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VIHELM MD4030

VIHELM MD4030 Metal Detector User Manual

High Sensitivity Metal Detector for Gold and Underground Exploration

1. Introduction

This manual provides detailed instructions for the assembly, operation, and maintenance of your VIHELM MD4030 Metal Detector. Please read this manual thoroughly before using the device to ensure proper function and safety. The MD4030 is designed for detecting various metal objects, including coins, gold, silver, and other metallic items, with adjustable sensitivity and discrimination features.

2. Safety Information

- Always operate the metal detector in a safe environment, away from active electrical lines or hazardous areas.
- Do not use the detector during thunderstorms or in extreme weather conditions.
- Ensure the search coil is securely attached before use.
- When digging, be aware of potential underground utilities or objects. Always obtain permission before searching on private property.
- Keep batteries out of reach of children. Dispose of used batteries responsibly.
- The search coil is waterproof, but the control housing is not. Avoid submerging the control housing in water.

3. Package Contents

Carefully unpack your MD4030 Metal Detector and verify that all components are present and in good condition. The package should include the following items:

MD4030
Color: Black
Material: ABS Plastic + Aluminum
Sensitivity: Min. 130mm / 5.12" (Test Coin: US Φ 25)
Detect Objects: Metal(Iron nail, iron covering, aluminum ring, small aluminum product, coins, gold, bronze, silver)
Detection Mode: All Metal, Discrimination
Operating Frequency: 5KHZ
Power Supply: 2 x 6F22 9V Batteries (Not Included)
Operating Current: Standby 10mA(LCD with backlit color 80mA)
Max 70mA(LCD with backlit color 150mA)
Operating Voltage Range: 9V
Detection Indication: Mechanical Pointer Mode, Audio Mode
Control: Power Switch
Sensitivity: Adjustable
Detection Depth: 10-30cm / 3.94-11.81inch
Volume: Adjustable
Adjustable Height of Detector: 78-107cm / 30.71-42.12inch
Application: Testing metal foreign body of raw materials, fuel and food, Detection of underground pipeline & line, Archaeology, Exploration, Found buried treasures of gold, silver and metal artifacts, The acquisition of scrap metal industry, Customs and safety inspection, Police department detective search, Detection of interpol search, Checking metal foreign bodies in express delivery and luggage.
Operating Temperature: -15~45℃ / 5~113℉
Storage Temperature: -20~60℃ / -4~140℉
Item Size: 107 * 27 * 16.5cm / 42.12 * 10.63 * 6.50in
Item Weight: 862g / 1.90 lb
Package Size: 54 * 22 * 11cm / 21.26 * 8.66 * 4.33in
Package Weight: 1.28kg / 2.83 lb

Figure 3.1: All components included in the MD4030 package.

- Control Housing with View Meter
- Adjustable Stem (Upper and Lower)
- Waterproof Search Coil
- Arm Rest
- Knob Threaded Bolt and Locking Collar
- User Manual

4. Product Overview

4.1. Components

Familiarize yourself with the main parts of your metal detector:



Figure 4.1: Key components of the MD4030 Metal Detector.

- **View Meter:** Displays target indication.
- **Waterproof Search Coil:** Detects metal objects.
- **Adjustable Stem:** Allows for length adjustment.
- **Anti-slip Handle:** Provides a secure grip.
- **Arm Rests:** Supports the forearm for comfortable operation.
- **Control Housing:** Contains the electronics and controls.

4.2. Control Panel

The control panel provides access to all operational settings:



Figure 4.2: Detailed view of the MD4030 control panel.

- **DISC (Discrimination) Knob:** Used to eliminate unwanted metals from detection.
- **ALL METAL / DISC Switch:** Selects between all-metal detection and discrimination modes.
- **VOLUME Knob:** Adjusts the audio output level.
- **LOW BAT:** Indicator light for low battery.
- **EAR (Earphone Jack):** For connecting headphones (not included).
- **POWER OFF:** Turns the detector off.
- **SENS (Sensitivity) Knob:** Adjusts the detector's sensitivity to targets.

5. Assembly Instructions

Follow these steps to assemble your MD4030 Metal Detector:



Figure 5.1: Assembly diagram of the MD4030.

1. **Attach the Search Coil:** Connect the waterproof search coil to the lower stem using the knob threaded bolt. Ensure it is secure but allows for slight angle adjustment.
2. **Connect Stems:** Insert the lower stem into the upper stem. Secure it with the locking collar.
3. **Attach Control Housing:** Slide the control housing onto the upper stem. The handle should align with the armrest.
4. **Secure Arm Rest:** Attach the armrest to the control housing assembly.
5. **Wrap Cable:** Carefully wrap the search coil cable around the stem, ensuring it is not too tight or loose, and plug the connector into the control housing.
6. **Adjust Length:** Adjust the stem length to a comfortable operating height (30"-42" / 78-107cm) and tighten the locking collar.

6. Operating Instructions

6.1. Battery Installation

The MD4030 requires two (2) 6F22 9V batteries (not included). Open the battery compartment on the control housing, insert the batteries according to the polarity indicators, and close the compartment securely.

6.2. Powering On/Off

To power on the detector, rotate the SENS (Sensitivity) knob clockwise from the OFF position. To power off, rotate the SENS knob counter-clockwise until it clicks into the OFF position.

6.3. Operating Modes

The MD4030 offers two primary operating modes:

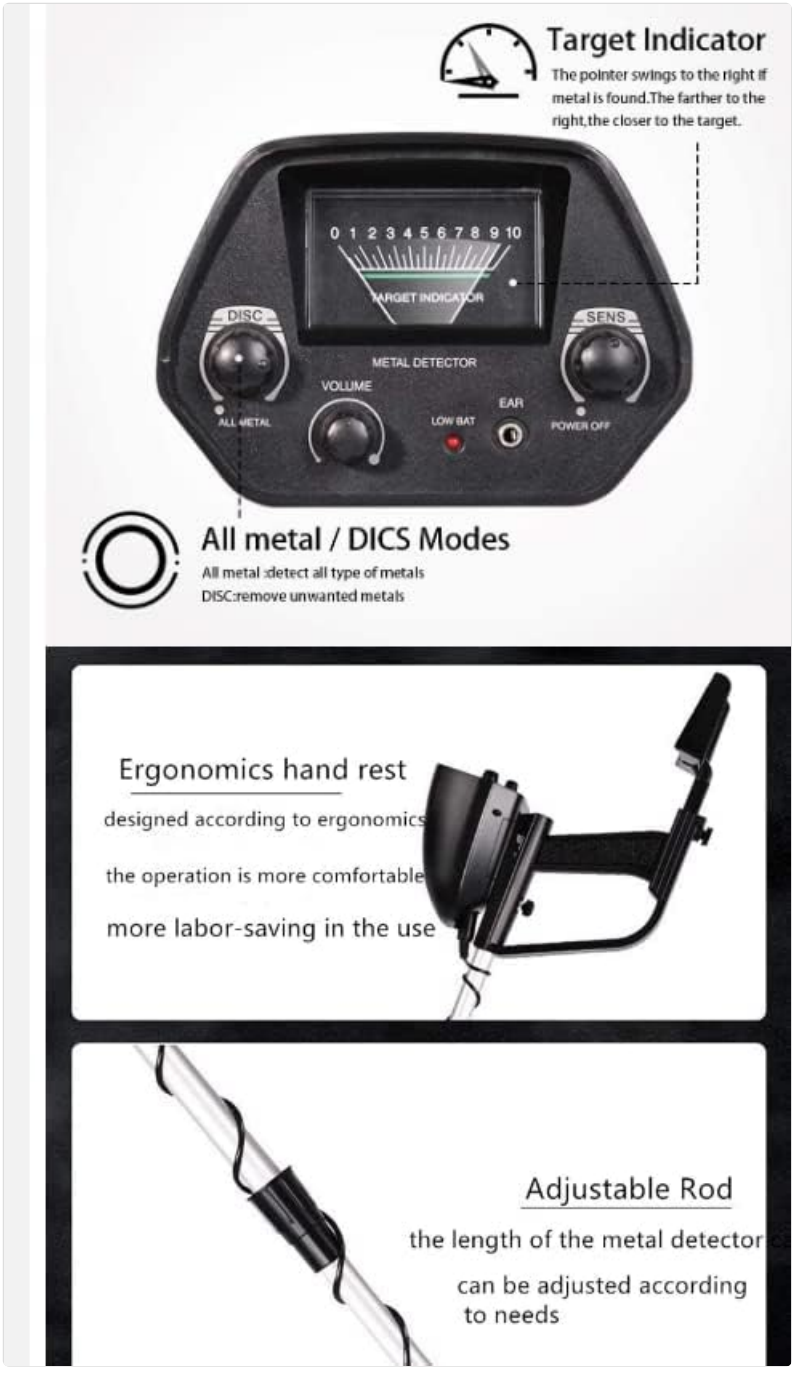


Figure 6.1: All Metal and Discrimination modes explained.

- **ALL METAL Mode:** Detects all types of metal. This mode offers the greatest detection depth and is ideal for general searching or when the target metal type is unknown.

- **DISC (Discrimination) Mode:** Allows the user to eliminate certain types of unwanted metals (e.g., iron trash) from detection. Use the DISC knob to adjust the level of discrimination.

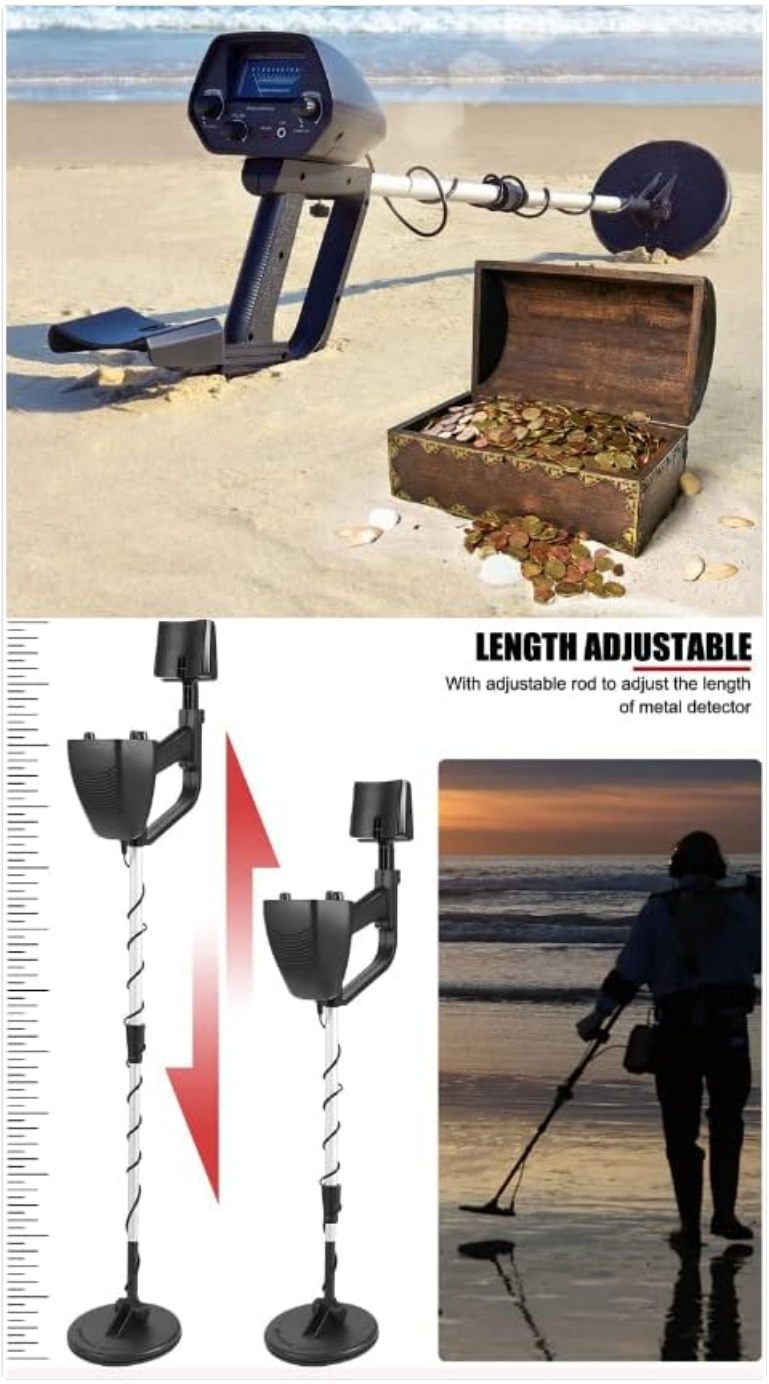


Figure 6.2: Visual representation of metal detection in different modes.

6.4. Sensitivity Adjustment

Rotate the SENS knob to adjust the detector's sensitivity. Higher sensitivity settings increase detection depth but may also increase false signals from ground mineralization or electrical interference. Start with a medium setting and adjust as needed.

6.5. Discrimination Adjustment

In DISC mode, rotate the DISC knob clockwise to increase the level of discrimination. This will progressively filter out smaller or less conductive metals. Rotate counter-clockwise to decrease discrimination and detect more types of metal.

6.6. Volume Control

Adjust the VOLUME knob to a comfortable listening level. Using headphones (connected to the EAR jack) can help conserve battery life and improve the clarity of faint target signals.

6.7. Target Indication

When a metal object is detected, the MD4030 provides two forms of indication:

- **Mechanical Pointer Mode:** The pointer on the view meter will swing to the right. The farther to the right it swings, the stronger the signal, indicating a larger or closer target.
- **Audio Mode:** An audible tone will be emitted. The pitch and intensity of the tone may vary depending on the target's size, depth, and metal type.

6.8. Detection Depth

The typical detection depth ranges from 10-30cm (3.94-11.81 inches), with a minimum sensitivity of 130mm (5.12 inches) for a US Φ 25 coin. Actual depth can vary based on target size, ground conditions, and sensitivity settings.

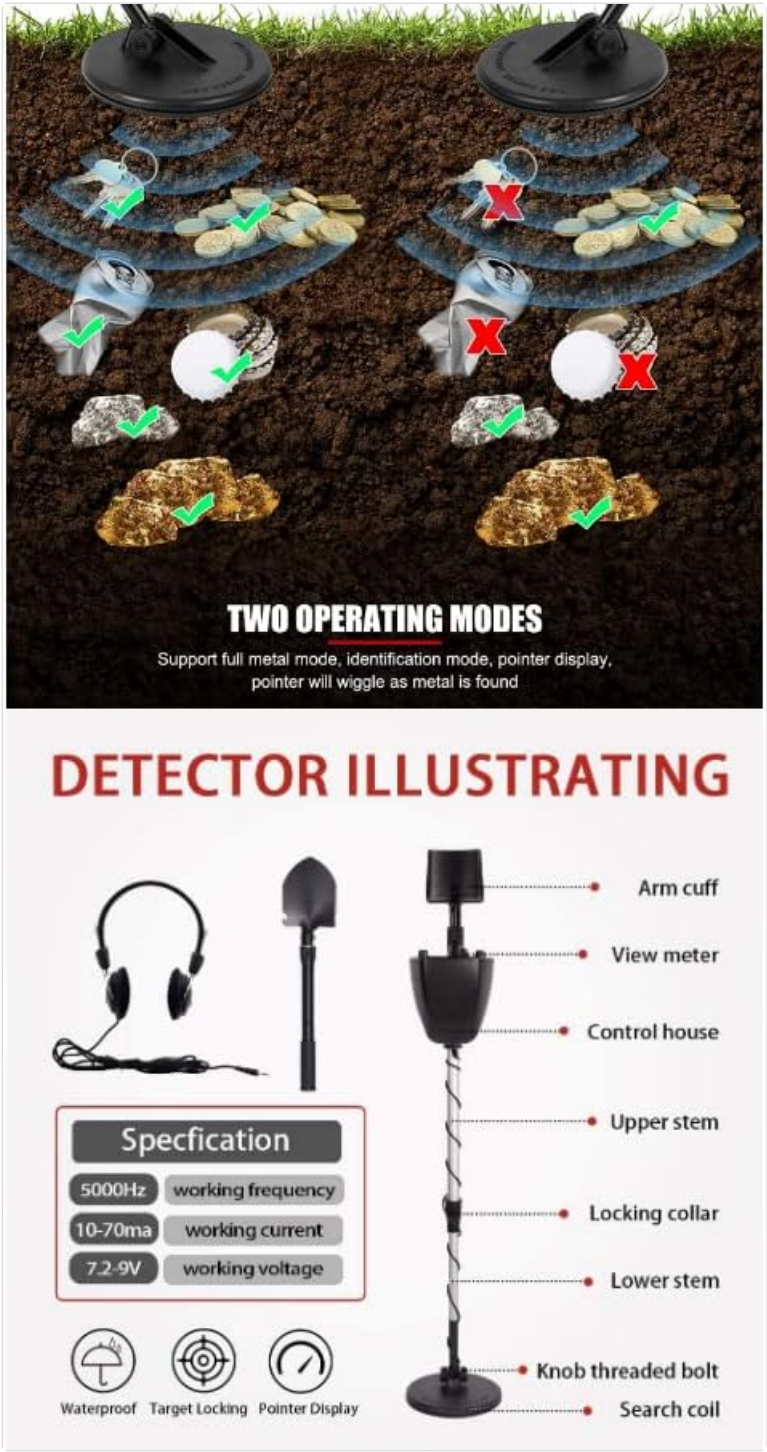


Figure 6.3: Example of detection depth for various objects.

6.9. Adjustable Stem

The detector's stem length can be adjusted from 78cm to 107cm (30.71 to 42.12 inches) to suit the user's height and comfort. Loosen the locking collar, extend or retract the stem, and then tighten the collar to secure the desired length.

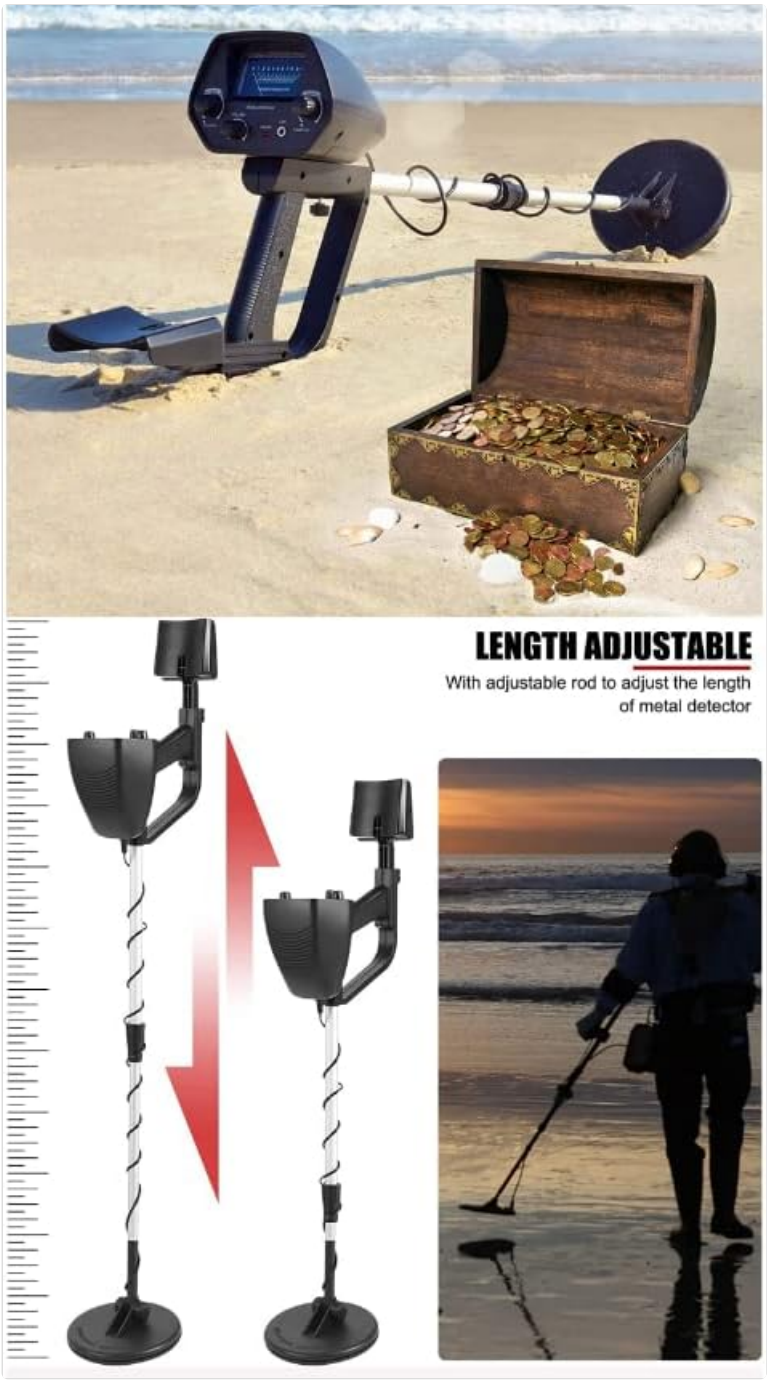


Figure 6.4: The adjustable stem allows for comfortable use by different individuals.

7. Detection Tips

- **Swing the Search Coil:** Hold the search coil parallel to the ground and swing it slowly from side to side in overlapping sweeps.
- **Ground Balance:** While the MD4030 does not have a manual ground balance, adjusting sensitivity can help minimize false signals from mineralized ground.
- **Pinpointing:** Once a target is detected, narrow down its location by slowly moving the coil in a cross-pattern over the signal area.
- **Practice:** Practice in an area with known metal objects to become familiar with the detector's responses.

8. Maintenance

- **Cleaning:** Wipe down the detector with a damp cloth after each use. Do not use abrasive cleaners.
- **Search Coil:** The search coil is waterproof and can be rinsed with fresh water. Ensure the cable connection to the control housing remains dry.
- **Storage:** Store the detector in a dry, cool place when not in use. Remove batteries if storing for extended periods to prevent leakage.
- **Battery Care:** Replace batteries when the LOW BAT indicator illuminates. Always use fresh, high-quality 9V batteries.

9. Troubleshooting

Problem	Possible Cause	Solution
No power	Batteries are dead or incorrectly installed.	Replace batteries or check polarity.
Constant false signals	High sensitivity setting, ground mineralization, electrical interference.	Reduce sensitivity. Move to a different location away from power lines or other electronics.
Detector does not find metal	Low sensitivity, high discrimination, target too deep.	Increase sensitivity. Reduce discrimination. Ensure proper swinging technique.
Weak or intermittent signal	Low batteries, loose coil cable connection.	Replace batteries. Check and tighten the search coil cable connection.

10. Specifications

Feature	Specification
Model	MD4030
Color	Black
Material	ABS Plastic + Aluminum
Operating Frequency	5KHz
Operating Voltage Range	9V
Power Supply	2 x 6F22 9V Batteries (Not Included)
Operating Current	Standby: 10mA (LCD with backlight 80mA), Max: 70mA (LCD with backlight 150mA)
Detection Indication	Mechanical Pointer Mode, Audio Mode

Feature	Specification
Detection Modes	All Metal, Discrimination
Sensitivity (Min.)	130mm / 5.12" (for US Φ 25 coin)
Detection Depth	10-30cm / 3.94-11.81inch (varies by target and conditions)
Adjustable Height	78-107cm / 30.71-42.12inch
Operating Temperature	-15~45°C / 5~113°F
Storage Temperature	-20~60°C / -4~140°F
Item Size	107 x 27 x 16.5cm / 42.12 x 10.63 x 6.50in
Item Weight	862g / 1.90 lb
Package Size	54 x 22 x 11cm / 21.26 x 8.66 x 4.33in
Package Weight	1.28kg / 2.83 lb
International Protection Rating	IP68 (Search Coil only)

11. Warranty and Support

Your VIHELM MD4030 Metal Detector comes with a standard manufacturer's warranty. Please refer to the product packaging or the retailer's website for specific warranty terms and conditions. For technical support, troubleshooting assistance, or inquiries regarding parts, please contact your point of purchase or the VIHELM customer service department.

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