Central heating solid-fuel boiler with a cooker

TEMY PRO P 25

Technical manual for use and maintenance



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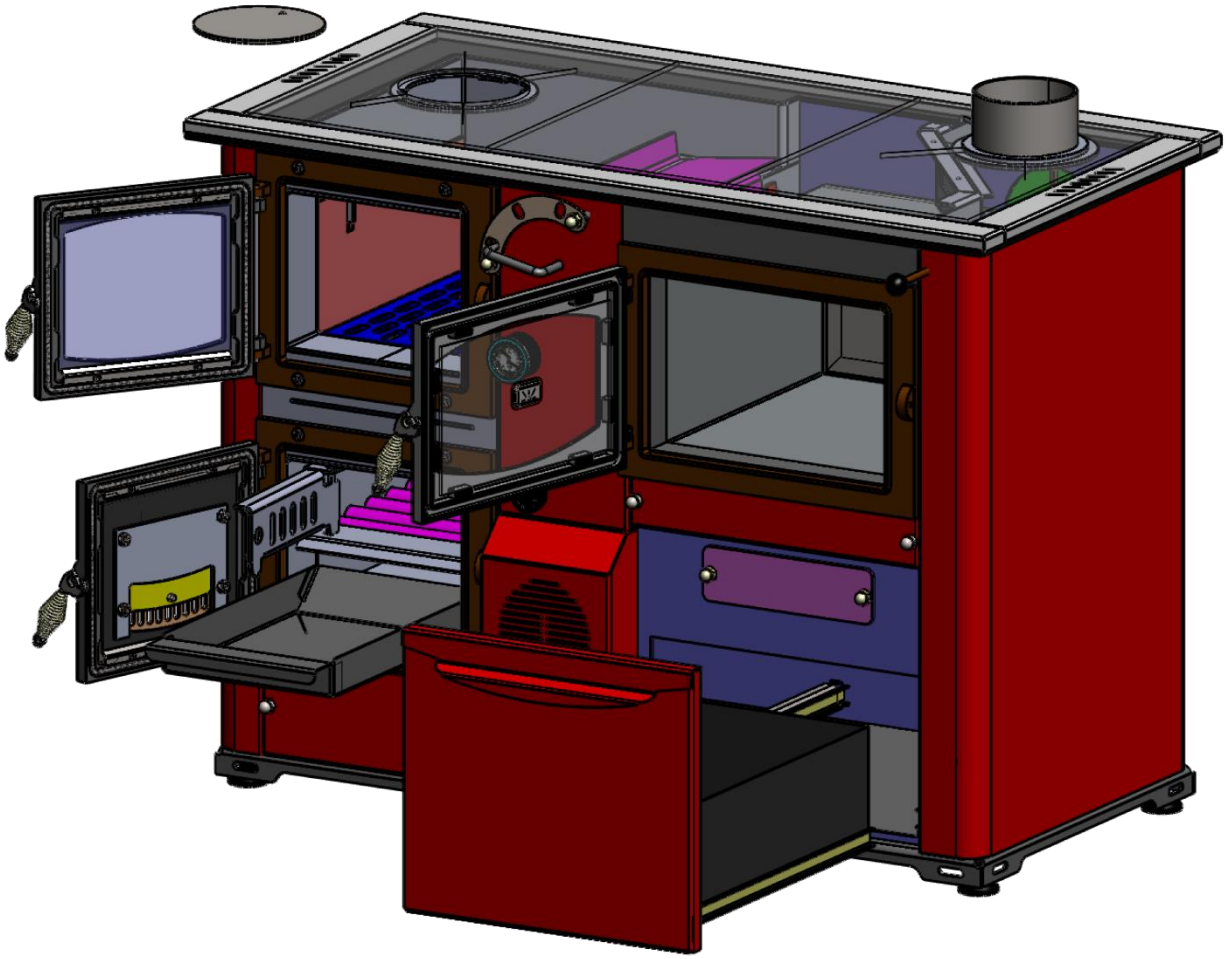
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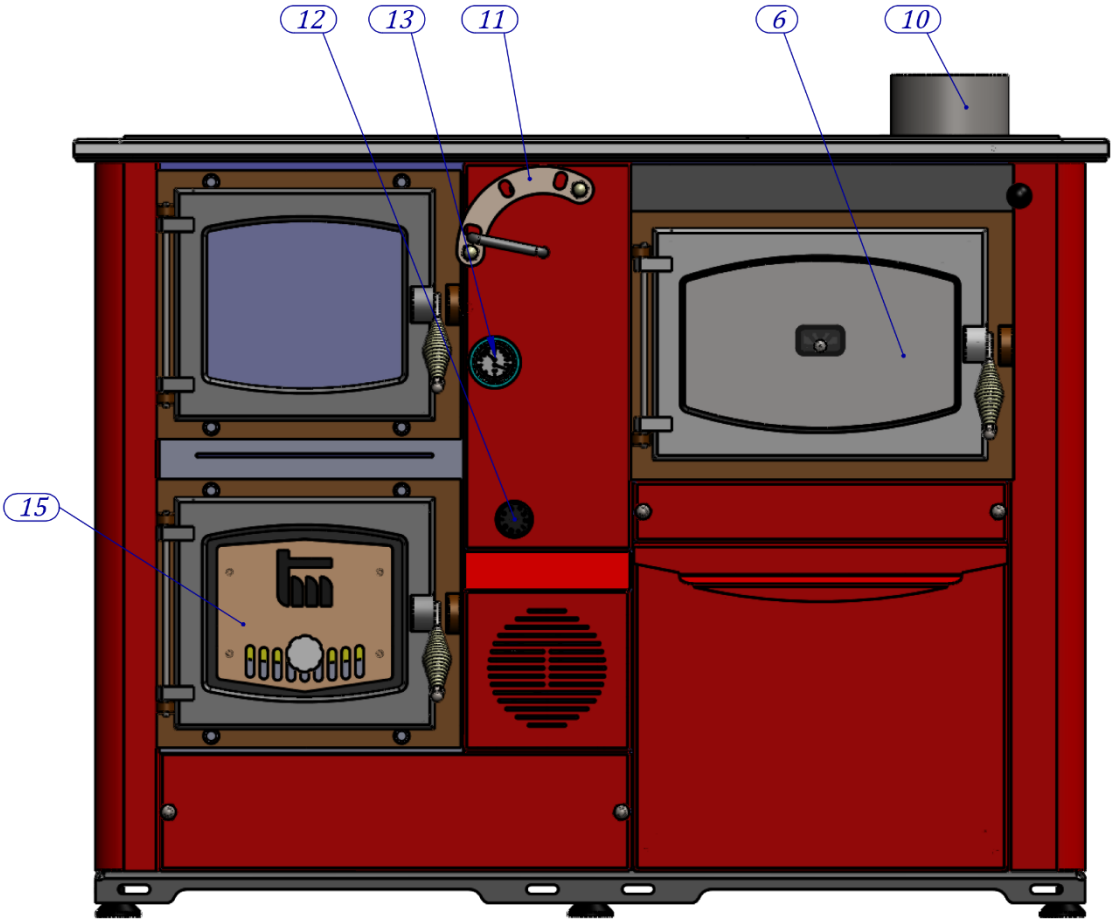
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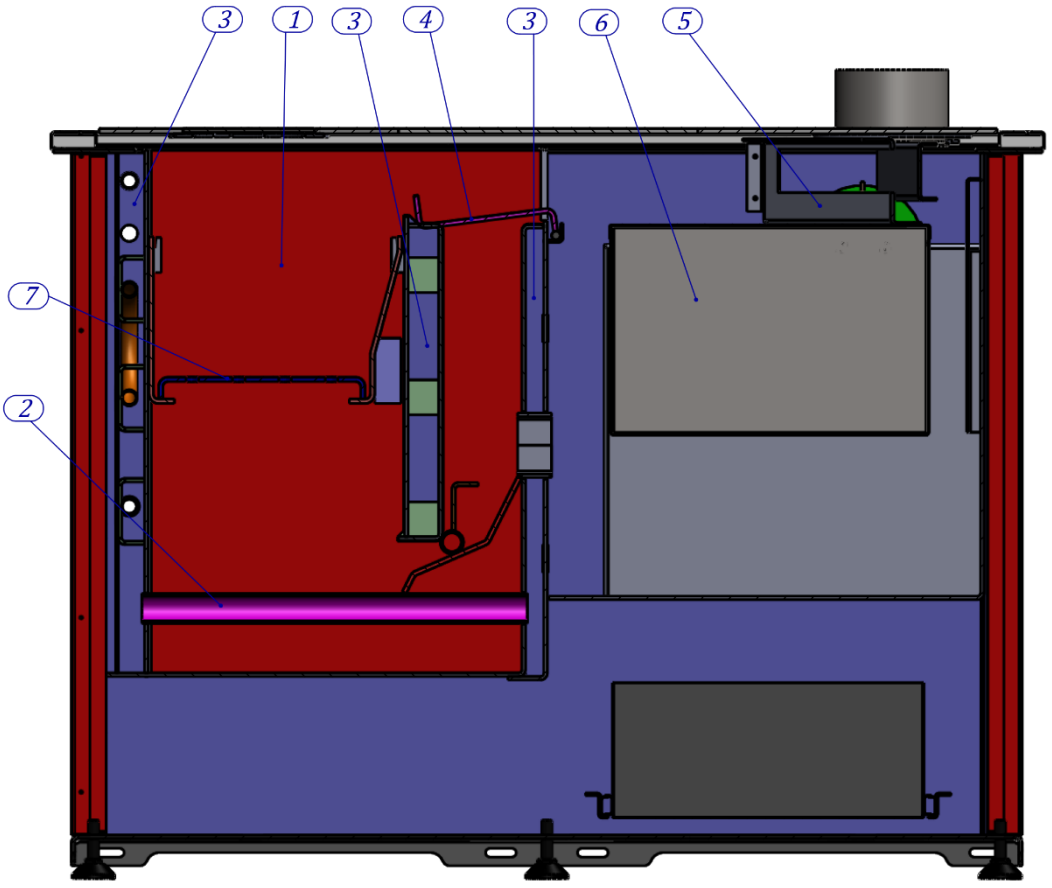
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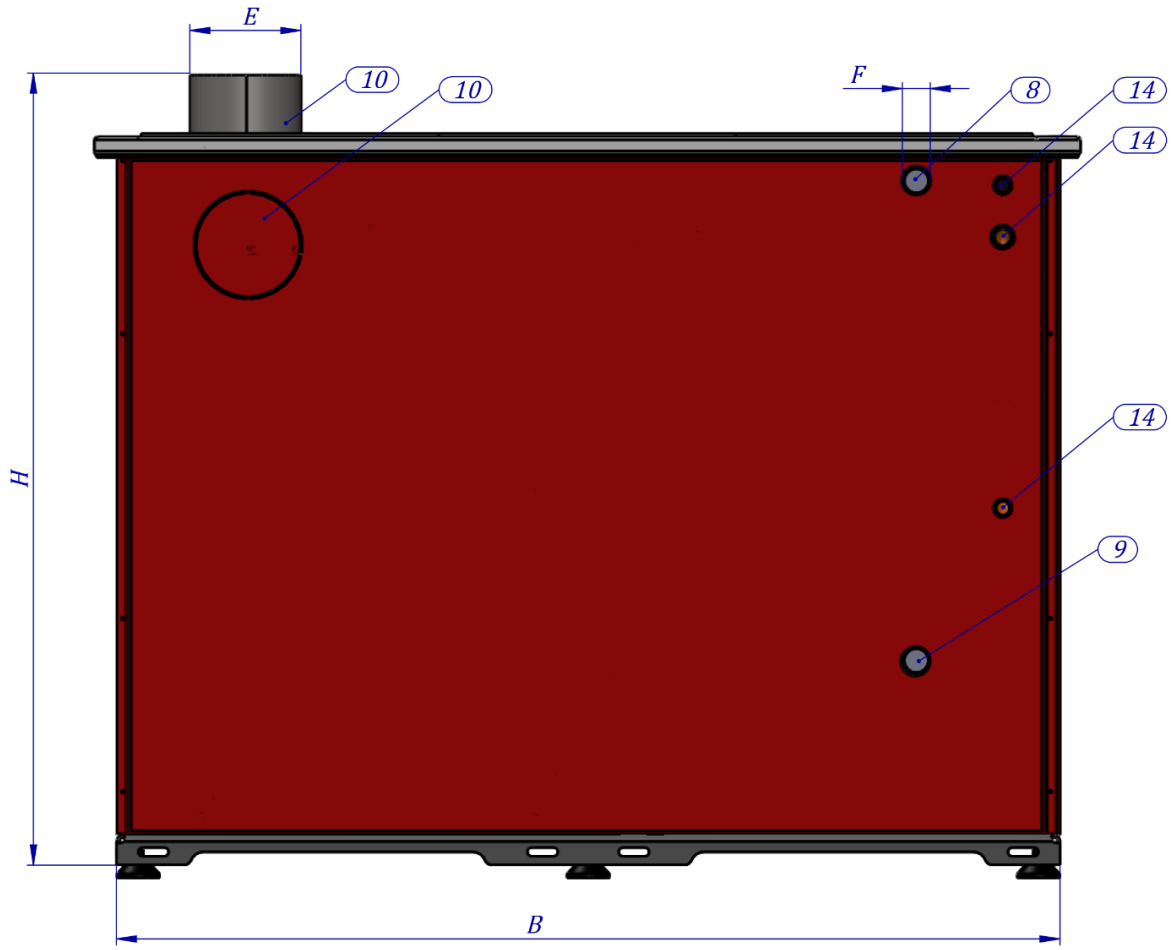
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1 General product data




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Boiler part description: 1. Boiler chamber 2. Boiler heat-exchanger (tubes) 3. Hot-water 4 Boiler flap 5. Flue gases flap 6. Oven 7. Summer mode grid 8. Flow line 9. Return line 10. Flue gas exit (chimney connection) – default and alternative mount 11. Working mode handle (combined, cooking, central-heating) 12. Thermometer 13. Thermomanometer 14. Safety heat-exchanger (temperature relief valve mount) 15. Lower boiler door with secondary air inlet

1.1 Technical data chart

Type	**TEMY PRO P 25**
Nominal power	25 KW
Power transmitted to the central heating	18 KW
Power range	10-25 KW
Temperature range	60- 80 °C
Minimum temperature of the return line	60 °C
Width (B)	1130 mm
Height (H)	855 mm
Length (L)	670 mm
Total weight of the boiler	282 kg
Flow / Return (F) (inch)	1"
Fill / Drain tap (inch)	1/2"
Flue gas diameter (E)	Ø 148 mm
Necessary draught	15 Pa
Boiler water volume	48 lit
Max working pressure	2,5 bar
Dimensions of the oven	350 x 230 x 405 mm

1.2 Emission values

TEMY PRO P is evaluated according to European Directive **2015 :1189** and its emission values as well as boiler efficiency are officially tested and confirmed to be below prescribed limits.

Results	**TEMY PRO P**
Dust [mg/Nm3]	43
CO [mg/Nm3]	592
OGC [mg/Nm3]	21
NOx [mg/Nm3]	107
Seasonal space heating energy efficiency	80 %

1.3 Description of the product

- This product is a solid fuel boiler device with no thermal insulation coat. Upper surface and the oven can be used for preparing food.
- **This product can be placed into living area used as a residential solid fuel cooker only if the safety requirements defined by EN 12815:2001 are fully respected.**
- This product can only be fed and fired with **dry firewood logs with relative humidity smaller than 12 %.**
- Boiler chamber is entirely made of steel, while the oven and the frame parts of the upper plate are made of stainless steel AISI 314.
- The door frames are made of cast-iron. The upper door is filled with fireproof glass, while the lower door is made of steel.
- The flue opening is placed on the **upper side** by default (it can be used laterally as well).

2 Recommendations for shipment and storage

2.1 Delivery

 Make sure product is during transport always placed in its vertical position.

 Turning boiler upside-down can seriously damage the unit.

 It is forbidden to stack products.

 Product can be stored only in closed area without atmospheric influence. Moisture cannot exceed 80%, room temperature should be between 0°C and 40°C.

 While unpacking make sure if the paint is scratched somewhere, and that all boiler parts are stable and fixed in its place.

2.2 Additional parts and documents

 Following parts and documents are delivered along the boiler:

- A cleaning kit
- Summer-mode grid
- Regulation bar (mounted)
- Boiler draught regulator (part of the boiler)

 Following parts are not delivered with the boiler:

- Thermo-manometer and the safety group
- Mixing valve
- Additional boiler room valves and fittings

3 Introduction notes

 The end user must strictly follow the guidelines prescribed in this manual. On the contrary, the warranty will not be recognized.

 Permitted fuel for this boiler is **dry firewood** with caloric value of at least 15 MJ/kg.

 The heating chamber of the boiler is factory tested at **test pressure of 4 bar**.

 Pay strict attention that boiler valves are always open while boiler in use.

 Don’t forget to do a mechanical reset of the circulation pump in your system at start of every heating season.

 Clean the boiler on a regular base.

 While the boiler is heating up, damp patches and drips may occur in the chimney area and in the hearth. If the pressure in the installation is constant, this phenomenon represents condensation and not a leak from the boiler. The reason for the condensation is a large temperature difference between the flow circuit and the return circuit, and occurs as a consequence of the following errors:

- If the power of the installed boiler exceeds the size of the installations,
- The mixing valve for the protection of the cold part of the boiler has not been installed.
- The boiler door or the ash pan are not correctly positioned (there is more air than necessary).

 If the boiler leak is reported to the repair team and it is condensation, the team's visit will be invoiced.

 An expert should be entrusted for the planning and construction of the heating system.

 **In the case of an incorrectly planned system or the incorrect installation of the system, which can again lead to an incorrect operation of the boiler, the complete liability for the material damage and new costs arising are to be covered by the person who was entrusted with the mounting of the central heating system, and not by the boiler manufacturer, sales representative or seller.**

 Initial operation of the boiler is only to be performed by an authorized person (service). Please contact your local seller.

4 Safety remarks

 While in use, **parts of the boiler are hot**. Don't touch the boiler without appropriate hand protection against heat!

 If some parts of the boiler occur to be damaged it is **strictly forbidden** to continue using the boiler.

5 Boiler installation

5.1 Boiler placement

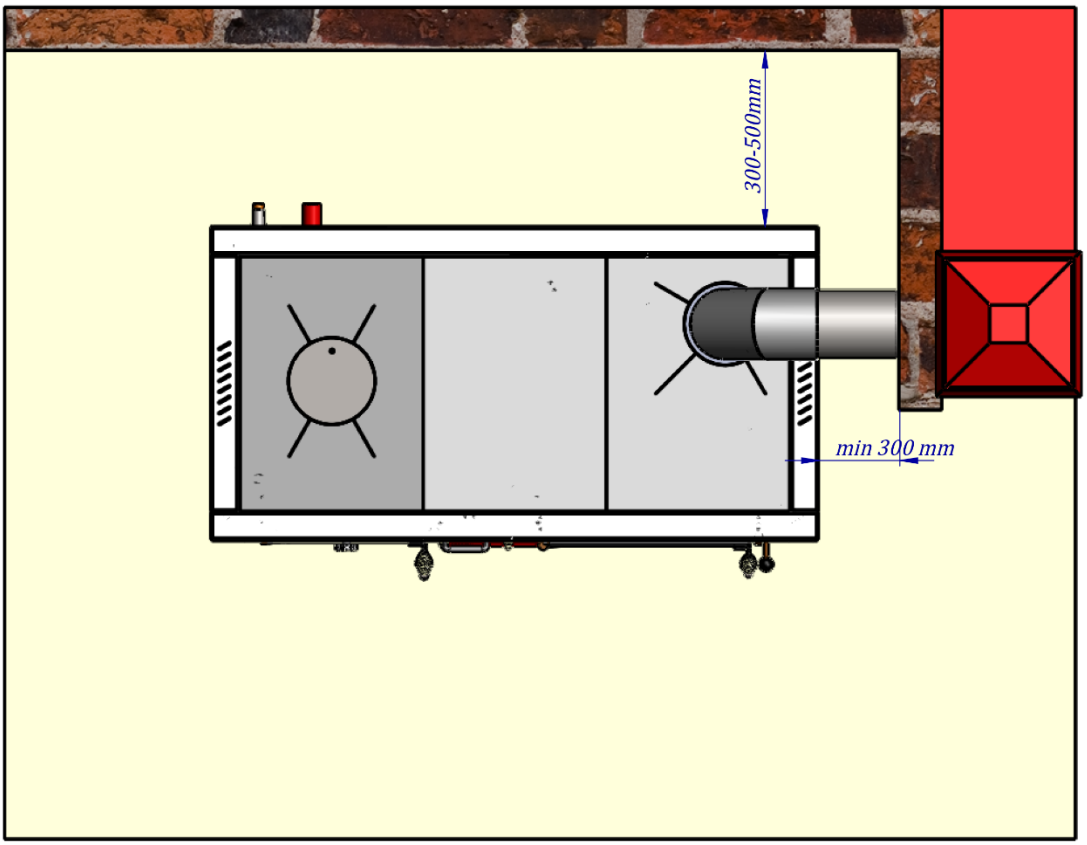
 **This product can be placed into living area used as a residential solid fuel cooker only if the safety requirements defined by EN 12815:2001 are fully respected. The temperature relief valve (chapter 5.5) must be present.**

Room where heater is placed, **must have windows**, minimum surface area of window is given by equation:

$$A\ (cm^2) = 6\ x\ P$$

where **P** represents nominal power of the **KW**.

 Boiler basement must be stable and made of fireproof material.



5.2 Connecting to the chimney

This product requires a natural draught and a chimney not just to transport flue gases out of the boiler but also to create **natural pressure difference necessary for boiler function**. This boiler requires pressure drop of **13-15 Pa** depending on the model.

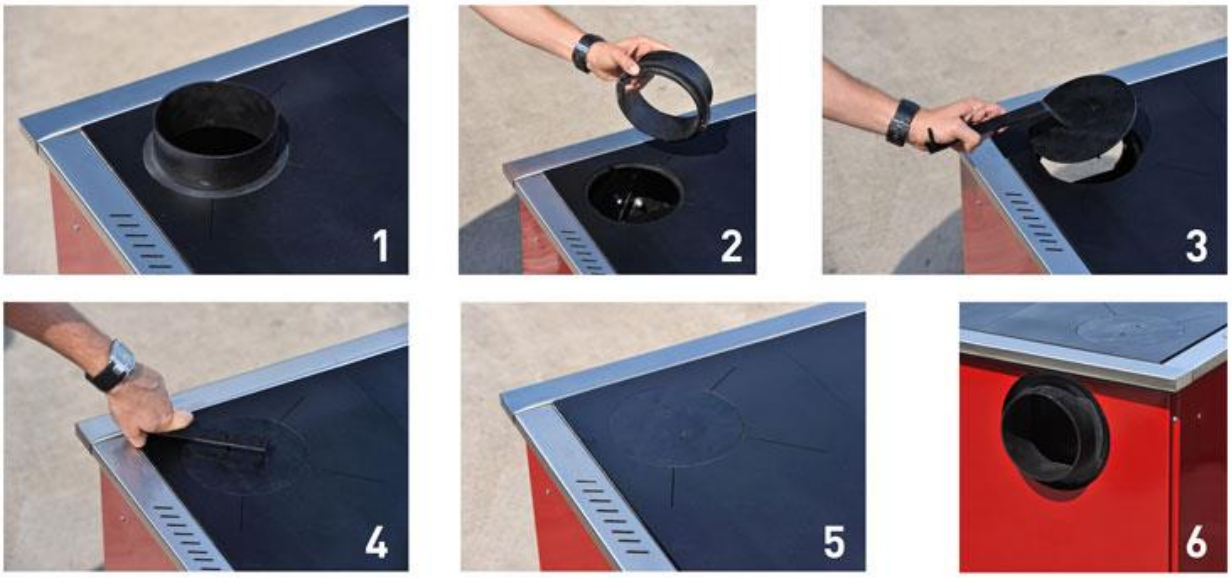
To reduce heat loss and due to ecological and safety factors, it is essential to have a vertical chimney connected according to the picture and, if conditions allow, the chimney must be of quality (made with ceramic segments thick up to 5 cm).

Clean the chimney regularly, at least once or twice a year.

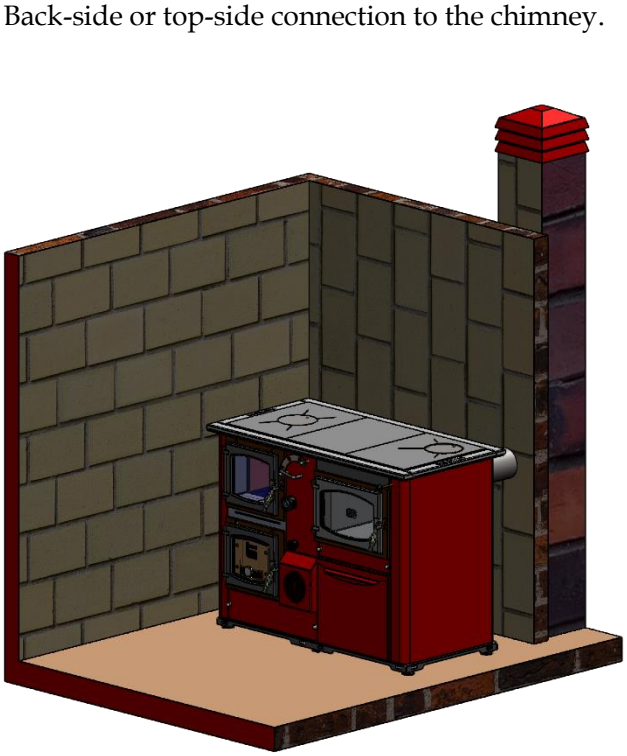
The maximum number of elbows between the boiler and the chimney is **2.**

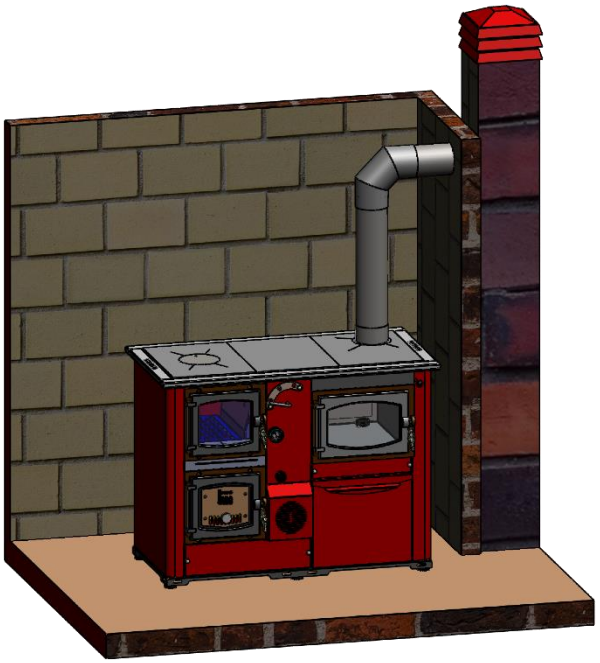
There are two ways to connect TEMY PRO P – **flue exit on the upper side (default) back flue exit.**

The flue gas exit is by default on the upper side of the boiler. End-user can change it and use the back-side mount instead, as shown on the pictures below.

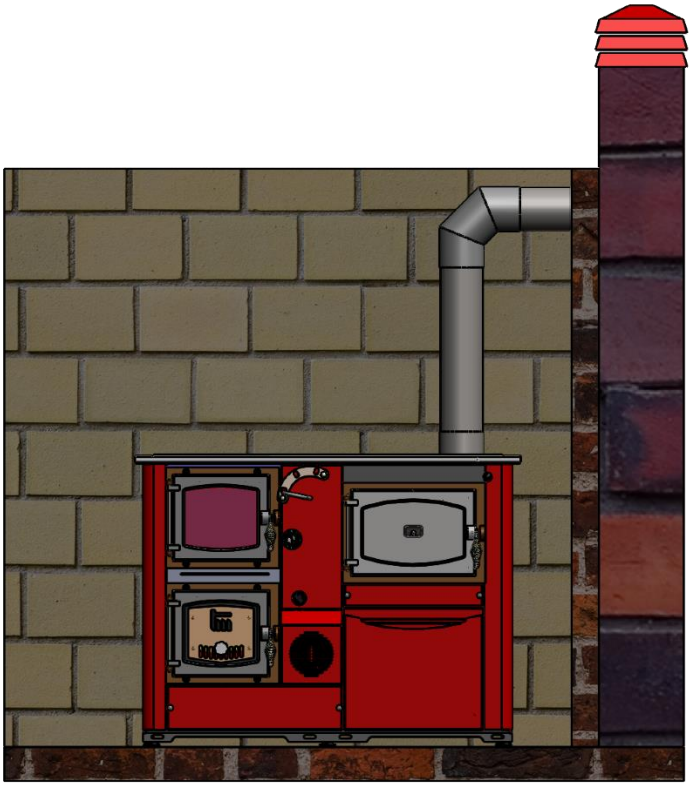


Back-side or top-side connection to the chimney.









5.3 Filling the system with water

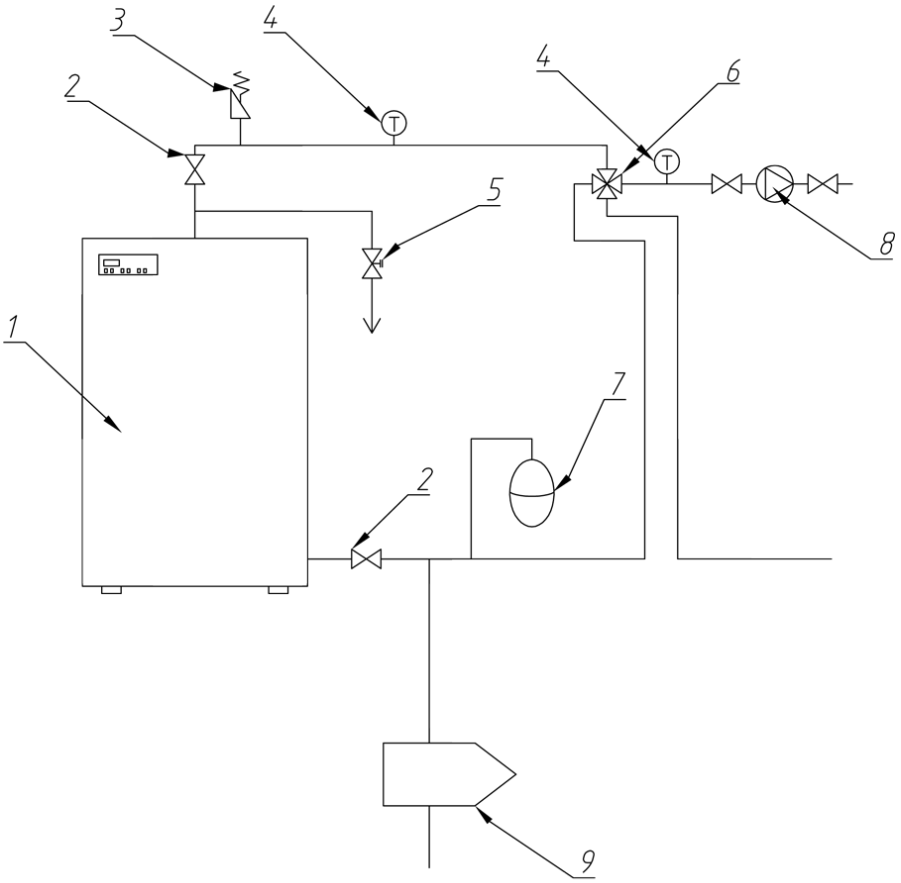
Filling the system with water is to be done using the tap valve connection of the boiler.

When filling the system with water take care that no air remains in the boiler.

The filling process is done when no air is coming out through automatic air vent and pressure gauge is showing the value between **1 bar** and **1,5 bar** (closed systems). Air vent is to be set at the highest point of the (closed) central heating system. If the pressure is below 1,5 bar the filling process must be repeated. After the filling process is done, it is obligatory to close the drain tap valve, close the water supply to the water-filling pipe and detach the water-filling pipe.

5.4 Connecting the boiler with a closed central heating system with circulation pump on the return line

Recommended connection scheme is depicted below:



1) Boiler 2) Boiler valve 3) Automatic air vent 4) Thermo-manometer 5) Safety valve 6) Mix valve 7) Expansion vessel 8) Circulation pump 9) Dirt catcher

The safety valve (with preset **1,5 bar** threshold) should be mounted on the backside of the boiler.

It is essential to have a thermometer and a manometer installed to the system (Position 4 on upper scheme)

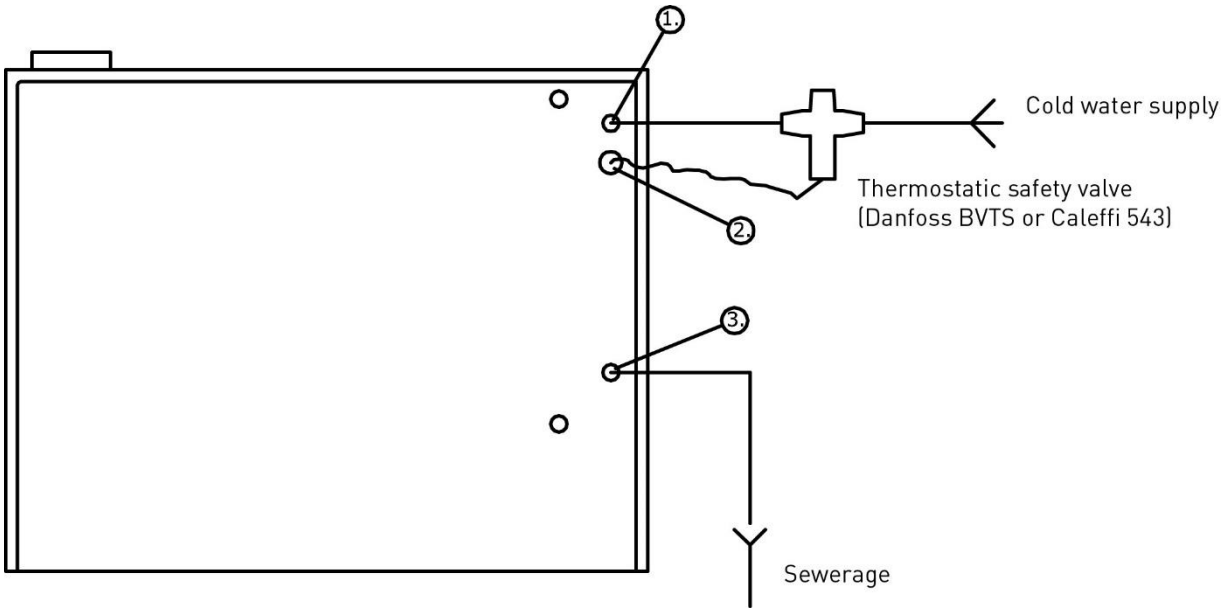
It is recommended to install a dirt catcher and also an anticondensation valve on the return line. (3-way mixing valve).

Additional closed expansion vessel (position 7) should be mounted close to the boiler. Vessel must be positioned so that its membrane is in horizontal position. The volume of the expansion vessel should be around **18 lit**.

Please read the circulation pump manual before placing it into operation. Please note air vent is not pre-mounted within the boiler, it should be installed (Position 3) additionally.

5.5 Installation of temperature relief valve with obligatory filling

The temperature relief valve (as shown below or similar) **must be present in the system.** The valve must be installed by a qualified technician in accordance with the instructions given in the manual from the producer of the valve.



In the event of a rise in the temperature of the water in the boiler for any reason and if the critical value of **95-100 C** is reached, the role of this valve is to open the supply channel of the cold water from the network and directly cool the water in the boiler, thus preventing a potential breakdown.

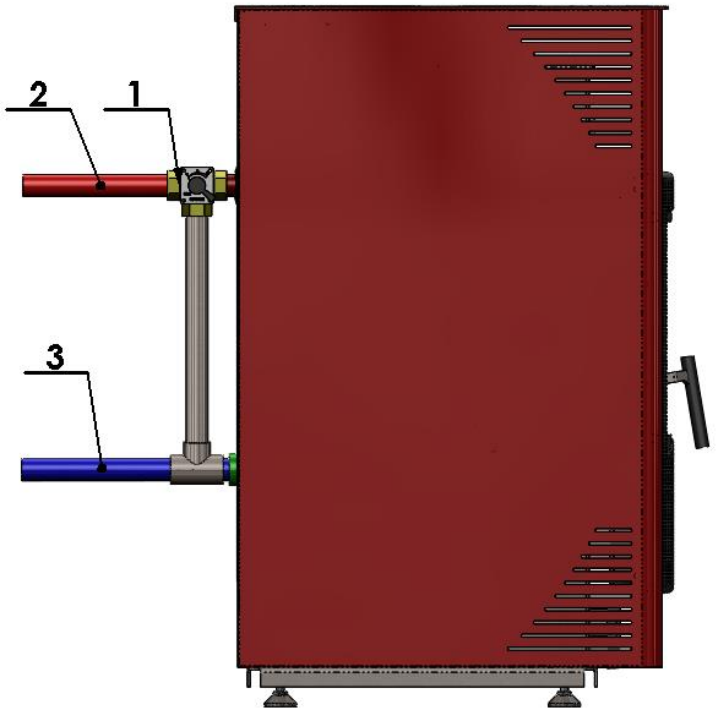
When the set temperature is reached, the cold water valve and the drain open simultaneously until the temperature drops to the marked value, after which the valves are closed simultaneously.

The method of installing the relief valve is described in detail in the manufacturer's instructions that are accompanying the product. The relief valve is not included in the boiler price, it has to be purchased elsewhere separately. Ask your local installer.

6 Boiler return-line protection against condensation

It often happens that water runs under the boiler and creates a small puddle. This phenomenon does not always mean that the boiler is leaking. In most cases, it is a bad installation of the boiler, a bad selection of the power (size) of the boiler, or a bad chimney, which leads to the creation of condensation of the boiler. This is not pure water, but "condensate", which may contain, depending on the fuel used, substances harmful to health. This water can cause boiler corrosion and greatly reduces the life of the boiler.

If the chosen boiler corresponds to the calculated heating surface, the problem of condensation can be avoided with protection of the cold part of the boiler by installing a designated device called the mixing valve:



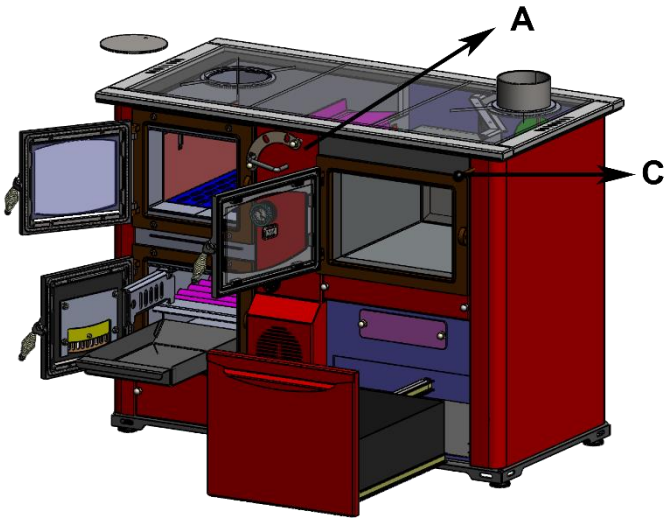
1. 3-way mixing valve 2. Circulation pump 3. Thermostate

The function of the mixing valve is to immediately transfer a part of hot water to the cold part of the boiler in order to reduce the temperature difference between flow and return line. Indeed, low temperature corrosion occurs when the temperature of the water in the return circuit of the heating is below the point of creation of condensation by the flue gases. If this is the case, then the condensation of water vapor in the flue gases occurs, which creates condensates, i.e. the water flowing from the boiler.

Installation of the mixing valve is obligatory.

7 Modes of operation

In order to operate this product properly, end-user must correctly set the positions of three flaps that are built-in in this product. The position of flaps **A**, **B** and **C** will determine the mode of the operation: whether **the central-heating** function should be dominant, or the **cooking or baking** should be primary. There are many scenarios that exist. Lets describe the flaps first.



"A" – the mode-selector

"A" is the main mode controller and it moves the flap located in the upper middle part between the boiler chamber and the oven. It is also depicted on images below. This flap has **"3 stages"**.

1. In its first stage (the handle is in its **extreme left-side position**) flap allows the gases from the heating chamber to stream further above the oven and below the heating plate.
2. In its middle stage the gases would **partially** stream further
3. In its third stage (the handle is in its **extreme right-side position**) the passage **is closed**.

"C" – exit flue gas flap

The handle of the flap is moved forward/backward and it opens or closes the flue gas exit entirely or partially.

"B" – the (additional) regulation bar

The regulation bar is a bar with a wing placed inside the boiler and it is positioned in the lower part between the heating chamber and the oven. Its position is shown on images below. There is no handle that can control the regulation bar – it is either present inside (**by factory default**) or it is not present.

Start-up:

The flap **"C"** is primarily used for the combustion start-up. During start-up the flue gas path through the boiler should be shortest possible. The flap "C" should be opened completely and mode-selector "A" should be in its middle position.

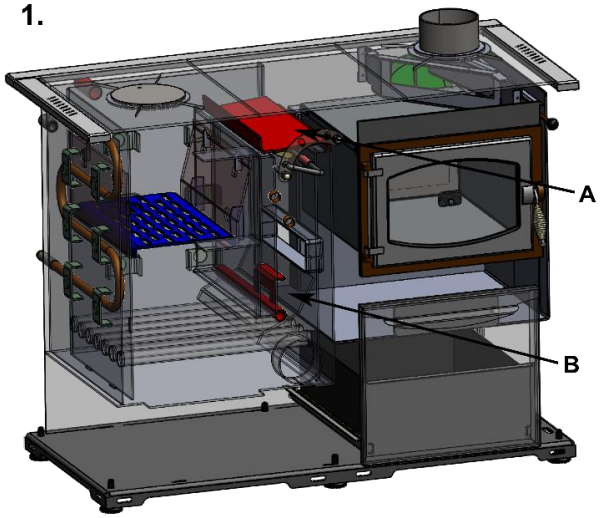
Combining flaps "A", "B" and "C" various operation scenarios are possible.

In the first scenario we have chosen the stage 1 for the **upper flap – "A"** and the regulation bar is present. The flue gas path is **OPEN** so the flue gases are allowed to enter the zone between the boiler chamber and the oven **from below**.

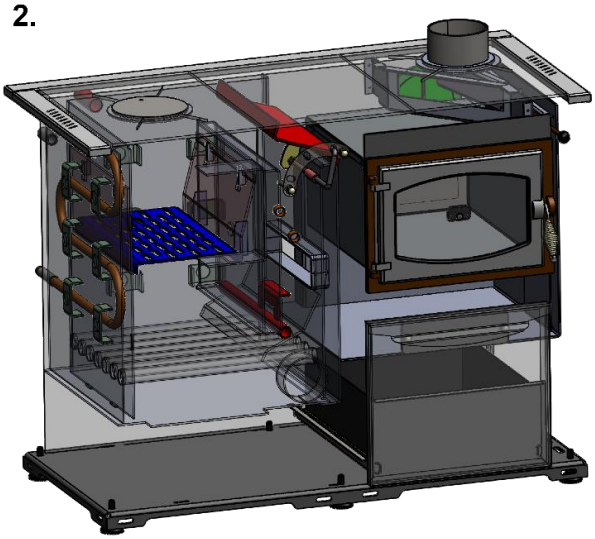
In the second scenario we have set the **stage 3** – please note **the upper flap is now lifted**. The regulation bar is present so the flue gases will continue to flow through the zone between the boiler chamber and the oven. The oven will receive more heat from all sides. Left image shows the flue gas path in the first scenario, while the right drawing shows the path of the gases in the second scenario.

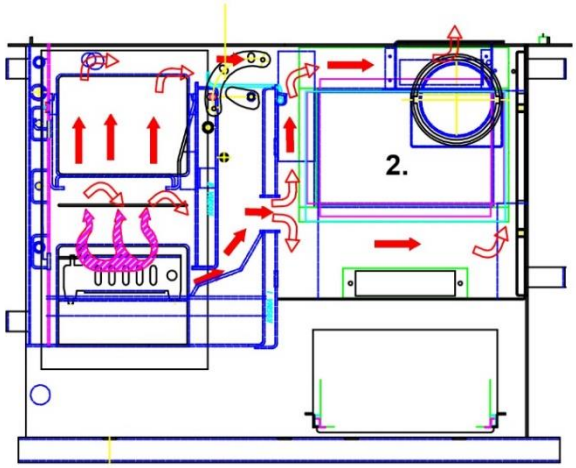
Conclusion: by closing the mode-selector pass below cooking plate – more heat can be directed around the oven than onto cooking plate.

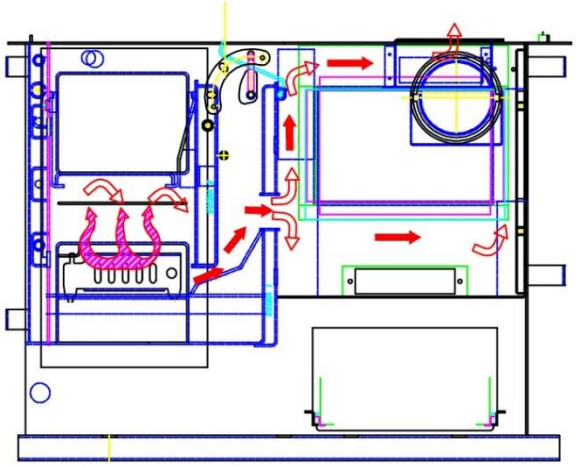
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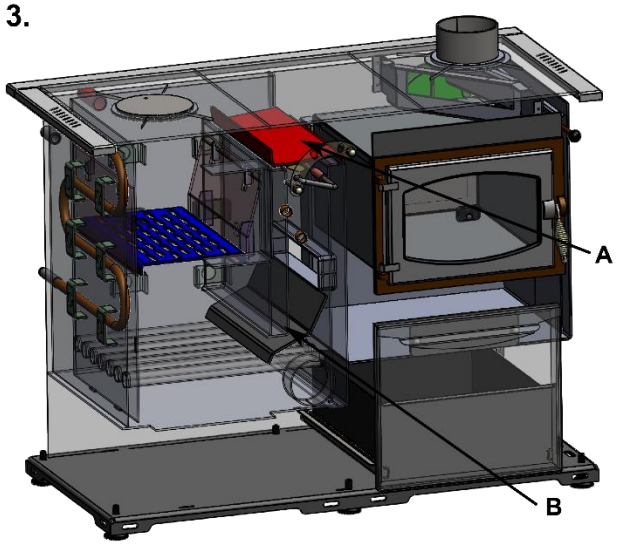




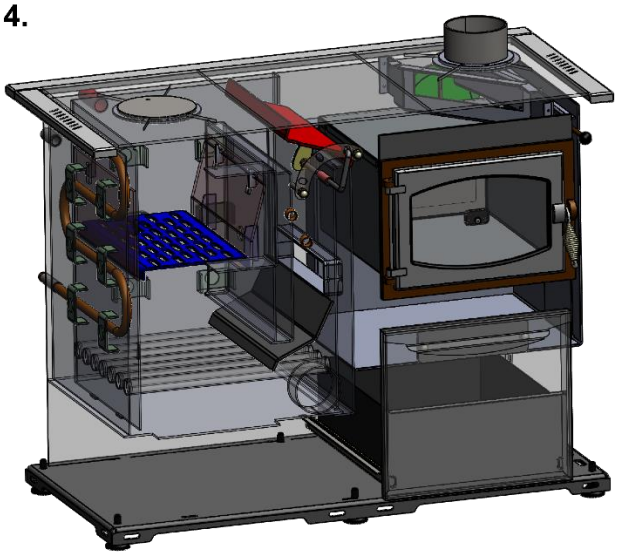


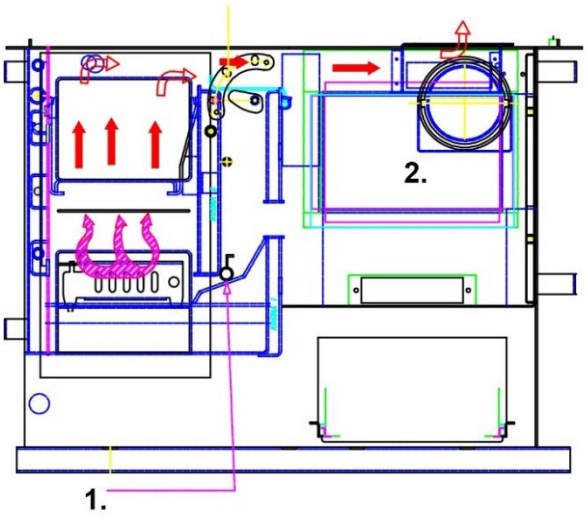
In the third and fourth scenario regulation bar **"B"** is **REMOVED**. The drawings below show the primary path of the flue gases in these cases.

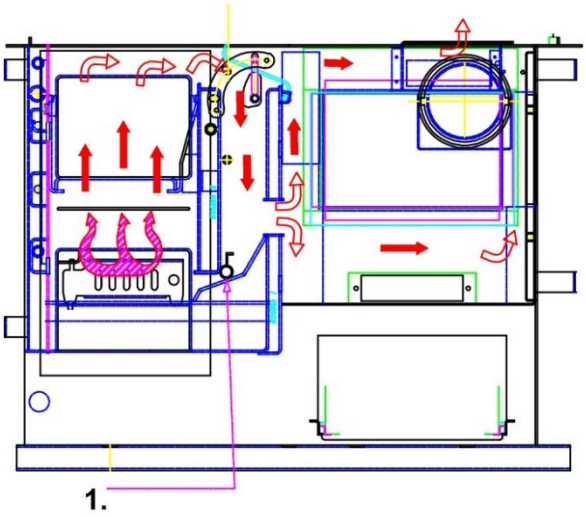
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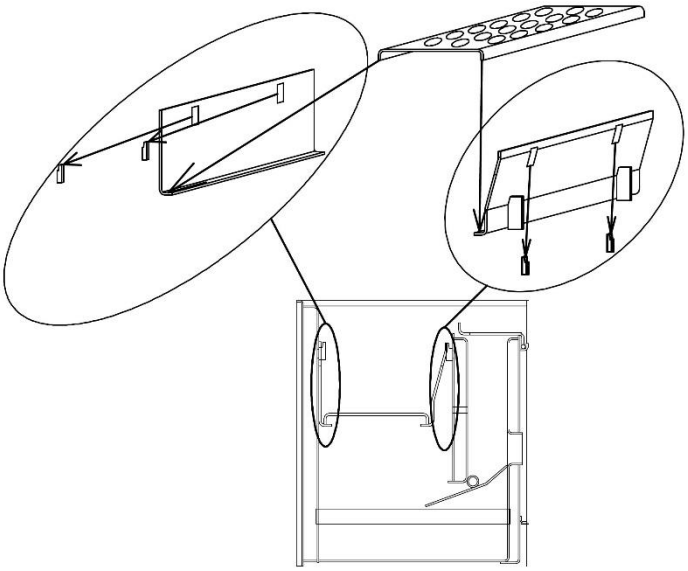




Conclusion: by removing the regulation bar more heat will be pushed toward the cooking plate and eventually around the oven. This scenario can be useful when cooking and baking are primary function.

Summer mode:

Please note there is a a so-called **summer-mode grid** delivered with this product. The purpose of this grid is to shorten the heating chamber and avoid unnecessary heating.



In the **winter ("central heating") mode** or combined heating mode the combustion should occurs at a lower level ("bottom use" of the heating chamber is welcome).

In the **summer mode** there is a primary need for cooking. It is advised to mount a summer-mode. The firewood is now loaded at higher position too – where the pattern is put inside.

Important safety notice: Even when using summer-mode, the boiler remains connected to the central heating, boiler valves must be open all the time.

1 Boiler cleaning and maintenance

 Regular maintenance and cleaning of solid fuel boilers is necessary to ensure product functionality and long-life operation. Boiler cleaning consists of following operations:

1. Emptying ash-trail of the boiler
2. Removing ash from the bottom part of the boiler
3. Cleaning all other accessible parts from ash. Opening for cleaning (Position 11, boiler drawings) are to be used for additional access (at the end of season in any case).

 Dry firewood with a caloric value of at least 15 MJ/kg is the only fuel allowed for this type of product. Using other materials is an ecological act of crime and can be punished legally.

 Lack of cleaning of the boiler leads to rapid degradation, i.e. corrosion of certain parts of the boiler, which leads to poor combustion and heat loss.

 Before accessing cleaning, all parts of the boiler must be completely cold.

 Use of gloves is obligatory for all operations described.

THANK YOU FOR READING THIS DOCUMENT CAREFULLY – IF YOU HAVE ADDITIONAL QUESTIONS FEEL FREE TO CONTACT US OR YOUR LOCAL RESELLER.

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