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GARRETTTM
METAL DETECTORS

**Owner's
Manual**

Sea Hunter Mark II



\$3

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TO THE OWNER

The Garrett *Sea Hunter Mark II* has an unparalleled reputation among treasure hunters, law enforcement agencies and various industries as one of the most reliable and sophisticated submersible metal detectors of its kind.

The *Sea Hunter Mark II* is an advanced microprocessor-driven instrument that is lightweight, highly durable and easy to use. The *Sea Hunter's* pulse induction (PI) circuitry provides excellent depth and enables you to find treasure without interference from salt water and most ground minerals.

OUTSTANDING FEATURES

The *Sea Hunter's* outstanding performance, custom-designed housing and multiple configurations make it superior to other underwater detectors available. Microprocessor-based circuitry in the *Sea Hunter* provides greater sensitivity, faster target response and comes with Garrett's

exclusive Discrete Target Elimination mode. The custom designed double-o-ring sealed housing is durable and lightweight, with individual, o-ring sealed battery and electronics compartments that makes battery replacement hassle free. An 8" epoxy-filled searchcoil and custom designed headphones, submersible to 200 feet, make the *Sea Hunter Mark II* highly stable and reliable.

The *Sea Hunter Mark II* is very versatile, offering four stem arrangements to suit your search needs: the long stem with top stem mount, under cuff stem mount, hip mount and the short stem ScubaMate. Each arrangement allows you the versatility to search on land, in shallow water or underwater, or in situations where a sealed detector is required. The ScubaMate is ideal for diving while the long stem allows you to carry the control housing on your waist or shoulder, or stem mounted, is useful for searching on land or in shallow water.

CONTROL FUNCTIONS



Figure 1, Panel Face

Power - Use to turn the detector on and choose either of two search modes. A battery check occurs automatically each time the power is switched on. (Figure 1)

Threshold - Use to set the base audio level according to an individual's hearing ability and how loud the outside noise is. Typically the sound is set no louder than necessary, just above silent is recommended. (Figure 1)

Elimination - Use in conjunction with either the Standard or Discrete Trash Elimination modes to choose the elimination level appropriate to your search needs. As the elimination knob is rotated clockwise, an increasing number of undesirable items are excluded from detection. (Figure 1).

SEARCH MODES

Standard Trash Elimination and Discrete Trash Elimination are the search modes available with the *Sea Hunter Mark II*. The selector switch for these modes is located on the right side of the panel.

Standard Trash Elimination is the search mode normally available on conventional pulse induction (PI) metal detectors. The background audio threshold is continuous and remains close to the operator's chosen level while responding to ongoing variations in the detection signal. Small or deep targets produce faint, weak signals and large or shallow targets produce loud, strong signals.

The elimination knob is used to change the detector's ability to detect various types of metal. As you rotate the elimination knob clockwise, the detection response to metals decreases. The detection response to poor conductors, such as foil, nickel and pull tabs decreases significantly more than

the response to good conductors such as coins and fine jewelry. In Standard mode, the response to poor conductors can be eliminated effectively; however, if these objects are too close to the searchcoil, a detection response may occur. The response to good conductors, although somewhat diminished, remains relatively strong. Some jewelry such as rings and thin gold necklaces are found in the middle of the conductivity range, so it's important to dial in only the amount of elimination needed for the search area.

Standard mode permits a very slow searchcoil sweep, making it particularly effective for pinpointing targets. It provides the deepest possible detection and is most useful in areas with little trash.

Discrete Trash Elimination is a search mode exclusive to the *Sea Hunter Mark II*. It is similar in operation to detectors with a Motion Discrimination mode in that it provides more precise and enhanced

target discrimination. The background audio threshold remains at the chosen level until the searchcoil passes over targets in the knob's "accept" range, at which time a sharp audio response, a characteristic of all motion detectors, occurs.

Figure 2 shows the typical detection responses from various metals in both Discrete (DIS) and Standard (Std) Trash Elimination modes. Note that in Std 0

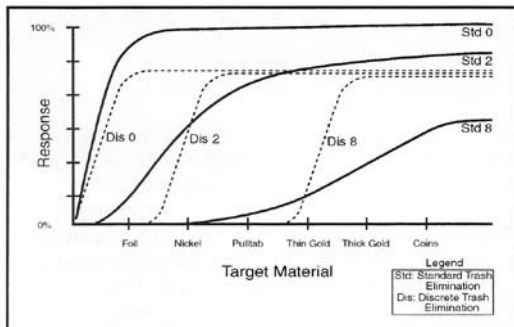


Figure 2

(Standard Mode with elimination at 0) metals can be detected at 100% capability. As the elimination control is increased in either search mode, the response to various targets decreases. Note that the response to many metals decreases more rapidly in Standard mode than in Discrete mode.

As with Standard mode, the elimination knob is used to change the detector's ability to detect various types of metal; poor conductors can be eliminated while only slightly reducing the detection of better conductors. Although Discrete mode appears to achieve less detection depth in air tests, its ability to eliminate undesirable items precisely, without affecting desirable items, enable it to outperform Standard mode in certain situations. For example, when the elimination control is set to exclude pull tabs, it excludes pull tabs with little or no effect on the detection response to most thin gold rings (Figure 2).

To pinpoint in Discrete mode, you simply sweep the searchcoil from side to side over a target. The searchcoil must remain in motion to produce a detection response. This mode is designed to provide superior pulse induction target discrimination and is extremely effective in areas with lots of trash.

ASSEMBLY

1. Choose a desired operating / stem / control housing configuration. Assemble the stem and attach the control housing as desired. (Figure 3,4,5).



Figure 3, ScubaMate



Figure 4, Full length with undercuff



Figure 5, Long stem with hip mount configurations



Figure 6, Parts needed to assemble stem and searchcoil

2. Attach the searchcoil to the lower stem. Align the mounting holes of the searchcoil and stem, insert the threaded bolt through the holes and hand-tighten the knobs; Do Not use tools. (Figure 6)

3. Wrap the cable around the stem and secure it according to your operating configuration. For a hip mount configuration, use the adjustable strap to secure the cable to the upper stem.

4. Ensure the searchcoil connector at the rear of the control housing is clean and the o-ring is well lubricated; add a little silicon grease or petroleum jelly if necessary. Do not coat connector pins with lubricant. Insert coil connector and gently hand tighten. Do not over tighten.

5. Repeat Step 4 when assembling the headphone connector at the front of the control housing.

6. Perform a battery test by switching on the detector, noting the number of beeps that occur. Scan a metal object to confirm detection. If the batteries are low or the detector fails to operate, verify that the battery pack and batteries are aligned properly.

OPERATING PROCEDURE

1. Switch on the detector and note the results of the battery test represented by a range of one to four beeps. Four beeps indicate the batteries are full, one beep indicates they must be replaced.

2. Select the Standard or Discrete Trash Elimination mode.

3. Set the threshold knob to the desired audio level. Typically the audio is set very low; usually just above silent. How low you set it depends on your hearing needs and how loud the background noise is.

4. Set the elimination control to zero or a low level until you examine your search area and determine the kinds of metal items you want eliminated from detection. Then re-adjust it to a level that maximizes your search goals.

FIELD RECOMMENDATIONS

Knowing the conditions of your search and which items you want, or don't want, to find will help you choose the search mode and elimination setting which best suits your needs.

Depending on your search goals, you may want to set the elimination no higher than necessary so that you can detect most metals. You may even want to set the elimination at zero so there is no discrimination and all metals are detected. Although you'll detect a lot of undesirable items like foil and pull tabs, you won't miss any desirable ones.

Methodically sweep the searchcoil from side to side keeping it one or two inches above the surface. Restrict your sweeping speed to about one to two feet per second. Overlap each sweep by advancing the searchcoil by at least a quarter of its diameter; one half is recommended. Always scan in a straight

line (not a wide arc); it helps keep the searchcoil level, reduces the likelihood of lifting the searchcoil at the end of each sweep and ensures the overlap sweeps remain uniform.

Finally, it is important to remember that any detection signal, no matter how loud or faint, represents the sound of metal and its source should always be determined.

As with all PI detectors, eliminating iron materials while in either mode is difficult if not impossible. However, attaching a magnet to the inside of your digging tool can help separate bits of iron and other debris from your treasure finds.

SEARCH & RECOVERY TIPS

Treasure Hunting

Research - The first rule of successful treasure hunting, whether on land or in the sea is to do your homework. Learn as much as you can about the areas you want to search, the kind of treasure you want to find and the best ways to recover it. The better prepared you are the greater your chances for success. The following books by Charles Garrett, available from Garrett Metal Detectors, or your local Authorized Garrett Dealer, offer invaluable research, advice and detailed information on search and recovery techniques for hobbyists: *How to Search Sand and Surf*; *Treasure Hunting for Fun and Profit* and *New Successful Coin Hunting*.

Search popular gathering places - Survey the beach to determine areas with lots of people activity. A wealth of treasure, including lost coins and jewelry, often lies hidden beneath the sand. Other areas that can yield treasure include footpaths, scenic spots, picnic or camp sites, concession stands, dressing cabins, water fountains, boat docks, boardwalks, sea

wall bases, bridges, channel-dredging sites and sunken vessels.

Study surf and weather patterns - Pay attention to storm, wind and tide activity. Treasures from deepwater vaults are often transferred to shallower locations like tidal pools and water-filled depressions near the shoreline. A beach considered unproductive can suddenly yield riches. Heavy storm waves often unearth treasures like rings caught in exposed rock and gravel areas. (Figure 7).



Figure 7, Surf Pattern

Use the right recovery tools - Use the right tool for the job and you'll recover treasure in no time. Knowing what you're digging for and the kind of surface you're digging into will help you choose the right digging tool.

Double check your holes - After you dig a target, re-scan the hole to make sure you retrieved everything in and around it; corroded and coral-encrusted desirable items can be easily mistaken for undesirable ones.

Law enforcement and industry - Law enforcement agencies often depend on metal detectors to help their investigative teams recover stolen, lost or discarded property, particularly material evidence such as vehicles, weapons and stolen goods.

Construction, forestry and lumber, and landscaping are just a few industries that use metal detectors to purge areas or

materials of unwanted or hazardous metal items. Metal detectors have been used to find a variety of hidden items, such as pipes, scrap metal, nails embedded in lumber, underground electrical power cables and oil barrels.

Select zero discrimination - When used for the purposes of law enforcement or industry, the *Sea Hunter Mark II*, or any metal detector for that matter, usually requires little or no discrimination.

Underwater searches - The *Sea Hunter Mark II* can locate both ferrous and non ferrous metals concealed within and below aquatic growth from bottom soil and rocks, wood and other non-metallic materials. Large items such as boats, motors and safes can be located several feet below the searchcoil. Locating small, isolated items is more difficult and requires a comprehensive grid search with the detector.

Land searches - When searching near wire fences, metal buildings, etc., make sure that you scan the searchcoil parallel to the structure.

CAUTIONS

1. To avoid acid damage you should install high-quality alkaline or nickel metal hydride batteries and always remove them prior to storing the detector.

2. If the battery compartment becomes flooded, remove the batteries immediately, rinse the compartment with fresh water and allow to air dry. The electronics compartment is factory sealed and should never be opened. The see-through "helmet mask" window on the front panel should remain clean and free from condensation. If the window ever displays moisture, you should contact the Garrett factory as soon as possible.

3. Before diving, always examine the searchcoil and headphone connectors and battery cap. Verify the battery strength by operating the detector for a couple of minutes prior to field use.

4. Dive with extreme caution. Observe diving practices to lessen the risk of becoming entangled with the headphones or coil cables. Ensure that the headphones' vent holes are open prior to diving.

5. When using the hip mount configuration, ensure that the belt will not interfere with equipment removal in the event of an emergency.

MAINTENANCE

1. Wash off any sand, salt and residue from the detector immediately after each use.
2. Avoid high, internal temperatures by protecting the equipment from the sun. Store equipment in a cool location; avoid storage in a hot vehicle.
3. Take advantage of Garrett's preventative maintenance program. For a small fee, the factory will inspect the entire detector, replace its seals and pressure test it. Contact the factory for more details.

BATTERY REPLACEMENT



Figure 8, Proper battery pack re-installation

To access the battery pack, unscrew the battery cap at the rear of the detector housing, by hand. Do not use tools. The o-ring should remain in the control housing while the battery pack slides out. When installing batteries ensure that they are aligned with the correct polarity (plus and minus) markings. Re-install the battery pack by placing the contact end of the housing inside first and pointing downward (figure 8). Verify that the o-ring is well-lubricated and free from debris. Add a little silicon grease or petroleum

jelly, if necessary. Reinstall the battery cap, hand tighten it until it is flush with the housing and the two index marks are aligned as shown (Figure 9).



Figure 9, Proper battery cap re-installation

RECOMMENDED ACCESSORIES

Using the right recovery tools is as essential to treasure hunting as the detector itself. Here are a few examples of recovery tools and their uses (Figure 10).

A hand scoop is useful for dry sand and shallow water recovery up to two feet.

A trowel is best for recovering items in clay or gravel areas.



Figure 10, Various commercially available recovery tools

Tip: A strong magnet attached to the inside of a scoop will help separate bits of wire and other iron debris from your treasure finds.

SPECIFICATIONS

- Circuit type: Pulse Induction, automatic cancellation of salt/iron mineralization.
- Frequency: 750 pulses per second
- Submersion depth: Up to 200 feet (65 meters) or seven atmospheres
- Buoyancy: Near neutral
- Batteries: Eight "AA"
- Battery life: Approximately 18-22 hours
- Control housing weight: 31 oz.
- Headphones: 11 oz.
- *Sea Hunter Mark II* with ScubaMate, no headphones: 64 oz.
- *Sea Hunter Mark II* with long stem, no headphones: 73 oz.

REPAIR SERVICE

If you have difficulty operating the *Sea Hunter Mark II*, take a few minutes to re-read this manual and check the batteries, switches and connectors. If you are unfamiliar with underwater detectors, consult your local Authorized Garrett Dealer or the Garrett factory.

If your *Sea Hunter* needs repair, you should return it to the factory accompanied by a detailed letter describing the problem(s). Carefully pack the detector in its shipping carton or other sturdy box, using packing material or appropriate insulation to protect the parts. Do not include the stems or headphones unless they are part of the problem. Return all coils, unless the problem is mechanical.

Note: Remember to include your name, address and daytime phone number with your shipment.

Return your detector to:
Garrett Metal Detectors
1881 W. State St.
Garland, Texas 75042

Please allow one week from the receipt date for the detector's inspection and/or repair and another week for its return. Garrett will automatically return the detector via UPS or Parcel Post unless you provide a written authorization that instructs otherwise.

MORE INFORMATION

For further assistance, please contact the Garrett Customer Service Department, at 1.800.527.4011 or 972.494.6151.

WARNING

The following measures must be observed at all times.

Do not hunt in areas where electric lines, gas/water pipelines, bombs or other explosives may be buried.

Never trespass or hunt on private property without permission.

National and state parks, monuments, military sites, etc. are absolutely "off limits".

Always exercise caution when digging toward a target where the underground conditions are unknown.

RECOMMENDED READING

There are a variety of books available from Garrett that can teach you how to use a metal detector effectively, give you ideas about places to hunt and help improve your search and recovery skills. (All books are written by Charles Garrett unless specified otherwise.)

The revised classic, *Modern Metal Detectors*, is a book that provides necessary, basic information on metal detectors and their use.

The latest edition of *Treasure Hunting for Fun and Profit* is written especially for beginner hobbyists.

Looking for interesting places to hunt? Why not check out Charles Garrett's book, *Ghost Town Treasures*, or Bob Marx's *Buried Treasures You Can Find*, a book describing countless sites where treasure is believed to exist.

New Successful Coin Hunting, You Can Find Gold with a Metal Detector and How To Search Sand and Surf are perfect books for readers who have specific hunting goals.

MIND YOUR MANNERS

Filling holes and obeying NO TRESPASSING signs are just two of the responsibilities of a dedicated metal detector hobbyist. The sincere request that Charles Garrett makes to everyone who uses his equipment is to leave each place they search in better condition than they found it. Thousands of individuals and organizations have adopted this formal Code of Ethics for Metal Detector Operators:

- I will respect private and public property, all historical and archaeological sites and will not metal detect on these sites without proper permission.
- I will keep informed and obey all laws, regulations and rules governing federal, state and local public land.
- I will aid law enforcement officials whenever possible.

- I will not willfully cause damage to property, including fences, signs and buildings and I will always fill the holes I dig.
- I will not destroy property, buildings, or the remains of ghost towns and other deserted structures.
- I will not leave litter or uncovered items lying around. I will carry all trash and discarded 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 that will enhance the public image of everyone involved in the field of metal detection.

PATENT PROTECTION

Garrett's high tech instruments are protected by one or more of the following United States Patents and other Patents Pending: 4,398,104, 4,423,377, 4,303,879, 4,334,191, 3,662,225, 4,162,969, 4,334,192, 4,488,115, 4,700,139, 4,709,213,

Design 274,704 and 297,221

G. B. Design 2,011,852

Australia Design
111,674.

Other patents pending.

All Garrett detectors are manufactured in the United States of America.

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