PREDUZEĆE ZA PROIZVODNJU, PROJEKTOVANJE I PROMET
BLIST
BELOŠEVAC BB , 14000 VALJEVO, SRBIJA

USAGE AND MAINTENANCE MANUAL FOR A SOLID FUEL STOVE FOR CENTRAL HEATING (STOVE WITH WATER JACKET)

DEAR CUSTOMER,

Congratulations on your purchase of "BLIST" solid fuel fireplace for central heating. Please make installation and use the fireplace in accordance with this manual, this will ensure safe operation and long life of your fireplace.

Table 1. Technical specification:

Model name	Dimension	Power range	Weight	Efficiency	CO (13% O2)
	width/length/height [mm]	[KW]	[kg]	%	%
B MAX E	750x465x780	18-20	134	150	80/40/150
B MAX Er	850x465x780	18-20	143	150	80/40/150



Tabela 1. TEHNIČKE KARAKTERISTIKE

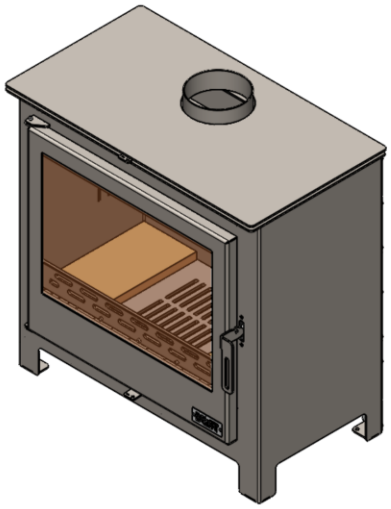
Model name	B MAX E/ B MAX ER
Nominal power	24-26
Radiant power	6
Power given up to the water	18-20
Water boiler volume	30
Net weight	134 / 143
Dimension	520x520x800 / 650x520x800
Necessary flue draught	14 ÷ 15
Output lead and returning lead connection	R1”
Input/output for filling/emptying system	R1/2”
Flue coupling diameter	150
Inner radius of chimney	140-160
Minimum distance from surrounding combustible materials	80/60/60
Maximum water temperature	90
Maximum operating pressure	2.5

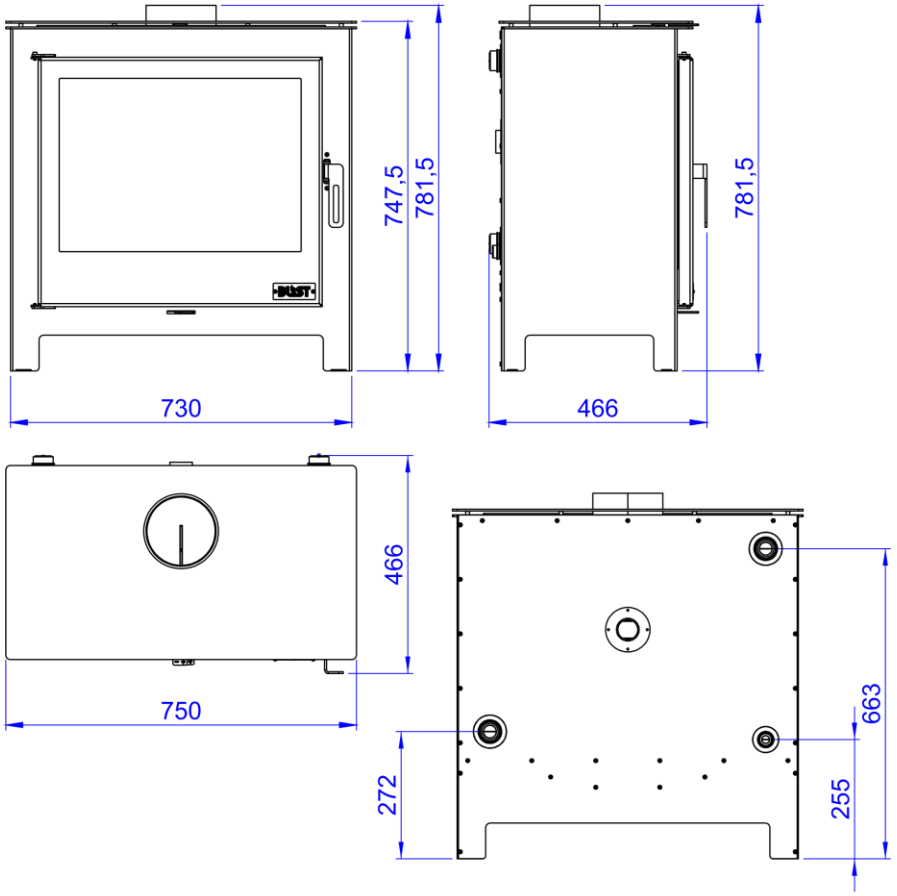
B Max E
Dimension: 750x465x780 mm

Net weight: 134 Kg

Combustion chamber:

○ firebox dimension:
610x310x360 mm





1. Description and purpose of the fireplace:

- BLIST permanently burning solid fuel fireplace is designed to enable efficient burning of solid fuels with the possibility of adjusting and regulating the required amount of air for the combustion process. The fireplace consists of parts made of sheet steel and with a hearth grate made of gray cast iron (gas). The fireplace is lined with vermiculite, which enables long-term accumulation of heat. Stoves and fireplaces are painted with special heat-resistant paints. The glass on the door is first-class ceramic heat-resistant glass.

BLIST fireplaces for floor heating have a built-in water boiler and are intended for floor/central heating of houses, apartments, business premises, restaurants, etc. This type of fireplace is used mainly for floor heating, but it can also be used for central heating. The fireplace must be connected to the floor/central heating system, i.e. it is not allowed to use the fireplace only as an independent heating element without filling it with water and connecting it to the system, because in this case it could cause structural damage to the fireplace. The fireplace directly heats the room in which it is installed, so no additional heating elements are needed in that room. The fireplace can be connected to the system in both configurations: either as an open system or as a closed floor/central heating system.

- Model: B MAX ER has automatic regulation of incoming air, as well as a thermostat for measuring water temperature in the boiler.

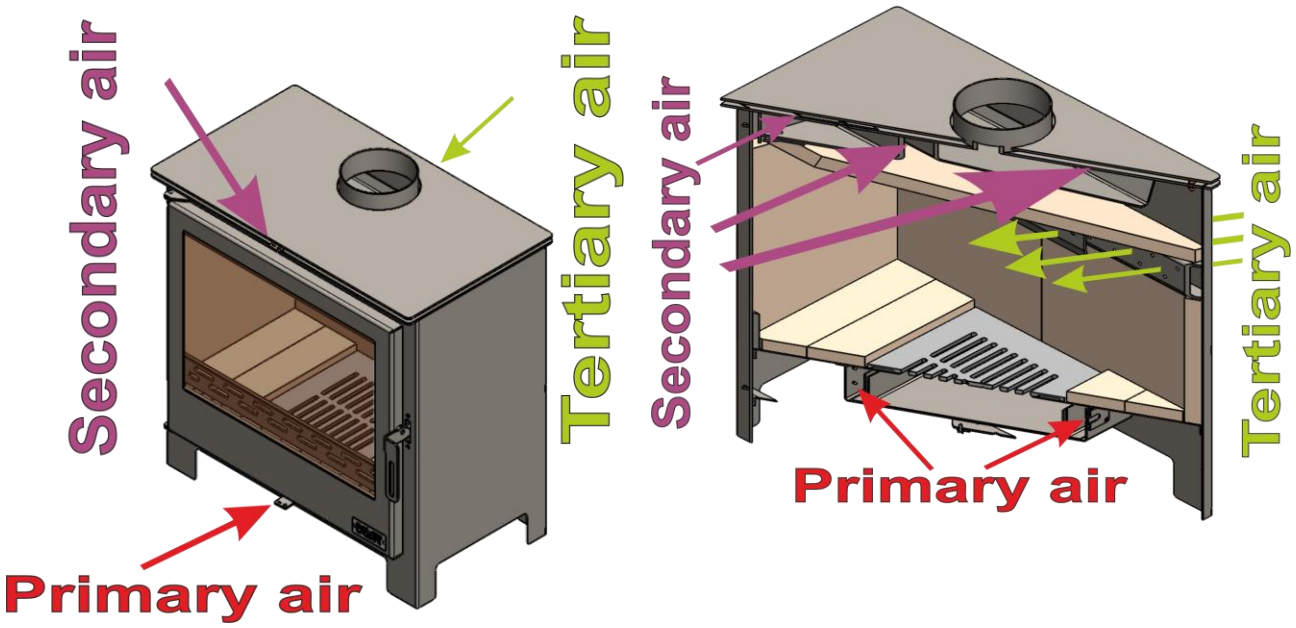
2. Installation:

- All legal regulations on construction and fire protection requirements must be observed when connecting the fireplace.
- The place of installation must be horizontal and must have a suitable bearing capacity, otherwise appropriate measures must be taken to meet these conditions.
- The fireplace must not be placed near flammable (wooden, textile, plastic, etc.) parts of furniture, nor near cooling devices. The minimum distance between the fireplace and such elements is given in Table no. 1.
- If the fireplace is placed on a floor made of combustible materials (wood, itison, plastic derivatives, etc.), it is necessary to protect the floor with a sheet of min. width. 30 cm from the sides of the fireplace, and min. 50 cm from the front of the fireplace. The flue gas exhaust pipe must be away from flammable objects min. 40 cm.
- When connecting the fireplace to the chimney, you should consult with the competent local chimney sweep. The fireplace is placed on a chimney whose height must be min. 6m, and the diameter is at least the same as the exit diameter of the smoke pipe from the fireplace (150mm). If several stoves or fireplaces are connected to the same chimney, the vertical distance between those connections must be min. 2 m. The chimney should protrude above the top of the roof min. 50 cm. Also, attention should be paid to the fact that the connecting pipes for the chimney do not protrude into the section of the chimney, and that the connection point of the chimney pipes to the chimney must be well sealed. (See picture no. 1) If two chimneys run parallel to each other, they must have special openings for cleaning, and cavities between the chimneys must also not exist. The opening for cleaning the chimney must be well closed and sealed during the use of the fireplace (while the fire is lit in the fireplace). If the chimney is new, the fireplace must not be lit at full load until the chimney is completely dry.
- Before lighting the fireplace for the first time, fill the installation with water, release the air from the installation and check whether all connections, valves and measuring and regulating instruments are properly installed and adjusted. The scheme for connecting the stove to the floor heating system is given in Figure 3. In the case of a closed floor/central heating system, the installation of safety valves

is necessary.
- In the place where the fireplace is installed, access must be provided for unhindered cleaning of the fireplace, chimney and flue pipes.

- In order for the fireplace to work properly, the required pressure (draft in the chimney) should be 12 ÷ 14 Pa. Checking the strength of the draft can also be done using a candle, which is shown in Picture no. 2.

- **Fresh air** is necessary for burning fuel and the proper functioning of the fireplace, so it is necessary to ensure that there is always enough (fresh) air in the room where the fireplace is installed. Fans, steam extractors and similar devices that extract air from the room should not be placed in the same room as the fireplace. If this is the case or if the doors and windows are hermetically sealed, then combustion air must be brought in from the outside if necessary. In this case, before installing the fireplace, it is necessary to consult with the competent (chimney) organization. If a sufficient amount of air for combustion is not provided, the fuel in the fireplace will not burn completely and the room where the fireplace is located can become polluted with unhealthy and dangerous gases!



Primary air – opened (+):
Place dry firewood on the grate. When lighting the fire, leave the door slightly open and gradually light the fire to heat the hearth, glass, chimney, this will ensure that the fireplace works properly and avoid condensation. Later, add bigger wood, but not too big and not too much, the fire should be built gradually, because too much wood can suffocate the fire. Avoid working with the door open, except when lighting, as this can cause excessive cracking and damage to the fireplace.

Primary air – closed (-):
Once you have established a fire, shut off the primary air and control combustion with secondary air.

Secondary air (+/-):
If you burn large amounts of fuel with closed secondary air, soot will appear on the glass. The use of secondary air gives the effect of cleaning the glass, regulates the temperature in the room and achieves a better efficiency of the chimney.

Tertiary air:
Tertiary air serves for cleaner combustion with less ash, also reduces the amount of tar and soot to a minimum. A bright and clean hearth is a sign that the fireplace is working properly.

Figure No. 1. *INSTALLATION OF THE STOVE*

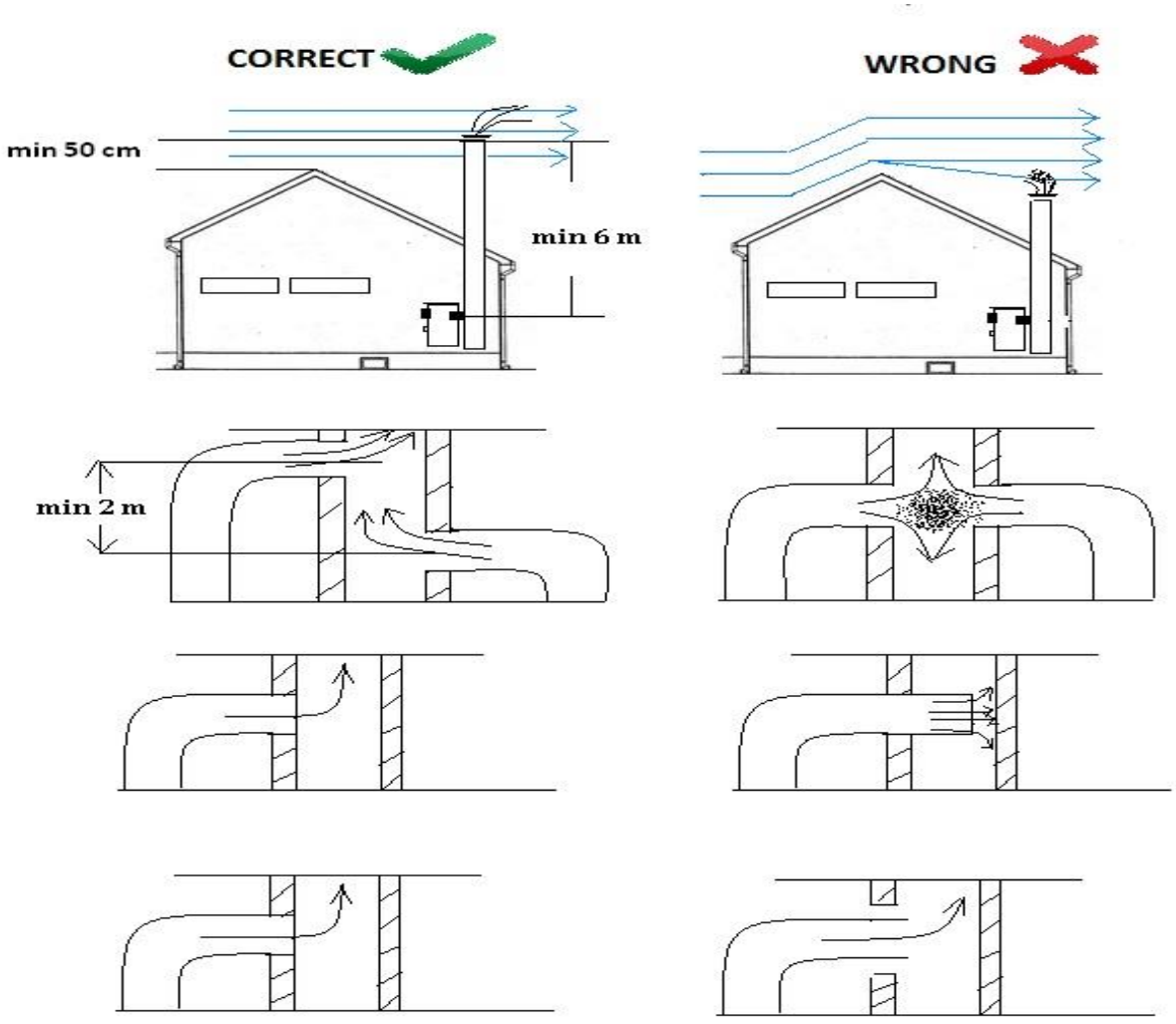
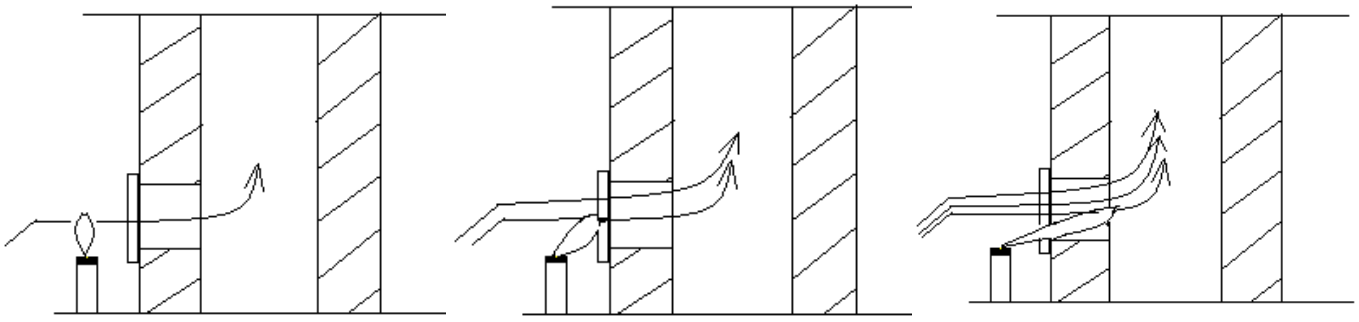
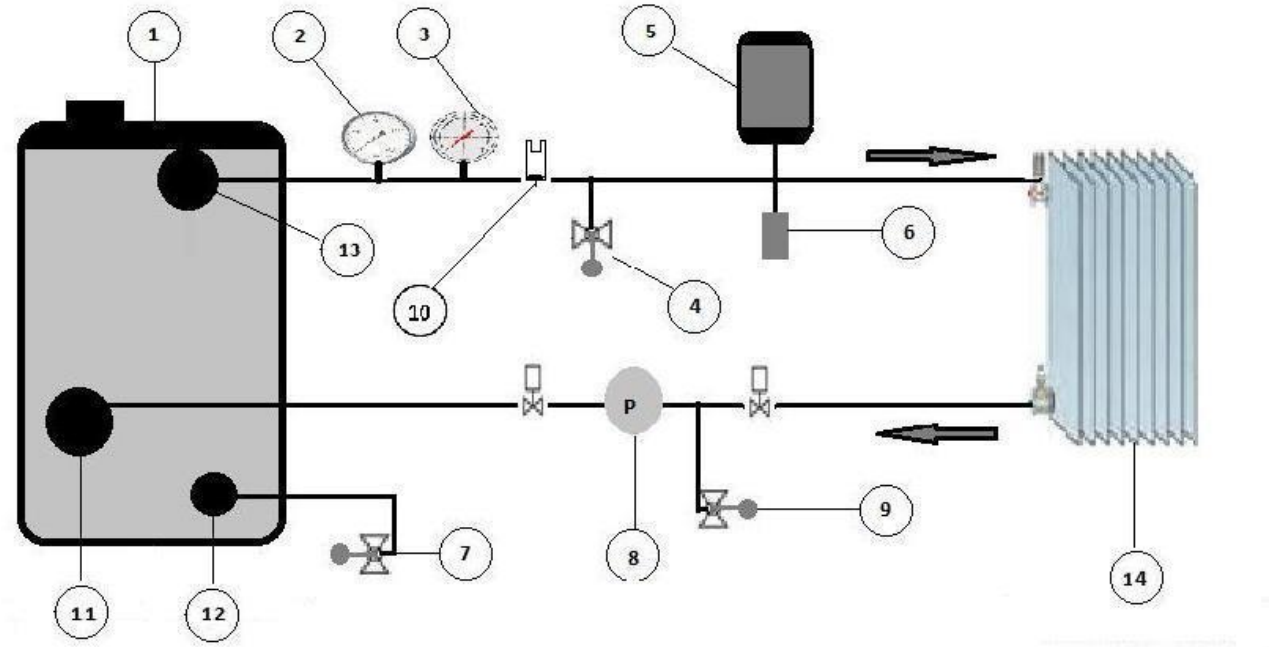


Figure No. 2. *CHECKING OF THE FLUE DRAUGHT*



weak air-flow | good air-flow | too strong air-flow

Figure No. 3 CONNECTION TO THE SYSTEM



1. Stove for central heating
2. Manometer (up to 4 bar)
3. Thermometer (up to 120ºC)
4. Safety valve (up to 2 bar)
5. Expansion tank
6. Relief air valve
7. Valve for water filling/emptying

8. Circulation pump
9. Safety valve (up to 2 bar)
10. Valve for air let out
11. Returning lead connection
12. Input/output for filling/emptying system
13. Output lead connection
14. Heating body (radiator)

3. Usage:

- The intensity of combustion depends on the type and quality of the fuel used. It is recommended to use wood chips, wood briquettes, as well as low-calorie coal (all except coke and hard coal).
- The fireplace uses wood or low-calorie coal (all except coke and hard coal) as fuel. The power of the fireplace depends on the type and quality of the fuel used.
- During the first 8-10 hours (1-2 days) of burning the fireplace, burn gradually and not at full capacity in order for the material to adapt to high temperatures. Heat-resistant paint on the fireplace will fully form (harden) after the first 2-3 hours of burning the fireplace. During this time, please do not touch the paint or put anything on the fireplace, in order to avoid damage to the paint. During the first 15-30 min. burning, the fireplace can emit an unpleasant smell and smoke, so during this time the windows of the room where the fireplace is located should be open.

Lighting and fire maintenance:

- The intensity of combustion is regulated with the inlet air regulators (primary and secondary) located on the front of the fireplace, as well as the flue gas outlet regulator located on the outlet flue extension (for models that have this regulator).
- It is forbidden to use gas, alcohol or any other flammable liquid/fuel when lighting the fireplace, as well as burning it. When lighting the fireplace, the inlet air regulator and the flue gas outlet regulator (for models that have this regulator) must be set in a position that allows maximum air flow. Start a fire on the grate using crumpled newspaper/paper, kindling and/or commercially available "fire blocks". Do not let pieces of paper fly into the chimney, especially if they are on fire. This could cause a chimney fire and therefore structural damage to your property. When the kindling is sufficiently lit, add larger pieces of wood to gradually increase the fire.
- When you want to refill the fireplace, first set the inlet air regulator to the closed position, then open the door slowly and carefully refill the fireplace. Do not open the fireplace door suddenly as this could cause smoke to appear in the room. It is recommended that you wait for the fire to die down until all the fuel is glowing before refilling the fireplace with new fuel. The maximum height of the fuel in the fireplace should not exceed 2/3 of the height of the firebox. The optimal height of the fuel in the fireplace is 1/2 the height of the firebox. Do not allow the grate at the bottom of the firebox to become clogged with ash and unburned fuel residues. Clean the grate regularly.
- The fireplace is designed to work with the door closed, except when filling the fireplace with fuel. Do not open the fireplace door while the fire is burning unnecessarily.
- Clean the ashtray regularly. Do not allow the ashtray to overflow with ashes. The wood will burn better if you leave a thin layer of ash in the ashtray.

- It is forbidden to use a fireplace for burning organic and inorganic waste (animals, plastics, textiles, painted wood and with oil impurities, etc.). During the burning of such materials, many harmful and toxic gases can be produced.

4. Maintenance:

- The ashtray should be emptied regularly.
- Periodically clean the fireplace from the remains of unburned substances and soot. Clean internal surfaces in the fireplace guarantee economical operation of the fireplace. It is recommended that you clean the fireplace once a month or more often in case of heavy dirt and unburnt material residues in the hearth of the fireplace.
- After each heating season, it is necessary to thoroughly clean the fireplace, smoke pipes and chimney from soot and other remains of unburned substances. In the off-season, while the fireplace is not in use, leave the inlet air regulator and the flue gas outlet regulator in the maximum open position to enable air circulation inside the fireplace, this prevents the appearance of condensation inside the fireplace.
- Clean the glass on the fireplace door regularly with a soft cloth. Clean the outside of the fireplace with a soft cloth and do not use abrasive or other aggressive chemical agents because they can damage the paint. Clean the fireplace only when it is cold.

5. CAUTION!

- Glass on the fireplace in a heated state must not be poured with water or cleaned with a wet cloth. Otherwise, the glass may break.
- Very cold objects should not be placed on the upper plate when it is in a heated state. Otherwise, the plate may crack.
- It is forbidden to use gas, alcohol or any other flammable liquid/fuel.
- During use, certain parts of the fireplace can reach very high temperatures, so caution is required when using the fireplace. Do not allow children to play near the fireplace or handle it.
- It is not allowed to make any structural changes to the fireplace without the manufacturer's permission.

6. IMPORTANT NOTICES

- During starting the stove for central heating you may notice appearance of condensation on the outside of the water boiler which can lead to the wrong conclusion that boiler emits water. When the stove and boiler become hot, condensation evaporates and disappear.

In the following table are described possible problems during use of stoves for central heating, probably causes of these problems, and described ways of how to solve them

Table 2 – *Common problems and how to solve them*

STOVES FOR CENTRAL HEATING – POSSIBLE MALFUNCTIONS			
MALFUNCTION		CAUSE	WAY TO SOLVE
1.	**Weak heating power**	Poor fuel	Use better fuel (with higher calorific power)
		Weak flue draught (weak air circulation)	Increase chimney height to more than 6 m
		Clogged chimney	Clean the chimney
		Too strong flue draught (too strong air circulation)	Decrease air circulation (by adjusting input air and/or stack valve regulator)
		Too much radiators in the system	Reduce number of radiators connected to the system. The maximum volume of water in radiators should be equal to twice the value of water in boiler volume
			Distribution pipe system should not be too long and non-insulated, or passing under the ground
		Weak circulation in the system	There must not be submerged radiators (pipes must not be lower than the boiler)
			Vent the radiators
2.	**Weak heating of the room where the stove is placed**	Too big room with regard to the radiant power of stove	Add radiator to the room where the stove is placed

3.	**Smoke exits periodically from the door opening**	Low chimney	Extend the chimney
		Clogged chimney	Clean the chimney
		Another stove installed on distance lower than 2m on the same chimney	Turn fire off on one of the stoves
4.	**Smoke exits out from the top plate**	Clogged chimney	Clean the chimney
		Damaged schamotte powder or sealant tape under the top plate (can happen due to an strong punch during inadequate manipulation with the stove)	Remove the top plate and fix the sealing with schamotte powder and/or fireresistant sealant tape
5.	**Water leaks within the stove**	Occurrence of condensation, because of starting the cold stove	The condensate will evaporate and disappear when the stove and the boiler becomes hot
		Fuel with big humidity percentage	Use better quality fuel
6.	**Low temperature on the output lead pipe**	There is no circulation of water in the system	Check the water pump and/or other elements in the system
		Too much radiators in the system	Reduce number of radiators connected to the system. The maximum volume of water in radiators should be equal to twice the value of water in boiler volume