# field test | RUTUS Alter71 V2 Gordon Heritage


## RUTUS Alter71 V2

**Specifications:**
**Operating Principle:** VLF induction balance
**Frequency:** 4.4kHz – 18.4kHz (71 different, in increments in 0.2kHz)
**Standard Search Coil:** 11"
**Wireless headphones:** Enabled
**Weight:** 3.6lbs
**Battery Type:** 6 x AA
**Warranty:** 2 years
**Price:** From £575.00

This month's field test is on the RUTUS Alter71 V2 **fig1** above. This metal detector is made in Poland and the second software version I've tested, the first featured in **The Searcher**, May 2017 issue, and this will be an updated version of the original report.

The RUTUS impressed me when I first tested it, giving enough settings and features to customise its performance, lifting into the premier division of professional metal detectors.

**You can adjust the working frequency from between 4.4kHz and 18.4kHz in 71 increments.** This makes this machine **extremely versatile** to different metals, target sizes and soil types.

### Updates

The software update adds extra versatility; here are the main (seven) improvements you'll find in Version 2 of the Alter71 RUTUS software;

**Display improvements –** Program Frequency and Sensitivity levels are now prominent in the display screen (bottom left).

**Dedicated custom program slots –** We now have user savable programs (Private 1 to 4), saved once you power down. These are displayed during use as 'P1' to 'P4' in the detect screen (bottom left). In the previous software version you could only modify the original 7 factory programs, and if you then wanted to reinstate the factory setting you would lose your custom program. So, the new software has dedicated custom slots to save your 'private' settings, independent from the often useful, factory programs.

Changes made to the factory settings are still automatically saved (at power down), so the extra 'private' slots also gives you extra places to save custom programs, to what you had in the previous software version.

**ID Types –** TID identification scales types have increased in this new software. 'ID Types' are different software driven modes of producing the TID scale displayed in the screen, eg. 'At 6kHz' gives a scale of 1-120 produced by transmitting a 6kHz frequency, the iron will be displayed at '1' and large copper alloy towards '120' end of the scale. The previous software had the ability of displaying TIDs as 'Real', 'At 6kHz' and 'At 12kHz'. These were all displayed as TIDs in a range 1-120. The new software adds three new TID ranges of 180 (-90+90). These new choices are designated as 'R -90+90', '6 -90+90' and '12 -90+90' in the 'Screen' menu.

**ID Gain –** This is a great new feature, added to control how TIDs of deep faint targets are displayed, often giving a TID where previously there was none. A high setting may not always be accurate, but I personally, welcome any TID rather than none.

**Languages –** if your first language isn't English or Polish, then the new software adds lot more choices including German and French.

**Iron Volume –** A great new feature is Iron Volume. Here you can control the volume of the rejected targets. This is great if you like to search in All Metal, and want to know when the conditions of the field you're searching change. Personally, I want to know if I walk into an area of extra iron, because they are the areas where habitation are and where you'll find the good stuff between the iron trash.

**Improved Ground Balance** (GB) and how it's displayed. You will also hear a series of beeps rating your GB, 3 beeps being perfect, 2 beeps okay or a 'grunt' sound if the GB is dodgy (Ground Balanced over iron etc.)

This upgrade is available on all new machines, and for existing users via the RUTUS dealer network. The nominal costs for the upgrade are to cover return postage.

Fig 2


Fig 3

## Assembly

The RUTUS Alter71 retains its excellent rugged build quality. Assembly followed the usual procedure; put together the three-piece stem to the correct length. Fit the coil to one end with a plastic nut and bolt, and then wind the lead up the stem taking up the extra cable. Then connect the connector to the rear of the control box. Install six AA batteries into the battery holder, and slide the holder into the compartment located under the arm-cup. There's a clipped detachable compartment door that retains the battery pack into position. **Fig2**

Battery life is stated at between 22 and 55 hours depending on the frequency chosen. Low frequency machines take more power to operate than high frequency ones. So, on the Alter71 the high frequencies will give you best battery life. My test machine was supplied with a full set of control box covers to keep the rain off.

## Controls

The control box consists of an LCD screen, six push buttons and an index-finger trigger-switch underneath. **Fig3**

On the left is the Power/Program/Tone edit button. This switches the detector on and off; short press on, a long press to switch off (while in detecting mode). It's also used to access the seven factory and four custom programs with a short press.

The final use for this button is to edit the tones of each of the target IDs.

To the right of the power button is the LCD screen, and below that are five more push buttons.

From left to right; Ground Balance/Page left button. This is used to start a Ground Balance while in the detecting screen. When in the menu it is used with the right hand Menu button to navigate through the three menu trees (Engine, Audio and Screen), this being the 'move Menu left' button.

While you are in the Detect screen, the 'Enter' button (centre) accesses the Sensitivity, Discrimination and Notch Discrimination menus.

The final button on the right is the Menu (right page) button, where you change most of the settings in three menus (Engine, Audio and Screen).

While in the main Menu the three buttons; left arrow, right arrow and enter, are used to navigate/adjust and enter settings (or programs).

The last control is a finger trigger, under the control box, which is used to pinpoint, exit and reset the All-Metal channel.

## Menu

The menu system is divided into three parts; Engine, Audio and Screen.

The Engine controls the performance of the Alter71, allowing users to customise the performance of the detector. In this menu you will be able to adjust; Frequency, Hot Rock (mineralisation falsing), Reaction (detecting speed) and Masking (controls iron falsing).

The second menu is Audio; with eight detector settings that can be customised. These control the Th level (Threshold), Th tone, Th Sens, VCO (yes/no), Th SAT, Audio Gain, Volume, Iron Volume, Tones and Wireless-Headphone feature.

The Tones section is an advanced feature, where you can choose one of three sub-menus; Coin, Relic or User. Each of these has three profiles (1,2 and 3), controlling the sounds the machine makes to different target ID's.

The 'Coin' and 'Relic' profiles are factory set; they can't be edited.

The three 'User' profiles are editable, allowing you to adjust the tones between 66 – 999Hz for each of the Tone ID positions. To edit select a User profile and press the power button (on/off button) to enter the Tone edit screen.

You should refer to the menu to understand which factory program uses which sound profile. For example, if you like the tones in the 'Fast' program, you can see Fast uses the 'Coin 1' tone profile. These profiles change the way the detector sounds.

The third and last menu operates the screen. Here you adjust the way the screen looks and how the information of a target is displayed (ID Type). You can also change the 'hold time' for TIDs (how long they display for), Backlight level and choose from 8 languages to display the text messages.

## Modes of operation

You can setup the detector to be a motion machine (Discriminating or All-Metal), or use it in a non-motion mode detector for deep items ... and even combine the two (Dual Mode) getting the best of both worlds.

**Motion mode with discrimination –** the Alter71 works as your traditional motion machine. You need to keep the coil moving over a target; for detection, discrimination and target IDs work accurately.

Setting up these modes needs a good understanding of which settings to adjust to enable the machine detection mode (program). For 'motion mode with discrimination' you to set 'Th Sens' to '0' and the 'Audio Gain above zero (1-60).

**All Metal Non-Motion –** In this mode extra care has to be observed to Ground Balancing, and done correctly, this is the deepest way of using the Alter71. Responses are All-Metal, you can't remove Audio responses from undesirable targets.

This mode is achieved by setting 'Audio Gain' and 'Th SAT' to '0' and the 'Th Sens' above zero (1-30).

**All-Metal motion –** By setting the 'Audio Gain' to '0', 'Th Sat' and 'Th Sens'


Detect screen


Menu tree

above zero, you will be running it as an All-Metal motion machine. This is a very sensitive way of using this machine, often sounding off on non-metal targets like ceramics and hot rocks.

**Dual Mode –** this is an interesting way of setting up the Alter71, allowing it to work as a discriminating motion machine while simultaneously running in the All-Metal mode. You achieve this mode by setting 'Th Sen's and 'Audio Gain' above zero.

## Factory programs

The real power of this machine will become apparent once you understand the menu adjustments, and you're able to build a custom program for your own personal detecting situation (sites and quarry).

To get you started while you gain a greater understanding of the Alter71, you are given seven factory programs. Each program sounds different, so by entering a program you are literally switching 'On' an entirely different detector.

The main difference between each of the programs is the operating Frequency, Audio Tones and Reaction setting (the recovery rate).

Programs with low Reaction setting combined with low frequencies give the incredible depth capabilities to larger objects. While programs with high reaction settings combined with high frequencies are very sensitive to small targets in trashy soils; where depth is not the driving issue.

**Ultra Deep:** this 5kHz (Reaction 1) program is used to search for large deep objects. Typically used in Poland to search for World War II relics like guns and munitions etc.

Here it could be a useful program looking for a hoard after finding scattered coins on the surface.

**Deep:** this 7kHz (Reaction 2) program is like the Ultra Deep mode, and is used mainly to search large deep targets.

**Big Silver:** 5kHz (Reaction 3) program is an ideal program for searching large non-ferrous target deep in pasture. It won't be a sensitive or quick program, so avoid using if there's a lot of iron contamination. If iron is prevalent; switch to the basic program on pasture.

**Basic:** this 8kHz (Reaction 3) program is an ideal starting mode giving reasonable depth and sensitivity in most situations. This is also a good pasture program is there's a lot of deep iron present.

**Coins:** this 15kHz (Reaction 4) program is ideal for finding coins in fields where the iron contamination isn't too great. As the iron level increases, it may be necessary to move to one of the faster modes. This is my favourite 'go to' program, as it gives a good compromise on speed and sensitivity on ploughed soil sites.

**Fast:** this 18kHz (Reaction 6) is a mode with a faster reactivity (Recovery rate) for searching for non-ferrous targets in ground with heavy iron contamination. This is a good program for habitation sites like Roman, where iron nails can mask good targets.

**Ultra Fast:** this 18kHz (Reaction 8) program is the one to use when the iron contamination becomes extreme. This has an extremely fast recovery rate, lessening the chance of a good target being blanked by iron targets. The trade off however is less depth to good targets.

**Personal 1 – 4:** These four customisable program modes are set at 8kHz (Reaction 3), but are intended to be the slots where you build your own programs.

**Top tip:** *Although these modes are very convenient quick starts, you still need to add your Discrimination the first time you use them. I would recommend you start with a Discrimination setting of 28. You can then lower it to allow some chatter from iron that will allow the user to discern large false iron targets (eg horseshoes).*

## LCD Screen

The easiest way to understand the LCD screen is to divide in two: upper and lower screen. The upper screen contains dynamic visual information including Discrimination bars and a Target ID graph.

The lower screen contains numeric, icons and written information.

When a target is encountered, a Target ID number is displayed in the lower screen and a fluid ID graph (in real time) is displayed in the upper screen. Continual swings over the target allows you build up the ID graph, giving you additional visual information to determine target identification.

To the left of the lower screen is where your current program and frequency are displayed, these being the most important things you need to know, without having to enter the menu to check. In the centre of the lower screen (and most prominent) is the TID panel. Whichever display mode you chose is

Fig 4

Fig 5

Fig 6

Fig 7

Fig 8

displayed as letter/number over the TID panel in the display (R, 6 or 12). To the right of the lower screen are the icons for battery charge level, radio transmitter (wireless headphones) and backlight.

**Getting started**

You start the Alter71 by pressing the on/off button. You are then prompted to raise the coil above the ground, and pull the trigger. **Fig4**

The machine then configures and sets the machines internal settings. **Fig5**

You are then prompted to do a Ground Balance, which you do by bobbing the coil up and down five times. **Fig6** Pull the trigger and you will see the ground phase number displayed, and you will hear a single grunt or a series of beeps rating your Ground Balance (three beeps is best).

**Top tip:** *It's important to make sure this number is what you expect for the ground you're searching. You may have ground balanced over a piece of metal. While using this machine on inland English sites, I expected a Ground Phase settings in the mid to high 80's. Reading in the 70s were usually signs I had Ground Balanced over iron.*

*This new software now has a series of beeps rating the GB of the detector. 3 beeps is best, two is okay but try again, and a single grunt/negative acknowledgement (nak) is telling you the machine was probably Ground Balanced over a metal target*.

Now press the on/off button with a short press to enter the mode selection menu. **Fig7**

Choose a mode to suit your site and quarry. I mainly detect ploughed fields for ancient coins, so the two modes I started with were **Coins** (for low trash sites) and **Fast** for iron infested soils. Next press the Enter button to set the Sensitivity, high as possible without too much chatter. Then press Enter again to toggle to the Discrimination menu. Add Discrimination by raising the number from zero, to blank unwanted trash. Iron is at the low number end of the scale, copper at the high end. I started with a setting of 28 to eliminate most iron targets.

That's it, start detecting!

**Conclusion**

The new software has enhanced the performance of the RUTUS Alter71. It was always a good machine, and the addition of the Iron Volume feature alone has made this machine even better.

The Alter71 should appeal to all detector users of intermediate to professional ability, the factory programs are good enough to make this a 'switch on and go' machine. But the real power is gained by understanding how it can be customised for any detecting situation, for any particular target group; be it a Roman coin on an ancient site, or military finds on a 20th century battlefield, this machine can do it all.

The more time you put into this machine, the more you'll get out. This pushes the Alter71 into the top-end professional market, and there aren't that many machines with this level of performance, and fewer still at this price point.

If you want a detector where you can control **all** frequencies/settings, and you understand how a detector needs to setup for different situations, then this is the machine for you ... a thinking detectorist's dream metal detector!

The RUTUS range is available from Detecnicks Ltd at www.detecnicks.co.uk and Leisure Promotions at www.leisure-promotions.co.uk

**For more on the Alter71 test please head to The Searcher YouTube channel.**