



INSTRUCTIONS FOR

DIGITAL BATTERY & ALTERNATOR TESTER 12V

MODEL NO: **BT105**

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. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.



Refer to
Instruction
Manual



Wear eye
Protection



Wear
Protective
Clothing



Wear
Protective
Gloves



Explosive
Material



Corrosive
Substance

1. SAFETY

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 Safety

- WARNING!** Wear approved eye protection. Wear appropriate Personal Protective Equipment. A full range of Personal Protective Equipment is available from your Sealey dealer.
- ✓ Remove personal metallic items such as rings, bracelets, necklaces and watches. A lead-acid battery can produce a short-circuit current high enough to melt or weld a ring, which would cause severe burns.
- ✓ Ensure that hands and clothing are clear of fan blades and other moving or hot engine parts. Remove ties and ensure that belts cannot become entangled.
- ✓ Ensure that there is another person within hearing distance and is able to come to your aid should a problem arise when working near a lead-acid battery.
- ✓ Have fresh water nearby in case battery acid contacts skin or clothing; flush affected area immediately. If acid enters eyes, flush immediately with clean running water for a minimum of 15 minutes, seek medical attention.
- * **DO NOT** smoke or allow a spark or flame in the vicinity of the battery or engine.

1.2. General Safety

- ✓ 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.
- ✓ Clean battery terminals 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.
- ✓ Modern vehicles contain extensive electronic systems. You are required to check with the vehicle Manufacturer, for any specific instructions regarding the use of this type of equipment on each vehicle.

2. INTRODUCTION

Compact device which accurately tests battery, cranking and alternator. No heat, no sparks and no misdiagnosis. Just key in the battery rating from the top of the battery and results are displayed on the LCD screen. Includes a facility to print results via PC. No internal battery and will test batteries with a residual charge of just 8V. Supplied with PC software and instruction manual in storage pouch.

3. SPECIFICATION

Model No.: BT105
Rated Battery Voltage: 12V.
Rating Systems: CCA,BCI,CA,DIN,EN,GB,IEC,MCA,SAE.
Test Ranges: 100-2000 CCA*CCA.
..... 100-2000 CCA*BCI.
..... 100-2000 CCA*CA.
..... 100-1400 CCA*DIN.
..... 100-2000CCA*EN.
..... 100-1400 CCA*GB.
..... 100-1400 CCA*IEC.
..... 100-2000 CCA*MCA.
..... 100-2000 CCA*SAE.
..... By Battery Type JIS.
PC Compatibility: Windows 7,8,10.
Languages:.... English, Danish, Norwegian, Polish, Romanian.
*CCA-Cold Cranking Amps.
Operating Temperature 0 to 50°C
Storage Temperature -20 to 70°C

4. FEATURES



- 4.1. Up Key.
- 4.2. Enter Key.
- 4.3. Down Key.
- 4.4. Mini-USB Socket (in side of the product) Connect to computer via USB cable.
- 4.5. Battery connection cables with clips.
- 4.6. Exit Key.
- 4.7. LCD display.

5. OPERATION

5.1. Connecting the tester

5.1.1. Before testing make sure the battery terminals are really clean as grease and dust could lead to errors in the test results.

5.1.2. If the battery is still fitted to a vehicle, make sure that all the car electronics are off, the doors are closed and that the ignition is turned off.

5.1.3. The red clip is connected to the positive electrode and the black clip is connected to the negative electrode.

5.1.4. Ensure that the clips have a firm, secure grip on the battery terminals.

5.1.5. If the tester has a poor connection it will not be able to boot up. If this happens clean the battery terminals.

5.2. Product Set Up

5.2.1. Connect tester as above.

5.2.2. Press enter to scroll to Main Menu.

Main Menu
1. Quick Test
2. Battery in Vehicle
3. Out of Vehicle
4. Review Data
5. Print Data
6. System Setup

5.2.3. Press Down key to scroll down to System Setup, press enter.

System Setup
1. Language
2. Contrast
3. Tool Information

5.2.4. Select Language, press enter.

Main Menu
1. English
2. Danish
3. Norwegian
4. Polish
5. Romanian

5.2.5. Select Language required, press enter.

5.2.6. Reselect System Setup, select contrast.

5.2.7. Use Up and Down button to select contrast value, press enter to save selection and return to previous menu.

5.2.8. Select Tool information by pressing enter, press exit to return to main menu.

5.3. Quick Test

5.3.1. The Quick test can check the following: Voltage, CCA electronic resistance, rated CCA, Charging value, health value. Input the AH value which is marked on the battery label.

5.3.2. Press up/down key to select the Quick test, press enter to confirm.

Main Menu
1. Quick Test
2. Battery in Vehicle
3. Out of Vehicle
4. Review Data
5. Print Data
6. System Setup

5.3.3. Input the rated battery capacity- xxAH

Input AH value
50 A-H
Please input AH value on the battery label.

5.3.4. Press enter key to start test.

Good Battery

Healthy:96%	490CCA
Charge:98%	12.64V
Internal R=6.1mΩ	
Rated:500A	
GOOD BATTERY	

There is no problem with the battery and is ok to use.

Good Recharge

Healthy:78%	440CCA
Charge:30%	12.2V
Internal R=7.2mΩ	
Rated:500A	
GOOD, RECHARGE	

Good battery but low current, recharge before use.

Replace

Healthy:46%	490CCA
Charge:80%	12.68V
Internal R=18.1mΩ	
Rated:500A	
REPLACE	

Battery is near end or at end of life, replace battery.

Bad Cell, Replace

Healthy:0%	0CCA
Charge:20%	10.64V
Internal R=45.2mΩ	
Rated:500A	
BAD CELL, REPLACE	

Battery interior damaged, bad cell or short circuit, replace battery.

Charge, Retest

Healthy:39%	310CCA
Charge:20%	12.08V
Internal R=30.1mΩ	
Rated:500A	
CHARGE - RETEST	

Unstable battery, recharge, retest. If the same test result appear after recharge and retest, the battery is damaged, replace battery.

5.4. **Battery In-Vehicle**

Choose battery in vehicle and press Enter key.

Test in Vehicle
1. Battery Test
2. Cranking Test
3. Charging Test

5.4.1. **Battery Test**

When surface charge is detected by the tester it will prompt "SURFACE CHARGE, TURN LIGHTS ON"

Turn lights on to eliminate battery surface charge. Tester will then display the following messages in sequence.

Battery Test
1. Check surface charge. Turn lights on.
2. Turn head lights on for about 10 seconds.
3. Turn lights off.

The surface charge has now been eliminated. The tester will continue with test.

Select battery type.

After the battery charger status has been selected, the tester will prompt to select battery type.

Battery Type
1. Regular Flooded
2. AGM Flat Plate.
3. AGM Sprial
4. GEL
5. EFB

Press Up/Down keys to select battery type then press enter key to confirm.

The battery tester will test each battery according to the selected system and rating.

Press Up/Down key to select according to the actual system standard and rating specified on the battery being tested.

Select Input
CCA

Input correct Rating and press Enter Key. It takes approx. 3 seconds to display the battery test results.

Select Input
500 CCA

Battery Test Results

Good Battery

Healthy:96%	490CCA
Charge:98%	12.64V
Internal R=6.1mΩ	
Rated:500A	
GOOD BATTERY	

There is no problem with the battery and is ok to use.

Good Recharge

Healthy:78%	440CCA
Charge:30%	12.2V
Internal R=7.2mΩ	
Rated:500A	
GOOD, RECHARGE	

Good battery but low current, recharge before use.

Replace

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Charge:80%	12.68V
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REPLACE	

Battery is near end or at end of life, replace battery.

Bad Cell, Replace

Healthy:0%	0CCA
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Charge, Retest

Healthy:39%	310CCA
Charge:20%	12.08V
Internal R=30.1mΩ	
Rated:500A	
CHARGE - RETEST	

Unstable battery, recharge, retest. If the same test result appear after recharge and retest, the battery is damaged, replace battery.

If a replace result is obtained remove the battery and retest the battery using the Out of Vehicle mode before replacement.

If after testing the tester is in "In Vehicle" test state, press the enter key will bring up Cranking Test.

5.4.2. Cranking Test

Select Cranking test by scrolling menu and pressing Enter Key. Tester prompts as follows:

Cranking Test
Start Engine

Start the engine as prompted the tester will automatically complete the cranking test and display result.

Cranking Test
RPM Detected.

Cranking voltage value lower than 9.6V is regarded as abnormal.

Test results of the tester include actual cranking voltage and cranking time.

Cranking Test	
Times	780ms
Cranking	Normal
10.13V	

When cranking test is abnormal,the battery test result will also be displayed at the same time

Cranking Test	
Times	1020ms
Cranking	Low
Replace	10.13V

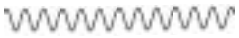
After testing is finished do not switch off engine, press the Enter Key to select Charging test.

5.4.3. Charging System and Rectifier Diode Test.

Select Charging test and press Enter Key

Note:- Do not shut down the engine during test, all electrical appliances should be switched off, leaving lights etc. on will affect the test and the accuracy of the results.

The Battery tester will do the following tests in sequence:

Ripple Test	
	
95mV	14.32V

The ripple test will display the real time ripple, it will also show the ripple volts and charging volt values.

It takes approx. 6 seconds for the ripple test. After the ripple test the tester will automatically start the loaded voltage test.

Charging Test	
Loaded Testing	

Loaded Volt testing takes approx. 3 seconds it will then prompt to increase engine speed.

Charging Test	
Increase RPM to 2500 r/min And keep it 5 seconds Press Enter to continue.	

Increase engine speed to 2500 rev/min or above and maintain for 5 seconds.

The tester will start the charging test after increase in engine speed is detected.

Charging Test	
Testing	

After the test has finished, the tester will display the effective charging volts, ripple test results and charging test results.

Charging Test	
Loaded	14.16V
Unloaded	14.39V
Replace	15mV
Charging	Normal

Note: If no increase rev/min detected there is a fault with the alternator or wiring to the battery.

The tester will try 3 more times to detect an increase, if this fails the test result displays "no volt output"

Check the wiring between the alternator and battery and retest.

Charging Test Results

a) Charging Volt: Normal

Charging system shows the alternator output as normal.

b) Charging Volt: Low

Charging voltage of the system is low.

Check alternator drive belt, check the connections between alternator and battery, if all are in good condition follow the manufactures procedure to eliminate charging fault.

c) Charging Volt: High

The normal maximum high voltage is 14.7+/- 0.5V. If the charging voltage is too high, it will overcharge the battery. This will shorten the battery life.

d) No Volt: Output

No alternator voltage output is detected. Check the alternator connection cable and belt.

e) Diode Test

When ripple volt is too high it shows that at least one diode is damaged. Check and replace the diode.

5.5. Battery out of vehicle test.

Select "Out of Vehicle" from main menu.

Main Menu	
1. Quick Test	
2. Battery in Vehicle	
3. Out of Vehicle	
4. Review Data	
5. Print Data	
6. System Setup	

5.5.1. Select battery Type

Battery Type
1. Regular Flooded
2. AGM Flat Plate.
3. AGM Sprial
4. GEL
5. EFB

Press Up/Down keys to select battery type then press enter key to confirm.

The battery tester will test each battery according to the selected system and rating.

Press Up/Down key to select according to the actual system standard and rating specified on the battery being tested.

Select Input
CCA

Input correct rating and press Enter Key. It takes approx. 3 seconds to display the battery test results.

Select Input
500
CCA

Battery Test Results

Good Battery

Healthy:96%	490CCA
Charge:98%	12.64V
Internal R=6.1mΩ	
Rated:500A	
GOOD BATTERY	

There is no problem with the battery and is ok to use.

Good Recharge

Healthy:78%	440CCA
Charge:30%	12.2V
Internal R=7.2mΩ	
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GOOD, RECHARGE	

Good battery but low current, recharge before use.

Replace

Healthy:46%	490CCA
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Battery is near end or at end of life, replace battery.

Bad Cell, Replace

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Charge, Retest

Healthy:39%	310CCA
Charge:20%	12.08V
Internal R=30.1mΩ	
Rated:500A	
CHARGE - RETEST	

Unstable battery, recharge, retest. If the same test result appear after recharge and retest, the battery is damaged, replace battery.

After testing remove clips from battery and store in a dry, childproof location.

Review Data

Select "Review Data" from main menu.

Main Menu
1. Quick Test
2. Battery in Vehicle
3. Out of Vehicle
4. Review Data
5. Print Data
6. System Setup

Check the battery testing results.

Healthy:96%	490CCA
Charge:98%	12.64V
Internal R=6.1mΩ	
Rated:500A	
GOOD BATTERY	

- 5.6. **Print Data.**
Before selecting the print data function, it is necessary to connect the Battery tester to the computer via the USB cable.
Insert the CD into the computer.
At prompt install USB Driver

Manual
Print Software
USB Driver
Read me.txt

Open the Print Software.
Choose the COM Port No (Delete any data history on the system)
On the battery tester screen select Print Data from the main menu.

Main Menu
1. Quick Test
2. Battery in Vehicle
3. Out of Vehicle
4. Review Data
5. Print Data
6. System Setup

Once the data is transferred to the computer, the print software will show the following.

Healthy:96%	490CCA
Charge:98%	12.64V
Internal R=6.1mΩ	
Rated:500A	
GOOD BATTERY	

The Battery Tester will show the following menu.

Print Data
OK

Press exit to return to main menu
After testing remove USB lead from computer / tester and store tester and leads in a dry, childproof location.

6. MAINTENANCE

Keep Battery Tester, leads, disc and instructions clean and store in a dry, childproof location.



Environmental Protection

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain off any fluids (if applicable) into approved containers and dispose of the product and the fluids according to local regulations.



WEEE Regulations

Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). When the product is no longer required, it must be disposed of in an environmentally protective way. Contact your local solid waste authority for recycling information.

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.



Sole UK Distributor, Sealey Group.
Kempson Way, Suffolk Business Park,
Bury St. Edmunds, Suffolk.
IP32 7AR



01284 757500



01284 703534



www.sealey.co.uk



sales@sealey.co.uk