Golden Mask

5+SE

User Guide

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Golden Mask 5+SE User Guide ver. 1.0.1 (last update: June 20, 2018)

About the Golden Mask 5+SE Metal Detector

The Golden Mask 5+SE is an improved version of the original GM5+.

This machine is engineered to have complex qualities for all type of metal detecting activities and to be an universal tool to successfully answer the highest requirements of the contemporary metal detecting amateurs and professionals.

The Golden Mask 5+SE has the following features, that place it within the top machines on the market:

- High sensitivity and great depth of detection
- Fast recovery speed and target separation
- Two working frequencies - 8 and 18kHz
- Spectrum VDI + target ID
- Superb Iron discrimination
- Collapsible telescopic carbon shaft
- Wide range of optional dual-frequency coils
- Wireless headphones WS105 or WS106 (included in the package)
- 5 years warranty of the electronics board

To offer the 5 years warranty, the Golden Mask metal detectors are made with top-level quality components. This guarantees a long life of your machine and many happy moments for you, enjoying your hobby.

Technical Specifications

Operating Frequency	8 and 18 kHz with frequency shift
Ground Balance	Manual and Auto
Search Mode	motion, one-tone all metal, two-tone, one tone with discrimination
Controls	gain, threshold, power box, frequency, search mode, disc. depth, ground balance, volume, tone, backlight, screen contrast
Coil Type	Double D, dual-frequency 8 and 18kHz, Kit coil: 23 cm (9″) Spider
Weight (incl. batteries):	1.35kg with 23 cm (9″) search coil
Battery pack	10xAA, 1.2V, 2500 mAh NiMH rechargeable batteries
Battery Life	minimum 10 hours (with Power Box at High)
Wireless Headphones	Yes, included WS105
Headphones Jack	6.35 mm - 1/4″
Operating temperature	—10 to +50°C

What's new over the original 5+

- The Golden Mask 5+ SE is made with new generation Etrim™ operational amplifiers with EMI/RFI filtered inputs. Thanks to the used Etrim™ chips, the SE signal-to-noise ratio is much better than with the original 5+, and under good conditions, you can set the Power Level as high as the detector maximum preset: 30.
- 80% analogue technology that allows for great depth and fast recovery speed at the same time.
- Added 10% depth in mode Power Box - High
- Improved work on mineralized soils in mode Power Box - Low
- Added Iron Volume - You can control the volume of the sound from ferrous targets in Bi-Tonal mode (Volume 0-7).
- New Power Box settings - now the power box has 3 levels: Low, Medium and High, for better control over the detector sensitivity, stability and adaptivity to different soil conditions.

So what all this means to you and how all these improvements affect the performance of the detector?

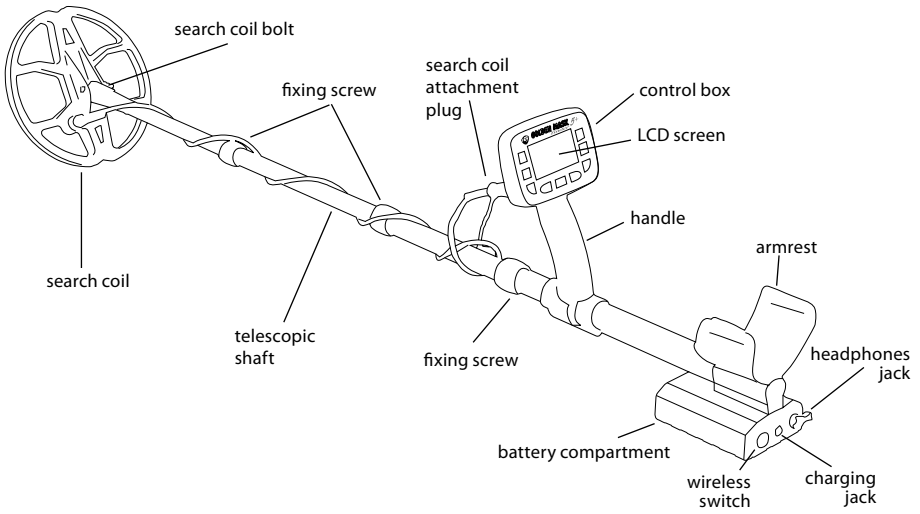
First of all, the used Etrim™ OA chips add stability. Stability means the detector can be operated with higher sensitivity, going deeper in the ground without returning false signals. In addition, the greater stability allows for easier ground-balancing on tough ground conditions as mineralized soils, wet soils, wet beach sand, clay soils and others.

The Etrim™ OA allow also to operate the detector with greater values of the Thresold setting, which means better sensitivity and better depth of detection.

The new SE software has now 3 positions of the PowerBox - Low, Medium and High. At Low, the detector works great on mineralized ground. Medium is for everyday search on normal soils. High shall be used on low-mineralized soils to obtain maximum depth of detectiom.

The new software of the 5+ SE also brings a brand new feature - Iron Volume. This means you can now control the volume of the sound response from ferrous targets in Bi-Tonal mode, using settings from 0 to 7. With the Iron Volume, you could set the sound from ferrous targets to be very low for comfortable search, but stil audible, to not miss something important such as long/large targets that are intersesting despite being ferrous.

Main Parts and Assembly



Your Golden Mask 5+SE comes to you in a box that contain: the detector with telescopic carbon shaft and pre-installed 10 x 2500mAh AA NiMh rechargeable batteries (this is subject to change, while shipping batteries in some destinations is prohibited), a 23 cm (9 inch) Spider search coil, wireless headphones, smart charger, warranty card and purchase papers (invoice, payment statement, packing slip - may vary upon payment method and destination country).

There is nothing special assembling the detector. You have to attach the coil to the lower stem of the shaft, using the supplied plastic bolt and screw (they are already on their place), then attach the coil cable to the main unit. Using the supplied velcro straps, tighten well the coil cable to the shaft and you are ready to go. Pay special attention on the coil side - the cable have to be set outside the active zone of the search coil.

To extend the telescopic shaft, start from the first section by the side of the coil. Turn the fixing screw counter-clockwise, pull the search coil gently to the full extent of the carbon pipe and then fix the section by turning the fixing screw clockwise. Do the same with the second section. Check if the length is enough, if not, extend the third section to match the desired length.

WARNING: The third section of the shaft can be pulled out completely from the handle part, but we do not recoomend it, because a plactic shim inside the locking screw could be lost or damaged. Please, be sure to have a minimum of 15 cm (6 inch) of the third section inside the fixing screw of the handle section, otherwise the stem will not be stable enough and could be broken, especially if a large coil is used.

Usually, the detector is delivered with pre-installed rechargeable batteries. In this case you can start using the dtector immediately, but be aware, that the initial charge of the battery pack is usually lower than the full capacity of the elements. The rechargeable batteries will get to their full capacity after 3-5 charge-discharge cycles.

If you purchased the LITE version of the detector, you will have to first install batteries in the battery compartment. To do this, remove the battery compartment cap, by sliding it down, while gently pulling its bottom rim. Inside the battery compartment you will find the battery cassette. It holds 10 pcs. of STANDARD AA batteries - rechargeable or non-rechargeable Alkaline. If you choose to use rechargeable 1.2V batteries, be sure they are standard size - some large capacity batteries are out of standard and cannot be installed in the battery cassette. Most batteries with capacity up to 2500mAh are standard, but it is possible that exceptions exist.

After you install the batterries in your Golden Mask metal detector, press the ON/OFF button and the detector will start. The software loads for around 5 seconds, then the detector will perform a RESET (you will learn about the reset later) and starts. When you see the working screen from the next page, you're ready to go.

WARNING!

In or near houses, power lines, military radars, mobile base stations, TV or radio antennas and other EMI sources, you could experiance malfunctions and/or faulty signals.

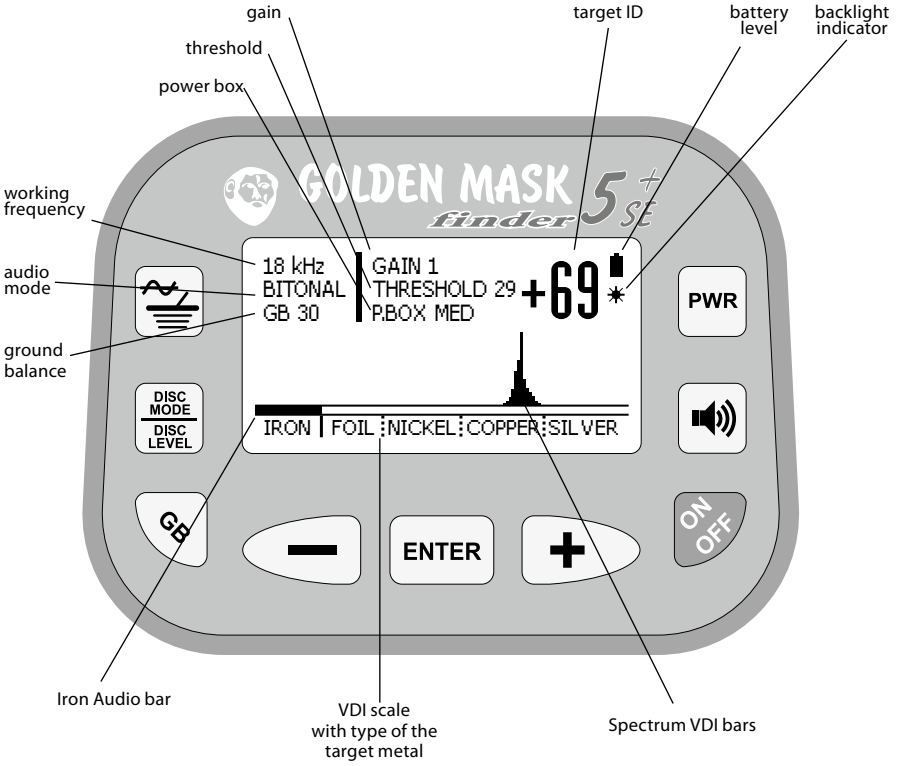
Operating the Golden Mask 5+ SE

The Golden Mask 5+SE is designed to be as simple to operate as possible. The Golden Mask engineers worked hard to simplify the controls and make your hobby a real pleasure, not a struggle with endless functions and menus.

The controls of the detector are 9 buttons on the front panel of the control box and a switch on the back side of the battery box to control the wireless transmitter for the wireless headphones.

On the LCD screen are shown all the working parameters of the detector, the TargetID number and the Spectrum VDI scale, where a graphic of the target signal response is shown to help identifying the target detected.

On the graphic you can see the LCD screen indicators. Buttons will be explained later.



Turning on and off the detector

To turn on the detector, hold the ON/OFF button for 2 seconds - a world map graphic will appear on the screen. From this stage to operation stage around 10 seconds are required for the detector software to load.

To turn off the detector, press and hold the ON/OFF button. A screen with HOLD TO TURN OFF will appear. Hold until a POWER OFF screen appears and then release the button.

WARNING!

THIS PART IS VERY IMPORTANT,
READ IT CAREFULLY!

When you turn on the detector, the coil must be at least 50 cm (20") high from the ground, and far from any metal objects. After the software loads, the detector performs a RESET of the electronics to pair the detector with the coil, according to the surrounding temperature and electromagnetic fields (if any). You can manually do a RESET at any time by short-pressing the ENTER button.

A RESET is REQUIRED every time after you change the working frequency or the PowerBox settings.

If the surrounding temperature is changing quickly, the detector may become nervous. In this case you should perform a reset prior of making any other changes, the reset resolves the problem in 99% of the occasions.

Selecting the working frequency

To select the detector working frequency, press the top-left button. A FREQUENCY label will appear on the screen and two options boxes at the bottom are present. You can navigate between the options by pressing the + and - buttons. The selected option is marked with a diagonal grid. To select the desired frequency, select a box and confirm your choice by pressing ENTER.

After you've selected the frequency and confirmed with the ENTER button, a screen with nine options will appear (-4, -3, -2, -1, 0, 1, 2, 3, 4). This is the so-called frequency shift. By selecting one of these options, the working frequency changes slightly to avoid electromagnetic interference with similar devices or industrial electromagnetic fields. Select the desired value (the selected option is above the ENTER button), and confirm your choice with ENTER.

After the frequency shift confirmation, the main screen will appear and you will see the new frequency in the parameters row at the top-left of the LCD screen.

WARNING!

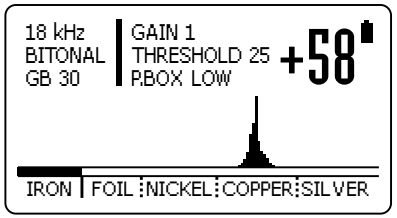
After changing the working frequency, a RESET is required for the detector to work properly!

Target ID and Spectrum VDI

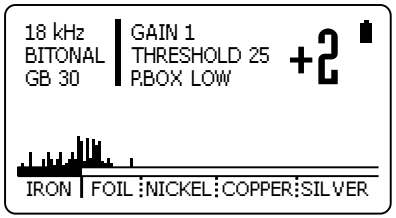
Target ID and Spectrum VDI are two ways for target identification.

Target ID is a number, shown at the top-right corner of the LCD display. Ferrous targets are shown with negative numbers (e.g. -5), while non-ferrous targets are indicated with positive numbers. The border between ferrous and non-ferrous targets is 0. The more a target is placed to the right end of the VDI scale, the greater the Target ID value. And vice-versa.

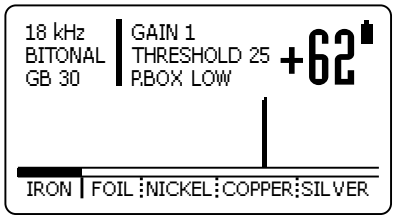
The Spectrum VDI is in fact a graphical presentation of the real signal, returned by the detected target. It contains a great volume of information about the target, so experienced prospectors could easily guess what's under the coil only by looking at the Spectrum VDI graphic. The graphic itself consist of thin bars with different height, placed above the VDI scale. The position of the bars left/right on the VDI scale depends on the metal type. The height of the bars depends on the signal strength - the stronger the returned signal, the longer the bars. Fewer and longer bars mean strong signal and big/shallow target. Stretched left-right graphic means stretched and/or multi-metal or rusty target.



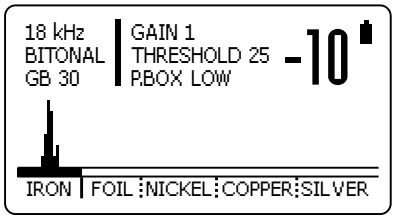
Graphic from a medium-size copper coin at medium depth



Graphic from a small rusty sheet iron at small depth



Graphic from a medium-size copper coin just under the coil



Graphic from a big iron at medium depth

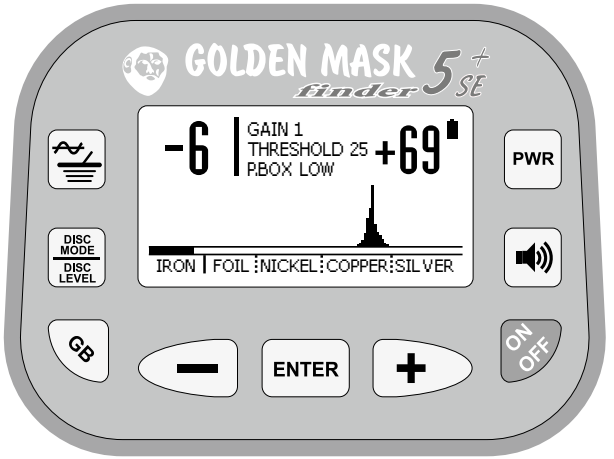
Discrimination and Iron Audio explained

The Golden Mask 5+SE has improved discrimination with added Iron Audio discrimination function and Iron Volume (explaned in the Audio chapter), so the user could move the discrimination border and reject targets. The default value is 0 (zero) - at the border between the ferrous and the non-ferrous metals. Targets bellow this border are shown with negative values, targets above this border are shown with positive numbers.

The Iron Audio setting is shown with bi-color bar just bellow the Spectrum VDI scale. The black part of the Iron Audio bar shows targets that will sound as ferrous or rejected (depending on the discrimination mode setting), while the white part shows targets that will sound as non-ferrous in Two-tone mode or will not be masked in Mono-tone mode.

Why do you need this? For example, if you are on an ancient settlement where you expect to find tiny coins or small jewellery pieces, you could push the Iron Audio discrimination a little bit at left to be sure these small targets will not be discriminated. Or if you're on a place polluted with lots of aluminium foil, you can rise-up the Iron Audio discrimination to reject the foil and the detector indicates only targets from Nickel to Silver.

Be aware, that if you reject the foil, you will probably reject also some small targets made from low-conductive metals as Gold. We recommend that Iron Audio stays at zero, especially if you're a novice metal detector user. If you're experienced enough, you could push the Iron Audio border a little bit to the left to hear some weak/deep signals that could be cut-out with the default setting, depending on the soil conditions.



To set the Iron Audio value, simply push the - and + buttons, while the machine is in search mode - the black part of the Iron Audio bar will move left or right and a number value appears at the top-left corner of the LCD display. As it was said above, the default value is zero.

Selecting the discrimination mode

To select the discrimination mode, press the DISC MODE | DISC LEVEL button at the middle-left. A selection screen will appear to select between discrimination mode and discrimination depth.

Select the DISC MODE option and confirm with ENTER.

After you select and confirm the DISC MODE option, a selection screen with three options will appear - Mono, 2 and All, as shown on the next graphic.

As you can guess, selecting and confirming your choice is done by pressing the + and - buttons and then the ENTER button.

1. Mono-tone (mono)

In Mono discrimination mode, the detector produces sound for non-ferrous targets only. The signal from ferrous targets (iron) is masked. However, some rusty iron or big iron objects will produce sound, but with practice you'll learn to securely distinguish the sound response from iron - it is harsh and choppy, not as sharp and obvious as the non-ferrous targets sound. The Spectrum VDI scale and the Target ID help to fast easy identify targets.

With the Iron Audio setting you can control the border of the signal masking. For example, if you don't want to hear the response from foil, just push the + button to place the border to the right.

The Mono-tone mode is good for iron-polluted areas with lots of trash. Pay attention for every sharp signal and try not to pay attention to the chattering from the iron targets.

In Mono mode, the Golden Mask 5+SE is a little bit deeper than in two-tone mode and handles better the deep iron signals.

2. Two-tone (2)

In two-tone or bitonal mode, you hear both signals from ferrous and non-ferrous targets. Ferrous targets are indicated with a low sound, while the sound response from non-ferrous targets is indicated with high frequency sound. Again, you can control what to be indicated as ferrous and what to be indicated as a ferrous signal with the Iron Audio setting.

The bitonal mode is used if you want to hear the non-ferrous metals. This is usual for new areas, where the presence of iron could give you valuable information about the place. Many people like to always hear the non-ferrous targets and this is not a problem with the Golden Mask 5+SE even in very polluted areas, because of the fast response of the detector. To search in areas with lots of iron trash, use 18kHz and the Disc. Depth setting should be set at or near the maximum value of 15, the Gain should be set to 1 or 2 and the PowerBox to Low - with these settings the detector is even faster.

3. All Metal (All)

In All metal mode the discrimination is completely omitted and the detector is equally sensible to all type of metals. You hear the response from all the metals with a single tone. Identification of the target detected is possible by looking the TargetID numbers and Spectrum VDI graphic on the LCD screen.

In All metal mode the Golden Mask 5+SE achieves the best depth of detection. The difference with the Mono mode is not as big as you'd like, however there is a difference and this tiny difference may be that additional depth you just need to reach a deep target. Unfortunately, this mode is not comfortable in iron-polluted areas, but works great on places with few targets and you want to search at the maximum depth possible.

For maximum depth of detection in All Metal mode, set the frequency to 8kHz, Gain at 2 and PowerBox to High.

Setting the discrimination depth (Disc. Depth)

The Discrimination Depth setting is something different from the usual discrimination you see on some other brands and models. On the Golden Mask 5+SE this setting controls the depth the detector discriminates targets at. The lower the value, the closer to the coil the discrimination works. And vice versa. The default setting is 8.

In general, you'll want your machine to discriminate at the maximum depth of detection. The problem is that the discrimination and the depth of detection are opposite, that's why the default setting is 8, not 15.

So, what are the lower values for? If you set the Disc. Level to zero, you will discriminate the objects near the surface and dig all the deep targets. Deep targets are usually ancient, so they could be interesting, even if they are made of iron. Another use of the lower Disc. Depth values is when you search on a mineralized ground. On such ground, all metal detectors tend to indicate deep non-ferrous targets as ferrous. With Disc. Depth set to or near zero, these deep non-ferrous targets will be properly indicated as non-ferrous. In addition, you will have a slightly better detection depth.

With higher values of the Disc. Depth the detector is faster, so if you want maximum recovery speed, use higher values and 18kHz working frequency.

To set the Disc. Depth, press the DISC MODE/DISC LEVEL button, select the Disc. Depth option and confirm with ENTER. Then select the desired value with the - and + buttons and confirm with ENTER.

Ground balance (GB)

The ground balance is a setting that compensates for different ground conditions. There are soils with no to very strong magnetic properties (the so-called mineralization), and the detector needs to be tuned-up for the soil conditions on the area you are searching in. There are also conductive soils (salt soils or wet beach sands) that also need ground compensation. There is also a combination of both mineralization and conductivity, which is the worse case - on such ground most detectors cannot be ground-balanced or are running with strongly reduced performance. The Golden Mask 5+SE is no an exception.

Strong mineralization reduces the working depth of the VLF (very low frequency) metal detectors and their discrimination capabilities, while on low mineralized soils detectors achieve their best working parameters. Again, the Golden Mask 5+SE is no an exception.

Ground balancing depends also on the coil used. Usually, larger coils are harder to ground balance.

The Golden Mask 5+SE has two options for ground balancing: Auto and Manual.

As you could guess, Auto ground balance is made automatically. In the Golden Mask 5+SE this mode is improved and now it's done fully automatically. Golden Mask 5+SE has a separate processor unit to perform the ground balance in the best possible way. And it does it quite well, especially on non-mineralized soils and lack of electromagnetic fields. However, the best ground balancing is done manually, especially on mineralized soils, clay soils or wet beach sand.

Manual ground balancing the machine is best, if you perform it the right way. On mineralized soils a proper manual ground balance could dramatically increase the machine performance and depth of detection.

If you have troubles with the ground balance of your GM5+SE (this usually happens on very mineralized soils), you should first change the working frequency. This almost always solves the problem. If not, decrease the Gain and the PowerBox values until you are able to successfully ground balance your machine. Remember: the proper ground balance is essential for the performance of every metal detector!

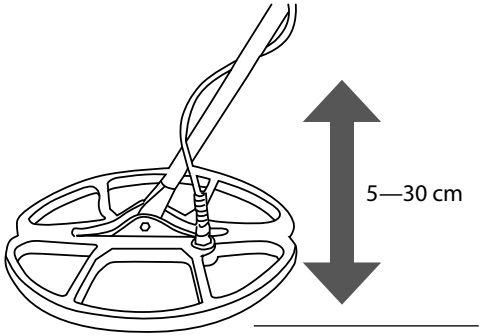
To chose between Auto and Manual ground balance options, press the ground balance (GB) button on the bottom-left corner of the control panel and confirm your choice with the ENTER button.

ATTENTION! Ground balance must be performed on a place free from metal objects!

Auto Ground Balance

To automatically adjust the ground balance, press the ground balance (GB) button on the bottom-left corner of the control panel, then select the Auto option from the ground balance menu and confirm your choice with the ENTER button. A new screen will appear.

Now start to move the search coil up and down from around 5 to 30 cm (2—12"), this is known as "pumping" the coil.



Look at the numbers - they change up or down. Continue to pump the coil until an AUTO GND COMPLETE screen appears. You're done!

Manual Ground Balance

The manual ground balance should be made while the detector is in bitonal discrimination mode - it is easier to balance while hearing low and high sounds.

To manually ground-balance your Golden mask 5, press the Ground balance (GB) button on the bottom-left corner of the detector control panel, then select the Manual option by pressing the - and + buttons and confirm your choice by pressing ENTER. A screen with numbers will appear (the same as with Auto ground balance).

Now start to pump the coil exactly like you do it with Auto ground balance. If the machine is not balanced, you will hear a sound while the coil is going up or down. The goal is to change the numbers on the screen (by pressing the - and the + buttons) until the sound disappears or is slightly audible but equal with the movement of the coil in both directions. If the sound is present while the coil goes up, you should increase the numbers and vice versa. When the sound from the coil movement disappears, the detector is ground-balanced. Press the ENTER button to confirm and you are ready to go.

To make it easier, especially on places you've never being before, it is a good idea to start with Auto ground balance, then switch to Manual and tune-up the ground balance.

WARNING!

Every time after switching frequencies or changing the Power-Box level, a new ground balance must be set!

Mineralization

You can judge the mineralization level of the ground you are on by looking the number at which your Golden mask 5+SE is ground-balanced. See the table bellow:

Frequency	Ground balance numbers and mineralization level		
8 kHz	0-55 : high mineralization	55-120 : normal mineralization	120+ : conductive ground
18 kHz	0-60 : high mineralization	60-120 : normal mineralization	120+ : conductive ground

Setting the Gain

The Gain setting is the Golden Mask 5+SE overall sensitivity. The possible options are 0, 1 and 2. The higher the number, the greater the overall signal amplification. But be aware: on mineralization higher number of the Gain does not always mean deeper penetration of the signal. On such ground a higher Gain setting could lead to impossibility to ground-balance the machine, reduced depth and worse discrimination. With Gain at zero, the detector still has a good depth, so don't be afraid to lower the value - on mineralized ground this could be the right decision. Lower Gain value also lead to a faster recovery speed.

To set the Gain, press the PWR button at the top-right of the control panel. A new screen with numbers will appear. Select the desired value number by navigating left or right with the - and the + buttons and press ENTER to confirm your choice.

Setting the Threshold

The Threshold controls how the detector handles the response from targets. In other words, with the Threshold you could reject or cut-out some weak signals and hear only the strongest ones. This is useful in very polluted areas, where you could reject some of the weakest signals and this way lower the chattering sounds. Of course, this means lower sensitivity to small targets and reduced depth.

You could set the Threshold to values from 0 to 30, the default value is 25. A lower value cuts more signals, while a value of 30 cuts nothing and you hear even the weakest signals. Thanks to its special Etrim™ OA, the 5+ SE could be usued with Threshold value of 30, especially if you are on a EMI-free environment.

To set the Threshold, press the PWR button, select the THR option with the - and + buttons and confirm with ENTER. Then select the desired value and confirm it with ENTER.

Setting the PowerBox

The power Box is an additional signal amplifier, used to achieve better depth of detection. There are three options: Low, Medium (Med.) and High, Low is the default setting.

With PowerBox set to High, the depth of detection increases by around 20% (on normal soil conditions). This could be great, but not always. The additional amplification of the signal could sometimes lead to problems. For example, the detector becomes more sensitive to EMIs or if you are on a mineralized ground, you could experience difficulties ground-balancing the machine. The number of the so-called ghost signals also increases. If the number of ghost signals increases significantly and you're not comfortable with this, you have two options: 1. To lower the Gain value; 2. To decrease the Threshold value. The second option is recommended only if after lowering the Gain, you are still receiving too many ghost signals. Be aware that the main reason for ghost signals and a "nervous" detector are the electromagnetic fields around you. So, first use the Frequency Shift to eliminate EMIs, then try the above two options.

The PowerBox setting is related to the working frequency. In other words, you could set different values for the two working frequencies. The detector will remember the setting, so next time you turn-on the detector, the settings for the PowerBox will be the same.

Recommendations about the use of the PoweBox settings on different soils:

LOW	MED	HIGH
Mineralized soils and beaches	Normal soils	Normal to very low mineralized soils

To set the PowerBox value, press the PWR button, select the PBox option and confirm with ENTER. A new screen with 8 and 18kHz options will appear. Select the working frequency you want to set the PBox value for and confirm with ENTER. A new screen with the two options will appear - Low and High. Select the desired value and confirm with ENTER.

Setting the sound volume

To set the sound options, press the tone button at the middle of the right column on the control panel of the detector. A screen with options will appea. Select the VOLUME option and confirm your choice with the ENTER button.

Now you will see a screen with numbers. By selecting the desired value with - and + buttons, you change the sound volume. At every push of a button, you will hear a sound. When the sound volume matches your desired level, confirm with the ENTER button.

Note that the speaker volume control works only at Gain 0. At Gain 1 & 2, the speaker volume cannot be controlled. The headphones volume is controlled from the headphones.

Setting the sound tone

You can tune-up the sound frequencies for different targets by selecting the sound button (with the speaker icon), then select the TONE option and confirm with ENTER.

Then select the tone you want to change (for non-ferrous, ferrous or all targets) and select the desired frequency by pressing the - and + buttons. As usual, confirm your choice by pressing the ENTER button. The tone for All Metal mode applies to Mono-tone mode also.

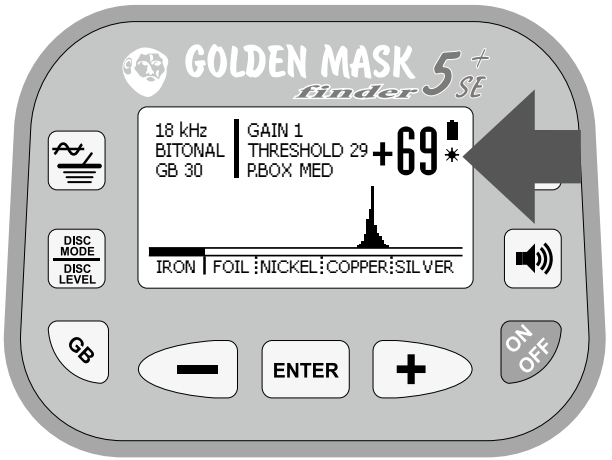
A new screen with tone values will appear. Select the desired tone by pressing the - and + buttons. On every change, you will hear the signal from your selection, Once you choose the sound you like, confirm your choice by pressing the ENTER button.

Setting the Iron Volume (i vol)

The Iron Volume is a new function on the Golden Mask 5 family, introduced in the 5+ SE. This setting controls the volume of the tone for ferrous targets, when you are on Bi-Tonal sound mode. The setting has 7 positions, at 7 you hear ferrous and non-ferrous signals with the same volume. For more comfortable search, easpecally on iron-polluted areas, you can decrease the volume for ferrous targets to a lower value at your taste.

Turning-on the backlight

To turn-on the LCD screen backlight (for search when it's dark), just short-press the ON/OFF button and wait until the backlight is lit and the light icon appears.



To turn the backlight off, short-press the ON/OFF button once. As simple as that.

When the backlight is activated, a small icon appears below the battery icon on the main screen to show you the backlight is on.

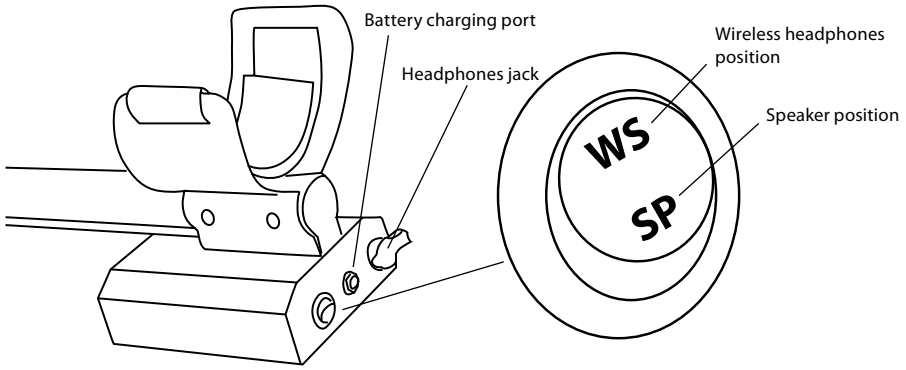
Controlling the LCD screen contrast

You can change the LCD screen contrast. To do this, short-press the ON/OFF button, then press the - and + buttons within 3 seconds after you've pressed the ON/OFF button. If you don't press any button within 3 seconds, the backlight will be activated or deactivated.

Using the wireless headphones (except Light version)

Your Golden Mask 5+SE is delivered with wireless headphones WS105 or WS106. The wireless transmitter is integrated in the battery compartment of the detector.

At the backside of the battery compartment you will find a small switch that routes the sound signal to the speaker or to the wireless transmitter. To use the wireless headphones, you just switch to WS position and the sound goes to the wireless transmitter. Now you have to switch-on the headphones by pressing and holding for 2 seconds the on/off button. When the headphones are ready to work, a red light will start to blink.



When used with the GM5+SE, the WS105/106 headphones are operated by the three buttons on the right earphone: on/off, volume+ and volume-. The three other buttons on the left earphone are not used.

NOTE: The Light version of the detector is delivered without wireless headphones and wireless transmitter. It does not have the WS/SP switch.

WARNING! The detector and the wireless headphones are factory-paired. You cannot use other models and brands, only the ones the detector is delivered with will work.

Charging the headphones battery (except LITE version)

The wireless headphones are powered by an internal non replaceable battery. The headphones are charged through an USB cable (supplied within the package) by connecting it to the supplied wall socket, to an USB adapter or by connecting it to the USB port of your computer. A phone charger with standard micro-USB jack could be used as well. The charging process is indicated by a green light on the headphones. When the light turns off, the charging is complete and you can disconnect the USB cable and start using the headphones.

Using wired headphones

The detector has a standard 6.35 mm | 1/4" headphones jack to plug-in wired headphones.

The sound module of the detector is engineered to use a large gamut of contemporary STEREO headphones, designed mainly for music listening. Of course, metal detecting-dedicated headphones will also work and are preferred because of their built quality.

WARNING!

Never use headphones with MONO jack!
Never use nonstandard headphones or headphones that are designed to be used with special equipment, for example military equipment - this could damage the sound module of the detector.

Using headphones with 3.5 mm jack + adapter is not recommended - most adapters are junk and may cause malfunctions on your detector. Some adapters may cause short circuit on the sound output module and damage the detector sound amplifier.

Charging the detector batteries

The Golden Mask 5+SE is delivered with pre-installed 10 x 2500mAh 1.2V AA-size NiMh rechargeable batteries (this is subject to change, while shipping batteries in some destinations is prohibited). The batteries have a life of around 300 cycles charge/discharge.

You can replace the supplied batteries with any standard-size NiMH rechargeable batteries of type AA. You can also use standard AA 1.5V alkaline batteries.

To charge the detector batteries, connect the Golden Mask Smart charger jack to the charging port of the detector on the backside of the battery box (see the above graphic). A red light will be lit on the charger. After the charging is complete, the light will turn to blue color. You can now disconnect the charger and start using the detector.

ATTENTION! Do not turn on the detector until the charging process is finished and the charger is disconnected! Otherwise the detector electronics may be damaged!

WARNING!

Never try to charge non-rechargeable batteries!

Do not connect the charger to the detector when inside the battery box are installed non-rechargeable batteries!

Such action will cause fire!

Multi-Color Indicating LED

Plug ON	**RED:BLUE flash show the charger is ready**
No batteries	**BLUE**
Charging Progress	**RED**
Full charged, trickle on	**BLUE**
Short circuit	**RED BLINK QUICKLY**
Battery reverse	**RED BLINK QUICKLY**
Repairing Batteries	**RED BLINK SLOWLY**
NTC thermistor short	**BLUE BLINK SLOWLY**
Battery voltage too low	**RED:BLUE:YELLOW BLINK ALTERNATELY**
Temperature protect	**OFF**

Specifications of the smart charger

INPUT UNIT:
Rated Voltage: AC110/220Vl
Voltage allowed: AC90—265Vl
Rated Freq: 50/60Hzl
Rated Current: 100mA (220V full load):
200Ma/100V
20mA (220V no load)
Max Current: 150mA (220V full load)
30mA (220V no load)

OUTPUT UNIT:
Ratedl Voltage:Automatically adjust from 6V—15V
Max voltage (with no load): 20V
Rated Current: 500mA (450mA---600mA)
Trickle Current: 35--50MmA (Pulsel ratio 1/20 +10mA)
Short Circuit Current: 10—20mA
Battery repairingl Current (Voltage less than 6V): 50-100MA

CONTROL UNIT:
V Detect: D -l -5mV
V Detect: 50—65SD 0
Temperature protect: Power Supplier IC =l 150°C
Temperature protect (optional): Battery package 45—55°C
Using 10K MF52 NTC, B=3950
Battery numbers: 5—10 PCs series connected
Pulsel ratio: 31/32 512mS/Pirode
Timer: 6 Hours

ENVIRONMENT:
Ambientl Temperature: -10—40°C
Ambient Humidity: 30%—85%
Storagel Temp: -20—70°C
Storage Humidity: 30%—90%

When the power from the batteries reaches the minimum level, required by the electronics to function properly, the detector will emit a BEEP sound, even if the battery indicator still shows the batteries are not not completely discharged!

Some advices

The Golden Mask 5+SE comes in a standard set with a 23 cm (9 inch) dual-frequency Spider search coil. A coil with this size is considered universal - it could be used with success in every aspect of metal detecting - from gold prospecting to treasure hunting. Of course, there are better option for these, but the 23 cm Spider also works quite well.

You can buy additional coils with different size and shape from 13 cm to 32x38 cm. The GM5+SE is compatible with all dual-frequency coils produced by Golden Mask. These have an orange or yellow point on the cable protector at the coil top. Non-compatible coils do not have the same point or have a white one.

Smaller coils are better for small targets as gold nuggets, jewellery and small coins, while the larger coils are best for large targets - large coins, relics and treasures.

Larger coils are not always deeper. Depth depends on the target size and the working frequency. For tiny gold jewellery a small 18 cm or 23 cm coil and 18kHz working frequency will work better than a larger coil. Even more, you could easily miss small jewellery and tiny coins if you search with the a large coil. Larger coils are deeper on large targets only.

Larger coils are harder to ground-balance, especially on mineralized ground and at 18kHz. For beach hunting, where a combination of both mineralization and conductivity is present, a smaller coil will work better and will be ground-balanced easier.

We recommend using the 18kHz working frequency always when possible. At 18kHz the detector achieves maximum speed and depth for the most common metal detecting activity - coin shooting. At higher frequency, the detector is more sensitive to low conductive metals as gold and tiny objects. You can do some air tests for yourself and you will see this is true.

Speaking about tests, do not try to test the detector at home - in every house or even far from a house there are always too many electromagnetic interference (EMI) fields that will disturb the detector and you may think something's wrong.

On sites with not too many targets, try to use the All metal mode - this will give you 2-3 cm more depth. If you cannot get used with All metal mode, try to use the Mono tone mode.

On mineralization, decrease the Gain and the PowerBox settings until the detector becomes calm. On strongly mineralized ground, a low value of the Gain very often gives you more depth and more correct discrimination.

Try to swipe the coil near the ground, but without touching it. Do not move it too slow or too fast. With practice, you will find the appropriate speed.

Pay attention on the sound. With practice you will learn to successfully distinguish different sounds. Some experienced detectorists can distinguish different type of targets without even looking on the screen. For example, you can easily distinguish the sound from a coin and a lead bullet, just have to listen carefully. But to do this, you will have to practice a lot. This is the same as with car driving - remember your first days driving?

Respect the private property. Do not search in private property without permission - this could lead to serious legal, financial or other type of punishment.

Respect the law in your country about the protection of historical heritage and archeological sites. In all countries in Europe it is strictly prohibited to do metal detecting on or nearby archeological sites.

Cautions

Keep the detector electronics and battery compartment from water and moisture. Be very careful when placing your detector on wet ground - moisture can penetrate batteries and brake the electronics inside the battery compartment.

Keep the search coils from mechanical impact - stepping on your coil almost always brakes it, and the warranty does not cover this. The search coils are water-proof. You can wash them or submerge them in water - no problem.

Keep the coil connector from dirt and moisture. The good contact between the coil and the detector is essential for the performance of the machine.

Do not use other charger than the supplied with your machine. Third party chargers may be very dangerous for the batteries and may cause fire.

Do not forget to turn off your detector after you end searching - this could ruin the batteries and the electronics inside the battery box.

Good Luck!