

T1

**The Most Powerful and Stable Metal Detector
with Most Recent Technology of Pulse Waves**

OPERATION MANUAL

Introduction

T1 is the newest pulse system of T.Finder Company and an evolution in case of pulse metal detectors.

It is one of the most sensitive and a stable metal detector in the world's marketing.

T1 is the result of years of research and development in T.Finder Company.

Many Efforts have been done that this new metal detector prepares facilities for "auto ground settings".

Pulse systems specially are suitable for searching in the deep of the ground.

Performance of the system isn't often affected by saline soil of mineral lands or thermal changes.

Designed electronica chips neutralize the signals reaches from the ground.

Therefore, T1 is a reliable system for diagnostic precision metal objects and even in the worst state conditions of the ground.




Device capabilities:

- 1) Automatic adjustment with ground conditions (AGB)
- 2) “Delay” adjustment to eliminate the effects of the ground and reduce the sensitivity to clay.
- 3) A digital filter to remove environmental noises (FLR).
- 4) Performing in “All-metal” mode and “Analyze” mode simultaneously.
- 5) A digital meter in range of “-999 to +999”.
- 6) Facility of finding holes
- 7) Identifying and measuring target depth

How to turn on and off

To turn on the system, the coil must be connected to; otherwise the system will not be turned on. After connecting coil to the device press the power button and hold it for 2 seconds. Then to improve operating in tough conditions wait about 3 to 4 minutes until the system and processor chips to be warmed up and to adapt with environment temperature. Now the device is ready to use.

To turn off the system, press the power button and hold it for 2 seconds.

 As long as the device is turn on, prevent disconnecting the coil cable.

How the keys operate?



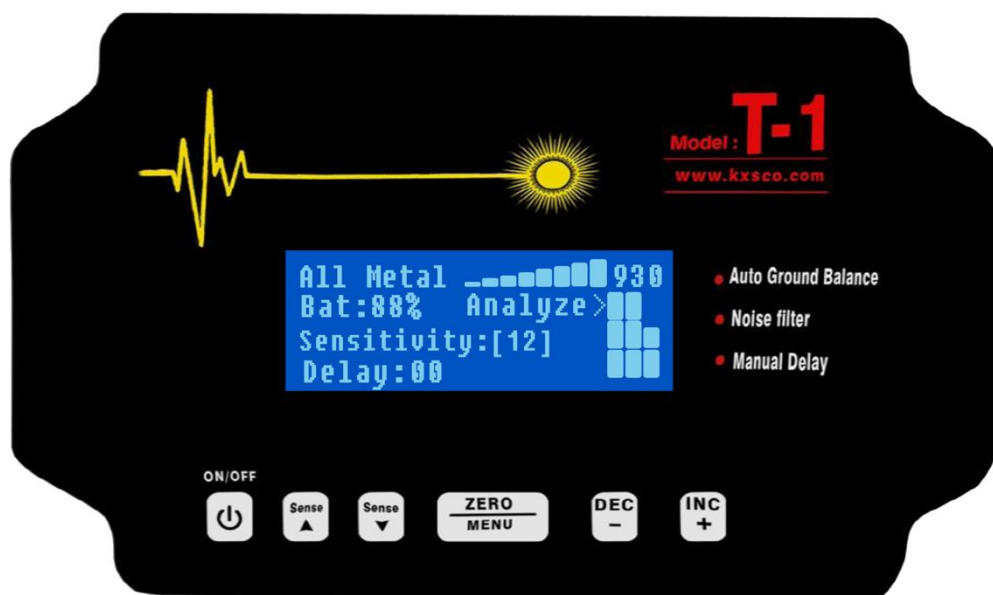
These keys are used to increase or decrease device sensitivity and in “Menu” to select different parameters



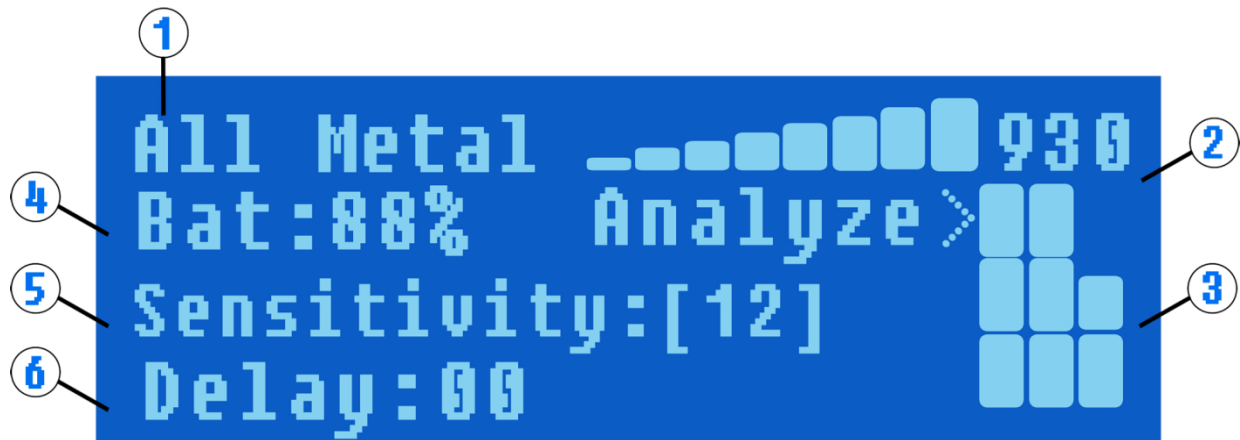
This 2 state touch key is used in 2 separate ways. If you press and free this key the system will be balanced (ZERO) and if you press it and hold it 2 seconds you will be entered to “Menu” settings



These keys are used to increase or decrease device Parameters in “Menu”



System screen- in exploring status:



1) Sensitivity of metals barograph in “All Metal” mode (detecting all metals)


2) Digital meter indicates the exact amount of metal’s sensitivity in “All Metal” mode. This amount differs from -999 to +999. It can be used for pinpointing and identifying correct diagnosis balancing of device. This means that if the system has been balanced on a certain point of the ground and if after movement this meter has an amount less than -10 (for example -15) then you can know the balance point is not correct and you may have balanced the system on a metal.

3) The device has ability of performing in “Analyze” mode and “All Metal” mode simultaneously.

When the intended target is in Analyze range the system will separate it with a 3 column graph. So ferrous targets the growth of columns is close to each other. But it differs for non-ferrous targets. User can test some kinds


of metals with different types and remember column figures for each of them.

4) The battery level is displayed. Note that for increasing battery life you can turn the system off and recharge it when the charging level has lowered down to 20%. Charging the battery will take about 2 to 3 hours; this depends on how the charging level of the battery is low. When the battery is full, charger light will be green and stable.

 Never connect charger to device as long as it is on.


5. The system sensitivity to metals is increased and decreased by this parameter and the range of this parameter is from 1 to 15.

The amount of this parameter should be set in such a way that in exploration area, the device doesn't beep additionally.

 The difference in system range between each grade to next grade is not more than 2 to 3 percent, therefore even on degree of sensitivity 1, almost 50 percent of final system range will perform.

6. In this section of screen a summary of menu settings will be displayed and when the battery charge is less than 12 percent **"Low Battery"** message appears.

Warning:

 When the device is balanced close to big metal objects **"Balance Error"** message will be displayed.

MENU Settings:



DLY (Delay): The Scope of Changes (0-6)

Whatever numbers have been set for this parameter are lower, then system's sensitivity to small precious metals will be more. But also its sensitivity to the minerals and ceramics with silicon compound will be more. So "Delay" setting depends on the soil type and purpose of the operator.


For example, if the target is a small gold object in normal terrain, "Delay" parameter should be set between "0 to 2". But if aim is finding large amounts of gold in mineral and salt marsh grounds, this parameter must have a value greater than 2. (For example 5)

⚠ For proper operation of the device, the distance between the search coil and ground shouldn't change when you explore.

FLR (Filter): The Scope of Changes (1-15)


We use this parameter to remove the effects of surroundings noises on the device. Whatever value of this parameter is increased the effects of surroundings noises will be lower, but instead the velocity of response to metals will be decreased subsequently the operator should move the coil slowly.


So number 1 for this parameter will have the quickest sensitivity to metal and the least noise reduction and number 15 will have the most noise reduction and lowest velocity of sensitivity to metal.

 In areas outside of cities and far from power towers we can chose this parameter less than the 6.

AGB (Auto Ground Balance): The Scope of Changes (0-5)


Enabling this parameter allows the device to be adapted automatically to ground conditions and there wouldn't be any requirement to consecutive balance. But in the case of sudden changes, you may need to manually balance as well.


 Higher values are suitable for lands that have inappropriate and different conditions and lower values are suitable for lands that have stable conditions.

 If you need to specify the precise location of a weak target, we recommend you set AGB to zero.

TUN (Tune): The Scope of Changes (0-5)

This parameter reduces effects of thermal changes on the device. Whatever the numbers are higher, the matching is faster and for lower numbers the matching is slower.

 If the DLY parameter is more than 2, it can be disabled.

 If the AGB parameter has been enabled, the TUN parameter would automatically be disabled even if user has set TUN parameter.

VOL (Volume): The scope of Changes (0-15)

It uses for setting of VCO loudness.

TON (Tone): The scope of Changes (1-7)

System's VCO has ability of producing 7 different tones. (below table)

<u>Tone Number</u>	<u>Output Frequency</u>	<u>Performance to metal sensitivity</u>
<u>1</u>	<u>305 Hz</u>	<u>Stable</u>
<u>2</u>	<u>610 Hz</u>	<u>Stable</u>
<u>3</u>	<u>1.2 KHz</u>	<u>Stable</u>
<u>4</u>	<u>305 Hz</u>	<u>Increasing-Decreasing</u>
<u>5</u>	<u>610 Hz</u>	<u>Increasing-Decreasing</u>
<u>6</u>	<u>1.2 KHz</u>	<u>Increasing-Decreasing</u>
<u>7</u>	<u>1.2 KHz-610Hz-250Hz</u>	<u>Increasing-Decreasing</u>

This scope of changes causes the operator can detect smallest buried metal objects easily in the worst environmental conditions and ground pollution.

Finding Holes (Detecting Holes with T1)

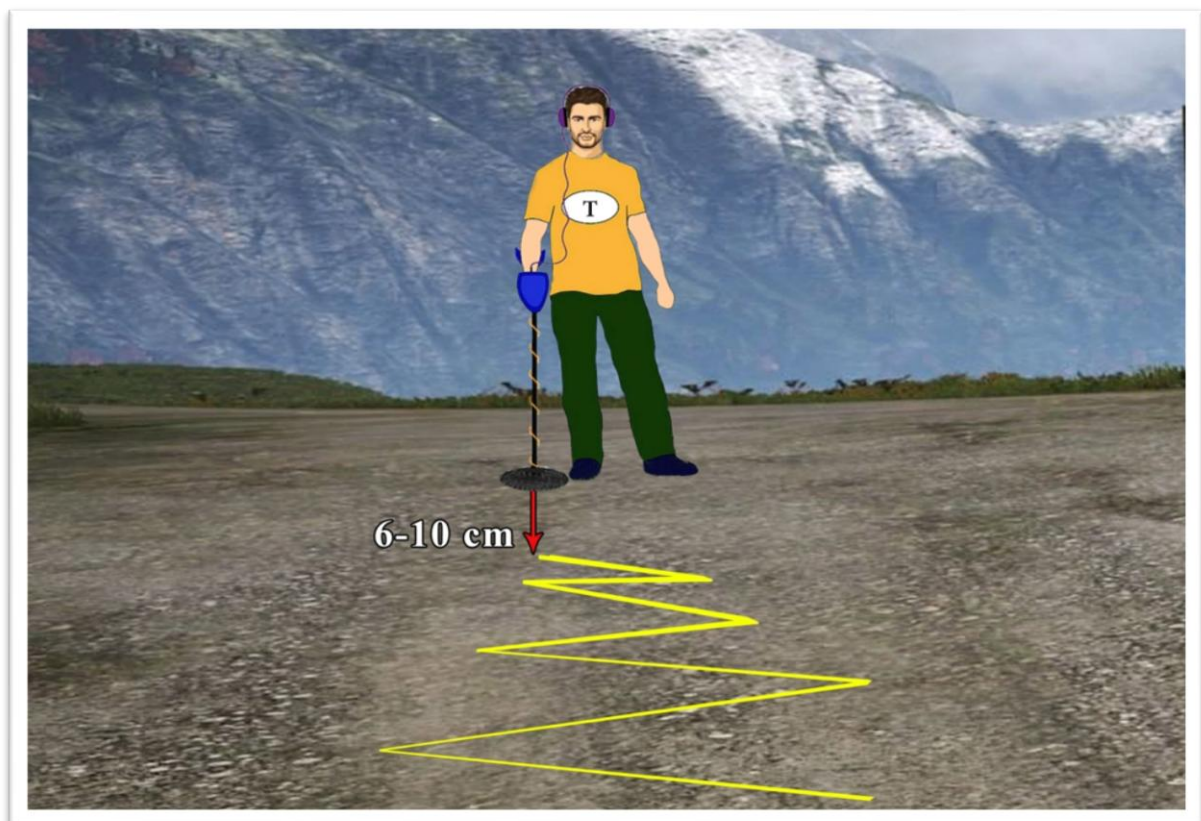
This device can be used to detect ancient holes with more than 20 years of lifetime. For this reason DLY and AGB parameters must be 0 that the device has had maximum sensitivity to ground. Now, you might balance the device and begin to move on.

If you get to the point of the ground that Meter shows a large negative value, then this point shows a hole. (Hole is a completely closed space in the ground, for example a grave)

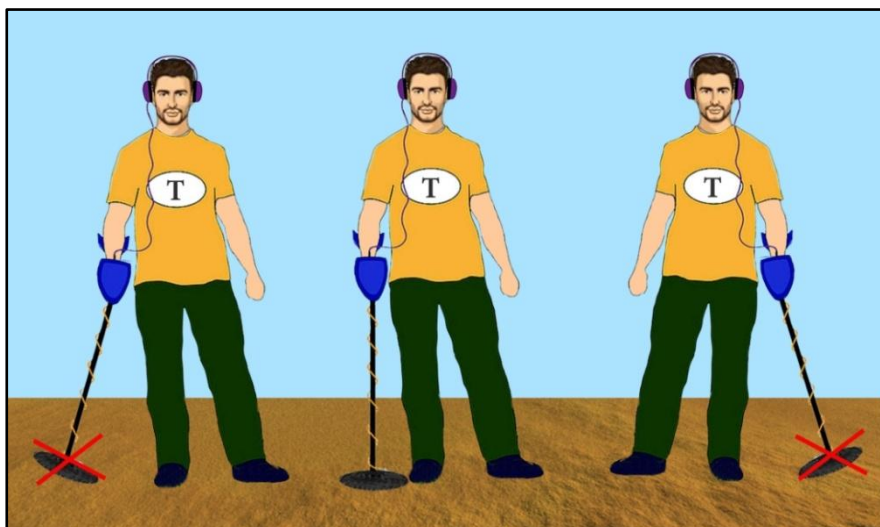
Exploration principles

1. Search coil wire must be tightened firm and spiral to probe that prevent additional beeps when you move on.
2. This is important that in scanning the ground with all metal detectors the distance and angle between coil and ground shouldn't be changed. So the operator must scan the area with the device so that the search coil should be parallel to ground and the distance should be 6-10 cm.

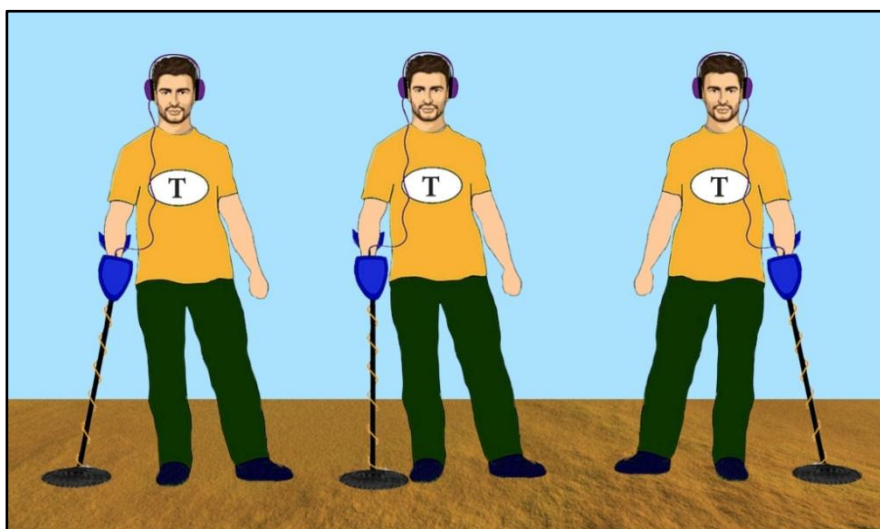
Achieving maximum sensitivity and limit range of metal detector combined with acceptable stability depends on moving the loop into this way.



Swipe Movement for Scanning the Ground



Wrong Form



Correct Form

Table of T1 Depth using Discus loop and 120*120 Loop

Size (cm)	(COIL 50 cm) Depth	(COIL 120×120) Depth
2×2	25-35 cm	20 cm
5×5	35-50 cm	35-50 cm
10×10	65-90 cm	80-110 cm
20×20	110-140 cm	200-280 cm
30×30	140-150 cm	240-270 cm
40×40	160-180 cm	280-350 cm
50×50	180-220 cm	330-400 cm

Note that T1 sensitivity to precious metals like gold and steel is more than its sensitivity to valueless metals like iron, aluminum and copper.

Correct form to explore with 120*120 coil

Operating with 120*120 coil is similar to 50 cm discus. The difference is that 120*120 coil sensitivity to tiny metals is less than 50 cm discus but exploring depth for a 50*50 precious metal object like steel is 3.5 m.

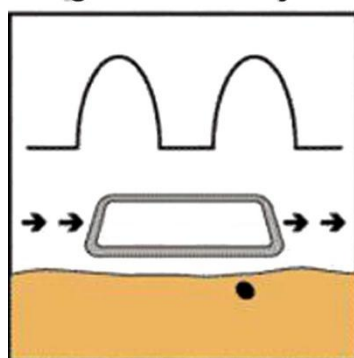
For moving with 120*120 coil one person should stand at the center of the coil without any metal objects and hold the belts and the other one should keep out the coil equal to coil cable while holding system's panel. Do the settings like discus loop and distance the coil 10 cm to the ground and balance it. Move on simultaneously like the image on the next page.



How to receive Frequency - Reaction to metal objects (120*120 coil)

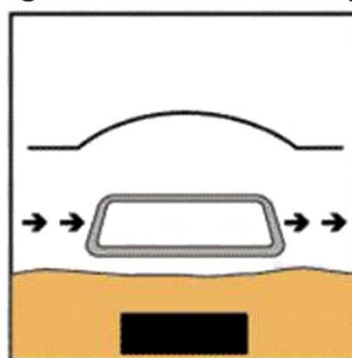
- If small size metal object has been buried underground, then 120*120 coil sideways show sensitivity as follows in figure 1.
- If big size metal object has been buried underground, then sensitivity starts from beginning of the first sideway and will end at the end of the second sideway. (Figure 2)
- If medium size metal object has been buried underground, then coil center shows sensitivity.

Signal Intensity - Using T.Finder 40"x40" (1m x 1m) Frame Coil



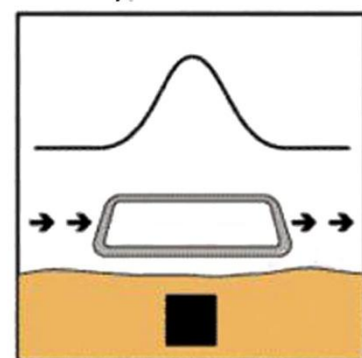
Small object near the surface

Figure 1



Large object - deeply buried

Figure 2



Medium sized object

Figure 3

Box and Accessories of T1



(1*1 Search coil can be purchased)