

SSP-5100 G

EXTREME DEPTH & SENSITIVITY



DETECH

INSTRUCTION MANUAL

ASSEMBLY OF THE COIL AND TURNING THE DETECTOR ON



CONGRATULATIONS FOR PURCHASING YOUR SUPER SENSITIVE PENETRATOR-5100G PULSE INDUCTION METAL DETECTOR.

Take the coil out of the leather bag. The coil is folded into sheaf, this is its transport position. Put the sheaf on the ground, and arrange its elements to form a square. You'll find that your coil is different from the classic square coils of the PI detectors - it has a middle sector. A magnetometer is built-in there, making possible the unique discrimination of your detector. Now join all the tubing elements, as shown on Figure 1. After the assembly position the coil on operational height (Figure 2) over the ground surface, far from big metal objects. Attention: Take care for metal parts on your shoes and wear.

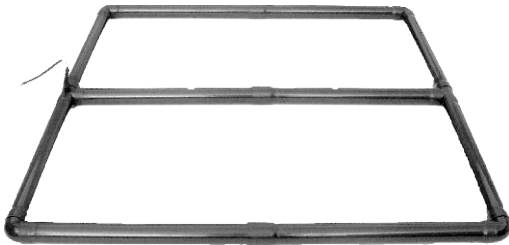
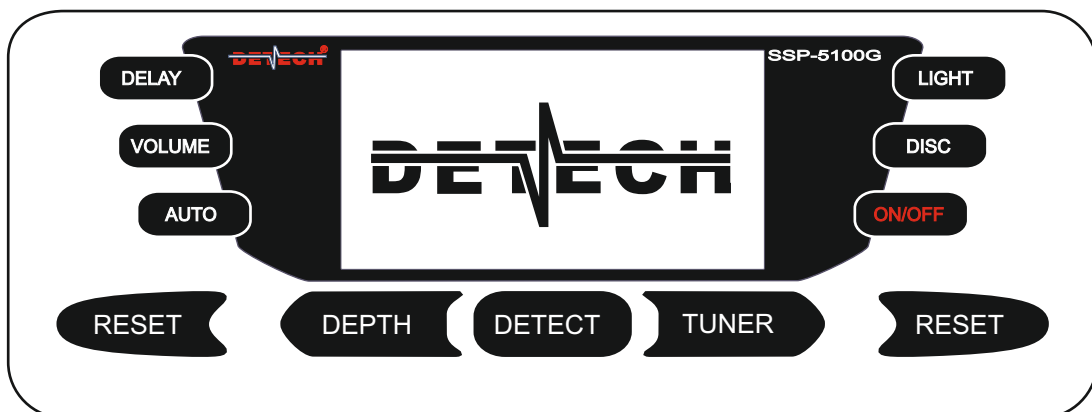


Figure 1



Figure 2

Connect the antennae cable to the control box using the coupling on the rear panel. Then turn the detector on pressing the ON/OFF button.



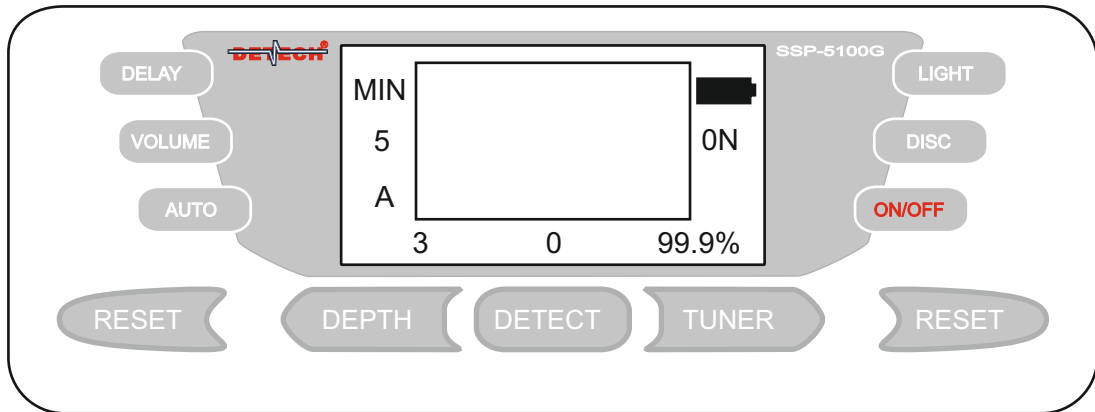
SSP-5100G
PULSE INDUCTION
VERSION 1.0

For few seconds you'll see on the display the logo of the manufacturer, the model of the detector and its software.

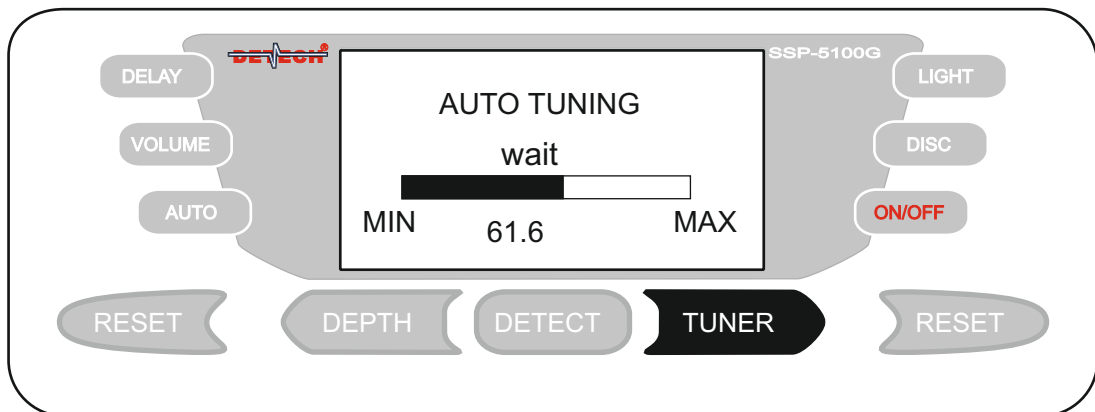
AUTOMATIC OPERATION MODE



Then the operational screen appears. It shows the battery condition and the current levels of the settings. The symbol A shows that your detector is in AUTOMATIC MODE of operation. This mode will be described in details below.



Press the TUNER button. On the display will appear "AUTO TUNNING/wait". The detector starts to tune automatically to the ground conditions. For some seconds the AUTO-



TUNNING will stop at a level corresponding to the current ground conditions. Few seconds later the detector will turn to the OPERATIVE screen itself. You will hear 1-3 ticks per second coming from the loudspeaker of the detector. Your detector is now ready for searching.

ATTENTION: If you are close to metal object the cursor will continue to move from max to min positions unable to stop at a certain value. Then on the screen will appear the text PLEASE, MOVE THE COIL. Remove the coil to an other position and press the TUNER button again.

Because of the presence of too many metal objects in the buildings we do not recommend testing the detector inside the buildings.

Everything we spoke about until now is done in the AUTOMATIC MODE.

Every time you turn on your detector, it will enter its AUTOMATIC MODE of operation.

The Automatic mode of operation is one of the most important options of your detector.

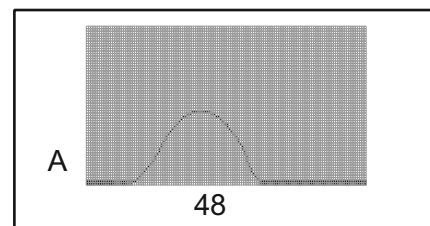
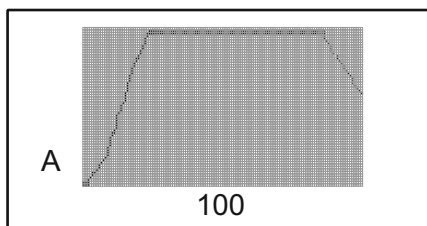
In this mode the processor looks for the changes in the ground mineralization during the coil's movement over the ground and adjusts the detector to these changes. The ticking rate in this mode of operation is preset and could not be controlled by the operator.

NOTE: While in Automatic Mode the SSP-5100 is a typical motion system - the search coil should be moved slowly over the ground surface, but never stop over a metal target.

Try to keep constant operational height of the coil. If anyway you change the operational height of the search coil, nearing it sharply to the ground surface, the processor will need 7-8 seconds to restore the optimum ticking rate. If you don't want to wait for this, you could use whichever of the two RESET buttons for a fast AUTO retuning.

NOTE: If you RESET while the coil is passing over a metal target the detector will tune to the target and it will be cancelled, or will produce only a very faint signal.

Some professionals use this feature to decrease the signal's intensity and receive a better target pin-pointing. If you have a big shallow target the signal's line would be like that on the screen shown left down.



Due to the very high intensity of the signal while operating the detector with the 1mX1m coil or the bigger sized coils, you would not be able to get an idea about the location of the target and you would have difficulties with its pin-pointing. At the moment you start hearing a signal from the target press immediately the RESET button, but in no way while the signal from the target has reached its maximum strength. In this way you'll be able to pin-point the target much better. After the resetting, passing over the target you'll hear signal with much less intensity (see the right display above) and the pin-pointing will be much more accurate. We recommend this only to the experienced operators, as there is a risk to reject a target if resetting the detector in inappropriate moment.

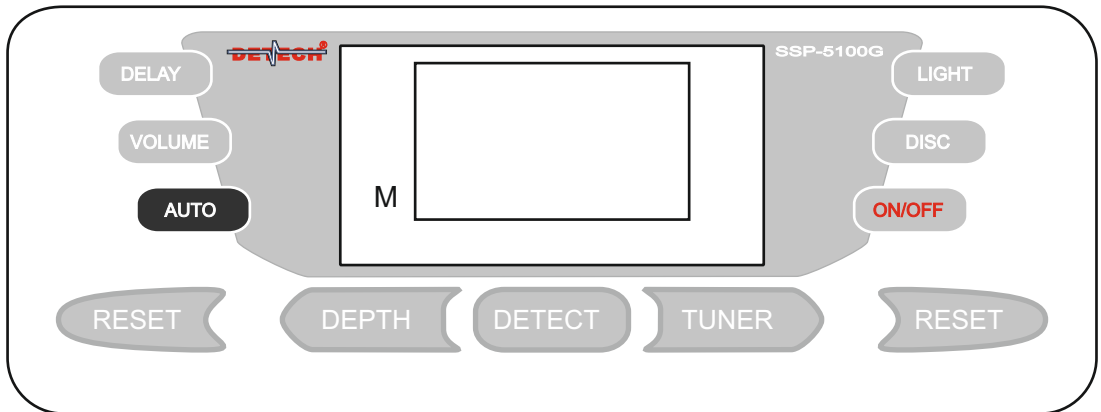
The bigger size of the target, and the closer distance to it, the higher is the intensity of the signal. When the signal's intensity is maximal, the graphics will raise to the highest part of the operative screen, and a value of 100 will be given in the middle of the screen. If the signal is with a lower intensity (this could happen while resetting, as explained above) the graphics will reach a lower level, and the value on the screen will be, as in the described example, 48.

Note: If you are moving the coil correctly, at a constant operational height, not passing over metal object, and you are not under the influence of strong electromagnetic disturbances, the graphics will be a smooth straight line "crawling" in the lower end of the screen, and the intensity of the signal will be 0.

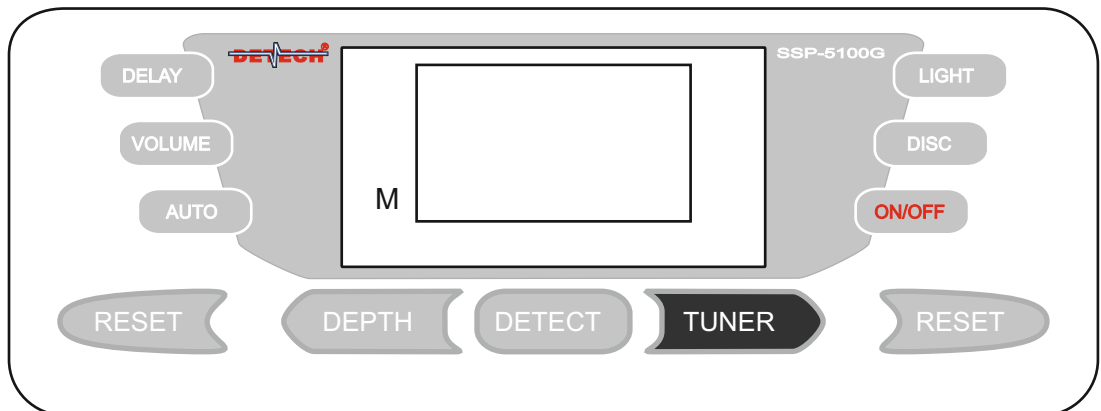
MANUAL MODE OF OPERATION



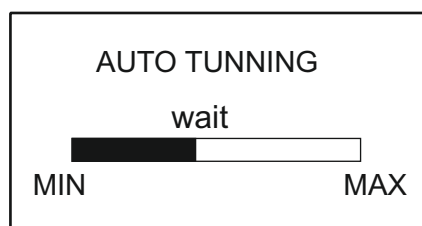
The Automatic Mode is very easy and operative mode. But the MANUAL MODE of operation will give you much more sensitivity and stability of operation. While in Automatic Mode press the AUTO button. On the Operative Screen the symbol A for Automatic Mode will change to the symbol M - Manual Mode of operation.



Then you should press the TUNER button, so that you could tune the detector in the Manual Mode. Lets remind you again that the coil should be on operational height over the ground's surface - 3-6 inches.



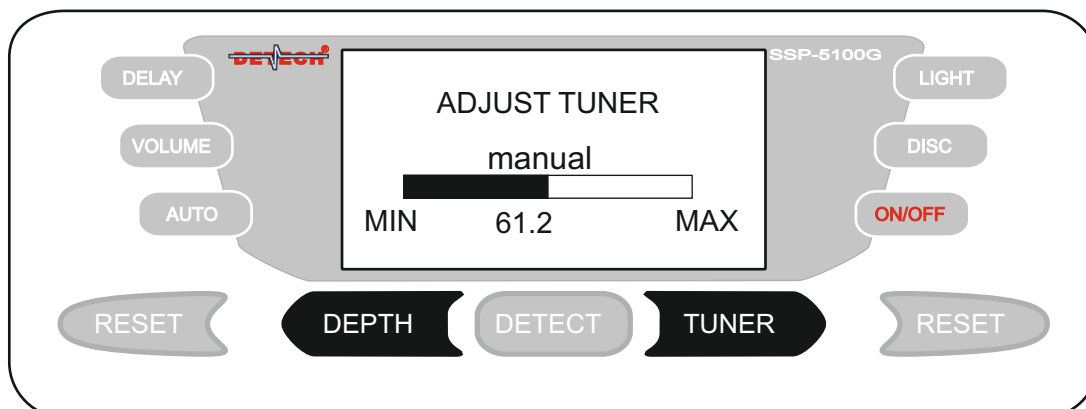
On the screen will appear the inscription for Automatic Tuning of the detector. For some seconds the detector will finish the process of AUTO TUNING. The ticking rate is 1-3 ticks per second - it is chosen by the manufacturer as universal, and appropriate for the most conditions of searching.



MANUAL MODE OF OPERATION



Immediately after that on the display appears an inscription for manual tuning.



If you like the preset level of the ticking rate and find it appropriate for your needs, press the DETECT button to enter the operational screen and start searching.

If you want to change the ticking rate you could make it by pressing DEPTH or TUNER buttons. Note that the DEPTH and TUNER buttons have an ARROW like form and function. You could increase or decrease the ticking rate by pressing the right arrow (TUNER) button or left arrow (DEPTH) button.

For a higher sensitivity increase the ticking rate. But have in mind that the increasing of the ticking rate too much won't give you any more sensitivity, it could even worsen the quality of detector's operation.

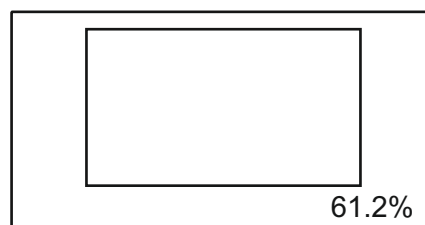
There are cases when the detector becomes unstable, due to high mineralization or electromagnetic interferences nearby. In such cases you could decrease the ticking rate, pressing the left arrow (DEPTH) button. This will increase the stability of operation, but will decrease significantly the sensitivity of the detector.

No matter whether you have increased or decreased the ticking rate you'll have to press the DETECT button. Immediately upon this the processor will save the setting of the ticking rate you have chosen and will keep it, no matter the changes in the ground conditions or the changes of the operational height of the detector's coil.

Have in mind, that if you sharply change the operational height of the coil, the ticking rate will change sharply, and the processor will need about ten seconds to return to the ticking rate you have chosen. If you do not want to wait for this, press one of the RESET buttons.

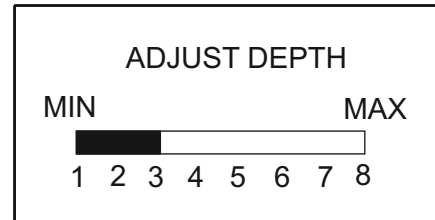
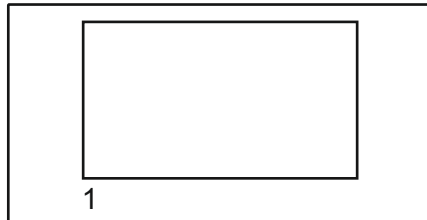
NOTE: If you are over a metal target while pressing a RESET button this could eliminate the target!

You could check at every time the level of tuning, looking at the right bottom end of the display - the current level of tuning is inscribed in %. Maybe it is good to know that when you are on the field and you tune the detector and the processor choose a lower value in percentage, this will mean that the soil's mineralization is higher. If you tune the detector in the town, the lower percentage value will mean that you are near to metal objects. In this case you'll have to find a clear from metal objects place.



DEPTH

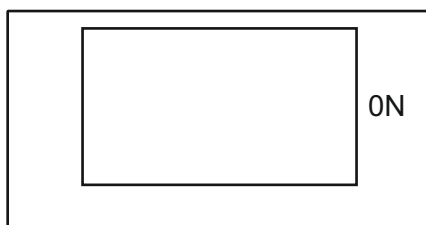
The DEPTH button is the control directly affecting the sensitivity of the detector and its depth of detection. The value of depth is always inscribed in the bottom left end of the operative screen - the values are from 1 to 8. To make a change in the depth of your detector, simply press the DEPTH button. For about 5 seconds on the display will appear the ADJUST DEPTH screen.



Using the ARROW buttons DEPTH and TUNER you could change your DEPTH setting. If you operate the detector in ideal ground conditions you could use higher settings of DEPTH for maximum depth penetration. But it is not necessary, as your detector is really a powerful penetrator. We recommend using lower settings of DEPTH - you'll have the same great depth of detection with a much more stable operation..

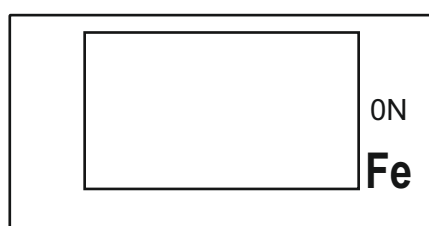
DISCRIMINATION

Your detector has an unique, real discrimination of the ferrous (magnetic) objects through built-in the search coil magnetometer. The Discrimination mode of operation allows avoiding the unnecessary digging of the unwanted shallow ferrous targets. The detector is set in a way to discriminate only in the surface, arable layer of the ground. As it happens often the hoards of coins to be buried together with ferrous instruments, weapons or other ferrous objects. If the detector discriminated in its entire detection range, it would reject also the valuable hoards while eliminating the ferrous targets. If you have an information that the treasure you are looking for is in a ferrous vessel, or buried together with other ferrous objects you it is advisable to turn off the discrimination. Turning ON/OFF the discrimination is made when the detector is in the



operative screen by pressing the DISC button. Of course, you should know that the discrimination is possible only with a discriminating coil - such are the coils with built-in magnetometer. With discrimination turned ON and operating in AUTO mode when passing the coil over a ferrous target the

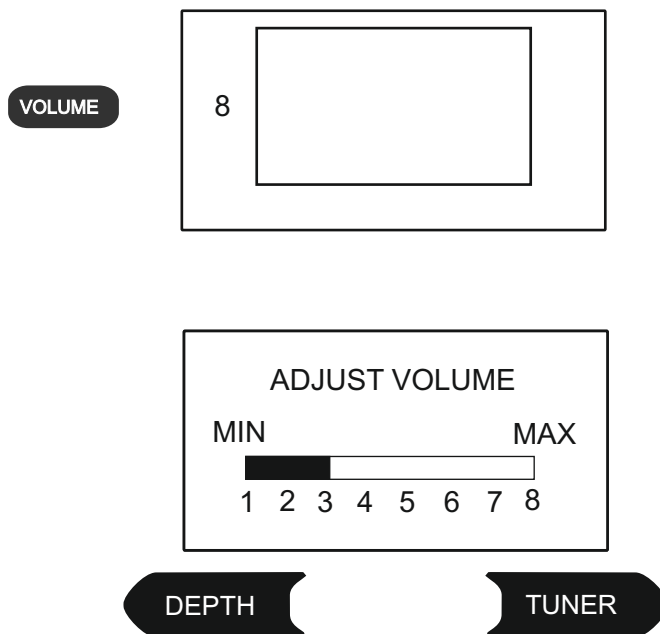
sound will start to increase, and then will sharply fall into silence, the graphics will fall sharply and turn black and in the right bottom of the screen will appear the symbol Fe. When you operate in Manual mode the graphics will turn black the symbol Fe will appear, but there won't be any audio discrimination.



The discrimination is based on the magnetic qualities of the ferrous objects. The tempered steels would produce a more explicit response from your detector. These are objects like knives, scalpels, scissors, swords. At the other hand, such ferrous objects should be dug, as they are relics. They have been valuable for their ancient users. And people used to bury their money together with their valuable instruments and weapons. That is why your detector is set to discriminate the unwanted ferrous objects only in the arable surface layer of the ground.

VOLUME

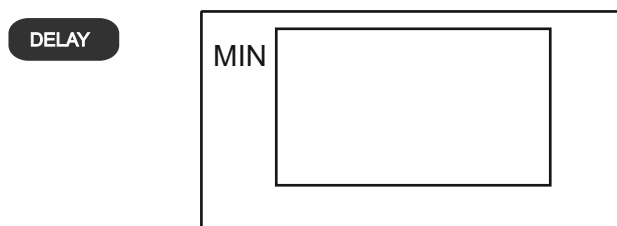
Through the VOLUME control you could choose different levels of sound's volume.



When the coil is brought by two operators we recommend the level of the sound to be at maximum - 8. When the operator is alone, for example operation with the round coils, and if he wishes to work with headphones then he could be forced to decrease the sound's volume - this could be made by pressing the VOLUME button (in front of this button on the operative screen is inscribed the current level of sound's volume). On the display will appear ADJUST VOLUME, and using the arrow buttons DEPTH and TUNER you could decrease/increase the sound's level. After you have chosen the new level, press the DETECT button to return the operative screen. If you don't make this for 5 seconds, the detector will turn to the operative screen itself.

When operated by two men in a windy weather, or when the noise of your steps on dried grasses and leaves is too high, it is possible to not hear the ticking rate or the signals from the deeper targets. In such cases we recommend operation with maximum (8) level of sound's volume.

DELAY



The DELAY is control having strong effect on the detector's sensitivity and on the overcoming of the grounds effects. The detector has two values of the DELAY - MIN and MAX. The value of the DELAY is inscribed always on the left upper end of the screen. To change the current setting you should press the DELAY button.

With the MIN setting of the DELAY the detector is equally sensitive to all metal target and detects them at maximum depth. With the MAX setting of the DELAY the detector rejects some thin foils, modern alloys, i.e. low conductivity objects. This setting is appropriate for operation in heavily mineralized grounds. Mind that with the MAX setting of the DELAY the detector loses a little bit of its sensitivity. With every change of the DELAY settings on the display will appear the text DELAY IS CHANGED, and for proper operation the detector will have to be tuned again - please, press the TUNER button.

DELAY IS
CHANGED

PLEASE ADJUST
TUNER AGAIN

TUNER

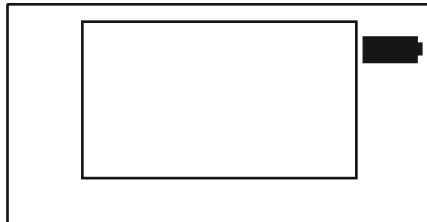
LIGHT

If you want to use the light of the display press the LIGHT button. With LIGHT on in the upper right end of the display there will be a symbol of a small lamp. Have in mind that with LIGHT ON the detector will faster discharge its batteries.

BATTERIES

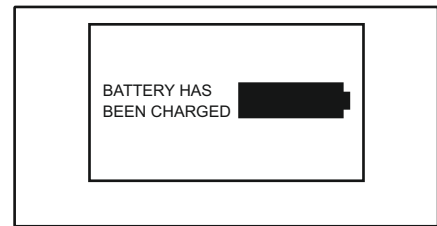
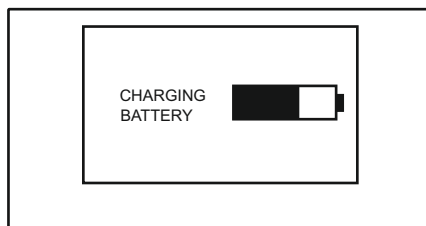
Your detector is provided with built-in rechargeable battery pack - NiMH batteries, 1800 mAh. These batteries have no “memory” - they could be recharged at any time, with no request to be fully discharged.

NOTE: The NiMH battery pack supplied with your detector is charged, so it is not necessary to charge it before the first use of your detector. The batteries will reach their full capacity after numeral charge/discharge cycles. The battery condition is constantly shown by a battery symbol in the upper right end of the display.



To recharge your detector, please, plug the mains charger into the COIL/CHARGER coupling on the rear panel. Then plug the mains charger

into the wall socket. The detector starts charging. But to be able to see the process, press ON/OFF button. If the battery is not charged, on the screen will appear a text

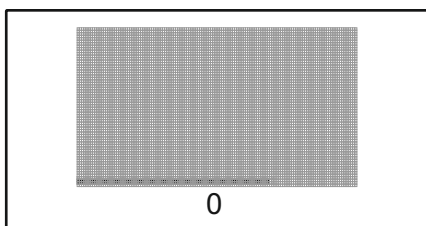


CHARGING BATTERY and a symbol of a recharging battery. When the battery is fully charged the text BATTERY HAS BEEN CHARGED will appear and the battery symbol will show a fully charged battery.

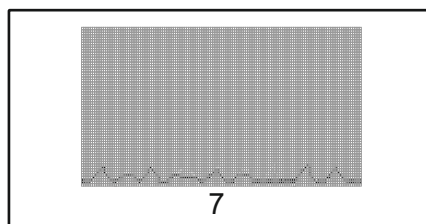
On the rear panel there is also a coupling for external power supply. When you switch on an external power supply its voltage should not be more than 12V, and please, keep to the polarity given on the rear panel.

NOTE: No matter whether you use external, or the internal power supply, if the voltage of the batteries decrease below the appropriate level the detector will warn you with an inscription on the display THE BATTERY IS LOW. PLEASE CHARGE IT.

To extend your battery' life use headphones.

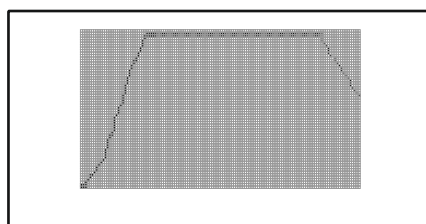


Looking at the Operative screen you'll see a continuously rolling line at the bottom of the screen. When you are not moving and there are no sources of electromagnetic interferences nearby the line will be smooth, nearer to straight line. The same straight line you'll see if you operate the detector keeping constant operational height of the searchcoil and you do not pass over a metal object.
Note that the intensity of the signal is 0.

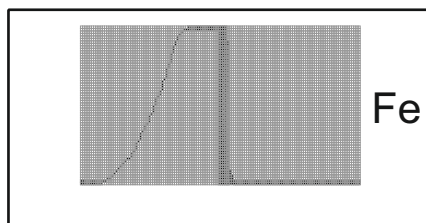


When you operate the detector in areas with electromagnetic interferences the rolling line at the bottom of the screen will be broken and curly one. The ticks from the loudspeaker would not be constant, they would change their frequency chaotically. The intensity of the signal will vary from 1 to 7-8.

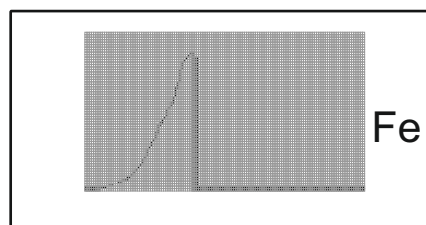
SOME EXAMPLES FOR DISPLAY INDICATIONS



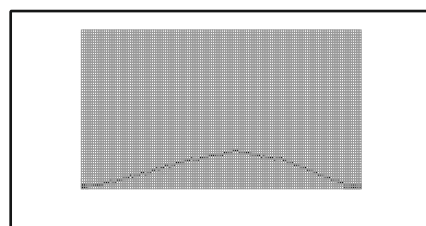
Big, shallow non-ferrous target



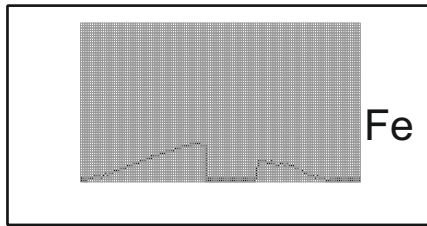
Big, shallow ferrous target



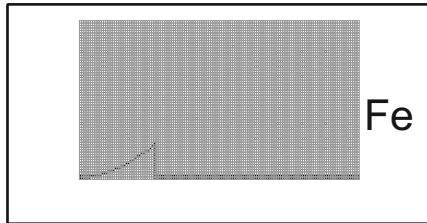
Big, strongly magnetized ferrous target



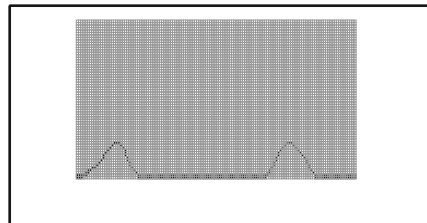
Big, deeply buried non-ferrous target



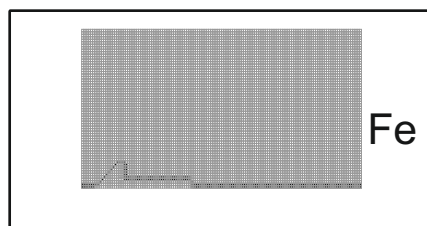
Big, deep low magnetic ferrous target



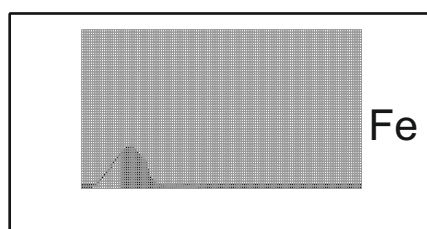
Big, deeply buried strongly magnetized ferrous target



Small, shallow non-ferrous target



Small, shallow low magnetic ferrous target



Small, shallow, strongly magnetized ferrous target

With the graphics above we have shown only some more typical cases. In the practice, the graphical variants are much more. With your practice you'll learn to identify most of the targets without digging them out first.

SSP-5100 DISCRIMINATOR Technical Specifications

Continuous power consumption: min 110 mA

Maximum power consumption: 180mA

Working Frequency: 100 Hz

Sound Range: 0.2Hz - 2.0KHz

Battery: Rechargeable 1800mA / 12V

Charger Input: 110V AC, 60Hz

Charger Output: 17V DC

Battery Charging Time (empty): max. 10 hours

Depth Control for Maximized Detection Depth

Headphone Input: 1/4" Mono Jack

Optimum Temperature Range: 0-50 Degrees C

Control Box Weight (incl. battery): 24.69oz. (700 g)

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