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

ENG

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 stove for central heating. Please make installation and use the stove in accordance with this manual, this will ensure safe operation and long life of your stove.

Table 1. *Technical specification*

Model name		ROMA E	PADOVA E	BLIST B2 E	MILANO E	B MAX E/ B MAX ER
Nominal power	[KW]	20-22	18-20	12-14	23-25	24-26
Radiant power	[KW]	5	5	4	6	6
Power given up to the water	[KW]	15-17	13-15	8-10	16-18	18-20
Water boiler volume	[l]	22	19	15	26	30
Net weight	[kg]	98	97	80	134	134/143
Dimension	width/length /height [mm]	490x460x1050	510x500x910	465x460x910	580x560x1060	520x520x800 / 650x520x800
Necessary flue draught	[Pa]	14 ÷ 15	14 ÷ 15	14 ÷ 15	14 ÷ 15	14 ÷ 15
Output lead and returning lead connection		R1"	R1"	R1"	R1"	R1"
Input/output for filling/emptying system		R1/2"	R1/2"	R1/2"	R1/2"	R1/2"
Flue coupling diameter	[mm]	120	120	120	120	150
Inner radius of chimney	[mm]	140-160	140-160	140-160	140-160	140-160
Minimum distance from surrounding combustible materials	front/sides /rear [cm]	80/60/60	80/60/60	80/60/60	80/60/60	80/60/60
Maximum water temperature	[ºC]	90	90	90	90	90
Maximum operating pressure	[bar]	2.5	2.5	2.5	2.5	2.5

1. Description and purpose of the stove:

BLIST solid fuel stoves are designed in a way to enable efficient combustion of solid fuels with the possibility of adjusting and regulating the amount of input air required for the combustion process. The stove consists of parts from steel, with grate in the combustion chamber made of cast iron or fireproof steel pipes (models: B MAX E / B MAX ER) and boiler made of fireproof steel. The stoves are painted with special heat resistant paint. For the glass on the door is used high quality heat resistant ceramic glass. BLIST stoves for central heating are constructed with water jacket inside and are designed for a central heating of a houses, apartments, offices, restaurants, etc. Stove must be connected to the system of central heating, and it is not allowed to be used as a standalone stove only, because in this case structural damages to the stove may occur. The stove allows direct heating of the room in which it is located, so that room do not need additional heating sources. It can be installed in both configurations: opened system or closed system for central heating.

- Model: ROMA E have sides coated with ceramic tiles which gives unique atmosphere to your room.
- Model: MILANO E has oven with built-in thermometer. Thus, alongside with heating of space, the stove can be used for baking (of different kind of bread, pies, meat, etc..)
- Model: B MAX ER has regulator for automatic regulation of input air, and thermostat for measuring temperature of water in the boiler

2. Installation:

- All local regulations including those referring to national and European standards needs to be complied with when installing the appliance.
- Place of installation must be horizontal and must have adequate carrying capacity, otherwise must be taken appropriate actions to fulfill these conditions.
- The stove must not be placed near combustible materials (such as wooden, textile or plastic furniture parts, etc..) nor near cooling devices. Minimum distance between the stove and such materials must be provided according to data from Table 1.
- If the stove is placed on the floor made from combustible materials (wood, itison, floor plastic, etc.) it is necessary to protect the floor with metal sheet of min.30cm width from the sides of the stove, and min. 50cm from the front side of the stove. Flue pipes must be away from combustible objects min. 40cm.
- When connecting the stove to the chimney you should consult a local competent institution. The stove should be attached to a chimney with inner radius of at least 140mm and height of 6m. If multiple stoves are attached to a single chimney, the attachment distance should be at least 2m. The chimney should extend beyond the top of the roof min. 50cm. You should also pay attention that connection pipe to the chimney does not stand out in the cross-section of the chimney, as well as the connection point of flue pipe to the chimney must be tightly sealed. (see the Figure No.1) If two chimneys are going parallel one to each other, they must have separate openings for cleaning, and cavities between the chimneys also may not exist. Opening for cleaning the chimney must be tightly closed and sealed when using the stove (while the fire runs in the stove). If the chimney is a newly built the stove must not be constantly fired at full capacity until the chimney is completely dry.
- Before first firing of the stove fill installation with water, release air out from installation, and check if all connections, valves, measuring and regulating instruments are correctly installed and set. The connection scheme of the stove to the central heating system is given in Figure No. 3. In configuration of closed system for central heating, installation of safety valves is mandatory.
- On the place of installation of the stove there must be provided free access for cleaning the stove, the flue connectors and the chimney itself.
- In order that stove work properly the necessary flue draught must be 14 ÷ 15 Pa. Check of the airflow can be carried out by using a candle also, as shown in Figure no. 2
- Fresh air is necessary for combustion of the fuel and proper functioning of the stove, and you must provide that in the room where the stove is installed always be enough (fresh) air. Extractor fans, cooker hoods and similar devices which extracts air from the room should not be placed in the same room where the stove is installed. If this is the case or if the doors and windows are sealed, then if necessary you must find a way to lead fresh air from outside for proper combustion. In this case, before installing the stove, it is necessary to consult with a competent engineer/organization. If you do not provide a sufficient amount

of air for combustion, the fuel in the stove will not burn completely and the room where the stove is placed can become contaminated with unhealthy and dangerous gases!

Figure No. 1 INSTALLATION OF THE STOVE

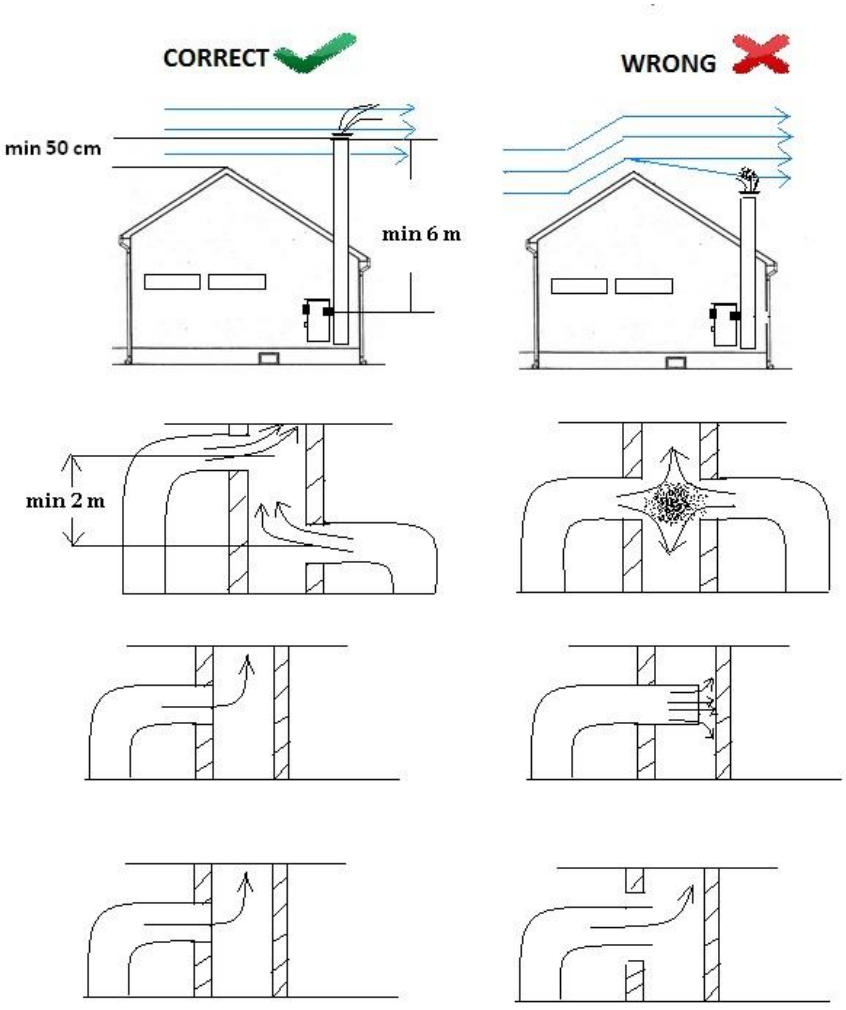
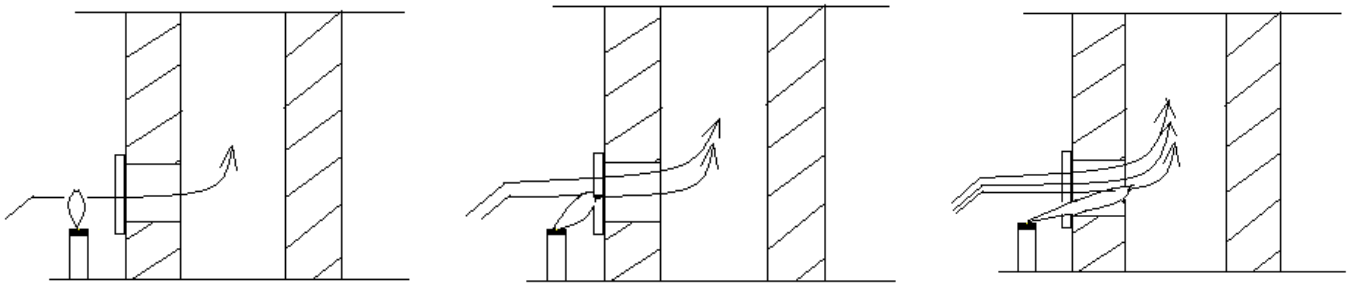


Figure No. 2 CHECKING OF THE FLUE DRAUGHT

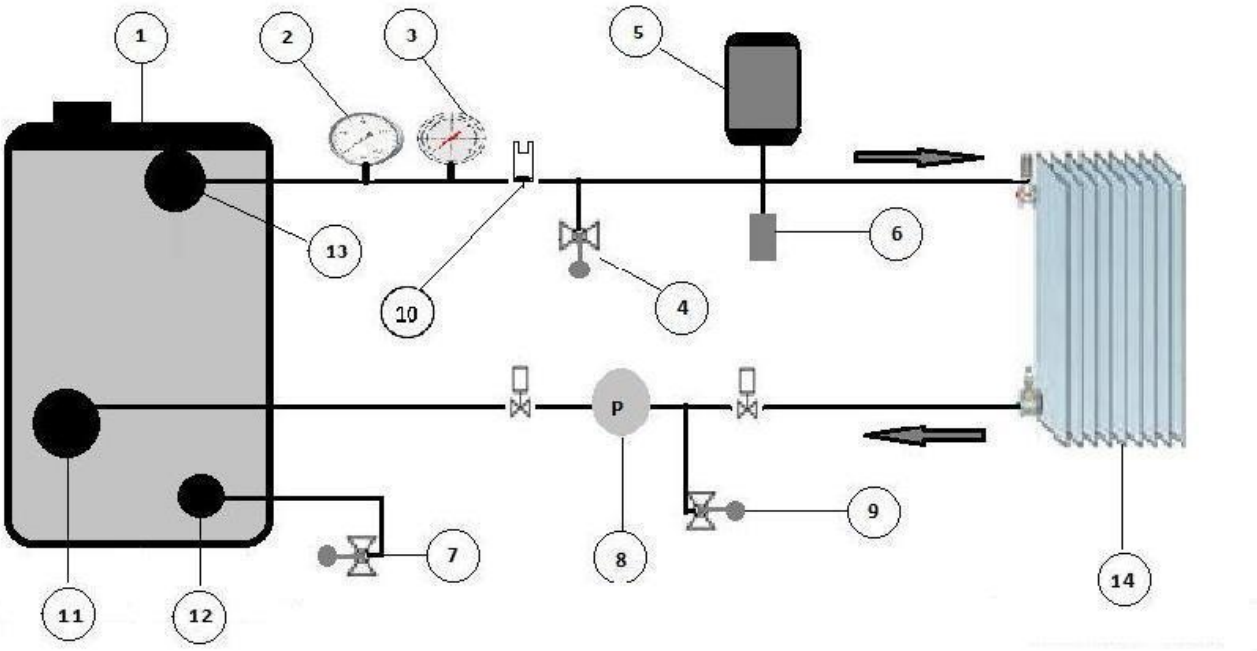


weak air-flow

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:

- All local regulations including those refering to national and European standards needs to be complied with when installing the appliance.
- Recommended fuel: wood logs (beech wood, poplar wood, etc..), coal with less calories (brown coal). The heating strength depends on the type and quality of fuel used.
- The initial heating of the stove should be gradual in order to avoid sudden stresses on the material. Do not use the stove with full capacity during the first 8-10 hours of firing (1-2 days). Thermo-resistant paint on the stove will be fully formed (harden) after first 2-3 hours of the firing the stove. During this time, please do not touch the paint and do not put anything on the stove, in order to avoid damage of the paint. During first 15-30 min. of firing, the stove may emit unpleasant smell and smoke, during which period

windows of the room should be opened widely.
Starting and maintaining the fire:
- Do not use gasoline, lighter fluid, Kerosene or other flammable liquids to start or rekindle the fire, for the safety reasons.

Build a fire directly on the grate with crumpled newspaper, kindling wood and commercially available "firelighters". Do not allow single pieces of paper to float up the chimney especially alight. This is a common cause of chimney fire and can cause structural damages to the property. When the kindling is burning well you can add larger pieces of wood to gradually increase the size of fire

a.) Models with manual input air regulator (Roma E, Padova E, Milano E, B MAX E):
The combustion intensity is regulated with the primary air regulator located at the front of the stove by turning it left-right, and with stack valve regulator located at the chimney spout by rotating it. The desired water temperature is adjusted manually by letting more or less input air to the stove by input air regulator.
When starting the fire, make sure that air regulator and stack valve regulator are in fully opened positions.

b.) Model with automatic input air regulator (B MAX ER):
The combustion intensity is regulated with the rotating knob of automatic air regulator located at the left side of the stove by rotating it, and with stack valve regulator located at the chimney spout by rotating it. By rotating the knob of automatic air regulator you can adjust desired intensity of input air (0- minimum, 9 – maximum).
When starting the fire on model with automatic regulation of input air make sure that manual input air regulator (which is also built in the stove) and stack valve regulator are in fully opened positions, and that knob of automatic air regulator is set to position 5.
After that, when fire is well burning, put manual input air regulator into the closed position, and continue regulation of input air only by automatic input air regulator. The temperature of water inside boiler is displayed on thermometer located on the left side of the stove.

- When you want to refuel the stove, first put the input air regulator in closed position and after that open the door slowly and carefully refuel the stove. Do not open the door abruptly as this may cause the appearance of smoke in the room. Maximum filling height in the burning chamber should not be more than 2/3 of the height of the chamber. Optimal filling height in the burning chamber is 1/2 of the height of the chamber. It is advisable to wait for the fire to be reduced to hot embers before re-loading. Do not let the congestion of grate in the combustion chamber with ash and non-burned fuel. Clean the grate regularly.
- The stove is constructed and designed for continuous operation with the closed door of the combustion chamber, except during refueling the stove. Do not open the door without the need.
- De-ash the ash pan regularly - do not allow a bed of ash to build up above the level of the sides of the ash pan. Wood will burn better with the slight build up of ash in the ash pan.
- It is forbidden to use the stove for burning of organic and inorganic waste (animals, plastic, textiles, oiled wood, etc..). During combustion of such materials can be released many harmful and toxic supstances.

4. Maintenance:

- Ash pan must be emptied regularly
- Burning chamber and all surfaces which are in contact with smoke gases should be cleaned and emptied periodically from the ash and other types of fuel waste. Clean interior surfaces inside the stove guarantee economical operation of the stove. It is recommended to clean the stove once a month or more frequently in the case of larger soiling and fuel waste.
- After each heating season the stove, pipes and the chimney must be thoroughly cleaned from the soot. During the period of non-use the stove, leave the input air regulator and stack valve regulator in maximum opened position to allow natural air flow through the stove, in order to avoid aggregation of condensate inside the stove.
- After each heating season check and fill installation with water if necessary. Installation should be emptied only if it needs to be repaired. If stove is not used in the heating season drop water from installation or fill it with adequate liquid which prevents freezing in order to avoid cracking of boiler and/or installation.
- Clean the glass regularly with soft cloth. Clean the outside of the stove with soft cloth, but do not use abrasive and other aggressive chemical cleaners as they could remove the paint from the stove. Do cleaning only when the stove is cold.
- If there is a need for changing some part or repairing the stove you must call competent enginner to do this maintenance

5. SAFETY – CAUTION !

- The glass must not be cleaned with wet cloth nor sprinkled with water when is hot. Otherwise, the glass may crack.
- Very cold objects should not be placed on the top plate when is hot. Otherwise the top plate may crack.
- It is forbidden to artificially cool the stove with air after the termination of firing. Stove and combustion chamber must not be wet with water for the purpose of cooling because it will cause cracking and deformation of parts of the stove.
- It is forbidden to use alcohol, petrol or any other liquid fuel!
- Some parts of the stove can reach very high temperatures during operation the stove, thus it is required adequate precaution while using the stove. Do not allow children to handle and play near the stove.
- It is not allowed to make any structural changes on the stove without the approval of the manufacturer.

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