



"PROTON 1"

User's guide



Made in Bulgaria
2006r.

"PROTON 1" is a metal detector for searching and finding of big and deep buried metal objects. The detector works on the principle of impulse induction. It's small, not heavy, and easy to work with, no special settings and buttons needed, it maintains the sensitivity threshold automatically.

Main characteristics:

- Work frequency – 550 Hz.
- Impulse power – 200W
- Regulation of power and thickness of impulses and sensitivity threshold.
- Automatic adjustment to temperature changes.
- System of an automatic maintenance of a constant sensitivity threshold.
- Blinking red light indicator showing battery exhaustion.

"PROTON 1" works excellent in every kind of earth conditions including high mineralized soils. This apparatuses does not react to very small objects like nails, wires, bottle covers, and aluminum foil

Standart equipment of the "Proton 1"

- electronic unit with built-in accumulator 12V/1,3Ah
- searching frame 1x1m. with carrying straps
- automatic charger 220V
- user's guide (english version)

"PROTON 1" can work with different types of searching coils: 1x1m., 2x2m. and 45cm with handle.

"PROTON 1" is offered with a search coil 1x1m. (standart equipment).

For finding metal objects in deeper depth can be used search coil with sizes 2x2m. Thus the depth can be increased with 20 – 40 % (depending on size of found objects). However, sensitivity to smaller objects will be reduced.

Using large search coils will allow the operator a fast search covering larger areas.

45cm. a round search coil with a handle, can be used for finding smaller objects and for correct appointing of their position and can also be successfully used in overgrown and bushy areas.

Please, before using the unit, read this user's manual attentively and completely

1. „Proton 1“ has the following parts for control:

- „ON / TRESHOLD“ – with this control knob you can power on the metal detector and adjust a initial ticking rate. Turn clockwise until you can hear ticking-rate in speaker. For comfortable operation – 1-2 clicks per second.

- „POWER“ – with this control knob you can adjust emitted impulse power. There are 7 power levels. Usually for normal operation you must set between „4“ and „6“.

- „DELAY“ – with this knob you can adjust detection depth of different objects. Additionally you can minimize the effects due to highly mineralized soils when using a lower „DELAY“ position.

- „Phone“ – a headphones jack. When you switch on headphones, the speaker switches off automatically.

- „Low battery“ red light – indicate when it is necessary to charge the battery.

1. Setting and way of work:

Searching frame is assembled and is placed on the ground paying attention to the range and there don't have to be any metal objects.

The cable is sub - connected to the device. Turn the sleeve on the plug clockwise until it is securely fastened.

Turn on "Proton 1" by rotating the "ON / TRESHOLD" clockwise.

Turn "DELAY" and "POWER" knobs to "4" position.

Next adjust the "ON / TRESHOLD" until you can hear several tick per second.

The "Proton 1" is now ready to use.

The search coil should be held approximately 10 to 15sm. from the ground while searching.

In order to avoid interference of the metal parts of the electronic unit, be sure to carry the "Proton 1" on the side of your body that is away from the coil.

Should within the coil range there falls in a metal object, it provokes a sound with a frequency which depends on the level of the signal. The more louder the signal, the more higher the sound frequency.

2.The detection depth depends on the following:

-size, shape and location of the object in the soil. The bigger the reflecting surface of the object the deeper it is to be found;

-soil composition and mineralization level – the drier and more homogeneous the soil the easier it will be to adapt the device and for the device to detect deeper. Under stones, dry sand or in clay utensil, metals are easier to be found than in freshly dug out or damp soil.

-the longer the object has been in the soil the easier it will be to be found as a result of the good contact with the soil. The longer the object has been in the ground the bigger the field is and imitates bigger object!

-type of detecting coil. The bigger the diameter of the coil the deeper it will be able to detect metals.

-operator's experience and skills.

You can do field tests by yourself using the device if you bury different metal objects in different depth but you should leave them in the ground for at least 3 months. Thus the test results will be more reliable. You should mind

the soil type and the moisture composition in it. Best results are received when the soil is dry.

3. Charging storage batteries and indications for their status.

“Proton 1” has a built-in accumulator battery 12V/1,3Ah, which is able to provide 15-30 hours of working process without any interruption depending on the chosen power and the type of the used search coil. Bigger coils consume more power and thus the working time is shorter.

When the capacity decreases below 11,0V, the “Low battery” light switches on and show it’s necessary to charge the battery.

The charging is automatic and begins when the device is **SWITCHED OFF** and you plug the charger into the charging jack of the back panel of the device. The jack cage is “+” and the middle terminal is “-”. The red LED on the charger indicates that the battery is charging. The charging continues till the moment when the batteries reach their maximum capacity. Then the charging automatically stopped and red LED on the charger turn off and indicates the has been battery is fully charged.

Always charge device's storage batteries ONLY with the paired chargers to it. Thus you will prevent damages or confusion between “+” and “-” because the use of other chargers or adaptors may lead to irretrievable damages in the batteries!

4. Possible problems during exploitation of “Proton 1”:

4.1. When switching it on you can not hear a sound, there is no information on the display, no indication that the device is switched on. It might indicate for:

- Accumulator battery is dead (usually after a long period of time). Charge the battery with the charger. If the problem is not solved contact the service-station (office) of the company manufacturer or the local distributor.

4.2. The working depth is significantly shallower than the normal. It might indicate for:

- Accumulator battery could be discharged – pay attention to the shown for the capacity of the battery. If it is under 12V, and if you choose impulse power under “3” charge the batteries with the automatic charger and increase power at least “4” . If you can not solve the problem contact the service-station (office) of the company manufacturer or the local distributor.

4.3. During detection the device does not work stable, makes strange sounds which are not due to a metal detection. It might indicate for:

-irregular electromagnetic external interruptions.
-problems with the aerial cable – disconnected conductor, a short circuit or bad connection in the coupling.

It is possible after continuance work and many times of switching on and off the cable's coupling to the jack box the contact between them to be destroyed. There are 2 terminals with sightholes in the jack of the back panel of the device. Put something sharp like a knife or a screwdriver in the sightholes and make them wider. Thus the coupling will fit better into the jack which will improve the contact between them. It is possible in the presence of some kind of dirty like dust or moisture to clean the terminals with cotton-wool and alcohol. If you can not solve the problem contact the service-station (office) of the company manufacturer or the local distributor.

4.4. The device works only with headset and when working with amplifier you can not hear a sound. Usually that happens when the headset jack is damaged. In that case contact the service-station (office) of the company manufacturer or the local distributor to change the jack.

4.5. The battery charge quickly and after that during the working process they go dead quickly. Usually that happens when the battery is really

old and need replacement. Contact the service-station (office) of the company manufacturer or the local distributor for change of the storage batteries.

IMPORTANT: While searching indifferent regions it is possible to come upon different ammunitions – shells, cartridges, mines – so be careful while dig any object.

The Manufacturer (trader) does not bear any responsibility if you use the device in violation of the law, on archeological or forbidden for search places as well as on private property without the knowledge or the permission of the owner.

Protect the environment and always fill back in the holes you have dugged out!

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