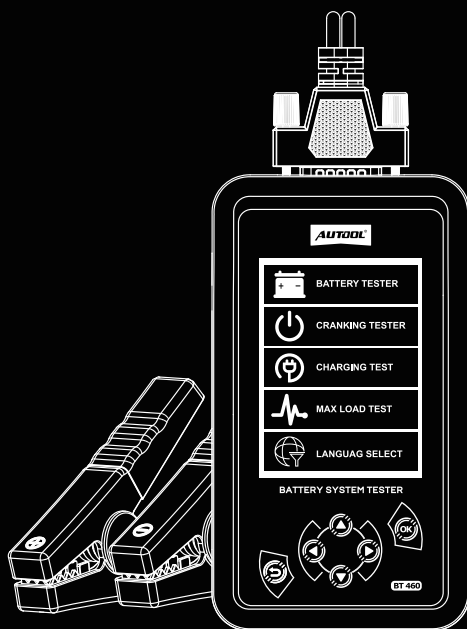


AUTOOL BT460

Battery System Tester

User Manual





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ATTENTION

Warning



Before using the instrument, please read this manual carefully for proper operation.

- ▶ Non- technical person shall not change, disassemble or repair the product, otherwise all losses caused by this shall be bared by the user himself.
- ▶ Please do not scratch, bend, twist or stretch the wires. Do not place the wires in high temperature. Do not press hard or decompose the on-board charging adapter.
- ▶ Please do not place nails, pins, and other small debris on the charging port, in order to avoid damaging the charging connector.
- ▶ Do not place the product in unstable place such as high altitude area, slope, or shelf.
- ▶ This product is powered by electricity and should not be used as a toy for children.
- ▶ To avoid short circuit, do not immerse the product in water or other liquid.
- ▶ Please try to use the power supply and power cord supplied by manufacturer as standard.
- ▶ Please do not expose this product to strong light or high temperature when it's not at use.

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PRODUCT INTRODUCTION

Overview

BT460 Battery Tester adopts currently the world's most advanced conductance testing technology to easily, quickly and accurately measure the actual cold cranking amps capability of the vehicle starting battery, healthy state of the battery itself, and common fault of the vehicle cranking system and charging system, which can help maintenance personnel to find the problem quickly and accurately, thus to achieve quick vehicle repair.

- Application: 12V automotive cranking lead acid battery, new cranking lithium battery and 12V / 24V car system test.
-

Measure range

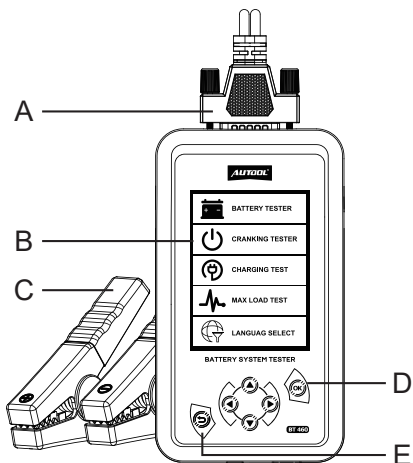
Standard	Range
CCA	30-2000
IEC	30-2500
EN	30-3000
DIN	30-2500
JIS	26A17R-N135
GB	30-300AH

Product specifications

Working environment temp	-20°C~50°C
Special test clip	Double conductance Kelvin clamp
Current measure range	4AH~240AH
Voltage measure range	6V~30V
Housing material	Acid-resistant ABS plastic

PRODUCT STRUCTURE

Structure diagram



A	COM Connecting line	B	LCD screen
C	Clamps	D	OK button
E	ESC button		

OPERATIONS INSTRUCTION

- Battery test**
- Connect the red test clamp with battery positive (+) and the black clamp with negative (-), the tester will power on automatically. Battery voltage below 6.0V can't be tested properly, then press any key to continue.
 - Select according to the tester display:

(1) Test standard:

The standard which you can read from the top or front of the battery, such as CCA, IEC, DIN. If you can't find any information about the standard, AH of battery capacity can be used as a reference. Choose similar battery standard, and it will cause small error.

(2) Rated capacity:

You can read the cranking current standard in the top or front of the battery, such as CCA 370.

(3) Press ENTER key to start testing.

For small battery, the lower resistance it is, the healthier the battery is (except short-circuit). Resistance can be used as a reference for the battery state.

Battery Test Result (for example).

Battery voltage	12.5V---Voltage when testing the battery
Measurement	400A(CCA)--cranking current for testing
Resistance	18.5mΩ--Battery resistance
Life	95%--Battery remaining life
Test result	Good--Battery state

⚠ NOTE:

- ▶ When battery voltage is lower than normal test voltage, the test result cannot check the battery state properly. It will show "Re-test after charging". At this time, please charge the battery, then test it.
- ▶ When battery voltage is too high or the vehicle is starting, the test can't be proceeded. It will show "The voltage is too high. Please turn off the engine! Please turn on the headlights in 3

minutes, then test it.”

- ▶ For serious battery shortage (For example, the vehicle is on hold for a long time; the battery is not charged in time; the headlight or door is forgotten to be turned off, which cause serious battery shortage, and vehicle can't start), it may show “Please replace the battery” during test. For such batteries, please consult the battery manufacturer to restore charging, then test it.

- Cranking test**
- After battery test, press UP / DOWN key to select cranking test. Then, press ENTER key to cranking test:

Current	12.5V--Current voltage
Minimum voltage	11.1V--Minimum voltage tested
Minimum cranking voltage	9.6V--Cranking voltage lower than 9.6V is regarded as abnormal, which may be caused by battery aging which can't provide sufficient cranking current, or because of starter worn or poor mechanical lubrication.

- In the state of engine off, it will show “Start engine, and wait for 15 seconds!” Start engine, and wait for the test result.

- Charging test**
- In the menu, press UP / DOWN key to select charging test. Press ENTER key to charging test. It will show “ Start engine, and wait for 15 seconds! Press ENTER key to start charging test!”
 - At the same time, start engine. When engine running is stable, press ENTER key to display test state:

Maximum	14.5V <15.0V normal
Current	11.1V--Minimum voltage tested
Minimum	13.6 >13.3V normal

⚠ NOTE:

- ▶ Do not shut down the engine during the test. All electrical appliance and device should be in OFF. During the test, turning on / off any electrical appliance in the vehicle will affect the accuracy of the test result.
 - ▶ The battery voltage will be different because of different engine conditions.
 - ▶ Normally, charging voltage cannot be lower than 13.3V, higher than 15.0V even in high-speed rotation.
-

Charging voltage is too low:

- Charging system voltage is not enough.
- Please check if generator belt slips or runs off, if the generator connects well with the battery.
- If the generator belt and connection are good, please follow the manufacturer's suggestion to avoid generator failure.

Charging voltage is too high:

- Generator output voltage is too high.
 - Since most of the vehicle generators are using internal regulator, the generator assembly has to be replaced. (Some old vehicle are using external regulator, then replace the regulator directly.)
 - Normally, the maximum voltage of regulator is 14.7V. If charging voltage is too high, the battery will be overcharged, which will shorten battery life and cause battery failure.
-

Load test

In the menu, press UP / DOWN key to select load test. Press ENTER key to load test. It will show:

- Please turn on all the electrical appliance and device
- Start engine, and wait for 15 seconds! Press ENTER key to start load test!
- At the same time, start engine. When engine running is stable, press ENTER key to display test state:

Current	14.1V
Minimum	13.5V
Minimum when all on	12.8V

- When all appliances are in ON state, normally, charging voltage is more than 12.8V if the power supply from generator is sufficient. If the voltage is less than 12.8V, it may be caused by insufficient output current from generator, reduced power generation, excessive electrical load or leakage. Increasing the electrical appliances in the vehicle, it will also cause a voltage drop.

Language

- In the menu, press UP / DOWN to select language setting.
- Press ENTER key to language setting. It will show:
Language: English; Portuguese; España; French...
- Press UP / DOWN to select the language, then press ENTER key to save.
- Press ESC to exit. Then, you can proceed other test.

MAINTENANCE SERVICE

Our products are made of long-lasting and durable materials, and we insist on perfect production process. Each product leaves the factory after 35 procedures and 12 times of testing and inspection work, which ensures that each product has excellent quality and performance.

Maintenance To maintain the performance and appearance of the product, it is recommended that the following product care guidelines be read carefully:

- Be careful not to rub the product against rough surfaces or wear the product, especially the sheet metal housing.
- Please regularly check the product parts that need to be tightened and connected. If found loose, please tighten it in time to ensure the safe operation of the equipment. The external and internal parts of the equipment in contact with various chemical media should be frequently treated with anti-corrosion treatment such as rust removal and painting to improve the corrosion resistance of the equipment and extend its service life.
- Comply with the safe operating procedures and do not overload the equipment. The safety guards of the products are complete and reliable.
- Unsafe factors are to be eliminated in time. The circuit part should be checked thoroughly and the aging wires should be replaced in time.
- Regularly clean and replace consumable parts such as oil pump and oil filter; adjust the clearance of various parts and replace worn (broken) parts. Avoid contact with corrosive liquids.
- When not in use, please store the product in a dry place. Do not store the product in hot, humid, or non-ventilated places.

WARRANTY

From the date of receipt, we provide a three-year warranty for the main unit and all the accessories included are covered by a one-year warranty.

Warranty access

- The repair or replacement of products is determined by the actual breakdown situation of product.
- It is guaranteed that AUTOOL will use brand new component, accessory or device in terms of repair or replacement.
- If the product fails within 90 days after the customer receives it, the buyer should provide both video and picture, and we will bear the shipping cost and provide the accessories for the customer to replace it free of charge. While the product is received for more than 90 days, the customer will bear the appropriate cost and we will provide the parts to the customer for replacement free of charge.

These conditions below shall not be in warranty range

- The product is not purchased through official or authorized channels.
- The product breakdown because the user does not follow product instructions to use or maintain the product.

We AUTOOL pride ourselves on superb design and excellent service. It would be our pleasure to provide you with any further support or services.

Disclaimer

All information, illustrations, and specifications contained in this manual, AUTOOL reserves the right of modify this manual and the machine itself with no prior notice. The physical appearance and color may differ from what is shown in the manual, please refer to the actual product. Every effort has been made to make all descriptions in the book accurate, but inevitably there are still inaccuracies, if in doubt, please contact your dealer or AUTOOL after-service centre, we are not responsible for any consequences arising from misunderstandings.

RETURN & EXCHANGE SERVICE

Return & Exchange

- If you are an AUTOOL user and are not satisfied with the AUTOOL products purchased from the online authorized shopping platform and offline authorized dealers, you can return the products within seven days from the date of receipt; or you may exchange it for another product of the same value within 30 days from the date of delivery.
- Returned and exchanged products must be in fully saleable condition with documentation of the relevant bill of sale, all relevant accessories and original packaging.
- AUTOOL will inspect the returned items to ensure that they are in good condition and eligible. Any item that does not pass inspection will be returned to you and you will not receive a refund for the item.
- You can exchange the product through the customer service center or AUTOOL authorized distributors; the policy of return and exchange is to return the product from where it was purchased. If there are difficulties or problems with your return or exchange, please contact AUTOOL Customer Service.

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