BLISSTOOL

LTC64X v3

User Guide

Version: USA/CP

Contents

Introduction

The BLISSTOOL LTC64X v3 is an induction balance metal detector that has the ability to go DEEP in even the harshest of soil conditions. Unlike other VLF machines, the gain does not need to be at high levels to penetrate great depths. In certain ground conditions, the BLISSTOOL will work better at lower gain settings. **Gain**, **GROUND MODE** and **DISCR DEPTH** settings all work together to achieve optimal performance.

The BLISSTOOL LTC64X v3 is designed:
- to have excellent depth of detection in all conditions
- to be used on any type of terrain
- to operate with or without a threshold
- to successfully detect non-ferrous targets in iron infested dirt, ceramics, stones and rocks
- to successfully detect non-ferrous targets in highly mineralized terrain.
- to have excellent depth regardless of the target conductivity
- to be very stable while being able to process ferrous vs. non-ferrous targets *extremely fast*
- to deliver pulse induction (PI) type depth while being able to discriminate out iron
- to operate in both discrimination and all-metal modes
- to be fully shielded against electromagnetic interference (EMI)
- with a standard 28 cm (11") DD waterproof search coil that is double shielded against electromagnetic interference. Optional coils are available.
-with gold plated pin connectors ensuring smooth operation and durability
-with a 3 year worldwide transferable warranty plus USA service centers.

Your BLISSTOOL LTC64X v3 comes with:

1. A standard 28cm (11") DD search coil (optional coils available)
2. LiPo battery 11.1V, 2200mAh
3. Automatic LiPo battery charger
4. User guide / USA manual
5. Warranty card
6. Transport and storage box
7. 3 year worldwide transferable warranty

Optional accessories:

- Car adapter for charging your BLISSTOOL
- 15” optional search coil
- 7” optional search coil (due in 2013)

Features

- Operating frequency 8.0 kHz Induction Balance
- Adjustable operating frequency (+/-60Hz)
- Operating mode: motion
- Audio discrimination
- Able to handle the harshest terrain and operate where other VLF machines have difficulty
- Standard 28cm (11") DD search coil
- Optional 38cm (15") DD search coil
- Optional 18cm (7") DD search coil (2013)
- Built-in LiPo battery 11.1V, 2200mAh – lasts 30 hours on one charge
- Automatic LiPo battery charger
- Manual and Automatic ground balance modes
- Coarse and Fine settings in manual ground balance mode
- Extremely fast processing allows good targets to be heard next to iron
- Adjustable sounds (frequency / tone) of target response
- Adjustable Silencer to reduce or eliminate "chatter"
- Adjustable audio Threshold and Volume control
- Discriminator switch with three independent modes of discrimination
- Adjustable Discrimination Level for detection/rejection of iron, tin-foil and low-grade non-ferrous metals (usually ground pollutants)
- Adjustable Depth of Discrimination
- LED low battery indicator
- 6.35mm (1/4") Stereo headphones outlet
- Single charge operating time: up to 30 working hours
- Consumption: min: 35mA, max: 100mA
- Detachable and adjustable shaft construction made from aluminum and carbon fibre
- Robust and comfortable handle and armrest
- Light Electronic block with a robust control box made from ABS & aluminum
- Electronic block (control box) located under the armrest
- Electronics fully shielded against electromagnetic interference
- Cable for the search coil is double shielded against electromagnetic interference
- Gold-plated pins for the coil connector
- Gold-plated pins for the battery charger connector
- Total weight in ready to use condition: just under 4 lbs.
- RoHS compliant
- Developed and manufactured in Bulgaria
- 3 year worldwide transferable warranty

Assembling your BLISSTOOL metal detector

1. The search coil is connected to the lower connecting rod utilizing the supplied spacers, plastic bolt and plastic nut.

2. The upper part of the lower connecting rod is attached to the lower part of the intermediate connecting rod via the small fixing ring, and adjusted to the appropriate length.

It is recommended that the mounting of the lower connecting rod to the intermediate connecting rod should be carried out following the sequence below:
– the small fixing ring has to be unscrewed loose from the intermediate connecting rod before inserting the lower connecting rod;
– the lower connecting rod is inserted in the intermediate connecting rod at the appropriate length;
– the small fixing ring is hand tightened until it is fixed.

2. The upper part of the intermediate connecting rod is attached to the carrier rod via the large fixing ring, and adjusted to the appropriate length.

It is recommended that the mounting of the intermediate connecting rod to the carrier rod should be carried out following the sequence below:
– the large fixing ring has to be unscrewed loose from the carrier rod before inserting the intermediate connecting rod;
– the intermediate connecting rod is inserted in the carrier rod at the appropriate length;
– the large fixing ring is hand tightened until it is fixed.

3. The angle of the search coil is adjusted by holding the coil horizontally against the ground surface, while the user is in an upright (working) position and is holding the metal detector by the handle. This adjustment is possible, if the plastic bolt and nut used for assembling the search coil with the lower connecting rod are not tightly fastened. After determining a comfortable angle the plastic bolt and nut should be hand tightened until snug. Do not over tighten or the plastic nut may become stripped.

4. The shielded cable of the search coil should be wound evenly and spirally up the lower and intermediate connecting rods and the end connector of the cable is plugged in and tightened into COIL connector plug that is located on the detector.

The cable, at its lower end near the search coil, has to have enough free length so that it is not damaged when the search coil is bent against the lower connecting rod, for example when the device is folded for carrying and transporting.

Additionally, the cable should be set in place with the included Velcro strips.

The incorrect insertion and/or the application of brute force while incorrectly inserting the connector of the search coil could lead to damage of the detector.

The detector should ALWAYS BE SWITCHED OFF before plugging in or removing the search coil connector, the LiPo battery charger or external headphones.

Description of Controls

The **VOLUME** on/off control turns on your detector and adjusts the volume level. **WARNING:** the volume output is very loud so be sure to start off testing your headphones without having them on your ears! Headphones are different with some having volume controls and some not - so be cautious when learning where to set your volume level. A **VOLUME** setting of just slightly more than "2" may be more than enough. Detecting without headphones and keeping the volume around "3", may be all that you need – the external speaker can become very LOUD.

The **FREQUENCY** control changes the operating frequency of the metal detector (+/- 60Hz) in order to avoid external interference caused by other metal detectors or other power sources. Normally keep set on MAX. If after turning your machine on you hear "chatter" adjust the frequency control until quiet.

The **GROUND MODE** switch toggles back and forth between **MANUAL** and **AUTO** ground balance.

The **AUTO ZONES** toggle switch is functional only when the **GROUND MODE** toggle switch is set to **AUTO**. As a general guide:

- Auto Zone 1: soils with black and/or negative mineralization
- Auto Zone 2: not mineralized or weakly mineralized soils
- Auto Zone 3: soils with a color and/or positive mineralization

The **GROUND RUDELY** control is for "coarse" ground balance control

The **GROUND FINELY** control is for "fine" ground balance control

The **THRESHOLD** control allows you to operate with a slight chatter or silent. Normal settings are "4-6" depending on user preference.

The **SILENCER** control is used for eliminating external noise caused by ground conditions or external interference caused by power lines, etc. Normal settings are between "0-2" when no interference is present. In more difficult dirt, a higher silencer level may be required to run stable.

The **DISCRIMINATOR** toggle switch adjusts the degree or power of discrimination. Level "I" is the strongest and used when there are a lot of contaminants in the ground and Level "III" being the weakest is used with less harsh conditions.

The recommended position of the **DISCRIMINATOR** toggle switch is:

- "I" - for terrain with a high degree of mineralization, terrain with a high content of ore and slag, and for terrain with hot rocks
- "II" - for terrain with a medium to high degree of mineralization
- "III" - for terrain with a low to medium degree of mineralization

Most often you should use the **DISCRIMINATOR** toggle switch on level "III" and you will still cancel out iron while hearing deep non-ferrous targets.

The **DISCR LEVEL (DL)** control adjusts the detection/rejection level of iron, tin-foil and low-grade non-ferrous metals (usually ground pollutants). To use the machine in an "all metal" mode, set to level "0" along with a **DISCR DEPTH** set to level "0".

The recommended settings for **DISCR LEVEL** are:

*- from "3–6" with the **DISCRIMINATOR** toggle switch in mode "I"*
*- from "3–8" with the **DISCRIMINATOR** toggle switch in mode "II"*
*- from "3–10" with the **DISCRIMINATOR** toggle switch in mode "III"*

Keeping the **DISCR LEVEL** at "5" will take out iron and still let you hear all non-ferrous targets. Even at the highest setting of "10", you will still hear larger pieces of foil, tin, nickels, etc.

DISCR DEPTH (DD) control is used for adjusting the specific depth of discrimination. It works in direct relation with the **GAIN** setting and we will get into more detail about this control in the Getting Started section of this guide.

GAIN control serves to define the input AC amplification of the signal from the detected object. The proper adjustment of the **GAIN** control provides increased depth of detection. This does <u>not</u> mean the higher you set your gain, the deeper you will go; on the contrary, in many conditions, lower levels of gain will allow you to go deeper. The level of gain works in direct correlation to the ground balance. Sometimes too much gain will not allow for a proper ground balance. Trying to push too much AC amplification into mineralized ground will overload the signal and actually reduce depth.

TONE control allows you to hear target responses at a level that is preferred by you. If you run your BLISSTOOL with an audible threshold, the tone control can also be used to find the most stable tone.

Getting Started

Before initial use, please charge the LiPo battery at least 4 hours (from 4 to 12 hours), using the automatic LiPo battery charger provided.

Now that you have your BLISSTOOL charged, assembled and ready to go, let's review the initial set up step by step. We will also have these steps on our website www.BlisstoolUSA.com in printable form so you can have them out in the field if needed. Your BLISSTOOL induction balance metal detector is unlike any other metal detector you have used before. In some ways it will seem similar, in many ways it will not. Find an open field without much trash or interference (power lines). With the machine in the OFF position follow these steps:

1. Set your controls:
   - Threshold: 5
   - Silencer: 2
   - Ground Rudely: 4
   - Ground Finely: 5
   - Ground Mode toggle: MAN
   - Auto Zone: I
   - Discriminator toggle: III
   - Gain: 4
   - Tone: 1
   - Discr Level: 0
   - Discr Depth: 0
   - Frequency: MAX

2. Plug in your headphones but do not put them on your head. You don't need to use headphones but it is recommended.

3. With your coil in the air at waist level and with your headphones still NOT on your head, turn on your machine by using the **VOLUME** control and set the volume to level "3". Lower your coil to the ground and listen for a "beep". Adjust your volume so that the "beep" is comfortable for you to hear when the coil is raised then lowered to the ground. Now put the headphones on. **IMPORTANT:** To avoid damage to your hearing ALWAYS MAKE SURE TO CHECK THE HEADPHONE VOLUME **BEFORE** PLACING HEADPHONES OVER YOUR EARS.

4. Flip your **GROUND MODE** toggle to **AUTO**. Now we are ready to ground balance the BLISSTOOL.

5. With your coil at waist level, lower the coil in a pumping motion, to about 2" above the ground and listen for a loud response. Adjust the **AUTO ZONES** toggle trying all three zones to see which one is the quietest. A slight "click" sound is OK but if your BLISSTOOL still beeps

loud in all three **AUTO ZONES** settings when the coil is lowered to the ground, you're not ground balanced. If this happens, lower your **GAIN** to "3" and repeat the same procedure. In some highly mineralized dirt you may need to lower your **GAIN** to or just under "1" in order to achieve ground balance.

If you cannot get your BLISSTOOL to ground balance in **GROUND MODE** AUTO, switch to **GROUND MODE** MAN (at this point the **AUTO ZONES** toggle position has no effect).

Put your **GAIN** level back to 3 to start the MAN ground balance procedure. Use the **GROUND RUDELY** control and adjust it while pumping the coil as described above. In harsh ground, it may not balance until the setting is up to "8" or "9". In moderate ground, it may balance between "5 – 8". If you cannot achieve proper ground balance lower the **GAIN** level in .5 increments and repeat the procedure until the unit is mostly quiet. Then use **GROUND FINELY** to fine tune, if necessary.

6. Now that you are ground balanced at the proper gain level for your BLISSTOOL to run smoothly, raise your **DISCR LEVEL** to "5" and your **DISCR DEPTH** according to where you set your gain. See below.

For Land: Gain setting relating to DISCR DEPTH (DD) setting	
Gain	**DD**
0	3-5
1	4-6
1-2	6-7.5
2-3	7-8
3+	7-9

If your DD is set too high relative to the gain level, good deep targets may "break up". It is recommended to use the higher end of the DD range while getting used to the sounds of iron and non-ferrous and use as little DD as possible the more familiar you become with your Blisstool.

If you would like to get rid of surface iron yet still be able to hear deep iron, keep your DD set lower than the suggested settings.

You are now ready to detect! Find a clean area and bury a coin at about 6" and bury a rusty nail at about the same depth in a different hole. Swing your coil over the nail and listen to how it "clicks and pops". Now go over the coin at different speeds and angles to hear how a good signal sounds.

General Pointers

The BLISSTOOL is a true Beep-n-Dig machine. There is no meter, no tone ID and no unnecessary "bells and whistles". Perfect balancing with no filters = extreme depth!

When the machine is set correctly, good targets sound loud and clear while iron will crackle and break up. If you think you are hearing a good target from one angle but it breaks up from all other directions, it is 99% iron.

Turning down the **THRESHOLD** can lower your sensitivity to some extremely deep targets. Keeping the **THRESHOLD** too high may make the machine a little noisy. It is best to start with the **THRESHOLD** level between "4-5" and after getting comfortable with the machine – you can then raise it to your preference.

All locations are different; but here are some suggested starting point settings:

	Gain	GB	Discr Level	Discr Depth	Discr Toggle	Threshold	Silencer
Salt Water Beach Dry Sand	7	Auto II	5	8	III	4-5	0-2
Salt Water Beach Wet Sand*	1	Manual to "-" both knobs	9	10	III	4	9-10
Ironized Soil Culpeper, VA	0-2	Manual 8+	5	6 - 7.5	III	4-5	2-3
Light to Moderately Mineralized Fields & Woods	5	Auto II	5	8	III	5	0-2

* keeping the Discr Level at 9 reduces the effects of salt water but you may not hear smaller gold chains

The BLISSTOOL processes very fast and will hear targets in iron infested areas. Throw some rusty nails down and go over them to hear the "clicking and popping" of the discriminator at work. Now drop a coin next to the nails and notice at what speed you are able to hear a good target next to and along with iron.

Try not to keep the **SILENCER** above "2". In the beginning, while you are learning the sounds, it's OK to set the **SILENCER** higher but you may lose some small deep non-ferrous targets.

A target at 3” will sound like a target at 12” because the signal is either there or not…. Sort of like a light switch being on or off. When you hear a loud beep, don’t assume it’s shallow. If your target repeats nicely but disappears when the coil is lifted a few inches off the ground, your target is either deep or very small. A coin size object that is only 4” deep will still sound strong even if your coil is 6” above the ground. Bury a coin and practice this technique for probable depth.

Less is more with your BLISSTOOL when it comes to **GAIN** and **DISCR DEPTH**. Don’t be concerned if your BLISSTOOL only operates well at a **GAIN** of “1”. You will still be going very deep. When in Virginia, detecting the Culpeper red dirt, we heard a deep signal with our **GAIN** set at “1”. We turned the **GAIN** up to “5” and the signal disappeared. It ended up being a round ball at about 12” deep. That old analogy applies here; too much **GAIN** in bad dirt is like turning on your hi-beam headlights in the fog.

If you need to run at a low **GAIN** level, make sure your **DISCR DEPTH** is not too high - otherwise deep non-ferrous signals will “break up”. (see Chart on page 8).

Wrap the cable as shown using the Velcro ties. If the cable flops around loosely, you can get false signals.

Battery

Your BLISSTOOL LTC64X v3 is equipped with a high quality, low weight and long life LiPo battery 11.1V, 2200mAh

The LiPo battery has about 800 cycles of charge-discharge (battery life), after which time it must be replaced with a new battery.

A full charge lasts 30 hours. With a life of 800 charge-discharge cycles, you are looking at up to 24,000 hours of operation before the battery needs replacing. LiPo batteries do not have a memory.

NOTE: The use of chargers other than the one designed for your BLISSTOOL may cause rupture or ignition of the LiPo battery and the metal detector which could cause a fire!

During the charging, the metal detector should be switched off. Leaving your detector ON while charging could damage the electronics and/or the battery.

CHARGING TIME:

Battery charging time takes from 2 to 12 hours, depending on the discharge level of the LiPo battery. The charger is automatic so when fully charged it goes into trickle charge mode, which protects the battery from over-charging.

The automatic LiPo battery charger is available in two versions:

3 Light Version - The LED indicators are RED when charging and GREEN when fully charged.

2 Light Version – While charging, only the RED LED is displayed; when fully charged, both the GREEN and RED LED's will be displayed simultaneously.

Low Bat LED is located on the front of your control box and will light up when the battery is getting low. You will also hear a periodic drawn out tone letting you know the battery is low.

Warranty Support and Service

The BLISSTOOL LTC64X v3 metal detector has a 3 year worldwide transferable warranty covering the components and any factory flaws.

If the electronic block (control "box") is tampered with or the integrity of the seals placed on the lid of the electronic block is opened, the warranty is not valid. The warranty excludes the battery and the battery charger, and is not valid for mechanical damages of the respective components and for damages done by user abuse or unauthorized access and repair (incorrect plugging of the search coil; damaging due to connecting of incompatible search coils, batteries, battery chargers or headphones).

Before returning your BLISSTOOL, please email us at info@blisstoolusa.com with your serial number and the purchase date written on the warranty card, so we can verify the warranty information and issue you a return authorization number. The customer must pay all shipping expenses to and from our repair facilities located at:

Blisstool USA Service Center
1085 Belle Ave
Winter Springs, FL 32708

We recommend using your original box for shipping and make sure the contents are well protected and secure.

The BLISSTOOL team has years of experience in metal detecting and design of metal detectors. BLISSTOOL thoroughly tests each metal detector before leaving the factory.

Contact information:

BLISSTOOL USA
web site: www.blisstoolUSA.com
Email: info@blisstoolUSA.com

RoHS Compliant

BLISSTOOL LTC64X is RoHS compliant
When RoHS compliant symbol is marked on your product it means that it is compatible with European Directive 2002/95/EC (RoHS, Restriction of Hazardous Substances Directive). With this directive, the EU recommended limiting the use and incorporation of harmful materials, such as lead, in the manufacture of electrical and electronic products.
In order to be RoHS compliant, the BLISSTOOL LTC64X uses high quality electronic components, unleaded tin for soldering and pcb board with a final coating of nickel-gold.

These green technologies ensure your metal detector is of the highest quality and built for long life. For comparison, the standard and cheaper technology that is not RoHS compliant includes the use of tin with a high content of lead and pcb boards with a final coating tin-lead.

BLISSTOOL LTC64X falls under the WEEE directive
When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC (WEEE, Waste Electrical and Electronic Equipment).
This EU directive governs matters relating to the collection, storage and recycling of waste from electrical and electronic products.
BLISSTOOL LTC64X is designed and manufactured with high quality materials and components, which can be recycled and reused.

In order to improve the product, BLISSTOOL reserves the right to make changes without notice.