

 **GOLD  
LEGEND**

**5** **SEARCH SYSTEMS**

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**USER MANUAL**



LONG RANGE



FREE MODE



SMART DEPTH



IONIC



BIONIC

**GL-2030**

**GEOGROUND**  
GEOPHYSICAL GROUND MEASURING



# **Φ GOLD LEGEND**

We develop the latest German technology in the field of  
gold and metal detectors

**GEOGROUND**  

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**GEOPHYSICAL GROUND MEASURING**

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## Geo Ground

Since we Started our business 20 years ago, We Seeks to take one step further to provide the best detection technology for our customers. We won't stop researching until you find all your deep underground objects, structures and anomalies like tunnels and cavities, pipelines and utilities, metal targets and hoards, ancient treasures and artifacts, foundations and water deposits.

From an idea to the largest brand in the field of gold and metal detectors using the latest German technology.

Development of Geo Ground machines takes place at the headquarters in Hamburg, Germany, starting from research and brainstorming via hand-made production up to the delivery of the metal detectors to our .

The internal departments responsible for the development are:

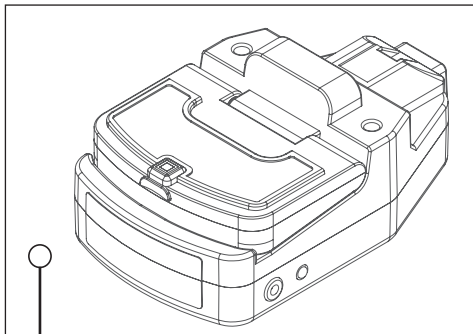
Department of Mold design and construction

Department of Circuit board design and placement

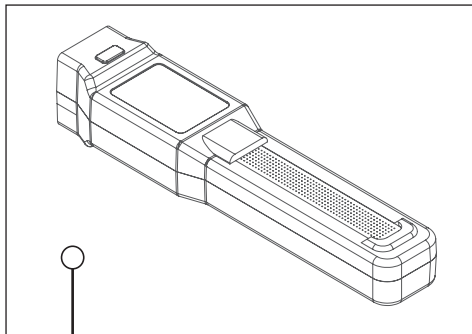
Department of Detectors assembly and testing

Department of Software development and programming

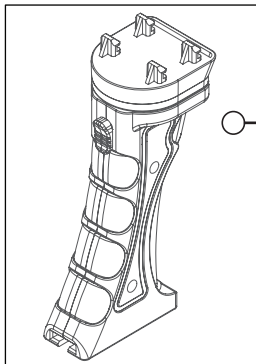
Department of Sales and support services



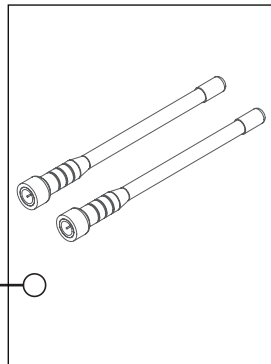
Gold Legend Main Device



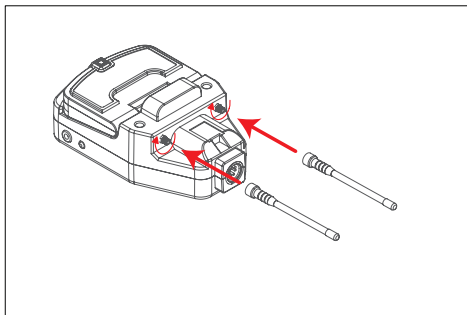
Smart Sensor



Wireless Handle Unit



RF Antennas

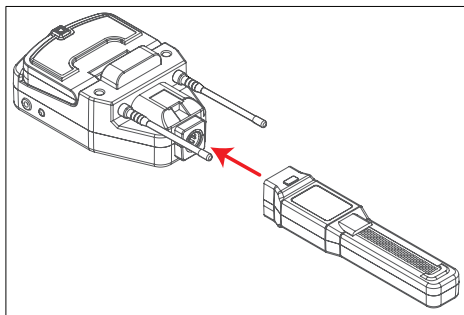


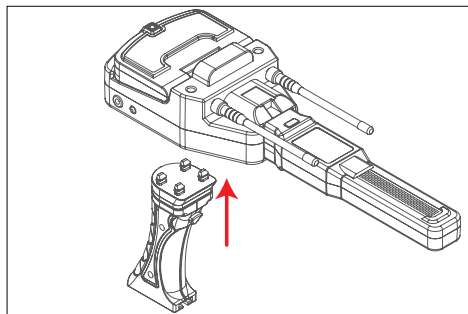
1. Install the two antennas on the device like it's shown below. And fix them by clockwise rotating direction.

2. Install the Smart Scan Sensor on the device.

**Attention:**

*The sensor lock button must be at the top side*

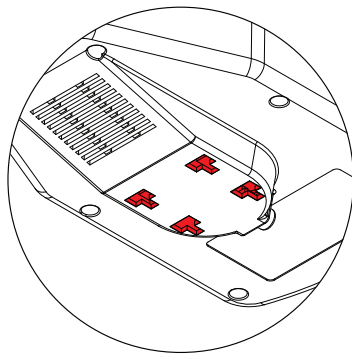
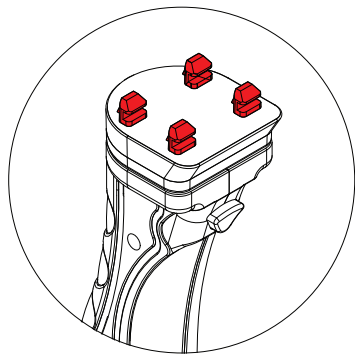




3. Install the handle unit on the device from bottom side.

**Attention:**

*There is 4 pins in the top side of the handle unit that must to inserted directly in the correct holes in the device*







LED / Lazar

Power



OK / Enter

Back

Left Arrow

Right Arrow

Down Arrow

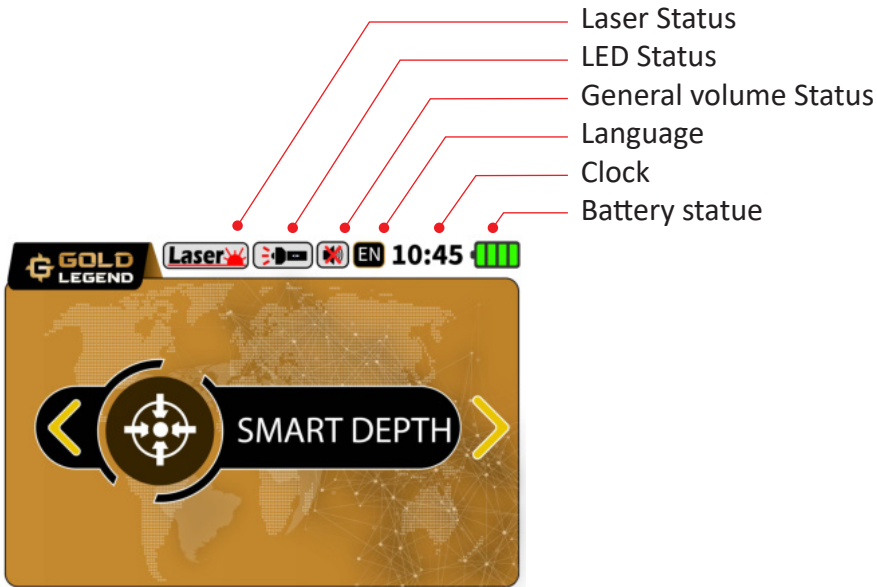
Up Arrow

After device installation make sure to plug the device on charge for at least 6 hours and wait until the charge LED color changes to blue. Open screen unit and press and hold power button for two seconds to turn the device ON.



Splash Screen

When device is turning ON you can see the splash screen at the start of booting the device. Wait for this screen to go to main menu screen.



Main menu

## Adjust Setting

At the beginning of using Gold Legend device, and if the device is turned on for the first time, the device settings page is displayed. On this page, user can set up the device with the desired settings. These settings are: Time- Display- Sound- Language- Info

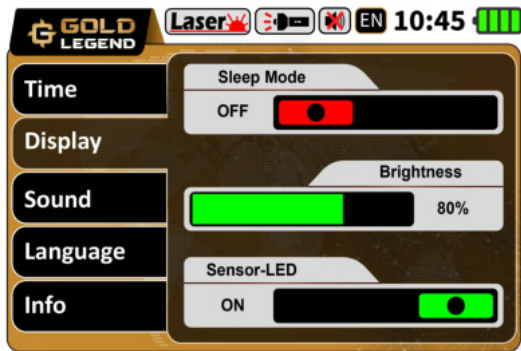
### Time

Use this section to set the device clock, to change the clock, click OK on the keyboard once to move to the clock section in the middle of the screen. When you move to the hour number, the color of the hour number changes to red. Use the up and down keys to change the clock. Press the right key to jump to the minute part and use the up and down keys to adjust it like a clock.



## Display

In this page, you can see the settings related to the screen and the scan sensor light.



### Sleep mode

By using this option, if the user does not use the device for a minute, the screen of the device will go to sleep mode and turn off. In this case, to reuse, just click on one of the keys on the keypad to turn the screen on again.

To change this option, when the Display tab is selected, click the OK button on the keyboard to activate the display options. (You can select other options using the up / down keys on the keyboard) If sleep mode is selected, you can turn this option on or off with the left / right keys on the keyboard .

## Brightness

Use this option to set the screen brightness level.

To change this option, when the Display tab is selected, click the OK button on the keyboard to activate the display options. (You can use the up / down keys on the keyboard to select other options) If the brightness option is selected, you can change the brightness with the left / right keys on the keyboard

## Sensor LED

By turning on this option, the sensor LED will be turned on in search mode and the user can also see the result through the color of the sensor light (the sensor light will be explained in the systems section). If the user does not want to turn on the sensor light (for example for security issues) he can turn off this option

To change this option, when the Display tab is selected, click the OK button on the keyboard to activate the display options. (You can select other options using the up / down keys on the keyboard) If the sensor LED option is selected, you can turn this option on or off with the left / right keys on the keyboard. .

## Sound

In this page, the user can control the amount of different sounds produced by the device.



### General

This option can be used to adjust the amount of general sound produced by the device.

To change this option, when the sound tab is selected, click the OK button on the keyboard to activate the sound options. (You can select other options using the up / down keys on the keyboard) In the case of the general volume option is selected, you can increase / decrease this value with the left / right keys on the keyboard.

## Keys

This option can be used to adjust the volume of the device keyboard.

To change this option, when the sound tab is selected, click the OK button on the keyboard to activate the sound options. (You can select other options using the up / down keys on the keyboard) If the Keys option is selected, you can increase / decrease this value with the left / right keys on the keyboard .

## Scan

This option can be used to adjust the amount of sound produced during the search operation.

To change this option, when the sound tab is selected, click the OK button on the keyboard to activate the sound options. (You can select other options using the up / down keys on the keyboard) If the scan option is selected, you can increase / decrease this value with the left / right keys on the keyboard.



## Language

Gold Legend device is designed with 8 languages

English-German-Spanish-French-Russian-Italian-Arabic-Persian



To change the device language When the language tab is selected, you can change the device language with the left / right keys on the keyboard. (With each click the device language changes instantly.)

## Info

On this page, the user is able to see the full info of the device. (Values of this page can not be changed)



After finishing the settings, you can return to the main menu by clicking on the Back button.

Gold legend GL-2030 from geo ground comes with 5 different search systems which are listed below:

1. Long Range
2. Free Mode
3. Ionic System
4. Bionic System
5. Smart depth

After turning on the device you will see below screen. You can change the system item using left & right arrows.





## Long- Range

The long-range system in the Gold Legend device performs the search for treasures in the environment by generating radio frequencies and sending them through the two antennas in the device. The Gold Legend device is designed in such a way that when the radio frequencies generated by the device hit potential targets, it starts to rotate towards the target on the electronic handle.

Select Long Range system from the main menu and press on OK to enter the system.

By entering the system you can see the below screen which includes system setting. You should set all settings depends on scan area and the target to have better scan result.



You can set soil type, kind of target, maximum distance and maximum depth using this settings. Use up / down arrows to switch between tabs. The description of all above setting comes on next.

## Soil

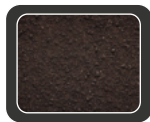
User must select the desired area soil from this section. Gold Legend Device is designed to work in 7 different types of soil. These soils are:



High Mineral



Low Mineral



Normal



Rocky



Sand



Stony



Wet

Use the left and right keys on the keyboard to change the soil type.

## Target

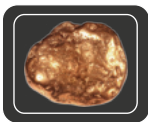
In this section, the user must specify what kind of target s/he is looking for in the area. Selecting the right target causes the tracker to focus only on that target and perform the search operation. The Gold Legend device is designed to search for 11 different types of targets. These targets are:



Bronze



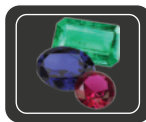
Cavity



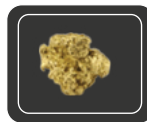
Copper



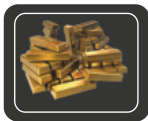
Diamond



Gemstone



Gold ore



Gold  
treasure



Gold veins



Iron



Platinum



Silver

Use the left and right keys on the keyboard to change the target type.

## Distance

Gold Legend device has tracking power up to 3000 meters distance from the device location, and this feature will enable the user to be able to search all possible targets within this radius.

Use the left and right keys on the keyboard to change the distance.



**Note:** By long press on the left / right keys, the values will change faster.

## Depth

Gold Legend device has the power to track up to a depth of 40 meters under the ground, and this feature will enable the user to search all possible targets to this depth.

Use the left and right keys on the keyboard to change the depth.



**Note:** By long press on the left / right keys, the values will change faster.



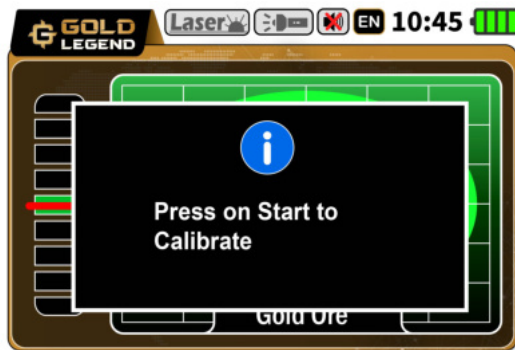
## Search

After selecting the desired settings, use the down key to go to the search section. On this page you can see all the settings made. (If necessary, you can use the above key to return to previous sections and change the settings.).

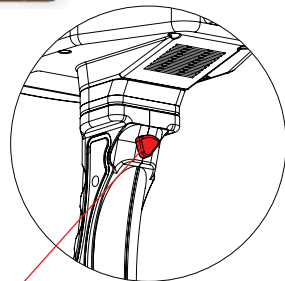


On the search page, by pressing the OK key, the search page will be displayed, which is described at next.

After completing the initial settings, you will enter the search screen.



**Note:** At first you need to hold the device straight and horizontal position then press and hold start button for one second to calibrate the balance indicator on the screen.



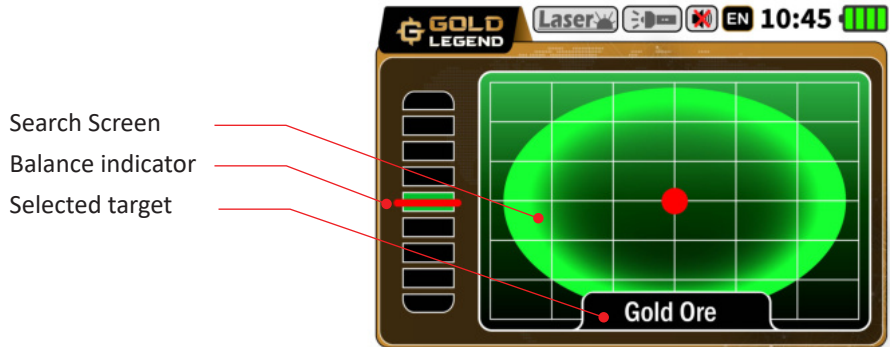
Start Button

Screen description:

**Balance indicator:** This indicator shows the balance of the device relative to the control horizon. To get a better result, this indicator should be placed on the green mark.

**Search Screen :** This page displays the frequency search operation by animation movement in a green circle.

**Selected Target :** The type of selected target in the system settings will be displayed in this box



As the introduction to the long-range search system, this system searches for targets chosen by the user.

After selecting the correct settings, go to the area you want to search and keep the device horizontal without tilting (the user can calibrate the balance using the balance indicator on the screen).

We emphasize that this requires a lot of focus (for example if you are tired, try to rest a little bit and then keep doing it for a better and more accurate result).

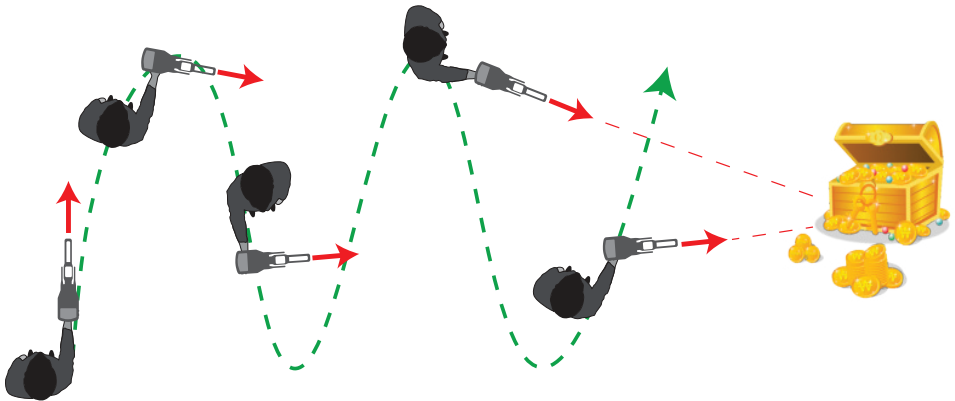
Make sure the device balance indicator is on the green mark, then start moving slowly in the search area according to the following order:

### **1) Zigzag Path**

The user must advance according to a zigzag shape as shown in the line drawn in the following figure, from north to south, following the direction of rotation of the device (in case there is a target).

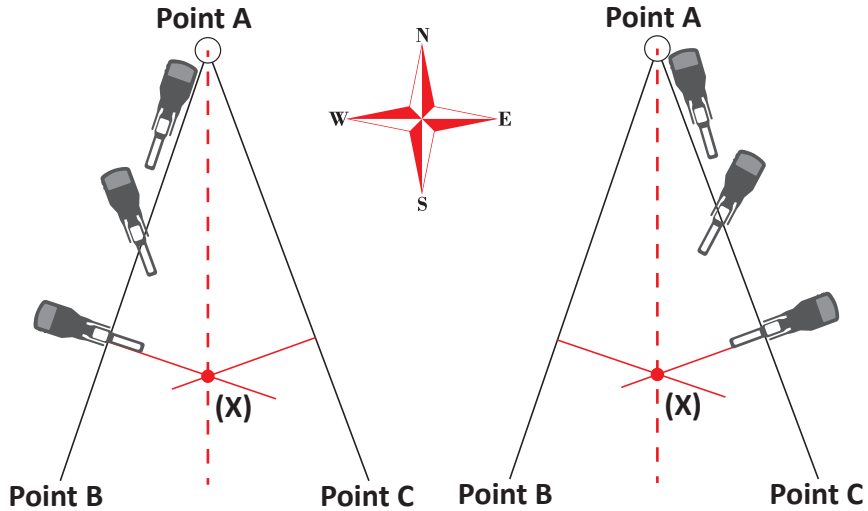
In this type of search, the user must move according to the mentioned path, and we note that the direction of rotation of the device is concentrated according to a specific point with more progress towards the supposed target, this point is the location of the buried target.

To make sure of the exact location of the target, it is preferable for the user to repeat the above-mentioned process from different directions towards the point that was first identified. If the found point is confirmed, this point (X) is an assumed location for the potential target.



## 2) V Shaped Path

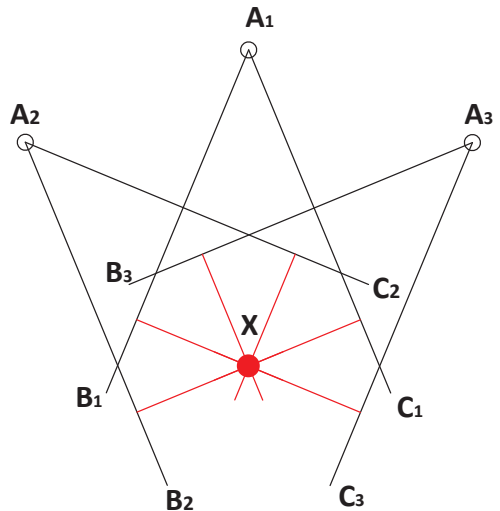
After finding the mentioned point (X) in the previous paragraph and to make sure that the target exists, that is, the target is real and the signals are not false, then the user must move from point (X) a few meters towards the north and identify a new point (A) and then advance towards the south of the point (A) according to the right and left sides of the point (X), as shown in the picture below.



In the movement of moving from point (A) to the point (B), the device will rotate towards the direction of point (X) in case of the presence of the target or signals from the target.

When moving from point (A) to point (B), in case the device rotates around its axis, heading towards point (X), this means that this point is the confirmed location of the target.

To make sure, the above process must repeat in two different directions on both sides of point (A) and progress according to certain lines drawn in the following figure.





## Free Mode

The Free Mode system in the Gold Legend device performs the Search for treasures in the environment by generating radio frequencies and sending them through the two antennas in the device. The Gold Legend device is designed in such a way that when the radio frequencies generated by the device hit potential targets, it starts to rotate towards the target on the electronic handle.



Select Free Mode system from the main menu and press on OK to enter the system. By entering the system you can see a screen which includes system setting. You should set all settings depends on scan area and the target to have better scan result.



You can set soil type, Custom Frequency, maximum distance and maximum depth using this settings.

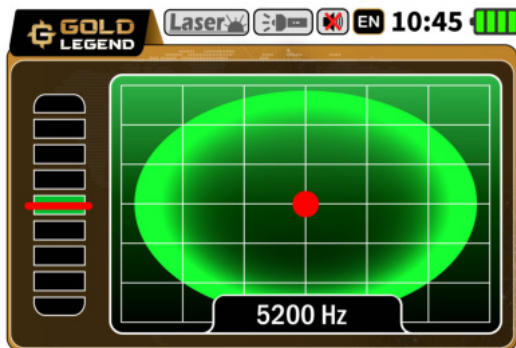
Use up / down rows to switch between tabs.

The description of all above setting comes on next.



Free Mode Setting View

The settings and method of working with this system are quite similar to the long range system. The only difference is that in this system user should change the frequency produced by the device according to the type of target, instead of selecting the target type.



Free Mode Scan View



## Smart Depth

Since the invention of metal detectors until now, knowing the Depth of buried targets underground that treasure hunters and prospectors find has been one of the problems they face before or during exploration.

Geo Ground, after a long period of research and using highly intelligent algorithms, was able to program and run a new system in the Gold Legend device. This system, called Smart Depth, is capable of calculating the approximate depth of burials with great accuracy.

After completing the search through previous systems (long range and free mode), A point above the target is determined. This system is used to estimate the depth of the target below the founded point.

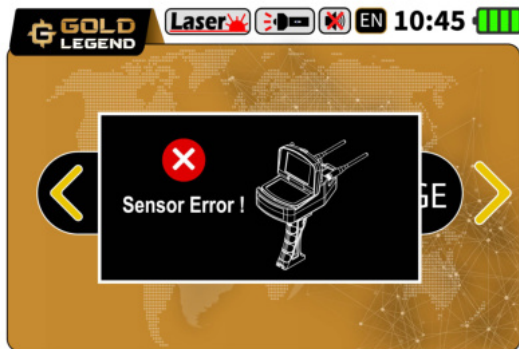
To use this system, stand on the point and start to do the next steps.



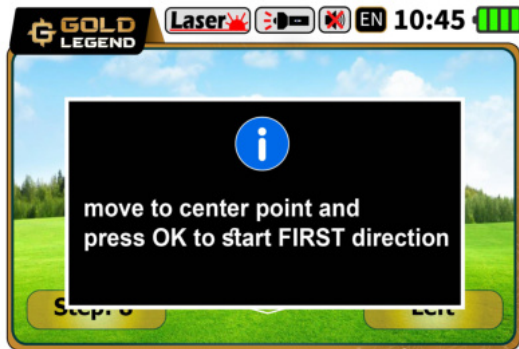
## How to use

First, select the Smart Depth System from the main menu to enter the page of this system.

**Note:** If the smart sensor is not installed on the device, a sensor error message will be displayed on the screen.



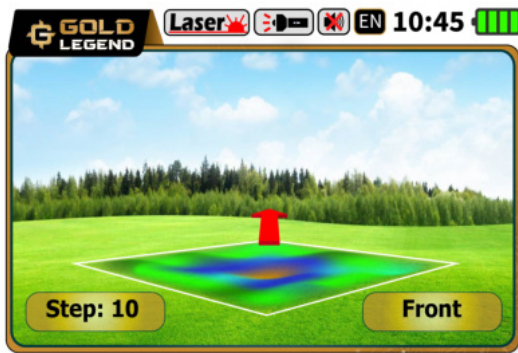
By selecting the system, you will first see a message asking you to stand at the center point and click the OK button or press and hold on Start button to start first direction.



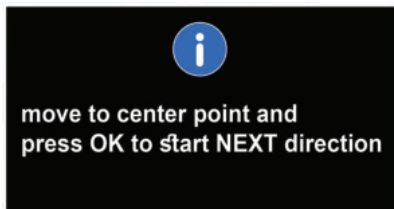
It is better to keep the device to the north side to get a better result for the first direction and then press the start button to perform the calibration operation in the north direction.

If you have done the above operation correctly, the next figure screen will be displayed, which will indicate your forward movement with a flashing red arrow.

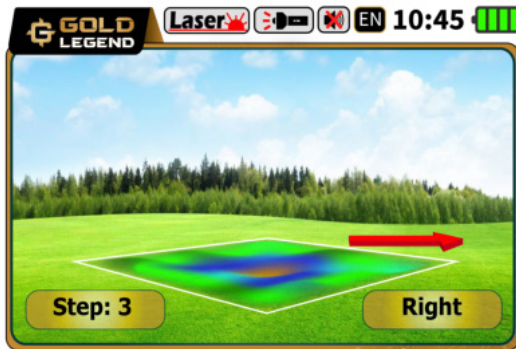
The user must press the start button once with each step to the north and continue this operation until the device rotates left or right more than 70 degrees.



Note that while the device is rotated, a message will appear on the screen asking you to return to the center point and press the Start button again to start the next direction

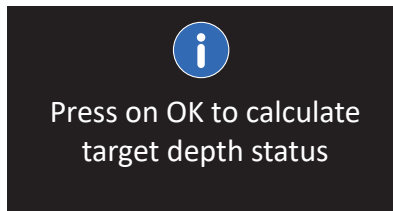


Note that this time you have to stand on the center point and take the device to the EAST and move in the east direction.

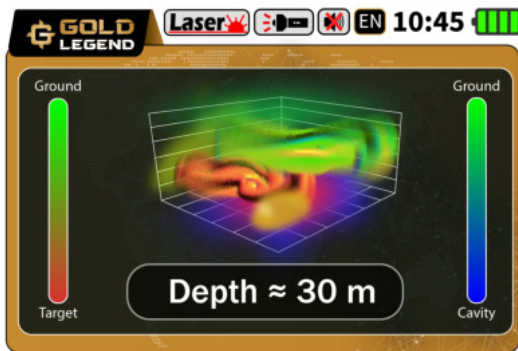


Repeat this as before and wait for the device to rotate again to the right or left more than 70 degrees.

After completing this direction, do the south and west directions to finally display the following message on the screen.



By pressing on OK or press and hold the start button, the device will starts calculating the buried target depth and after a few seconds the approximate depth of the target is displayed, as shown in the next image.



**Note:** *The calculated depth is an approximation and is displayed with a margin of tolerance of +/- 30 cm*



## IONIC System

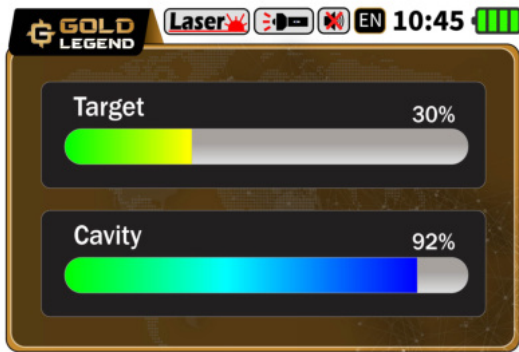
Since the invention of metal detectors until now, knowing the Ionic search system has been developed according to a completely new technology, which is the first of its kind in metal detectors, and represents a major improvement over the traditional system that existed before.

Where the new technology allows more accurate detection of ion fields resulting from metal targets buried underground that ensures accurate reception and processing of signals, with the ability to control some of the signal settings on the screen to ensure accurate results.

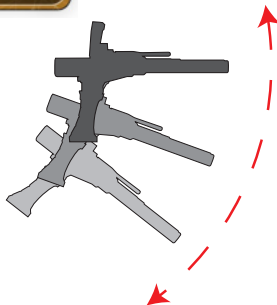


## How to use

Select IONIC search system from main menu to enter this system. This page contains two progress bars where the upper one shows target signal strength and bottom one shows cavity signal strength.



For starting after entering Ionic page, user must press on start button out of search area in opposite direction that the user want to search in, to calibrate the sensor. Then move the device slowly up and down with the same speed, while the device is slightly lowered towards the ground.



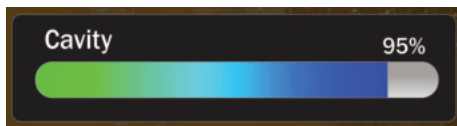


In case of a presence of close target signal, the target progress bar on the screen will show the captured signal percentage.



Target Progress Bar

However in case of a presence of close cavity signal, the cavity progress bar on the screen will show the captured signal percentage.



Cavity Progress Bar

To make sure the signal is correct, we do a reset by pressing the start button once, but in a different direction than the one from which the signal was picked up the first time, this step is repeated more than once, if the signal continues to appear, this means that the signal is completely correct.



## BONIC System

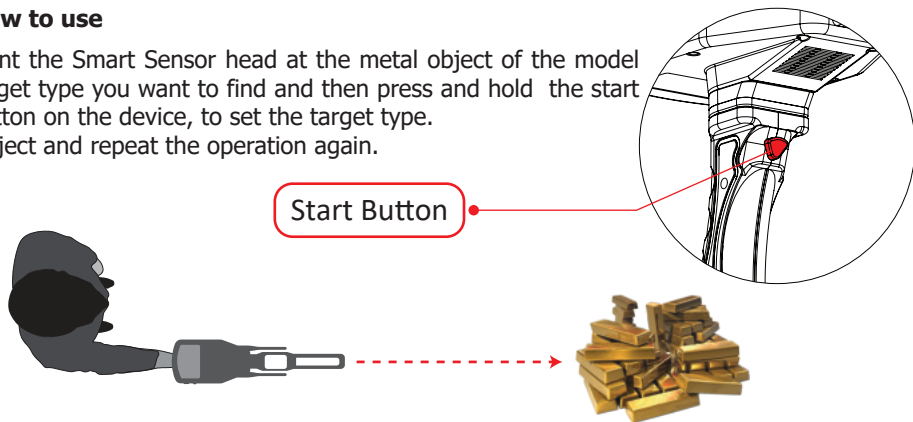
This search system is similar to the ionic search system in terms of Working method .The difference, however, is that here, Bionic signals are captured from a specific metallic object. For example, from gold, then the search is directed towards capturing Bionic signals similar to metal objects buried underground within the surrounding area.

That means, in the ionic search system, the search is random and free, but in the bionic system the search is directed according to a specific target type, that is, according to predefined signals.



## How to use

Point the Smart Sensor head at the metal object of the model target type you want to find and then press and hold the start button on the device, to set the target type. Object and repeat the operation again.



User can fix the device direction on the scanned object using the laser light. This will help to capture the exact needed object signals.

**Note:** There is no reset in this system, so in any point which we press the start button, will be the new field on which to match.

By using this system, we move the unit of the Bionic system in all directions slowly, in case there is a close signal, it will appear on the indicator. Normally when there is no signal like which captured before, a green motion circle will appear on the bionic screen.



Bionic - Search processing

The indicator in this system will appear stably and with color red in case of a founded signal is similar to the captured signal, in conjunction with a sound alert indicating the target.

In the event that the signal appears, it can be confirmed by returning to the first metal object and repeat the operation again.



Bionic - Target captured

## Specifications

CPU	Type	ARM
	Frequency	72 MHz
Memory	Type	SD
	Capacity	2 GB
Screen	Type	TFT LCD HMI
	Size	3.5 INCH
	Resolution	480 X 320
	Color	64 K 65536
	Back Light	LED
Sound	Output	Speaker + Headset
	Jack Type	3.5 mm
	Internal Speaker	3W
Charger	Input	100 – 220 V 50 / 60 Hz
	Output	5V - 2.5 A
Battery	Type	Lithium Ion
	Input	5V - 2.5 A
	Capacity	9600 mA
	Removable Battery	No
Other	Flash LED	5mm
	LAZER	650nm /5mw
	Vibration	Yes
Temperature	Operating Temp	0 – 40 C
Package	Dimension	400 mm X 300 mm X 160 mm
	Weight	3200 g



The device may only be dismantled or repaired by GEO-GROUND or its authorized service centers. Unauthorized disassociation / infiltration of the internal components of the main monitor or other units for any reason cancels the warranty.

Do not store the device and its components under extremely low or high temperatures for long periods (the preferred storage temperature is  $-20^{\circ}\text{C}$  to  $60^{\circ}\text{C}$  /  $-4^{\circ}\text{F}$  to  $140^{\circ}\text{F}$ ).

Do not assemble and operate the device before reading the user manual.

Do not use miscellaneous chargers and use only original chargers

Protect the main unit of the device from impacts during normal use. For transportation, place the detector carefully in the original carton and secure with shock-resistant packaging.

Do not leave another detector or electromagnetic device close to the device (within a distance of less than 10 meters by 30 feet)

Do not hold any metallic objects while using the device.

Do not submerge the device or its accessories in water. Do not expose the equipment to excessively moist environments.

Keep the device out of your shoes while walking. The device may detect minerals on you or inside your shoes as targets.

Do not use the device indoors. The device may constantly give target signals indoors as there are many metals. Use the device outdoors, in open fields.

## Property Rights

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# GEOGROUND

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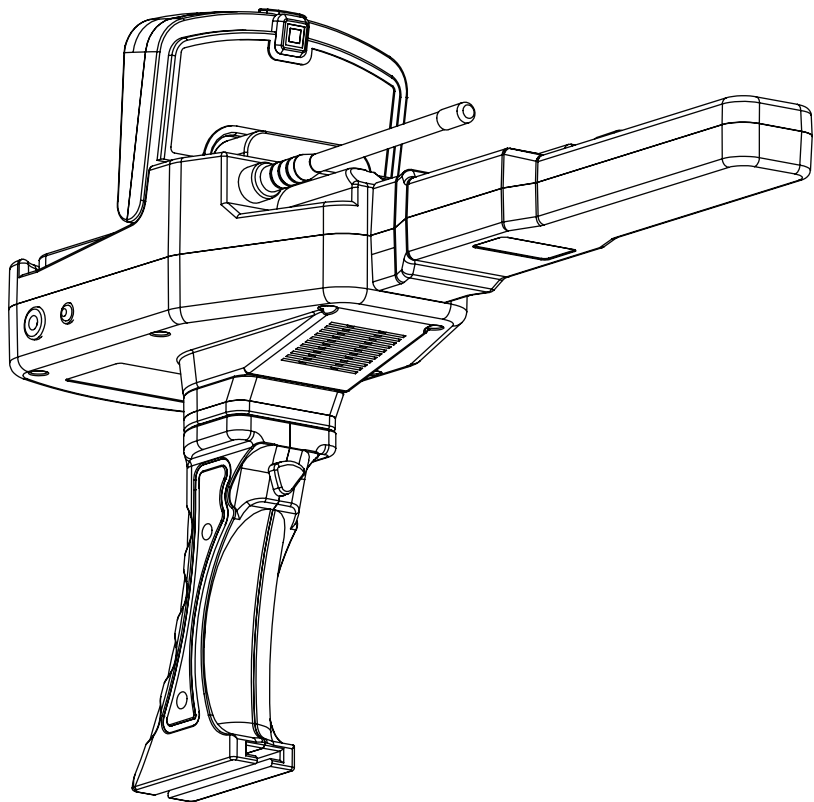
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GL-2030



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