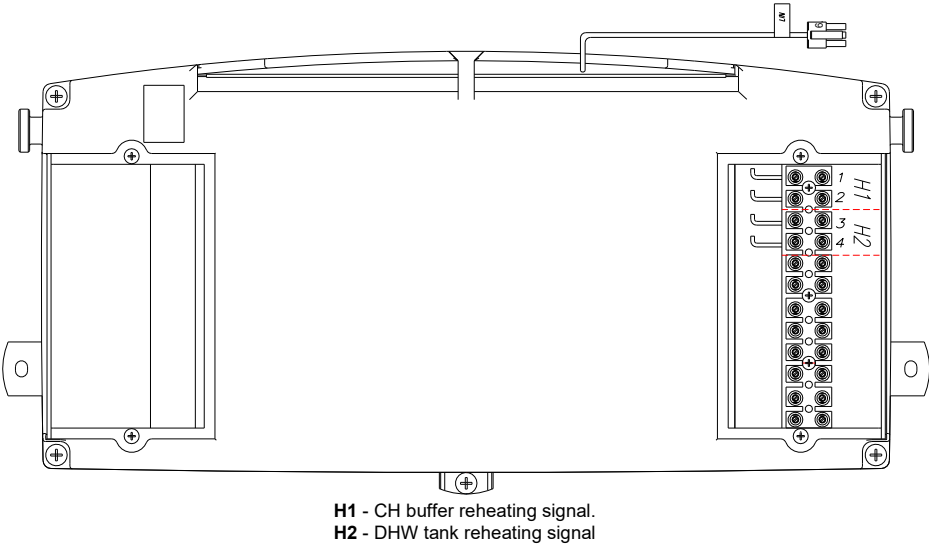
$$H = L_1 + L_2 + (1\text{m loss at elbow}) + 1\text{m (loss at tee)}$$

fig. 3.7.5.1



3.8. Connection of additional devices

On the back of the controller there are two flaps under which there is access to electrical terminals. To connect an additional device unscrew the appropriate flap, put the cable through the bushing in the flap and connect the ends of the wire to the correct terminals.



Drawing .3.8.a. Electrical terminals of the controller

3.8.1. Connection of the HEAT signal from the heat pump to inputs H1 and H2

The boiler has two inputs that can be controlled by independent currentless control contacts

- H1 input (terminals 1 and 2) - activates operation to reheat water in the CH buffer.
- H2 input (terminals 3 and 4) - activates operation with the target of reheating water in the DHW tank

The change of heating circuits must be provided by an external 3-way valve, which is not boiler equipment. The connection shall be made according to the heat pump manufacturer's instructions using a suitable length of 2-wire cable(2x0.5mm², 50m max)

The connection of the heat pump to the boiler is carried out by an AUTHORISED SERVICE or an AUTHORISED INSTALLER.

4. BOILER ADJUSTMENT AND PRELIMINARY SETTINGS

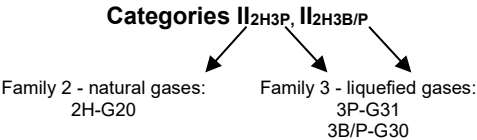
4.1. Preliminary notes

The purchased boiler is factory-set to operate with the gas specified on the rating plate and in the boiler's documentation.

If it is necessary to change the parameters or adjust the boiler for another type of gas, the adjustment and setting of the boiler operating parameters can only be carried out by an AUTHORISED SERVICE. This procedure is not covered by warranty repairs.

4.2. Boiler adjustment for combusting a different type of gas

The boiler can be adjusted to combust other types of gas, but only the type for which the boiler has been certified. Gas types are indicated on the rating plate in the designation index:



Example of a completed label

termet		After adjusting the boiler to another type of gas you should: • Cross out on the rating plate the type of gas for which the boiler was adjusted at the factory, • Enter the designation of the gas type for which the boiler has been adjusted and the heat load set on the corresponding label attached to the boiler. The entry must be made legibly and indelibly, • The completed label, as described above, must be affixed to the cover next to the rating plate.
Gas setting:	liquefied	
Gas designation:	3P	
Gas pressure [mbar]	30	
Set nominal heat load [kW]		

4.3. Fan characteristics

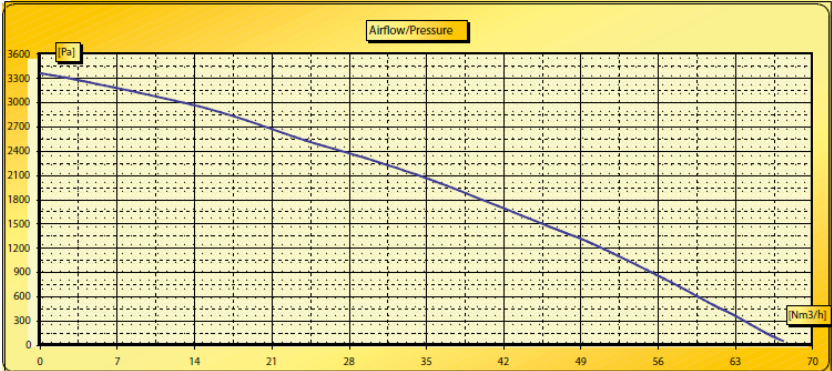


Fig.4.3.1. NG40 fan characteristics

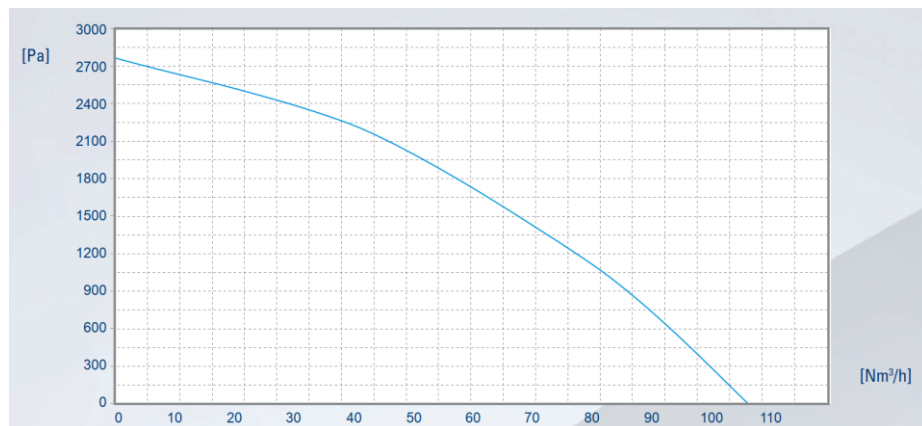


Fig.4.3.2. NG40E fan characteristics

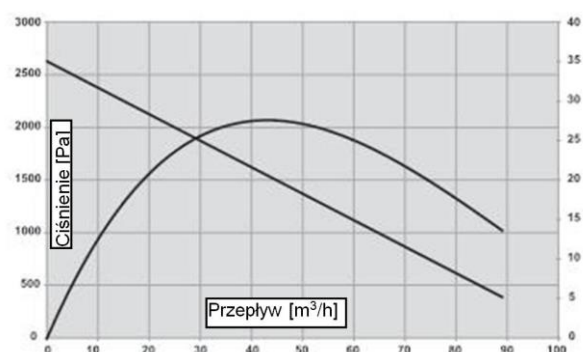


Fig.4.3.3. PX 118 fan characteristics

5. STARTUP AND OPERATION OF THE BOILER.

5.1. Start-up of the boiler

After the boiler has been installed, inspected for correctness and tightness of its connection and prepared for operation in accordance with this manual and applicable regulations, the first start-up and training of the user in the operation of the boiler and its safety devices and in how to operate it may only be carried out by an AUTHORISED SERVICE.

5.2. Switching on and operation

All boiler functions are carried out by an electronic control board. Operating mode and setpoints can be changed using 4 buttons. The current operating status of the boiler is illustrated on a dedicated LCD display.

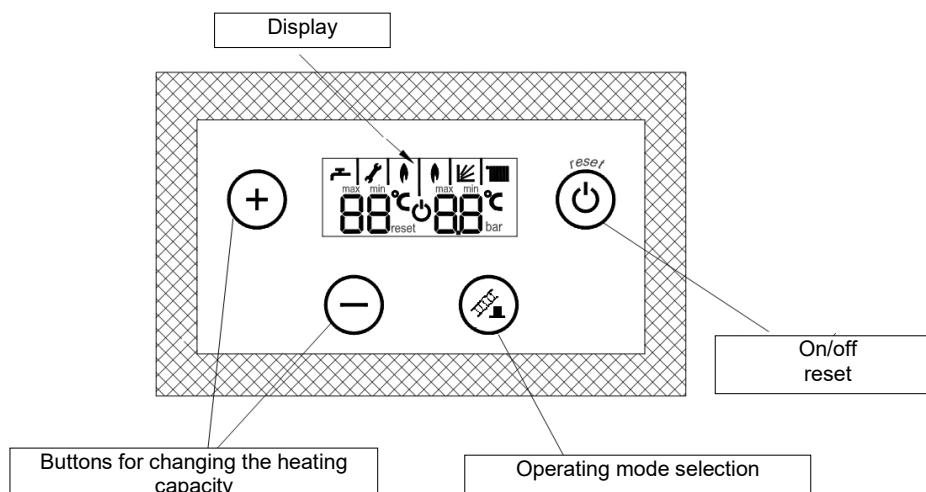
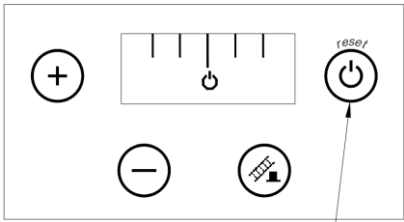
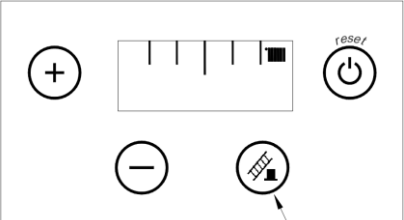
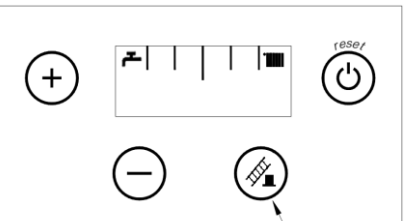
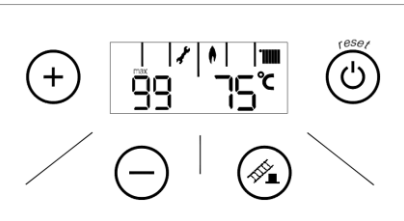


Fig. 5.2 1. Control panel

- Switch the boiler on,
- Open the gas valve and water valves,
- Wait for the boiler to go into auto-diagnosis mode
- Set the operating mode HEAT (p.5.3)
- Set the desired heating capacity using the {+/-} keys between 0% and 99%.
- If the heat pump provides an adequate flow of heating water and gives a heater signal, the spark generator will ignite the gas coming out of the burner.

5.3. Controller operating modes

Operating mode	Display	Operating mode selection	Functions performed
STAND-BY		To switch the boiler on or off, hold down the reset button for approx. 2 sec.	Boiler does not meet heat demands
HEAT H1		Holding down the  button for approximately 1 second changes the operating mode to SERVICE	H1 heating (triggered by H1 input)
HEAT H2			H2 heating (triggered by H2 input)
TECHNICAL SERVICE		Pressing the reset button returns to HEAT mode	service function

5.4. Operation status indicators

When the power is switched on, the display appears sequentially:

- **b1** and the software version number of the control board,
- **b2** and the software version number of the display board,
- **1F 02** indicating the type of boiler configuration

- flashing  symbol with **max** indicating that the start-up procedure has been executed.

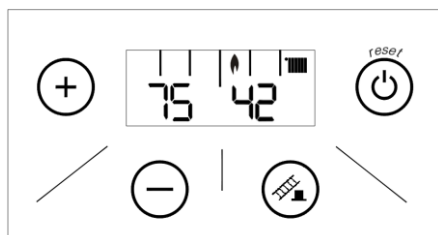
Once the start-up procedure is complete, the controller goes into a state of readiness to accept user commands.

Symbol on the display	Signalling	Notes
	RESTART OF THE CONTROLLER	The controller started working after power-up or after resetting the emergency lock.
	HEAT MODE H1 or CHANGE IN HEATING CAPACITY H1	When changing the heating capacity setpoint, the symbol flashes together with the setpoint value.
	H2 HEAT MODE	H2 heating mode indication.
	THE BURNER IS RUNNING	Right flame: H1 heating operation. Left flame: H2 heating operation.
MAX	MAXIMUM SETPOINT	The maximum setpoint has been reached. After exiting the setpoint change mode, the symbol is extinguished.
MIN	MINIMUM SETPOINT	The minimum setpoint has been reached. After exiting the setpoint change mode, the symbol is extinguished.
flashing 	PAUSE IN C.H. HEATING	The symbol displayed indicates a standstill of the boiler for the time specified by parameter P25 (default: 3 min) for cooling down the flue gas/water heat exchanger after exceeding the heating water temperature specified by parameter P29 by the hysteresis value (parameter P20, default: 5°C) from the setpoint.
	SERVICE FUNCTION PARAMETER ADJUSTMENT EMERGENCY SIGNALLING	The symbol can signal different situations. Appears during: - the active service functions - controller configuration - emergency signalling p.5.8.2

Symbol on the display	Signalling	Notes
RESET	BOILER SHUTDOWN WITH INTERLOCK	Once the cause of the fault has been disposed of, use the reset button to resume boiler operation.

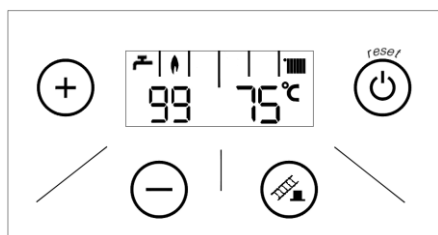
5.4.1. Signalling of start of heating in H1 mode and the display during H1 mode operation

At the start of heating, a flashing CH temperature target for mode H1 is displayed for 4 seconds on the right-hand display field . Then the heating capacity setpoint is displayed on the left-hand display field and the current heating water temperature on the right-hand display field.



5.4.2. Signalling the start of heating in H2 mode and the display during H2 operation

At the start of heating, a flashing CH temperature target for H2 mode is displayed on the right-hand display field for 4 seconds with symbols  . Then the heating capacity setpoint is displayed on the left-hand display field and the current heating water temperature on the right-hand display field.



5.4.4. Display of additional operating parameters

In order to display additional operating parameters of the appliance, the reset button must be briefly pressed (in a mode other than STAND-BY).

The following information will be displayed in afterwards:

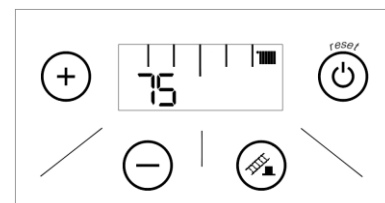
Symbol on the left-hand display field	Value on the right-hand display field	Unit
Fr	Fan operation	[%]
FL	Heating water flow rate	[l/min]
CH	Heating water temperature	[°C]

The display goes out automatically or when the reset button is pressed again.

5.5. Modification of heating capacity setpoint H1

- Briefly pressing the + / - button activates the H1 heating capacity setpoint modification mode. The heating capacity setpoint H1 flashes on the left-hand display field.
- The + / - buttons allow the heating capacity setpoint H1 to be changed.

Parameter change mode is terminated automatically after 5 seconds of inactivity or by pressing **reset**.



5.6. Controller configuration - setting the boiler parameters

Entering the programming mode and changing the settings of the boiler parameters is only accessible to an AUTHORISED SERVICE.

5.7. Boiler shutdown

- leave the boiler connected to the power supply,
- leave the gas valve and the heating water valves open,
- set the operating mode: STAND-BY (p.5.3)

If you decide to stop using the boiler for an extended period of time:

- set the operating mode: STAND-BY (p.5.3)
- empty the boiler water system
- Close the valve on the water and gas supply system and disconnect the boiler from the power supply.

Note: In winter, the EXTRA POWER boiler cannot switch on the burner on its own to heat the water in the system to prevent it from freezing. It is therefore forbidden to leave water in the heating system if the boiler is not connected to a heat pump that has an anti-freeze function.

5.8. Diagnostics

5.8.1. Signalling of error codes during emergency procedures

During emergency procedures, a permanent error code consisting of the letter E and two digits is displayed. The  and "RESET" symbols are extinguished. If the emergency procedure is successful, the boiler automatically returns to normal operation and the error code symbol is extinguished. A negative result of the emergency procedure results in a **shutdown with interlock**.

5.8.2. Signalling of emergency error codes without locking

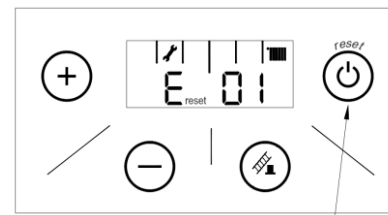
In an emergency without interlock, a flashing  symbol and an error code consisting of the letter E and two digits is displayed. The "RESET" symbol is extinguished. Once the cause of the fault has been disposed of, the boiler automatically returns to normal operation and the error code symbol is extinguished.

5.8.3. Signalling of emergency shutdown with locking

Emergency interlock is signalled by flashing symbols  and "RESET" together with an error code. A return to normal operation is possible once the cause of the failure has been disposed of and the **reset** button has been pressed.

If the boiler will continue to block we advise you to contact AUTHORISED SERVICE.

The picture above shows, an example of the display with error code E 01 along with the symbol **reset** and .



5.8.4. List of errors

Error code	Cause	Solution
E 01	No flame on the burner: There are 3 self-actuated re-ignition attempts. Each attempt is preceded by 15 sec. break for ventilation of the boiler. After unsuccessful attempts, the following occurs: shutdown of the boiler with interlock, display of the symbol E RESET 01 .	The boiler is in the process of gas ignition tests and will return to normal operation on its own.
 E reset 01	No flame on the burner: Boiler shutdown with interlock after unsuccessful attempts to ignite the gas. The reason for the failure may be: 1. Lack of gas. 2. Error connecting the control unit to power source (phase detection)	Verify that the gas taps are open and gas is reaching the boiler. Press reset button Procedure: - turn off power - switch lines of power cable
 E reset 02	The water temperature in the flue gas-water heat exchanger have reached over 95°C: take effect: shutdown of the boiler with interlock.	Press the reset button .
 E reset 03	The flue gas temperature exceeded the permitted value. A one-time thermal fuse has blown and the boiler shutdown with interlock has occurred.	Call Authorized Service
 E 04	Failure in the central heating water temperature NTC sensor circuit. take effect: burner shutdown	Call Authorized Service
 E 05	No heating water flow signal when input H1 or H2 is active.	The boiler is in the process of trying to ignite the gas and will return to normal operation on its own when the heating water flow signal appears.
 E reset 05	No signal of heating water flow after a period of approximately 5 minutes. take effect: shutdown of the boiler with interlock.	Call Authorized Service
 E reset 06	Failure in the boiler electronic system. take effect: burner shutdown	Call Authorized Service
 E 07	Failure of the fan speed measurement system or the fan itself.	Call Authorized Service
 E 13	Exceeding the maximum number of consecutive E1 emergencies after early flame detection	Press reset button

6. EXTRA POWER as an emergency heat source

Most heating systems, such as heat pumps or gas boilers, operate on electric power. In the case of a power outage, the equipment will stop working, interrupting the supply of heat to the building and, in extreme conditions, can lead to serious problems such as water pipe failure through freezing, generating incremental costs for repair and loss of heating system efficiency.

Choosing a suitable emergency power supply is therefore a good way to protect against such a situation.

One of the main components of an uninterruptible power supply system is a UPS.

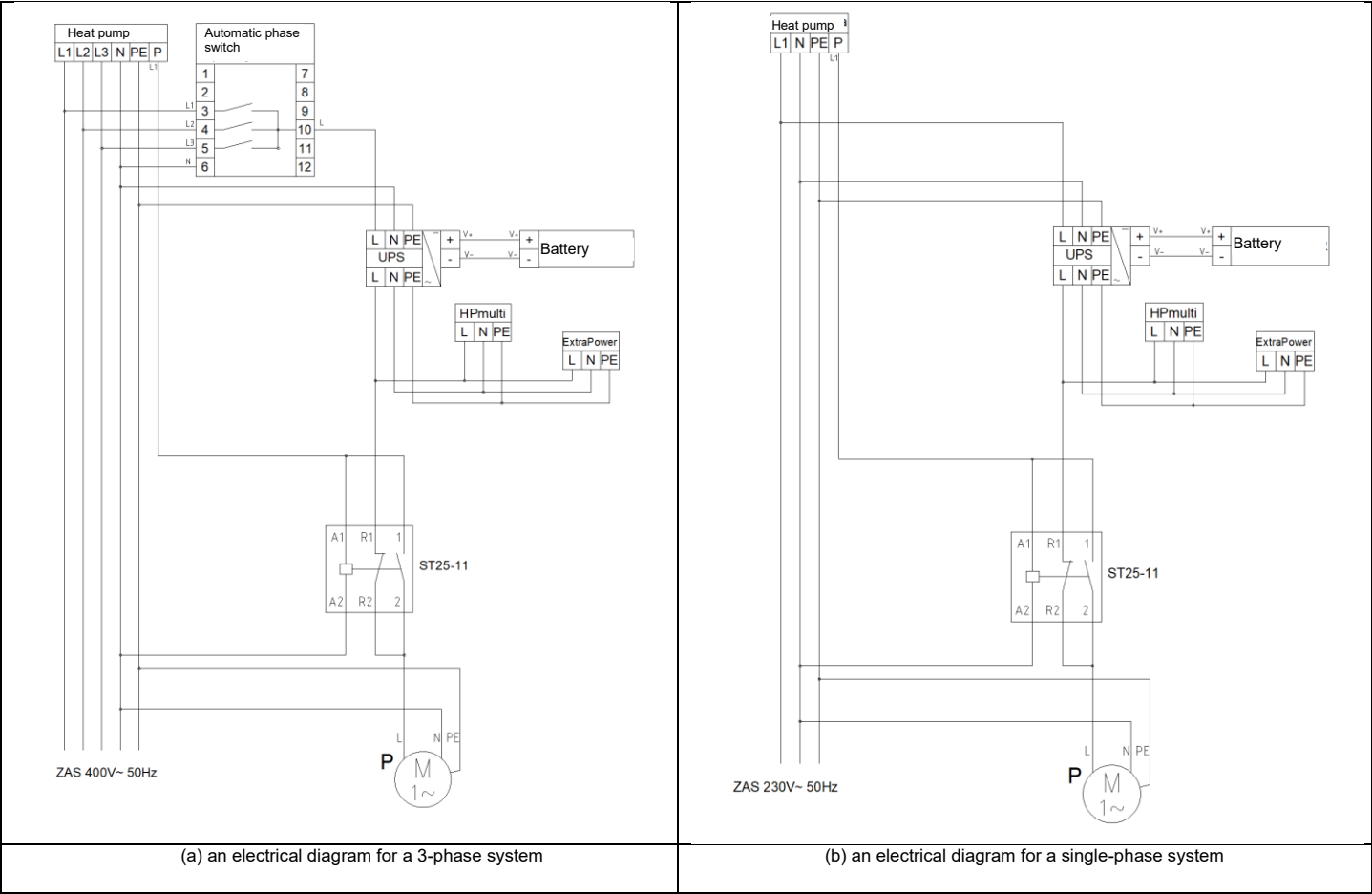
- A UPS for a gas boiler should be distinguished by its output voltage shape in the form of a full sine wave, both when operating using mains-flowing and battery power. This ensures stable boiler operation under all conditions.
- The safeguards implemented in the UPS should focus on, among other things, control of the boiler's ionization current, a mains voltage corrector that reacts to power outages and spikes, and surge protection. All of this effectively protects the boiler from various malfunctions and defects.

6.1 Connecting the UPS power supply to the installation with EXTRA POWER.

Below are sample connection diagrams for single-phase or three-phase networks.
In emergency power mode, the following devices operate::

- EXTRA POWER boiler;
- top source circulation pump;
- HP Multi controller;
- **heat pump is not working.**

The emergency operation of the EXTRA POWER boiler provides heat production for heating the building and preparing domestic hot water.



CAUTION:

- When making connections, the order of phase continuity must be observed at all times.
- for diagrams a and b the water pump runs continuously regardless of the demand load

Parameters of related components			
Product name	Designation	Power supply	Power
EXTRA POWER peak source	Pzsz	230V AC	70W
Upper source circulation pump	Pzg	230V AC	120W
HP controller	Php	230V AC	12W

Pzsz - maximum value of energy consumed by peak source [kW].
Pzg - maximum value of energy consumed by the top source pump [kW].
Php - maximum value of energy consumed by the HP controller [kW].

Note:
The choice of battery capacity should be made by a professional after gathering information on the type of installation.

7. MAINTENANCE, INSPECTIONS, CHECKING OF OPERATION

7.1. Inspections and maintenance

The boiler should be subjected to periodic inspections and treatments.
It is recommended that the boiler is inspected at least once a year, preferably before the heating season.
All repairs and maintenance checks should be carried out by an AUTHORISED SERVICE.
Use only original spare parts for repairs. Each time the boiler is inspected and maintained, the proper functioning of the safety systems and the tightness of the gas fittings and the tightness of the connections between the boiler and the gas supply system must be inspected. These activities are not part of the warranty repairs.

7.2. Maintenance work to be carried out by the user

- The user on his own should:
- periodically, preferably before the heating season, clean the water filters (if worn out, replace them),
 - top up the water in the heating system,
 - vent the system and the boiler,
 - periodically wash the casing with water and detergent (avoid cleaning agents that cause scratches).

8. BOILER EQUIPMENT

Table 8 gives a list of the parts necessary for the installation of the boiler, for proper operation and for increasing the comfort of use of the product. The following components are available for sale with the boiler or are included in the boiler equipment.

Table 8.1.

#	Name	Drawing ref. Data Code	INDEX	Number of pieces entering the boiler	It comes to:	Notes
1	2.	3	4	5	6	7
1.	Mounting bar	0700.00.00.44/CN		1	EXTRA POWER	Boiler equipment. Packed in boiler packaging
2.	Wood screws 8 x 70			2		
3.	Self-adhesive EPDM spacer	1780.00.00.49		4		
4.	Coupling subdivision	0696.00.00.00			EXTRA POWER	

PURCHASE RECOMMENDED TO INCREASE THE COMFORT OF THE BOILER

5.	Magnetic filter for central heating systems.			1.		
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PURCHASE NECESSARY TO ENSURE CORRECT OPERATION OF THE BOILER

6.	Gas filter			1	EXTRA POWER	Is not boiler equipment
7.	Heating water filter (central heating)			1		

Air-Combustion gas system of the boiler (plastic ducts)

Flue gas system diagram	Flue gas system type	Name of the flue system component	INDEX	Number of pieces entering the boiler	Remarks
Fig. 3.8.1.1	C13	Balanced flue kit – concentric system Ø80/Ø125			Additional equipment of C13 type boiler is sold according to the current offer.
		Reducing elbow with revision ø60/100 x ø80/125	T 9000 04 01 16	1	
		or			
		Concentric reducer ø60/100 x ø80/125	T 9000 04 01 34	1	
		Elbow 87° with cleanout ø80/125	T 9000 04 01 15	1	
		System components (according to the system design)		1 kit	
		Balanced flue kit – concentric system Ø60/Ø100			
		Elbow 87° with cleanout ø60/100	T 9000 04 01 14	1	
		System components (according to the system design)		1 kit	
Fig. 3.8.2.1	C33	Balanced flue kit – concentric system Ø80/Ø125			Additional equipment of C33 type boiler is sold according to the current offer.
		Concentric reducer ø60/100 x ø80/125	T 9000 04 01 34	1	
		System components (according to the system design)		1 kit	
		Balanced flue kit – concentric system Ø60/Ø100			
		System components (according to the system design)			
Fig. 3.8.2.2	C33	Balanced flue kit – concentric system Ø80/Ø125			Additional equipment of C33 type boiler is sold according to the current offer.
		Reducing elbow with revision ø60/100 x ø80/125	T 9000 04 01 16	1	
		or			
		Concentric reducer ø60/100 x ø80/125	T 9000 04 01 34	1	
		Elbow 87° with cleanout ø80/125	T 9000 04 01 15	1	
		System components (according to the system design)		1 kit	
		Balanced flue kit – concentric system Ø60/Ø100			
		Elbow 87° with cleanout ø60/100	T 9000 04 01 14	1	
		System components (according to the system design)		1 kit	
Fig. 3.8.3.1 Fig. 3.8.3.2	C53*	Balanced flue kit – separate ducts system Ø80 x Ø80			Additional equipment of C53 type boiler is sold according to the current offer.
		Air-flue gas separator ø60/100 x 2x ø80	T 9000 04 01 33	1	
		System components ø80 (according to the system design)		1 kit	
Fig. 3.8.4.1	C83*	Balanced flue kit – separate ducts system Ø80 x Ø80			Additional equipment of C83 type boiler is sold according to the current offer.
		Air-flue gas separator ø60/100 x 2x ø80	T 9000 04 01 33	1	
		System components ø80 (according to the system design)		1 kit	
Fig. 3.8.5.1	C93	Balanced flue kit – concentric system Ø80/Ø125			Additional equipment of C93 type boiler is sold according to the current offer.
		Reducing elbow with revision ø60/100 x ø80/125	T 9000 04 01 16	1	
		or			
		Concentric reducer ø60/100 x ø80/125	T 9000 04 01 34	1	
		Elbow 87° with cleanout ø80/125	T 9000 04 01 15	1	
		System components (according to the system design)		1 kit	
		Balanced flue kit – concentric system Ø60/Ø100			
		Elbow 87° with cleanout ø60/100	T 9000 04 01 14	1	
		System components (according to the system design)		1 kit	

*Air-flue systems should be installed in accordance with local regulations

Air-Combustion gas system of the boiler (steel ducts)

Flue gas system diagram	Flue gas system type	Name of the flue system component	INDEX	Number of pieces entering the boiler	Remarks
Fig. 3.8.1.1	C13	Balanced flue kit – concentric system Ø80/Ø125			Additional equipment of C13 type boiler is sold according to the current offer.
		Reducing elbow with revision ø60/100 x ø80/125	T 9000 04 02 88	1	
		System components (according to the system design)		1 kit	
		Balanced flue kit – concentric system Ø60/Ø100			
		Cleanout tee 87° ø60/100	T 9000 04 02 31	1	
		System components (according to the system design)		1 kit	
Fig. 3.8.2.1	C33	Balanced flue kit – concentric system Ø80/Ø125			Additional equipment of C33 type boiler is sold according to the current offer.
		Concentric reducer ø60/100 x ø80/125	T 9000 04 03 42	1	
		System components (according to the system design)		1 kit	
		Balanced flue kit – concentric system Ø60/Ø100			
		System components (according to the system design)			
Fig. 3.8.2.2	C33	Balanced flue kit – concentric system Ø80/Ø125			Additional equipment of C33 type boiler is sold according to the current offer.
		Reducing elbow with revision ø60/100 x ø80/125	T 9000 04 02 88	1	
		System components (according to the system design)		1 kit	

		Balanced flue kit – concentric system Ø60/Ø100			offer.
		Cleanout tee 87° ø60/100	T 9000 04 02 31	1	
		System components (according to the system design)		1 kit	
Fig. 3.8.3.1 Fig. 3.8.3.2	C53	Balanced flue kit – separate ducts system Ø80 x Ø80			Additional equipment of C53 type boiler is sold according to the current offer.
		Air-flue gas separator ø60/100 x 2x ø80	T 9000 04 02 46	1 kit	
		System components ø80 (according to the system design)		1 kit	
Fig. 3.8.4.1	C83	Balanced flue kit – separate ducts system Ø80 x Ø80			Additional equipment of C83 type boiler is sold according to the current offer.
		Air-flue gas separator ø60/100 x 2x ø80	T 9000 04 02 46	1 kit	
		System components ø80 (according to the system design)		1 kit	
Fig. 3.8.5.1	C93	Balanced flue kit – concentric system Ø80/Ø125			Additional equipment of C93 type boiler is sold according to the current offer.
		Straight connector ø80/125	T 9000 04 07 48	1	
		Cleanout tee 87° ø80/125	T 9000 04 02 32	1	
		System components (according to the system design)		1 kit	
		Balanced flue kit – concentric system Ø60/Ø100			
		Cleanout tee 87° ø60/100	T 9000 04 02 31	1	
		System components (according to the system design)		1 kit	

The Termet logo, featuring the word "termet" in a bold, white, sans-serif font with a registered trademark symbol (®) to the upper right, set against a dark grey rectangular background.

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