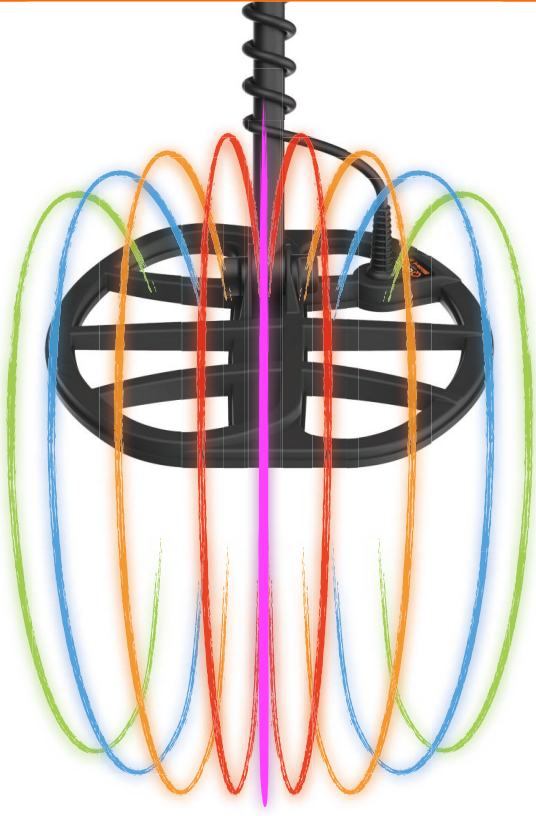




Advantageous of HyperQ

Thanks to the high performance STM32H750 series micro controller with high sensitivity and low noise ADC TLV320ADC5140, metal detectors equipped with HyperQ technology can transmit 4 essential frequencies from 7 to 80kHz to the ground, simultaneously. Key features include:

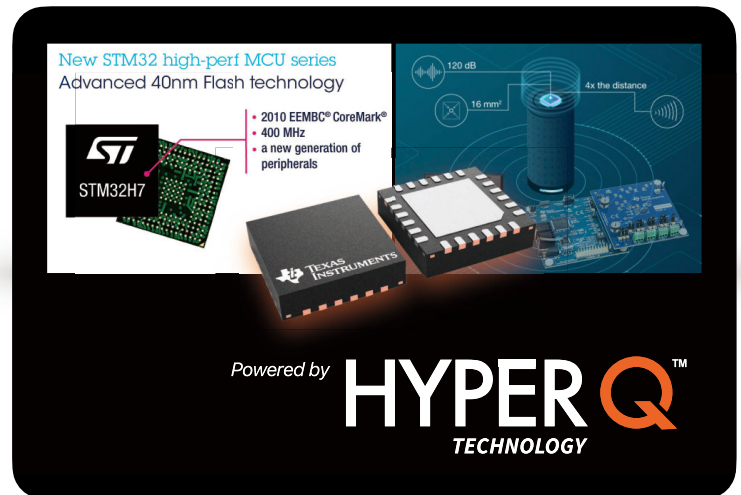
- Higher detection frequency.
- Highly accurate results.
- Auto noise canceling by 1 click.

The V series detectors are equipped with HyperQ, allowing them to operate with simultaneous multi-frequency. Additionally, users have the option to choose from specific single frequencies.

Adjusting the frequency only affects the current Search Mode Profile, leaving other profiles untouched.

How to Change the Frequency:

1 Select Frequency: Use the Frequency button to cycle through the available frequencies. The HyperQ symbol will be displayed when HyperQ(simultaneous Multi-frequency) is selected.



Single frequencies are shown in kHz, with options such as 5, 10, 15, 20, 40 kHz, 60kHz*.

2 Noise Cancellation: Perform a Noise Cancel to minimize interference (refer to page 25 in the manual).

Multi-Frequency Operation (HyperQ):

HyperQ operates across the entire frequency spectrum at once, enhancing the detection range. It is generally recommended for its ability to detect various targets while providing more stable and precise target IDs.

Single Frequency Operation:

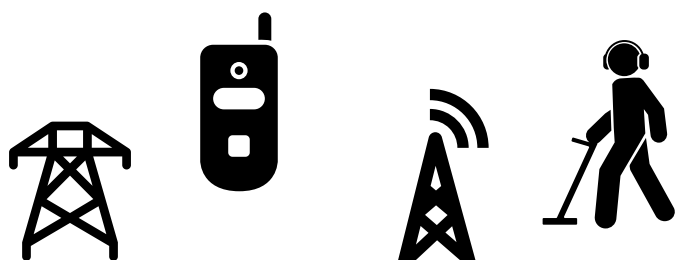
Certain situations might benefit from using a single frequency. For example:

For detecting larger, highly conductive objects at deep levels, 5 or 10kHz might be advantageous.

For finding fine gold jewelry at shallow depths, 40 kHz or 60 kHz* could yield better results in specific environments, like dry sand at a beach.

However, in areas with high Electromagnetic Interference where noise cancellation is less effective, using a single frequency might reduce noise. This might limit target sensitivity across a broader range, but it could be preferable in specific conditions.

By offering both multi-frequency and single-frequency options, the V Series detectors provide versatility to adapt to various detecting situations and preferences.



Electromagnetic Interference (EMI) Noise

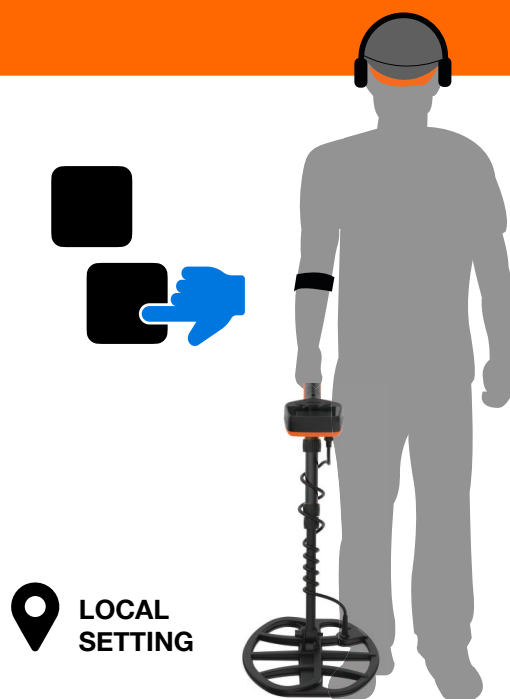
In metal detecting, 'EMI noise' refers to electrical or electromagnetic interference from sources such as power lines, electronic devices, or other detectors. This interference can cause false signals, inconsistent readings, reduced sensitivity, and difficulty in pinpointing targets, leading to confusion and potentially hindering the detection process.

Auto Noise Canceling and how it works

Auto noise canceling technology in metal detectors is a sophisticated process that enhances the accuracy of detection by filtering out unwanted interference. Initially, the detector "listens" to all available frequencies or channels, scanning the environment to identify where the noise or unwanted signals are coming from, much like scanning radio stations to find static. The detector's internal algorithm consists of specific rules and patterns that recognize the particular patterns resembling interference. Once identified, the detector picks the quietest frequency or channel, where the noise is least pronounced, and aligns itself to that frequency. By doing so, it minimizes responsiveness to the noise and maximizes focus on genuine metal signals. This process of scanning, identifying, and aligning ensures that the detector can operate in various environments, providing clear readings and reducing false detections, even in areas filled with electronic devices or power lines.

How to perform a Auto Noise Canceling

1. Hold the detector still and keep the coil off the ground.
2. Press and hold noise canceling button.
3. Wait about 10 seconds until the speaker remind with a beep and the LCD shows OK.



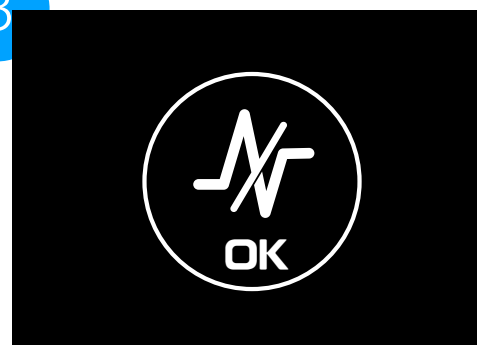
1

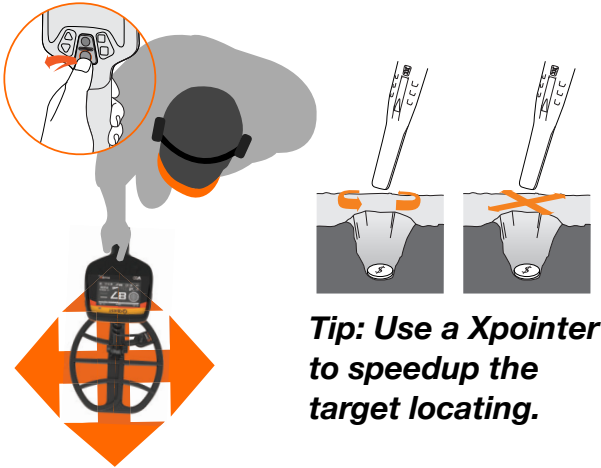


2

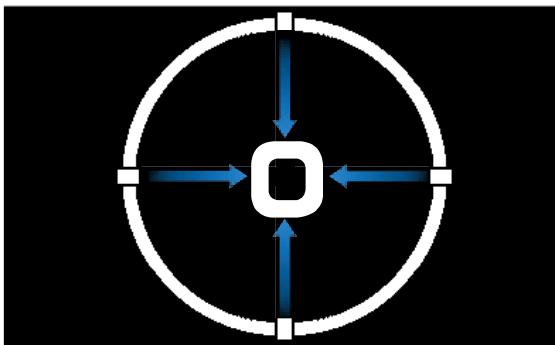


3





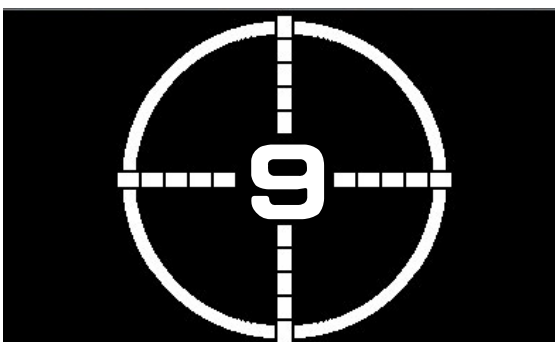
VISUALIZATION OF PINPOINTING



Initial status of pinpoint mode



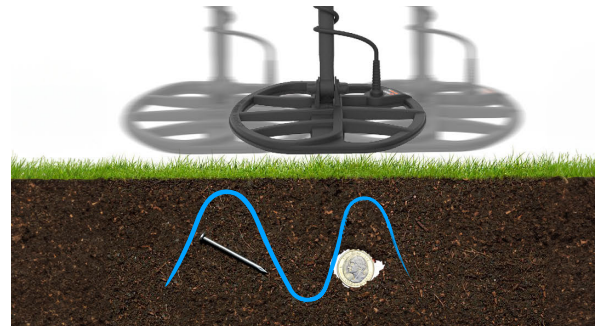
Middle signal strength



Strongest signal strength

Pinpoint mode produces a continuous tone with variable volume to help you accurately locate the target's location before you start digging.

It's essential for precise targeting and can be applied in two ways:



Finding a Target with Pinpoint Mode

Step 1: Move the coil away from the estimated target spot, then press the Pinpoint button to activate Pinpoint Mode. A circle with four dots and a one digit numeric number will be displayed on the screen.

Step 2: Keep the coil level with the ground and sweep over the target area slowly a few times.

Step 3: Identify the target's center by listening for the strongest signal or observing the Pinpoint Visualization on the screen.

Step 4: Memorize the location with most segments of the cross are active and the highest digit show on screen. The target will be positioned under the coil's center.

Step 5. Press pinpoint button again to exit

If pinpointing becomes challenging or the detector becomes noisy, deactivate Pinpoint Mode, then repeat from Step 1.

Note: When Pinpoint Mode is engaged, the discrimination pattern is momentarily turned off (i.e., All Metal mode is activated), and motion detection is disabled, so targets can be detected even if the coil is still.

GROUND BALANCE



Ground balance.

Ground balancing helps calibrate the detector to the local ground, eliminating false signals caused by mineralization or saltwater effect. The Ground Balance feature adjusts the detector to match the specific conditions of the local soil, thereby reducing false signals that can arise from mineralization or saltwater effect.

There are two ways to balance the ground:

1 Auto Tracking. The V Series metal detectors are equipped with intelligent automatic ground tracking, allowing them to operate without ground balancing on most minor mineralized terrains. This design offers flexibility and ease of use, especially for beginners or in areas with minimal ground mineralization.

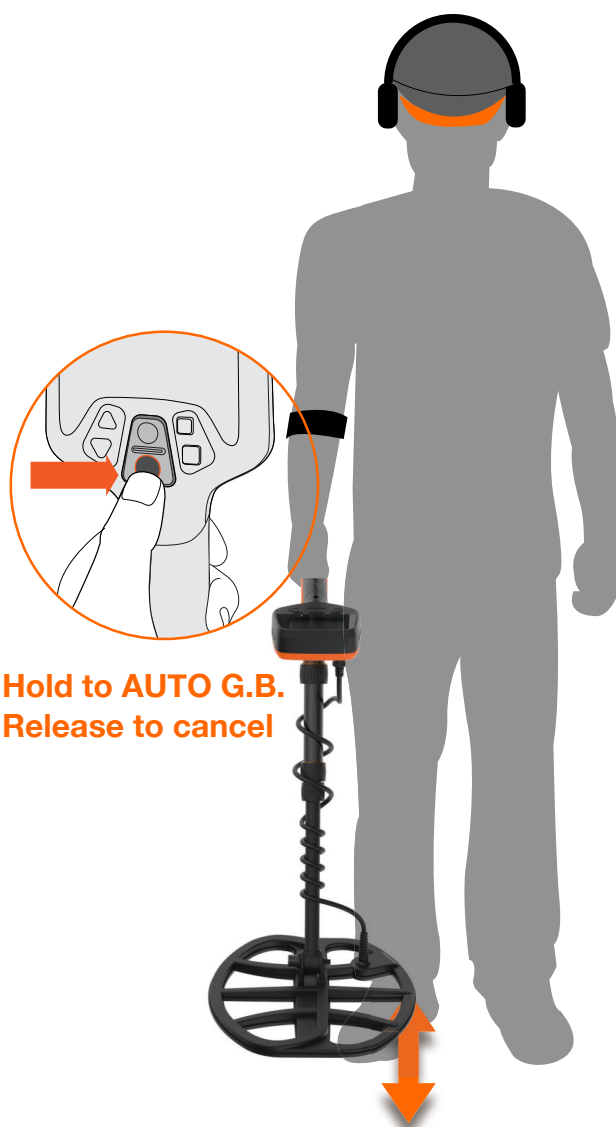
2 Auto G.B. In highly mineralized or salty grounds, or for more experienced users seeking extra depth and stability, Auto Ground Balance (Auto G.B.) becomes essential.

With the V Series, Auto G.B. can be performed in two ways:

- 1 Hold pinpoint button and pump coil on ground. The device automatically adjusts to the ground conditions. During the operation, the LCD will display the **Dynamic Ground Effect Ball** with a 2-digit real-time ground balance value. When the number stops changing dramatically and you don't hear much noise from the detector, that means it's ready. Then, let go of the Accept/Reject button
- 2 Just pump above ground when Gyro sensor feature "pump to GB" is on.

It's important to note that Ground Balance adjustment is local, meaning that only the current Search Mode Search Profile is affected by changes to this setting.

VISUALIZATION OF AUTO G.B.



**Hold to AUTO G.B.
Release to cancel**



Park Mode is the ideal setting for metal detecting in areas filled with metal trash, such as urban parks, recreational areas, or other places where people often gather. The recovery speed

is slightly tuned to detect in such trashy conditions. In these locations, you might find valuable items like coins and jewelry, but you'll also encounter plenty of metallic debris like aluminum foil, pull-tabs, and bottle caps. Here's what makes Park Mode a standout choice:

1. Versatility: It's not just for parks; it's also suitable for general uses, including detecting in freshwater.
2. Depth and Sensitivity: The default settings in Park Mode offer excellent depth and precise identification of targets, filtering out the junk commonly found in recreational areas. By using

Multi-Frequency, it becomes highly sensitive to various targets, ignoring most trash.

3. Frequency Options: You can choose single or HyperQ based on the target type, with HyperQ allowing for maximum depth and separation. This might create a slight noise, but it's typically manageable.

If you're new to an area or just starting with metal detecting, Park Mode is often the best first choice. Its combination of depth, sensitivity, discrimination, and adaptability makes it a reliable option for hunting coins and jewelry amidst modern trash.

Tips: Use FeScale feature to help identifying the ferrous/non-ferrous ratio of the target, helping you distinguish between valuable finds and trash metals.

Some recommended places to detect: School Playgrounds, Picnic Areas, Walking Paths, Historical Sites, Near Food Vendors Sports Fields, Parking Lots etc.

Field Mode is specifically designed for metal detecting in open pastures, cultivated fields, and areas rich in historical significance. This mode excels in environments that are often littered with ferrous trash such as iron nails, as well as coke—a byproduct of coal combustion from past human activities. The mode is especially useful for discriminating against these unwanted items while effectively identifying valuable finds like ancient artifacts and hammered coins.

One of the standout features of Field Mode is its adaptability to a wide range of target sizes, making it ideal for those who are on the hunt for a diverse set of items. When the frequency is set to HyperQ the detector becomes highly sensitive across a broad spectrum of targets. This heightened sensitivity allows for more accurate identification, even for objects that are located at

the edge of the detector's depth range. In comparison to single-frequency options, Multi frequency in Field Mode offers a distinct advantage in terms of both detection depth and target identification accuracy.



In essence, Field Mode provides an optimized setting that balances sensitivity, discrimination, and depth, making it your go-to option for challenging terrains laden with historical artifacts and varying types of metal trash. Whether you are an amateur treasure hunter or a seasoned archaeologist, Field Mode offers a tailored detecting experience that maximizes your chances of making valuable finds.



Beach Mode is meticulously designed for metal detecting in various beach environments, from dry sand to underwater conditions up to 15feet/

5M. The mode is especially useful in tackling the challenges posed by high salt content and black sand, which can interfere with accurate target identification. Unlike single-frequency detectors that struggle in these environments, Beach Mode employs HyperQ technology to minimize noise from salt and achieve maximum performance.

Another unique feature is the black sand detection. Beaches with black sand, rich in natural iron, make metal detection extremely challenging. In such cases, Beach Mode automatically senses the presence of black sand and displays high mineral+saltwater presence, allowing you to adjust your strategy accordingly.

This mode is ideal for saltwater beaches, offering a high Recovery Speed to minimize saltwater interference without sacrificing depth. Overall, Beach Mode provides a comprehensive solution for efficient and effective treasure hunting in some of the most challenging terrains.



Gold Mode is specifically engineered for the challenging conditions of mineralized goldfields. Unlike other modes, it features a continuous background threshold tone, aiding in the detection

of both shallow, small gold nuggets and deeper, larger ones. The audio alerts in this mode are dynamic; their volume and frequency change in proportion to the strength of the target signal, making it easier to gauge the size and depth of detected objects.

The mode allows for the use of high single frequencies like 40kHz or 60kHz, as well as Multi frequency.

By default, Gold Mode operates at a Recovery Speed of 5 and uses continuous tone. This configuration aims to pinpoint valuable targets amidst the mineralized ground noise. Whether you're searching for small, surface-level nuggets or deeper, larger pieces, Gold Mode offers a specialized, effective toolset for navigating the complexities of goldfield terrains.

GOLD MODE INTERFACE



Cache Mode is specifically designed for detecting deeper targets, making it ideal for treasure hunters seeking older, more deeply-buried items. By default, it comes with a Recovery

Speed set at 1, the lowest setting, which increases the detector's depth sensitivity. This enables the device to pick up signals from deeper objects that other modes might miss. However, the lower Recovery Speed also has its drawbacks. It makes the detector more

susceptible to false signals from mineralized soil or other kinds of interference. It also slows down the response time, which could make pinpointing smaller, closer targets more challenging.

Tips for Using Cache Mode:

Use Cache Mode in areas where you expect to find deeper, older targets, like historical sites. Due to the slow Recovery Speed, it's essential to move the coil more slowly over the ground to ensure accurate detection.



Operating the V series is quite straightforward. There are 2 levels of menus, categorized into 4 sections based on their functions. So you can access every function quickly without any guessing.

Click to enter the MENU.

- Use to navigate within the first level menu.
- Click the upper to enter the 2nd level menu.
- Use to navigate within the 2nd level menu.
- Click the lower to return to the 1st level menu.
- Click again to exit the MENU.

Settings with local mark will only affect the recent mode. Global mark means the setting is for every mode



LOCAL
SETTING



GLOBAL
SETTING



Discrimination patterns in metal detecting allow you to focus on specific targets and ignore others. Targets are identified by a Target ID number and segment on a scale from 0 to 99. You can turn segments On (accept) or Off (reject), creating a custom pattern for detecting treasure and ignoring trash. These patterns are specific to each Search Mode Profile, enabling tailored experiences for different hunting environments. By using discrimination patterns, you can make your detecting more efficient and enjoyable.



Click once to move triangle indicator forward or backward with one ID position.

Hold to move triangle indicator forward or backward at fast speed.

Click the upper to select or deselect one ID.

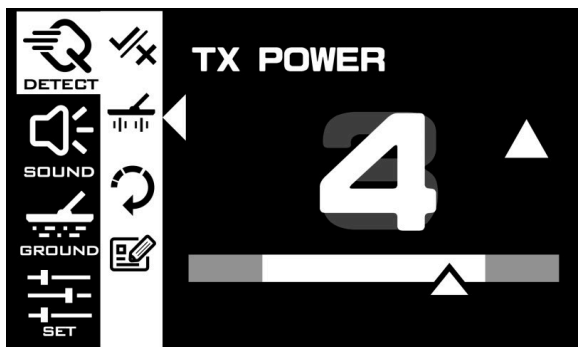
Click the lower to return to the 1st level menu.

Click again to exit the MENU.



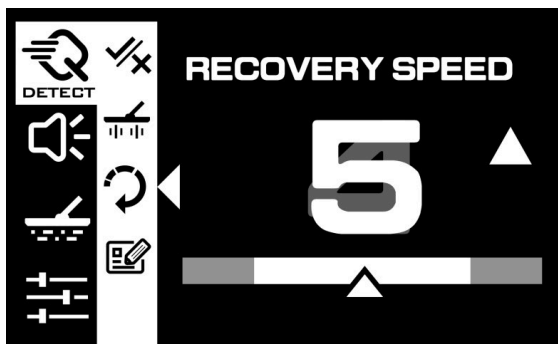
LOCAL
SETTING

DETECT



TX Power refers to the amount of power supplied to the transmitter coil, which creates an electromagnetic field around the coil. Effect on Detection: Increasing the TX Power increases the strength of the electromagnetic

field. This enables the detector to penetrate deeper into the ground and detect objects that are farther away from the coil. Differences with Sensitivity setting: TX Power controls the strength of the electromagnetic field, affecting the depth of detection and potentially the level of noise. Sensitivity controls how the detector responds to received signals, affecting the ability to detect small or weak signals and also influencing the level of noise or false signals.



Recovery Speed or so-called reactivity determines how fast the detector can recover after detecting one target to detect another nearby target. Importance: It helps in differentiating between multiple targets that are close together and assists in high-trash areas to find smaller valuable targets amongst larger iron trash. The default setting is 5, except CACHE mode and GOLD mode, which are set to 1

Fast Recovery Speed(8,9):

Application: Useful in areas with lots of iron, mineralized debris, or magnetic black sand, such as some beaches.

Benefits: Speeds up signal analysis, allowing the detector to separate non-ferrous targets next to ferrous targets.

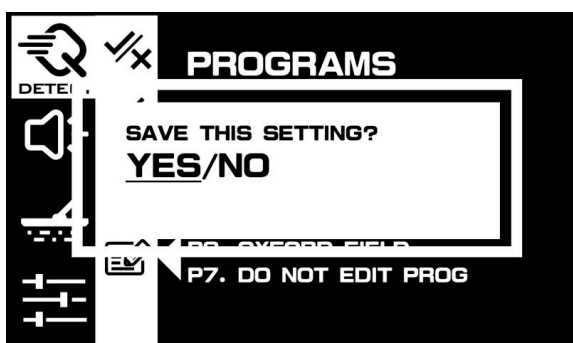
Drawbacks: Reduces detection depth and may affect Target ID accuracy.

Slow Recovery Speed(1,2):

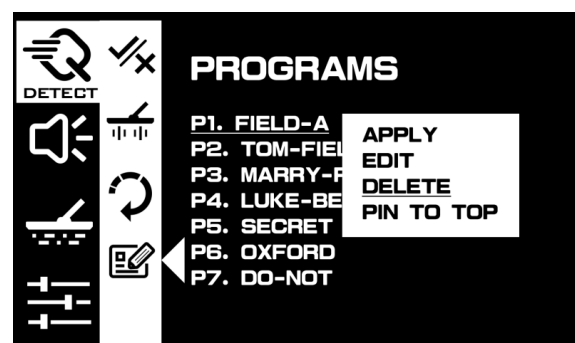
Application: Suitable for "clean" ground or beaches where targets are well spaced.

Benefits: Makes the machine more sensitive to deep targets, increasing the ability to detect objects buried further down.

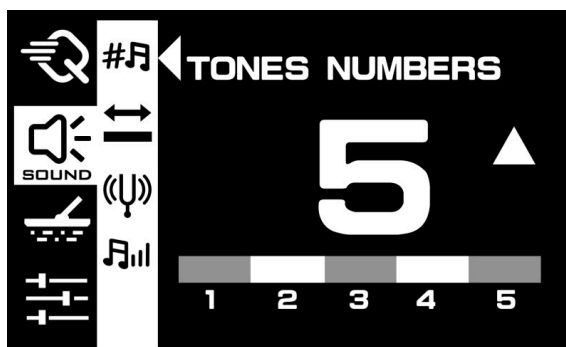
Drawbacks: Decreases the ability to detect targets in close proximity.



Programs can be saved to apply, edit, pin to top or delete. To save your setting, just press



and hold for 3 seconds activate the window.

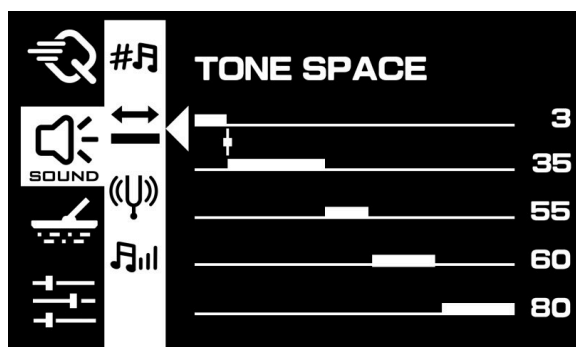


Tone Numbers. The ability to adjust tone numbers in a metal detector is highly influenced by personal preference and the specific goals of your treasure hunt. For example, you can set the detector to operate in '2-tone,' '5-tone,' or even in '99-tone' infinity mode, where almost each metal type is designated its own unique audio cue.

With the ability to fine-tune the audio responses based on what you're most interested in finding, you can essentially make the metal detector an extension of your own senses. This personalization makes your searches more efficient, reduces the amount of unwanted items you dig up, and overall enhances the joy and effectiveness of your metal-detecting adventures. The tone numbers you choose directly change the tone spaces quantity.

How to adjust Tone Numbers.

When you spot the Tone Numbers setting, Then click ▲ or ▼ buttons to adjust the quantity.



The **Tone Space** setting, which adjusts the end positions of each tone region, is a powerful tool for fine-tuning your metal detecting experience. This setting is especially useful for dictating when and how different types of materials trigger specific audio responses. For example, you can manually adjust the tone spaces to make 'coke,' a common but undesirable non-ferrous target with a typical Target ID of 1, fall into the ferrous range. By doing so, it would then trigger a ferrous audio response, helping you avoid digging up this nuisance item.

However, a word of caution: altering the tone spaces can also mean that some low-

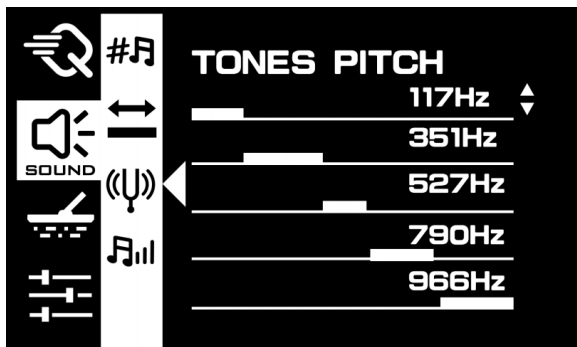
conductive, potentially valuable targets may give off the same audio cue as less desirable ferrous targets. This is something to keep in mind based on what you're hoping to find.

Another advantage of manipulating tone spaces is the ability to make more distinct separations between targets of varying conductivity levels. By finely tuning these spaces, you're essentially customizing your detector to be more attuned to the types of materials you're most interested in, thereby making your hunting more efficient and rewarding.

How to adjust Tone Space.

When you spot the Tone Space setting, click the upper ■ repeatedly to access the specific region you want to adjust. Then click ▲ or ▼ buttons to adjust the breaking point. Hold for fast movement. The bars on the standby interface will change accordingly.





The **Tone Pitch** Setting is a customizable feature that lets you set specific audio frequencies for different types of targets. This is incredibly useful for focusing on the items you're most interested in finding. By adjusting the pitch for each Tone Space, you can easily distinguish between targets that might otherwise have similar Target IDs.

For instance, if you're searching for gold coins and keep encountering aluminum tabs, you can

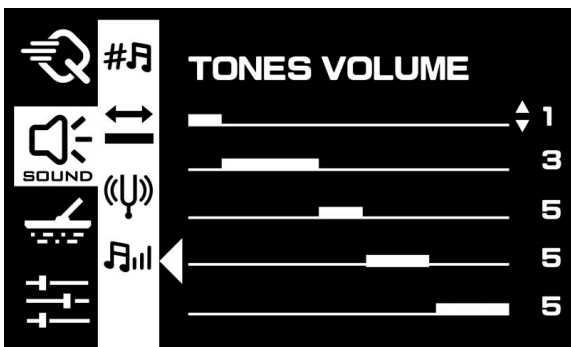
set distinct pitches for each. That way, as soon as you hear the pitch you've set for gold coins, you'll know it's time to dig.

The setting ranges from 90 to 1500Hz, giving you a wide spectrum of audio cues to choose from. Keep in mind that any adjustments you make to the Tone Pitch will only apply to the current Search Mode Profile you're using. This allows for tailored experiences across different search scenarios.

How to adjust Tone Pitch.

When you spot the Tone Pitch setting, click the upper  repeatedly to access the specific tone spaces you want to adjust.

Then click  or  buttons to adjust the level.



Tone Volumes is a feature to adjust the volume of each Tone Space on your metal detector, particularly when you're searching in areas with high iron content. This customization allows you to prioritize certain metal targets over others by setting their corresponding Tone Spaces to be louder. For example, if you're hunting for gold in discrimination modes, you can set the Tone Space for gold to be louder than that for iron, making it easier to distinguish valuable finds from junk.

By default, the detector is set to emphasize non-iron metals, making them louder. However,

you have the flexibility to alter this based on your specific needs. This is particularly useful when you're in an area where you expect to find a variety of metals, and you want to be sure you don't miss anything valuable.

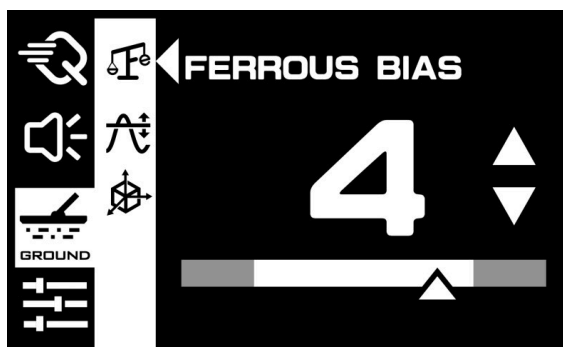
The number of different Tone Spaces you can adjust depends on your Tone Numbers settings. You can have up to five different Tone Spaces, each with its own volume level.

How to adjust Tone Volume.

When you spot the Tone Volume setting, click the upper  repeatedly to access the specific tone space you want to adjust.

Then click  or  buttons to adjust the level.





The **Ferrous Bias** feature is a valuable tool that allows you to accurately sort ferrous from non-ferrous targets. By adjusting the Iron Bias settings, you can fine-tune your detector's ability to identify large or complex iron objects, such as rusty nails or bottle caps, and easily reject them. This feature is especially useful when you're operating in HyperQ frequency.

The benefits of this feature:

Firstly, it gives you the power to discriminate against unwanted ferrous targets, saving you the effort and disappointment of digging up

trash. Secondly, it allows for a more focused and efficient hunt, tailoring your detector's capabilities to the types of items you're most interested in. Lastly, the setting enhances your ability to navigate challenging terrains and conditions, adapting to different levels of iron contamination in the soil.

The Iron Bias feature and FeScale function work hand-in-hand to optimize your metal detecting experience. Iron Bias allows you to fine-tune ferrous target identification, while FeScale enhances precision by visually displaying the ferrous to non-ferrous ratio. Together, they offer a comprehensive approach to avoiding unwanted digs and focusing on valuable finds.

How to adjust Ferrous Bias.

When you spot the Ferrous Bias setting, click ▲ or ▼ buttons to adjust the level.



While most modes have a default Threshold Level of 0, meaning it's turned off, the Gold Mode starts with a default level of 10 to aid in the detection of small gold pieces.

How to adjust Threshold.

When you spot the Threshold setting, click ▲ or ▼ buttons to adjust the level.

