





The name that means Treasure

Lobo OPERATOR INSTRUCTION MANUAL

CONGRATULATIONS!

Your new TESORO Metal Detector was designed to provide you with many happy hours of enjoyment in the most rewarding hobby I can think of – treasure hunting. Ahead of you lie fascinating and exciting experiences as you step into the past – uncovering artifacts lost by past generations. I wish we could share these experiences with you, and we wish you the best of success.

Your TESORO Metal Detector is capable of meeting your needs in any conceivable treasure hunting situation. As with any detector, operating skill and familiarity with this instrument are probably the limiting factors in determining how successful you will be. We recommend that you read this manual and understand fully before attempting to use the instrument in the field. As you become more familiar with your detector through practice, your rate of success will increase dramatically.

The TESORO Metal Detector is a precision electronic instrument, which will last for years if properly cared for. Treat it right and it won't let you down.

Good Hunting! Jack Gifford

GENERAL DESCRIPTION

Since most gold nuggets are very small, it has been very difficult to find them using normal detectors which were basically designed for coin shooting use. Historically, any attempts to discriminate against trash have caused a complete loss of the very small gold objects. Many trash items however have a response to the metal detector which is above the domain of gold nuggets. Careful use of the Lobo's discrimination mode, after finding the target in the All Metal mode, will allow rejection of much of this trash.

The Lobo is our newest and most powerful metal detector expressly designed for the purpose of finding gold nuggets, although it is certainly useful as a coin shooter since it is equipped with an extremely sensitive discriminate mode. Its strength will also allow its use as a relic hunter, or for most other hunting situations.

Two coil styles are available, both of them in elliptical packages. The Ellipticon searchcoil is a concentric style, and is joined by the new Tesoro Wide Scan elliptical. Both styles are extremely hot for gold, but the new wide scan is less effected by mineralization. Both style give a much wider sweep than round coils, but are narrow enough to fit into crevices and between rocks.

As with any detector, the familiarity of the user with the instrument will have a great deal to do with how successful the hunter is. We recommend that you read and understand this manual fully before attempting to use the instrument in the field.

Be sure to fill out and mail your warranty registration card to validate your warranty.

ASSEMBLY

The assembly of the Lobo is very simple and requires no special tools. The only assembly required is to mount the searchcoil to the end of the lower stem, and to install the lower stem and lock assembly to the upper stem.

1. Remove the screw and thumbnut from the pole tip in the end of the lower pole. Insert the pole tip into the mounting ears of the searchcoil, making sure that you don't lose the friction washers from the pole tip.
2. Line up the holes in the mounting ears with those of the pole tip, and insert the mounting screw.
3. Install the thumb nut on the screw and tighten by hand.
4. Depress the two buttons on the upper end of the lower stem, and insert the lower stem into the upper stem. Push the lower stem up so that the buttons click in the third set of holes.
5. Wind the searchcoil cable around the pole, and install the connector into the receptacle on the control housing.

ADJUSTMENT

The searchcoil angle and stem length should be adjusted so that the unit is not uncomfortable or tiring after long periods of use. The stem length is adjusted by depressing the spring buttons and extending or shortening the pole till they click into the holes that give you the most comfortable setting. The coil should be about one inch above the ground while standing erect

the holes that give you the most comfortable setting. The coil should be about one inch above the ground while standing erect. Adjust the angle of the searchcoil, so that the coil is parallel to the ground. Tighten the searchcoil thumb nut by hand to maintain this setting.

The arm rest on the rear of the handle can be moved forward by removing the screws and nuts, and reinstalling the assembly into the most forward set of holes.

SPECIFICATIONS

Operating Frequency	Approx. 20 kHz
Searchcoil Type	Concentric or Wide Scan
Audio Frequency	Approx. 625 Hz
Audio Output	1 1/2" speaker
Headphone Compatibility	1/4" stereo earphone jack
Weight (may vary slightly)	3 1/4 lbs.
Battery Requirement	12 volts DC 8 AA penlight batteries
Battery Life (typical)	15 to 30 hours
Optimum Temperature Range	30° to 100° F
Operating Modes	All Metal & Discriminate
Tuning	Automatic or Normal

NOTE: Due to the extreme amount of gain in the electronic circuitry, the Normal mode has been furnished with a very slow automatic tuning. This tuning is necessary to keep the detector from drifting up or down when tuned to threshold.

TESORO Electronics, Inc., reserves the right to modify or improve the design without further notice.

CONTROLS

The Lobo has five controls on its front panel, and a threshold adjust on its rear panel. The front panel controls are all readily adjusted with the index finger of the hand holding the detector.

1. **THRESHOLD CONTROL.** This control is placed on the back panel of the detector, since it requires very little usage. Once the control is adjusted to the desired threshold, it will not require frequent resetting.
2. **GROUND ADJUST CONTROL.** This control adjusts the All Metal mode sampling so that the Lobo ignores the normal ground mineralization. This control is a ten turn device, and it is sometimes difficult to feel when the end of the ten turn range is reached. The setting of this control is the most critical adjustment to do, but it is a very simple adjustment to make. Study the manual section TUNING and be sure you learn how to properly adjust this control.
3. **AUTO TUNE/MODE CHANGE SWITCH.** This switch is used to control the tuning mode of the Lobo, as well as to determine if the detector will change modes when the MODE switch is held in the RETUNE position. In the top two position, the Lobo will be in the AUTO tune mode, and will try to maintain the threshold sound. In the lower position, the tuning will be NORMAL, whereby the degree of autotuning is very, very small. In the upper position, the Lobo will remain in the ALL METAL mode when the MODE switch is held in the RETUNE position. This will enable you to hear the threshold sound when you are retuning. In the lower two positions, the Lobo will go to the DISCRIMINATE mode when the MODE switch is held in the RETUNE position. This momentary mode change will allow you to check your target in DISCRIMINATE, and then return to the ALL METAL mode when you release the MODE switch.
4. **MODE SWITCH.** This switch is used to determine the operating mode of the Lobo. The down position selects the Discriminate mode. The center position is the ALL METAL mode position, which is the primary operating mode for gold nugget hunting.. The upper position is the RETUNE position, which may cause the detector to shift to DISCRIMINATE while this position is held. Releasing the MODE switch from the RETUNE position will return the Lobo to the ALL METAL mode with the threshold sound adjusted back to suit the environment the detector sees as the switch is released.
5. **ON/OFF SENSITIVITY CONTROL.** The primary function of this control is to reduce the detectors sensitivity to those influences that make operation ore difficult for you. This control also turns the power on and off. When the knob is first turned on, the detector will test it's batteries for about 3 to 5 seconds, with the audio strength indicating the remaining power in the batteries.
6. **DISCRIMINATE LEVEL CONTROL.** This control is used to adjust the detector's response to unwanted metallic trash when used in the discriminate mode. At the lowest setting most iron will be rejected, but some will still be found. As the control setting is increased, more and more of the trash items will be rejected. If you are using this control while nugget hunting, be aware that almost all gold nuggets will be rejected prior to losing pull tabs.

TUNING

While the Lobo is useful as a coin hunter, it was designed as a nugget hunter, so the extra power available makes its GROUND ADJUST tuning one of the more critical settings you must make to obtain proper operation of the detector. Also, in most areas that will yield gold nuggets, you will be plagued by false signals caused by "hot rocks". Most of these false signals can be minimized or eliminated by constant attention to the GROUND ADJUST setting. Since the mineralization will

signals can be minimized or eliminated by constant attention to the GROUND ADJUST setting. Since the mineralization will change sometimes quite drastically within a few feet, you may need to readjust the control very often to maintain the proper tuning.

To achieve maximum performance from your Lobo, be sure to properly adjust the GROUND ADJUST and THRESHOLD controls in the ALL METAL mode. The settings of both of these controls will also affect the operation of the detector in the DISCRIMINATE mode, so be sure to adjust them properly, even if you are going to hunt only in the DISCRIMINATE mode.

TUNING IN THE AUTO TUNED MODE

1. Put the Auto Tune/Mode Change Switch in the Auto/All Metal position and the Sensitivity control on Max. Make sure that the threshold adjust gives just a weak beginning of sound.
2. Rapidly lower the searchcoil from about one foot above the ground to about two inches above the ground. Listen to see what effect this has on the threshold sound. If there is no change, you are properly tuned. If the sound decreases as the coil is lowered, and then comes back to threshold as the auto tuning recovers, you should turn the Ground Adjust control about one half a turn clockwise. Repeat the step of lowering the coil rapidly again. If the sound increases before the auto tuning recovers, you will need to turn the Ground Adjust control about one half a turn counterclockwise. Repeat the step of lowering the coil rapidly again.
3. Keep repeating the lowering of the searchcoil, and making such adjustments to the Ground Adjust control until the response is reversed. Then turn the Ground Adjust control back in small increments until you find the setting where there is not a change in the threshold sound as the searchcoil is lowered toward the ground.
4. You are now tuned properly, and only need to begin your search. Keep monitoring the tuning by raising and lowering the searchcoil every so often. Readjust the Ground Adjust as necessary to keep the detector properly tuned.

TUNING IN THE NORMAL MODE

1. Put the Auto Tune/Mode Change Switch in the lower position, with the Sensitivity control in the Max position. Be sure that the threshold control is adjusted to just yield a faint beginning of sound signal. Hold the searchcoil about one foot from the ground, and if the threshold has changed, momentarily lift the Mode switch to retune back to threshold. Then lower the searchcoil to about two inches above the ground. Remember that you cannot hear the Threshold sound while the Mode switch is in the Retune position.
2. If there is no change in the threshold sound, you are properly tuned. If the sound increases or decreases, it will not recover automatically as it did in the Auto Tuned mode. If the sound decreased, turn the Ground Adjust control about one half turn clockwise. If the sound increased, turn the Ground Adjust control about one half turn counterclockwise. When you turn the Ground Adjust control, the threshold sound may get either louder or go quiet. That's normal, and means nothing to the tuning procedure.
3. Move the searchcoil back up to about a food above the ground, and momentarily push the Mode switch into the Retune position to reestablish the threshold sound. Repeat the step of lowering the searchcoil to the ground. Readjust the Ground Adjust control as indicated by the change in the threshold.
4. When the threshold change reverse, then move the Ground Adjust control back in small increments, until there is no change as the searchcoil is lowered towards the ground. Remember to momentarily hold the Mode switch in the Retune position each time just before you lower the coil to the ground.

NOTE: The Normal mode of operation has very slow automatic retuning which is just fast enough to help you maintain the threshold sound as you search. This slow autotuning is necessary because of the extreme power of the Lobo circuitry.

TUNING IN THE DISCRIMINATE MODE

Tuning the Lobo for use in the discriminate mode requires that the All Metal Mode tuning procedure be properly accomplished, as the Ground Adjust control provides for mineral free operation in both the all Metal and Discrim modes. Also, the threshold setting of the Tuning control determines the minimum sound level for deep targets in the Discriminate mode. Too little threshold, and depth will be lost. Too much threshold, and the detector may become erratic.

After the All Metal mode procedure is accomplished, the only setting necessary for operation in Discriminate mode is set the Disc Level control to the desired amount of trash rejection, and to set the Disc Sensitivity control to the maximum setting that will allow smooth operation.

SELECTING THE PROPER MODE OF OPERATION

The Lobo offers two basic modes of operation, the All Metal mode and the Discriminate mode. Both modes are mineral free if the unit is properly adjusted. The Normal mode is the industry standard "VLF" type which does not require motion of the searchcoil for proper operation. This mode, while requiring an initial ground adjust setting of sound threshold, offers two very important advantages, these being the ability to pin-point without motion, and to provide exact ground canceling. The Discriminate mode is based on motion of the searchcoil, but requires very little motion, and offers the advantage of completely silent operation.

Nugget Hunting requires using the All Metal mode, since the response to small gold items is so close to iron.

We feel that for most nuggetshooting use, Auto Tuning will provide the best performance. Since most gold nuggets are quite small, you need to be sure that your detector is tuned to threshold at all times to avoid missing any of these little nuggets. Obviously the Auto Tuned mode will help you in this respect. Hot Rocks will cause a momentary silence as the coil is swept over them, with a loud overshoot when the coil clears them. The sound is so different from a good target sound, that it's very easily recognized. The only problem with just ignoring these sounds are that a small nugget may be hiding beneath the hot rock. Adjusting the ground Adjust control in the clockwise direction until the hot rocks are almost neutralized will help detect small gold nuggets, but the ground will read as a positive signal, so you will have to be very careful to keep your coil height constant.

Normal Tuning is very useful for pinpointing, since searchcoil motion isn't necessary. This mode is also useful for

searching and for identifying whether a sound is target or the overshoot from an intense mineral signal such as a hot rock. This mode is going to require much more care and attention from you also, since you will need to retune the detector more often to maintain threshold, and you will also need to readjust the Ground Adjust control more often.

Remember that the very slow autotuning in the Normal mode will cause a nulling of the threshold sound if you pass the searchcoil over a very strong metallic target.

When nugget hunting, the Discriminate mode can be used to check a located target, but since the response of gold nuggets is so broad, you will still dig a lot of trash if you are to be successful. The Discriminate level can be set at about the pulltab level, and any targets which cause a response in the discriminate mode can be ignored, since they are above the domain of gold. This will allow you to ignore many junk items such as pulltabs, screwcaps, beer cans, shotgun shell ends, coins, etc. If your detector doesn't respond in discriminate, DIG THE TARGET.

Since gold is found naturally in areas which will most likely include hot rocks, black sand, and other intense minerals, it may be necessary to lower the Sensitivity control to minimum when hunting such areas. It may also require readjusting the Ground Adjust control to help compensate for the added minerals.

The Wide Scan coil supplied as standard on the Lobo is much less affected by bad soil and hot rocks than the concentric coil, although it does lose some ability to detect tiny gold objects. If you are searching for nuggets in an area that is free of hot rocks, the concentric coil might be an excellent coil to use.

Relic or Cache Hunting also generally calls for using the All Metal mode, but the Discrimination mode can be used to eliminate the response to iron targets. Much relic hunting is done in woods and brush too thick to properly utilize the motion based Discriminate mode. It usually is possible to search in the All Metal mode, and when a target is found, switch to Disc to check the target response.

Competition and Coinshooting can be accomplished in either mode, depending upon the amount of trash at the site. Coil type and size are also of concern to these hunters. Generally, most targets are buried very shallow at competition hunts, so operating at reduced Sensitivity settings will yield better stability. When coinshooting, a higher setting of Sensitivity will help pick up the deeper targets, as long as the detector is still stable.

PINPOINTING

It will probably be a good idea to check the Ground Adjust setting to be sure that your Lobo is properly tuned prior to pinpointing, especially if you have been searching in the Auto Tuned mode. Pinpointing is best done in the Normal mode; however, since you can do this without sweeping the searchcoil, you can also retune close to the target center to cut the detectors response to the target.

1. Try moving the searchcoil back and forth and forward and back until you get the strongest audio signal. The target should be directly below the coil center.
2. If the audio response is maximum over a very large area, just momentarily push the Mode switch to the Retune position when you are close to the target center. This will cause the target sound to shrink drastically, which will allow more accurate pinpointing.
3. You may have better luck at pinpointing if you try 'X-ing' the target. Sweep the coil from side to side until you get the loudest response. Make a mental note of this point and then move to a position where you can sweep the coil at 90 degrees to the original position. Again, sweep side to side until you get the loudest response. Dig where these two lines intersect.

RECOVERING YOUR TARGET

With the extreme power of the Lobo, just pinpointing isn't all there is to recovering a 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 won't be gold, they will be junk such as nails, wire, 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 toll will be up to you, but most prospectors use a small pick axe and carry a magnet to help identify 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 Lobo to see if you have moved the target. If you have, try the magnet to see if you can pick up the target. If the magnet doesn't pick it up, you can set your detector down with the coil close to the area containing the target.

Pick up some dirt, and wave your hand in front of the coil. If you are holding the target you should get a good signal from the detector. Since the Lobo has so much gain, it will probably read a positive signal from just your hand at max sensitivity. You may need to try just a small amount of dirt held in your fingertips.

You can also put the Lobo in the Auto tuned mode, and set the coil on the ground. Try dumping some of the dirt onto the top of the searchcoil. When the target hits the coil, you will receive a good signal from the detector. You will need to be careful using this technique though, since the wear on the searchcoil won't be covered by warranty.

BATTERY REPLACEMENT

The Lobo has an automatic battery test sequence with each initial power turn on. To check the batteries, simply turn the Lobo 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 that the battery clip lead is 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.

Should you desire to do so, rechargeable Nickel-Cadmium batteries can be substituted for standard penlight cells. Individual AA size cells are readily available at most electronic supply stores, as well as the chargers for them, and they can be inserted into the standard 8 holder used in your Inca. The initial battery check reading will be slightly lower, but will not drop as much with use, until the batteries are completely discharged.

GENERAL 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 coin shooter 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 you 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 detector is not equipped with a volume control, but does have a limiting 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 or 16 ohm set with 1/4 inch stereo jack will do.

HAPPY HUNTING, and thank you for purchasing a TESORO.

WARRANTY SERVICE

Your metal detector is covered by a **Limited Lifetime Warranty**, the terms of which are listed below. If your metal detector should require service, you may return it to the Tesoro factory, or tone of the factory authorized service centers. Contact the factory for the name and address of the nearest service center.

If you have any questions, don't hesitate to contact the factory.

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.

During the first two years, 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, or at one of its authorized repair centers. After two years from date of purchase, TESORO will replace defective parts at no charge except a nominal labor change and transportation charges.

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.

If warrant service should be necessary, contact the factor for nearest repair center.

Under the copyright laws this documentation may not be copied, photocopied, reproduced, translated or reduced to any electronic or

Under the copyright laws this documentation may not be copied, photocopied, reproduced, translated or reduced to any electronic or machine-readable form, in whole or in part, without the prior written consent of Tesoro Electronics Incorporated, except for the private use of a Inca owner or operator, or in a manner otherwise described in this documentation.
© 1995-1996 Tesoro Electronics Incorporated. All rights reserved. Printed in the United States.

Tesoro Electronics, Inc. 715 White Spar Road Prescott, AZ, USA 86303 1-928-771-2646