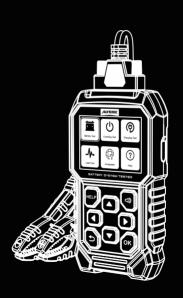


AUTOOL BT460

Battery System Tester

User Manual 用户手册



www.autooltech.com

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ATTENTION

Warning

- Non- technical person shall not change, disassemble or repair the product, otherwise all losses caused by this shall be borne 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 accessories.
- 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.

PRODUCT OVERVIEW

The battery tester adopts the world's most advanced conductance testing technology; it is designed with a built-in printer. BT460 can quickly and accurately measure the actual cold starting current of the starting batteries of automobiles and motorcycles, the health condition of the batteries, and it can quickly detect common failures of the starting systems and charging systems of cars and motorcycles, which is convenient for the rapid maintenance of cars and motorcycles.

- The BT460 can conduct tests on automotive and motorcycle batteries, including battery tests, cranking tests, charging tests, and load tests.
- It is capable of testing all automotive cranking lead-acid batteries, including ordinary lead-acid batteries, AGM flat plate batteries. AGM spiral batteries. Gel batteries, etc.
- · It can directly detect faulty cell batteries.
- The device features polarity reverse connection protection, ensuring that reverse connection will not damage the tester or affect the vehicle and battery.
- Additionally, it can directly test batteries with power shortage, eliminating the need for full charging before testing.
- The testing standards include the majority of battery standards worldwide, such as CCA, JIS, DIN, IEC, EN, GB.

Product Function

- Battery test is mainly targeted to analyze the battery healthy status to calculate the actual cold cranking capability of the battery and the aging extent, which provide reliable analysis evidence for the test and maintenance of the battery. It notifies the user to replace battery in advance when the battery getting aged.
- Cranking test is mainly to test and analyze the starting motor. Through testing the actual required cranking current and cranking voltage of the starting motor, it can find out

whether the starting motor works fine. There are several reasons why the starting motor is abnormal: lubricating system fault causing the starting loaded torque increasing or rotor friction of the starting motor causing the increasing friction of the starting motor itself.

- Charging test is to check and analyze the charging system, including generator, rectifier, rectifier diode, etc., thus to find out whether the output voltage of the generator is normal, the rectifier diode works fine and the charging current is normal. Suppose one of the above mentioned parts is not in normal situation, it will lead to over charge or incomplete charge of the battery, thus the battery will be quickly damaged and also greatly shorten the using life of other loaded electrical appliance.
- Load test is the test of battery pack, DC power supply, UPS backup battery maintenance and capacity detection.

Product Parameters

Measurement Standards and Ranges		
CCA: Cold cranking amps	30-2000	
IEC: Internal electrical technical commission	30-2500	
EN: European automobile industry association	30-3000	
DIN: German auto industry committee	30-2500	
JIS: Japan industrial standard	26A17R-N135	
GB: China national standard	30-300AH	
Other specifications		

Voltage Range	8~30V
Current Range	15mAps~5Amps
Operating Temperature	-20°C~50°C (-4°F~122°F)

PRODUCT STRUCTURE

Structural Diagram

Α	Display screen
В	[HELP]Help button
С	Electric clamps
D	[🗢]Return button
Ε	[🖈]Sound button
F	[◀▶▲▼]Direction buttons
G	[OK]Confirm button



WORKING STEPS

Pre-test

It is applicable for automotive manufacturers, automotive maintenance and repair workshops, automotive battery factories, automotive battery distributors, and educational organizations, etc.

Connect tester

- Shake the clamps back and forth to make sure they are well connected.
- Tester requires the two clamps well connected with the battery poles, otherwise, the test can not go on.
- The red to the positive and the black to the negative, then the tester display will show the starting interface.

When the measured battery voltage is lower than 6.0V, the normal test cannot be performed. Press OK to continue.

Start tester

· According to the tester's prompt, press the [◀▶▲▼] keys to select in sequence: Battery Test; Cranking Test; Charging Test; Load Test; Language; Help.



Select language

Press [◀ ▶ ▲▼] key to select the Language.





Battery test

 1) After entering battery test program, tester will show the battery types for you to choose.





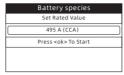








 2) After choosing right battery type, the tester will display the following content.



• 3) Press [OK] key to Start Testing.

Regarding internal resistance, for the same battery, the smaller the internal resistance, the better the health status (except for short circuit). The internal resistance value can be used as a reference for the state judgment standard of a certain range of battery performance.



Battery Test			
SOC	100%	Life	100%
Voltage			13.88V
Current	905 A (CCA)		
Resistance			2.99 mΩ
Good			

⚠ NOTE:

- When the battery voltage is lower than the normal test voltage, the test value cannot correctly determine the battery usage status, and the test result will display "Charge Retest". At this time, you need to charge the battery before testing.
- When the battery voltage is too high or the vehicle is running, the test cannot be performed normally, it will prompt "The voltage is too high, please stop the fire! Turn on the headlights for 3 minutes before measuring".
- For batteries that are deeply in deficit (such as when the vehicle is not in use for a long time and the battery is not charged in time; the lights and car doors are forgotten to be

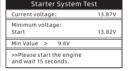
closed, causing the battery to fail due to severe battery failure and cannot start the vehicle, etc.), the actual detection process may also prompt "Please replace the battery". Such a battery, please consult the battery manufacturer first, and perform the test after charging and restoring according to the charging method provided by the manufacturer.

Cranking test







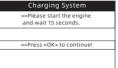


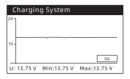
Starter System Test	
Current voltage:	13.87V
Minimum voltage: Start	13.82V
Min Value > 9.6V	
ok	

Charging test

 In the main menu, press the [◀▶▲▼] keys to select the charging system test. Press the [OK] key to enter the test. At this time, start the engine. After waiting for stable operation, press the [OK] key to display the test status. AUTOOL' EN







⚠ NOTE:

Please do not shut down the engine during the test. Other electrical equipment should be turned off. If any electrical appliances in the car are switched on or off during the test, it can affect the accuracy of the test results.

Under different engine operating conditions, the battery voltage will be different. Under normal conditions, the charging voltage will not be lower than the minimum value of 13.3V. and it should not be higher than 15.0V at high speeds.

Charging voltage is too low:

- ▶ The charging voltage of the charging system is insufficient.
- ▶ Please check the generator drive belt for slippage or disconnection, and check whether the line connection between the generator and the battery is normal.
- ▶ If the transmission belt and line are well connected, please follow the suggestions of automobile and motorcycle manufacturers to eliminate the generator fault.

Charging voltage is too high:

- ▶ The generator output voltage is too high.
- Since most car generators use built-in regulators, you need to replace the generator assembly (some older cars use



external regulators, please replace the regulators directly).

The usual high voltage limit for automotive regulators is 14.7V. Excessive charging voltage can overcharge the battery, which shortens the battery life and causes it to malfunction.

Load test

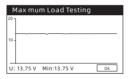
 In the main menu, press the [◀▶▲▼] keys to select the load test, and press the [○K] key to enter the test, notice:











- Start the engine at this time, wait for the operation to stabilize, and then press [OK] to display the test status.
- When all electrical appliances are turned on, under normal circumstances, the power supply capacity of the generator is sufficient, and the charging voltage will be greater than 12.8V. If it is lower than this voltage value, the reason may be that the generator output current is insufficient, the generating power is reduced, or the appliance excessive load or leakage occurs; if the electric appliances on the car are artificially increased, the voltage will also decrease.

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.
- 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 resumes 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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- ▶请勿将钉子、针等其他细小杂物置于线路接口,以免损坏仪器。
- ▶ 请勿将产品置于斜面、支架等不稳的位置使用。
- ▶ 本产品通电使用,请勿让儿童玩耍。
- ▶ 请勿把本产品浸入水或其他液体中, 可能发生短路。
- ▶ 请勿自行拆卸修理本产品,否则会带来保修损失的风险。
- ▶ 请使用本产品标配连接线。

产品简介

BT460蓄电池检测仪,采用目前世界上最先进的电导测试技术,可方便、快速、准确地测量汽车启动电池的实际冷启动电流能力,电池本身的健康程度,以及快速检测汽车启动系统和充电系统的常见故障,有利于维修人员快速准确判断汽车的故障位置,便干汽车的快速维修。

产品特点

- 主要功能包括:电池测试、启动测试、充电测试、负荷测试和其他附加功能。
- 测试所有汽车启动式铅酸电池,包括普通铅酸电池、 AGM平板电池、AGM螺旋电池和凝胶电池等。
- 显示蓄电池目前的健康状况,直接检测出坏电池。

- 极性反接保护, 反接不会损坏检测仪或影响车辆和电池。
- 直接测试电池是否断电,测试前无需充电。
- 测试标准包括当前世界上大多数的电池标准: CCA、JIS、 DIN、IEC、EN、GB。
- 快速、准确地显示蓄电池测试结果。
- 可以直接测试亏电的蓄电池。

产品功能

- 快速测试摩托车、汽车12V/24V蓄电池冷启动电流、内阻、 电池寿命及剩余电量,判定蓄电池是否需要更换。
- 检测12V/24V汽车启动系统和充电系统,可通过电压负荷测试检测发电机供电能力,并打印出测试结果。

产品参数

测量标准与测量范围	
CCA: 国际电工委员会标准	30-2000
IEC: 国际电工委员会标准	30-2500
EN: 欧洲标准	30-3000
DIN: 德国标准	30-2500
JIS: 日本工业标准	26A17R-N135
GB: 中国国家标准	30-300AH
其他规格	

8~30V	电压范围
15mAps~5Amps	电流范围
-20°C~50°C (-4°F~122°F)	工作温度

产品结构

结构图

Α	显示	屏幕
В	[HELP]帮助键
С	ŧ	夹
D	[5]返回键
Е	[🖒]声音键
F	[4]	▶]方向键
G	[ок]确认键



操作方法

预测试

连接检测仪

- 前后摇动电夹, 以确保它们连接牢固。
- 检测仪要求两个电夹与蓄电池两极连接良好,否则测试将无法进行。
- 检测仪具有反向连接保护功能。反向连接夹具时,检测仪的屏幕不会亮起,也不会损坏检测仪或汽车负载。

↑ 注意

▶ 对于并联电池,请先断开阴极连接,在对每个电池进行一次测试。假设未断开阴极连接,测试结果会有误差。

检测仪启动

• 正确连接电夹后, 检测 仪自动启动, 并显示功 能主界面。



电池检测

 进入电池检测程序后,检测仪显示电池类型选择,选择 所需的电池类型。







输入正确的测试标准和等级,按[OK]键,检测仪开始进行测试,并提示"测试中,请稍后!",检测仪将显示电池测试结果。





14.00V

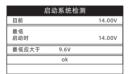
14.00V



启动测试

 进入启动测试程序后,检测仪将显示启动系统检测,并 提示"启动发动机,等待15秒!"。按照提示完成操作, 检测仪将显示启动系统检测结果。





充电测试

 进入充电测试程序后,检测仪将提示"启动发动机,等待 15秒!按<OK>键开始检测"。按照提示完成操作,检测 仪将显示充电系统检测结果。







负荷测试

进入负荷测试程序后,检测仪将提示"请开启全部用电设备,启动发动机,等待15秒!按<OK>键开始检测"。按照提示完成操作,检测仪将显示最大负荷测试结果。









维修保养服务

 您所拥有的AUTOOL产品选用持久耐用的材料, AUTOOL坚持精益求精的生产工艺,每一件产品出厂都 经过35道工序及12次质检工作,从而确保每一件产品都 拥有卓越的品质及性能。所以您的AUTOOL产品值得您 定期维护保养,使其将能够长期稳定地工作。

维修保养

维护保养是为了保持产品性能和外观,我们建议您仔细阅读以下产品保养指南:

- 注意不要将产品与粗糙表面摩擦或揉搓产品,特别是钣金外壳。
- 对产品中需要紧固和连接的部位经常进行检查,如发现 松动应及时紧固,以保证产品的安全运行。对与各种化 学介质接触的产品外部和内部零件要经常进行除锈、喷 漆等防腐处理,以提高产品的抗腐蚀能力,延长产品的 使用寿命。
- 遵守安全操作规程,不超负荷使用产品。产品的安全防护装置齐全可靠,及时消除不安全因素。电路部分彻底检查,老化电线要及时更换。
- 不使用时,请将产品存放于干燥的位置。不要将产品存放在高温、潮湿或不通风的地方。

保修服务

AUTOOL主机自客户签收日起享有3年保修期。其所含附件自客户签收日起享有1年保修期。

保修方式

- 根据具体的故障情况对产品进行免费修理或更换;
- 我方保证所有更换的部件、附件或产品都是全新;
- 在客户收到产品90天内出现故障同时提供视频和图片, 我方承担运费并免费提供相应配件给客户更换。收到产 品超过90天,客户承担相应的费用,我方免费提供配件 给客户更换;

以下情况不在免费保修范围:

- 非正规渠道购买AUTOOL的产品;
- 未按产品说明书要求使用和维护造成的损坏;

在AUTOOL,我们为精湛的设计和卓越的服务感到自豪。 我们很乐意为您提供更多的支持或服务。

声明

偶然公司保留更改产品设计与规格的权利,届时恕不另行通知。实物外观与颜色可能与说明书中显示的有差别,请以实物为准。我们已尽最大努力力求使书中所有描述准确,但仍难免有不妥之处。如有疑问,请联系经销商或偶然售后服务中心。本公司对产品拥有最终解释权,不承担任何因误解而产生的后果。



退换货服务

退换货

- 如果您对从线上授权购物平台和线下授权经销商所购买的AUTOOL产品不满意,根据《AUTOOL全球销售条款》,您可以自收到产品之日起七日内退货;或者在产品交付之日起的30日内调换等值的其他产品。
- 退回及调换的产品必须处于完全可销售状态,并附上相关销售单单据,所有相关配件、纸质发票(如有)。
- AUTOOL将会对寄回退货的商品进行检查,以确保其处于完好无损的状态并且符合条件,相关条件详情请参阅《AUTOOL全球销售条款》。任何未通过检查的商品将退还给您,您将不会获得商品退款。
- 您可以通过客户服务中心或AUTOOL授权经销商调换产品;退换货原则为从哪里购买,就从哪里退换货。如果您退换货遇见困难或者阻碍,请联系AUTOOL客户服务中心。通过客户服务中心退换货时,我们建议您通过下面的方式进行:

中国区域致电	400-032-0988 / 18929303778
售后微信号	18929303778
海外区域致电	+86 0755 23304822
E-mail	aftersale@autooltech.com
Facebook	https://www.facebook.com/autool.vip
YouTube	https://www.youtube.com/c/autooltech

• 如您的退换货得到确认, 您将收到确认信息和邮件。



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