SAFETY

1.1. Notes about this instruction
This manual contains important information about proper installation, testing, use and maintenance of boiler. Manual of installation and use is created for installers, who have special education and good knowledge about use of heating systems. Indication related to use of boiler are dedicated to user and are clearly marked. In this document boilers of solid fuel are generally called boilers. Text clearly identifies differences of different versions of the unit.

1.2. Intended use
Before connecting the boiler to heating system it is necessary to read this manual carefully and to make sure that all components are working correctly and none of them are missing.

Stropuva “Granulinis” is steel boiler with automatic pellet feed (without helical conveyer), fired using 6 mm – 8 mm wood pellets. They are designed for heating of apartments, premises, small shops, repair shops. Temperature of water in boiler is 85 °C and highest pressure of heat transfer medium is – 0,15 MPa.

Integral part of boiler “Granulinis” is electronic control block.

Company reserves the right to change the construction and assures that these changes will not severely affect the firing process or operation of boiler.

Boiler “Granulinis” meets the requirements of European standards EN 303-5, EN 12809, provisions of Lithuanian laws and EU directives related to safety of products. Installation and operation of boiler should be done according to country’s regulations and indications of this manual.

1.3 Meaning of symbols

Word **Attention!** Means that there is a risk of slight damage to property.

Word **Warning** means that there is likely possibility of slight injury or severe damage to property.

Text marked with this symbol, provides advice. It will be separated from other text by upper and lower horizontal lines.
1.4 Advice for user

At the time of installation of boiler, regulations and standards of country in which this device will be operated must be adhered to:

- Country’s construction standards, which provide requirements of installation, combustion air supply, smoke gas system type and connection to chimney.
- Regulations and standards related to safety of related technical equipment and hydraulic heating systems.

Use only original STROPUVA parts. STROPUVA cannot be held responsible for damage done by using other manufacturer’s parts.

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**DANGER**

Danger of poisoning with carbon monoxide.
If boiler uses air from premises in which it is installed, there can be life hazard in case of gas exhaust system failure caused by insufficient flow.

- Do not decrease the diameter of outlets and do not cover them or chimney.
- It is prohibited to use the boiler if this failure is not eliminated immediately.
- User must be informed in written form about such circumstances.

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**DANGER**

Danger of explosion of poisoning with carbon monoxide.
Poisonous smoke may be produced during burning of plastic or liquids.

- Use only recommended fuel.
- Turn off the boiler in case of danger of explosion, fire, formation of flammable gases or vapors.
DANGER

Flammable materials or liquids may catch fire.

- It is forbidden to store flammable materials and liquids near the boiler.
- Respect the indication of minimum distance between boiler and easily flammable materials.

1.5. Advice for user

ATTENTION!

- Boiler can only be operated by adults who are familiar with boiler’s manual.
- It’s only permissible to turn on the boiler, set the regulator of temperature, turn off the burner and to clean the boiler.
- It is forbidden to leave the children near the boiler when it is working.

- Boiler’s operating temperature must not exceed 85 °C, it must be constantly observed.
- It is forbidden to use liquids for ignition of fire or to increase the power of boiler.
- Removed ash should be placed in nonflammable tank with a cover.
- Surface of boiler that gets very hot must only be cleaned with non-flammable agents.
- It is forbidden to place flammable items on or near the boiler (safe distance must be respected).
- It is forbidden to store flammable materials on the boiler (for example, wood, paper, oil).
After installing the boiler, before first firing the boiler is necessary to check for loose screws, if necessary retighten them. We recommend that you check them constantly.

1.6. Minimum distance and flammability of materials

Different countries may have different minimum distances than indicated further. You can ask installer or chimney sweep for information about it.

- Minimum distance from wall of boiler and chimney to material of average flammability must be at least 600 mm.
- Minimum distance from flammable materials must be at least 200 mm. If flammability is unknown, 200 mm distance must be preserved.

<table>
<thead>
<tr>
<th>Flammability of materials</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A – non-flammable</td>
<td>Asbestos, rocks, bricks, ceramic tiles, calcined clay, construction mortar, plaster (without organic additives)</td>
</tr>
<tr>
<td>B – not easily flammable</td>
<td>Plaster cardboard panels, basalt felt mats, panels AKUMIN, IZOMIN, RAJOLIT, “lignos”, VELOX and “Heraclitus”</td>
</tr>
<tr>
<td>C1 – hardly flammable</td>
<td>Felt mat covered with beech wood oak wood, panels HOBREX, VERZALIT, “Formica”</td>
</tr>
<tr>
<td>C2 – average flammability</td>
<td>Wood of pine, larch and spruce also products covered with such wood</td>
</tr>
</tbody>
</table>
Boiler is installed according to distance from walls indicated in illustration:

```
A  1 000 mm  
B     600 mm  
C     600 mm  
```

Boiler must be installed on non-flammable, even and horizontal basis or foundation. Separation seals made from non-flammable material can be placed under boiler if it is needed. If a foundation is not completely horizontal, side (back) connection can be installed 5 mm higher to facilitate the air supply and flow.

Foundation should be larger than pad of boiler: at least 300 mm from front and about 100 mm from other sides.

1.7 Tools for cleaning and installation

Installation of boiler requires regular tools, used by installers of heating, liquid fuel and water systems.

Simple domestic tools like scoop, broom and shovel can be used for maintenance of boiler. To clean the boiler you will need brush, poker and scraper, ash pump.

2. DESCRIPTION OF PRODUCT

2.1 General information

Pay attention to the instructions for connecting the boiler to heating system. Installation of boiler must be carried out in accordance with rules and standards that apply for heating systems in that country, especially:

- EN305 “Heating boilers”, 5th part. Solid fuel heating boilers, with automatic or manual ignition, 300 kW rated power.
In systems where temperature can exceed 90 °C and water column is larger than 15 m, spiral cooler with permeability of 1500 l/h needs to be installed. Pressure of cold water supplied to safety device cannot be lower than 2 bar. Water flow from cooler’s low temperature outlet must be designed in a way that it could not be stopped.

Boiler can be controlled when thermostat and emergency thermostat works properly and draft in chimney does not exceed 20 Pa. If this value is exceeded, chimney’s draft flow must be reduced. Manufacturer tested this boiler with 4 bar pressure.

Boiler can be installed by installer who works with accordance to current requirements and laws and understands the appropriate operation of heating system. Quality of boiler installation must be confirmed by certificate of installation works, issued by installer.

### 2.2 Pellet boiler

Boiler for heating water in the system. Highest temperature of outgoing water is 85 °C, and allowed operational pressure at lowest point of heating system – 1,5 bar. Technical data is presented in additional table and instructions can be found in rated data plate. Parts of pellet boiler:

1. Decoration of boiler.
2. Burner of pellets.
3. Pipe of heated water.
4. Pipe of returning water.
5. Heat exchanger, with flowing water inside of it.
6. Thermal insulation layer made from mineral wool.
7. Turbulator.
9. Safety valve 1,5 bar (left-hand thread).
10. Thermometer.
11. Pellet hopper.
12. Smoke discharge vent.
15. Cover.
2.3 Pellet burner

- Burner – for burning and feeding fuel.
- Burning chamber is cube shaped – it is attached to the housing of boiler. It is used to put in a burner and to burn fuel.
- Ignition, observation opening (1.) – for primary ignition of pellets using gas burner and for observation of fire.
- Fuel bunker (5.) – attached over the burning chamber and it is used to hold fuel.
- Fan (2.) – for air supply. Flow of supplied air is adjusted by air flow regulator, which ensures optimal burning conditions.
- Temperature regulator (contact thermostat) – installed on piping fed by boiler. For controlling temperature of outgoing water and for controlling the fan.
- Airflow regulator (3.) – installed in burner. Secondary air supply into burning zone is determined – for optimization of burning conditions. Adjustment is carried out during first ignition by using analyzer of gas.
- After positioning the carriage (4.) screw must be fully tightened, so that there would be minimal space between carriage and burner.

2.4 Fuel

Boiler is designed to be used with pellet burner, fired with 6 – 8 mm wood pellets. Pellets of varying quality can be used.
3. TECHNICAL DATA

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Measuring unit</th>
<th>“Pellet boiler” with 30 kg hopper</th>
<th>“Pellet boiler” with 60 kg hopper</th>
<th>“Pellet boiler” with 90 kg hopper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated power</td>
<td>kW</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Heated area [1]</td>
<td>m²</td>
<td>Up to 200</td>
<td>Up to 200</td>
<td>Up to 200</td>
</tr>
<tr>
<td>Efficiency</td>
<td>%</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Width</td>
<td>mm</td>
<td>300</td>
<td>400</td>
<td>500</td>
</tr>
<tr>
<td>Length</td>
<td>mm</td>
<td>800</td>
<td>900</td>
<td>1000</td>
</tr>
<tr>
<td>Height</td>
<td>mm</td>
<td>1500</td>
<td>1500</td>
<td>1500</td>
</tr>
<tr>
<td>Measurements of hydraulic system joints</td>
<td>inch</td>
<td>1 1/4</td>
<td>1 ¼</td>
<td>1 1/4</td>
</tr>
<tr>
<td>Connection of flue</td>
<td>mm</td>
<td>Ø 160</td>
<td>Ø 160</td>
<td>Ø 160</td>
</tr>
<tr>
<td>Height of chimney flue from the floor</td>
<td>mm</td>
<td>1300</td>
<td>1300</td>
<td>1300</td>
</tr>
<tr>
<td>Standard load of fuel</td>
<td>kg</td>
<td>30</td>
<td>60</td>
<td>90</td>
</tr>
<tr>
<td>Weight</td>
<td>kg</td>
<td>82</td>
<td>87</td>
<td>92</td>
</tr>
<tr>
<td>Fuel consumption at rated power</td>
<td>Kg/h</td>
<td>4,0</td>
<td>4,0</td>
<td>4,0</td>
</tr>
<tr>
<td>Required chimney draft</td>
<td>Pa</td>
<td>20-25</td>
<td>20-25</td>
<td>20-25</td>
</tr>
<tr>
<td>Power supply</td>
<td>-</td>
<td>230 V, 6 A.</td>
<td>230 V, 6 A.</td>
<td>230 V, 6 A.</td>
</tr>
<tr>
<td>Maximum temperature of heat exchange medium</td>
<td>°C</td>
<td>85 °C</td>
<td>85 °C</td>
<td>85 °C</td>
</tr>
<tr>
<td>Minimum temperature of heat exchange medium</td>
<td>°C</td>
<td>50 °C</td>
<td>50 °C</td>
<td>50 °C</td>
</tr>
<tr>
<td>Maximum operational pressure</td>
<td>bar</td>
<td>1,5</td>
<td>1,5</td>
<td>1,5</td>
</tr>
<tr>
<td>Volume of water tank</td>
<td>l</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Main fuel</td>
<td>-</td>
<td>8 – 6 mm pellets</td>
<td>8 – 6 mm pellets</td>
<td>8 – 6 mm pellets</td>
</tr>
<tr>
<td>Boiler’s class</td>
<td>-</td>
<td>IV</td>
<td>IV</td>
<td>IV</td>
</tr>
</tbody>
</table>

1 Largest heating area is calculated according to specific heating requirements after evaluating the coefficient of loss q = 100-150 W/m²; quality of fuel.
4. CHIMNEY

Chimney of appropriate height and diameter is very important for proper operation of boiler. Before connecting the boiler to the chimney, check if its flue is suitable (diameter of flue must be not lower than of boiler’s flue), if there are other systems connected to the chimney. Chimney must be installed according to current standards and regulations. Chimney’s draft must be 20-25 Pa. If draft is low, boiler will operate poorly (buildup of resins, congestion, smoking) and its service life will be shorter.

NOTE

In order to prevent chimney’s performance deterioration, caused by rain water steam and buildup of resin, it must be impermeable and isolated.

In case of excessive draft, there will be increase in fuel consumption and in extreme cases there is a chance of overheating the device. This flaw can be eliminated by installing draft limiter. Chimney sweep must assess the technical condition of chimney which will be connected to boiler. In order to safeguard the system from wind gusts, chimney must rise no less than one meter above the roof. Premise, in which the boiler will be installed, must meet the requirements of “the rules of installing solid fuels boilers in buildings ST 8860237.02:1998”.

Chimney must meet specific regulations, of the country where it is being installed.

Lowest dimensions of flue recommended by manufacturer of boiler:

- Round cross-section – 150 mm
- Square cross-section – 140 x 140 mm

Boiler’s flue must be connected to chimney’s steel part of suitable size and form.

Connection must be leak-proof.
5. CONNECTION TO HYDRAULIC SYSTEM

5.1. Installation in closed system

According to requirements of this manual, boiler is allowed to be used in closed system only after installing specific safety devices.

On our boiler (on back side, near the flue) there is ½ inch connection for protection system.

Manufacturer does not take responsibility for quality, selection and appropriate installation of devices for protection from higher temperature than 95 °C and higher pressure than 1.5 bar.

This work can only be carried out by authorized qualified technician.

Example of protective device Laddomat 5067.

Heating protection system with thermostatic valves for protection of solid fuel boilers, installed according to standard EN 303-5. Especially recommended for boiler with no cooler.

Parts of Laddomat heating valve 5067: return valve, pressure regulator, adjustable heat and emptying-filling valve, temperature sensor with capillary. Pressure reducer that can be connected to water supply and output of filling up valve adjustable according to temperature that can be connected to return line of boiler, as shown in illustration. Supply line is connected with release valve. It releases water out of the system to cool down the boiler.

6. ELECTRICAL INSTALLATION

Operated boiler “Pellet boiler” must be connected to working electrical system which completely complies with laws of Country in which it is operated.

In case of bad installation, controller can be damaged or damage can be done to people and environment. Controller and device need 230 V power supply, therefore installation works must be carried out by a person with appropriate knowledge, skills and who meets additional requirements of Country in which the boiler is installed.

7. OPERATION OF BOILER

7.1 General information

User must have operational accessories of boiler, for example, scoop, cleaning rod, also he/she must be wearing personal protection clothes, at least gloves.

It is forbidden to alter boiler’s construction or operational principle, also to add other – not factory installed and not manufacturer’s recommended – equipment, because boiler can fail or be damaged. Before testing the boiler, all heating system must be filled with heat exchanging medium.

This part must be carried out by complying with all instructions of device and current regulations. Before lighting the burner, check if the system is correctly loaded and looking orderly.

Also you must inspect the condition of chimney.

Boiler can be inspected by installer or qualified technician.

Use only dry fuel. Wet fuel can get stuck in storage – there will be more smoke while burning and boiler will wear out faster.
7.2 Ignition

Before igniting the boiler – fuel bunker must be filled up, controller must be connected to power supply and boiler’s temperature must be set in contact thermostat (recommended 0 °C).

Boiler has ignition, observation opening, which when opened – allows to light the fuel with use of gad lighter. First ignitions must be carried out mechanically. Following ignitions are performed automatically – by maintaining a layer of live coal in a burner. Controller turns on and shuts downs the burner according to controllers parameters or when selected temperature of boiler is reached.

Attention!

After ignition, observation opening and door must be closed. Selected temperature in contact thermostat (60 – 75 °C)

7.3. Burning

Desired temperature can be set on contact thermostat, recommended 60-75 °C. Boiler works automatically according to settings, which can be chosen by user according to instructions of controller and room thermostat.

When boiler is working in automatic mode, it requires less frequent filling of bunker and cleaning of ash.

Attention!

When device is in operation, cover of tank must be fully closed.

Attention!

In order to fill fuel tank with pellets, contact thermostat must be set to zero and fan must be turned off.
If fuel meets the standards and recommendation of manufacturer, ash will fall into ash chamber. If fuel doesn’t meet the standards, requirements and manufacturer’s instructions, there can be malfunctions of burning process, buildup of condensate, soot and resin.

### 7.4. Setting of burner’s temperature

Thermostat makes sure that burner maintains the layer of ash and is able to ignite automatically after disconnection. Thermostat is set for optimal operation of boiler 50 °C.

### 7.5. Setting of thermostat of premises

Electronic programmable thermostat is designed for adjustments of temperature in the premises. In order to find out how to program the thermostat, read its manual, which is included with manual of every boiler.
7.6. How to stop the flow of pellets

1.

2.

3.

7.7. Shutting down the boiler

When the bunker is out of fuel or fire of the burner is out, turn off the fan by following the instructions (set the contact thermostat to 0 °C), remove the ash and soot out of boiler. If boiler will not be used for longer period of time (for example, when heating season is over), use up all the fuel from the bunker. Heat exchange medium mustn’t be removed from the heating system before the downtime period.

7.8. Emergency shut down of boiler

In cases of boiler malfunction, for example, when heat exchanger medium exceeds 100 °C temperatures (when heat exchanger medium is partly evaporated or when sounds, made by boiler, are heard in heating system), cracked pipes, radiators, valves or if there is other danger of unsafe operation of boiler, user needs to:

- Assure maximum cooling of boiler room by opening doors, windows, hatches, loading holes, etc.
- Turn off the fan.
- Eliminate the problem.
- Check the level of heat exchanger medium in heating system and after boiler cools down, fill it up if needed.

If there is a need to pour some of cold heat exchanger medium into cold one (after losing large amounts), while boiler is working, wait till boiler cools down, fill up the system of heat exchanger medium, carry out preparation works and reignite the boiler. If cold heat exchanger medium touches hot wall of boiler, there is possibility of damage to the boiler.

7.9. Accidental combustion of sooth in chimney

Sooth in dirty chimney can flame up. This can cause fire of all house or nearby houses and walls of the chimney can start to shatter.

In case of combustion of sooth a chimney it is important to:

- To stop the airflow from boiler to chimney by closing all openings (turning of the fan).
- For firefighters to eliminate potential fire sources on the outside of building, which could combust because of emitted burning sooth.

Do not use the boiler, after extinguishing the chimney, because chimney’s condition must be thoroughly inspected, all damage must be repaired. Also user needs to get permission from competent administration institutions to continue to use the chimney according to provisions of the Country.
7.10. Cleaning and technical maintenance

Boiler’s service life highly depends on frequency of cleaning and appropriate technical maintenance. Boiler and burner needs to be cleaned periodically (at least once a week). If it is not cleaned, there are large heat losses and circulation of gas inside the boiler is worsened. If it is left unmaintained for longer period, corrosion could start and boiler could get terminally damaged. Clean the boiler after the heating season.
7.11 Rules of safe operation

Boiler’s equipment can be operated safely when the requirements of Country in which it is operated.

Also, follow these instructions when using the boiler:
1. These actions have to be carried out before doing any maintenance work:
   a) Turn off the fan or switch it to STOP mode without airflow (set the contact thermostat to 0 °C).
   b) Use up the remaining pellets in the bunker.
2. All maintenance works must be carried out while wearing gloves, protective glasses and helmet.
   a) Boiler room must be well ventilated when cleaning the boiler.
   b) Do not use the boiler if the level heat exchanger medium in the system is lower than indicated in boiler room operation manual.
   c) Act orderly and according to the room while working in a boiler room.
   d) Immediately remove all known failures of boiler.

8. ENVIRONMENTAL PROTECTION

8.1. Disposal of packaging

Boiler is delivered in packaging.

Wooden and paper packaging can be burned in boiler of solid fuel, if user has one, or disposed according to requirements of environmental protection.

Replaced parts of heating system need to be forwarded to respective waste management company.

8.2. Utilization of boiler

After the end of boiler’s operational period, it must be dismantled and sent for recycling.

9. WARRANTY

9.1 Warranty conditions

This document confirms that boiler was tested in factory, its tightness was inspected and it was confirmed as effective and suitable for use.

1. If user follows the instructions of installation, operation and maintenance, indicated in user manual, distributor provides a warranty according to conditions listed below:
   Boilers are given 24 month warranty from the day of purchase, but not longer than 36 months from the day of manufacture.

2. Warranty doesn’t cover consumables, for example, stuffing, seals, chamotte insert, connectors, sockets, fuses. Warranty doesn’t cover mechanical, heat related or chemical damage caused by inappropriate use or lack of actions.

3. Setting of burning parameters, technical maintenance (cleaning), replacement of parts with specific date of expiration (fuses, electric heaters, seals) is not included into warranty service and user is responsible for them.

4. According to warranty rules, distributor can be held responsible only when defects are caused by sold product or there are physical defects of the product. Warranty doesn’t cover interruptions of boiler’s operation or boilers failures caused by low quality fuel or failure to follow installation instructions, false choice of equipment, inappropriate chimney or poor draft in chimney.
5. In case of unauthorized changes of boiler’s construction, without following installation, operation and technical maintenance instructions provided in the manual, if boiler is not maintained or mandatory service is not carried out or in case of failure to settle with seller, warranty is suspended or terminated. User must cover the expanses of travel of technical service specialists if:

- Technical service staff is called to carryout non-warranty work.
- Device must be repaired because of the fault of user or independent distributor.
- Failure cannot be eliminated because of reasons that do not depend on actions of technical service workers (for example, when there is no fuel, no draft in chimney, system is not tight, boiler is installed inappropriately).

6. Boilers of biomass require raised temperature in return counter of system.

7. Warranty only applies if distributor informs the manufacturer or user fills out request and after filling out a complaint provides a copy of document proving the purchase of product. If passport of device is lost, user is responsible for all repairs.

8. If the same part of the device was unsuccessfully repaired three times, user has the right to demand that whole device would be replaced. Whole system can only be replaced after receiving technical service representative’s confirmation that it cannot be repaired.

10. UAB “STROPUVA IR KO” cannot be held responsible for indirect losses or damage, which is caused by additional inconveniences because of inability to use the device or its parts, which are under warranty. Client’s complaints about damages, other than damages caused after delivery of good because of physical defects, are not accepted.

11. All disputes indirectly or directly related to the contract are solved by competent court, according to registration place of territorial distributor. Distributor is allowed to choose competent court according to buyers residence place.
10. Warranty application

For general director of UAB “STROPUVA IR KO”

A .............................................................., I purchased a product which was manufactured in your company.

(name, surname and company’s name)

product: .............................................................., manufacture No..............................................................

(products name) (date of manufacture)

(place, date of purchase, name and number of purchase documents)

After studying product’s technical passport, I declare that product was installed according to requirements presented in manufacturer’s technical passport and it’s intended us, without breaching the requirements of user’s manual. With respect to that, I have a complaint concerning this product:

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

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

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I believe that shortcomings listed in complaint were caused by defects of your product. I ask you to send your representatives to inspect the connected device, to determine and remove the defects. If it will be found that mentioned shortcomings were caused by inappropriate installation or use of device or if there are no warranty covered shortcomings, I commit to refund the expenses of transportation (0,25 Eur/km) and time wasted during the travel and inspection (9 Eur/h), for your representatives, for each worker of service crew (not more the for three workers).

If in 7 days I will not refund the expenses in my own will, I agree that expenses would be recovered from me according to the order determined by laws of LR.

My address.............................................., phone..............................................................

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

Name, surname Signature
10.1. Boiler’s passport

Boiler’s passport must be filled out thoroughly. If passport is not filled out, warranty does not apply. In case of failure of device, copy of this passport is sent to seller or distributor. Original copy of passport must be presented to authorized technician who comes to repair the failure.

<table>
<thead>
<tr>
<th>Model</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial No.</td>
<td></td>
</tr>
<tr>
<td>Rated power</td>
<td></td>
</tr>
<tr>
<td>Purchase date</td>
<td></td>
</tr>
<tr>
<td>Sellers stamp and signature</td>
<td></td>
</tr>
<tr>
<td>Stamp and signature of installer</td>
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<tr>
<td>Date of installation</td>
<td></td>
</tr>
<tr>
<td>Date of first use</td>
<td></td>
</tr>
<tr>
<td>Technical maintenance works</td>
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