



**INSTRUCTION MANUAL
FOR THE OPERATION
AND INSTALLATION OF BOILERS**

ROTARY PELL COMPACT 15

ROTARY PELL COMPACT 20

ROTARY PELL COMPACT 25

ROTARY PELL COMPACT 30

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Dear customer,

Congratulations on your choice and purchase of a BLAZE HARMONY boiler from the ROTARY PELL COMPACT series. You are becoming a user of a boiler with top parameters. To ensure that the boiler serves you well, reliably, and for a long time, operate it in accordance with the instructions in the manual, paying particular attention to chapters 6, 7, and 8.

We greatly appreciate your trust and would welcome feedback on the operation and use of the boiler.

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Contents

1	Use and advantages of the boiler.....	5
2	Technical specifications of the boiler	7
3	Prescribed fuel for the boiler	8
4	Boiler description	8
4.1	Boiler design	8
4.2	Basic dimensions of the boiler	12
4.2.1	Dimensions of the boiler with an integrated hopper, without an ash remover	12
4.2.1	Dimensions of the boiler with an integrated hopper, with an ash remover	13
4.2.2	Dimensions of the boiler without a hopper, without an ash remover	14
4.2.3	Dimensions of the boiler without a hopper, with an ash remover	15
4.3	Burner description	16
4.4	Burner operation	17
4.5	Auger feeder	18
4.5.1	Auger feeder for boilers with an integrated hopper	18
4.5.2	Auger feeder for boilers with a hopper beside the boiler	19
5	Boiler assembly and installation.....	20
5.1	Checking the quality and completeness	20
5.2	Placing the boiler in the boiler room	20
5.3	Connection to the chimney.....	21
5.4	Supplying air to the boiler.....	23
5.5	Connecting the boiler to the heating system	23
5.5.1	Boiler without a pump group	23
5.5.2	Boiler with a pump group.....	24
5.6	Hydraulic connection diagrams.....	26
5.6.1	Connection diagram 1	26
5.6.2	Connection diagram 2	27
5.6.3	Connection diagram 3	28
5.6.4	Connection diagram 4	29
5.7	Instructions for water quality in the heating system	30
5.8	Electric connection	30
5.8.1	Burner wiring diagram.....	30
6	Commissioning the boiler	31
6.1	First commissioning of the boiler.....	31
6.2	Prohibition of boiler commissioning	32
7	Boiler operation by the user.....	32
7.1	Fuel feeder calibration	32

7.2	Proper door closing.....	32
7.3	Ignition	33
7.4	Boiler operation	34
7.5	Taking the boiler out of service.....	34
8	Boiler inspection and maintenance.....	35
8.1	General instructions.....	35
8.2	Maintenance performed by the user.....	35
8.2.1	Boiler cleaning.....	36
8.2.2	Fuel feeder cleaning	40
8.2.3	Burner cleaning	40
8.3	Maintenance performed by an authorised service centre	41
8.3.1	Scope and interval of service inspection and maintenance	41
8.3.2	Burner maintenance.....	41
9	Health, safety and fire instructions	43
10	Troubleshooting	44
11	Related standards.....	47
12	Disposal of transport packaging	47
13	Disposal of the boiler after the end of its lifespan	47
14	Warranty conditions.....	47
15	WARNING!.....	49
16	Record of repairs performed	50

1 Use and advantages of the boiler

Use of the boiler:

Hot water pellet boilers of the ROTARY PELL COMPACT series (hereinafter referred to as RPC) are designed for heating family houses, apartments, cottages, office buildings, small businesses, and other premises.

The RPC15 boiler is designed for heating buildings with a heat loss not exceeding 15 kW.

The RPC20 boiler is designed for heating buildings with a heat loss not exceeding 20 kW.

The RPC25 boiler is designed for heating buildings with a heat loss not exceeding 25 kW.

The RPC30 boiler is designed for heating buildings with a heat loss not exceeding 29 kW.

RPC series boilers are manufactured and tested according to the applicable documentation and comply with EN303-5+A1:2023 Heating boilers.

Advantages of the boiler:

- **Low investment costs**
 - The boiler can be factory-fitted with an integrated pump group that replaces the standard protection of the boiler's inlet water (return) against low-temperature corrosion. This reduces the labour involved in installing the boiler, which is also associated with lower initial costs.
- **Low operating costs**
 - The 3-pass design of the boiler body transfers heat from the fumes to the heating water through the heat exchanger. Boiler efficiency values determined under defined test conditions are specified in Table 2.
 - By using the highest-quality insulation, heat losses to the boiler room are also minimised.
 - A sophisticated control unit equipped with a PID controller ensures a smooth change of thermal output according to the requirements of the heated building. The boiler produces only as much heat as the heated building requires under all circumstances.
 - The control unit has weather regulation, i.e. it can automatically adjust the boiler's heat output to the current outdoor temperature.
 - Electrical power consumption at nominal output, minimum output and in standby mode is specified in Table 2
- **Quality combustion**
 - The boiler is equipped with a pellet burner with a rotary burning chamber. Emission values determined during testing comply with the applicable Ecodesign requirements and Class 5 according to EN 303-5.

- **Long lifespan**
 - The boiler is made of high-quality materials.
 - Automatic monitoring of the return temperature by the control unit is an effective protection of the heat exchanger surfaces against low-temperature corrosion.

- **Service comfort**
 - The boiler design offers a compact arrangement, which is especially suitable for boiler rooms with a small floor plan.
 - The boiler is equipped with automatic firing-up, so manual lighting by the operator is not required.
 - By choosing an appropriate size of the fuel hopper, the frequency of pellet refilling can be minimised during the heating season.
 - The well-designed boiler construction allows for easy and time-efficient removal of ash and cleaning of the heat exchanger.
 - Due to the high quality of combustion, it is usually sufficient to remove the ash on average once a week of operation.
 - The boiler can be optionally equipped with automatic ash removal. Under these circumstances, the ash is then removed from the boiler only a few times during the heating season.
 - Wood pellet ash can be used as a high-quality fertiliser in the garden.

2 Technical specifications of the boiler

Table 1. Dimensions and technical parameters of the boiler

Boiler type		RPC15	RPC20	RPC25	RPC30
Weight (version with hopper)	kg	185	225	225	270
Weight (version without hopper)	kg	165	200	200	240
Water capacity	l	43	55	55	67
Flue pipe diameter	mm	127			
Fuel hopper capacity	dm ³	150	200	200	230
Boiler dimensions: width x depth x height	mm	see chap. 4.2.			
Maximum allowable operating pressure	bar	3.0			
Test pressure for type testing	bar	6.0			
Temperature control range of the outlet water	°C	60 – 85			
Minimum return water temperature	°C	53			
Minimum operating draft of the chimney ¹⁾	mbar Pa	0.10 10			
Boiler connections: - heating water	Js	G 3/4"			
- return water	Js	G 3/4"			
Hydraulic loss of the boiler at $\Delta T = 20$ K	mbar	1,7	1,9	2,2	2,4
Hydraulic loss of the boiler at $\Delta T = 10$ K	mbar	3,7	4,3	4,9	5,5
Maximum noise level	dB	54±3			
Connection voltage		1 PEN ~230V / 6A / 50 Hz			
Environment		basic AA5 / AB5			
Ingress protection		IP 20			
Energy efficiency class		A+			

Table 2. Thermal technical parameters of the boiler

Boiler type		RPC15	RPC20	RPC25	RPC30
Nominal output	kW	14.5	20	25	29
Output controllability	kW	4 – 14.5	5 – 20	6 – 25	7 – 29
Fuel consumption	kg . h ⁻¹	0.9 – 3.0	1.1 – 4.1	1.3 – 5.2	1.6 – 6.0
Burning time at nominal output and full hopper	h	31	30	24	24
Boiler class according to EN 303-5		5			
Eco-design		Yes			
Fumes temperature ²⁾					
- at nominal output	°C	120	130	150	160
- at minimum output	°C	100	100	110	110
Efficiency					
- at nominal output	%	94.6	94.5	94.4	94.3
- at minimum output	%	93.1	93.3	93.4	93.5
Mass flow of fumes at the outlet at nominal output	kg . s ⁻¹	0.0090	0.0124	0.0155	0.0178
Mass flow of fumes at the outlet at minimum output	kg . s ⁻¹	0.0043	0.0053	0.0064	0.0072
Maximum power consumption	W	450	450	450	450
Power consumption at nominal output	W	62	70	78	85
Power consumption at minimum output	W	41	45	49	52
Power consumption in standby mode	W	4	4	4	4
Boiler operating mode		Non-condensing			
Boiler category		1			

¹⁾ Chimney requirements are described in chapter 5.4

²⁾ Applies to the clean heat exchanger (with typical fouling, the fumes temperature is higher by approximately 10 to 20 °C)

3 Prescribed fuel for the boiler

For trouble-free and economical operation of RPC series boilers, it is essential to use wood pellets manufactured in accordance with EN ISO 17225-2.

We recommend using certified fuels from reliable sources. The fuel must have low moisture and ash content. The table below shows the minimum fuel quality requirements.

Table 3. Warranty fuel for RPC boilers

Fuel type		Wood pellets
Diameter	[mm]	6 – 8
Length	[mm]	max. 40
Bulk density	[kg/m ³]	600 – 650
Water content	[%]	max. 10
Content of ash	[%]	max. 0,7
Calorific value	[MJ.kg ⁻¹]	min. 16,5



WARNING! Using unsuitable fuel can significantly and negatively impact the boiler's performance and emission parameters.

When refilling the hopper, attention must be paid to any mechanical impurities (e.g. stones, steel parts, etc.) that could damage the boiler equipment (burner, feeder, automatic ash removal system) and cause faults for which the boiler manufacturer is not responsible.

4 Boiler description

4.1 Boiler design

The boiler design meets the requirements of:

EN 303-5+A1:2023 Heating boilers – Part 5: Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW – Terminology, requirements, testing and marking.

The RPC hot water automatic boiler has a modular design and is available in several configurations:

- boiler with integrated hopper
- boiler with integrated hopper and ash remover
- boiler with integrated hopper and pump group

- boiler with integrated hopper, ash remover and pump group
- boiler with side hopper
- boiler with side hopper and ash remover

The boiler body (6) is made of steel sheets and pipes. Its basic design has a horizontal cylindrical shape, with the burning chamber - the first pass of the exchanger - at its centre. Along its circumference there is a tubular heat exchanger - 2nd and 3rd pass - ensuring efficient heat transfer from the fumes to the heating water. The lower part of the burning chamber opens into the ash pit, where ash accumulates.

At the front part of the boiler body, there is a reverse chamber ensuring the transition of fumes from the 2nd to the 3rd pass. The chamber is accessible after opening the door (8).

Connections for heating water (12) and return water (11) and the drain coupling (19) are located at the rear part of the boiler body (6): the connections for heating water (12) and return water (11) in its upper part, the drain coupling (19) in the lower part. In the upper part of the boiler body, there are also sockets for the boiler temperature sensor and the capillary of the STB safety thermostat (14).

A rotary burner (7) is installed in the door (8), where the actual fuel burning takes place. The burner operates automatically and requires no supervision. The used rotary burning chamber system minimizes the problem of slag adhesion that can occur during combustion in the burning chamber. Cyclic rotation ensures the forward movement of ash and slag until their removal from the burning chamber. Burning fuel is aerated along the entire length of the burning chamber, which has a positive effect on the quality of combustion. The burner (7) is equipped with a safety device that, in the event of its overheating or loss of flame in the burning chamber, interrupts the fuel supply and shuts down the boiler.

The rear part of the boiler is formed by the cover (17), in the central part of which the exhaust fan (16) is mounted. This creates a vacuum in the burning chamber and facilitates the exhaust of fumes through the flue pipe (15) into the chimney. The lower part of the rear cover (17) is then formed by a removable lid (18), which is used for cleaning the rear part of the boiler from ash.

To minimise heat loss by radiation to the surroundings, the boiler body (6) is thermally insulated with high-quality mineral wool and covered with steel casings coated with powder paint.

Depending on the boiler design, a fuel hopper (3) can be mounted on the boiler body (6) – see Fig. 1 and 2. This compact solution requires minimal floor space and is mainly used in boiler rooms with limited space. The control panel of the regulator (2) is then located on the front wall of the integrated hopper. The transport of pellets from the hopper (3), through the flexible hose (5) to the burner (7) is ensured by the horizontal auger feeder.

The second option is that the fuel hopper is made up of a separate unit (here there is a possibility to choose from several sizes) and is placed next to the boiler according to the spatial layout of the boiler room. Under these circumstances, the boiler itself consists only of a clad boiler body with a regulator – see Fig. 3 and 4. The transport of pellets from the hopper to the burner is then ensured here by an inclined auger feeder (again, there is an option to choose from several lengths).

The boiler control unit is a modern microprocessor regulator with a touch display (2). It ensures the operation not only of the boiler itself but of the entire heating system (see separate operating manual).

At the customer's request, the boiler can be equipped with an automatic ash remover (9). The automatic ash removal system ensures the automatic removal of ash from the burning chamber of the boiler, thereby reducing the operational effort. The frequency of necessary ash removal from the external ash pit depends on the size of the boiler, the required output, and the type of fuel used (usually 1-2 times per month).

The pump group (optional accessory) facilitates and speeds up the connection of the boiler to the heating system. This group is equipped with a boiler pump, a switching valve for DHW heating, a safety valve, a thermostatic valve for return protection, and a pressure gauge.

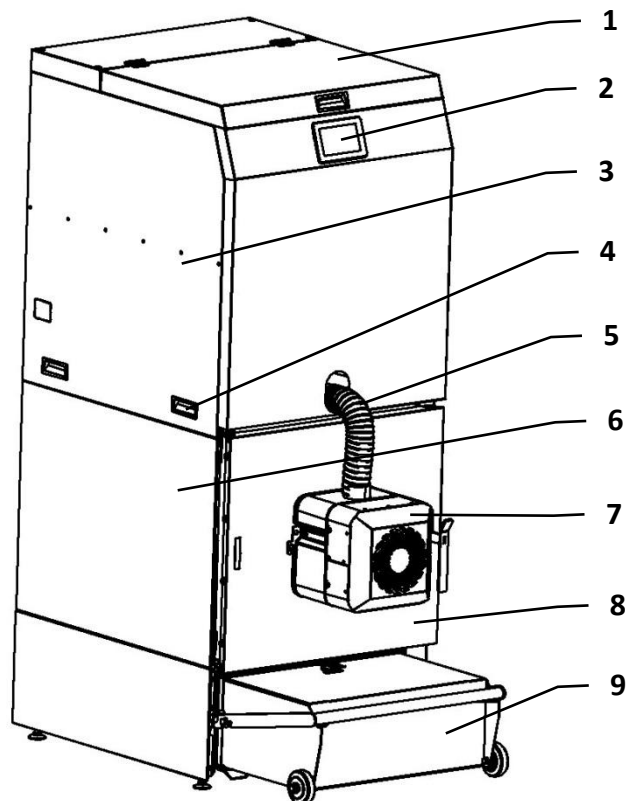


Figure 1. Front view of the boiler with an integrated hopper, where:

- 1 – fuel hopper lid
- 2 – regulator control panel
- 3 – fuel hopper
- 4 – handles for hopper removal
- 5 – flexible hose
- 6 – boiler body
- 7 – rotary burner
- 8 – door
- 9 – ash remover (not included in the boiler's standard equipment)

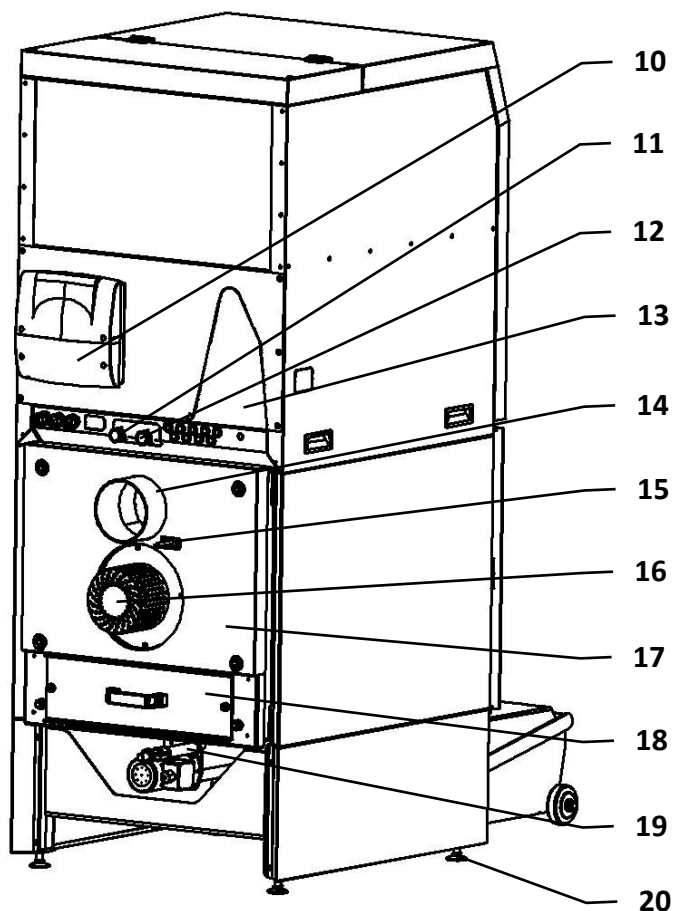
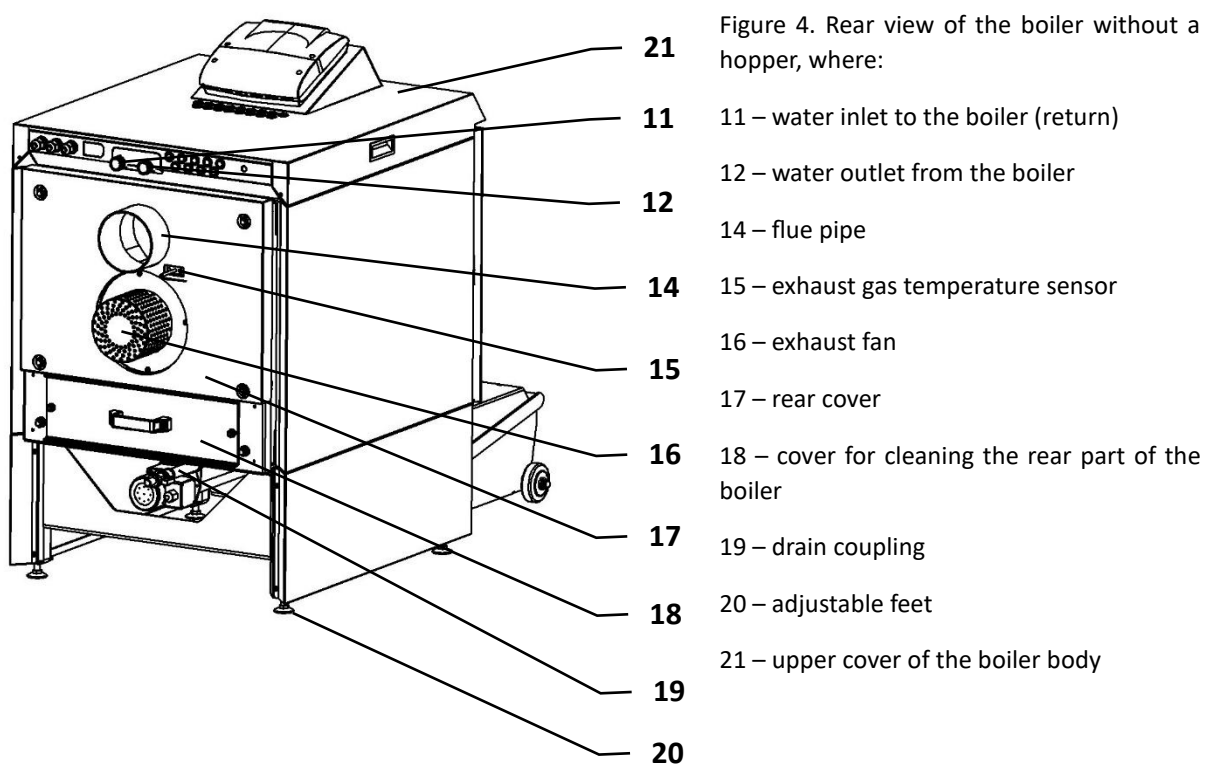
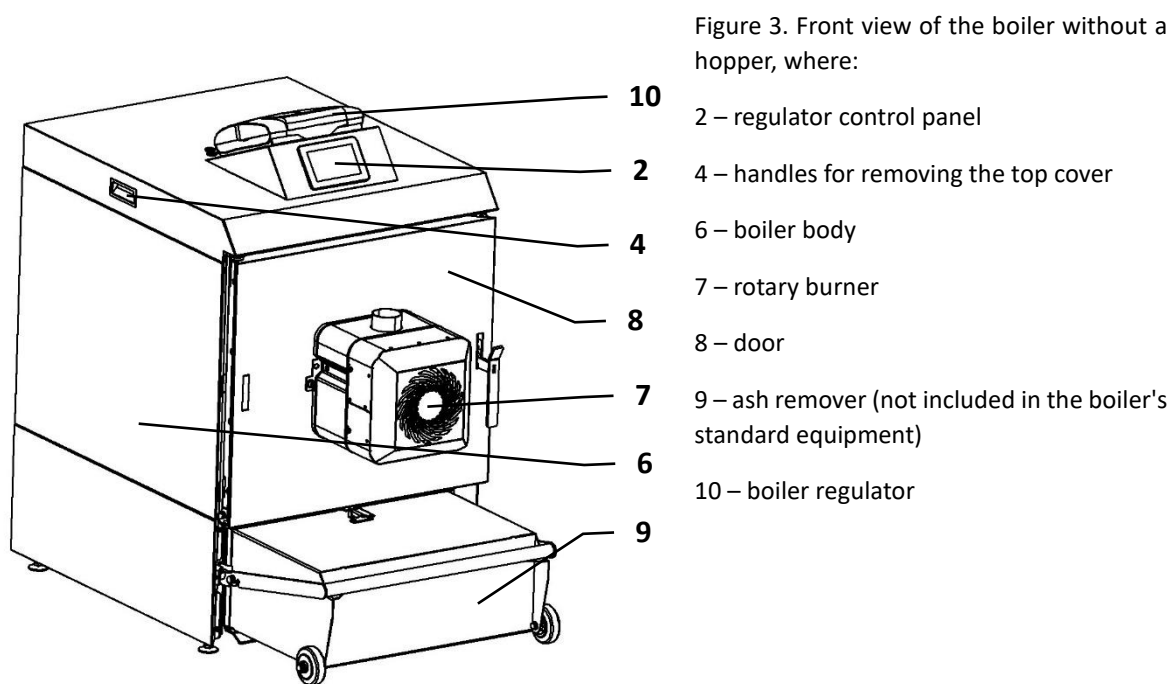


Figure 2. Rear view of the boiler with an integrated hopper, where:

- 10 – boiler regulator
- 11 – water inlet to the boiler (return)
- 12 – water outlet from the boiler
- 13 – preparation for the pump group
- 14 – flue pipe
- 15 – exhaust gas temperature sensor
- 16 – exhaust fan
- 17 – rear cover
- 18 – cover for cleaning the rear part of the boiler
- 19 – drain coupling
- 20 – adjustable feet



4.2.1 Dimensions of the boiler with an integrated hopper, with an ash remover

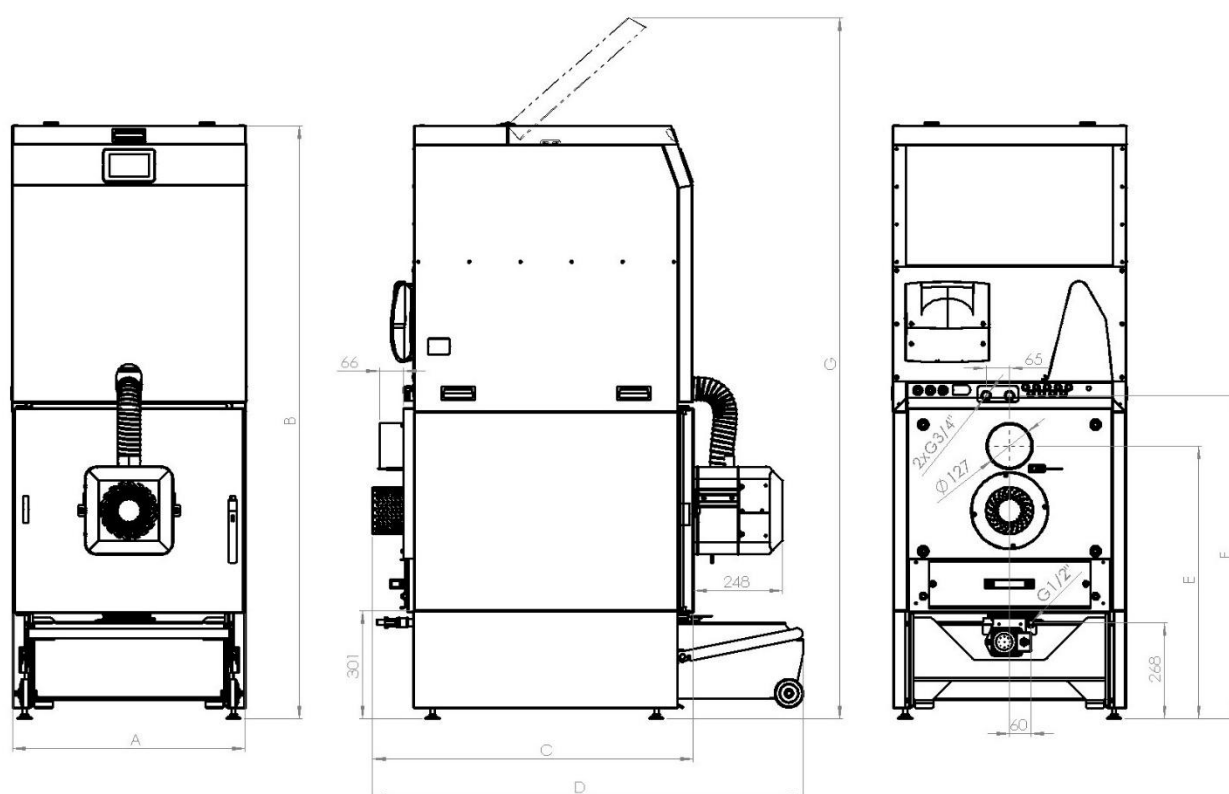


Figure 6. Basic dimensions of the boiler with an integrated hopper, with an ash remover

Table 5. Table of basic dimensions of the boiler with an integrated hopper, with an ash remover

	RPC15	RPC20/RPC25	RPC30
A [mm]	593	650	705
B [mm]	1562	1653	1742
C [mm]	803	895	970
D [mm]	1106	1199	1274
E [mm]	707	760	788
F [mm]	847	902	957
G [mm]	1862	1953	2042

4.2.2 Dimensions of the boiler without a hopper, without an ash remover

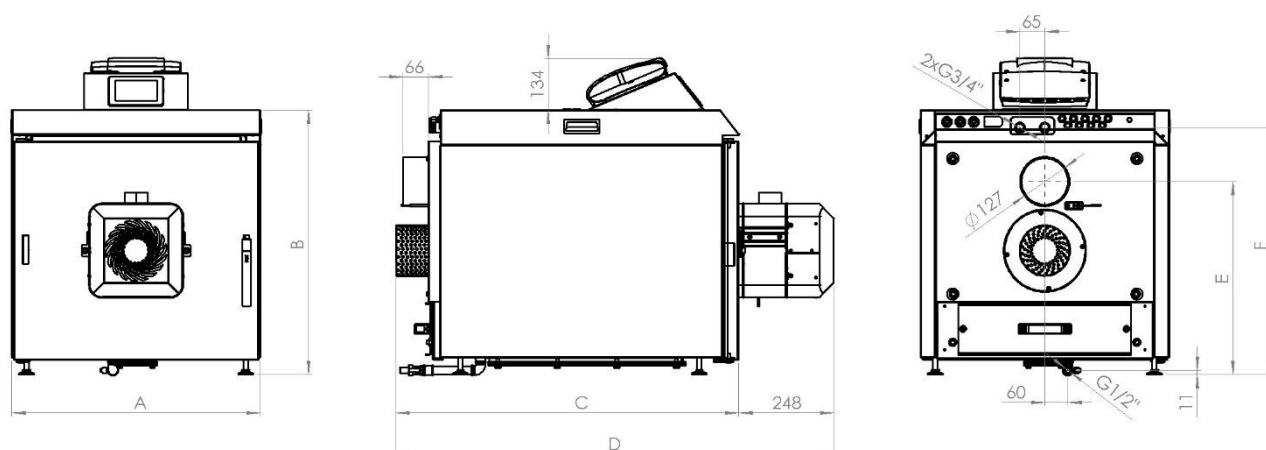


Figure 7. Basic dimensions of the boiler without a hopper, without an ash remover

Table 6. Table of basic dimensions of the boiler without a hopper, without an ash remover

	RPC15	RPC20/RPC25	RPC30
A [mm]	593	650	705
B [mm]	634	689	744
C [mm]	803	895	970
D [mm]	1053	1145	1220
E [mm]	450	503	531
F [mm]	589	644	700

4.2.3 Dimensions of the boiler without a hopper, with an ash remover

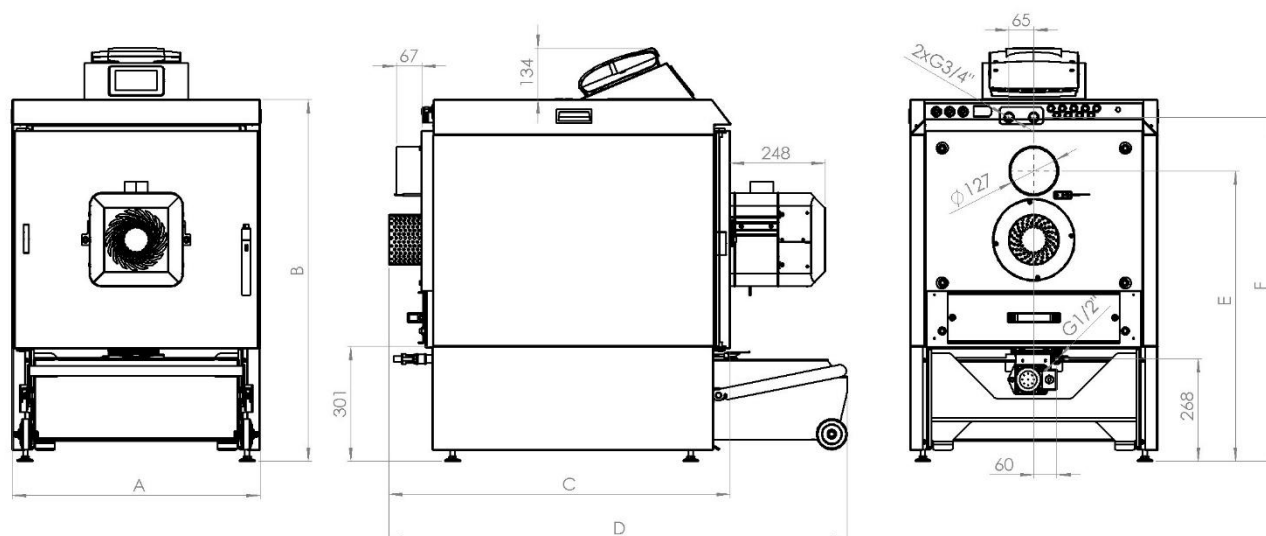


Figure 8. Basic dimensions of the boiler without a hopper, with an ash remover

Table 7. Table of basic dimensions of the boiler without a hopper, with an ash remover

	RPC15	RPC20/RPC25	RPC30
A [mm]	593	650	705
B [mm]	892	947	1002
C [mm]	803	895	970
D [mm]	1106	1199	1274
E [mm]	707	760	788
F [mm]	847	902	957

4.3 Burner description

The burner is designed for burning wood pellets. The pellets must comply with the requirements defined in Chapter 3. The burner operation is automatic and under normal circumstances does not require supervision. The used heat-resistant rotary firebox system prevents the adhesion of slag formed during combustion. By cyclically rotating the firebox, the ash and slag are pushed forward until they are completely removed from the burner. By minimising adhesion, the burner cleaning process is also facilitated, significantly extending its service life. Burning fuel is aerated and mixed throughout the entire length of the furnace, which intensifies the burning process and enables complete combustion of the supplied fuel.

Electrical power consumption of the boiler under defined operating conditions is specified in Table 2.

The modern control unit ensures safe operation of the system. In the event of system overheating, flame loss in the firebox, or fan malfunction, the fuel supply will be interrupted. In the event of a power outage, fuel supply is automatically turned off; the remaining fuel in the furnace does not pose a risk of burner damage.

The burner itself is assembled from the following parts:

- burning chamber – which consists of a firebox (1) made of high-chromium heat-resistant cast iron of the highest quality and a protective tube (2)
- air supply system – which, in addition to the steel cover (3), includes an X.Board electrical socket (4) located on the right side of the burner. The cable plug from the regulator connects to it.
- aeration chamber – the aeration chamber (5) is located between the air supply system and the burning chamber. At its upper part, there is a neck (6) with a gravity valve, onto which a flexible hose supplying fuel from the reservoir is attached.
- All mechanical and electrical burner subassemblies are located under the steel cover (3).

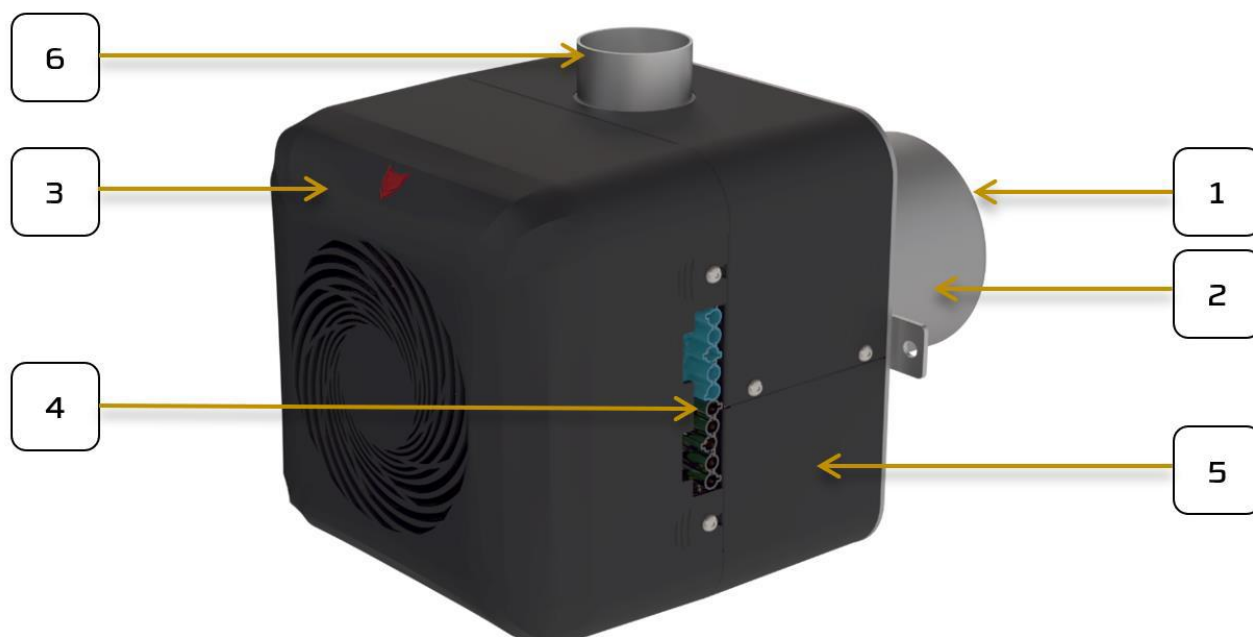


Figure 9. Arrangement of the rotary burner

4.4 Burner operation

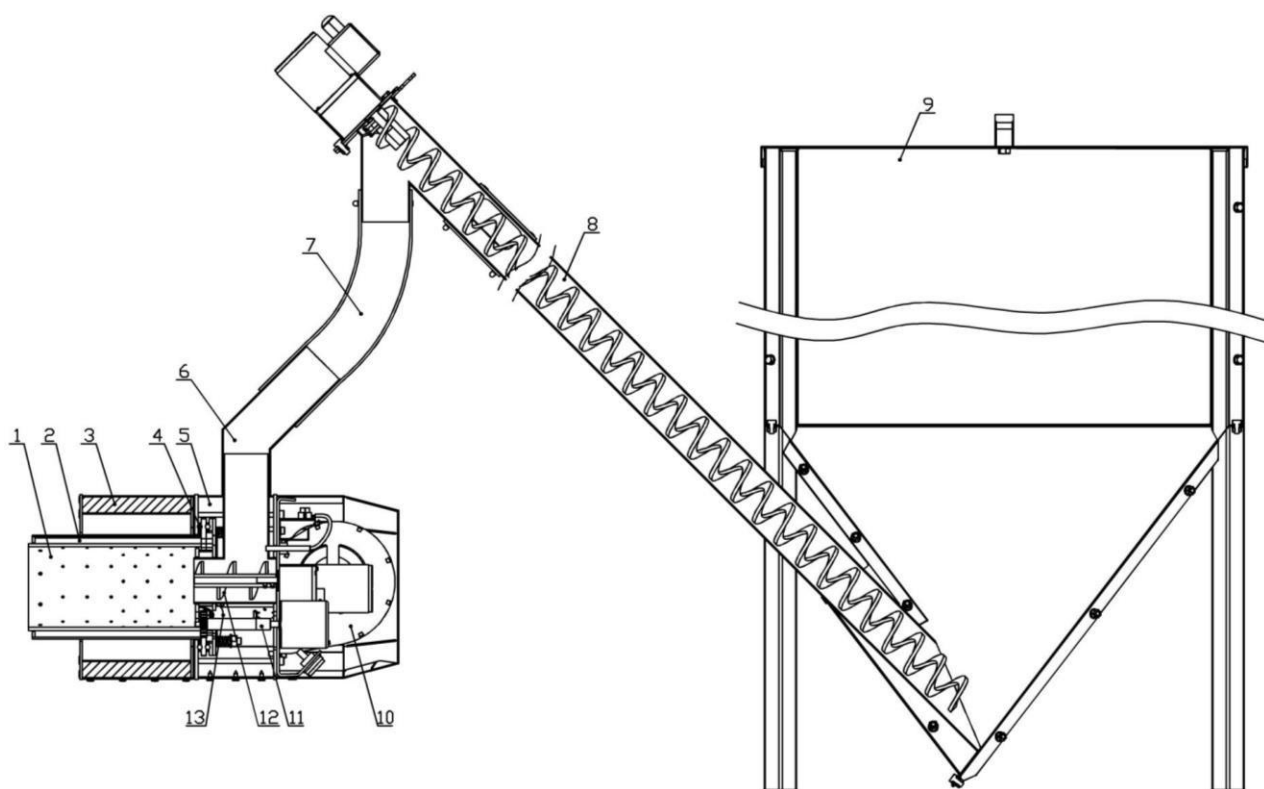


Figure 10. Diagram of the feeder with rotary burner

- where:
- 1 – rotary firebox
 - 2 – aeration rotary chamber
 - 3 – thermal insulation
 - 4 – bearing
 - 5 – aeration chamber
 - 6 – metal coupling
 - 7 – fuel overflow (flexible hose)
 - 8 – auger feeder for fuel from the hopper
 - 9 – fuel hopper
 - 10 – fan
 - 11 – rotary cleaning mechanism
 - 12 – fuel auger feeder in the burner
 - 13 – igniter

The burner operation is initiated by supplying fuel from a hopper (9) via an auger feeder (8), connected to the burner itself by a flexible hose (7). The fuel batch is then moved by the auger feeder in the burner (12) into the rotary firebox (1). After supplying a sufficient amount of fuel to the burner, it is ignited by the glowing element (13). After firing-up, the burner switches to normal operation mode according to the predefined parameters. Air necessary for fuel burning is supplied by the fan (10) through the aeration chamber (2) into the rotary firebox (1), and a certain amount of air flows through the chamber (5) to the glowing element (13). The air supply to the burner is located at its bottom part. During burner operation, the firebox (1) and the aeration chamber (2) rotate cyclically using the rotary cleaning mechanism (11). The rotation intensity is adjustable. Combustion residues are moved to the front part of the burner, where they subsequently fall into the ash pit of the boiler.

The burner operation is fully automatic and adjustable. Fuel is dosed from the hopper depending on the required heat output. If the set temperatures are reached, the burner will automatically go through controlled burning off

and switch to standby mode. The transition from standby mode through firing-up to operating mode is also fully automatic.

The operation therefore consists only of correctly setting the parameters, replenishing the required amount of fuel, and removing ash from the ash pit.

4.5 Auger feeder

The auger feeder connects the fuel hopper to the burner. It is made of galvanized steel tubes with a diameter of 60.3 mm. Inside the pipe, there is a steel auger conveyor driven by an electric motor (230 VAC/50Hz) with a gearbox. The motor is connected to the boiler control unit by a cable with an IEC connector.

4.5.1 Auger feeder for boilers with an integrated hopper

This is the configuration shown in figures 1 and 2. Under these circumstances, the fuel hopper is mounted on the boiler body and the fuel transport from the hopper to the burner is ensured by a **horizontal auger feeder**.

Installation diagram of the horizontal auger feeder:

- Attach the motor (4) with gearbox (5) to the mounting flange (6) using screws with washers (6)
- Place the gearbox shaft (5) into the hole of the auger hub (2) and secure with screw (8)
- Insert the auger conveyor (2) into the pipe (1). Using screws (9) with washers, screw the mounting flange (3) with the drive (4, 5) to the feeder pipe (1)

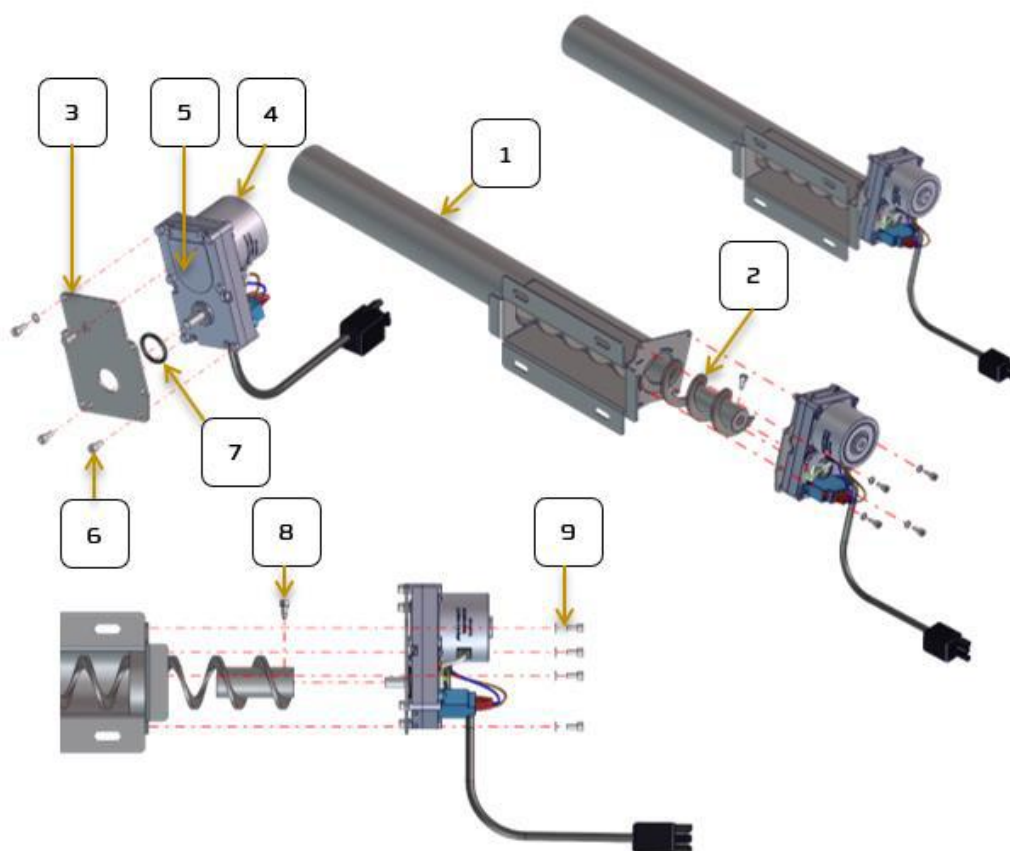


Figure 11. Installation diagram of the horizontal auger feeder

4.5.2 Auger feeder for boilers with a hopper beside the boiler

This is the boiler and hopper configuration shown in figures 3 and 4. Under these circumstances, the fuel hopper is installed next to the boiler, and the fuel transport from the hopper to the burner is ensured by an **inclined auger feeder**.

Installation diagram of the inclined auger feeder:

- Connect both pipes (1, 2) using the screw (3) with washer and nut (4)
- Place the yoke (6) into the shaft hole (8), then screw the auger conveyor (5) into the yoke (6) and secure it with the nut (7)
- Mount the feeder flange (10) to the drive (9)
- Insert the drive shaft (9) with the auger into the bore in the shaft axis (8) and secure with screw (11)
- Insert the auger (5) into the pipes (1, 2). Using screws (12) and nuts (13), attach the drive (9) with the pipe flange (1, 2).

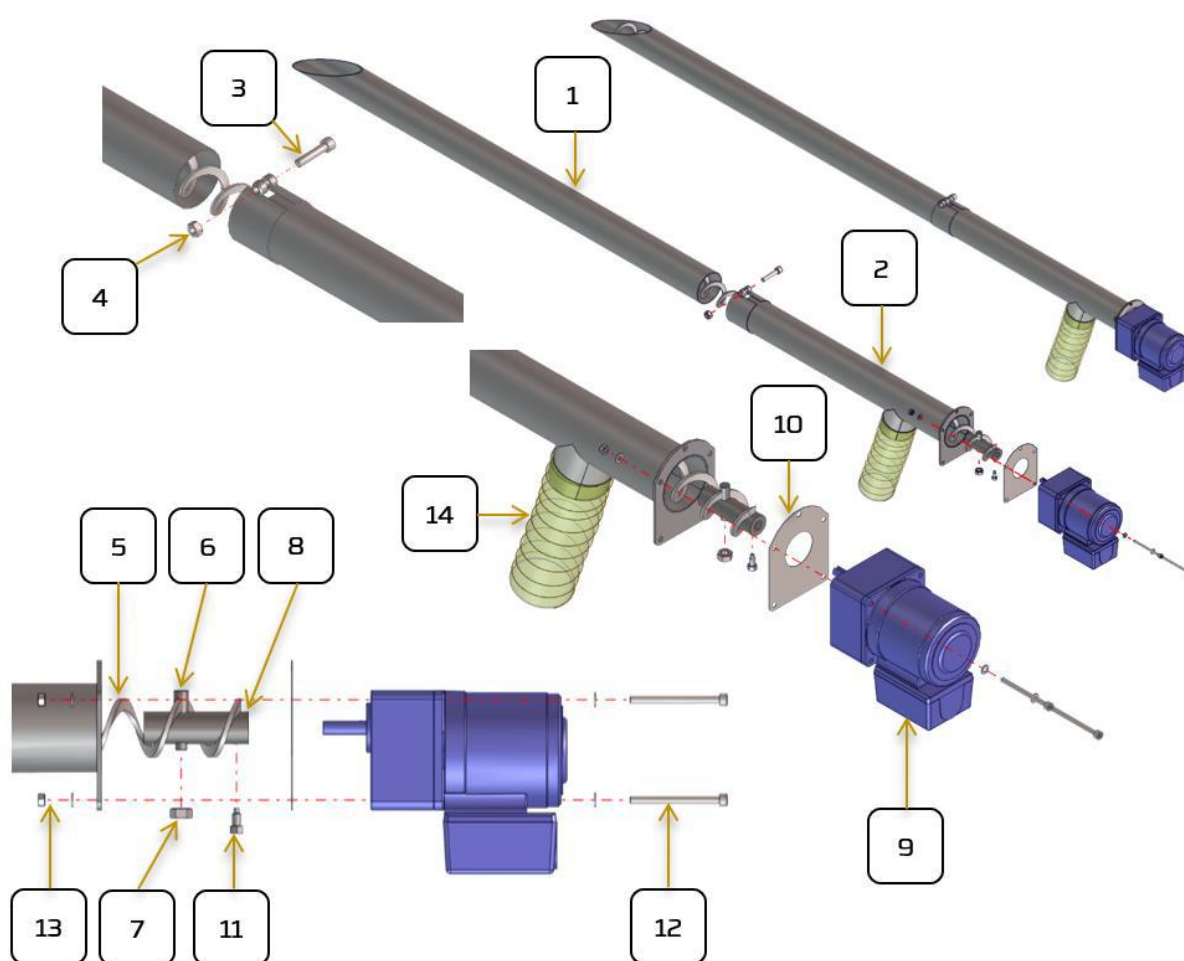


Figure 12. Installation diagram of the inclined auger feeder

Fuel delivery is automatic. The feeder operation is cyclic and is controlled by the boiler regulator. The feeder is to be installed at a maximum angle of 45° relative to the floor. The flexible antistatic hose should be offset from the burner axis by at least 30 cm. In case of fuel ignition and melting of the flexible hose, pellets will not fall into the burner. Fuel absence will cause the boiler to shut down. It prevents further spread of the fire to the external hopper or boiler room.

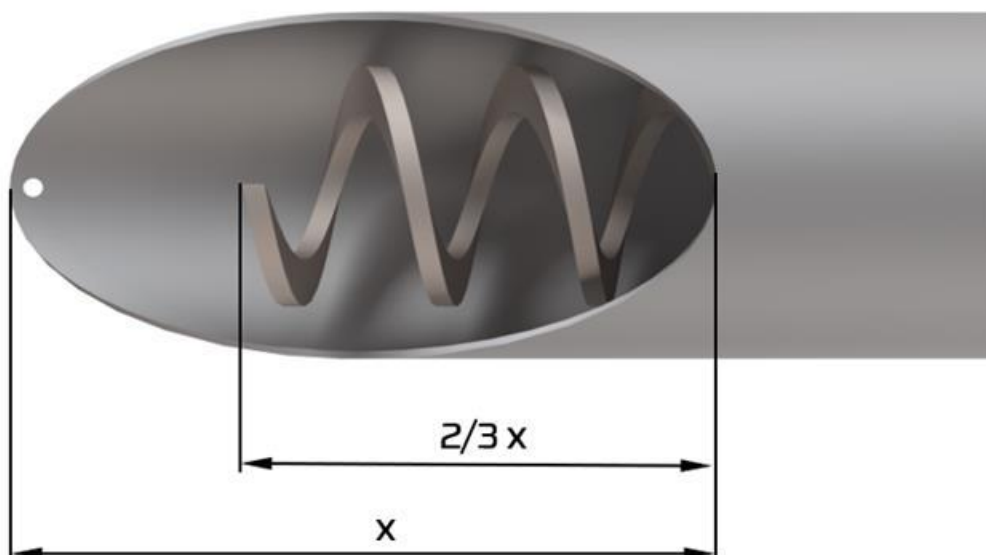


Figure 13. Correct length of the feeder spiral

5 Boiler assembly and installation



During installation and operation of the boiler, all local rules and regulations relating to national and European standards must be observed. Assembly and installation may only be carried out by an authorised person.

5.1 Checking the quality and completeness

Before starting the boiler installation itself, it is necessary to check that:

- the boiler is free from defects and mechanical damage that could have occurred during transport, even though the boiler's packaging was not damaged. If you find any damage, please promptly send information along with photographic documentation to the e-mail: info@blazeharmony.com.
- the heating system's hydraulic installation was properly carried out
- the hydraulic installation of the heating system does not contain any impurities (e.g. corrosion, limescale, etc.) that could cause malfunctions during boiler operation (e.g. by increasing the resistance to water flow in the boiler)
- the chimney is equipped with an acid-resistant steel liner, it is passable and it has the correct draft
- proper ventilation is ensured in the boiler room
- it is an electrical network with the appropriate voltage (230V/50Hz) and that the phase wire (L) is correctly connected and the electrical socket is secured with a protective contact.

5.2 Placing the boiler in the boiler room

The boiler must be placed on a non-combustible, heat-insulating base, extending beyond its footprint at the front by at least 300 mm and on the other sides by at least 100 mm.

The minimum permissible distances of the outer contours of the boiler from combustible materials (see EN 13501-1) must be at least 400 mm. Flammable materials must not be placed in front of the appliance and within a distance less than the safe distance from it.

The floor strength must be adequate for the weight of the boiler.

The boiler must stand horizontally; any floor unevenness should be compensated by screwing in or out the adjustable feet of the boiler body or ash remover.

A minimum clearance must be maintained around the boiler for operation, maintenance, or possible servicing – see figure 14. It is recommended to leave a space of at least 450 mm above the fuel hopper for comfortable loading.

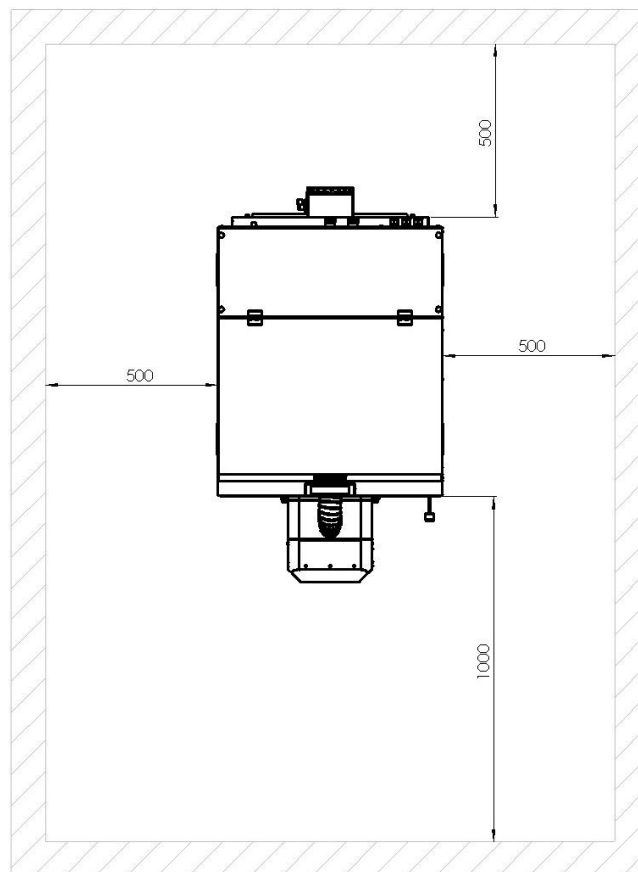


Figure 14. Placing the boiler in the boiler room

5.3 Connection to the chimney

The chimney system is responsible for the proper exhaust of fumes from the boiler outside the building where the boiler room is located. Correct chimney draft depends on many factors such as ambient temperature and temperature difference, chimney length, its shape, cross-sectional size, surface roughness, etc. The chimney system used must ensure the **required draft in the range of 0.1 – 0.3 mbar** (i.e. 10 – 30 Pa). A chimney draft within the given range then ensures the correct operation of the boiler under negative pressure. The boiler is thus protected against the leakage of fumes into the boiler room.

During the operation of the RPC boiler at lower output, the fumes temperature may drop below 100°C. This can result in the formation of aggressive condensate in the chimney, which adversely affects both the chimney itself (possibility of stains on the outer walls of the chimney) and the boiler (corrosion). To prevent this undesirable

phenomenon, it is recommended to use a chimney system that is not prone to moisture – double-walled chimneys and chimney liners made of acid-resistant stainless steel.

The connection of the boiler flue pipe to the chimney must be well insulated and made as short as possible (no more than 7 metres), maintaining a slight incline (the boiler flue pipe rises towards the chimney). It is also essential to avoid sharp bends and to use the minimum number of elbows possible.

It is prohibited to install any additional heat exchangers on the flue pipe.

For the proper commissioning of the boiler into permanent operation, a chimney inspection is required, which is only valid if it consists of the following parts: inspection report, technical report, and calculation of the fumes path. Whether the existing chimney is suitable for the type of boiler used needs to be verified by a calculation from a chimney sweeper before the installation of the boiler.

Table 8. Diameters of the chimney flue of RPC boilers

Boiler		RPC15, RPC20	RPC25, RPC30
Recommended diameter of the chimney flue	[mm]	160	180
Minimum diameter of the chimney flue	[mm]	150	150

We do not recommend a chimney draft regulator for standard chimneys (with operating drafts of 10 to 30 Pa). They are a source of leaks and transfer heat from the heated building to the chimney.

The flue pipe must be securely assembled and secured to prevent any accidental or spontaneous release of its parts. A flue longer than 2 m must be securely anchored. All components of the flue pipe must be made of non-combustible materials.

We recommend sealing the gaps in the flue pipe with a sealant designed for this purpose or by using aluminium tape. The chimney door must also be tight. Sealing can be achieved by an additional cover with a rubber sleeve secured, for example, with screws.

We recommend that the chimney flue is sufficiently thermally insulated.

For flue pipes longer than 1 metre, we recommend fitting suitable insulation, for example, made of mineral wool with an outer aluminium foil. In an uninsulated flue pipe, there is intense cooling of the fumes. During operation at low output, there is a risk of condensation of moisture from the fumes.

The minimum permissible fumes temperature 1 m below the upper edge (outlet) of the chimney is 90 °C.

The ideal situation is a chimney located within the building; outdoor chimneys experience more intense cooling.



WARNING! It is forbidden to connect any additional equipment to the chimney where the boiler is connected. It is prohibited to use the chimney for purposes other than its intended use (e.g., ventilation).



All work related to connecting the boiler to the chimney, as well as obtaining permission to use the chimney (inspection), must be carried out by a qualified person in accordance with local regulations and standards.

5.4 Supplying air to the boiler

The air needed for burning can be supplied to the boiler room directly from the external environment or from the living space. Air supply from the living space is advantageous in a certain sense, as it allows for ventilation while simultaneously utilising the heat of the air that would be lost during conventional ventilation (the heat savings are approximately 2%). At an output of 10 kW, the air consumption is approximately 20 m³/h, which corresponds to the hygienic minimum for air exchange in a typical apartment layout.

If the natural infiltration (micro-ventilation of windows and doors) does not provide a sufficient amount of air, it is necessary to ensure it through a ventilation opening from the outdoor environment with an area of at least 177 cm² (which corresponds to a diameter of 150 mm).

The control grilles on the ventilation openings must be positioned in such a way that they do not become blocked.

We recommend installing a carbon monoxide detector near the boiler.

5.5 Connecting the boiler to the heating system

- Installation must be carried out in accordance with the design and local regulations.
- Before connecting the boiler to the heating system, it is essential to thoroughly clean it of all impurities (dirt, rust, limescale, etc.).
- There must be shut-off valves between the boiler and the heating system so that, if it is necessary to disconnect the boiler, it is not required to drain water from the entire heating system.
- To protect the boiler from low-temperature corrosion, **automatic return protection** must be ensured under all circumstances so that the temperature at the boiler inlet does not fall below 55°C.
- The boiler pump must be installed (if the pump group is absent).
- The optimal design of the heating system is one where the temperature drop (the difference between the inlet and outlet water temperature) is in the range of 10 to 20°C.
- A filter must be installed on the return water to the boiler before the pump.

In the rooms of the heating circuit where the installation of a room thermostat is planned, do not install thermostatic radiator valves on the radiators because:

- the room temperature is fully controlled by a regulator, which operates the boiler pump and, if necessary, the three-way mixing valve;
- in case of a temperature change on the controller, it would be necessary to readjust the thermostatic valves on the radiators;
- in the event of emergency overheating of the boiler, the regulator automatically activates the boiler pump and the heating circuit pumps to cool down the boiler.

5.5.1 Boiler without a pump group

If the RPC boiler is not equipped with a pump group (optional equipment), the boiler is provided with 2 outlets ¾" with external thread. The boiler inlet (return) is on the left when viewed from the back of the boiler. The boiler outlet is on the right when viewed from the back of the boiler.

The drain coupling (1/2") is located at the lower rear part of the boiler along its axis.

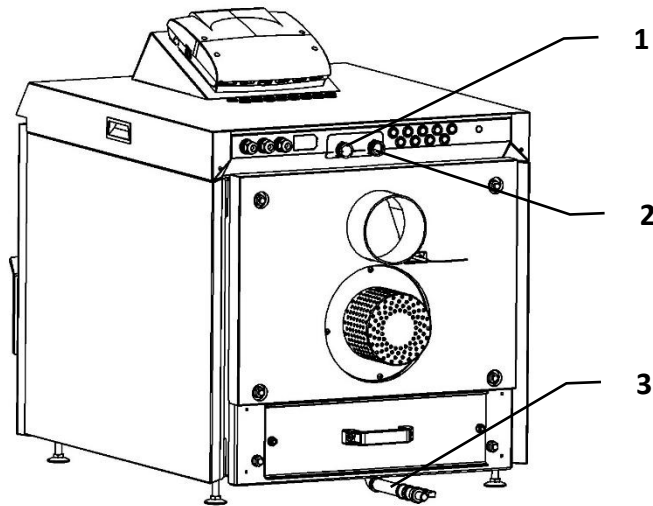
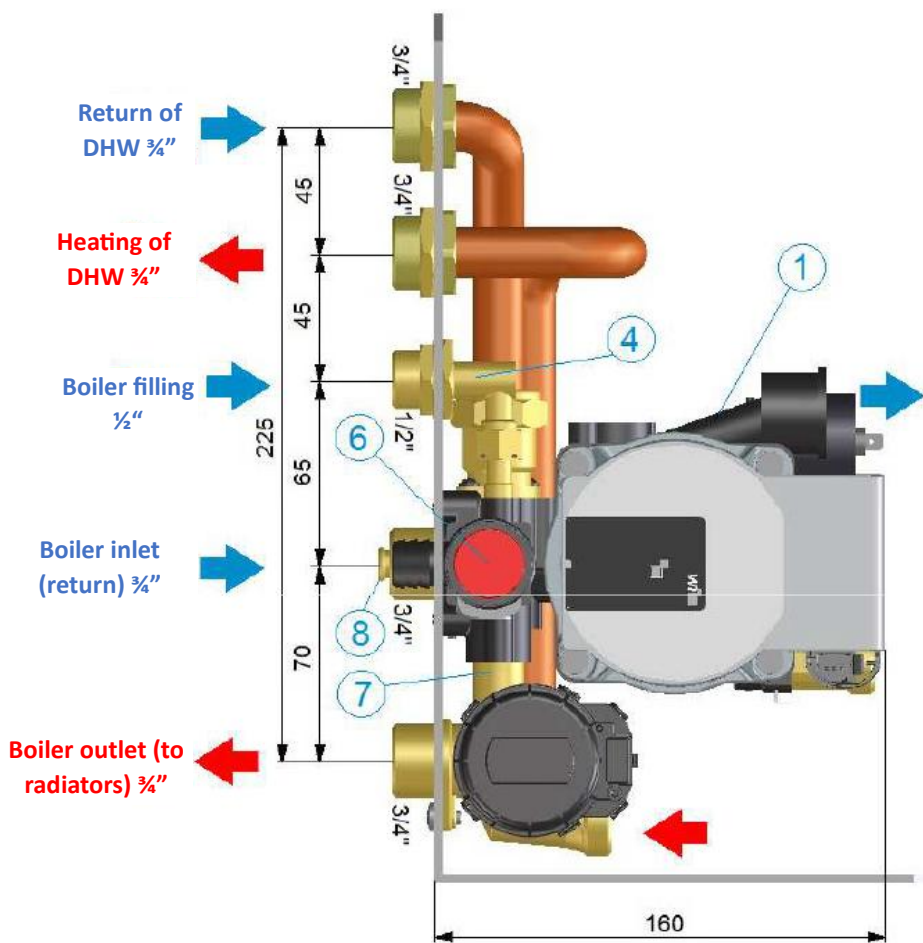


Figure 15. Outlets of a boiler without a pump group, where:

- 1 – boiler inlet (return)
- 2 – boiler outlet
- 3 – drain coupling

5.5.2 Boiler with a pump group

If the boiler is factory-equipped with a pump group, the connection to the heating system is given by the diagram in Figure 16.



- where:
- 1 – boiler pump
 - 4 – filling coupling
 - 6 – safety valve
 - 7 – BYPASS valve
 - 8 – drain coupling

Figure 16. Outlets of a boiler with a pump group



In a boiler installation with a pump unit, DHW heating always takes priority, regardless of the settings on the controller. This is due to the design of the pump unit.

5.6 Hydraulic connection diagrams



All hydraulic connection diagrams displayed here are for informational purposes only and do not replace the heating project! This is prepared by a qualified heating system designer.

5.6.1 Connection diagram 1

- Hydraulic diagram for one unmixed heating circuit and DHW heating
- This requires an integrated pump group (66), see chapter 5.5.2. This assembly also includes a thermostatic valve for return protection (65).

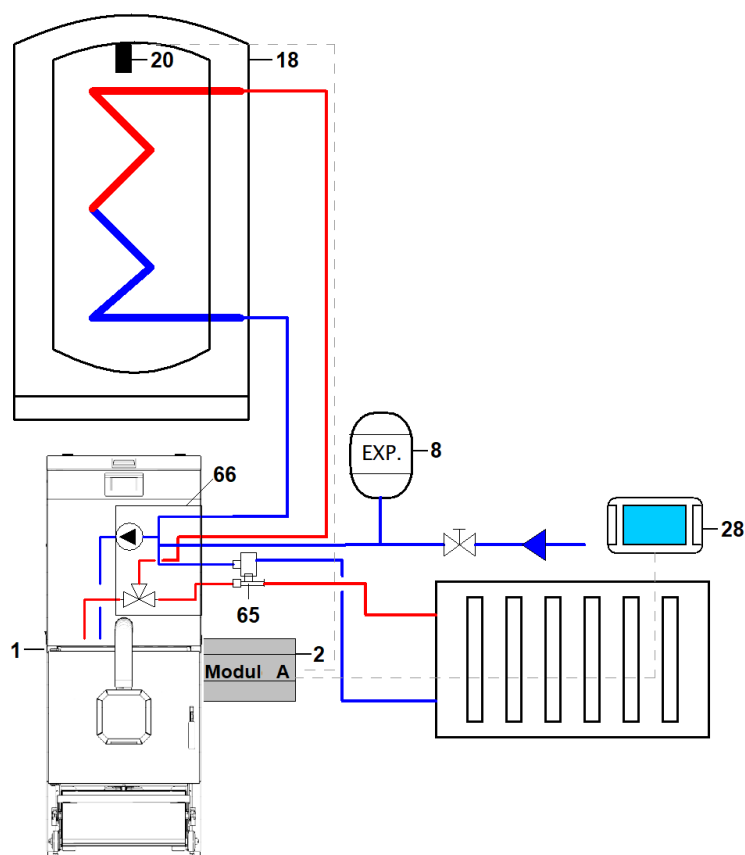


Figure 17. Hydraulic diagram for one unmixed heating circuit and DHW heating

1 – RPC boiler
2 – regulator
8 – expansion tank
18 – DHW storage tank
20 – DHW temperature sensor (CT10)

28 – room panel eSTER
65 – thermostatic valve of the pump group
66 – pump group

5.6.2 Connection diagram 2

- Hydraulic diagram for one mixed heating circuit and DHW heating
- This requires an integrated pump group (66), see chapter 5.5.2. This assembly also includes a thermostatic valve for return protection (65).

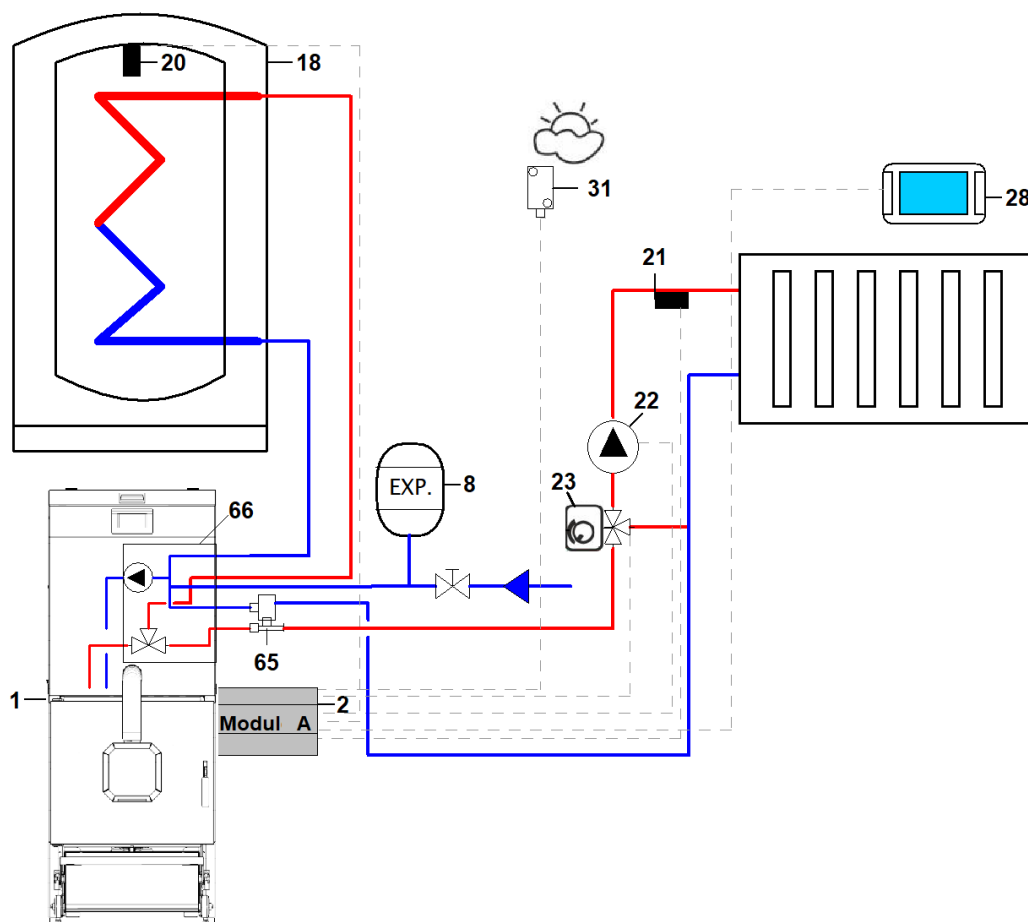


Figure 18. Hydraulic diagram for one mixed heating circuit and DHW heating

- | | |
|--|---|
| 1 – RPC boiler | 22 – mixer 1 pump |
| 2 – regulator | 23 – mixer 1 mixing valve servo |
| 8 – expansion tank | 28 – room panel eSTER |
| 18 – DHW storage tank | 31 – outdoor temperature sensor (CT6-P) |
| 20 – DHW temperature sensor (CT10) | 65 – thermostatic valve of the pump group |
| 21 – mixer 1 temperature sensor (CT10) | 66 – pump group |

5.6.3 Connection diagram 3

- Hydraulic diagram with a four-way valve for return protection
- Control of a single heating circuit (pump*) and DHW heating (solenoid electromagnetic valve)

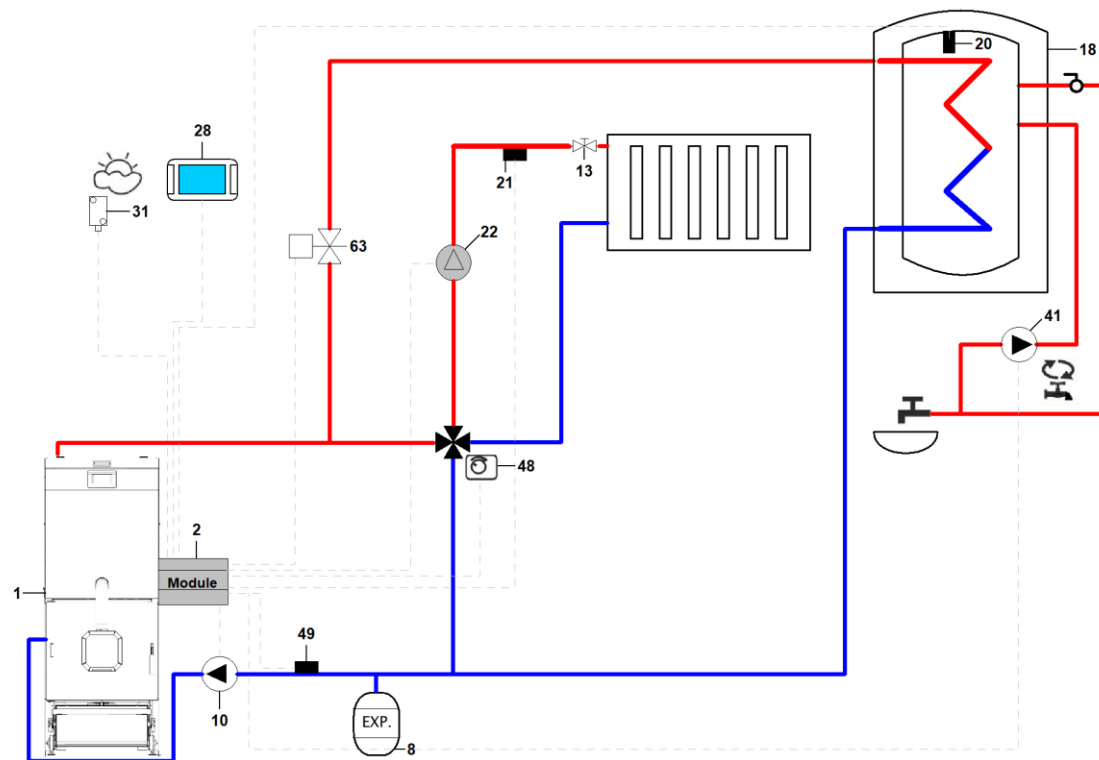


Figure 19. Hydraulic diagram with a four-way valve for return protection, one heating circuit and DHW heating

- | | |
|--|---|
| 1 – RPC boiler | 28 – room panel eSTER |
| 2 – regulator | 31 – outdoor temperature sensor (CT6-P) |
| 10 – boiler pump | 41 – DHW circulation pump |
| 13 – ball valve | 48 – mixing valve servo |
| 18 – DHW storage tank | 49 – return water temperature sensor (CT10) |
| 20 – DHW temperature sensor (CT10) | 63 – solenoid electromagnetic valve |
| 21 – mixer 1 temperature sensor (CT10) | |
| 22 – mixer pump 1* | |

* For the small heating circuit, the mixer pump (22) is not necessary.

5.6.4 Connection diagram 4

- Hydraulic connection diagram with expansion modules B and C
- Control of buffer charging
- Control of up to five mixed heating circuits and DHW heating

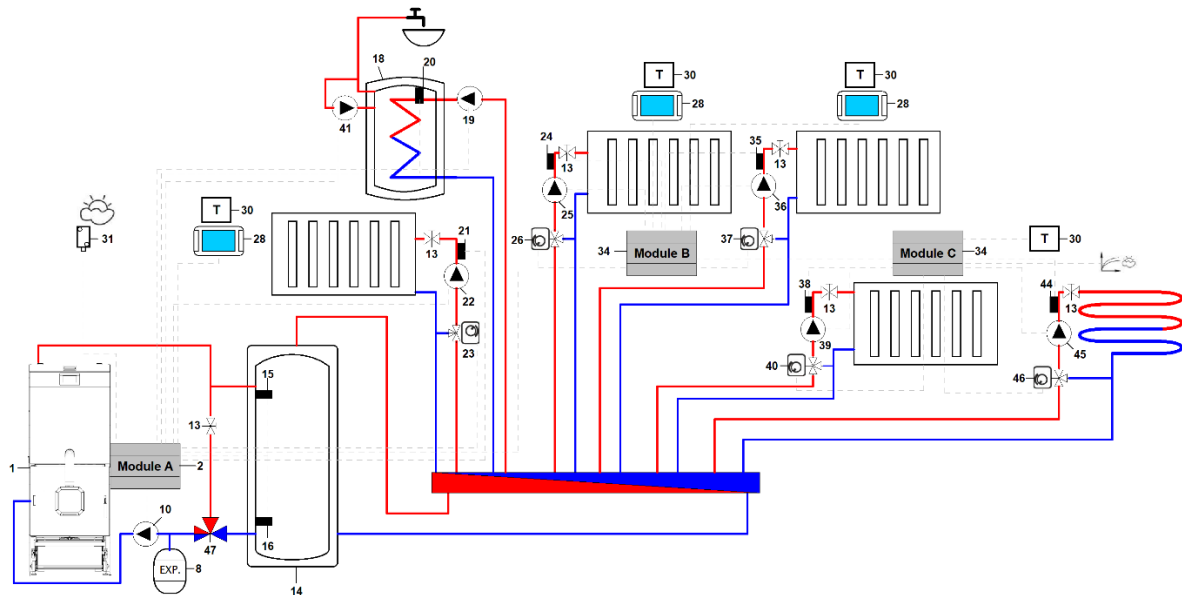


Figure 20. Hydraulic connection diagram with expansion modules B and C

- | | |
|---|---|
| 1 – RPC boiler | 30 – universal room thermostat |
| 2 – regulator | 31 – outdoor temperature sensor (CT6-P) |
| 10 – boiler pump | 34 – expansion module |
| 13 – ball valve | 35 – mixer 3 temperature sensor (CT4 or CT10) |
| 14 – buffer | 36 – mixer 3 pump |
| 15 – upper sensor of the buffer (CT10) | 37 – mixer 3 mixing valve servo |
| 16 – lower sensor of the buffer (CT10) | 38 – mixer 4 temperature sensor (CT4 or CT10) |
| 18 – DHW storage tank | 39 – mixer 4 pump |
| 19 – DHW pump | 40 – mixer 4 mixing valve servo |
| 20 – DHW temperature sensor (CT10) | 41 – DHW circulation pump |
| 21 – mixer 1 temperature sensor (CT10) | 44 – mixer 5 temperature sensor (CT4 or CT10) |
| 22 – mixer 1 pump | 45 – mixer 5 pump |
| 23 – mixer 1 mixing valve servo | 46 – mixer 5 mixing valve servo |
| 24 – mixer 2 temperature sensor (CT4 or CT10) | 47 – thermostatic three-way valve (55°C) |
| 25 – mixer 2 pump | |
| 26 – mixer 2 mixing valve servo | |
| 28 – room panel eSTER | |

5.7 Instructions for water quality in the heating system

The quality of the water with which the boiler and the entire heating system are filled has a fundamental impact on their service life and trouble-free operation. Water in the boiler with unsuitable parameters causes the accumulation of limescale and the formation of corrosion, which can lead to boiler failure. The warranty does not cover damage caused by corrosion and limescale deposits. Water for filling the heating system must comply with the requirements of the relevant standards and local regulations.

The water treatment technology used for filling the boiler and heating system must enable achieving the following parameters:

- pH > 8.5
- hardness < 20°f
- oxygen < 0.05 mg/l
- chlorine < 60 mg/l

5.8 Electric connection



WARNING! All work related to connecting the boiler to the mains may only be carried out by an authorised worker.

5.8.1 Burner wiring diagram

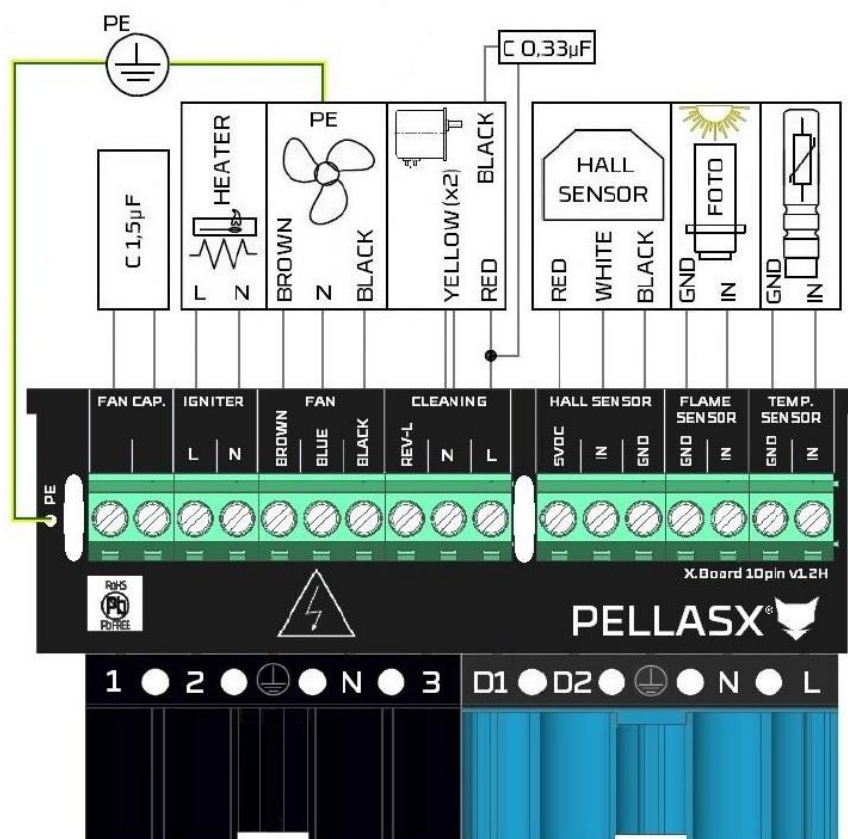


Figure 21. Burner wiring diagram

Information on the electrical connection with the regulator can be found in the separate operating and installation manual for the regulator, which is supplied with the boiler.

6 Commissioning the boiler

To ensure the reliable and safe operation of the boiler, the operator must strictly follow the instructions provided in this boiler operating manual and in the operating and installation manual for the regulator (separate document).

6.1 First commissioning of the boiler

Before the boiler is put into operation for the first time and after each longer shutdown (e.g. at the beginning of each heating season), it is necessary to inspect the boiler and the heating system.

- Check whether the boiler is properly filled with water and the entire heating system maintains the required pressure. If it is insufficient, add water.
- Properly vent the heating system (we recommend using automatic air vent valves).
- Check the tightness of movable parts, such as doors, cleaning openings, etc.
- Check the functionality of all mixing valves and circulation pumps in the heating system.
- Check the condition of operational, measuring, and control components (safety valves, boiler water temperature regulator, thermostats, etc.).
- Perform a visual inspection of the boiler's completeness – cladding, insulation, burner, etc.
- Check whether there are any foreign objects in the boiler or the tank.
- Check the condition of all equipment working with the boiler: chimney, ventilation, electrical installation, fuel hopper, etc.
- Check compliance with hygiene, safety and fire regulations in the boiler room.
- Check the fuel level in the hopper and refill if necessary.

If all the above points have been checked and are in order, the initial start-up of the boiler can be initiated.



During the initial commissioning of the boiler, continuously check the boiler's tightness, especially the connection between the boiler and the chimney (flue).



During boiler operation, some parts (flue, smoke duct) can reach high temperatures, even above 100°C. Direct contact with these parts can cause severe burns. Therefore, it is necessary to exercise increased caution.



Refilling cold water into the boiler can only be performed when the boiler has cooled down. Damage to the boiler body may occur.

6.2 Prohibition of boiler commissioning

The boiler commissioning is prohibited if:

- during the operation of the burner, the fuel feeder, fan, or boiler regulator malfunction;
- it was found that the chimney system is not working properly;
- there is no water in the boiler or there is low pressure in the heating system;
- the heating system is not properly vented;
- malfunction of any measuring or safety device in the installation was detected;
- there is a risk of fire or explosion or other hazard that may cause harm to health or property.

7 Boiler operation by the user



WARNING! It is forbidden to open the door while the boiler is in operation, as there is a risk of burns or fire.

7.1 Fuel feeder calibration



WARNING! This is a very important activity. Correct and precise measurement and setting of the value "Feeder efficiency" into the control unit determines the reliability of the boiler operation. Entering an incorrect value will cause the boiler to malfunction.

Value *Feeder efficiency* defines the amount of fuel that the feeder is capable of delivering to the burner at a given configuration and inclination during continuous operation within 1 hour.

The procedure for calibrating the feeder is described in detail in the separate boiler regulator user manual.

7.2 Proper door closing

For the correct and safe operation of the boiler, it is essential that the front door is always properly closed so that the safety door switch is engaged - see Fig. 22 and 23. The rear cleaning door must also always be properly closed and secured with screws.

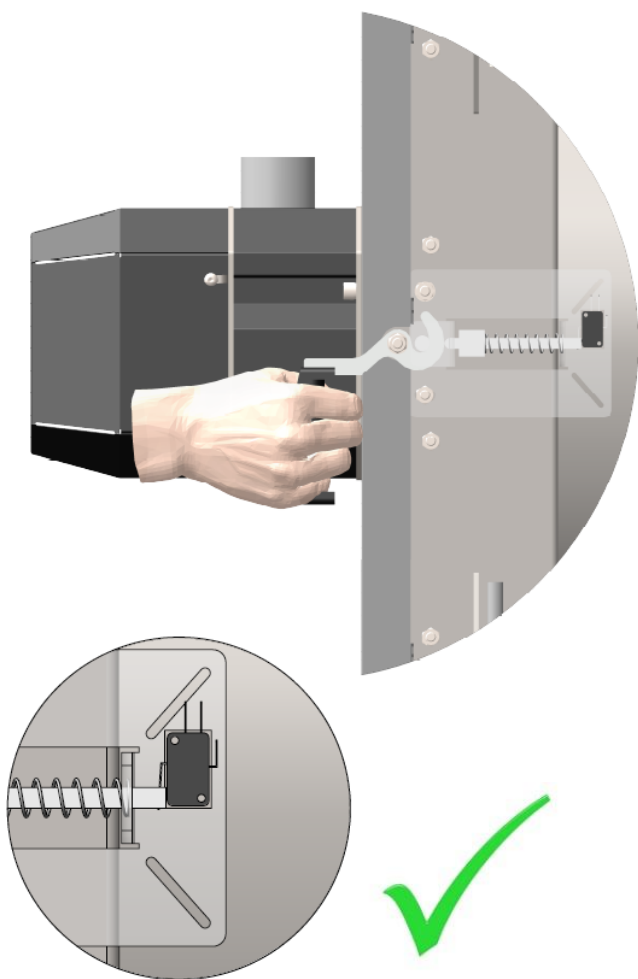


Figure 22. Proper closing of the front door

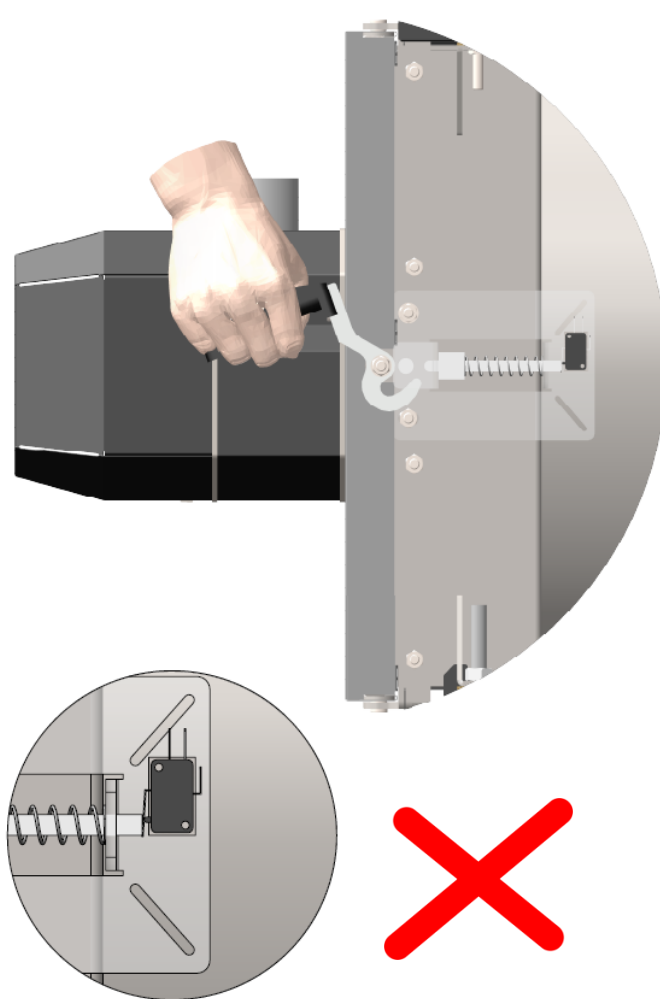


Figure 23. Front door not properly closed

7.3 Ignition



It is prohibited to use flammable liquids for ignition. During operation, it is prohibited to exceed the nominal output of the boiler by any unacceptable means.

- Check the water level in the heating system.
- Check that the shut-off valves between the boiler and the heating system are open.
- Check the operation of the circulation pumps.
- Clean the burner and ash pit, or the ash remover trolley if applicable.
- Fill the hopper with the prescribed fuel – see chap. 3. After refilling, close the hopper to prevent any false air being drawn into the burner through the auger fuel feeder.
- Connect the boiler to the electrical network (230V/50Hz) using a cable with a plug and turn on the main switch.

- If this has not already been done, use the manual mode on the regulator to fill the auger feeder from the fuel hopper.
- Ensure that the parameter "Feeder efficiency" is correctly set in the controller, or perform calibration of the fuel feeder – see the separate boiler controller operating manual.
- Turn on the boiler on the regulator display (see the separate regulator user manual). The regulator evaluates the boiler status and initiates ignition. First, the fan is switched on and the burner is purged. The fuel feeder is then activated and delivers the amount of fuel needed for ignition to the burner. Then the igniter is activated, which ignites the fuel. Ignition time varies depending on the type of fuel, usually taking 2 to 3 minutes. When the fuel ignites (i.e. the value of the parameter measured by the optical sensor reaches the set value), the firing-up mode ends and the boiler switches to automatic operation.

7.4 Boiler operation

In this state, both the fan and the cycling of the auger fuel feeder are in operation. The regulator display shows basic information regarding the operation of the boiler and heating circuits. This mode lasts until the boiler (or room) temperature reaches the set value (see the separate regulator user manual).

In the event of a power failure (230 V, 50 Hz), the boiler control unit memorises its state and maintains it after power is restored.

If the heating water temperature reaches approximately 95 to 100°C, the safety thermostat will activate, independently of the regulator, shutting down the boiler. When the emergency thermostat is switched off, the regulator signals overheating.

The emergency thermostat can be activated only after the temperature drops approximately 20 °C below the set value by unscrewing the black cap on the emergency thermostat and pressing the coloured button. The black cap must then be screwed back onto its original place.

To prevent unwanted activation of the emergency thermostat due to the boiler's thermal inertia, it is recommended to operate the boiler at output heating water temperatures up to 80 °C.

In the event of repeated shutdown of the emergency thermostat, the boiler must be taken out of operation and the cause of the repeated overheating of the boiler must be determined.

7.5 Taking the boiler out of service

The boiler shutdown is handled automatically by the regulator (see the separate regulator user manual), no operator intervention is required.

When taking the boiler out of operation for an extended period, we recommend cleaning its heat exchange surfaces and removing ash from the boiler (see chap. 8.2.1.).

8 Boiler inspection and maintenance



WARNING! Before performing any work or maintenance interventions, it is essential to disconnect the boiler and its accessories from the electrical power supply and wait until the boiler has cooled down.

8.1 General instructions

- The operator is obliged to continuously monitor the equipment and carry out the necessary maintenance – see chapter 8.2. No special qualifications are required for this activity; training during the commissioning of the boiler will suffice.
- Professional interventions may only be carried out by an authorised worker who has been trained by the manufacturer for interventions and inspections of this type.
- During each inspection and maintenance, it is also necessary to check the proper functioning of all safety components of the installation as well as the tightness of the hydraulic system and the flue.
- The above activities do not fall under warranty repairs.
- Always maintain cleanliness and order in the boiler room.
- In the event of any abnormal behaviour of the boiler, burner, regulator or other accessories affecting operational safety, it is essential to immediately contact the authorised service partner for this boiler and have the faults rectified.

8.2 Maintenance performed by the user

The boiler user must regularly check and perform the following activities:

- Check at least once every 2 days whether there is enough fuel in the hopper.
- At least once a month, after the boiler has cooled down, check and, if deposits are present, clean the burner furnace.
- If the boiler is not equipped with an automatic ash remover, check the ash pit at least once a week and, if necessary, empty it into a non-combustible container with a lid. Wear protective gloves during this activity.
- If the boiler is equipped with an automatic ash remover, check the ash remover trolley at least once a month and, if necessary, empty it into a non-combustible container with a lid. Wear protective gloves during this activity.
- Clean the burning chamber of the boiler and the exchanger pipes at least once a month – see chap. 8.2.1.
- Clean the rear part of the heat exchanger at least once a month – see chap. 8.2.1.
- Check water in the heating system every 3 months and refill if necessary.
- Check the door seal every 3 months. The edges of the door frame must be gently pressed into the sealing cord. Sealing is carried out by replacing the sealing cord. The tightness (correctness of seating) is recognized by the smoothly imprinted edge of the sealing surface of the boiler body in the cord. If it is rough and covered with a deposit of soot and tar, it indicates a leak.
- Bleed the heating system and boiler if necessary.

- Clean the exhaust fan at least once a year – see chapter 8.2.1.
- At least once a year, check the tightness and sooting of the flue pipe and the clearance of the chimney flue. During operation and cleaning, a layer of ash accumulates in the chimney. It is necessary to remove it through the chimney door in such a way that the chimney flue does not become blocked.
- Leakage in the joints of the flue and chimney doors can be sealed with sealant or by applying aluminium tape.
- At least once a year, check and clean the water filter in front of the boiler pump.
- Maintain cleanliness in the boiler room and do not use the boiler room for other purposes.



WARNING! There may be hot embers in the ash pit! It is essential to empty ash into a metal non-flammable container intended for ash storage! It is forbidden to dispose of any additional material in this container!

8.2.1 Boiler cleaning

To ensure proper combustion and maintain the high efficiency of the boiler, it is necessary to keep the walls of the boiler's burning chamber and the individual heat exchanger passes clean. Ash must be stored in non-combustible containers with lids. For more comfortable cleaning, an ash vacuum cleaner can be used.

The standard equipment of the boiler includes the following cleaning tools:

- Rake
- Steel brush with a 40 mm diameter and handle



Figure 24. Cleaning tools for the RPC boiler

Procedure for cleaning the burning chamber and exchanger pipes (performed at least once a month):

- Shut down the boiler (burning off mode and cleaning cycle must take place) and allow it to cool down.
- Open the front door of the boiler.
- Use a rake to clean the walls of the boiler burning chamber.
- For thorough cleaning of the individual passes of the exchanger (all horizontal pipes), use a round steel brush.
- Remove accumulated residues from cleaning the burning chamber (it is recommended to use a vacuum cleaner)

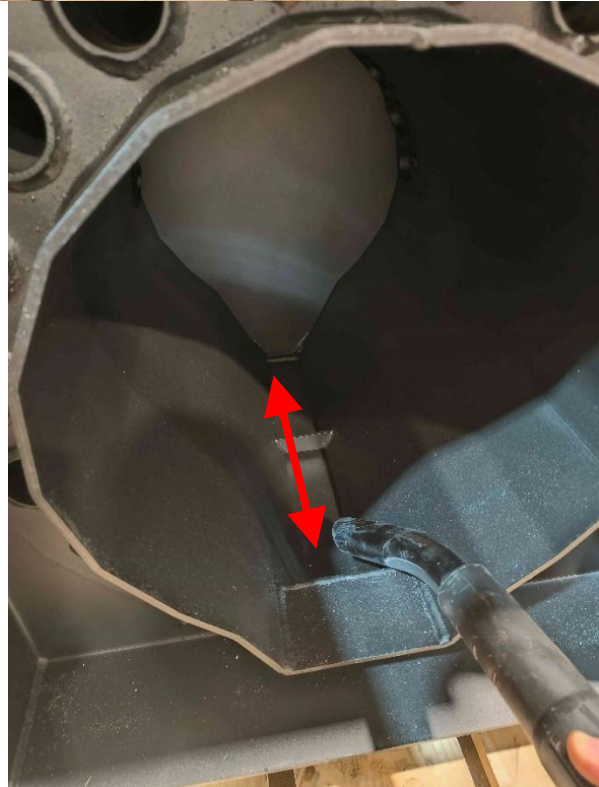
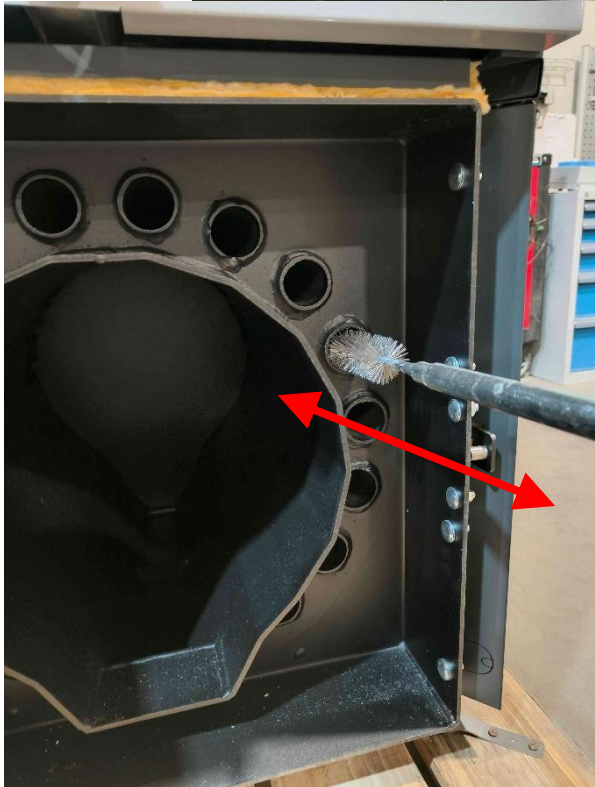
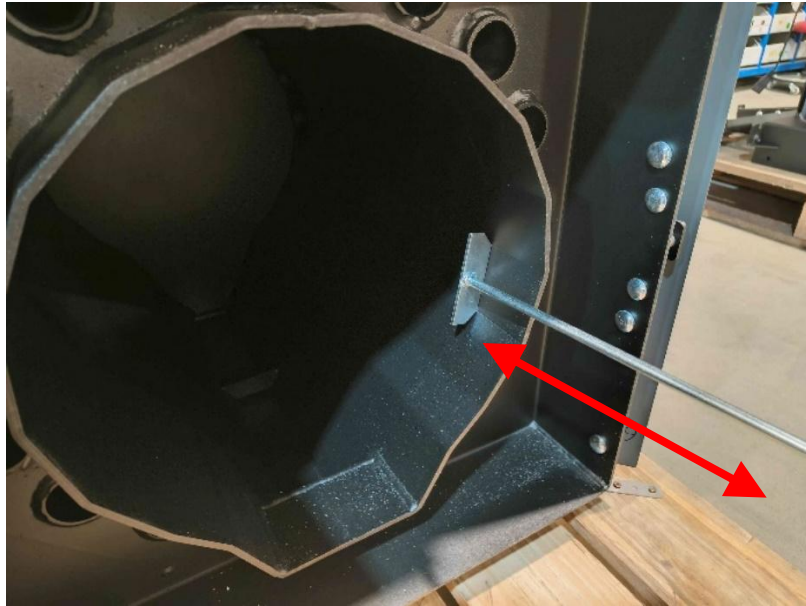


Figure 25. Cleaning of the burning chamber and heat exchanger pipes

Procedure for cleaning the rear part of the boiler (performed at least once a month):

- Shut down the boiler (burning off mode and cleaning cycle must take place) and allow it to cool down.
- Loosen the nuts of the rear cleaning opening.
- Remove the lid and clean the space of the boiler's rear chamber from accumulated dirt (we recommend using a vacuum cleaner).
- Check the condition of the seal on the lid, fit it back onto the boiler and secure it with nuts.

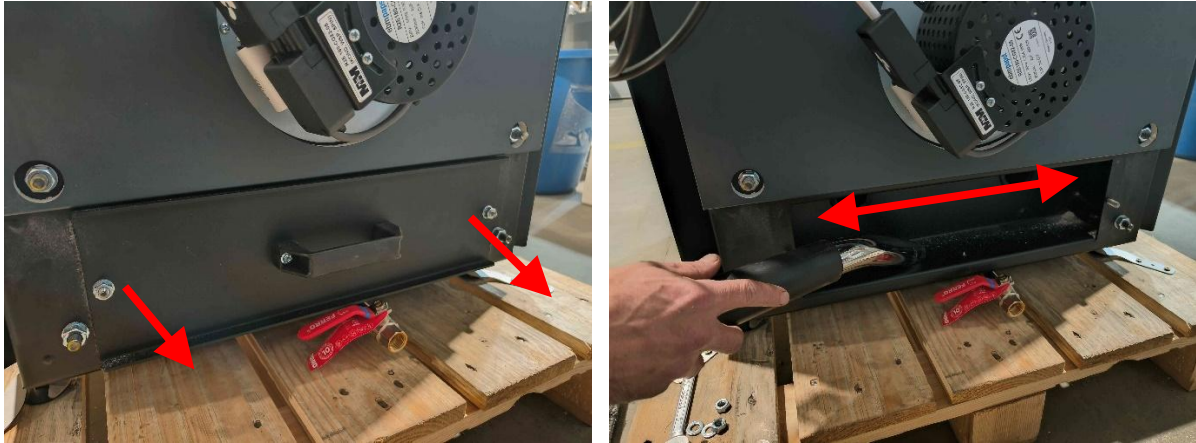


Figure 26. Cleaning the rear part of the boiler



WHEN CLEANING THE REAR CHAMBER OF THE BOILER AROUND ITS ENTIRE PERIMETER, THOROUGHLY CHECK WHETHER ANY DIRT HAS ADHERED TO THE BOILER WALLS, WHICH WOULD PREVENT THE PROPER FLOW OF FUMES.

IT IS NECESSARY TO CLEAN THE ENTIRE AREA OF THE REAR CHAMBER, NOT JUST THE DIRT ACCUMULATED IN THE LOWER PART OF THE CHAMBER!

Procedure for cleaning the exhaust fan (to be carried out at least once a year or in case of increased noise):

- Clean with a spatula or wire brush.
- Shut down the boiler (burning off mode and cleaning cycle must take place) and allow it to cool down.
- Disconnect the supply cable from the exhaust fan.
- Loosen the screws on the rear wall of the boiler and remove the exhaust fan.
- Remove the motor with the propeller from the back wall of the boiler.
- Remove ash and deposits from all surfaces of the fan chamber.
- Loose ash and deposits should be removed from the fan chamber (using a vacuum cleaner is recommended).
- Remove the fan propeller from the fan motor. **WARNING! The fan propeller nut has a left-hand thread!**
- Carefully clean the fan blades and motor flange.
- Perform the reassembly of the exhaust fan in the reverse order.



Figure 27. Exhaust fan cleaning



AFTER CLEANING, ENSURE THAT THE COVER OF THE REAR CLEANING OPENING AND THE EXHAUST FAN ARE PROPERLY AND TIGHTLY INSTALLED.



Regular cleaning and maintenance of the boiler is essential to maintain its long lifespan. If the boiler is not cleaned regularly and properly, there is an increased thermal stress on all parts and there is a risk of damage. The warranty does not cover damage caused by neglected maintenance of the boiler!



The composition of wood pellet ash depends on the fuel used. Ash must be handled or disposed of in accordance with applicable local requirements. Where permitted and where its composition is suitable, it may be used as a fertiliser.

8.2.2 Fuel feeder cleaning

If an unwanted object enters the fuel feeder, causing the feeder to jam and the motor to overheat.

To remove an object from the feeder body, it is necessary to disconnect the boiler from the electrical network, unscrew the drive from the feeder body (see the feeder installation diagram – figures 11 and 12), remove the auger spiral from the feeder, and remove the object.

Assemble the feeder in the reverse order and connect it to the electrical network.

8.2.3 Burner cleaning

One of the reasons for the fuel not igniting in the burner may be a layer of baked-on minerals on the walls of the rotary firebox. If you are unsure about the quality of the pellets used, clean the burning chamber more frequently. We recommend cleaning it with a wire brush or a small spatula.

A common cause of mineral buildup on the furnace walls is turning off the boiler by directly disconnecting it from the electrical supply. Smouldering pellets without air access cause them to stick to the hot walls of the burning chamber. After it is put back into operation, intense soot formation occurs due to the limited supply of combustion air.



When putting the boiler out of operation, it is therefore necessary to turn off the boiler using the regulator, which will controlledly carry out the burning off mode.

8.3 Maintenance performed by an authorised service centre



WARNING! All activities mentioned in this chapter concern only and exclusively the authorised service partner!

8.3.1 Scope and interval of service inspection and maintenance

Service inspection must take place at least once a year (every 12 months):

- check of the functionality of control and safety devices including the safety relief valve, gravity valve, and optical sensor
- check of the tightness of doors and cleaning openings, condition of sealing cords
- check of the boiler insulation
- check of the cleanliness and technical condition of individual parts of the burner: burning chamber (air vent passage, cleaning of the space between the aeration and burning chamber), drives, fan, optical sensor, igniter, passage of the fuel supply pipe, internal and external feeder
- check of the regulator parameter settings for boiler and heating system operation
- check of the boiler room ventilation functionality
- Checking or replacing starting capacitors of individual electrical components (fans, drives)



WARNING! The chimney and ventilation system must be regularly inspected by a qualified chimney sweep. This activity must always be carried out with the frequency mandated by local regulations and standards.

8.3.2 Burner maintenance

During burner operation, some of the combustion products may pass through the aeration openings into the space between the burning and aeration chambers. Depending on the fuel quality, it is recommended to clean this space on average every 6 months of burner operation.

Cleaning the optical sensor

The optical sensor needs to be cleaned regularly with a damp soft cloth. This requires removing the burner cover. Then carefully remove the optical sensor from the burner (1), clean it, and reinstall it back into the burner. Finally, reinstall the burner cover.

Recommended frequency for cleaning the optical sensor: Once a year.

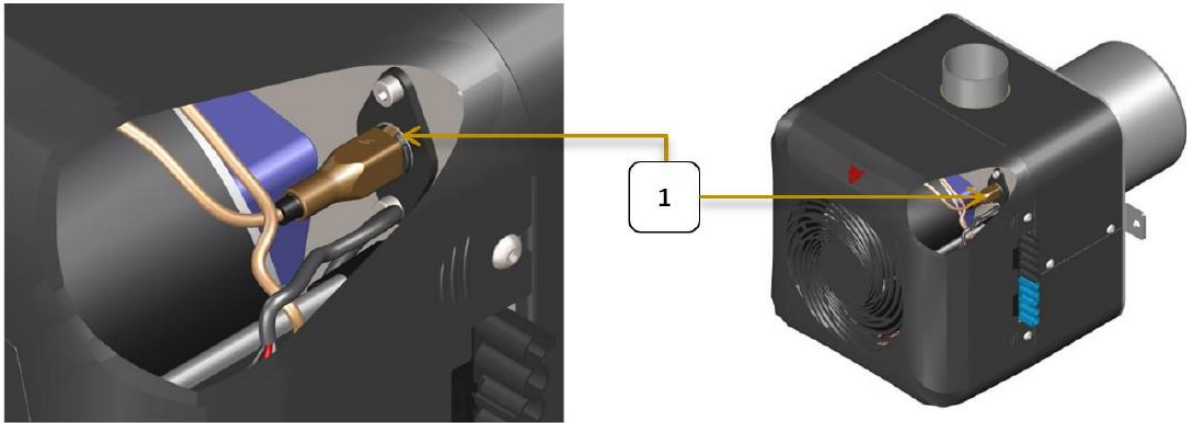


Figure 28. Cleaning of the burner optical sensor

Igniter replacement

If the igniter does not heat up in the FIRING-UP mode, it has likely been damaged. To replace the igniter, you have to remove the burner cover. Then disconnect the igniter wiring from the terminal block. Unscrew the damaged igniter from the metal casing and carefully remove it.

Then install the new igniter in reverse order, including the burner cover.

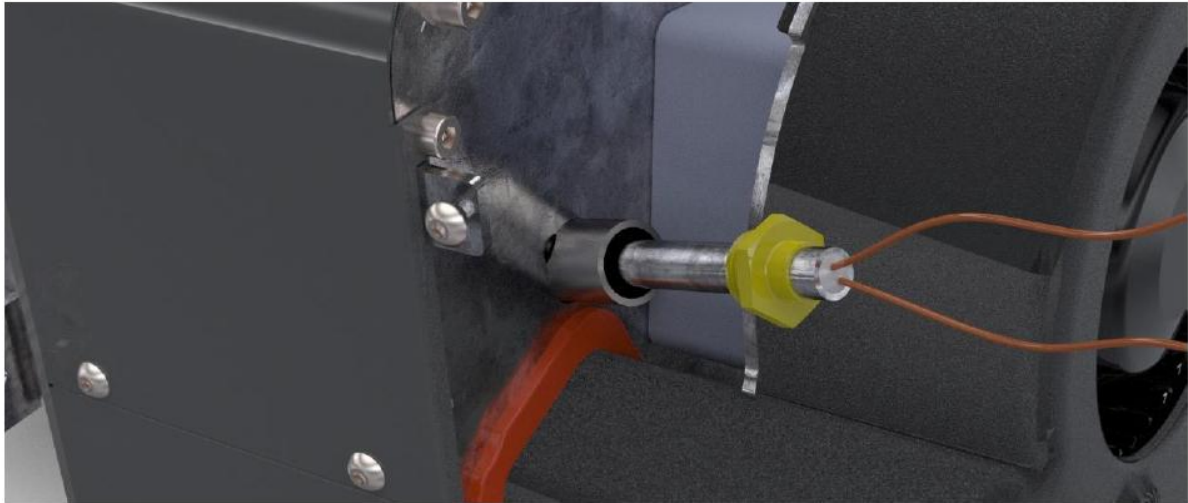


Figure 29. Igniter replacement

9 Health, safety and fire instructions

- Before the initial start-up of the boiler, familiarise yourself with the complete boiler documentation
- The boiler operator must be a person over 18 years old who is familiar with the manual and the operation of the appliance. Leaving children unattended near boilers that are in operation is unacceptable. Boilers must be under occasional supervision by the operator during operation.
- Prevent unauthorized persons and children from accessing the boiler room.
- Installation and operation of the boiler (boiler room) must comply with the relevant project, safety, and hygiene regulations.
- Do not interfere in any way with equipment that is under electrical voltage.
- Only a qualified professional may intervene in the electrical part of the boiler.
- Any discrepancies or malfunctions in the operation of the boiler should be reported immediately to the authorised service technician.
- Before any service interventions or maintenance, disconnect the boiler from the electrical power supply.
- Using any kindling agents, whether solid or liquid, to ignite the fuel is strictly prohibited.
- The boiler can only be connected to a suitable 230V/50Hz socket or to a switchboard. After installation, the network socket or switchboard must be accessible without restrictions.
- Keep the boiler and boiler room clean.
- There must be sufficient lighting in the boiler room.
- The room where the boiler is installed (boiler room) must be equipped with fire protection equipment.
- In case of fire, use only powder or snow (CO₂) fire extinguishers.
- Do not place flammable materials near the boiler and the loading and ash removal openings. Ash must be disposed of in non-combustible containers with a lid. Always pay due attention to the fact that the outer surfaces of the boiler may be hot to the touch.
- If there is a risk of flammable vapours or gases entering the boiler room or during work that poses a temporary risk of fire or explosion (such as laying floor coverings or painting with flammable paints), the boiler must be taken out of operation in good time before the work begins.
- Regularly check the condition of all individual equipment such as the boiler, electrical installation, chimney system, etc.
- Under no circumstances block the ventilation openings in the ventilation system or alter the size of their cross-section in any way.
- When transporting the product to its destination, it is necessary to observe safety regulations. For transportation, use aids and transport devices specifically designed for this purpose with appropriate load capacity.
- The inspection of fumes paths and chimneys must be carried out in accordance with applicable regulations. The flue pipe must be safely connected to the chimney flue. Flue pipes must be mechanically strong, tight against the penetration of fumes, and cleanable. The condition of the chimney should be checked regularly. The cleaning opening in the chimney must be properly sealed to prevent smoke blown by the exhaust fan from leaking into the surrounding area.
- Only one boiler can be connected to a single chimney flue. The connection of the appliance to the chimney flue must always be carried out with the consent of the relevant chimney sweep guild.
- Flue pipes must not be routed through third-party utility or residential spaces. The internal cross-section of the flue pipe must not be larger than the internal diameter of the flue and must not narrow towards the flue.
- The operator is required to have a professional inspection of the boiler carried out at least once a year and to verify its functionality according to local operating conditions. In the case of connecting the boiler

to a dedicated pressure device (e.g. an expansion vessel), the owner is obliged to ensure inspections according to applicable regulations.

- For all activities related to boiler operation, it is necessary to use protective gloves.



WARNING! The boiler may only be used for the purposes for which it is intended.



No flammable objects must be stored near the boiler. Ash must be stored in non-combustible containers with lids.

10 Troubleshooting

A detailed list of typical faults that may occur on the boiler controller can be found in the regulator manual. The table below only lists faults that may occur on the boiler itself.

Fault	Cause	Removal
The regulator display is not working.	Regulator power supply is missing.	Check if the power cable is connected to the electrical network and if the main switch is turned on.
	Burnt internal fuse on the control module.	Replace the fuse (service technician, qualified electrician).
	Loose or disconnected data wire connector of the display on the panel or regulator module, damaged wire.	Check the connector, replace the damaged part (service technician, qualified electrician).
	Damaged display.	Replace the display (service technician, qualified electrician).
	Damaged regulator.	Replace the regulator (service technician, qualified electrician).
	Environment too humid for regulator operation.	Reduce humidity in the boiler room.
The exhaust fan does not rotate in WORK mode.	Boiler overheating and disconnection of the emergency thermostat STB.	After the water temperature in the boiler drops below approximately 80 °C, unscrew the cover of the emergency

	Stuck fan impeller. Burnt fuse of the regulator. Non-functional motor. Damaged regulator.	thermostat and press the switch with a suitable object (e.g. a pencil). Remove the cause (foreign body, blockage). Replace the fuse (service technician, qualified electrician). Replace the motor (service technician, qualified electrician). Replace the regulator (service technician, qualified electrician).
The exhaust fan is making excessive noise.	The impeller is fouled with tar. The cause may be low fumes temperature.	Remove the exhaust fan motor. Clean. Set the boiler to operate at a higher output.
The fuel feeder (or ash removal) is not functioning.	Drive power supply is missing. Incorrect connection of power cables. The feeder is mechanically blocked. The feeder drive is damaged.	Check if the connectors are connected properly. Remove the blocking object. Check that the auger can rotate freely. Replace the feeder drive (service technician, qualified electrician).
The boiler is not reaching the required temperature.	Incorrectly selected boiler output relative to the heated building. Damaged boiler temperature sensor. The boiler temperature sensor is incorrectly positioned in the exchanger well. The boiler output is set too low.	Verify the correctness of the boiler size selection. Check/replace the boiler temperature sensor. Check the correct placement of the sensor in the exchanger well. Check and, if necessary, adjust the boiler performance settings.

Smoke is coming out of the boiler/storage tank.	Blocked chimney or flue pipe between the boiler and the chimney.	Clean the chimney and flue paths.
	Clogged boiler heat exchanger.	Clean the boiler heat exchanger.
	Damaged or worn boiler sealing cords.	Check/replace the boiler sealing cords.
	Fumes extraction power set too low.	Check or, if necessary, adjust the fumes extraction power setting.
The burner does not ignite the fuel.	Fuel is missing.	Check/refill fuel in the hopper. Check if the feeder is clogged.
	Igniter damage.	Check/replace the igniter (service technician, qualified electrician).
	Non-functional/blocked fan in the burner.	Check/clean/replace the fan. Check/replace the fan start capacitor.
The burner ignites but does not continue to operate.	Clogged optical sensor.	Clean the optical sensor.
The burner does not indicate flame brightness.	Clogged optical sensor.	Clean the optical sensor.
Burner overheating.	Burner clogged with impurities.	Clean the burner firebox.
	Low chimney draft.	Check the chimney, adjust the fumes exhaust parameters.



Always disconnect the boiler from the mains power supply first when troubleshooting! If the boiler unit also controls a backup heat source, it is essential to disconnect it from the mains power supply as well.

In the interest of maintaining quality function and safe operation, it is necessary for boiler repairs to be carried out **exclusively by personnel from professional service centres.**

Warranty and post-warranty repairs of boilers are provided by BLAZE HARMONY s.r.o. through its **professional service centres and contractual partners.**

11 Related standards

Heating system

EN 303-5+A1:2023 Heating boilers

Fire regulations

EN 13501-1 Fire classification of construction products and building elements

Electrical

EN 60445 ed. 2 Basic and safety principles for man-machine interface, marking and identification – Identification of equipment terminals and of terminations of certain designated conductors, including general rules for an alphanumeric system

EN 60079-14-2 Electrical apparatus for explosive gas atmospheres – Part 14

EN 60 446 Basic and safety principles for man-machine interface, marking and identification – Identification of conductors by colours or numerals

EN 50 165 Electrical equipment of non-electric appliances for household. Safety requirements

EN 55 014-1 Electromagnetic compatibility – Requirements for household appliances – Part 1

EN 60335-1 ed.2 2003+1:2004+A11:2004+A1:2005+2:2006+A12:2006+a2:2007+ 3:2007+ Z1:2007
Household and similar electrical appliances – Safety – Part 1: General requirements

EN 60335-2-102 Household and similar electrical appliances – Safety – Part 2

12 Disposal of transport packaging

- dispose of the polyethylene cover film in a recycling bin for plastics
- deliver the wooden pallet to a collection yard

13 Disposal of the boiler after the end of its lifespan

- clean the boiler and disassemble it into individual parts
- metal parts to be delivered to a metal waste collection point
- insulation boards and sealing cords should be disposed of as household waste

14 Warranty conditions

RPC series boilers are manufactured and tested according to the applicable documentation and comply with EN303-5+A1:2023 Heating boilers.

The warranty period for the pressure part of the boiler is 60 months.

The warranty period for consumable parts is 12 months.

The warranty period for other components is 24 months.

The warranty period for the pellet burner is 12–36 months (see the Service Book, which forms an integral part of the delivery).

The warranty starts from the date of the first commissioning of the boiler, but no later than 6 months after the date of dispatch of the boiler from the manufacturing plant of BLAZE HARMONY s.r.o.

The warranty applies only to the boiler that is operated according to the instructions provided in the installation, operation, and maintenance manual and started by an authorized company.

Sealing cords are considered consumable parts.

In the event of the need to replace a defective boiler part under warranty, the end user shall contact the authorised service organisation that commissioned the boiler, or another company in their area with a valid authorisation to commission and service boilers from BLAZE HARMONY s.r.o. The latter will ask the service department of BLAZE HARMONY s.r.o. for a new spare part. If the service department of BLAZE HARMONY s.r.o. considers that the complaint is justified, it will immediately send the spare part in question to the service organisation. The latter will then replace the part on the customer's boiler.

The warranty does not cover, among other things, faults arising from:

- connecting the boiler to a water pressure greater than 300 kPa
- using fuel other than the recommended fuel
- in case of incorrect operation (e.g. overheating of the boiler)
- connecting the boiler to a network other than 230V/50Hz or to a faulty network
- untreated water (e.g. sedimentary limescale in the boiler)
- inexperienced handling and mechanical damage to parts
- incorrectly sized and improperly executed heating system
- violent treatment, intervention in the boiler structure, natural disaster, improper storage or for other reasons not influenced by the manufacturer

Failure to comply with the above will result in the loss of warranty.

In the event of a warranty claim, please contact the service and installation organisation that put your product into operation.

If the first commissioning of the boiler is carried out by an unauthorised person, the warranty on the product is void!

Immediately send a properly completed and signed document **“Warranty Card and Boiler Commissioning Checklist and Heating Test Report”** to the manufacturer after the boiler is put into operation. Without fulfilling this condition, the manufacturer cannot acknowledge the repair as warranty.

When reporting a fault, it is necessary to report:

- the boiler serial number
- the installation date
- the authorised company that put the boiler into operation
- the circumstances of the fault (description of the fault)

The manufacturer reserves the right to make changes as part of product innovation that may not be included in the manual.

15 WARNING!

A properly completed warranty card intended for the manufacturer of the RPC boiler should be sent promptly to the address below:

BLAZE HARMONY s.r.o.

Trnávka 37

751 31 Lipník nad Bečvou

Czech Republic

Or by e-mail to zarucak@blazeharmony.com

16 Record of repairs performed

Record of warranty and post-warranty repairs and product inspections			
Record date	Performed activity	Contractual service organization (signature, stamp)	Customer signature



BLAZE HARMONY s.r.o.

Trnávka 37, 751 31 Lipník nad Bečvou

Czech Republic

E-mail: info@blazeharmony.com, www.blazeharmony.com

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