MAKRO DEDEKTÖR

JeOSCAN

USER GUIDE

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CAUTION !

PLEASE DO NOT START ASSEMBLING OR USING BEFORE READING THE WARNINGS SECTION!

WARNINGS!

SOME METALS THAT ARE BURIED UNDER GROUND FOR A LONG TIME AND ROTTEN LIKE SHEET STEEL AND TIN (LEAD, GALVANIZE etc.) MAY IN SOME CASES MAY GIVE AN IMPRESSION AS GOLD.

POSITION OF METALS UNDER THE GROUND INFLUENCE PERCEPTION OF THE DEVICE AND MAY CAUSE AN EFFECT AS GOLD OR PRECIOUS METAL.

1. **SINCE THE DEVICE IS ELECTRONIC AND VERY SENSITIVE; NEVER ASSEMBLE AND OPERATE BEFORE READING THE USER MANUAL.**
2. **DO NOT START SEARCHING BEFORE MAKING GROUND SETTINGS. IT WILL NOT BE POSSIBLE THAT THE DEVICE OPERATE CORRECTLY UNLESS THE GROUND SETUP IS MADE.**
3. **DO NOT USE ANY OTHER DETECTOR OR A DEVICE THAT EMIT MAGNETIC WAVES WITHIN 10 m PROXIMITY OF THE DEVICE.**
4. **PREVENT THE DEVICE FROM ABRUPT MOVEMENTS AND POSSIBLE SHOCK.**
5. **DO NOT EXPOSE THE DETECTOR HEAD TO DIRECT HEAT; DO NOT EXERT FORCE DURING ASSEMBLY AND USE.**
6. **THE BATTERY SHOULD BE DECENTLY PLACED IN ITS CASING AND CARE SHOULD BE TAKEN “+” “-“ POLES ARE NOT CONNECTED BY A METAL PIECES.**
7. **DO NOT EXPOSE THE BATTERY TO HEAT.**
8. **CHARGE THE BATTERY IN ROOM TEMPERATURE.**
9. **DO NOT EXERT PRESSURE ON THE LCD MONITOR.**

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PARTS AND ACCESSORIES

1. Electronic System Box and Case:

It is the part where the detector sockets, earphone socket joystick feed socket and battery socket are located and where measurement results are evaluated and displayed on the LCD monitor. There is a carrying apparatus for easy transport of this system.

2. 360x440 Detector Head:

It is the system that consists of the detector head for general purposes. There are no LEDs on this system and operator follows the results on a LCD monitor located on the system box. This system can only be used in LCD mode.

3. Batteries:

14.8 V, 4 Ampere Lithium Ion rechargeable batteries.

Battery Operating Voltage (Min): 12 V
Battery Operating Voltage (Max): 14.8 V
Battery Current: 4 A
Battery Life: 4-6 hours

4. Battery Charger:

It is a device to charge 14.8 V 4 Ampere Lithium Ion batteries.
Input: AC 100-240 V / 50-60 Hz / 1A (City mains)
Output: DC 12 – 16.8 V / 400 mA
Charge duration: 10 hours

5. Carrying Case:

It is a case used for transport and storing of the System box, the 210x315 Detector Head, the 400x600 Detector Head and accessories.

6. Earphone:

It is the piece that maintains vocal communication between the detector and the operator. Waterproof speaker on the electronic system is turned off when using the earphone to enable only the operator to hear the sound of the detector.

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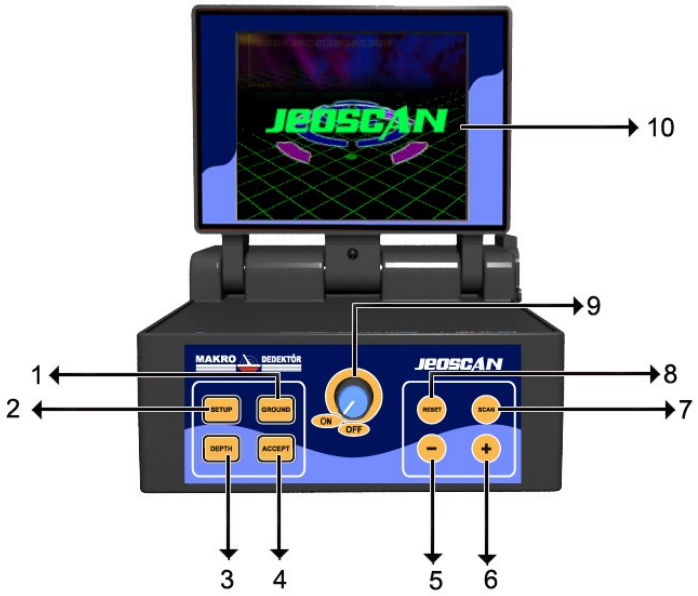
SYSTEM UNIT



ELECTRONIC SYSTEM UNIT

1- GROUND: The key that allows switching to Ground Setting mode in LCD system mode.

2- SETUP : The key that allows switching to the Settings Menu.

3- DEPTH : The key that enables the device to switch to diameter screen and carry out depth analysis.

4- ACCEPT: The key that approves the related function and enable to switch to the previous menu.

5- " – " : The minus key.

6- "+": The plus key.

7- SCAN: A key that enables analyzing a target when pressed passing over it.

8- RESET: Resets all detector settings (Default Settings) in reference to recent settings whenever resetting is done.

9- COMMUTATOR: The commutator that is used for selecting between device turn off and system selection.

10- LCD: The section that presents data to the operator in LCD system.

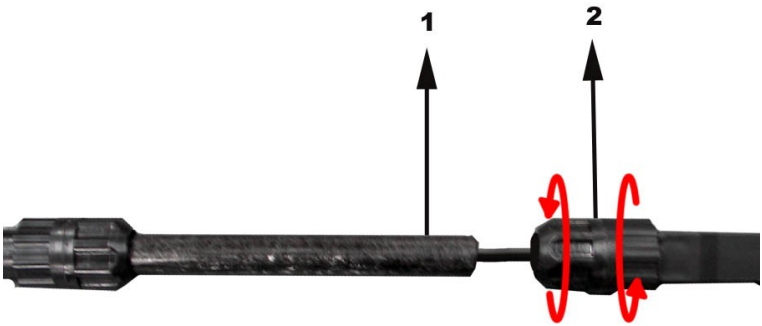
ASSEMBLY AND CHARGING THE BATTERIES

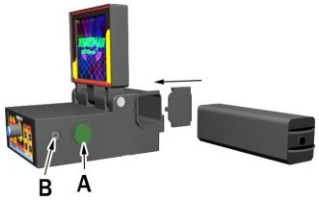
1. ASSEMBLY:

Detector head is taken off the carrying case and telescopic extension tube is inserted, piece Nr.1 into piece Nr.2 as shown in the diagram and tighten the sleeve.

The detector head is dismounted from the extension tube when packing in the carrying case. Dismantling is carried out as the reverse of the process described above.

CAUTION: Do not take apart the screws that connect the Connecting piece and Detector Head. Take off only the telescopic tube without damaging cable coil and suitably store in the carrying case.





DETECTOR HEAD CONNECTION

Transmits the data received from detector head to the Electronic system box. The 5 pin “A” plugs shown in the above figure are connected to socket “A” on the system box.

EARPHONE CONNECTION

Enables signal sound to be switched from external loudspeaker to the earphone. The “B” plug shown in the figure in the previous page is connected to socket “B” on the system box.

BATTERY CONNECTION

The batteries shown in the previous page is located in the direction of the arrow in the system box and battery compartment lid is closed. The battery is so placed that the poles on the battery is in contact with the springs mounted in the battery compartment.

2. CHARGING THE BATTERIES:

- **Battery Charger State without Batteries Installed:** When the charger is connected to the mains plug, the green light on the charger is lit and triggers a short alarm tone.

- **Detection of a defective Battery:** When a defective battery is connected to the charger green light on the charger blinks 5 times, a short beep tone is heard and the green light turns into red, blinks repeatedly and frequent beeps are heard. In such a case do not use the battery and contact the manufacturer.

- **Detection of a fully charged battery:** When the battery is connected to the charger green light on the charger blinks 5 times and short beeps are heard, the green light turns into yellow, blinks repeatedly and infrequent beeps are heard. This indicates that the battery is full.

- **Detection and Charging of a Depleted Battery:** When a depleted battery is connected to the charger green light on the charger blinks 5 times, 10 short beeps are heard and the green light turns into blue that blinks for a short period. During this period the charger sets the battery charging current. When the setup is completed a short beep sound is heard and charging starts.

ATTENTION: During the setting period do not disconnect the battery from the charger.

During the charging process the blinking sequence of the blue light decreases to 3 seconds, the battery is charged during this period and ready for use. When the battery is fully charged a short beep is heard and the blue light turns into yellow.

The charging period required for a fully depleted battery to be fully charged is 10 hours.

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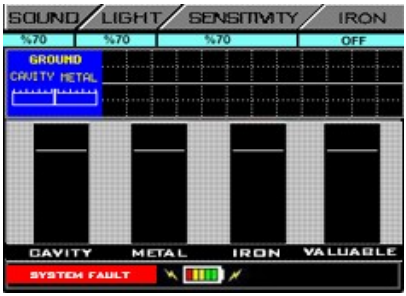
GROUND SETTING

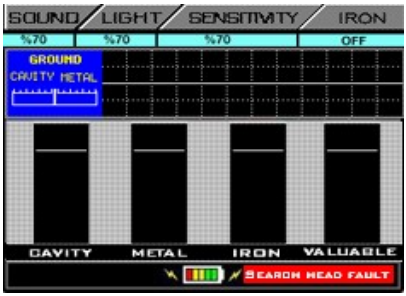
Turn the **COMMUTATOR** **“**ON”

When the device is on the screen system is enabled and the device detects the installed detector head and prepares for that detector head. If no detector head is installed on the device a warning is displayed on the screen.

Coil and System Error Warnings:

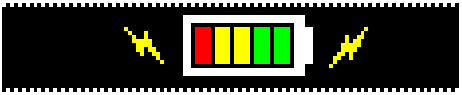
If there is an error in the detector head or in the system “SERCHING HEAD FAULT” or “SYSTEM FAULT” warning lights blink at the bottom of the screen and a sound alarm is heard to warn the operator after the device is switched on. In this case the operator should switch off the device, check the connectors and witch on the device again. If the warning persists authorized service should be called.





Checking Battery Charge Level:

The device switches to “Ground Adjustment” section after it detects the detector head. At the bottom of this section there is an area that indicates battery status and the operator detects battery status by referring to this area. When battery charge decreases device settings change and may cause some errors. Make sure not to use the device and charge the batteries when a single bar is full. If the battery is depleted or does not have adequate charge switch off the device and charge the batteries installing the charger.



Adjusting LIGHT Level:

“SETUP” button is pressed for adjusting the level of light of the device in whatever mode is it in.

The current adjusted light level is displayed as % on the screen.

Select the “LIGHT” mode by pressing “+” and “-“ keys as described above. After this mode is selected press the “ACCEPT“ button, the light indicator bar will turn from yellow into green. Adjust the light level by pressing “+” and “-“ keys and press “ACCEPT” button. The green indicator bar turns back into yellow. Now the light level is adjusted as you desired and you can switch to the previous mode by pressing “SETUP” button.

Adjustment of SOUND Level:

“SETUP” button is pressed for adjusting the level of sound of the device in whatever mode is it in.

The current adjusted sound level is displayed as % on the screen.

Select the “SOUND” mode by pressing “+” and “-“ keys as described above. After this mode is selected press the “ACCEPT“ button, the sound indicator bar will turn from yellow into green. Adjust the sound level by pressing “+” and “-“ keys and press “ACCEPT” button. The green indicator bar turns back into yellow. Now the sound level is adjusted as you desired and you can switch to the previous mode by pressing “SETUP” button.

Adjustment of SENSITIVITY Level:

“SETUP” button is pressed for adjusting the level of sound of the device in whatever mode is it in.

The current adjusted sensitivity level is displayed as % on the screen.

Select the “SENSITIVITY” mode by pressing “+” and “-“ keys as described above. After this mode is selected press the “ACCEPT“ button the sensitivity indicator bar will turn from yellow into green. Adjust the sensitivity level by pressing “+” and “-“ keys and press “ACCEPT” button.

The green indicator bar turns back into yellow. Now the sensitivity level is adjusted as you desired and you can switch to the previous mode by pressing “SETUP” button.

Adjustment of IRON Mode:

“ADJUST” button is pressed for switching the level of worthless mode of the device on and off in whatever mode is it in.

The current IRON mode is displayed as ON or OFF.

You may find more detailed information about the properties of this mode and how it is used in following sections.

Using the RESET Button:

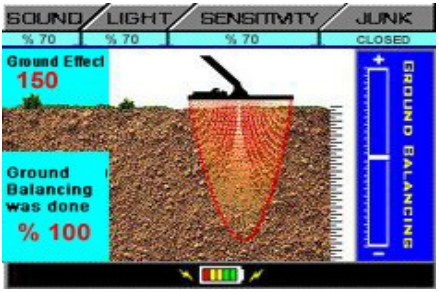
When the device is in use some interference may occur due to the environment or unbalanced detector head movement. These interferences start to show on the screen and cause the device to give a sound alarm. Resetting can be done by pressing the “RESET” button on the system box. By resetting the effects of interference are eliminated. Resetting should not be done when the detector head is over the target! This will cause loss of depth, misinterpretation of received signal and the target become invisible to the device. **Resetting procedure is carried out after the detector head is removed away from the target.**

WHAT IS GROUND SETTING AND HOW IT IS DONE?

In our country land formation and soil composition vary in relation to regions. In some regions the composition may vary frequently (Sand, lime, red earth with dense mineral content, rocky formation, etc.).
These variations in soil composition mislead the detector and cause perception as metal or void. Therefore first we have to launch the soil characteristics of the region to the detector's system. Launching these data will block all misleading effects that may come up from the ground; these will be perceived as misleading signals from the ground, and thus eliminated.
Ground setting is one of the most important provisions of exploration. Therefore the operator should be a keen observer and should be able to detect variations in the ground. He has to observe soil compositions continuously to be able to make ground adjustment again in case misleading signals the device will perceive results from variations in soil composition.
Ground setting is made for the device to recognize the soil and not to be affected by it. Thus the device is not affected from metal or void reflections of varying soil compositions. If ground setting is not properly done it will cause loss of depth and minerals to be evaluated as metals or voids. Therefore **ground settings should be made as correctly as possible.**
Considering the general condition of land formation in our country, a ground setting system is established that will eliminate ground effect on the device.

HOW IS GROUND SETTING DONE?

When the device is switched on it starts with the GROUND ADJUST" mode. Ground adjustment should be done before using the device for correct results. During exploration when soil composition has changed and when ground adjustment has to be done again switch to ground mode by pressing the "GROUND" button and re-adjust ground settings after checking existing settings.



Ground Setting Phases

1. When the device is switched on in "LCD" mode, ground adjustment is displayed automatically.

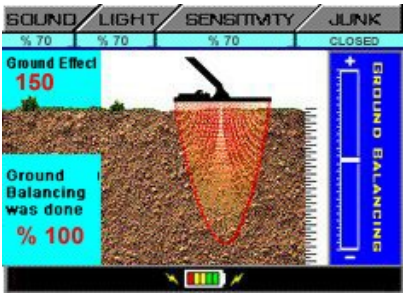
2. Lift the detector head 40 cm above ground and press the "RESET" button.

3. When in ground mode the effect of ground on the device is displayed on the monitor as "Ground Effect". This effect will change when ground adjustment is made.

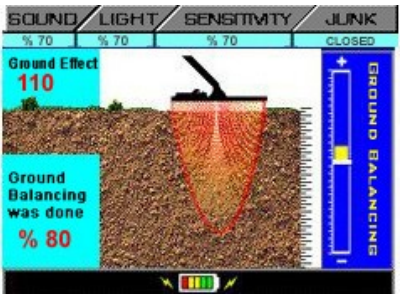
4. Make sure that there are no metals or voids in the ground where ground setting will be made. If ground setting could not be adjusted it will be repeated in a neighboring area.

5. The operator lifts the detector head “**40** cm” above ground and after resetting lower the detector head “**5-10** cm” parallel to the ground.

6. If there is no ground effect on the device there is no interaction on the bar that is indicated in the figure and “Ground Setting 100% Completed” expression is displayed. In this case the device is ready for exploring and you may switch to explore mode by pressing the “ACCEPT” button.



7. In case there is ground effect on the device an interaction is observed in the “GROUND ADJUST” bars that are indicated in the figure. To eliminate this effect press “-“ button for “-“ effect and press “+” button for “+” effect. Press “-“ or “+” buttons until this effect is eliminated and “Ground



Setting 100% Completed” expression is displayed.

8. After pressing “+” or “-“ buttons lift the detector head 40 cm above ground and press the “RESET” button and observe the ground effect by holding the detector head 5-10 cm above ground, if ground effect persists try to eliminate this effect by pressing “+” or “-“ buttons.

9. If we are not able to eliminate the ground effect decrease the sensitivity level one step and repeat the above defined operation.

10. After the ground effect is eliminated you may press the “ACCEPT” button and switch to Explore Mode.

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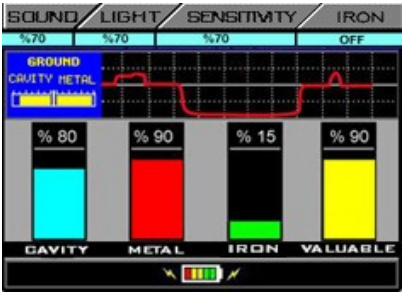
EXPLORE MODE

- After “GROUND“ setting is completed “ACCEPT” button is pressed and switched to Explore Mode.

- The detector head is lifted 40 cm above ground and the “RESET” button is pressed.

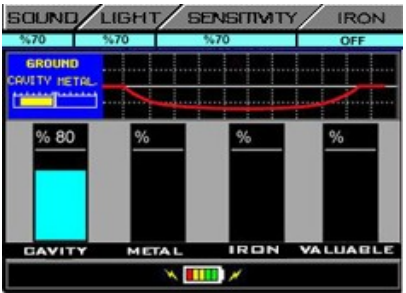
- Hold the detector head 5-10 cm above and parallel to the ground. You can explore by moving the detector head slowly with a right o left sweeping motion or by walking straight. Try to detect a target by exploring his way.

- When the device detects a metal or a void it gives a sound alarm and interaction occur on CAVITY, METAL, IRON and VALUABLE bars according to the power of the signal. At the same time the effect of the target can be monitored on the graph above the bars. Metal targets are indicated with upper projecting lines and void targets are indicated with lower projecting lines on this graph.



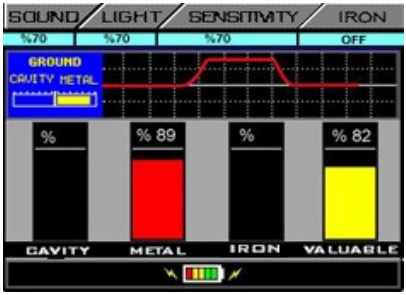
- Ground effect that may be formed together with the target is also displayed on the display. This ground effect is indicated to the operator as “CAVITY” or “METAL”

- If the target is a CAVITY, there is a raise on the “CAVITY” bar and

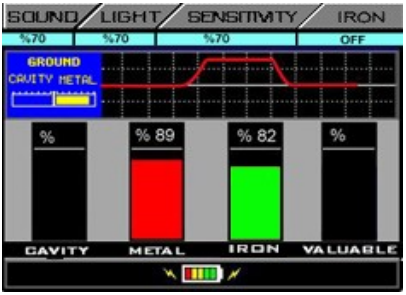


decrease in the graph. The intensity of the “CAVITY” bar is indicated as % on top depending on the magnitude of the effect of target.

- If the target is valuable metal, there is a raise both on the “METAL” and ”VALUABLE” that is expressed in % depending on the magnitude of the effect. The effect of metal can be monitored in the graph on top of the bars.



- If the target is worthless metal there is a raise both on the “METAL” “IRON” that is expressed in % depending on the magnitude of the effect.



- When an alarm is received from the device over any point; the device is taken away from the target and reset in an area where no signal is received and the detector head is passed over the same target again. If there is increase in the “CAVITY” bar, our target is a void. If there is increase in the “METAL” and “VALUABLE” or “IRON” bar, our target is a metal. If required the “RESET” button is pressed and detector head is passed over the target once more. This last operation is done to be sure about the result.

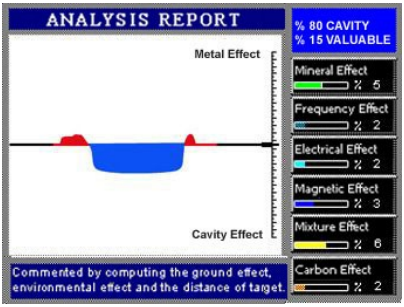
Worthless Metals Elimination Function:

The device can enable to filter the worthless metals by the device and warn the operator if desired. For this operation “IRON” mode should be off. To switch off this mode press “SETUP” button when in explore or ground modes. Select the “IRON” mode by pressing the “+” key. After selecting this mode press the “ACCEPT” button. Place the frame that turns from yellow to into green on “OFF” and press the “ACCEPT” button again. After this operation press “SETUP” button to switch to the previous mode. Following this step the device will filter worthless metals. To be able to detect worthless metals again this mode should be switched back to “ON” mode by repeating above mentioned operation.

Getting and Analysis report by Analyzing the Target:

To get an analysis report by analyzing the detected target during exploration:

- Press the “RESET” button by removing the detector head off the target after the target is detected.
- Press and hold the “SCAN” button when passing over the target again slowly. At that moment the device analyzes the target.
- Release the “SCAN” button after you pass overt the target.



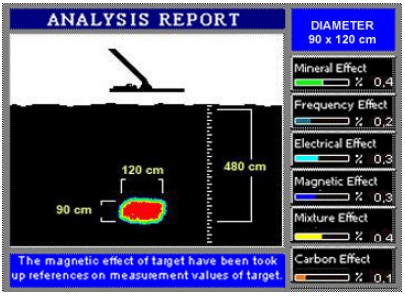
- After this operation the device presents the “ANALYSIS REPORT” to the operator. Type of the metal, magnitude of the target and the ratios of

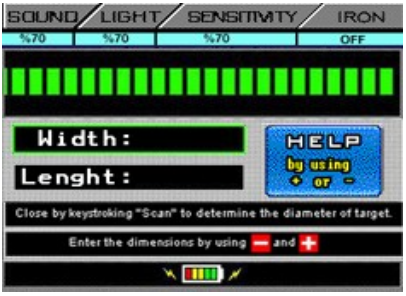
other environmental effects are received.

Detection of Target Depth:

For detecting target depth during exploring:

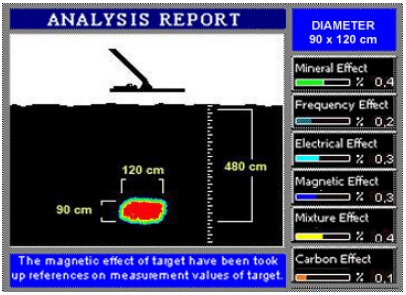
- Press the “DEPTH” key when in explore mode after the target is detected.
- First the dimensions of the target should be determined in depth mode. This operation is explained in detail with operator help menu.
- To enter the help menu form a yellow frame around the “HELP” window by using “+” and “-“ keys.
- Press the “ACCEPT” button after forming this frame.
- In this menu it is explained to the in detail how to determine the dimensions of the target.





- To enter the determined width dimension place the yellow frame on “Width” by using “+” and “-“ keys. Press the “ACCEPT” button to convert the yellow frame to green.
- Enter the “Width” value by using “+” and “-“ keys. Press the “ACCEPT” button after entering the width value and convert the frame into yellow.

- To enter the determined length dimension place the yellow frame on “Length” by using “+” and “-“ keys. Press the “ACCEPT” button to convert the yellow frame to green.
- Enter the “Length” value by using “+” and “-“ keys. Press the “ACCEPT” button after entering the length value.
- Press the “SCAN “ button after this operation and pass over the target again and release the “SCAN” button
- After this operation the device presents an “Analysis Report” that indicates whether the target is METAL or VOID, entered dimension values and environmental effects.
- Press the “ACCEPT” button to leave this report.
- Switched back to Depth mode and switched to explore mode by pressing the “DEPTH” button.



TECHNICAL PROPERTIES

DEPTH (cm)							
5x5	10x10	20x20	30x30	40x40	50x50	60x60	Max. Depth
58 cm	75 cm	110 cm	132 cm	154 cm	176 cm	189 cm	6 - 8 m

The values above have been found by trying new metals with no magnetic fields and effects formed yet. As the metal size grows, the rates given in the tables also increase. The metals act like a transmitter after they remain underground for years due to the magnetic field created. The search antenna enables the receiver detect from by 3 or 4 times these depth values and above.

DIMENSIONS (mm)	360 X 440 SPORTING METAL
FREQUENCY	12,5 kHz RADIO FREQUENCY
OPERATING SYSTEM	VLF (Very Low Frequency)
USED MODE	LCD (Liquid Crystal Display)

JEOSCAN ACCESSORIES

CARRYING BAG	CARRYING BAG	CHARGING ADAPTER	LITHIUM-ION BATTERY	HEADPHONES	USER'S MANUAL	WARRANTY CERTIFICATE

BATTERY	14.8 V 4 AMPERE LITHIUM-ION RECHARGEABLE BATTERY
OPERATIONAL VOLTAGE	12 V - 18,8 V
BATTERY CURRENT	4A
CHARGING ADAPTER	14,8 V 4 AMPERE LITHIUM-ION BATTERY CHARGING ADAPTER
INPUT	AC 100-240 V / 50-60 Hz / 180 mA (CITY NETWORK)
OUTPUT	DC 12 - 16,8 V / 400 mA

WARRANTY PERIOD: 2 YEARS

NOTE: BATTERIES, BAGS, HEADPHONES AND CHARGERS EXCLUDED FROM WARRANTY

MAKRO DEDEKTÖR

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