



**ELECTRIC HEATING
DEVICE FOR BATHS
AND SAUNAS**

**AUTONOMOUS
ELECTRIC GENERATOR
OF SUPERHEATED
STEAM**

Electric power 2,25; 3,9; 6,0 kW

**INSTRUCTION
MANUAL**

ATTENTION!



Before you start installing and operating an electric furnace, please read this Instruction Manual carefully.

It is strictly forbidden to leave the stove running unattended. To avoid fire, it is forbidden to cover the stove with any objects or materials.

This Instruction Manual is a document that provides information about the design, characteristics, and instructions for proper installation, connection, safe operation, maintenance, transportation, and storage of the electric furnace.

Due to the continuous improvement of the design and technology of the stove, in this Instruction Manual there may be some discrepancies between the stove device and its description, which do not affect its performance and do not worsen its technical characteristics.

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With a calm and even boiling of water, the so-called saturated steam is formed, that is, a steam-water mixture, a "fog", in which part of the water remains in an unevaporated, microdroplet, suspended state. Such vapor condenses not only on the skin of a person who has not even had time to sweat, but also in the respiratory organs, causing a feeling of heaviness of breathing, "suffocation".

"Light steam" - is really materially light steam, due to the absence of suspended, microscopic, heavy water droplets in its composition. It is this steam that is considered correct in the bath and is appreciated by its connoisseurs. To determine the overall comfort of the microclimate in the steam room, there is a complex theoretical relationship between the temperature and humidity of the air, this dependence is not linear, it is not realistic to remember it. Yes, probably, it is not necessary. Each person has the right to determine this ratio in accordance with his own personal preferences.

Single "deliveries" of water even on sufficiently hot stones of a typical electric stove lead to only insignificant short-term increases in humidity in the steam room and fundamentally do not solve the problem of creating a general volume and long-term comfortable temperature and humidity regime.

And prolonged and frequent pouring of water on the stones leads to their accelerated cooling and, accordingly, to a decrease in the quality of steam. In addition, such intensive watering undoubtedly reduces the electrical safety of the operated product.

Taking into account the above, LLC "Engcomcenter VVD" has developed, designed and serially produces steam-thermal electric furnaces of various capacities and modes

the design of which implements not only the right of a person to determine the parameters of temperature and humidity conditions, but also provides the technical ability to do it easily, simply and conveniently. These products are based on a fundamentally new electric superheated steam generator (EGPP).

By installing a steam-thermal electric stove of sufficient capacity in your bath (already a BATH, not a sauna), and it is determined by the previous ratio of parameters - one kW per one meter. cubic meters, you get a real opportunity to control the temperature in the steam room in automatic mode in accordance with the value set on the control panel (PU), and humidity in manual mode, also set on the control panel. The duration of the steam generation mode ensures the level of humidity in the room according to your personal feelings and preferences.

The absence of any particularly complex automatic devices, the general simplicity and safety of the steam generation scheme guarantee the reliability and stability of the entire system as a whole. And the presence in the design of the steam thermal furnace of the zone of a standard electric furnace, decorated with tubular electric heaters and stones for vaporization, leaves the user with the opportunity to obtain typical steam emissions in the "feed" mode.

The company also produces autonomous electric generators of superheated steam (AEGPP) from 2.25 to 18 kW in various cases and versions depending on the capacity, with an outlet temperature of superheated steam from 300 to 330 C. Autonomous electric generators of superheated steam can be installed in ready-made equipped and decorated baths and saunas in addition to electric or wood-burning stoves already installed in steam rooms to ensure comfortable parameters of humidity in them.

Their operation is ensured, in this case, using an individual control panel with the "ON-OFF" function.

With the autonomous installation of autonomous electric generators of superheated steam the autonomous electric generator of superheated steam AEGPP in steam rooms, stable ratios of temperature and humidity are provided, both in the modes of the "Russian bath" and at lower and higher temperature modes at the request of the user, including the soft, low-temperature and high-humidity, delicate mode of the Turkish bath "Hamam".

In this case, the temperature is set, as in standard electric furnaces, with the help of a remote control panel, and the humidity corresponding to this temperature is provided by the technical parameters of autonomous electric generators of superheated steam AEGPP, set by the manufacturer.

An additional possibility of extracting saturated steam in the operating mode of products guarantees effective aromatization of steam rooms and steaming of brooms when installing either a phytovaporation device or a steamer of brooms in the saturated steam flow, also produced by LLC "Inzhkomtsentr VVD".

1. DESCRIPTION AND OPERATION

1.1 Product purpose

1.1.1 The autonomous electric generator of superheated steam AEGPP (hereinafter referred to as the Device) is designed for continuous generation of a vapor-air mixture of high temperature, to create and maintain the necessary temperature and humidity conditions in the steam room.

1.2 Technical specifications

Electric power (kW)	Supply voltage (V)	Water flow rate (l/h)	Water tank volume (l)	Weight (kg)	Overall dimensions (mm)	Conductor cross-section of the supply cable (copper) (mm ²)
2,25 kW	220; 380	1,35	11	13	250x250x600	1,5
3,9 kW	220; 380	2,35	18	15	450x200x605	2,5; 1,5
6,0 kW	220; 380	3,6	18	15	450x200x605	4,0; 1,5

Water tank material: 1.0 mm stainless steel

Operating mode: continuous

Temperature of the vapor-air mixture: 300-330 C

The water supply is automatic.



Autonomous EGPP 2.25 kW

the autonomous



Autonomous EGPP 3.9 and 6.0 kW

1.3 Productstructure

##	Name	Measure unit	Quantity
1	Autonomous electric generator of superheated steam assembly	pc	1
2	Control panel*	pc	1
3	Instruction manual	pc	1
4	Packaging containers	pc	1 or 2*

Note:

* – purchased for a fee.

- Control panel of the PU-01M model is used when the autonomous electric generator of superheated steam AEGPP is operated in the electric furnace mode.
- Control panel model the autonomous electric generator of superheated steam AEGPP control panel – when operating the autonomous electric generator of superheated steam AEGPP in the mode of additional steam source
- The control panel of the PU-01M model is equipped with a temperature sensor located outside the control unit and installed inside the steam room. The temperature sensor is connected to the control unit with its own 5 meter cable.

1.4 Product construction and operation

1.4.1 The structure of the autonomous electric generator of superheated steam AEGPP is shown in Fig. 1, 2. A box-section channel (pos. 2, fig. 1, 2) passes through the thermally insulated water tank (pos. 1, fig. 1, 2), in which tubular electric heaters are installed (pos. 3, fig. 1, 2). Water is heated to a boiling state due to the transfer of heat through the walls of the channel from the tubular electric heaters to the water. Inside the channel there are steam ducts (pos. 4, figs. 1, 2), through which steam is supplied to the lower part of the channel, where it mixes with the air entering the channel from below. Due to convective flows, the vapor-air mixture rushes upwards, heating up to a temperature of 300-330C and is discharged into the room through the nozzle (pos. 5, Fig. 1, 2). Filling the container with water is carried out through a hose (pos. 6, fig. 1, 2). The autonomous electric generator of superheated steam AEGPP is connected to the electrical network through a terminal block (pos. 8, fig. 1, 2).

1.4.2 When using the Device as the only source of heat in the steam room, the autonomous electric generator of superheated steam AEGPP is controlled by means of a remote control panel (PU-01M), which allows setting and maintaining the required temperature and humidity in the room, as well as limiting the time of continuous operation of the device. When using the Device as an additional source of steam, the autonomous electric generator of superheated steam AEGPP is controlled by means of an individual remote control panel (the autonomous electric generator of superheated steam AEGPP control panel), which has the function of turning the device on and off. The design of the remote control unit and the presence of three tubular electric heaters in the steam generator allow the operation of the autonomous electric generator of superheated steam AEGPP in three modes of steam generation intensity.

1.4.3 The Device shall be supplied with water from the external water supply system through a filling hose (pos. 6, Fig. 1, 2) located on the rear wall of the Device under a removable casing. Water drainage is carried out through a plug fitting located in the same place.

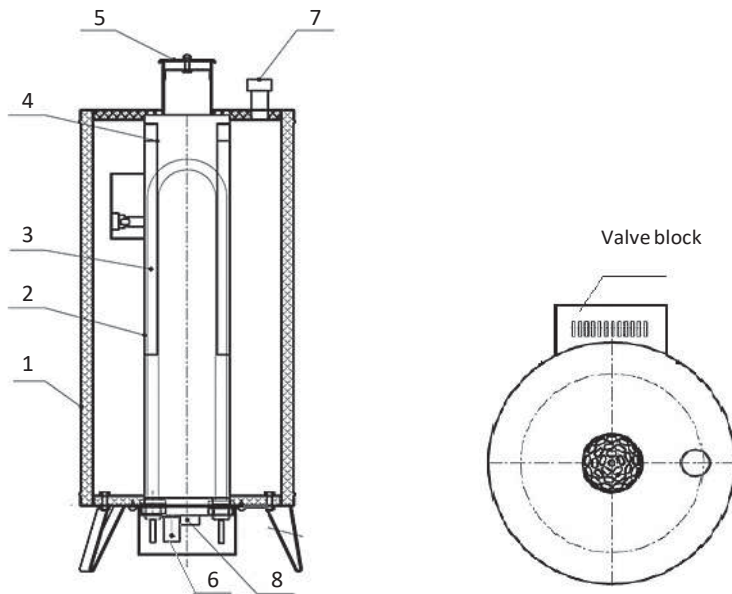


Fig. 1 Autonomous EGPP 2.25 kW

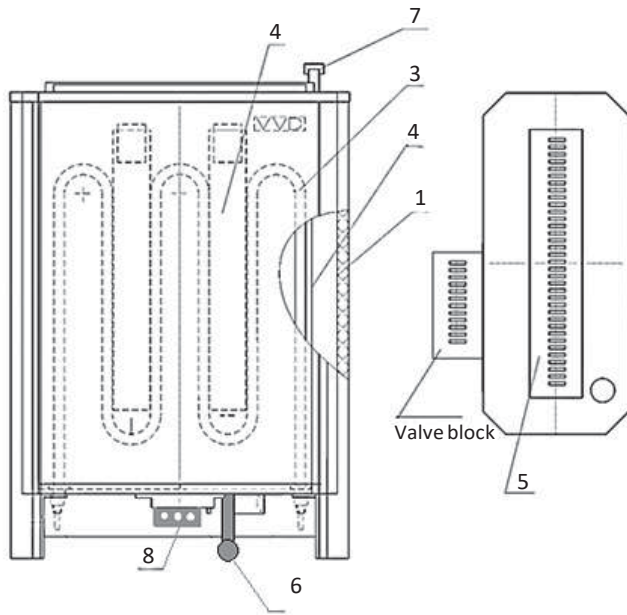


Fig 2 Autonomous EGPP device 3.9-6.0 kW

1.5 Control-measuring instrumentation

1.5.1 Temperature control in the steam room is carried out using the measuring device of the control panel

1.6 Marking and sealing

1.6.1 The marking is applied to the nameplate located on AEGPP body

1.6.2 The marking complies with the requirements of Article 5 of TR CU 004/2011 and contains the following data:

- symbol (type) of the device,
- trademark or name of the company - manufacturer,
- serial number,
- device power in kilowatts,
- rated voltage of the supply network in volts,
- weight of the device in kilograms,
- year and month of manufacture,
- country of manufacture,
- designation of technical specifications,
- a single product circulation mark in the market of the Customs Union member states.

1.6.3 Sealing of the autonomous electric generator of superheated steam AEGPP is not provided.

1.7 Packaging

1.7.1 the autonomous electric generator of superheated steam AEGPP is packaged in corrugated cardboard boxes.

1.7.2 The packaging and preservation of the device comply with the requirements of Section 3 GOST 23216 for transportation, storage and shelf life.

2. USE OF THE PRODUCT

2.1 Preparation before use of the product.

The walls and ceiling of the steam room should have good thermal insulation.

2.1.1 Safety measures.

2.1.1.1 For the purpose of strict compliance with the rules of fire and electrical safety, the connection of the autonomous electric generator of superheated steam AEGPP should be carried out by electrical personnel who have access to work with electrical installations up to 1000 V and a qualification group for electrical safety not lower than III.

2.1.1.2 Electrical wiring must be made in accordance with the norms of the Rules for the Installation of Electrical Installations and the Safety Rules

2.1.1.3 Acceptance of the autonomous electric generator of superheated steam AEGPP for operation must be carried out with the execution of an appropriate act.

2.1.1.4 It is forbidden to install the Autonomous EGPP in premises that do not meet fire safety requirements (SNiP 31-05-2003, MGSN 4.04-94).

2.1.1.5 The cable with which the electric heating device is connected shall be in heat-resistant insulation of the SiHF/GL-P type. Russian analogues: PVKV, RKGМ, PNBS or others. In order to save money, it is allowed to connect the electric heating device using wires with non-heat-resistant insulation to the soldering (terminal) box located in a low-temperature and protected from water ingress zone. The ends of the cable cores connected to the electric heating device and the control panel must be equipped with special lugs.

2.1.1.6 It is forbidden to operate an autonomous the autonomous electric generator of superheated steam AEGPP without a protective circuit breaker. To connect AEGPP, it is necessary to provide a circuit breaker with a rated operating current corresponding to the power consumed by the Device.

The circuit breaker must be differential with a rated breaking residual current of 30 mA, or a residual current residual current (CRC) with the specified residual current rating must be installed in the line after the protective circuit breaker. Connection of other consumers to the circuit breaker is prohibited.

2.1.1.7 The body of AEPP shall be securely grounded.

2.1.1.8 Before switching on AEGPP, it is necessary to make sure that there are no foreign objects on the steam generator grate

2.1.1.9 the autonomous electric generator of superheated steam AEGPP shall be operated only in an upright position.

2.2 Connection of the Device to the electrical and water supply networks. Preparation for work.

2.2.1 Open the container, check the completeness, remove protective and packaging materials.

2.2.2 Install an autonomous EGPP in the bath or sauna room.

Install the control panel at a height of about 1.5 meters outside the steam room, in a dry place, easily accessible for visual inspection and maintenance. Install a temperature sensor in the bath or sauna room in the treatment area, approximately at the level of the head of the person sitting on the top shelf. It is not allowed to install the sensor in the immediate vicinity of the autonomous electric generator of superheated steam AEGPP and the entrance door to the steam room or above them (when the autonomous electric generator of superheated steam AEGPP is operated in the electric furnace mode).

2.2.3 Make electrical cable connections in accordance with the Control Console Operating Manual. Electrical wiring diagrams are shown in Figures 3a-3c.

2.2.4 When organizing the filling of the autonomous electric generator of superheated steam AEGPP with water, connect it with a flexible hose to the water supply network or storage tank located in the adjacent room (see Fig. 4). In any case, a shut-off valve should be installed in front of the autonomous electric generator of superheated steam AEGPP (pos. 4, Fig. 4)

Install the water drain valve (pos. 2, Fig. 4), or plug the drain fitting with a threaded plug. To prevent the formation of limescale, the water hardness value should be in the range of 0.5° to 5° F. The use of a special demineralizer (reverse osmosis) is recommended.

2.2.5 As an option, it is possible to connect a phyto-steamer and (or) a broom-steamer to the Device in accordance with the connection diagram of Fig. 5. To the steam extraction fitting (pos. 1, fig. 5). through the tap (pos. 3, fig. 5), phyto-steamer (pos. 6, Fig. 5), or, by means of a corrugated stainless steel pipe (pos. 5, Fig. 5), broom-steamer (pos. 8, Fig. 5) is connected. When using the phyto-steamer and broom-steamer at the same time, a tee is used (pos. 2, Fig. 5)

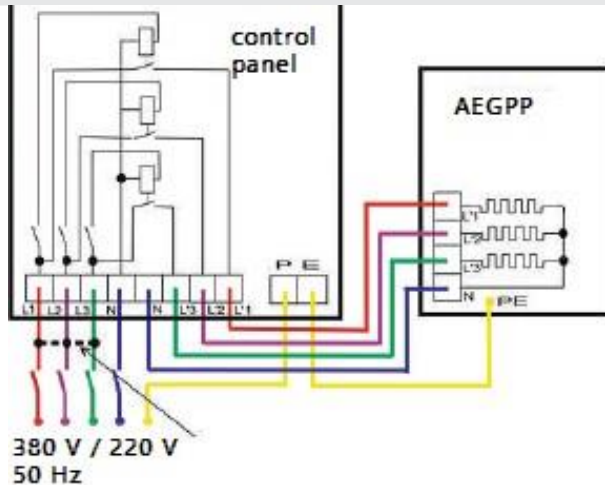
2.2.6 Use only aromatic substances and essential oils intended for use in the sauna or bath. Follow the manufacturer's instructions on the packaging of the product.

ATTENTION!



When connecting the phyto-steamer, it is necessary to avoid its ingress into the stream of superheated steam.

When connecting a broom-steamer, it is necessary to avoid long horizontal, and even more so, with a counter-slope sections of the corrugated pipe.



When connected to a 220V network, terminals L1, L2, L3 are connected by a jumper.

Fig 3a Electrical wiring diagram for connecting EGPP as an additional source of steam to the 380 V/220 V network.

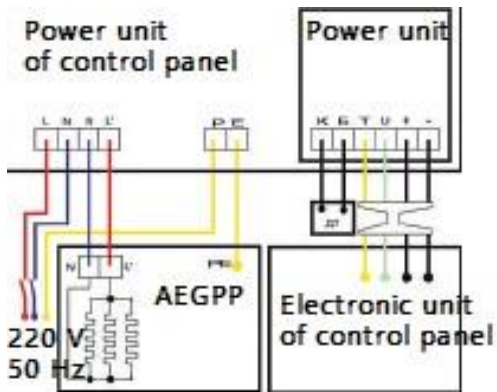


Fig. 3b Electrical wiring diagram for connecting the autonomous electric generator of superheated steam AEGPP in the electric furnace mode to the 220V network.

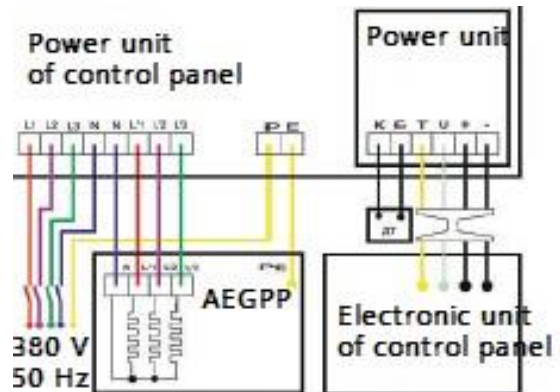


Fig.3c Electrical wiring diagram of the autonomous electric generator of superheated steam AEGPP connection in the electric furnace mode to the 380V network.

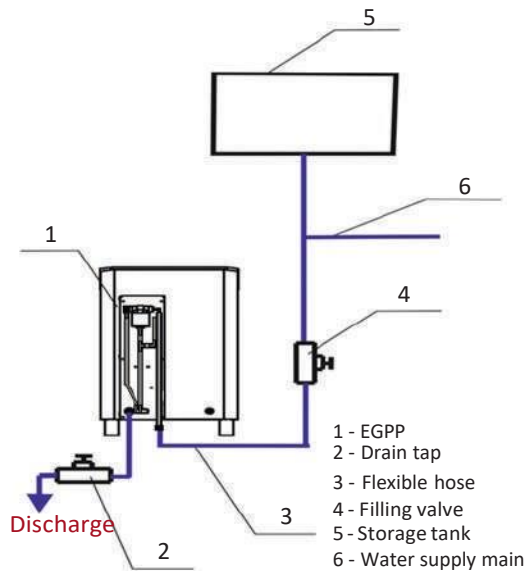


Fig. 4 EGPP connection diagram when operating in automatic water filling mode

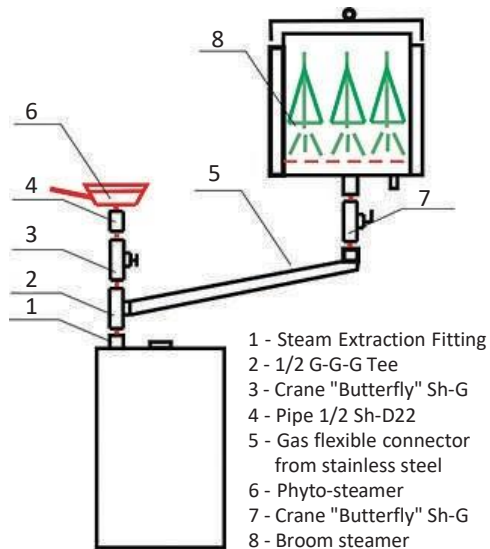


Fig. 5 Scheme of saturated vapor extraction from EGPP

2.3 Operating the Device

2.3.1 Safety Precautions

2.3.1.1 The device belongs to electrical installations, therefore, during operation, it is necessary to comply with all the rules and regulations of the current documents on safety and fire safety of electrical installations.

2.3.1.2 Do not touch parts of the autonomous electric generator of superheated steam AEGPP when heated – this may cause burns. Do not operate the saturated vapor extraction fitting without a protective glove.

2.3.1.3 Do not leave children unattended in the sauna.

2.3.1.4 Do not cover the autonomous electric generator of superheated steam AEGPP grille with any objects.

2.3.1.5 Do not use the autonomous electric generator of superheated steam AEGPP if it is damaged (foreign odor, smoke, fire, etc.).

2.3.1.6 In the event of a malfunction of AEGPP, immediately disconnect it using the input protective circuit breaker. Take measures for its qualified repair.

2.3.1.7 It is strictly forbidden to fill with water the tank of EGPP, which has been operating without water in the tank even for a short time before. It is necessary to turn off AEGPP, wait for it to cool down and only then continue its operation in accordance with paragraph 2.3.2 of this Instruction Manual

2.3.1.8 It is forbidden to leave water in the tank of a non-operating the autonomous electric generator of superheated steam AEGPP in case of negative temperatures.

2.3.2 Operating procedure when using the autonomous electric generator of superheated steam AEGPP in the electric furnace mode.

2.3.2.1 Close the drain valve (pos. 2, fig. 4) and open the filling valve (pos. 4, fig. 4).

2.3.2.2 Turn on the protective circuit breaker of the external VA network.

2.3.2.3 Turn on the Device by pressing the key on the control panel. After about 20-30 minutes, the generation of a vapor-air mixture will begin.

2.3.2.4 Further control of the Device is carried out automatically in accordance with the Operating Manual of the Control Panel. When using the autonomous electric generator of superheated steam AEGPP as an additional source of steam, turn on all three keys of the steam generator operating modes on the individual control panel. The presence of three keys on the control panel allows you to control the intensity of vaporization at the request of the user during operation. If it is necessary to take saturated steam to connect the phyto - steamer and broom-steamer or just additional air humidification, it is recommended to connect these devices in accordance with the diagram (see Fig. 5).

2.3.2.5 At the first technical switching on the Device, light smoke and odor may appear. In this case, turn off the Device and ventilate the room. After that, turn the Device back on.

2.3.2.6 It is recommended that you drain the system after you have finished working. To do this, turn off the filling valve (pos. 4, fig. 4) and open the drain valve (pos. 2, fig. 4). Wait for the water to be completely drained from the system, turn off the autonomous electric generator of superheated steam AEGPP on the control panel. Leave the taps in this position until the next time the Device is turned on.

2.3.3 Possible malfunctions and their elimination

External signs of malfunction	Probable cause	Methods of elimination
The device is turned on, but no steam is generated.	There is no voltage in the electrical network	Check if the network is healthy
The device is turned on, hot air is flowing, but steam is not generated.	There is no water in the steam generator tank	Fill the tank of the steam generator with water. Check the water supply.

2.3.4 Operations in extreme conditions

2.3.4.1 In the event of a threat to human life or fire, regardless of the causes of their occurrence, it is necessary to:

- immediately disconnect the Device with a circuit breaker of the external network of VA;
- evacuate people from the room where the device is located;
- call the fire service and, if necessary, the ambulance service;
- take measures against the spread of fire.

3. TECHNICAL MAINTENANCE

3.1 During the technical maintenance of the Device, the following types of work should be performed:

3.1.1 Cleaning the external surface of the Device – regularly, as soon as it gets dirty;

3.1.2 Cleaning the inlet filter and dirt - periodically after 8-10 sessions.

3.1.3 Descaling from the autonomous electric generator of superheated steam AEGPP tank – periodically after 8-10 sessions, in accordance with the instructions of the manufacturer LLC "Engcomcenter VVD" (https://vvd.su/pdf/EGPP_Clear.pdf). Follow the instructions and safety rules provided by the manufacturer.

3.1.4 Checking the condition of the grounding circuit and the reliability of power contacts at the electrical heating device and the control panel – 2 times a year;

3.1.5 All cleaning and repair work of the Device should be carried out only when it is disconnected from the mains.

3.1.6 Maintenance of the Device under clause 3.1.3 shall be carried out by an electrician who has permission to work with electrical installations up to 1000 V.

4. STORAGE AND TRANSPORTATION

4.1. The Device must be stored in a packaged form before installation at the place of use.

4.2. Transportation of the Device in a packaged form is carried out by any type of closed transport. During transportation, the Device must be secured in such a way as to prevent it from moving and overturning.

5. UTILIZATION

- 5.1 The device must not be disposed of with household waste.
- 5.2 The device should be disposed of at an appropriate recycling facility for waste electrical and electronic equipment.
- 5.3 For more information, please contact your local authority or your nearest waste collection point.

6. WARRANTY OBLIGATIONS

- 6.1 The device fully complies with the requirements of the Technical Regulations of the Customs Union TR CU 0042011 "On the safety of low-voltage equipment" and TR CU 0202011 "Electromagnetic compatibility of technical means", GOST 30345.0-95 "Safety of household and similar electrical appliances" and TU 27.51.24-015-51036005-2017.
- 6.2 The products are certified by the certification body "ROSTEST-Moscow". Certificate of Conformity No **TC RU C-RU.AI46.B.83477** series **RU** No **0613791**.
- 6.3 The Manufacturer guarantees the uninterrupted operation of the Device for 12 months from the date of sale, provided that the Consumer complies with the rules of this Instruction Manual.
- 6.4 The warranty is valid if the date of purchase of the Device is confirmed by the seal and signature of the seller on the manufacturer's warranty card and the presence of the original sales receipt or contract with the specified date of purchase.
- 6.5 The warranty does not apply to Devices used for commercial purposes.

6.6 Warranty repairs are not carried out in the following cases:

- expiration of the warranty period;
- in case of independent repairs of the Device;
- in case of damage to the Device caused by the fault of the Consumer;
- in case of violation of the rules for storage and transportation of the Device;
- when using the Device with a non-certified third-party remote control.

ATTENTION!



The Manufacturer is not responsible for the consequences resulting from violation of the rules for installation, connection and operation of the Device set forth in this instruction manual.

7. ГАРАНТИЙНЫЙ ТАЛОН

Mark of compliance of the "Autonomous Electric Generator, Superheated Steam (EGPP)" with the requirements of TU 27.51.24-015-51036005-2017.



Control panel (PU)

Seal, address and phone number of the company - seller

.....
.....
.....

Date of sale:

Warranty service is carried out at the address:

142180, Russia, Moscow region, Podolsk city,
Klimovsk microdistrict, Fabrichny proezd, 4E
Multi-channel telephone: +7 495 411-99-08
e-mail: sales@vvd.su
<http://www.vvd.su>

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