OBDMONSTER BM520

OBDMONSTER BM520 Car Battery Tester User Manual

Model: BM520 | Brand: OBDMONSTER

1. Introduction

The OBDMONSTER BM520 is a versatile automotive battery tester designed to analyze the health and performance of 6V, 12V, and 24V lead-acid batteries. It supports a wide range of battery types including regular flooded, AGM flat plate, AGM spiral, and Gel batteries, with a capacity range of 2-220Ah and CCA ratings from 100-2000. This device provides comprehensive testing for battery health, cranking system, and charging system, making it an essential tool for vehicle maintenance.



Image 1.1: The OBDMONSTER BM520 Car Battery Tester. This image shows the device with its screen and attached red and black alligator clips, ready for use.

2. Safety Information

Please read and understand all safety instructions before operating the BM520 battery tester. Failure to follow these instructions may result in injury or damage to the device or vehicle.

- **Eye Protection:** Always wear appropriate eye protection (safety goggles) when working near batteries.
- **Ventilation:** Ensure adequate ventilation when testing batteries, as they can emit explosive gases.
- **Avoid Sparks:** Do not smoke or allow sparks or flames in the vicinity of the battery.
- **Proper Connection:** Connect the tester clamps correctly to the battery terminals (red to positive, black to negative). The BM520 features reverse polarity protection, but correct connection is always recommended.
- **Clean Terminals:** Ensure battery terminals are clean and free of corrosion for accurate readings.
- **Keep Dry:** Do not operate the device in wet conditions.



Image 2.1: Reverse Polarity Protection. This image illustrates the BM520 connected incorrectly to a car battery (red clamp to negative, black to positive), highlighting the device's built-in protection against damage from reversed connections.

3. Product Overview

3.1 Components

- **2.8-inch TFT Color Screen:** Provides clear and colorful display of test results.
- **Navigation Buttons:** Up, Down, Left, Right arrow buttons for menu navigation, and an 'OK' button for selection. A 'Return' button is also present.
- **Alligator Clips:** Pure copper plating, large opening range, strong bite force for secure connection.
- **Integrated Line Design:** Durable cable design to prevent falling off and loss.
- **Mini USB Interface:** For software upgrades.

3.2 Key Features

- Multi-functional analysis: State of Health (SOH), State of Charge (SOC), Voltage Test, Cranking Test, Charging Test, Ripple Analysis, Load Test, Data Storage, Resistance Test.
- Fast and accurate results (within 3 seconds).

- Screenshot function: Capture and save important data by long-pressing the Up and Down arrow buttons simultaneously for 3 seconds. The device can store up to 10 pictures.
- Reverse Polarity Protection: Prevents damage to the device and battery if clamps are connected incorrectly.
- Supports 11 languages.



Image 3.1: BM520 Features. This image provides a detailed view of the BM520, showcasing its 2.8-inch TFT color screen, durable alligator clips, responsive physical buttons, and integrated cable design.



Image 3.2: Screenshot Function. This image demonstrates how to use the screenshot feature on the BM520 by simultaneously pressing the Up and Down arrow buttons to capture and save test results.

4. Specifications

Feature	Specification
Voltage Range	6V, 12V, 24V
CCA Range	100-2000 CCA
AH Capacity Range	2-220Ah
Battery Types Supported	Regular flooded, AGM flat plate, AGM spiral, Gel, EFB
Display	2.8-inch TFT Color Screen
Connectivity	Mini USB for software upgrade
Power Source	Battery Powered (from tested battery)

Feature	Specification
Dimensions (L x W x H)	Approximately 7.5 x 3.55 inches (device only)
Weight	Approximately 1.48 Pounds

5. Setup

Follow these steps to prepare your BM520 for testing:

1. **Inspect the Device:** Ensure the BM520 and its cables/clamps are free from damage.
2. **Prepare the Battery:** Ensure the battery terminals are clean and free of corrosion. If necessary, clean them with a wire brush.
3. **Connect the Clamps:**
    - Connect the **red positive (+)** clamp to the **positive (+)** terminal of the battery.
    - Connect the **black negative (-)** clamp to the **negative (-)** terminal of the battery.

    The device will power on automatically once connected correctly. The BM520 can test batteries both in-vehicle and out-of-vehicle, and can even test dead batteries.
4. **Initial Screen:** The device will display the main menu or an initial test screen. Use the navigation buttons to select your desired test.



Image 5.1: Connecting the Tester. This image shows a user properly connecting the red and black alligator clips of the BM520 to a car battery, demonstrating the initial setup process.

6. Operating Instructions

The BM520 offers various testing functions accessible from the main menu. Use the Up/Down arrow buttons to navigate and the 'OK' button to select.



Image 6.1: Multi-functional Analyzer. This image displays the main menu of the BM520, showing icons for various tests including State of Health, Voltage, State of Charge, Cranking, Charging, Ripple Analysis, Load, Data Storage, and Resistance.

6.1 Battery Health Test (Check)

This function provides an overall analysis of the battery's health. Select 'Check' from the main menu.

1. Select the battery type (e.g., Regular Flooded, AGM Flat Plate, Gel).
2. Enter the battery's CCA rating (found on the battery label).
3. The tester will display results including: Voltage, Internal Resistance, Cold Cranking Amps (CCA), Amp-hour (AH) capacity, State of Health (SOH), and State of Charge (SOC).
4. The device will provide advice on whether to replace or charge the battery.

6.2 Cranking Test

This test evaluates the vehicle's starting system performance.

1. Select 'Cranking Test' from the main menu.
2. Follow the on-screen prompts to start the vehicle.

3. The tester will analyze the cranking voltage and time, providing results on the starter's performance.

6.3 Charging Test

This test assesses the vehicle's charging system, including the alternator.

1. Select 'Charging Test' from the main menu.
2. Follow the on-screen prompts, which may include revving the engine to a specific RPM.
3. The tester will measure the charging voltage under various conditions and report on the alternator's output and rectifier ripple.

6.4 Load Test

The load test simulates real-world conditions to determine the battery's ability to deliver current.

1. Select 'Load Test' from the main menu.
2. The device will guide you through the process, applying a simulated load to the battery.
3. Results will indicate the battery's performance under load.

6.5 Ripple Analysis

This function measures the AC ripple voltage in the charging system, which can indicate issues with the alternator's rectifier diodes.

6.6 Resistance Test

Measures the internal resistance of the battery, which is a key indicator of battery health and capacity.

6.7 Multimeter Function

The BM520 includes a basic multimeter function to display real-time voltage and other parameters, useful for quick checks.

7. Data Management

7.1 Screenshot Function

To capture a screenshot of the current test results, long-press the 'Up' and 'Down' arrow buttons simultaneously for 3 seconds. The device can store up to 10 screenshots for later review.

7.2 Data Storage and Playback

The BM520 automatically stores test results. Navigate to the 'Records' or 'Playback' option in the main menu to review previously saved data.

8. Software Update

The BM520 features a mini USB interface for software upgrades. To update the firmware:

1. Visit the official OBDMONSTER website to download the latest software update tool and firmware package.
2. Connect the BM520 to your computer using a mini USB cable.
3. Run the update tool on your computer and follow the on-screen instructions to complete the upgrade. No

driver installation is required.

9. Troubleshooting

- **Device does not power on:** Ensure the clamps are securely connected to the battery terminals with correct polarity. Check if the battery voltage is extremely low (below 6V for a 6V battery, etc.).
- **Inaccurate readings:** Ensure battery terminals are clean. Verify that the correct battery type and CCA rating are entered for the test.
- **"No Connection" error:** Recheck the clamp connections to the battery terminals. Ensure there is good metal-to-metal contact.
- **Screen display issues:** If the screen appears distorted or unreadable, try disconnecting and reconnecting the device. If the issue persists, contact support.

10. Maintenance

- **Cleaning:** Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Storage:** Store the BM520 in a clean, dry environment away from extreme temperatures and direct sunlight.
- **Cable and Clamp Care:** Regularly inspect the cables and clamps for any signs of wear or damage. Replace if necessary.

11. Warranty and Support

The OBDMONSTER BM520 comes with a 24-month warranty. If you encounter any issues or have questions regarding the product, please contact OBDMONSTER customer service via Amazon. Our professional technical team is available to assist you within 24 hours.