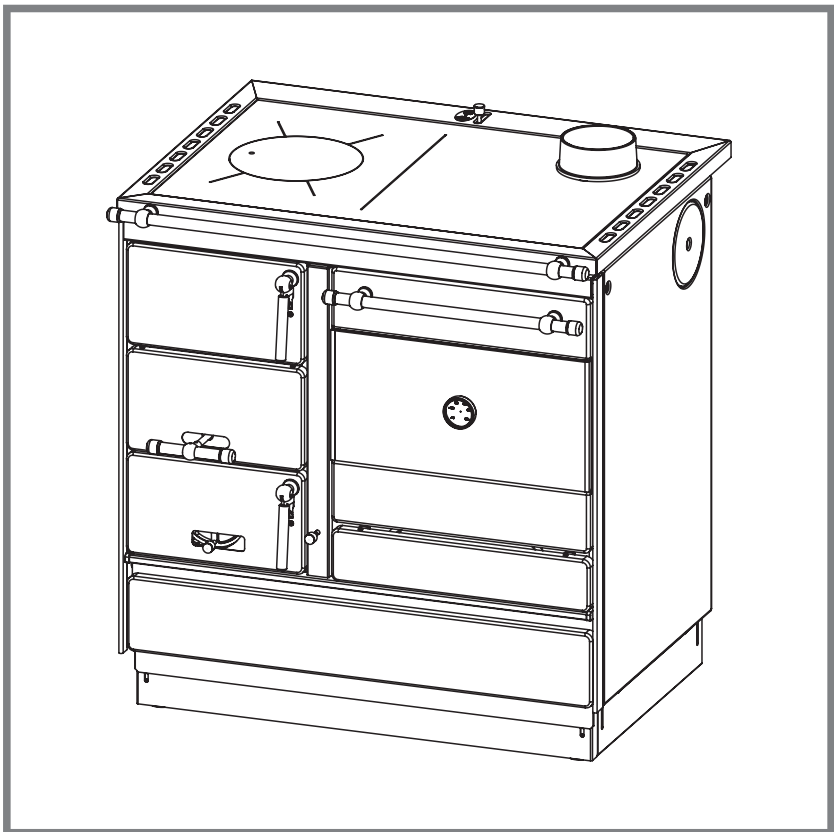


Smederevac

INSTALLATION AND OPERATING INSTRUCTIONS



Solid Fuel Stove

KING

TO OUR RESPECTED CUSTOMERS

Thank you for your trust and decision to buy our product.

You have made a good choice, because this stove's technical characteristics place it at the very top of its class, which you will see for yourself during use.

Please read these instructions carefully before you start using the stove, as you will find tips for proper handling in it.

We believe that you will join a long list of satisfied customers of our products.

Smederevac d.o.o.

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WARNING BEFORE USE

In order for your stove to operate properly, it is important to read this manual and strictly follow the operating instructions.

- For firing, use solid fuels such as wood, briquettes, and low-calorie coal.
- It is forbidden to place explosive devices and substances in the firebox or on the stove.
- It is forbidden to keep highly flammable substances in the immediate vicinity of the stove.
- For proper combustion, in normal operating mode, the draft in the chimney should be from 12 ± 2 Pa. If the draft is greater than 15 Pa, a damper should be installed in the chimney.
- It is not permitted to reduce the diameter of the flue pipes.
- The room in which the stove is located must be regularly ventilated for the inflow of fresh air necessary for combustion.
- Parts of the stove are very hot during operation so proper precautions are necessary when operating the stove. Do not allow children to operate the stove and play near the stove.
- Only spare parts allowed by the manufacturer may be installed in the stove. No modifications must be made to the stove.
- Slight smoking may occur during the initial firing, especially from the stove cooktop. This is a common phenomenon that occurs due to the combustion of deposits on the stove cooktop (anti-corrosion protection, paints, dust...). Ventilate the room where the stove is located during the initial firing.
- It is not advisable to connect the stove to a common chimney as this may reflect poorly on the required draft.
- A device that uses gas as fuel must not be connected to the same chimney.
- When firing, use protective gloves because the door handles are heated.
- National and local regulations relevant to the installation and operation of the stove must be observed.
- Operation is permitted only with the firebox door closed.
- After each use, all air supply regulators must be closed.
- The appliance must not be used if the firebox door gasket/rope is visibly damaged or has come off the product.

In the event of non-compliance with the operating instructions, the manufacturer shall not be liable for any damage to the stove.

Note:

The stove is intended for installation in an enclosed indoor space, and in addition to space heating, it is also intended for cooking and baking. The **Technical Data** table (page 4) shows the nominal output of the product for the combustion of a specified quantity of fuel (wood) (as stated in the Technical Data table), with a specified moisture content and wood type

(up to 20% moisture, beech wood) and a specified chimney draft (10-14 Pa). This appliance is Type B appliance, in accordance with standard EN 16510, and must be connected to an appropriate chimney. The chimney temperature class is T400 G. All data contained in the **Technical Data** table have been verified in a notified laboratory in

accordance with European standards EN 16510-2-3 and EN 16510-1.

When selecting a stove, consideration should be given to the area/volume of the space to be heated. A simple method for calculating the required stove output is as follows: 1 kW of stove output heats approximately 6.5 m² (with a standard room height of 2.6 m).

When calculating the required output for heating the desired space, the following building characteristics should be taken into account:

- whether the building is insulated
- the quality of the joinery (windows and doors)
- the diameter and height of the chimney with adequate draft

DESCRIPTION OF THE STOVE

The stove has been manufactured and tested in accordance with European standards EN 16510-2-3 and EN 16510-1.

Figure 1 shows the appearance of the stove with the components essential for operation.

Stove cooktop consists of stainless steel frame (item 2) and steel hotplate (item 1).

Stove frame holds a front handle bar (item 4) which is connected to the stove via brackets.

The stove is supplied with a cast flue outlet (position 3).

Sealing between the hotplate and the stove frame, as well as on all doors, is achieved using a glass fibre rope gasket.

The stove firebox is lined with firebricks.

All cast parts are made of grey cast iron, ensuring a long service life.

The oven is enamelled and protected with insulating material.

The inner firebox door and ash pan door are made of cast iron, while the outer covers of the firebox door, ash drawer door, and oven door are made of enamel-coated sheet steel.

The oven door is fitted with a glass panel, on which a thermometer (position 7) with a measuring range of 0–500 °C is installed. The ash drawer door is equipped with a handle for regulating the primary air supply (item 11).

The external side panels, drawer cover, and baking tray are made of sheet steel and protected with enamel.

Stove components (Image 1, page 4):

- | | |
|----------------------|---|
| 1 - hotplate | 8 - cast firebox bottom grate shaker handle |
| 2 - hotplate frame | 9 - secondary air handle |
| 3 - smoke outlet | 10 - ash drawer door |
| 4 - front handle bar | 11 - primary air handle |
| 5 - firebox door | 12 - storage drawer |
| 6 - oven door | 13 - stove operating mode selector |
| 7 - thermometer | 14 - panel below the oven door |

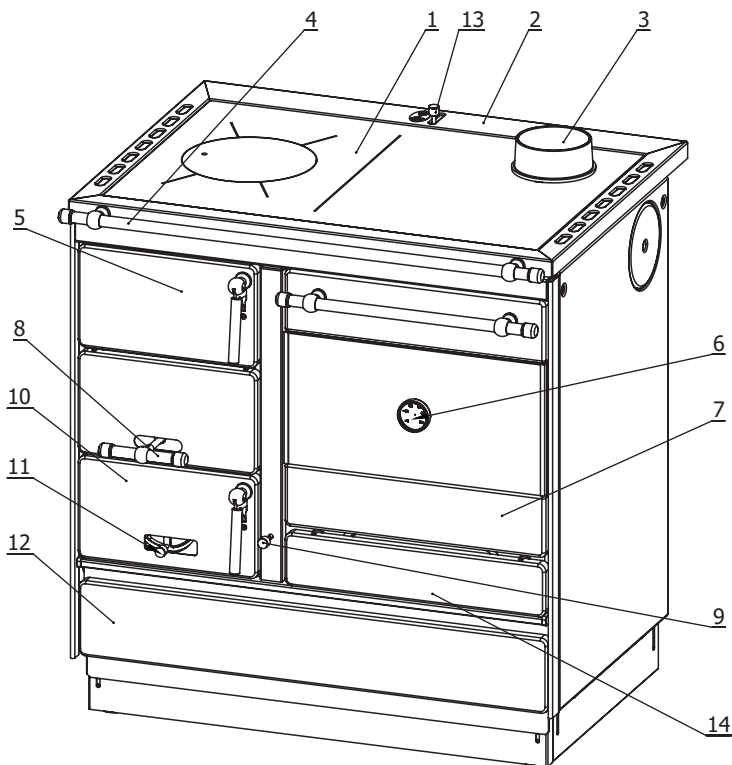


Figure 1

TECHNICAL DATA

Table 1 in accordance with EN16510-1 is an additional document supplied together with this manual.

This table contains information on the characteristics of this appliance.

Nominal output	7,8 kW
Efficiency degree	75,4 %
Sezonska efikasnost	65,4 %
Dimensions of the stove (HxWxD)	860-900x810x645 mm
Dimensions of the firebox (HxWxD)	300x197x345 mm
Oven dimensions (HxWxD)	270x350x410 mm
Stove weight	139 kg
Position of the chimney connection	central, lateral
Chimney connection diameter	Ø120 mm

Flue gas temperature	166 °C
Mass flow rate	12,47 g/s
CO content (reduced to 13% O ₂):	962 mg/Nm ³
Dust emission (reduced to 13% O ₂):	38 mg/Nm ³
OGC (reduced to 13% O ₂):	106,2 mg/Nm ³
NOx (reduced to 13% O ₂):	111 mg/Nm ³
Fuel type / Fuel consumption at nominal output	wood / 2,24 kg/h
Required draft	11 Pa
Minimum distance from flammable substances: - from the back wall - from lateral sides - from the top side - from the front side - in the front radiation area on the floor - in the radiation area toward the side wall - below the bottom part	d_R d_S d_C d_P d_F d_L d_B 30 cm 50 cm 100 cm 80 cm 50 cm 70 cm 16 cm

INSTALLATION OF THE STOVE

When installing the stove, attention must be paid to the applicable building and fire safety regulations and provisions.

The stove must not be placed in the immediate vicinity of wooden elements, refrigeration devices, plastic furniture parts and other flammable materials because during its operation (when burning fuel) it achieves a high operating temperature that is dissipated through external shell of the stove. The minimum distance between the stove and the surrounding elements is 20 cm, and 75 cm from flammable substances.

If the surface on which you will install the stove is made of highly flammable material (wood, vinyl flooring, laminate wood flooring...), it is necessary to install a sheet metal protection - 10cm of width laterally, and 50 cm of width in front. Due to its weight, the stove must be installed on the floor of appropriate load capacity. If it does not meet the requirements, suitable measures must be taken to achieve this (e.g. weight distribution).

Connect the stove to the chimney with flue pipes through the connection at the hotplate of the stove, while ensuring adequate sealing and smoke flow from the stove to the chimney. The flue pipe must not be pushed too deep into the chimney so as not to reduce the cross-sectional area and thus disrupt the draft in the chimney. Do not use reducers that would reduce the cross-section of the smoke extraction pipe.

The stove requires the supply of fresh air into the room in which it is installed, whereby the surface of the fresh air intake opening must not be less than 0.4dm².

The fresh air supply device must be installed outside the common ventilation room, which must be secured with a door and a grille.

Fans operating in the same room as the stove may interfere with the operation of the stove. Also, all devices or ventilation that creates underpressure in the room where the stove is installed must be adjusted so that it does not create decompression that prevents the normal operation of the stove.

Before installing the stove, check the draft of the chimney, as it is one of the key factors for proper functioning of the stove. Draft depends on the correct condition of the chimney and meteorological conditions. If the draft in the chimney is poor, check the chimney for faults. The chimney should be located inside the building, and if it is on the outer walls of the building, it is recommended to insulate the chimney.

One of the simplest ways to check the chimney draft is by using an A4 sheet of paper placed over the chimney opening where the flue pipe connects. If the paper remains attached and stays against the wall, the chimney has good draft; otherwise, if the paper falls, the chimney draft is insufficient and problems in stove operation may occur.

A proper chimney must meet the following requirements:

- the chimney must be at least 0.5 m higher than the roof and must extend above nearby objects/obstacles (adjacent house, tree, etc.) (Figure 2).
- the flue pipe must not be inserted too deeply, and the connection openings must be sealed (Figure 3a).
- the chimney must be free of foreign objects, damage, and accumulated soot or other deposits (Figure 3b).
- the cleaning door and all other openings must be tightly closed in order to prevent the formation of so-called "false" air (Figure 3c).



Figure 2

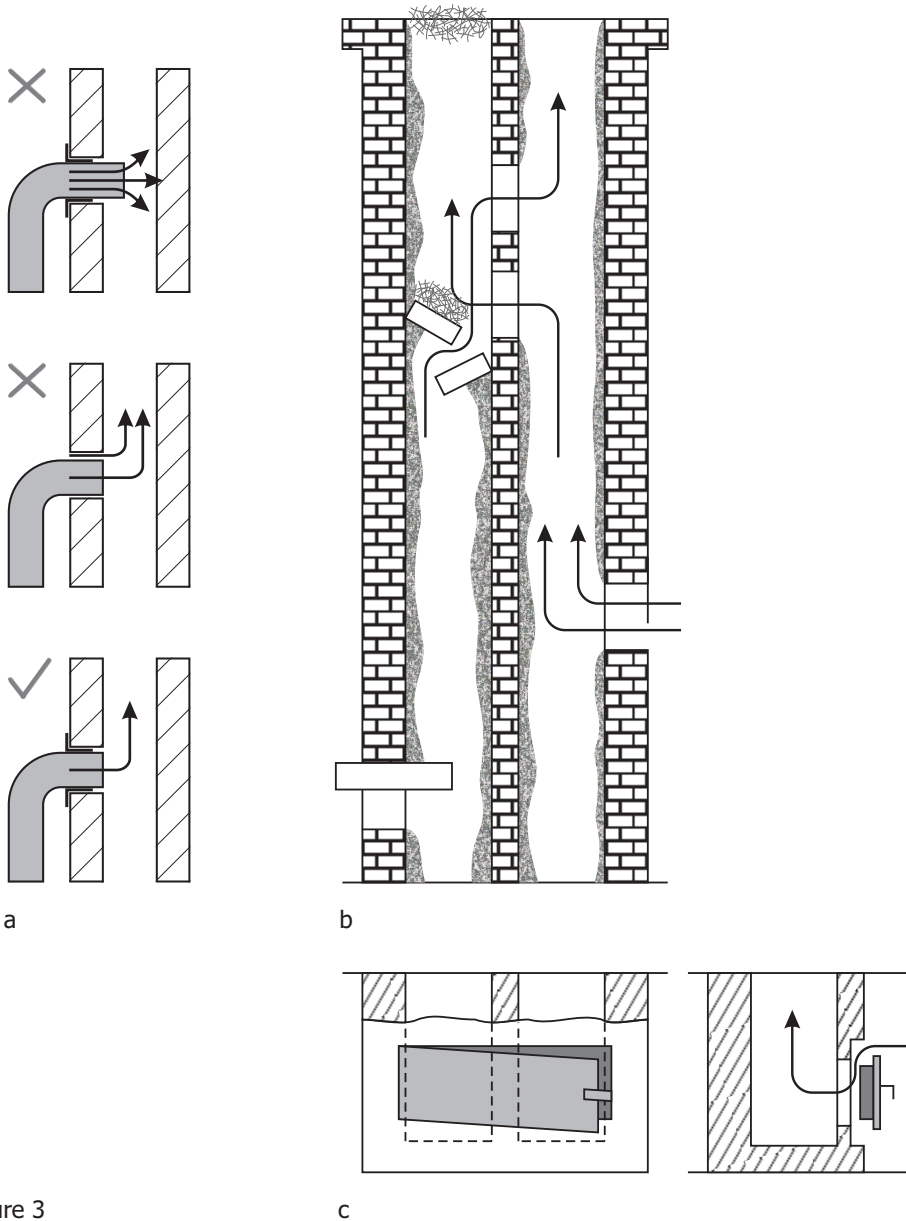


Figure 3

Chimney deficiencies may also occur if:

- the chimney has a small cross-sectional area
- multiple stoves or other appliances are connected to the same chimney

LIGHTING A FIRE AND FIRING

Before the first firing, wipe all enameled surfaces of the stove with a dry cloth to avoid burning impurities on the stove and creating unpleasant odors.

Fire in the stove should be started in the following order:

- open the firebox and stove ash drawer doors,
- insert firing material (shredded wood on ungreased wrinkled paper) into the firebox,
- light a fire,
- leave the door of the ash drawer open until a stable flame forms, and after closing, regulate the burning intensity with a primary air regulator, (Fig.1, item 11)
- close the firebox and stove ash drawer doors,
- once a basic ember bed has formed, insert larger pieces of wood. If briquettes are used as fuel, all the used amount of fuel must be allowed to glow before reducing the draft in half (using the primary air regulator, Fig. 1, item 11)
- when adding fuel, open the firebox door (Fig.1, item 5) only a couple of degrees, wait 4-5 seconds, then slowly open it wide. Do not open the door abruptly, because when there is a strong flame in the firebox, it may spread out towards the room.

By adjusting the draft in the stove, you regulate the temperature, output, and fuel combustion rate, which is done using the primary air regulator handle on the ash drawer door (Fig. 1, item 11). By combining the primary air supply via the regulator on the ash drawer door and the tertiary air supply via the handle (Fig. 1, item 9), the desired combustion can be achieved.

The stove is equipped with auxiliary tools intended to facilitate maintenance.

Wood and briquettes are recommended for firing.

Fuel oil, gasoline and the like must not be used as fuel, because the use of liquid fuels creates conditions for stove damage and explosion.

Attention!

- Do not use waste of organic origin, food residues, plastic items, flammable and explosive materials as fuel, because their combustion disturbs the proper operation of the stove and can cause damage and pollution to the environment.
- Increased outdoor temperatures can cause poor airflow (draft) in the chimney, so more frequent firing in smaller quantities is recommended.
- Avoid using the stove in cases where meteorological conditions are poor for stove operation and in case of strong wind, as this affects the required underpressure in the chimney. In these cases, smoke may return to the room where the stove is located. Then it is more difficult to start a fire.

We recommend firing at 1h intervals with up to 10 cm of fuel in the firebox by arranging the wood in cross formation for greater draft.

After each filling, it is recommended that the stove burns for at least 30 minutes with maximum power, in order to burn all volatile ingredients that are the reason for

condensation in the stove during this phase of combustion.

For the correct operation of the stove, it is necessary to:

- regularly clean the stove and chimney,
- regularly ventilate the rooms for good combustion,
- regularly remove ash from the stove ash drawer,
- regularly remove the accumulated slag and unburned matter from the stove from the cast bottom grate

OPERATING THE STOVE

Light the fire with a moderate fire in order to avoid thermal shocks.

The next quantity of wood is inserted only after the previous quantity has burned.

Do not allow clogging of the firebox bottom cast grate with ash and unburned fuel.

Clean the bottom cast grate.

Open the door slowly and carefully, never by abruptly pulling, allowing the pressure in the firebox and the room to equalize, otherwise smoke may appear in the room.

The stove is constructed and intended for operation with the door constantly closed, except during refueling.

Do not open the door unnecessarily.

The wood must be with a maximum of 20% humidity for maximum burning effect.

Otherwise, tar and gases form that create creosote with water vapor. If it occurs to a large extent, a fire in the chimney may occur. The chimney fire will be easily recognized by: the characteristic sound coming from the chimney, such as loud roaring, visible flames coming out of the chimney, the high temperature of the surrounding walls and the characteristic smell of arson.

If a fire spreads, take the following steps:

- Call the fire department immediately
- Reduce the oxygen supply to the chimney and put down the fire in the stove;
- Do not insert anything into the chimney and make sure that the fire does not spread to a wooden structure or other combustible material nearby;
- **NEVER extinguish the chimney with water or pour water into the stove;**
- You can only extinguish a chimney fire with a dry powder device;
- Only surrounding material can be extinguished with water;
- Do not cool the surrounding walls with water;

Note:

If the fire in the stove becomes dangerously strong for any reason, take the following measures:

Close the air dampers supplying combustion air.

If necessary, throw sand prepared for this purpose into the firebox or use a special non-flammable fire blanket.

It is recommended to have a fire extinguisher available.

Before refuelling, clean the grate by shaking it using the grate shaking handle

(Fig. 1, item 8) and auxiliary tools, in order not to obstruct the supply of fresh air. Clean the ash drawer regularly, making sure there is always room for ashes. The stove is designed to operate in periodic mode. In order to maintain the required nominal power, the firebox is periodically filled with the specified amount of fuel. The stove is not intended to operate in the permanent embers mode or in the heat accumulation mode.

I - Primary air regulation

Set the primary air regulator to the open position (Fig. 4a) during firing and keep it in that position until stable stove operation is established after adding larger pieces of wood. After that, set the regulator to the closed position (for wood and wood briquette combustion – Fig. 4b) and keep it in that position throughout stove operation. When closed, the regulator prevents air supply below the grate, thereby reducing combustion intensity. If the fuel is of poor quality, partially open the regulator. With the primary air regulator in the closed position (Fig. 4b), the nominal output of 7.8 kW is achieved.

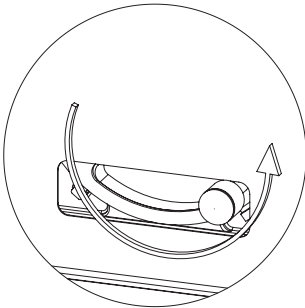


Figure 4a.

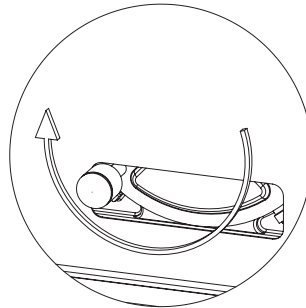


Figure 4b.

II - Tertiary air regulation

Regulation of the tertiary air is performed via the secondary air handle (Fig. 1, item 9). Tertiary air is used for additional combustion and for increasing the efficiency of the stove. The quality of combustion depends on the correct adjustment of the amount of tertiary air in the firebox and is optimal when the regulator is open (Figure 5a). We recommend closing the tertiary air regulator (Figure 5b) only when you wish to preserve embers for a longer period.

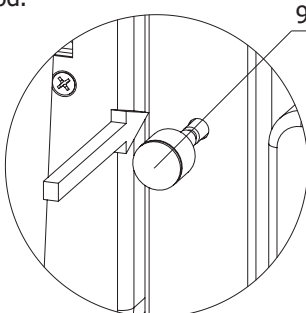


Figure 5a.

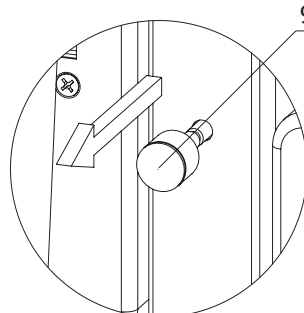


Figure 5b.

Before first use, it is necessary to thoroughly familiarize yourself with the method of selecting the stove operating mode using the stove operating mode selector handle (Fig. 1, item 12) (cooking - baking/roasting).

The stove operating mode selector handle has two positions (Figs. 6a, 6b):

1. during firing and for cooking, set the handle to the position shown in Fig. 6a.
2. for simultaneous cooking, baking/roasting, and space heating, or for space heating only, set the stove operating mode selector handle to the position shown in Fig. 6b.

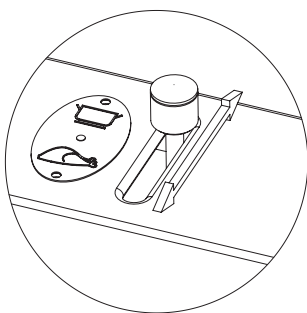


Figure 6a.

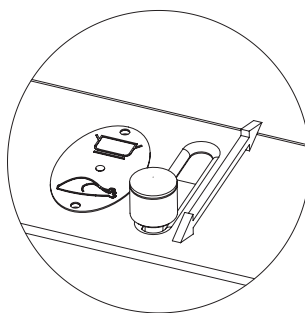


Figure 6b.

STOVE OPERATING MODES

The stove has four operating modes, selected by adjusting the draft.

Combined operation - To enable simultaneous baking in the oven, cooking on the hotplate, and heating the room, set the stove mode handle to the position shown in Fig. 5b and adjust the draft to a medium level by turning the primary air handle (Fig. 1, item 11) on the ash drawer door.

Fast cooking - This mode is achieved when the hotplate is intensely heated, which is done by adding small amounts of fuel; set the stove mode handle to the position shown in Fig. 6a and adjust the draft to a medium level.

Baking/roasting - Set the stove operating mode handle to the position shown in Fig. 6b, adjust the draft to a medium level, and keep the oven door closed after inserting the baking tray.

Heating - for heating purposes, wood is used as fuel.

Set the operating mode selector handle to the position shown in Fig. 6b, and adjust the draft to a medium level.

Summer Operating Mode (Upper Position of the Lower Grate)

The appliance has two positions of the lower grate:

- **Lower position** - winter mode, for operation at the declared nominal heat output.
- **Upper position** - summer mode, primarily intended for cooking with reduced heat output.

In the upper position of the lower grate:

- the nominal heat output is approximately 5.2 kW;
- the flue gas temperature is typically 130 - 150°C;
- the amount of heat released into the room is reduced.

Operation in Summer Mode

Use only the fuels specified in this manual.

For normal operation in summer mode, add approximately 1.0 - 1.2 kg of firewood every 30–40 minutes, depending on combustion conditions and chimney draft. Do not exceed the recommended fuel quantity.

The primary air regulator is used only for ignition. After igniting the fire, once a stable flame develops, the primary air supply should be closed. Other air regulators may remain open as required to maintain stable combustion.

The appliance must always be operated with the firebox door closed.

The position of the lower grate may only be changed when the appliance is completely cold.

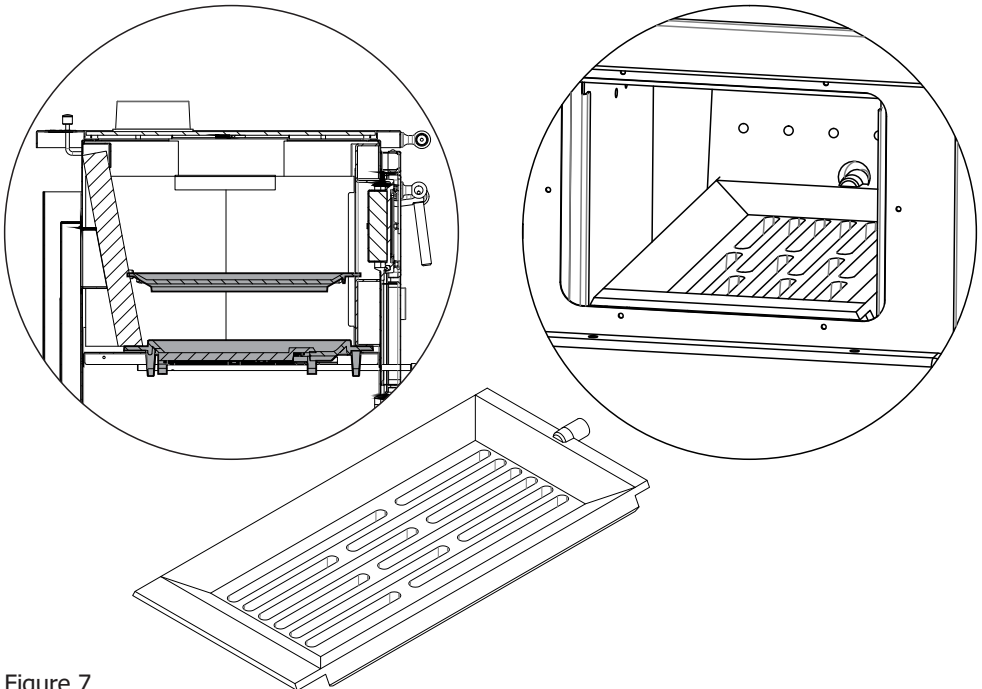


Figure 7

CLEANING AND MAINTENANCE OF THE STOVE

Regular and proper cleaning ensures correct operation and extends the service life of the stove. All cleaning operations, whether the exterior or interior surfaces, are always performed on a cold stove.

Cleaning of external surfaces - carried out with a soft cloth that will not damage the surfaces of the stove. Cleaning chemicals do not damage the surfaces of the stove and can be used. Do not clean painted and enamelled surfaces with abrasives.

Cleaning of inner surfaces - use protective gloves when cleaning the stove. Clean the inner walls of the stove firebox from accumulated soot, pick up small and unburned pieces from the bottom cast grate, clean the ash drawer and remove the accumulated ash inside the stove. In order to clean the passages where flue gases flow through the stove, certain components of the stove must be disassembled. Disassembly is carried out in the following order: remove the flue pipes, remove the flue outlet (Fig. 1, item 3), and remove the hotplate (Fig. 1, item 1). The stove is equipped with a cast bottom grate shaking handle (Fig. 1, item 8), which facilitates cleaning of ash deposits on the cast bottom grate. Figure 6 shows the method of using this handle. Pull the cast bottom grate shaking handle towards you (Fig. 8a), then rotate it as shown in Figures 8b and 8c. Return the cast bottom grate to its original position by reversing the procedure.

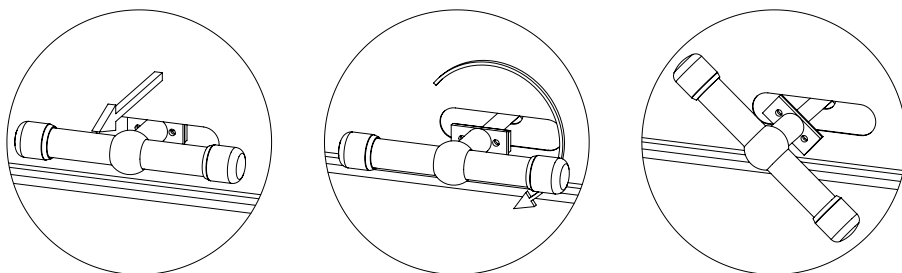


Figure 8

a

b

c

Cleaning of flue gas passages below the oven - Remove the panel below the oven door (Fig. 1, item 14). Unscrew the two screws (Fig. 9a, item 16), then remove the cleaning opening cover (Fig. 9a, item 17). Through the opening on the front side of the stove (Fig. 9b), use auxiliary tools to remove soot deposits from the surface beneath the oven bottom. After cleaning, reassemble all removed parts in the reverse order.

Cleaning of glass surfaces - the glass of the stove gets dirty during the operation. Use mild detergents for cleaning. Do not use abrasives as the surface of the glass may be damaged. Only clean the glass when it has cooled down.

Chimney cleaning and maintenance - cleaning and inspection of the chimney is recommended at least once a year as well as after the prolonged periods of non-use. Regular maintenance and inspection of the chimney will prevent the occurrence of fire and poor operation of the stove. Regular chimney maintenance is mandatory to prevent the risk of fire.

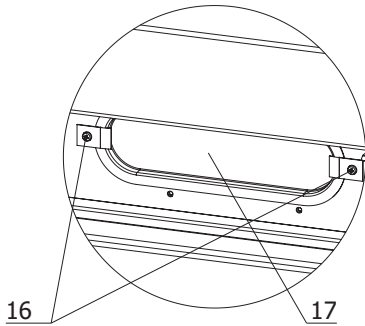


Figure 9a.

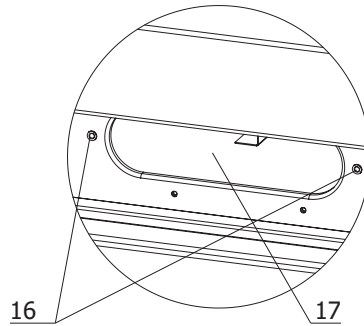


Figure 9b.

MALFUNCTIONS AND RECOMMENDATIONS FOR THEIR ELIMINATION

The following table shows the most common malfunctions and recommendations for their elimination.

Malfunction	Possible cause	Troubleshooting
The stove heats and cooks poorly	- Improper operating - Bad chimney	- Read and follow the instructions carefully - In the event that, despite the fulfillment of all requirements from the instructions, the malfunction is still present,
Difficulties in lighting a fire	- Closed primary air regulator - Wet wood - Lack of oxygen	- Open the primary air regulator and provide the primary air supply - Use dry wood - Ventilate the room to ensure fresh air
Smoke coming out from under the cooktop	- Closed primary air regulator - Insufficient draft - Uncleaned ash from the bottom cast grate	- open the primary air regulator and provide the primary air supply - carefully read the instructions and apply the tips for providing draft - clean the bottom cast grate
Furnace door glass is soiled in a short time	- Wet wood - Too much fuel - Insufficient draft	- use dry wood - see the proposed amount of combustion fuel in the instructions - check the connection with the chimney

GENERAL

If all the recommendations for installation, air regulation and cleaning given in this manual are met, the stove is a proven safe appliance for household use.

Before installing the stove, remove the packaging.

Take care of possible injuries as the wooden slats are fastened by nails.

Dispose of the plastic bag in the designated place in accordance with the regulations.

Dispose of the old furnace that you no longer want to use in accordance with the regulations.

All complaints, regarding malfunctions or poor operation of the furnace, should be reported to the factory or authorized service center by telephone or in writing, and providing a receipt. All contact information is provided at the end of this manual.

Any malfunction on the stove must be eliminated by the factory maintenance service.

If unauthorized persons perform servicing or any repairs and alterations on the stove, the owner loses the right to service maintenance guaranteed by the manufacturer's warranty.

The procurement of spare parts is carried out exclusively through the factory maintenance service, based on the positions and figures in this manual or their names.

The manufacturer bears no responsibility if the customer does not comply with the stove operating and installation instructions.

ENVIRONMENTAL PROTECTION TIPS

Packaging

- Packaging material is 100% recyclable.
- When disposing of waste, comply with local regulations.
- Packaging material (plastic bags, polystyrene-styrofoam parts, etc.) should be kept out of reach of children, as it is a potential source of danger.
- Take care of safety when removing and disposing of wooden slats as they are fastened by nails.

Product

- The appliance is made of recyclable materials. When disposing to waste landfill, comply with applicable environmental laws.
- Use only recommended types of fuel.
- It is forbidden to burn inorganic and organic waste (plastics, chipboard, textiles, oiled wood, etc.), as they release carcinogens and other harmful substances during combustion.

INSTRUCTIONS FOR INSTALLATION OF THE SMOKE OUTLET

Figures 8 and 7 show the installation of the smoke outlet from the top (Fig. 10) and from the lateral side of the stove (Fig. 11).

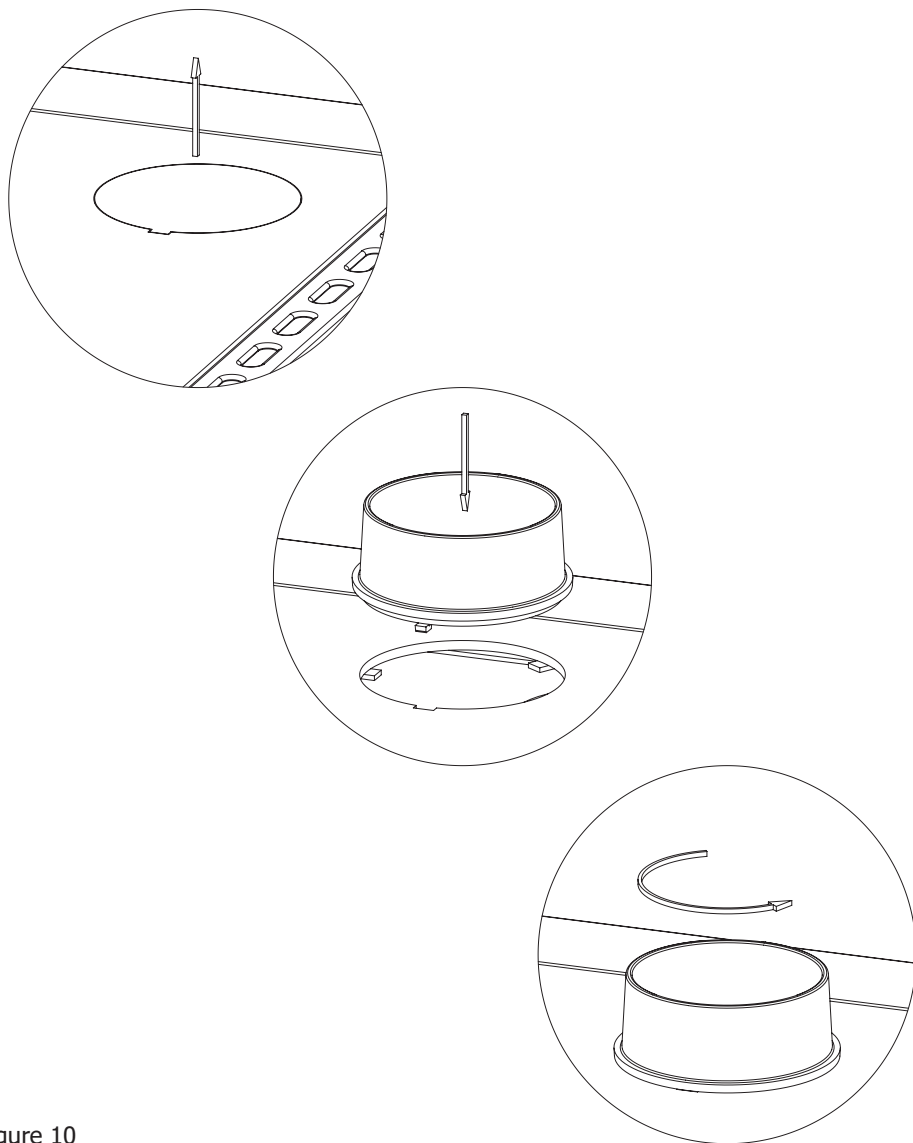


Figure 10

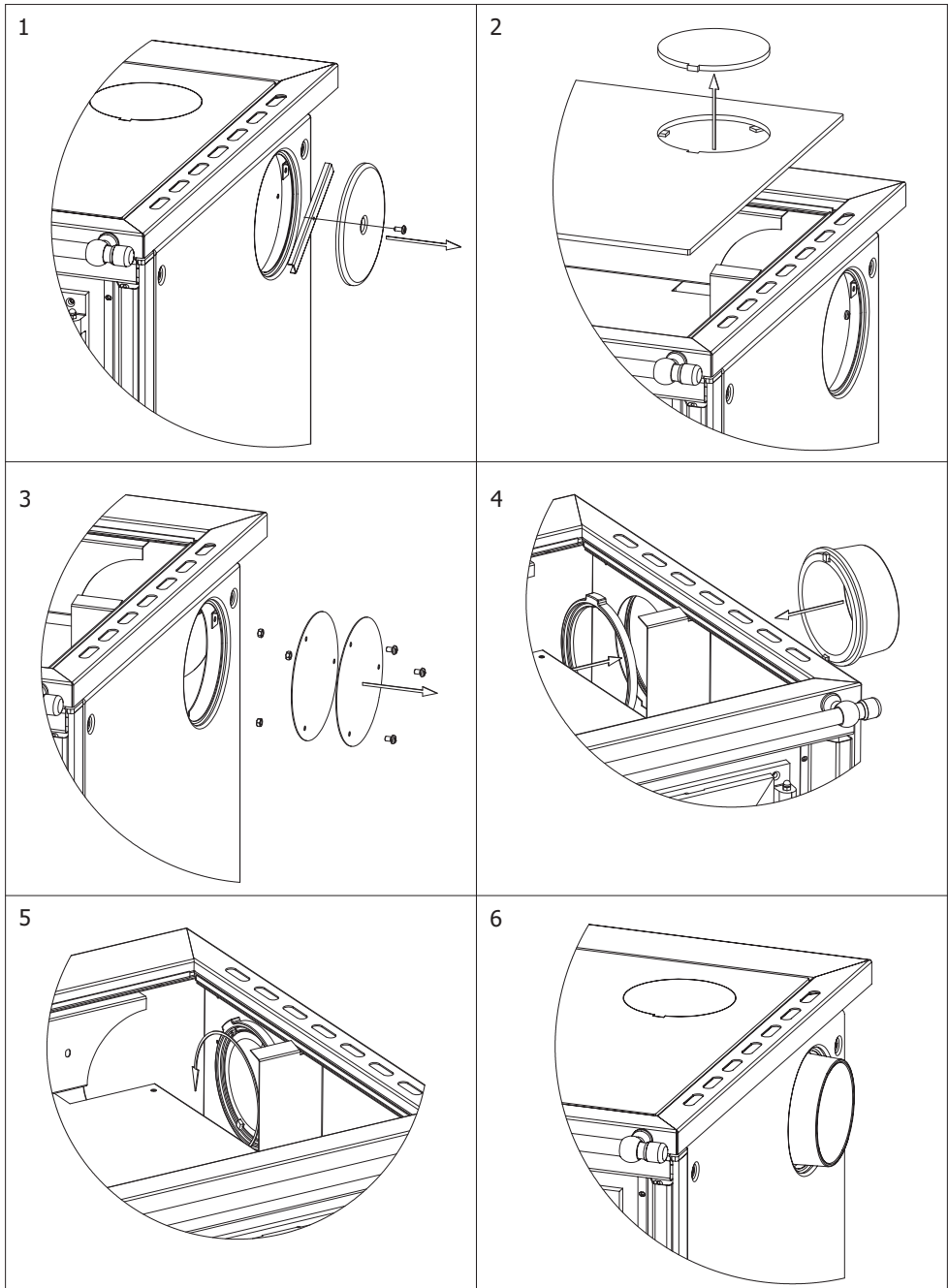


Figure 11

INSTRUCTIONS FOR INSTALLATION OF SIDE PANELS

The stove is supplied to the customer without the side panels (2 pcs.), which are packed inside the stove storage drawer. The side panels do not affect the operation of the stove (they are purely aesthetic elements), and the user may install them according to the instructions shown in Figure 12.

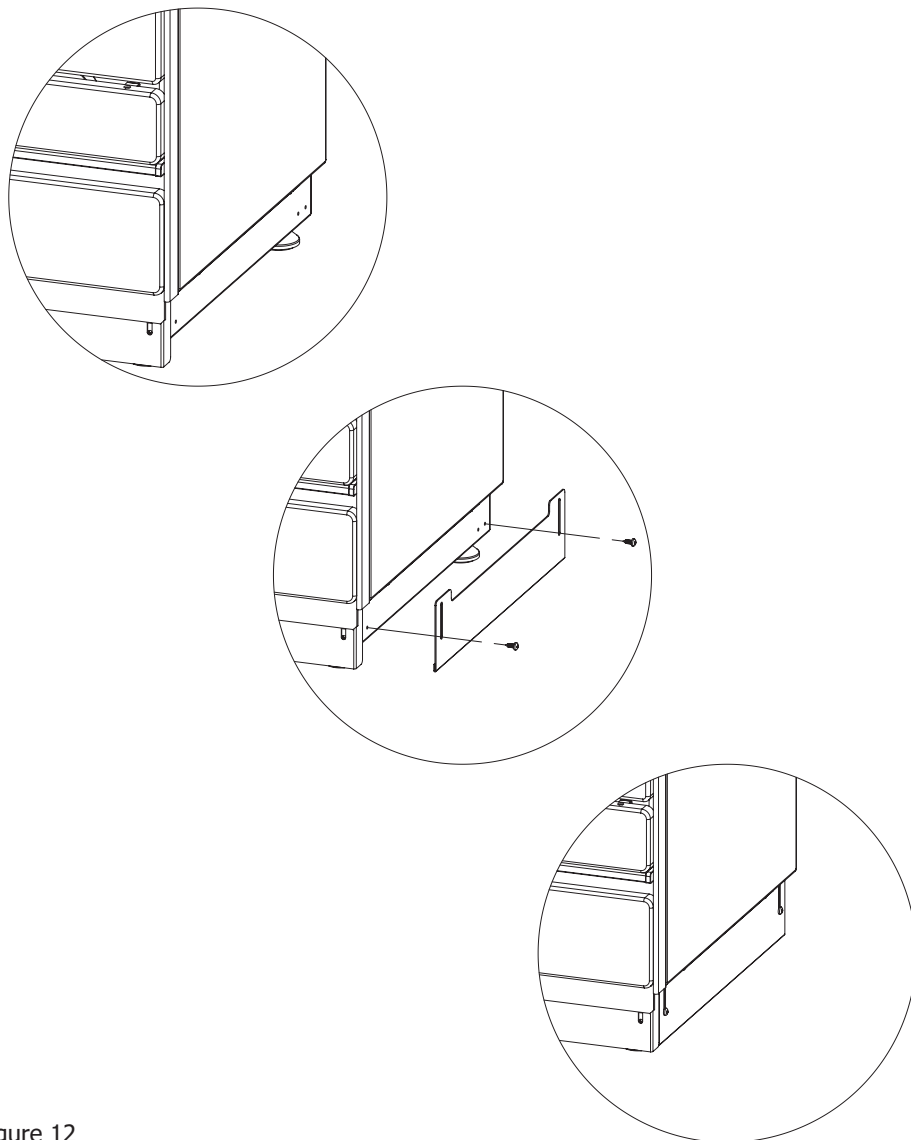


Figure 12

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