DIOGENES TIR

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Controls / Quick Guide

Function

The Diogenes TIR is basically a pulse induction metal detector.

Short and very strong magnetic pulses are being emitted by the search coil.

Even after switching off the magnetic pulse, so-called currents remain in the metal objects for some microseconds, so clearly even from now these objects can be detected by the search coil working as a receiver.

A different mode in regard of the decay behavior , generated in the metals by using magnetic pulses, enables a more precise identification of the localized metals.

The operator is thus able to detect on the basis of sound and exact location provided by the instrument, size and depth of the located metal object.

In addition, the metal differentiation enables detection of the temporal decay behavior of the currents in the metal, which is indicated by two LEDs.

The cooldown allows direct conclusion on the type of metal because they derive themselves from the conductivity and the size of the metal object.
For a clear identification of ferrous and non-ferrous (ferrous / non ferrous), another evaluation method has been designed.

Benefits

The pulse induction process has a lot of advantages due to the technically required time delay between sending and receiving.

There is a temporal decoupling , allowing a very high transmission power, so virtually search coils with unlimited coil sizes can be used.

Increasing search coil sizes also allow an increase of the search depth for large objects. At the same time, the sensitivity for small objects sharply decreases, which is desired in many cases.

Application

Diogenes TIR was created for professional search tasks.

With the corresponding coils, large areas can be deeply penetrated and examined.
Even very conductive soils, pylons, magnetic tiles and salt water can hardly affect the performance of the Diogenes TIR .

It is possible to eliminate nails, thin films, splinters and other small parts during depth examination or distinguish them from deeper lying larger objects.

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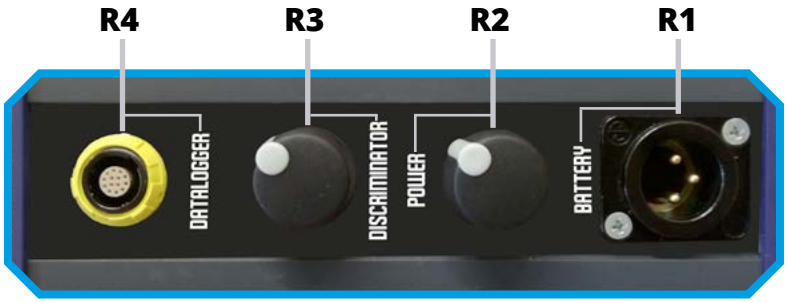

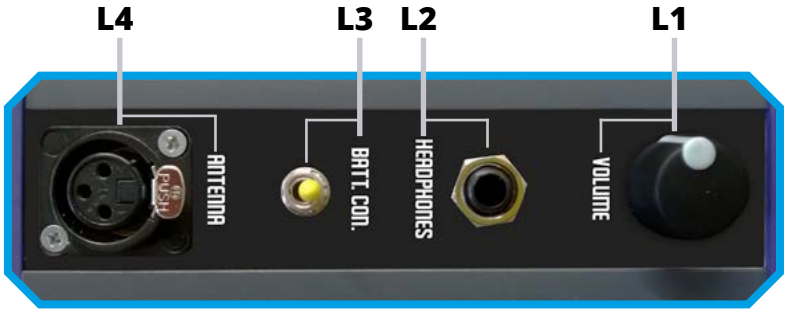

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Battery connector (R1)

Here, the battery pack is connected.

Power button (R2)

When turning this knob, the Device is switched on, provided that the supplied battery is charged and connected to the electronic unit.

At the same time, the BC indicator lights in the front of the device
You will notice that the low-power LED lights up from time to time.

By further turning the power button takes you to the medium or high power level.

Discriminator (R3)

Off Stage:
With this setting, no metal distinctions are displayed, i.e. all metals will be located.

Stage two:
All metal - in this stage, the metals are distinguished in iron or non-ferrous metals by their decay.

Stage three:
Ferrous - by turning the knob in ferrous the unit can locate only ferrous metals.

Stage four:
Non-Ferrous –with this setting not only ferrous metals can be located.

Data logger socket (R4)

Here the data logger is connected.

Volume Knob (L1)

Volume control.

Headphones (L2)

Jack for headphones.

Bat. Control (L3)

Display of battery status.

Antenna (L4)

Antenna connector.

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Indicators

Analog instrument (F1)
Power button-position indicator (F2)
Discriminator button -position indicator (F3)

Delay Knob (F4)

By turning the delay knob different object sizes will be faded out.

•Knob position -0 = normal search

Discriminator Deep (F5)

If you have a normal search operation without using the discriminator the “Dis. Deep” button must be located in the center.

IMPORTANT:
After having located the object, depending on depth and size, the “Dis. Deep” knob must be turned to the right or the left to provide metal discrimination.

Surface button (F6)

If during the search a target is located, you can press the surface button and recognize objects on the surface up to 20cm depth or large low-lying objects.

Adjust knobs (F7)

The device has two flashing knobs.

RED – (Coarse) coarse adjustment
GREEN – (Fine) fine adjustment

***To adjust the ground balance (Ground Balance ZERO), it is important to turn the adjust buttons until the lights are off, then the unit works perfect.

If during the search process the device is set to OFF (F3) the green adjustment knob will light up as soon as an object has been located, whereas the indicators display the object´s size. (signal strength)

At the same time it is possible to determine the theoretical depth in connection with the object´s size and the value of the instrument display.

If the red adjustment knob lights on during the search, the signal displays different electrical constants of the soil. E.g.:
Cavities, spilled dig sites, bunkers etc.

Position Discriminator (F3)

All metal:
Both adjustment knobs will be turned until the red /green LED `s are off to achieve a successful ground balance.

If during the search process the red adjustment knob (coarse) lights, then an iron object was discovered.
If a non-ferrous object has been located, the green adjustment knob (fine) lights.

The same is for the setting of ferrous / non ferrous because only one LED lights up and one kind of metal objects is displayed.