DESIGNED BY
SMARTECH
ACCESSORIES

DBT4-PRO
USER GUIDE

DIGITAL BATTERY
TESTER & PRINTER

SSB

INSTRUCTION MANUAL

Please save this owners' manual and read it before each use. This manual will explain how to use the battery tester safely and effectively. Please read and follow these instructions and precautions carefully.

Table of Contents

1. IMPORTANT SAFETY INSTRUCTIONS

1.1 Save these instructions - This manual contains important safety and operating instructions.

1.2 Keep out of reach of children

1.3 Do not expose tester to rain or snow.

1.4 Use of an attachment not recommended or sold by the manufacturer may result in a risk of fire, electric shock, or injury to persons.

1.5 To prevent electric shock - Dispose of battery tester if cord becomes defective.

1.6 Do not operate tester if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified service center.

1.7 Do not disassemble tester; take it to a qualified service center when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.

1.8 To reduce risk of electric shock, unplug the tester from outlet before attempting any maintenance or cleaning.

1.9 Batteries being tested with the tester likely contain liquid acids which are hazardous if spilled.

1.10 WARNING – RISK OF EXPLOSIVE GASES.

Working around lead-acid batteries may be dangerous. Lead-acid batteries release explosive gases during normal operation, charging and jump starting. Carefully read and follow these instructions for safe use. Always follow the specific instructions in this manual and on the tester each time you use it. All lead-acid batteries (car, truck and boat) produce hydrogen gas which may violently explode in the presence of fire or sparks. Do not smoke, use matches or a cigarette lighter while near batteries. Do not handle the battery while wearing vinyl clothing because static electricity sparks are generated when vinyl clothing is rubbed. Review all cautionary material on the tester and in the engine compartment.

2. PERSONAL SAFETY PRECAUTIONS

2.1 Someone should be within range of your voice or close enough to come to your aid when you work near a lead-acid battery.

2.2 Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.

2.3 Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.

2.4 If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with cold running water for at least 10 minutes and get medical attention immediately.

2.5 NEVER smoke or allow a spark or flame in vicinity of battery or engine.

2.6 Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause explosion.

2.7 Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or other jewelry to metal, causing a severe burn.

2.8 NEVER test a frozen battery.

2.9 Do not submerge in water.

2.10 Do not operate with flammables such as gasoline, etc.

2.11 If the tester receives a sharp blow or is otherwise damaged in any way, have it checked by a qualified service person.

2.12 Do not disassemble the tester. Have it checked by a qualified service person.

3. PRODUCT DESCRIPTION

1 = Pilot Light on/off
2 = Print Button
3 & 4 = Page up/Page down
5 = Escape/Exit button
6 = Enter button
7 = Battery compartments

Battery Tester is designed to test 6 and 12 Volt batteries and 6, 12 or 24 Volt charging systems. It offers quick and accurate assessment of battery condition and starting and charging system performance. It has lighting function, data storage function historical data view function. It features extralong 10' leads for convenient in-vehicle testing and a backlit display for easy service documentation and uses standard thermal paper. The tester is compatible with a wide range of battery types, including Conventional, Maintenance Free, AGM, Gel Cell, Marine Starting, Spiral Wound and Deep Cycle starting rating) batteries. The tester can test these types of batteries against several battery capacity rating systems. The tester comes equip with a convenient storage/travel case.

Below is a chart of the operating range of the tester based on the applicable capacity rating systems:

Rating System	Testing Capacity
CCA	40-2000 CCA
SAE	40-2000 CCA
CA	50-2400 CCA
MCA	50-2400 CCA
AH	5 -250 AH

The tester has a recommended operating ambient temperature range of -20°C to 50°C.

4. PREPARING BATTERY TO BE TESTED

4.1 Be sure area around battery is well ventilated while battery is being tested.

4.2 Clean battery terminals. Wire brush them if necessary. Be careful to keep corrosion from coming intio contact with eyes.

4.3 Inspect the battery for cracked or broken case or cover. If the battery is damaged, do not use tester.

4.4 If the battery is not a sealed Maintenance Free battery, add distilled water in each cell until battery acid reaches level specified by the manufacturer. This helps purge excessive gas from cells. Be careful not to overfill.

4.5 Confirm that all vehicle accessories are turned OFF to ensure you do not cause any arcing and the tested battery has a nominal voltage of 6 or 12 Volts.

4.6 If it is necessary to remove battery from vehicle to test, always remove ground terminal from battery first.

4.7 To reduce explosion risk, never connect both clamps directly to the battery. When making each connection, twist or rock clamp back and forth several times to make a good connection and to reduce the risk of a clamp slipping off and creating a spark. Do not twist or rock clamp on the battery after the second clamp connection is made.

5. TESTER PREPARATION AND SET-UP

5.1 Installing Batteries

5.1.1 Open battery door and install a 9V alkaline or lithium battery (example - GP1604AU) into the battery chamber. Take care to properly orient the batteries during installation. Close battery door after inserting the battery.

5.1.2 Once the battery installation process is complete, please note, nothing will appear on the tester display until it is connected to a 6 or 12 Volt battery.

Note: When the internal batteries run out of power, the tester display will read “POWER LOW”. When the lighting function is unavailable, replace internal batteries before performing any additional tests.

5.2 Loading Printer Pape

To load thermal paper, you must be connected to a battery (See Battery Tester Operation: Battery Testing, steps 1-3) and have the internal batteries installed. Open paper chamber cover > Set the paper roll into the paper chamber > feed the paper from the roll until the paper begins to feed past the cutter. Close the paper chamber.

6. TESTER CONFIGURATION

You must be properly connected to a battery (See Battery Tester Operation: Battery Testing, steps 1-3) with internal batteries installed to configure the tester.
Upon proper battery connection (with internal batteries installed), the tester will display the Home Screen. The Home Screen shows the battery status by providing the Open Circuit Voltage of the connected battery. Press “ENTER” to enter the Function Screen, which offers three options:
1. Battery/Electrical system Test
2. Settings
3. Test Records.

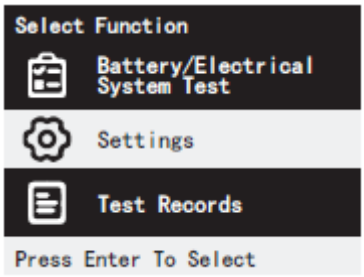
Using the Down button Keys, scroll down to SETTINGS and press “ENTER” (using the enter button) to go to the SETTINGS Screen. The SETTINGS Screen provides four options:
Screen Contract;
Tool Information;
Printer;
License.

7. BATTERY TESTER OPERATION

Note: Each time you connect the tester to a battery, the tester will run a quick cable verification to ensure a proper connection through the output cables to the sensors in the clamp jaws. If the connection is OK, proceed to the Home Screen. If the connection is poor, the display will show “CHECK CONNECT.” In this case, check cable connections for visible signs of damage or a barrier between clamps and terminals. Damaged clamps may need to be replaced, cleaned or barriers removed.

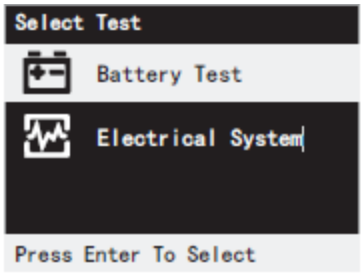
7.1 Main menu page

7.1.1 Use “UP” and “DOWN” buttons to select the function from the main menu. The screen will highlight the desired function as you move the buttons up or down.
7.1.2 Press “ENTER” button to enter the next interface of the function you have selected.
7.1.3 Press the “ESC” button to return to the upper interface;



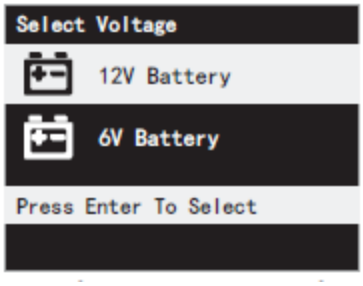
7.2 Battery Test

7.2.1 Use the “UP” and “DOWN” buttons and highlight the Battery Test option.
7.2.2 Press “ENTER” button to enter the next interface of the corresponding menu.
7.2.3 Press the “ESC” button to return to the upper interface;

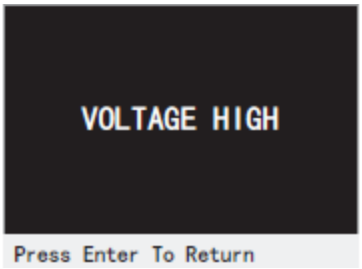


7.3 Battery Voltage Selection

7.3.1 Use the “UP” and “DOWN” buttons to select different battery voltage menus and the background color of the selected menu will light up for highlighting (default 12V battery);
7.3.2 Press “ENTER” button to enter the next interface of the corresponding menu.
7.3.3 Press the “ESC” button to return to the upper interface;

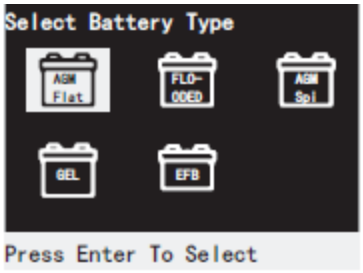


7.3.4 Select 6V/12V voltage, if more than 8V/16V voltage, there will be a "high voltage" prompt interface; As follows:



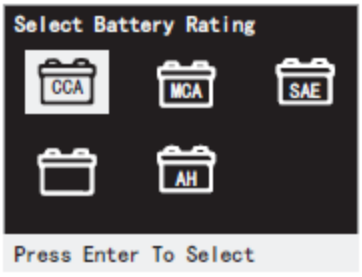
7.4 Battery Type Selection

7.4.1 Use “UP” and “DOWN” buttons to select different battery types, and the background color of the selected menu will light up for highlighting.
7.4.2 Press “ENTER” button to enter the next interface of the corresponding menu.
7.4.3 Press the “ESC” button to return to the upper interface;



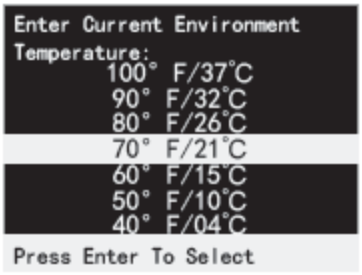
7.5 Select Battery Rating Standard

7.5.1 Select different standards by “UP” and “DOWN” buttons, and the background color of the selected menu will light up for highlighting (default CCA test standard);
7.5.2 Press “ENTER” button to enter the next interface of the corresponding menu.
7.5.3 Press the “ESC” button to return to the upper interface;



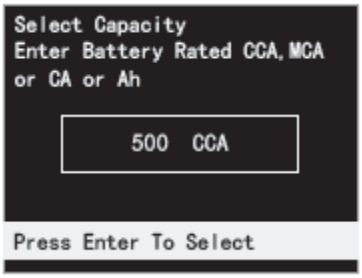
7.6 Ambient Temperature Selection

7.6.1 Use “UP” and “DOWN” buttons to select different temperature, and the background color of the selected menu will light up for highlighting;
7.6.2 Press “ENTER” button to enter the next interface of the corresponding menu.
7.6.3 Press the “ESC” button to return to the upper interface;



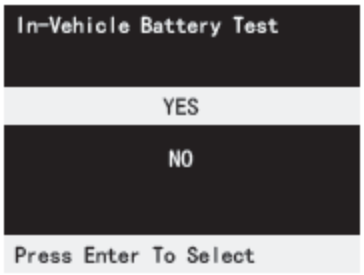
7.7 Setting the Battery Rated Capacity

7.7.1 CCA test range 40 ~ 2000;
SAE test range 40 ~ 2000;
CA test range 50 ~ 2400;
MCA test range 50 ~ 2400;
AH test range 5 to 250AH;
(The default start-up value is the last input value)
7.7.2 Use the “UP” and “DOWN” buttons to adjust and set the capacity rating. The minimum step size is 5; if you press and hold the “UP” and “DOWN” buttons you can quickly adjust the setting value; releasing the button will stop the value;
7.7.3 Press "ENTER" button to enter the next interface after setting;
7.7.4 Press the “ESC” button to return to the upper interface;

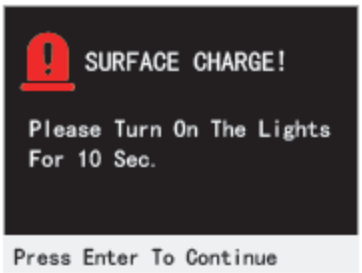


7.8 In-Vehicle Battery Test Options

7.8.1 "In-vehicle battery Test" select YES and press the “ENTER” button. If surface charge is detected on the battery (6V test: battery voltage≥6.5V; 12V test: battery voltage≥ 13V;), the next level interface "Please turn on the lights for l0s to remove the battery surface charge" will pop out,

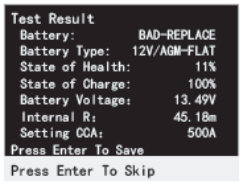


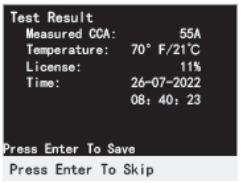
7.8.2 "In-vehicle battery Test" select "YES" and press "ENTER" button. If no surface charge is detected, the battery test will be carried out and the battery test result will be displayed.
7.8.3 "In-vehicle battery Test" select "NO", press "ENTER" button, the battery test will be carried out, and the battery test results will be displayed;



Line 1 – Test Results (Heading)
Line 2 – Results (e.g. BAD, PASS, etc.)
Line 3 – Battery Type;
Line 4 – State of Health (SOH) Percentage;
Line 5 – State of Charge (SOC) Percentage;
Line 6 – Battery Voltage;
Line 7 – Internal Resistance;
Line 8 – Set CCA Value;
Line 9 – Measured CCA;
Line 10 – Temperature;
Line 11 – Customer License Plate Number;
Line 12 – Date & Time of Test;

Battery test results interface

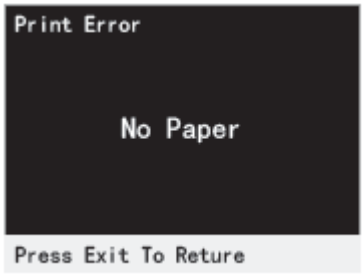




Press **"PRINT"** button to PRINT the test results directly;

The tester will stop printing if the clamp voltage is lower than 7.5V, the paper is short or the temperature of the thermal protection plate exceeds 75 degrees. When the paper is short, press the **"PRINT"** button will display "No Paper".

When the temperature is too high, press the **"PRINT"** button and "Printer temperature is too high" will be displayed.

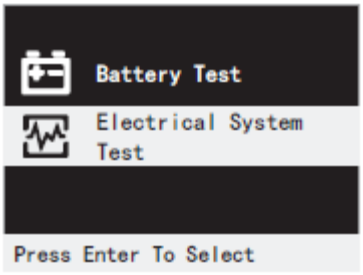


7.9 Press ENTER to display the "Save Result" interface

Press **"ENTER"** button to save and jump to the main menu interface.

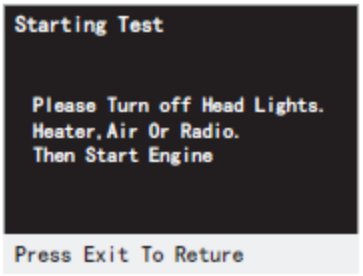
7.10 Electrical System Test

7.10.1 Select "Electrical System Test" menu by pressing "UP" and "DOWN" buttons on the interface above. The background color of the selected menu will light up for highlighting.
7.10.2 Press "ENTER" button to enter the next interface of the corresponding menu.
7.10.3 Press the "ESC" button to return to the upper interface;

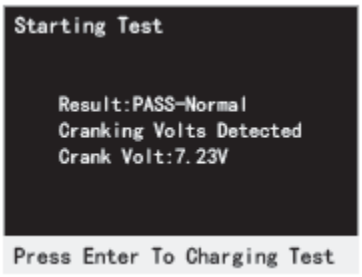


7.11 Start the test

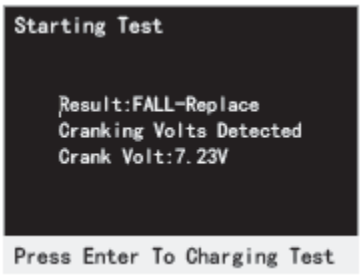
7.11.1 Start operations according to the prompts on the interface;
7.11.2 When voltage is detected, it will automatically jump to the next "Show startup result" interface;
7.11.3 If the external voltage is below 7.75V, judge 6V to start the system; External voltage 7.75 ~ 15.5V, judge 12V start system; If the value is greater than 15.5V, the system starts at 24V.
7.11.4 Start the system at 6V/12V/24V, and the minimum starting voltage Vmin > 4.8V/9.6V/19.2V is detected, indicating that the starting system is normal; Otherwise, the display starts system maintenance.

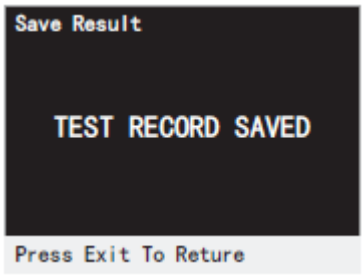


7.11.5 The system startup and maintenance result page is displayed



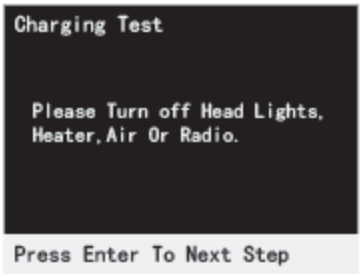
7.11.6 Press "ENTER" button to proceed to the next menu "Charge Test"

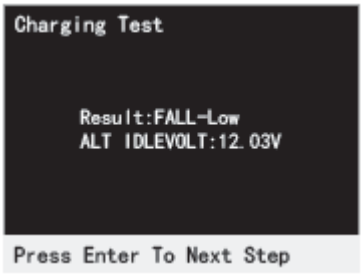




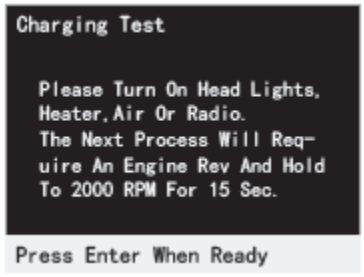
7.12 Charging System Test" interface

7.12.1 Operate the vehicle according to the prompt of the interface content, and then press “ENTER” button to enter the next step; The next screen displays the following information: No-load voltage result.

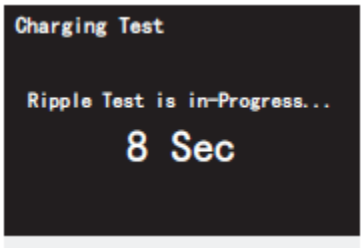




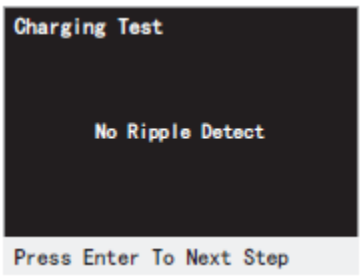
7.12.2 Then press “ENTER” button to enter the next step; The next screen is as follows: Operate the vehicle as prompted



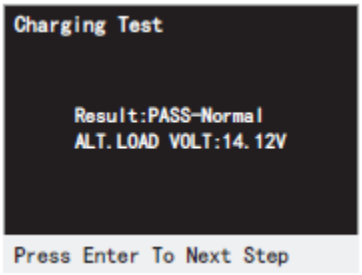
7.12.3 A 15 second Countdown interface will commence during the test



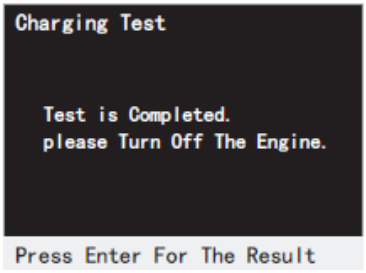
7.12.4 After the end automatically jump into the next interface, ripple test results



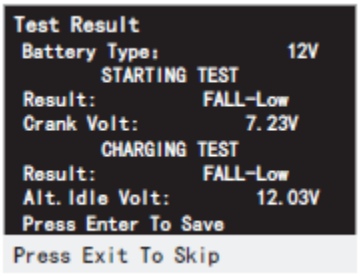
7.12.5 Press “ENTER” button to enter the next step; The next interface content is as follows: On-load voltage result:

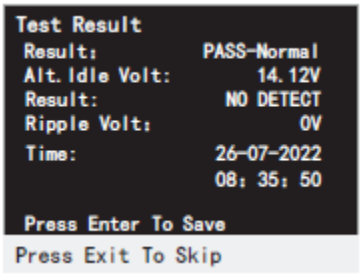


7.12.6 Press “ENTER” button to enter the next step; According to the above interface content, turn off the vehicle engine and press the "ENTER" button to enter the next step.



7.12.7 Press the "ENTER" button to report the test results of the electrical system. The display interface is as follows:

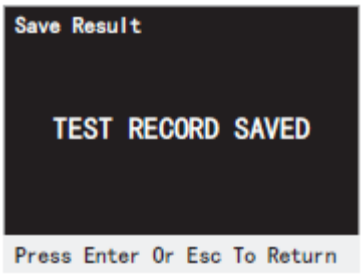




7.12.8 Criteria for judging test results:
The no-load voltage of 6V/12V/24V test charging is 6.5V < Vmax≤7.75V; 13.0 V < Vmax ≤15.5 V; If the value is 26V < Vmax≤31V, voltage + normal is displayed. Then add the corresponding gear (6V/12V/24V with 6P/12P/ 24P); If the voltage is lower than the minimum value, it is considered as LOW. When the voltage is higher than the maximum value, it is judged as HIGH. The test charging voltage of 6V, 12V, and 24V is 6.4V< Vmax ≤7.5V; 12.8 V < Vmax ≤15 V; 25.6V < Vmax≤30V (6V/12V/24V with 6P/12P/24P);
If the voltage is lower than the minimum value, it is considered as LOW. When the voltage is higher than the maximum value, it is judged as HIGH. The test charging ripple voltages of 6V, 12V, and 24V are as follows: if the ripple voltage is less than 0.18V, 0.33V, or 0.68V, the voltage is normal. Ripple voltage > 0.18V/0.33V/0.68V display HIGH;

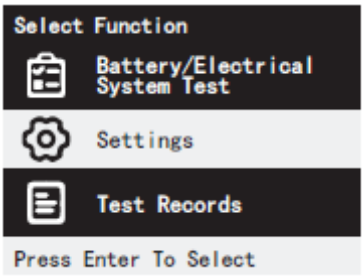
7.12.9 Press "PRINT" to print the test results directly;
Stop printing when the clamp voltage is lower than 7.5V, the paper is short, or the temperature of the thermal protection plate exceeds 75 degrees. When the paper is short, press the “PRINT” buttons to display "PRINT error is short of paper". When the temperature is too high, press the “PRINT” buttons and "printer temperature is too high" will be displayed.

7.12.10 Press “ENTER” to display the "Save Result" screen. Press “ENTER” to save and jump to the main menu interface.

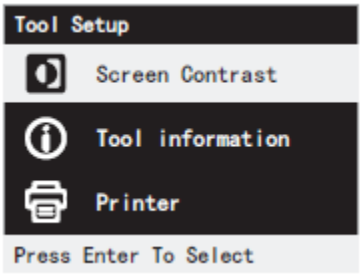


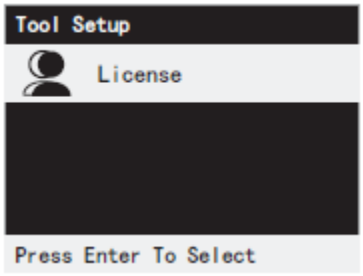
7.13 The Settings menu

7.13.1 Press “UP” and “DOWN” buttons to highlight the "Settings" function from the main menu page.
7.13.2 Press the “ENTER” button to move to the settings interface.
7.13.3 Press the “ESC” button to return to the upper interface;

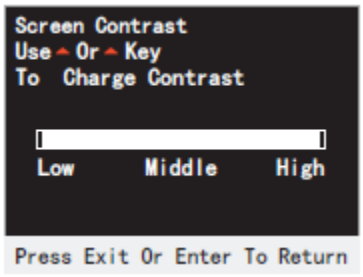


7.13.4 Within the settings interface you will see “Tool Setup”. Here you can adjust and view the following:
- Screen Contrast
- Tool Information
- Printer Settings
- License Plate Setting

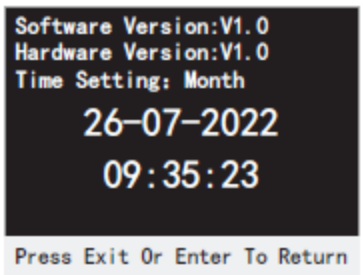




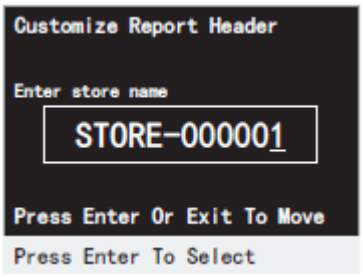
7.13.5 Screen Contrast; adjust the screen contrast by using the “LEFT” or “RIGHT” arrow buttons. Press “ENTER” or “ESC” to save and return to “Tool Setup”.



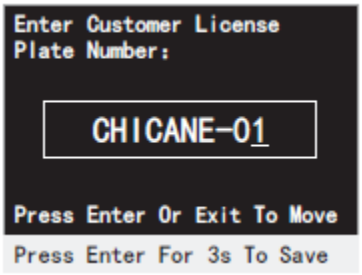
7.13.6 Tool Information; View Software and Hardware version and date and time settings. Date and time settings can be adjusted and saved. Press “ENTER” or “ESC” to save and return to “Tool Setup”.



7.13.7 Print Settings; Enter user details. This will be shown at the top of all printed test results. Press “ENTER” or “ESC” to save and return to “Tool Setup”.

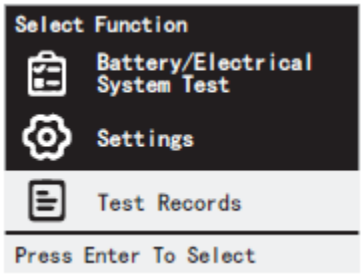


7.13.8 License plate setting; Enter customers license plate number. This will be shown on the saved records. Press “ENTER” or “ESC” to save and return to “Tool Setup”.



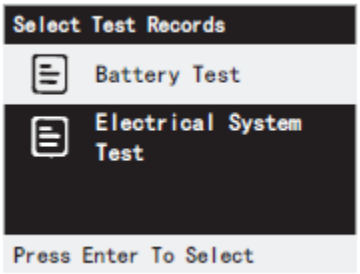
7.14 Test Records

7.14.1 Press “UP” and “DOWN” buttons to highlight the "Test Records" function from the main menu page.
7.14.2 Press the “ENTER” button to move to the “Test Records” interface.
7.14.3 Press the “ESC” button to return to the upper interface;

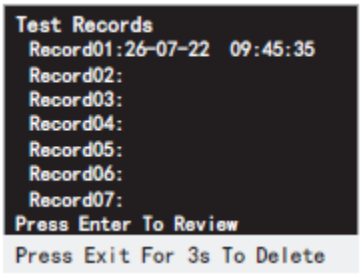


7.14.4 Within the “Test Records” interface you will see a menu with two options:
- Battery Test
- Electrical Systems Test

Press “UP” and “DOWN” buttons to highlight the type of test results records you require. Press “ENTER” to view the list of saved test results.
7.14.5 Press the “ESC” button to return to the upper interface;

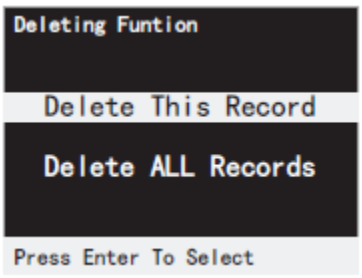


7.14.6 The “Test Records” page will list all saved records as shown in the picture. Select each test record by pressing the “UP” and “DOWN” buttons,
7.14.7 Press “ENTER” to view the highlighted record and the detailed test results of the test record will be shown.

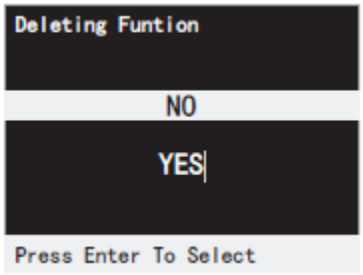


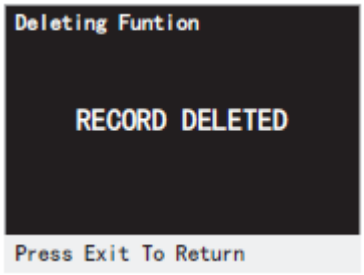
7.14.8 To Delete the test record(s), press and hold the “ESC” button for 3 seconds and the delete interface will show up with two options as shown in the picture. Use the “UP” and “DOWN” buttons to highlight the desired option.

7.14.9 Press “ENTER” to display the confirmation menu. As shown below.



7.14.10 Press “Enter” on YES to confirm deletion or no to return to the upper interface. If yes is selected the tool will show “RECORD DELETED” as confirmation. Press “ESC” to return to the upper interface.



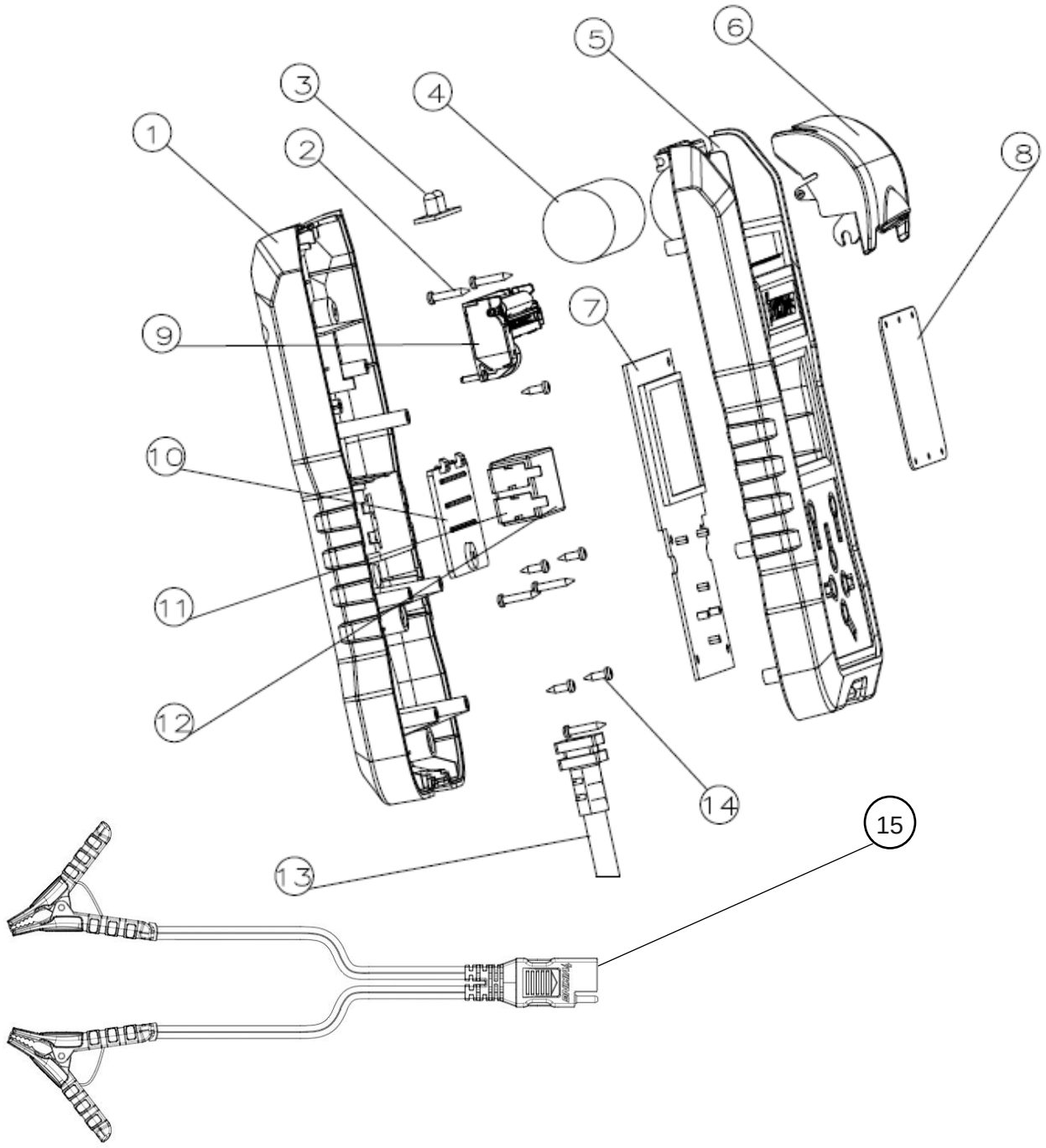


8. MAINTENANCE AND CARE

A basic amount of care and maintenance will allow your tester to provide years of valuable service. The following tips will assist.

- After each use, ensure there is no corrosion on the clamps. If corrosion is visible on the clamps, use a damp cloth to wipe corrosion off of the clamps or a scourer brush and hot water clean dense stubborn corrosion.
- After each use, ensure that leads have not been damaged or come into contact with aggressive fluids, such as grease, engine oil, ATF or battery corrosion. NEVER use tester if leads show signs of damage. Ensure to clean or fix clamps before use otherwise it may effect the performance of the tool or show incorrect and misleading results.
- After each use, put back the tester to its storage case to protect the tester when not in use.
- If tester body becomes dirty or soiled, use a damp cloth to wipe it.
- If tester display becomes dirty, use a screen cleaning product, such as those used to clean glasses or computer monitors, to wipe the display. When cleaning the display, take care not to scratch or damage it.
- Periodically replace onboard batteries (rear compartment) to avoid a situation where the batteries run down at a critical moment. Ensure those batteries are not corroded. Replace any corroded batteries.
- When storing tester for extended periods of inactivity, remove onboard batteries.

9. ASSEMBLY DRAWING



No.	Part Description	QTY.
1	Back housing	1
2	Screw ST3x16	4
3	Light PCB board	1
4	Thermal paper roll	1
5	Front housing	1
6	Printer cover	1
7	Main PCB board	1
8	Acrylic plate	1

No.	Part Description	QTY.
9	Thermal printer	1
10	Battery compartment cover	1
11	Battery connector	1
12	9V battery (not included)	1
13	Output cable	1
14	Screw ST3x8	5
15	Cable with clamps	1
NA	Carry case (not shown)	1

10. WARRANTY STATEMENT

APPLICABLE ONLY TO PRODUCTS SOLD IN AUSTRALIA

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

All claims are subject to Smartech Accessories+ standard testing procedures by its authorized representatives. Should a product be deemed defective due to a manufacturing fault and is within its applicable warranty period; it will be replaced with an equivalent product free of charge.

The product is guaranteed to be free from defects in workmanship and parts for a period of 12 months from the date of purchase. This warranty does not cover ordinary wear and tear, abuse, alteration of products, damage caused by the consumer, changes in the condition or operational qualities of the product resulting from incorrect storage, or other influences. Warranty does not include transit costs if the product is sent back for a claim.

Proof of purchase is required to make a claim. The warranty period is not renewed or extended as a result of a repair or replacement. The warranty is not transferable and is only offered to the original end user of the product.

If you believe your product to be defective due to a manufacturing fault you must deliver the product at your cost to the original place of purchase. Alternately, you may contact Smartech Accessories+ directly to arrange for it to be returned to our head office or a nominated distributor for assessment. If the product is confirmed as defective, we will repair or replace it under the terms of the relevant warranty. If a product is deemed by our testing not to be faulty, you have the choice to have the product returned at your cost. You must also deliver the original invoice evidencing the date and place of purchase together with an explanation in writing as to the nature of the claim.

Distributed By

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