



Rocket heater „GAMERA“

High efficiency heater on hard fuel

Manufacturer: AGNON Ltd., Bulgaria

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ATTENTION!

Read the following instructions carefully before using your appliance.

TECHNICAL DATA

Material: Steel, Vermiculite

Finish: Cast gray thermal resistant paint

Fuel: Wood, eco briquettes, Pellets (in development)

Fuel length: max: 40 cm

Fuel diameter: max: 5 cm

Burn time: 50-90 min.

Flue outlet: Bottom back/left/right

Flue pipe: Ø130mm

Dimensions (HxWxL): 92/50/66cm

Weight: 65 kg

Shipping weight: 100 kg.

Shipping dimensions: 103/73/65 cm.

Warranty: 2 years

Technical data according EN 13240

Nominal output power: 9.5 kW (32400 BTUs)

Heated area: ~60m²

Heated volume: ~140m³

Efficiency: 89.3%

CO emission (brought to 13% O₂): 0.0298%

Flue gas temperature: 139.7° C

Recommended chimney draught: 12Pa

Flue gas mass flow: 8.23 g/s

Operation mode: Intermittent

DESCRIPTION

The rocket heater runs on solid fuel and is intended for heating communal buildings. The top plate can be used for cooking. The output power can be adjusted by varying the quantity and the size of the fuel also by changing the flow of primer air controlled by the intake valve. We recommend using dry wood with low ash content.

The body of the heater is made from black sheet metal steel with 1.5mm thickness. The top plate is 4mm thick. For the burning chamber 25mm thick high density vermiculate sheets are used. The firebox door is equipped with thermal ceramic-glass plate.

To calculate the power necessary to heat a certain space it should be considered that heating 1m³ takes 25÷180W depending on the outside temperature, wall insulation, window area etc.

INSTALLATION INSTRUCTIONS

When installing the appliance, all local laws and regulations must be complied, including those relating with national or European standards. The heater must be placed on a stable fireproof flat surface that can support its weight. For protecting the floor the base must protrude before the heater at least 30 cm in front and 5cm at each side.

In the radiating area of the heater, at a distance of 70cm in front and 50cm around it there shall not be any objects burnable and damageable by the radiated heat.

Before connecting the appliance to the chimney, consult a qualified technician.

The exhaust pipes must be tightly connected and secured, and must be the same size as the connecting pipe of the rocket heater.

It is advisable that the heater is connected to a dedicated chimney. If more heating appliances are connected to the same chimney, it must be designed to handle multiple heaters.

For optimal performance, 4m³ of fresh air is needed for each kWh of released heat.

To ensure a stable and safe burning process there should not be any shortage of air caused by the action of gravitational or forced aspirations, since this is a prerequisite for insufficient combustion and/or returning of flue gases in the premises.

Ensure that air vents in the room where the heater is located are not blocked and the chimney is clean and operating normally.

Avoid using mechanical fan vents in a room with a hard fuel heater. This may cause negative pressure and draw poisonous gasses into the room.

The front door must be placed on the hinge.

The handle on the top cover must be installed with a screwdriver.

OPERATING INSTRUCTIONS

To utilize the appliance correctly and prevent any accidents please follow the instructions in this manual. Before initiating any action the user must have read and completely understood the contents of this operation manual.

This appliance must not be used or manipulated by people suffering from psychic or mental disorders, people with limited vision and children (unless taught by the responsible person).

The heater must be used only as intended. Any other use should be considered incorrect and risky.

Most surfaces are very hot and should be handled with fireproof gloves.

Never start a fire if the glass is broken.

Before attempting any cleaning or maintenance make sure that the fire is completely extinguished and the appliance is cool.

Always clean the ash from the previous run before starting a fire.

Never attempt to start a fire or burn highly flammable materials or liquids.

Do not use the appliance to burn waste/garbage. This can lead to unpredictable results. Waste materials have various chemical composition and cannot burn completely, therefore the exhaust gases become very toxic. All heaters are designed and tested for use with dry wood without paint and glue.

Incorrect installation and usage or poor maintenance (not conforming to this manual) may lead to injury and/or damage.

The user is completely responsible for correct installation and exploitation of this appliance, which dispenses the manufacturer from responsibility for all his/her actions or inactions.

FUEL

Wood:

Always use dry firewood with low ash content. This will give you optimal results. Other types of fuel (not wood) may damage the heater.

Quality firewood should have water content of maximum 20%.

If you prepare your firewood than consider doing that at least one season before using it. Fire wood should be stored at dry and airy place.

Maximum recommended log diameter is 5cm.

The amount of available energy in 1 kg of quality firewood varies very little. On the other hand the specific weight (density) of the different kinds of wood varies considerably.

As an example, a certain volume of birch will provide less energy (kWh) than the same volume of oak, which has a higher specific weight.

The amount of energy produced by 1 kg quality firewood is around 3.8 kWh. One kilogram of completely dry firewood (0% humidity) produces about 5 kWh, while firewood with a humidity level of 60% produces around 1.5 kWh/kg.

Consequences of using damp wood may include:

- Decrease in burning efficiency.
- Appearance of soot/tar on the glass.
- The heater emits little warmth.

Be especially careful never to lay a fire using any of the following materials:

- Household waste, plastic bags, etc.
- Painted or impregnated wood (highly toxic).
- Chipboard or laminated boards.
- Driftwood.

This may damage the appliance and pollutes the atmosphere.

Attention! Never use combustible liquids such as petrol, kerosene, red spirit or similar to start the fire. This may cause injury and/or damage.

Eco briquettes:

- Eco briquettes with diameter up to 5cm and hole in the center are recommended;
- Eco briquettes can be combined with woods;

Pellets:

- Pellets can be used only with special add-on sold separately;
- With installed pellet add-on only pellets can be burned. The add-on should be removed in order to burn wood and eco briquettes;

Starting a fire

Attention! When starting a fire in your heater for the first time it is advised to gradually increase its intensity. When the heater is used for the first time, residues from the manufacturing process such as glue, paint and sealant will burn away and produce fumes and/or smoke. The thermal paint will off-gas for about 15-20 minutes, as is typical for most wood heaters. Ventilate the room by opening doors and windows until the vapors around the stove have been cleared out. The heater will only off-gas the first time you light it.

Before lighting the heater, ensure that any build-up ashes in the fire box has been removed.

Loading:

Fuel (wood logs, briquettes) is loaded vertically through the opening at the top of the firebox. Lift the top cover and place 2 to 3 pieces of wood about 2-3cm thick. Before them place some thinner pieces;

Through the front glass door put some fire starters and/or paper;

Close the top cover and the air intake valve so that only the front door remains open.

Before starting the fire check that there is initial draft from the chimney. This can be done easily by approaching the flame from the lighter near by the door opening. If the flame bends inward there is some draft.

Light up the paper and/or the fire starters and wait for the fire become stable then close the glass door and open the intake valve located above it.

Attention! The air intake valve must remain open during operation. It should be closed after the fire have extinguished to prevent losing warm air from the room.

After 5-10 minutes the fire should be strong. Now you can add more logs bigger in size (up to 5cm) until the fire box is 70% filled. Avoid filling the firebox completely. There should be at least 20% free space for proper air flow.

The recommended maximum size of the wood logs/eco briquette is 5cm in diameter. This limitation is imposed from the requirement that a minimum of 3 logs should burn together in order to sustain each other. If you try to burn only one piece of wood it will most probably extinguish.

To achieve more intensive fire and higher output power use more logs that are smaller in size.

To extend the refuel period use 3-4 bigger logs.

Attention! During operation do not open the front glass door. It is intended only for starting the fire and cleaning the burning chamber.

Note! If you are experiencing low draught or you need to boost the fire to achieve quick initial warming you can load the fuel horizontally as described below:

Make sure the wood logs fit on the bottom of the burning chamber and the glass door can be closed. The logs must be shorter than 40cm.

Put 2 to 3 pieces of wood about 2-3cm thick. Above them place some thinner pieces. On top insert long stripes of paper until the burning chamber is filled half of its height.

Light up a piece of paper and insert it in the bottom of the burning chamber.

When stable fire is achieved and the heater does not smoke in the room close the glass door and load more fuel vertically through the top opening.

When using eco-briquettes start the fire as described above and after achieving stable burning load some eco-briquettes vertically through the top opening.

Starting the heater in pellet mode is done with gas fire torch for 3-5 minutes.

Indications for normal operation

The fire should be intensive with strong flames and distinctive sound. If it smolders the heat riser does not get hot enough and the burning becomes ineffective, like in a regular hard fuel heater. This leads to higher fuel consumption and more pollution. If the appliance is used regularly in smolder mode soot builds up on the inner surface of the body which decreases its efficiency.

Warning! If there is a red glow on the top plate this is a sign for overloading. Stop feeding fuel and limit the air intake until the fire intensity reaches normal levels. Load the necessary amount of fuel without overloading the heater.

Warning! Never put water in the fire. This will cause damage to the heater. The appliance can handle short term overloading so just stop adding fuel until the fire reaches normal intensity.

If you need to abruptly extinguish the fire use sand.

Cleaning, maintenance and storage

The ashes on the bottom of the burning chamber should be cleaned after each cycle.

Do not store the ash in plastic containers.

Each season remove the ash that builds on the bottom of the heater through the flue connector.

Dust clean the outer surfaces with moist cloth when the appliance is cool.

Do not use detergents and/or abrasive agents.

Repaint with suitable thermal resistant spray paint.

The glass can be cleaned with moist cloth or if necessary remove the door and wash with detergent.

When you need to suspend the heater for longer periods (at the end of the heating season) remove the ash from the burning chamber to prevent damage due to moist agglomeration. Also remove the ashes at the bottom of the appliance through the flue exit with dust cleaner or by hand.

Do not try to alter the appliance.

If there is a damage in the burning chamber contact the manufacturer.

The company performs warranty and post-warranty service of the burning chamber.

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