

BT460 Auto Battery Tester User Manual

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.

Product Introduction:

- 1 year warranty, and lifetime maintenance
- Application: 12V automotive cranking lead acid battery, new cranking lithium battery and 12V/24V car system test
- Measure Range:

BT 460	Measure Standard
30-- 1700	CCA
30-- 1000	DIN
30-- 1700	EN
30-- 1000	IEC
30--1700	SAE
26A17--245H52	JIS
4-220AH	GB
Battery Test	-----
Cranking Test	-----
Charging Test	-----
Load Test	-----

4. Working Environment Temp.: -20°C-50°C
5. Special test clip: Double conductance Kelvin clamp
6. Housing Material: Acid-resistant ABS plastic

7. Current Measure Range: 4AH-240AH

8. Voltage Measure Range: 6V—30V

I. Battery Test

1. Connect the red test clamp with battery positive and the black one with negative, the tester will power on automatically. Battery voltage below 6.0V can't be tested properly, then press any key to continue.

2. 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

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:

(a) When battery voltage is lower than normal test voltage, the test result cannot judge the battery state. It will show “Re-test after charging”. At this time, please charge the battery, then test it.

(b) 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.”

(c) **For deep loss battery (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 turn off/close , which cause battery loss deep, 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.**

II. 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
Mininum 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.

III. 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:

Charging test

Maximum

14.5V <15.0V normal

Current

13.8V

Minimum

13.6 >13.3V normal

Note: Do not shut down the engine during the test. All electrical appliance and device are in OFF state. 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 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 OK. please follow the manufacturer's suggestion to exclude generator failure.

Charging voltage 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 .

IV: 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:

Load Test

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.

V. Language

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

Language

- 1.English
- 2.Portugues
- 3.Espana
- 4.French
- ...

Press UP/DOWN to select the language, then press ENTER key to save. Press ESC to exit. Then, you can proceed other test.