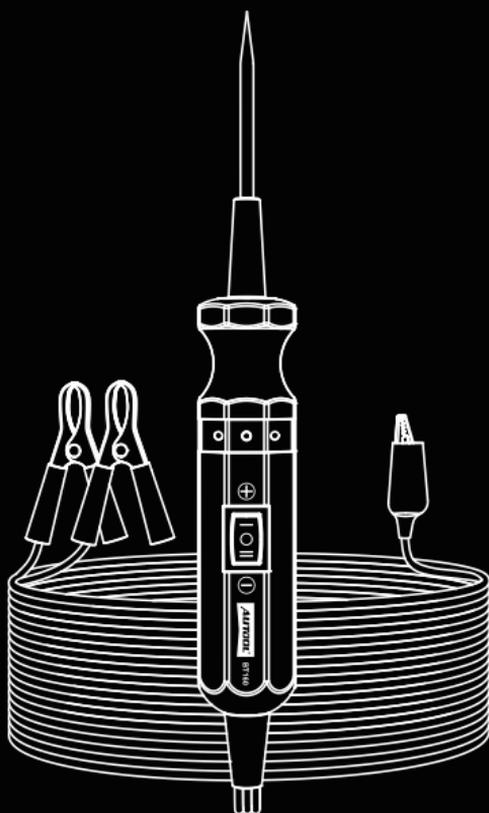


**AUTOOL**<sup>®</sup>

# AUTOOL BT160

Automotive Electric System Tester

User Manual



[www.autooltech.com](http://www.autooltech.com)



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## CAUTIONS

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### Warning

⚠ This is overload protected by disconnecting circuit and beeping alarm to ensure safety of user and battery. Before using this tester, please read the instruction manual carefully.

- ▶ Only for use with 6-24V DC systems.
- ▶ Not designed to be used with 110/220 AC-volt house current and other over 24V DC systems.
- ▶ There are probably sparks on probe tip during it is used. Do not operate it in area with combustible gas, dust and explosive conditions.
- ▶ Check case and leads prior to using it. Do not use it when cracks or damage is visible.
- ▶ Be careful of the sharp probe tip during using or putting away this tool. Keep out of reach of children.
- ▶ Do not attempt to open this tool, no serviceable parts are inside. Opening it voids the warranty. All repairs should only be performed by authorized dealer.

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## PRODUCT INTRODUCTION

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### Introduction

Thank you for purchasing Automotive Electric System Tester. It's your best tool for testing automotive electrical problems.

After simply hooking up two clips to the vehicle's battery, user is able to operate it with below key functions.

- Quickly check if a circuit is positive, negative or open by probing it and observing the red or green LED.
- Quickly activate and check electric components by pressing power switch to (-) or (=) position to determine their electronic and grounding status.
- Test continuity of switches, relays, diodes, fuses and wires by connecting them between the auxiliary ground lead and the probe tip and observing the green LED.

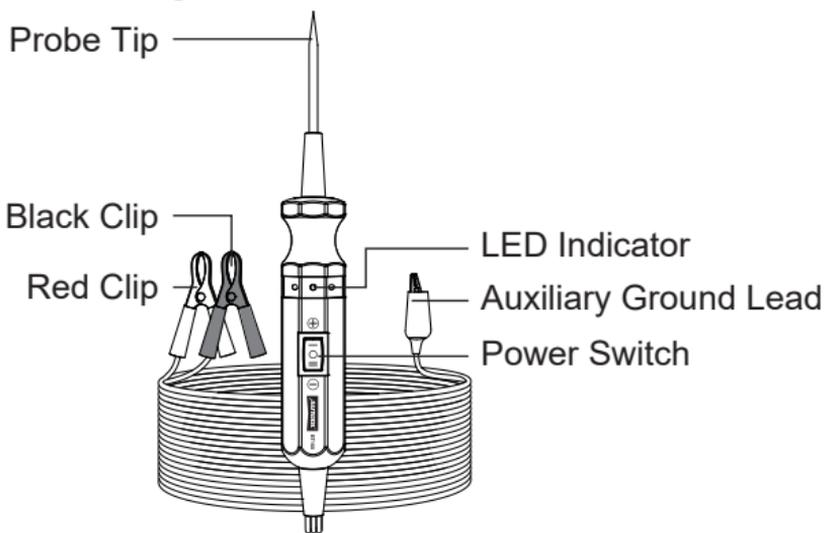
- Find faulty ground connections instantly.
- Follow and locate short circuit.

## Specification

Operation voltage	<b>6-24V DC</b>	Overload protection	<b>10A</b>
Lead length		<b>Approximately 4m (13F)</b>	

## PRODUCT STRUCTURE

### Structure diagram



- **Red LED:** Positive voltage supplied or indicated.
- **Green LED:** Negative voltage supplied or indicated.
- **Power Switch:**  
 Press button to “-” side to output positive voltage;  
 Press button to “=” side to output negative voltage.

## Operation Instruction

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### 1. Quick self-test

Please complete self-test to determine tool's functional availability prior to using it.

- Unroll the leads.
- Connect red clip to positive terminal of vehicle's battery.
- Connect black clip to negative terminal of vehicle's battery.
- Press button to "-" side, the LED should light red.
- Press button to "=" side, the LED should light green.
- Loose the button and contact the probe tip to positive terminal of battery, the LED should light red.
- Loose the button and contact the probe tip to negative terminal of battery, the LED should light green.
- Press button to "-" side, the LED should light red. Then have the probe tip quickly contact negative terminal of battery (there will be a little sparks), LED indicator turns to green with buzzer sounding.

#### NOTE

- ▶ Do not operate it in area with combustible gas, dust and explosive conditions. Not allowed to use it with AC and over 24V DC circuit.
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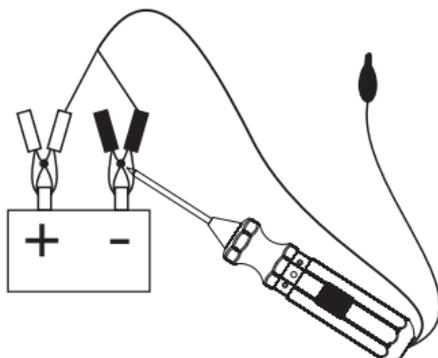
### 2. Polarity testing

This tool can test uncertain polarity of contact in the circuit of vehicle.

- Unroll the leads.
- Connect red clip to positive terminal of vehicle's battery.
- Connect black clip to negative terminal of vehicle's battery.
- Contact the probe tip to a positive (+), the LED should light red.
- Contact the probe tip to a negative (-), the LED should light green.

#### NOTE

- ▶ Do not operate it in area with combustible gas, dust and explosive conditions. Not allowed to use it with AC and over 24V DC circuit.
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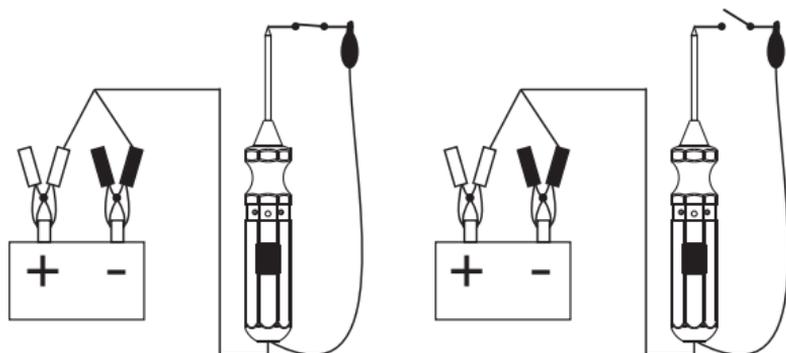


### 3. Continuity testing

- Unroll the leads.
- Connect red clip to positive terminal of vehicle's battery.
- Connect black clip to negative terminal of vehicle's battery.
- Connect auxiliary ground lead to one side of tested wire along with probe tip connecting to the other side. When continuity is present, the LED will light green. If LED does not light up, no continuity present.

**⚠ NOTE**

- ▶ Do not operate it in area with combustible gas, dust and explosive conditions. Not allowed to use it with AC and over 24V DC circuit.



#### 4. Testing components out of vehicle's electrical system

- Unroll the leads.
- Connect red clip to positive terminal of vehicle's battery.
- Connect black clip to negative terminal of vehicle's battery.
- Connect auxiliary ground lead to negative terminal of tested component.
- Press button to (-) side with LED lighting red. Contact the probe tip to positive terminal of tested component to activate the component. If LED turns to green with buzzer sounding, stop testing and check the component if defective or not, or rating current of component is higher than that of this tester.



#### NOTE

- ▶ Do not operate it in area with combustible gas, dust and explosive conditions. Not allowed to use it with AC and over 24V DC circuit.

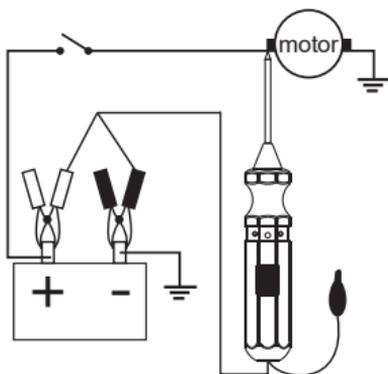
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#### 5. Testing components in vehicle's electrical system

- Unroll the leads.
- Connect red clip to positive terminal of vehicle's battery.
- Connect black clip to negative terminal of vehicle's battery.
- When component's control switch is located at the side of positive terminal of component , press button to "-" side to have LED light red. Contact probe tip to the positive terminal of component. The component will be activated.
- When component's control switch is located the at side of negative terminal of component , press button to "=" side to have LED light green. Contact probe tip to the negative terminal of component. The component will be activated.
- When it comes to check each little metal points in lamp's socket , connect auxiliary ground lead to ground of component. Then press button to "-" side to have LED light red. Contact probe tip to each metal points individually. The component will be activated.
- If color of LED changes along with buzzer sounding, stop testing and check the component if defective or not, or rating current of component is higher than that of this tester.

**⚠ NOTE**

- ▶ Do not operate it in area with combustible gas, dust and explosive conditions. Not allowed to use it with AC and over 24V DC circuit.

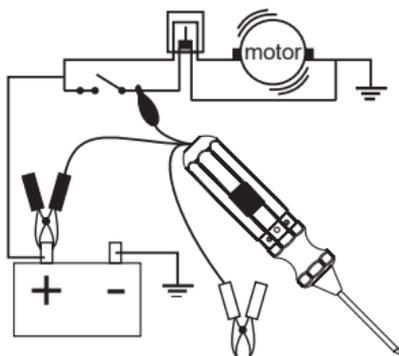


**6. Jumper lead operation**

- The black clip and auxiliary ground lead are connected directly through the unit. User can consider it as a long jumper test lead by leave the red clip disconnected from the battery.

**⚠ NOTE**

- ▶ Do not operate it in area with combustible gas, dust and explosive conditions. Not allowed to use it with AC and over 24V DC circuit.



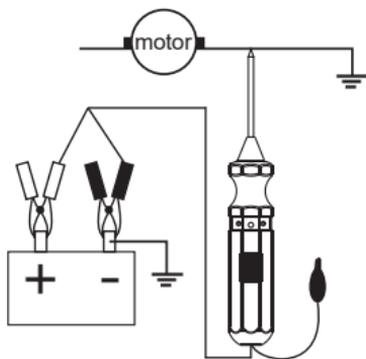
## 7. Grounding testing

For some components of which negative terminal is required to be well grounded for large current flowing, this tester is a good tool to test their grounding.

- Unroll the leads.
- Connect red clip to positive terminal of vehicle's battery.
- Connect black clip to negative terminal of vehicle's battery.
- Press button to “-” side , the LED should light red, and positive voltage is supplied. Then have the probe tip quickly contact negative terminal of component as close as possible, LED indicator turns to green with buzzer sounding, which means it is well grounded. If not, the LED remains red without any buzzer.

### NOTE

- ▶ Do not operate it in area with combustible gas, dust and explosive conditions. Not allowed to use it with AC and over 24V DC circuit.



## 8. Short circuit following and locating

In most cases short circuit or instant overload of component will lead to blown fuse or circuit breaker tripping. This tester can search and locate the problem.

- Unroll the leads.
- Connect red clip to positive terminal of vehicle's battery.
- Connect black clip to negative terminal of vehicle's battery.

- Press button to “-” side, the LED should light red, and positive voltage is supplied.
- Remove the blown fuse from the fuse box and begin tracking from two terminals of the fuse socket. Use probe tip quickly contact wire. If LED lights green with buzzer, short circuit or overloading component appears in this side. Please note this wire's color or identification code. Follow the wire as far as you can along the wiring harness. Locate the color-coded wire in the harness and expose it. Cut the wire. Follow the wire in the shorted direction and repeat this process until the short is located. If there are components in the following wire, check the components individually if good or not.

**NOTE**

- ▶ Do not operate it in area with combustible gas, dust and explosive conditions. Not allowed to use it with AC and over 24V DC circuit.

## MAINTENANCE SERVICE

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- 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. 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

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- 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.
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### 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.

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### 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

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- 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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