

# Clarke®



## 12V BATTERY TESTER

MODEL NO: C12BT

PART NO: 6260108

## OPERATION & MAINTENANCE INSTRUCTIONS

UK  
AK | CE



ORIGINAL INSTRUCTIONS

DL0424

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## INTRODUCTION

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Thank you for purchasing this CLARKE Battery Tester.

Before attempting to use this product, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safety of yourself and that of others around you, and you can look forward to your purchase giving you long and satisfactory service.

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## GUARANTEE

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This product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt which will be required as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

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## ENVIRONMENTAL RECYCLING POLICY

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Through purchase of this product, the customer is taking on the obligation to deal with the WEEE in accordance with the WEEE regulations in relation to the treatment, recycling & recovery and environmentally sound disposal of the WEEE. the laws governing Waste Electrical and Electronic Equipment (WEEE) at a recognised disposal facility.

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# SAFETY INSTRUCTIONS

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**WARNING: PLEASE READ THESE INSTRUCTIONS AS WELL AS THOSE IN YOUR VEHICLE HANDBOOK VERY CAREFULLY BEFORE USING THE TESTER. KEEP THEM IN A SAFE PLACE FOR FUTURE REFERENCE.**

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**WARNING: HIGH VOLTAGES ARE PRESENT AT THE FOLLOWING POINTS: - THE IGNITION COIL, DISTRIBUTOR CAP, IGNITION CABLE, SPARK PLUGS.**

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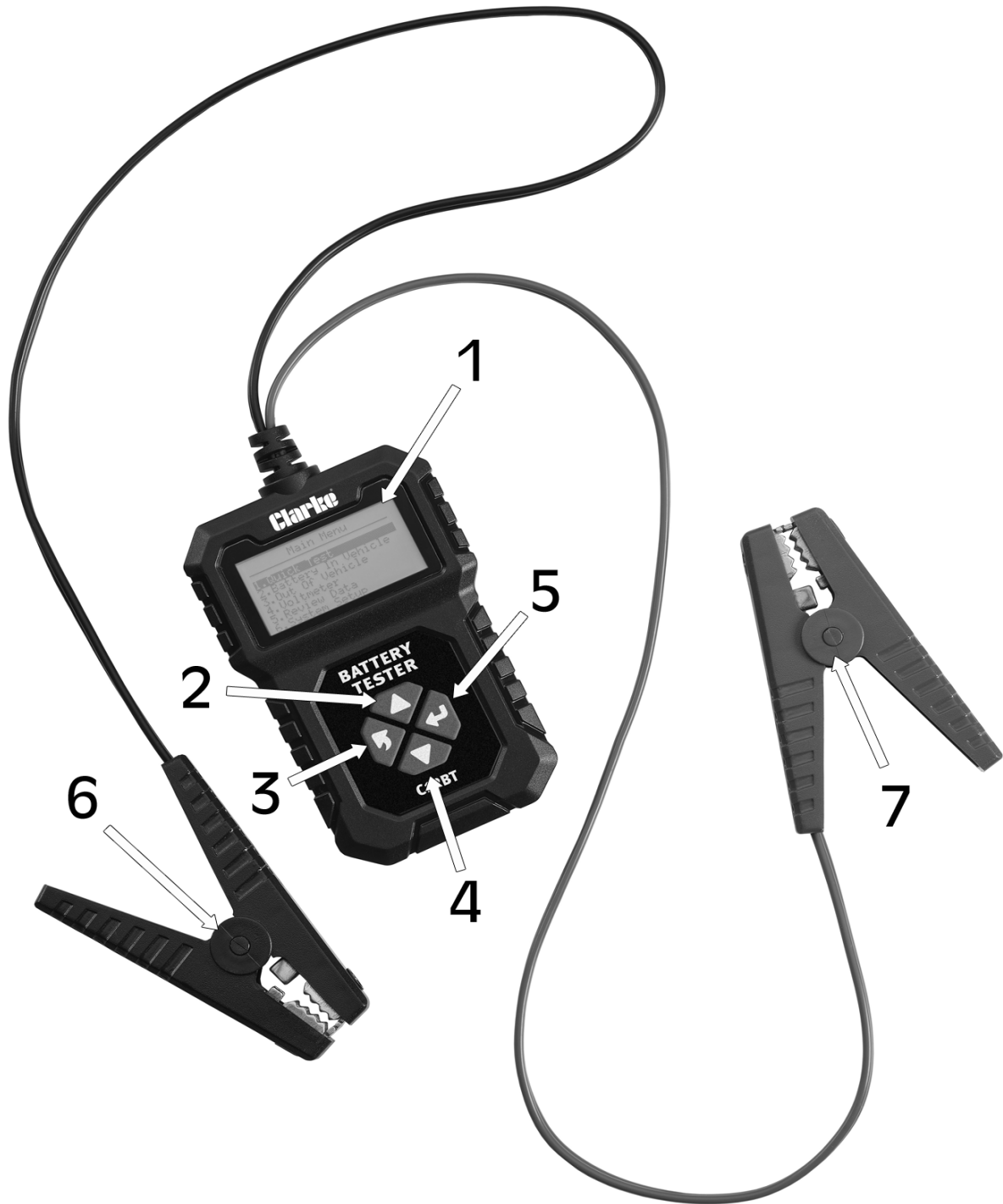
1. CLARKE International are not liable for any damages or consequences resulting from:
  - Connection and installation errors.
  - Damage to the device due to mechanical influences or voltage surges or any modification to the device.
  - Any unauthorized manipulation to the product which would lead to cancellation of the guarantee.
  - Use of the device for purposes other than described in this instruction manual.
  - Any influence of fluids.
2. **DO NOT** use the device in a moist or wet environment.
3. **DO NOT** smoke, strike a match or cause a spark near the vehicle while testing.
4. **DO NOT** use the tester close to flammable materials.
5. **DO NOT** use the tester in an explosive environment.
6. Make sure the device is always positioned in a safe place.
  - The device must be placed out of reach of children.
  - **DO NOT** expose the device to direct sunlight or other heat source.
7. Store the tester in a safe, dry place after use.
8. **DO NOT** try to use other cables with this product.
9. **DO NOT** open the case. There are no replaceable parts inside the product.
10. If the device malfunctions, please consult your CLARKE dealer.

11. **DO NOT** test a battery within a short period of time after charging or use, as the result may be inaccurate.
12. Perform the test when the battery is in a cold state, when the voltage is stable.
13. Make sure all electrical equipment is turned off when testing.
14. **DO NOT** use the device while the vehicle is in motion. The tester is not suitable for permanent installation in a motor vehicle.
15. Make sure the vehicle is securely parked and the handbrake applied before using the tester. For vehicles with automatic transmission the "park position" must be engaged and the hand brake must be engaged.
16. **DO NOT** use other measuring devices when using the tester.
17. Seek professional help if you are unsure about anything related to the electrical system in your vehicle.
18. When using the crocodile clips for testing, the red clip must be clamped to the positive pole (+ or Red) of the battery, and the black clip must be clamped to the negative pole (- or black). **DO NOT** reverse the connections.
19. If the outer insulation of the cable is damaged, it may cause a short circuit. Stop using it immediately and contact your CLARKE dealer.

## **OTHER INFORMATION**

1. The Battery Tester is suitable for all types of 12V lead acid batteries (vehicle batteries).

# PRODUCT IDENTIFICATION



1	LCD Display Screen	5	Exit/Back Button
2	Up Button	6	Black/Negative Crocodile Clip Test Lead
3	Enter/Select Button	7	Red/Positive Crocodile Clip Test Lead
4	Down Button		

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# PRODUCT DESCRIPTION

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## PRODUCT PROFILE

This battery tester adopts currently the worlds most advanced conductance testing technology to easily, quickly and accurately measure the actual cold cranking amps capacity of the vehicle starting battery, healthy state of the battery itself and common fault of the vehicle starting and charging systems. This will help maintenance personnel find the problem quickly and accurately to achieve a quick vehicle repair.

1. Test all automotive cranking lead acid batteries, including ordinary lead acid batteries, AGM flat plate batteries, AGM spiral batteries, GEL batteries, EFB batteries, etc.
2. Directly detect a bad cell battery.
3. Polarity reverse connection protection, reverse connection will not damage the tester or affect the vehicle or battery.
4. Directly test the battery for loss of electricity (no need to fully charge before testing).
5. Supports multi-languages. You can select from the following languages: Chinese Simple, Chinese Traditional, English, Japanese, Russian, Spanish, French, Italian, German.
6. Testing standards include currently the worlds majority of battery standards: CCA, BCI, CA, MCA, JIS, DIN, IEC, EN, SAE, GB (See Technical Parameters section for measurement range).

## FUNCTION DESCRIPTION

The main functions of this battery tester include: Battery Test, Cranking Test, Charging Test and other additional functions.

1. **Battery Test:** Analyses the battery health status to calculate the actual cold cranking capability of the battery and the aging extent, which provides reliable analysis for the testing and maintenance of the battery. It helps identify the need to replace the battery in advance when the battery is becoming aged.
2. **Cranking Test:** This is to test and analyse the starter motor. Through testing the actual required cranking current and cranking voltage of the starter motor. It can identify whether the starter motor works correctly. There are several reasons why the starter motor maybe abnormal, for example: a lubricating system fault causing the starting loaded torque to increase or rotor friction of the starter motor causing increasing friction of the starter motor itself.

3. **Charging Test:** This is to check and analyse the charging system, including the generator, rectifier, rectifier diode, etc., to find out whether the output voltage of the generator is normal, the rectifier diode works correctly and the charging current is normal. If one of the above mentioned parts is not operating normally, it will lead to over charging or incomplete charging of the battery, this will damage and also greatly shorten the life of other loaded electrical appliances.
4. **Additional Functions:** These include set language, voltmeter and screen brightness adjustment.

## TECHNICAL PARAMETERS

### BATTERY SYSTEM STANDARD AND RATING

This tester will test each battery according to the selected system and rating as follows:

#### 1. System Standards

- CCA: Cold Cranking Amps, specified by SAE & BCI, most frequently used value for starting batteries at 0°F (-18°C)
- BCI: Battery Council International standard.
- CA: Cranking Amps standard.
- MCA: Marine Cranking Amps standard.
- JIS: Japan Industrial Standard.
- DIN: German Institute of Standardization standard.
- IEC: Internal Electro Technical Commission standard.
- EN: European Automobile Industry Association standard.
- SAE: Society of Automotive Engineers standard.
- GB: China National standard.

#### 2. Cold Cranking Amps Measurement Range:

Measurement Standard	Measurement Range	Measurement Standard	Measurement Range
CCA	100 - 2000	DIN	100 - 1400
BCI	100 - 2000	IEC	100 - 1400
CA	100 - 2000	EN	100 - 2000
MCA	100 - 2000	SAE	100 - 2000
JIS	26A17 - 245H52	GB	30 - 220Ah

#### 3. Voltage Measure Range: 8 - 30V DC

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# PRODUCT SETUP

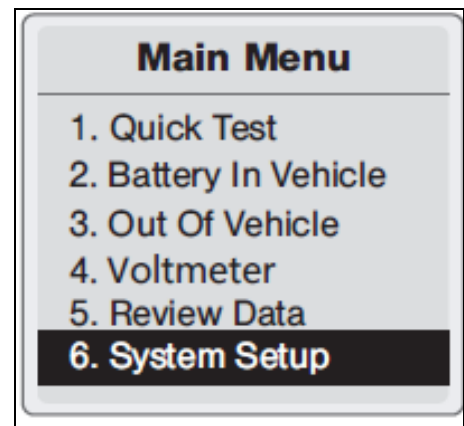
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This tester allows you to make the following adjustments and settings:

- Language: Selects desired language.
- Contrast Adjustment: Adjusts the contrast of the LCD display.
- Tool Information: The tester shows the latest software & hardware versions.

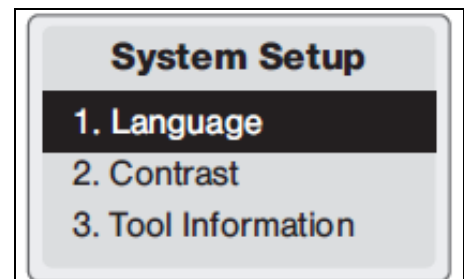
## TESTER SETUP

1. From the main menu, select the system setup, and press the 'ENTER' button.



## LANGUAGE

1. From the System Setup menu, use the 'ENTER' button to select Language.



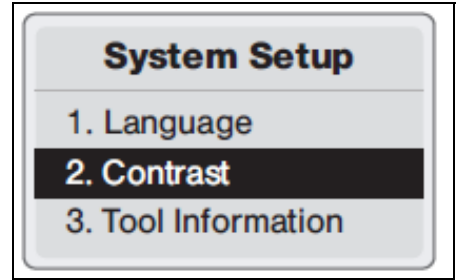
2. Use the 'UP' and 'DOWN' buttons to select the desired language and then press the 'ENTER' button to save your selection and return to the previous menu.



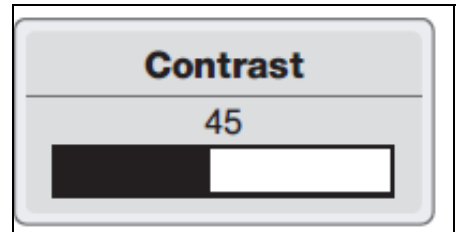


## CONTRAST

1. From the System Setup menu, use the 'ENTER' button to select contrast.

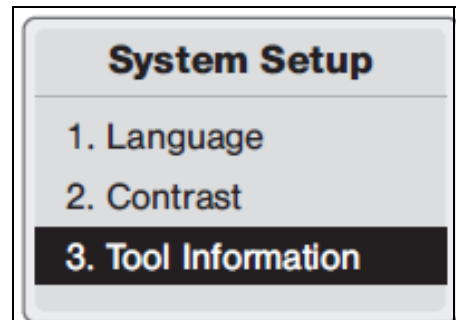


2. Use the 'UP' and 'DOWN' buttons to select the contrast value and press the 'ENTER' button to save your selection and return to the previous menu.



## TOOL (TESTER) INFORMATION

1. From the System Setup menu, use the 'ENTER' button to select Tool Information.



2. Press the 'EXIT' button to return to the previous menu.

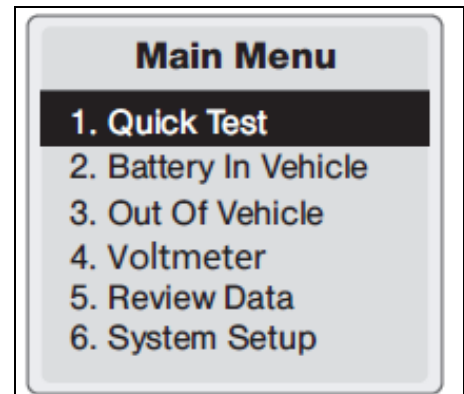


# BATTERY TESTER OPERATION

## QUICK TEST

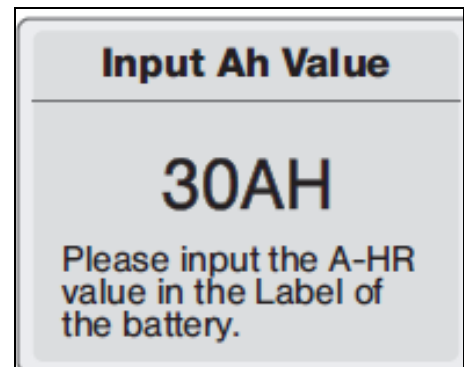
The tester can confirm of the battery status, including voltage, CCA, electronic resistance, rated CCA, charging value, healthy value and testing result in one second, once the AH value of the battery rated capacity has been inputted. This can be found on the label of the battery.

1. Press the 'UP' or 'DOWN' button to select the quick test, then press the 'ENTER' button to confirm.



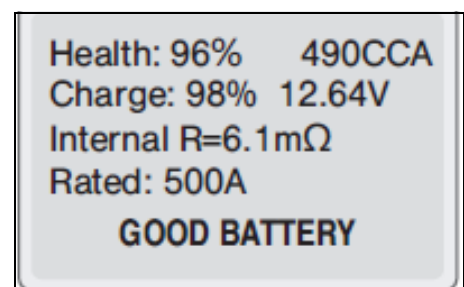
2. Input the rated battery capacity by pressing the 'UP' or 'DOWN' button to the appropriate value, then press the 'ENTER' button to confirm.

**NOTE:** In general, the battery capacity for a 12V vehicle is above 30AH.



3. The test results will show one of the following 5 test results (examples shown).

- Good Battery: The battery is without any problems.



- Good Recharge: Good battery but low current, recharge before using.

Health: 78%    440CCA  
Charge: 30%    12.20V  
Internal R=7.2mΩ  
Rated: 500A  
**GOOD, RECHARGE**

- Replace: The battery is near to or already reached the end of its useful life, replace battery.

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

- Bad Cell Replace: Battery interior damaged, bad cell or short circuit. Replace the battery.

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

- Charge, Retest: Unstable battery should be recharged and retested to avoid error. If same test result appears after recharge and retest, the battery should be regarded as damaged, replace the battery.

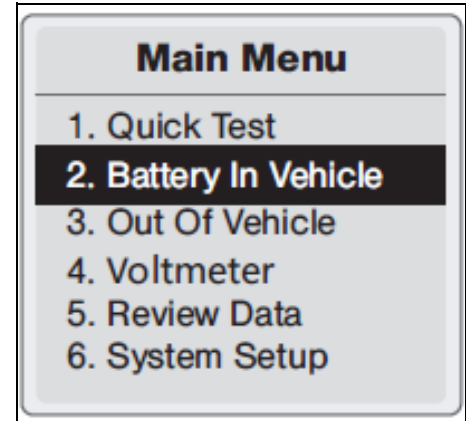
Health: 39%    310CCA  
Charge: 20%    12.08V  
Internal R=30.01mΩ  
Rated: 500A  
**CHARGE-RETEST**

## BATTERY TEST IN VEHICLE

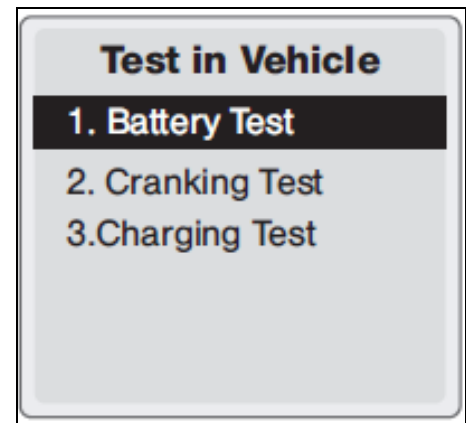
'Battery in vehicle' means the battery is connected with the vehicle generator or vehicle electrical appliances.

### BATTERY TEST

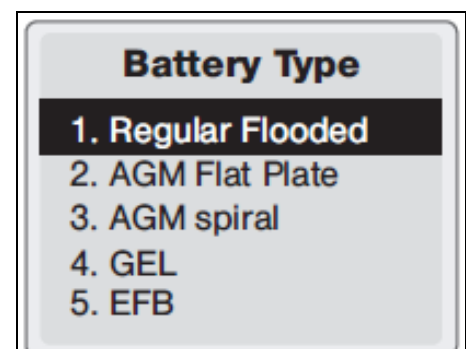
1. From the main menu, choose the 'Battery in Vehicle' and press the 'ENTER' button,



2. Choose the 'Battery Test' and press the 'ENTER' button.



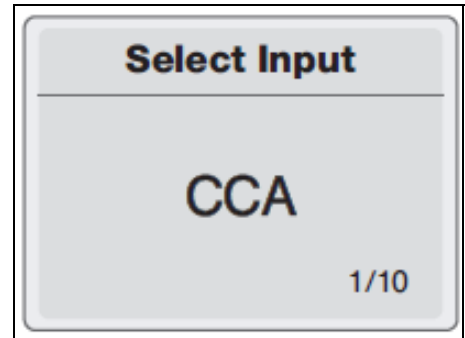
3. Select Battery Type: The tester will prompt you to select the battery type, Regular Flooded, AGM Flat Plate, AGM Spiral, GEL or EFB battery. Press 'UP' or 'DOWN' button to select battery type, then press the 'ENTER' button to confirm.



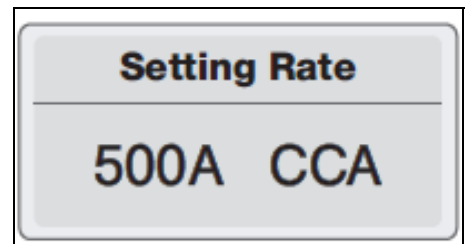
4. Battery System Standard and Rating: The tester will test each battery according to the selected system and rating, which can be found on the battery, see example.



5. Use the 'UP' or 'DOWN' buttons to select the correct system standard and press the 'ENTER' button.

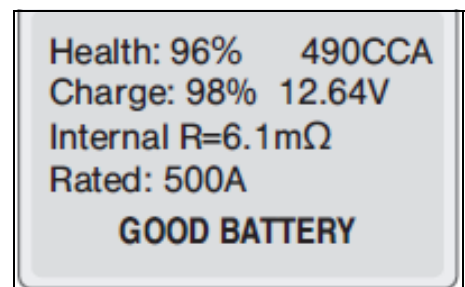


6. Use the 'UP' or 'DOWN' buttons to select the correct rating and press the 'ENTER' button
7. The tester will start the test and a dynamic interface will appear with 'TESTING' prompted.



**NOTE:** It takes around 5 seconds to display the battery test result.

8. The testing results will show one of the following 5 test results (examples shown).
- Good Battery: The battery is without any problems.



- Good Recharge: Good battery but low current, recharge before using.

Health: 78%    440CCA  
 Charge: 30%    12.20V  
 Internal R=7.2mΩ  
 Rated: 500A  
**GOOD, RECHARGE**

- Replace: The battery is near to or already reached the end of its useful life, replace battery.

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

- Bad Cell Replace: Battery interior damaged, bad cell or short circuit. Replace the battery

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

- Charge, Retest: Unstable battery should be recharged and retested to avoid error. If same test result appears after recharge and retest, the battery should be regarded as damaged, replace the battery.

Health: 39%    310CCA  
 Charge: 20%    12.08V  
 Internal R=30.01mΩ  
 Rated: 500A  
**CHARGE-RETEST**

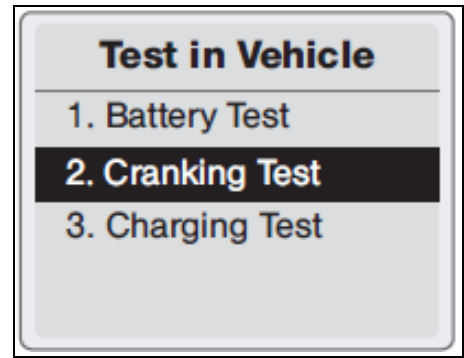
## CRANKING TEST

1. From the main menu, choose the battery in vehicle and press the 'ENTER' button,

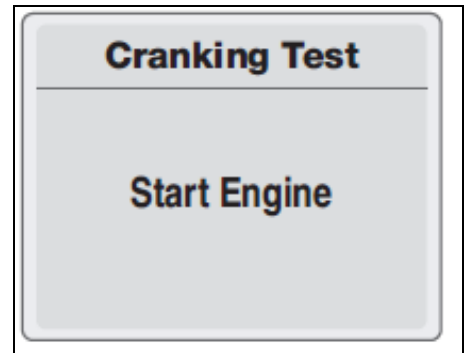
### Main Menu

1. Quick Test
- 2. Battery In Vehicle**
3. Out Of Vehicle
4. Voltmeter
5. Review Data
6. System Setup

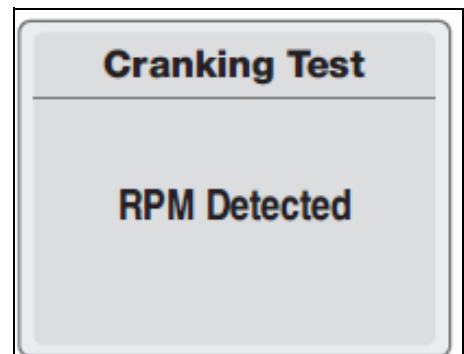
2. Choose the cranking test and press the 'ENTER' button.



3. Start the engine as prompted.

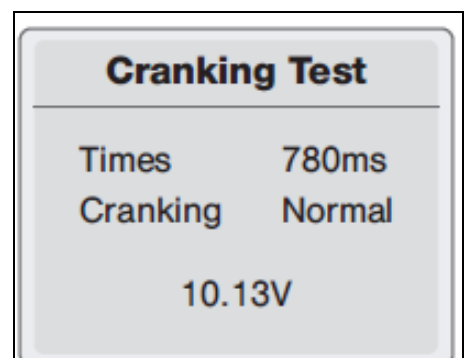


4. The tester will automatically complete the cranking test and display the results.



5. The test results include actual cranking voltage and cranking time.

- Normally a cranking voltage value lower than 9.6V is regarded as abnormal.
- This is for the convenience of the maintenance personnel to quickly know the whole state of the starting system according to the data.

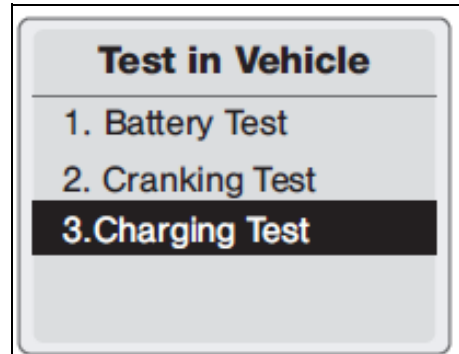


6. After testing has finished, do not shut down the engine, press the 'ENTER' button to enter Charging Test.

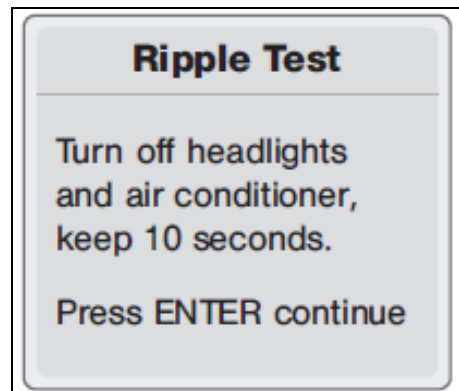
## CHARGING TEST

1. Choose the charging test and press the 'ENTER' button.

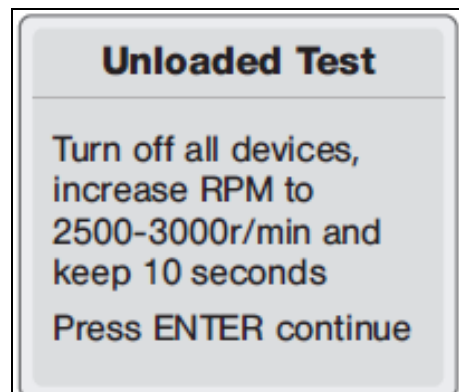
**NOTE:** DO NOT shut down the engine during the test. Follow the steps according to the following on screen instructions



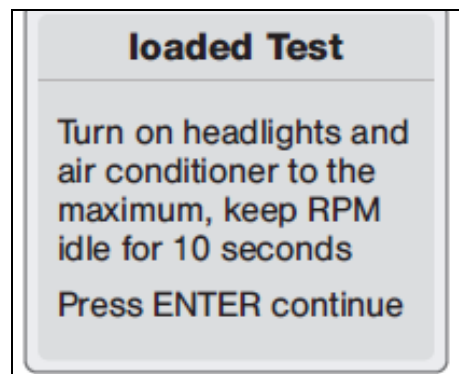
2. Ripple Test.



3. Unloaded Test.



4. Loaded Test.





5. After the test has finished, the tester will display the loaded and unloaded charging voltages, ripple voltage and charging test results.

**NOTE:** 'NO OUTPUT' means the charging system has no output. The vehicle will stop working when the battery is exhausted. Please check the alternator or contact a vehicle mechanic immediately.

<b>Cranking Test</b>	
Load	14.16V
Unloaded	14.39V
Replace	15mV
<b>NORMAL</b>	

## BATTERY OUT OF VEHICLE TEST

'Out of Vehicle' means the battery is not connected with any of the vehicle's systems.

### BATTERY TEST

1. From the main menu, choose the 'Out of Vehicle' and press the 'ENTER' button,

<b>Main Menu</b>
1. Quick Test
2. Battery In Vehicle
<b>3. Out Of Vehicle</b>
4. Voltmeter
5. Review Data
6. System Setup

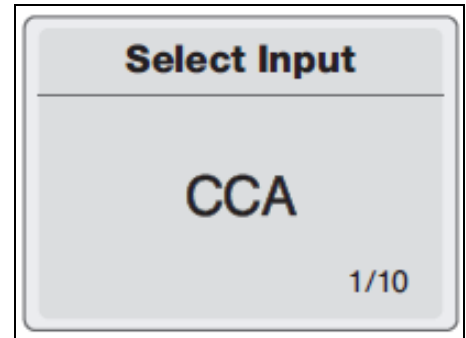
2. Select Battery Type: The tester will prompt you to select the battery type: Regular Flooded, AGM Flat Plate, AGM Spiral, GEL or EFB battery. Press 'UP' or 'DOWN' button to select battery type, then press the 'ENTER' button to confirm.

<b>Battery Type</b>
<b>1. Regular Flooded</b>
2. AGM Flat Plate
3. AGM spiral
4. GEL
5. EFB

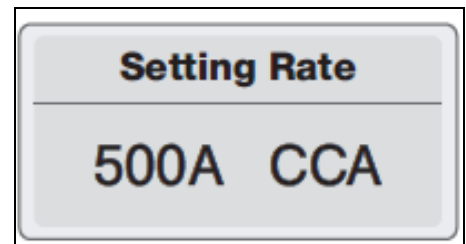
3. Battery System Standard and Rating: The tester will test each battery according to the selected system and rating, which can be found on the battery, see example.



4. Use the 'UP' or 'DOWN' buttons to select the correct system standard and press the 'ENTER' button

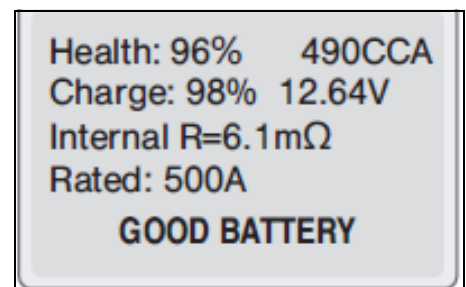


5. Use the 'UP' or 'DOWN' buttons to select the correct rating and press the 'ENTER' button
6. Tester will start the test and a dynamic interface will appear with 'TESTING' prompted.



**NOTE:** It takes around 5 seconds to display the battery test result.

7. The testing results will show one of the following 5 test results (examples shown).
  - Good Battery: The battery is without any problems.



- Good Recharge: Good battery but low current, recharge before using.

Health: 78%    440CCA  
 Charge: 30%    12.20V  
 Internal R=7.2mΩ  
 Rated: 500A  
**GOOD, RECHARGE**

- Replace: The battery is near to or already reached the end of its useful life, replace battery.

Health: 46%    490CCA  
 Charge: 80%    12.68V  
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**REPLACE**

- Bad Cell Replace: Battery interior damaged, bad cell or short circuit. Replace the battery.

Health: 0%    0CCA  
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 Rated: 500A  
**BAD CELL, REPLACE**

- Charge, Retest: Unstable battery should be recharged and retested to avoid error. If same test result appears after recharge and retest, the battery should be regarded as damaged, replace the battery.

Health: 39%    310CCA  
 Charge: 20%    12.08V  
 Internal R=30.01mΩ  
 Rated: 500A  
**CHARGE-RETEST**

## VOLTMETER

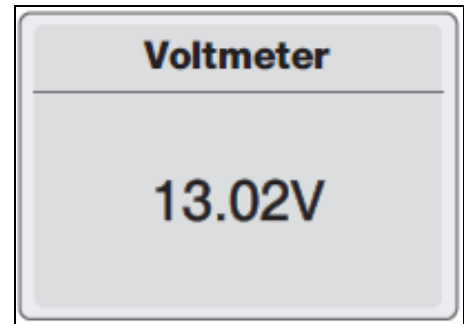
1. From the main menu, choose the voltmeter and press the 'ENTER' button,

**Main Menu**

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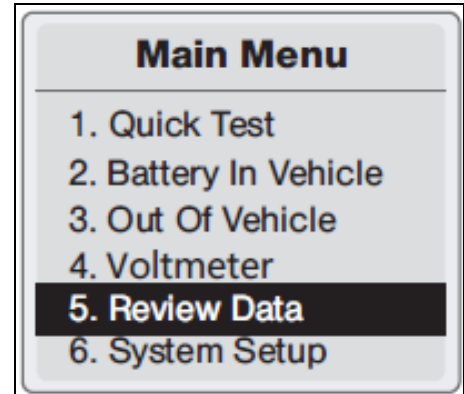
1. Quick Test
2. Battery In Vehicle
3. Out Of Vehicle
- 4. Voltmeter**
5. Review Data
6. System Setup

2. This will display real-time voltage value of the battery.

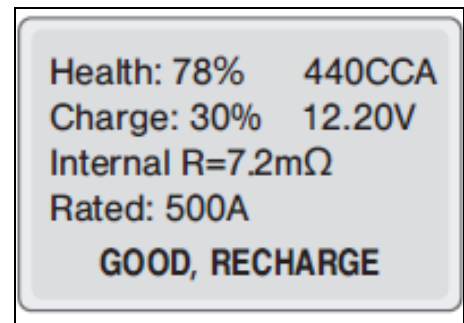


## REVIEW DATA

1. From the main menu, choose the review data and press the 'ENTER' button,



2. This will display the history of the battery testing results.



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## MAINTENANCE & CLEANING

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- Before cleaning, disconnect the device from the electrical system.
- **DO NOT** use any liquid cleaning product.
- **DO NOT** use any flammable cleaning product.
- **DO NOT** submerge the device or spill any liquid over it.
- **AVOID** engine oil, petrol, antifreeze and electrolyte from contacting the tester as they may cause surface deterioration of the product.
- If needed, clean the device with a light, damp, soft cloth.

## SPECIFICATION

Product Description	12V Battery Tester
Part number	6260108
Operating Temp. Range	-10°C - 60°C
Input Voltage	8V -30V DC (12V Nominal)
Minimum/Maximum Battery Size (Ah/CCA)	30-220Ah/100 - 2000 CCA
Rating System Types	CCA - Cold Cranking Amps BCI - Battery Council International CA - Cranking Amps Standard MCA - Marine Cranking Amps Standards JIS - Japan Industrial Standard DIN - German Institute of Standardization IEC - Internal Electro Technical Commission Standard EN - European Automobile Industry Association Standard SAE - Society of Automotive Engineers Standard GB - China National Standard
Measurement (H x W x D)	122 x 80 x 20mm
Product Weight	180g

# DECLARATION OF CONFORMITY - UKCA



Hemnall Street, Epping, Essex, CM16 4LG

## DECLARATION OF CONFORMITY

**This is an important document and should be retained.**

**We hereby declare that this product(s) complies with the following legislation:**

*The Electromagnetic Compatibility Regulations 2016*

*The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012*

**The following standards have been applied to the product(s):**

*EN 61000-3-3:2013/A1:2019/A2:2021, EN 55032:2015/A1:2020/A11:2020, EN 55035:2017/A11:2020,*

*EN IEC 61000-3-2:2019/A1:2021, IEC 62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-3-1:2013,*

*IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-8:2017*

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

**The UKCA mark was first applied in: 2024**

**Product Description:** Battery Tester  
**Model Number(s):** C12BT  
**Serial/Batch Number:** Refer to product/packaging label  
**Date of Issue:** 19/01/2024

**Signed:**

**J.A Clarke**

**Director**

# DECLARATION OF CONFORMITY - CE



**Clarke**<sup>®</sup>  
**INTERNATIONAL**

Fitzwilliam Hall, Fitzwilliam Place, Dublin 2

## DECLARATION OF CONFORMITY

**This is an important document and should be retained.**

**We hereby declare that this product(s) complies with the following legislation:**

2014/30/EU                      *Electromagnetic Compatibility Directive*  
2011/65/EU                     *Restriction of Hazardous Substances (RoHS) Directive*

**The following standards have been applied to the product(s):**

*EN 61000-3-3:2013/A1:2019/A2:2021, EN 55032:2015/A1:2020/A11:2020, EN 55035:2017/A11:2020,  
EN IEC 61000-3-2:2019/A1:2021, IEC 62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-3-1:2013,  
IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-8:2017*

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

**The CE mark was first applied in: 2024**

**Product Description:**                      Battery Tester  
**Model Number(s):**                         C12BT  
**Serial/Batch Number:**                    Refer to product/packaging label  
**Date of Issue:**                              19/01/2024

**Signed:**

**J.A Clarke**

**Director**

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