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› Maclean MCE940 Discriminatory Metal Detector User Manual

Maclean MCE940

Maclean MCE940 Discriminatory Metal Detector User Manual

Detailed instructions for assembly, operation, and maintenance.

1. SAFETY WARNINGS

- Do not operate the metal detector near airports or other sensitive areas where electromagnetic interference could pose a risk.
- This device may interfere with other electronic equipment. Maintain a safe distance from other devices.
- Always comply with local regulations and laws regarding metal detector usage. Be aware of property rights and protected areas.
- The search coil is waterproof, but the control unit is not. Avoid submerging the control unit in water.

2. PACKAGE CONTENTS

Verify that all components are present in your package:

- Maclean MCE940 Metal Detector (Control Unit, Adjustable Stem, Armrest)
- 10 x 5 inch (26 x 13 cm) Elliptical Waterproof Search Coil
- User Manual (English and German)

3. PRODUCT OVERVIEW

The Maclean MCE940 is a versatile discriminatory metal detector designed for efficient metal detection. It features an adjustable stem for user comfort, an integrated speaker for audio alerts, and an LED indicator for detection results. A 6.3mm jack allows for headphone use, and a volume control is included for audio adjustment.



Figure 3.1: Fully assembled Maclean MCE940 Metal Detector.



Figure 3.2: Detail of the control panel, showing various adjustment knobs and indicators.

4. SETUP AND ASSEMBLY

Follow these steps to assemble your metal detector:

1. **Assemble the Stem:** Connect the upper, middle, and lower stem sections. Ensure they click securely into place.
2. **Attach the Armrest:** Slide the armrest onto the upper stem and secure it with the provided fasteners.
3. **Mount the Control Unit:** Attach the control unit to the upper stem. Ensure it is firmly secured and oriented correctly for easy access to controls.
4. **Connect the Search Coil:** Attach the 10 x 5 inch elliptical waterproof search coil to the lower stem using the non-metallic bolt and wing nut. Do not overtighten.
5. **Route the Cable:** Carefully wrap the search coil cable around the stem, leaving enough slack for coil movement, and secure it to prevent tangling during operation.
6. **Insert Batteries:** Open the battery compartment on the control unit. Insert two 9V batteries (not included), ensuring correct polarity. Close the compartment securely.

7. **Adjust Length:** Adjust the stem length from 105 cm to 120 cm to achieve a comfortable operating position. The search coil should be parallel to the ground when you are standing upright.



Figure 4.1: Ergonomic armrest and handle for comfortable operation.

5. OPERATING MODES

The MCE940 offers three distinct operating modes to suit various detection needs:

5.1. Discrimination (DISC) Mode

In Discrimination mode, the detector allows you to manually adjust the ground balance. This mode is particularly useful for filtering out unwanted metallic objects, such as iron trash, enabling you to focus your search on more valuable targets. Adjust the DISC knob to set the desired discrimination level.

5.2. All Metal Mode

All Metal mode is a static operating mode designed for detecting all types of metals without discrimination. When a metal object is detected by the stationary search coil, the detector emits a continuous signal. This mode does not require the detector to be moved from side to side, making it suitable for general scanning.

5.3. Target Mode

Target mode is a static pinpointing mode. It is used to precisely locate the exact position of a detected object after a general scan. Pressing the TARGET button will activate this mode, allowing for accurate retrieval of the target.

6. CONTROLS AND INDICATORS

Familiarize yourself with the control unit's functions:

- **DISC (Discrimination) Knob:** Adjusts the level of discrimination. Turning it clockwise increases the rejection of ferrous metals.
- **GND BAL (Ground Balance) Knob:** Used for manual ground balancing, primarily in Discrimination mode, to compensate for mineralized ground.
- **SENS (Sensitivity) Knob:** Controls the detector's sensitivity to metal targets. Higher sensitivity increases detection depth but may also increase susceptibility to interference.
- **VOLUME Knob:** Adjusts the audio output level for both the integrated speaker and connected headphones. Turn clockwise to increase volume.

- **LOW BAT Indicator:** An LED light that illuminates when the installed 9V batteries are low and require replacement.
- **TARGET Button:** Press and hold this button to activate the static Target mode for precise pinpointing of detected objects.
- **Headphone Jack (6.3mm):** Connect standard 6.3mm headphones here for private listening or to enhance audio clarity in noisy environments.

7. POWER SUPPLY

The Maclean MCE940 metal detector operates on two 9V batteries (not included). Ensure you use fresh, high-quality alkaline batteries for optimal performance and battery life. Always observe the correct polarity when inserting batteries into the compartment. The LOW BAT indicator will signal when battery replacement is necessary.

8. MAINTENANCE

Proper maintenance will extend the life and performance of your metal detector:

- **Cleaning:** After each use, wipe down the detector with a damp cloth to remove dirt, dust, and moisture. Avoid using abrasive cleaners or solvents.
- **Storage:** Store the detector in a dry, cool place away from direct sunlight and extreme temperatures. If storing for an extended period, remove the batteries to prevent leakage and potential damage to the electronics.
- **Search Coil Care:** The search coil is waterproof and can be rinsed with fresh water if it gets dirty. However, ensure the cable connection to the control unit remains dry.
- **Cable Management:** Periodically check the search coil cable for any signs of wear or damage. Ensure it is securely wrapped around the stem to prevent snagging.

9. TROUBLESHOOTING

If you encounter issues with your MCE940, refer to the following common problems and solutions:

- **No Power:** Check if the batteries are correctly inserted and fully charged. Replace both 9V batteries if the LOW BAT indicator is on or if they are old.
- **Weak Signal or No Detection:** Increase the SENS (Sensitivity) setting. Ensure the search coil cable is securely connected to the control unit. Check the battery level.
- **False Signals or Erratic Behavior:** Reduce the SENS (Sensitivity) setting. Adjust the DISC (Discrimination) and GND BAL (Ground Balance) settings to match the ground conditions. Move away from sources of electromagnetic interference such as power lines, cell phones, or other electronic devices.
- **No Audio Output:** Verify that the VOLUME knob is turned up. If using headphones, ensure they are properly plugged into the 6.3mm jack and are functioning correctly. Check if the integrated speaker is obstructed.

10. SPECIFICATIONS

Feature	Specification
Product Dimensions (L x W x H)	23 x 14 x 73 cm (adjustable length)
Weight	Approximately 0.965 kg

Power Supply	2 x 9V batteries (not included)
Adjustable Stem Length	105 cm to 120 cm
Search Coil	10 x 5 inch (26 x 13 cm) Elliptical, Waterproof
Headphone Output	6.3mm jack
Material	Metal
International Protection Rating	IP44 (for search coil)
Model Number	MCE940

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