Smederevac

Installation and Operating Instructions



Solid Fuel Stove

SD 10 New Line

Dear customer

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 and briquettes.
- 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 hotplate. This is a common phenomenon that occurs due to the combustion of deposits on the stove hotplate (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.
- Storage drawer is foreseen only for storing accessories.
- 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.
- Warning - flammable materials and wood must not be stored in the storage drawer.

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, with a specified moisture content and wood type (up to 20% moisture, beech wood) and a specified chimney draft (12±2 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.

DESCRIPTION OF THE STOVE

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

The stove is intended for heating rooms, as well as for food preparation on the hotplate and in the oven. The hotplate made of steel sheet. During stove operation, it heats up and transfers heat to the cookware used for food preparation. If food is not being prepared in the oven, in order to achieve higher heating efficiency, keep the oven door open.
Depending on the stove model, flue pipe connections with a diameter of 120 mm are available on the side and/or top of the stove.
There is a primary air regulator on the ash drawer door. If the primary air regulator is closed, the combustion intensity is at its lowest due to the reduced airflow required for combustion. The desired operating mode (combustion intensity) is achieved by allowing primary air to enter, which is done by opening the primary air regulator.

Components of the stove (Fig. 1):

1 - cover
2 - hotplate
3 - front handle bar
4 - firebox door
5 - ash drawer door
6 - storage drawer
7 - oven door
8 - smoke outlet connectors
9 - flue gas flow regulator handle
10 - primary air regulator

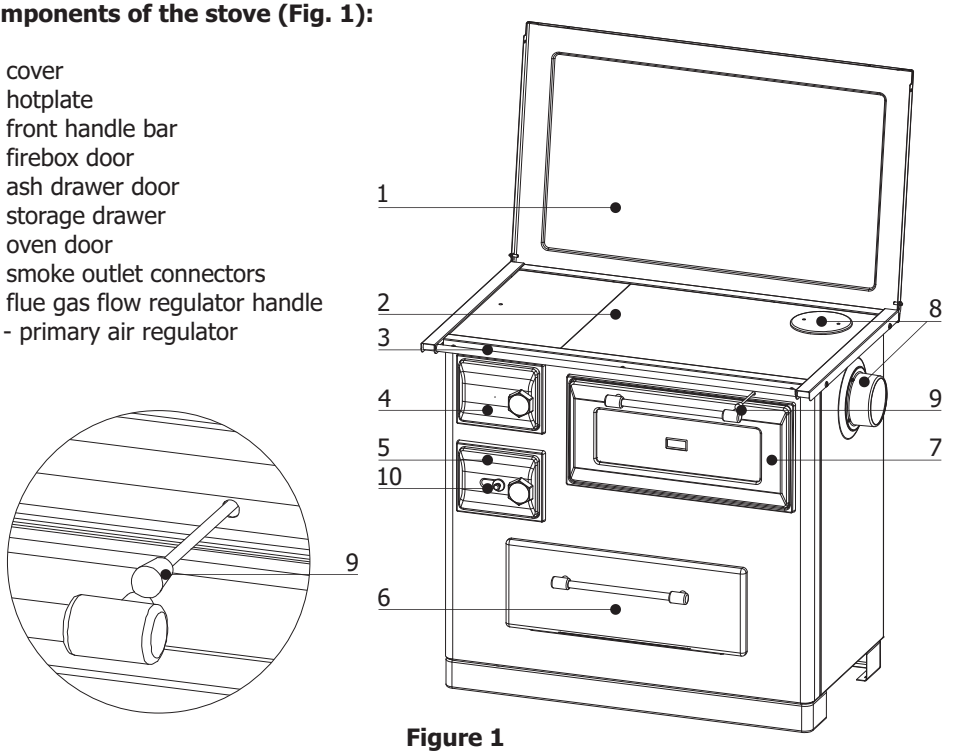


Figure 1

Technical data:

Nominal output		8,7 kW
Efficiency rating		89 %
Seasonal efficiency		79 %
Stove dimensions (H×W×D)		860x945x605 mm
Dimensions of the firebox (H×W×D)		216x190x320 mm
Oven dimensions (H×W×D)		200x490x430 mm
Stove weight		115 kg
Position of the chimney connection		At the lateral side / at the hotplate
Chimney connection diameter		Ø120 mm
Flue gas temperature		164 °C
Mass flow rate		7,86 g/s
CO content (reduced to 13% O_2):		743 mg/Nm³
Dust emission		36 mg/Nm³
OGC		94 mg/Nm³
NOx		92 mg/Nm³
Fuel consumption at nominal power		2,25 kg/h
Minimum distance from flammable substances:		
- from the back wall	$\mathbf{d_R}$	30 cm
- from right lateral side	$\mathbf{d_{S1}}$	30 cm
- from left lateral side	$\mathbf{d_{S1}}$	25 cm
- from the top side	$\mathbf{d_C}$	>75 cm
- from the front side	$\mathbf{d_P}$	70 cm
- in the front radiation area on the floor	$\mathbf{d_F}$	40 cm
- in the radiation area toward the side wall	$\mathbf{d_L}$	20 cm
- below the bottom part	$\mathbf{d_B}$	0 cm
- from a non-combustible wall	$\mathbf{d_{non}}$	5 cm

INSTALLATION OF THE STOVE

- 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.
- 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 on the rear side

or 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 chimney has to be of appropriate cross section.
- 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).

If multiple stoves or other appliances are connected to the same chimney, a malfunction may occur.

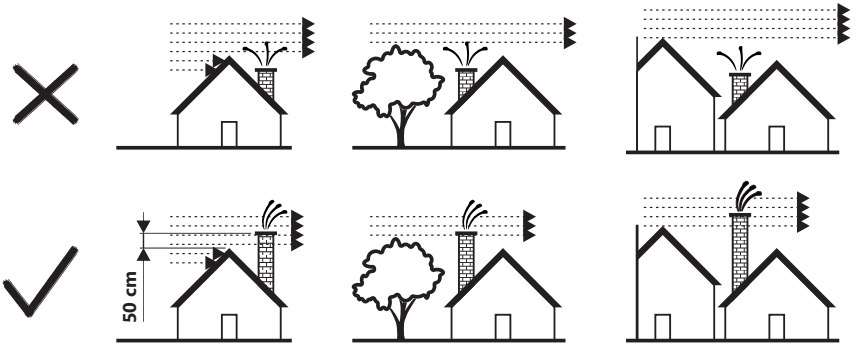


Figure 2

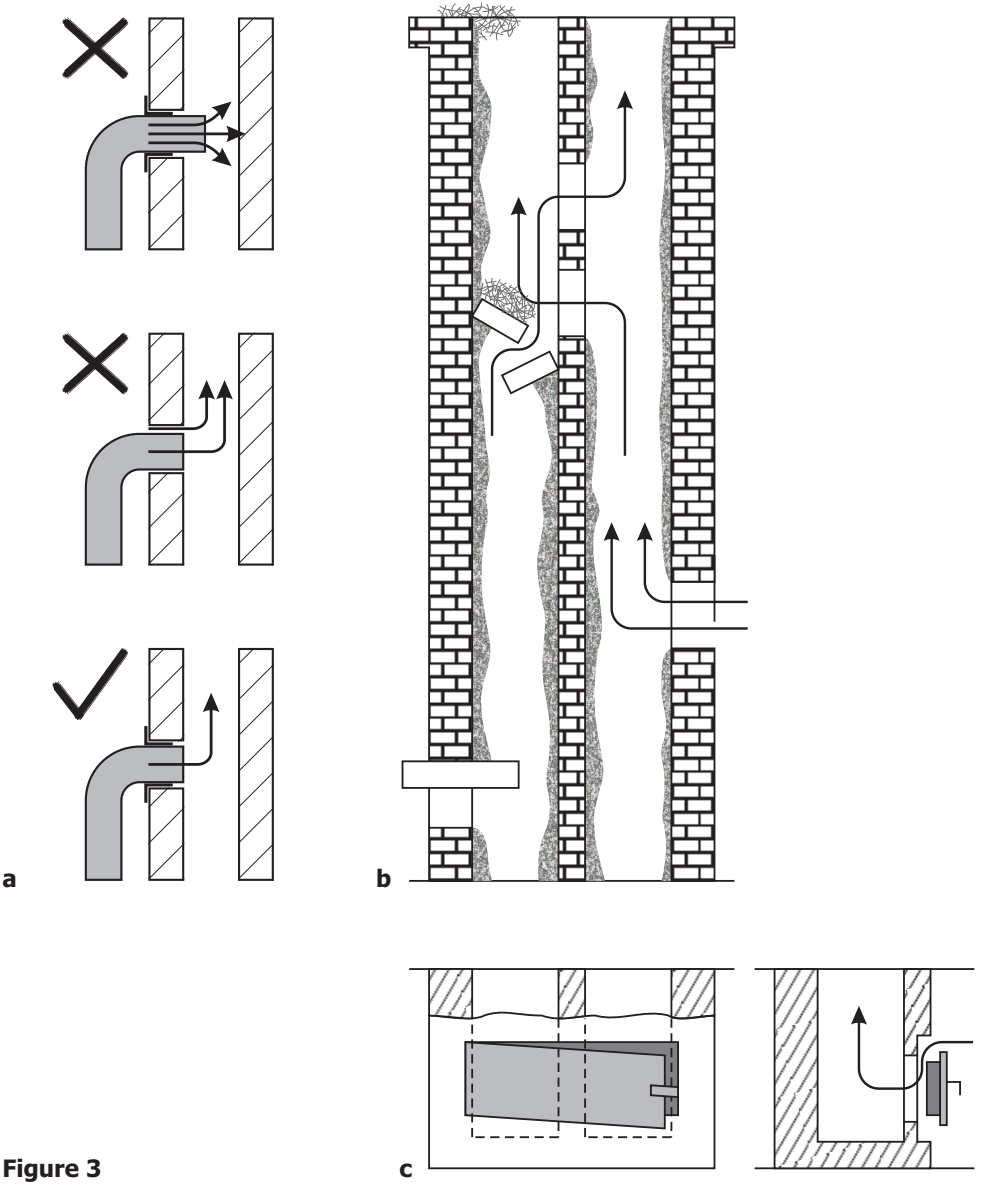


Figure 3

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 primary air regulator at the ash drawer door, and pull the flue gas flow regulator handle,
- insert the firing material (shredded wood on ungreased wrinkled paper) into the firebox,
- light a fire,
- open the primary air regulator on the ash drawer door until a stable flame is established. With the primary air regulator closed, a nominal output of 8.7 kW is achieved.
- close the firebox and stove ash drawer doors,
- when the first embers are formed, insert larger pieces of wood or coal into the firebox and close the firebox door. If briquettes are used as fuel, all the used amount of fuel must be allowed to glow before reducing the draft in half.
- when adding fuel, open the firebox door 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. Wood and briquettes are recommended for firing.

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 10cm of fuel in the firebox by arranging the logs side by side. Logs with dimensions of 100x100x250mm and average weight of 2.2kg, are recommended.

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 with cleaning accessories.

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 firebox door slowly as follows: turn the handle to the left (to unlock), then pull the door to a position that allows unobstructed fuel loading.
The firebox is designed to remain closed at all times.
Do not open the door unnecessarily while the stove is in operation. Open the door only when adding fuel during operation.
The wood must have a maximum moisture content of 20%. Otherwise, tar and gases form that create creosite with water vapor. If it occurs to a large extent, a fire in the chimney may occur.

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 regulators 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 the second firing, clean the firebox bottom cast grate with an auxiliary accessory so as to allow 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.

Before first use, it is necessary to thoroughly familiarize yourself with the stove operating modes using the flue gas flow regulator handle.
The flue gas flow regulator handle, used to select the stove's operating mode, has two positions:
1. when starting the fire, the handle should be pulled outward (toward you) from the interior of the stove,
2. for simultaneous cooking, baking/roasting, and room heating, or for heating only, the flue gas flow regulator handle should be pushed inward (away from you) into the stove.

Primary air regulation is achieved by opening the regulator on the ash drawer door, allowing air to pass into the firebox. The lowest draft occurs when the regulator is closed.

STOVE OPERATING MODES

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

Combined operation of the stove - to enable simultaneous baking/roasting in the oven, cooking on the hotplate, and heating the room, the flue gas flow regulator handle should be pushed inward (away from you) into the stove, and the primary air regulator on the ash drawer door should be opened.
Fast cooking - enabled when the hotplate is intensely heated, which is achieved by adding small amounts of fuel; during this mode, the flue gas flow regulator handle should remain pulled out throughout cooking, the oven door should be closed, and the primary air regulator on the ash drawer door should be open.
Heating - for heating purposes, wood and coal may be used as fuel.
If coal is used, it is necessary to refuel the firebox several times in order to form an ember bed that intensively heats the hotplate. The flue gas flow regulator handle should be pushed inward into the stove, and the primary air regulator on the ash drawer door should be closed.
Baking/roasting - the flue gas flow regulator handle should be pushed inward into the stove, the draft set to a medium level, and the oven door should be closed after placing the baking tray inside.

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.

Cleaning of glass surfaces - the glass of the oven 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 control 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.

Cleaning of flue gas passages below the oven - Open the oven door. Pull the oven bottom out of its seat toward you. Remove soot deposits and impurities from the fireclay surface beneath the oven bottom to ensure unobstructed gas flow during further operation.

Cleaning the channels for the flow of gaseous combustion products through the stove is performed by disassembling certain stove components in the following order:
- remove the flue pipes,
- remove the hotplate.

MALFUNCTIONS AND RECOMMENDATIONS FOR THEIR ELIMINATION

The following table shows the most common malfunctions in operation, possible causes and recommendations for their elimination.

Malfunction	Possible cause	Troubleshooting
The stove heats and cooks poorly	- Improper operating - Inadequate 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, contact the maintenance service
Difficulties in lighting a fire	- Closed air supply regulator - Wet wood - Lack of oxygen	- Open the air supply regulator and provide the primary air supply - Use dry wood - Ventilate the room to ensure fresh air
Smoke coming out from under the hotplate	- Closed air supply regulator - Insufficient draft - Uncleaned ash from the bottom cast grate	- Open the air supply regulator and provide the primary air supply - Carefully read the instructions and apply the tips for providing draft - Clean the bottom cast grate

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.

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