



User Manual

OPOP H5

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1. INTRODUCTION

Dear Customer,

Thank you for choosing a product from our range and becoming one of our valued customers. We wish you every satisfaction with your new boiler and hope it serves you reliably for many years to come. This is made possible by the dedication of our entire team, and now also by you, by carefully reading this user manual and adhering to all prescribed rules and regulations.

2. BOILER OVERVIEW

The OPOP H5 steel hot-water gasification boiler is designed for both single-storey and central heating systems in family homes or suitable industrial facilities, with a maximum heating static head of 20 metres. The OPOP H5 boiler belongs to the highest emission class and is intended for burning solid fuels, specifically dry, split firewood. The boiler must be connected to a chimney suitable for its output. For optimal operation, in addition to professional installation and proper use, it is essential to ensure sufficient draught. This boiler has been certified by the Engineering Test Institute in Brno in compliance with ČSN EN 303-5+A1:2023.

3. TECHNICAL DESCRIPTION

3.1 External features of the boiler

The OPOP H5 boiler is equipped with a front-loading door for adding firewood. Firewood can be loaded either lengthwise or crosswise, as described in the [Boiler operation](#) section. The loading door is fitted with a primary air damper, which supplies the main air necessary for optimal performance and clean combustion. This damper can be manually adjusted using a screw to fix it in an open position or connected to a draught regulator (not supplied) for automatic operation. In the latter case, it is essential to ensure that the damper remains open at least 1 cm at all times, allowing minimal airflow in order to maintain proper combustion and prevent excessive soot build-up or smoke escaping through the chimney.

The ash door is located at the lower front of the boiler, with an ashpan housed inside. The ashpan must be emptied regularly.

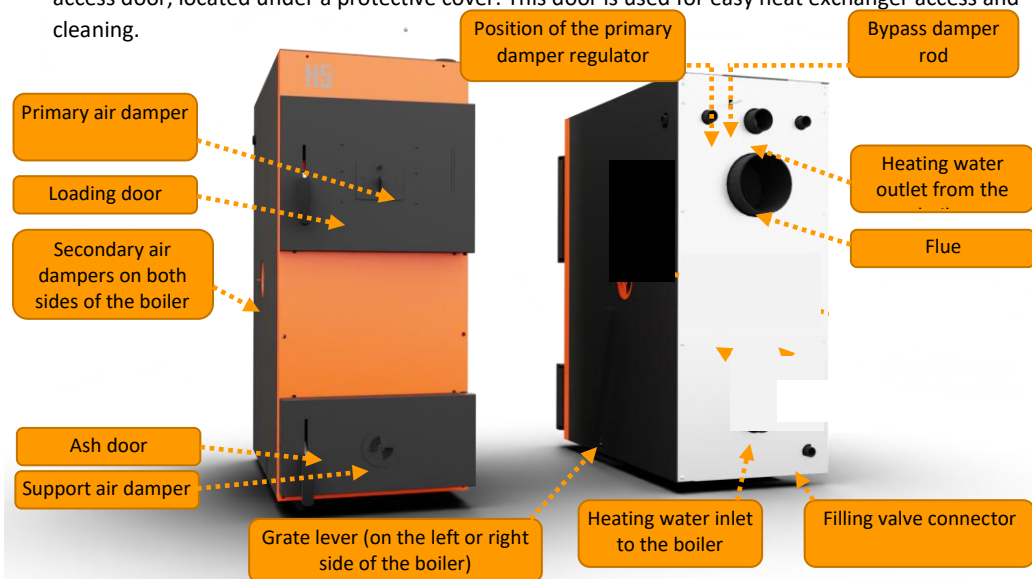
On the right-hand side of the boiler, there is a grate lever that operates the sliding grate inside. A short forwards-and-back movement of the lever clears the grate's openings, a task that can be performed regularly, even while the boiler is burning fuel. Pushing the lever to its full extreme position removes the sliding grate completely, allowing ash to fall into the ashpan – this is typically done after the fuel has burned out to clean the grate of ash. The grate lever can be relocated to the opposite side of the boiler, and the front door hinges can similarly be swapped from right to left. Further details can be found in the sections [Changing the position of the grate lever](#) and [Changing the door opening direction](#).

On both sides of the boiler, there are secondary air dampers. These dampers should remain closed when lighting the boiler to maximise chimney draught. Once the boiler is fully loaded with firewood, the secondary air dampers can be opened to the marked position. The purpose of secondary air is to improve emissions and ensure the combustion of gases at a higher flame temperature. If the secondary air dampers remain closed during operation at nominal output, the flame may lack sufficient air for combustion, leading to excessive soot accumulation in the heat exchanger and flue. For more information on setting the dampers, refer to the [Boiler operation](#) section.

At the rear of the boiler, you will find connectors for integrating the boiler into the heating system. These connectors can be equipped with U26-type flanges (not supplied), making the boiler to be interchangeable with U26 models without requiring modifications to the system's pipework – allowing for a straightforward replacement without altering pipes or the flue. Also located at the rear are the flue outlet and, at the bottom, a connector for a filling valve (not supplied).

Another feature at the upper rear of the boiler is the bypass damper rod. When the rod is pulled out, the bypass damper is closed (when the boiler is in operation). Pushing the rod in opens the bypass damper (used during ignition and when adding fuel). More details about the bypass damper can be found in the [Boiler operation](#) section.

At the top of the boiler, there is a thermomanometer that measures the water temperature and pressure inside the boiler. Additionally, the upper rear section of the boiler houses a cleaning access door, located under a protective cover. This door is used for easy heat exchanger access and cleaning.



3.2 Internal features of the boiler

Inside the boiler, there are two grates. One is a sliding grate, which moves using the grate lever, and the other is a fixed slanted grate, which is suspended on hooks and does not move. The loading chamber is lined with shielding plates, which protect the boiler plate from combustion by-products, thus extending the boiler's lifespan. These plates, or rather the ash that accumulates behind them, must be cleaned before the season – the shielding plates are removable. More information can be found in the [Cleaning the boiler](#) section.

At the bottom of the loading chamber is a refractory brick lining, through which the flame passes into the rear section of the boiler. The purpose of the refractory brick lining is to maintain the highest possible flame temperature and ensure clean combustion, provided there is sufficient primary and secondary air supply.

Beneath the grates is the ashpan.

At the rear of the boiler is a partition heat exchanger, where heat from the flame is transferred to the system water. Below the heat exchanger is a cleaning plug. This separates the heat exchanger from the ashpan section and must always be properly seated during operation. Removing the cleaning plug allows the ash from the heat exchanger to fall into the ashpan. More information about the cleaning plug can be found in the [Cleaning the boiler](#) section.

The upper part of the heat exchanger includes the bypass damper. When in the open position (rod pushed in inserted), it serves as a bypass, providing an easier pathway for the flue gases to bypass the heat exchanger and go directly to the chimney. Open the bypass damper during ignition and when loading fuel. Once the boiler is fully loaded, close the device (rod pulled out).

All accessories for the boiler can be found in the boiler ashpan.

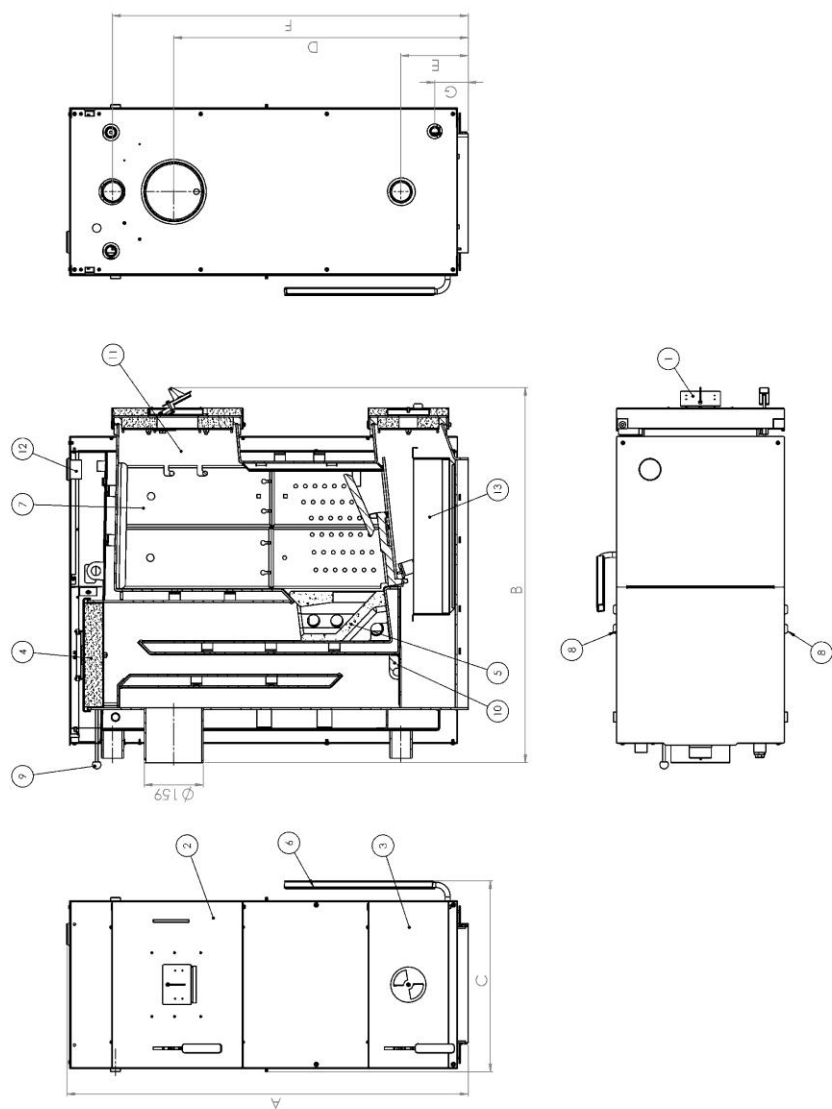


4. TECHNICAL SPECIFICATIONS

Technical specifications		H516	H521	H526
Nominal heat output	[kW]	16	21	26
Operational draught	Pa	15–20	18–20	20
Weight	kg	297	370	376
Efficiency Boiler class as per ČSN EN 303-5+A1	[%]	88.6	89	89
Water volume	[l]	67	89	95
Flue pipe diameter	[mm]	159	159	159
Log length	[cm]	25–31	25–33	25–33
Fuel consumption	[kg/h]	4.4	5.4	6.7
Measured burn time at nominal output	[h]	3	3	2.5
Heating water temperature range	[°C]	65–90	65–90	65–90
Fuel chamber volume	[l]	66.5	79	83
Filling opening dimensions	[mm]	270x315	280x384	280x384
Heating surface area	[m ²]	2.5	3.4	3.6
Flue gas temperature	[°C]	180–220	160–220	160–220
Maximum heating water overpressure	[MPa]	0.2	0.2	0.2
Test overpressure of heating water	[MPa]	0.3	0.3	0.3
Flue gas mass flow at nominal output	[kg/s]	0.011		
Hydraulic loss at $\Delta T = 20/10$ K	[mbar]	1.36–5.1		

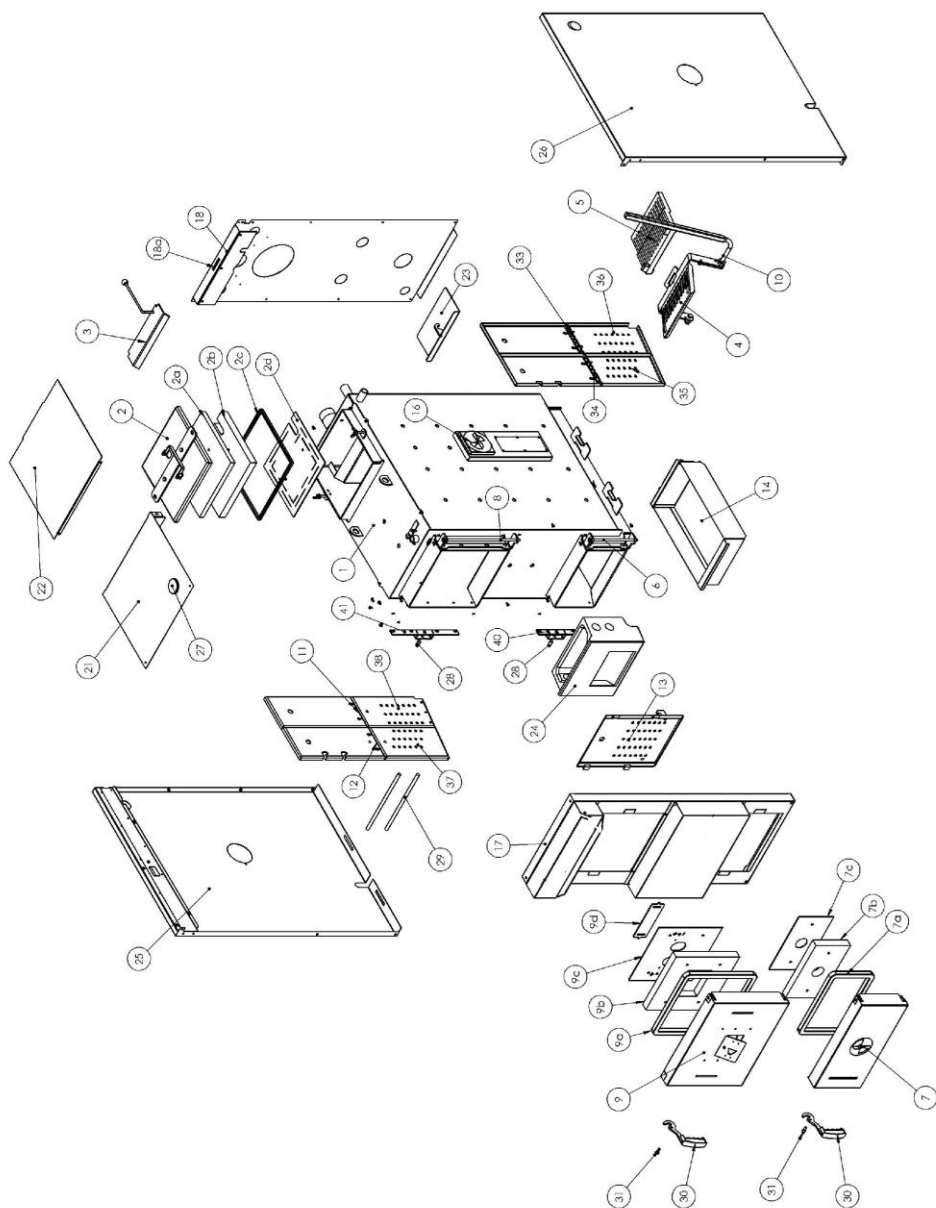
		H516	H521	H526
inlet/outlet connection (external thread)	Js	G2"	G2"	G2"
Cooling loop circuit inlet/outlet (internal thread)	Js	G 3/4"	G 3/4"	G 3/4"
Drain and fill connection (internal thread)	Js	G 1/2"	G 1/2"	G 1/2"
Connection for output regulator installation (internal thread)	Js	G 3/4"	G 3/4"	G 3/4"
A – total boiler height	[mm]	1082	1082	1092
B – total boiler depth	[mm]	1011	1154	1154
C – boiler width	[mm]	517	595	595
D – flue pipe location	[mm]	794	794	794
E – location of inlet water connector	[mm]	181	181	181
F – location of outlet water connector	[mm]	958.5	958.5	958.5
G – location of drain water connector	[mm]	90	90	90
H – boiler base depth	[mm]	675	821	821
I – boiler base width	[mm]	314	394	394
Boiler body wall thickness (water/flame)	[mm]	5	5	5
Boiler body wall thickness (water)	[mm]	3	3	3

Position		Position		Position	
1.	Primary air damper	6.	Grate lever	11.	Cleaning plug
2.	Loading door	7.	Spacing plates		
3.	Ash door			13.	Loading chamber
4.	Cleaning access door	9.	Secondary air damper	14.	Thermomanometer
5.	Nozzle	10.	Bypass damper	15.	Ashpan



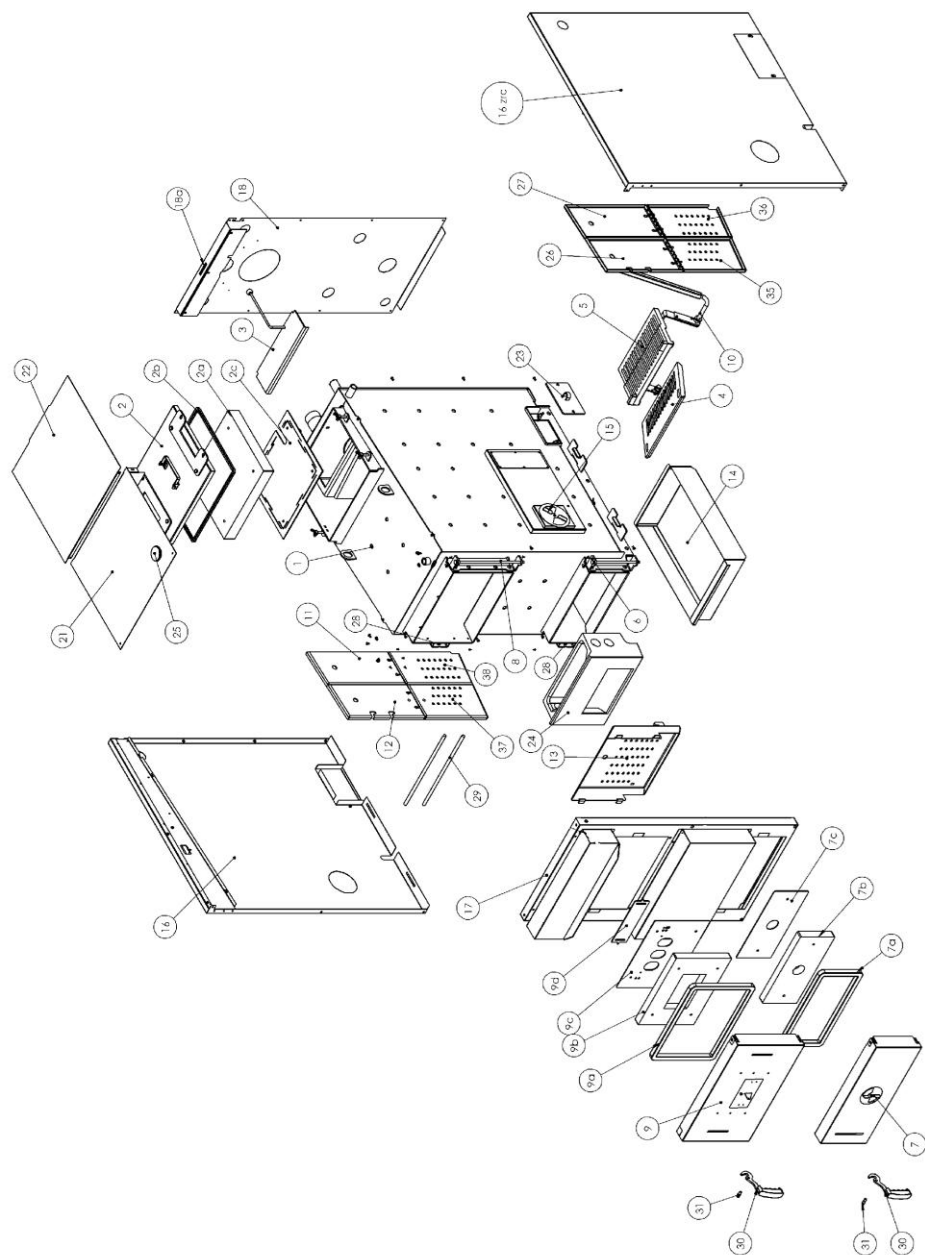
5. LIST OF REPLACEABLE SPARE PARTS

OPOP H516



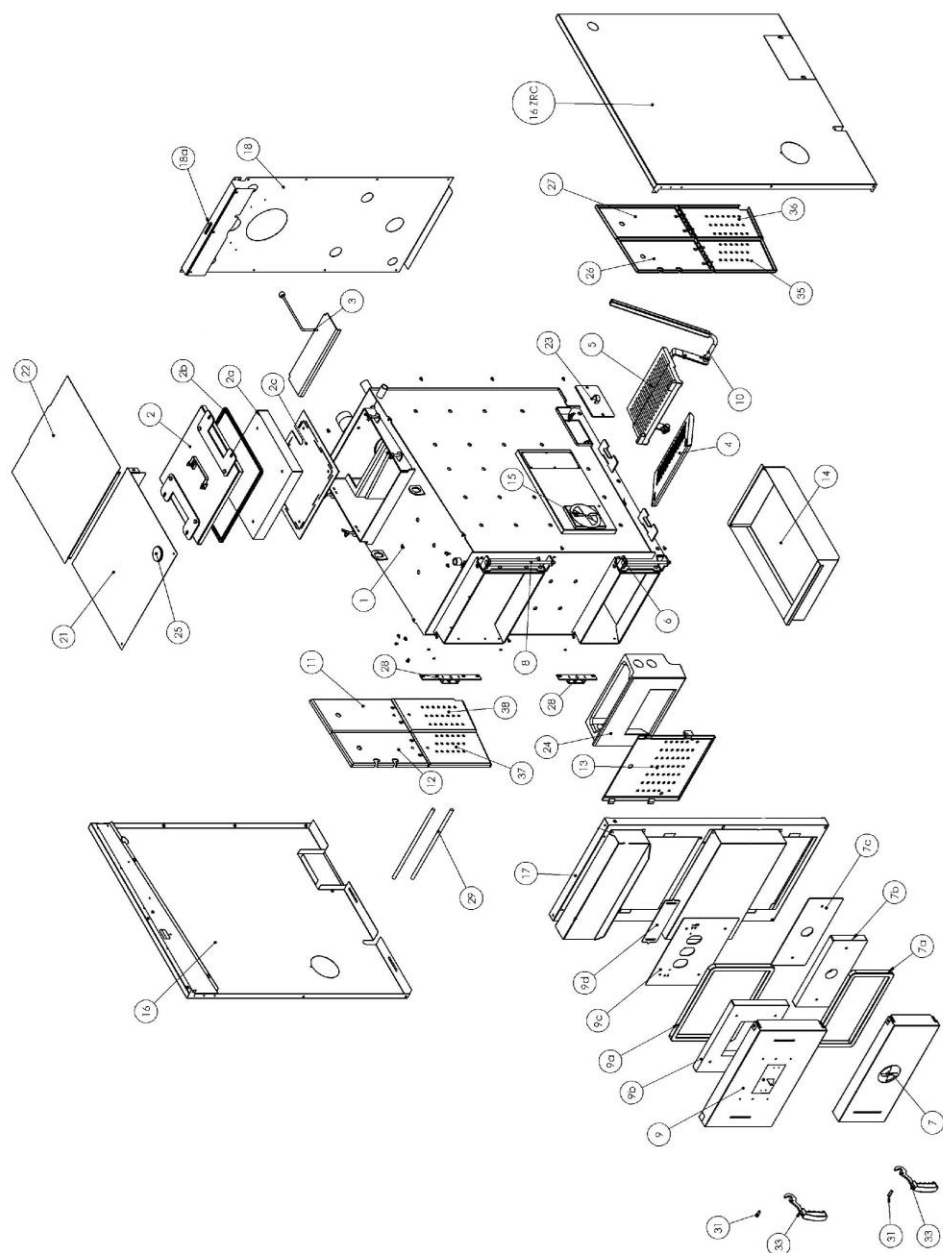
ITEM	Part number	Name	Quantity
1	ND573430	Weldment assembly	1
2	ND7002848	Cleaning door assembly	1
2a	ND577909	Cleaning door insulation – Grenamat 20	1
2b	ND5771013A	Cleaning door insulation – Grenamat 30	1
2c	NDC516	PS000 VK 10×10 – length 1,200 mm	1
2d	ND3633159A	Cleaning door cover plate	1
3	ND7002849	Cleaning flap assembly	1
4	161112374127	Slanted grate	1
5	161112374126	Sliding grate	1
6	ND7003248	Ash door hinge pin	1
7	ND7002843	Ash door	1
7a	NDPO516	Sealing cord – PS000 20×20 mm VK – length 1,020 mm	1
7b	ND577907A	Front door insulation	1
7c	ND3633157A	Front door cover plate	1
8	ND7002842	Loading door hinge pin	1
9	ND7002844	Loading door	1
9a	NDPR516	Sealing cord – PS000 20×20 mm VK – length 1,290 mm	1
9b	ND577908A	Front door insulation – Grenamat	1
9c	ND3633158A	Front door cover plate	1
10	ND7003216	Grate mechanism assembly	1
11	ND7003254	Left rear spacing plate assembly	1
12	ND7003256	Left front spacing plate assembly	1
13	ND7003246	Front cover plate	1
14	ND7003209	Front ashpan assembly	1
16	ND7003253	Secondary air damper regulator assembly	2
17	ND7003210	Front cover assembly	1
18	ND7003213	Rear cover assembly	1
18 a	625500022003	Magnet	1
21	ND7003212	Upper cover assembly	1

22	ND3655300	Rear upper cover	1
23	ND7002851	Cleaning plug	1
24	ND5771012	OPOP H516 nozzle	1
25	ND7003029	Left side cover assembly	1
26	ND7003250	Right side cover assembly	1
27	388109300000	Thermomanometer 1:1000, 4 bar	1
28	ND214400	Handle pin 2	2
29	ND3633489A	Guard	1
30	ND1157	HANDLE 1157.UCH003/B	1
31	319434214401	Handle pin	1
33	ND7003257	Right rear spacing plate assembly	1
34	ND7003259	Right front spacing plate assembly	1
35	ND3655348	Right front lower spacing plate	1
36	ND3655346	Right rear lower spacing plate	1
37	ND3655344	Left front lower spacing plate	1
38	ND3655345	Left rear lower spacing plate	1
39	ND 3633507A	Primary air damper rod	1

OPOP H521

Item number	Part number	Name	Quantity
1	ND573467	Weldment assembly	1
2	ND7003293	Cleaning door assembly	1
2a	ND5771033	Cleaning door insulation	1
2b	NDC516	PS000 VK 10×10 – length 1,446 mm	1
2c	ND3633551	Cleaning door cover plate	1
3	ND7003294	Cleaning flap assembly	1
4	190101374237	Slanted grate	1
5	190101374238	Sliding grate	1
6	ND3654764A	Ash door hinge	1
7	ND7003289	Ash door	1
7a	NDPO516	Sealing cord – PS000 20×20 mm VK – length 1,074 mm	1
7b	ND5771035	Ash door insulation	1
7c	ND3633549	Ash door cover plate	1
8	ND3655463	Loading door hinge	1
9	ND7003290	Loading door	1
9a	ND5771034	Front door insulation	1
9b	NDPR516	Sealing cord – PS000 20×20 mm VK – length 1276 mm	1
9c	ND3633550	Front door cover plate	1
10	ND7003304	Grate mechanism assembly	1
11	ND7003310	Left rear spacing plate assembly	1
12	ND7003311	Left front spacing plate assembly	1
13	ND7003339	Front cover plate	1
14	ND7003297	Front ashpan assembly	1
15	ND3655430	Air regulation I	2
16	ND7003342	Left side cover assembly	1

16 ZRC	ND7003347	Right side cover assembly	1
17	ND7003340	Front cover assembly	1
18	ND7003344	Rear cover assembly	1
18 a	625500022003	Magnet	1
21	ND7003300	Upper cover assembly	1
22	ND3655428	Rear upper cover	1
23	ND7003296	Rear ash door with insulation	2
24	632695771025	OPOP H526 nozzle	1
25	388109300000	Thermomanometer 1:1000, 4 bar	1
26	ND7003364	Right front spacing plate assembly	1
27	ND7003315	Right rear spacing plate assembly	1
28	ND214400	Handle pin 2	2
29	ND214558	Guard	2
30	ND1157	HANDLE 1157.UCHO03/B	2
31	ND214401	Handle pin	1
35	ND3655445	Right front spacing plate	1
36	ND3655446	Right rear spacing plate	1
37	ND3655437	Left front spacing plate	1
38	ND3655438	Left rear spacing plate	1

OPOP H526

Item number	Part number	Name	Quantity
1	ND573467	Weldment assembly	1
2	ND7003293	Cleaning door assembly	1
2a	ND5771033	Cleaning door insulation	1
2b	NDC516	PS000 VK 10×10 – length 1446 mm	1
2c	ND3633551	Cleaning door cover plate	1
3	ND7003294	Cleaning flap assembly	1
4	190101374237	Slanted grate	1
5	190101374238	Sliding grate	1
6	ND3654764A	Ash door hinge	1
7	ND7003289	Ash door	1
7a	NDPO516	Sealing cord – PS000 20×20 mm VK – length 1,074 mm	1
7b	ND5771035	Ash door insulation	1
7c	ND3633549	Ash door cover plate	1
8	ND3655463	Loading door hinge	1
9	ND7003290	Loading door	1
9a	ND5771034	Front door insulation	1
9b	NDPR516	Sealing cord – PS000 20×20 mm VK – length 1276 mm	1
9c	ND3633550	Front door cover plate	1
9d	ND3633558	Output regulator	1
10	ND7003304	Grate mechanism assembly	1
11	ND7003310	Left rear spacing plate assembly	1
12	ND7003311	Left front spacing plate assembly	1
13	ND7003308	Front cover plate	1
14	ND7003297	Front ashpan assembly	1
15	ND3655430	Air regulation I	2

16	ND7003295	Left side cover assembly	1
16 ZRC	ND7003346	Right side cover assembly	1
17	ND7003298	Front cover assembly	1
18	ND7003301	Rear cover assembly	1
18 a	625500022003	Magnet	1
21	ND7003300	Upper cover assembly	1
22	ND3655428	Rear upper cover	1
23	ND7003296	Rear ash door with insulation	2
24	632695771025	OPOP H526 nozzle	1
25	388109300000	Thermomanometer 1:1000, 4 bar	1
26	ND7003364	Right front spacing plate assembly	1
27	ND7003315	Right rear spacing plate assembly	1
28	ND214400	Handle pin 2	2
29	ND214558	Guard	2
30	ND7003245	Pull rod assembly	1
31	ND214401	Handle pin	1
33	ND1157	HANDLE 1157.UCHO03/B	2
35	ND3655445	Right front spacing plate	1
36	ND3655446	Right rear spacing plate	1
37	ND3655437	Left front spacing plate	1
38	ND3655438	Left rear spacing plate	1

6. Safety instructions for boiler installation

The boiler must always be installed in accordance with applicable standards and regulations. The manufacturer's safety instructions must be followed.

Before starting the boiler, ensure that it is fully assembled (components that need to be installed after delivery are stored in the ashpan as part of the boiler's accessories).

We recommend having the boiler professionally inspected once a year, preferably before the heating season, with a focus on the correct connection of the boiler flue and expansion vessel, the condition of the grates, and similar components. The inspection should also include a check of the proper functioning of the two-way safety valve (e.g. DBV 1) and the draught regulator (not supplied).

Connection to the chimney

The boiler may only be installed to a chimney that complies with ČSN 73 4201:2010 (Chimneys and Flue Pipes). A hot water boiler may be connected only with the approval of a chimney service.

The boiler must be connected to a dedicated flue pipe that provides sufficient draught for all practical operating conditions.

The flue pipe, secured in the flue socket and connected to the appliance's flue collar, must be properly assembled and installed to prevent accidental or spontaneous disconnection. It is recommended that the flue pipe from the boiler to the chimney be no longer than 1 metre, with a recommended upward incline of at least 10° towards the chimney. The connection should be direct, with no more than one bend.

Connection to the heating system

The hot water system must be installed according to ČSN 06 0310:2014 (Heating systems in buildings – design and installation), ČSN 06 0830:2014 (Heating systems in buildings – safety devices), ČSN 07 7401 (Water and steam for thermal power equipment with steam pressure up to 8 MPa), and ČSN 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).

The boiler and flue pipe must comply with fire safety regulations ČSN 06 1008:1997 (Fire safety of thermal equipment), ČSN EN 13501-1:2019 (Fire classification of construction products and building elements – Part 1: Classification using data from reaction-to-fire tests), and must be installed at a safe distance of 400 mm from combustible materials. This safe distance must be maintained even when the combustibility of materials has not been proven.

The safe distance can be reduced by half when using Class A non-combustible heat-insulating shielding boards, at least 5 mm thick, placed 25 cm away from the protected combustible material (air insulation).

Classification of construction products and components based on fire reaction (according to ČSN 73 4201)

(a) non-combustible materials – which comply with the fire reaction class A1 or A2 as per ČSN EN 13 501-1.

(b) combustible materials – with fire reaction classes B, C, D, E, and F as per ČSN EN 13 501-1.

Boiler placement – important warnings

The boiler can be installed according to ČSN 33 2000-3:1995 in basic environments AA5/AB5.

It is not permissible to install boilers in living spaces, including hallways. A continuous air supply for combustion must be provided to the room where the boiler is installed.

The boiler must be installed in compliance with the requirements of ČSN 06 1008 – Fire safety of thermal equipment. No combustible materials should be placed on, or within the safe distance from, the boiler. The safe distance must also be maintained in relation to furnishings, kindling, and fuel in the boiler room.

The boiler must be placed on a non-combustible heat-insulating base, which should extend at least 300 mm beyond the boiler on the side of the ash door and at least 100 mm on all other sides.

If there is a risk of transient combustion gases or vapours, or if there is a temporary fire or explosion risk during certain works (such as laying linoleum, PVC, etc.), the appliance must be switched off before the risk arises.

Boiler and fuel placement in relation to required working space

- a minimum of 1,000 mm of working space must be left in front of the boiler
- the minimum distance between the back of the boiler and the wall is 400 mm
- at least one side of the boiler must allow for access to the back with a minimum space of 400 mm
- it is not allowed to store fuel behind or beside the boiler at a distance of less than 400 mm.
- Fuel must not be stored between two boilers in the boiler room
- The manufacturer recommends maintaining a distance of at least 1,000 mm between the boiler and the fuel, or storing fuel in a different room from where the boiler is installed.

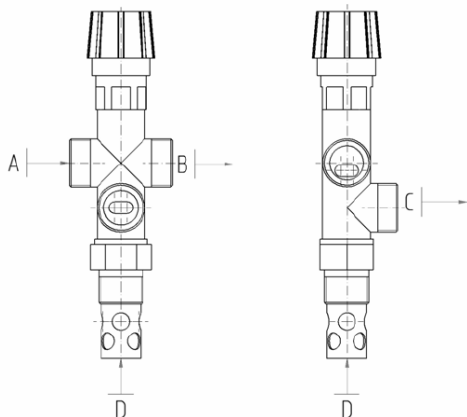
Instructions for the installation and use of pressure expansion vessels for steel boilers

- 1) The supply pipe to the pressure expansion vessel must be as short as possible, without shut-off valves, and must allow for expansion. The expansion vessel must be positioned in a way that prevents it from being heated by radiant heat.
- 2) Every heating system must be designed according to ČSN 06 0830 (Safety devices for central heating and hot water systems), and must be equipped with at least one reliable safety valve located on the outlet pipe or on the boiler, as well as a manometer (pressure gauge). The location, installation, and clearances of the safety valves must comply with ČSN 06 0830.

- 3) If the safety valve is not functioning correctly, it is necessary to check that it is properly set to open at an overpressure of 180 kPa. If the safety valve is incorrectly set, it must be re-set and verified.
- 4) The installation and setting of the safety valve, and the installation and testing of the air pressure (gas medium) in the pressure expansion vessel, may only be carried out by an authorised organisation. Before the system is filled with water, the air pressure (gas medium) in the pressure expansion vessel must be measured to ensure that the overpressure in the expansion vessel corresponds to the pressure exerted by the height of the water column in the heating system.
- 5) The heat source must be equipped, among other things and in accordance with ČSN 06 0830 and ČSN EN 303-5+A1, with a draught regulator in the case of solid fuel boilers (draught regulator not supplied). The maximum operating temperature is limited to 90 °C.
- 6) The pressure expansion vessel and supply pipe must be protected to stop the water from freezing.
- 7) The value of the gas overpressure in the expansion vessel should be adjusted by venting it to the value of the hydrostatic pressure in the system when cold. Venting is done via the automatic valve on the pressure expansion vessel, and overpressure is measured using a manometer designed for measuring tyre pressure. After adding water to the system, adjust the pressure to a value no higher than 10 kPa above the hydrostatic head in the system.
- 8) After filling the system with water, mark, on the manometer, the adjusted hydrostatic head and the maximum pressure in the system once the water temperature reaches 90 °C.
- 9) If there are changes in the pressure difference during operation according to the marked lines, or if the minimum or maximum pressure is exceeded, the system must be checked, properly vented, and water should be added when cold. Additionally, the gas pressure in the expansion vessel must be adjusted according to the manufacturer's instructions.
- 10) An external inspection of each pressure expansion vessel – including a check of the filling pressure – must be performed at least once a year.
- 11) A project for each heating system must be prepared and approved, and equipment for the removal of excess heat must be installed. The boiler installation and connection must then follow this plan.
- 12) If the pressure expansion vessel is correctly selected, the actual pressure difference should not exceed 60 kPa for water temperatures in the system ranging from 10°C to 90°C. This pressure difference can be tested during a heating test, where the water is heated from cold in the system.

Connection of boiler with overheating protection device – two-way safety valve, such as DBV 1-02

The DBV 1-02 two-way safety valve is used to discharge excess heat if the boiler water temperature exceeds 97 °C. The valve is connected to the boiler flanges – see illustration. If the system is equipped with the DBV 1-02 two-way safety valve and the boiler overheats (i.e. the outlet water temperature exceeds 97 °C), the valve creates a cold water circuit, which remains active until the temperature drops below the set limit. At that point, both the cooling discharge device and the cold water supply feeding into the system are shut off.



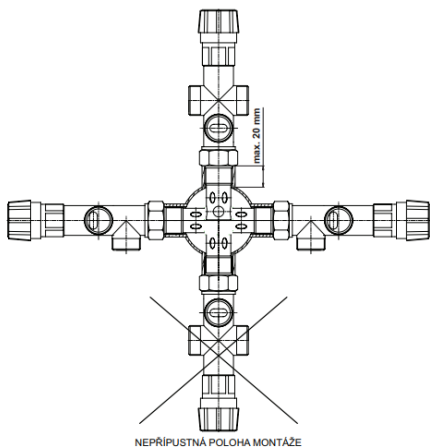
A – vstup studené vody
B – výstup do kotle
C – výstup do odpadu
D – vstup z kotle

Key: A – Cold water inlet
B – Boiler outlet
C – Discharge outlet
D – Boiler inlet

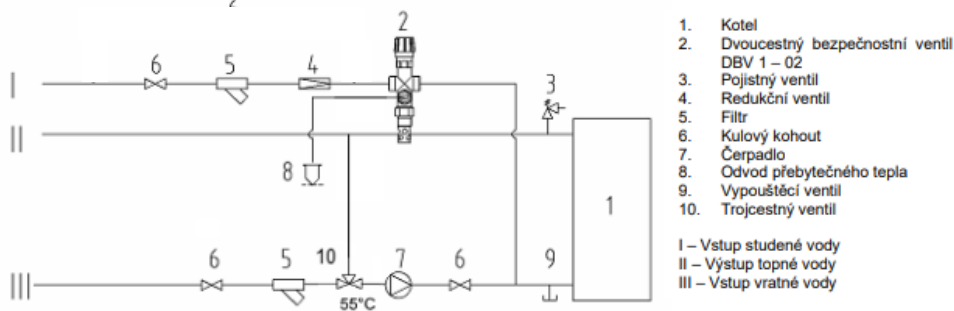
DBV 1-02 two-way safety valve

DBV 1 valve operating positions

PRACOVNÍ POLOHY "DBV1"



Key: UNACCEPTABLE INSTALLATION POSITION



Key:

1. Boiler
2. DBV 1-02 two-way safety valve
3. Safety valve
4. Pressure-reducing valve
5. Filter
6. Ball valve
7. Pump
8. Excess heat discharge
9. Drain valve
10. Three-way valve

I – Cold water inlet

II – Heating water outlet

III – Return water inlet

System schematic of the DBV 1-02 two-way safety valve

Technical specifications of the DBV 1-02 two-way safety valve (manufacturer: Regulus)

Opening temperature (set point): 97 °C (+2 °C / -2 °C)

Maximum temperature: 120 °C

Maximum pressure on boiler side: 2 bar

Maximum pressure on water side: 6 bar

Nominal flow rate at Δp 100 kPa: 1.9 m³/h

Use

The DBV 1-02 two-way safety valve is designed to protect central heating boilers from overheating. The valve body contains a discharge and filling valve, both controlled by a thermostatic element. When the set point is reached, both the discharge and filling valves open simultaneously. This means that cold water flows into the boiler while hot water is discharged from it. When the temperature drops below the set limit, both the discharge and filling valves close simultaneously.

CAUTION! This is not a substitute for a safety valve.

If the two-way safety valve is triggered and water is added that does not comply with ČSN 077401, the system water must be treated to bring it back into compliance with this standard.

Installation

Installation may only be carried out by a qualified professional. For the thermostatic two-way safety valve to function correctly, the prescribed installation conditions must be observed, including the flow direction markings indicated on the valve body. The safety valve must always be installed in the boiler outlet pipe. When installing the valve, it is necessary to check that the use of a ¾" connector ensures that the thermostatic element is fully submerged after installation. Once the DBV 1 is installed, the discharge pipe should be connected at point "C" – this will carry hot water from the boiler to the drain. At point "A", the cold water supply is connected. Once the valve is in operation, this water cools the boiler. A filter must be installed on the cold water inlet to trap mechanical impurities. At point "B", connect the pipe that leads to the return line of the heating system near the boiler.

Regular maintenance

Once a year, turn the head of the safety valve to remove any impurities that may have settled inside. Clean the filter on the cold water inlet.

If an open expansion vessel is used, an overheating protection device is not required.

Every heat source in an open heating system must be connected to an open expansion vessel located at the highest point of the system.

Expansion vessels must be sized to accommodate the change in water volume caused by heating and cooling.

Open expansion vessels must be equipped with non-shut-off vent and overflow pipes. The overflow pipe must be designed to safely discharge the maximum flow rate entering the system.

7. Safety instructions for boiler operation

For safe and economical operation, the boiler must be used in accordance with this user manual.

The boiler may be left unattended provided that the output is set in such a way that the system cannot overheat – i.e. the two-way safety valve is installed and the boiler output is correctly matched to the heating system.

During operation, certain parts of the boiler (e.g. fuel loading, cleaning, the ash door, and the flue pipe) may reach high temperatures. Touching these parts could result in burns, so protective gloves should be used.

Only adults familiar with this manual may operate the boiler. Children must not be left unsupervised near the boiler.

It is forbidden to use flammable liquids to ignite the boiler or to increase its nominal output during operation in any way (i.e. to overfire the appliance).

The user may only perform routine maintenance and, where appropriate, replace parts with the spares supplied. Tampering with the boiler's construction, altering its function, or operating a damaged product is strictly prohibited.

The boiler may be cleaned only when it is completely extinguished, i.e. when there is no burning fuel inside.

The boiler manufacturer is not responsible for the components of the heating system, the correct use of the boiler, or the correct selection of the boiler type and output.

Boiler condensation and tar build-up

Condensation is very likely to occur during the initial or subsequent firings of the boiler. This is manifested as excessive moisture and may be visible as dark liquid in the ashpan. It results from low water temperatures in the boiler (below the dew point of 65 °C) and low flue gas temperatures. The condensation will subside after combustion residues have partially settled on the walls and once the boiler heats above 65 °C. This is not a product defect. Every boiler is thoroughly pressure-tested, and the possibility of leakage is virtually excluded.

Causes of boiler tar build-up:

- low chimney draught. If persistent, this may require structural modifications. If temporary, it is caused by weather conditions
- damp fuel
- prolonged operation at low temperatures below the dew point of flue gases (65 °C)
- incorrectly sized boiler relative to the heat loss of the space being heated
- boiler ignition with the bypass damper closed
- improper operation.
- A permanently closed primary air damper, resulting in insufficient combustion air for optimal burning.

Warning:

Since the flue gas dew point is around 65 °C, condensation will only occur when the flue gases cool down in the boundary layer on the walls of the boiler to a temperature below 65 °C. If condensation is observed in the fuel loading chamber, this indicates that the fuel is too damp. In these cases, condensation may also flow into the ashpan compartment, even if the water temperature in the boiler is above 65 °C.

It is recommended that a minimum operating temperature higher than 65 °C be maintained, as lower temperatures may lead to the condensation of water vapour in the flue gases, which may adversely affect the proper operation and lifespan of the boiler.

It is important to follow several key principles to ensure safe and efficient operation of the boiler.

- diligent operation
- adequate chimney draught
- clean boiler (draughts and vents)
- sealed boiler – properly installed and sealed cleaning loading, and ash door
- proper boiler output for the space to be heated
- sufficiently dried fuel

AVERAGE MOISTURE CONTENT OF WOOD (%)

Drying time	Quantity stored freely		Quantity stored 3 months after felling under a protective roof		Logs 50 cm long, stored 3 months after splitting under a protective roof		Logs 50 cm long, stored immediately after splitting under a protective roof	
	G	K	G	K	G	K	G	K
0*	75	78	76	78	75	78	73	76
3 months	48	62	48	61	44	61	36	40
6 months	37	46	32	45	29	35	25	29
9 months	33	38	27	37	26	28	23	28
1 year	36	35	26	33	25	27	24	27
1.5 years	18	27	18	21	17	17	15	16
2 years	16	24	16	17	16	14	14	13
2.5 years	15	24	15	18	15	14	13	13

* Initial moisture K – roundwood G – quarters

8. Installation of boiler and accessories

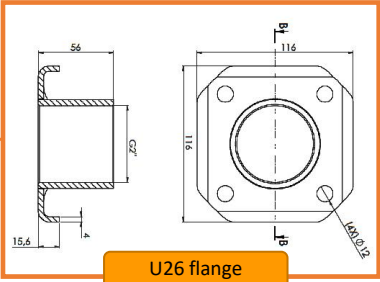
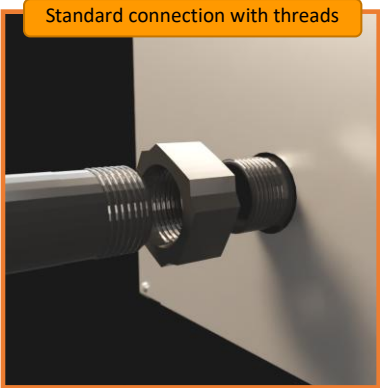
8.1 Installation of the inlet and outlet water connectors

The boiler is fitted with connectors for the inlet and outlet water with external G2” threads. These can be directly used for connection to heating system pipes using union nuts and sealing rings.

Since the OPOP H5 boiler has the same connection dimensions as U26 cast-iron boilers, *U26 (not supplied)* flanges can be used. These flanges screw onto the boiler connectors. The boiler can then replace the old U26 boiler without changing the heating system’s pipes or flue. Sealing gaskets must be inserted between the flanges.

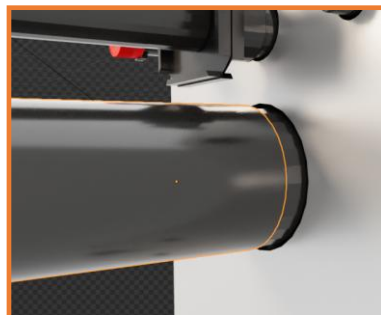


U26 flanges are optional accessories for all OPOP H5 boilers. The connection is identical to U26 boilers, including the dimensions and position of the flue



8.2 Flue installation

The flue pipe diameter is 159 mm. The flue should be connected to the boiler in such a way that the connection is tight, preventing any exhaust fumes from escaping into the room. There should be an inspection and cleaning hole in the flue so that the entire flue can be cleaned of soot build-up.



The flue length should be as short and straight as possible, avoiding unnecessary bends. Any bend in the flue reduces chimney draught and worsens the exhaust gas flow from the boiler to the chimney. Low chimney draught can result in smoke during loading, poor combustion, tar build-up, and low boiler performance. Therefore, it is crucial for the chimney to be properly sized, and for the flue to be kept as short as possible – ideally straight from the boiler directly into the chimney at a minimum upward angle of 10 ° or more. Also ensure that any heat source installation includes a valid inspection report of the flue system, including the measured chimney draught. The minimum operational chimney draught is 16 Pa, measured by the testing facility during boiler certification.

8.3 Filling valve installation (filling valve not supplied with the boiler)

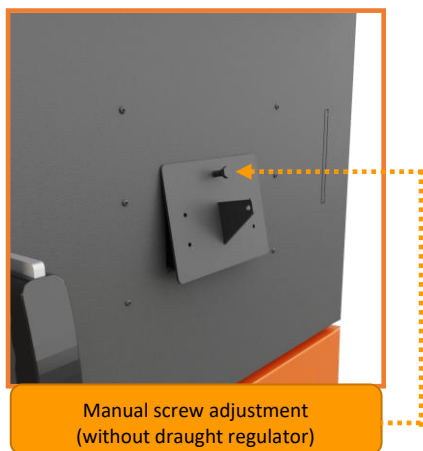
At the lower rear of the boiler, there is a G 1/2" connector with an internal thread for connecting the filling/bleed valve. After filling the boiler/system with water, close the valve. The maximum overpressure of the heating water is 2 bar. Keep in mind that as the water in the system heats up, the pressure increases. Therefore, water pressure of up to 2 bar corresponds to the pressure of water in its heated state. In the cold state, the pressure in the heating system will be lower. Exceeding the specified pressure may lead to excessive stress on the boiler welds over time. Low operational pressure may cause poor water circulation in the boiler and system, which could lead to air pockets – for instance, where part of the radiator remains cold. This is an installation issue downstream of the boiler, which needs to be resolved by the installation company responsible for the system's implementation, company that the boiler in the



or the installed system.

8.4 Primary air damper regulator installation (primary damper regulator not supplied with the boiler)

The primary air damper controls the boiler's output and combustion quality. It can be adjusted manually using an adjustable screw. Alternatively, it can be connected to a primary damper regulator chain. If the damper is connected to a regulator chain, the screw on the damper should be set to allow for minimal opening. As such, the damper will never be fully closed. It is recommended that it be set so that it is always at least 1 cm open. A fully closed damper may cause the flame to be extinguished, or result in tar build-up in the boiler. The user needs to find the correct minimum opening position based on specific conditions such as chimney draught, fuel dryness, heating system size, etc. The rule is that the minimum opening should be set so that the boiler does not overheat, but still maintains proper combustion. This requires the customer to perform several firings and experiments to find the ideal position for the damper.

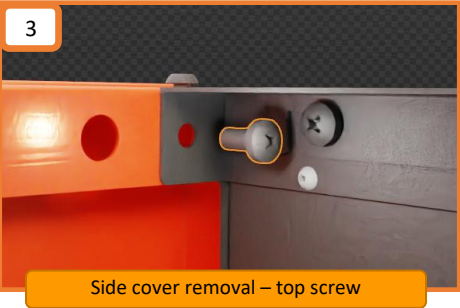
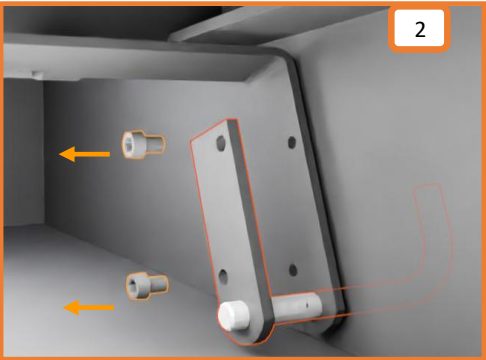
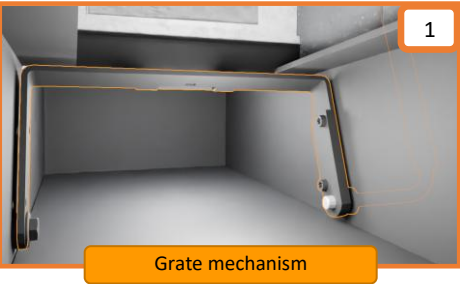


THE DRAUGHT REGULATOR IS AN OPTIONAL EXTRA ACCESSORY

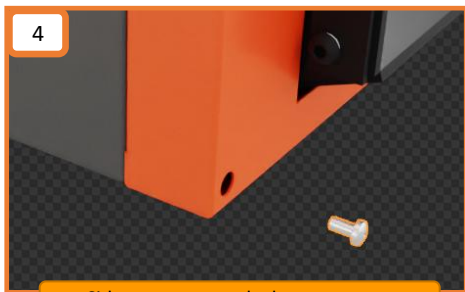
The draught regulator is an optional component that must be purchased separately if you wish to control the air damper automatically. You will also need to purchase a primary air damper rod to ensure proper operation of the draught regulator.

8.5 Changing the position of the grate lever

The grate lever is used to move the sliding grate. This enables the grate to be cleaned. Move the lever to the second limit position to allow all the ash to fall into the ashpan. By default, the lever is installed on the right-hand side of the boiler. However, you can switch the lever to the left-hand side if this configuration is more convenient for you by following the instructions below.



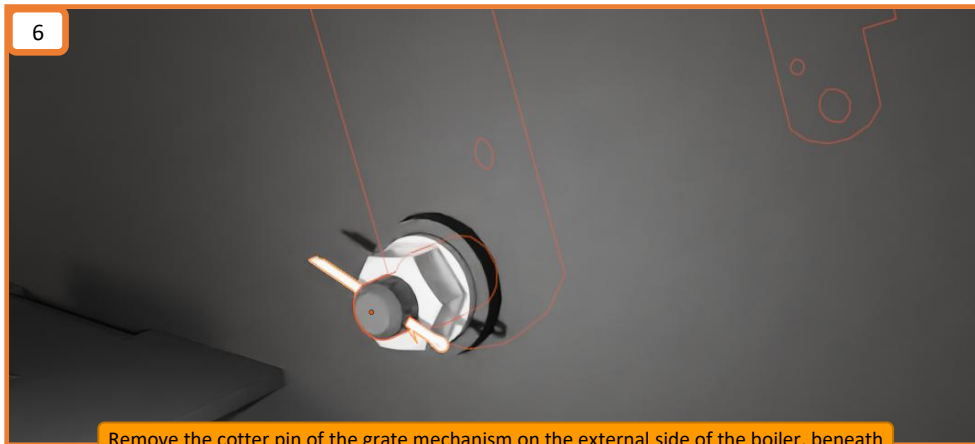
4



Side cover removal – bottom screw

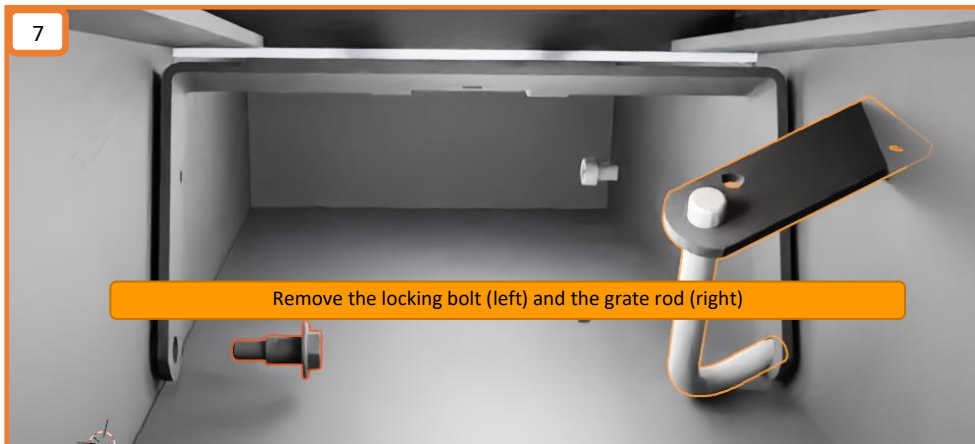
For better access to the grate mechanism's cotter pin on the external side, near the lever, it is recommended to remove the side cover. The side cover is secured with screws. One is located at the top and can be accessed after removing the upper cover, which also houses the thermomanometer ([fig. 3](#)). Another screw is located near the ash door at the bottom ([fig. 4](#)). Additional screws are located at the rear of the boiler ([fig. 5](#)).

6



Remove the cotter pin of the grate mechanism on the external side of the boiler, beneath

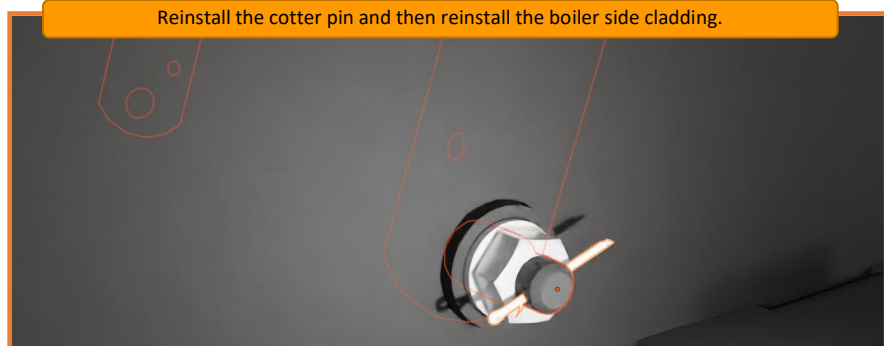
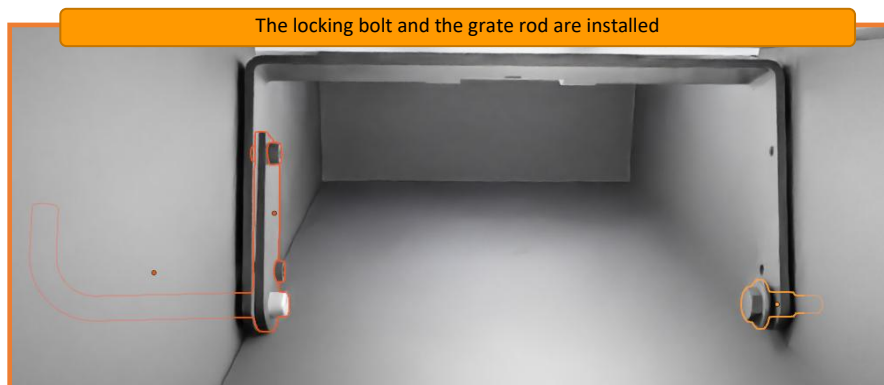
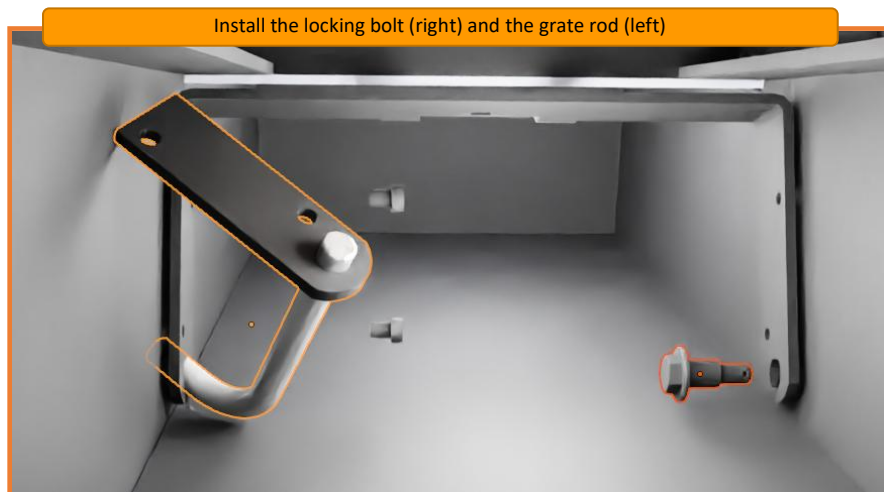
7



Remove the locking bolt (left) and the grate rod (right)

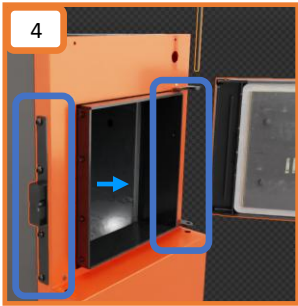
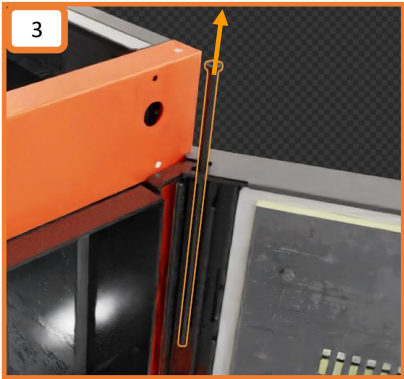
After removing the cotter pin, take out the pin holding the grate mechanism on the left-hand side. Remove the grate rod from the right-hand side. This can be done by sliding it out as indicated in fig. 7.

Then, reinstall the mechanism on the opposite side. See the procedure below.



8.6 Changing the direction in which the front door opens

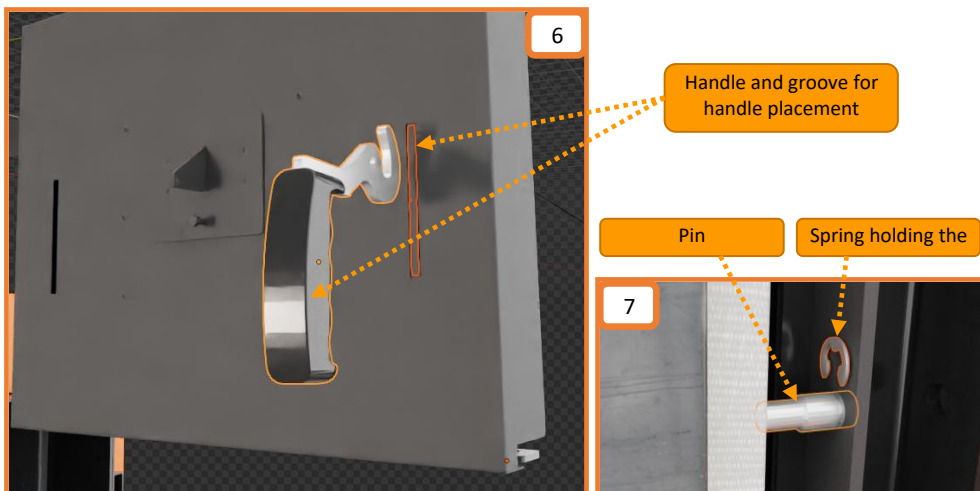
Extract the door pin around which the door rotates by lifting it upwards. The door can now be removed, see [fig. 3](#). There are brackets on both sides of the filling opening. On the left side, there is a bracket into which the hook of the door closing handle slides. On the right side of the filling opening, you will find a bracket in which the door pin you removed in the previous step was inserted. Swap these two brackets. The pin bracket will now be on the left, and the door closing bracket will be on the right. See [fig. 4](#) and [fig. 5](#).



The door can then be slid into place and secured with the pin. The final step is to reposition of the door closing handle and the locking pin to the opposite side of the door. Note that a groove is burned into the door to position the handle on the other side, as shown in [fig. 6](#). Remove the handle by taking out the pin around which the handle pivots. Use a small screwdriver or similar device to help remove the spring that holds the pin in place, as shown in [fig. 7](#).



Then, reinstall the handle and pin on the opposite side in the same way, as shown in *fig. 6 and fig. 7*.



In the same way, you can change the direction in which the bottom ash door opens.

8.7 Checking the position of the cleaning plug

The cleaning plug sits at the bottom of the heat exchanger to prevent a false draught from the ashpan compartment into the chimney. This cleaning plug is removed only when cleaning the heat exchanger. When the plug is removed, ash from the heat exchanger falls into the ashpan. More information about the cleaning plug can be found in the section on cleaning. Applies to H516 only.



During operation, the cleaning plug must always be in position, horizontal and free of leaks.

8.8 Checking the movement of the bypass damper

The bypass damper has a rod extending from the upper rear part of the boiler (a lever with a black ball as a handle). Check that there is nothing blocking the movement of the rod. Slide the handle towards the boiler and then out of the boiler.

- The rod inserted into the boiler means the bypass damper is open – a shorter path for the flue gases to the chimney. This is used during ignition and when adding fuel.
- The rod extended out of the boiler means the bypass damper is closed – the flue gases pass through the boiler heat exchanger. This is used during normal operation after the boiler has heated up and the fuel is loaded.

8.9 Checking the movement of the sliding and slanted grate

By moving the grate lever, you slide the sliding grate in the loading chamber closer to the nozzle. Check the sliding movement of the grate before first igniting the boiler.

- Grate lever tilted backwards – the sliding grate is prepared for ignition and operation.
- Grate lever tilted forwards – the sliding grate is open for cleaning.

8.10 List of standard boiler accessories

- Operating manual, including additional documentation
- Ashpan
- Grate lever H5 (Jackl 20×20×2) – anthracite grey, 1 pc; PLASTIC PLUG 20×20, 1 pc

9. Boiler operation

Before starting up the boiler for the first time, it is necessary to:

- 1) Check that the boiler and the entire heating system are filled with water or another heat-transfer medium and properly vented.
- 2) Check the tightness of the exhaust ducts.
- 3) Check the position of the cleaning plug to prevent false air from being drawn into the heat exchanger compartment.
- 4) If you are using a primary damper regulator, it must be connected by a chain to the damper on the loading door.

Ignition:

- 1) Place paper as close as possible to the nozzle opening on the sliding grate in the boiler, then enough small pieces of wood and kindling on top.
- 2) Insert the bypass damper rod at the top rear of the boiler into the boiler – this opens the bypass damper and shortens the flue gas path to the chimney.
- 3) Adjust the primary air damper so that the screw in the damper ensures the damper opens as far as possible. If you do not want to adjust the damper with each ignition, leave the loading door slightly open (a small crack is enough) during ignition to prevent

the flame from being extinguished due to lack of air. Once the flame is ignited, you can close the door, provided that the primary damper is open enough to keep the flame from going out.

If you have low chimney draught and smoke escapes from the door while the door is ajar, we recommend that you keep the door closed during ignition. Supply air into the boiler via the open primary damper – screw in the screw in the damper to open the damper.

- 4) Close the secondary air dampers on both sides of the boiler during ignition. This reduces the demand on the chimney draught and slightly increases the draw from the loading chamber to the heat exchanger.
- 5) Ignite the wood with additional paper placed in the loading chamber or a similar solid fire starter (Pepo).
- 6) Once the fine wood and kindling catch fire, you can add one or two larger logs. Continue to supply enough air to the boiler either through the primary damper or via the slightly open loading door.
- 7) Wait a minute, then add the remaining logs up to the edge of the hopper and close the loading door. Wood can be loaded into the hopper either lengthwise or crosswise, as shown in [fig. 7](#) below.
- 8) Return the primary damper to its original position. The damper screw should be set so that the damper maintains a minimum opening of 1–2 cm.

Keep in mind that how well the boiler burns depends on many external factors, including chimney draught, wood dryness, wood type, boiler cleanliness, proper boiler performance relative to the heating system, etc. Therefore, a little experimentation is needed to determine the minimum primary damper opening. You want to supply enough air to the boiler to avoid tar build-up and ensure clean combustion, but you also don't want to

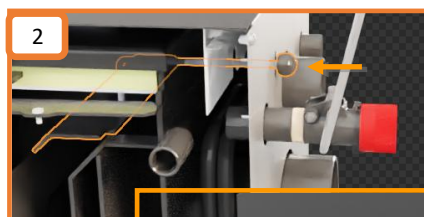
- 9) improve the combustion emission parameters.
- 10) Extend the bypass damper rod so that the damper is closed.



Lighting the boiler



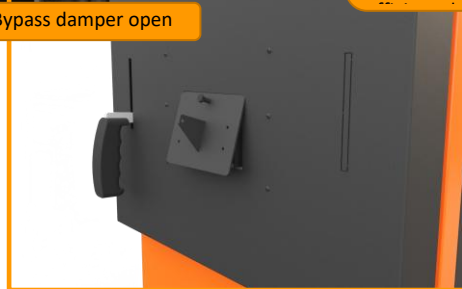
Once the fire starts, add 1 to 2 larger logs.



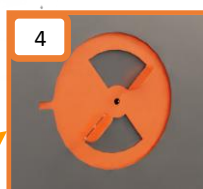
This position of the bypass damper during ignition ensures a shorter flue gas path outside the heat exchanger section of the boiler.

How well the flue gases are drawn into the chimney with the bypass damper open mainly depends on

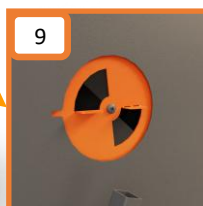
Bypass damper open



Opening the primary damper during ignition using the screw on the



Secondary air dampers positioned to closed during ignition in the boiler



Position of the secondary air damper at the marking after fully loading the fuel

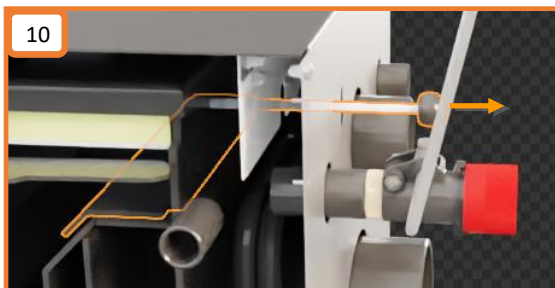


Wood placed lengthwise



Minimum opening of the primary damper – the damper should never be fully closed

Wood placed crosswise



Bypass damper closed

Re-loading and opening the loading doors:

It is very important to know that during the main combustion in the boiler, it is not recommended to open the boiler door. In all wood gasification boilers, combustion by-products accumulate in the loading chamber. These by-products disappear when there is only a hot layer remaining in the loading chamber, i.e. glowing embers with no burning pieces of wood. These glowing embers create minimal smoke. This is therefore the ideal time to load a new batch of wood.

The measured burn time at nominal output can be seen in the parameters table in section 4. This value is measured in a state testing facility during certification testing. For boiler users, this should serve only as an estimate, as the burn time is influenced by many parameters.

In practice, it is necessary to track how long it takes for all the wood in the boiler to burn, leaving only glowing embers. After that, new wood can be loaded by following the procedure described below.

Before reloading fuel:

Depending on the heat demand and combustion intensity, fuel may need to be added to the boiler while it is in operation. Add fuel about 10–12 cm thick to the glowing embers. Before loading more fuel, do a manual grate (min. 2 times). Before adding fuel, use cleaning tools to clear the opening at the bottom of the combustion chamber nozzle so that the fuel burns smoothly and the nozzle is not clogged.



Optimal embers for refuelling.

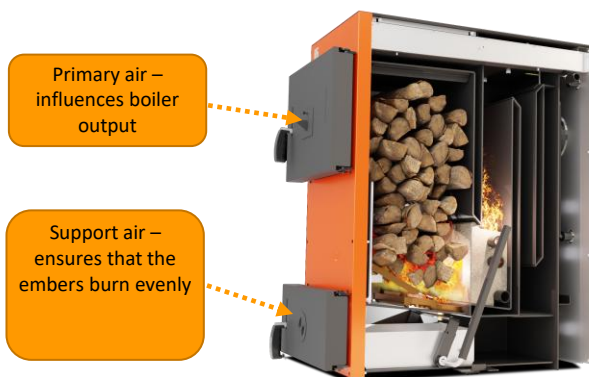
In the boiler, there are only glowing embers, with no pieces of burning wood – minimal smoke when reloading.

The minimum burn time at nominal output is measured at 3 hours. Even then, there will probably still be burning wood in the boiler.

It is important to track how long the glowing embers remain in the boiler in your conditions and to add fuel only onto

Use of the supportive damper:

On the ash door, there is a so-called support damper, which can be opened during combustion if the chimney draught does not meet the minimum requirement or if the wood you are using is too dry, or if you are using only soft dry wood.



In these circumstances, the fuel in the loading chamber burns quickly, and the height of the glowing embers may grow to such an extent that they clog the nozzle. This leads to reduced boiler output and smoke may escape into the room through the open primary damper in the loading door. The reason for this is usually low chimney draught or overly dry wood.

Opening the support damper after ignition (i.e. when the boiler is fully loaded) will help the embers to burn off more quickly.

If you experience smoke escaping into the room or a reduction in boiler output during operation, open the lower support damper 1 to 2 cm to accelerate the burning of the embers. The degree to which you open it will depend on the situation and requires experimentation. The more you open the support damper, the faster the embers will burn off, and the clearer the nozzle will become. This helps when the chimney draught is low.

To quickly increase output, the support damper on the ash door can be opened fully for about 15 minutes after loading the boiler.

However, if you open the lower damper too much, the support damper may cause smoke to escape through the upper primary damper. Therefore, only open the support flap 1 to 2 cm.

If there is no problem with chimney draught and combustion is proceeding normally, without clogging the nozzle with excessively high embers, you can close the support damper. This results in slower combustion and higher embers, which will keep the fire in the boiler longer – meaning less frequent reloading is required.

10. Boiler and heating system maintenance

To achieve the highest operating efficiency and thus the best boiler performance, the internal parts of the boiler body must be properly cleaned regularly, approximately once a week (depending on the intensity of heating and the quality of the fuel used). This is done by scraping the build-up from the walls with a scraper, which is included among the boiler's accessories.

CAUTION! Always clean the boiler when it is cold. An uncleaned boiler is less efficient and has lower output.

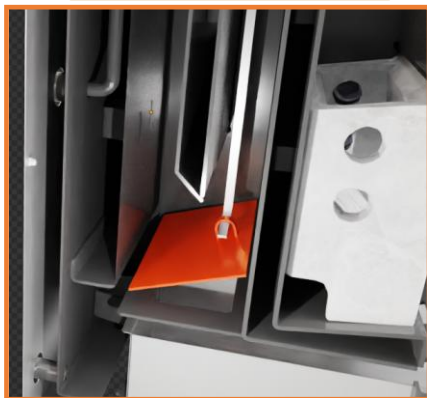
When cleaning, follow these steps:

- a) Remove the cleaning door. Then, using cleaning tools, remove the cleaning plug and insert the ashpan all the way to the back of the boiler (applies to OPOP H516 only). The cleaning plug seals the space between the rear vent of the partition and the ashpan. This plug is pulled out through the central shaft. In the OPOP H521 and H526 models, the cleaning holes are located at the lower rear part of the boiler. These models do not have a cleaning plug like the one used in the H516.

Removal of cleaning door



Hooking of the cleaning plug using cleaning tools (applies to H516 only)



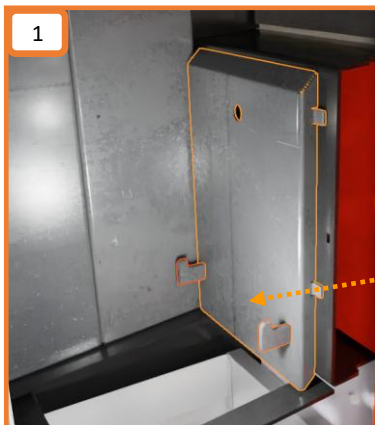
Area for cleaning ash from the boiler's rear chamber. Located at the rear of the boiler on both the left and right sides (applies to H521 and H526).



- b) Using the scraper, remove ash and soot deposits from the boiler walls. After removing the dirt, replace the cleaning plug and, shining a torch (not supplied) in the ashpan compartment, make sure the cleaning plug is properly installed – in a horizontal position, with the loop facing up, without any leaks.
- c) Close the cleaning door and adequately tighten the two wing nuts of the cleaning door.
- d) Also clean the hopper in the front part of the boiler through the open loading door, scraping the surfaces of the shielding plates. The shielding plates can be removed from the boiler occasionally (e.g. twice a year) so that the surfaces of the boiler behind the shielding plates can be cleaned.
- e) Using short movements with the grate lever, remove any remaining ash from the grates. If the grate holes are clogged, use cleaning tools to clear them.
- f) Open the ash door and remove the ashpan. Empty the contents of the ashpan, clean the bottom of the boiler to remove any remaining ash and debris that may have fallen outside the ashpan during cleaning or grating, and close the ash door.

During this task, ash should be placed in fireproof containers with lids. Not least, be sure to wear protective gear and observe personal safety.

The shielding spacer plates in the loading chamber can be removed. They are hinged. You can remove them by moving them upwards and away from the boiler body. The sequence for removing the plates is shown below: first, fig. 1 (front spacer plate), then fig. 2 (side spacer plate).



Remove the front spacer plate by moving it upwards.



Remove the side spacer plates by tilting them away from the boiler

The ashpan in the boiler is pulled out through the open ash door.

The flue pipe must be cleaned through the inspection opening or openings. These should be regularly cleaned, just like the chimney itself. The entire flue path, from the flame to the chimney outlet, must be clear and clean.

11. Determination of the storage tank size

Calculation of the minimum tank volume:

$$V_{sp} = 15 T_b \times Q_n (1 - 0.3 \times (Q_H / Q_{min}))$$

Where: V_{sp} volume of the storage tank in litres

T_b burn time in hours

Q_n nominal heat output in kW

Q_H thermal load of the buildings in kW

Q_{min} minimum heat output in kW

The dimensions of the storage tank must be determined based on the output, the type of fuel used, and whichever has the largest storage tank. This storage tank is not required if the calculated volume is less than 300 litres.

OPOP H5 series boilers meet the conditions of emission class 5 and EcoDesign as per ČSN EN 303-5+A1. They meet this class when operating at nominal output. If the nominal output is higher than the instantaneous heat demand of the building, excess heat must be directed to the storage tank. When the tank is fully charged, the boiler must be shut down, and heating should be provided from the storage tank. After the heat in the tank has been depleted, the boiler can be restarted. The storage tank ensures thermal comfort while maintaining the quality operation of the boiler. Hydraulic diagrams for connecting boilers to a storage tank are available in the OPOP design documentation.

12. Waste disposal

Packaging material (paper and wood) can be burned in stoves. PP tape, unburned residues, and ash should be disposed of as household waste.

After the stove has reached the end of its service life, dispose of the casing and grates as metal waste, and the insulating material should be taken to a scrap yard.

Wooden slatting is designed for single use and cannot be reused as a product. Its disposal is subject to Act No 185/2001 on waste and amending certain other acts, as amended. Used packaging materials comply with the conditions for placing packaging on the market, as laid down in Act No 477/2001 on packaging and amending other acts, as amended.

13. Troubleshooting

The boiler does not provide sufficient output:

- have the chimney inspected by a professional company
- use prescribed fuel that does not exceed the prescribed moisture content
- check the tightness of the cleaning door
- check that the cleaning opening is sealed with the cleaning plug
- check the position of the bypass damper
- check the flue gas path for leaks
- clean the boiler and flue gas ducts
- loading fuel into the boiler vertically reduces boiler output

Water is boiling in the boiler:

- high hydraulic resistance in the heating system, especially if it is a gravity-fed system
- excessive chimney draught – reduce the draught
- clean the heating system by flushing, or install a circulation pump.
- The boiler is too large for the heating system

The boiler emits smoke into the room during loading or operation:

- Uncleaned boiler or flue gas paths
- Low chimney draught
- Blocked nozzle when burning non-prescribed fuel
- Loading fuel before there are only embers in the boiler

Tar build-up, especially in the boiler exchanger, ashpan, or flue gas path behind the boiler:

- Uncleaned boiler or flue gas paths
- Low chimney draught
- Boiler throttling – not enough primary and secondary air entering the boiler
- Wet fuel
- No protection against low-temperature corrosion

The boiler does not burn, or it goes out:

- Uncleaned boiler or flue gas paths
- Low chimney draught
- Blocked nozzle when burning non-prescribed fuel
- Wet fuel
- Non-prescribed fuel
- Fuel fed vertically into the boiler

14. Regulations and standards

ČSN 06 0310 – Central heating. Design and installation.

ČSN 06 0830 – Safety devices for central heating and domestic hot water heating.

ČSN 06 1008 – Fire safety of local appliances and heat sources (boilers up to 50 kW).

ČSN 06 1610 – Parts of flue gas ducts of domestic appliances.

ČSN 07 0245 – Hot water and low-pressure steam boilers. Hot water boilers up to 50 kW.

Technical requirements:

ČSN 07 7401 – Water and steam for thermal energy equipment with a working pressure up to 8 MPa.

ČSN EN 13 501-1+A1 – Classification of building products and building construction.

Part 1: Classification according to the results of fire reaction tests.

ČSN 73 0831 – Fire safety of buildings. Assembly spaces.

ČSN 73 4201 – Chimneys and flue pipes. Design, execution, and connection of fuel appliances.

ČSN 73 4210 – Construction of chimneys and flue pipes and connection of fuel appliances.

ČSN EN 303-5 – Central heating boilers for solid fuels.

163/2002 – Government Regulation

26/2003 – Government Regulation

185/2001 – Waste Act

477/2001 – Packaging Act

34/1996 – Consumer Protection Act

15. Energy efficiency

I	II	III	IV	V	VI
supplier's name or trademark	supplier's model identification	energy efficiency class	nominal heat output in kW	energy efficiency index	seasonal heating energy efficiency (%)
OPOP s.r.o.	OPOP H516	A+	16	114	78
OPOP s.r.o.	OPOP H521	A+	21	114	78
OPOP s.r.o.	OPOP H526	A+	26	115	79

16. Identification labels

Model identification: OPOP H516							
Condensing boiler:	no	Cogeneration boilers for solid fuels:	no	Combination boiler:	no		
Fuel loading mode: manual	Manual: the boiler should be operated with a hot water storage tank with a minimum volume of x(*) litres/ Automatic: it is recommended that the boiler be operated with a hot water storage tank with a minimum volume of x(**) litres						
Fuel			Preferred fuel (only one):		Other suitable fuel(s):		
Wood logs, moisture content ≤ 25%			yes		no		
Wood chips, moisture content 15–35%			no		no		
Wood chips, moisture content > 35%			no		no		
Pressed wood in the form of pellets or briquettes			no		no		
Wood shavings, moisture content ≤ 50%			no		no		
Other wood biomass			no		no		
Non-wood biomass			no		no		
Hard coal			no		no		
Lignite (including briquettes)			no		no		
Coke			no		no		
Anthracite			no		no		
Briquettes made from a mixture of fossil fuels			no		no		
Other fossil fuel			no		no		
Briquettes made from a mixture of biomass (30–70%) and fossil fuels			no		no		
Other mixture of biomass and fossil fuels			no		no		
Operational characteristics when using preferred fuel:							
Seasonal indoor heating energy efficiency η_s [%]:			78				
Energy efficiency index (EEI):			114				
Energy efficiency class:			A+				
Name	Designation	Value	Unit	Name	Designation	Value	Unit
Useful heat output				Useful efficiency			
At nominal heat output	Pn(***)	16	kW	At nominal heat output	η_n	79.3	%
At [30%] of nominal heat output, where applicable	Pp	not applicable	kW	At [30%] of nominal heat output, where applicable	η_p	not applicable	%
Cogeneration boilers for solid fuels: electric efficiency				Auxiliary electricity consumption			
At nominal heat output	$\eta_{el,n}$		%	At nominal heat output	elmax	not applicable	kW
				At [30%] of nominal heat output, where applicable	elmin	not applicable	kW
				Built-in secondary emissions-reduction device, where applicable		not applicable	kW
				In standby mode	PSB	not applicable	kW
Contact details		OPOP s.r.o., Zašovská 750, Valašské Meziříčí, 757 01					

(*) Tank volume = $45 \times Pr \times (1 - 2.7/Pr)$ or 300 litres, whichever is higher, where Pr is expressed in kW

(**) Tank volume = $20 \times Pr$, where Pr is expressed in kW

(***) For the preferred fuel, P_n equals Pr

Model identification: OPOP H521							
Condensing boiler:	no	Cogeneration boilers for solid fuels:	no	Combination boiler:	no		
Fuel loading mode: manual	Manual: the boiler should be operated with a hot water storage tank with a minimum volume of x(*) litres/ Automatic: it is recommended that the boiler be operated with a hot water storage tank with a minimum volume of x(**) litres						
Fuel		Preferred fuel (only one):		Other suitable fuel(s):			
Wood logs, moisture content $\leq 25\%$		yes		no			
Wood chips, moisture content 15–35%		no		no			
Wood chips, moisture content $> 35\%$		no		no			
Pressed wood in the form of pellets or briquettes		no		no			
Wood shavings, moisture content $\leq 50\%$		no		no			
Other wood biomass		no		no			
Non-wood biomass		no		no			
Hard coal		no		no			
Lignite (including briquettes)		no		no			
Coke		no		no			
Anthracite		no		no			
Briquettes made from a mixture of fossil fuels		no		no			
Other fossil fuel		no		no			
Briquettes made from a mixture of biomass (30–70%) and fossil fuels		no		no			
Other mixture of biomass and fossil fuels		no		no			
Operational characteristics when using preferred fuel:							
Seasonal indoor heating energy efficiency η_s [%]:			78				
Energy efficiency index (EEI):			114				
Energy efficiency class:			A+				
Name	Designation	Value	Unit	Name	Designation	Value	Unit
Useful heat output				Useful efficiency			
At nominal heat output	$P_n(***)$	21	kW	At nominal heat output	η_n	80.4	%
At [30%] of nominal heat output, where applicable	P_p	not applicable	kW	At [30%] of nominal heat output, where applicable	η_p	not applicable	%
Cogeneration boilers for solid fuels: electric efficiency				Auxiliary electricity consumption			
At nominal heat output	$\eta_{el,n}$		%	At nominal heat output	el_{max}	not applicable	kW
				At [30%] of nominal heat output, where applicable	el_{min}	not applicable	kW
				Built-in secondary emissions-reduction device, where applicable		not applicable	kW
				In standby mode	PSB	not applicable	kW
Contact details		OPOP s.r.o., Zašovská 750, Valašské Meziříčí, 757 01					

(*) Tank volume = $45 \times Pr \times (1 - 2.7/Pr)$ or 300 litres, whichever is higher, where Pr is expressed in kW

(**) Tank volume = $20 \times Pr$, where Pr is expressed in kW

(***) For the preferred fuel, P_n equals Pr

Model identification: OPOP H526									
Condensing boiler:		no	Cogeneration boilers for solid fuels:		no	Combination boiler:		no	
Fuel loading mode: manual		Manual: the boiler should be operated with a hot water storage tank with a minimum volume of $x(*)$ litres/ Automatic: it is recommended that the boiler be operated with a hot water storage tank with a minimum volume of $x(**)$ litres							
Fuel					Preferred fuel (only one):		Other suitable fuel(s):		
Wood logs, moisture content $\leq 25\%$					yes		no		
Wood chips, moisture content 15–35%					no		no		
Wood chips, moisture content $> 35\%$					no		no		
Pressed wood in the form of pellets or briquettes					no		no		
Wood shavings, moisture content $\leq 50\%$					no		no		
Other wood biomass					no		no		
Non-wood biomass					no		no		
Hard coal					no		no		
Lignite (including briquettes)					no		no		
Coke					no		no		
Anthracite					no		no		
Briquettes made from a mixture of fossil fuels					no		no		
Other fossil fuel					no		no		
Briquettes made from a mixture of biomass (30–70%) and fossil fuels					no		no		
Other mixture of biomass and fossil fuels					no		no		
Operational characteristics when using preferred fuel:									
Seasonal indoor heating energy efficiency η_s [%]:					79				
Energy efficiency index (EEI):					115				
Energy efficiency class:					A+				
Name		Designation	Value	Unit	Name		Designation	Value	Unit
Useful heat output					Useful efficiency				
At nominal heat output		$P_n(***)$	26	kW	At nominal heat output		η_n	81.5	%
At [30%] of nominal heat output, where applicable		P_p	not applicable	kW	At [30%] of nominal heat output, where applicable		η_p	not applicable	%
Cogeneration boilers for solid fuels: electric efficiency					Auxiliary electricity consumption				
At nominal heat output		$\eta_{el,n}$		%	At nominal heat output		e_{lmax}	not applicable	kW
					At [30%] of nominal heat output, where applicable		e_{lmin}	not applicable	kW
					Built-in secondary emissions-reduction device, where applicable			not applicable	kW
					In standby mode		PSB	not applicable	kW

Contact details	OPOP s.r.o., Zašovská 750, Valašské Meziříčí, 757 01
(*) Tank volume = $45 \times Pr \times (1 - 2.7/Pr)$ or 300 litres, whichever is higher, where Pr is expressed in kW (**) Tank volume = $20 \times Pr$, where Pr is expressed in kW (***) For the preferred fuel, Pn equals Pr	

17. Warranty policy

The points listed below must be met not only to comply with the warranty policy, but also to ensure the correct installation of the boiler according to valid standards, safety requirements, and to ensure the smooth operation of the boiler.

1. The heating system must be filled with water that meets the requirements of ČSN 07 7401, and its hardness must not exceed the specified parameters. The use of antifreeze mixtures is not recommended by the manufacturer.
2. The boiler must be connected to the system in accordance with applicable regulations and standards.
3. The flue gas path must be checked by a chimney company before the boiler is installed. Request an inspection report, including the basic parameters of the flue gas path, such as the chimney diameter, length, and draught.
4. The flue pipe should not be longer than 1 m and must be fitted with a cleaning opening. The flue pipe may only be longer if the chimney draught has been measured and recorded no further than 30 cm from the boiler and meets the minimum operational draught requirements.
5. The OPOP boiler must be installed in a separate boiler room specially designed for heating purposes. The boiler room must provide enough space for the installation and maintenance of the boiler. Sufficient fresh air circulation for combustion must be ensured.
6. The boiler must never be installed in open spaces, on balconies, in habitable areas, such as kitchens, living rooms, bathrooms, and bedrooms, or in spaces where there are explosive and flammable materials.
7. It is recommended that the boiler be installed on a concrete base made of fire-resistant material.
8. The following minimum clearance for handling should be ensured around the boiler: 60 cm from the back and sides, 100 cm from the front.
9. During installation and operation, a safe distance of 200 mm from combustible materials must be maintained.
10. It is not allowed to store fuel behind or beside the boiler at a distance of less than 800 mm.
11. Fuel must not be stored between two boilers in the boiler room.
12. Maintain a distance of at least 1,000 mm between the boiler and the fuel, or store fuel in a different room from where the boiler is installed.

13. Only warranty-approved fuel specified in the boiler's user manual should be used.
14. The manufacturer is not responsible for the quality of the fuel in terms of combustion quality, ash quantity, or frequency of boiler cleaning, as these are influenced by external factors such as fuel quality, dust and moisture in the fuel, chimney draught, or incorrect combustion process settings.
15. The use of flammable liquids (e.g. petrol, alcohol) for igniting the boiler is prohibited.
16. It is prohibited to overheat the boiler in any way during operation.
17. If there is a danger of flammable vapours or gases entering the boiler room, or during activities that pose a temporary fire or explosion risk (e.g. the gluing of floor coverings, use of flammable paints), before starting the work the boiler must be shut down.
18. When the heating season ends, the boiler and flue pipe must be thoroughly cleaned. The boiler room must be kept clean and dry.
19. It is prohibited to interfere with the structure or electrical wiring of the boiler.
20. The manufacturer is not responsible for damage caused by improper settings or operation of the product.
21. The standard warranty period does not apply to parts subject to wear and tear, including asbestos sealing cords, granulated plates, and refractory nozzles. These parts, however, serve their function for a long time if the boiler and its components are operated in accordance with the user manual.
22. The manufacturer is not responsible for rust on the boiler and its components, as this is always caused by external factors such as room humidity, fuel quality, or improper installation without protection against low-temperature corrosion.
23. The boiler must be protected against low return water temperature using a valve that prevents cold water from entering the boiler. The minimum acceptable return water temperature is set by the manufacturer at 65 °C.
24. The manufacturer is not responsible for the condensation of cold air in the flue path, as this must be prevented by correct installation and proper combustion process settings in the boiler.
25. The manufacturer is not responsible for smoke escaping from the boiler into the room if this is caused by low chimney draught, improper boiler installation, incorrect combustion process settings, or improper use of the boiler.
26. The manufacturer is not responsible for damage to components caused by handling, transport, incorrect settings, improper use, or other external causes not directly related to the function of the individual boiler components.
27. The installation of the boiler, additional boiler devices, and their correct set-up and start-up are the responsibility of the installation company that makes the sale to the end customer.

18. Warranty certificate

For the OPOP H5 hot water boiler

Manufacturer: OPOP s.r.o., Valašské Meziříčí
Phone: 571 675 589, **fax.:** 571 611 225

Date of dispatch from the factory: _____

Terms of warranty: The user is required to entrust commissioning, regular maintenance, and fault rectification to authorised service professionals only. This warranty certificate includes certification of quality and completeness. The manufacturer confirms that the product has been inspected and complies with technical standards and ČSN EN 303-5+A1:2023. We guarantee the quality, functionality, and construction of the boiler for 24 months from the date of sale to the end consumer, but no longer than 30 months from the dispatch date from the production facility. We will repair any defects resulting from faulty material, faulty design, or faulty construction at our expense, on condition that the boiler:

- is in normal technical condition and is operated as per the user manual
- is connected to a chimney flue in accordance with ČSN 73 4201:2010
- has not been subjected to mechanical damage (no unauthorised interventions, except those permitted in the user manual)
- the chimney draught according to ČSN 303-5+A1:2023 must meet the value stated in this standard (or the values specified in this manual, based on the type of boiler)
- the consumer must present this warranty certificate, properly filled in, when making a claim
- the manufacturer's instructions for the use of pressure expansion vessels are followed
- if the purchaser does not complete the sale of the product within the statutory warranty period, all responsibility for any defect lies with the purchaser
- costs associated with claim processing will be charged to the purchaser
- the insulation under the loading door and the refractory nozzle is considered to be a consumable, and cannot be claimed if damaged

When reporting a defect, always present this warranty certificate, provide the exact address, and describe the circumstances under which the defect occurred. The method and location of the repair will be determined by our company.

Date, signature – boiler sale

Date, signature – boiler installation

Date, signature – boiler commissioning

Steel weldment – we guarantee its permanent tightness for two years from the date of dispatch from the production facility. We provide an extended warranty of 60 months if a pressure expansion vessel is not used in the heating system, the required temperature range of the heating

water is maintained, and the leak is due to faulty material or welding work. For the warranty to be accepted for a leaking steel weldment, it must be conclusively proven that the water in the boiler was caused by a weldment leak, not by the condensation of cooled air. The warranty will not be accepted for defects caused by improper operation or if the boiler is connected to a heating system that does not meet the basic operational conditions for the boiler. If the warranty is recognised during the extended warranty period, we will provide the user with a replacement weldment via parcel delivery or personal collection. If the faulty weldment is not returned to the manufacturer within 30 days of the date of dispatch or handover of the replacement weldment, the user will be charged for the full cost of the weldment, including transport costs thereof. During the extended warranty period (i.e. 60 months), a replacement weldment is guaranteed for 24 months from the date of collection. The boiler weldment is coated with black, water-based paint, which may peel. Peeling paint does not affect the boiler's functioning. After the first ignition, the paint will burn off.

Claim procedure:

- 1) Submit, in person, by post, or by email, the confirmed warranty certificate and proof of payment of the product to the installation company that installed the boiler.
- 2) Provide the exact address and, if applicable, a phone number, and describe the circumstances under which the incident occurred.
- 3) Standard warranty resolution methods:
 - a) return of the defective part for replacement
 - b) if the process outlined above under (a) is not possible, the manufacturer reserves the right to determine the method, timing, and repair process by its service worker or authorised partner
 - c) the user must allow the manufacturer to carry out repairs as described in (b)
 - d) if the user does not allow access for the repair, the manufacturer considers the claim to be closed
 - e) if the defect is irreparable, the user has the right to a replacement part
 - f) if the claim is deemed unjustified (i.e. no defect or leak is confirmed by the service technician), the user will be billed for any inspection or travel costs incurred by the technician
 - g) The consumer must submit claims to their supplier – the installation company or shop where the product was purchased.
 - h) If a heavily soiled claimed boiler is sent to the manufacturing facility, the company will clean it, and the cleaning costs will be passed on to the user

Dear Customer,

We are delighted that you have decided to purchase our product. This decision entitles you to a 20% discount on spare parts. To take advantage of this offer, please complete the registration form and send it to the following address:

**OPOP s.r.o.
Sales Department
Zašovská 750
757 01 Valašské Meziříčí**

Upon receiving the completed form, we will promptly send you a Customer Card, which will entitle you to discounts on spare parts from the manufacturer. When ordering spare parts, please ensure that you always provide your Customer Card number.

Thank you for your confidence in us.

Cut here and send to our address

.....

REGISTRATION FORM

You may also register at our website at www.opop.cz

First name.....

Product serial number.....

Surname.....

Dealer.....

Street and building number Product type

City.....

Postcode.....

Phone number (optional)

Email

Signature

CONTACT INFORMATION

Below you will find a complete directory of contacts to help you obtain comprehensive information, from product orders and spare parts to technical support for installed OPOP products.

Sales Department

Phone:

(+420) 571 675 240

(+420) 571 675 108

(+420) 571 675 589

Email:

sales@opop.cz

Spare Parts

Phone:

(+420) 571 675 578

Email:

nahradnidily@opop.cz

Servicing

Phone:

(+420) 571 675 252

Email:

servis@opop.cz

OPOP s.r.o.

Zašovská 750

757 01 Valašské Meziříčí

Bank:

UNI CREDIT BANK, Account No 1008228004/2700

Company registration number: 14091704, VAT number: CZ14091704

Phone: Sales Department: 571 675 589, Secretariat: 571 611 250, Production: 571 675 405

Supplies: 571 675 114, Financial Department: 571 675 472

Fax: 571 611 225
