



BATTERY & SYSTEM TESTER

Thank you for selecting this quality GRIOT'S product. The **BATTERY & SYSTEM TESTER** is designed to test 12 Volt batteries and systems and is compatible with a wide range of battery types, including Conventional, Maintenance Free, AGM, Gel Cell, Marine and Deep Cycle batteries. Please read and understand all instructions before using the **BATTERY & SYSTEM TESTER**. Enjoy the best!

PRODUCT FEATURES

The **BATTERY & SYSTEM TESTER** will test the condition of your vehicle's battery, charging, and starting system. The tester has a recommended operating ambient temperature range of 32°F to 122°F. It will test batteries using any of the rating systems below:

- CCA 100-1200 CCA
- IEC 65-790 CCA
- CA(MCA) 120-1440 CA(MCA)
- DIN 55-670 CCA
- EN 95-1125 CCA

PREPARING A BATTERY FOR TESTING

1. Be sure the area around battery is well ventilated while battery is being tested.
2. Clean the battery terminals with a wire brush if necessary. Be careful to keep corrosion from coming in contact with eyes.
3. Inspect the battery for a cracked or broken case or cover. If the battery is damaged, do not use the tester.
4. If the battery is not a sealed Maintenance Free battery, add distilled water in each cell until battery acid reaches level specified by the manufacturer. This helps purge excessive gas from cells. Be careful not to overfill.
5. Confirm that all vehicle accessories are turned off to ensure you do not cause any arcing and that the tested battery has a nominal voltage of 12 Volts.
6. If it is necessary to remove battery from vehicle to test, always remove ground terminal from battery first.

TESTING A BATTERY

1. Before you test a battery in a vehicle, turn off the ignition, all accessories and loads. Close all the vehicle doors and the trunk lid.
2. Make sure the battery terminals are clean (see above).

3. Connect tester leads to the battery, clamping the red clamp to the vehicle positive battery terminal first. Then, clamp the black clamp to the vehicle negative battery terminal second. Note: Whenever possible, connect directly to the terminals/posts of the battery.
4. The LCD screen will power up and show the open circuit voltage of the battery. Note: If you see "**HI**"/"**Lo**"/"----" Blank on the display or the red "Check Connections" LED is lit, please refer to Troubleshooting.
5. Press **ENTER** to initiate the testing process.
6. The display will read "**bAtt**".
7. Select the type of battery to be tested, "**SLI**" or "**SEAL**", where SLI stands for Standard Starting/Lighting/Ignition flooded batteries and SEAL means VRLA/GEL/AGM batteries.
Press **ENTER**.
8. Select the applicable battery rating that you plan to test against. Options include "**CCA**", "**din**", "**IEC**", "**En**" or "**CA**" (MCA).
Press **ENTER**.
9. Select the battery rating using the arrow keys. Press **ENTER** to perform the battery test (lasts 1-2 seconds).
10. (Optional sequence that is determined by the tester.) If the display shows "**CHA**"- (Is tested battery charged?), press

ENTER. Select "**YES**" or "**no**" using the arrow keys, as applicable, then press **ENTER**.

11. When the test is complete, the LCD screen will show the actual determined rating (as compared to the nominal rating entered in Step 9) and provide an LED assessment of starting system condition. Assessment corresponds as follows:
 - Green LED – The battery is good and capable of holding a charge.
 - Green/Yellow LEDs – The battery is good but needs to be charged.
 - Yellow/Red LEDs – Battery is discharged. The battery condition cannot be determined until it is fully charged. Recharge and retest the battery. If result is the same after a second test, the battery should be replaced immediately.
 - Red LED – the battery cannot hold a charge. Or, the battery has at least one short-circuited cell. It should be replaced immediately.
 - "**Err**" on Display plus Red "Check Connection" LED – The clamps are not connected properly or the tested battery is has a higher CCA/CA(MCA) capacity than the tester's operating range.

12. Press **ENTER** to return to the home screen and once again display the battery's open circuit voltage. Remove the test leads from the battery posts after completion of testing, always removing the negative clamp first and then the positive clamp.

SYSTEM TESTING: STARTING & CHARGING SYSTEM TESTS

1. Make sure the battery terminals are clean. See "Preparing A Battery For Testing" section.
2. Connect tester leads to the battery, clamping the red clamp to the vehicle positive battery terminal first. Then, clamp the black clamp to the vehicle negative battery terminal second. Note: Whenever possible, connect directly to the terminals/posts of the battery.
3. LCD screen will power up and show the open circuit voltage of the battery on the screen. Note: If you see "**HI**" / "**Lo**" / "----" Blank on the display or the red "Check Connections" LED is lit, please refer to Troubleshooting.
4. Turn off all vehicle accessory loads such as lighting, air conditioning, radio, etc.
5. Press **ENTER** to choose the type of test you want to perform.
6. Press **UP** or **DOWN** arrow key to select the system test "**SySt**". Press **ENTER**.

7. The screen shows "**CrAn**". Press **ENTER** to perform Starting System Test.
8. Start the engine. The LCD screen will show the minimum voltage reach by the battery and provide an LED assessment of starting system condition. Assessment corresponds as follows:
 - Green LED – Starting System OK.
 - Yellow LED – Starting System Weak
 - Red LED – Starting System Problem. Check connections, wiring and starter immediately.
9. After Starting System Test, press **ENTER** to go to Charging System Test "**CHAr**".
10. Run the engine to 1200 – 1500 rpm. Press **ENTER**. The tester will display the charging system voltage without loads and provide an LED assessment of that reading. Assessment corresponds as follows:
 - Green LED – Charging System OK
 - Red LED – Charging Voltage is High
 - Yellow LED – Charging Voltage is Low
11. Next, the tester can provide an assessment of the charging system under load.
12. Without pressing **ENTER**, turn on the following accessories: blower to high (heat), high beam headlights, & rear defroster.

Note: Do not use cycling loads such as air conditioning or windshield wipers.

13. The tester will display the charging system voltage under loads and provide an LED assessment of that reading. Assessment correspond as follows:
 - Green LED – Charging System OK
 - Red LED – Charging Voltage is High
 - Yellow LED – Charging Voltage is Low
14. Turn engine off and remove the test leads from the battery posts after completion of testing, always removing the negative clamp first and then the positive clamp.

TROUBLESHOOTING

Question: What does it mean if the LCD screen shows "**HI**"?

Answer: The voltage of the tested battery is over 15V and too high of a reading for a 12V battery. The tester will not work under this situation. Confirm that the tested battery has a nominal voltage of 12 Volts.

Question: What does it mean if the LCD screen shows "**Lo**"?

Answer: The voltage of the tested battery is under 7V and too low to power the tester. Confirm that all vehicle accessories are turned off and that the tested battery has a

nominal voltage of 12 Volts. If so, charge the battery. If reading is the same after charging, the battery should be replaced.

Question: What does it mean if the LCD screen is blank?

Answer: The voltage of the tested battery is too low to power the tester. Check battery connections and be sure that you have not made a reverse connection. If condition persists, confirm that all vehicle accessories are turned off and that the tested battery has a nominal voltage of 12 Volts. If so, charge the battery. If reading is the same after charging, the battery should be replaced.

Question: What does it mean if the Tester Display shows "----"?

Answer: The voltage reading is unstable. Confirm that all vehicle accessories are turned off and that the tested battery has a nominal voltage of 12 Volts. If condition persists, place a short (15-20 seconds) load on the battery by turning on the lights or another accessory and then turn accessory off. This temporary load may assist in stabilizing the battery voltage by removing any surface charge on the battery.

Question: What does it mean if the RED Check Connection LED is lit?

Answer: The tester is not sensing a proper 12 Volt battery connection. Make sure that the tester is properly connected using the correct polarity (positive to positive, negative to negative). Make sure that each connection is tight, with good surface contact between the clamp and the connected surface.

Question: What might cause sparking at the connection to the negative or positive terminal?

Answer: It is important that the tester clamps make a good connection to the battery terminal (preferred) or to the battery connection hardware. Avoid connecting to any screws that are used as part of the vehicle's battery connection. In some circumstances, usually when connecting to such screws, an inefficient connection is made that provides very little surface contact from the clamp to the connected surface. In such cases, the tester's electrical pulse will try to follow the easiest path to the battery posts. If such a situation occurs, disconnect tester immediately and attempt to make a better connection with greater surface contact between the clamp and the connected surface.

IMPORTANT SAFETY AND PERSONAL PRECAUTIONS

- Someone should always be within range of your voice or close enough to come to your aid when you work near a lead-acid battery.
- Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes. Protective eye wear should always be worn when working near lead-acid batteries.
- If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.
- Be extra cautious to reduce risk of dropping a metal tool onto a battery. It might spark or short circuit the battery or another electrical part that may cause explosion.
- Remove personal metal items such as rings, bracelets, necklaces and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.
- Use the tester for testing lead-acid batteries only. Do not use for testing dry-cell batteries that are commonly used with home appliances.
- NEVER test, charge or jump start a frozen battery.

- Do not submerge in water.
- Do not operate with flammables such as gasoline, etc.
- If the tester receives a sharp blow or is otherwise damaged in any way, have it checked by a qualified service person.
- Do not disassemble the tester. Have it checked by a qualified service person.

DISCLAIMER

GRIOT'S GARAGE is not responsible for any misuse of the **BATTERY & SYSTEM TESTER** for any injury or damage incurred to any person or object related to the **BATTERY & SYSTEM TESTER**.

ANSWERS TO YOUR QUESTIONS

Should you want to order another **BATTERY & SYSTEM TESTER** please call our Customer Service Department at 800-345-5789 or email to info@griotsgarage.com. For a complete selection of quality products or to receive a free GRIOT'S GARAGE handbook, call us or visit us at www.griotsgarage.com. Reorder number 10253.

Have fun in your garage!®

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