WATER LINE

USER MANUAL

Model: V2-7500



GERMAN TECHNOLOGY
WWW.GEO-GROUND.COM

WATER DETECTOR

WATER LINE

GEOGROUND
GEOPHYSICAL GROUND MEASURING

Introduction

GeoGround is a leading German manufacturer and a recognized global leader in the field of geophysical measurement and underground detection technologies. Driven by a vision to completely transform the standard of metal detection worldwide, the company is dedicated to continuous innovation, precision engineering, and uncompromising quality.

For years, Geo Ground has focused on identifying and overcoming the technical limitations and errors that have traditionally challenged prospectors. By combining cutting-edge German technology with advanced research, the company engineer's professional-grade detection systems that deliver exceptional reliability in diverse and challenging soil conditions.

What truly sets Geo Ground apart is its commitment to accessibility and ease of use. The company firmly believes that advanced exploration technology should not be out of reach. By streamlining user interfaces and maintaining affordable pricing without compromising on performance, Geo Ground empowers prospectors and treasure hunters of all experience levels—from beginners to seasoned professionals—to turn their exploration dreams into reality.

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WATER LINE
Advanced Underground Water Detection Technology

The Water Line by GEOGROUND is a specialized underground water detection device developed for users seeking to investigate potential underground water resources. Designed with a dedicated water detection system, Water Line focuses on underground water exploration, offering a purpose-built solution for identifying potential water sources across a variety of terrains.

Unlike multi-system detection devices designed for different types of targets, Water Line is built around one dedicated system specifically designed for underground water detection. Its focused operating approach is intended to support the search for different types of underground water in a range of soil conditions, making it suitable for diverse exploration environments.

Whether investigating potential groundwater resources in dry terrain or exploring areas with different soil characteristics, Water Line provides a dedicated platform for underground water exploration. Its specialized design brings the device's core function into focus: helping users investigate potential underground water locations across varied ground conditions.

GEOGROUND — Specialized Technology for Underground Water Exploration.

WARNINGS

Water Line is an is a state-of-the-art electronic device. Don't assemble or operate the device before reading the user manual and don't store the device and its components under extremely low or high temperatures for long periods.

- The suitable temperature for storage is from −20°C to 60°C (approximately −4°F to 140°F)

- Don't immerse the device or its attached parts in water. Don't expose the equipment to extremely humid environments.

- Protect the main unit of the device from the impacts during normal use .

- For shipping, place the detector carefully and safely in the original carton inside shock-resistant packaging.

- It isn't allowed to disassemble or repair Water Line except by Geoground company or their authorized service centers.

- Unauthorized disassembly or intrusion into the internal components of the main device unit or other units for any reason, will cancel the warranty.

Notice

Do not use the device indoors. The device may constantly give target signals indoors where there are many metals present.

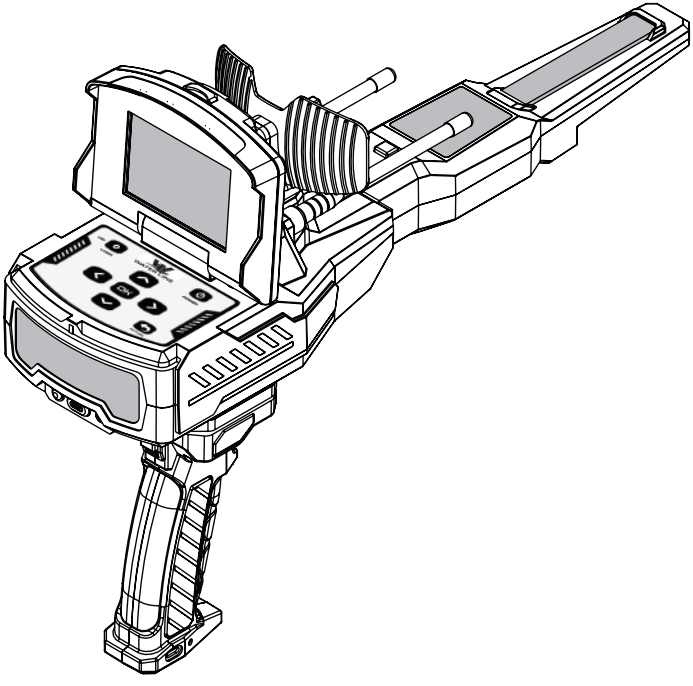
- Use the device outdoors, in open fields.

-Do not leave another detector or electromagnetic device close to the device within 10 meters (approximately 33 feet)

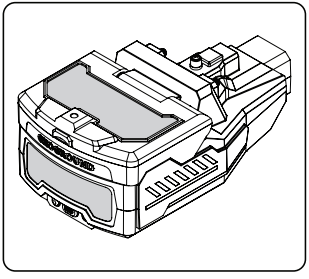
-Do not carry any metallic objects while using the device.
The device may detect the metals attached to you or to your shoes as targets.

For Consumers within the European Union: Do not dispose of this equipment in general household waste. The crossed-out wheeled-bin symbol on this equipment indicates this unit should not be disposed of in general household waste, but recycled in compliance with local government regulations and environmental requirements

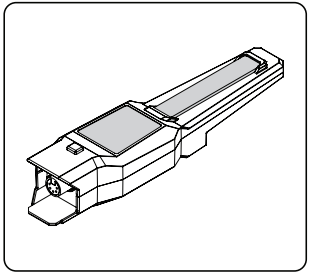
Device Overview



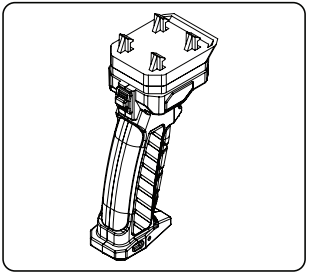
Package contents



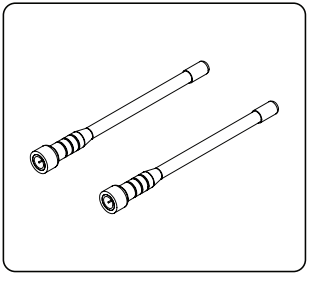
Main Unit



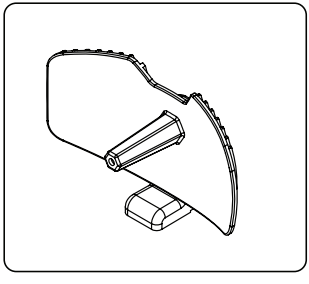
GEO Matrix Sensor



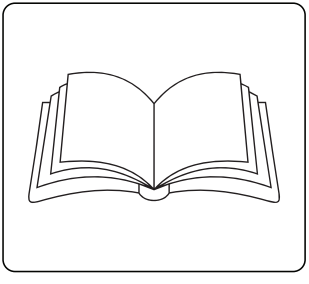
Wireless Handle



Search Antennas



Signal Booster Dish

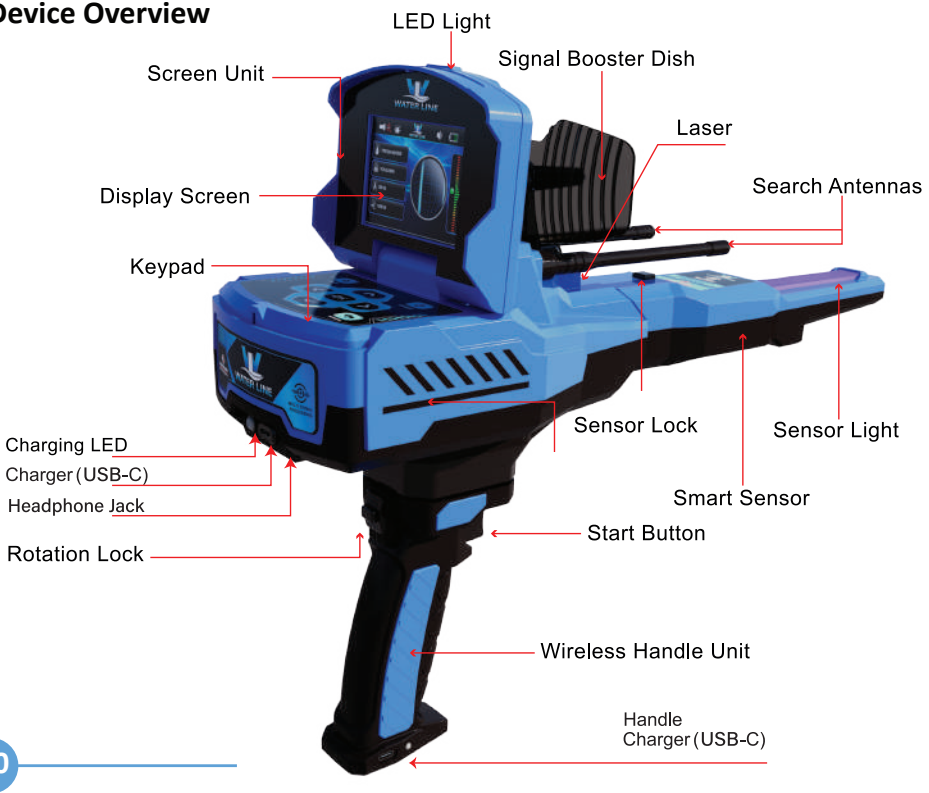


User Manual

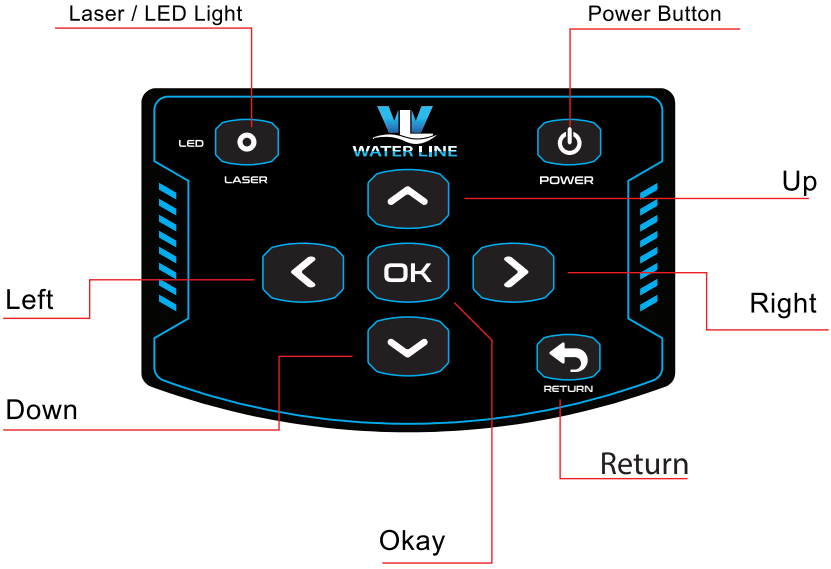
Package contents

1	Main unit
2	GEO Matrix Sensor
3	Wireless Handle
4	Search Antennas
5	Signal Booster Dish
6	Charger
7	Charger Cable
8	User Manual
9	Warranty Card

Device Overview



Keypad Overview



Device Assembly

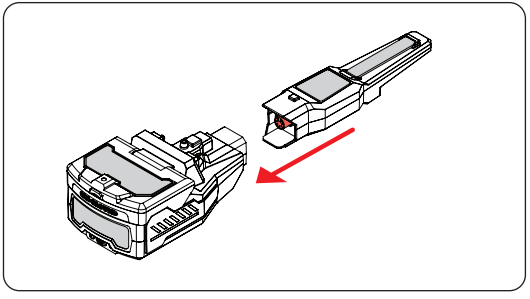
Safety First

Make sure the device is completely powered off and disconnected from any power source before performing assembly or installation.

Connect the GEO Matrix Sensor

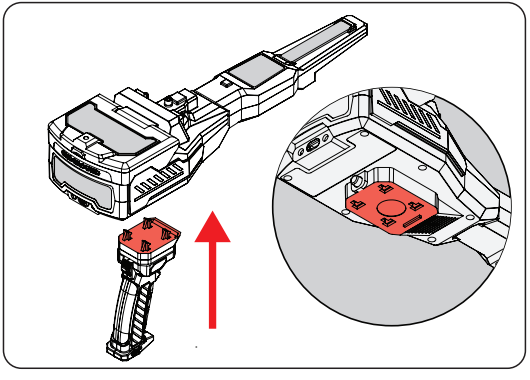
Align and plug the GEO Matrix sensor securely into its designated socket on the front of the main device unit.

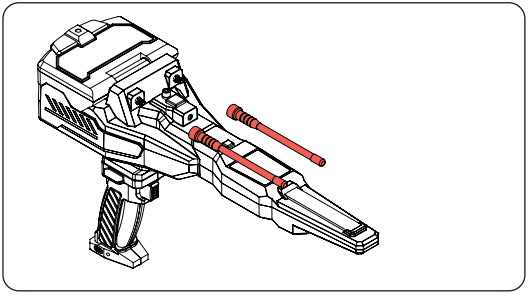
Verification: Ensure the connector is fully pushed in and seated tightly with no looseness.



Attach the Wireless Handle

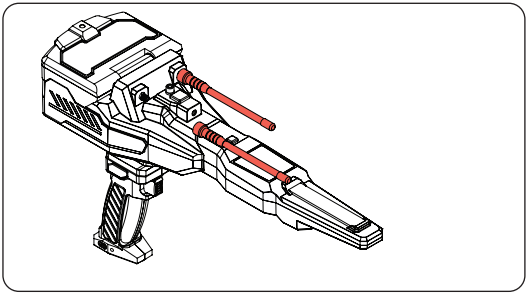
Connect the wireless handle to the bottom section of the device. Pay close attention to aligning the internal alignment pins properly into their matching slots underneath the housing before securing.





Mount the Antennas

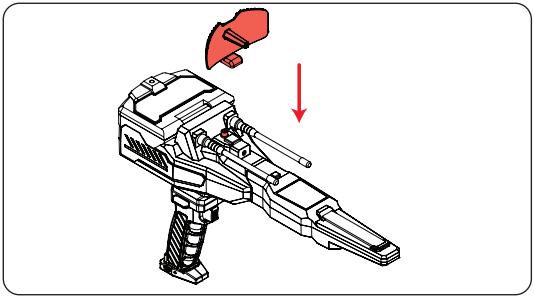
Insert and tighten the antennas into their designated mounting sockets on the main until they are finger-tight



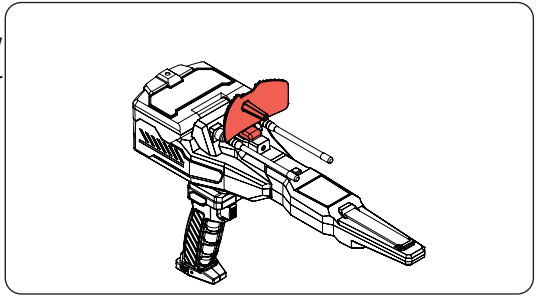
Verification: Confirm each antenna is firmly secured and does not wobble or spin loosely in its mount.

Attach the Signal Booster Dish

Place and securely fasten the signal booster dish onto its designated mounting location on the main device unit.



Verification: Ensure the dish is firmly fixed in place with no looseness or misalignment.



Systems explanation

Underground water exploration requires an understanding of ground conditions and the characteristics of the area being investigated. Different soil types and underground environments can present different challenges when searching for potential water resources.
The Water Line features one dedicated operating system focused exclusively on underground water detection. Designed to support the exploration of different types of underground water across various soil conditions, this system provides the device's primary detection function through a unified operating platform.
The following section explains the Water Line's underground water detection system and its intended function in the exploration process.

Underground Water Detection System

The Underground Water Detection System is the core technology of the Water Line. Developed specifically for underground water exploration, this system is designed to help users investigate potential groundwater locations across different types of terrain and soil conditions.
With a focus on water detection rather than general-purpose target searching, Water Line offers a specialized approach to underground exploration. Its single-system design provides a dedicated operating experience for users seeking potential underground water resources, including different types of water in a variety of ground environments.



Water Detect

To use the Water Detect system, select it from the main menu.
Upon entering this system, we must first configure the search settings. These settings include:



1. the type of water being searched for.
2. the type of soil in the search area.
3. the required search depth.
4. the estimated or desired search distance.

Use the left and right arrow keys to switch between system settings.



Target :

To select the target water type, use the up and down arrow keys on the keyboard to choose your desired water type.

The water line device includes the following water types:



Unconfined Aquifer



Aquifer water



Groundwater

Soil Type:

To select the Soil type, use the up and down arrow keys on the keyboard to choose your desired soil type.

The Water Line device includes the following soil types:




Low Mineral


High Mineral


Gravel


Forest


Saline


Volcanic


Rocky


Dry

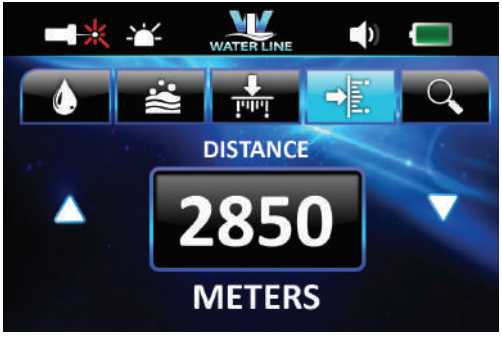

Normal


Sandy



Depth:

Water Line has the ability to detect targets up to a depth of 40 meters underground, and this feature will enable the user to search for all possible targets to this depth. Use the up / down arrow keys on the keypad to change the desired depth.



Distance:

The Water Line has a detection range of up to 3000 meters from the device's location.

From this section, the user can search for all possible targets within the range he defines (from 1 meter to a maximum of 3000 meters).

Use the Left/Right arrows on the keypad to change the desired distance.

Scan settings overview:

Use the right arrow key to move to scan setting overview tab. in this tab, you can see all the settings that you previously selected iin the previous sections, such as target type, soil type, selected depth and selected distance.



By pressing the OK key on the keypad, the long-range locator scan process page will be displayed.

Continue to the following pages to explain the details of the search screen

Calibration

After completing the initial settings, and entering the search screen, a warning window will appear to us, as shown below:

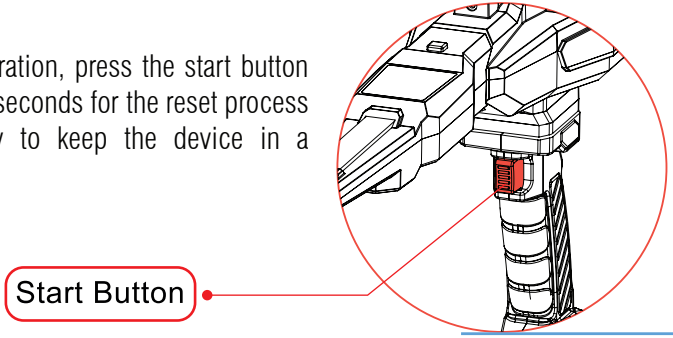
Hold the device horizontally then press START to begin calibration.

Press the OK button on the keypad or the Start button on the top of the wireless handle to start calibration and enter the search screen.





Note: To reset the calibration, press the start button on the handle and wait 5 seconds for the reset process to complete. Always try to keep the device in a horizontal position



Description of the Search Screen

After completing the initial settings and dismissing the calibration notification, the search screen will appear.



Search Screen:
This screen shows us within the large box the ongoing search process according to the previously selected settings.

Balance Indicator:

Selected Settings

Balance Indicator:
This indicator shows the balance of the device in relation to the direction of the horizon. To get a better result when searching, this indicator (red line) should be on the green line in the middle.

Selected Settings Overview
This section shows all the previous settings that the user chose in the settings tabs.

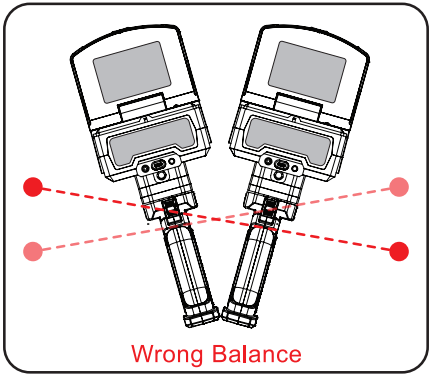
Device Balancing

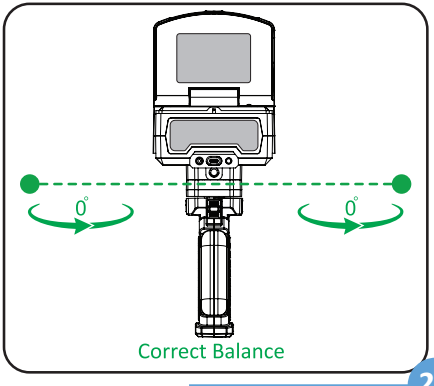
In Long-Range system, the device searches for targets that the user chooses in advance, after specifying the correct settings in the system.

Go to the area where you want to search and keep the device in a flat horizontal position without tilting to any side, here the user can calibrate the balance of the device using the balance indicator on the screen.

Make sure that the device's balance indicator (green indicator) is on the green mark in the middle of the indicator.

You should also be aware that this requires a lot of concentration (for example, if you are tired, try to rest a bit and then continue the calibration process) in order to obtain a better and more accurate results.

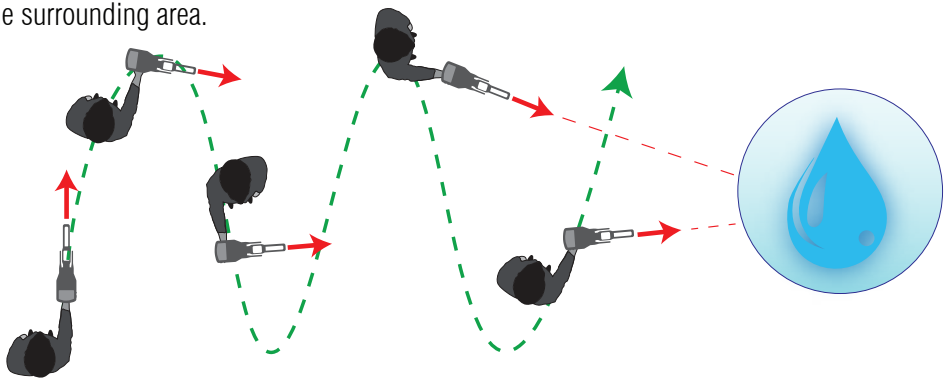




Search Methods:

1. Search Method According to the Zigzag Path if the Device Does Not Rotate:

During an initial or normal search—meaning when no targets or signals are picked up by the device in the current search area—you must always advance according to the zigzag path. This allows the device to capture and analyze as many signals as possible in all directions of the surrounding area.

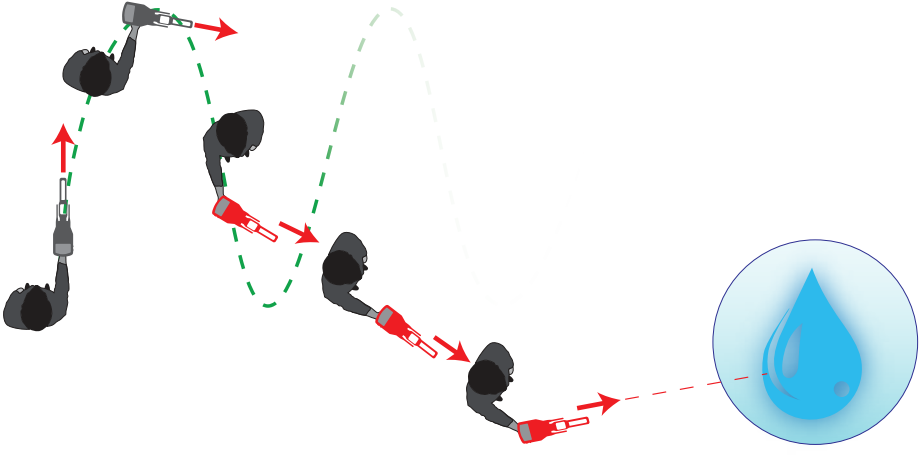


We always recommend starting from the northern region of the target search area. Until the device begins to rotate on its axis. Then the user must follow the method of determining the target area, which will be described in Paragraph 2.

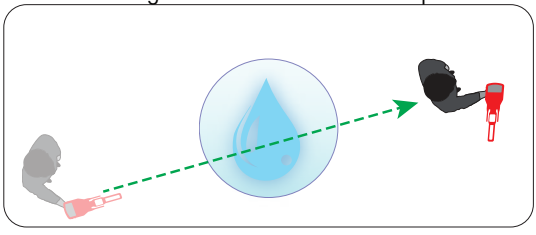
2. Determine Target Area if Device Rotates:

Suppose that we are now advancing in the search area specified by the winding path (Zigzag), and at some point in this path, the device begins to rotate around its axis to the right or to the left.

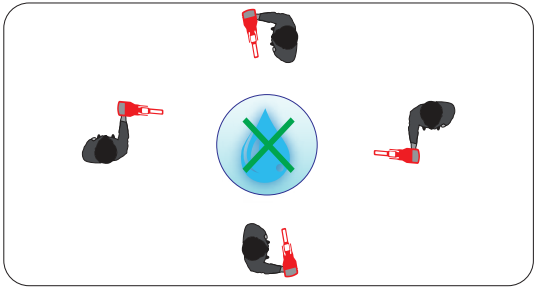
The user must then proceed in the direction of the device's rotation. the direction of the device's rotation always, and then we will notice that the device leads us to a point or a certain direction.



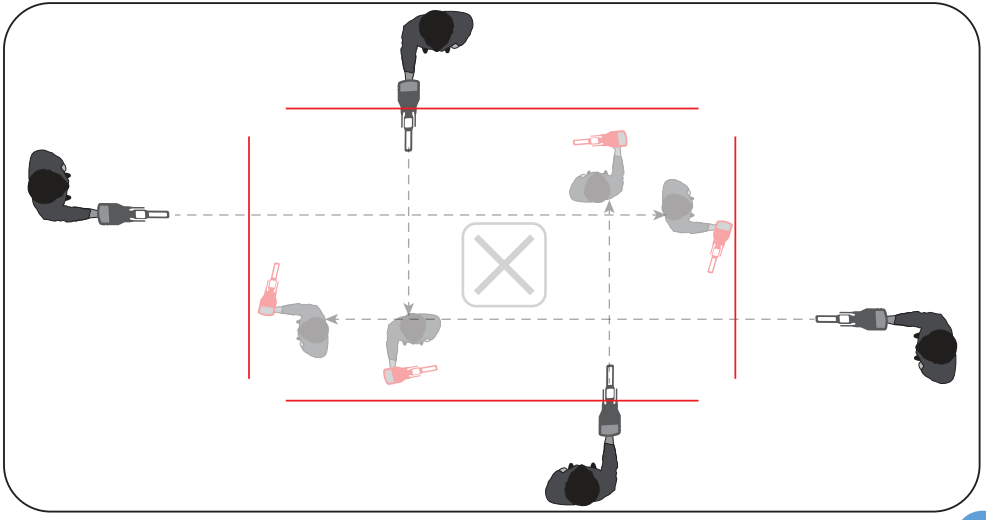
We keep following the direction of rotation of the device, until the device begins to rotate around its axis for more than 90 degrees. Then we mark this point.



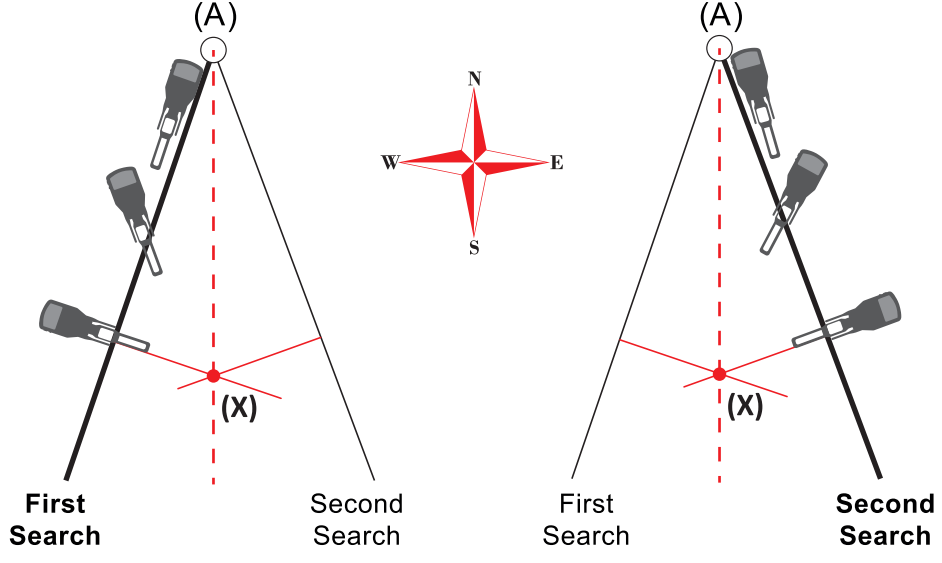
We go back in the opposite direction and slowly until the device rotates around its axis again for more than 90 degrees, we put a mark at this point as well. We repeat this process from different directions of the search area and mark each point where the device rotates. We will notice that it has begun to form a rough outline of the target area. We will notice that the device always rotates towards a specific point or area.



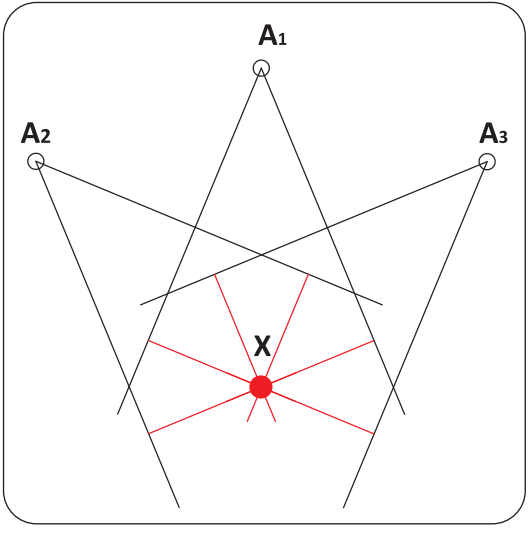
We move away a little from the drawn area (marked area) and start heading from the north side towards it, and at every point where the device rotates for more than 90 degrees, we draw a new transverse line. We repeat this process from the four sides of the target area. we will see that a square or rectangular shape has begun to form for this area. Let us say this region is (X). We follow the next step (the process of verifying the target area) to make sure and limit the target area more accurately.



We start moving from the area (X) a few meters towards the north, and define a new point (A), and then we advance from the right and left of this point towards the area (X). If the direction of rotation of the device in both cases is towards the area (X), then this suggests that area X may contain the target.



In order to limit the target area more precisely, repeat the process described above from more than one different direction for the potential target area (X).



Note: We always recommend proceeding as slowly as possible while searching.



Settings

The settings menu provides a centralized interface for managing system preferences, hardware options, and device diagnostics. Users can customize display and audio output by adjusting screen brightness and speaker volume levels, configure language preferences, and toggle the smart sensor's LED illumination. Additionally, the system features a dedicated information page displaying technical specifications such as the serial number, software version, and model details, alongside automated alert screens that notify users of hardware or power issues like sensor disconnections and low battery status.

Accessing Settings: Select Settings from the main menu and press OK. Then you can access the settings page.

Switching Between Items: Use the Left/ Right Arrow controls on the Keypad to select and toggle between the different setting categories displayed across the top bar (such as Language, Brightness, Volume, Sensor LED, and Device Information).

Language

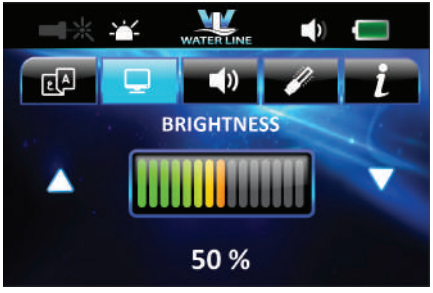
This option allows you to configure and change the display language of the system interface to match your preference.
Navigate to the Language icon, select your desired language option from the list and confirm to apply the changes across the system.



Supported Languages:
The device interface is available in multiple languages to accommodate users worldwide:

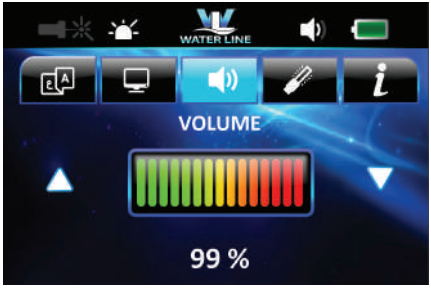


Brightness



this option controls the intensity of the screen backlight to ensure clear visibility under varying outdoor lighting or sunlight conditions.
Select the brightness setting, then use the up and down arrows on the keypad to increase or decrease the screen illumination level to your comfort.

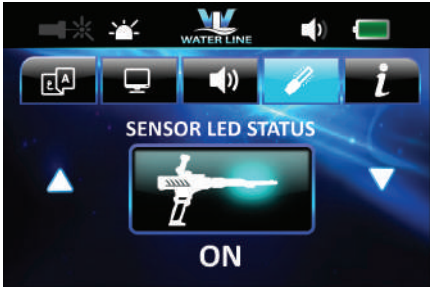
Brightness



Manages the audio feedback, alert tones, and systems and keypad sound levels so you can clearly hear detection beeps and warnings.
Open the volume control panel and use the up/Down arrows on the keypad to adjust the percentage level up or down to raise or mute the system's sound output.

Sensor Light

Controls the built-in LED illumination light on the sensor head.
Toggle the option between ON and OFF depending on whether you need illumination for your working environment useing the up/Down arrows on the keypad.



Information

A read-only system screen that displays critical technical specifications about your unit.
No adjustment is needed here. this screen simply provides information such as your Serial Number, Software Version, Model Name, and Manufacturer details for maintenance and verification purposes.





Status Bar Overview
The top status bar provides a persistent real-time overview of key hardware functions and system indicators during operation:

Laser Indicator: Represents the device laser, which automatically activates when using the Bionic system to help accurately point toward target samples.

LED Indicator: Refers to the LED light located at the back of the screen, designed to assist with visibility and operation in dark environments.

Device Logo: Displays the device logo (Water Line) in the center of the bar.

Volume Indicator: Shows the active audio/sound volume status of the device.

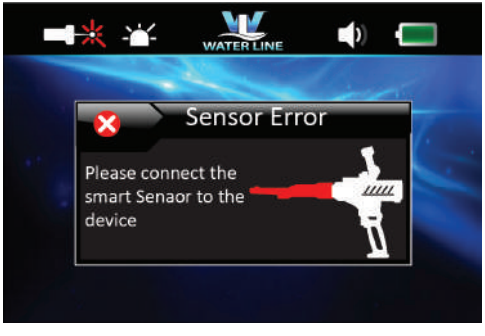
Battery Status: Displays the current power level of the battery with a visual indicator bar.

System Error & Warning Alerts
The device features built-in automated diagnostic screens that alert you immediately when hardware or power attention is required:

Sensor Error: This warning popup appears if the sensor is disconnected or improperly attached to the main unit. To resolve this, securely connect the smart sensor to the device.

Battery Error: This warning popup appears when the battery level is critically low. To resolve this, plug the device into the charger.

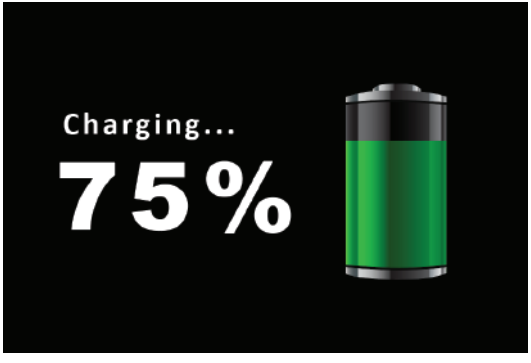




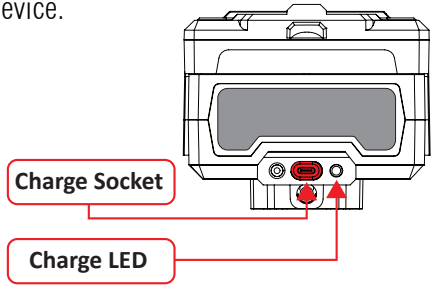
Charging the Device:
Since the device consists of two rechargeable components (the main unit and the wireless handle), each of them must be connected to the charger separately.

To charge the main unit, plug the USB-C charging cable into the charging socket located at the back of the device.
During charging, a red LED lights up. Once fully charged, the LED changes to blue.

Important recommendation: For the first time, leave the device on charge for at least 6 hours.



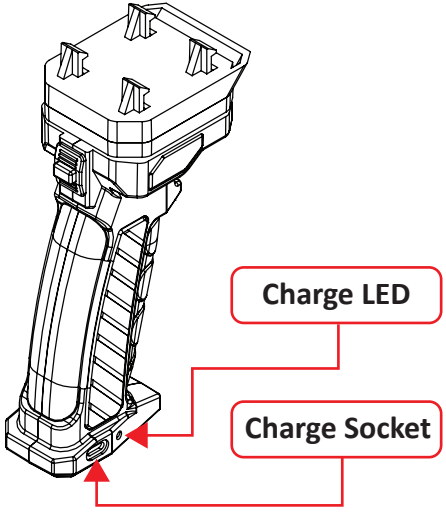
When the device is turned off and connected to the charger, a charging screen is displayed, allowing you to check the current battery level of the device.



Charging the Wireless Handle:

To charge the handle, you can use the main device charger or any standard compatible charger equipped with a USB-C socket.

The charging socket is located at the bottom of the wireless handle. Next to it, an LED indicator lights up red during charging and turns blue when fully charged.



Technical Specifications

Component	Feature	Specification
Processor (MCU)	Architecture / Type	Tensilica Xtensa / RISC-V (ESP32 Based)
	Frequency	72 MHz
Memory	Type	SD
	Capacity	2 GB
Screen	Type	TFT LCD HMI
	Size	3.5 inches
	Resolution	480 × 320
	Color	64 K (65536)
	Backlight	LED
Sound	Output	Speaker + Headset
	Jack Type	3.5 mm
	Internal Speaker	2 Ω / 3 W

Component	Feature	Specification
Charger	Input	100 – 220 V, 50 / 60 Hz
	Output / Port	5 V, 2.5 A (Type-C Standard Input for both Main Unit & Handle)
Battery	Main Unit Battery	3 × Lithium-Ion (2000 mAh each)
	Wireless Handle Battery	1 × Flat Lithium-Polymer (Li-Po)
	Removable Battery	No
Other Features	Flash LED	5 mm (rear/ illumination)
	Laser	650 nm / 5 mW
	Vibration	Yes
Environment	Operating Temperature	0 – 40 °C
Package	Dimension	430 mm × 380 mm × 160 mm
	Weight	3,750 g

WATER LINE

GEOGROUND
GEOPHYSICAL GROUND MEASURING

WATER LINE

USER MANUAL

Model: V2-7500



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WATER DETECTOR