



Tesoro
"The Name That Means Treasure"

LOBO Super TRAQ

LOBO SUPER TRAQ OPERATOR INSTRUCTION MANUAL

CONGRATULATIONS!

Your new Tesoro LOBO SuperTRAQ Metal Detector is designed to provide you with many happy hours of gold nugget prospecting and metal detecting. Ahead of you lie fascinating and exciting experiences as you take pleasure in the great outdoors searching for the most beautiful of all precious metals. I wish we could share these experiences with you, and all of us at Tesoro wish you the best of success. Your LOBO SuperTRAQ is capable of meeting your needs in a wide range of gold prospecting and metal detecting situations. As with any other metal detector, familiarity with this instrument is probably the limiting factor in determining how successful you can be. I recommend that you read this manual and understand fully how to operate this metal detector before attempting to use it in the field. As you become more familiar with your metal detector through practice, your rate of success will increase dramatically. The LOBO SuperTRAQ is a precision electronic instrument that will last for years if properly cared for. Treat it right and it won't let you down.

Good Hunting! Jack Gifford

INTRODUCTION

To be successful in gold nugget prospecting with a detector you must:

- Use a high-performance metal detector designed specifically for gold prospecting.
- Learn how to use your metal detector properly.
- Search where there is gold to be found.
- Be persistent.

The LOBO SuperTRAQ metal detector is designed for gold prospecting. It will find both large and small gold nuggets. It will find nuggets smaller than a BB under good conditions. It will not find gold dust. Because the LOBO SuperTRAQ is sensitive to all kinds of metals and has Discrimination circuitry, it is also an excellent machine for finding all types of buried metal objects such as coins, relics, jewelry, etc.

This OPERATOR Instruction Manual is designed to help you learn to operate the detector properly for maximum performance in various search conditions. Complete instructions on how to properly operate the LOBO SuperTRAQ are found in the two main sections: PART 1 - GETTING STARTED and PART 2 - OPERATING TECHNIQUES.

If you are new to electronic gold prospecting and operating metal detectors, we highly recommend reading and following the entire GETTING STARTED section to develop the "feel" of your detector. Then, study and practice the OPERATING TECHNIQUES section to get the best performance from your detector.

If you are an experienced detectorist and are familiar with the concepts of metal detecting, you may want to go directly to the Operating Techniques section. Whatever your prior detecting experience is, the more skilled you become at operating this detector, the more rewarding your results will be.

Please keep this in mind: If there is no gold where you are searching, it won't matter how good your metal detector is or how skilled and persistent you are. To learn more about where to search for gold, see your dealer for magazines and books on the subject.

PRODUCT DESCRIPTION

The LOBO SuperTRAQ features Tesoro's latest electronic innovations including the SuperTRAQ Computerized Ground Mineral Tracking System. State-of-the-art circuitry and advanced design make the LOBO SuperTRAQ one of the finest gold

Mineral Tracking System. State-of-the-art circuitry and advanced design make the LOBO SuperTRAQ one of the finest gold nugget metal detectors available. Expanded Discrimination circuitry lets the LOBO SuperTRAQ double as a high-performance coin and relic hunting detector as well.

The LOBO SuperTRAQ is a Transmitter-Receiver (TR) type detector that operates in the Very Low Frequency (VLF) portion of the Radio Frequency (RF) spectrum. The detector uses three control knobs and two toggle switches to provide full VLF capabilities with fingertip adjustment of all controls.

The performance of this detector will satisfy the requirements of the serious gold nugget prospector and detectorist, whether experienced or a beginner. At the heart of the LOBO SuperTRAQ is a totally new circuit board developed from Surface Mount Technology. This circuit board helps provide ultra-smooth operation in the most difficult soil conditions along with greater depth and sensitivity to smaller gold nuggets.

The features found on the LOBO SuperTRAQ make its power both versatile and easy to use. The SuperTRAQ System automatically performs troublesome “ground balancing.” There are two Operating Modes: All Metal and Discriminate. Slight motion is required in either mode so the searchcoil will detect a target located directly under it. The All Metal Mode tuning is Fast Auto Tune that readjusts the threshold quickly after encountering a target. The Discriminate Mode is Silent Search. The fingertip PINPOINT switch helps identify a target's exact location by momentarily switching to a No-Motion All Metal Mode without Auto Tune. The LOBO SuperTRAQ also features the added power and depth of Tesoro's MAXBoost Sensitivity.

The LOBO SuperTRAQ comes standard with a 10” elliptical widescan searchcoil for best all-around performance with good rejection of ground mineralization—a most important feature for gold prospecting. A variety of optional, interchangeable searchcoils are also available, further adding to the versatility of this metal detector.

GETTING STARTED - UNPACKING THE BOX

Your Lobo SuperTRAQ was shipped with these parts:

1 Upper Pole Assembly

Fully assembled, including upper pole stem with handle grip, padded arm bracket and control housing.

1 Middle Pole Assembly With Pole Lock

1 ABS Lower Pole Assembly

Fully assembled, complete with two friction washers, mounting screw, and thumb nut.

1 10" elliptical, widescan searchcoil with 8’ Cable

2 battery packs with 4 AA cell alkaline batteries each

1 Operator Instruction Manual

1 Tesoro Warranty Card

If any of these items are missing, contact the Tesoro Authorized Dealer where you purchased your detector *immediately.*

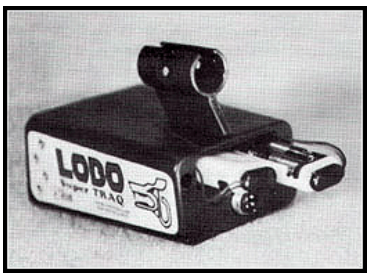


Assembly of the Lobo SuperTRAQ is simple and requires no special tools. Just install the batteries, mount the searchcoil on the lower pole assembly, connect the three pole assemblies, wrap the excess cable around the pole and plug the cable into the control housing. Finally, adjust the pole length and searchcoil angle and you're ready!

INSTALLING THE BATTERIES

Your LOBO SuperTRAQ is equipped with a special battery test circuit so that you can always be sure you are getting top performance from the detector.

To install or replace the batteries, first make sure the THRESHOLD control is set to OFF—turned completely counterclockwise past the “click.”

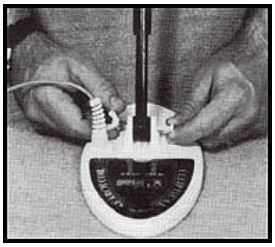


Remove the battery door from the back of the control housing. Do this by pulling the battery door's two nylatch plungers out until the door pops off.

Remove the battery packs. Place 4 fresh AA size alkaline cells into each pack, observing polarity as marked on the battery packs. Make certain the polarity snaps fit properly. A poor connection may cause the detector to act erratically or fail to operate completely.

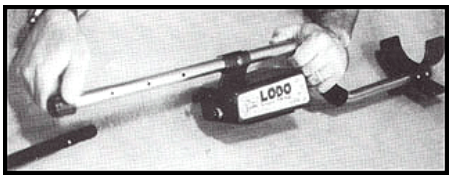
Place the battery packs into the battery compartment without pulling or stretching the battery lead wires. Replace the battery door by placing the door into its original position and then pushing in on the nylatch plungers to lock the door into place.

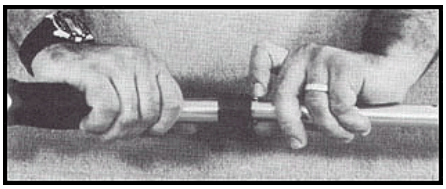
ASSEMBLING YOUR DETECTOR



1. Remove the mounting screw and thumb nut from the black nylon pole tip mounted on the end of the lower pole.
2. Insert the pole tip between the mounting ears of the searchcoil and align the holes of the pole tip and washers with those of the mounting ears. Note: The pole tip should fit very snugly into the mounting ears.
3. Insert the mounting screw through the holes in the mounting ears and pole tip—entering from the side opposite the cable connection.
4. Install the thumb nut on the mounting screw and tighten by hand. Note: Do not overtighten the thumb nut. It should be snug, but not too difficult to loosen up.
5. On both pole assemblies, turn the plastic lock nuts at the end of the poles completely clockwise to the unlocked position to allow one pole to fit into the other pole. On the middle pole assembly, depress the two spring buttons and slide the middle pole assembly into the upper pole assembly until the spring buttons click into the holes—locking the two assemblies into place. Tighten the pole lock to secure the two assemblies together. Slide the lower pole into the middle pole until the spring buttons click into the first set of adjustment holes. Turn pole lock to tighten—locking the assembly into place.

Note: The plastic lock nuts will be used to eliminate any “slop” in the pole joint by turning it counterclockwise to the locked position.



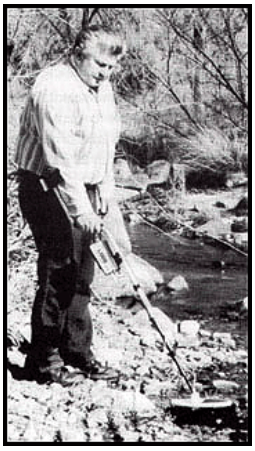


6. Wrap the cable around the pole leaving enough slack near the searchcoil to permit searchcoil adjustment. Note: Do not allow the cable to flop loosely over the searchcoil. Since the detector is sensitive enough to “see” the tiny wires in the cable, a floppy cable can cause false signals as the searchcoil senses the moving wires.
7. Plug the male cable end into the female connector on the control housing and tighten the cable thumb nut. You are finished!

Note: You will want to adjust the pole length and searchcoil angle to your preference.



ADJUSTING THE POLE & SEARCHCOIL



The pole length should be adjusted so that the detector does not become uncomfortable or tiring after long periods of use. The detector grip should rest in your hand with your arm relaxed, your elbow straight but not locked, with the pole extending out in front of you at the approximate angle shown in the photo.

You should be able to swing the detector back and forth in front of you—using relaxed shoulder movement—while keeping the searchcoil as close to the ground as possible. This swinging movement is often called a "sweep."

The searchcoil should not touch the ground during your sweep. The pole length should be adjusted to allow this without having to lift the detector with your elbow or shoulder. The searchcoil should rest about one inch above the ground while you are standing erect. The angle of the searchcoil should allow the bottom to be parallel to the ground.

The pole length is adjusted by depressing the spring buttons and extending or shortening the pole until the spring buttons click into the set of holes that give you the most comfortable pole length.

To adjust the searchcoil angle, simply loosen the searchcoil thumb nut slightly and move the searchcoil into the desired position by hand. Tighten the searchcoil thumb nut by hand so that the searchcoil will hold in place.

QUICKSTART - SELF-GUIDED TUTORIAL

The QuickStart is designed to help you use your new LOBO SuperTRAQ metal detector right away, even if you have never used a detector before. Just follow each easy step carefully and you will learn how to set up your detector for basic use. You will also be introduced to some important concepts such as All Metal Operation (ALL MET) and Discrimination (DISC) along the way.

Here's what you will need:

- Your fully assembled LOBO SuperTRAQ
- Three newer coins: a penny*, a nickel and a quarter
- A nonmetal table or counter surface
- Approximately 20 minutes to complete the QuickStart

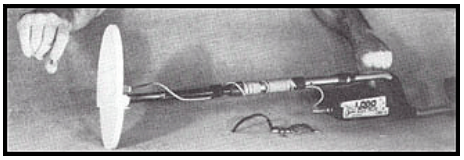
*must be 1984 or newer—made of zinc

Here's what you will do:

1. Your fully assembled Tiger Shark Detector.
2. An iron target (a small nail or screw will do), a nickel, a pull tab and a quarter.
3. A fine jeweler's screwdriver.
4. A nonmetal table or counter surface.

Before You Begin - Prepare for the QuickStart

Place your assembled LOBO SuperTRAQ on the nonmetal surface as shown in the photo below. Make sure there are no metal objects near the coil. Remove any jewelry from your hands and wrists.



IMPORTANT: Start out with these control settings:

- THRESHOLD control set to OFF
- Mode switch set to DISC
- Ground selection switch set to NORMAL SOIL
- SENSITIVITY control set to min
- DISC LEVEL control set to min

Step 1 - Perform an Audio Battery

- Test Turn the THRESHOLD control just past OFF

You will hear the battery test tone for a few seconds as the batteries are automatically tested. When the tone stops, the detector is on and the controls are ready for adjusting. NOTE: You should always perform the Audio Battery Test with Mode Switch set to DISC to avoid confusing the battery test tone with the ALL MET "threshold sound."

Function Demonstrated in Step 1: How the battery test tone will tell you the batteries are working each time the detector is turned on.

WARNING! The Audio Battery Test Sound is quite LOUD. Do NOT put your headphones on before turning on the detector in the field.

Step 2 - Adjust the SENSITIVITY control

- Turn the SENSITIVITY control from min to 8

This is a good setting to begin with each time you use your detector. Leave the control at this setting for the rest of the QuickStart.

Function Demonstrated in Step 2: Where to set the SENSITIVITY control for basic metal detector operation.

Step 3 - Adjust the THRESHOLD control

- Flip the MODE switch to ALL MET

When the threshold control is turned to approximately the “9:00 o'clock” position (just past OFF), there is no sound from the detector.

- Turn the THRESHOLD control clockwise

As the control gets to approximately the “12:00 o'clock” or “1:00 o'clock” position, you will begin to hear a slight sound. Turn the control a little further until you hear a clear tone. (Turning the control completely clockwise will result in a fairly loud noise!) Listen to the continuous, fairly even tone. This is called the “threshold sound.” You will hear the threshold sound only when operating the detector in All Metal Mode.

Turn the control back counterclockwise until the sound is barely audible. Leave the control at this setting for the rest of the QuickStart.

Function Demonstrated in Step 3: How to set the THRESHOLD control for basic All Metal operation.

Step 4 - Perform an air test in All Metal Mode

There are 3 sections in Step 4:

1. Identify the Target Response
2. Retune the Threshold (Auto Tune)
3. Use the Pinpoint Feature

Identify the Target Response

Hold the quarter in your fingertips and move the quarter from side to side about 12 inches in front of the searchcoil.

Gradually move the quarter closer to the searchcoil—as you continue to move it from side to side—until you hear the threshold sound increase. This increase in volume is called the “target response sound.”

Continue to move the coin to test the target response sound. As you do this, try varying the distance or angle of the coin. Try varying the speed you move the coin. Try passing it in front of the edge of the searchcoil and then under the center. Notice the differences in the target response sound with each change.

Repeat the test with each coin. Notice that the detector responds to each coin although the target response sound may vary, sometimes subtly. Your detector will respond to objects made of any kind of metal when the object is in the searchcoil's sensitivity area or “range.” A detector operating in a mode that responds to all types of metal targets is referred to as “All Metal Mode."

Retune the Threshold

Hold the quarter still about 2 to 4 inches from the searchcoil, in line with the searchcoil center. Listen to the target response sound for 1 or 2 seconds. Do not move the quarter!

Notice that the target response sound will decrease to the regular level of the threshold sound in just a few seconds. This change in sound is the threshold being automatically retuned. Now, move the quarter from side to side, going past the edge of the searchcoil each time. Notice the regular threshold sound is gone and the target response sound is now a “beep” that occurs when the target passes in front of the searchcoil center. This threshold retuning technique is used in the field to “pinpoint” the exact location of a object.

Take the quarter away from the searchcoil and wait several seconds. Notice the regular threshold sound returns—as the detector automatically retunes the threshold to its original level. Move the quarter close to the searchcoil momentarily and notice the loud continuous target response sound has returned also. Take the quarter away again. A detector operating in this way is called “All Metal Mode with Fast Auto Tune.”

Use the Pinpoint Feature

Hold the quarter still near the searchcoil for a few seconds and notice the detector automatically retunes itself. Moving the coin from side to side will result in the target response sound becoming a “beep” as demonstrated in the previous section. While holding the quarter still near the center of the searchcoil, press and hold the mode switch to PINPOINT.

- Mode switch held to PINPOINT

Then, while holding the switch to PINPOINT, try moving the coin from side to side. Notice that the normal threshold sound has returned and notice the target response sound is an increase in volume and not a “beep.” Take the quarter away from the searchcoil for a few seconds and try it again. Now, try this test with the different coins listening for the differences in the sounds the various coins make.

Holding the Mode switch in the PINPOINT position removes the Auto Tune until the switch is released. A detector operating in this way is referred to as “No-Motion Pinpointing” because motion is not needed to generate a target response. This technique is used in the field to “pinpoint” the exact location of a object.

Functions Demonstrated in Step 4: 1) How the All Metal Mode target response sound will vary depending on various factors such as what type of metal targets are buried in the ground, how deep they are, how fast you move your searchcoil and so on. 2) How the threshold is automatically retuned with Fast Auto Tune and how this affects the target response sound. 3) How the Pinpoint Mode removes the Auto Tune feature allowing motionless pinpointing.

Step 5 - Perform an air test in Discriminate Mode

There are 2 parts in Step 5:

1. Identify the Target Response
2. Use Discrimination

- Flip the MODE switch to DISC
- Leave the DISC LEVEL control set to min

Note: In Discriminate Mode, you will not hear the continuous threshold sound of the All Metal Mode.

Identify the Target Response

Hold the quarter in your hand and move the quarter back and forth about 12 inches in front of the searchcoil bottom.

Gradually move the quarter closer to the searchcoil—as you continue to move it back and forth—until you hear a "beep." This beep is the target response sound.

Continue to move the coin to test the target response sound. As you do this, try varying the distance or angle of the coin. Try varying the speed you move the coin. Try holding the coin still then moving it slightly. Notice the differences in the target response sound with each change.

Repeat the test with each coin. Notice that the detector responds to each coin although the target response sound may vary. Your detector can respond to objects made of any kind of metal if there is movement between the object and the detector. A detector operating in this way is called "Silent Search."

Use Discrimination

- Turn the DISC LEVEL control from min to max

Pass the quarter back and forth in front of—and close to—the searchcoil bottom. Notice the sound as the coin nears the center of the searchcoil. Now, try this with the nickel and then the zinc penny. Notice there is no sound with these two coins. The ability of a metal detector to ignore certain types of metal is called "discrimination." A detector operated in this way is referred to as "Silent Search Discriminate Mode."

Control settings to ignore most zinc and nickel objects can be:

- MODE switch: DISC
- DISC LEVEL: max

- Move the DISC LEVEL control from max to 7

Pass each of the three coins in front of the coil. Notice the quarter and the zinc penny now cause a target response sound.

Control settings to ignore most nickel objects can be:

- MODE switch: DISC
- DISC LEVEL: 7

- Now move the DISC LEVEL control from 7 to 4

Pass each of the three coins in front of the searchcoil. Notice all three coins now cause a target response sound.

Control settings to include newer US coins while excluding most iron objects can be:

- Mode Switch DISC
- DISC LEVEL 4

Functions Demonstrated in Step 5: 1) The motion-based operation and target response sound of Silent Search Discriminate Mode. 2) How the Discriminate Mode can be used to help determine the types of metal a target may be. By adjusting the DISC LEVEL control, you can select what metals your detector will ignore.

CONCLUSION

Well done! You have finished the QuickStart Guide and have operated many of the basic detecting features of the LOBO SuperTRAQ. You have also been introduced to the ideas of: "All Metal Operation," "No-Motion Pinpointing," "Silent Search Operation," "Target Response Sound," "Threshold Sound," "Retuning the Threshold," "Target Discrimination" and "Target Pinpointing."

You are almost ready to begin the journey into the art of metal detecting by actually using your detector to find buried metal. But first a word about air tests.

The air tests in the QuickStart are of limited value. Metal detectors perform differently in air tests than when actually used "in the field." Tesoro detectors are specifically designed to deliver the best performance in the field.

The CONTROLS and TUNING YOUR LOBO SuperTRAQ sections will give you more detailed information on how to set

The CONTROLS and TUNING YOUR LOBO SuperTRAQ sections will give you more detailed information on how to set your detector's controls for the best results—especially when selecting an operating mode and using discrimination.

Finally, the only way you can become truly proficient at using your detector to find gold nuggets and buried treasure is to use it in the field and learn from experience! However, we strongly suggest that you read this entire manual to become proficient with all of the features as you continue to use your detector.

You have the finest tool available, now all you need is the skill that comes from experience.

To Turn Your Detector OFF:

- Turn The Threshold Control To OFF
  Counterclockwise past the "click."

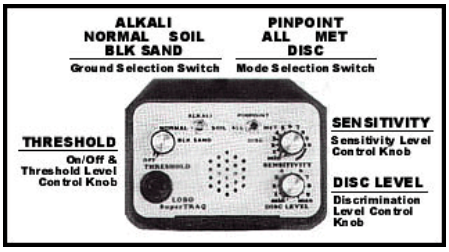
To Turn Your Detector ON:

- Make Sure The Mode Switch Is Set To DISC
- Turn The Threshold Control Past OFF
  Counterclockwise past the "click."

REMEMBER: DO NOT PUT ON YOUR HEADPHONES UNTIL THE AUDIO BATTERY TEST IS OVER!

OPERATING TECHNIQUES - CONTROLS

The LOBO SuperTRAQ has only five controls, all mounted on the front panel of the housing for fingertip adjustment. How these controls should be set for peak performance will depend on the search site conditions, mineral content of the soil and so forth. Use the information in this section as a basis for setting the controls on your detector. Using your detector in the field will allow you to learn the detector's response to various conditions and will guide you in fine tuning the detector's operating controls.



THRESHOLD

On/Off Threshold Level Control

This rotary knob control has three functions:

- Turns the detector ON and OFF
- Activates the automatic Audio Battery Test
- Adjusts the Threshold Level

Turning the THRESHOLD knob counterclockwise completely until it "clicks" into the OFF position turns the detector off by disconnecting the batteries from the circuit. NOTE: The detector should always be turned off when not in use.

Turning the THRESHOLD knob clockwise past the initial "click" turns the detector on and activates the automatic Audio Battery Test circuit. This test will give a sound, usually lasting several seconds, that indicates the battery condition. When the test is over, the detector's Threshold Level can be adjusted.

The threshold is the loudness of the background hum. Most users prefer this background hum to be just barely audible in lightly mineralized ground, or a little louder in moderate to heavy mineralization. A few users like to silence ground noise by setting the THRESHOLD knob slightly below the threshold of audibility, but this will cause loss of some nuggets that would otherwise have been heard.

NOTE: It is best to turn the detector on in Discriminate Mode. Since the Discriminate Mode is a silent mode with no continuous threshold sound, it will be obvious when the Audio Battery Test is complete. If you turn the detector on in All Metal Mode, the Audio Battery Test sound will be immediately followed by the threshold sound. This may make it difficult to hear the Audio Battery Test end and discern the battery condition.

IMPORTANT: The battery test tone can be VERY LOUD. So, it is best to turn the detector on BEFORE putting headphones on to avoid the loud tone.

ALKALI NORMAL SOIL BLK SAND

Ground Selection Switch

NORMAL SOIL— This is the mode you'll probably operate in over 95% of the time. In this mode, detector response is limited to a smaller range. This helps keep the unit from tuning out small metal targets and smoothes the sound caused by mineralization.

BLK SAND— This mode is similar to the NORMAL SOIL mode, but the sensitivity is reduced in order to accommodate extremely high concentrations of iron minerals such as magnetite black sand. The NORMAL SOIL mode will handle all but the most extreme conditions, and most users will never need to switch to the BLACK SAND mode. But it's there if you need it.

most extreme conditions, and most users will never need to switch to the BLACK SAND mode. But it's there if you need it, and it will handle the extreme soil that other machines can't.

ALKALI— This mode is similar to the NORMAL SOIL mode except that the SuperTRAQ circuitry is allowed to operate over a much wider range of mineral signals. The ALKALI mode may allow the ground cancelling to be slightly less effective than the NORMAL SOIL mode.

PINPOINT ALL MET DISC

Mode Selection / Pinpoint Switch

This combination toggle switch has two functions:

- Sets the operating mode: All Metal or Discriminate
- Momentarily activates the Pinpoint mode

This toggle has three positions: Downward (DISC)—it locks in place and sets the operating mode to Discriminate. To the center (ALL MET)—it locks in place and sets the operating mode to All Metal. Upward (PINPOINT)—it activates the Pinpoint Mode (a No-Motion All Metal Mode with no Auto Tune) for as long as the switch is held in position. When the switch is released, it spring returns to the center position and returns the detector to the Fast Auto Tune All Metal Mode.

So, this combo switch functions as Mode Selection Switch when used in the lower and center locking positions. It also functions as a Pinpoint Switch by pressing the switch completely upward and holding it in place.

SENSITIVITY

Sensitivity Level Control

Turning the SENSITIVITY knob clockwise increases the detector's Sensitivity Level. The level from min up to 10 is the normal range. This range corresponds with the normal Sensitivity on standard detectors. Turning the SENSITIVITY knob past 10 into the orange area puts the Sensitivity into the MAXBoost range found only on Tesoro detectors.

In lightly to moderately mineralized ground, you can usually set the SENSITIVITY knob to 10 (normal maximum). In highly mineralized ground, the noise from ground minerals will cover up sounds made from small or deeply buried targets if the SENSITIVITY knob is at 10—so, you will use a lower SENSITIVITY setting. A lower SENSITIVITY setting cuts back on target signals a little, but it cuts back on ground noise a lot more, allowing the target response to rise above the ground noise so you can hear it.

NOTE: The Sensitivity Level affects both operating modes (All Metal or Discriminate) and may require different settings for use in each mode.

DISC LEVEL

Discrimination Level Control

This rotary knob control has one function:

- Adjusts the Discrimination Level

Once the detector is in the Discriminate Mode, the DISC LEVEL control is used to adjust the detector's Discrimination Level. Turning the DISC LEVEL knob clockwise increases the detector's Discrimination Level and vice versa.

NOTE: When operating in All Metal Mode, the DISC LEVEL control is not used.

TUNING YOUR LOBO SuperTRAQ

No matter which operating mode you are planning to use when you search with your metal detector, the detector cannot be expected to perform up to spec unless the Ground Adjust procedure is correctly performed so the unit operates as completely mineral free as possible. With manually adjusted units, this can be a procedure which may need to be done every few feet. Fortunately, the LOBO SuperTRAQ has a micro controller based Ground Tracking feature which essentially eliminates this tiresome procedure. The LOBO SuperTRAQ's procedure is very simple and takes only a few seconds to do. It should be done each time you use the detector, no matter which mode of operation you plan to use.

Once the LOBO SuperTRAQ is properly ground balanced, it tracks the mineral conditions automatically as you hunt in the All Metal Mode. The automatic tracking is disabled when the detector is used in the Discriminate mode.

SuperTRAQ Ground Adjust Procedure

1. Select a spot on the ground where you feel certain there are no metal targets. You can search for this spot in the all metal mode prior to performing this procedure.
2. With the detector operating in the All Metal Mode, set the Ground Selection Switch in the Normal Soil position and the Sensitivity Control at 10.
3. Raise and lower the searchcoil (from about one foot off the ground down to about two inches above the ground) fairly rapidly until you suddenly hear no further changes in the Threshold sound as the coil is raised and lowered. Typically the LOBO SuperTRAQ will do the ground balance in about three or four up and down motions. The detector is now properly ground balanced.

Note: The Ground Selection Switch should always be left in the Normal Soil position since that is where it gives the best ground balance and smoothest operation. If you cannot ground balance in the Normal Soil position, then move the switch to

the Alkali position. This will give the circuitry a much broader window for ground balancing, but will yield rougher ground balance and increase the chances of small metal targets being rejected by the circuit. The Black Sand position should only be used when absolutely necessary since it cuts the gain of the input amplifier, which reduces the detector's sensitivity. If it is necessary to use the Black Sand position, the decreased gain will yield a better chance of finding a good target in the black sand.

Selecting the Proper Operating Mode

The choice of which operating mode to use is really quite simple. If you intend to hunt for gold nuggets, you need to use the All Metal Mode. If you are interested in hunting for relics or caches which may be partially or completely ferrous in nature, you can use either mode, but if Discriminate is used, keep the Discriminate Level Control set at the min position so that ferrous targets are detected. If you want to hunt for any particular class of items, but don't want to detect other unwanted items, you must use the Discriminate Mode. The Discriminate Level Control can be used to adjust the detector's response to wanted/unwanted targets.

Operating in the All Metal Mode

Before beginning to operate in the All Metal Mode, perform the SuperTRAQ Ground Adjust procedure outlined above.

When operating in the All Metal Mode, the SuperTRAQ circuitry will automatically keep the detector's ground balance set for maximum mineral free performance. It will resist tracking on small metal targets, but if for some reason the detector does become unbalanced, the simple act of raising and lowering the searchcoil several times will restore the ground balance.

The Ground Selection Switch should always be left in Normal Soil position unless the detector will not ground balance or you are operating in an area of heavy black sand. If the detector cannot properly ground balance, put the switch in the Alkali position. This will increase the amount of range the SuperTRAQ circuitry can balance out, but performance may be slightly less than when in Normal Soil position. The Black Sand position will cut the electronic gain of the input amplifier to prevent distortion due to the amplifier saturating from the large input signals caused by the black sand. It will decrease the overall sensitivity of the detector, but will make it much easier to find a target located in black sand.

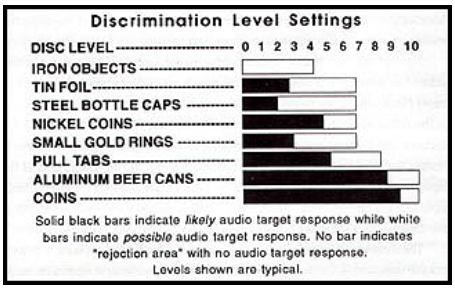
The Sensitivity Control should always be at the highest level possible to yield smooth operation. If the detector becomes somewhat unstable at maximum sensitivity, stability can be restored by lowering the Sensitivity Control level. Reducing the Sensitivity Control level in order to gain stability will not cause an enormous loss of depth. It will give a better ability to see small targets, effectively yielding better depth.

Operating in the Discriminate Mode

Before beginning to search in the Discriminate Mode, perform the SuperTRAQ Ground Adjust procedure outlined above.

In the Discriminate Mode of operation, the Threshold sound will no longer be heard, since the LOBO SuperTRAQ uses Silent Search Discrimination. The Discrimination Level Control will set the effective good/bad rejection level desired. See the figure below, Discrimination Level Settings, to determine the approximate setting to reject the unwanted targets. The searchcoil needs to be moving slightly with respect to the target in order to find targets in Discriminate Mode.

The Sensitivity Level control should be kept as high as possible without causing unstable operation or false target signals. The MAXBoost area (denoted by the orange colored area above 10) can be used, but in some conditions the detector may become too noisy or erratic for good operation. Turning the Sensitivity Level control down slightly to restore stability will again give an apparent increase in depth by making the detector's response easier to discern without having to separate the "good" signals from the "bad."



FIELD USE PINPOINTING

Pinpointing with the LOBO SuperTRAQ can be accomplished easily in either the All Metal Mode or the Discriminate Mode. The detector also has a pinpoint position on its Mode Selection Switch labeled PINPOINT, which may make pinpointing even easier. In this position, the automatic threshold tuning is eliminated, and the gain is reduced, so it will be easy to tell where the loudest target response is located.

Move the searchcoil back and forth and forward and backward until you get the loudest audio response. The target should be directly below the searchcoil center at the time of loudest response. If the audio response is at maximum over a very broad range of movement, momentarily stop the searchcoil in the center of this area and release the pinpoint switch until the detector retunes itself back to threshold. Then press the switch back to the pinpoint position and continue moving the searchcoil to find the loudest response. This retuning in the middle of the loud area will greatly reduce the area of response.

You may have better luck pinpointing by "X-ing" the target. To do this, sweep the coil from side to side over the target until you determine the coil position when the loudest response is present. Make a mental note of this position, which will give you one of the lines of the X you are about to make. Turn 90 degrees to this line and sweep back and forth until you again get the loudest response. The position of the coil at this time should give you the other line, and the target is at the center of the X formed by these two lines. Dig where the two lines intersect.

formed by these two lines. Dig where the two lines intersect.

Recovering Your Target

Even with the extreme power of the LOBO SuperTRAQ, pinpointing isn't enough to recover your target. Since most of the really tiny nuggets look just like the rocks and other pieces of soil they are found in, they can be very difficult to locate. Also most of your targets will not be gold, they will be junk, such as nails, tacks, iron, pulltabs, etc. You will need to dig them all to be sure you don't miss that occasional small piece of gold.

Your choice of a digging tool will be up to you, but most prospectors use a small pick axe and carry a magnet to help pick out iron targets. Some stores sell a pick axe with a magnet in the end of the handle.

When you have pinpointed your target, dig some of the soil back from the pinpointed area with your pick axe. Recheck with your detector to see if you have moved the target. If you haven't, dig some more dirt out from the pinpointed area. When you succeed in moving the target, try the magnet to see if you can pick up the target. If the magnet doesn't pick it up, you can try grabbing some dirt in your hand, and waving it over the detector's coil. However, the LOBO SuperTRAQ will probably read the fleshy center part of your hand as being a good target, so it may be necessary to use your fingertips or use two plastic scoops to try to separate the target from the dirt.

Pick up a scoop full of dirt and pass it over the searchcoil of the detector to see if the target is in the scoop. If not, discard the dirt, and try another scoop. When the scoop contains the target, dump one half of the dirt from the first scoop to the second scoop. Try both scoops over the coil to see which one contains the target. Discard the dirt from the scoop which has no target and continue dividing and checking until you get the dirt down to a small enough sample that you can visually pick out the target.

If your target is big enough that you don't have trouble separating it from the dirt, and if it is gold, then congratulations! Finding a large piece of gold makes the day a lot more enjoyable, but usually your gold targets will be small pieces.

BATTERY REPLACEMENT

The LOBO SuperTRAQ has an automatic battery test sequence with each initial power turn on. To check the batteries, simply turn the LOBO SuperTRAQ off for about five seconds, and then turn it back on. The battery test circuit will engage for about 3 to 5 seconds, with the audio output loudness indicating the remaining battery strength. As the batteries age, this tone will get quieter, and when you hear only a brief buzz or no output at all, it's time to replace the batteries.

To replace the batteries, pull the large knobs on the battery door on the rear of the unit. The entire door will pop out. Remove the battery packs from the detector, and then remove the batteries from the packs. Replace the new penlight batteries into the packs, observing the polarity indicators that are embossed into the insides of the packs. Slide the packs back into the detector, making sure the battery clip leads are connected to the packs. Install the battery door back onto the chassis and push the nylon fasteners into the holes on the chassis, making sure that the plungers are still pulled out. Then push the plungers back in to lock the door in place.

RECOMMENDED RECOVERY METHODS

GENERAL INFORMATION - CARE AND USE

If the detector is to be stored for a long period of time, it is best to remove the battery pack from the detector. This will prevent internal damage to the detector if the batteries should leak.

The searchcoil is waterproof and may be submerged in either fresh or salt water. Caution should be exercised to prevent water from entering the chassis, where it could damage the electronic circuitry. After the coil is used in salt water, the coil and lower stem assembly should be rinsed well with fresh water to prevent corrosion of the metal parts.

There are several good books to help the beginner learn how to use the detector, where to search and how to recover a target without damaging the environment. A good detectorist can recover a lot of finds and leave the area looking as though he had never been there. Above all, always fill your holes when you have recovered the target.

TESORO Metal Detectors are sold through independent dealers, who are almost always treasure hunters themselves. They can provide you with much needed information about how to use your detector, how to probe, plug and dig in your locale, and answer most of your questions about treasure hunting in general.

The use of earphones will benefit you in two ways. Most earphones will very effectively block out most of the ambient noise, such as traffic noise and wind noise, which will enable you to better hear the fainter signals caused by the deeper targets. Obviously, the older, more valuable coins will probably be deeper than the ones which were lost last week, so you should take advantage of anything that will help you hear the weaker signals. Secondly, using earphones will greatly extend the battery life, since it takes much less power to operate them. The LOBO SuperTRAQ is not equipped with a volume control, but does have a limited circuit in the earphone jack. If less volume is desired with earphones, you may want to use earphones with a built-in volume control. Any good 8 to 16 ohm set with ¼ inch stereo jack will do.

HAPPY HUNTING, and thank you for purchasing a TESORO.

SPECIFICATIONS

Operating Frequency	17.8 kHz
[illegible]	[illegible]

Searchcoil Type	Elliptical, widescan
Searchcoil Size	10" elliptical (length)
Cable Length	Approx. 8’
Audio Frequency	Approx. 330 Hz to 550 Hz
Audio Output	1½” speaker and headphone jack
Headphone Compatibility	¼” stereo plug
Weight (may vary slightly)	3.5 lbs. (may vary slightly)
Battery Requirement	Eight AA cells (alkaline)
Battery Life (typical)	20 to 30 hours (typical)
Optimum Temperature Range	30° to 100° F
Optimum Humidity	0 to 75% R.H.
Operating Modes	All Metal (motion required)
	Silent Search Discriminate
All Metal Tuning Mode	Fast Auto Tune
Pinpoint Mode	No-Motion All Metal (no Auto Tune)

METAL DETECTORIST'S CODE OF ETHICS

Always check federal, state, county and local laws before searching. It is your responsibility to “know the law.”

Abide by all laws, ordinances or regulations that may govern your search and the area you will be in.

Never trespass. Always obtain permission prior to entering private property, mineral claims, or underwater salvage leases.

Do not damage, deface, destroy, or vandalize any property, including ghost towns and deserted structures, and never tamper with any equipment at the site.

Never litter. Always pack out what you take in and remove all trash dug in your search.

Fill all holes, regardless how remote the location. Never dig in a way that will damage, be damaging to, or kill any vegetation.

Do not build fires, camp at or park in non-designated or restricted areas.

Leave all gates and other accesses to land as found.

Never contaminate wells, creeks, or any other water supplies.

Be courteous, considerate, and thoughtful at all times.

Report the discovery of any items of historic significance to the local historical society or proper authorities.

Uphold all finders, search and salvage agreements.

Promote responsible historical research and artifact recovery and the sharing of knowledge with others.

WARRANTY SERVICE

Your Tesoro metal detector is covered by a Lifetime Warranty, the terms of which are listed below. If your metal detector should require service, you may return it to the Tesoro factory at the address below.

LIMITED LIFETIME WARRANTY

This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

This instrument is warranted to be free of defects in material and workmanship as long as it is owned by the original consumer purchaser. This warranty is not transferable and is valid only if the warranty registration card has been completed and mailed within 10 days of purchase.

TESORO will, at its option, repair or replace any instrument covered by this warranty, without charge, except for transportation charges, at its factory in Prescott, Arizona.

This warranty excludes batteries, damage caused by leaky batteries, cable breakage due to flexing on body mount units, and wear of the searchcoil housing. Also excluded are instruments which have been abused, altered, or repaired by an unauthorized party.

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