Golden Mask 5

User Guide

All Rights Reserved!

© 2016 GMD - Linoart Ltd.

Text: Nikolay Dimitrov - www.goldenmaskdetectors.com

Graphics: Linoart Ltd.

About the Golden Mask 5 Metal Detector

The Golden Mask 5 is the latest and top-of-the-line addition in the Golden Mask range of metal detectors.

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 high requirements of the contemporary metal detecting amateurs and professionals.

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

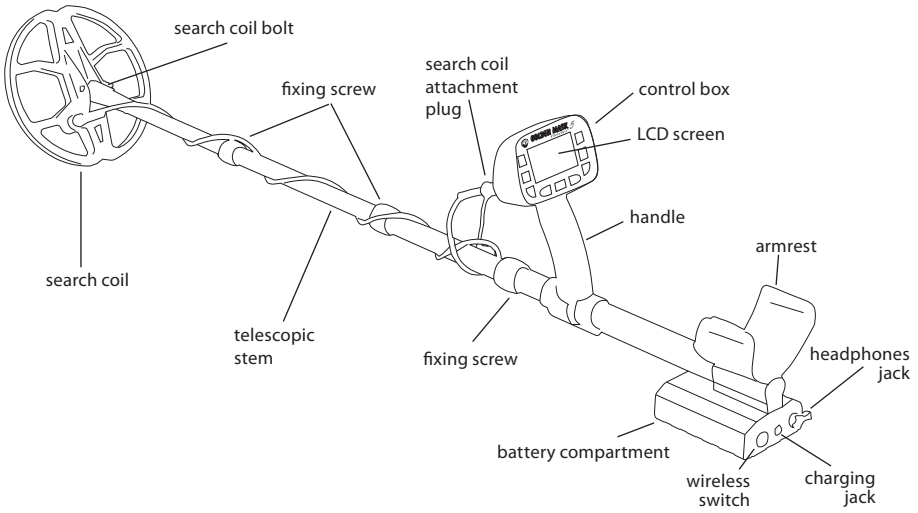
- High sensitivity
- Great recovery speed and target separation
- Two working frequencies - 8 and 18kHz
- Spectrum VDI
- Superb Iron discrimination
- Collapsible telescopic carbon stem
- Wide range of optional dual-frequency coils
- Wireless headphones WS105 (included in the package)
- 5 years warranty of the electronics board

To offer the 5-years warranty, the Golden Mask metal detectors are made with only 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	sensitivity, frequency, search mode, deep target discrimination, ground balance, volume, tone, backlight, screen contrast
Coil Type	Double D, dual-frequency 8 and 18kHz, 23 cm (9″)
Weight (incl. batteries):	1.35kg with 23 cm (9″) search coil
Battery pack	10xAA, 1.2V, 1500 mAh NiMH rechargeable batteries
Battery Life	7 hours at 8kHz; 8 hours at 18kHz
Wireless Headphones	Yes, included WS105
Headphones Jack	6.35 mm - 1/4″
Operating temperature	—5 to +40°C

Main Parts and Assembly



Your Golden Mask 5 comes to you in a box that contain: the detector with telescopic carbon stem and pre-installed 10 x 1500mAh 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, user guide in English, 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 stem, using the supplied plastic bolt and screw (they are already on their place), then attach the coil cable to the main unit and you are ready to go.

To extend the telescopic stem, 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 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.

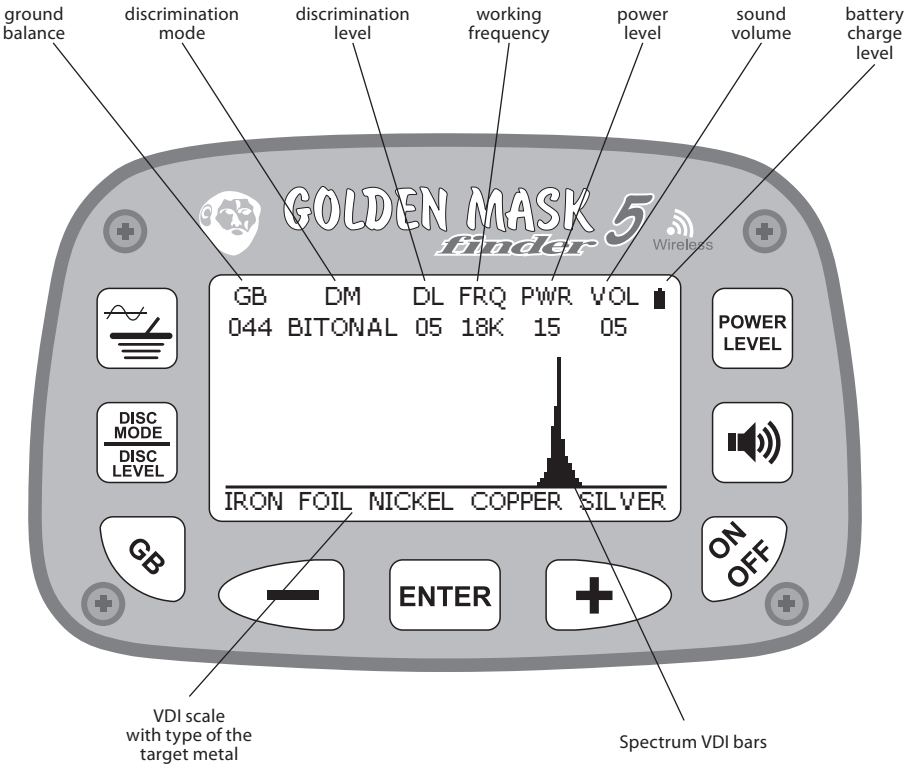
Operating the Golden Mask 5

The Golden Mask 5 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 and the Spectrum VDI scale, where a graphic of the target signal response is shown to help identifying the target under the coil.

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.

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).

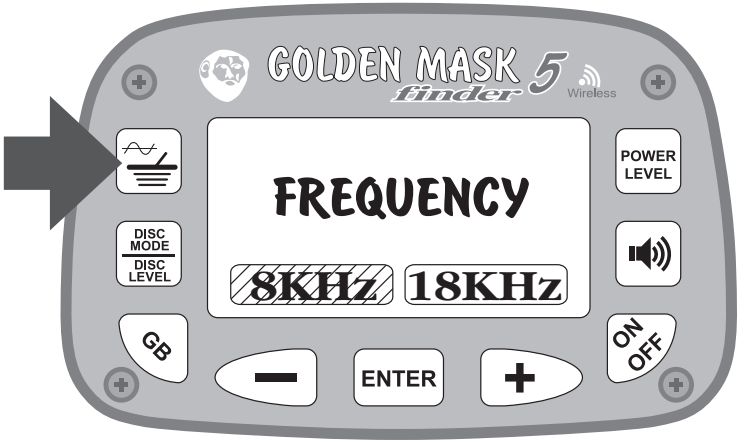
You can manually do a reset at any time by pressing the ENTER button.

A reset must be made every time after you switch the working frequency.

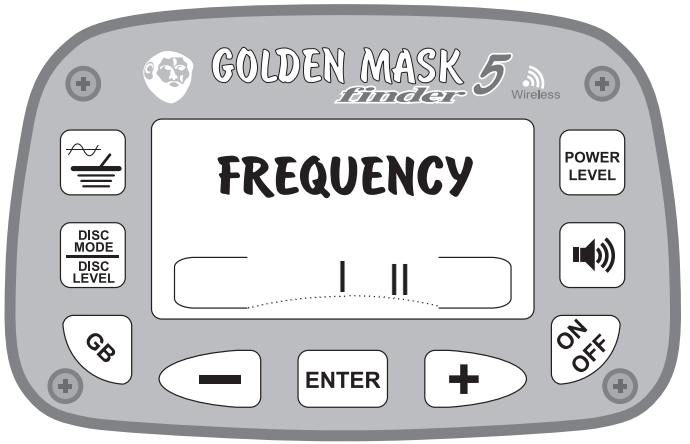
If the surrounding temperature is changing quickly, the detector may become nervous. In this case you should perform a reset prior of making any other changes, the reset resolves the problem in 99% of the occasions.

Selecting the work frequency (FRQ)

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 two options will appear. This is the so-called frequency shift. By selecting one of these two options, the working frequency changes slightly to avoid electromagnetic interference with similar devices or industrial electromagnetic fields. Select the desired value (I or II), the selected option is above the ENTER button, and confirm your choice with the ENTER.



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

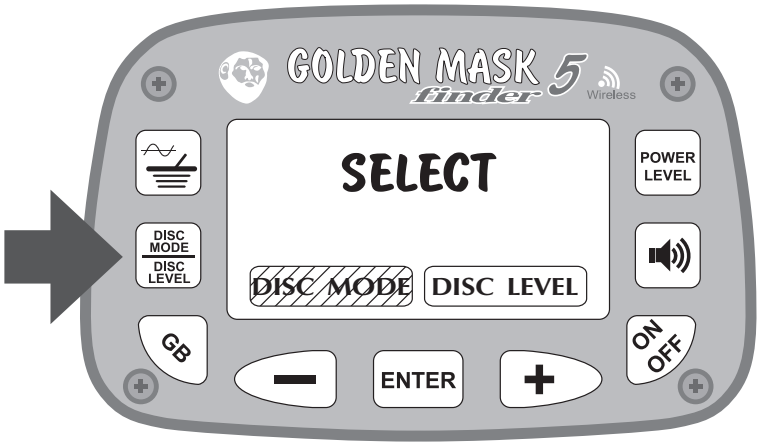
WARNING!

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

Selecting the discrimination mode (DM)

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 level.

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, select and confirm your choice is done by pressing the + and - buttons and then the ENTER button.

Discrimination modes explained

The Golden mask 5 does NOT have a regular discrimination setting as many other detectors have. What this means? To better understand the iron discrimination and how it works with most detectors, think about this setting as the border line between iron and all other metals. Because not all iron objects return the same signal, it is hard to set this border properly. For example, a large iron object returns a signal similar to non-ferrous metals. A small piece of thin aluminium foil produces a signal similar to small iron object and so on. To make it easier for the GM5 users, the Golden mask engineers decided to fix this border. The exact value was found after 2 months of tests with hundreds of ferrous and non-ferrous objects, and this value is set to securely discern the most part of the ferrous objects and in the same time to keep all the good targets. This way you will sometimes dig iron objects, but you won't lose any small gold coins or small gold jewellery, that could be easily descriminated out by rising-up the discrimination border on a "regular" detector.

1. Mono-tone (mono)

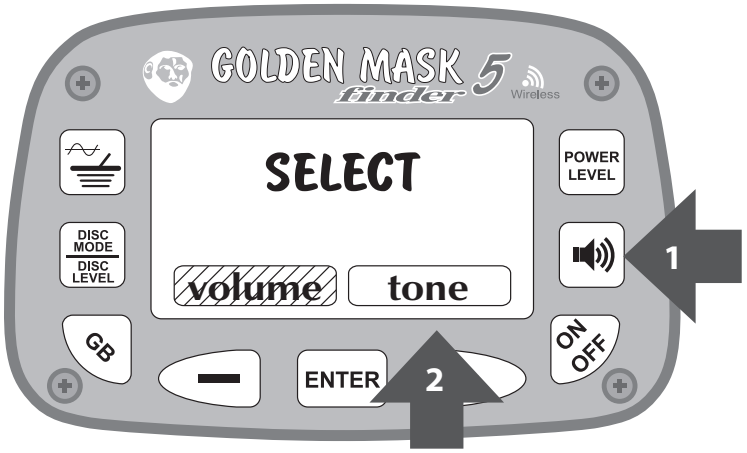
In Mono discrimination mode, the detector produces sound for non-ferrous targets only. The signal from ferrous targets (iron) is masked. However, some rusty iron or big iron objects could produce sound, but with practice you'll learn to securely distinguish the sound response from iron - it is harsh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

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,

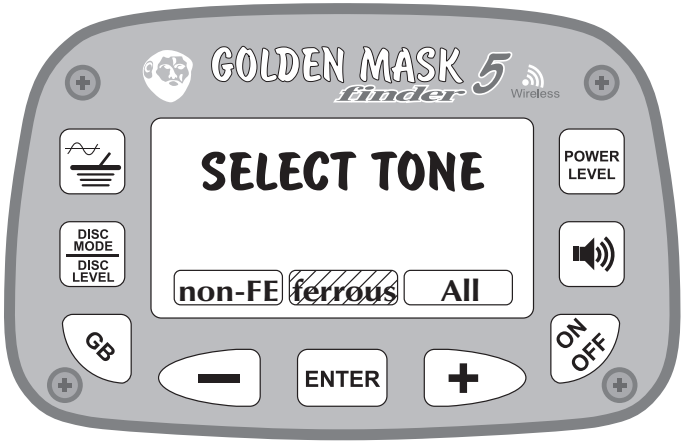
In Mono mode, the Golden Mask 5 is a little bit deeper than in bitonal mode and handles better the deep iron signals, if the Discrimination level (DL) is set properly. You will learn about setting the DL level and how it works in the next chapter.

2. Two-tone (2)

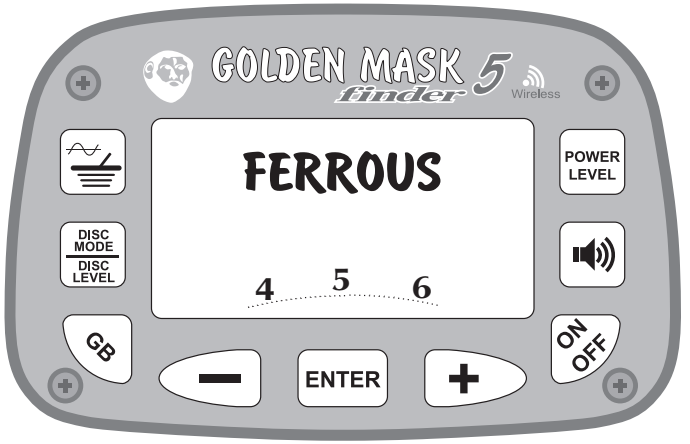
In two-tone or bitonal mode, you hear both signal from ferrous and non-ferrous targets. Ferrous targets are indicated with a low sound, while the sound response from non-ferrous targets is with high frequency sound. You can tune-up the sound frequencies for different targets by selecting the sound button (with the speaker icon), then select the TONE option and confirm with ENTER.

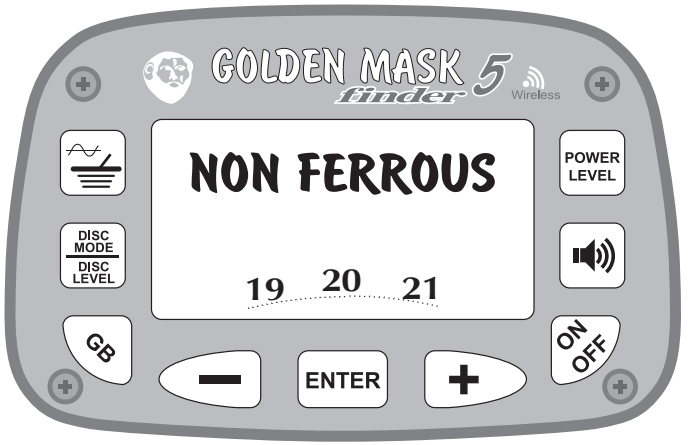


Then select the tone you want to change (for non-ferrous or ferrous targets) and select the desired frequency by pressing the - and + buttons. As usual, confirm your choice by pressing the ENTER button.



A new screen with tone values will appear. Select the desired frequency 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.





The bitonal mode is good 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 even in very polluted areas, because of the fast response of the detector. To work good in areas with lots of iron trash, the DL setting should be set at or near the maximum value of 15 and the sensitivity (PL, power level) should be lowered to 10-15.

3. All Metal (All)

Remember what we said about discrimination, in general? 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. The tone frequency can be changed the same way you do it for the bitonal mode.

Identification of the target detected is possible by looking the Spectrum VDI graphic on the LCD screen.

In All metal mode the Golden Mask 5 achieves the best depth of detection, but the difference with the Mono mode is not as big as you'd think. However there is a difference and this tiny difference may be the depth you just need to detect an object. Unfortunately, this mode is not comfortable in iron-polluted areas, but works best on places where a few targets are present and you want to search at the maximum depth possible.

Setting the discrimination level (DL)

As it was said in the previous chapter, Golden Mask 5 does not have the usual discrimination setting other models have - you cannot control where to place the border between the iron and the other metals, it is fixed (or not exactly, as you will see bellow). And this is done for two reasons:

1. To protect you making mistakes - setting a wrong discrimination border leads to many good targets loss.

1. To ensure correct VDI for both 8 and 18kHz - with the frequency change, the response from the target also changes. Moreover, the signal response changes also with the change of the ground balance. To maintain an independent VDI display, that will show always the same no matter what the working frequency and the ground conditions are, the discrimination border is fixed, but only for the user. In fact it changes upon the detector settings to ensure iron is always shown as iron, copper is always shown as copper and so on.

The Discrimination level (DL) setting is something different from the usual discrimination. This setting (on the Golden Mask 5) controls how the detector handles iron targets. To ensure a proper target identification, especially on big and/or deep targets, the detector needs time. The faster the detector, the worse the target identification, and vice versa.

If you set a lower DL value, the detectors "holds" the signal for more time, so the signal is properly identified by the processing engine. Lower values are good to properly identify deep targets.

If you set a higher value of the DL, the signals are purged faster from the processor queue and the detector becomes faster. But with faster signal processing, large iron objects could be idetified as non-ferrous.

In brief: for deep search on clean areas, set the DL to a lower value; for trash-polluted areas set the DL to a higher value.

Ground balancing (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 is no exception.

Strong mineralization reduces the working depth of the detector, while on low mineralized soils the detector achieves its best working parameters.

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

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

As you can guess, Auto ground balance is made automatically. It's easy to be done, but it is not always the best. Golden Mask 5 has a separate processor unit to perform the ground

balance in the best possible way. And it does it quite well, especially on light soils and lack of electromagnetic fields.

Manual ground balancing the machine is best, if you perform it the right way. On tough soils manual ground balance could dramatically increase the machine performance.

If you have troubles with the ground balance of your GM5, you should first change the frequency. This almost always solves the problem. If not, decrease the power level (PL) until you are able to successfully ground balance your machine.

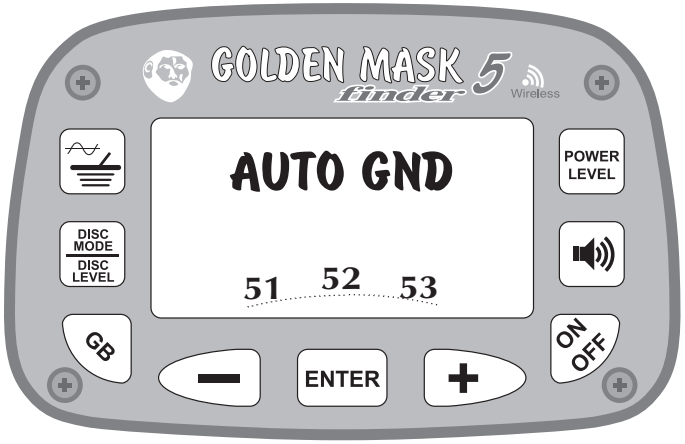
Remember: the ground balance is essential for the performance of every metal detector!

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!

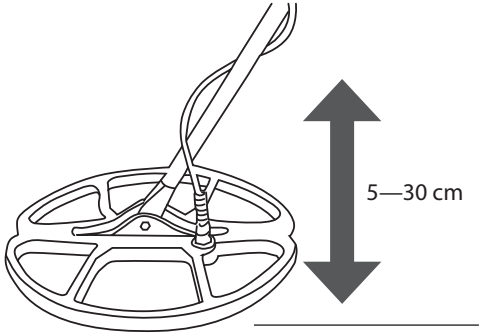
Auto Ground Balance

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.

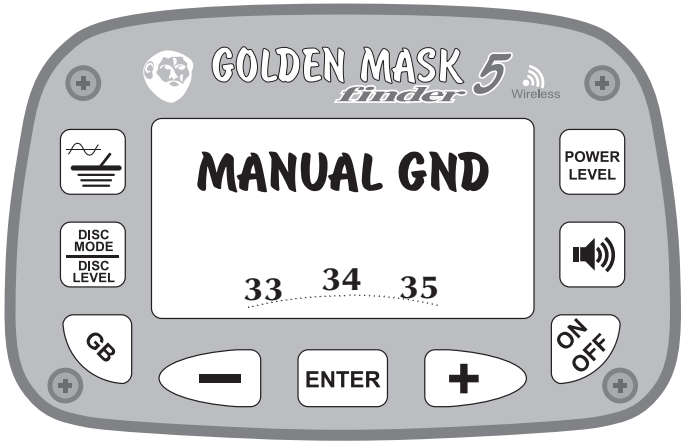
Now start to move the search coil up and down from around 5 to 30 cm (2—12"), this is known as "pumping" the coil. Look at the numbers - they change up or down. Continue to pump the coil until the numbers stop to change or change with no more than plus or minus one. You're done. Now confirm the number with the ENTER button and you can start searching.



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 (see the previous page graphic). 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 now ground balanced. Press the ENTER button to confirm the number above that button 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.

Mineralization

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

Frequency	Ground balance numbers and mineralization level		
8 kHz	0-20 | high mineralization	35-80 | normal mineralization	80+ | conductive ground
18 kHz	0-30 | high mineralization	40-100 | normal mineralization	100+ | conductive ground

Setting the power level (PWR)

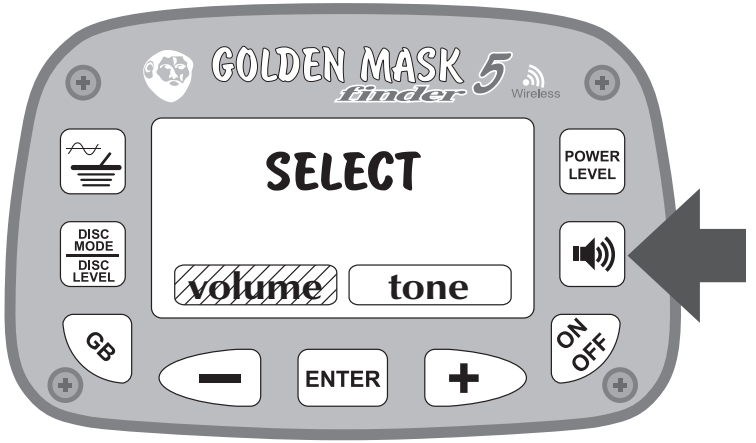
The power level setting is the Golden Mask 5 sensitivity. The higher the number, the deeper the signal goes. But be aware, that on mineralization higher number of power level does not always mean deeper penetration of the signal. On highly mineralized ground a higher number of the power level setting could lead to impossibility to ground-balance the machine and/or reduced depth.

Although the numbers start at 0, a number of 0 does not mean zero sensitivity. With power level at zero, the detector still has a good depth, so don't be afraid to lower the power level, especially on highly mineralized ground this could be the right decision. Lower power level value also leads to a faster recovery speed.

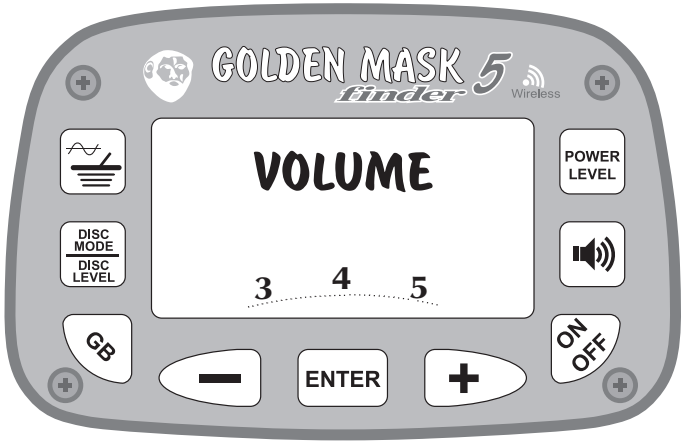
To set the power level value, press the POWER LEVEL button at the top-right of the control panel. A new screen with numbers will appear. Select the desired value number by navigating left or right with the - and the + buttons and press ENTER to confirm your choice.

Setting the 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 (that you already know from the dual-tone mode chapter) will appear. Select the VOLUME option and confirm your choice with the ENTER button.



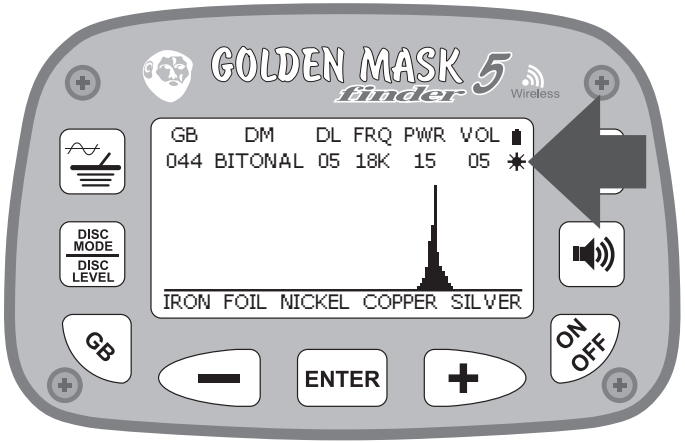
Now you will see a screen with number. By selecting the desired value, you change the sound volume. At every push of the button, you will hear a sound. When the sound volume matches your desired level, confirm with the ENTER button.



Turning-on the backlight

To turn-on the LCD screen backlight (for search when it's dark), just double-press the POWER LEVEL button. To turn the backlight off, double-press the POWER LEVEL button once again. As simple as that.

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



Controlling the LCD screen contrast

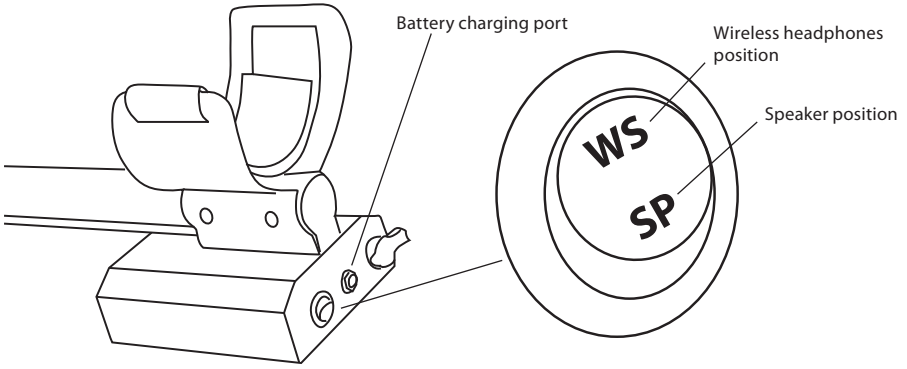
You can change the LCD screen contrast by pressing the - and + buttons while you are on the main screen.

Using the wireless headphones (except LITE version)

Your Golden Mask 5 is delivered with wireless headphones WS105, so you don't have to deal with those nasty wires anymore. The 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, the WS105 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.



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

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.

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.

Charging the batteries

The Golden Mask 5 is delivered with pre-installed 10 x 1500mAh 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 similar standard-sized NiMH rechargeable batteries of type AA. You can use standard AA 1.5V alkaline batteries also.

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%

Golden Mask detectors are supplied with a smart charger with multi-color LED light.

To charge the detector batteries, simply connect the 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.

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**

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

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!

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 USB adapter or by connecting it to the USB port of your computer. A phone charger with standard micro-USB jack could be also used.

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.

Some advices about metal detecting

The Golden Mask 5 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 is compatible with dual-frequency coils only. These have an orange point on the cable protector at the coil top.

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 larger coil. Larger coils are deeper on large targets only.

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 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 Power level (PL) until the detector becomes calm. On strongly mineralized ground, a low value of the PL very often gives you more depth.

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 sound. The sound of the Golden mask 5 is analogue. This means you hear the real response from the target, not a digital manipulated one. 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 injuries - stepping on your coil almost always brakes it, and the warranty does not cover this. The search coils are water-resistant. 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 ruins the batteries.

Good Luck!