METAL-FACH
HEATING TECHNOLOGY

Technical and operating documentation

SE

English language

Original instructions, edition 01/2022

Contents

Introduction

Dear customer, thank you for purchasing a METAL-FACH Heating Technology. We hope that the operation of the device will meet your expectations and will provide you with a lot of satisfaction. The heating boiler has been designed and manufactured in accordance with applicable norms and standards, ensuring safe and reliable operation. Operation with strict adherence to the instructions contained in the manual attached to the device will ensure optimal and reliable operation of the central heating boiler for many years. The product is not intended for use by people with reduced physical / mental fitness or without experience and knowledge, if these people are supervised or instructed by a person responsible for their safety. Operation by children is forbidden.

Symbols used in the manual

ATTENTION!
Very important information, always read it if it exists in a given place.

TIP!
It is worth reading this information, it makes operation easier.

Definitions of terms used in the manual

(User | Installer)

Central heating boiler - a device for burning various types of solid fuels in order to heat the heat carrier (most often water) circulating in the central heating circuit.

Draft regulator - a device whose task is to regulate the temperature in solid fuel boilers. As the temperature increases, the air supply to the furnace is limited, which slows down the combustion of fuel. As the temperature drops - the air supply increases, allowing the fuel to fire up again.

Chimney draft regulator - is used to stabilize and reduce too high negative pressure in the chimney ducts.

Introductory activities

(User)

Activities to be performed during the commissioning of the METAL-FACH boiler:

- carefully check the completeness of the delivered boiler (Chapter: Boiler Accessories) and that the boiler has not been damaged during transport,
- compare the rating plate on the left or right side of the boiler casing with your order,

- carefully read the operating manual - it contains information necessary for the correct use of the boiler.

In case of any problems, please contact the service department or the authorized METAL-FACH Jacek Kucharewicz service. These people have appropriate training and access to original parts that enable proper service and installation of METAL-FACH Jacek Kucharewicz boilers, confirmed by a certificate issued at the company's premises.

General information

(User)

The Operation and Maintenance Documentation is one of the parts of the product, it is delivered together with the purchased central heating boiler. The Operation and Maintenance Documentation contains data on the construction, assembly and use of SE series boilers. Careful reading of the content of the operating instructions ensures correct and safe use of our boiler.

ATTENTION!
It is recommended that the user obey all instructions regarding the device contained in this Operation and Maintenance Documentation, Warranty Conditions and generally applicable legal regulations.

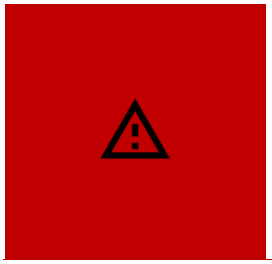
The boilers are delivered assembled. They are set up and fixed to the pallet in a permanent manner. Additional protections in the form of foil packaging are used.

During transport of the boiler, it should be secured against shifting or turning on the car's load box with the use of safety devices, e.g. belts. Transport of boilers should be performed in accordance with the rules for the transport of materials. Loading and unloading should be carried out with the use of lifting devices (forklift) with a lifting capacity of more than 1000 kg.

Application

(User | Installer)

Steel water boilers are intended for heating utility water in central heating systems. They are intended for heating residential buildings such as: single-family and multi-family houses, farm buildings, public utility buildings. Thanks to the use of modern design solutions, the SE 60-350 boiler achieves efficiency ≤ 81%. The correct operation and achieving the full capabilities of the boiler depends on the quality of the installation, appropriate chimney draft, and proper operation and maintenance of the boiler.



ATTENTION!

The boilers are designed for operation in open and closed water systems with gravity or forced circulation, with security features compliant with the requirements of the applicable PN-B-02413 standard for Heating and District heating and a closed system in accordance with PN-EN 12828. Heating installations in buildings. Projects.

Boiler equipment

(User)

The scope of delivery includes both basic and additional elements, depending on the order placed. at the time of receipt, carefully inspect the product to make sure it has not been damaged during transport and check the completeness of the equipment. The items included in the basic and additional equipment are described below .

Basic equipment:	Unit of measure	Quantity
Central heating boiler	pcs	1
Ash drawer	pcs	1
Boiler cleaning tools: • poker • brush	pcs	1
Thermometer	pcs	1
Additional equipment:	**Unit of measure**	**Quantity**
Draft regulator	pcs	1
Documentation:		
Boiler technical and operational documentation	pcs	1

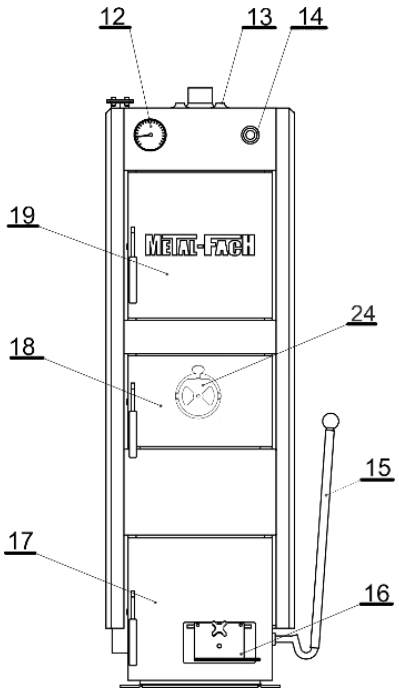
ATTENTION!
METAL-FACH reserves the right to introduce changes to the technical parameters, equipment and specifications of the offered goods without prior notice.

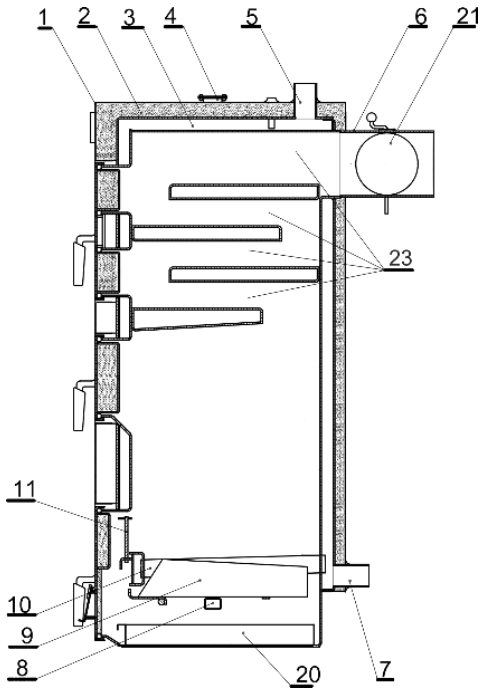
Basic elements of the boiler construction a

(User | Installer)

The water body is made as a welded structure of certified steel sheets 6 mm P265GH (for elements in contact with exhaust gases) and 4 mm (for other elements) S235JR + N.

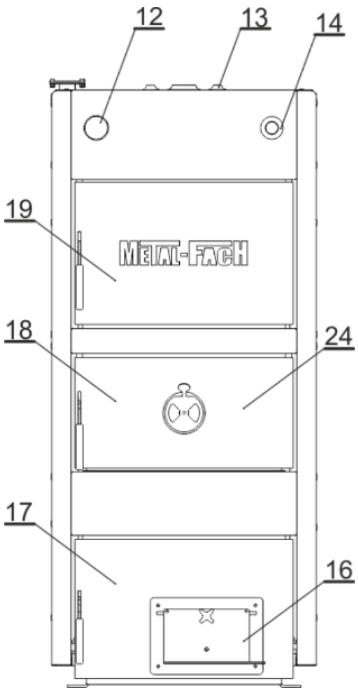
SE 60 boiler

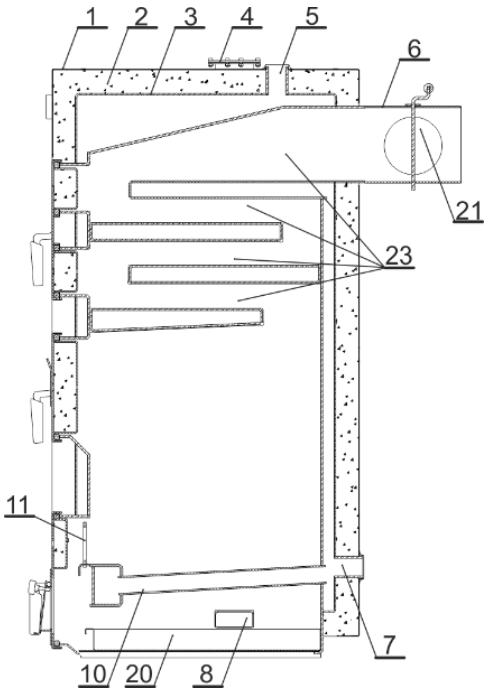




1. Boiler casing
2. Thermal insulation
3. Boiler body
4. Fan mounting
5. Supply connection
6. Flue
7. Return connection
8. Blow window
9. Movable grate
10. Water grate
11. Slatted doors
12. Thermometer
13. Temperature sensor sockets
14. Draft regulator connection
15. Scaffolding lever
16. Air dispenser
17. Grate and ash doors
18. Charging door
19. Cleaning door
20. Ash drawer
21. Exhaust gas damper
22. -
23. Convection channels
24. Secondary air damper

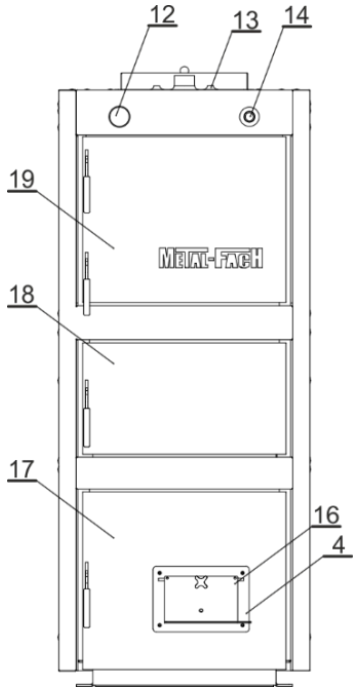
SE 75 boiler

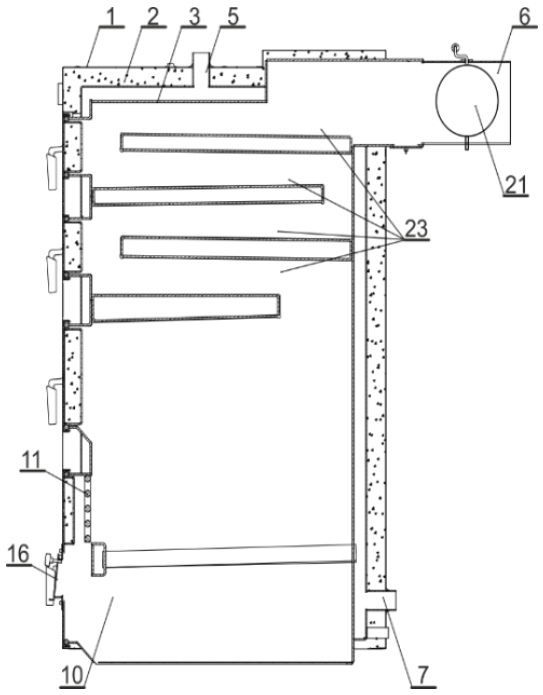




1. Boiler casing
2. Thermal insulation
3. Boiler body
4. Fan mounting
5. Supply connection
6. Flue
7. Return connection
8. Blow window
9. -
10. Water grate
11. Slatted doors
12. Thermometer
13. Temperature sensor sockets
14. Draft regulator connection
15. -
16. Air dispenser
17. Grate and ash doors
18. Charging door
19. Cleaning door
20. Ash drawer
21. Exhaust gas damper
22. -
23. Convection channels

SE 95-350 boiler





1. Boiler casing
2. Thermal insulation
3. Boiler body
4. Fan mounting
5. Supply connection
6. Flue
7. Return connection
8. -
9. -
10. Water grate
11. Slatted doors
12. Thermometer
13. Temperature sensor sockets
14. Draft regulator connection
15. -
16. Air dispenser
17. Grate and ash doors
18. Charging door
19. Cleaning door
20. -
21. Exhaust gas damper
22. -
23. Convection channels

Boiler technical data a

(User | Installer)

Parameters	SI unit	Boiler model			
		SE 60	SE - 75	SE - 95	SE - 120
Nominal thermal power for hard coal combustion	[kW]	60	75	95	120
Heating area	[m2]	3.4	3.8	4.5	6.9
The surface can be heated	[m2]	600	600-750	750-950	950-1200
Water capacity	[L]	90	105	115	260
Maximum working pressure	[bar]	1.5	1.5	1.5	1.5
Maximum working temperature	[° C]	95	95	95	95
Test pressure	[bar]	4	4	4	4
Fuel	[-]	Firewood - hornbeam logs with humidity W_c = 15-20%			
Computational flow resistance ΔT	[10K]	2.36	3.14	4.20	7.45
Computational flow resistance ΔT	[20K]	1.18	1.57	2.10	3.73
Boiler weight	[kg]	438	480	521	850

* Boiler weight +/- 5 kg.

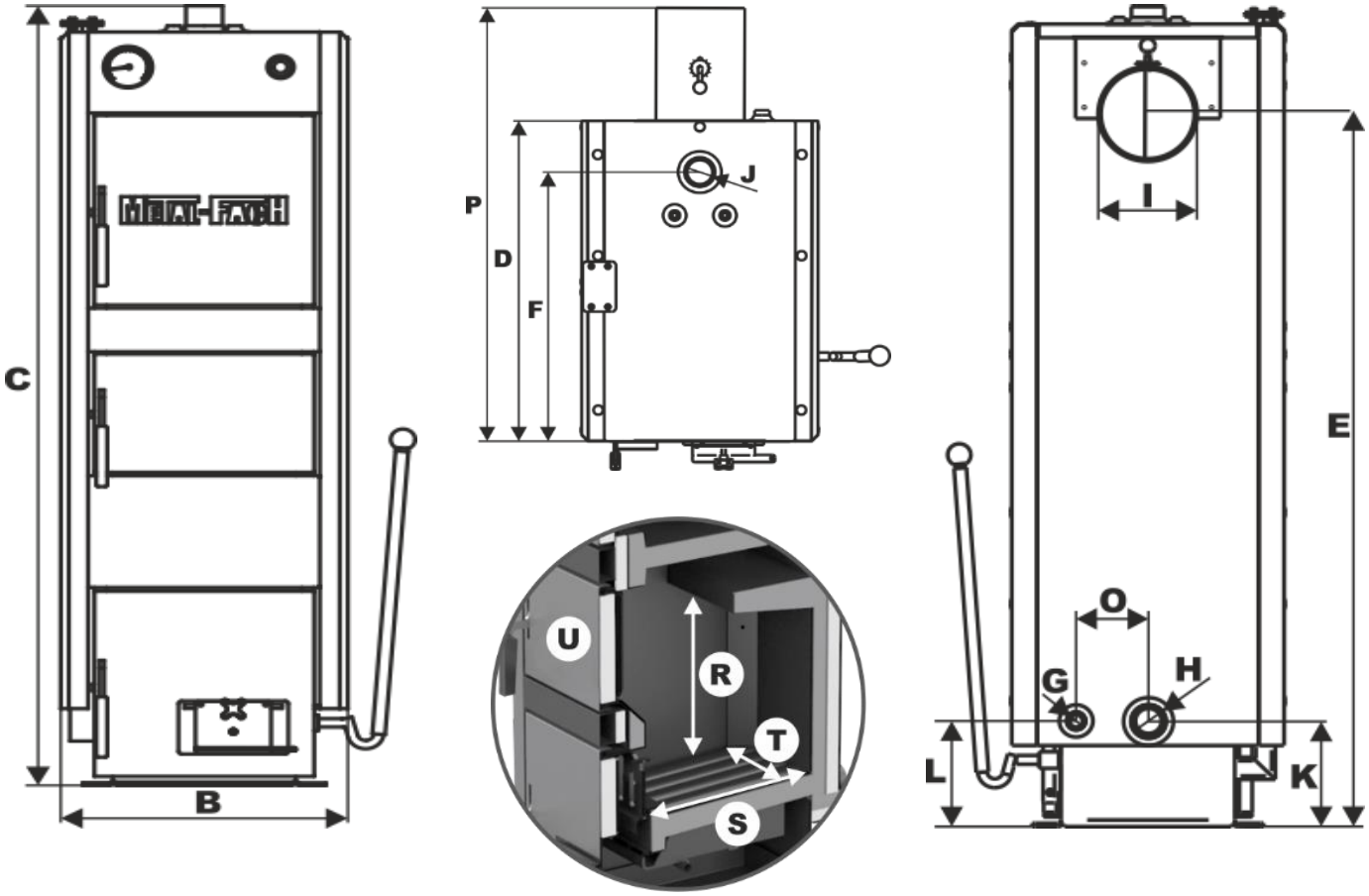
Parameters	SI unit	Boiler model			
		SE - 150	SE - 200	SE - 250	SE-350
Nominal thermal power for hard coal combustion	[kW]	150	200	250	350
Heating area	[m2]	8.0	9.2	10	18.32
The surface can be heated	[m2]	1200-1500	1500-2000	2000-2500	2500-3500
Water capacity	[L]	290	316	330	713
Maximum working pressure	[bar]	1.5	1.5	1.5	1.5
Maximum working temperature	[° C]	95	95	95	95
Test pressure	[bar]	4	4	4	4
Fuel	[-]	Firewood - hornbeam logs with humidity W_c = 15-20%			
Computational flow resistance ΔT	[10K]	11.65	16.76	26.20	-
Computational flow resistance ΔT	[20K]	5.825	8.38	13.10	-
Boiler weight	[kg]	1015	1090	1160	2050

* Boiler weight +/- 5 kg.

Boiler dimensions

(User | Installer)

SE boiler dimensions



Type	SE 60	SE - 75	SE - 95	SE - 120	SE - 150	SE - 200	SE - 250
AND	-	-	-	-	-	-	-
B	530	580	680	770	860	860	860
C.	1530	1530	1530	1830	1910	2110	2110
D	800	800	800	1120	1170	1170	1270
E.	1330	1330	1330	1690	1780	1980	1980
F.	584	584	584	480	660	655	655
G.	3/4 "	3/4 "	3/4 "	3/4 "	3/4 "	3/4 "	3/4 "
H.	1.5 "	1.5 "	1.5 "	2 "	2 "	2 "	2 "
AND	200	200	200	250	250	250	250
J.	1.5 "	1.5 "	1.5 "	2 "	2 "	2 "	2 "
K.	225	225	225	195	180	180	180
L.	175	175	185	100	155	155	155
M.	-	-	-	-	-	-	-
N	-	-	-	-	-	-	-
ABOUT	130	160	210	185	234	234	234
P.	960	960	960	1550	1580	1580	1580
R	550	550	550	650	700	900	900
S.	600	600	600	900	950	950	1050
T.	340	390	490	540	640	640	640
AT	340x200	390x200	490x250	540x300	640x300	640x300	640x300

* The dimensions do not include the height of the boiler leveling feet.

Fuel

(User)

The fuel for SE series boilers is hardwood firewood not exceeding 20% humidity, hard coal of the OI assortment.

It is recommended to use the wood of deciduous trees such as: beech, hornbeam, oak, birch, alder, ash. The use of coniferous wood is not recommended as it causes the boilers to smoke and the need for more frequent cleaning.

ATTENTION!
When using wood with a moisture content above 20%, it is recommended to use an acid-resistant steel insert in the chimney.

Requirements for the boiler room and boiler installation

(User | Installer)

In Poland, boiler houses built for solid fuel should meet the requirements of PN-87 / B-02411 "Solid fuel boiler houses" and Journal of Laws of 2015.0.1422. They have been divided into two types:

1. For small boiler rooms up to 25 kW of power, the following requirements should be met:

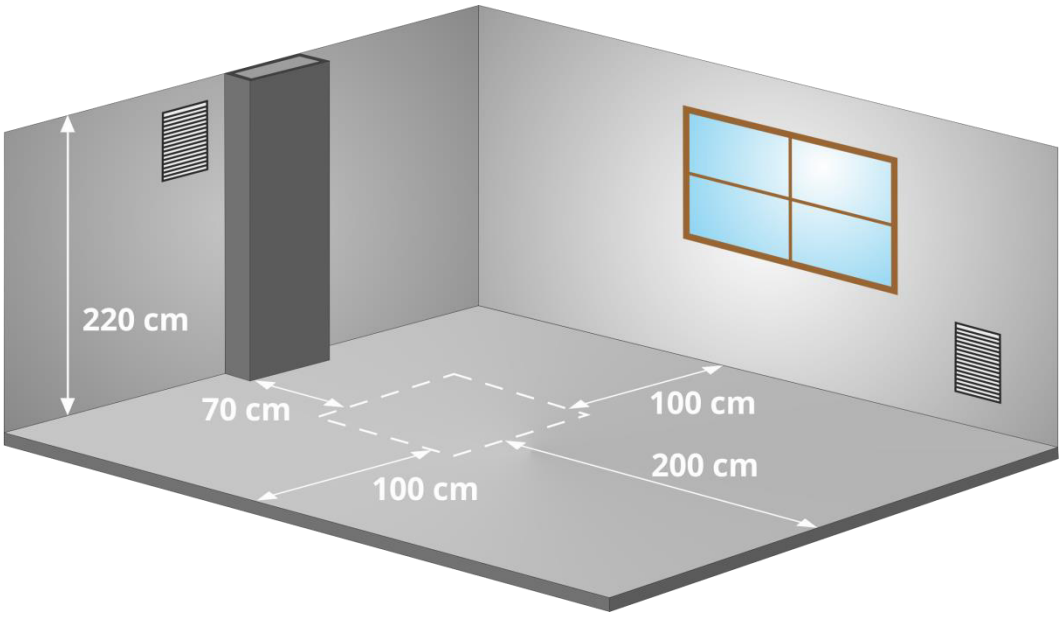
- the boiler should be placed as centrally as possible in relation to the heated rooms and in a separate room;
- the material from which the floor in the boiler room will be made should be non-flammable, in the case of flammable material, the floor should be covered with a steel sheet with a thickness of 0.7 mm at a distance of at least 50 cm from the edge of the boiler; the boiler should be placed on a foundation made of non-combustible materials, protruding 0.05 m above the floor level, and edged with steel angles;
- there should be artificial lighting in the room, natural lighting is also advisable;
- placing the wheel in the room should allow free access to the boiler during cleaning and maintenance; the distance between the rear of the boiler and the wall should not be less than 70 cm, the distance between the boiler side and the wall should not be less than 100 cm, and the distance between the front of the boiler and the opposite wall should not be less than 200 cm;
- the height in new buildings should be at least 220 cm, in the case of existing buildings, the height of the boiler room is at least 190 cm, with proper ventilation (supply and exhaust) provided;
- supply ventilation should take place through a non-closed opening with a minimum cross-section of 200 cm^2 and located up to a maximum of 100 cm above the floor level;
- exhaust ventilation should be provided through an exhaust duct made of non-combustible material with a minimum cross-section of 14 x 14 cm with an inlet opening under the ceiling of the boiler room; the exhaust air duct should lead above the roof and placed near the chimney; there must be no closing devices on the exhaust duct;
- the chimney cross-section should not be less than 20 x 20 cm;
- there should be a floor drain in the floor of the boiler room;
- the optimal place for fuel storage is a separate room located near the boiler room;
- ash and slag should be collected in appropriate containers allowing for daily emptying.

2. Boiler rooms with a thermal power from 25 kW should additionally meet the following requirements:

- the distance of the boiler furthest from the chimney, with gravity draft, cannot exceed 50 cm of the chimney height;
- the fuel and slag storage should be located next to the boiler hall at a storage height of up to 220 cm with a free space above the fuel of at least 50 cm;
- facilities and equipment allowing the vertical and horizontal transport of fuel and slag should be included;
- the fuel storage rooms should be ventilated in a natural, unforced manner, allowing one full air change per hour in the fuel storage and three full air changes in the slag storage;

- the entrance door to the boiler room should be non-flammable (fire resistance class 0.5), minimum width 80 cm, opening outwards; they should have a locking system without a handle, enabling them to be opened outwards under pressure, inwards with the use of a handle;
- the requirements for ventilation are the same as for boiler rooms with lower powers; additionally, in boiler rooms, the power of which exceeds 400 kW, in addition to the supply and exhaust ventilation, mechanical ventilation should be provided, periodically turned on when filling fuel and deslagging the boilers, ensuring a minimum of 10 full air changes per hour;
- natural lighting should be included in the boiler room, illuminating the boiler from its front, and the area of windows should be at least 1/15 of the boiler room floor area; half of the installed ones should be opened; electric lighting and an electric socket with a voltage not exceeding 24 V, should also be in the room;
- there should be a drain in the floor to cool the water, and its capacity should be equal to the water capacity of the largest boiler, but not more than 2 m^3;
- in the boiler room, thermal pipes should be insulated;
- The positioning of the boiler with the minimum required distances is shown in the diagram of the boiler room below.

Minimum distances to place the boiler in the boiler room



ATTENTION!
Mechanical exhaust ventilation should not be used in the boiler room.

ATTENTION!
Ensuring an inflow of a sufficient amount of fresh air to the boiler room will enable efficient combustion of the fuel.

ATTENTION!
Avoid excess carbon dioxide build-up in the room.

ATTENTION!
More detailed information on the requirements for the construction of a boiler room can be found in the Regulation of the Minister of Infrastructure of March 12, 2009.

TIP!
The above-mentioned provisions are guidelines that need to be reviewed as the regulation is subject to amendment.

Boiler assembly

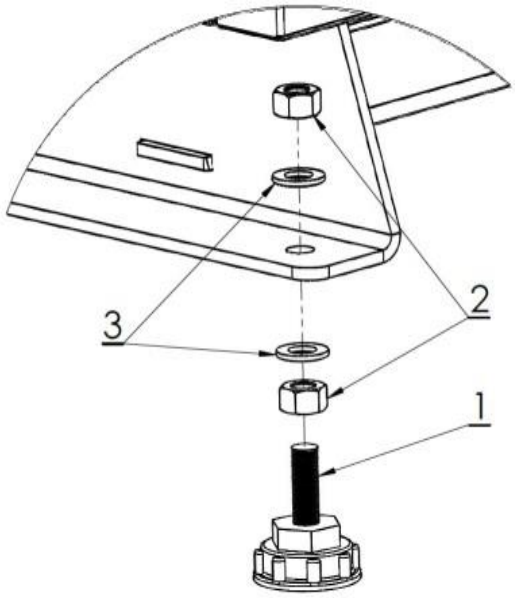
(User | Installer)

An important element of the installation is the correct positioning and leveling of the SE boiler, these boilers do not require any special foundations. The boiler must be vertical.

1. Check if the set includes four feet.
2. Use a spirit level to align the boiler with the ground. If the boiler is in a horizontal position, the installation of the feet is not required.
3. Screw the four feet into the designated holes.
4. Use the spirit level to align the boiler

Method of mounting the boiler leveling feet

1. Adjusting foot, pcs. 4
2. Nut M10, pcs. 8
3. Washer Ø10, pcs. 8



ATTENTION!
An incorrectly leveled boiler may be damaged.

ATTENTION!
The temperature of water returning from the system to the central heating boiler should not be lower than 45ºC.

The boiler should be placed on a heat-insulating non-flammable pad, which on each side of the boiler should be 2 cm larger than the boiler base. If the boiler is located in a basement, it is recommended that it is placed on a foundation of at least 5 cm. The strength of the substrate, as well as the conditions of fire protection. are the key guidelines when positioning the boiler in the right place, they include:

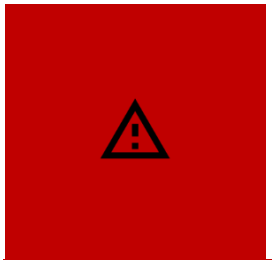
- 20 cm safe distance from flammable materials,
- 40 cm for flammable materials with a degree of flammability of C3,
- 40 cm if the degree of flammability is unknown.

The degree of flammability of building masses and products	Building masses and products
A - Non-flammable	Sandstone, concrete, bricks, fire plaster, mortar, ceramic tiles, granite
B - Hardly burning	Wood and cement boards, glass fibers, mineral insulation
C1 - Hard to burn	Beech wood, oak wood, plywood
C2 - Moderately burning	Pine, larch and spruce cork for trees, sawn wood boards, rubber floor coverings
C3 - Burns easily	Asphalt plywood, celluloid pulp, polyurethane, polystyrene, polyethylene, plastic, PVC

Connection of the boiler with the heating system

(Installer)

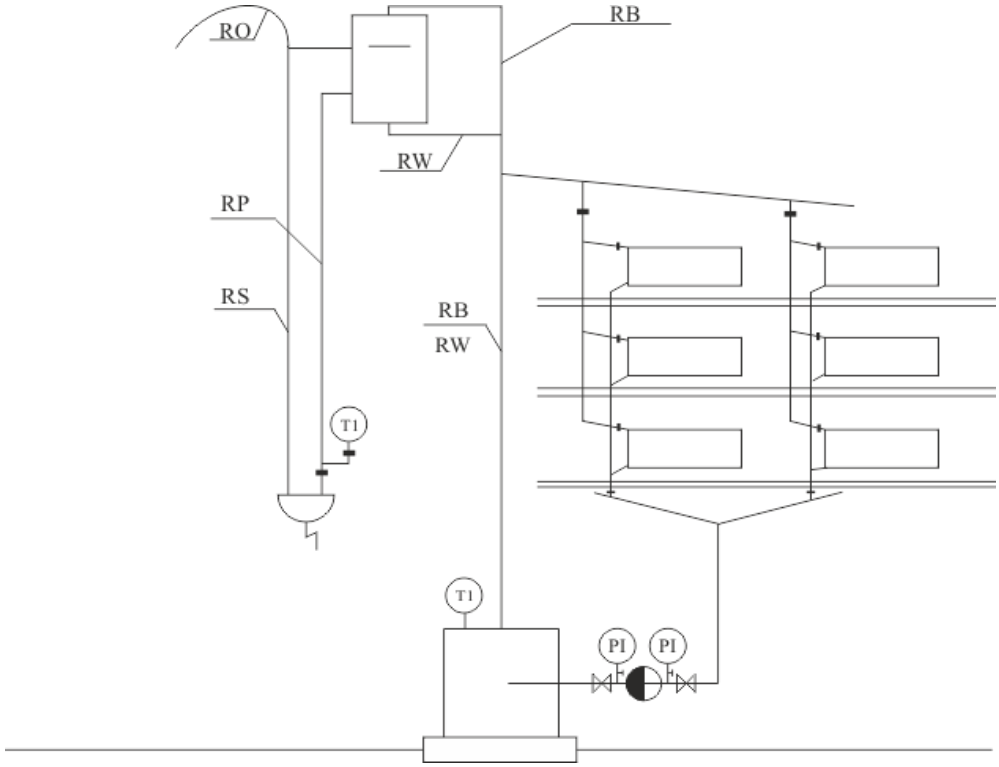
The boiler should be connected to the central heating system by a company authorized by the manufacturer, and the correct connection should be confirmed on the warranty card attached to this manual. The boiler should be connected in accordance with the manufacturer's recommendations, in accordance with this manual.



ATTENTION!

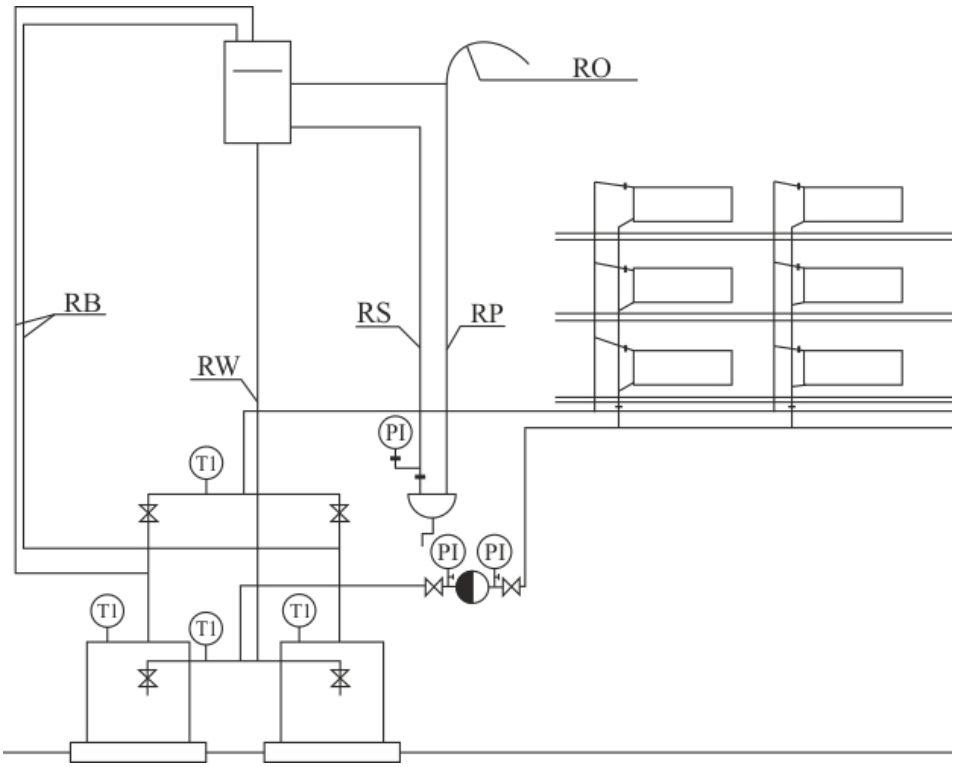
It is recommended that the boiler be commissioned for the first time in accordance with the guidelines contained in the Operation and Maintenance Documentation by a person with valid authorizations - (Information on persons authorized to start the boiler is available from the Manufacturer - tel. +48 85 711 94 56).

Diagrams for connecting boilers to the heating system in accordance with the PN - 91 / B - 02420 standard



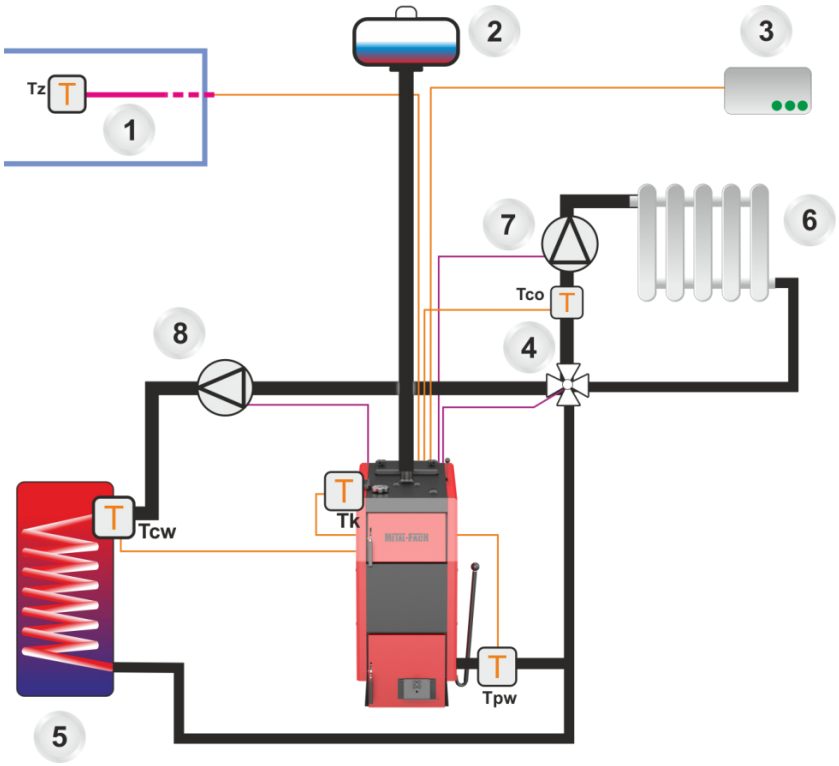
Designation	Description
RO	Vent pipe
RW	Expansion pipe
RS	Signal pipe
RP	Overflow pipe
RB	Safety tube
T1	Temperature
P1	Pressure

Diagrams for connecting boilers to the heating system in accordance with the PN - 91 / B - 02420 standard



Designation	Description
RO	Vent pipe
RW	Expansion pipe
RS	Signal pipe
RP	Overflow pipe
RB	Safety tube
T1	Temperature
P1	Pressure

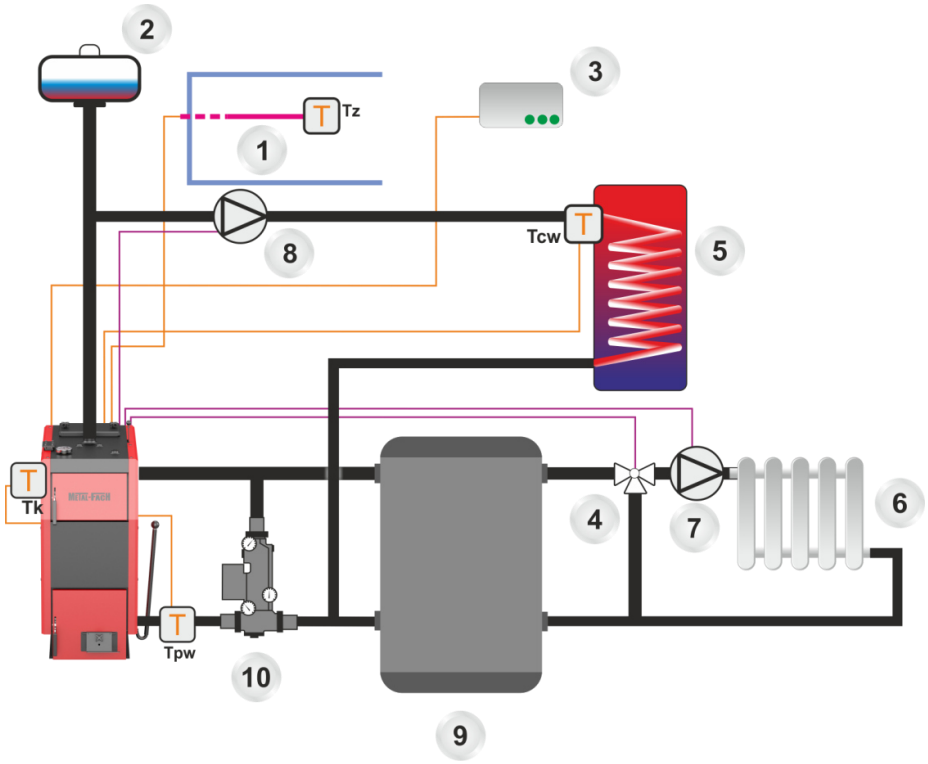
Connecting the boiler to the heating system



1. Outside the building
2. Dish in the collective
3. Room regulator
4. Mixer
5. Heater
6. Heating circuit
7. Central heating pump (CH)
8. Domestic hot water pump (DHW)
9. Buffer
10. Laddomat

Designation	Description
T.	Temperature sensor
Tk	Boiler temperature sensor
Tz	Outdoor temperature sensor
Tcw	Domestic hot water temperature sensor
Tco	Central heating temperature sensor
Tpw	Boiler return temperature sensor
Tpod	Feeder temperature sensor

Connecting the boiler to the heating system



1. Outside the building
2. Dish in the collective
3. Room regulator
4. Mixer
5. Heater
6. Heating circuit
7. Central heating pump (CH)
8. Domestic hot water pump (DHW)
9. Buffer
10. Laddomat

Designation	Description
T.	Temperature sensor
Tk	Boiler temperature sensor
Tz	Outdoor temperature sensor
Tcw	Domestic hot water temperature sensor
Tco	Central heating temperature sensor
Tpw	Boiler return temperature sensor
Tpod	Feeder temperature sensor

Requirements for the expansion vessel

(Installer)

Each open system heating installation should be equipped with an expansion vessel, whose task is to take over the increase in the volume of water filling the installation and to vent it. This vessel should be installed at the highest point of the installation, possibly in a vertical line above the boiler (s).

The volume of the expansion vessel can be estimated by assuming the unit capacity for one kW of thermal efficiency is 1-2 dm^3.

The expansion vessel is equipped with a spigot for connecting a safety riser pipe, a safety downpipe and an overflow pipe and the associated venting.

The diameter of the vent pipe and the overflow pipe must be at least:

$$d = 15 + 1{,}39\sqrt{\dot{Q}} \quad \text{[mm]}$$

$\dot{Q}$ - boiler capacity [kW]

The most important requirements for safety devices are as follows:

- the expansion vessel should have a volume of about 3.5% of the water volume contained in the heating system, including the boiler,
- each boiler should absolutely have a safety pipe and an overflow pipe,
- the installation should be equipped with a signal and expansion pipe as well as a connector for venting the expansion vessel.

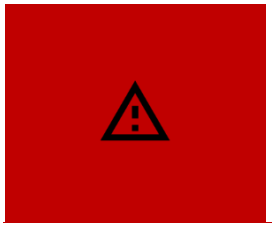
If several boilers are installed, each of them should be equipped with a safety pipe in accordance with the rules provided in accordance with PN-91 / B02413 - protection of open system water heating. No shut-off valves may be installed on the safety and overflow pipes, and the pipes and the vessel must be protected against freezing.

Connection of the boiler with the electrical installation

(Installer)

The boiler is designed to be connected to a voltage of 230V / 50Hz. Installation should be performed by a qualified person. The 230V / 10A grounded connection socket should be easily accessible. The boiler power supply and boiler room lighting should have a different circuit.

The completion of the assembly and the heating test must be recorded in the Warranty Card. The completed Warranty Card should be sent by the user to the manufacturer's address in order to register the user in the company's system.



ATTENTION!
The first start-up of the boiler must be carried out only by a service trained by the manufacturer, with a current certificate of an Authorized Service Engineer, METAL-FACH Distributor or a person with SEP qualifications up to 1.5 kW.

Connecting the boiler to the chimney

(Installer)

Smoke pipes

Smoke pipes are designed to reliably discharge exhaust fumes to the outside and to suck in air that enables fuel combustion. The necessary chimney draft depends on:

- temperature difference between hot exhaust gas and cold air,
- effective height of the chimney,
- chimney cross-section not smaller than 20 x 20 cm,
- the execution of the chimney (possibly smooth internal surfaces) and the tightness of the joints.

The effective height of the chimney is the height difference between the highest hearth and the chimney exit. The effective height of individual chimneys must be at least 4 m, and of common chimneys for solid and liquid fuels, at least 5 m. The difference in height between the two furnaces must not exceed 6.5 m. In the case of sloping roofs, the chimneys should end within the ridge (the highest roof edge), in the area of free wind flow. Disturbances in the draft are thus avoided. Always pay attention to the location of the building in relation to other buildings.

Choosing a chimney

In most cases, the approximate method or selection according to the chimney manufacturer's diagrams is sufficient to select a chimney. In special cases (unfavorable pressure and temperature dependencies, large flue gas volume), chimneys are calculated in accordance with the applicable standard. Low exhaust gas temperature at the boiler nominal power may cause emission of humid exhaust gases, soot deposition, and insufficient chimney draft. This can lead to dampness and corrosion of brick chimneys. It is recommended to use a chimney insert:

- in new buildings, a ceramic flue gas system resistant to condensate, thermally insulated and with a condenser is recommended,
- in existing buildings, it is recommended to modernize the brick chimney by using a stainless steel chimney system (intended for solid fuel boilers), single or double-walled.

Flue

The boiler is connected to the chimney by a flue and a smoke duct. The smoke channel consists of pipes and fittings that are laid indoors. Smoke channels meet the fire protection requirements for chimneys and are often made of the same material as the main chimney. Smoke pipes should be made of non-flammable products. Flues or casing of smoke pipes should meet the requirements set out in the Polish Standard for fire tests of small chimneys. It is allowed to make a brick casing with a full thickness of 12 cm, built on a cement-lime mortar, with external plaster or grouting. Connectors should be as short as possible and placed with a rise to the chimney in order to avoid heat loss and additional resistance. They cannot be led to other floors. Exhaust pipes should not be placed in rooms where the firebox cannot be installed, and besides, they should not be placed in walls and ceilings. Due to the low flue gas temperature, in order to protect the chimney against moisture and reduce the draft, acid-resistant or ceramic chimney liners should be used, with condensate drained to a drain grate. There should be a distance of at least 6 m between the chimney and the nearest edge of the tree crown.

Moving the boiler

(User | Installer)

Before starting the fire in the boiler, check that the central heating system has been properly made and that it is properly filled with water - until it is overflowing with an overflow pipe from the collecting vessel.

Softened water / chemically treated water, distilled or rainwater would be the most suitable for filling the entire system or filling up the losses.

In addition, it should be checked whether the grate is cleaned of unburned fuel residues, ash and slag from previous burning and that the ash has been removed from the ash pan.

Recommended firing up (correct - from the top) - cover the prepared grate deck with fuel (when burning wood - full charge - to the bottom edge of the hopper, place the logs across the boiler), place the firing layer on the surface (paper, wood chips) and set it on fire. The boiler is started up with the primary air dispenser flap in the lower door ajar (grate and ash-pan doors) and with the secondary air throttle in the charging door open.

The operation of the boiler in the upper combustion system takes place in a system with a cyclic fuel charge, which means that after the fuel portion poured into the combustion chamber is completely burnt and the ash is removed from it, the chamber is filled up again and a new portion of fuel is fired with the use of firing fuel.

We do not recommend firing up fuel "from below" in top-firing charging boilers.

Before setting fire to the ignition layer, make sure that the chimney provides sufficient draft. The phenomenon of insufficient draft occurs most often when the boiler is started for the first time or when the boiler and the chimney have been cooled down for a longer break. In order to check the chimney draft, bring the lit wood log closer to the air inlet duct with the damper open.

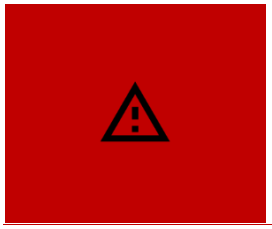
If we find that the flame is not being drawn intensively into the boiler, it means that the chimney draft is insufficient.

In this case, before setting the layer on fire, the chimney should be “warmed up”, proceeding as follows:

- put a few pieces of wood into the flue channel and set it on fire;
- keep the fire going until the chimney draft increases (the flame is drawn into the chimney);
- after the wood has burnt out, scoop out the unburned residues and throw them into the ash pan.

As soon as the desired temperature of water in the boiler is achieved, the intensity of combustion should be adjusted. The intensity of combustion is regulated by the appropriate setting of the adjustment screw of the primary air feeder flap and the appropriate secondary air throttle. During normal operation of the boiler, it is necessary to periodically inspect and refuel as described above. In the case of hard coal, hitting the hook will cause the fuel to slip.

When opening the charging door, be especially careful, as an explosive ignition of gases (degassing products) may occur if the door is opened suddenly. When opening the charging door, stand to the side of the boiler, slightly open the door, wait a moment until the exhaust gases are drained from the fuel container into the chimney, and then slowly open it completely. Also then, do not stand in front of the door opening. A similar principle should be adopted when opening the remaining doors while the boiler is in operation.



ATTENTION!
If for any reason there is a lack of water in the boiler-network system, it is not allowed to refill with cold water. The boiler should be cooled down to 30 ° C as soon as possible, and only after the boiler has cooled down, refill water and start burning again.

ATTENTION!
Cold water inflow on the boiler walls when they are hot (fired) may cause the boiler to explode and, consequently, damage the heating devices. In extreme cases, it can cause damage to buildings and injuries to people.

When starting the cold boiler operation or for the first time, the phenomenon of "boiler sweating" may occur. Seeming like a leak. In such a case, an intensive burning process (70-80°C) should be carried out in order to dry and heat the boiler and the chimney duct for 2-3 days.

It is recommended to maintain the temperature in order to extend the life of the boiler

180°C of flue gas above the ambient temperature, and the boiler water temperature should not be lower than 60°C.

In this situation, maintaining a sufficiently low temperature in the radiators in the autumn or spring period can be achieved, among others, by:

- Proper selection of the boiler to the size of heated rooms;
- Three-way or four-way mixing valves, operated manually or automatically, are used between the water supply and return.

Improper insulation (insulation) of the expansion vessel (overflow) can also cause the boiler to explode with all negative consequences.

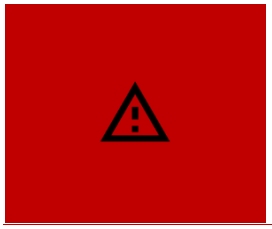
The water frozen in the expansion vessel breaks the connection of the central heating system and the boiler with the atmosphere, and when the boiler water temperature increases, the pressure in the installation increases uncontrolled, which in turn may lead to an explosion of the boiler.

ATTENTION!
Do not stand in front of the boiler when opening the door, it may cause burns.

Remember when using the boiler

(User)

- the boiler can only be operated by adults who have read the operating instructions;
- it is forbidden for children to stay near the boiler without the presence of adults;
- if flammable gases or vapors get into the boiler room or during work where there is an increased risk of fire or explosion (gluing, varnishing, etc.), the boiler should be turned off before starting these works;
- when cleaning carbon deposits in the retort, gutter, the boiler should be turned off ("OFF" position);
- when adding fuel to the tank, the boiler should be turned off ("OFF" position);
- do not use flammable liquids to light the boiler up, the boiler should ignite automatically (using an igniter);
- when cleaning the boiler, switch the device off ("OFF" position);
- during operation the boiler must not overheat in any way;
- flammable objects must not be placed on the boiler and in its close vicinity;
- when removing ash, flammable materials must not be closer than 150 cm from the boiler;
- the ash should be put into heat-resistant vessels with a cover;
- when the boiler is operated at a temperature lower than 60 ° C, condensation may occur in the steel exchanger and thus corrosion as a result of low temperature, which shortens the exchanger's life; therefore the temperature during boiler operation must be at least 60 ° C;
- after the end of the heating season, the boiler and the smoke duct should be thoroughly cleaned;
- the boiler room should be kept clean and dry.



ATTENTION!

The product is not intended for use by people with reduced physical / mental fitness or without experience and knowledge, unless these people are supervised or instructed by a person responsible for their safety.

ATTENTION!

It is forbidden to interfere with the electronics or the structure of the boiler by any means.

Cleaning and maintenance of the boiler

(User)

ATTENTION!
The boiler may only be cleaned with the device disconnected from the power supply.

In order to use fuel economically, the furnace chamber and boiler convection channels should be kept clean. The walls and shelves in the furnace chamber should be cleaned through the cleaning and inspection doors. The boiler exchanger and ash pan are also subject to systematic cleaning.

Cleaning should be done with wire brushes on extension cords. The above activities should be performed during periodic boiler standstill, preferably every 100 hours of boiler operation. Thorough cleaning of the boiler should be performed once a month.

Instructions for the disposal of the boiler after its service life has expired

(User)

Before scrapping the boiler, disconnect all electronic components from it. They can be disposed of in accordance with the European Directive 2002/96 / EC on the use of electronic and electrical equipment. For proper disposal, please contact the manufacturer of electronic components according to the above-mentioned European Directive.

The steel elements of the boiler should be scrapped in designated places (scrap purchase).

ATTENTION!
A worn-out boiler intended for scrapping and its components should not be disposed of with general waste.

Device failure examples

(User)

Before calling the service, read the most frequently asked questions.

On-line application: www.metalfachtg.com.pl/zglos-problem-online

Helpline: + 48 85 711 94 54 ext.17

Tutorial videos: www.youtube.com/c/METALFACHTechnikaGrzewcza

FAQ: www.metalfachtg.com.pl/kontakt-z-serwisem/#faq

Terms of warranty

(User)

User's statement:

I hereby declare that the boiler (hereinafter also referred to as the "device") has been delivered to me in accordance with the order, new and complete. The seller familiarized me with the operation of the device and provided me with a complete set of documentation (including in particular: Operation and Maintenance Documentation containing, among others, installation and operation instructions for the device, warranty conditions). I acknowledge the manufacturer's recommendation to subject the device to regular annual technical inspections, which should be confirmed in the warranty card.

Date and legible signature of the User

Warranty scope:

1. The liability under the warranty covers only defects arising from reasons inherent in the device at the time of its delivery to the User.
2. The warranty for the device is provided by the manufacturer (also known as the "Guarantor"): Jacek Kucharewicz running a business under the name Metal Fach Jacek Kucharewicz, 16-100 Sokółka, ul. Sikorskiego 66, NIP: 545-100-10-62, REGON 050073833, telephone +48 85 711 94 56.
3. Under the warranty, the User obtains the right to a free repair of the device, if the device defects are revealed during the warranty period. if the Guarantor determines that it is impossible to repair the device or its part, the Guarantor reserves the right to replace the device or its part with a new one.

Guarantee period:

For the device (boiler) - 2 years from the date of sale, but not longer than 36 months from the date of its production, except for:

a) exchanger - for which the warranty is 5 years from the date of sale;
b) moving parts, cast iron, mechanical, screw - for which the warranty is 1 year from the date of sale;
c) consumables (e.g. sealing cord, gaskets, vermiculite, fireclay), electrical components, screw securing the snail coupling, cotter pins - which are not covered by the warranty.

Warranty conditions:

1. Installing the device in accordance with the Operation and Maintenance Documentation (in particular, connecting the boiler with a properly made installation, performing the first start-up in accordance with the manufacturer's guidelines, using devices protecting the boiler against return of cold water (four-way valve with an actuator, ice dispenser, etc.)
2. Sending to the Manufacturer's address a copy of the correctly completed warranty card, signed and stamped by the seller within 30 days from the date of sale of the device
3. Presentation of a correctly completed warranty card (signed and stamped by the seller) at the time of submitting the complaint and substantiating the circumstances of the purchase of the device (e.g. receipt, invoice). if the User loses the warranty card, a duplicate will not be issued.
4. The User's compliance with the recommendations contained in the Operation and Maintenance Documentation of the device.
5. The first start-up of the boiler, within 6 months from the date of installation of the device by the installer, in accordance with the guidelines contained in the Operation and Maintenance Documentation, by a person with valid authorizations (Information on persons authorized to start the boiler is available from the Guarantor - +48 85 711 94 56), confirmation of this fact in the warranty card and sending the commissioning report to the Guarantor. The first start-up of the boiler is a paid service and its cost is covered by the User.
6. Performing annual inspections of the device, in accordance with the guidelines contained in the Operation and Maintenance Documentation, by specialist companies with appropriate licenses (an exemplary list of specialist companies is available from the Manufacturer - at the number +48 85 711 94 56 and recording their performance in the warranty card. a paid service.
7. Performing service of the device (e.g. device adjustment, cleaning, measurements, flue gas analyzes) by specialist companies with appropriate qualifications (an exemplary list of specialist companies is available from the Manufacturer - at the number +48 85 711 94 56), in accordance with the guidelines contained in the Technical Documentation Ruchowa and recording maintenance services in the warranty card. The User may report the need for service interventions to the Guarantor (Helpline +48 85 711 94 56, www.metalfachtg.pl/zglos-problem-online). The maintenance service is payable.
8. Performing warranty repairs only by specialist companies with appropriate authorizations (a list of specialist companies is available from the Guarantor - tel. +48 85 711 94 56), and recording them in the warranty card.
9. The use of spare parts and consumables meeting the parameters specified by the manufacturer. The use of original parts is recommended.
10. The warranty covers the territory of the Republic of Poland.

The warranty does not cover device defects resulting from:

1. Failure by the User to comply with the conditions contained in the Technical and Traffic Documentation and contained therein, inter alia, instructions for transport, assembly, operation, operation and maintenance of the device;
2. Improper storage and transport by the User;
3. Damage to components of the device due to the use of improper electrical voltage by the User. if the device is powered directly or indirectly by power generators, systems or UPS devices, the User should consult the parameters of the power devices with the manufacturer;
4. Device defects caused by a faulty heating system connected to the device;
5. Overheating of the boiler by the User;
6. Connecting the boiler by the User to a closed system, without the use of an appropriate cooling device;
7. The use of inappropriate, poor quality fuel by the User;
8. Unauthorized modifications to the device by the User.

Complaints procedure:

1. In the event of incorrect operation of the device, before making a complaint, make sure that everything has been done in accordance with the Operation and Maintenance Documentation.
2. The User should report the need to repair the device under the warranty immediately, preferably within 7 days from the date of noticing the defect. Notifications can be made directly to the Seller or the Guarantor (www.metalfachtg.pl/zglos-problem-online or the hotline +48 85 711 94 56).
3. It is recommended to refrain from using the faulty device.
4. The user is obliged to ensure free access to the device (in particular, enabling the removal of the device housing, access to the valves).
5. Warranty repairs will be performed by the Guarantor or a specialized company indicated by the Guarantor.
6. The obligations arising from the warranty will be performed within 14 working days from the date the device is made available (at the place of its installation) by the User.
7. The User sets the date of making the device available with the Guarantor.
8. Depending on the scope of the repair, it can be performed at the User's place, at the place of installation of the device, or at the Guarantor's plant or a specialist company performing activities on behalf of the Guarantor.
9. The performed repair under the warranty should be confirmed in the warranty card.
10. The warranty is extended by the time during which the user could not use the device due to a defect in the device covered by the warranty.
11. The guarantee does not exclude, limit or suspend the rights of the buyer resulting from the provisions on the warranty for defects in the goods sold.

Confirmation of the performance of the inspection, warranty repair, service

No.	Execution date	Description of performed activities	Contractor's signature and stamp
1.			
2.			
3.			
4.			
5.			
6.			
7.			

No.	Execution date	Description of performed activities	Contractor's signature and stamp
8.			
9.			
10.			
11.			
12.			
13.			
14.			

EC / EU declaration of conformity

Producer:	Product name and intended use:	
	Steel central heating solid fuel boiler with automatic fuel charging.	
METAL-FACH Jacek Kucharewicz Ul. Sikorskiego 66 16-100 Sokolka NIP 545-100-10-62	Type:	SE
	Serial number:	
	Year of production:	

Reference documents:

1. Directive 2009/125 / EC laying down general principles for the setting of Ecodesign requirements for energy-related products - Commission Regulation (EU) 2015/1189
2. Directive 2006/42 / EC Machinery.
3. Directive 2010/30 / EU labeling of energy-related products - Commission Regulation (EU) 2015/1187

Technical Documentation:

1. PN-EN 303-5: 2012 standard. Solid fuel heating boilers with manual and automatic fuel charging with nominal power up to 500 kW.
2. PN EN ISO 12100: 2012 Safety of machinery Basic concepts, general principles of design Part 1: Basic terminology, methodology.
3. PN EN 1708-1: 2010 Welding Basic solutions for steel welded joints Part 1: Pressure elements.
4. PN EN ISO 9606-1: 2014-02 Welding. Examination of welders. Steels.
5. PN EN 60335-1: 2012 Electrical appliances for household and similar use Safety in use Part 1: General requirements.
6. PN EN 60335-2-102: 2006 / A1: 2010 - Household and similar electrical appliances - Safety in use - Part 2-102: Particular requirements for appliances burning gas, oil and solid fuels with electrical connections.
7. PN EN 61000-6-2: 2008 - Electromagnetic compatibility (EMC) - Part 6-2: General standards - Immunity in industrial environments
8. PN EN 61000-6-3: 2008 / A1: 2012 Electromagnetic compatibility (EMC) - Part 6-3: General standards - Emission standard in residential, commercial and light industrial environments.

The product is marked with the following signs:	Approvers:	Place: Sokółka, Date: 01.2022
CE	DYREKTOR PRODUKCJI Julian Żukowski	WŁAŚCICIEL Jacek Kucharewicz
	Production director	Owner

Warranty Card

Central heating boiler with a power [kW]: Type:

Number:

Boiler production date: Boiler sale date:

Buyer's name and surname:

Buyer's address

Date of purchase and stamp	Customer's signature

I accept the warranty conditions	√

Personal data provided in this form are processed by Jacek Kucharewicz running a business under the name Metal Fach Jacek Kucharewicz, 16-100 Sokółka, ul. Sikorskiego 66, NIP: 545-100-10-62, telephone number +48 85 711 94 56 in order to implement the provisions contained in the warranty conditions - in accordance with the Act of August 29, 1997 on the protection of personal data (uniform text: Journal of Laws of 2014, item 1182). The User has the right to access their personal data, to correct them, to request the cessation of data processing and to object to the processing of data in cases specified by law. All correspondence regarding the processing of personal data should be sent to the following address: Metal Fach Jacek Kucharewicz, 16-100 Sokółka, ul. Sikorskiego 66. Providing personal data is voluntary. In accordance with the Act of August 29, 1997 on the protection of personal data (uniform text: Journal of Laws of 2014, item 1182), we would like to inform you that the personal data provided in this form will be protected against unauthorized access.

The complaint

Customer data	Central heating boiler data
First name and last name	Product name:
Address	Model:
Telephone	No. factory
No. purchase document:	Guarantee period Includes | Does not include
No. payment document:	Detailed description of the fault:
Seller's signature	

Conditions for starting the complaint repair procedure:

1. Confirmation of the payment for the advertised product by the point of sale is the basis for the complaint procedure.
2. The warranty card is the only basis for a free repair.
3. The person submitting the complaint undertakes to reimburse the costs incurred by METAL FACH Jacek Kucharewicz in the event of an unjustified call from the service team, or failure to complete points 1 or 2 (each commenced hour of work of a service technician PLN 70 net, travel PLN 1 net / km both ways).
4. A legible signature of the declarant confirms that he has read the basic terms of complaint procedures.

Legible signature of the claimant	Signature of the person accepting the complaint

I declare that I have read the terms of the warranty on the basis of which I submit a complaint and I consent to the processing of my personal data for the purposes of the complaint process in accordance with the Act of August 29, 1997 on the Protection of Personal Data (Journal of Laws No. 133 item 833) .

Legible signature of the claimant

The manufacturer undertakes to carry out a warranty repair within 14 days from the date of receipt of the user's written damage report on the manufacturer's complaint form.

Personal data provided in this form are processed by Jacek Kucharewicz running a business under the name Metal Fach Jacek Kucharewicz, 16-100 Sokółka, ul. Sikorskiego 66, NIP: 545-100-10-62, telephone number +48 85

711 94 56 in order to implement the provisions contained in the warranty conditions - in accordance with the Act of August 29, 1997 on the protection of personal data (uniform text: Journal of Laws of 2014, item 1182). The User has the right to access their personal data, to correct them, to request the cessation of data processing and to object to the processing of data in cases specified by law. All correspondence regarding the processing of personal data should be sent to the following address: Metal Fach Jacek Kucharewicz, 16-100 Sokółka, ul. Sikorskiego 66. Providing personal data is voluntary. In accordance with the Act of August 29, 1997 on the protection of personal data (uniform text: Journal of Laws of 2014, item 1182), we would like to inform you that the personal data provided in this form will be protected against unauthorized access.

Report on the first start-up of the boiler

(A copy of the owner of the central heating boiler)

In order to verify the purchase and recognize the validity of the warranty, a report must be sent within 30 days from the date of the first start-up. These activities can be performed by:

1. E-mail - in which the scan or photo of the report will be posted.
2. Letter - in which a copy of the report for METAL-FACH Jacek Kucharewicz will be sent, the company's address is at the end of the Technical and Movement Document.

Boiler	Fulfills	It does not	Comment
The conditions included in the Operation and Maintenance Manual in the chapter "Requirements for the boiler room and boiler installation" are complied with.			
The conditions specified in the Operation and Maintenance Manual in the chapter "Connecting the boiler to the chimney" section are complied with.			
Central heating system.	Fulfills	It does not	Comment
The conditions specified in the Operation and Maintenance Manual in the chapter "Connecting the boiler with the heating system" are complied with.			
The conditions specified in the Operation and Maintenance Manual in the chapter "Requirements for the expansion vessel" are complied with.			
There is no other source of heating. If it exists, and how does it affect the operation of the boiler?			
System frost protection.			
Connecting elements with electrical installation	Fulfills	It does not	Comment
The conditions included in the Operation and Maintenance Manual in the chapter "Connecting the boiler to the electrical system" are complied with.			
Fixture test	Fulfills	It does not	Comment
The sensors are placed in the right place.			
The sensor readings are consistent with the actual state.			
The direction of rotation of the fan is correct.			
Fan flap is opened by blowing force.			
Boiler commissioning	Fulfills	It does not	Comment
The tightness of the hydraulic connection of the boiler to the system is maintained.			
Boiler firing up in accordance with chapter "Boiler start-up".			

Initial adjustment of boiler operation parameters settings.			
Final adjustment of boiler operation parameters settings.			
Confirmation of the user's training in the field of	Yes	Not	Comment
Instruction on the safe operation of the boiler for the user is included in the chapter "Remember when using the boiler".			
Instruction on the operation of the boiler regulator and regulation of the combustion process.			
Fan speed settings.			
Boiler maintenance, chapter "Cleaning and maintenance of the boiler"			
Chapter "Fuel" of the required fuel quality			
Procedure in emergency cases, chapter "Examples of device failures"			

Launch date	Boiler name	Boiler power [kW]	Factory number

Name and surname of the service technician	Owner's name and surname
Address	Address
Company stamp	Contact number
Signature	Signature

Personal data provided in this form are processed by Jacek Kucharewicz running a business under the name Metal Fach Jacek Kucharewicz, 16-100 Sokółka, ul. Sikorskiego 66, NIP: 545-100-10-62, telephone number +48 85 711 94 56 in order to implement the provisions contained in the warranty conditions - in accordance with the Act of August 29, 1997 on the protection of personal data (uniform text: Journal of Laws of 2014, item 1182). The User has the right to access their personal data, to correct them, to request the cessation of data processing and to object to the processing of data in cases specified by law. All correspondence regarding the processing of personal data should be sent to the following address: Metal Fach Jacek Kucharewicz, 16-100 Sokółka, ul. Sikorskiego 66. Providing personal data is voluntary. In accordance with the Act of August 29, 1997 on the protection of personal data (uniform text: Journal of Laws of 2014, item 1182), we would like to inform you that the personal data provided in this form will be protected against unauthorized access.

Report on the first start-up of the boiler

(A copy of the METAL-FACH Heating Technology company)

In order to verify the purchase and recognize the validity of the warranty, a report must be sent within 30 days from the date of the first start-up. These activities can be performed by:

1. E-mail - in which the scan or photo of the report will be posted.
2. Letter - in which a copy of the report for METAL-FACH Jacek Kucharewicz will be sent, the company's address is at the end of the Technical and Movement Document.

Boiler	Fulfills	It does not	Comment
The conditions included in the Operation and Maintenance Manual in the chapter "Requirements for the boiler room and boiler installation" are complied with.			
The conditions specified in the Operation and Maintenance Manual in the chapter "Connecting the boiler to the chimney" section are complied with.			
Central heating system.	Fulfills	It does not	Comment
The conditions specified in the Operation and Maintenance Manual in the chapter "Connecting the boiler with the heating system" are complied with.			
The conditions specified in the Operation and Maintenance Manual in the chapter "Requirements for the expansion vessel" are complied with.			
There is no other source of heating. If it exists, and how does it affect the operation of the boiler?			
System frost protection.			
Connecting elements with electrical installation	Fulfills	It does not	Comment
The conditions included in the Operation and Maintenance Manual in the chapter "Connecting the boiler to the electrical system" are complied with.			
Fixture test	Fulfills	It does not	Comment
The sensors are placed in the right place.			
The sensor readings are consistent with the actual state.			
The direction of rotation of the fan is correct.			
Fan flap is opened by blowing force.			
Boiler commissioning	Fulfills	It does not	Comment
The tightness of the hydraulic connection of the boiler to the system is maintained.			
Boiler firing up in accordance with chapter "Boiler start-up".			

Initial adjustment of boiler operation parameters settings.			
Final adjustment of boiler operation parameters settings.			
Confirmation of the user's training in the field of	Yes	Not	Comment
Instruction on the safe operation of the boiler for the user is included in the chapter "Remember when using the boiler".			
Instruction on the operation of the boiler regulator and regulation of the combustion process.			
Fan speed settings.			
Boiler maintenance, chapter "Cleaning and maintenance of the boiler"			
Chapter "Fuel" of the required fuel quality			
Procedure in emergency cases, chapter "Examples of device failures"			

Launch date	Boiler name	Boiler power [kW]	Factory number

Name and surname of the service technician	Owner's name and surname
Address	Address
Company stamp	Contact number
Signature	Signature

Personal data provided in this form are processed by Jacek Kucharewicz running a business under the name Metal Fach Jacek Kucharewicz, 16-100 Sokółka, ul. Sikorskiego 66, NIP: 545-100-10-62, telephone number +48 85 711 94 56 in order to implement the provisions contained in the warranty conditions - in accordance with the Act of August 29, 1997 on the protection of personal data (uniform text: Journal of Laws of 2014, item 1182). The User has the right to access their personal data, to correct them, to request the cessation of data processing and to object to the processing of data in cases specified by law. All correspondence regarding the processing of personal data should be sent to the following address: Metal Fach Jacek Kucharewicz, 16-100 Sokółka, ul. Sikorskiego 66. Providing personal data is voluntary. In accordance with the Act of August 29, 1997 on the protection of personal data (uniform text: Journal of Laws of 2014, item 1182), we would like to inform you that the personal data provided in this form will be protected against unauthorized access.

METAL-FACH
HEATING TECHNOLOGY

Phone:
+48 85 711 94 54 ext. 17

E-mail:
p.czepiel@metalfach.com.pl

On-line form:
https://b2b.metalfachtg.com.pl/commission/createFromShortcut/shortcut_id/2

Video instructions:
www.youtube.com/c/METALFACHTechnikaGrzewcza

Website:
www.metalfachtg.com.pl

Contact with the service:
Phone: +48 85 711 94 54 ext. 17 / +48 663 45 32 22
E-mail: p.czepiel@metalfach.com.pl

Producer:
METAL-FACH Jacek Kucharewicz
st. Sikorskiego 66, 16-100 Sokółka
NIP: 545-100-10-62, REGON: 050073833
www.metalfachtg.com.pl