# UNDERGROUND METAL DETECTOR



# THANK YOU FOR CHOOSING OUR METAL DETECTORS!

Congratulations on the purchase of your new MD-6350 metal detector. This enhanced metal detector has been specifically designed for use in more challenging environments such as mineralized grounds and iron-cluttered relic and coin hunting areas.

The MD-6350 includes Tianxun's exclusive Target ID technology and patented discrimination features. This technology features two indicator scales that allow you to see the detector's discrimination setting (Lower Scale) as well as the analysis of each detected target (Upper Scale). The MD-6350 also features Enhanced Iron Resolution (additional resolution for separating desirable targets from iron junk in cluttered areas) and a standard 8.5"  $\times$  11" elliptical Double-D searchcoil engineered for optimum performance in more challenging mineralized soils.

Backed by more than 45 years of extensive research and development, your MD-6350 metal detector is the most advanced of its kind in the industry. Whether you are experienced or a beginner, this machine is well suited for a wide variety of your detecting environments. With One-Touch operation, the MD-6350 powers on with the touch of a single button, adjusts easily for ground minerals and is immediately ready to begin searching.

In order to take full advantage of the special features and functions of the MD-6350, you are urged to carefully read this instruction manual in its entirety.

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## **MD-6350 CONTROL PANEL**



# QUICK START GUIDE

## 1. Install batteries.

The MD-6350 operates with four (4) AA batteries which are already installed by Tianxun.



Press and release the ON / OFF Power button. The MD-6350 powers on in the last mode used, automatically adjusts for ground minerals and is ready to search. (Factory default mode is Coins.)

## 3. Select Mode.

Use the Mode Pushbutton to select a different detection mode, when desired.

### 4. Adjust settings.

Adjust Sensitivity or Discrimination settings, if desired.

### 5. Begin scanning.

Lower the searchcoil to 1 to 2 inches above the ground and scan the coil left and right at approximately 3 ft/second.



## **MD-6350 COMPONENTS**



## LIST OF PARTS

No tools are required to assemble the MD-6350. Four (4) AA batteries are included with the detector. The box for your detector contains the following parts:

One (1) control housing with S-shaped stem
One (1) upper stem and one (1) lower stem connected
One (1) wing nut, two (2)
Marranty Card mounting washers and one (1) threaded bolt

If any part is missing, please contact your local dealer.



# DETECTOR ASSEMBLY

 Align the holes in the mounting washers with the small posts on the lower stem and press firmly into place.





- 2. Slide the searchcoil onto the stem.
- Insert the threaded bolt through the holes of the lower stem and searchcoil. Hand-tighten the searchcoil assembly with the wing nut.





- Depress the spring clip in the S-stem and insert the control housing into the upper stem.
- Depress the spring clip in the lower stem and adjust to the most comfortable operating length.



6. Wrap the cable snugly about the stem with the first turn of the cable over the

stem.

 Insert the cable connector into the connector of the control housing and hand-tighten.



 Adjust the arm cuff by removing the screw on the bottom and moving it to the other hole.

## **MD-6350 DISPLAY ELEMENTS**

The MD-6350 is designed with Tianxun's exclusive Graphic Target ID technology, which indicates the probable identification of a target along a horizontal scale that reads from ferrous metals (e.g. iron) on the left to low conductivity metals in the middle to high conductive metals (e.g. pure silver) on the right.



- Mode—Indicates which of the five detection modes (Zero, Jewelry, Custom, Relics or Coins) has been selected by highlighting the corresponding word on the LCD screen.
- Target ID Legend—Works in conjunction with the Target ID Cursor to indicate a target's probable identity. Ferrous (iron) targets will indicate on the left half, non-ferrous targets that are thin or have low conductivity will indicate in the middle, and thick or high conductivity targets will indicate at the right.
- Target ID Cursor (Upper Scale)—The Target ID cursor, in conjunction with the Target ID Legend, indicates the probable identity of a detected target. The upper scale consists of twelve (12) graphic segments for Target ID.
- **Output** Lower Scale—The lower scale, or Notch Discrimination Scale, indicates the discrimination pattern. The MD-6350 will produce an audible target response for the pixels that are switched on, and no audible response for those that have been switched off. The Target ID Cursor will always indicate all targets.

The discrimination pattern can be adjusted by changing modes and / or using the DISCRIM and Accept/Reject ( $\sqrt{\times}$ ) pushbuttons (see page 13).

6 Coin Depth Indicator—The depth of a coin, or similar sized target, is indicated in 2-inch increments. Sweep over the target with the searchcoil 1 inch from the soil to get the most accurate reading. Note: targets larger than a coin may display shallower than actual depth while targets smaller than a coin may display deeper than actual depth.



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6 Battery Level Indicator-Indicates the current battery condition. The detector will maintain full performance until the batteries need to be replaced. Replace batteries when there is only 1 segment remaining. NiMH rechargeable batteries may be used, but may have a shorter life per charge. You can expect 20 to 40 hours of operation depending on battery type and quality.

Access and replace the batteries by sliding the cover off the control housing. Remove batteries when the MD-6350 will be stored for longer than 30 days.



**7** Sensitivity Indicator—The MD-6350 has eight (8) settings for sensitivity. (See page 15 for information on when to adjust your sensitivity settings.)

# AUDIO FEARURES

Headphone Jack-Any headphones with a 1/4" plug can be inserted into the jack at the rear of the Control Housing.



**Tone ID**—The Tone ID feature produces three distinct audible tones based on a target's metal type and conductivity:

- High conductivity targets (such as silver) produce a unique belltone signal.
- · Medium to low conductivity targets (such as jewelry or small gold), produce a

medium-pitched audio signal.

· Ferrous targets (such as iron and nails) produce a low-pitch audio signal.



## **ON/OFF** Power Pushbutton

Press and release to switch the unit ON and resume hunting with the same settings used prior to turning the unit OFF. To restore the factory settings, press and hold the power button for 5 to 10 seconds (until the detector produces a fast double beep).

## **OMODE** Pushbutton



Push the MODE button to select one of five discrimination modes (Zero, Jewely, Custom, Relics or Coins). See the next section ("Selecting Modes") for details on each MD-6350 Mode.

## **8** PINPOINT Pushbutton

Press and hold the Pinpoint pushbutton to determine the exact location of a

target.

To use the pinpoint function, position the searchcoil to the side of the target's suspected location at a fixed height above the ground (e.g. 1"). Press and hold the Pinpoint button and sweep the searchcoil over the target area while maintaining the same fixed height above the ground (e.g. 1"). Sweep the searchcoil side-to-side and front-to-back in a crosshair pattern to locate the peak signal. Note: it is important to maintain a constant height during the entire Pinpointing process to prevent ground mineralization from producing false signals or masking the target's signal.

The bar graph on the LCD can also aid in locating a peak signal. When pinpointing, the Upper Scale on the LCD Screen indicates signal strength. When the greatest number of LCD segments (increasing left to right on the scale) is shown, the center of the searchcoil is directly over the target with the depth of a coin-sized target shown on the depth scale.

With practice, you will be able to pinpoint objects quickly and accurately.

### DISCRIM Pushbutton

(Use in conjunction with the Accept/Reject pushbutton to modify the discrimination pattern.)

Use the (+) or (-) DISCRIM pushbuttons to move the Target ID cursor to the left or right. Next, use the Accept/Reject pushbutton to modify the Lower

Scale discrimination pattern.



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(Use in conjunction with the DISCRIM pushbuttons to modify the discrimination pattern.) Press the Accept/Reject pushbutton to eliminate or activate pixels located on the Lower Scale, directly below the Target ID cursor.

As seen in the illustration below, the MD-6350 has 12 pixels or "notches" of discrimination. Any combination of these pixels can be switched on or off based upon your preference. There are two primary methods for modifying the Notch Discrimination Pattern to reject a specific type of trash or unwanted item while detecting all other metal.

The example below illustrates how to manually use both the DISCRIM and Accept/Reject pushbuttons to modify the Notch Discrimination pattern.



Use the DISCRIM buttons to position the Target ID Cursor above the pixel you wish to eliminate (see above illustration). Use the Accept/Reject pushbutton ( $\sqrt{x}$ ) to delete this pixel from the Lower Scale (see below). This item is now rejected.



The second method of modifying the Notch Discrimination pattern involves the use of only the Accept/Reject pushbuttons. When an unwanted metal target is audibly detected while hunting, simply push the Accept/Reject button to create a notch where the Target ID Cursor has signaled the presence of the trash. The next time the MD-6350 encounters the same trash item, it will not produce an audible signal.

The MD-6350's Accept/Reject pushbutton ( $\sqrt{x}$ ) can also be used to find specific metal items. For example, if an earring has been lost, scan the matching earring with the MD-6350 while in the ZERO mode. Note where the Target ID cursor appears when the earring is scanned. Next, use the DISCRIM and Accept/Reject pushbuttons to switch off all the pixels except the one for the earring.

Note: Depending upon how the lost earring is laying in the ground, its Target ID may shift a little; therefore, your ability to find it will be enhanced by turning on an additional pixel on either side. The MD-6350 is now programmed to find only the missing earring based on the conductivity of its matching pair.

Note: The accept/reject function can be used to modify each Mode's discrimination pattern. Notch Discrimination modifications made while in CUSTOM mode will be retained when the detector is turned OFF. However, all

changes made to the Notch Discrimination pattern while in ZERO, JEWELRY, RELICS or COINS modes will return to the factory settings when the detector is turned OFF and back ON again.

#### **G** SENSITIVITY Pushbutton



Use the (+) or (-) SENSITIVITY buttons to step through the eight (8) sensitivity levels, which are continuously shown on the LCD screen.

Use higher sensitivity levels when searching for very small or very deep targets. Use lower sensitivity levels in locations where the detector is behaving erratically due to excessive metallic trash, highly mineralized soils, saltwater beaches, electrical interference or the presence of other metal detectors.

## **SELECTING MODES (Discrimination Patterns)**

The MD-6350 includes five Modes. Select the mode that best suits the targets you hope to find or use the CUSTOM Mode to create your own personal settings. In each mode, minor changes in the preset discrimination patterns have been programmed to optimize hunting for such typical target(s).

This does not mean that the detector will search only for jewelry while in Jewelry Mode. It simply indicates that the discrimination pattern is optimized for locating most jewelry items. The JEWELRY Mode will still locate coins, relics and other non-jewelry items.

#### Jewelry Mode

The discrimination pattern for this mode is designed to find jewelry such as rings, bracelets, watches and necklaces. Three pixels of ferrous targets have been excluded to ignore most nails and small iron pieces. Some iron pixels remain in order to minimize target masking effects (see page 18 for more on target masking).

The LCD screen in JEWELRY Mode will appear as:



In JEWELRY Mode, the lower 3 pixels are notched out.

#### CUSTOM Mode

The discrimination pattern for this mode can be programmed by the operator. The factory preset for the CUSTOM Mode is the same as the COINS Mode. Once you have changed the discrimination pattern of the CUSTOM Mode to your preferences, the MD-6350 will retain your CUSTOM discrimination pattern. (For information on the use of the DISCRIM and Accept/Reject pushbutton controls, see pages 13–15.)

#### Coins Mode

The discrimination pattern for this mode is designed to find all types of coins and eliminate trash items such as iron and foil. Five pixels of ferrous targets and two notches of non-ferrous have been excluded in the COINS Mode.

This discrimination pattern is intended to eliminate iron trash, many pulltabs and pieces of tabs from detection. Be aware that medium-sized gold rings may be missed with the Coins Mode discrimination pattern. Some digging of junk targets is to be expected, such as aluminum cans.

For COINS Mode, the discrimination pattern will appear as illustrated below.



In COINS Mode, 5 pixels under ferrous and 2 pixels of non-ferrous targets are notched out. • RELICS Mode

The discrimination pattern for this mode is designed to eliminate small iron pieces, while detecting good targets in the lower conductivity range, such as lead, brass and bronze. Two pixels of ferrous have been removed and the pattern will appear as:



In RELICS Mode, the lowest 2 ferrous pixels are notched out.

#### ZERO Mode

The discrimination pattern for this mode is designed to detect every type of metal and should be used when you want to find all metal items or when the material of the desired object is unknown. As seen in the illustration below, all 12 discrimination pixels are switched on—indicating that no metal targets have been notched out (eliminated).

Switch to the Zero Mode to aid in locating a target when its signal is inconsistent. Such signals could mean a trash target is close to a good target.



In ZERO Mode, the discrimination pattern shows all 12 pixels are on.

## **ENHANCED IRON RESOLUTION**

The MD-6350 features increased resolution (i.e. more pixels) of iron discrimination. This additional resolution allows more precise control of how much iron discrimination can be applied. In the example shown below, an iron object can often "mask" out the signal of an adjacent good target.

To prevent this from happening, use the DISCRIM and Accept/Reject pushbuttons to select just enough discrimination to reject the iron trash (e.g. small nail, as seen in Illustration 1). By using only a minimal amount of iron discrimination, your detector will continue to detect the coin and nail together (see Illustration 2) and "masking" will not cause you to miss a good target. See example settings shown on the following page.



Iron targets, such as the nail shown above, can sometimes mask a good target. If too much iron discrimination is applied, the good target can be missed. Read this page to learn how to apply the proper amount of iron discrimination to eliminate the nail shown in Illustration 1 and still detect the good target shown in Illustration 2.

#### Example: Preventing Target Masking with Enhanced Iron Resolution



In the illustration above, the MD-6350 is operating in RELICS Mode, with two pixels of iron discriminated. The nail seen in Illustration 1 registers above the third pixel. These ferrous targets can be eliminated from detection by using the Accept/Reject pushbutton ( $\sqrt{x}$ ) to turn off the third pixel from the left.



In Illustration 2, one of the same iron nails is laying above a good coin target. Since three pixels of ferrous have been notched out, the nail by itself would not be detected; however, the two objects have a combined conductivity of four pixels.

Therefore, the good target is detected due to the combined conductivity being higher than that of the discriminated target (nail) alone.

## **BENCH TESTS**

You should conduct bench tests to become more familiar with your detector's operation. To conduct a bench test:

- 1.Place the searchcoil on a flat, non-metallic surface that is several feet from other metallic objects.
- 2. Select the ZERO mode.
- 3.Pass various metal objects (coins, bottle caps, nails, etc.) across the searchcoil at a distance of 3 to 4 inches. Your metal detector will audibly and visually identify the target.
- 4.Perform this test in all the modes available on your detector. Observe the sounds as well as the graphics on the LCD that are made in each mode.
- 5.Record the results of your bench tests and refer to them when hunting in the field.



Once you have determined how your test targets register on the Target ID during bench tests, test them in the soil. Bury your targets at recorded depths to create a "test plot." Note how various targets read based upon whether they are lying in the ground flat or at various angles.

Keep accurate records or surface markers to indicate your test plot targets and their depths. Try testing these targets again in several months after the ground has settled, during periods of extreme drought or after a soaking rain. Take note of any changes in how these targets are detected.

The following illustrations depict a MD-6350 in ZERO Mode scanning selected targets during a bench test. (Note: these are "air tests" conducted in a pristine environment. The target ID scale can be influenced by the soil as well as the conductivity, permeability, thickness, size, shape and orientation of the

TARGET

TARGET ID DISPLAY



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# **HUNTING TIPS WITH YOUR MD-6350**

- If you are new to metal detecting, start searching in areas with sandy and loose soil to make it easier to learn how to use your metal detector, pinpoint and dig targets.
- Keep your searchcoil height approximately 1 to 2 inches above and parallel to the ground at all times for best detection results.
- Walk slowly as you scan your searchcoil in a straight line from side to side at a speed of about 2 to 5 feet per second. Advance the searchcoil about half the length of the searchcoil at the end of each sweep.







In order to fully search an area, overlap the swings of your searchcoil by half the length of the coil (about 5.5 inches). Sweep the searchcoil in a straight line or with a slight arc at a sweep speed of about 3 ft/sec.

• Isolating adjacent targets. The narrow detection field of the MD-6350's DD searchcoil allows better separation of adjacent targets versus a similar size concentric searchcoil. Use narrow swings of the searchcoil in trashy areas to isolate good targets amongst the trash.



• Swing your searchcoil parallel to plow lines and the water's edge. This will minimize the negative effects caused by uneven ground in plowed fields and varying amounts of moisture near the water. Do not swing the searchcoil perpendicular to plow lines and the water's edge, as this may produce abrupt changes in ground response that can reduce the detector's performance.





# TARGET PINPOINTING METHODS

**Standard pinpointing method** using the Pinpoint button (see page 12). In this method, position the searchcoil to the side of the target's suspected location. Press and hold the Pinpoint button, then sweep the searchcoil side-to-side and front-to-back in a crosshair pattern to locate the peak signal. You will notice the greatest number of pixels on the upper scale and the strongest audio (loudest sound) as you pinpoint the peak target signal. (See LCD meter illustration below.)



**Note:** The MD-6350 DD searchcoil's "hot spot" is under the center of the coil, just ahead of its stem mount. The opening just ahead of the stem mount can serve as your reference point for pinpointing.



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Indicates target pinpointing center of the 8.5" x 11" **PRO**formance searchcoil.



Traditional pinpointing technique using Pinpoint pushbutton.

**Note:** It is important to maintain a constant searchcoil height above the ground (e.g. 1 inch) during the entire Pinpointing process to prevent ground mineralization from producing false signals or masking the target's signal.

• Alternative pinpointing technique: DD-wiggle. Quickly locate targets without using the Pinpoint button as follows. Continuously swing the searchcoil side-to-side using fast, narrow swings of 2 to 4 inches (i.e. wiggle). While continuing this side-to-side wiggle, slowly move the searchcoil sideways toward the target's suspected position until the audio response produces a consistent, symmetric beat. This indicates the lateral left-to-right position of the target. Then locate the target's front-to-back position by rotating around 90° and repeating the same process.

• Alternative pinpointing technique: **DD**-tip or tail. In the standard pinpointing method described on pages 12 and 24, the target is pinpointed beneath the center of the searchcoil. Some detectorists using DD coils prefer to pinpoint off the tip or tail of the searchcoil.



## DD "tip" pinpointing technique

(Left) Press and hold the Pinpoint pushbutton during this technique. Sweep the searchcoil side-to-side to center the target (the point where the strongest audio response is heard and the maximum LCD pixels on the top row are displayed).

Then, pull the searchcoil slowly toward you, while noting the target signal (see Image A).

Once the target signal drops off (both audibly and on the LCD meter), shallow targets should be located immediately in front of the searchcoil's tip (see Image B). Deep targets will be under or just inside your searchcoil's tip. This is because the conical shape of the searchcoil's detection field begins bending in slightly as the depth increases (see Image C).



You can reverse this pinpointing technique to pinpoint off the DD coil's tail; in this case, push the coil away from you. The audio and LCD meter will place the target just off the searchcoil's tail.

Tip: Practice any or all of these various pinpointing options in your test plot.

Choose the technique that works best for you. As you improve your pinpointing accuracy, you will dig smaller holes and increase your productive hunting time.

SYMPTOM	SOLUTION
No power	1. Ensure batteries are installed in the correct position.
	2. Replace all old batteries with all new batteries.
Erratic sounds or target ID cursor movement	<ol> <li>Ensure your searchcoil is securely connected and the coil cable is snugly wound around the stem.</li> <li>If using the detector indoors, be aware that excessive amounts of electrical interference exists, plus excessive amounts of metal can be found in floors and walls.</li> <li>Reduce your sensitivity setting.</li> <li>Determine if you are close to other metal detectors or other metal structures such as electrical power lines, wire fences, benches, etc.</li> </ol>
Intermittent Signals	Intermittent signals typically mean you've found a deeply buried target or one that is positioned at a difficult angle for your detector to read. Scan from different directions to help define the signal. In the case of multiple targets switch to the ZERO Mode or press the pinpoint button to precisely locate all targets. In trashy areas, use the Super Sniper <sup>TM</sup> searchcoil. (NOTE: Iron targets may cause Intermittent Signals. You can identify iron targets in ZERO Mode).
I'm not finding specific targets	Ensure you are using the correct mode for the type hunting you are doing. If specifically hunting for coins, COINS mode should be your best choice to eliminate other undesirable targets. You may also use the ZERO mode, which detects all metal targets to ensure desired targets are present.
Target ID Cursor bounces	If your Target ID Cursor bounces erratically, chances are you've found a trash target. However, a Target ID Cursor may bounce if a good target (such as a coin) is not parallel to the searchcoil (e.g. on edge). It may also bounce if there is one or multiple "junk" targets laying next to the good target. Scan from different directions until your Target ID Cursor becomes more stable. NOTE: Large, flat pieces of iron—depending on their orientation in the ground—can read as a good target or can cause erratic Target ID Cursor movement.

# **TROUBLESHOOTING GUIDE**

## METAL DETECTING CODE OF ETHICS

The following is a Code of Ethics that many treasure hunt clubs endorse and hobbyists follow to preserve our exciting hobby of metal detecting. We encourage you to do the same:

- I will respect private and public property, all historical and archaeological sites and will do no metal detecting on these lands without proper permission.
- I will keep informed on and obey all local and national legislation relating to the discovery and reporting of found treasures.
- I will aid law enforcement officials whenever possible.
- I will cause no willful damage to property of any kind, including fences, signs and buildings.
- · I will always fill the holes I dig.
- · I will not destroy property, buildings or the remains of deserted structures.
- · I will not leave litter or other discarded junk items lying around.
- · I will carry all rubbish and dug targets with me when I leave each search area.
- I will observe the Golden Rule, using good outdoor manners and conducting myself at all times in a manner which will add to the stature and public image of all people engaged in the field of metal detection.

# CAUTIONS

When searching for treasure with your detector, observe these precautions:

- · Never trespass or hunt on private property without permission.
- · Avoid areas where pipelines or electric lines may be buried.
- · National and state parks / monuments, etc are absolutely off-limits.
- Deepseeking detectors can detect concealed pipes, wiring and other potentially dangerous material. When those are located, the proper authorities should be notified.
- · Do not hunt in a military zone where bombs or other explosives may be buried.
- · Do not disturb any pipeline, particularly if it could be carrying flammable gas

or liquid.

- Use reasonable caution in digging toward any target, particularly in areas where you are uncertain of the ground conditions.
- If you are unsure about using your metal detector in any area, always seek permission from the proper authorities.

## **CARING FOR YOUR MD-6350 DETECTOR**

Your detector is a rugged machine, designed for outdoor use. However, as with all electronic equipment, there are some simple ways you can care for your detector to maintain its high performance.

- Avoid extreme temperatures as much as possible, such as storing the detector in an automobile trunk during the summer or outdoors in sub-freezing weather.
- Keep your detector clean. Wipe the control housing with a damp cloth when necessary.
- Remember that your searchcoil is submersible, but your control housing is not. Never submerge any control housing or the connector in water (unless specifically designed for underwater use).
- · Protect your control housing from heavy mist, rain and blowing surf.
- · Disassemble the stem, and wipe it and the searchcoil clean with a damp cloth.
- When storing for longer than one month, remove the batteries from the detector.
- It is best to use quality alkaline batteries. When changing batteries, be sure to replace with all new batteries for optimum performance.

## **MD-6350 WARRANTY & SERVICE**

Your MD-6350 detector is warranted for 24 months, limited parts and labor, but does not cover damage caused by alteration, modification, neglect, accident or misuse.

In the event you encounter problems with your MD-6350 detector please read through this Owner's Manual carefully to ensure the detector is not inoperable due to manual adjustments. Press and hold the power pushbutton for 10 seconds to return to the recommended factory settings.

You should also make certain you have:

- Checked your batteries, switches and connectors. Weak batteries are the most common cause of detector "failure."
- Contacted your dealer for help, particularly if you are not familiar with the MD-6350 detector.

In the event that repairs or warranty service are necessary for your MD-6350, contact the local retail outlet where your detector was purchased. To avoid excessive shipping and import charges, do not attempt to return a product to the factory in the United States.

# UNDERGROUND METAL DETECTOR

