REX Deep Force

User's operating manual



In order to be able to use the device for as long and trouble-free as possible, as well as to successfully use all its capabilities, read the entire instruction carefully and follow the instructions in it.
It should be borne in mind that a protective coating is applied to certain areas of the circuit board of the electronic unit. Removing it causes the detector to fail and stop working normally. This can only be repaired by the manufacturer! The warranty conditions do not include the restoration of a damaged detector due to external interventions**!**

The standard set of **Deep Force** consists of:

- search coil 28x32cm (or 25x35cm)
- control unit
- metal carrying stem with handle and armrest
- midle stem from carbon fiber
- lower stem with a plastic bolt for fixing the search coil
- automatic charger for 220V (or USB)
- detailed user's manual
- warranty card

If any of these items are missing, immediately inform us, or autorized dealer where you purchased your detector.

1. Assembling of the device:

Assembling the **Deep Force** is simple and you don’t need any special tools. The bearing rod is assembled by inserting of the lower part into the upper one. Choose the desired length of the whole construction and the fixing clamp is tightened between both parts of the bearing rod. The lower part of the bearing rod is put with the opening between the ears of the coil and the plastic bolt is tightened by choosing the position of the coil to be parallel to the ground surface. Don't over-tighten the plastic bolt and nut. The coil cable is wind up tightly around the bearing rod and is switched to the terminal of the electronic unit. Upon switching of the cable of the coil to the monitor unit, tighten the well the metal nut of the coupling to the terminal of the box. Upon switching off, unscrew the nut completely and pull out the coupling without pulling or twisting

the cable of the coil. This way, you will prevent the cable and the conductors in it from breakdown or short circuit.

Finally adjust search coil angle to your preference and you are ready.

The searching coil is approached to the surface of earth by paying attention to avoid presence of metals within its range.

NOTE: Do not allow the cable to flop loosely over the search coil. Since the detector is sensitive enough to „see“ the tiny wires in the cable, a floppy cable can cause false signals as the search coil senses the moving wires**.**

Deep Force has the following controls for operating:

Front panel:



Back panel:



- Potentiometer with **ON / VOLUME** switch for turning the detector on and off and amplifying the sound.
- 2-position **Relic – Coins** switch for selecting the operating mode.
- **SENSITIVITY** potentiometer – for precise sensitivity adjustment
- "**GND BAL**" (Ground Balance) potentiometer – for precise manual balancing to the ground surface.
- "**Disc**" potentiometer – regulates iron discrimination
- **Threshold** potentiometer – for precise adjustment of the sound threshold level.

Switch on and work with Deep Force:

1. The unit is switched on by the **ON / VOLUME** knob with clockwise rotation and the desired volume can be adjusted with the "**VOLUME**" potentiometer.

2. The sound threshold is adjusted with the "**Threshold**" potentiometer so that, in the absence of metal around the search coil, the device is set to the sound threshold, but no sound is heard, or a weak "buzzing". The lower the "**Threshold**", the lower the sensitivity of the detector! When the sound threshold "**Threshold**" is increased too much, a constant sound signal starts to be heard, during which it is impossible to work normally and to detect metal objects.

Deep Force has a self-adjusting sound threshold - **SAT** (**S**elf-**A**djustment **T**hreshold). The speed of this self-regulation is selected so that sharp and chaotic sound signals do not appear in the case of inhomogeneities and variable mineralization of the soil, as well as in case of strong electromagnetic disturbances. In the presence of electromagnetic interference, for example, the detector does not emit uneven chaotic sounds, and the sound threshold is relatively stable and smooth. However, this usually requires the **Threshold** to be lowered to set the trigger threshold, which results in a reduction in the detection depth of metal objects. This may mislead an inexperienced operator into thinking that these are the detector's maximum capabilities. Therefore, it is recommended that when getting acquainted with the settings and features of the detector for the first time, the first tests should be done away from populated areas, yards,

gardens, busy parks, as well as places without high-voltage power lines, airports with radar stations or places with the presence of repeaters and any other possible sources of electromagnetic interference.

3 The detector has the ability to **manually balance** to soil conditions.

With the **GND BAL** potentiometer, it is adjusted so that it is not affected by the soil when the search coil approaches and moves away from it. This is done in the following way - the device is raised in the air and the coil approaches the surface of the earth to about 2-3 cm. A low-pitched or high-pitched sound is usually heard from an unbalanced detector. Raise the probe into the air again and rotate the **GND BAL** left or right. Again the coil is brought closer to the surface of the earth and the sound is again monitored. This is repeated until the sound stops when the coil moves up and down a distance of about 2cm. up to 20 cm. above the soil.

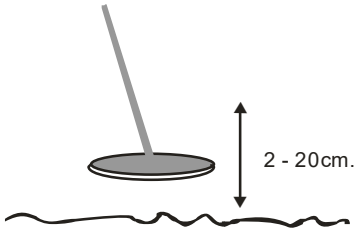


Fig.1

This means that the unit is balanced to ground and can operate normally above the ground surface without giving false signals when there is no metal under the coil. At the extreme left position of **GND BAL** a low tone is heard as the coil approaches the ground, and at the extreme right - a high tone. **GND BAL** should be set where the sound changes from one tone to the other. This is the zero position (balance) in which the ground does not affect the normal operation of the device and in this position no sound is heard when the coil approaches it. If this setting is not done correctly the device will make sound even without metal under the coil due to the influence of the soil. Be careful when balancing to the ground that there is no metal object under the search coil. In such a case, whenever the coil approaches the surface of the earth, the device will emit only a low or only a high tone (according to the type of metal). If, for example, at any value of **GND BAL** the device emits only a low tone when approaching the soil,

it means that there is an iron (magnetic) object under the coil. Move to another location to allow the unit to balance normally.
When the device is properly balanced to the ground, you can be sure that it will only sound when the coil passes over a metal object!

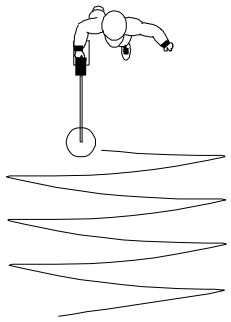
5. "DISC" serves to set the degree of rejection (discrimination) of ferrous and various types of magnetic metals and alloys. With this potentiometer, the unit can be set to eliminate some unwanted metal objects, for example iron scraps, wires, nails, bottle caps, horseshoes, etc.
For the normal discrimination of ferrous from non-ferrous metals, "**DISC**" is usually placed in position **4** or **5**.
If we want to increase the degree of discrimination of larger irons, flat sheets, rusty cans or other larger iron waste, the "**DISC**" level can be increased to about **6 - 7** or even more. When detecting large or flat irons, mixing of the low-high sound signals may occur due to the shape and size of these iron wastes. In these cases, Pull the coil back a little so that it is not exactly centered over the target, but detects it with the periphery, regardless of the front or back end of the coil. In these cases, discrimination is much more precise.
It is recommended that with high mineralization (soils with a high content of iron oxides) the **DISC** value should be reduced to position **3** or lower to avoid the so-called "ironizing" - the reversal of the sound identification from high to low tone when detecting non-magnetic (non-ferrous) metals. This effect can be manifested in magnetic soils, when detecting small metal targets at a greater depth. If in doubt about such soils, it is good to check them with a magnet. If the soil sticks to the magnet, the **DISC** must be reduced.

6. **Coins** and **Relic** modes differ in the speed of the detector's response to metal objects. In the **Coins** mode, the detector operates at a higher speed and this mode is suitable for operation when using smaller search coils and, for example, operation in terrains with a higher content of iron waste. **Relic** mode is suitable when searching for larger objects at greater depth and when using larger search

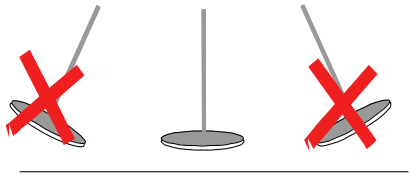
coils. It is also preferable to work in **Relic** modes, in the absence (or low content) of iron contamination, absence of external electromagnetic interference - emissions from power cables, transmission lines, radar stations or repeaters, etc.

If the operating conditions allow (lack of external electromagnetic interference and not particularly high mineralization) it is always preferable to work at maximum sensitivity in order to have the greatest possible depth of detection. However, if the sound background (sound threshold) is not stable and clear (constant smooth "buzzing") or the soil is complex/non-uniform and requires frequent balancing to it, then it is preferable to find a level of SENSITIVITY at which the detector is relatively stable, without parasitic (or with minimal) signals from the soil or from external electromagnetic interference. Coins mode can also be used, in which the resistance to interference is slightly higher.

7. Deep Force working in dynamic mode - searching metal objects is made by moving search coil toward ground surface – fig.2, fig.3

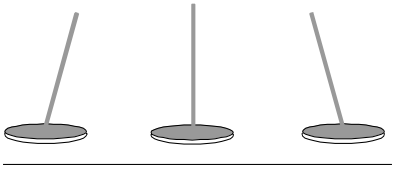


Фиг.2



Wrong

Фиг.3



Correct

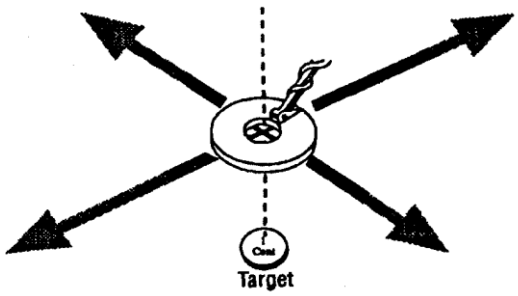
Always keep the search coil parallel to the ground as close to it as possible (Fig.3). Lifting reduces the search depth. While searching, wave the search coil evenly in front of you. It should move with uniform and smooth movements (fig. 2). Moving too fast or too slow may reduce the search depth, especially for deeper small objects.

The search coil should not touch the ground during your sweep. The pole length should be adjusted to allow this without having to lift the detector with your elbow or shoulder. The search coil should rest about one inch above the ground while you are standing erect. The angle of the search coil should allow the bottom to be parallel to the ground.

8 . Pinpointing a Target

A good method for pinpointing is "X-ing" the target with the search coil. Squeezing and holding in the trigger on the grip accesses a "**Pinpoint**" mode that makes it much easier to sweep the search coil slowly and center directly above the target. Use loudest tone, to indicate targets exact center. To "X" a target, sweep the search coil over the target from side to side and nothing the side to side center. Then turn 90 degrees and sweep the coil side to side noting the center from this new direction. "X" marks the spot that you need to dig. You can practice with a coin on top of the ground to become acquainted with this technique. The center of the X— the spot on the ground where the target response sound is the greatest. Pinpointing a target is probably best done by "X-ing" as well. Remember that the detector will beep just as the target passes under the center of the search coil. Slowing the sweep speed down will help you pick out the center of the X, but remember that the search coil must always be moving slightly for target detection.

Another easy method is to sweep the coil from side to side across the target in very short sweeps as you slowly move forward and backward across the target. Slow down the sweep rate and shorten the sweeps until you just barely get a response at one spot. The target will be directly below the coil center at this response time – fig.4



. Fig.4

9. 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.

- 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.

To reduce false signals when searching in a very trashy ground, scan only a small area at a time using slow, short overlapping sweeps.

Keep the searching coil moving at a comfortable rate. If you walk too fast, you can't overlap yours sweeps and you will miss a lot of ground. Also if you sweep too fast, you will lose sensitivity and miss the deep targets

10. Using a headphone.

You can use headphones to hear the sound of the detector while searching. The headphones are very suitable in the presence of noise - wind, working near a river or seashore, and also in populated areas or near roads.

When using headphones, the operator can much better hear weak signals or a slight change in the sound indication.

Depending on the size of the headphone jack, they can be plugged into the standard 6.3mm socket. in the back of the detector electronics box. If your headphones have a 3.5mm jack, use a 3.5mm - 6.3mm adapter so they can be plugged into the jack. When the headphones are plugged into the jack, the built-in speaker is automatically turned off and the sound signal is heard only in the headphones.

Using headphones also increases the detector's operating time because the battery discharging is reduced.

11. **Deep Force** is equipped with a battery pack **8.4V/7000mAh**. It needs no service other than charging when needed. When during operation you start to hear a periodically repeating double interrupted sound "beep-beep", it means that the batteries must be charged. They are usually fully charged in about 6 hours with the included charger. If you charge the batteries before the low battery beep sounds, the time to fully charge will depend on how low the batteries are. If they have some reserve (not completely discharged), it will take a little shorter.

When connecting for charging, first connect the charger jack to the device and then the charger itself to 220V! Charging must be done with the metal detector turned off! Always wait for charging to complete. Do not interrupt charging before the batteries are fully charged.

If your detector is supplied with a charger powered not by 90-240V, but from USB, then you can charge the batteries from any possible source with USB -

phone adapters, power strips with a USB port, solar panels, adapters from the car cigarette lighter 12V - USB, power bank etc.

Always charge the unit's rechargeable batteries ONLY with the supplied chargers. This will ensure that you will not have problems such as overcharging or confusing the "+" and "-" when using other chargers or adapters, which can lead to irreversible damage to the batteries, for example swelling or spontaneous combustion!!!

NOTE :

If the device is turned-on into rooms and premises, there should be no electrical devices operating around it that cause interference (usually a pulsating, intermittent sound is heard).

If possible, avoid working outdoors in direct sunlight in summer at temperatures above 35°C.

12. Possible problems during exploitation of Deep Force:

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

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

-the accumulator block consists of 4 elements **LiIon 4,2V.** If only one of them is damaged the connection between them will be destroyed and practically the device will be left without power supply.

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

- storage batteries could be dead – charge the batteries with the automatic charger. If you can not solve the problem contact the service-station (office) of the company manufacturer or the local distributor.

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 shot 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 sight holes in the jack of the back panel of the device. Put something sharp like a knife or a screwdriver in the sight holes 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. 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.

5. Batteries charge quickly and after that during the working process they go dead quickly. Usually that happens when the batteries are really old and need replacement. Contact the service-station (office) of the company manufacturer or the local distributor for change of the storage batteries.

13. GUARANTEE

The detector **Deep Force** is offered with 2 years of guarantee of electronics, labor and materials used, for harms which are not caused on purpose or irresponsibly.

We can upkeep your device after period of guarantee if it is necessary.

10. Protecting your investment

Often detectorists are disappointed when their new detector slowly becomes less and less responsive and seems to have lost some of its original peak performance. You can help avoid this from happening to your detector by following these basic care and protection guidelines:

⇨ Operate your detector exactly as recommended in this Operator Instruction Manual.

⇨ The search coil cable is hard-wired to the search coil and protected by a strain relief. It is very important that the strain relief remains intact and should *never* be adjusted or tampered with.

⇨ Keep cables properly wound around the pole stems and protect them during use. Floppy, pinched, or cables that become snagged during use may short, causing erratic noises or unnecessary replacement of the search coil.

⇨ Sweep the search coil carefully, especially when using around rocks and building foundations. Avoid hitting the search coil against hard, solid objects and surfaces.

⇨ Keep your search coil slightly off of the ground during the sweep, especially when using in gravel or hard, rocky dirt.

⇨ Remove and clean out scuff covers periodically to avoid buildup of mineralized dirt particles which will affect performance.

⇨ The search coil is waterproof and can be submerged in either fresh or salt water. After the search coil is used in salt water, rinse it and the lower stem assembly well with fresh water to prevent corrosion of the metal parts.

⇨ The search coil is waterproof but *the electronics are not,* so always prevent any moisture or water from entering the control housing and never allow the cable connector to become submerged in water.

⇨ If working in or near water, or if there is a possibility of rain, use a protective weather resistant pouch or plastic bag to cover the control housing. Make sure it can "breathe" in order to ensure
against condensation buildup inside.

⇨ After each use, clean the detector with a soft cloth to remove dust, moisture, or other contaminants.

⇨ When transporting the detector in a car during hot weather, store it on the floor of the passenger compartment if possible. Using a carry bag gives additional protection. In any case, never allow the detector to roll around unprotected in the trunk or back of a pickup truck.

⇨ Protect your detector from dust, moisture, and extreme temperatures during storage.

⇨ Treat your detector as you would any sensitive electronic instrument. Though ruggedly constructed and designed to withstand the demands of normal treasure hunting, proper care is essential.

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 digged out!