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## ANCEL BST500 with 2 in 1 ANCEL AD410 PRO

# User Manual for ANCEL BST500 Automotive Battery Load Tester & AD410 PRO OBD2 Scanner

Model: BST500 with 2 in 1 ANCEL AD410 PRO

Brand: ANCEL

## 1. INTRODUCTION

The ANCEL BST500 Automotive Battery Load Tester and the ANCEL AD410 PRO OBD2 Scanner are professional diagnostic tools designed for vehicle maintenance and troubleshooting. This manual provides comprehensive instructions for the safe and effective operation of both devices, covering their features, setup, testing procedures, and maintenance.

The BST500 is a dedicated battery system tester capable of performing battery health, cranking, charging, and load tests on 12V and 24V lead-acid batteries. It includes a built-in printer for instant test report generation.

The AD410 PRO is an upgraded 2-in-1 OBD2 scanner and battery tester, offering comprehensive OBDII diagnostic functions, including reading and clearing trouble codes, I/M readiness, live data stream, and additional battery health checks.



Image: The ANCEL BST500 Battery System Tester (left) and the ANCEL AD410 PRO OBD2 Scanner (right), showcasing both devices included in the package.

## 2. SAFETY INFORMATION

Always observe the following safety precautions when operating the ANCEL BST500 and AD410 PRO to prevent personal injury or damage to the devices or vehicle.

- Wear appropriate eye protection and protective clothing when working near vehicle batteries.
- Ensure the vehicle is in a well-ventilated area to disperse any battery gases.
- Avoid sparks or open flames near the battery.
- Do not connect the tester to a battery that is visibly damaged or leaking.
- Ensure correct polarity when connecting the battery clamps: Red to positive (+), Black to negative (-). The BST500 features wrong connection protection.
- Keep the devices dry and clean. Do not expose them to moisture or extreme temperatures.
- Refer to your vehicle's service manual for specific safety procedures related to your vehicle's electrical system.

# ANCEL BST500 CAR BATTERY TESTER with BUILT-IN PRINTER and PAPER

Built-in Printer to conveniently print out test results for customer communication or record-keeping with date/time function.

\* Type: Thermal

2 1/4" W (57mm W)



1 1/5" D (30 mm D)



\* Package with one roll thermal paper included.

Image: The ANCEL BST500 highlighting its premium-safe clamps with wrong connection protection, loose lead detection, and overload protection features.

## 3. PACKAGE CONTENTS

Verify that all items are present in your package:

- 1 x ANCEL BST500 Automotive Battery Load Tester with built-in printer
- 1 x ANCEL AD410 PRO OBD2 Scanner Battery Tester
- 1 x User Manual (this document)
- 1 x Roll of Thermal Printer Paper (for BST500)
- 1 x JIS Transcoding Table (for BST500)
- 1 x Quick Start Guide
- 1 x Official Protective Case

## MULTIPLE CERTIFICATIONS QUALITY GUARANTEED



Image: Illustration of the complete package contents, including the BST500 tester, user manual, thermal paper, protective case, and packing box.

## 4. PRODUCT FEATURES

### 4.1 ANCEL BST500 Automotive Battery Load Tester

- **Comprehensive Battery Testing:** Performs Battery Health Test, Start-up Load Test, Maximum Work Load Test, and Charging Test.
- **Wide Compatibility:** Supports 12V and 24V lead-acid batteries (100-2000 CCA), including regular flooded, AGM flat plate, AGM spiral, gel, and deep cycle batteries.
- **Multiple Standards:** Compatible with CCA, BCI, CA, MCA, JIS, DIN, IEC, EN, SAE, and GB battery rating standards.
- **Built-in Thermal Printer:** Allows for convenient printing of test results for record-keeping or customer communication.
- **Full Color Screen:** Bright and easy to read display for clear navigation and result interpretation.
- **Fast & Reliable:** Equipped with STM 32-bit CPU for quick response and accurate results (99.99% accuracy in 3 seconds).
- **Safety Protections:** Features spark-proof reverse polarity protection, wrong connection protection, loose lead detection, and overload protection.
- **Multi-language Support:** Supports English, Polish, German, Spanish, French, and Italian.

# MULTIPLE ADVANCED BATTERY TESTS

**MAIN MENU**

1. BATT CAPACITY
2. START-UP LOAD

**MAIN MENU**

3. MAX WORK LOAD
4. CHARGE SYSTEM

**Battery Health**

**Start-up Load Test**

**Charging Test**

**Max Work Load Test**

**Cranking Test**

Image: The ANCEL BST500 displaying its capabilities for various battery tests, including Battery Health, Start-up Load Test, Charging Test,

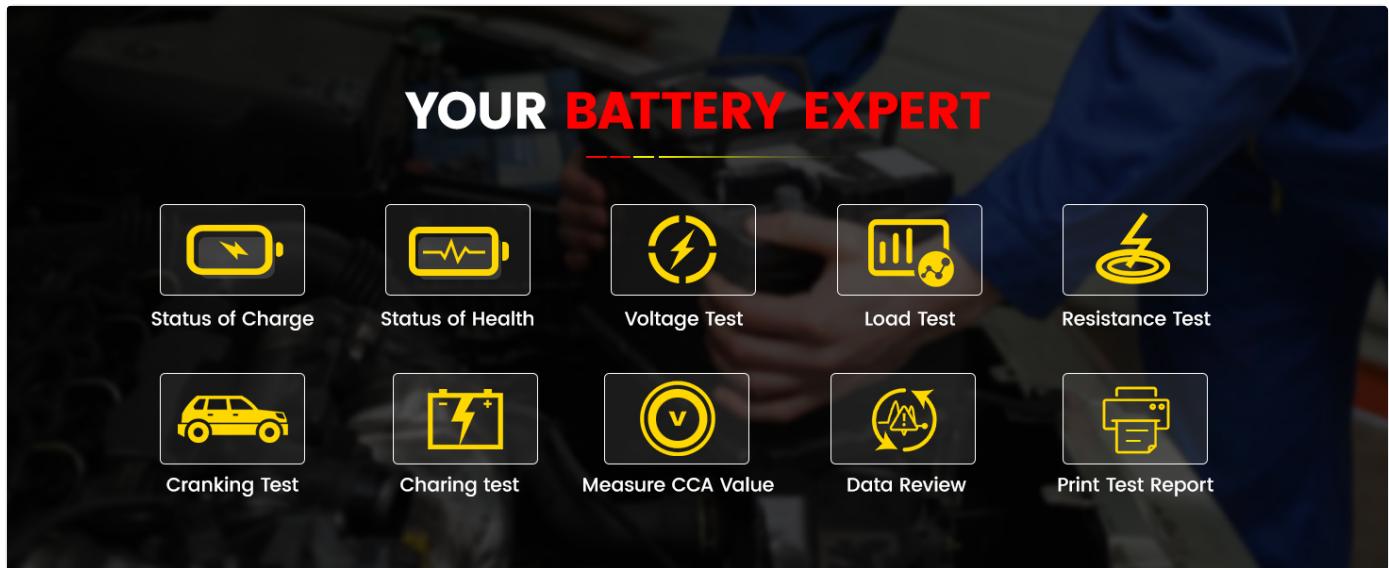


Image: The ANCEL BST500 showcasing its built-in thermal printer and the type of paper it uses, emphasizing its ability to print test results.

#### 4.2 ANCEL AD410 PRO OBD2 Scanner Battery Tester

- Enhanced OBDII Diagnostic Functions:** Reads and clears Diagnostic Trouble Codes (DTCs), views live data stream, I/M readiness status, freeze frame data, O2 sensor test, EVAP system test, and vehicle information.
- Integrated Battery Tester:** Performs battery health test, cranking test, and charging test for 6V/12V batteries.
- User-Friendly Interface:** Compact design with a 2.8" TFT 262K true color display LCD for clear and easy-to-understand information.
- DTC Lookup:** Built-in DTC library for quick code definitions.
- Data Review:** Allows review of recorded diagnostic data.
- Free Updates:** Provides free lifetime software updates.
- Multi-language Support:** Supports English, French, Spanish, German, and more.

# Upgraded Powerful **OBD2** Scanner and 6/12V Battery Tester



The image shows the ANCEL AD410 Pro OBDII + BATTERY TESTER. The device has a black and orange design with a color screen displaying various diagnostic icons. To the right of the device are three smaller images: one showing a car dashboard with a battery and oil light on, another showing a person under a car with the hood open, and a third showing a person working on a car's battery in the engine compartment. Below these images are nine circular icons representing different functions: OBD2 Diagnosis, Battery Test, I/M Readiness Test, Code Reader, Evap System Test, DTC Lookup, O2 Sensor Test, Data Management, and Free Updates.

- OBD2 Diagnosis
- Battery Test
- I/M Readiness Test
- Code Reader
- Evap System Test
- DTC Lookup
- O2 Sensor Test
- Data Management
- Free Updates

Image: The ANCEL AD410 PRO displaying its various functions, including OBD2 Diagnosis, Battery Test, I/M Readiness Test, Code Reader, EVAP System Test, DTC Lookup, O2 Sensor Test, Data Management, and Free Updates.

## 5. SETUP AND INITIAL USE

### 5.1 ANCEL BST500 Battery Load Tester Setup

- Prepare the Battery:** Ensure the battery terminals are clean and free of corrosion.
- Connect the Clamps:** Connect the red clamp to the positive (+) battery terminal and the black clamp to the negative (-) battery terminal. The device will power on automatically.
- Select Language:** If prompted, select your preferred language using the navigation buttons.
- Insert Thermal Paper:** Open the printer cover on the BST500 and insert the thermal paper roll, ensuring the paper feeds out correctly. Close the cover.



Image: A detailed view of the ANCEL BST500, showing its screen displaying "MAIN MENU" and a printed test report emerging from the top, indicating its built-in printer functionality.

## 5.2 ANCEL AD410 PRO OBD2 Scanner Setup

- 1. Locate OBD-II Port:** Identify the 16-pin OBD-II diagnostic port in your vehicle, usually located under the dashboard on the driver's side.

2. **Connect the Scanner:** Plug the AD410 PRO's OBD-II connector into the vehicle's OBD-II port. The device will power on automatically.
3. **Select Language:** If prompted, select your preferred language using the navigation buttons.



Image: A close-up view of the ANCEL AD410 PRO OBD2 Scanner, showing its display screen with menu options like OBDII, I/M, BAT, Lookup, Review, and Setup, along with its navigation buttons and OBD-II connector.

## 6. OPERATING INSTRUCTIONS

### 6.1 Using the ANCEL BST500 Battery Load Tester

The BST500 offers various battery and system tests. Navigate the menu using the UP/DOWN arrows and press ENTER to select.

#### 1. Battery Health Test (BATT CAPACITY):

- From the main menu, select "1. BATT CAPACITY".
- Input the battery's CCA (Cold Cranking Amps) rating as specified on the battery label.

- The tester will display results including Voltage, Internal Resistance (IR), State of Charge (SOC), and State of Health (SOH).
- The result will indicate "Good", "OK", "Attention", or "Replace".

# BATTERY TEST & CHARGING TEST

## Charging System



MAX: 14.10V < 15.00V  
VOLT: 13.88V  
MIN: 13.58V > 13.30V

## Battery Health

VOLTAGE

SOH

CCA VALUE

IR

**GREAT NEED CHG**

VOLT: 12.11 V  
IR: 4.75 mΩ  
SOH: 588 CCA 100%

**Suspect Replace!**

VOLT: 12.37 V  
IR: 6.75 mΩ  
SOH: 415 CCA 32%



Image: The BST500 displaying results for Battery Health (Voltage, SOH, CCA Value, IR) and Charging System tests, showing detailed diagnostic information.

## 2. Start-up Load Test (START-UP LOAD):

- From the main menu, select "2. START-UP LOAD".
- Follow the on-screen prompts to start the vehicle engine. The tester will automatically record the lowest voltage during the cranking process.
- The standard voltage for a 12V system is 9.6V; for a 24V system, it is 16V. The test determines if the starting system is functioning correctly.

## Engine System Activation Load Test

Start the engine to make the tester record the lowest voltage in this process automatically. For the 12V system, the standard voltage is 9.6V; for 24V system, the standard voltage is 16V. If the lowest voltage is higher than the 9.6V (for the 24V system, the lowest voltage is over 16V), the system is good. If the lowest voltage is lower than the standard voltage, the system is not good.

MAIN MENU  
2. START-UPLOAD  
3. MAX WORK LOAD

CURR-VOL: 12.36V  
INST-VOL: 12.30V  
IST-VOL> 9.6V

Image: The BST500 performing an Engine System Activation Load Test, showing the main menu and the resulting voltage readings during engine start-up.

### 3. Maximum Work Load Test (MAX WORK LOAD):

- From the main menu, select "3. MAX WORK LOAD".
- This test assesses the battery's ability to handle maximum discharge.
- For a 12V system, the standard voltage is 12.8V; for a 24V system, it is 25.6V. The test helps identify issues with the battery's capacity under load.

## MAXIMUM LOAD SYSTEM TEST

For the 12V system, the standard voltage is 12.8V, for the 24V system, the standard voltage is 25.6V. If the lowest voltage is higher than the 12.8V (for the 24V system, the lowest voltage is over 25.6V), the system runs normally. If the lowest voltage is lower than 12.8V (for the 24V system, the lowest voltage is under 25.6V), please check if the engine belt is damaged and the wires are short-circuited.



Image: The BST500 conducting a Maximum Load System Test, illustrating the main menu and the voltage parameters for 12V and 24V systems to determine battery performance under load.

### 4. Charging Test (CHARGE SYSTEM):

- From the main menu, select "4. CHARGE SYSTEM".
- This test evaluates the vehicle's charging system (alternator).
- The tester will detect changes in battery voltage to determine if the alternator is functioning correctly.



Image: The BST500 performing a Charging System Test, showing the main menu and the expected voltage ranges (Max, Volt, Min) to assess the alternator's condition.

## 5. Printing Test Reports:

- After completing a test, the BST500 will often prompt if you wish to print the report. Press ENTER to confirm.
- You may be asked to set the date and report number before printing.
- The built-in thermal printer will then print a detailed report of the test results.



Image: A three-step guide demonstrating how to print a test report using the ANCEL BST500, from inquiring to setting details and finally printing.

## 6.2 Using the ANCEL AD410 PRO OBD2 Scanner

The AD410 PRO provides comprehensive OBDII diagnostics. Navigate the menu using the UP/DOWN arrows and press ENTER to select.

### 1. OBDII Diagnostics:

- Select "OBDII" from the main menu.
- This mode allows you to read and clear DTCs, view live data, freeze frame data, and perform other standard OBDII functions.
- To read codes, select "Read Codes". To clear codes, select "Erase Codes" (ensure the ignition is on, engine off, before clearing codes).

### 2. I/M Readiness:

- Select "I/M" from the main menu.
- This function checks the readiness of the emission-related monitors, indicating if the vehicle is ready for a smog test.

### 3. **Battery Test (BAT):**

- Select "BAT" from the main menu.
- This allows you to perform a quick battery health check, cranking test, and charging test for 6V/12V batteries.

### 4. **DTC Lookup:**

- Select "Lookup" from the main menu.
- Enter a Diagnostic Trouble Code (DTC) to view its definition.

### 5. **Review Data:**

- Select "Review" from the main menu.
- Access previously recorded diagnostic data for analysis.

### 6. **Setup:**

- Select "Setup" from the main menu.
- Configure device settings such as language, unit of measure, and display brightness.

## 7. COMPATIBILITY

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The ANCEL BST500 and AD410 PRO are designed for broad compatibility:

- **Battery Types (BST500):** Regular flooded, AGM flat plate, AGM spiral, gel, and deep cycle batteries.
- **Battery Voltage (BST500):** 12V and 24V lead-acid batteries.
- **Battery Capacity (BST500):** 100 to 2000 CCA.
- **Battery Voltage (AD410 PRO):** 6V and 12V batteries.
- **Vehicle Types:** Both devices are suitable for a wide range of 12V and 24V vehicles, including motorcycles, cars, trucks, and tractors.

# MOST BATTERIES COMPATIBLE

## Works on 12V & 24V Battery

1. Regular-flooded

2. AGM Flat Plate

3. AGM Spiral

4. GEL

5. EFB



Image: An illustration showing the various battery types compatible with the ANCEL BST500, including Regular-flooded, AGM Flat Plate, AGM Spiral, GEL, and EFB batteries, for both 12V and 24V systems.

## WHAT IS THE GIFT



◆ BST500 BATTERY TESTER



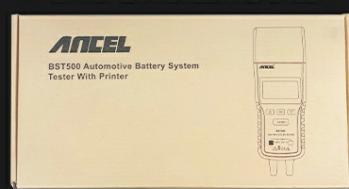
◆ USER MANUAL



◆ THERMAL PAPER



◆ OFFICIAL PROTECTIVE CASE



◆ PACKING BOX

Image: Visual representation of vehicle types that the ANCEL BST500 can test, including motorcycles, cars (12V), trucks, and tractors (24V).

## 8. MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your ANCEL devices:

- **Cleaning:** Use a soft, damp cloth to clean the device's exterior. Do not use abrasive cleaners or solvents.
- **Storage:** Store the devices in their protective case in a dry, cool environment, away from direct sunlight and extreme temperatures.
- **Cable Care:** Inspect cables and connectors regularly for damage. Do not pull on the cables to disconnect.
- **Software Updates (AD410 PRO):** Regularly check for and install software updates from the ANCEL official website to ensure optimal performance and compatibility with new vehicle models.
- **Thermal Paper (BST500):** Replace the thermal paper roll when it runs out. Use only compatible thermal paper.

## 9. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Device does not power on.	Incorrect connection; vehicle battery too low (for AD410 PRO); damaged cable.	Ensure clamps are correctly connected (BST500) or OBD-II cable is fully inserted (AD410 PRO). Check vehicle battery voltage. Inspect cables for damage.
BST500 printer not printing.	No thermal paper; paper inserted incorrectly; printer malfunction.	Check if paper roll is present and inserted correctly (thermal side facing print head). Ensure printer cover is closed. If problem persists, contact support.
Inaccurate test results.	Poor connection to battery terminals; incorrect battery type/CCA input; battery surface corrosion.	Clean battery terminals. Ensure clamps are securely attached. Verify correct battery parameters are entered into the device.
AD410 PRO cannot link to vehicle.	OBD-II port issue; ignition not on; vehicle not OBD-II compliant.	Ensure ignition is in the ON position (engine off or running). Check vehicle's OBD-II port for power. Verify vehicle is OBD-II compliant (most vehicles 1996 and newer).

If you cannot resolve the issue using the above table, please contact ANCEL technical support.

## 10. SPECIFICATIONS

Feature	Description
Product Model	ANCEL BST500 with 2 in 1 ANCEL AD410 PRO
Brand	ANCEL
Power Source	Corded Electric (powered by vehicle battery)
BST500 Battery Compatibility	12V & 24V Lead-Acid Batteries (Flooded, AGM Flat Plate, AGM Spiral, Gel, Deep Cycle)

Feature	Description
BST500 CCA Range	100 - 2000 CCA
BST500 Test Standards	CCA, BCI, CA, MCA, JIS, DIN, IEC, EN, SAE, GB
AD410 PRO Battery Compatibility	6V & 12V Batteries
AD410 PRO Display	2.8" TFT 262K True Color LCD

## 11. WARRANTY AND SUPPORT

ANCEL is committed to providing high-quality products and customer satisfaction.

- Returns:** Enjoy 30-day free returns.
- Technical Support:** 24/7 technical support is available to assist you with any operational or technical queries.
- Innovation:** ANCEL has 10 years of innovation in the automotive diagnostic field.
- Customer Choice:** Trusted by over 10 million customers worldwide.

For support, please visit the official ANCEL website or contact their customer service team directly. Contact information can typically be found on the product packaging or the ANCEL brand store page.

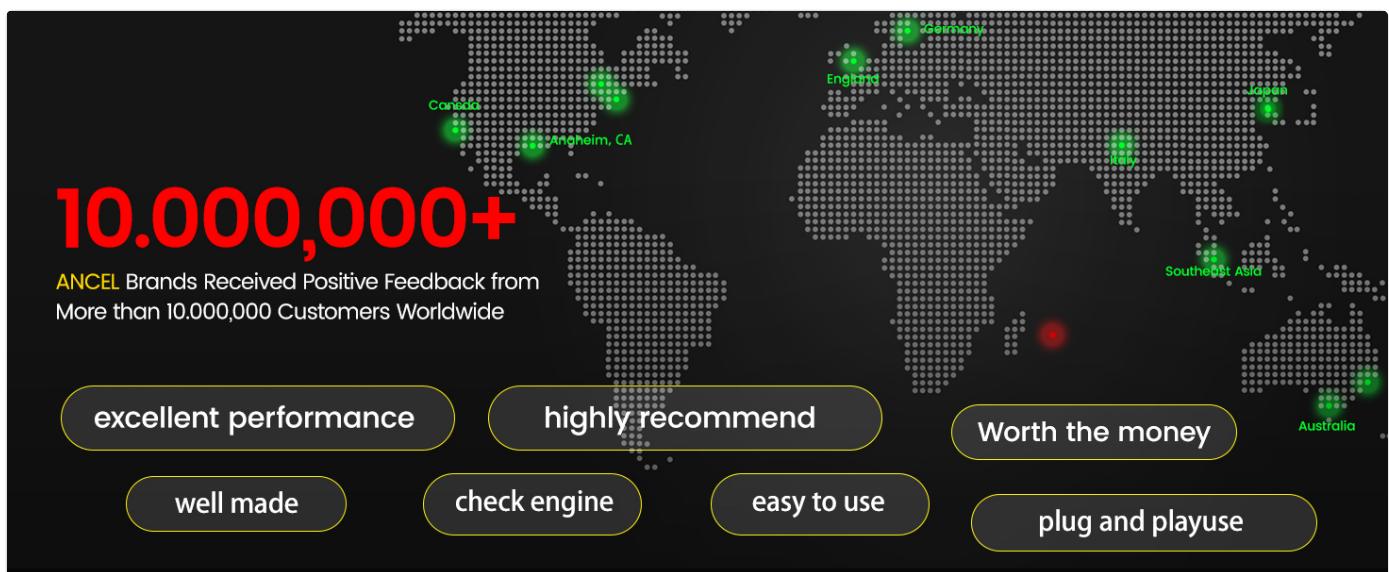


Image: A visual representation of ANCEL's professional technical service team, highlighting 30-day free returns, 24/7 tech support, 10 years of innovation, and 10M+ customer choice.