

Innovative rodentscarer

Operating manual



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This manual introduces you to structure, rules of operation (functioning, maintenance, reparation, storage and transportation) of innovative rodent scarer “GRAD A-500” (hereinafter - the device).

Before using your device, please read this supplied user’s guide.

Following the rules, restrictions and guidelines will prolong the device life and will help to use it most effectively.

1. Device description and operation

1.1. Device purpose

1.1.1 The device is a portable gadget, developed to scare rodents (mice, rats, moles, shrews) in the garden and indoors - warehouses, storage facilities, personal service room, etc.

The operation is based on rodents intolerance to sound produced by the device. Sound waves influence the nervous system of rodents, causing them pain and discomfort. Rats and mice lose their ability to consume food, water, trying to leave the room. This product is not harmful for humans and domestic animals. A distinctive feature of the device, comparing it to its analogues, is that the ultrasound radiation parameters are constantly changing, the repeat period is 60 hours, what eliminates the habituation of rodents to the sound, also allows mounting additional devices at any distance without "fading sound" occurrence.

The device can have an external power supply as well as battery set, what allows using the device without possibility to AC power connection (eg, outdoor garden space.)

1.1.2 Operational environment:

- Ambient temperature..... - 40 to + 55;
- Relative humidity at 25 ° C,% 98;
- Atmospheric pressure of 66.6 kPa to 106.6 kPa (500 mmHg to 800 mmHg).

1.2 Specifications

1.2.1 Device appearance can be seen on Picture 1



Picture 1 – appearance of the device

1.2.2 Overall dimensions, mm, no more than	109 x 65 x 25
1.2.3 Device Weight with batteries, kg, not more than	0.12
1.2.4 DC supply voltage (three batteries type AAA).....	from 3.0 to 4.5
1.2.5 Input DC voltage when running on external power supply, AV.	10 to 30
1.2.6 Maximum device current consumption, mA, not more.	3
Battery, not more than.	1.5
External source, not more than.....	3
1.2.7 Range of operating frequencies kHz	from 4 to 64
1.2.8 Diagram of radiation	circular
1.2.9 Sound pressure level at 2 m from device, dB, not more than	90
1.2.8 Effective area, covered by the radiation, m ²	500

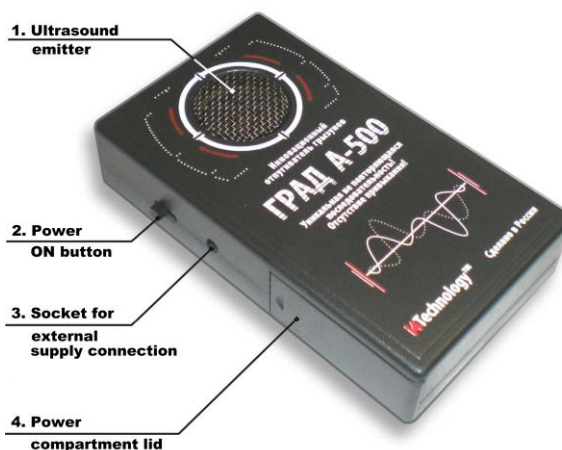
1.3. Device parts

1.3.1. Device parts and package contents can be seen in Table 1.

Table 1

№	Item	Quantity	Note
1	Innovative rodent scarer “GRAD A-500”	1	
2	External power supply (<i>network adapter</i>)	1	
3	Individual package	1	
4	Operating manual INTK.433523.001 RE	1	

1.3.2 Main parts location can be seen on Picture 2



Picture 2 – device main parts location

The device consists of ABS shockproof plastic body, inside it:

- Ultrasound emitter pos.1
- Power ON pos.2
- Socket for external supply connection pos. 3
- Power compartment lid

1.4. Components and functioning

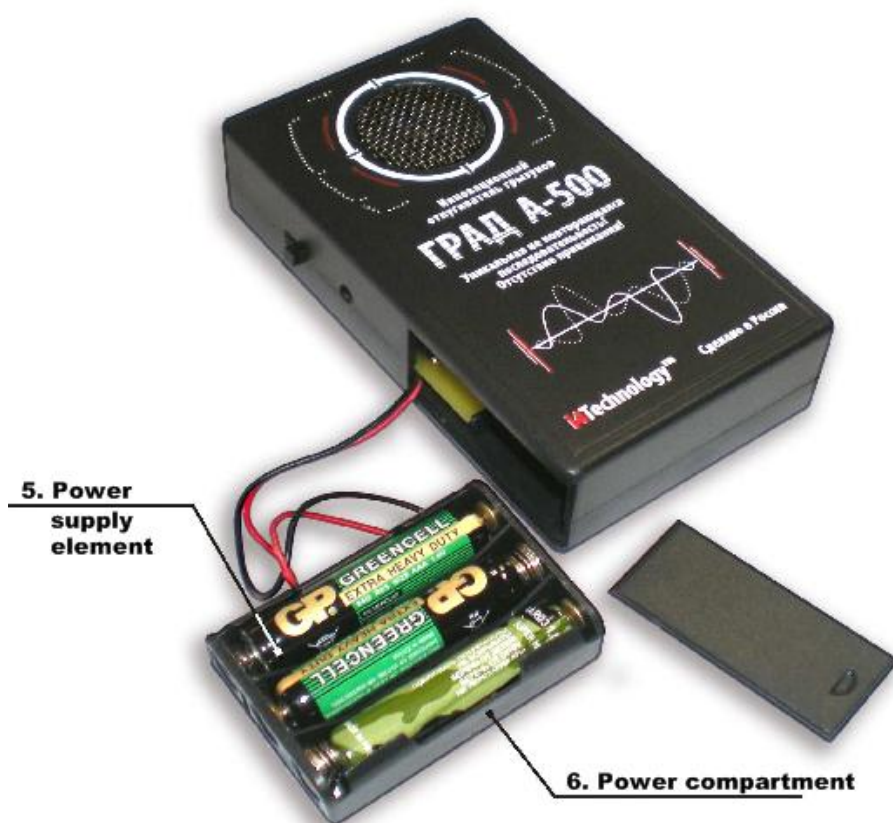
1.4.1. The operation is based on rodents intolerance to sound produced by the device. Constant changing of radiation eliminates the habituation of rodents to the sound.

1.4.2. The product is based on a microcontroller with preinstalled software.

1.4.3. Power supply is provided from three AAA batteries or from external supply with DC voltage output from 10 to 30 V.

Battery set up scheme pos.5 into power compartment pos.6 shown on Picture 3.

External power supply is realized through socket pos. 3. Nest polarity is shown on Picture 4



Picture 3 – battery set up scheme



Picture 4 – nest polarity

2. Intended use

2.1 Operating limitations

2.1.1. It is not recommended to locate operating device closer than 2.5 m from a person

2.2. Functioning

2.2.1. Turning on the device is realized by the button pos.2 (Picture 2) Wright after you turn it on, the device produces an ultrasound pos.1 (Picture 2), it means the device is ready to work.

2.2.2 For a successful rodent control is important to choose a location, where the device can be installed.

You should consider the following factors:

- Ultrasonic waves are reflected from solid materials and are absorbed by soft materials;
- Ultrasound waves do not pass through walls and partitions;
- Maximum effect is achieved by placing the device at a distance of 60-70 cm

from the ground (floor).

2.2.3 The results of the indoor research show-the complete disappearance of rodents after 14 days of device continuous operation.

2.2.4 Using the device in the gardens, it is recommended to put the device inside a plastic bag and locate it at the entrance of the rodent hole or cover it with soil, because ultrasound extension conditions are better in soil.

3. Maintenance

3.1 Maintenance consists in charging batteries, as well as keeping the outside device surface clean.

3.2 Reparation. Possible troubleshooting.

Typical troubleshooting and fixing methods are provided in Table 2

Table 2

Troubleshooting description	Possible reason	Fixing methods
Turning On the device it emits no sound	Low battery power	Charge the batteries
	The device is defective	Send device to be repaired
	External power supply is connection	Turn on the power supply or disconnect it

4. Package, storing and transportation certificates

In accordance to package contents in Table 1, each device is packed into the individual corrugated cardboard box.

Moving of the item in the package is not in allowed.

Packed products are fit into the shipping container - a box made of corrugated cardboard GOST 22637.

Packaged goods can be delivered by road or by rail in boxcars or containers, also in pressurized module by air.

During transportation, the items must be protected from direct precipitations and solar radiation.

Terms of transportation:

- Ambient temperature from -50 to 50 °C;
- Relative humidity up to 95% at 25 °C;
- Atmospheric pressure from 84 to 107 kPa (630 to 800 mm Hg. Art.)
- Peak shock acceleration up to 147 m/s² (15 g) during shock acceleration duration of 10-15 ms.

The requirements of warning labels should be strictly complied when loading and delivering.