



EASYSYSTEM®



ANAPA SOCHI GELENDZHIK

INSTALLATION AND MAINTENANCE

We thank you for having chosen EasySteam and appreciate your interest in our products.

Producing furnaces for Russian banyas we try to make them easy-to-use, long-lasting and safe to work with. Technical characteristics and design features of furnaces were tested in the conditions of Russian steam rooms which allows us to make a statement that «EasySteam»'s furnaces are made for true Russian banyas!

By installing the furnace made in "EasySteam" company in your family-owned steam room, you'll get the optimum correlation between the temperature and air humidity (microclimate) which will be perfect for you. Make your own Russian banya! Banya with its intrinsic pleasant warmth and easy steam!

For correct and safe furnace exploitation, read this instruction carefully!

Enjoy your bath,
"EasySteam" company

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Installation and all operating and maintaining activities should be performed after reading this manual.

Made in Russia



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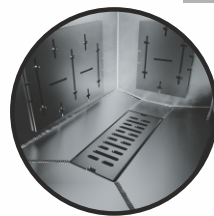
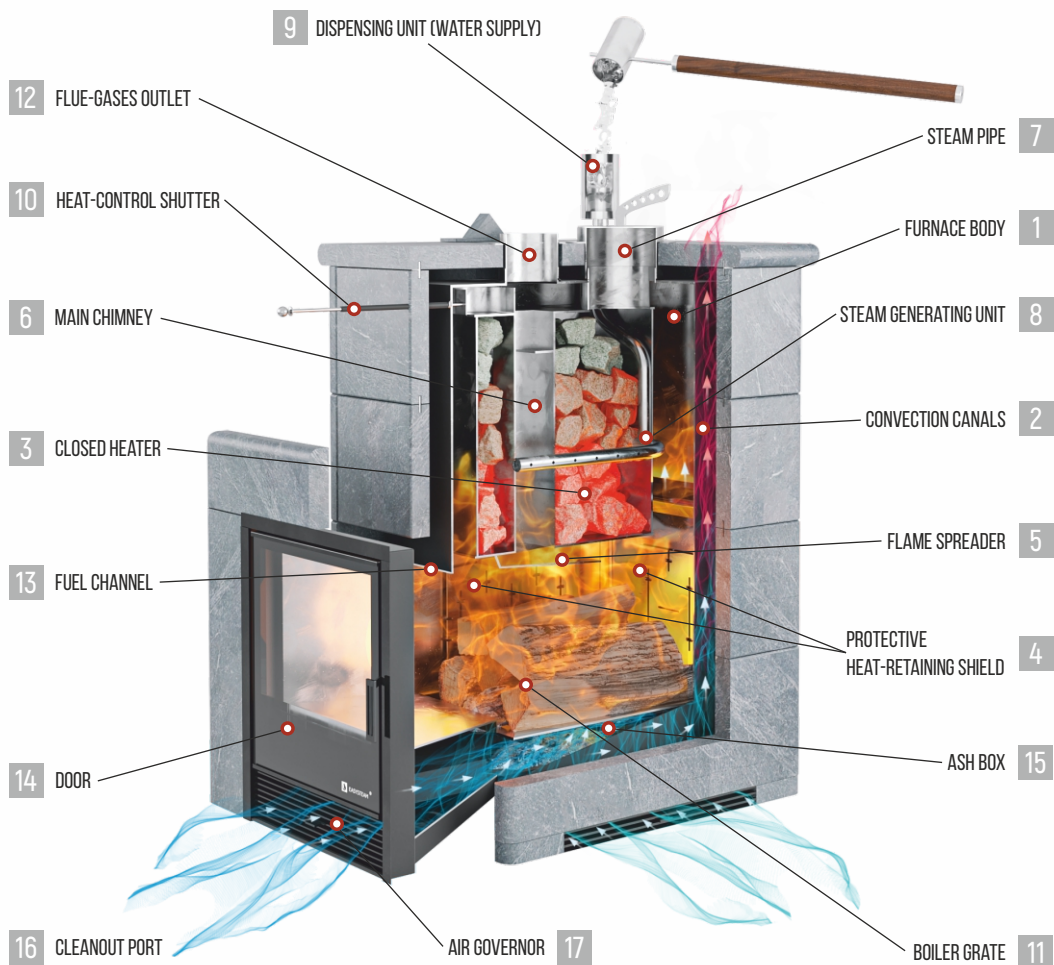
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PRODUCT PURPOSE

Wood-burning heater is designed for creating true Russian banya temperature-humidity conditions in your sweating room. You will get as much easy steam as you want.

In order to use the furnace for other purposes, you need to have a written permission of the manufacturer. If the furnace is used for commercial purposes as well as if the furnace is burning for more than 10 hours, all guarantee obligations would be declared null and void and manufacturer will not be held liable for any potential adverse consequences.

PRODUCT DESCRIPTION



When the gas equipment is installed, the heat-control shutter and the main chimney shouldn't be installed.

"EasySteam" company's furnaces are made from stainless heat-resistant steel with chrome content not less than 17% and wall thickness more than 4 mm. The furnace body (point 1) is a complex bent-welded structure with additional elements to reinforce the construction. There are convection canals (point 2) on the outside of side-walls. Maintaining the flame temperature high inside the furnace is essential for the heating up of the heater's filling (point 3) to the uttermost. There are protective heat-retaining shields (point 4) inside the furnace which help to redistribute the temperature load inside the furnace, significantly increase the heat energy transfer to the bottom of the heater and to take the load off the load-bearing wall.

The heater is a complex reservoir in the center of the furnace.

In order to fully and evenly heat up the heater's filling and to be able to regulate the heating process, there is a main chimney (point 6) in the heater in addition to manufacturing clearances between the heater and the furnace body. The flame spreader (point 5) is installed in the furnace to prevent the penetration of high-temperature flame in the chimney flue through the main chimney. When the flame spreader is working the most flames are staying in the furnace heating it up and only combustion gases end up in the chimney.

In order to equally distribute the load of massive heater's filling, the heater's bottom is made semicircular that also let's to increase the heating area and to prevent the bottom elevated-temperature deformation. Maintenance of the equipment is done through the steam pipe (point 7).вых нагрузках.

Due to the fact that in the operating process the heater is one of the most loaded elements, total mass of the filling shouldn't exceed the maximum value mentioned in this manual!

Steam generating unit (point 8), which is a complex system of vertical and horizontal pipes, is installed in the heater to get high quality finely dispersed steam. Pin-holes are made in horizontal pipes to ensure even distribution of steam-water mixture over the most heated-up bottom layer of the heater's filling. The dispensing unit is attached to the upper part of the steam generating unit. There is a safety (back pressure) valve in order to prevent an unpermitted emission of steam-water mixture in the opposite direction.

Before usage, it is necessary to check the performance capability of the dispensing unit. Remove (screw off) the dispensing unit and examine the safety valve. In case of discovering of foreign object (small pieces of bath besom or so on), remove them and wash the device properly.

Performance capability of the safety valve is checked by shaking if the valve is functional, you will hear a distinctive sound of valve jingling in both ways which indicates that nothing blocks its movement.

On the front wall of the furnace there is a heat-control shutter (point 10) which allows the furnace to operate in two modes: "intensive heating up of the sweating room" and "intensive heating up of the heater"

The boiler grate (point 11) is installed at the bottom of the furnace. Through the slots in the grate the air comes to the heater which is essential for high-temperature combustion process. Combustion products also get to the ash box (point 15) through the boiler grate.

At the top of the furnace there is a flue-gases outlet (point 12), a steam pipe (point 7), a pipe of a steam generating unit to connect it to the dispensing unit, and a cleanout port (point 16).

The cleanout port serves to clean and examine manufacturing clearances between the heater and the furnace body. Examine manufacturing clearances not less than once a year or when there is a difficulty of a chimney draft. In case if there is a lot of soot in the clearances, clear it off with a flexible brush for smoke pipes (pic.1). In order to get to cleanout port, ease off the cap nut on the lid of the cleanout port with a 13 mm wrench. While lifting the nut up, make three full rotations (don't unscrew the nut completely) then move the lid of the cleanout port aside and take it out of the port. Put the lid of the cleanout port back after the examination and tighten the cap nut.

The front of a furnace consists of a specially shaped frame with a door (point 14) and air governor (point 17) attached to it.

The front of a furnace and its body are separated by the fuel channel (point 13) which allows lighting the furnace from a room adjacent to the sweating one.

The furnace is painted with black organosilicone enamel.



Pic. 1 Flexible brush for smoke pipes

FURNACE PREPARATION FO USE

Before installation, you should test-light the furnace outdoors for 4-5 hours. During the first burning, all technical components (dirt, occupational dust and so on), which got on the furnace during the transportation and warehouse or production storage, will burn out.

Before putting the furnace into exploitation, make sure that all installation works were completed according to the requirements of this manual or to instructions for constituent parts made by other supplier!

When developing your banyas' project and installing the furnace, it is NECESSARY to ensure that all fire safety standards mentioned in the Code of Practice (CP) 112.13330.2011* "Fire safety of buildings and facilities" and CP 7.13130.2013 "Heating, ventilation and conditioning. Fire safety requirements. With Amendment No.1 & Amendment No.2" are met. Non-compliance with safety standards can cause a fire.

Furnace and chimney should be regularly checked. In case if there is any malfunction of the equipment, you should immediately stop exploiting the furnace and contact our specialists to get a troubleshooting assistance on a possible cause of this failure and remedial procedures to fix it.

Our main chimneys are made of stainless heat-resistant steel AISI 316 (310, 321) with wall thickness not less than 0.8 mm in the brick or stone cover which is fixated with a decorative sheet (economizer).

The minimum distance between the cover and inflammable surfaces is 500 mm.

The protective heat-resisting shield in the front of the furnace should be as high as the full height of the room (pic. 4).

While in operation the furnace has a thermal expansion of 3-5 mm. This should be taken into account in the process of installation.

It is prohibited to place the flue channel of the furnace outside. The furnace cannot be lighted up from the outdoors.

The pass-through in floors and in the roof should be made fire-proofed according to the CP 7.13130.2013.

The floor in front of the door should be covered with a metal sheet in size of 700*500 mm in order to shield it from the combustible materials.

Combined extract-and-input ventilation is installed in the sweating room to insure good ventilation.

In the far corner away from the furnace, there is should be a small window under the ceiling to remove the carbon dioxide accumulated during the respiration.

The laying of the filling in the inner heater is done through the steam pipe at the top of the furnace. The laying of the filling in the outer heater is done through clearances between the cover and the wall.

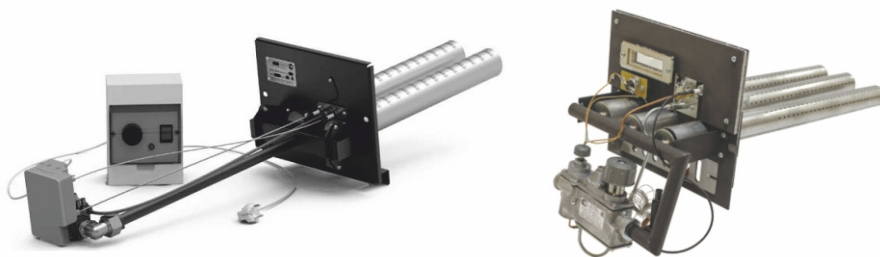
Not every type of stone is suitable for the furnace! Undefined stones of unknown origin should not be used!

As the filling for the inner heater we recommend you to use following stones: gabbro-diabase, jadeite, quartzite, quartz, porphyrite, jasper and so on. They have high heat absorption capacity, don't contain any harmful impurities and won't be affected by changes of temperature. Before laying stones in the heater, clean them of any foreign particles and wash properly with hot water.

On the bottom of the heater, under the steam generating unit, lay stones of 100x80x70 mm fraction. Then it is recommended to lay bigger stones and fill up cavities with smaller fractions.

In order to avoid damaging the furnace, it is not recommended to make a monolithic-type laying of stones. You should always leave some space between the stones. Total mass of the filling shouldn't exceed the maximum value mentioned in this manual!

To be able to use natural or liquefied gas as fuel, burner units of the ГГУ or CA5K-T5 series were installed at the factory.



Pic. 2 Burner units' appearance

Burner units are installed in the burner and fixated with fasteners. For more detailed information on the installation, utilization and technical characteristics see the instructions for burner units.

The appearance of burners unit may differ from the one presented in the picture 2

FURNACE OPERATION

Proper burning of the furnace significantly increases the service life and reduces a risk of fire breaking-out. A recommended heater's load is 50-70 % of its volume. The most appropriate fuel for the furnace is dry wood of deciduous hardwood trees (birches, aspens, alders). High quality fuel briquettes made of pressed sawdust may also be used.

It is prohibited to burn coal or peat in the furnace.

To light a furnace, put a woodpile (5-7 logs) in the burner and pull out the heat-control shutter ("intensive heating up of the sweating room" mode).

It is prohibited to light the furnace with highly inflammable liquids.

Log must not be longer than the length which is specified in the technical specifications! This could lead to smoking of the glass and overheating of the furnace portal.

Some time after lighting up the furnace, an intensive combustion process starts, and high-temperature gases go up through manufacturing clearances between the heater and the furnace body as well as through the main chimney and engulf the heater in flames.

At the highest point high-temperature gases run against the top of the furnace and form a circle around the heater, in so doing, enhancing the heating-up of the inner filling.

Oxygen, that is essential for high-temperature combustion in the lower part of the heater, comes in directly through the boiler grate.

High-temperature combustion is a process directly connected with oxygen input, which is regulated by using air governor.

Proper installation of main chimney prevents flue gases from getting into the room even if the furnace door is open.

Heating-up of the heater is directly connected to stones' (inner filling) heating-up.

When in service, walls of the furnace and the heater can undergo a slight deformation, which won't affect weld's leak-tightness. This is not a spoilage.

Well heated heater guarantees that you'll enjoy your easy steam!

In order to create true Russian banya temperature-humidity conditions in your sweating room, the furnace is installed with protective heat-retaining shields.

It is prohibited to cover the furnace with a chamotte with a wall-to-wall cover made of bricks or natural stones.

When the furnace is equipped with a heat-retaining screen (look "protective heat-retaining shield"), the process of air circulation takes place which helps to heat-up the sweating room much faster.

The temperature in the sweating room is regulated by opening or closing of the convection door in the shield (look "protective heat-retaining shield").

Protective shield absorbs direct radiation of heated furnace walls, prevents getting burns, makes outcoming warmth even more gentle and comfortable as well as allows regulating the temperature in the sweating room with a precision up to 10 degrees. The warmth accumulated by the shield helps to maintain air temperature within a given range.

To prevent the overheating of the sweating room, when the air temperature reaches 60-70 degrees, close the heat-control shutter thereby switching the furnace into the mode of "intensive heating up of the heater"

In the mode "intensive heating up of the heater" the main thermal load is aimed at heating and maintaining the temperature of the inner filling of the heater, but walls temperature and wood consumption decrease.

Decrease of walls temperature in the mode "intensive heating up of the heater" is a continuous process which doesn't lead to their complete cool-down.

If the temperature in the sweating room drops lower than 60-70 degrees (in case of continuous exploitation), you should switch the furnace to the "intensive heating up of the sweating room" mode for a short period of time.

High quality steam is obtained by supplying water to the steam generating unit. From the dispensing unit water gets into horizontal pipes where preliminary preparation happens (water transforms into water-steam mixture). Then under the pressure, water-steam mixture comes out of small holes made along the whole length of horizontal pipes into the most heated layer of heater's filling. Going from the bottom up, water-steam mixture comes out of the steam pipe and fills the sweating room with an easy steam. Every stone (total volume of the filling) is involved in the steam production process, that why the steam comes out nothing else but finely dispersed (invisible) – easy!

Be careful! The process of water (volume of which is equal to one of the dispensing unit) transformation into the steam takes no longer than 5 seconds!

Chromium (Cr), as furnace compound, prevents oxygen combustion by metal surfaces of the furnace!

FURNACE FOUNDATION

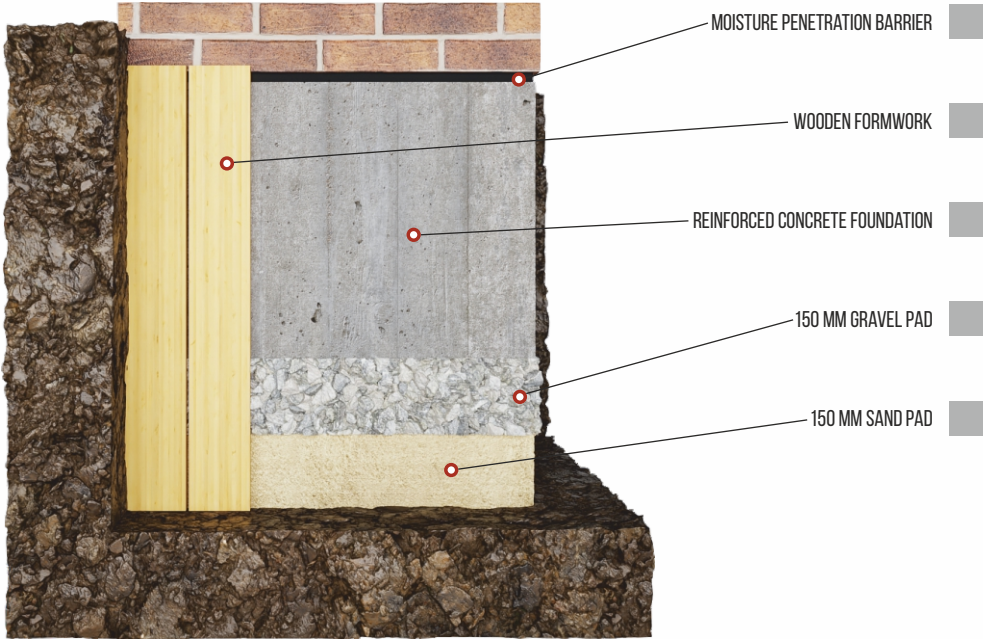
Furnace foundation is an underground structure usually made out of concrete. This foundation is a main load-bearing element that allows to transfer the load from the installed furnace to the foundation (ground).

To install the foundation for the furnace with a brick chimney, you should adhere to the following guideline:

- 1 The foundation must only bear the load of the furnace, that's why in case of furnace and wall foundations closeness to each other they shouldn't be combined. The distance between two foundations should be 30–50 mm, so they will be able to move freely in the process of their settlement.
- 2 If all of the conditions, such as climatic conditions, type of soil, mass of the construction (for example, a furnace with a metal chimney and protective shields made of soapstone would weight not more than 750 kg), satisfy the requirements it is possible to combine two foundations. In this case, draw special attention to the installation of reinforcement cage and foundations connecting node.
- 3 Foundations' width and length are determined in accordance with overall dimensions of the furnace plus manufacturing clearance, which takes into account the thickness of the protective shield and all essential clearances. In some cases, it is needed to add 100 mm around the perimeter of supporting structure for the floor decking.
- 4 To prevent bulging, it is recommended to lay the foundation to the soil frost zone according to the CP 22.13330.2016 "Soil bases of buildings and structures". Revised edition of Construction Directives and Rules 2.02.01–83* (With Amendment No.1, 2, 3).
For example:
For Moscow, where the soil type is clay loam, the depth should be 1320 mm
For Yekaterinburg, where the soil type is clay sand, fine and dust sand, the depth should be 2090 mm
- 5 Regardless of the construction, the foundation must be damp-proofed at the top edge in order to prevent the infiltration of ground waters into furnace' brick constructions. For this reason, the foundation is laid on two layers of hydraulic insulating material.

Foundation for the furnace and separately standing chimney is a single-piece reinforced concrete structure.

CONSTRUCTION SCHEME OF FOUNDATION



Pic. 3 Construction scheme of foundation

INSTALLATION OF FOUNDATION

- 1 Preparation of the excavation pit.
- 2 Installation of the wooden 25–30 mm formwork.
- 3 Laying of the setting pads: compacted 150–200 mm sand pad, then 150–200 mm layer of gravel (50–70 mm fraction).
- 4 Installation of the reinforcement cage (A-III 10 mm reinforcing bars, bas fastening is done with a binding wire).
- 5 Concrete pouring.
- 6 Installation of the moisture penetration barrier.

- As a concrete casting of the foundation, we use ready-mixed concrete or site-mixed concrete.
- During production of the ready-mixed concrete, manufacturer addresses more than one dozen of parameters and characteristics thereof concrete's quality is higher!
- When concrete is mixed on-site (for large volumes of foundation) it ought to be noted that the interval between pouring shouldn't be longer than 12 hours.
- For a time of solidification (up to 22 days) the foundation should be covered with polyethylene sheeting and, if necessary, irrigated with water in order to avoid sudden water evaporation.

SIZE CALCULATIONS FO THE FOUNDATION

Width (mm) = $b_f + 2xb_{ac} + 2xb_{op} + 2xe_{shd}$ where,

E_{shd} is the thickness of the protective heat-retaining shield (natural stone – 40–60 mm, brick - 65–120 mm)

b_f is the width of the furnace

b_{ac} is the width of the air clearance (50–70 mm)

b_{ss} is the width of the supporting structure for floor decking (0–100 mm)

Length (mm) = $l_f + 2xb + \Delta_{shd} + b$ where,

E_{shd} is the thickness of the protective heat-retaining shield

l_f is the length of the furnace

b_{ac} is the width of the air clearance (40–65 mm)

b_{ss} is the width of the supporting structure for floor decking (0–100 mm)

Height (mm) = $h_{fr} + h_{floor} - h_{bl}$ where,

H_{fr} is the depth of frost penetration

h_{floor} is the height of the floor above ground

h_{bl} is the height of brick layer and moisture penetration barrier in the foundation

PROTECTIVE HEAT-RETAINING SHIELD

Protective heat-retaining shield retains and preserves excess heat, absorbs direct radiation of heated furnace walls, prevents getting burns, creates a system of convection canals which allow regulating the temperature in the sweating room within a given range. The shield made of natural stones or bricks helps to fully dehumidify sweating and washing rooms.

To install the furnace correctly, it is recommended to follow requirements of the actual manual.

PROTECTIVE HEAT-RETAINING SHIELD MADE OF NATURAL STONES



Pic. 4 The example of the furnace with a natural stone cover

- 1 Install the furnace foundation (ref. section "Furnace foundation").
- 2 Saw up a passage for the combustion flue

The minimum distance between the cover and inflammable surfaces is 500 mm.

- 3 Install the furnace on the prepared foundation
- 4 Check the fixation (aligning) of the chimney to the furnace

- 5 Lay the brick cover matching ½ of a brick on the front wall (ref. section “Protective heat-retaining shield made of bricks”).
- 6 In the sweating room, cover the brick veneer of the front wall with tiles made of natural stones. High-temperature block glue or mastic compound could be used as binding materials. For better grip it is necessary to carve a 30*30 mm notch, 1-2 mm deep.
- 7 Install the natural stone cover.

ASSEMBLY SCHEME FOR THE NATURAL STONE COVER

“EasySteam”'s veneers are only made of soapstone, serpentine marble or pyroxenite tiles and fastening element without any adhesives.

Each tile has its own place in the cover.

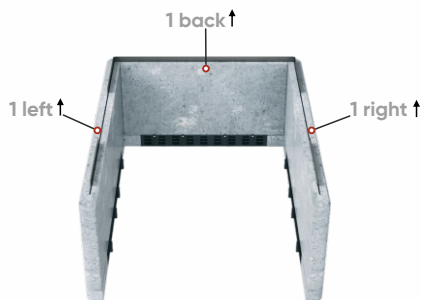
- The wall by the firebox is considered as the front of the cover.
- There is a number of tier, a front/back indication and an orientation arrow on each tile.
- For covers with columns in the corners, there is an information on between which walls should the column be installed and the number of tier.

Metal plates are used as fasteners for covers.

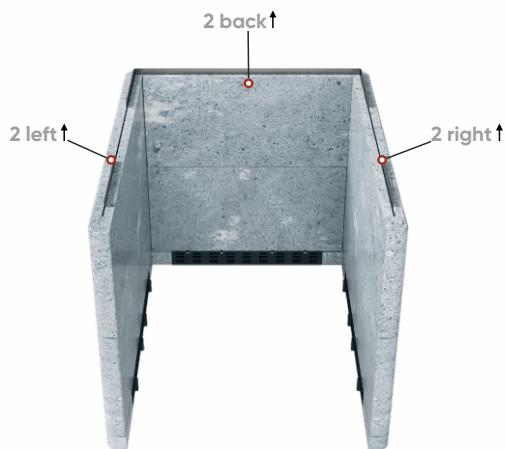
- 1 Install the legs. Place shutters between them.



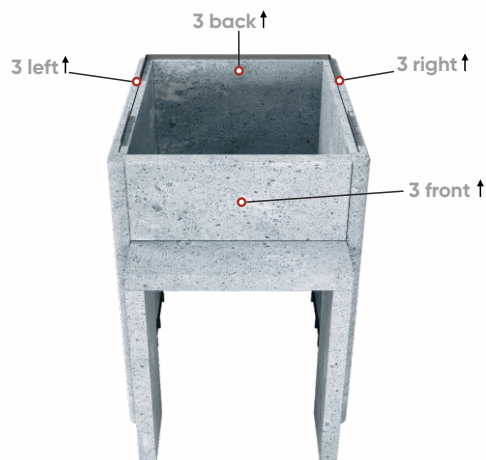
- 2 Install the tiles of the first tier. Install metal plates in notches in tiles' ends.



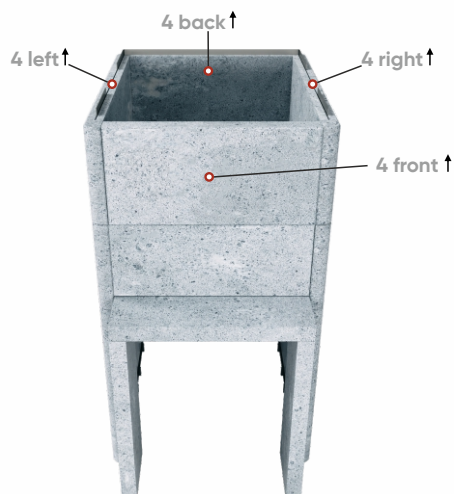
- 3** Install the tiles of the second tier. Install metal plates in notches in tiles' ends.



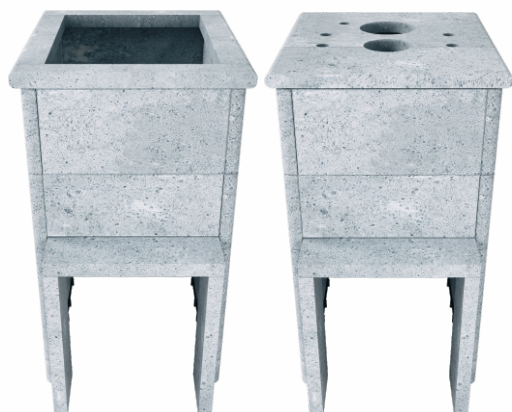
- 4** Install the tiles for the combustion flue cover. Install the tiles of the third tier. Install metal plates in notches in tiles' ends.

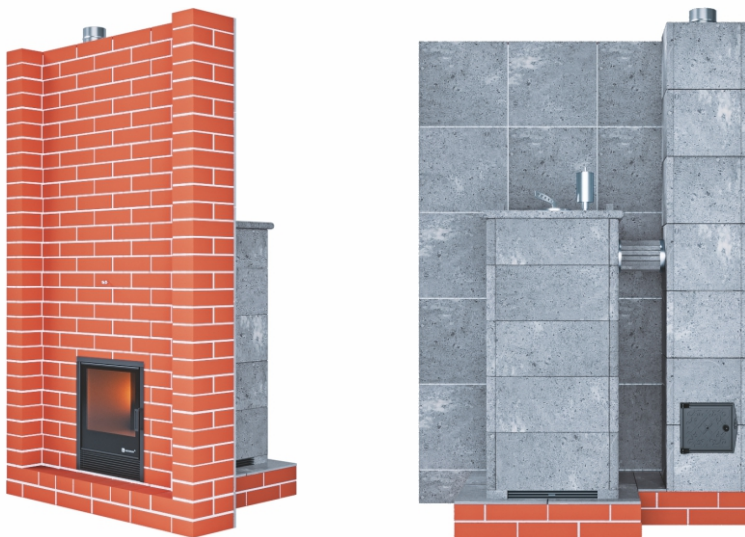


- 5** Install the tiles of the fourth tier. Install metal plates in notches in tiles' ends.



- 6** Place the top lid / upper plates on ribs of metal plates.





Pic. 5 The example of the furnace with a separately standing chimney

Following types of chimneys shall be applied:

- Single-circuit stainless chimney with a brick cover
- "Sandwich" type chimney

PROTECTIVE HEAT-RETAINING SHIELD MADE OF BRICKS

The protective heat-retaining shield retains excess heat inside the furnace, herewith not obstructing the required amount of warmth to penetrate through in order to maintain the temperature of the sweating room within the given range.

As a material of the protective heat-retaining shield, we recommend you to use following materials:

- Solid ceramic furnace brick - «LODE» (Latvia)
- Solid ceramic furnace brick - «Gdjel»
- Solid ceramic furnace brick - «Kirovo-Chepetskiy»
- Solid ceramic furnace brick - «Vitebskiy» (1 factory workshop) Belarus

To make a protective shield we use ceramic bricks with dimensions of 250x120x65, the thickness of binding seam should be 5-9 mm.

As a binding solution, you should use clay puddle or ready-to-use furnace solution made of red clay:

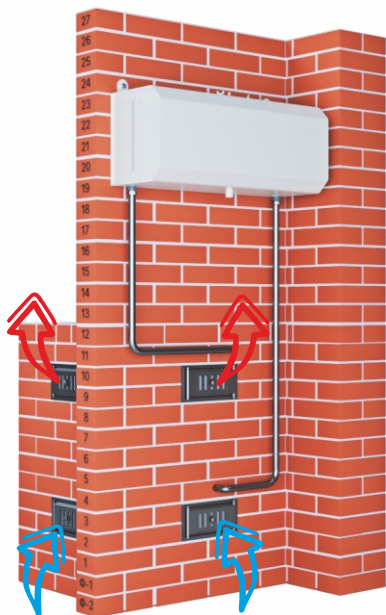
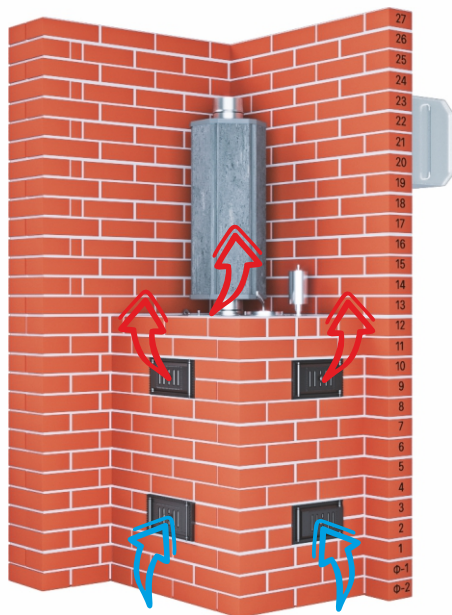
- Furnace solution Borovichi ("СЭВ" company)
- Furnace solution from Kostroma ("Макаровыхъ" company)
- other binding solutions that do not contain any harmful impurities and can be used in conditions of high temperatures

It is prohibited to install the brick cover of the chimney without inner metal pipe!

Every wall should be connected to each other. The cover is installed directly on the prepared foundation. The shield in the sweating room should be 30–50 mm higher than the furnace top lid (not including steam or smoke pipes).

It is not recommended to make the distance between stiffening bars and protective shield more than 30 mm as it would cause inefficient warm-up of the cover and longer heating-up of the banya.

- Lower convection doors are installed at the minimum distance from the floor. Install convection doors on every side of protective shield in order to achieve maximum convection effect. Minimum recommended area for lower convection doors is 500 cm² and 600 cm² for upper ones.
- The protective heat shield in the front of the furnace should be as high as the full height of the room.
- Around and across the heat-control shutter stem, it is required to make a 5 mm manufacturing air clearance to compensate temperature expansions.
- To cover the combustion flue or the heater, utilize two 50x50 mm iron angles.
- It is recommended to reinforce the brick cover with 2–3 mm steel wire every 4–5 tiers.
- To cover the top of the furnace with bricks, place 50x50 mm iron angles on side walls of the protective shield and put bricks on them, make notches in corners where furnace components are
- While doing brick covering, make convection canals at the top of protective shield to ensure hot air output.
- When installing the furnace with a brick cover and covered top, decorate the top with stones (lay 50–70 kg). When doing so, pick bigger stones in comparison with the width of the gap between the furnace and the shield. In this case, convection flows would go through clearances between stones.



Pic. 6

Example of the furnace with a brick cover which heats up both resting and sweating rooms

Stones, which are laid at the top surface, are not suitable for steam generation and serve exclusively as a decoration or used for possible evaporation of different flavored liquids from their surfaces.

When installing the furnace with a brick cover, adjustable convection and covering stainless sheet on the top, cover the sheet with not more than 120 kg of stones or 1 layer of bricks without binding materials (clay, solution).

Because covering sheet isn't a load-bearing element, it is not allowed to lay bricks on it in order to cover the chimney.

If the furnace is installed according to this design, economizer should be installed as the first section of a chimney.

If the furnace is installed with a separately-standing chimney, it is prohibited to do a brick cover for a chimney without an inner metal pipe.



Pic. 7 Example of furnace top decoration with stones



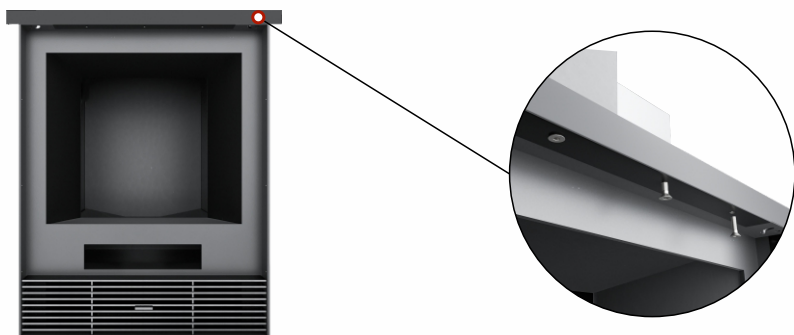
Pic. 8 Example of furnace with a brick cover and a covering sheet



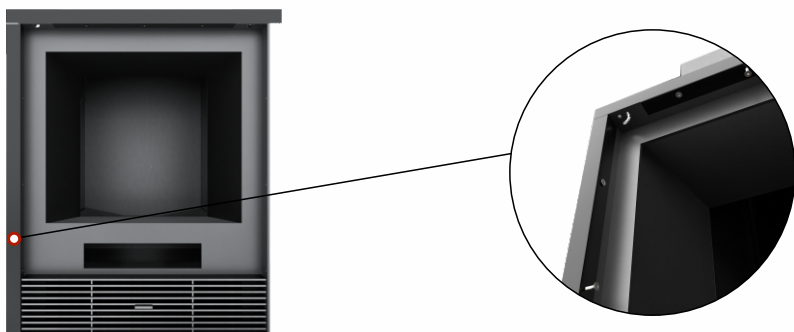
Pic. 9 Example of furnace with a brick cover and a separately-standing chimney

ASSEMBLY SCHEME FOR THE VENEER

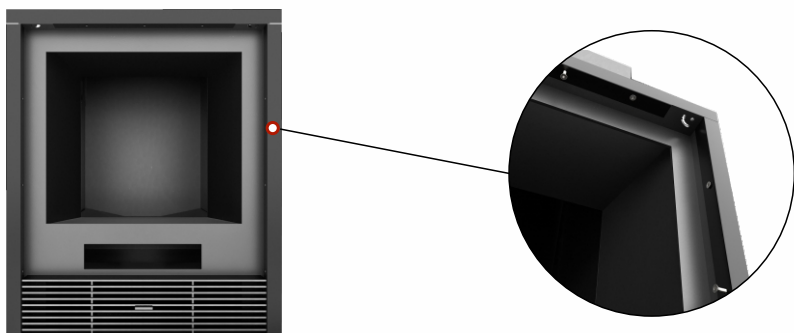
- 1 Screw up the upper corner from the inside of the frame with 3 M4 nuts by use of 2.5 mm hex-nut wrench.



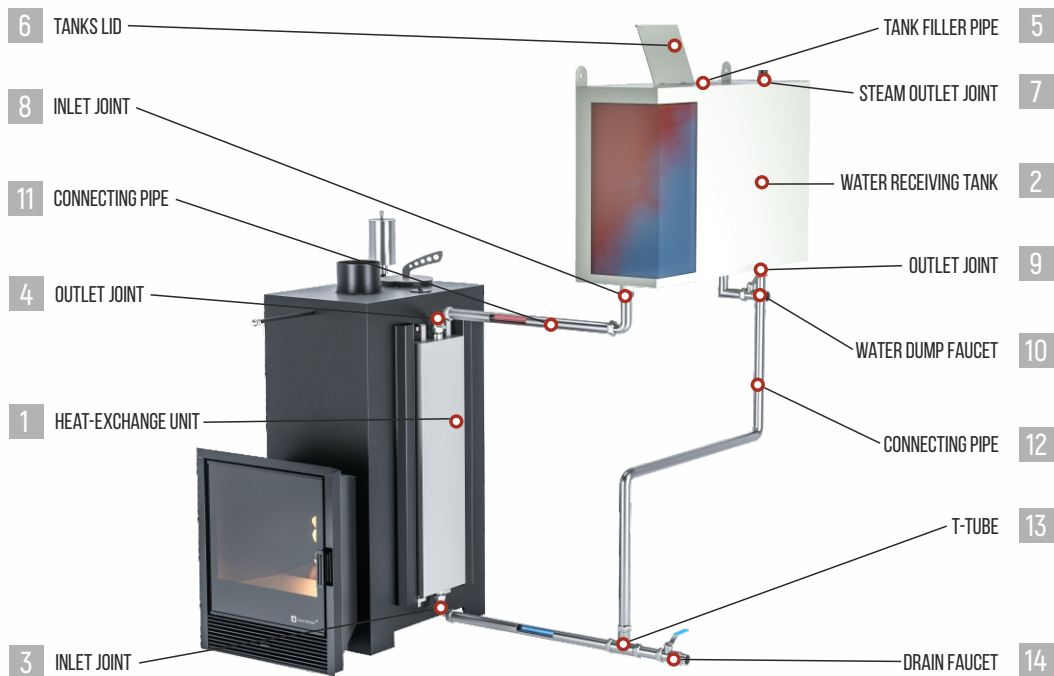
- 2 Screw up the left corner from the inside of the frame with 3 M4 nuts by use of 2.5 mm hex-nut wrench.



- 3 Screw up the right corner from the inside of the frame with 3 M4 nuts by use of 2.5 mm hex-nut wrench.



HOT WATER PRODUCTION SYSTEM



STRUCTURE OF HOT WATER PRODUCTION SYSTEM

In the system of hot water production there are 2 main elements: heat-exchange unit (point 1) and water receiving tank (point 2) connected by pipes.

Heat-exchange unit is a rectangular tank with a volume of 3,5 liters. Its function is heating up of water by receiving heat of the furnace. The heat-exchange unit is attached directly to the side wall of the furnace. There are one inch threaded joints (points 3 and 4) on the top and on the bottom of the heat-exchange unit that connect pipe-lines to the side-mounted tank.

Heat-exchange unit is a structural section of the furnace. When the furnace is heated up, it is not allowed to fill up the system if there is no water in the water level gauge of the side-mounted water receiving tank.

Constant exploitation of the system without water is not permitted because it leads to short life of a furnace.

Side-mounted water receiving tank is a rectangular, cylindrical or different shape reservoir (shape and dimensions can vary based on customers wishes and technical peculiarities of the installation site). At the top of a tank there is a tank fillet pipe (point 5) which is needed to fill the system with water, with a hermetic lid (point 6) and one inch threaded joint (point 7) for steam removal from indoor space. There are one inch threaded inlet and outlet joints (points 8 and 9) at the bottom of a tank. The hot water faucet (point 10) is on the front wall of a tank. All water receiving tanks are equipped with water level gauges which allow monitoring water level while in operation.

Fill the tank with water not exceeding upper point of the water level gauge.

The heat-exchange unit and water receiving tank are connected by metal pipes (points 11 and 12) one inch in diameter. There is a T-tube (point 13) with connected discharge pipe on the bottom tube which allows discharging water system via faucet (point 14) in wintertime.

In circumstances when the distance between heat-exchange unit and water receiving tank is less than 1 metre, when water level lowers while in use or when the furnace burns for more than 3 hours, water can start boiling. Water boiling goes along with insignificant noise.

To prevent boiling add some cold water in the system (if water level lowers when in use).

Choose water receiving tank based on assumption that there's should be 15 litres per person plus 10 litres to steam the bath besom.

OPERATION OF HOT WATER PRODUCTION SYSTEM

To start the system, unscrew the lid and fill the tank with water.

Fill the system with water before lighting up the furnace. It's prohibited to fill the empty system when the furnace is hot!

When the furnace is burning, its walls release the heat, a significant part of which goes to the heat-exchange unit and heats up the water. The process of natural water circulation starts as a consequence of water temperature differences in heat-exchange unit and water receiving tank. Water from heat-exchange unit and water from water receiving tank start to mix up. The system starts to operate.

Open a faucet (point 10) on the front wall of the tank to get hot water.

Estimated time of water heating to the temperature of 80 degrees is between two and three hours and depends on layout of heat-exchange unit and water receiving tank connection as well as on their physical distance.

In case if there is a big distance between heat-exchange unit and water receiving tank or when the geometry of inlet pipes is complex, cut the low-power circulating pump into the system.

The process of system heating up is inevitably linked to a process of water evaporation. The higher water temperature in the system, the more intensive the process of evaporation. All generated steam should be removed from indoor space via exhaust steam pipe.

Exhaust steam pipe must be regularly examined before each burning of the furnace. For the purpose of your own safety and maintaining systems' working capacity, avoid pipes full or partial clogging.

To prevent breaks during winter, don't leave the water in the system!

INSTALLATION OF HOT WATER PRODUCTION SYSTEM

When installing the hot water production system, pay special attention to equipments' location. The heat-exchange unit should be placed in such a way to minimize the distance to water receiving tank and connect them in the most effective and practic way possible.

Water receiving tank should be placed in such a way that tanks' bottom surface would be not less than 100 mm higher than the top surface of the heat-exchange unit.

Maximum margin between the top surface of a heat-exchange unit and tanks' bottom surface should be not more than 2 meters. The water receiving tank is attached to the wall, in order to do that there are fasteners on the back wall of the tank.

Systems are connected via metal pipes and pipe branches. Avoid sagging of the connecting pipes, as they must be sloped from water receiving tank to heat-exchange unit.

Pipes connecting the heat-exchange unit and water-receiving tank should be free to move in places where they pass through the cover made of bricks or natural stones. The diameter of the passage in the cover made of bricks or natural stones should be 5-10 mm larger than the pipes coming out of the heat-exchange unit.

Connect water receiving tank and heat-exchange unit, avoiding unnecessary bends of connecting pipes.

Each additional bend of connecting pipes negatively affect the process of circulation.

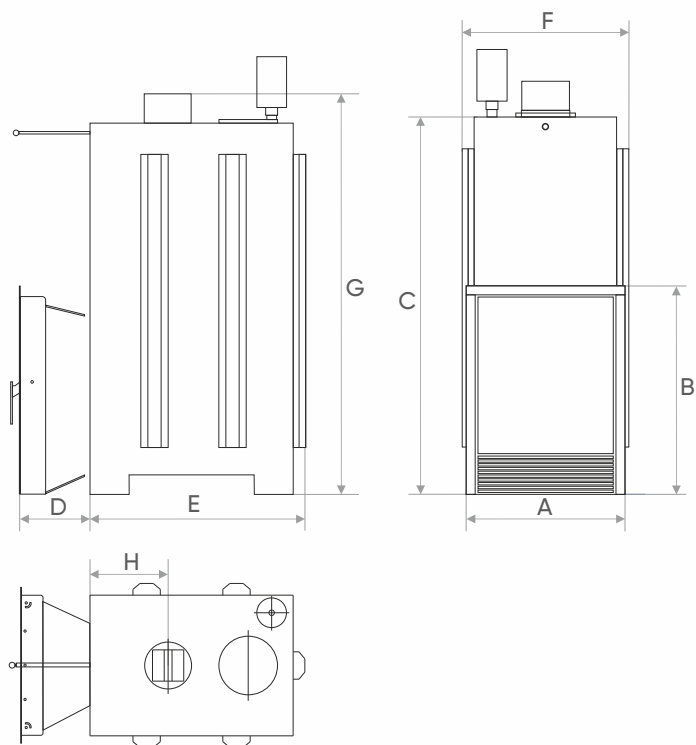
You should only use high-temperature materials (flax fiber) as a seal for threaded connection joints of the heat-exchange unit.

To remove the steam from indoor space, connect the steam outlet joint to a pipe (hose) which removes the steam.

Place one end of the pipe (hose) somewhere where coming out steam would be safe for people around! When in use, watch carefully for the hose, so it doesn't have any bends!

For safe exploitation, tank should be covered with a wooden crate.

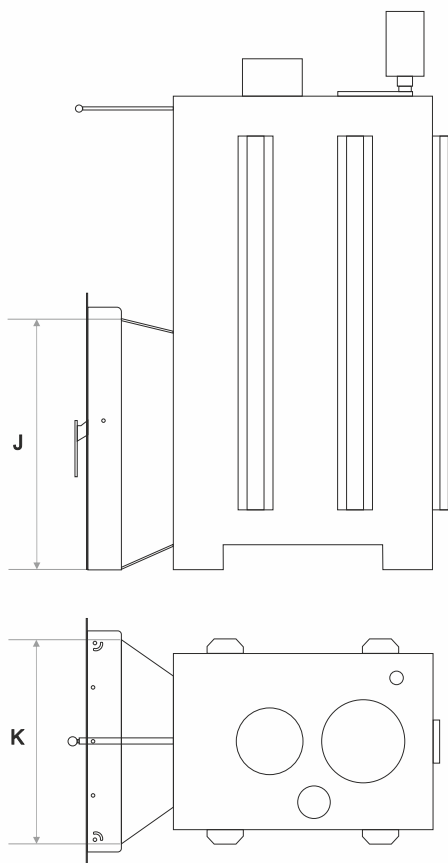
FURNACE DIMENTIONS



Pic. 10 Furnace dimentions

Furnace	Dimentions, mm							
	A	B	C	D	E	F	G	H
Anapa	405	465	805	200	530	420	890	185
Sochi	435	535	955	200	530	420	1040	185
Gelendzhik	435	535	1055	200	610	450	1140	250

Due to the constant improvement of furnaces' functionality and aesthetic qualities, structural design and dimensions could slightly differ from ones mentioned in this table. Chimney diameter of standard models of furnaces is 120 mm., for Gelendzhik furnace - 150 mm.



Pic. 11 Furnace dimintions

Furnace	Dimentions, mm			
	J	K	H (with ГГУ or САБК-ТБ burner unit)	J (with ГГУ or САБК-ТБ burner unit)
Anapa	450	370	520	390
Sochi	520	390	520	390
Gelendzhik	520	390	520/520	480/390

TECHNICAL CHARACTERISTICS

Furnace		Anapa	Sochi	Gelendzhik
The size of the heated space, m ³		up to 16	up to 22	up to 35
Dimensions				
Width, mm		420	420	450
Height, mm		890	1040	1140
Depth, mm		730	730	810
Material	furnace	4-6 mm stainless heat-resistant steel		
	door	steel, heat-resistant glass ceramic		
	boiler grate	stainless steel		
Type of a heater		closed internal heater		
Steam generating unit		built-in unit		
Supply of water		to the lower part		
Sweating room temperature control		yes		
Sweating room dehumidification		yes		
Water heating up		yes		
Furnace lighting up from a room adjacent to the sweating one		yes		
Room quick heating up		yes		
Construction		bent-welded structure		
Chimneys' diameter		120 mm	120 mm	150 mm
Mass of the furnace (excluding the weight of stones filling and chamotte)		120 kg	135 kg	170 kg
Mass of the stones filling		55 kg	72 kg	90 kg
Time to enter "Russian banyas" mode (winter/summer)		110 min./ 80 min.		
Maximum log length		450 mm	450 mm	500 mm
Amount of consumable logs		5-12 kg/h	5-16 kg/h	10-20 kg/h
Size of a glass in the door (W – H)		370-370 mm	400-420 mm	400-420 mm
Fuel type		firewood and/or natural gas		

Information on the type of fuel for your type of furnace is indicated in the "Product certificate" section on the page 33

CONFIGURATION

Equipment's delivery package consists of:

Wood-burning furnace with a built-in steam generating unit	1 pce
Door	1 pce
Ash box	1 pce
Component parts	
Boiler grate	1 pce
Dispensing unit (water supply)	1 pce
Lid of the dispensing unit	1 pce
Lid of the heater	1 pce
Installation and operation manual (product certificate)	1 copy

Depending on the transportation mode and declared storage conditions, the manufacturer has a right to singly choose the packaging. All component parts are wrapped in a soft packaging and placed inside the furnace.

GUARANTEE OBLIGATIONS

When the product is used in violation of rules which are set forth in this document, the manufacturer disclaims all warranty liabilities.

Warranty goes into effect as from the moment of furnace sale and provided only in the presence of the product certificate.

In case if there is no sale date in the certificate, the warranty period starts from the date of production but not more than 3 years.

Manufacturer provides furnace walls burn-out guarantee for 3 years:

This warranty doesn't cover detachable parts, furnace parts (chamotte tiles, boiler grate, glass, cords), paint-and-lacquer coating as well as damages in the course of incorrect installation or exploitation. If chamotte tile breaks inside the burner it will not affect the operation of the furnace and consequently this is not a warranty case.

Manufacturer disclaims all warranty liabilities upon any of the following:

- 1 Inappropriate use of the furnace
- 2 Commercial use of the furnace
- 3 Furnace exploitation with a natural stones veneer from another manufacturer, laying of the
- 4 Expiration of a warranty
- 5 Independent repair or changes in the engineering design of the furnace
- 6 Installation of gas equipment in the furnace, which is not designed for gas. Product certificate should contain information that the furnace could be used with gas equipment (page 33)
- 7 Installation of burner units unauthorized by manufacturer
- 8 Addition of different kinds of salts and salt-containing solutions without the use of a special device - evaporator

In case if a failure occurs, customer has the right to turn to an authorized distributor who sold the furnace or directly to the manufacturer.

When applying to distributor or manufacturer, provide installation and operation manual with filled-in product certificate. If you have any questions, please contact us by calling the toll-free number 8(800)555-56-16 or by using an e-mail: info@easystem.ru.

PRODUCT CERTIFICATE

Product certificate

Serial № ____

Object of verification – furnace « _____ »

Modification: standart M2
ad. door to the heater

Material: AISI 430 AISI 321

Thickness: 4–6 mm

Fuel: wood gas, wood gas
standard equipment ГТУ burner units CA8K burner units

External examination was conducted (internal in accessible areas) and based on its results it was found that:

- the quality of fillet welded joint approved
- protective coating KO-870

Deviation from the project _____

(additional options)

Conclusion: the product is qualified as suitable for exploitation

Quality control department check mark:

The test was performed by _____ (_____)
(position held; surname, first name and patronymic) (signature)

(_____) (_____) (202_)
(date) (month) (year)

Warranty period: 1 year 3 year 5 years
custom design AISI 430 AISI 321

TRANSPORTATION AND STORAGE

The furnace can be transported by any means of transportation as long as conditions mentioned on the marking are observed.

The furnace should be stored indoors in the original packaging.

TROUBLESHOOTING GUIDE

Failure	Cause of a failure	Remedial procedure
Abnormality in the combustion process	<ol style="list-style-type: none">1 Air deficiency in the heater2 Difficulty of a chimney draft	<ol style="list-style-type: none">1 Clean the ash box2 Clean the chimney
Smell of smoke	<ol style="list-style-type: none">1 Difficulty of a chimney draft2 Insufficient leak-tightness of the chimney3 Chimneys' deterioration	<ol style="list-style-type: none">1 Clean the chimney2 Check and seal up chimneys' joints3 Replace the chimney
It is difficult to light up the furnace	Draft difficulty	Clean the chimney
Water doesn't get to the steam generating unit	Back-pressure valve is clogged	Take off and unclog the dispensing funnel
The safety valve doesn't work	Foreign object in the back-pressure valve	Take off and unclog the dispensing funnel
Outgoing vapor has a specific smell	<ol style="list-style-type: none">1 Poor-quality stones2 Old stones	<ol style="list-style-type: none">1 Replace stones and clean the heater2 Replace stones and clean the heater
When hot-water system is running, walls of water receiving tank start to inflate	Dysfunction of the steam removing system	Clean the system
Water in the system boils	Water level is below the minimum	Add some water or drain the system
Water in the heat-exchange unit boils, but water in the water receiving tank is still cold	<ol style="list-style-type: none">1 Clogging of inlet pipes2 Incorrect installation	<ol style="list-style-type: none">1 Unclog inlet pipes2 Consult a manufacturer

In case if any malfunctioning has been detected, you should immediately stop exploiting the furnace and contact our specialists to get a troubleshooting assistance on a possible cause of this failure and remedial procedures to fix it.

