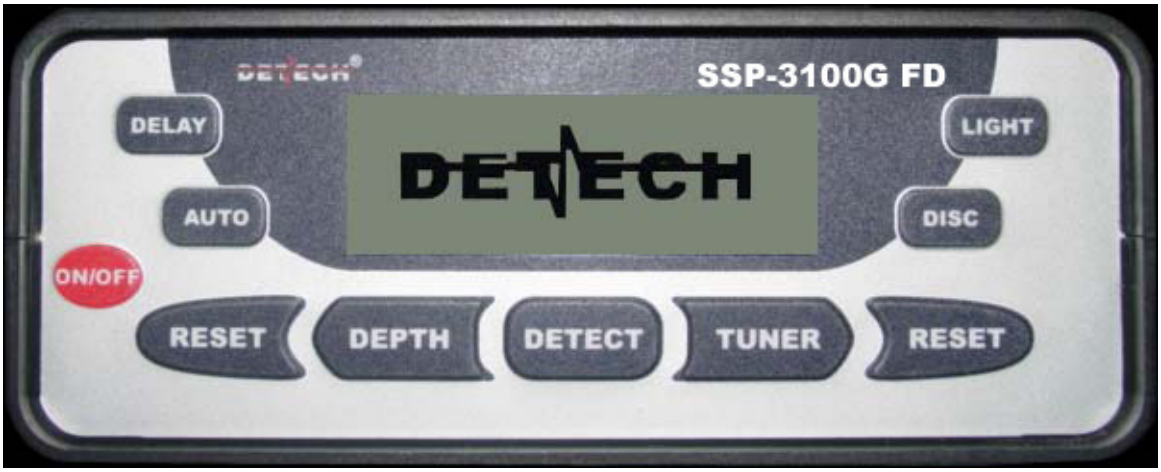
SSP-3100G FD
Discriminator
“Pulse Penetrator”

User’s Manual

INSTRUCTION MANUAL

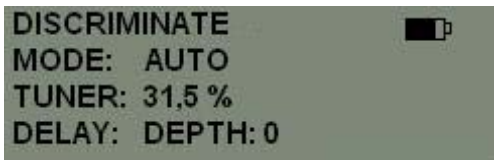
SSP – 3100G FD

Taking the coil out of the leather bag 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, making the unique discrimination of your detector possible. After the assembly, position the coil on operational height over the ground's surface, far from metal subjects. *(Attention: be careful of exposure to metal parts on your shoes and clothing)* Connect the antenna cable to the control box, using the coupling on the rear panel. Then turn on the detector pressing the **ON/OFF** button.



For a few seconds you'll see on the display the logo of the manufacturer, the model of your detector, its software, and an invitation to press any key to continue.

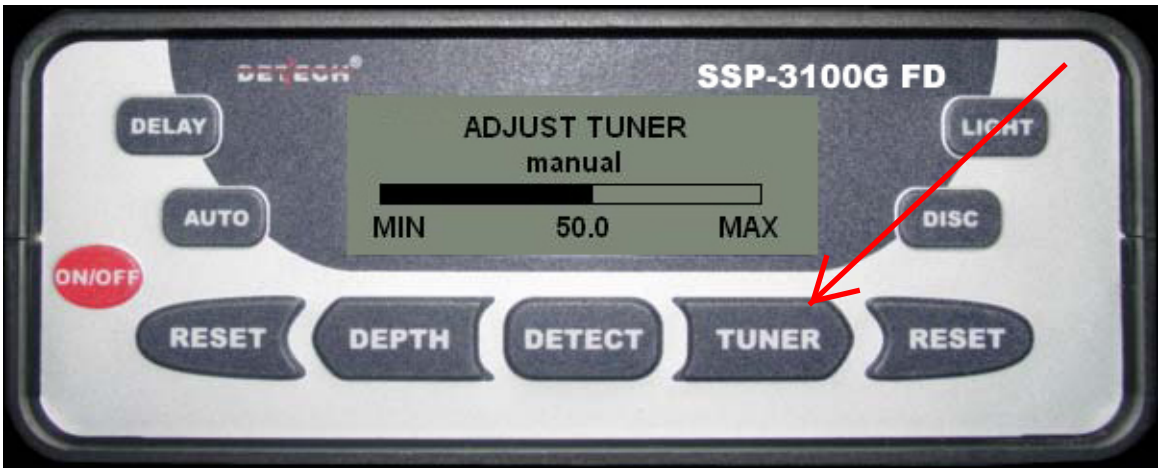
Immediately after that, the Main Menu appears on the display. It shows the battery condition and the current settings of your detector.



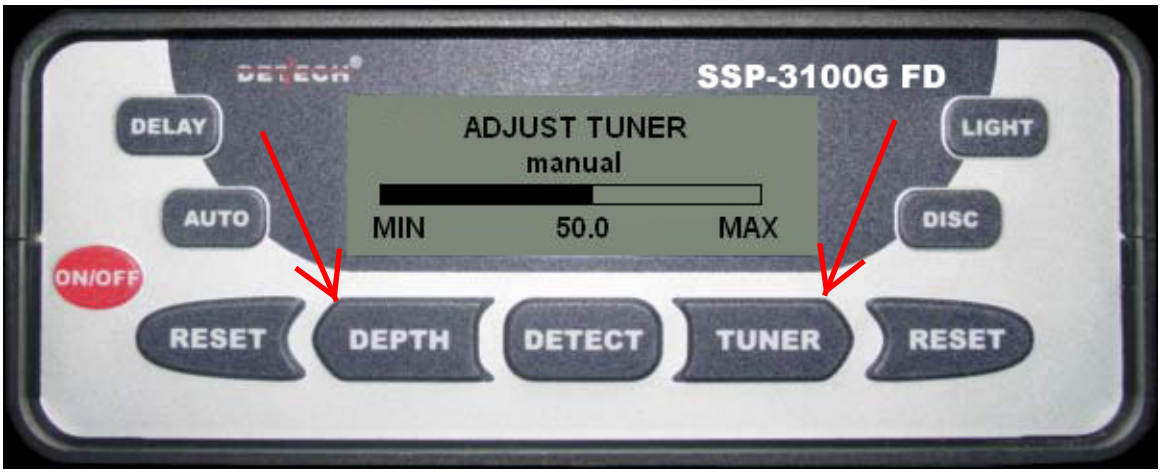
NOTE: The detector is designed with a volatile memory, which saves the last settings you have used, including the Tuner level. Each time you turn on the detector, the Main Menu will show you the last settings you have operated the detector with. Do not forget to check the battery condition before starting operation with the detector.

NOTE: To switch off your detector, press and hold for a short time the **ON/OFF** button.

NOTE: From now, with black color will be the buttons which we describe and which should be pressed. The next step is to tune the detector Press once the **TUNER** control.



This will activate the procedure for Manual Tuning adjustment. Let us remind you, that the coil should be on its operational height over the ground. Immediately after the appearance of the Tuner Adjust screen the only active buttons will be **DEPTH** and **TUNER, AUTO and LIGHT**. If you press the **AUTO** button, you'll enter the **AUTO TUNING** Mode. This mode will be described later on.

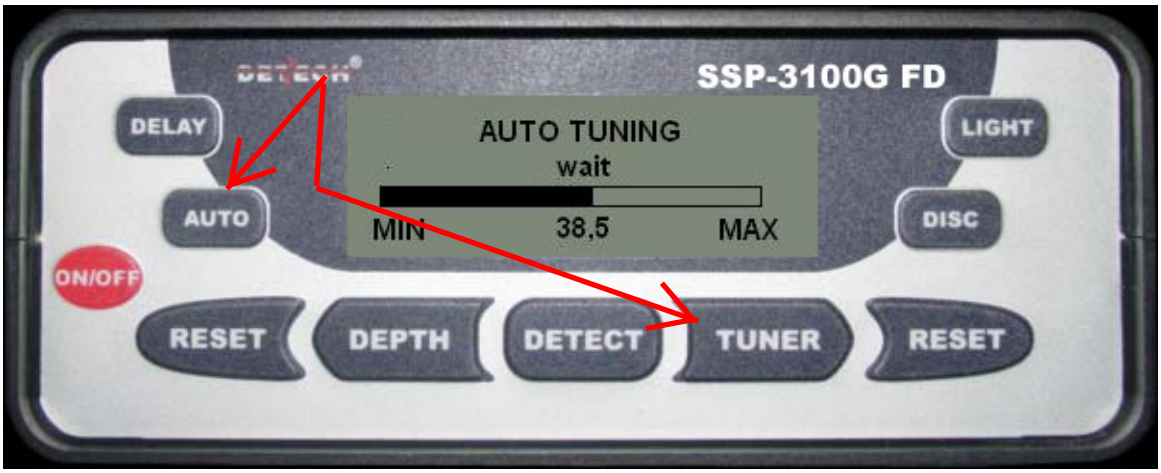


NOTE: The buttons **DEPTH** and **TUNER** have an **ARROW** like form, this is their second function – to change levels and settings of the detector. When we have a screen for a change of the level of setting, or a choice of setting then these two controls will be used for making these changes. Depending on the ground mineralization are possible two cases. One of them is, if your detector is silent. Start pressing the right arrow **(TUNER)** key. Press the button until you come to the optimum **TUNER** setting, i.e. where you just start hearing about 1-2 "ticks" per second. If the frequency of the ticks is higher, you'll have to lower it by pressing the left Arrow **(DEPTH)**. The second case is if you hear very frequent ticks, or roaring from the detector. Then start by pressing the

left Arrow button to the optimum **TUNER** setting. **NOTE:** If pressing the left Arrow button you reach the **MIN** position of the **ADJUST TUNER** graphics, and the roaring continues, please, check whether you are not over or near to big metal objects. If you successfully reach the optimum level of 1-2 ticks per second, then you have really a precise tuning of the detector. Now press the **DETECT** button twice. After the first pressing of the button the Main Menu will appear on the display, and after the second pressing of **DETECT** button , the Operational Screen.

NOTE: If you don't press any button for 10 seconds, the detector automatically will show you the Main Menu.

Now we'll discuss the **AUTO TUNING**. This is an option, which no other PI detector has. In this mode the processor sets the detector to the grounds' conditions, substituting entirely the operator. To enter this Mode press **TUNER** and on the screen will appear the inscription for Manual Tuning (**TUNER ADJUST**). Immediately after that press the **AUTO** key and you'll see the following screen.

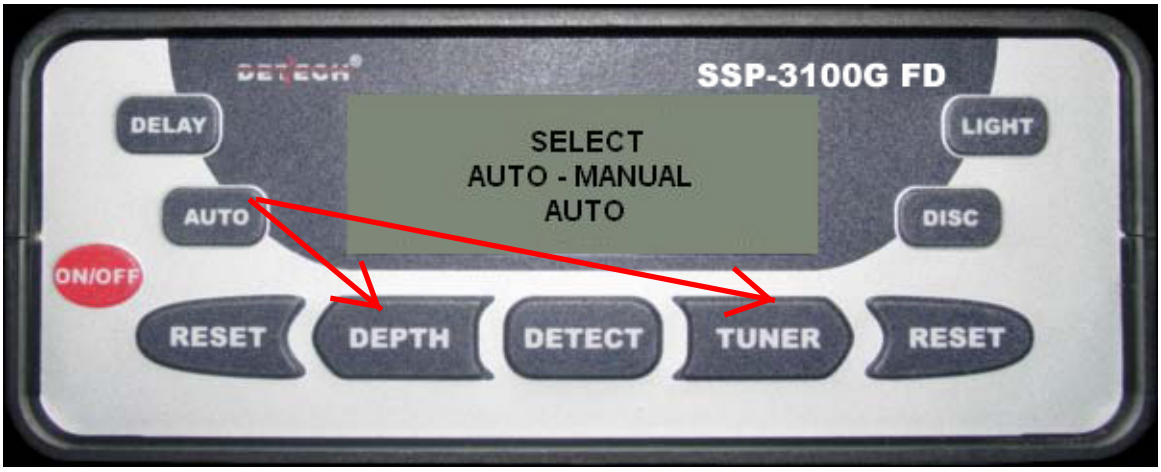


You'll note that the black stripe and the numbers under it will start changing. An inscription on the screen will invite you to wait. In this moment the processor is automatically retuning the detector to the changes in the ground mineralization.

NOTE: If for more than 30 seconds the processor could not find the optimum level of ticks per second, and continues to look for it, then you are probably close to a big metal object, please be aware that may be the case.

After the **AUTO TUNING** is completed a manual **TUNER ADJUST** screen will appear. The detector gives you the ability to make some manual changes in the **TUNER** adjustment. Some professional treasure hunters prefer levels of the **TUNER** slightly different from the optimum one – with more ticks per second for a higher sensitivity, and with less ticks per second – for a more stable operation, especially in highly mineralized grounds.

NOTE: For both Manual and Auto Tuning, pressing any other button except **LIGHT** and **AUTO** you'll receive an audio signal for a wrong choice of button. After you completed this most important adjustment you could start your search. Now we'll inform you about some of the other options of your detector.

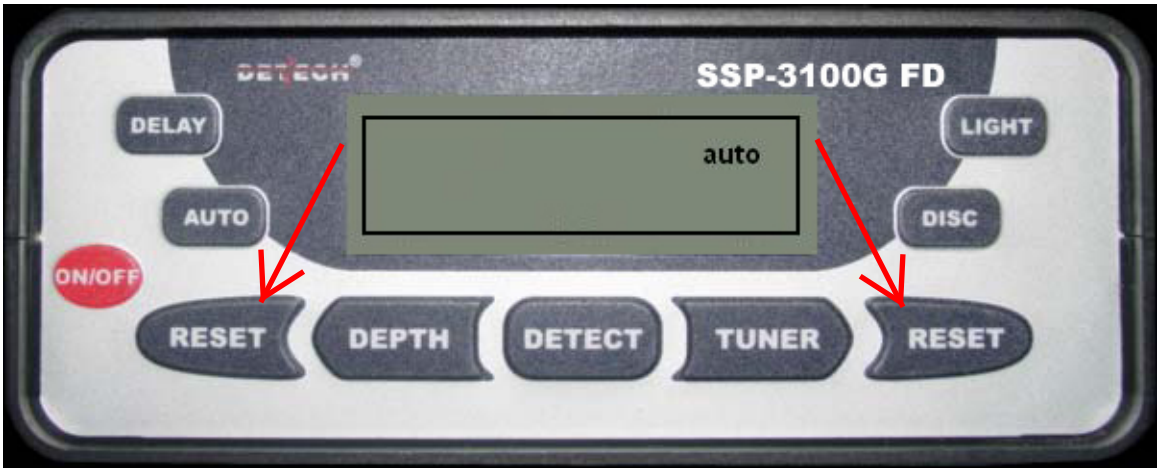


The Automatic Mode of operation is also a unique feature of your detector. In this mode the processor looks for the changes of the ground mineralization during the coil movement over the ground and adjusts the preset and could not be controlled by the operator. Your selection between **AUTO** and **MANUAL** modes of operation in operational mode of the detector could be done in the following way. If you are in the operational screen or in the Main Menu, just press the **AUTO** button. The screen above will appear. Select the Mode of operation (**AUTO or MANUAL**) through pressing left or right **ARROW (TUNER or DEPTH**). We recommend to you the **AUTO** (Automatic) mode of operation.

You could always check what mode of operation you are using – it is listed on the right side of the operational screen. If you have chosen the Manual Mode of operation, then at the same place **MAN** will be inscribed.

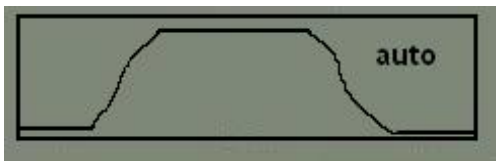
NOTE: While in Automatic Mode the SSP-3100G FD is a typical motion detector. The search coil should be moved over the ground.

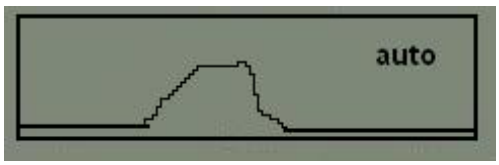
Keeping constant operational height of the search coil and the slowly changing external electromagnetic fields are not so critical for the stable performance of the detector.



In the Automatic Mode of operation the processor looks for all the changes in the ground mineralization and for the changes in the operational height of the coil. If either way, you change sharply the operational height of the search coil, the processor will need 7-8 seconds to restore the optimum level. If you don't want to wait for this, you could use both 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 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 signals line would be like that on the screen shown left down.





If you have difficulties with pin-pointing use this recommendation. When you start passing over the target, press the **RESET** button. In this way you'll be able to pin-pint the target much better.

Another unique feature of your detector is the discriminator built in with the search coil magnetometer. The selection of Discrimination or All Metal mode is made by pressing the DISC button while in the Operational Screen or the Main Menu. The SELECT menu will appear on the display. With the left and right Arrows (DEPTH and TUNER buttons) you make your choice. After that with a single press of DETECT button you enter the Main Menu, and with the second pressing you'll enter the Operational Screen.

This Discrimination mode of operation allows avoiding the unnecessary digging of the unwanted ferrous targets. The detector discriminates all the ferrous objects laying in the arable layer of the ground. The discrimination is not affected by the size, the oxidation and the aging of the ferrous objects within the detection range of the search coil. But in case there are ferrous instruments or weapons, buried together with a cache of money, you risk to miss the cache, because of the so-called iron shield or mask – the discrimination of the ferrous targets oppresses the detector's reaction to the non- ferrous targets. That is why we recommend to you to use the All Metal mode in such cases.

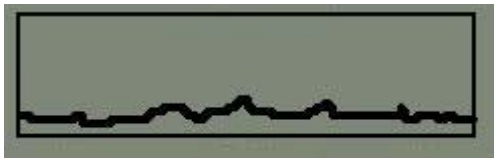
NOTE: Please have in mind, that when DISC is on the detector is a motion detecting system, and if there is not movement of the coil the discrimination would be extremely weak.

The detector allows you to use its discrimination feature in the Automatic and in the manual Mode of operation. If you are in the Automatic mode of operation when approaching and passing over a ferrous target the SSP 3100 detector produces an increasing sound, followed by a sharp lapse into silence and on the right side of the screen appears the symbol Fe. The graphics on the screen will give you a better idea of the process - length and intensity of the signal. We'll give some examples for the display indications for different targets.

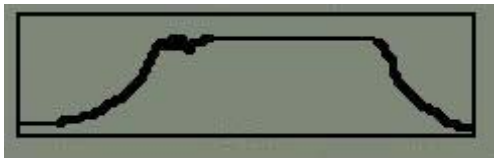
NOTE: The indications of the display, given below, are when operating the detector with the square 1m X 1m search coil.

Every treasure hunter knows that the conventional metal detectors identify the targets depending on their conductivity, and in this way the metal targets with lower conductivity are discriminated. With the SSP-3100 detector 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. You'll note with your practice, that if a long target, for example a sword, positioned vertically in the ground, would give a better signal, than the same target laying horizontally in the ground. Also, you'll have to know that the detector discriminates the ferrous objects positioned only in the arable layer of the ground, i.e. not deeper than 10". All the deeper ferrous targets could be hidden weapons, metal containers, instruments. In the old times, the people used to bury their money somewhere in their houses, but have in mind, that the tools and instruments had been valuables for their owners too. That is why very often over the buried pot with ancient coins you would find a ferrous weapon, or agricultural tools, which their owner has hidden for better times. If your detector discriminates the ferrous objects in its full detection range you would risk to loose these weapons, as well as the pot with coins beneath them.

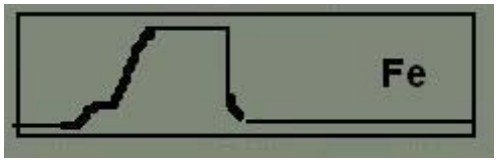
Looking at the operational screen you'll see a continuously rolling line at the bottom of the display. As we mentioned before, this line shows the intensity of the signal.



When you operate the detector in areas without electromagnetic interferences this line will be smooth, nearer to a straight line. In case you operate the detector near a source of electromagnetic interferences this line would look similar to the line on the second figure.

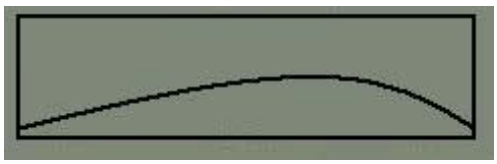


Big, not deeply buried non – ferrous target

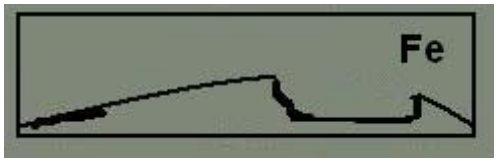


Big, not deep ferrous target

Big, strongly magnetized ferrous target

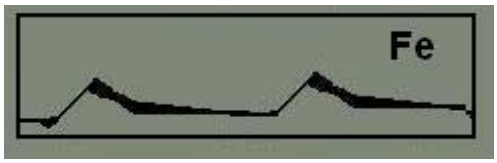


Big, deeply buried non-ferrous target

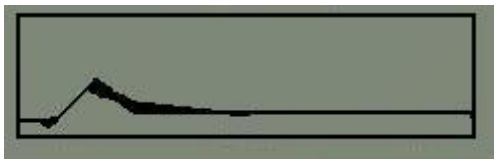


Big, deep, low magnetic ferrous target

Big and deeply buried strongly magnetized ferrous target



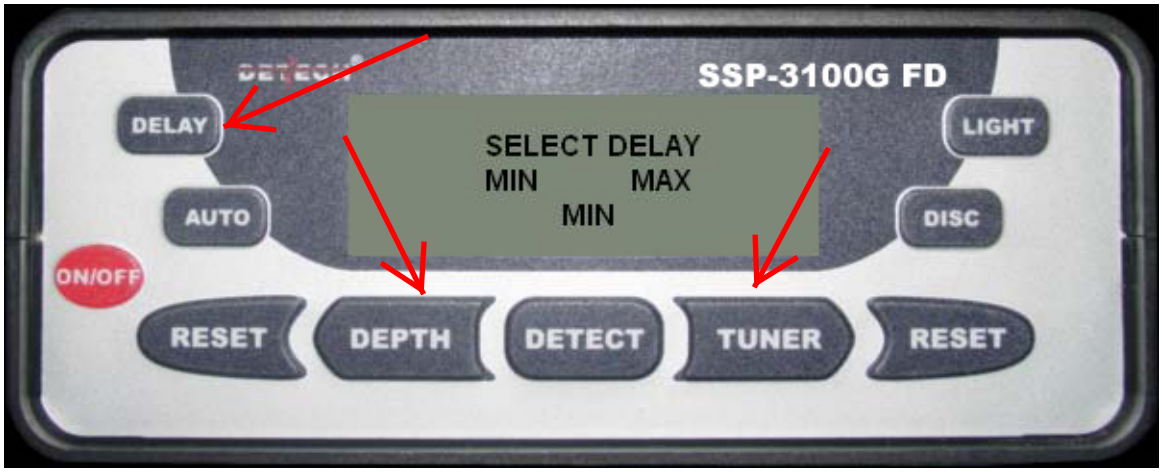
Small, shallow non-ferrous target



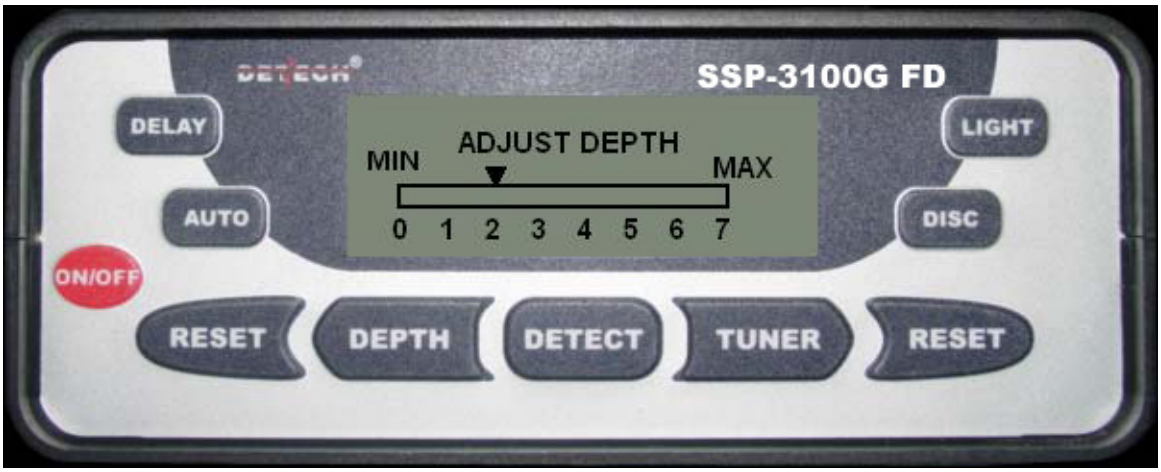
Small, shallow, low magnetic ferrous target

Small, shallow, strongly magnetized ferrous target

The DELAY is a control, having strong effect on the detector's sensitivity and overcoming the ground effects. Through the Arrows (DEPTH and TUNER) button you could choose MIN or MAX delay setting. With DELAY MIN setting the detector is equally sensitive to all metal targets and detects them at maximum depth. With a MAX setting of the DELAY the detector rejects some thin foils, modern alloys, i.e. lower conductivity objects, this setting is appropriate for operation in heavy, mineralized grounds.



REMEMBER: You should retune your detector after each change of the DELAY settings. DEPTH - If you operate the detector in ideal ground conditions you could use higher settings of DEPTH for maximum depth penetration. But this is not necessary, as your detector is really a powerful penetrator.



That is why we recommend you to use lower settings – you have a great depth of detection and a very good stable operation if you choose the marked position of the DEPTH scale on the display. LIGHT- Your detector is equipped with a backlight of the display for easier operation in low visibility conditions and at night…

BATTERIES:

Your detector is provided with built – in rechargeable battery pack – NiMH batteries, 1600 mAh. These batteries have no "memory" – they could be recharged at any time, with no need to be fully discharged. NOTE: The NiMH battery pack supplied with your detector comes in discharged condition. It is necessary to charge them before operating the detector. The batteries will reach their full capacity after several charge/discharge cycles. Insert the main charger plug into the "COIL / CHARGER " COUPLING ON THE EAR PANE. Then plug the mains charger into the wall socket. The detector shows you the following screen.

The small battery shows the current condtion of your NiMH battery pack, the big battery at the right side of the display shows that at the moment the battery is charging.

Looking at the small battery you could determine how much is its charge at each moment of the recharging process. Every time when turning on your detector, the MAIN MENU will show you the battery's condition. At each time during operation and with the Operational Screen on your display, you could check the battery condition by pressing DETECT button once, then the MAIN MENU will appear on the screen and will show you the battery condition. To come back to the Operational Screen again, press once the DETECT button. When you switch on an external battery charger pack the detector will count its voltage. NOTE: The external battery charger pack could not be charged from the detector. If the voltage of the batteries decrease under the appropriate level the detector would warn you via a sound or visual indication. To extend your battery life use headphones.

Product Warranty

Mr/Mrs/Miss ……
Address…….....Post.code.....……
Country…… Phone……..
E-mail ……..
Detector Model …… Serial No……
Coil Sizes and Ser.Numbers ……
Date of purchase ……..
Purchased from …….....…. (Dealer/Distributor)

Warranty Conditions

1. DETECH Ltd warrants, that the product will be free from defects in materials or workmanship.
2. DETECH Warranty periods are:

2.1. Electronics Control Box – 24 months from the date of purchase;
2.2. Search Coils – 12 months from the date of purchase;
2.3. Battery Chargers - 6 months from the date of purchase;

3. This warranty form:

3.1. This form is not valid unless completed by the original purchaser and returned to DETECH within 14 days of the date of purchase.
3.2. Does not extend to any indirect or consequential loss or damage, including failure in operation or performance of the equipment sold, repaired or serviced.
3.3. Does not cover damages, caused by accident, misuse, neglect, alterations, modifications or unauthorized service.
3.4. Is limited to only operation of the equipment under normal use and in accordance with DETECH's printed instructions.
3.5. Extends only to the original purchaser of the equipment.

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