



MARS MD TECHNOLOGY



# V@LES

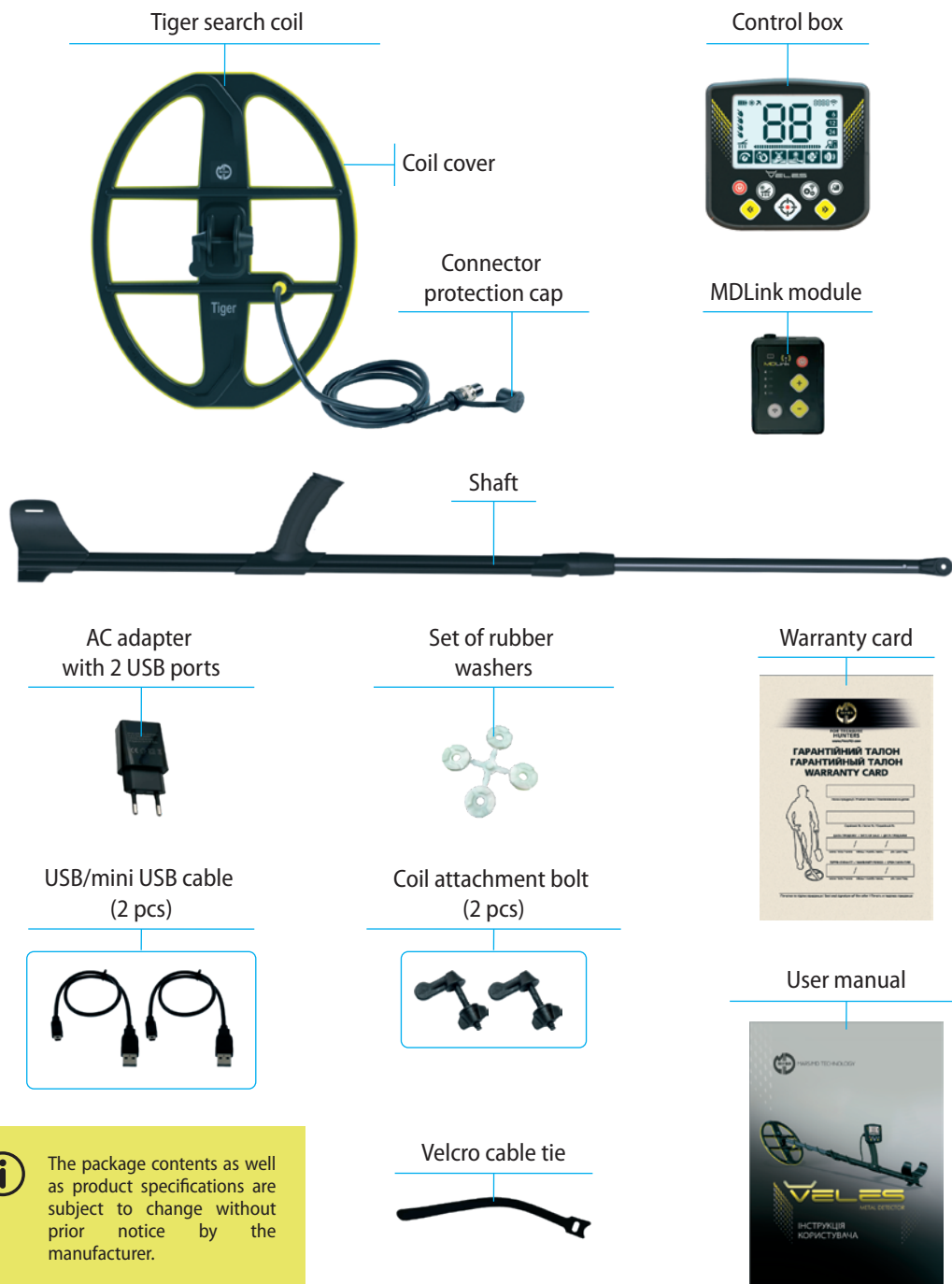
METAL DETECTOR

USER MANUAL





Before you get started with assembling your Veles metal detector, make sure the package includes:

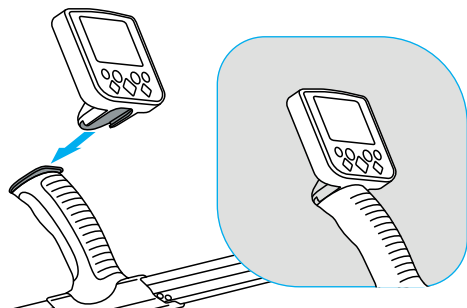


The package contents as well as product specifications are subject to change without prior notice by the manufacturer.

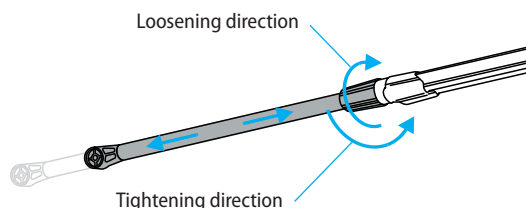


Assembly of the Veles metal detector proceeds through the following simple steps:

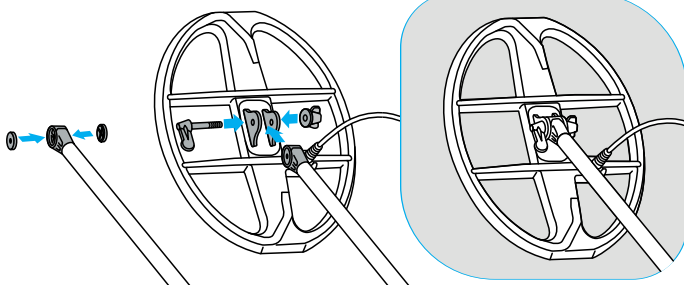
- 1.** Attach the control box to the end of the shaft handle.



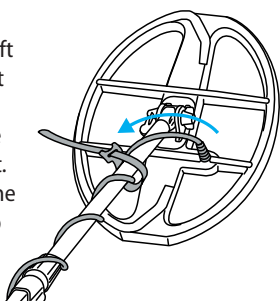
- 2.** Adjust the shaft length to fit your height and tighten the twist lock to secure.



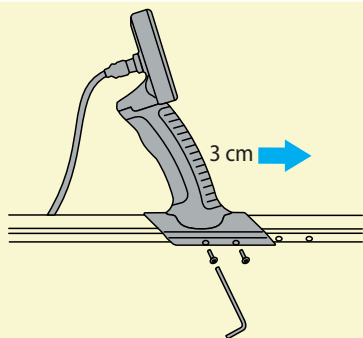
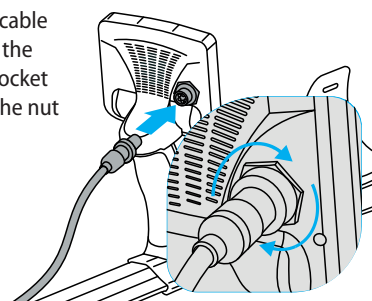
- 3.** Insert the rubber washers into the holes of the lower shaft yoke and place the yoke between the mounting tabs on top of the coil. Ensure that the coil is located in the correct position and secure it by tightening the coil bolt. Do not overtighten.



- 4.** Wrap the coil cable around the lower shaft in such a manner that the first loop close to the coil goes over the top of the lower shaft. Fix the coil cable to the shaft using the velcro cable tie.



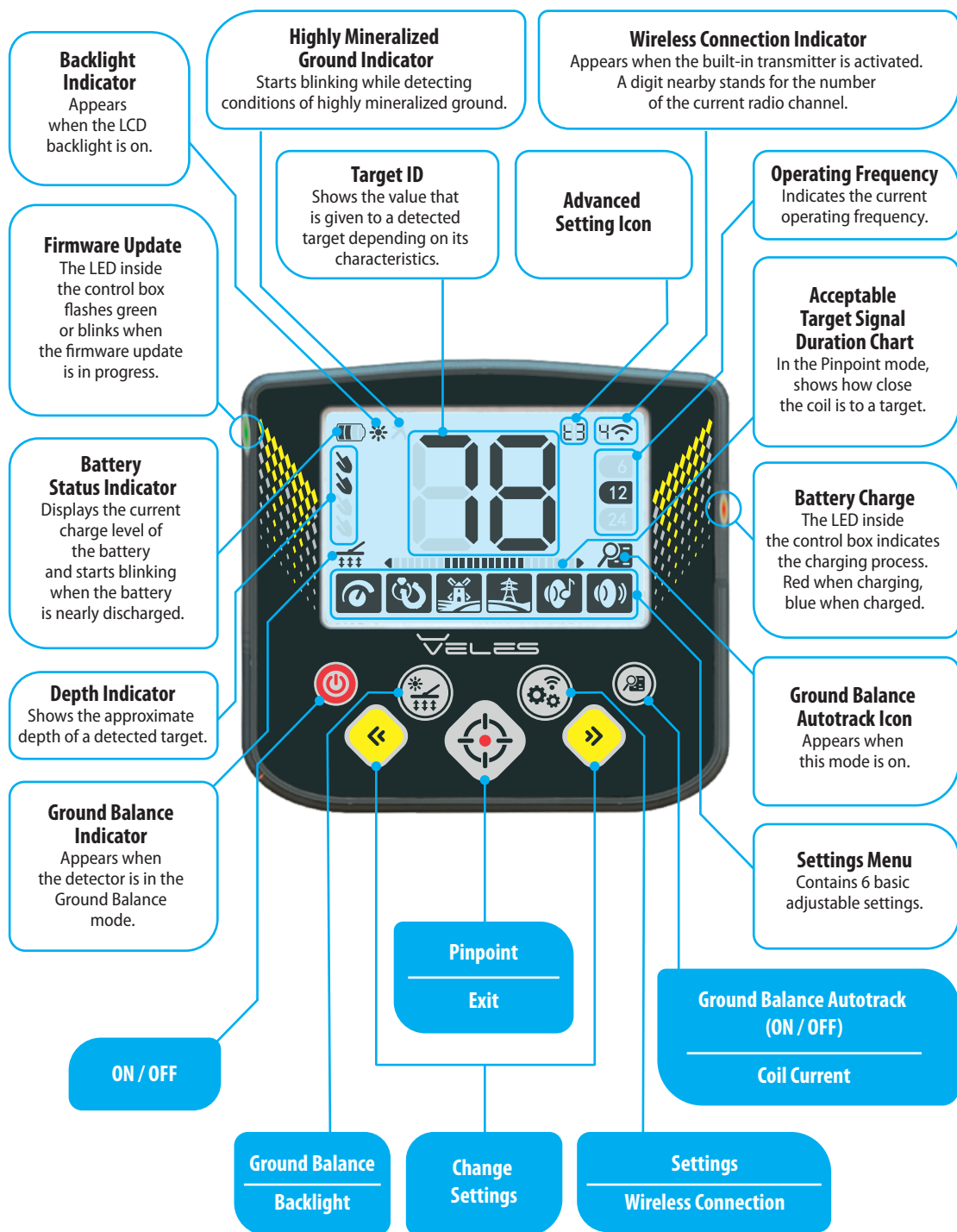
- 5.** Plug the coil cable connector to the control box socket and tighten the nut securely.



The distance between the armrest and the handle can be adjusted to make the detector grip more convenient.


For this purpose:

- using a 2 mm hex key (not supplied), remove the screws that hold the shaft handle;
- move the handle either forwards or rearwards until the desired position is achieved and return the fixing screws to secure the handle in its new place.




The Veles is extremely easy to use, so even a novice user is able to quickly understand the settings. To get started, you just need to take the metal detector out of the box, assemble it and follow a few simple steps:

## **1 STEP**

Turn on the device by pressing .

## **2 STEP**

Turn on the Automatic Tracking Ground Balance mode by pressing .

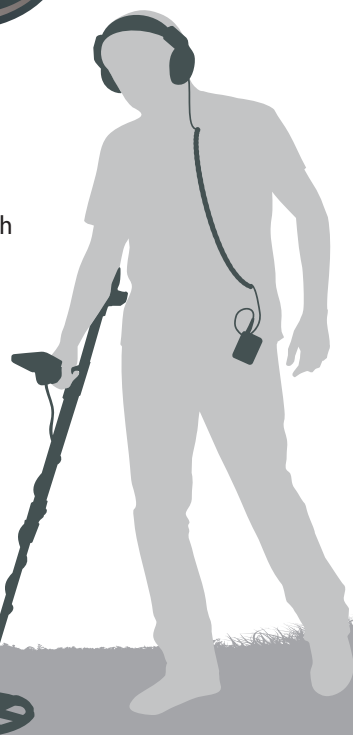


Before first time use, it is recommended to return the device to the factory settings (p.19).

If you hear extra noise, try to eliminate the effect of interference in the automatic mode (p.11) or set the sensitivity to a lower level (p.10).

## **3 STEP**

Sweep the coil over the ground in smooth even motions and start detecting.



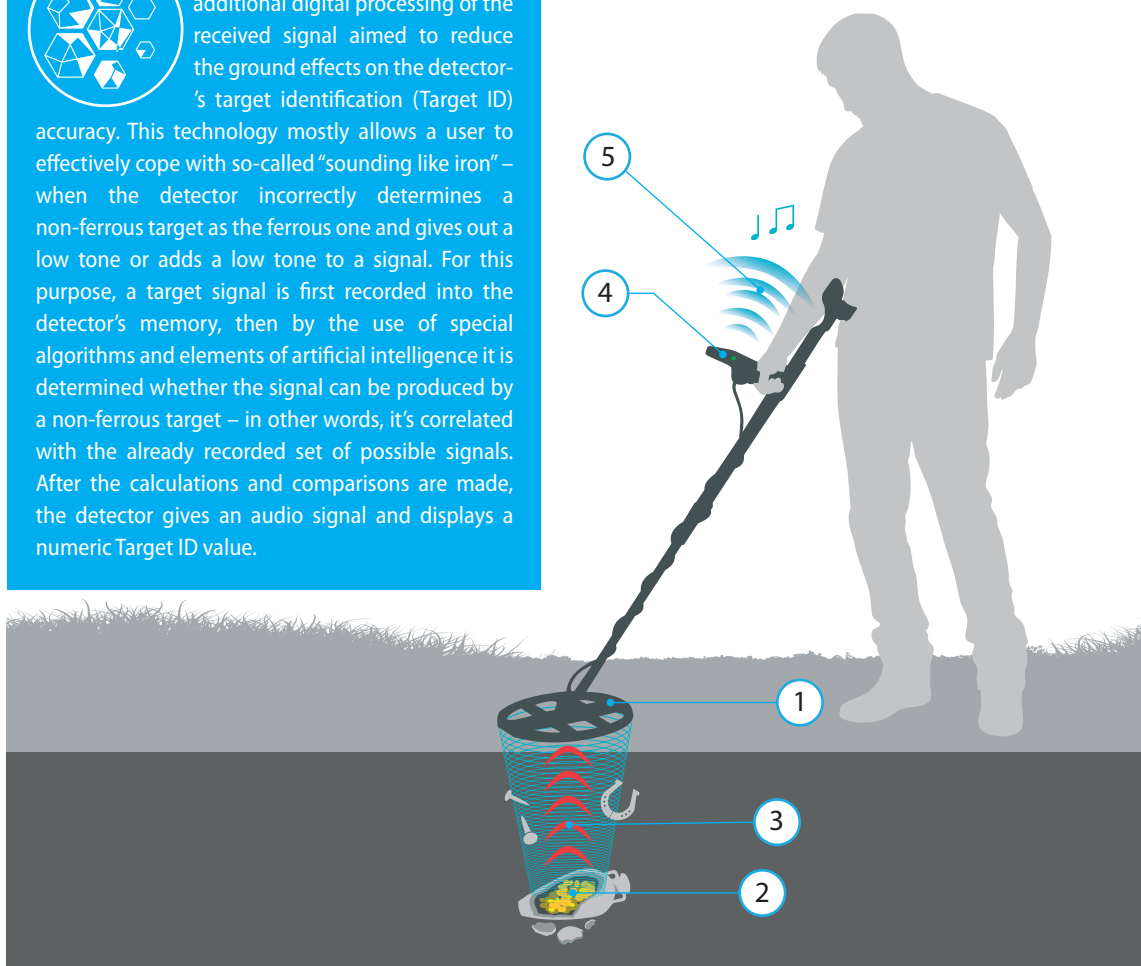
The Veles is an up-to-date metal detector with the direct Digital Signal Processing (DSP). It means that a signal generated by the coil is converted into digital form and processed inside the microcontroller. This solution allows to get rid of limitations that are common to analog circuits, as well as to reduce interference, increase sensitivity, ensure flexibility in settings etc. Also, modern microcontrollers, with their high processing power, make it possible to carry out additional complex mathematical calculations.

The basic principle of the Veles' operation is induction balance (IB), which is achieved by using two induction coils (the transmitter and the receiver ones) inside the detector search coil ①. When a metal object appears in proximity to this coil ②, the inductive balance is disrupted and this results in an unbalanced signal at the output of the receiver coil ③. This signal is transmitted to the control box ④ where it's processed by the electronics and then is presented to the operator ⑤. Before starting the operation, the control box automatically chooses one out of three operating frequencies depending on the connected coil. The low frequency of 6 kHz is used when searching for objects made of copper, silver and ferrous metals; 12 kHz is general-purpose, whereas 24 kHz is better suited for detecting small objects made of precious metals.



CLEAR ID Technology is a system of additional digital processing of the received signal aimed to reduce the ground effects on the detector's target identification (Target ID)

accuracy. This technology mostly allows a user to effectively cope with so-called "sounding like iron" – when the detector incorrectly determines a non-ferrous target as the ferrous one and gives out a low tone or adds a low tone to a signal. For this purpose, a target signal is first recorded into the detector's memory, then by the use of special algorithms and elements of artificial intelligence it is determined whether the signal can be produced by a non-ferrous target – in other words, it's correlated with the already recorded set of possible signals. After the calculations and comparisons are made, the detector gives an audio signal and displays a numeric Target ID value.

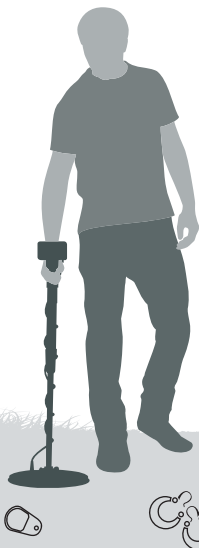


Before you start searching for artifacts, it's important to understand how to interpret audio and visual signals of the detector. It will be easier for you to learn to distinguish detector sounds, if you first become familiar with the response from the device for different metal objects.

Prepare some items made of various metals, e.g., different coins, gold and silver jewelry, an aluminum can pull tab, a rusty nail or self-tapping screw, a bronze part, aluminum foil.

Take your metal detector and find a glade without vegetation, as far away as possible from sources of electromagnetic interference and metal objects buried in the ground.

Place the items in a row on the ground, at a sufficient distance from each other, so that the coil can pass between them.



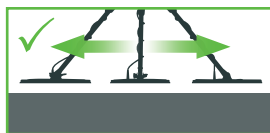
Sweep the coil over each of the objects, observe the detector screen and listen to the sounds of all items detected. The Target ID and audio response will provide comprehensive information on an object under the coil.

- If there is no sound when the detector is passing over a nail, this happens because the device may reject signals from unwanted targets.
- If you are receiving signals from a clear area of soil, this can be due to metal objects buried underground.
- Try to look for another test site.

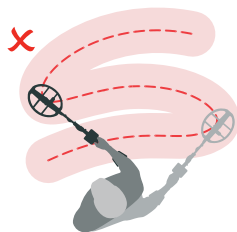
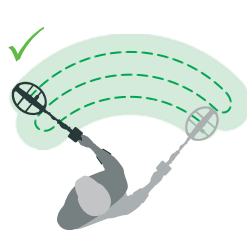


The Veles is a motion detector, it means you should constantly move the coil over the ground. If the coil is motionless, a target won't be detected. Incorrect movement of the coil can cause you to potentially miss a target or can lead to false signals.

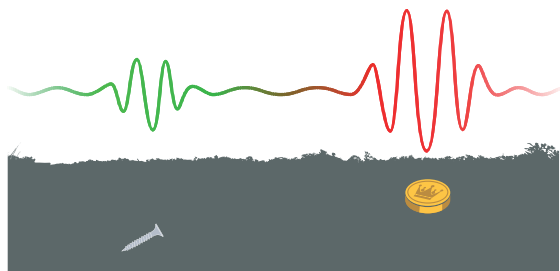
**SWINGING THE COIL.** Move the coil in a steady and methodical manner parallel to the ground. This will increase the detection depth and improve the detector's response to small targets. Also, avoid bumping or touching of the coil against the ground.



**SWING TECHNIQUE.** Swing the coil over the ground from side to side, slowly moving forward at the end of each sweep. Each subsequent sweep of your coil should overlap about 50 percent of the previous sweep to ensure complete ground coverage and not leave any targets behind. An average swing speed is 2 to 3 seconds.







**TARGETS.** A target signal is a response given by the device when detecting any metal object. The audio signal for a ferrous target (iron) is most commonly a low tone, whereas the one for a non-ferrous target is a higher tone, which changes depending on the electrical conductivity of metals (e.g., silver will give a higher tone than aluminum). Large targets as well as targets lying close to the soil surface give louder audio signals. The farther the target away from the coil is, the quieter the sound gets.




## BASIC SETTINGS

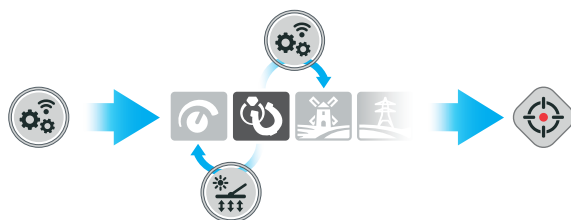
of the Veles include 6 options.







Press  for the first time and the current setting and its Target ID value will be shown on the display. If you want to return to the previous setting, press .

The values of the selected setting can be adjusted by using  .

If a setting has multiple values, then press and hold one of these buttons to make fast adjustments.

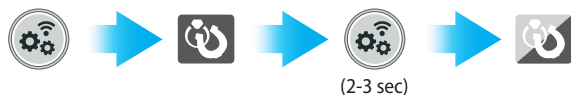
To exit the menu, press .





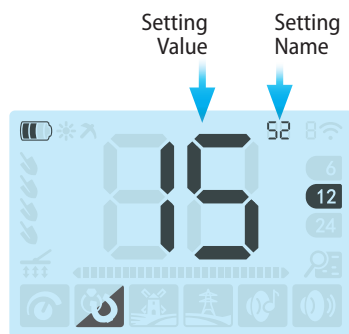
	SENSITIVITY	1 — 40
	DISCRIMINATION	-9, -8 ... 0 - 70
	SEARCH MODE	PA, FL, tr, bH, dP, CL
	NOISE CANCELLATION	-2, -1, 0, 1, 2
	TARGET TONE	t1, t2, t3, t5
	SOUND VOLUME	1 — 10




## ADVANCED SETTINGS

provide the experienced operator with additional access to three groups of settings for more detailed adjustment of audio target signals. You have the option to individually adjust the device based on your experience and preferences. Advanced Settings are shown in the Basic Settings menu with a flashing icon.



Press  and navigate to any setting that has an Advanced Setting (e.g., TONE BREAK). Press  again and hold for 2 to 3 seconds to access to the setting. The icon will start flashing, and the setting name will be shown in the top-right corner of the LCD, with its value in the Target ID field. Use the same buttons to navigate and edit as those for the Basic Settings menu.



	TONE BREAK	S1, S2, S3, S4
	TONE PITCH & TYPE	t1, t2, t3, t4, t5, St
	TONE VOLUME	t1, t2, t3, t4, t5



All the latest settings changes are saved in the memory of the device before it turns off.



## SENSITIVITY

This setting value determines the detector sensitivity. It ranges from 1 to 40. The higher the value, the greater the distance targets can be detected at. It should be kept in mind that the detector becomes more sensitive to the effects of electromagnetic interference and ground signals when entering the limit values of this setting. The recommended values for comfortable searching: 20...35.



## DISCRIMINATION

This setting allows you to selectively eliminate target categories from detection according to a certain Target ID. It sets such Target ID value below which all numeric values will be ignored by the detector. heard as a low ("ferrous") tone and above which – as high ("non-ferrous") tones. In this way, you can reject, for example, unwanted ferrous targets that have negative Target ID numbers.



## TONE BREAK (Advanced Setting)

This setting allows you to set the break points of numerical Target ID values for each separate TARGET TONE. It may be useful when it's necessary to combine (or separate) targets with similar Target ID in a group with one tone. Depending on the TARGET TONE setting value, some break points (e.g., S3 and S4) will be not used. You should remember that the larger the Target ID number, the higher the audio tone, so the break points must meet the following condition: S1 <S4 <S3 <S4.



	S1	S2	TARGET ID	S3	S4
88	t2				
82	t1	t2			
83	t1	t2	t3		
85	t1	t2	t3	t4	t5



## SEARCH MODE

The Veles supports six operating modes, each of which is intended to be used in different search conditions. Each mode is specifically optimized to provide maximum performance, in normal operating conditions, for specific detection area. Evaluate your detecting spot and choose the most suitable mode. The device will remember its last search mode used and will restore it when you restart.

- › **PA (PARK)** The simplest mode, recommended for beginners or to get started with. This mode is best suited for detecting in city parks, at sports venues, in recreation areas with heavy amounts of various metal trash. The **PA** mode is sensitive enough and offers fast recovery speed for separating targets as well as good discrimination capability in trashy sites.
- › **FL (FIELD)** This mode is a perfect fit for metal detecting in historical sites for the widest range of target sizes. The **FL** mode provides high sensitivity and recovery speed helping separate targets, plus sound response from a target – in real time, without delay like that in analog detectors.
- › **tr (TRASHCAN)** This mode, like **PA**, is used for searching in areas with large amount of metal objects buried in the ground. The mode has fast recovery speed, target separation and sound response in real time.



- › **bH (BEACH)** The mode for detecting on the beach, seashore and in the shallow water. In this mode, the detector can be set to any combination of magnetic and conductive soil (e.g., sand and saltwater). However, targets with iron content and low Target ID values may be ignored by the device.
- › **dP (DEPTH)** The special operating mode that provides maximum detection depth and is capable to find large sized targets. In this mode, digital signal processing and additional signal accumulation are used, for that reason you should swing the coil slowly, in a steady and methodical manner, keeping it at a consistent distance parallel to the ground. The approximate size and depth of a buried object can be determined based on the audio signal. The signal duration is proportional to a target size, whereas the sound volume – to the distance to a target. The detector doesn't distinguish between metals in this mode. If the coil is held motionless over a target for a while, the device is adjusted/adapts to the new conditions and the target signal disappears.
- › **CL (CLEAR ID)** This mode has all the advantages of Clear ID technology: a target signal is recorded into the detector's memory, processed and displayed on the screen as the coil passes over a target. The ground effect on the Target ID is minimized in this mode. The audio signal contains 2 tones. The low-pitched tone, as for ferrous metals, is always created by a target in real time, whereas a high-pitched tone is produced only when a target is identified by the detector as non-ferrous. In this mode, the detector may determine large ferrous targets or complex shaped objects as non-ferrous. This mode is recommended to be used while re-exploring the promising detecting sites and reducing the ground effect on objects with low Target ID values.



## NOISE CANCELLATION

This setting reduces the effect of ambient electromagnetic noise coming from sources such as power lines, cell phone towers and other metal detectors. The device is susceptible to this interference often resulting in false signals. Selecting one of the five channels (-2, -1, 0, 1, 2) slightly changes the operating frequency to minimize the effect of the noise source on the detector.

### MANUAL NOISE CANCELLATION

Manual tuning means that by scrolling through channel options you choose the one with the least amount of interference. Follow these steps:

Hold the coil motionless and parallel to the ground. This is important because interference may have a different origin or a greater effect if the coil is held vertically.

Choose the NOISE CANCELLATION setting in the **Basic Settings menu**.

Scroll through channel options one-by-one and pause for a few seconds to listen for interference and noise without moving the detector.

After listening to all the channels, select the one with the least interference and exit the menu.

### AUTO NOISE CANCELLATION

In AUTO mode, the detector scrolls through and listens to the channels by itself and then selects the one with the least interference and noise.

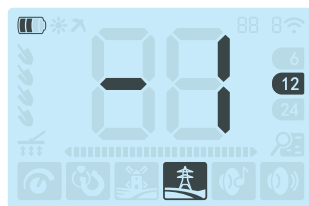
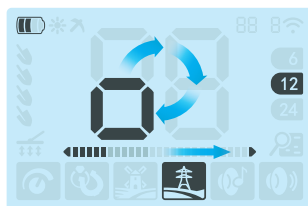
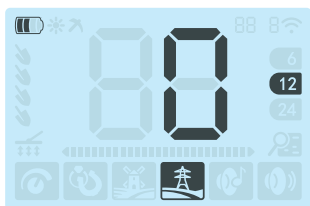
Hold the coil motionless and parallel to the ground. This is important because interference may have a different origin or a greater effect if the coil is held vertically.

Choose the NOISE CANCELLATION setting in the **Basic Settings menu**.

Press  to launch the process of Auto Noise Cancellation.

The progress is indicated on the scale at the bottom of the display, and by a series of short beeps. When this process is complete, the detector emits a signal and the automatically selected channel appears in the Target ID field on the display.

Press  to exit the **Basic settings menu**.







## TARGET TONE

This setting determines the number of different tones you will hear for different types of targets. When set to **t1**, the detector responds to all ferrous and non-ferrous targets with one tone. If set to **t2**, the detector responds with two tones: low and high for non-ferrous targets. Accordingly, if you set the **t3** or **t5** values, the range of tones for non-ferrous targets increases further to 2 and 4 respectively.

### TONE PITCH

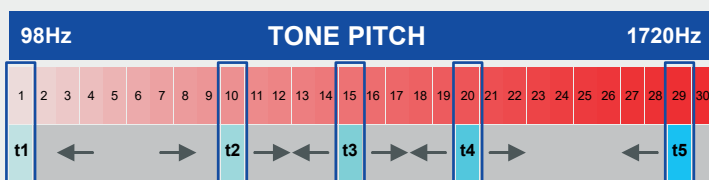


### TONE TYPE

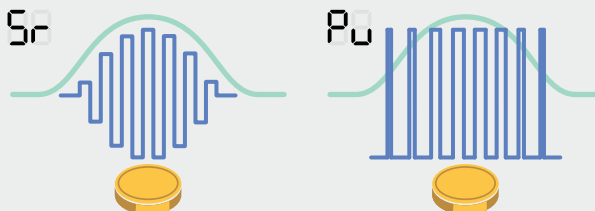


## TONE PITCH & TONE TYPE (Advanced Setting)

This advanced setting allows you to adjust the tone pitch for the specific conditions you are detecting in and select the type of target tone. You can set 30 different pitch values based on your preferences. It can be useful when you need to separate targets with similar Target ID numbers. The tone pitch values must meet the condition – **t1** ' **t2** ' **t3** ' **t4** ' **t5**.



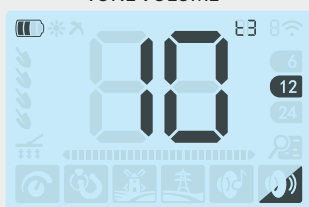
The **St** (TONE TYPE) setting determines the shape of the tone emitted by the device when a target is detected. If you set the value to **Sr** (Square), the audio signal will be shaped like a meander. By changing the setting value to **Pu** (Pulse), you will get the shape that looks like pulses with different lengths (PWM). The TONE TYPE is not applicable if the detector is operating in the SEARCH MODE – **Pa** and **CL**.



## SOUND VOLUME

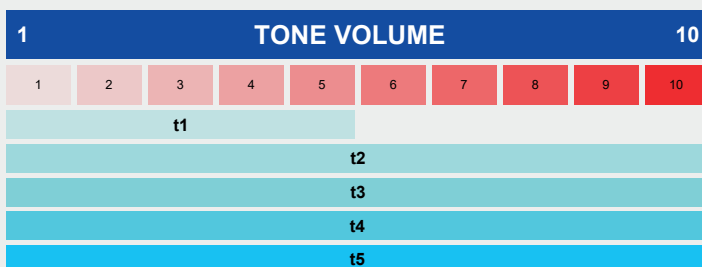
This setting adjusts the level of all audio signals emitted by the detector, making them louder or quieter. The numerical value of this setting is in the range from 1 to 10.

### TONE VOLUME








## TONE VOLUME (Advanced Setting)

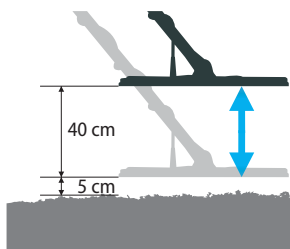
This setting allows you to set a separate volume level (1 to 10) for each step of the tone. This is a very handy feature when detecting in areas with a lot of ferrous targets. The setting gives you the option to make priority signals louder and to minimize, on the contrary, unwanted signals, thus significantly increasing the search efficiency.



**!** It's very important to always set the ground balance before starting the search. If the detector isn't properly ground balanced, its searching abilities may be reduced that way causing unstable operation and production of false responses.







### MANUAL GROUND BALANCE

1. Find an area where there is no metal.
2. Press  and switch the detector to the Ground Balance mode. The  icon will appear in the lower-left corner of the LCD, and a current ground balance value will be displayed in the Target ID field.
3. In a smooth motion, with no sudden movements and bumps, move the coil up and down at the height of 5 to 40 cm above the soil surface so that the coil passes over without touching it.
4. While moving, analyze the sounds emitted by the detector in this mode. If the device produces a low tone when you move the coil closer to the ground, increase the ground balance value using . If the detector emits a high tone, do the opposite action – decrease the value using . Press the buttons several more times until you get such ground balance value when the sounds become as quiet as possible or completely silent while the coil is swung over the ground.
5. Upon completion of ground balance, press  to continue detecting.



Ground balancing is a mandatory procedure that helps to reduce the detector's reaction on mineralized ground. By using the ground balance function, the device adapts to the soil conditions you are on, in order to minimize false detection signals caused by mineralization. The Ground Balance setting has a range from 0 to 99.




### AUTOMATIC GROUND BALANCE

1. Find an area where there is no metal.
2. Press  and switch the detector to the Ground Balance mode. The  icon will appear in the lower-left corner of the LCD, and a current ground balance value will blink in the Target ID field.
3. Enable the Ground Balance Autotrack by pressing , then the  icon will start blinking rapidly for about 10 seconds while the auto tracking is active.
4. In a smooth motion, with no sudden movements and bumps, move the coil up and down at the height of 5 to 40 cm above the soil surface without touching it.
5. While the coil is moving over the ground, the detector starts calibrating itself to the local ground conditions and fine tuning the ground balance value. Repeat this exercise several times until the sounds become as quiet as possible or completely silent while the coil is swung over the ground and you get a constant ground balance value on the LCD. Press  to end the process or wait until the Autotrack icon stops flashing, preventing the coil from abrupt movements at the same time. If there hasn't been enough time for a positive result, repeat the actions described in paragraph 3. again.
6. Upon completion of ground balance, press  to continue detecting.



**!** When the Sensitivity value is within the 35 to 40 range, the detector may produce false signals. That hinders the detector's ability to properly ground balance automatically. If such a situation occurs, switch to the manual mode and ground balance the device manually.

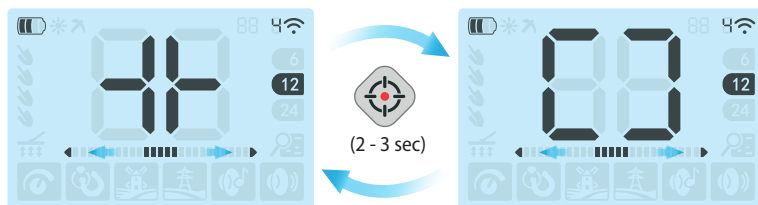
When the Ground Balance tracking is enabled, the device periodically adjusts the ground balance while detecting. This guarantees that the Ground Balance will always be set properly.

1. Press  to activate the tracking.
2. Once the mode is activated, the  icon will blink for about 10 seconds. During this time the ground balance tracking is performed in fast forward. When the icon stops flashing, the detector switches to the usual Autotrack mode.
3. To exit the mode, press  again.

**!** Since the detector automatically updates the ground balance in the tracking mode, multiple passes over a target may cause a target signal to reduce or disappear as well. It is best to turn off the Ground Balance Autotrack after target detection.

Once you get a signal from a target, activate a special mode that will help you identify the location of a target. This mode turns off the discrimination and switches the detector to static mode, that's why a target response will be heard even if the coil doesn't move. A target signal in this mode will be variable in both frequency and level of sound volume. The scale on the LCD additionally helps to visually identify the position of a detected target and estimate its burial depth.



The Veles has two PINPOINT modes: **Determining a target's precise location** and **Determining a target's size**. Press and hold  to choose one of these modes.



### TARGET'S PRECISE LOCATION

In this mode, the detector gradually decreases the sensitivity after each sweep, until you hear a very accurate target signal left. This helps to identify a target's precise location.

To determine the exact position of a target:

1. Sweep over the detected target several times to identify the approximate target location, then move the coil away from that area and press .
2. Move the coil slowly closer to the target keeping it at the same height above the ground. Identify the location where the detector produces the loudest sound and the scale on the LCD indicates maximum strength.
3. Keep this position in mind or mark it with a shovel. Then change your sweep direction – approach the target at a right angle to the original search line and repeat Step 2 above.
4. By doing so you'll quickly determine the target's exact location. Press  to exit.





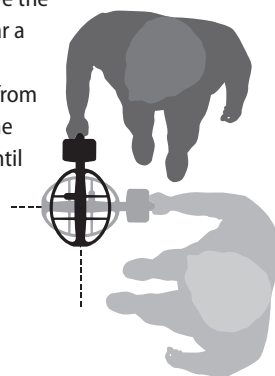
Do not activate the Determining a target's size mode right over the target as you can completely neutralize a target signal.



### DETERMINING A TARGET'S SIZE

After activating this mode, the sensitivity remains at a constant level. This feature is especially useful when detecting valuable items among unwanted targets.


To determine the size of a target:

1. Sweep over the detected target several times to identify the approximate target location, then move the coil away from that area and press .
2. Move the coil slowly closer to the target keeping it at the same height above the ground – you will hear a target signal.
3. Approach the target from a different angle to the original search line until you identify the approximate shape of a target.
4. Press  to exit.




The Veles gives you the ability to control the current running through the coil. There are two levels of current available, Normal and Reduced. Press and hold  to switch between the levels of the coil current. The Reduced mode is displayed on screen via . Each time you change to a different current, you need to ground balance the detector anew. The reduced current level is recommended for use when it's necessary to minimize the effects of ground mineralization on the performance of the detector.



While operating in an area where the soil is highly mineralized, the device will emit a corresponding sound and a flashing icon  will be displayed on the LCD screen. In that case, it's best to reduce the coil current to lower false detection signals caused by ground conditions.



The Veles LCD is equipped with a built-in backlight for operation in nighttime or other insufficient illumination conditions. It has 4 brightness levels. The last selected level will be saved in the detector's memory after it's turned off. When you turn on the device, the LCD backlight - even if it's switched off - also turns on automatically for a short period of time. Press and hold  for 2-3 seconds to turn the backlight on or off.

When the backlight is turned on, the icon will appear at the top of the screen and the brightness will increase smoothly to a set value. If you continue holding down while turning on the backlight, you'll be able to choose one out of the 4 brightness levels in approximately 3 seconds.



7.6 cm  
3"




15 cm  
6"



23 cm  
9"



>23 cm  
>9"

The depth gauge indicates the approximate depth of a buried target and has 4 levels in increments of nearly 7.6 cm (3"). The more  icons are shown on the LCD screen, the greater the depth of a possible buried item. The measurement accuracy depends on many factors such as the target type, soil conditions, etc.



The accuracy of depth gauge readings is significantly reduced in highly mineralized ground.

Target ID is the number produced by the device while identifying a buried object based on the electromagnetic properties of metals and physical dimensions of the item found. Ferrous targets mostly produce negative numbers (-9, -8...-1) whereas non-ferrous targets produce positive numbers (0, 1...90). The last detected Target ID value stays on the display for 5 seconds until another object is detected.

#### APPROXIMATE TARGET ID NUMBERS FOR DIFFERENT OBJECTS:

nail



kHz	TARGET ID
6	-4
12	-4
24	-3

foil



kHz	TARGET ID
6	0-2
12	2-5
24	6-12

bottle cap



kHz	TARGET ID
6	59-62
12	71-73
24	80-84

knife



kHz	TARGET ID
6	-4
12	-3
24	-3

jewelry



kHz	TARGET ID
6	8-9
12	15-16
24	28-29

coin



kHz	TARGET ID
6	39-43
12	54-62
24	71-73

arrowhead



kHz	TARGET ID
6	1-6
12	9-12
24	18-22

repousse



kHz	TARGET ID
6	10-15
12	22-30
24	42-47

large coin

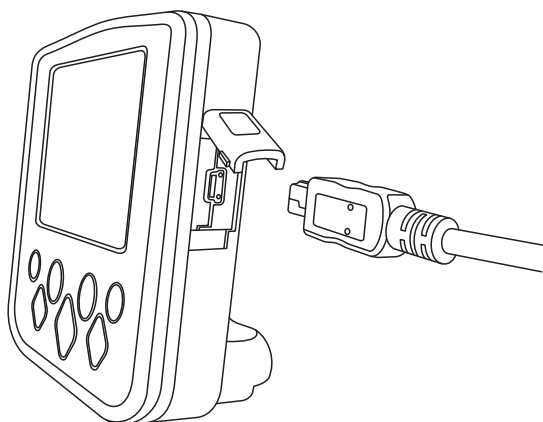


kHz	TARGET ID
6	63-84
12	83-86
24	85-88

The Veles is powered by a built-in lithium-ion battery. While in operation, the detector is capable of continuously monitoring the current battery charge level which will be shown on the LCD panel, as well as has a built-in automatic battery charge controller.

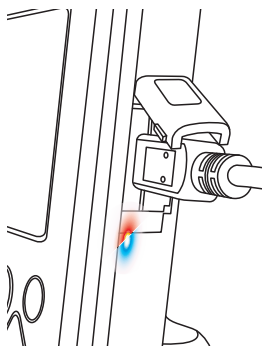
### THE BATTERY SHOULD BE CHARGED ACCORDING TO THE FOLLOWING STEPS:

1. Take the supplied charging cable and plug its end into the corresponding socket on the side of the control box.



2. Plug the other end of the cable into the power adapter supplied or any standard powered USB-A port.

3. The LED on the side of the front panel (near the socket) will flash red indicating ● the charging process. When the battery is fully charged, the red light will turn blue ●.




4. Wait until the charging is complete and disconnect the cable from the control box. the cable end from the power adapter first and then the magnetic connector from the control box. Insert a rubber plug into the socket on the control box to protect it from getting moisture and sand inside.

### BATTERY MAINTENANCE

Lithium-ion battery may degrade if they aren't in use for long periods of time. Fully charge the battery regularly, at least once every 2-3 months. However, be aware that the lithium-ion battery capacity decreases gradually with time, even under normal usage conditions. In view of this, the battery needs to be replaced every few years. Replacement batteries can be supplied and installed by an authorized service center.

#### Battery charge indicator:

 75% – 100%

 50% – 75%

 25% – 50%

 <25%

 <5% (charging required)



<2% (the detector will start to sound a warning alarm once the battery is discharged. When the battery level gets critically low, the device will turn off automatically.)



The charging time for a completely discharged battery is estimated to be about 5 hours if the charging adapter provides a power output of 5V and 1A. Less power from the power source may extend the charging time. If the detector is turned on while charging, the charge time will be longer.







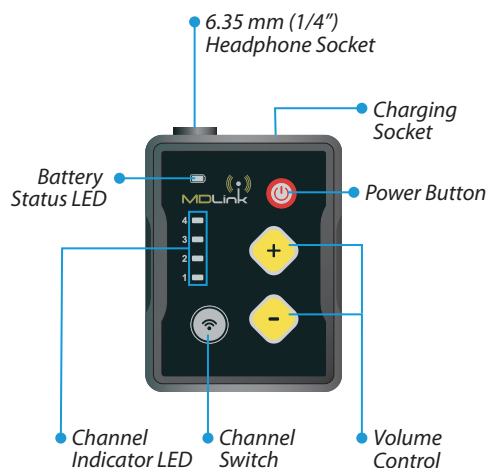
**Important!** To avoid battery damage, never charge a battery in an area with an ambient temperature of less than 5°C! Always allow the control box to first warm up to room temperature for a few hours, in order to then charge the battery under optimum condition.



To charge the Veles, the use of any quick charge AC power adapters is prohibited! It may cause damage or destroy the battery. Use the power adapter supplied in the package.

## HOW TO CONNECT YOUR HEADPHONES TO THE MDLINK MODULE:

1. Plug your headphones into a headphone jack on the MDLink module.
2. Turn on the detector and the module (sequence doesn't matter).
3. Quick press  to step through the channel selection.
4. Press and hold  for 2-3 seconds to activate the built-in transmitter. If you need to set the same channel as that on the module, don't release the button while turning on and wait for the channel rotation. Once the detector and the module are successfully paired, you will hear a beep sound and the LED light will flash constantly.
5. Use  &  on the module to adjust the volume to your preferred level.
6. Attach the module to your breast pocket or belt.



## Module Charging / Low Battery Warning

The MDLink module contains a rechargeable Li-Ion battery and a built-in charge controller.

To charge the battery, you need to plug one end of the USB/mini USB cable (supplied) into a mini-USB output on the module and the other end – into the USB power adapter (supplied) or a power bank (not supplied).

While being charged, the LED light will flash blue. Once charging is complete, the LED will turn off by itself.

When the module is turned on, the channel LEDs will flash briefly. Depending on the number of LED lights, you can get a rough estimate of the battery charge level (each LED represents 25%):

- One Light = 25%
- Two Lights = 50%
- Three Lights = 75%
- Four Lights = 100%

When battery level drops to roughly 5%, the battery LED on the module will start blinking red and you will hear a warning beep in your headphones.

When battery level approaches roughly 2%, the LED indicator on the module will be flashing red constantly and the beep will sound every 30 seconds until the battery is fully discharged.



The MDLink wireless audio system allows you to choose one of 4 channel options.

There are 10 levels of volume control. Once the maximum or minimum volume is reached, you will hear a low pitch sound indicating the upper or lower volume limit.

After turning off the MDLink power button, the current channel and volume level will remain in the module's memory.



If two MDLink wireless audio systems are located close to each other, they need to operate on different channels to eliminate mutual interference.

If the transmitter is disconnected from the module (due to the channel change or connection loss), you will hear a disconnect signal while the current channel LED indicator will blink in a repeating pattern.



The Veles is a modern metal detector with a feature that enables firmware updates (OTA -DFU) via Bluetooth. This update procedure could previously be complicated and tricky, but today your smartphone and access to the Internet are all you need to initiate the update process.

**i** Before starting the firmware update, check the battery charge level of the Veles control box. If it's extremely low, the device must be charged!

### HOW TO UPDATE FIRMWARE:

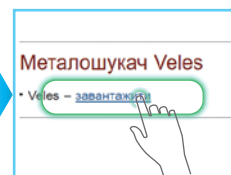
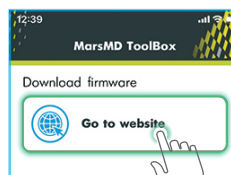
1

Download and install the **MarsMD ToolBox** app on your smartphone using the search or QR codes.



2

Launch the app, go to the website's **Download** section, find there a link to the archive file with the latest firmware version and download it to your smartphone.



3

Switch the Veles control box into the firmware update mode. For this purpose, hold down and turn on the detector using . The Veles control box is now ready for the firmware update.



If the update doesn't occur in approximately 2 minutes, the control box turns off automatically.

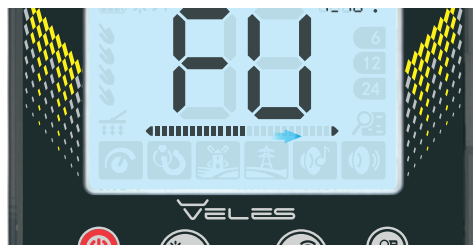
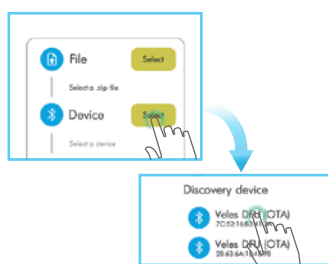
4

In the **Update firmware** section of the app, click the corresponding button and proceed immediately with the update process.

**4.1** Choose the firmware file you need to download.

**4.2** Select the metal detector among the Discovered devices list of available options.

**4.3** Click the **Start** button and wait for the download process to complete.



After the firmware update is successfully finished, the Veles control box turns off automatically.






To find out which firmware version is currently installed on your device, hold down before turning the detector on, and with it down, press the power button. The firmware version will appear briefly in the top right corner of the LCD screen.



The update won't occur if the detector already has a newer firmware version installed or if the firmware doesn't match the device.

All settings are saved in the Veles detector's memory after it's turned off and are automatically restored after it's turned on.

**TO RETURN YOUR SETTINGS TO THEIR FACTORY PRESETS, PERFORM THE FOLLOWING STEPS:**

1. Turn off the detector.
2. Press and hold , turn on the detector using .
3. Hold down  and wait until you hear a short confirmation beep and the Settings Menu briefly appears on the LCD.



TROUBLE	SOLUTION
The detector turns on, but turns off by itself	Ensure the battery is sufficiently charged.
The detector doesn't turn on	<ol style="list-style-type: none"> <li>1. Connect the supplied charger to the detector and wait until charging is complete.</li> <li>2. Disconnect the charging cable. If the detector turns off at once, the battery needs replacing.</li> </ol>
Erratic noises	<ol style="list-style-type: none"> <li>1. Check the coil cable, make sure all the contacts are clean.</li> <li>2. Ensure the nut on the coil connector is firmly tightened.</li> <li>3. Move away from the source of interference.</li> <li>4. Try switching to another operating frequency.</li> <li>5. Reduce the detector's sensitivity.</li> </ol>
No sound from the built-in speaker	Ensure the built-in transmitter is turned off.
No connection with the MDLink module	Ensure both devices are set to the same channel.
Unstable connection with the MDLink module	Change the mounting spot of the MDLink module. It should be located at a place where electromagnetic waves meet no barriers.
The shaft twist lock seizes	Rotate the twist lock in loosening direction and clean it out to remove dirt and sand.



The Veles is a high-quality electronic device, therefore proper care and maintenance is essential to ensure its continuous reliable operation.




#### VELES CARE:

- Do not leave the detector in extreme cold or heat (e.g. in a hot car) as well as in damp locations.
- Avoid getting sand and grit in the shafts and fastening parts (e.g. twist locks and coil assembly).
- If there is a noticeable scratch on the lower shaft, wipe it thoroughly with a damp cloth.
- Treat the detector coil with constant care, do not subject to strong shock and always remove traces of dirt.
- Remember that the detector coil is submersible whereas the control box isn't. Never submerge the control box in water!
- Loosen the coil attachment bolt when the detector isn't in use so that the coil mounting tabs don't experience excessive deformation to prevent cracks in the housing.
- Rinse the coil and the shaft with fresh water after use on the beach. Do not wash the control box by spraying or pouring water on it!
- Strictly follow the relevant instructions of this manual while charging the detector.
- Ensure that the coil cable is in good condition and not subject to excessive stress.
- Observe safety precautions when transporting or storing the detector. The device screen can get scratches or serious damage if not treated with due care. Use an LCD screen protector to keep it pristine.
- Do not expose the detector to extreme temperatures. Operating temperature range: 0°C to 35°C.

#### GENERAL CARE:

- Do not use solvents to clean the detector. Wipe down with a cloth using warm soapy water or a mild household detergent.
- Do not expose the accessories to moisture or excess humidity, keep them away from liquids.
- Do not open or distort the internal batteries.
- Strictly follow the relevant instructions of this manual while charging the accessories.
- Avoid charging the detector and accessories in extreme temperature conditions. The storage temperature range: 0°C to +50°C.
- Do not throw the detector or accessories into a fire as this may cause an explosion.

During operation, the detector is capable of continuously monitoring the coil condition to determine the coil disconnection or overload problem. If such a situation occurs, a corresponding warning message will be displayed in the Target ID field.

ERROR MESSAGE		CORRECTIVE ACTION
	OVERLOAD	Move the coil away from the source of overload.
	COIL NOT CONNECTED	Ensure the coil connector is plugged into the control box socket. Check the coil cable and housing for any visible signs of damage.
	COIL CONNECTED	Continue searching.

## VELES METAL DETECTOR

DETECTING RANGE*	Coin Ø25 mm	≈ 45-50 cm
	Aluminum can	≈ 80 cm
	Max range	≈ 120 cm
OPERATING FREQUENCY	Low frequency	5,7... 5,9 kHz
	Medium frequency	11,5...12,0 kHz
	High frequency	24,0...24,4 kHz
INDICATION	Visual	LCD
	Audible	5 tones (tone volume adjustment)
GROUND BALANCE	Manual	ground balance performed manually
	Automatic	ground balance performed automatically
BUILT-IN TRANSMITTER	Radio frequency range	2400 – 2483.5 MHz
	Power	+ 4 dBm
	Wireless transmission range	≤ 10 meters
SEARCH MODE	PA (PARK)	
	FL (FIELD)	
	tr (TRASHCAN)	
	bH (BEACH)	
	dP (DEPTH)	
	CL (CLEAR ID)	
LCD BACKLIGHT	4 brightness levels	
POWER SUPPLY	internal Li-ion battery	
OPERATING TIME	up to 24 hours	
OPERATING TEMPERATURE RANGE	0 °C to +45 °C	
STORAGE TEMPERATURE RANGE	-20 °C to +45 °C	
WARRANTY	24 months	
SHAFT LENGTH (MIN/MAX)	800 mm/1390 mm	
WEIGHT	1,320 g	

\* Detecting range is a maximum distance at which the device can still detect a metal object in the air. The value given is for the Goliath coil and the following settings: Gain – 40, Search mode – FL, Frequency – 12 kHz, FREQ – L3, Vol – 10.

## MDLINK MODULE

RADIO FREQUENCY RANGE	2400 – 2483.5 MHz
WIRELESS TRANSMISSION RANGE	≤ 10 meters
OPERATING TIME	15 hours
RF TRANSMISSION POWER	+4 dBm
SENSITIVITY	-89 dBm
AUDIO AMPLIFIER POWER	1 W
VOLUME ADJUSTMENT	10 levels
SIZE	70.2x52x30 mm
WEIGHT	64 g



