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› [VIHELM](#) /

› [VIHELM MD-6450 Underground Metal Detector User Manual](#)

VIHELM MD-6450

VIHELM MD-6450 Underground Metal Detector User Manual

Model: MD-6450

1. INTRODUCTION

The VIHELM MD-6450 is an advanced underground metal detector designed for locating various metallic objects. It features a digital display with backlight and incorporates technology for enhanced detection capabilities. This device is suitable for both beginners and experienced users, offering one-touch operation for immediate searching. The MD-6450 includes exclusive Enhanced Target ID technology and patented discrimination features, utilizing two indicator scales to provide detailed information about detected targets and discrimination settings. It also features Enhanced Iron Resolution for improved separation of desirable targets from iron in cluttered environments.

The standard 8.5" x 11" elliptical Double-D search coil is engineered for optimal performance, even in challenging mineralized soils.



Figure 1: Fully assembled VIHELM MD-6450 Metal Detector.

2. PACKAGE CONTENTS

Before assembly, ensure all components are present in the package:

- Control Box with Digital Display
- Adjustable Stem (Upper and Lower)
- Search Coil (8.5" x 11" elliptical Double-D)

- Armrest
- Fasteners and Washers for assembly
- Instruction Manual



Figure 2: All components included in the VIHELM MD-6450 package.

3. SETUP AND ASSEMBLY

Follow these steps to assemble your MD-6450 metal detector:

1. **Attach the Search Coil:** Secure the search coil to the lower stem using the provided bolt and washers. Ensure it is firmly attached but can still pivot.
2. **Connect the Stems:** Insert the lower stem into the upper stem. Adjust the length to a comfortable operating position and secure it.
3. **Mount the Control Box:** Slide the control box onto the upper stem. Ensure the cable from the search coil is wrapped securely around the stem to prevent tangling and damage.
4. **Install Batteries:** Open the battery compartment located on the underside of the control box. Insert four (4) AA batteries, ensuring correct polarity. Close the compartment securely.



Figure 3: Location of the battery compartment for installing 4 AA batteries.



Figure 4: Side view of the assembled metal detector, showing the control box and search coil attachment.

4. OPERATING INSTRUCTIONS

4.1 Power On/Off

Press the power button on the control panel to turn the detector on or off. The device is designed for one-touch operation, making it ready for use immediately after powering on.

4.2 Control Panel Overview



Figure 5: Detailed view of the MD-6450 digital control panel and display.

The digital display provides crucial information during operation:

- **Mode Indicator:** Highlights one of five detection modes (Zero, Jewelry, Custom, Relics, or Coins).
- **Target ID Legend:** Works with the Target ID Cursor to suggest the probable identity of a detected target.
- **Target ID Cursor (Upper Scale):** Consists of twelve graphic segments indicating the probable identity of a target.
- **Lower Scale (Notch Discrimination Scale):** Shows the current discrimination pattern. The detector will produce an audible response for targets corresponding to 'on' pixels and no response for 'off' pixels. This pattern can be adjusted using the DISCRIM and Accept/Reject (√/X) buttons.
- **Coin Depth Indicator:** Displays the approximate depth of a coin-sized target in 2-inch increments.
- **Battery Level Indicator:** Shows the current battery charge level.
- **Sensitivity Indicator:** Displays the current sensitivity setting. The MD-6450 offers eight (8) sensitivity settings.

4.3 Detection Modes

The MD-6450 offers five distinct detection modes:

- **Zero Mode:** Detects all types of metal without discrimination.
- **Jewelry Mode:** Optimized for finding jewelry, typically discriminating against iron.

- **Custom Mode:** Allows the user to set a custom discrimination pattern.
- **Relics Mode:** Designed to locate older, non-ferrous artifacts.
- **Coins Mode:** Specifically tuned for detecting coins.

Select the desired mode by pressing the 'MODE' button and observing the highlighted word on the LCD screen.

4.4 Adjusting Sensitivity and Discrimination

Use the sensitivity buttons to adjust the detector's sensitivity. Higher sensitivity increases detection depth but may also increase false signals in mineralized ground. Use the DISCRIM and Accept/Reject buttons to modify the discrimination pattern on the Lower Scale, allowing you to ignore unwanted metallic objects.

5. MAINTENANCE AND CARE

- **Cleaning:** Wipe down the control box and stem with a damp cloth after each use. The search coil is waterproof (IP65 rated) and can be rinsed with fresh water. Do not submerge the control box.
- **Battery Replacement:** Expect 20 to 40 hours of operation depending on battery type and quality. Replace batteries when the Battery Level Indicator shows low power. Access the battery compartment by sliding the cover off the control housing.
- **Storage:** Remove batteries if the MD-6450 will be stored for longer than 30 days to prevent leakage and damage. Store the detector in a dry, cool place.

6. TROUBLESHOOTING

This section addresses common issues you might encounter:

- **No Power:** Ensure batteries are correctly installed with proper polarity and are not depleted. Replace with fresh AA batteries.
- **Erratic Signals/False Alarms:** This can be caused by high sensitivity in mineralized ground, electromagnetic interference (power lines, cell phones), or nearby large metal objects. Try reducing sensitivity or moving to a different location.
- **No Target ID Display:** Ensure the detector is properly ground balanced (if applicable to the specific mode) and that the search coil is sweeping correctly over targets.
- **Weak Signal:** Check battery level. Ensure the search coil cable is securely connected and not damaged.

7. SPECIFICATIONS



Figure 6: Visual representation of the MD-6450 dimensions and key specifications.

Feature	Detail
Model	MD-6450
Brand	VIHELM
Power Source	4 x AA Batteries (not included)
Sensitivity Settings	8 levels
Operation Modes	All Metal, Jewelry, Custom, Relics, Coin, Pinpointer
Search Coil	8.5" x 11" (288 x 222 mm) Waterproof Double-D

Feature	Detail
Audio Tones	Three-tone audio identification
Display	LCD with digital display and backlight
Target Discrimination	Ferrous and Non-Ferrous
International Protection Rating	IP65 (Search Coil)
Item Weight	Approximately 4 pounds (1.8 kg)
Control Box Dimensions	115 mm / 4.52 inches (width)
Adjustable Height	Up to 1145 mm / 45.0 inches

8. WARRANTY AND SUPPORT

The VIHELM MD-6450 Metal Detector comes with a **2-year warranty** from the date of purchase, covering manufacturing defects. Please retain your proof of purchase for warranty claims.

For technical support, troubleshooting assistance, or warranty inquiries, please contact VIHELM customer service through the retailer where the product was purchased or refer to the contact information provided on the product packaging.