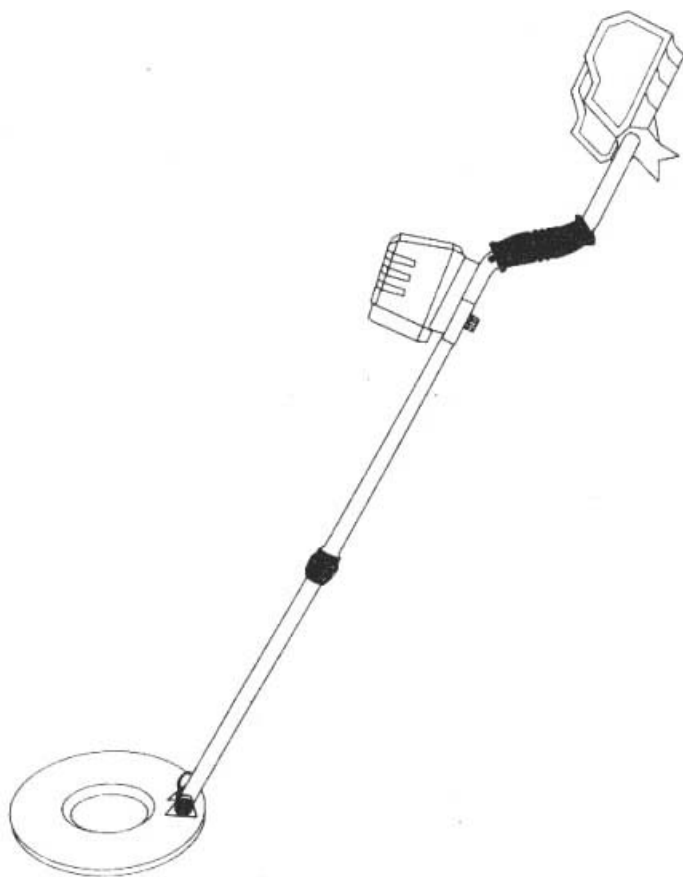


METAL DETECTOR

DEEP TARGET
SEARCH



CONTENT

INTRODUCTION

- 1.1 ABOUT YOUR DETECTOR
- 1.2. METAL DETECTOR OPERATORS ETHICS
- 1.3 PLACES WHERE YOU CAN USE YOUR METAL DETECTOR

PARTS AND NAMES

PREPARATION

- 3.1 ASSEMBLING THE DETECTOR
- 3.2 INSTALLING BATTERIES
- 3.3 BATTERY TESTING
- 3.4 USING HEADPHONE

OPERATION

- 4.1 MODES OF OPERATION
- 4.2 SEARCHING MODE
- 4.3 TARGETING MODE
- 4.4 OPERATION TIPS
- 4.5 FALSE SIGNALS

MAINTENANCE

SPECIFICATIONS

1. INTRODUCTION

Thank you for purchase of the MS-HD-10 Metal Detector. With this powerful and versatile device, you can hunt for coins, relics, jewellery, gold, and silver just about anywhere. To obtain maximum performance, we urge you to take a few minutes to read this manual carefully.

1.1 ABOUT YOUR DETECTOR

Fully Automatic - a turn-on-and-go detector.

Zero Motion Targeting Function - for precisely locate a target.

No Clumsy Slack Cable - hidden search coil cable (connecting between control unit and search coil) avoid entangling and for ease of stem length adjustment.

Headphone Jack - provided for headphone connection. Both stereo or mono headphone can be used.

Volume Control - for adjusting the output volume to the loud speaker and headphone.

Batteries Test - lets you test the conditions of the batteries in the battery compartment.

Waterproof Search Coil - lets you use the detector in the shallow water.

Adjustable Stem - lets you adjust the detector's length for comfortable use.

Armrest & Stem - designed to eliminate strain on forearm.

Power - only two 9-volt batteries are required. Built-in DC-DC converter for prolonging battery life.

1.2 METAL DETECTOR OPERATORS ETHICS

Below are few basic rules you should follow while using your metal detector.

- Always get permission to hunt on private property.
- Always leave a site cleaner than you found it. Take at least some trash with your or, if you can, take it all.
- Always fill in your holes neatly whether you're in a city park or remote wilderness. Leave the land as it was before you disturbed it.
- Always obey all laws relating to Treasure Hunting.
- Always return valuable property if you can locate the original owner.
- Always do what ever you can to give the hobby of Treasure Hunting the good image it needs and deserves.

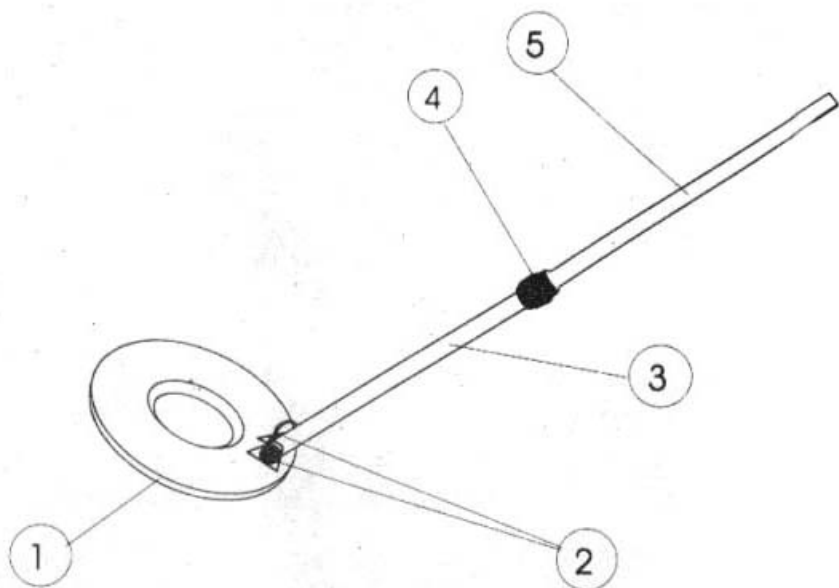
1.3 PLACES WHERE YOU CAN USE YOUR METAL DETECTOR.

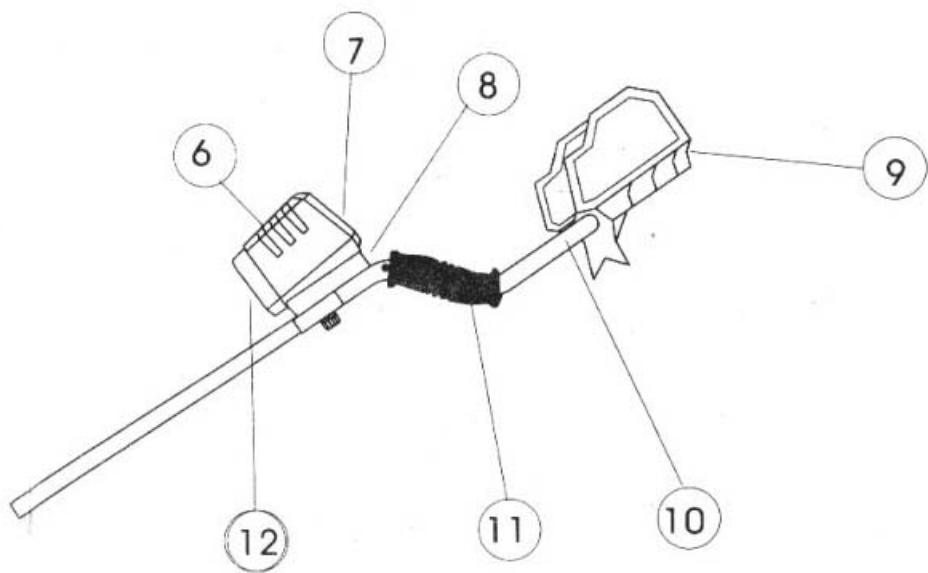
- National Forrest and Federal lands, State park and Lands.
- Corps of Engineers, Lakes, shorelines and lands.
- Bureau of Land Management (BLM) Lands.
- City or Country Park Lands and public school grounds.

2. PARTS AND NAMES

PARTS AND NAME

1. SEARCH COIL ASSEMBLY
2. SEARCH COIL KNOBS
3. LOWER STEM
4. STEM LOCK NUT
5. UPPER STEM
6. CONTROLLER UNIT
7. CONTROL PANEL
8. HEADPHONE JACK
9. ARMREST
10. ARMREST STEM
11. HANDLE ASSEMBLY
12. BATTERY COMPARTMENT





3. PREPARATION

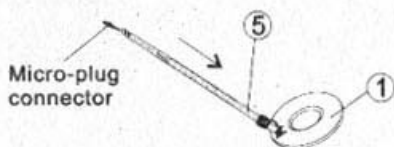
3.1 ASSEMBLING THE DETECTOR

You don't need any special tools to assemble your metal detector. All you need is a small Philips head screw driver. After unpack your detector, you may start the following assemblies and adjustments:

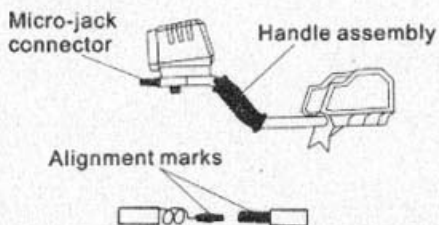
3.1.1. Rotate the STEM LOCK NUT (4) of the search coil clockwise until it loosens.



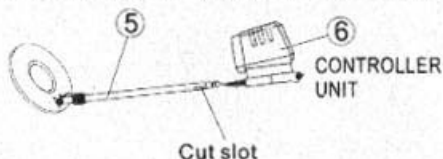
3.1.2. Slide the UPPER STEM (5) towards the SEARCH COIL (1) as indicated by an arrow until you can see a micro-plug connector. Pull out the plug so that you can hold it on your hand.



3.1.3 Locate the micro-jack connector in the HANDLE ASSEMBLY (11). Connect the plug and the jack together and take care of alignment marks showing on the surface of the jack and plug.



3.1.4 Slide the UPPER STEM (5) towards the CONTROLLER UNIT (6). Care should be taken for the direction of the cut slot (of the upper stem) which should be pulled underneath the support of control unit.



3.1.5 Tighten the KNOB NUT under the CONTROLLER UNIT (6).

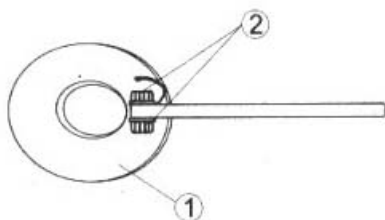


3.1.6 Adjust the LOWER STEM (3) so that when you stand upright with the detector in your hand, the SEARCH COIL (1) is level with and about 1/2 to 2 inches above the ground with your arm relaxed at your side.

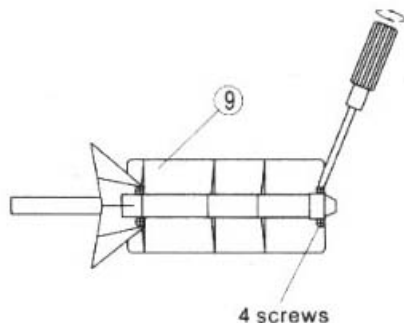


3.1.7 Tighten the STEM LOCK NUT (4) in reverse direction (counterclockwise) to lock it in place.

3.1.8 Loosen the SEARCH COIL KNOBS (2) at the SEARCH COIL ASSEMBLY (1), then adjust the search coil to the desired angle. (The Search Coil should be parallel with the ground.) Tighten the knobs just enough to keep the search coil from rotating or wobbling.

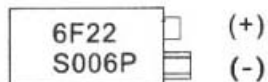


3.1.9 Loosen the 4 screws at the bottom of the ARMREST (9). Adjust the armrest so that it should be near to the end of you forearm. Tighten the 4 screws in the reverse direction.



3.2 INSTALLING BATTERIES

You need 2 9-volt (6F22, S006P or equivalent) batteries to power your detector.

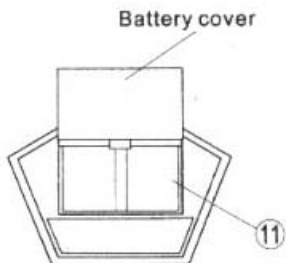


3.2.1 Turn the DISC dial anticlockwise to the OFF position to make sure the detector is off.

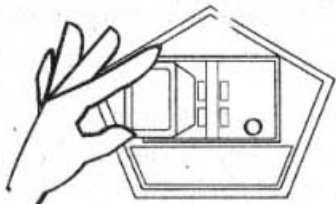


DISC dial

3.2.2 Slide the battery cover away from the BATTERY COMPARTMENT (12).



3.2.3 Insert 2 new batteries into the BATTERY COMPARTMENT. Care should be taken for the polarities symbols (+ and -) which are marked the connection terminals and on the batteries. The polarities of the battery must be matched with the polarities of the terminals.



3.2.4 Replace the battery cover.

Cautions:

Use only fresh batteries and always replace the old batteries by fresh batteries.

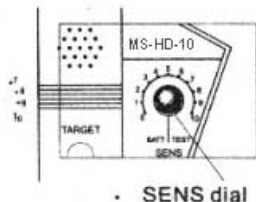
Do not mix old and new batteries, different types of batteries (standard, alkaline, or rechargeable), or rechargeable batteries of different capacities.

Never attempt to recharge the non-rechargeable battery. 6F22 or S006P 9-volt battery is normally non-rechargeable.

Dispose old batteries promptly and properly.

3.3 BATTERY TESTING

The batteries should be tested after initial batteries installation. The batteries should also be tested if the detector does not turn on, has weak volume, cannot tune properly, or drifts or has erratic operation.



Note:

You are recommended to test the batteries every time you use your detector.

To test the batteries, turn the DISC-rimination dial clockwise (at any position). Then set the SENS-itivity dial anti-clockwise until a click sound is heard. A loud tone indicates good batteries. A faint tone indicates weak batteries and no tone means that it's time to change.

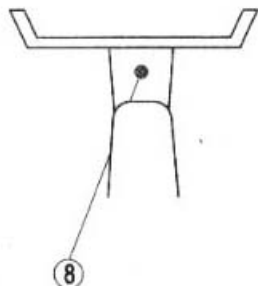
3.4 USING HEADPHONE

You should always use a headphone whenever you search with your metal detector. Headphone is especially useful in noisy area, such as the beach and rear city area. It enhances audio perception by bringing the sound directly to your ears while masking "outside" noise interference. You shall be amazed at how much better you can hear the detector signals with the headphone than you can with the speaker alone. Using headphones also save battery power.

To connect a headphone to the detector, insert the headphones' 1/8 inch plug into the HEADPHONE JACK (8).

Note:

The detector's internal speaker will be disconnected when you connect a headphone.



4. OPERATION

4.1 MODES OF OPERATION

MS-HD-10 has two operating modes. i.e. The searching mode and the targeting mode.

- **Searching mode:** when the power is turned on, the device defaults at this mode. This is a "VLF-Motion Discrimination" mode which automatically ignores most ground minerals, rejects junk and works only when search coil is moving.
- **Targeting mode:** when the **TARGET (RED)** button is depressed.

4.2 SEARCHING MODE

4.2.1 Initial Setting

Turn the **SENS** control dial to the position 8.

Turn the **DISC** control dial to the position 2.

For other settings, only experience will tell you how much sensitivity and discrimination should be used in a particular situation.

4.2.2 General Rules

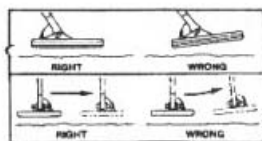
As a general rule, turn your sensitivity down to reduce excessive false signals caused by highly mineralized ground or interference caused by power lines, radio stations, etc. Turn it up if you want those deepest, smallest targets and you're willing to put up with a few more false signals.

In trashy areas you'll probably want to operate at a higher level of discrimination (6 for example) to cut down on the amount of time you spend digging bad targets.

In relatively non-trashy soil use a low level of discrimination (2 for example). In this manner the MS-HD-10 will detect all metal targets within its range and you can instantly increase the discrimination for further identification.

Keep the search coil moving at a comfortable rate. Remember that the MS-HD-10 is a motion detector and responds only when search coil (or the target) is moving while in the Searching mode.

Keep the search coil parallel to, and as close to the ground as practical. Overlap your sweeps approximately 50%



Search in a methodical manner sweeping in a tight semicircle. Pay close attention to where you're going and where you've been.

NOTE: Take Your Time. If you walk too fast you can't overlap your sweeps and you'll miss a lot of ground. If you sweep too fast, you'll lose sensitivity and miss the deep targets.

4.3 TARGETING MODE

4.3.1 Zero Motion Targeting

The Target mode requires no tuning, no motion, detects all metals and in normal soil it's even more sensitive than the search mode. Precise target location is a snap.

Once the presence of a buried target is indicated by the "beep-beep" of the MS-HD-10, simply place the coil lightly on the ground, away from the target area. Push the TARGET button and hold. (At maximum sensitivity you may hear a faint tone which will disappear as soon as the coil is raised.)

Raise the coil one-half inch or so and move it side to side across the target area a few times.

Stop the search coil over the spot where you receive the loudest response.

Now move the coil slowly forward and back a couple of times, again stopping over the strongest response.

Move the coil side-to-side one more time and stop over the strongest signal once again. Your target should be directly below the search coil.

For quick and accurate targeting of strong signals, place the coil on the ground very close to the target and push and hold the TARGET button. You have now "tuned-out" most of the target signal so that when you raise the coil for targeting you will only receive a response directly over, or very nearly over the target.

4.3.2 Targeting in the Motion Search Operation

Targeting in the search mode will take a little practice but you may find that for most targets, it's even quicker than the Zero Motion Targeting Mode.

Simply use the similar procedure as in Zero Motion Targeting 4.3.1. The only difference will be that when you stop the coil over the target you will lose the audio signal. You must keep the coil moving at least slightly to determine the location of the strongest signal before it.

- For very strong signals, you may improve your motion mode pinpointing accuracy by adding one or more of the following steps.

Lift the coil until the signal is just barely heard.

Reduce the sensitivity level.

Increase the discrimination level.

Rest the coil on the ground and move it back and forth very slowly.

- For very weak signals try the followings:

Move the coil closer to the ground.

Increase the sensitivity level.

Decrease the discrimination level.

Speed up the sweep rate slightly.

4.4 OPERATION TIPS

- As stated in the Note in 4.2. Take Your Time and Overlap your Sweeps.

- Use a good headphone. You won't miss faint targets, you won't attract unwanted attention and you won't bother others.

- Practice targeting. There's nothing sacred about the methods described in this manual. Many MS-HD-10 users have developed their own targeting methods.

- Always bury a coin when working in unfamiliar territory and check it at different discrimination and sensitivity levels. There may be some sensitivity loss at higher levels of discrimination.

The greater the ground mineralization, the higher the sensitivity loss. For example, you may be able to detect a penny at 6 inches deep at zero discrimination, but no deeper than 4 inches at the pull-tab discrimination point.

- The MS-HD-10 is an easy detector to use but if you're having trouble with any aspect of its operation (pinpointing, searching, false signals, etc) go back and reread the part of this manual relating to your problem.

- If a target gives a strong response in the search mode but no response in the Zero Motion Targeting mode, you may have "turned out" your target (and all others) by pushing the TARGET button over another piece of metal. If you suspect this may be the case, move the search coil to another spot before pressing the TARGET button again.

4.5 FALSE SIGNALS

A "false signal" occurs when something that shouldn't, sound like a good target. Your MS-HD-10 does an excellent job of ignoring junk targets with similar electrical characteristics. Large pieces of trash for example, or even some kind of bottle caps and pull tabs. Small pieces of trash less than 2 inches from the search coil will also sound good occasionally.

False signals normally very faint or very abrupt with static. Often when you go back over the same spot, a false signal will simply disappear.

Other false signals may be very loud and sharp but most of these will disappear if the coil is speeded or raised slightly. Some shallow, large or irregular pieces of junk however, will fool the MS-HD-10 no matter what you do. Here's some other sources of false signals and what to do about them:

4.5.1 Detector Interference

Caused by nearby metal detectors operating at the same (or close) frequency.

Solutions: Move further away or reduce sensitivity.

4.5.2 Electrical Interference

Caused by Radio / TV stations, power lines, etc.

Solutions: Move further away, lower the sensitivity, reduce sweep speed. Wrap the search coil cable tightly around the stem.

4.5.3 Highly Mineralized Soil

Usually causes constant static or good target sound.

Solutions: Lower the sensitivity, increase the discrimination. Raise the search coil until false signals disappear and sweep at the height.

4.5.4 Wet Sand

Same as highly mineralized soil.

4.5.5 Elongated Ferrous Objects

If you hear two beeps very close together and can't find either one, you're probably over a nail or some other long iron object. But a very shallow coin or a coin on edge will give the same response.

Solutions: In all cases, the target will be between the beeps, or if you sweep at right angles to your original direction, you'll receive a single beep directly over the target (except for the very shallow coin). One way to tell the difference between a coin and a nail is to set your discrimination at about 5. Most small nails will be tuned out while most coins will respond with a good, smooth signal.

4.5.6 Extremely Trashy Soil

May result in a constant chatter or "snap, crackle and pop" with assorted, hard-to-find good signals.

Solution: Increase the discrimination level. You'll be able to zero in on good targets much closer to junk.

4.5.7 Digging Tool

If you're carrying a metal digging tool in one hand, your MS-HD-10 may sound off each time you swing the coil beneath it.

Solution: Hold it behind your back or up above your waist.

False signals may also occur in the Zero Motion Targeting mode. When in this mode the MS-HD-10 detects all metals so you may pinpoint a piece of nearby junk instead of a good target. For this reason, you should always recheck your target area after recovering any target to insure that you haven't missed anything.

You may also receive false targeting signals in highly mineralized soil. In this case, it is important to keep the coil parallel to the ground and at least an inch above it.

4. MAINTENANCE

Your MS-HD-10 doesn't require a lot of care, but there are few things you should do to keep it in peak operating condition.

- If you're not going to use it for a while, take the batteries out.
- Avoid extreme temperature like the inside of a closed car sitting in the sun.
- If you "scrub" the search coil on the ground, you'll eventually wear off the bottom. Coil replacement are expensive. Instead, invest in an inexpensive coil cover or called the skid plate.
- Put a rain-rest cover over the control housing if you're hunting in rain, fog or dust.
- Keep your MS-HD-10 dry and clean. Wipe off the lower stem before sliding into the upper stem and keep the lock nut threads free of sand and dirt.

5. SPECIFICATION

1. BATTERY: 2X9V,
TYPE: 6F22,
S006P
OR EQUIVALENT
2. OPERATING CURRENT: STANDBY $\leq 18\text{mA}$
MAX $\leq 50\text{mA}$
3. OPERATING VOLTAGE RANGE: 7~ 9.6V
4. OPERATING FREQUENCY: 5.5KHz
5. SENSITIVITY: Min. 23 cm (Test Coin: US $\phi 25$)
6. AUDIO FREQUENCY: 500Hz
7. TEMPERATURE RANGE: $-10^{\circ}\text{C} \sim 50^{\circ}\text{C}$
8. SIZE: 130mm(L) x 150mm(W) x 95mm(H)
9. NET WEIGHT: 1.3Kg