CAST

FUSIONI PER L'INDUSTRIA IN GHISA E ACCIAIO

ELIPTIKO
Wood stove

Item No: S450E

USER GUIDE

Version 1 2020.09.16

Dear customer,

First of all we would like to thank you for having chosen us. You will be satisfied with your choice, as our stove is in the leading category of the similar products due to its features and design.

Yours sincerely,

CAST

CONTENT:

1. INTRODUCTORY REMARKS

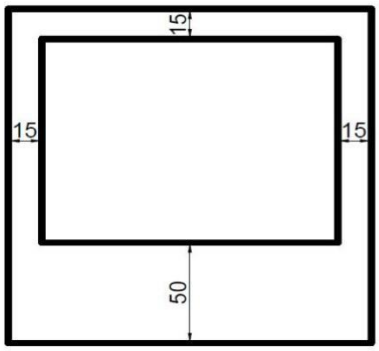
Please read carefully and follow this instruction. Hereinafter you will find data on furnace itself and instructions for its installation and maintenance.

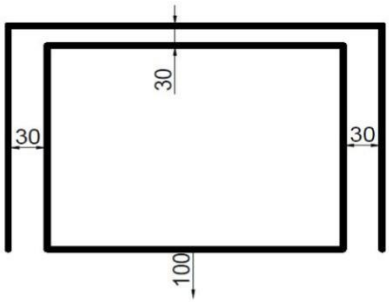
Furnace efficiency and safe work depend on its correct installation, which must be carried out by a professional, in compliance with applicable standards and safety regulations.

When choosing a place to install the furnace, take care of smooth air circulation and floor and surrounding objects to be from fireproof materials.

Consider a load capacity of the floor. If the floor can not bear the weight of furnace, it should be reinforced or provided with additional support structure in consultation with specialists. Also, if the floor is made of any flammable materials, it must be protected by an insulating plate (from steel, bronze, marbel, stone, etc.), extending from the front for at least 50 cm and 15 cm from the sides of furnace. (figure 1)

Keep sofas, chairs, curtains or other, not mentioned, flammable things at the distance of 100 cm from the furnace front .The side of the flammable objects must not be closer than 30cm and 30cm from the rear. (Figure 2)





Cast parts of the furnace are coated with heat-resistant paint. During the first times of use smoke and odour appear as a paint stabilization product. It is therefore necessary to ventilate the room in which the furnace is placed.

The furnace is intended for operation with closed door.

The door may be opened for feeding fuel only. It should be opened slowly in order to equalize the pressure. Sudden opening might cause intensification of the flame and smoke.

Add fuel only when there is a glow in furnace.

Make sure that fuel does not get in contact with glass so as not to become dirty.

The furnace warms up during operation, hence precautions are required.

Do not let children to get close to or play near the furnace.

Ensure continuous supply of fresh combustion air.

It is forbidden to put explosive devices and easily combustible substances in furnace firebox/ hearth or on furnace parts.

Prevent red heat of furnace components. Do not burn any waste materials in the furnace nor use improper fuels.

Installation of incompatible components and modifications without prior approval of the manufacturer are not allowed.

The furnace is made from materials which are NOT harmful to health. The manufacturer reserves the right to make changes to the appearance and dimensions of the model without prior notice.

Packaging material is to be disposed on place foreseen for that purpose. Cardboard, wood or plastic pieces placed into furnace firebox must be removed before the furnace use. Beware of nails when taking off the packaging material.

Disposal of furnace which will be no longer used is to be done at designated places, in accordance with ecology codes and local regulations for disposal of waste materials.

THE MANUFACTURER SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE ARISING FROM DISREGARD OF THIS INSTRUCTION.

2. TECHNICAL FEATURES

Definition: Solid fuel furnace tested in accordance with **EN 13240**

Design system	*
Power in kW	7,5
Efficiency in %	77,4
Smoke exhaust pipe dia in mm	120
Air supply pipe dia in mm	100
Maximum qty of fuel – wood in kg	2
Mean CO content at 13% O_2, expressed in % Dast (mg/Nm3)	0.0779 36
Firebox door size in mm (W x H)	260 x 352
Firebox size (W x H x D)	350x258x255
Grid type	Turning grid
Furnace height in mm	800 (with upper exhaust 860)
Furnace width in mm	477
Furnace depth in mm	473,5
Weight in kg	116
Rear smoke exhaust (axis height from floor) in mm	670
Air supply (axis height from floor) in mm	296

Auxiliaries: glove, key

□ *** The furnace adopts the self-closing system**

□ *** The furnace does not adopt the self-closing system**

3. FURNACE OPERATION

3.1. Description

The purpose of this furnace is the indoor heating. The heat is emitted through the glass of the firebox door and cast furnace parts.

Furnace components are made from the cast iron and the firebox door front is from the heat-resistant glass.

On the back, the furnace is equipped with a central supplying system for combustion air. Through a flexible hose of 100 mm diameter the combustion air is supplied from the external environment.

The furnace has a primary and secondary air controller which sets the required combustion air volume, as well as a continuous air supply from the firebox rear, through fixed holes.

Primary air regulator has to be completely open during firing (15-20 minutes).

After stabilisation of furnace operation , primar air regulator should be shut.Secondary regulator keeps front glass clean and enables additional combustion.

3.2. Installation

Installation requires support of professionals who are familiar with safety regulations concerning the furnace installation. Incorrectly installed furnace may provoke accidents (fire in chimney, burning of insulation, etc.).

3.3. Start-up

At first furnace ignition smoke and odour occur, emanating from the protective paint. This is normal as paint only stabilizes at temperatures above 350°C. IT IS NECESSARY TO VENTILATE THE ROOM.

Prior to firing all components of the furnace have to be wiped with dry cloth and thus freed from dust and dirt.

During the first furnace utilizations the quantity of fuel is to be halved compared to the prescribed quantities in order to test and break-in the furnace.

3.4. Site ventilation

In case there is no external combustion air supply, the room in which the furnace is placed must be adequately ventilated.

Sufficient ventilation is essential for regular functioning of the furnace without risk to people who use the room as the furnace consumes oxygen from the air. It is imperative that there must be adjustable air vents in the room.

4. CHIMNEY

Special attention should be paid to quality of the chimney which is to be designed according to respective standards. The chimney has to be upkept regularly. The furnace is connected to the chimney through connection aperture on its upper or back side and appropriate flue pipes in a manner that provides required tightness and unhindered flow of the smoke from furnace to the chimney. The flue pipe must not penetrate to deep into chimney as it could then reduce the cross sectional area and thus undermine draught in the chimney.

4.1. Air circulation

Inadequate circulation of air is the only reason for most complaints to the poor furnace performance! Draught needed for this type of furnace is 12 Pa.

Lower value does not provide proper combustion which results in the buildup of carbon and an excessive amount of smoke.

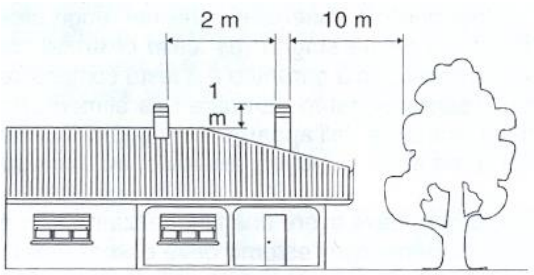
In case of too high air flow, the combustion will be done too fast and the heat will be lost through chimney. For draught rates exceeding 15 Pa air flow has to be reduced by installation of mufflers.

Improper air flow indicators are:

- dirty glass,
- smoke leaking into the room,
- furnace overheat,
- improper burning.

4.2. General features

For better air streaming through the chimney the latter must exceed the roof edge for at least one meter. Chimney must not be sheltered by surrounding objects.



The chimney ensures extraction of smoke even when there are strong horizontal winds and unfavorable weather conditions, and prevents smoke's reversal. Because of that chimney is the most common cause of dissatisfaction and complaints.

Deficient maintenance of the chimney can hinder the smoke flow as material from which the chimney is made, such as mortar, bricks and other, may fall in or there may be a combustion product deposits and intrusion of foreign objects.

The chimney must be thermally insulated as otherwise condensation occurs. Surface of the chimney inside components should be smooth and made of heat- and chemicals-resistant materials.

4.3. Furnace connection to chimney

The connecting pipe has to be as short as possible and connection spots hermetic. Connection to the chimney must be done by stable and strong pipes. The exhaust pipe has to be tightly fixed to the chimney.

ATTENTION:

Potential flammable parts which are 20 cm away from the connecting pipe must be replaced by fireproof elements and heat-resistant materials.

Metallic pipe that connects furnace and chimney must not have diameter lesser than that of the furnace outlet hole.

Try to avoid to many curves and horizontals, if possible. Otherwise, make sure that there is always an incline of at least 2/3 cm per meter of length.

It is strictly forbidden to connect some additional device using gas or easy evaporating fuels to the same chimney to which is your Eliptiko furnace already connected to.

Do not reduce chimney cross-section by inserting too deep the furnace-chimney connecting pipe.

The optimum draught in the chimney is 12 Pa. Measurement is to be carried out while the furnace is warm. If measured draught is higher than 15 Pa, it is necessary to decrease it by building in an additional regulation valve into exhaust pipe or chimney.

4.4. Chimney cleaning

The recommendation is to clean the chimney before the start of each heating season. This work is to be done by a chimney-sweeper who at the same time may revise the chimney (check on eventual deposits).

Cleaning should be performed every time you notice that the flow of exhaust gases is reduced.

Use auxiliary fixtures and protective appliances when removing soot and unburnt fuel residues.

5. FIREWOOD

Use exclusively dry wood! You should not only choose a high-quality wood, but it has to be dry at the time in which you use it.

Bear in mind the fact that caloric value of wood significantly drops when the wood is wet, since presence of humidity means that a large part of the produced heat is used to evaporate moisture, moreover, risk of coggling grows rapidly at condensation of moisture in the chimney.

The optimum wood humidity amounts up to 20%.

5.1 Drying

Wet wood both burns poorly and makes firing harder, reduces furnace efficiency and damages the chimney. Furthermore, water vapor transports products of condensation, such as acetic acid, alcohol, methyl alcohol and tar, which facilitate formation of deposits harmful to your furnace and chimney.

Freshly cut wood is bad for fuel. The major portion of energy it generates is used up for moisture evaporation, given young bark-free tree contains around 75% of water.

In order to get dry wood (of 15%-20% moisture content), a tree must be cut in the winter to the desired length and cut to pieces with a maximum diameter of 8 - 15 cm. Then you must leave it in sheltered and ventilated place for at least 2 years (4 for oak, first to expose it to rain to eliminate tannin). Wood must be stockpiled in a manner that provides sufficient air circulation for release of moisture.

DO NOT EVER USE:

Unripe or wet wood, wood already used for other purposes (painted and oiled wood, sleepers, plywood chips, etc.), coke and very caloric coal.

USE OF THE ABOVE SAID MATERIALS AND DAMAGES ARISING FROM IT WILL VOID THE WARRANTY AND MANUFACTURER'S LIABILITY

6. WEAR PARTS

Following parts are considered wear parts which are not subject to warranty:

All gaskets, glass components, firebox lining, paint, ceramics and components with chemical coatings (chrome-plated, nickel-plated and galvanized parts). The warranty does not cover damage caused by wrong installation, improper connection adverse to instructions supplied with the product, or by malfunction due to incompetent or unauthorized utilization.

7. OUT-OF-SEASON INSTRUCTIONS

After you have cleaned firebox, flue pipes and chimney and completely removed ash and other residues, you ought to close the firebox door and regulators; if you plan to separate the furnace from the chimney, you have to close connection holes and thus enable use of the chimney for other devices connected to it.

Chimney sweeping should be done at least once a year. Gaskets and sealings should be checked and replaced if so required.

If there is any moisture in a room where the furnace will be kept, we suggest you to put some air drying substances into firebox. If you wish to maintain the aesthetic appearance of the furnace, it is important to protect its inner walls of cast iron by neutral Vaseline.

8. PROCEEDING IN CASE OF IRREGULARITY

8.1. Functional difficulties

- Check whether the pipe correctly enters the chimney
- Check the chimney draught
- Check thermal insulation and design appropriateness of the chimney
- Check air regulator operation
- Check the air supply to the furnace
- Check fuel

8.2. Glass pollution

- Check fuel quality, use dry firewood (with max 20% moisture)
- Too much fuel in the firebox
- Unsufficient air flow (look at connection to the chimney)
- Faulty regulation: in case secondary air regulator is off/ closed, glass becomes dirty in a short period.

8.3. Condensation

-Over the first few firings occurrence of condensation is normal; it results from the different surrounding and furnace temperatures

-In case of an persisting problem check used firewood, as it must not be wet nor poorly dried.

-The chimney must not have defects and should not too quickly cool the exhaust gas.

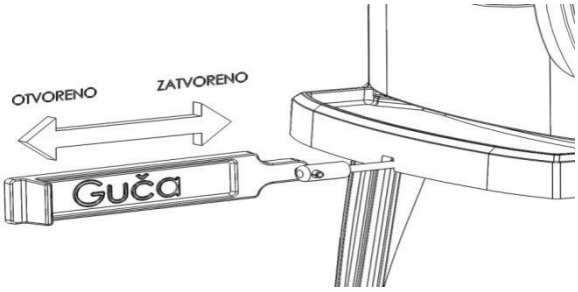
9. TECHNICAL DESCRIPTION

9.1. PRIMARY air control

Using the controller, which is located below the oven door can be adjusted for the passage of air through the space for the ashtray and the grid in the direction of fuel. During the combustion of wood, primary air regulator should be opened only when needed (arson, adding more fuel and ignition of accumulated embers), otherwise the wood burns quickly and the oven may overheat.

The primary air necessary for the process of firing the fire. Work of the primary controller is shown in picture .

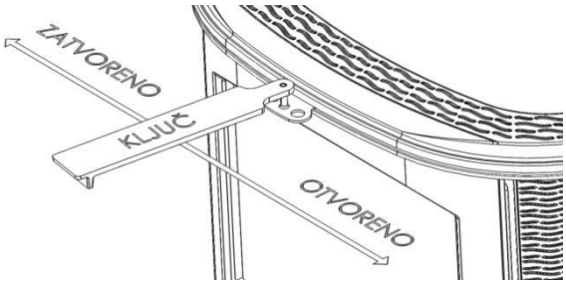
- opened - - closed -



9.2. SECONDARY air control

Secondary air control is performed by moving horizontally the regulator which is installed above the door. When the regulator is opened (handle pulled to the right), firewood burns better. The regulator should be opened as the furnace works, since in this case the glass remains clean.

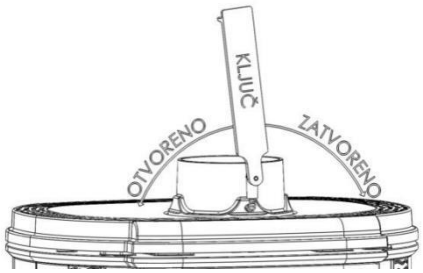
- closed - - key - - opened -



9.3.Exhaust gases control

Our model is equipped with a device that provides option of exhaust gases control. Opening and closing of the valve which is mounted on chimney wall is showed in the picture below.

- opened - - key - - closed -



10. INSTALLATION

The furnace needs to be connected to corresponding chimney. Connection has to be possibly short, straight or slightly curved up. Links must be tight. **Honouring National and European rules and local regulations concerning construction and firefighting rules is mandatory. Please contact your chimney sweep for more information.**

There must be enough inlet combustion air at the installation site. Diameter of flue connecting pipes has to be at least adjusted to the smoke exhaust diameter (Ø120 mm). The aperture has to be connected to the wall in order to enable the acceptance of the exhaust pipe.

Prior to installation do check whether your floor fits to the furnace weight; in case of insufficient load capacity measures for its increase are to be taken.

11. FIRE SAFETY

Following precautions must be taken during the installation of the furnace:

a) Minimum safe distance from objects and flammable or heat-sensitive pieces of furniture must be kept (furniture, wooden and plastic things, clothes, paper and other flammable materials). **All set minimum safe distances must be honoured**, **lower values MUST NOT apply.**

b) None flammable objects or materials may be held in front of the furnace. The minimum distance at which such objects may be placed is **100 cm**. If the furnace is installed on groundwork from easy flammable materials, such groundwork has to be plated with refractory material.

c) If the product is installed on a floor which is not fireproof, you must insert under the furnace some fireproof foundation (eg. metal or stone plate). The size of such plate has to be bigger than that of the furnace base, **15 cm** sideways and **50 cm** before the door.

d) Above the furnace must not be any flammable materials.

e) The ash drawer must be pulled in while the furnace operates. Solid combustion rests (ash) have to be gathered in one hermetic, fireproof container.

The furnace must not be fired in presence of any gases or steam in the atmosphere (eg. glue, gasoline and alike). Do never leave flammable materials close to the furnace.

f) The door of the furnace must be closed when furnace operates.

g) Usage of unsuitable or humid fuel causes creosote deposits on chimney walls, which in long term may lead to chimney firing.

11.1. FIRST AID MEASURES

In case that flue or chimney catch fire, you need to:

a) Close the door,

b) Close the combustion air regulators,

c) Extinguish fire using firefighting device CO2 type or dry „S" powder,

d) Call FIREMEN.

DON'T USE WATER JET TO EXTINGUISH FIRE.

After extinguishing the fire, the chimney has to be inspected by specialist on eventual cracks or leaking spots.

12. AIR SUPPLY TO THE INSTALLATION SPOT DURING THE COMBUSTION

Our model is provided with a central combustion air inlet, to which flexible hose of 100mm dia is connected. The combustion air is obtained from outside.

If you are not in position to supply the air from outside, the furnace will take air for combustion on the installation site, through outlet on its back lower part. The outlet must not be closed or reduced in diameter.

In case of hermetically closing doors and windows (eg. houses built adhering to energy efficiency criteria), the ventilation and air circulation might not be guaranteed, endagering thus people's well-being and safety. It is necessary to ensure air input into the room where the furnace is. This can be done through the external air hole and the required air volume to be provided is up to 20m^3/h. The air entry spot has to be protected by net or shutter.

Aspirator mounted in the room generates depression with the exhaust combustion gases (smoke, odour). It is therefore necessary to enable better circulation of the fresh air.

Depression in the aspirator may suck in the smoke which would have adverse consequences to human health.

13. PERMITTED/PROHIBITED FUEL

As permitted fuel are regarded chopped wood, wooden and anthracite coal briquettes. Wooden fuel must be asolutely dry (max. content of moisture to be 20%). In the firebox may be put maximum 2 or 3 pieces of wood at once, whose length should be 25-35 cm and max. circumference 25-30 cm.

Wet wood makes firing harder as more energy is required for vaporization of water contained in wood. Presence of moisture is disadvanategous because as the temperature goes down, the water condensates first in furnace hearth, then in the chimney. **Among others, following materials must not be fired: coal rests, bark rests, wet or lacquered wood, plastic materials, materials of organic origin; otherwise the product warranty shall not apply.**

Paper and cardboard may only be used to put regular fuel on fire.

Burning of waste materials is FORBIDDEN as this could damage both furnace and chimney, cause health damage or unpleasant smell.

The wood is not a fuel which enables uninterrupted furnace operation, therefore heating all over the night is not feasible.

ATTENTION: continuous usage of aromatic firewood impairs furnace's cast iron parts.

14. FIRING

At first furnace usage specific odour will be felt as a result of protective paint stabilization. Provide for sufficient room ventilation. At the very first firing usage of smaller firewood quantity and gradual temperature raise are recommended.

Over the course of firing following issues are to be monitored:

1. Check whether there is enough air flow in the room where the furnace is placed.

2. Do not overload the firebox during the first few firings (put not less than half of the wood volume stated in the manual) and keep fire for 6-10 hours uninterruptedly. Regulators must be opened lesser than prescribed in the manual.

3. Repeat this operation 4-5 or more times.

4. Later you can increase the fuel volume (in accordance with the maximum load from the manual) and keep fire for a longer period.

5. During the initial firings do not put any objects on furnace nor bring them in contact with its painted areas.

6. After this start-up period you can use your product according to the manual, avoiding sudden heating and overloading.

7. To set fire use small wood pieces and paper or some other means for ignition. Usage of fluids of any kind, such as alcohol, gasoline or oil is FORBIDDEN.

Setting fire: Open the primary and secondary air controls as well as the valve for exhaust gas regulation and set the fire.

After having established a stabel operating mode (10 to 15 min), set the regulator of the primary control to aimed mode of operation.

The air apertures (primary and secondary) have to be opened jointly only until the stable furnace operation is achieved. The furnace must never be overloaded.

Too much fuel and too much combustion air may cause overheating and

damage of the furnace.

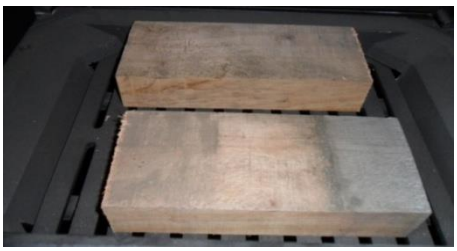
15. REGULAR EXPLOITATION

NOTE: Out of safety reasons the firebox door may be opened while the furnace works only to refill the fuel. Taking into account the large size of the hearth door, add further portion of fuel only when the initial glow is made and not when the fire already burns intensively.

Before opening the hearth door check if the initial glow is made (fire intensity has to be low), open the primary air regulator and the valve for exhaust gases .

In order to equalize subpressure close the door to 2-3 cm, keep it in this position for 10 seconds.

Now open the door, feed the firewood, place the firewood along grid (distance between woods should be cca.2cm , as shown on pictures.



You should place second layer of firewood criss-cross like shown on pictures.

Again , distance between woods should be cca.2cm.

Close the combustion chamber door and after stabilisation of the first flame (approximately after 5

minutes) close the primary air regulator .

Openings for air (primary and secondary) should be open together only until stabilisation of fireplace operation is achieved.

Best combustion is achieved when most of combustion air goes through secondary air regulator.

Never overload the furnace!

The warranty does not cover any damage due to overheating.

You should always use your fireplace with door shut in order to avoid overheating.

Regulation should be set as follows:

Fuel	Secondary air	Primary air
Wood	Open	Shut

Quantity of wood per hour : 1.8- 2,0 kg

16. OPERATION IN THE INTERIM PERIOD

In periods inbetween of seasons, when outside temperatures are higher, or if the temperature rises suddenly, it may happen that combustion gases cannot be completely pulled out of the chimney.

Remaining gas can be identified by sharp smell; to overcome this situation shake the grate more often, increase combustion air flow and add small quantities of fuel which will burn up faster and thus stabilize the air flow.

Check if cleaning holes and connections to chimney are well closed.

17. CLEANING

17.1. Furnace cleaning

Clean painted areas with soapy water or non-agressive and chemically neutral, non-abrasive materials at cold furnace. Dry washed surfaces.

Use water and detergent to clean glass. Glass must be dry prior to furnace usage. Do not use abrasive means which impair glass surfaces.

17.2. Cleaning of flue pipes

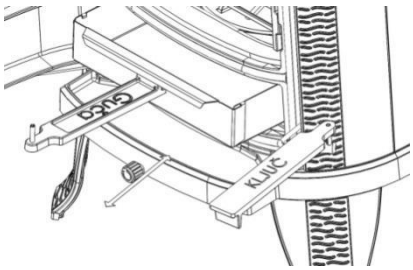
The entire device must be thoroughly cleaned at least once in a year, or always when necessary (in case of faulty function). Clean flue pipes only at cold furnace (when it does not operate).

17.3. Cleaning of ash drawer

We recommend daily removal of ashes. Never let ash to form deposits reaching the grate, as this would impair the primary air circulation and slowly put out the fire.

ATTENTION: Removed ash must be disposed in fireproof container with a tight cover. The container must be placed on not-flammable ground. Use auxiliary fixtures to empty the ashtray.

The auxiliary fixtures are also used for shaking glow and ashtray under the grate, as shown in picture below.



- key -

17.4. Period when furnace is not in use

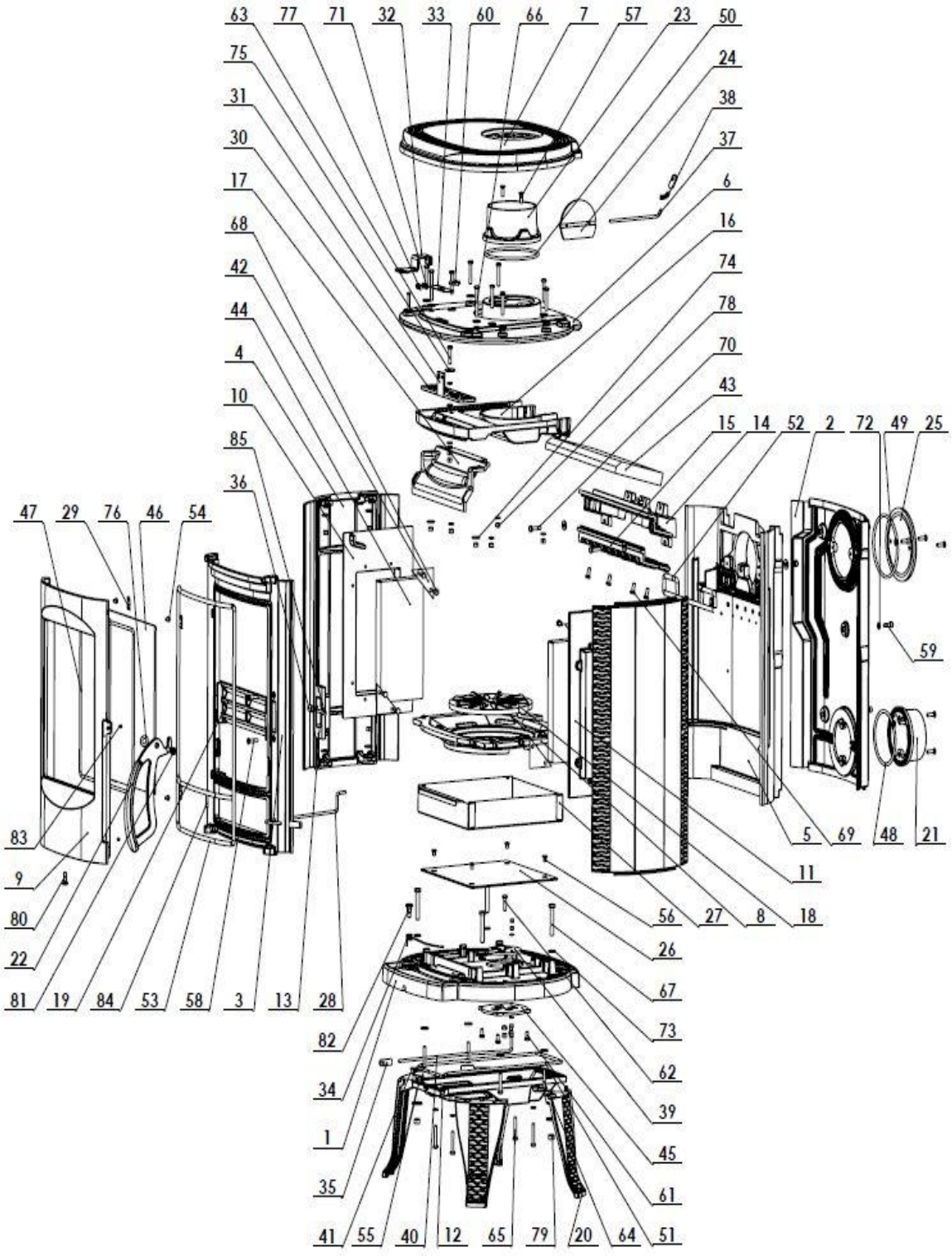
Clean firebox, pipes and chimney and try to completely remove ash and other residues. Meanwhile check condition of gaskets and sealings. In case of not satisfactory result replace them to ensure good furnace performance.

If there is moisture around the furnace, put some air drying substance in its hearth. If you wish to maintain the aesthetic appearance of the furnace, it is important to protect its inner walls of cast iron by neutral Vaseline.

Hopefully you have thoroughly studied this instruction so you will not face any difficulties while using the furnace.

For any claims please contact your seller/ local dealer or furnace manufacturer.

18. FURNACE COMPONENTS



Made in Serbia

Poz.	Oznaka/Standard	Kom.
1	P.400	1
2	P.401	1
3	P.402	1
4	P.403	2
5	P.404	1
6	P.405	1
7	P.406	1
8	P.407	1
9	P.408	1
10	P.409	2
11	P.410	1
12	P.411	1
13	P.412	1
14	P.413	1
15	P.414	1
16	P.415	1
17	P.416	1
18	P.417	1
19	P.418	4
20	P.419	1
21	P.423	1
22	P.305	1
23	P.306	1
24	P.014	1
25	P.420	1
26	P.421	1

Poz.	Oznaka/Standard	Kom.
27	P.422	1
28	P.424	4
29	P.425	1
30	P.426	1
31	P.427	1
32	P.428	1
33	P.429	1
34	P.032	2
35	P.034	1
36	P.317	1
37	P.318	1
38	VS.005	1
39		1
40		1
41		1
42		1
43		1
44		1
45		1
46	P.430	1
47	P397	1
48	DIN 7985, ISO 7045	4
49	DIN 965, ISO 7046	5
50	DIN 965, ISO 7046	6
51	DIN 965, ISO 7046	2

Poz.	Oznaka/Standard	Kom.
52	DIN 912, ISO 4762	5
53	DIN 933, ISO 4017	4
54	DIN 933, ISO 4017	2
55	DIN 933, ISO 4017	4
56	DIN 933, ISO 4017	4
57	DIN 933, ISO 4017	1
58	DIN 933, ISO 4017	4
59	DIN 933, ISO 4017	12
60	DIN 933, ISO 4017	3
61	DIN 933, ISO 4017	4
62	DIN 125, ISO 7089	2
63	DIN 125, ISO 7089	17
64	DIN 125, ISO 7089	4
65	DIN 522, ISO 4759-3	30
66	DIN 522, ISO 4759-3	5
67	DIN 137 - A - M10	1
68	DIN 934, ISO 4032	2
69	DIN 934, ISO 4032	17
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71	DIN 923	1
72	DIN 923	1
73	DIN 923	1
74	DIN 914, ISO 4027	2
75	DIN 660, ISO 1051	2
76	DIN 660, ISO 1051	1