SPARK

User's Manual

USER'S MANUAL FOR
SPARK

Metal and Water Finder

Safety information

The operating in high voltage areas would limit the results and performance

The cell signal interferes with the device signal, so turn off the cell while operating

Don't operate two devices with same method of search at the same place

Don't store in high temperature or high humidity

Disconnect the batteries before long time storage

The operator Must remove any metals that might affect the opreatin eg:Rings,watch, belt....

Any attempt to tamper the device or unapproved maintenance would void the warranty

For best power endurance and reliability. use heavy duty and high quality batteries thats for the devices which work on removable batteries

WARNING

❖ The user must practice before starting the detecting operations and discoveries

❖ Store in Cool and dry place 15-40 C 5%-75% humidity

Read & Understand
The User's manual
before using this device

Technical specification

Search system :	long distance sensing system (LDS)
Search principle:	Digital Frequency Signal Processing (DFSP) / To Receiving Electrostatic Fields of the targets
Operating processor:	MICROCONTLLER PIC18
Operating frequency:	From 1 kHz to 9 kHz
Power:	4 AAA batteries 1.5 volts / Equivalent of -6volt interchangeable
Power consumption:	Maximum of consumption 25 mAh
Battery life:	32 work hours
Charger:	none
Display Type:	LEDs Interface
Specialized to detects:	Gold – Silver – Bronze – Caves
Targets Discrimination:	Yes
Target Selection System:	Yes, can choose the target type before the start search
Depth Search:	10m, With controlling system in the depth level
Distance Search:	200m, With controlling system in the distance level
Results feedback:	Through orientation toward to the target location accompanied by acoustic Alerts
Bluetooth	none
Wireless:	none

|	
Automatic smart guidance system:	none
Voice alerts:	Yes
Vibrating alert:	Yes
Operating temperature:	From -15° C to 60° C
Storage temperature:	From -15° C to 40° C
Humidity:	It can be stored and work in the degree rate of air humidity of level 90%.
Weight:	Compound: 700 gr – disjointed in the bag: 1 kg
Dimensions:	16X9.5X2.5 cm
Bag dimensions:	20X15X5 cm

Main Control Unit

The unit which is responsible for adjusting the device and setting inaddition to full exploration search through this it.
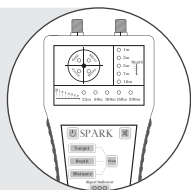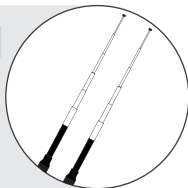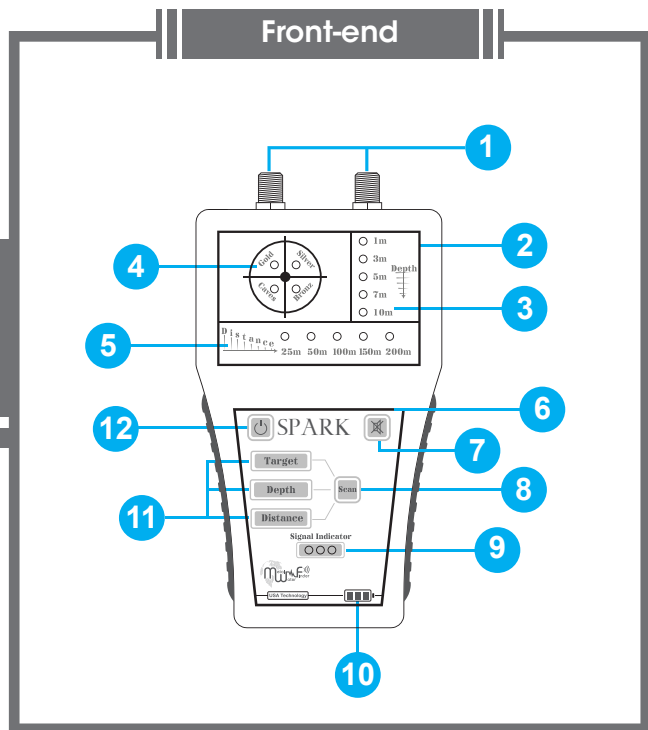

Handel Grip

Coms with the device . Used to carry the device through for the searching process, it has capability to rotation 360 degree.
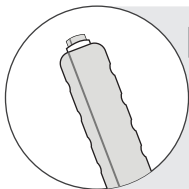

Transceiver Antennas

Antennas is responsible for transmit and receive signals and searching waves. It has a special and unique properties .

Front-end

1. Signal port ,connected with antennas
2. User interface.
3. Depth levels interface .
4. Target type interface .
5. Distance levels interface .
6. Control buttons.
7. Sound and vibration controlling button
8. Scan button
9. LED Indicators for signal.
10. Battery level indicators.
11. Selection keys (depth, distance & target)
12. On / Off button.

Backend
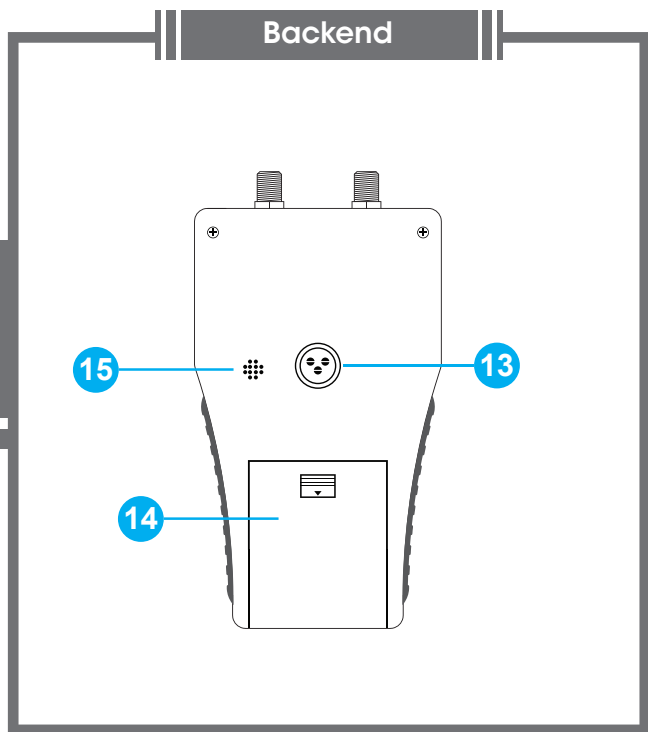
**13** Handle socket.

14 Battery compartment.

15 Audio out.

❖ Spark is working on remote sensing system (LDS) developed and compact with voice selection system to Metal path and point.

❖ The Spark device features in high precision waves to identify and locate underground metals with high specific. Where the device can locate targets from a distance of 200 meters forward at 360 degree angle with precise control in distance search front end.

❖ Spark device search depth up to 10m below the surface of the earth with strict control on deep research of device control interface the device of features a small size and ease of use. Where you can fit in your pocket and navigates it conveniently and easily any one can use it without having any experience or knowledge in the detectors.

❖ The principle of search depends on digital frequency signal processing (DFSP) to receive the energy of static electric field from the targets.

❖ Provider device automatic tuning system (ATS) to operate in all types of terrain, rocky soils, mountainous, sandy and clay.

This electronic device works on metal finder technology transmitter and receiver. It sends waves and receives at the same time and do the search for minerals by frequency depending on the combination of physical and chemical interaction metal too if the presence of minerals underground they are affected by the magnetic fields of the earth. It also acquires minerals static electrical currents gained the soil through the soil affected by different currents like (power stations, broad casters radio, satellites, lightening and a lot of stuff generated electrical energy and static energy.

This machine adopts the metal detectors and targets underground through the influence of waves emerging from the device by electrostatic fields formed on the metal as a result he was underground and metal frequency at the same time. Device waves work on inflate the size of these field and escalation of soil surface which helps the device to locate the target from long distance, the device receives a signal amplification and heading toward the target site directly and precise destination.
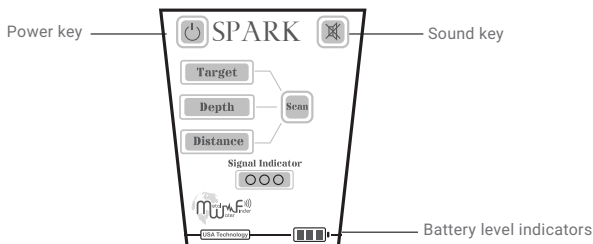

Soil

Target
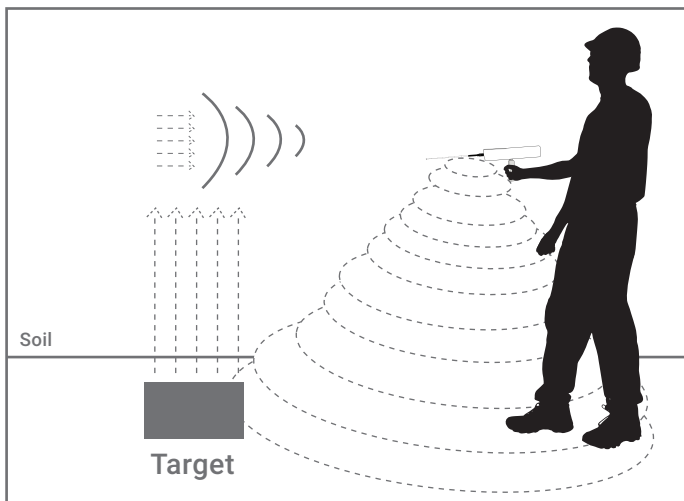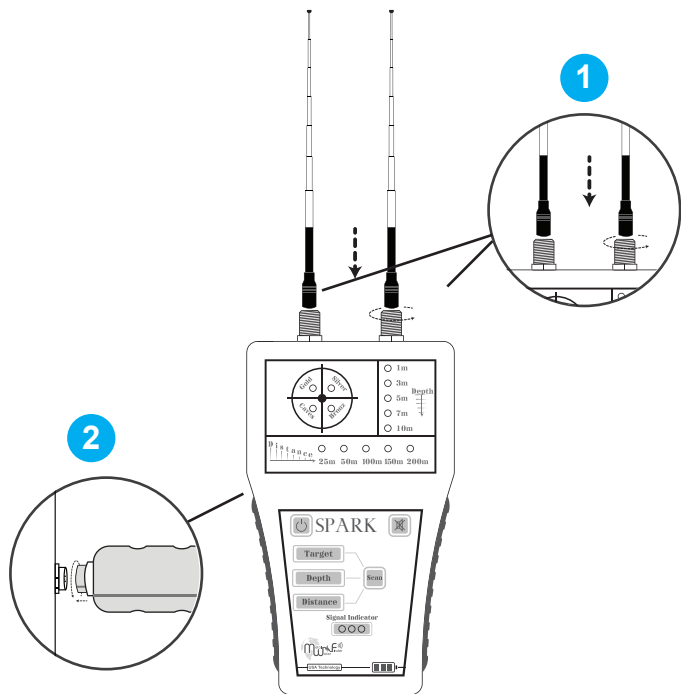
1. Connect the antennas in their places in front of the front part of the device as shown in the drawing.

2. Connect the carrier handle in its place at the bottom of the machine as shown in the drawing.

Characteristics and functionality

❖ To turn on the device press and hold the power key (for seconds) and for shut down process we do the same way.

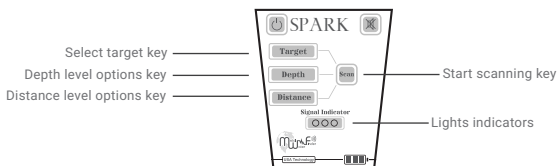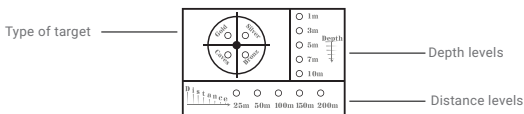❖ To control the audio levels through the key sound and pressure intermittently on the key to change the level.

Note: audio has five position in addition to silent mode and also there are several voice functions (voices of the keys and press – search alerts sounds).

❖ The device is equipped with vibrating alert feature; you can control turn and stop vibrating alerts through press and hold (for three second) on key sound.

❖ The device works on four batteries (1.5 AAA volts) subject to change after its completion.

❖ Battery level indicators are totally full where the battery is full and have three levels with different color landing descending (green, yellow, and red) and before the entry into force of the energy of the battery starts flashing red.

Power key ——— [⏻] SPARK [✕] ——— Sound key

Target
Depth — Scan
Distance
Signal Indicator
○○○

Battery level indicators ——— ▮▮▮

Setup wizard

Search settings

❖ Do turn on device through turn and close key.

❖ Choose the desired target type by pressing the target key and you will notice the change in optical indicators that special for target part at the top of device each target there is a special light and goals (Gold, Silver, Bronze and Caves).

❖ Choose the level of depth by pressing depth key and you will notice the change in levels and depths interface there are several level and is (1m, 3m, 5m, 7m and 10m)

❖ Choose the level of required distance to search by pressing on distance key and you will notice the change in levels in the interface distances and there are several levels and is (200m, 150m, 50m and 25m).

❖ Press the scan key to start the research process and you will notice the optical indicators started working and audio alarm started and this refer to device ready to start searching process.


Type of target ———

Depth levels

Distance levels

Select target key ———
Depth level options key ———
Distance level options key ———

Start scanning key

Lights indicators

❖ The user must carry the device through the carrier handle so the device is horizontal with the ground and tilted slightly toward the soil as shown in the drawing.

التربة
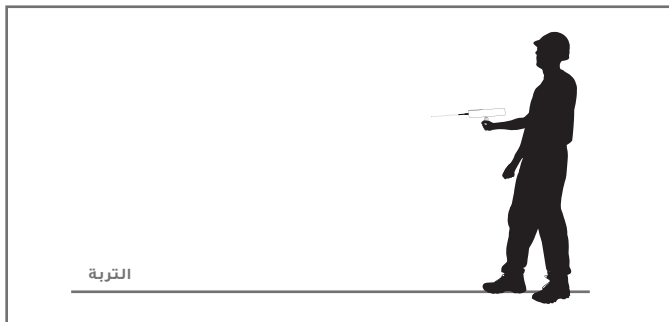
❖ And then just do the stimulation for waves and area outside of the device and we move the device by hand turn right and then left slowly and then install the hand that the device.

Right

Left

Move to the right and left
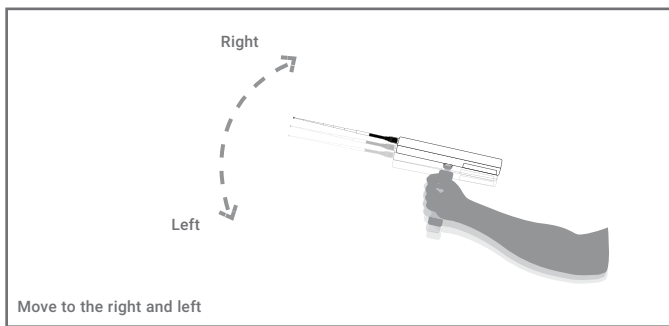
If you find the target that was determined search for him. The device will receive this read and signal and thus change the device path automatically from normal path that was stable in it to another path and this trend is toward target location. And then installs the device in the same direction. At the mean time we do clearing target location and install starts to launch audio alarm toward target location then we warp completely about the direction in which the device went to him to face adverse parking to note change device path at another time and toward to target location and launching audio alarm constantly. Then we get away from first reading point to stand at another location away from the first 10 meters sideways then do the process of stimulation device waves again and prove the device and wait for reading if the target was downright the device will go towards the site itself and we have made sure that there was target and could we do that way more than once to validate the target direction by taking more than the reading of device from different points. And if we notice theories to all our readings that we have made intersect in one point location and target point.
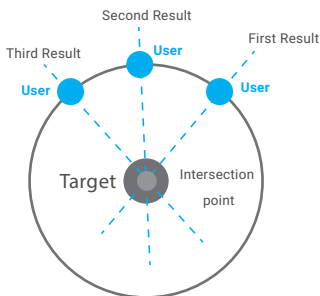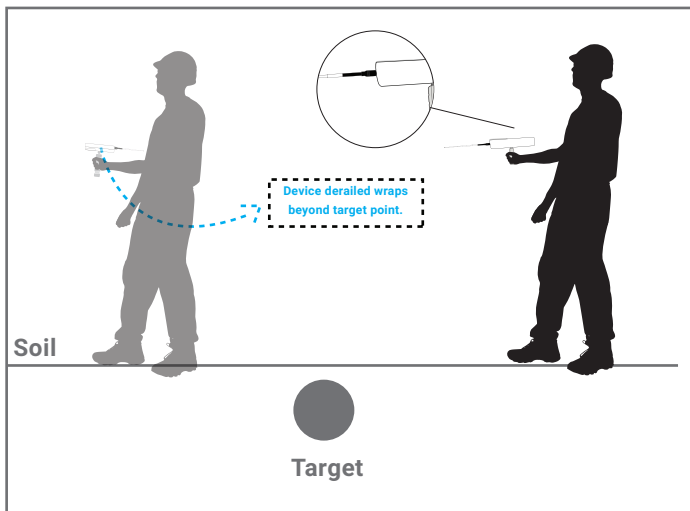
The user can know and estimate target distance from starting point search and to do that we change the distance level by pressing on distance key then we select distance from a list of distance for example if we have chosen at the beginning of search 200 search distance meters we reduce the distance of 50 meters then press on key scan again and the device starts to search and make previous steps. At this time hold the device and wait to read if we have received target read we have known that target walks away from search point is 50 meters. It is also possible restoring these settings again and reduce the distance less to estimate target distance bitterly and then move on to the stage to locate the target location.

How to locate the target

After confirmation read over to the direction of the target we press on key scan for installation and confirm the target location and we will notice that the device beep towards target then we are walking in the same direction and in the normal way to carry device to get point beyond the target location and we will notice that the device has changed its direction from normal track to warp back to the location and existence of the target point here we also spin with the device to target location and walk slowly when we were above the target directly we will notice the device will start to rotate left or right and this shows that we have identified the target point presence.

Note: When you begin the process of tracking for target location you will notice the device produce alerts and a acoustic signals toward target location but if you notice that you are go out from derailing and direction of target this sound will disappear and another sound is heard indicating the error mode. And will light up one of the light optical indicators right or left to indicate the correct path that will track it and to reach the target.

Device derailed wraps beyond target point.

Soil

Target

Metal and Water Finder