

Thank you for purchasing a Sealey product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.

 **IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.**

1. SAFETY INSTRUCTIONS

 **DANGER! BE AWARE, LEAD-ACID BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS VERY IMPORTANT TO READ AND FOLLOW THESE INSTRUCTIONS CAREFULLY, EACH TIME YOU USE THE BATTERY TESTER.**
 Follow these instructions and those published by the battery and vehicle manufacturers, and the maker of any equipment you intend to use in the vicinity of the battery. Remember to review warning marks on all products and on engines.

1.1. PERSONAL PRECAUTIONS

- ✓ Ensure that there is another person within hearing range and close enough to come to your aid, should a problem arise when working near a lead-acid battery.
- ✓ Wear safety eye protection and protective clothing. Avoid touching eyes while working near battery.
- ✓ Have fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
- ✓ Wash immediately with soap and water if battery acid contacts skin or clothing. If acid enters eye, flush eye immediately with cool, clean running water for at least 15 minutes and seek immediate medical attention.
- ✓ Remove personal metallic items such as rings, bracelets, necklaces and watches. A lead-acid battery can produce a short-circuit current which is high enough to weld such items to the vehicle and cause severe burns.
- ✓ Ensure that hands, clothing (especially belts) are clear of fan blades and other moving or hot parts of engine. Remove ties and contain long hair.
- ✗ **DO NOT** smoke or allow a spark or flame in the vicinity of the battery or engine.



1.2. GENERAL SAFETY INSTRUCTIONS

- ✓ Familiarise yourself with the application, limitations and potential hazards of the tester. Also refer to the vehicle manufacturer's hand book. *IF IN ANY DOUBT CONSULT A QUALIFIED ELECTRICIAN.*
- ✓ Ensure that the tester is in good condition before use. If in any doubt do not use the unit and contact a qualified electrician.
- ✓ Only use recommended attachments and parts. To use unapproved items may be dangerous and will invalidate your warranty.
- ✓ Keep tools and other items away from the engine and ensure that you can see the battery and working parts of engine clearly.
- ✓ Determine the system voltage before using the tester.
- ✓ If the tester receives a sharp knock or blow the unit must be checked by a qualified service agent before using.
- ✓ If the battery terminals are corroded or dirty, clean them before using the tester.
- ✓ Keep children and unauthorised persons away from the work area.
- ✗ **DO NOT** disassemble the tester for any reason. The tester must only be checked by qualified service personnel.
- ☐ **WARNING!** To prevent the risk of sparking, short circuit and possible explosion **DO NOT** drop metal tools in the battery area, or allow them to touch the battery terminals.
- ✗ **DO NOT** cross-connect tester to battery. Ensure positive (RED) clamp is to positive terminal and negative (BLACK) clamp is to negative terminal. If battery symbols cannot be distinguished, remember that the negative terminal is the one directly connected to the vehicle bodywork.
- ✗ **DO NOT** use the tester outdoors, or in damp, or wet locations and **DO NOT** use in the vicinity of flammable liquids or gases.
- ✓ Ensure there is effective ventilation to prevent a build-up of explosive gases.
- ✗ **DO NOT** use the tester for a task for which it is not designed.
- ✓ When not in use, store the tester carefully in a safe, dry, childproof location.

2. INTRODUCTION & SPECIFICATION

Compact design digital tester suitable for professional use. Utilises low current draw technology to evaluate condition of SLI, VRLA, AGM and Gel batteries and charging systems (BT102 only). Just key in the battery rating from the top of the battery. Simple, fast and accurate evaluation of battery condition. Results displayed on LED control panel. No internal battery and will test batteries with a residual charge of just 7 Volts. BT102 can also be used to evaluate the condition of the alternator and charging circuitry of the vehicle.

Rated Battery Voltage	12V
Rated Systems	SAE, DIN, EN, IEC & CA(MCA)
Test Range	185-1125CCA EN
.....	200-1200CCA SAE
.....	130-790CCA IEC
.....	110-670CCA DIN
.....	240-1440 CA(MCA)
Min. Power Requirement	7V
Recommended operating temperature 0°C ~ 50°C	
Note: CCA = Cold Cranking Amps	
CA(MCA) = Marine Cranking Amps	



3. OPERATION

- ☐ **WARNING!** Ensure that you read, understand and apply the safety and operational instructions before connecting the tester clamps to the battery. Only when you are sure that you understand the procedures is it safe to proceed with the testing process.
- 3.1 PREPARATION.**
- ☐ **WARNING!** Ensure that the vehicle, or battery, is in a well ventilated area before starting to test.
- 3.1.1 Check battery casing for cracks or leakage. If damage is found **DO NOT** test, replace battery.
- 3.1.2 Clean battery terminals.
- 3.1.3 If possible, check electrolyte levels and top-up with distilled water as necessary.
- 3.1.4 Unless otherwise specified tests are carried out with all electrical items switched off. **Leaving any items on (boot light, interior light, etc.) can result in misdiagnosis.**
- 3.1.5 Make sure that the battery terminals are clean.
- 3.2 OPERATION.**
- 3.2.1 Connect the red clamp to the positive (+) battery terminal and the black clamp to the negative (-) terminal.
- 3.2.2 The LED display will light up and show the battery voltage. Press **ENTER** to move to the next step. On BT102 the display will show **bAtt**, press **ENTER**.
- Note:** If the battery is below 7V, the tester will not work, recharge battery and try again. If **HI / Lo / _ _ _ _ /** are displayed or the screen is blank or flickers refer to the troubleshooting section.

- 3.2.3 Press the **▲ (UP) and ▼ (DOWN)** buttons to select the battery type, **SLI** or **SEAL** (VRLA/GEL/AGM/SLA) and press **ENTER**.
- 3.2.4 Press the **▲ (UP) and ▼ (DOWN)** buttons to select the battery rating, **SAE, DIN, IEC, EN** or **CA** (MCA) and press **ENTER**.
- 3.2.5 Press the **▲ (UP) and ▼ (DOWN)** buttons to input the battery capacity CCA or CA(MCA),
SAE: 200~1200CCA, DIN: 110~670CCA, IEC: 130~790CCA, EN: 185~1125CCA or CA(MCA): 240~1440CA(MCA) and press **ENTER** to start the test.
- 3.2.6 If the display shows **CHA_** (Is the battery charged?), press **ENTER** and using the **▲ (UP) and ▼ (DOWN)** buttons select **YES** or **NO** and press **ENTER**.
- 3.2.7 The tester will display the actual CCA or CA and the LED lights will show one of the five following combinations:

	Green LED light The battery is good & capable of holding a charge. XXX (CCA or CA value)
	Green & Yellow LED lights The battery is good but needs to be charged. XXXX (CCA or CA value)
	Yellow & Red LED lights Battery is discharged. The battery condition cannot be determined until it is fully charged. Recharge & retest the battery. If reading is the same, the battery should be replaced immediately. XXXX (CCA or CA value)
	Red LED light The battery cannot hold a charge. It should be replaced immediately, or the battery has at least one cell short circuit. Replace immediately. XXXX (CCA or CA value)
	Err on the screen & Second Red light The clamps are not connected properly. Please check if the clamps are connected properly or the tested battery is bigger than maximum testing CCA capacity.

Battery Type Glossary:	
Standard SLI:	Starting - Lighting - Ignition.
AGM:	Absorbent Glass Mat.
VRLA:	Valve-Regulated Lead Acid.
SLA:	Sealed Lead Acid.
Gel:	Gel Battery

3.3 Starting System Test (BT102)

- 3.3.1 The LED display will light up and show the voltage of the battery. Press **ENTER** to move to the next step.
- 3.3.2 Press the **▲ (UP) and ▼ (DOWN)** buttons to select the system test, **SYSt** and press **ENTER**.
- 3.3.3 Press the **▲ (UP) and ▼ (DOWN)** buttons to select the battery test, **bAtt** and press **ENTER**.
- 3.3.4 Turn off all vehicle accessories, radio etc.
- 3.3.5 LED display shows **CrAn**, press **ENTER**.
- 3.3.6 Start the engine. Record voltage reading after cranking the starter.
If the voltage reading is greater than 7.2V, the green LED will illuminate = Starting system OK.
If the voltage reading is between 5.8 ~ 7.2V, the yellow LED will illuminate = Starting system weak, check connections, wiring and starter.
If the voltage reading is less than 5.8V, the red LED will illuminate, screen will be blank or show the battery voltage. = Starting system problem, check connections, wiring and starter.

3.4 Charging System Test (BT102)

- 3.4.1 After the starter test press **ENTER**, the screen will show **CHAR**, press **ENTER** to show the live voltage.
- 3.4.2 Increase the engine speed to 1200 ~ 1500rpm and read the voltage.
If voltage is between 13.4V and 14.6V, the green LED will illuminate = Charging system OK.
If voltage reading is above 14.6V, the red LED will illuminate = Charging voltage too high, check regulator.
If voltage reading is less than 13.4V, the yellow LED will illuminate = Charging system fault, check connections, wiring, drive belt tension and alternator.
- 3.4.3 Switch on high beam headlights, fan blower to high and rear fog lamp and repeat the above test.
If voltage is between 13.4V and 14.6V, the green LED will illuminate = Charging system OK.
If voltage reading is above 14.6V, the red LED will illuminate = Charging voltage too high, check regulator.
If voltage reading is less than 13.4V, the yellow LED will illuminate = Charging system fault, check connections, wiring, drive belt tension and alternator.
- 3.4.4 Turn off engine and remove clamps from battery.

4. TROUBLESHOOTING

- 4.1 If Screen shows **H!**: Voltage over 15V. BT101/BT102 will not operate in this condition, ensure battery being tested is 12V.
- 4.2 If screen shows **Lo**: Voltage is under 7V. BT101/BT102 will not operate in this condition, recharge the battery and repeat test, if still reading **Lo** replace battery.
- 4.3 If the screen is blank: Ensure the clamps are connected correctly, clean battery posts if required. The voltage of the battery is too low to operate the BT101/BT102, recharge the battery and repeat test, if screen is still blank, replace battery.
- 4.4 If the screen flickers or shows **_ _ _ _**: The voltage is unstable, check all connections and recharge battery if required, retest if display remains as before replace battery.

5. DECLARATION OF CONFORMITY

Declaration of Conformity

We, the sole UK importer, declare that the products listed below are in conformity with the following standards and directives.

Digital Battery/Alternator Tester
Model Nos: BT101 & BT102
2004/108/EC EMC Directive
93/68/EEC CE Marking Directive
2002/95/EC RoHS Directive
2002/96/EC WEEE Directive



The construction files for these products is held by the Manufacturer and may be inspected, by a national authority, upon request to Jack Sealey Ltd.

Signed by Tim Thompson

 7th July 2008

For Jack Sealey Ltd. Sole UK importer of Sealey Professional Tools

NOTE: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

IMPORTANT: No liability is accepted for incorrect use of this equipment.

WARRANTY: Guarantee is 12 months from purchase date, proof of which will be required for any claim.

INFORMATION: For a copy of our latest catalogue and promotions call us on 01284 757525 and leave your full name and address, including postcode.



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