



## **INSTRUCTION MANUAL**

for installation and operation of  
wood-burning stoves and fireplaces

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## 1. Introduction.

We congratulate you on the excellent choice! We wish you many pleasant moments with your new appliance. If your choice is a wood-burning stove, it is produced and tested in accordance with the requirements of the European standard EN 13240. If your choice is a fireplace, it is produced and tested in accordance with the requirements of European standard EN 13229. They both respond to the approved technical documentation.

You may expect, that you will have the opportunity to use your appliance for the purpose with which it was made, for a long period of time, and with the least possible servicing. That is why we have a request for you, which is only for your benefit:



**Do not leave this instruction manual unread. The assembly and the exploitation of a wood-burning stove or a fireplace are connected with different legal obligations, which are explained in this instruction manual. According to the laws and regulations for safety, when using an appliance of such class, the end user is obliged, with the help of this instruction, to inform themselves for the assembling and the right operation of the appliance.**

The correct installation, careful exploitation and care for the appliance are of great necessity for its perfect functioning and longevity.

The convenience of maintenance, the high level of usability of the fuels and the excellent performance in continuous burning allow the usage of the appliance as a room heater of full value adding a comfortable atmosphere around the live fire.

Respecting all the directions in this instruction manual guarantees that your appliance will provide you with a lot of joy. By keeping the instruction manual in a good condition, you will always be able to inform yourself about the right maintenance of the appliance before the beginning of the heating season.

## 2. Appliance assembling.

### 2.1. Wood-burning stove.

Installation diagrams for a wood-burning stove with an integral boiler are given in Appendix №1.

The technical parameters of a wood-burning stove are given in Appendix №2.

It is necessary the following conditions to be kept in order to ensure a safe and correct work of the wood-burning stove:

- The wood-burning stove should be installed in rooms with sufficient airflow, which is required for the combustion.
- Not every wood-burning stove could be connected to any chimney. Before assembling the wood-burning stove, check if the static pressure and the chimney dimensions conforms to the needed parameters for the wood-burning stove. If the wood-burning stove does not conform to the chimney, it will lead to a lower burning rate and polluting the glass with soot.
- The chimney should be high enough (at least five meters). Only one more wood-burning stove can be connected to the same chimney. The flue draught should be higher than 10 Pa but for stoves with a boiler up to 15 Pa. If the chimney is too high (the draught exceeding 35 Pa) then it is necessary to mount a supplementary valve to reduce the draught.
- The chimney should be very well insulated, with inside diameter at least  $\varnothing$  150 mm or with a section area at least 200 cm<sup>2</sup>.
- The wood-burning stove should not be connected to a chimney when there is a solid fuel boiler connected to it.
- The floor, where the wood-burning stove is placed, should be flat and horizontal, made of non-combustible materials (mosaic, marble, terracotta, etc.). If the floor is not heat resistant (carpets, linoleums or others of the same kind) a stable, non-combustible platform should be used, made of steel, glass or stone plates.
- If there are any combustible materials or constructions, the wood-burning stove should be away from them at specified distances on the rating label or there must be put an additional incombustible screen.
- After the installation of the wood-burning stove, it has to be attached to the chimney through flue pipes. The connections between the flue pipes and the socket should be tight. The flue pipe should not enter into the chimney.

### 2.2. Fireplace.

Installation diagrams for a fireplace with an integral boiler are given in Appendix №1.

Technical parameters of a fireplace are given in Appendix №2.

Please, observe all the requirements shown in point 2.1. In addition, it is necessary to observe the following conditions:

- It is recommended, the assembling of the fireplace to be done by competent installation company.
- At the installation of the fireplace, connection to the chimney and building of the surround thermos-resistant and **inflammable** materials should be used only.
- The fireplace can be installed into special recess or a special surround with walls and ceiling can encase it. The floor, where the fireplace will be placed, should be smooth and leveled, made of non-combustible materials (mosaic, marble, terracotta, etc.) and possessing enough loading capacity. If the floor is not stable, a suitable reinforced concrete plate has to be done. **The fireplace has to be fixed to the base.**
- It is necessary to ensure enough distance between the fireplace and surround, as well as enabling the natural air convection.
- The walls of the surround have to be well insulated against overheating and thermal losses. The insulation material has to be foiled and to have a temperature resistance from 700°C up to 1200°C.

- It has to be providing air convection by special ventilation grilles.
- A suitable temperature resistant fan can be inserted into the ventilation system to improve the heating efficiency.
- If your fireplace is fitted with an integral boiler, all additional components like pump, valves, etc., have to be placed in a visible and easy to access places. Servicing apertures have to be provided.
- The fireplace should be installed in rooms with sufficient air flow which is required for the combustion.

### 3. Appliance operation.

#### 3.1. Fuels.

The most appropriate fuels are dry cleaved wood (wood logs) and briquettes. The wood logs, stored in the open under sheds, reach a

humidity level of 10%-15% after 2 years, when they are most suitable for combustion. We recommend to burn wood dried as much as possible. The maximum heat output is reached after burning wood logs dried for at least 2 years period.

The newly cut wood has little calorific value, high humidity and burns poorly –they extract many flue gases and additionally contaminate the environment. This leads to minimizing the longevity of the appliance and chimney as well. The increased condensate and tar content in the flue gases leads to blocking up the flue pipes and the chimney, and an appreciable impurity of the glass. When using them, the heat output of the appliance falls to 50%, and the fuel consumption grows twice. The type and the recommended quantity of fuel for the appliance are given in Appendix №2.

It is not recommended to use the following fuels in the appliance: wet or tarred wood, shavings, fine coal, paper and cardboard (except for the ignition), polymeric materials.



**Do not use liquid fuels.**

**Do not use the appliance like a furnace for burning waste matters.**

**If the appliance is used for burning unalloyed fuels then the warranty is not valid.**

#### 3.2. Components.

##### Glass

The mounted glass is ceramic, and it stands up to 850°C so it cannot be damaged by the temperature, which is achieved when the appliance is operating. It could be damaged by a mechanical influence when installing or transporting the appliance, or by putting big wooden logs into the firebox.

**The glass belongs to the spare parts which are quickly worn out and that is why it is not included in the warranty conditions.**

##### Polluting the glass with soot

The construction of the appliance helps during exploitation not to pollute the glass with soot. The soot is accumulated only when there is bad burning, which may be caused by some reasons: the static pressure and the dimension of the chimney do not conform to the required parameters of the appliance, the airflow necessary for combustion process is stopped too early, or the right fuel is not used. In order to keep the glass as clean as possible from soot, the wood logs must be placed in such a manner that the cut surface is not facing to the glass.

**We cannot influence those factors and that is the reason why we cannot guarantee that the glass will not be polluted with soot.**

##### Refractory plates (fireclay or vermiculite)

The firebox is supplied with refractory plates. These plates keep the heat and give it back into the firebox in order to increase the burning temperature. The higher is the burning temperature, the higher is the efficiency of the burning process. As a result of too high temperatures or mechanical influences the refractory plates might be damaged. Extremely high temperatures may be achieved when with high flue draught of the chimney, the primary and secondary air controls are open, and thus it makes a burning out of control. Under mechanical influence, it is understood e.g. throwing a wood log into the firebox or using bigger wood logs.

The refractory plates might be easily exchanged. If there is only a crack then it is not necessary to change them. It is necessary only in case when the metal parts between them or under them can be visibly seen.

**The refractory plates are quickly worn out and that is why they are not included in the warranty conditions.**

##### Sealing

The sealing of the appliance are made of special glass fiber and does not contain asbestos. This material is worn out during usage and the sealing must be periodically exchanged. Your shopkeeper could order these sealing to us.

**The sealing is quickly worn out part and that is why it is not included in the warranty conditions.**

##### Bottom grate

The lower part of the firebox is supplied with a cast-iron grate. Nails in the wooden material, small wooden parts, the residue, etc. could block this grate up. You are advised to clean regularly the grate in order to keep its functionality. The grate could burn when using inappropriate fuel or reaching high temperatures due to incorrect servicing.

**The grate is quickly worn out and that is why it is not included in the warranty conditions.**

##### Paint

The appliance is painted with highly temperature-resistant paint. This paint is resistant to high temperatures, but it is not resistant to rust. Please do not put any objects on the paint. When dust eventually accumulates then clean by brush or dry towel, but not by wet towel or water.

When the appliance is set to work for the first time, it is necessary to leave the paint to be heated for a few hours to be baked and to reach its ultimate stability. During the first fire, there could be visible shades in the paint color. During that period do

not put anything on the appliance or do not touch the outer surface, so that it can remain unaffected. The smell, which is produced, is caused by the baking of the paint and disappears after a few hours. That is why the room should be well aired. Because of overheating or incorrect servicing, the color changes into white-grey or a stain of rust appears or a part of the surface is damaged, then it is not a problem. You may order a spray in the appropriate color to your shopkeeper.

#### **Handles and knobs**

The handles and knobs of the appliance are made of brass or steel. This is an advantage because they cannot be worn out. They are heated to such a degree as the front part of the appliance is, that is why they must be serviced by using a heat-resistant glove.

#### **Tea shelf and Bottom niche**

They are decorative parts and it is not allowed storage of easy combustible materials in them.

#### **Integral boiler**

Purchased by your side appliance with an integral boiler gives you the great possibility of heating the nearby premises with radiators. Before assembling and the first ignition of the appliance, you should be acquainted with the information given into Appendix №1.

**An appliance with an integral boiler should be assembled by authorized organization only!**

#### **Oven**

You can use your appliance for heating the room and at the same time for warming dishes and baking different pastry products. It is necessary to put the grate on the bottom of the oven, which is inseparable part from the product. The inner part of the oven is painted with heat resistant paint, which can be damaged by boiled over food and grease. It is advisable to use deeper dishes with lids. In order to obtain even baking the baking dish should be rotated few times, and this is achieved after using the oven for some times and obtaining the needed experience.

### **3.3. Control devices.**

Before the first ignition of the appliance, pay attention to the function of all control devices.

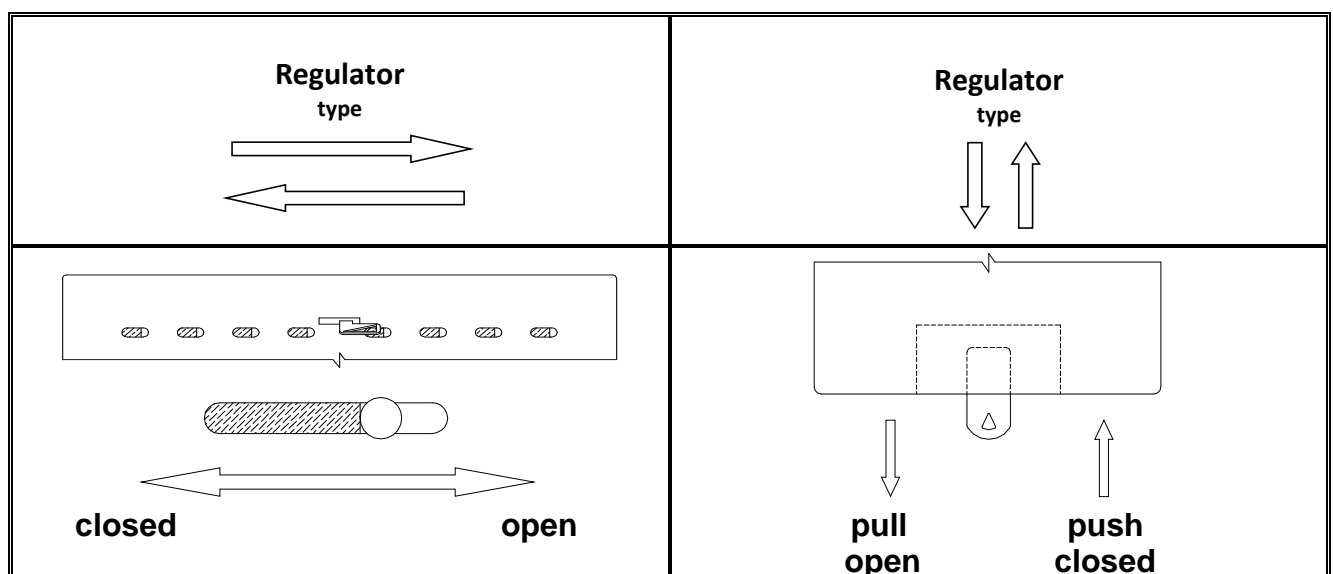
The primary air passes through the ash pan, the bottom grate and goes into the firebox. When the fuel is wood, primary air is not necessary. Primary air is necessary for faster ignition and better combustion of the coal. The control over the quantity of the primary air is done by slightly pulling the ash pan or through the valve mounted on the ash pan door. If the chimney has a strong flue draught it is recommended to entirely close the ash pan or the valve. The ash pan should not be fully filled for the primary air to be let in the firebox undisturbed. It is necessary to clean the ash pan regularly.

Secondary air provides the fire with the required quantity of oxygen for combustion and assists for the better combustion of the fuel. The quantity of the secondary air is adjusted through the regulator mounted above of the fire door. The appliance design enables the preliminary heating of secondary air, which results in an increase of the combustion temperature, the efficiency of the appliance and prevents fumigation of the glass. While the appliance is working, the secondary air regulator ensures control over the combustion process both qualitatively and quantitatively. The secondary air regulator should not be closed when the appliance is working. In many cases the secondary air regulator has been closed shortly after the ignition, despite our directions, in order to reduce the fuel consumption. This leads to limitation of the flow of oxygen, which bothers the combustion and the glass is covered with soot. In addition, there are harmful emissions which may cause burning in the chimney.

As the heat output of your appliance depends on the height of the chimney, the precise control of the necessary air for the combustion is done by trial and error.

Adjusting of the primary and secondary air supply is made manually by changing the position of the respective regulator.

On some models the regulator is located at the bottom part of the stove, under the ashtray. Adjustment is made by slow movement of the regulator by pushing or pulling.



### 3.4. Initial ignition of the appliance.

At the first ignition of the appliance, pay attention to the following:

- Take all the supplementary tools out of the ash pan;
- The regulators for the primary and secondary air control must be opened.
- Before the first ignition, remove the color label for energy efficiency from the glass of the fireplace.
- At first ignition, it is necessary to leave the fire door slightly open, in order to prevent sticking of the sealing of the fire door onto the paint.
- The first ignition must be slow and still, with little quantity of sticks and paper. After burning them, you may put two or three wood logs.

### 3.5. Ignition during exploitation.

Your appliance is constructed and designed for intermittent condition of burning. At each ignition, you must do the following:

- The primary air control is opened;
- The secondary air control is opened;
- Put the basic combustion materials, ignite them and close the door. After they burn well, the wished heat output is achieved by regulating the combustion air.
- If a continuous heating is necessary, fuel is added additionally into the appliance, but only after the volatile materials have burned and the basic fire bed is reached.
- **The ashtray is taken out for cleaning only after it cools down.**

### 3.6. Ventilation requirements.

An important factor for the right combustion of the appliance is the supply of additional quantity of air in the room, which must be minimum 4 m<sup>3</sup>/h per kW from the total heat output. If there are other working appliances in the same room, then it is necessary for them additional minimum of 1.6 m<sup>3</sup>/h air at each hour and at each kW from the total heat output.

A ventilator for suction the air from the room (desiccators, tumble driers, etc.) working at the same time with the appliance leads to change in the flue draught and consequently to bad burning conditions of the appliance. In this case, for the right burning to be achieved it is necessary to let additional air into the room.



**If the natural flue draught is insufficient, it should be increase by an exhaust ventilator or an additional device.**

### 3.7. Heating during the transitional period.

For the good functioning of the appliance, it is necessary to have enough flue draught of the chimney. This depends both on its height and on the ambient temperature. At a temperature of the environment exceeding 14°C, disturbances in the combustion caused by insufficient draught might occur. In this case it is necessary to load the appliance with less fuel and the regulators to be left open so that the fuel to be burned faster (with flame) and thus reaching a stable flue draught in the chimney. In this case, it is necessary to clean the ash pan more often.

## 4. Important directions for fire-precaution and safety regulations.

- **The appliance is not designed to be used by children and persons with limited physical, sensuous and mental abilities, or by people with not enough experience and knowledge, except in cases when they are watched and instructed how to work with this type of heater, by someone who is responsible for their own safety.**
- The door of the firebox should always be firmly closed even when the appliance is not working.
- The appliance should be installed only on a non-combustible floor.
- The appliance and the flue pipes should be at least 80 cm away from combustible objects or constructions.
- Using easily inflammable liquids is not allowed at ignition.
- Vertical connection of flue pipes with the chimney through floor structures is not allowed.
- The presence of easily inflammable and explosive substances in the heated room is not allowed.
- The ash disposal and the cleaning of the appliance should be done only at safe places and when the appliance has cooled down.
- The appliance is intended to local heating of chambers with normal fire hazard.
- It is prohibited to put combustible materials and objects on the appliance or in immediate proximity of it.
- The design, connection and servicing of the water heating installation should be obligatory made by an authorized organization.

Please pay attention during the operation of the appliance children to be kept away from it, because its surface is too hot.

**Incineration danger!**

**We recommend the following instructions in case of a chimney fire:**

- Close the combustion air regulator!
- Call the fire brigade in your region!
- Do not try to extinguish the fire with water by yourself!
- Take away all easily inflammable materials from the chimney!
- When the appliance is set to work again it is necessary the chimney to be checked by a competent person for eventual damages.



**When the appliance has been overworked over the limited heat output or for a longer period and also when using fuels other than the recommended by the manufacturer, then we cannot guarantee reliable work of the appliance.**

Please do regularly with the help of a specialist a full check of the appliance regarding its functionality. If necessary, replace the defected parts only with the spare parts manufactured and supplied by the manufacturer.



**The design and the connection of the water heating installation should be obligatory made by an authorized organization! The installation should conform to all European and national legal documents in reference with the operation and safety!**

**At "open" water heating system** the installation should be connected to the atmosphere with an opened expansion container, mounted above the highest heating device. Between the appliance and the expansion container not any blocking components should be connected.

**At "closed" water heating system** safety components should be integrated into the installation, which does not allow exceeding of the working pressure in the appliance over 2 bar.

**Do not make any non-authorized changes into construction of the appliance!**

## 5. Cleaning.

The correct maintenance and cleaning of the appliance guarantee its reliable work and keeping its good appearance.

The flue pipes and the interior of the appliance should be cleaned at least once per year.

The painted surfaces should be cleaned with a dry and soft brush, or with dry and soft towel.

The side and top plates of the integral boiler should be cleaned once a month.

The glass should be cleaned after cooling down by washing with a soap solution and should be dried afterwards.

**While cleaning do not use sharp objects or abrasive materials!**

## 6. Possible defects and their causes.

**At ignition the appliance is smoking (not enough flue draught pressure):**

- The chimney and the flue pipes are not sealed;
- The chimney is with wrong size;
- An open doors of another appliance connected to the same chimney;

**The room cannot be heated:**

- Bigger heat is needed;
- Bad fuel;
- There is a lot of ash on the bottom grate;
- The air supply is not enough.

**The appliance releases too much heat:**

- The air supply is too much;
- The flue draught is really high;
- The fuel is too much or the fuel is very calorific.

**There are damages on the bottom grate:**

- The appliance is overloaded many times;
- The used fuel is not from the recommended types;
- The primary air supply is too much;
- The chimney flue draught pressure is high.

**When the appliance does not work well:**

- Open the regulator for the primary air. The regulator for the secondary air needs to be completely open too;
- Put less fuel;
- Clean the ashtray regularly;
- The coals have to be well fired when you reduce the primary air supply;
- Check the chimney for blockage;
- Check if the flue pipe has entered the chimney;
- Check if the flue socket of the appliance was not cleaned and if air comes above it;
- If the appliance is connected together with a second appliance in the chimney check the proper operation of the second product;
- Check if the needed pressure of the flue gas flow in your chimney requires the appliance characteristics;
- Check if the passage to the chimney is not closed with top cover.

The manufacturer is keeping the right to make changes in the construction without violating the technical and exploiting quality of the appliance.

## 7. Recycling and waste disposal.

Submit all packaging material for recycling according to the local regulations and requirements. At the end of life cycle of each product its components are due to be disposed of in conformity with regulatory prescriptions. Obsolete equipment shall be collected separately from other recyclable waste containing materials with adverse effect on health and environment. Expired appliances must be collected separately from other recyclable waste containing substances hazardous to health and

environment. Both metal and nonmetal parts are sold out to licensed organizations for recyclable metal or non-metal waste collection. In any case they should not be treated as household waste.

#### **Recycling of ceramic glass.**

Ceramic glass cannot be recycled. Old glass, breakage or otherwise unusable ceramic glass must be discarded as residual waste. Ceramic glass has a higher melting temperature, and can therefore not be recycled together with glass. If mixed with ordinary glass, it would damage the raw material and could, in worst case end the recycling of glass. It is an important contribution to the environment to ensure that ceramic glass does not end up with the recycling of ordinary glass.

## **Appendix №1**

### **INSTRUCTION**

for installation and operation of wood-burning stoves and fireplaces with integral boilers



**Your appliance with an integral boiler is designed to work in a water heating system under the maximal operation pressure:**

- for “open” system under 1 bar;
- for “close” system under 2 bar;

In the combustion chamber of the appliance, there is an integral boiler with heat output according to Appendix №2. The maximum allowed temperature value of the water in the boiler should be 85°C.

When connecting the heating system the following rules and recommendations should be observed:

- **An appliance with an integral boiler should be assembled by authorized organization only!**
- Before connecting the installation, it is advisable to calculate the heat loss in the particular case. **In case of connecting loads with greater heat output, than the declared one in the referent appendix, a cooling down of the heating surfaces of the integral boiler occurs, which leads to condensation and pitching;**
- **At “open” water heating system** the installation should be connected to the atmosphere with an opened expansion container, mounted above the highest heating device. Between the appliance and the expansion container not any blocking components should be connected.
- **At “closed” water heating system** safety components should be integrated into the installation, which does not allow exceeding of the working pressure in the appliance over 2 bar. aeration in each branch and component of the installation should be ensured, in each moment of its operation, and the appliance as well;
- In the installation, immediately near the integral boiler, in the lowest point, drains tap not less than ½” should be mounted;
- All components of the installation should be ensured against freezing, especially if the expansion container or other parts of it are situated in non-heated rooms;
- At installations with forced circulation, the pump should be ensured with long-term power supply device –automatic mode (UPS). We recommend the circulation pump to be switched on and switched off by means of thermostat, doubled with manual electric switch;
- When an old installation is used, then it should be repeatedly washed from the accumulated filths, which could be precipitated on the walls of the integral boiler;
- The circulation water should not be drowned off the installation during the non-heating season.

For appliances with an integral boiler, it is better to clean the surfaces of the boiler from soot and resinous matters at least once a month.

By inserting appropriate isolation materials between the wall and the radiators, you will achieve radiation heating with approved advantages.

This water heater provides another opportunity -installing a coil into the boiler, for warm sanitary water.

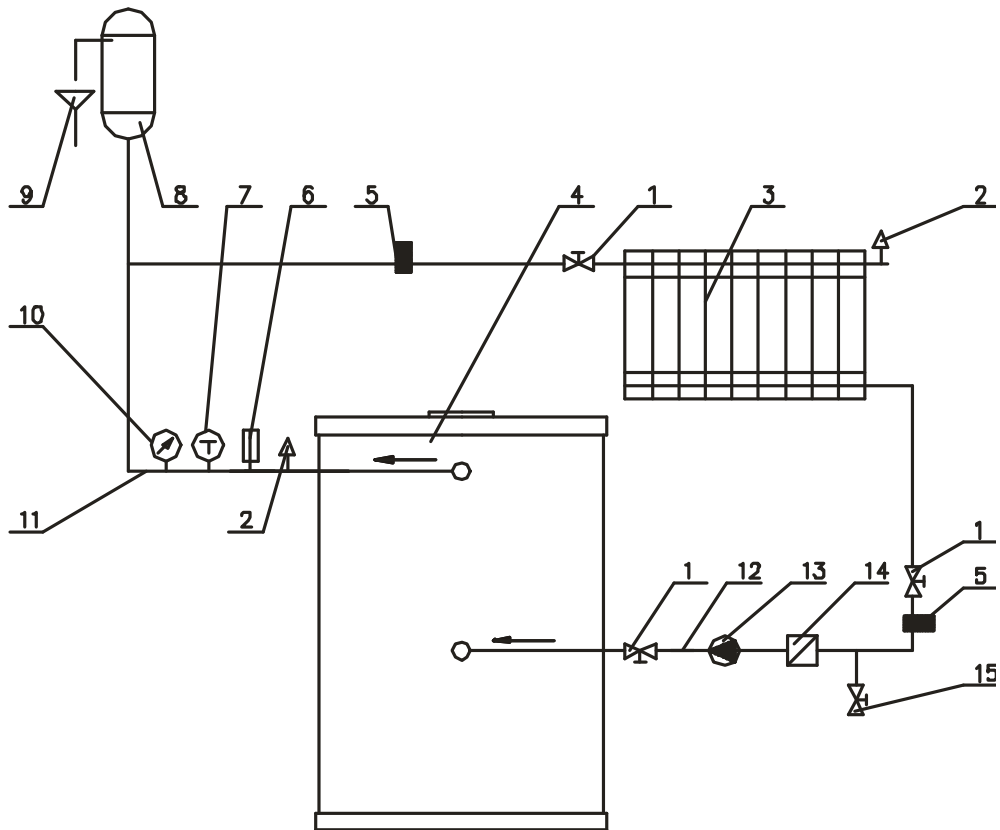


**The manufacturer cannot guarantee the work of the heating installation, except for the appliance. In case of incorrect connecting caused by increased pressure an inflation of the integral boiler and welding rupture occur. The manufacturer does not take any responsibility for such defects.**



## INSTALLATION DIAGRAM

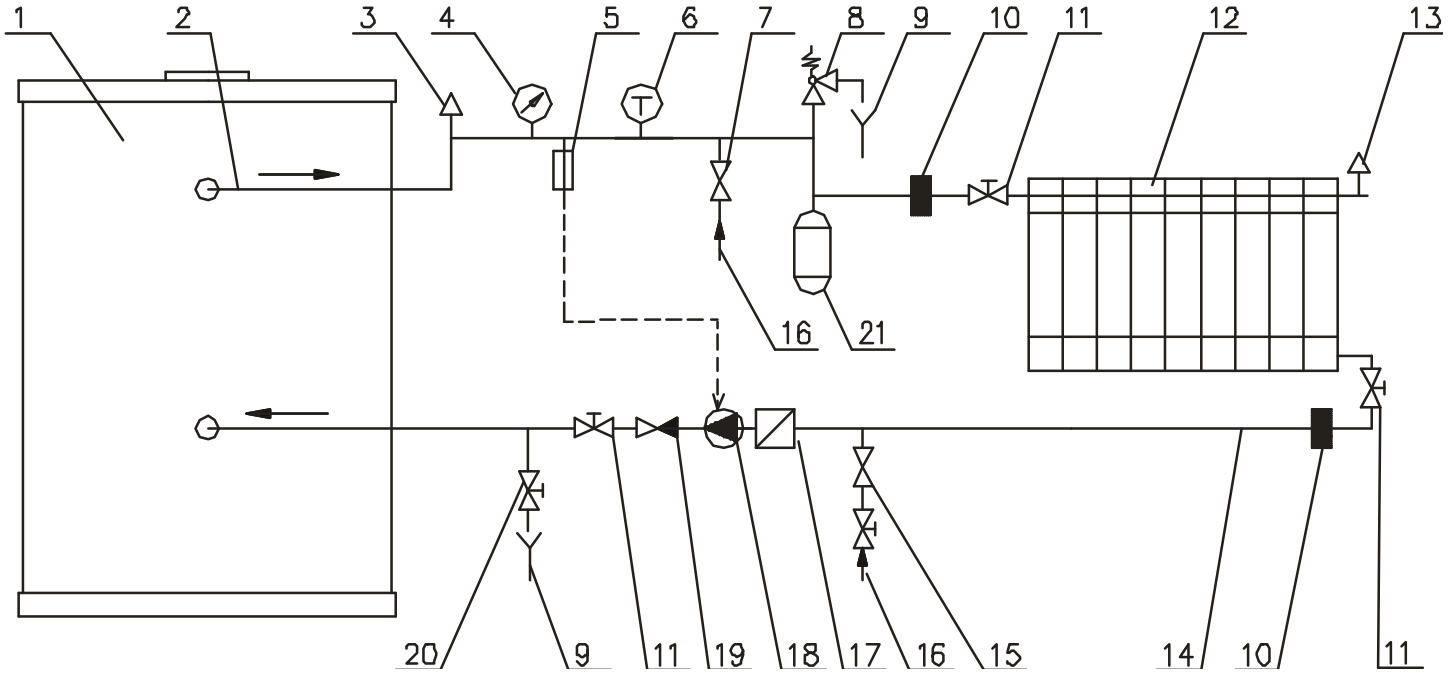
### for connecting of wood-burning stoves and fireplaces with integral boilers type "B" (open heating system)



- |                         |  |
|-------------------------|--|
| 1. Blocking valve       | 9. Overflow drain                                    |
| 2. Deaerator            | 10. Manometer  |
| 3. Radiator             | 11. Hot water pipes                                  |
| 4. Appliance            | 12. Cold water pipes                                 |
| 5. Collector            | 13. Pump   |
| 6. Pump thermoregulator | 14. Filter   |
| 7. Thermometer          | 15. Turn cock for filling and<br>draining the system |
| 8. Opened Expander tank |  |

## INSTALLATION DIAGRAM

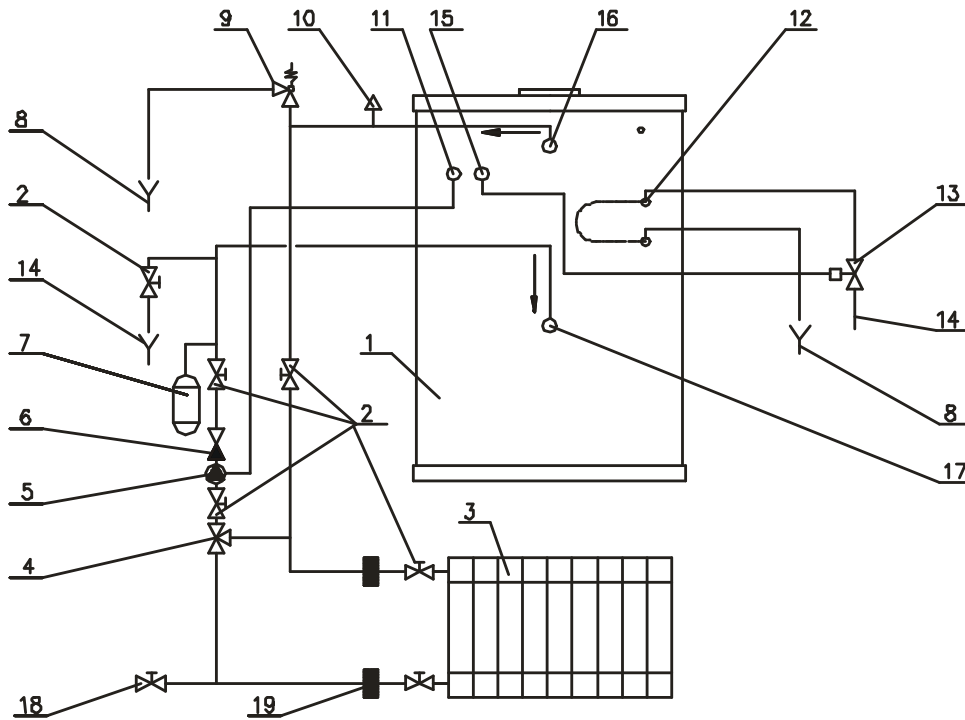
**for connecting of wood-burning stoves and fireplaces with integral boilers type "B\*" (close heating system)**



- |  |   |
|--|---|
| 1. Appliance                           | 12. Radiator                                      |
| 2. Hot water exit                      | 13. Deaerator                                     |
| 3. Automatic deaerator                 | 14. Cold water pipes                              |
| 4. Manometer                           | 15. Automatic filling group (up to 1.5 bar)       |
| 5. Electrical thermostat               | 16. Entry (from water conduit)                    |
| 6. Thermometer                         | 17. Filter  |
| 7. Safety thermo-valve (up to 85°C)    | 18. Pump  |
| 8. Safety hydraulic valve (up to 2bar) | 19. Non-return valve                              |
| 9. Overflow drain system               | 20. Turn cock for filling and draining the system |
| 10. Collector                          | 21. Expander tank                                 |
| 11. Blocking valve                     |   |

## INSTALLATION DIAGRAM

### for connecting of wood-burning stoves and fireplaces with integral boilers type "BO" (close heating system)



- |                           |   |
|---------------------------|---|
| 1. Appliance              | 11. Temperature regulator                         |
| 2. Blocking valve         | 12. Thermal discharger                            |
| 3. Radiator               | 13. Safety valve                                  |
| 4. Control thermo-valve   | 14. Entry (from water conduit)                    |
| 5. Pump                   | 15. Thermo-valve sensor                           |
| 6. Non-return valve       | 16. Hot water exit                                |
| 7. Expander tank          | 17. Cold water entry                              |
| 8. Overflow drain system  | 18. Turn cock for filling and draining the system |
| 9. Safety hydraulic valve | 19. Collector                                     |
| 10. Automatic deaerator   |   |

## Appendix №2

Representative Family	Nominal heat output												Dimensions (mm)			Weight	Seasonal space heating energy efficiency	Energy efficiency index	Energy efficiency class
	Direct heat output	Indirect heat output	Nominal heat output	Max pressure	Useful efficiency at nominal heat output	CO emission	CO emission	PM Emissions	NOx	OGC	Triple value g/s - C° - Pa	Fuel mass							
	Wood (kW)	Wood (kW)	Wood (kW)	(bar)	Wood (%)	Wood (%)	Wood (mg/m <sup>3</sup> )	Wood (mg/m <sup>3</sup> )	Wood (mg/m <sup>3</sup> )	Wood (mg/m <sup>3</sup> )	Wood (mg/m <sup>3</sup> )	Wood (kg/h)	L	B	H	kg	ηs [%]	EEl	
Z100 max g	8,3		8,3		75,1	0,0921	1152	37	100	71	9.41/237/12.8	2,59	806	482	901	142	65	99	A
Z100 max	8,3		8,3		75,1	0,0921	1152	37	100	71	9.41/237/12.8	2,59	806	482	826	148	65	99	A
E100 Lux	13,0		13,0		75,1	0,0921	1152	37	100	71	9.41/237/12.8	3,98	692	439	853	119	65	99	A
Z360	7,0		7,0		80,0	0,0796	995	39	92	62	6.11/175/10.8	2,2	492	492	1035	102	70	106	A
Z100	9,0		9,0		80,0	0,0796	995	39	92	62	6.11/175/10.8	2,76	506	422	1.050	110	70	106	A
Z360 m	7,0		7,0		80,0	0,0796	995	39	92	62	6.11/175/10.8	2,2	494	507	1035	108	70	106	A
D100	7,2		7,2		75,8	0,0988	1235	39	99	81	7.28/233/12	2,16	550	490	1140	152	66	100	A
H100	14,0		14,0		76,9	0,0907	1134	34	118	69	12.02/267/11.7	4,29	682	542	980	147	67	101	A
C400	14,0		14,0		76,9	0,0907	1134	34	118	69	12.02/267/11.7	4,29	755	550	1850	170	67	101	A
Q100 lux	15,0		15,0		76,9	0,0907	1134	34	118	69	12.02/267/11.7	4,60	585	515	1.005	104	67	101	A
H100 sm k	11,0		11,0		76,9	0,0907	1134	34	118	69	12.02/267/11.7	3,37	582	540	985	120	67	101	A
Q100 Max	13,0		13,0		76,9	0,0907	1134	34	118	69	12.02/267/11.7	3,98	668	440	800	92	67	101	A
E100	13,0		13,0		76,9	0,0907	1134	34	118	69	12.02/267/11.7	3,98	692	439	853	114	67	101	A
R100 Lux	11,0		11,0		76,9	0,0907	1134	34	118	69	12.02/267/11.7	2,597	615	424	762	97	67	101	A
C420 b	6,8	7,6	14,4	2	79,5	0,0738	923	36	121	85	10.58/276/12	4,11	755	550	1850	205	70	105	A
Q200 Max b	5,5	7,5	13,0	2	79,5	0,0738	923	36	121	85	10.58/276/12	3,98	668	451	800	118	70	105	A
E200 b	5,5	7,5	13,0	2	79,5	0,0738	923	36	121	85	10.58/276/12	3,98	692	455	853	142	70	105	A
E200 bo	5,5	7,5	13,0	2	79,5	0,0738	923	36	121	85	10.58/276/12	3,98	692	480	853	145	70	105	A
R200 lux b	6,0	5,0	11,0	2	79,5	0,0738	923	36	121	85	10.58/276/12	3,37	615	414	762	122	70	105	A
R200 lux bo	6,0	5,0	11,0	2	79,5	0,0738	923	36	121	85	10.58/276/12	3,37	615	436	762	125	70	105	A
H200 b	6,6	7,6	14,1	2	79,5	0,0738	923	36	121	85	10.58/276/12	4,31	682	542	980	177	70	105	A
H200 bo-tv	6,6	7,6	14,1	2	79,5	0,0738	923	36	121	85	10.58/276/12	4,31	682	562	980	180	70	105	A
Q200 lux b	7,5	7,5	15,0	2	79,5	0,0738	923	36	121	85	10.58/276/12	4,60	585	520	1.005	128	70	105	A
H200 sm kb	4,0	7,0	11,0	2	79,5	0,0738	923	36	121	85	10.58/276/12	3,37	582	540	985	136	70	105	A
L101	7,2		7,2		83,1	0,0773	966	26	85	53	5.16/223/12	2,02	510	419	900	70	73	110	A+
M100	7,2		7,2		83,1	0,0773	966	26	85	53	5.16/223/12	2,02	510	420	950	74	73	110	A+
L100	9,2		9,2		83,1	0,0773	966	26	85	53	5.16/223/12	2,74	556	466	910	90	73	110	A+
N100	9,2		9,2		83,1	0,0773	966	26	85	53	5.16/223/12	2,74	510	486	1.010	98	73	110	A+
Q100	9,0		9,0		83,1	0,0773	966	26	85	53	5.16/223/12	2,76	468	407	811	64	73	110	A+
O100	9,0		9,0		83,1	0,0773	966	26	85	53	5.16/223/12	2,76	470	400	960	75	73	110	A+
P100 lg	9,0		9,0		83,1	0,0773	966	26	85	53	5.16/223/12	2,76	454	400	850	68	73	110	A+
P100	11,9		11,9		83,1	0,0773	966	26	85	53	5.16/223/12	3,92	484	495	913	87	73	110	A+
P100 e	11,9		11,9		83,1	0,0773	966	26	85	53	5.16/223/12	3,92	484	495	913	87	73	110	A+
EV100 lux	12,0		12,0		83,1	0,0773	966	26	85	53	5.16/223/12	3,92	440	465	905	77	73	110	A+
P100 m	10,0		10,0		83,1	0,0773	966	26	85	53	5.16/223/12	3,50	484	497	810	77	73	110	A+
X100	7,0		7,0		83,1	0,0773	966	26	85	53	5.16/223/12	2,02	464	400	920	72	73	110	A+
X100 sm	9,0		9,0		83,1	0,0773	966	26	85	53	5.16/223/12	2,76	454	400	850	59	73	110	A+
N200 b	4,2	5,1	9,3	2	73,4	0,0989	1236	35	108		9.17/272/12	2,86	510	511	1.010	130	63	96	A
P200 b	5,1	7,1	12,1	2	73,4	0,0989	1236	35	108		9.17/272/12	3,75	484	515	913	105	63	96	A

P100 sm	7,0		7,0		80,0	0,0880	1100	40	118	70	4.88/223/12	2,15	380	400	750	47	70	106	A
R100	6,0		6,0		80,0	0,0880	1100	40	118	70	4.88/223/12	1,88	515	405	650	75	70	106	A
S100 lux	8,3		8,3		80,0	0,0880	1100	40	118	70	4.88/223/12	2,36	515	386	650	50	70	106	A
X101	5,0		5,0		80,0	0,0880	1100	40	118	70	4.88/223/12	1,48	384	386	763	46	70	106	A
X101 l	5,0		5,0		80,0	0,0880	1100	40	118	70	4.88/223/12	1,48	384	386	653	41	70	106	A
X101 sl	5,0		5,0		80,0	0,0880	1100	40	118	70	4.88/223/12	1,48	384	386	573	40	70	106	A
H300 sm kf	10,0		10,0		76,9	0,0988	1235	26	100	68	9.93/230/12.8	3,07	582	575	970	132	67	102	A
H300 f	12,0		12,0		76,9	0,0988	1235	26	100	68	9.93/230/12.8	3,68	614	597	1040	182	67	102	A
Q300 lux f	15,0		15,0		76,9	0,0988	1235	26	100	68	9.93/230/12.8	4,60	585	515	1.005	105	67	102	A
P102 l	10,0		10,0		83,1	0,0773	966	26	85	53	5.16/223/12	3,5	452	415	845	50	73	110	A+
P300 f	11,3		11,3		76,9	0,0988	1235	26	100	68	9.93/230/12.8	3,34	484	490	963	100	67	102	A
X102 m	9,8		9,8		82,1	0,0396	495	26	105	71	7.17/244/11.7	2,783	563	453	860	94	73	110	A+
X102	9,8		9,8		82,1	0,0396	495	26	105	71	7.17/244/11.7	2,783	563	453	860	97	73	110	A+
X102 l	9,8		9,8		82,1	0,0396	495	26	105	71	7.17/244/11.7	2,783	563	453	774	86	73	110	A+
X103	7,6		7,6		80,5	0,0834	1043	29	108	32	6.68/225/12,3	2,328	464	395	880	58	72	108	A+
FP420 b	5,1	7,6	12,6	2	79,9	0,0878	1097	37	101	64	11.56/185/12	4,32	695	445	970	160	70	106	A
FP400	10,7		10,7		76,8	0,0802	1003	35	106	96	11.61/227/12	3,42	695	445	701	100	67	101	A

Note: The test results into table are for wood logs with moisture content  $\leq 25$ .



**LINE STOVES LTD**  
Bld. Kuklensko shose №12  
4004 Plovdiv  
Republic of Bulgaria  
phone: +359 32 570 041  
e-mail: [info@linestoves.com](mailto:info@linestoves.com)  
[www.linestoves.com](http://www.linestoves.com)

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