

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

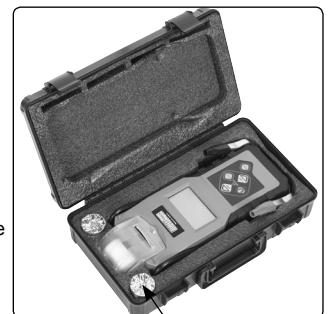
- ✓ Familiarise yourself with the application, limitations and potential hazards of the tester. Also refer to the vehicle manufacturer's hand book. *IF IN ANY DOUBT CONSULT A QUALIFIED ELECTRICIAN.*
- ✓ Ensure that the tester is in good condition before use. If in any doubt do not use the unit and contact 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

Fast and accurate diagnosis of battery and alternator condition with the facility to print the results. A large LCD display shows charging and starting system status and returns decision making information in seconds. Results need no interpretation and the tester will work on batteries with as little as 7.6V of residual charge.

### Specification:-

Rated Battery Voltage .....	12V	Voltage Range .....	7.6-17V
Rated Systems .....	DIN,EN,IEC,SAE	Replacement Printer Rolls .....	(Pack of 2)BT2003.V2-01
Test Range .....	100-800 CCA*DIN	Batteries: .....	4 x "AA" (not included)
Test Range .....	100-1400 CCA*EN	Operating Temperature .....	0 to 120°F (-18 to 55°C)
Test Range .....	100-800 CCA*IEC	Housing Material .....	.ABS
Test Range .....	100-1400 CCA*SAE	Dimensions .....	266mm x 94mm x 39mm
.....	By Battery Type JIS	Weight .....	560g
*CCA .....	Cold Cranking Amps		



Print paper reel

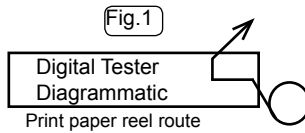
## 3. OPERATION

- ☐ **WARNING!** Ensure that you read, understand and apply the safety and operational instructions before applying 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 and 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. When testing on the vehicle, 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 expensive mis-diagnosis. If the vehicle was running prior to testing, turn on the headlights for 30 seconds to remove surface charge. Switch off the lights, let the battery recover for 60 seconds before testing.**
  - 3.1.5. Confirm that the 4 x "AA" batteries (not supplied) are correctly fitted in the compartment in the rear of the tester. These batteries power the printer and enables storage of test data after test and disconnection. **DO NOT** operate the printer without the print paper loaded and ready for printing.
- 3.2. Selecting the rating system**
  - 3.2.1. Connect the red crocodile clip to the positive (+) battery terminal and the black crocodile clip to the negative (-) terminal. For the best contact, rotate clips back and forth.
  - 3.2.2. The battery rating system displays the last selected for 3 seconds, and then the default rating. If the rating system is, as required, go to step 3.3.3 of the "Battery Test" paragraphs. If not, disconnect both clamps and reconnect the black clip to the negative (-) terminal.
  - 3.2.3. Press and hold the TEST button.
  - 3.2.4. Reconnect the positive red clip to the positive (+) terminal.
  - 3.2.5. After the display shows the letters of the rating system, "SAE" for example, release the test button.

3.2.6 Press the ▲ HIGH or ▼ LOW buttons to scroll to the correct rating system.

Rating system*	Increment	Default	Range
CCA	20	500	100-1400
SAE	20	600	100-1400
EN	20	600	100-1400
IEC	10	280	100-800
DIN	10	280	100-800

\*For JIS use the conversion table on back of tester also shown in (Fig.2).



LCD	GOOD	OK LOW	LOW	REPLACE
	The battery is good, return it to service.	Fully charge the battery and return it to service.	Fully charge the battery, retest. If no improvement replace.	Battery failure, replace.
	Decision	Decision	Decision	Decision

3.2.7 Press the TEST button to select the rating system and the default rating will display.

3.2.8 Continue with step 3.3.3 in "Battery test".

### 3.3 Battery test (12V only)

3.3.1 If testing on the vehicle, ensure all electrics are switched off, ignition, lights, boot light etc. Connect the red clip to the positive (+) battery terminal and the black clip to the negative (-) terminal, as in 3.2.1.

3.3.2 The battery rating system last selected will appear on the display for 3 seconds, then the default rating value.

3.3.3 Press the ▲ HIGH or ▼ LOW buttons to scroll to the battery's rating.

3.3.4 Press the TEST button.

3.3.5 The LCD will indicate the battery's condition. The display will alternate between the voltage and available power.

### 3.4 Starting system test (Note! The battery must be good and fully charged)

3.4.1 Connect the red clip to the positive (+) battery terminal and the black clip to the negative (-) terminal, as in 3.2.1.

3.4.2 Press the "V" button to read the live voltage.

3.4.3 Start the vehicle, whilst pressing the ▼ LOW button to read the cranking voltage.

### 3.5 Charging system test (Note! The battery must be good and fully charged)

3.5.1 When the vehicle is running, connect the red clip to the positive (+) battery terminal and the black clip to the negative (-) terminal, as in 3.2.1.

3.5.2 Press the "V" button to read the live voltage.

3.5.3 Run the engine at 2000rpm for 15 seconds.

3.5.4 Press and hold the ▲ HIGH button to read the highest average charging voltage.

### 3.6 Printing system (DO NOT operate the printer without the print paper loaded and ready for printing).

3.6.1 Open the print paper spool perspex lid and insert the roll of print paper (Fig.1).

3.6.2 Feed the leading edge of the reel into the guide slot. Press and hold the PRINT button enabling the reel to feed through the printer. Once "on the move", close the perspex lid.

3.6.3 When the reel feeds through the perspex lid slot release the PRINT button.

**Note! Points 3.6.1 & 3.6.2 can be achieved without connection to the vehicle battery, provided the 4 "AA" tester batteries are fitted. For an actual test connect the red clip to the positive (+) vehicle battery terminal and the black clip to the negative (-) terminal, as in 3.2.1.**

3.6.4 Press the PRINT button once, and the LCD screen will display "SAVE IN", which means the test data is being saved; and then the screen displays "SAVED", which means the data is saved.

3.6.5 Press the PRINT button twice in rapid succession, the previously saved test data will be printed automatically.

3.6.6 When used with the 4 "AA" batteries the tester can store and later print data after disconnecting from vehicle battery. Removal of the 4 "AA" batteries will lengthen their life (Fig.3).

### Battery test results

LCD	Decision
Good	The cranking voltage is greater than 9.6V. The starting system is OK.
Repair	The cranking system is less than 9.6V which indicates a starting system problem. Check the connections, wiring and starter motor.

### Starting system test results

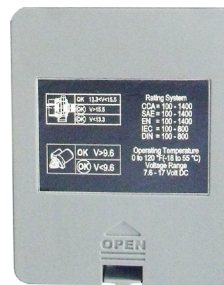
LCD	Decision
Good	The highest average charging voltage is between 13.3V and 15.5V. The charging system is OK
Repair	The highest average charging voltage < 13.3V or > 15.5V. If < 13.3V, check connections, wiring and alternator. If > 15.5V, check the regulator.

### Charging system test results

JIS	CCA	JIS	CCA	JIS	CCA
26B17L	185	55B24L	370	105E41L	540
28B17L	195	55D23L	320	115E41L	610
28B19L	190	55D26L	290	115F51	575
32C24L	195	65D23L	370	130E41L	680
34B17L	240	65D26L	370	145F51	735
34B19L	240	65D31L	340	145G51	685
36B20L	260	70D23L	420	150F51	765
38B19L	265	75D23L	465	165G51	710
38B20L	265	75D26L	450	170F51	925
44B20L	300	75D31L	380	180G51	860
46B24L	295	80D26L	490	190H52	765
48D26L	250	95D31L	565	195G51	930
50B24L	325	95D41L	475	210H52	910
50D20L	310	105D31L	655	245H52	1170

Fig.2

JIS Conversion tables and battery cover on base of tester.



## 4. TROUBLESHOOTING

### TROUBLESHOOTING:

**If the display flashes or shows one flashing letter:**

Voltage of the tested battery is less than 8 volts. Fully charge the battery and retest.

**If the display shows a message that alternates between "bAd" and "CELL":**

One or more battery cells are bad. Replace the battery.

**If the display shows a message "conn":**

Indicates a bad connection. Disconnect and reconnect crocodile clips from battery terminals and rock clips to improve connection.

**If the display shows a message "LOW"** : Indicates poor battery or possible excessive electromagnetic interference. Ensure there are no vehicle

loads, such as lights or ignition. Ensure other high current devices are not in close proximity. Double check battery off vehicle before replacing battery and use "decision" table.



**Environmental Protection.** Recycle unwanted packaging materials or dispose of in a manner which is compatible with the environment. When the product is no longer required, dispose of in an environmentally protective way. Open battery compartment (Fig.3) remove and dispose of batteries according to local authority guidelines.

**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 product.

**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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