

Future Series

Bionic 01

User's manual

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1 Preface

Dear customer,

in the first instance we want to thank you that you made your decision on a product of OKM Ortungstechnik GmbH.

The present product is based on a measuring method to detect gold objects in the destination area. The longer the object is buried in the ground the better and deeper it can be located by the device.

With our team of specialists we guarantee that our products are under recurrent control. Our specialists try to implement new developments in terms of further quality improvements for you.

Of course by selling our products we cannot guarantee that you really make a find during your research. The recognition of hidden objects and structures depends on a huge number of factors - like you know. Determining factors are the dielectricity constant of the ground, the grade of mineralisation and the dimensions of an object relating to its depth. Specially in very wet soil, clay and sand with high conductivity of the ground, recording of the measured results can be falsified strongly.

With this product you purchased a device which stood the tests in regular operation like all other products of us. If you are interested in where our devices have gone into action please visit our homepage.

For our company it is necessary that we protect our developments within the framework of existing legislation to a patent or trademark registration. Therewith we offer you a higher warranty while using our products.

Please take your time consecutively, read this user's manual and familiarize yourself with the utilisation and operation of this Bionic 01.

2 Important Notes

Please read these operating instructions carefully and closely before using *Bionic 01* and its accessories! These instructions give information on how to use the device and point out potential sources of danger.

2.1 General Notes

Being an electronic device, *Bionic 01* has to be treated with the caution and care necessary when such devices are used. Any failure to observe the safety precautions given or any use for purposes other than the ones it is conceived for may result in a damage or destruction of the processing unit and connected components.

The device will get destroyed if it is opened improperly.

2.2 Possible Health Hazards

If used properly the device normally does not pose any health hazards. According to current scientific knowledge, the high-frequency signals are not harmful to the human body on account of their low power.

2.3 Surrounding Area

Having been transferred from a cold to a warmer place, the device should not be operated immediately afterwards. Any condensation, which may have formed, might cause the device to get destroyed. Avoid strong magnetic fields, which may occur in places such as near machines or loudspeakers, and avoid using a detector within a radius of 50 meters.

2.4 Voltage

The power supply should not be outside the indicated range of values. Only use batteries and rechargeable batteries which are included in the scope of delivery.

Never use the 230 Volt mains supply.

3 Technical Specifications

The following technical indications are medial values. During operation small variations are quite possible.

3.1 Control Unit

Dimensions (H x W x D)	400mm x 130mm x 100mm
Weight	about 1,5 kg
Indication	LCD Display
Voltage	9 Volt
Operating Time (Full Charged Battery)	about 1 hour
Operating Temperature	0°C - 40°C
Feedback	accustical, visual
Controller	Motorola 4 MHz
Maximal Range	15 km
Maximal Penetration Depth	20 m

Table 1: Technical Specifications

4 Scope of Delivery

In the following section you can find all standard equipment. The scope of delivery can be different in some circumstances because of some optional accessories which should not be included in the basic equipment.

- 1 Control Unit
- 3 Probes
- 1 Charger
- 1 Headphones
- 1 Manual
- 1 Carrying Case

Table 2: Scope of Delivery

Beware that pictures in this manual could be different to delivered parts.



Figure 1: Scope of Delivery

5 Assembly

In this section is explained how to assemble the device and how to prepare a measurement.



Figure 2: Connection of Probes

Figure 2 shows how to connect the three probes to the control unit. The bigger probe has to be placed in the middle and the two smaller probes has to be plugged in at each side. Do it without any unnecessary application of force!



Figure 3: Connection of Charger and Headphones

In figure 3 you can see how the delivered charger has to be connected to the device and how to plug in the headphones.

6 Control Elements

In this section you will learn more about the fundamental use of all control elements for this measuring instrument. All connections, inputs and outputs are explained in detail.

6.1 Front View

Figure 4 shows the front side of the control unit.

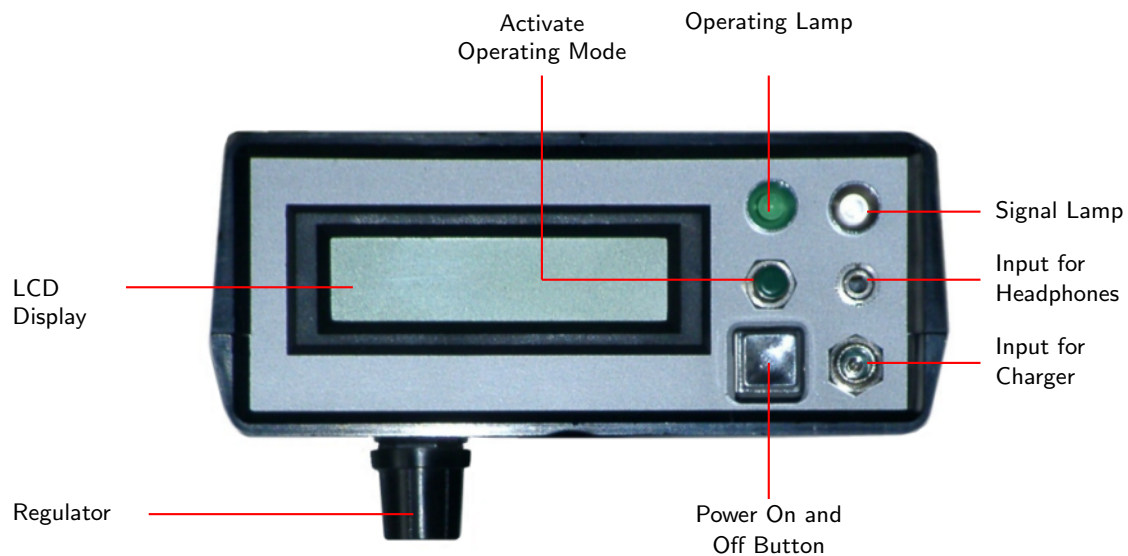


Figure 4: Front View

With the button **Activate Operating Mode** the desired operating mode can be selected and the measurement can be started.

The **Operating Lamp** indicates if the device is in the state of readiness. If this operating lamp is shining green the device is ready for operating. If this lamp is not shining after powering on the device you have to control if the internal batteries are charged fully.

The **Signal Lamp** shines blue as soon as a target has been located by the device. During this time the **Operating Lamp** will be deactivated.

In the **Input for Headphones** the delivered headphones can be connected.

In the **Input for Charger** the delivered charger can be connected to reload the internal batteries.

The **Power On and Off Button** is used to switch on and off the device.

On the **LCD Display** it is represented in which operating mode you are working.

With the **Regulator** the device can be calibrated and so the Bionic 01 can be adjusted optimal to the current environment conditions.

6.2 Back View

Figure 5 shows the back side of the control unit with all connections.

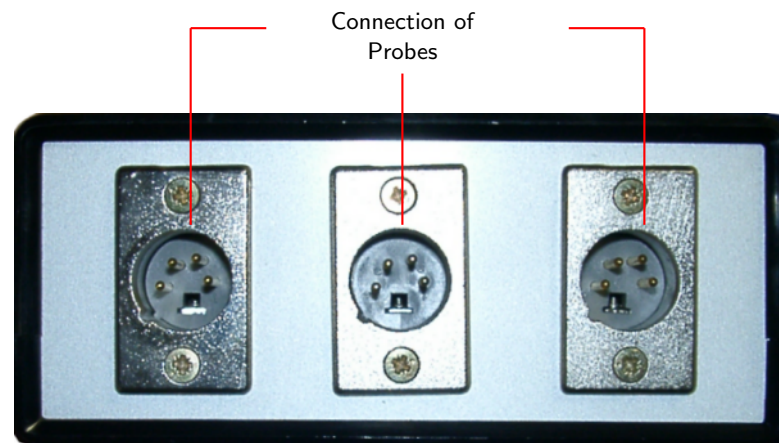


Figure 5: Back View

The Connection of Probes is used to connect the delivered probes. The bigger probe has to be connected in the middle and the two smaller probes has to be plugged in on each side.

7 Proceeding for a Measurement

In this section you will learn more about operating the device. It is explained step by step how to proceed for a measurement.

The device provides the following operating modes:

- **Bionic System**
Basis for measurement is the natural bio system of the human being and magnetic fields.
- **Ion System**
Measurement of the ionization of buried objects.

7.1 Measurement with Bionic System

To use the Bionic 01 you have to power on the device with the Power On and Off Button. After powering on the device the Operating Lamp will shine green to signal the operation readiness of the device. In case this Operating Lamp is not shining than the internal battery is not full charged and should be reloaded before using the device. To load the device the delivered charger should be used. If the Operating Lamp is shining green you can start the measurement. After powering on the device the operating mode Bionic System is activated. Before starting the measurement the device has to be calibrated to the current environment conditions.

The Regulator on the device has to be turned to adjust the optimal frequency between 188 and 254. The current frequency is represented on the display of the device. To adjust the optimal frequency the value has to be selected in this way that the accoustical signal just disappears. The value should be as high as possible but the accoustical signal should not go on. The higher the frequency the exacter the device is adjusted to the environment.

Also it is important that you always keep the contact between your hand and the electrodes on the retaining handle. This contact should stay during the complete measuring procedure. In case the contact has been intermitted you should restart the measurement from the beginning and calibrate again. As soon as the optimal value is adjusted confirm this value by pressing the green button Activate Operating Mode.

Now you can start with the measurement. Move the Bionic 01 slowly up and down like it is represented in figure 6. Additionally you can move it also to left and right until you can hear an accoustical signal from the Bionic 01. Figure 6 represents schematically the principle proceeding.

If the device is recognizing a gold object you will hear an accoustical signal and the Signal Lamp will shine in blue color. You should keep this point in your mind.

You have now determined a direction where the gold found could be located. But you don't know in which distance the object is situated. Therefore you have to do a cross pin pointing. Walk about 50 meter to the left or to the right and repeat this procedure. On the place where the 2 directions are crossing each other the possible target is located. This procedure you can repeat as often as you want. The principle of pin pointing is represented in figure 6.



Figure 6: Proceeding for a Measurement

By pressing again the button **Activate Operating Mode** you will get in the next operating mode **Ion System**. To finish the measurement you have to switch off the device with the **Power On and Off Button**.

7.2 Measurement with Ion System

To operate the Bionic 01 you have to switch on the device with the **Power On and Off Button**. After powering on the device the **Operating Lamp** will shine green to signal the operation readiness of the device. In case this **Operating Lamp** is not shining than the internal battery is not full charged and should be reloaded before using the device. To load the device the delivered charger should be used. If the **Operating Lamp** is shining green you can start the measurement.

After powering on the device the operating mode *Bionic System* is activated. To get in the next operating mode *Ion System* press twice the green button **Activate Operating Mode**. Then the operating mode *Bionic System* will be overleapt. To do a measurement with *Ion System* there is also a calibration necessary. To calibrate the device on ions the Bionic 01 has to be directed on the searched target. Now the device calibrates itself automatically on the ion field of this object and memorize this frequency. You confirm this value by pressing again the button **Activate Operating Mode**.

Now you can start the measurement. The principle procedure of the measurement is similar to operating mode *Bionic System*. You should take care always to measure from north to south, which means you should stay with your back directed to north direction.

To finish the measurement you have to switch off the device with the **Power On and Off Button**.

8 Charging the device

In this section you will learn more about how to operate the delivered charger.

8.1 Front View of the Charger

Figure 7 indicates the front side of the charger and its control elements.



Figure 7: Front View Charger

The Connector is used to connect the charger to the control unit.

With the Button to Discharge the discharge process can be started.

Control Lamp A and Control Lamp B signalize the charging process of the corresponding charging panel. During the time of charging the control lamp will shine red, as soon as this procedure is finished it will shine in green color.

The Charging Panel A can be used to reload a 9V battery.

The Charging Panel B cannot be used to reload 9V batteries. Therefore please use the Charging Panel A.

The Control Lamp for Discharging is shining yellow during the time of discharging.

8.2 Charging the Device

To load the Bionic 01 the delivered charger has to be connected with the control unit in the provided input, like represented in figure 8.



Figure 8: Connection of the Charger

During the loading time the Control Lamp B is shining red. As soon as the complete charging is finished the Control Lamp B change to green color. It is recommended to discharge the Bionic 01 completely after about 5 charging procedures and reload it afterwards. By pressing the Button to Discharge the internal batteries of the device will be discharged completely and afterwards reloaded automatically. During the time of discharging the Control Lamp for Discharging is shining yellow. The discharging and charging procedure should not be intermitted unnecessarily. Only if the Control Lamp B is shining in green color the charging procedure is finished.

9 Danger of Explosion during Excavation

Unfortunately, the last two world wars also made the ground in many places of the world a potentially explosive scrap heap. A host of those lethal relics are still buried in the ground. Do not start digging and hacking for an object wildly when you receive a signal of a piece of metal from your device. Firstly, you might indeed cause irreparable damage to a truly rare find, and secondly, there is a chance that the object reacts in an insulted way and strikes back.

Note the colour of the ground close to the surface. A red or reddish color of the ground is an indicator of rust traces. As regards the finds themselves, you should definitely pay attention to their shape. Curved or round objects should be a sign of alarm, especially if buttons, rings or little pegs can be identified or felt. The same applies to recognizable ammunition or bullets and shells. Leave that stuff where it is, do not touch anything and, most importantly, do not take any of it home with you. The killing machines of war made use of diabolical inventions such as rocker fuses, acid fuses and ball fuses. Those components have been rusting away in the course of time, and the slightest movement may cause parts of them to break and be triggered. Even seemingly harmless objects such as cartridges or large ammunition are anything but that.

Explosives may have become crystalline over time, that is, sugar-like crystals have formed. Moving such an object may cause those crystals to produce friction, leading to an explosion. If you come across such relics, mark the place and do not fail to report the find to the police. Such objects always pose a danger to the life of hikers, walkers, farmers or children.

10 Maintenance and Services

In this section you will learn how to maintain your measuring instrument with all included accessories to keep it in good condition a long time and to get good measuring results.

The following list indicates what you absolutely should avoid:

- penetrating water
- strong dirt and dust deposits
- hard impacts
- strong magnetic fields
- high and long lasting heat effect

If you want to clean your device please use a dry rag of soft material. To avoid any damage you should transport the device and accessories always in the appropriate carrying cases.

Beware that all batteries and accumulators are always charged fully while operating with your system. You should only load the batteries when they are completely discharged no matter if you are working with the external power supply or with the internal accumulators. In this way a long durability of the used batteries is guaranteed.

To load the external and internal batteries you have to use only chargers which are part of our scope of delivery.

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