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Pantera 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

The Pantera is high performance VLF metal detector that is capable of rejecting ground mineralization and buried metallic trash simultaneously. It includes Notch Discrimination so that most common pull tabs can be rejected without losing nickels and small gold rings, or so that only a particular band of desired targets will be detected. Notch Tone Target ID provides a lone tone for targets below the Notch Level setting, and a higher tone for targets above the Notch Level setting. Design emphasis was placed on performance and ease of use, while minimizing or eliminating those troublesome adjustments and features that could cause a loss of performance if not used properly.

The Silent Search discriminate mode is based on motion, which means that the searchcoil must be moving slightly to detect a target. The motion required is so slight that pinpointing is possible in this mode, however a no motion pinpoint mode is included, which with the 8 inch open center searchcoil makes pinpointing a very simple task.

A Ten Turn Ground Adjust control is used, which allows the detector to be adjusted to virtually any type of soil. This control allows the operator to get the absolute maximum performance from his detector.

The unit is furnished with an 8" open center concentric searchcoil. We feel that this coil will provide excellent performance in most situations. The open center greatly simplifies pinpointing.

The detector can be used as a pole mounted arm rest unit, or as a body mount unit. It can be converted easily without tools.

As with any detector, the familiarity of the user with the instrument will have a great deal to do with how successful the treasure 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 Pantera can be assembled in either of two configurations or easily converted from one to the other. The electronic control housing can be mounted on the arm rest pole, or can be body mounted. Installation of the lower pole and coil is the same for either configuration.

1. Depress the two buttons on the upper end of the lower stem, and slide it into the upper stem. Push the lower stem up so that the buttons click into the third set of holes from the end of the upper stem.
2. Insert the pole tip between the mounting ears of the searchcoil, after removing the screw and thumb nut. Align the holes in the pole tip and those in the mounting ears. Be sure that the rubber friction washers are in place.

It will be much easier to insert the pole tip into the searchcoil ears if you moisten the pole tip washers.

3. Insert the coil mounting screw through the coil and pole tip. Be sure the internal tooth lockwasher is on the screw

head side.

4. Install the thumb nut on the screw and tighten by hand.
5. Wind the searchcoil cable around the pole.
6. Leave enough slack in the cable at the searchcoil to allow adjustment of the coil's angle.

CAUTION: Too much slack may permit the cable to flap across the searchcoil while in use causing false signals.

POLE MOUNT

1. The control housing is already mounted on the pole, as shipped from the factory, so all that is necessary is to insert the searchcoil connector into the control housing connector, and tighten finger tight.
2. Use the two velcro straps to hold the cable tight against the pole.

NOTE: The cable will last much longer in the body mount configuration if some care is taken to spread the necessary flexing over a large area, rather than making a sharp bend away from the pole at cable clip which would concentrate the flexing in a small area.

POLE MOUNT

1. To use the detector as a body mount, simply remove the control housing from the upper pole by depressing the spring nuts in the plastic mounting piece, and slide the control housing off the pole.
2. Insert the searchcoil connector into the control housing connector and then finger tighten.
3. Use the two velcro straps to clamp the searchcoil cable. It will be best for you to sometimes move the straps so that the wear on the cable is spread over a large area.

CONVERSION

Obviously, converting the unit from body to pole mount or vice versa, is simply putting the control housing back on the pole, or removing it from the pole. Be sure to keep the searchcoil cable wound tight enough around the pole that it doesn't flap right over searchcoil housing. The Pantera is strong enough to see the tiny cable wires moving, and can give you false signals if the cable is too loose.

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.

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. 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	12 kHz
Searchcoil Type	Concentric
Searchcoil Size	8" Diameter
Cable Length	Approx. 3'
Audio Frequency	Hi Tone - Approx. 800 Hz
	Low Tone - Approx. 600 Hz
Audio Output	1 1/2" speaker
Headphone Compatibility	1/4" stereo earphone jack
Weight (may vary slightly)	3 1/2 lbs.
Battery Requirement	12 volts DC (8 AA penlight batteries)
Battery Life (typical)	15 to 30 hours
Optimum Temperature Range	30° to 100° F
Optimum Humidity	0 to 75% R.H.
Operating Modes	All Metal
	Discriminate
Notch Reject Discriminate	
Notch Accept Discriminate	

CONTROLS

The Pantera has six 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. Turn control clockwise or counterclockwise to a setting whereby the tone is barely audible.
2. **GROUND ADJUST CONTROL.** This control adjusts the All Metal Mode sampling so that the detector ignores the normal ground mineralization. The 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. **ON/OFF, BATTERY TEST, SENSITIVITY CONTROL.** The primary function of this control is to reduce the detectors sensitivity to those influences that could make the operation more difficult for you. This control also is used to turn the power on and off. Turning the knob completely counterclockwise until it clicks disconnects the batteries from the circuit. When the knob is first turned on (clockwise), the detector will automatically test its batteries, and give you an audible indication of their connection. **NOTE: This test should be performed with the Mode Switch in the Discriminate position.** Fresh batteries will cause a loud audio response which will gradually decay into silence over a period of about 4 or 5 seconds. As the batteries age and become weaker, the initial audio response will be weaker, and will decay quicker. When the response is just a short buzz instead of a long beep, or when there is no audio response, it's time for new batteries. It is recommended to always use alkaline batteries.

Many things can cause the response of the detector to become erratic as you are using it. Normally you will not hear any sound from the detector unless you pass the coil over a good target. Very large targets or a multitude of closely spaced smaller rejected trash targets can cause the detector to emit choppy sputtering sounds. CB radios, radio and TV broadcasting antennas, intense mineralization changes, and other sources of electrical noise can also cause the detector to emit false signals. These signals will generally sound "chopped" and will not be repeatable so you will not have any trouble recognizing them. They can be distracting, though, and turning down the sensitivity control will help reduce them. This will also cause a small loss of target sensitivity, so always run the sensitivity control as high as you can, while still getting smooth operation.

4. **SEARCH MODE SWITCH.** This switch is used to select the All Metal mode of operation or the Discriminate mode. The Discriminate mode is a Silent Search ultra slow motion type, and allows a lot of user control due to its extra features like notch discrimination. The All Metal Mode is a no motion mode, and has a very slight amount of automatic tuning. This mode can be used for searching, or for pinpointing your targets.
5. **DISCRIMINATE LEVEL.** This control is used to adjust the detector's response to unwanted metallic trash when used in the Discriminate mode. At the lowest setting "0", the detector will eliminate most iron objects, but will still respond in a positive manner to light foil, bottle caps, pull tabs and most other metallic items. As the knob setting is increased, response to more of these metallic trash items is reversed so that these objects give no response. Each detector can vary somewhat, so it would be a good idea to test your detector against various targets to determine exactly where they are rejected by your detector. Do this with the notch mode switch in the OFF position.
6. **NOTCH MODE SWITCH.** This toggle switch is used to select the function of the notch filter in the discriminator circuitry. In the reject mode, the target encompassed by the notch will be rejected, and in the accept mode, only those targets encompassed by the notch will be detected. The notch width is factor set to be just wide enough to include the common pull tabs and lift tabs, since rejecting these objects will be its primary use. In the center position, the notch filter is disabled, so that it has no effect on the decimated circuit.
7. **NOTCH LEVEL CONTROL.** This control is used to adjust the notch filter response to the desired target level when using the notch discriminate modes. The notch level control should always be set higher than the discriminate level by at least one full increment for proper operation.

This control also can serve as a tone control if the notch filter is not used, since all targets below the notch level are indicated by a lower audio tone than those above the notch setting. Setting the control at '0' will provide the higher audio tone for all targets detected in the Discriminate mode while setting it at maximum would provide the lower audio tone.

TUNING

No detector, regardless of how powerful it is, can provide optimum depth if it is improperly tuned. In fact, the more powerful the detector is, the more critical the tuning becomes. Less powerful units are more tolerant of operator misadjustment, but are not capable of the depth of a properly tuned high power detector such as the Pantera.

To achieve maximum performance from your Pantera be sure to properly adjust the GROUND ADJUST and TUNING controls in the All Metal Mode. The settings of these controls will also affect the detector's performance in the Discrim Mode, so be sure to adjust them properly, even if you plan to operate the detector in the Discrim Mode.

TUNING IN THE ALL METAL MODE

1. Put the Mode Switch in the All Metal 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 rapidly

lower the searchcoil to about two inches above the ground.

2. If there is no change in the threshold sound, you are properly tuned. If the sound increases or decreases, it will recover slowly due to the auto tune, therefore you must lower the searchcoil rapidly each time. 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 should get either louder or go quiet. That's normal, and means nothing to the tuning procedure.

3. Move the searchcoil back up to about one foot above the ground, and momentarily push the Mode switch into the Retune position to re-establish the threshold sound. Repeat the step of rapidly lowering the searchcoil to the ground. Readjust the Ground Adjust control as indicated by the change in the threshold as the coil approaches the ground.

4. When the threshold change reverses, then move the Ground Adjust control back in the small increments, until there is no change as the searchcoil is lowered rapidly toward the ground. Remember to momentarily hold the Mode switch in the retune position each time, just before you lower the coil toward the ground.

NOTE: The Normal Mode of operation has a slow automatic retuning which is just fast enough to help you maintain the threshold sound as you search. This slow autotuning can try to overcome the motion of lowering the coil to the ground, unless it is done fairly rapidly.

TUNING IN THE DISCRIMINATE MODE

Tuning the Pantera for using 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 the 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 settings necessary for operation in Discriminate Mode is to 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.

SEARCH MODE SELECTION AND TUNING

The Pantera offers two basic operating Modes, All Metal or Discriminate. The Discriminate Mode also has the further capability of using Notch Discrimination.

A. **ALL METAL MODE.** This Mode is useful for relic, cache, or nugget hunting, since it is an All Metal Mode. The automatic tuning should keep the detector tuned to threshold as you are using it, but by momentarily pushing the Mode switch to the retune position, the detector can instantly be brought to threshold. All other features of the detector, such as Notch Tone Target ID, and Notch Filter, are not operative when the unit is in the Pinpoint Mode. The audio sound is always the lower of the two notch tones when it the Pinpoint mode.

B. **DISCRIMINATE MODE.** The Discriminate Mode is motion based, and requires that the searchcoil be moving slightly for target detection. There is no threshold sound present as in the All Metal Mode. The Notch Tone Target ID feature works in the Discriminate Mode even if the Notch Mode switch is in the off position. The notch level control setting determines whether a target indication is high or low tone. All Target with phase response below the Notch level setting will be represented by the lower tone 'beep', those higher than the Notch level setting by a higher tone 'beep'.

We recommend setting the sensitivity control at about '7' when beginning to search a new area in Discriminate Mode. If the detector seems to have a lot of 'chirpy' sounds or false signals, turn the sensitivity control down slightly until the source of interference is overcome and the detector will operate smoothly. Note that in very large trash areas, some clicking or chirpy sounding false signals will be caused by the heavy concentrations of metallic trash or by very large iron objects. In relatively clean areas, it may be possible to increase the sensitivity setting.

When the Notch Mode switch is in the off position, the amount of trash rejection is controlled by the Discriminate Level Control. With the Disc Level Control set at about 2 or 3, the detector should reject foil and ferrous targets, while detecting those targets whose phase response is higher than foil.

SELECTING THE PROPER MODE OF OPERATION

The Pantera offers two basic operating modes, Pinpoint All metal or Discriminate. The Discriminate mode also has the further capability of using notch discrimination.

A. **ALL METAL MODE.** This mode is useful for relic, cache, or nugget hunting. The ground rejection is internally preset so that normal soil mineralization is slightly positive. This means the threshold sound will increase somewhat as the searchcoil is lowered to the ground. The automatic tuning should keep the detector tuned to threshold as you are using it, but by momentarily punching the mode switch to the fast tune position, the detector can instantly be brought to threshold. All other features of the detector, such as notch tone target ID #, and notch filter, are not operative when the unit is in the All Metal Mode. The audio sound is always the lower of the two notch tones when in the All Metal Mode.

B. **DISCRIMINATE MODE.** The Discriminate Mode is motion based, and requires that the searchcoil be moving slightly for target detection. There is no threshold sound present as in the All Metal Mode. The notch tone target ID features works in the Discriminate Mode even if the notch mode switch is in the off position. The notch level control setting determines whether a target indication is high or low tone. All Targets with phase response below the notch level setting will be represented by the lower tone 'beep', those higher than the notch level setting by a higher tone 'beep'.

We recommend setting the sensitivity control at the (7) mark when beginning to search a new area in Discriminate Mode. If the detector seems to have a lot of 'chirpy' sound or false signals, turn the sensitivity control down slightly until the source of the interference is overcome and the detector will operate smoothly. Note that in very large trash areas, some clicking or chirpy sounding false signals will be caused by the heavy concentrations of metallic trash or by very large iron objects. In relatively clean areas, it may be possible to increase the sensitivity setting.

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When the Notch mode switch is in the off position, the amount of trash rejection is controlled by the Discriminate level Control. With the Disc level control set at about 2 or 3, the detector should reject foil and ferrous targets, while detecting those targets whose phase response is higher than foil. This is shown by the solid line labeled foil reject. As the control is increased, more of the remaining targets are rejected. With the control increased to about 6 or 7, all of the targets shown are rejected except the penny and quarter. This is shown by the dotted line labeled pull tab reject. Note that at this level, the nickel and small gold ring are also rejected as bad targets. Since small gold items may have a phase response as low as foil, you can see that operating a normal discriminator at the pull tab reject level can also cause you to miss a lot of valuable finds. The Notch Filter in the Pantera can help you to overcome this inherent problem of normal discriminators.

NOTCH DISCRIMINATION. In the Notch Reject Mode, the response of the detector can be more closely controlled. The Discriminate level Control is used to set the lower cutoff level, for example, to eliminate ferrous targets, foil, and steel bottle caps. The Notch Filter is then used to reject the narrow band of targets containing pull tabs.

The Notch width is factor set to cover the range of most common pull tabs and lift rings would fall into, but some peculiar tabs may still be detected. If pull tabs have been chopped or mutilated by a lawnmower, the pieces may be detected as nickels, and of course, some valuable items may have the same phase response as pull tabs and be rejected. Still, the Notch Filter allows detection of nickels and small gold rings while rejecting almost all of the pull tab signals. The Notch level should always be set higher than the Disc level.

It is possible to adjust the width of the Notch Filter, but we recommend for best result to leave it set as it comes from the factory. If it becomes necessary to readjust the Notch Width to suit particular circumstances, contact your dealer for details.

The Notch Accept Mode allows the detector to respond only to a narrow band of targets. This may be useful if you are searching for a particular target, such as a lost ring or treasure hunt token. It is also useful to help you classify or identify a target before digging.

Each detector can vary somewhat due to manufacturing tolerance, so you should experiment with your detector and become familiar with the rejection levels for these trash items with your detector.

Earlier motion detectors that operated with "threshold" sound would give the user a definite indication of metallic trash by either nulling completely or by generating short, choppy sounds. Since the Pantera operates without threshold sound, there is no nulling to indicate that the area is extremely trashy, but under such circumstances the detector will probably also emit some short chirpy sounds. These are easy to distinguish from the good target's longer cleaner sound.

Since the notch filter response is like a "window" the notch level must be centered on the desired targets, rather than just set higher than the target. The preset mark at the '6' on the notch level is an ideal starting point to provide pull tab rejection while still finding nickels. It will probably be necessary to make some small correction up or down to accurately center the notch response on the pull tab range.

When set correctly, the notch level is set to be just wide enough to eliminate most common tabs. The aluminum screw cap is so close to the response of coins, that we feel it's best to not include it in the notch. The targets in the shaded area would be rejected by a properly adjusted notch level in the notch reject mode.

If the notch level were set too high, the notch 'window' would not include the complete unbent older style pulltabs and may start to eliminate pennies.

If the notch level were set to low, the 'window' may eliminate the nickel, and the newer style of lift ring tabs would be detected.

Beginning operation in the notch reject mode with the notch level control set at the '5' mark should put the notch window reasonably close to the desired response. If you begin to find the complete older style pull tab, you should turn the notch level down slightly, and continue searching. If you are finding the newer style lift rings which have been torn off the cans, it's a signal to raise your notch level slightly.

No matter which way you adjust the level, do it in very small steps, since this setting is fairly critical.

FIELD USE

The detector should be held in a position that is comfortable for you. Swing the detector from side to side in about a three foot arc, overlapping succeeding strokes well. This motion is called a "sweep." The Pantera was designed to get maximum depth without the frantic pace required of earlier motion detectors, so go at a pace that is comfortable for you. In fact, trying to hunt too fast in Discriminate may even cause a loss of depth in heavily mineralized locations.

It would be helpful to bury some coins and trash metal junk items in an area that you know is clear of other metal objects, and then try the unit in its various modes. Check the area in All Metal Mode first to be sure its clear of trash then bury the targets at least a foot apart, and from 2 to 6 inches deep to start. Make a map of the test bed to be sure you know what each target is and how deep it is. Practice on these targets to familiarize yourself with your detector's target response. This will also help you learn the proper sweep rate for best operation.

Regardless of which mode you are using, try to keep your searchcoil height constant and close to the ground. Most people tend to raise the coil at the end of a sweep, much like a pendulum, especially if they are hurrying. Try to avoid this, as any increase in height will cause a corresponding loss of depth.

In areas with well kept lawns, the easiest way to maintain a constant searchcoil height is to allow the coil to rest on the grass as you sweep from side to side. In rough and rocky areas it is best not to "scrub" the coil on the ground, as the rocks will act like abrasives, and wear away the coil bottom (an optional coil scuff cover will protect against this.) Sweep the coil as close to the ground as possible without touching. Hitting the ground or rocks may cause a false signal much like a desired target would. Sweeping the coil too high above the ground results in a loss of depth.

When operating in the Discriminate Mode, some "false signals" may be caused by heavy concentrations of trash metal objects, by very large trash items, or by electrical interference. These signals will sound different than good target signals because they are generally short, choppy sounds. At the end of your sweep, as you the reverse the coil direction, the

detector is most susceptible to trash induced noise. There are two ways to tell whether these sounds are good deep signals or trash "noise." The first is by repeatability. Trash induced noises will not be regular as you sweep the coil over the suspected target several times, whereas a good target response will be repeatable. The second method is to switch to All Metal Mode and check the target response sound. If the response is weak, it may well be a deep, good target; but if the response is very strong, it is probably trash. Note that a coin close to the surface can give a double beep sound, but it is regular and repeatable. Raising the coil an inch or two will restore the single beep on surface targets. Raising the coil an inch or two will also many times cause surface trash false signals to suddenly disappear, while good target responses just become fainter.

If the trash in an area is so heavy that you are getting lots of choppy sounding false signals, it might be good to change to a smaller coil. If this isn't feasible, you can probably get better results by slowing down your sweep speed, and using shorter sweeps. It would be good to hunt the area twice, the second time at right angles to the first time. This technique will probably allow detection of some targets that were hidden by trash the first time due to the sweep direction.

If there is any doubt whether a target is good or not, DIG IT.

If you don't dig any junk at all, you are surely passing up a lot of good finds, too. Set the DISC LEVEL only high enough to suit the conditions where you are searching, and use the Notch Filter if called for.

The detector is furnished with an 8" concentric searchcoil with an open center. This coil will yield the best results for most coin hunting situations. Pinpointing is greatly simplified by an open center, since you can now see the actual point on the ground where you will dig instead of logging your eyes on the coil center and trying to follow the coil as you move it out of the way. Optional coils of 4", 7" and 10 1/2" are available to allow you to tailor the response of your detector to suit special situations.

The 4" and 7" coils are useful for coinshooting in extremely trashy locations and can actually greatly increase your number of good finds under such conditions, although some loss of depth will be experienced. The smaller coil will allow you to detect coins and other good targets much closer to surface trash items. The 10 1/2" coil will yield about an extra inch in depth in most areas. The increased surface area makes pinpointing a little more difficult, and allows trash to hide the good targets a little easier. The 10 1/2" coil is also an excellent relic hunting coil and can provide greatly increased depth on larger targets, especially in the All Metal mode where surface junk won't hide the deep targets.

PINPOINTING

The sweep speed of the Pantera is slow enough to allow pin-pointing in the Discriminate Mode, but will require a little more practice. Move the coil slowly from side to side and then from front to back over the target. Raising the coil slightly and slowing the sweep speed will narrow down the detection area enough that it's easy to tell where the coil center is at the instant of the sound.

Another easy method is to sweep the coil from side to side across the target in very short sweeps, as you slowly move forward and backward across the target. Slow down the sweep rate and shorten the sweeps until you just barely get a response at one spot. The target will be directly below the coil center at this response time. In fact, you will be looking at the exact spot in the ground where you want to dig, because of the open coil center.

The easiest way to pinpoint for most people will be to switch to the All Metal, since no motion is required. To pinpoint a target that doesn't saturate the audio, just move the coil forward and back, and side to side until you get the strongest sound. The target will be directly below the coil center. If the audio saturates over a large area, simply push the mode switch to the retune position momentarily over the area to retune the detector. This will narrow its field of response to allow you to once again seek the area of strongest response. It may be necessary to retune more than once with this technique. With a moderate amount of automatic tuning, the detector itself will be attempting to tune back to threshold, which automatically narrows down its area of strongest target response.

RECOMMENDED RECOVERY METHODS

Always obtain permission from the person in charge before hunting on private property, schoolyards, parks, churches, or state parks. Even when relic hunting in the woods, NEER LEAVE A HOLE!, or damage anything on the property.

PROTECT YOUR HOBBY - FILL ALL HOLES

BATTERY REPLACEMENT

The Pantera has an automatic battery test sequence with each initial power turn on. To check the batteries simply turn the detector off momentarily and then back on. The detector should beep loudly for about 3 to 5 seconds, with the sound slowly fading into silence, if the batteries are fresh. As the batteries age, this sound less intense, and fades out quicker. When you just hear a brief buzz, or not audio at all, 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. Place the new penlight batteries into the packs, being sure that you observe the polarity indicators on the inside of the packs. Slide the packs back into the detector. 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.

We recommend when you replace the batteries, that you change all at the same time, and that you always use good quality alkaline batteries.

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

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. When used in the body mount configuration, you should not allow the cable connectors to be submerged.

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 Pantera 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 to 32 ohm set with 1/4 inch stereo jack will do.

HAPPY HUNTING, and thank you for purchasing a TESORO.

WARRANTY SERVICE

Your Tesoro 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 one 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.

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.

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

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