

Assignment of the instrument

The metal detector is intended for search in the low-conductive and non-conductive environments of metal objects from the ferrous and non-ferrous metals hidden on a body of the person, baggage, correspondence etc. The device can be used as tool of inspection in military structures, medicine and in other applications.

Technical characteristics

The instrument provides detection of objects made of non-ferrous and ferrous metals in the dynamic mode at speeds from 0 to 0.5 m/s 2.

Detection distance:

- the Makarov pistol - 230 mm.
- bayonet-knife - 160 mm.
- plate (magnetic steel) 100x100x1mm - 190 mm.
- 3. Operating frequency - 30kHz.
- 4. Probability of detection - 0.98.
- 5. Power supply - 9 V.
- 6. Consuming current - 3 mA.
- 7. Automatic switching off in case of inactivity - 8 min.
- 8. Operation level of discharge batt. indication - 7 V.
- 9. Time of the continuous operation - about 400 hours (in case of using U9VL-J 9V battery type).
- 10. Outline dimensions - 420x80x30 mm.
- 11. Weight with a battery - 0.3 kg.
- 12. Conditions of operations:
 - range of working temperatures: from -37 to +70°C
 - relative humidity 98 (T = 25°C)
 - atmospheric pressure: from 630 to 800 mm. Hg.

Service

Maintenance of the instrument consists in the following:

- Deleting dust from a housing surface;
- Visual check of appearance of the housing;
- Check of reliability of contact of a battery;
- Check of operability of the instrument according to the section "Preparation for operation".

Short description

Vortex-S instrument represents the portable metal detector with the eddy current probe (ECP) which is built in the housing from shock-resistant plastic in which also electronic elements of the scheme and the power supply are placed. The principle of operation of the instrument is based on eddy current method of detection of the hidden metal objects. The built-in voltage stabilizer provides operability of the instrument at change of voltage of the battery from 9 to 7 V. In case of discharge of the battery or rechargeable battery lower than 7.5 V. the light alarm system «Battery discharge indicator» works.

1. Lower than 7.5 V. the indicator blinks; 2. Lower than 7 V. the indicator lights and the sound alarm system turns on; 3. Lower than 6.7 V the instrument is automatically switched off; 4. If in the vibro-mode voltage on a source decreases lower than 7 V., the instrument automatically switches to sound indication.

Preparation for operation

To put on the thong of the instrument on a wrist of a hand and to take the instrument in a hand. To turn on the instrument holding the switch on button of 1 sec. After the end of testing of the instrument the green LED lights up. To check readiness of the instrument for operation, having brought a retrieval element to a local metal subject (a coin, hours, keys, etc.). The red LED and also sound- or vibro-signalization (if it presents at this modification), shall work at the given distance from a working surface of a retrieval element to object (in the limits specified in the section "Technical characteristics"). The instrument is ready to operation. In case of repeated «switching on - switching off» of the instrument additional adjustment of sensitivity is not required and carried out automatically.

Operational procedure

To bring the instrument to controlled object and slow scanning in close to its surface to run for search. Scanning speed shall not exceed 0.5 m/s, otherwise range and probability of detection of the hidden metal subjects, especially small-sized, decreases a little. Turning on of a sound and light signaling specifies existence of the hidden metal subjects. The instrument possesses enough high resolution capability and provides when scanning (<0.5 m/s) a separate signaling about existence of two small-sized metal subjects located at distance at least 8 cm. from each other. When pushing the «Sensitivity control» button (Sens.) the LED lights up "1/2" and sensitivity of the instrument to large metal subjects (a knife, the gun, etc.) decreases (twice), and small-sized metal objects (small-sized coins, fasteners, lightnings, etc.) don't cause actuating of a signaling. Thus, there is an opportunity to define value of the metal object found in case of primary scanning by clicking of the button and repeated scanning of a suspicious section of the inspected object (clothes of the person, baggage, etc.). And small-sized metal objects won't be selected, and to distract the operator from search of dangerous subjects (the gun, a knife, etc.) When clicking the «Control of the indication mode» button (Mode) there is a change of the mode of indication. Vortex S - with sound/without sound, Vortex-S (Ultra) - with sound/vibro.

Possible failure

After switching on of the instrument there is the continuous sound or the vibro-signal, thus burns only a LED "Charge/discharge".

Probable cause:

Voltage of the battery is lower 7V

Elimination method:

To replace or load a battery.

Change of sensitivity level of the instrument

For enter to the mode of sensitivity level change it is necessary to be convinced that the instrument is switched off. Then to click and retain in the clicked status at the same time the «MODE» and «SENS» buttons. To turn on the instrument during the «MODE» and «SENS» buttons are pressed. To retain all three buttons clicked until the LED "CHARGE/ DISCHARGE" lights up. To release all the buttons. The instrument is in the mode of sensitivity level change now. In order to increase the sensitivity of the instrument, the «SENS» button has to be clicked. To reduce - «MODE» button has to be clicked. Each indication of a LED "/2" means a single offset of response level. In case of the sensitivity change limit is reached (in the bigger or smaller direction), the LED "/2" lights up and doesn't turn off. The further change of sensitivity isn't possible in this direction. In the mode of sensitivity level change, the luminous and sound indications of metal presence are operated. These indications allow to set the required sensitivity level without quitting the mode. After achievement of the required sensitivity level, the instrument needs to be switched off. At the same time, the current value of sensitivity will be saved in a non-volatile memory of the instrument. The saved level of sensitivity will be set automatically after switching on of the instrument in the operating mode.

Warranty

Warranty period of operation - 24 months from the moment of sale, a warranty period of storage - 6 months from the moment of production. During a warranty period the manufacturer is obliged to make repair or replacement of the instrument free of charge if during the specified term the consumer finds the defects or failure which arose because of the manufacturer. Gratuitous repair or replacement of the instrument is made on condition of observance by the consumer of service regulations.

Rule of a charge of rechargeable battery

If the complete set of the instrument includes the charging device and the rechargeable battery, please study this section of the instruction. The charging device (220V12V.) may be includes in the modification of the instrument (current at least 50mA) which is intended for charging of the rechargeable battery. For rechargeable battery charging it is necessary to connect the instrument to the charging device (any side), thus on the instrument the «Charge» indicator will light up. Full rechargeable battery charging requires no more than 16 hours, not full charging is also allowed.

SPHINX

Metal Detector Operation and maintenance instruction

Vortex-S

