

TABLE OF CONTENTS

1. SAFETY

- 1.1 SAFETY INFORMATION**
- 1.2 IMPORTANT SAFETY INSTRUCTIONS**

2. PRODUCT DESCRIPTION

- 2.1 PRODUCT INFORMATION**
- 2.2 TECHNICAL SPECIFICATIONS**

3. BATTERY TESTER INSTALLATION

- 3.1 TESTER INSTALLATION**

4. HOW THE BATTERY TESTER WORKS

- 4.1 BATTERY TEST**
- 4.2 RESULT OF THE BATTERY TEST**
- 4.3 START TEST**
- 4.4 CHARGING TEST**
- 4.5 VIEW DATA**
- 4.6 PRINTING**

5. PAPER REPLACEMENT

- 5.1 INSTALLATION OF ROLL PAPER**

6. PRINTING DATA VIA PC

- 6.1 PRINTING DATA WITH A PC PRINTER**

1. SAFETY

1.1 SAFETY INFORMATION

For your own safety and that of others, and to prevent damage to equipment and vehicles, read this manual thoroughly before using the battery tester. The safety instructions below and elsewhere in this manual remind the user to exercise extreme caution when using this device. Always consult the vehicle manufacturer's safety instructions and test procedures. Read, understand, and follow all safety instructions in this manual.

1.2 IMPORTANT SAFETY INSTRUCTIONS

WARNING

Risk of explosive gasses: working in the vicinity of a battery is dangerous. Lead-acid batteries generate explosive gasses during normal battery operation. When testing the battery out of the vehicle, place it in a well-ventilated area. Visually check the battery for mechanical defects such as bulging, cracked casing, or signs of electrolyte leakage, if observed, DO NOT test the battery.

PRODUCT USE – If the tester, its cables, or battery clips are damaged, TO AVOID DANGER, DO NOT USE THE TESTER. Contact the manufacturer or his authorised agent to repair or replace the damaged part or product. The tester is not water or dust proof. When not in use always store the product in its nylon storage case. Protect your tester from acid and acid fumes and from damp and humid conditions during use. Avoid contact with water, alcohol-based liquid, engine oil, petrol, anti-freeze, battery-acid or electrolyte.



The thermal printer is sensitive to damage. Do not touch the inside of the printer with your hands. Do not force the printer lever or printer cover.

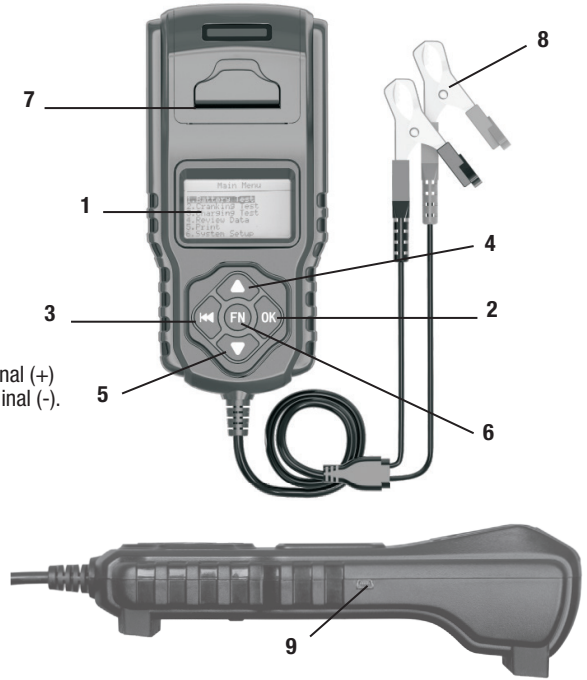
Damage resulting from liquid or dust penetration, corrosion, oxidation of internal electrical components or mishandling or misuse is not covered by warranty.

TESTING THE BATTERY IN THE VEHICLE – Do not smoke, light matches or cause sparks near the vehicle during testing. A spark near a battery may cause battery explosion. When securing the POSITIVE (POS, P, +) clip to the positive post / terminal of the battery, avoid accidental contact with the chassis of the vehicle. Secure the NEGATIVE (NEG, N, -) clip to the negative post / terminal or chassis. Position the tester and its cables away from moving engine parts. Stay clear of fan blade, belts, chains, sprockets, pulleys, exhaust, manifold, and other vehicle parts that can cause injury to persons and/or damage to the tester and its cables.

2. PRODUCT DESCRIPTION

2.1 PRODUCT INFORMATION

1. LCD display
2. Enter button 
3. Back button 
4. Up button
5. Down button
6. Fn key - Quick test or voltage measurement can be set.
7. Thermal printer
8. Clamps (red & black) - Connect the red clamp to the positive terminal (+) and the black clamp with the negative terminal (-).
9. USB port - Connect to the computer for data transfer.



2.2 TECHNICAL SPECIFICATIONS

- Input voltage range: 8V ~ 30V
- Operating temperature tester: -10°C tot 60°C (14°F tot 140°F)
- Printer operating temperature: 0°C tot 50°C (32°F tot 122°F)
- Storage temperature: -20°C tot 70°C (-4°F tot 158°F)
- Dimensions: (L)232 x (B)106 x (H)62 mm
- Paper roll: 57 x 50 mm

3. BATTERY TESTER INSTALLATION

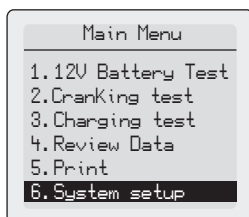
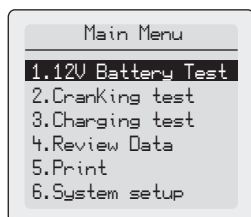
3.1 TESTER INSTALLATION

This device allows you to adjust the following settings:

- **Languages:** Select a language.
- **Fn setting:** Set the function of the One-Click button.
- **Contrast setting:** Adjust the contrast of the LCD screen.
- **Time settings:** Set the time and date.
- **Information about the device:** Displays the software and hardware version.

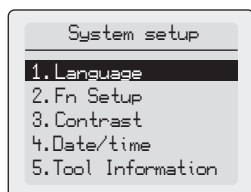
Settings

Select “Settings” from the main menu and press Enter.



Languages:

- Use the Enter key to select “Language” in the Settings menu.
- Use the UP and DOWN buttons to select the desired language and press Enter to save and return to the previous menu.



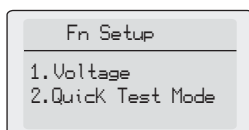
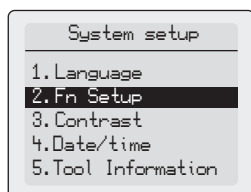
Fn setting:

- Use the Enter key to select “Fn Setting” from the Settings menu.
- Use the UP and DOWN buttons to select the desired shortcut key function.

Voltmeter mode displays the real-time voltage.

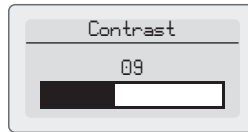
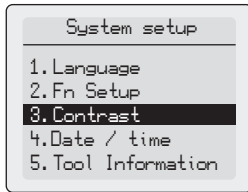
Quick test mode is suitable for testing batteries with the same parameters.

This means that, after entering the battery parameters during the initial test, the user can then press the Fn button to quickly perform the same test procedure with the same parameters as long as Quick Test Mode is selected.

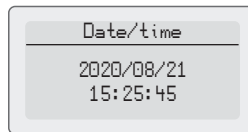
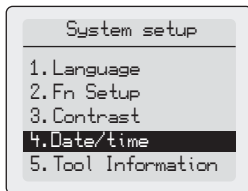


Contrast:

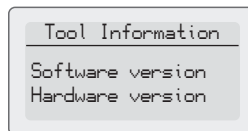
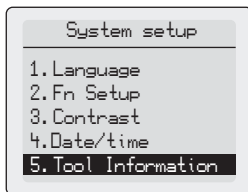
- Go to the “Settings” menu and select “Contrast” using the Enter button.
- Use the UP and DOWN buttons to select the desired contrast value.
- Press Enter to save your selection and return to the previous menu.

**Date/time:**

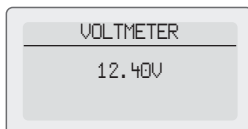
- Go to the “Settings” menu and select “Date/Time” using the Enter button.
- Use the UP, DOWN, and Enter buttons to set the time and date based on your location.
- Press the Back button to return to the previous menu.

**Device information:**

- Go to the “Settings” menu and select “Device information” using the Enter button.
- Press the Back button to return to the previous menu.

**Operation and testing of the battery tester**

- After connecting to the vehicle battery, the tester displays the real-time voltage.
- Press the Enter button, and the tester will display various options.
Select the desired option.

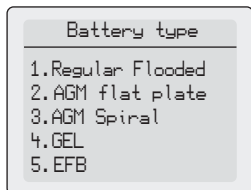
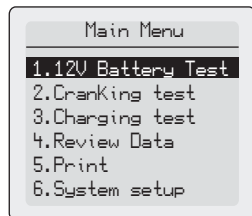


4. HOW THE BATTERY TESTER WORKS

4.1 ACCUTEST

Select the battery type:

- After starting the battery test, the tester asks you to select the battery type:
 - Standard lead acid (Regular Flooded)
 - AGM Flat Plate
 - AGM Spiral
 - Gel
 - EFB
- Use the UP/DOWN buttons to select the correct type and press Enter to confirm.



System standard and battery classification:

- The tester performs the test based on the selected standard and classification.
- Use the UP/DOWN buttons to select the correct system standard and classification as indicated.
(Please note: the location of these markings may vary depending on the manufacturer. If in doubt, consult the manufacturer.)

BATTERY TESTING STANDARDS AND MEASUREMENT RANGES

Abbreviations and standards:

CCA: Cold Cranking Amps, specified by SAE & BCI, most commonly used value for starter batteries at -18°C.

DIN: German automotive industry standard.

JIS: Japanese industrial standard, displayed on the battery as a combination of numbers and letters, e.g., 55D23.

EN: European automotive industry standard.

IEC: International Electrotechnical Commission standard.

GB: Chinese national standard.

MCA: Marine Cranking Amps standard, effective starting current at 0°C.

BCI: Battery Council International standard.

CA: Cranking Amps standard, effective starting current at 0°C.

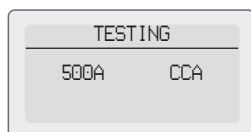
Measuring ranges per standard:

Measuring standard	Measuring range
CCA	100-2000
DIN	100-1400
JIS	26A17-245H52
EN	100-2000
IEC	100-1400
GB	30-220Ah
MCA	100-2000
BCI	100-2000
CA	100-2000

EN

Enter the correct test standard and value, press the Enter button, and the tester will start the test with a dynamic "TESTING" interface.

Note: It takes about 5 seconds for the battery test result to appear.

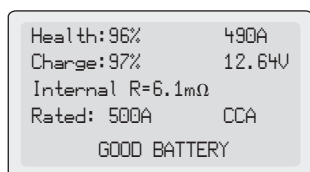


4.2 RESULT OF THE BATTERY TEST

The result of the battery test can fall into five categories:

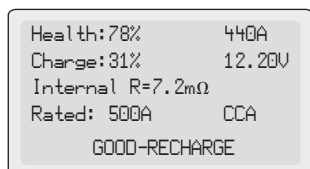
(1) GOOD BATTERY

- The battery is in good condition and functioning normally.




(2) GOOD-RECHARGE

- The battery is good but has a low charge. Charge before use.



(3) REPLACE

- The battery is at the end of its service life or is already defective. Replace the battery.



```
Health:8%      144A
Charge:99%     12.68V
Internal R=18.1mΩ
Rated: 500A    CCA
REPLACE
```

(4) CHARGE AND RETEST

- Battery is unstable. Charge and retest. If the same result appears, the battery is defective and must be replaced.

```
Health:39%     310A
Charge:12%     12.08V
Internal R=30.1mΩ
Rated: 500A    CCA
CHARGE & RETEST
```

(5) BAD CELL

- Internal damage. Replace the battery.

```
Health:10%     165A
Charge:0%      9.97V
Internal R=17.83mΩ
Rated: 500A    CCA
BAD CELL
```

Note: After completing the test, you will be asked if you want to print the results. Press Enter to confirm or Back to return to the previous menu.

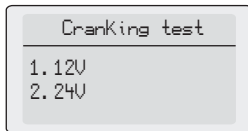
```
Print Test Results?
```

4.3 START TEST (CRANKING TEST)

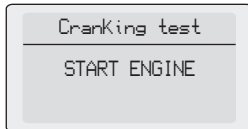
Test procedure:

```
Main Menu
1.12V Battery Test
2.Cranking test
3.Charging test
4.Review Data
5.Print
6.System setup
```

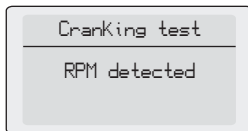
- Select whether you want to test the 12V or 24V starting system.



- Start the engine when prompted. The tester will automatically perform the start test and display the result.

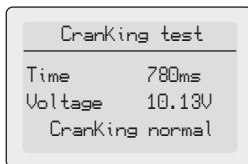


- As soon as the rotational speed (RPM) is detected, it appears on the screen.



- A starting voltage lower than 9.6V is normally considered abnormal.
- The test result contains:
 - Actual starting voltage
 - Actual start time

This data helps maintenance personnel to quickly assess the overall condition of the starting system.



Note:

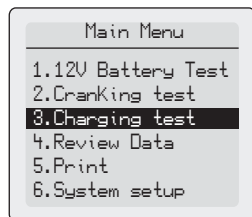
After completing the test, do not turn off the engine. The next step is the load test.

4.4 CHARGING TEST

Tester prompts as follows:

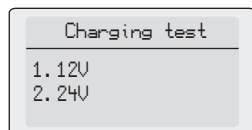
Select “Charge Test” and press the Enter button to start the charge test.

EN



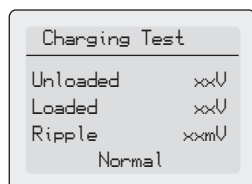
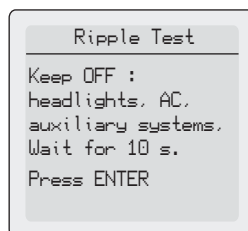
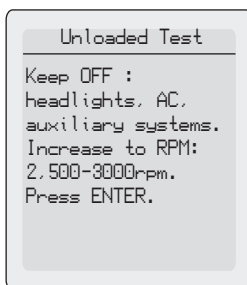
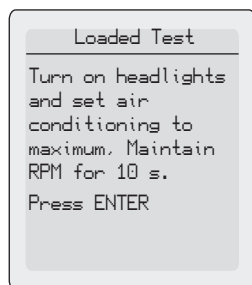
Note: Do not turn off the engine during the test. Follow the steps according to the instructions on the screen.

- Select to test the 12V/24V charging system.



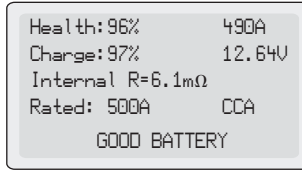
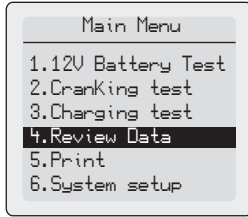
- After the test is complete, the tester displays the charged and discharged charging voltages, ripple voltage, and the result of the charging test.

Note: “NO OUTPUT” means that the charging system has no output. The vehicle stops working when the battery is empty. Please check the alternator or contact the maintenance service center immediately.



4.5 VIEW DATA

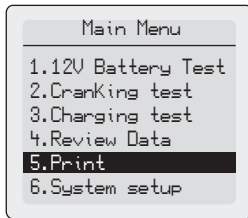
Select the 'View data' function to view the test results from the previous time.



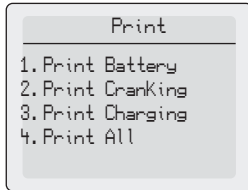
EN

4.6 PRINTING

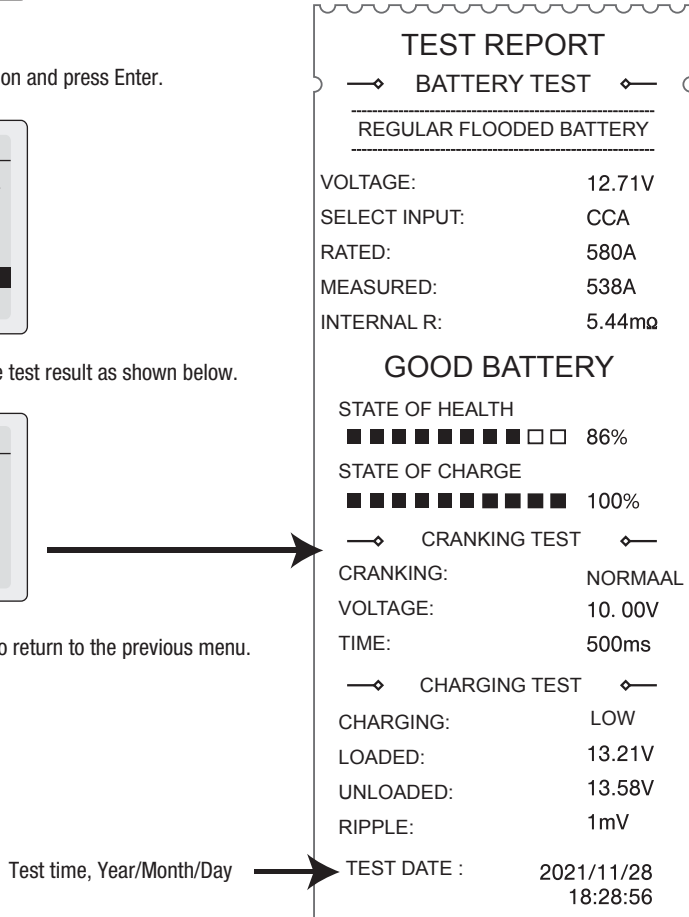
1. Select the "Print" function and press Enter.



2. The printer will print the test result as shown below.



3. Press the Back button to return to the previous menu.



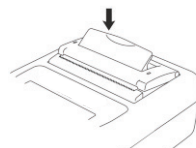
Test time, Year/Month/Day

5. PAPER REPLACEMENT

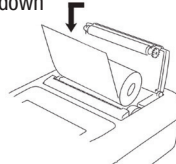
5.1 INSTALLATION OF ROLL PAPER

- Pull the printer lever to open the printer cover.
- Remove the remaining roll and prepare new printing paper.
- Pull out the beginning of the printing paper and place the printing side (smooth roll on the inside) facing down.
- Close the printer cover and tear off the excess paper.

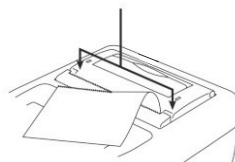
Pull lever to open printer cover



Insert roll of paper with smooth side facing down



Press both ends to close the valve



6. PRINT DATA VIA PC

6.1 PRINT DATA VIA PC PRINTER

- Before selecting the print function, connect the device to the computer using a USB cable.
- First, install the USB driver; it is located on the CD included in the package.
- Then start the printing software.
- Select the COM port number.
- Select the information you want to print from the battery tester.

LIMITED 2-YEAR WARRANTY

TecMate (International) SA, Neringstraat 14, 3300 Tienen, Belgium, offers this limited warranty to the original purchaser at retail of this professional use product. This limited warranty is not transferable. TecMate (International) warrants this device for two years from date of purchase, against defective material or workmanship. If such should occur the unit will be inspected, repaired and failed parts replaced. It is the obligation of the purchaser to forward the unit together with proof of purchase (see NOTE), transportation or mailing costs prepaid, to the manufacturer or its authorized representative.

This limited warranty is void if the product is misused, subjected to careless handling that may result in physical damage to cables, LCD display, control panel or case, or internal components, or if repaired by anyone other than the factory or its authorized representative. The manufacturer makes no warranty other than this limited warranty and expressly excludes any implied warranty including any warranty for consequential damages.

THIS IS THE ONLY EXPRESS LIMITED WARRANTY AND THE MANUFACTURER NEITHER ASSUMES NOR AUTHORIZES ANYONE TO ASSUME OR MAKE ANY OTHER OBLIGATION TOWARDS THE PRODUCT OTHER THAN THIS EXPRESS LIMITED WARRANTY. YOUR STATUTORY RIGHTS ARE NOT AFFECTED.

More information, including global warranty and after-sales service options, can be found at www.tecmate.com/warranty.

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