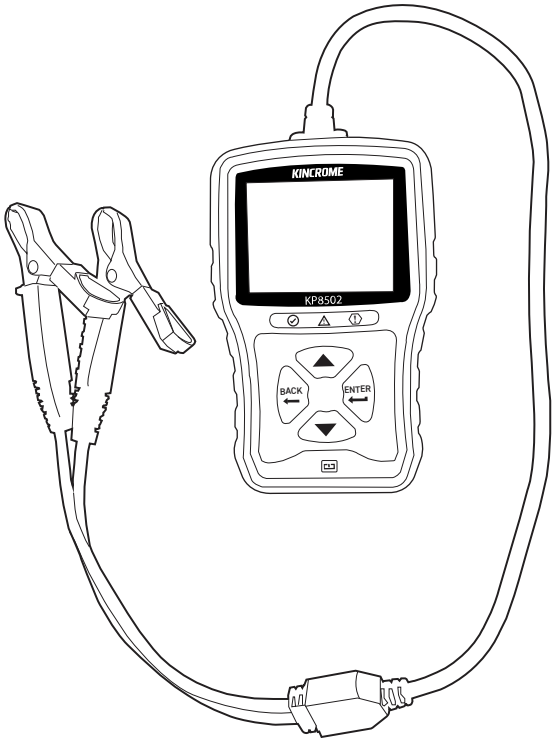
KINCROME

# DIGITAL BATTERY TESTER 12/24V DC




**KP8502**

**ED1 May 2023**

# General Safety Warnings

KP8502

**WARNING This operating manual contains important safety information, read carefully & understand all information before operating. Save this manual for future use.**

**The warnings, cautions and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. Common sense and caution are factors that cannot be built into this product, but must be supplied by the operator.**

## WORK AREA

1. Operate in a safe work environment. Keep your work area clean and well lit.
2. Keep anyone not wearing the appropriate safety equipment away from the work area. Note: Minimize distractions in the work environment.
3. Distractions can cause you to lose control of the tool.
4. When connecting the battery tester analyzer cables to the battery, avoid creating sparks; especially when the battery is being charged. Explosive gases are created during charging. Sparking could also damage the vehicle electrical system.
5. Always lock up tools and keep them out of the reach of children

## PERSONAL SAFETY

6. Wear ANSI-approved safety goggles during set up and use of the Battery Tester.
7. Test in a well ventilated area. Explosive gases may be produced during testing. Do not smoke, cause sparks, or strike matches near the battery when testing.
8. Protective, electrically non-conductive clothes and non-skid footwear are recommended when working. Wear steel-toed boots to prevent injury from falling objects.
9. Refer to the user manual of the battery being tested for testing instructions and precautions prior to using the battery tester analyzer.

## RISK OF ELECTRIC SHOCK

10. Never touch the clamps and the terminals with wet hands.
11. Do not pull the clamps from the terminals by pulling on the clamp cables.
12. Check the clamp leads for damage before every use.
13. Be certain of the test battery polarity before connecting the battery tester analyzer clamps (X & X). The RED (+) positive battery clamp (X) goes to the positive terminal of the battery. The BLACK (-) negative battery clamp (7) goes to the negative terminal of the battery. Reversing the battery tester analyzer battery clamps (X & X) on the battery may damage the battery tester analyzer.
14. Do not drop the battery tester analyzer as it may affect proper operation.
15. Do not smoke or have open flames near the battery.
16. The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

## TESTER USE AND CARE INSTRUCTIONS

17. This battery tester analyzer was designed for specific functions. DO NOT modify or alter the battery tester analyzer, all parts and accessories are designed with built-in safety features that may be compromised if altered.
18. DO NOT use the battery tester analyzer in a way for which it was not designed.
19. Do not connect in reverse polarity.
20. Use this product in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of this product for operations different from those intended could result in a hazardous situation.
21. This product is not a toy. Keep it out of reach of children.
22. Maintain labels and nameplates on the unit. These carry important safety information. If unreadable or missing, contact Kincrome Tools for a replacement.
23. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure. Caution is necessary when near coil, spark plug cables, or distributor of running engine. Engine should be off during distributor adjustment.
24. Undercharged lead-acid batteries will freeze during cold weather. Do not test or charge a frozen battery.
25. Do not smoke or have open flames near the battery.
26. Never remove battery load tester clamps while testing.
27. Ensure automatic vehicles are in park with the handbrake on before starting the engine.

# General Safety Warnings

KP8502

28. Ensure manual vehicles are in neutral with the handbrake on before starting the engine.
29. Road Safety Road Rules 2009 penalty code 2135, it is illegal to leave "motor vehicle unattended with keys in ignition, motor running, brakes not secured or doors unlocked**.**

This tester is designed in strict accordance with the IEC/EN61010-1 safety standard, meeting the requirements for double insulation and over voltage protection at CAT III 600V and pollution degree 2.

The Kincrome KP8502 tester is specifically designed for 12V and 24V lead-acid starting batteries. It operates within a voltage range of DC 9V to 36V.

After fully charging the battery being tested, the voltage reading will be higher than the normal value. To obtain an accurate measurement, please turn on the headlights for 2 to 3 minutes and then check the battery once its voltage returns to the normal range.

Prior to performing the test, carefully examine the insulating layer of the clamps. Verify that there are no signs of damage, exposed areas, or disconnections. It is essential not to utilize the tester if the housing is not fully and properly covered, as this can pose a risk of electric shock.
Optional storage battery standards:

| | |
|---|---|
| CCA: | 100-2000 |
| IEC: | 100-1400 |
| EN: | 100-2000 |
| DIN: | 100-1400 |
| JIS: | 26A17 - 245H52 |
| GB: | 100-1400 |

## BEFORE TESTING

Before you test a battery in a vehicle, turn off the ignition, all accessories and loads. Close all the vehicle doors and the boot lid.

Make sure the battery terminals are clean. Wire brush them if necessary. Clamp the black load lead to the vehicle negative battery terminal. Clamp the red load lead to the vehicle positive battery terminal. Please clamp on the lead part of the terminal only. Clamping on the iron part of the terminal will lead to wrong test results.

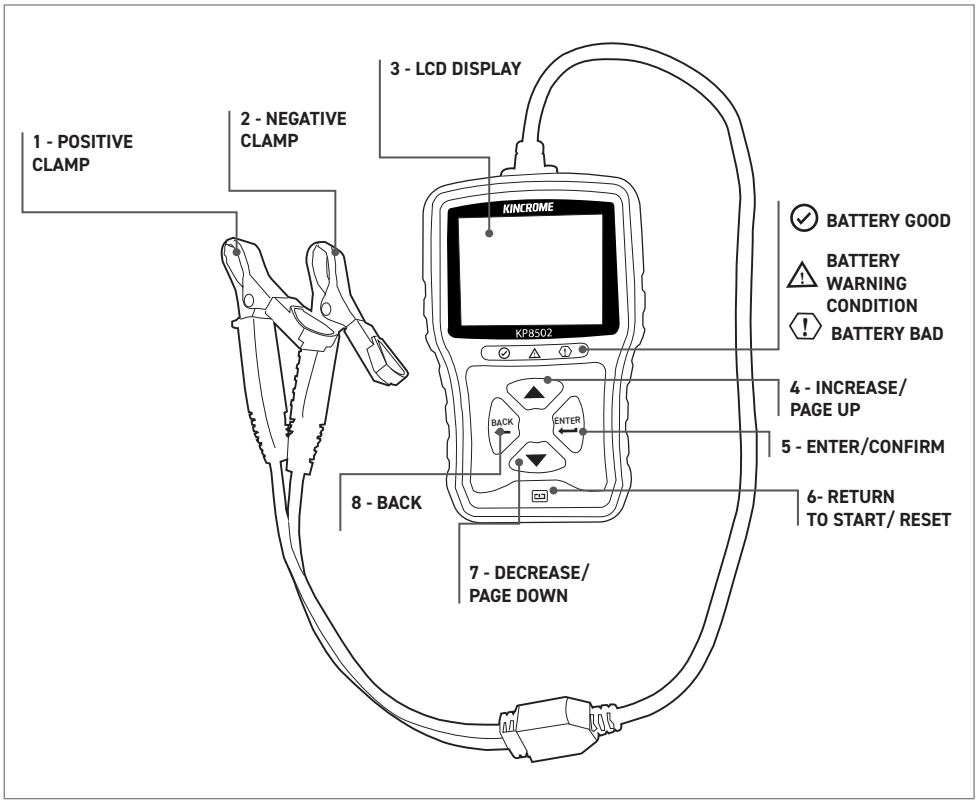
# Symbols

**The rating plate on your tool may show symbols. These represent important information about the product or instructions on its use.**

| | | | |
|---|---|---|---|
|  | Direct Current |  | Class II Tool, Double Insulated |
|  | Alternating Current | V | Volts |
|  | Direct Current and Alternating Current |  | Read the instruction manual before use. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. |
|  | WARNING! |  | Fuse |
|  | Hight Voltage, Risk of electric shock |  | Battery |
|  | Earth | | |

# Know Your Product

KP8502

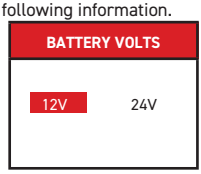



## Specifications

| | |
|---|---|
| **Battery Test Capability** | 12V DC and 24V DC<br>100 - 2000CCA/30-220Ah<br>URL A, GEL, AGM, SLA |
| **Measuring Voltage** | 9V-36V DC |
| **Standards Support** | CCA, JIS, DIN, IEC, EN and GB |
| **Operating Temperature** | 0 to 60°C (-4 to 140 F°) |
| **Storage Temperature** | 0 to 70°C (-4 to 158 F°) |
| **Battery power** | Via Battery Being Tested |
| **Charge Time** | 4 Hours (Cable) / 6 Hours (Wireless Charger) |
| **Dimensions** | 97 x 83 x 39 mm |

## Operation

The tester operates using power from the vehicle battery under test. To begin, connect the RED clamp to the positive terminal and the Black clamp to the negative terminal. It is recommended to connect the RED clamp first before the Black clamp.
Once connected, the tester is ready for use, and the screen will display the following information.




To ensure proper connection, please thoroughly inspect and firmly reattach both clamps to their respective terminals if the screen displays the following information and audible tone can be heard.

**Black clamp (NEG) contact is bad, please check**

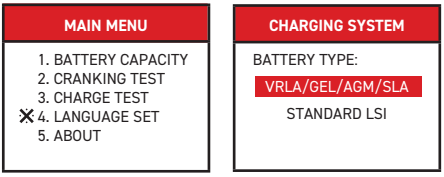
**Red clamp (POS) contact is bad, please check**

### SELECTING THE LANGUAGE

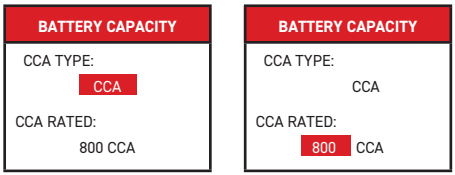



### BATTERY CAPACITY TEST

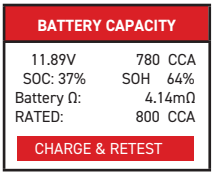
This test determines condition of battery according to rated value labeled on the battery.
First make sure the engine and all devices are off . The voltage value will be higher than that in the normal situation due to the checked battery is fully charged after the vehicle runs for a while. Please turn on the headlights for 2 to 3 minutes, until battery voltage drops to the normal value, then turn off all devices and start testing.
5-1-2. Press ▼ or ▲ to select “1. BATTERY CAPACITY” and press <ENTER> to continue.
5-1-3. Press ▼ or ▲ to select “BATTERY TYPE” and press <ENTER> to continue.




5-1-4. Press ▼ or ▲ to select CCA TYPE which is displayed on the battery rating label, and press <ENTER> to continue.
5-1-5. Press ▼ or ▲ to select CCA RATED which is displayed on the battery rating label.
5-1-6. Press <ENTER> to start Battery Test. The test result




will be displayed as below. Press <BACK> to return to main menu.



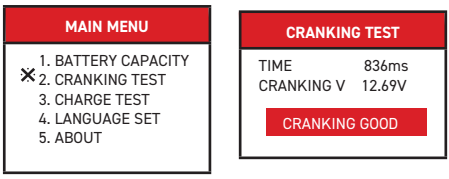

Battery State of Health (SOH) and Test Result Reference

| LIFE | RESULT | NOTE | LED |
|---|---|---|---|
| >80% | GREAT | Good to Use | GREEN |
| >60% | NORMAL | Not Bad | GREEN |
| >45% | CAUTION | Keep Caution | YELLOW |
| <45% | SUGGEST REPLACE! | Replace Needed | RED |

Table Please note that Internal Resistance refers to the sum total resistance of two series connection 12V batteries when testing 24V system.

### CRANKING TEST

This test determines cranking state by testing cranking voltage and time.
5-2-1. First make sure the engine and all devices are off .
5-2-2. Press ▼ or ▲ to select “2. CRANKING TEST” .
5-2-3. Press <ENTER> to Cranking Test interface.




Start engine as guide displayed in the screen.
5-2-4. Test result will be displayed as below. Press <BACK> to return to main menu.
Reading over 9.6V ( for 24V system, reading over 16V ) means cranking is good.

Reading below 9.6V ( for 24V system, reading below 16V ) means cranking is abnormal. Please check associated parts , such as connections, wires, starter and battery's terminal corrupted or not.

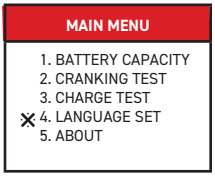
## CRANKING TEST RESULT REFERENCE TABLE

Reference Table (For 12V System)

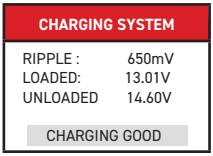
| Cranking Voltage | Cranking Ability | Action to Battery |
|---|---|---|
| > 10.7 V | Good | No Action |
| 10.2~10.7 V | Normal | Keep Caution |
| 9.6 ~10.2 V | Bad | Replace It Soon |
| < 9.6 V | Very Bad | Replace It Immediately |

## CHARGING TEST

This test determines charging system by testing it's condition under loaded and unloaded status.




5-3-1. First make sure the engine and all devices are off .
5-3-2. Press ▼ or ▲ to select "3. CHARGE SYSTEM".




5-3-3. Press <ENTER> to Charging Test interface. Start engine as guide displayed in the screen.
5-3-4. Test result will be displayed as below. Press <BACK> to return to main menu.

## CHARGING TEST RESULT REFERENCE TABLE

Reference Table (For 12V System)

| Status | Battery Voltage | Engine Performance |
|---|---|---|
| All Electric System Off (Depress Accelerator) | > 13.5 | Normal |
| | 13.2~13.5 | General |
| | 13.0~13.2 | Keep Caution |
| | <13 | Inspection Immediately |
| All Electric System On (Depress Accelerator) | 13.4~14.8 | Normal |
| | 13.2~13.4 | Keep Caution |
| | < 13.2 | Inspection Immediately |
| For reference only. Bad batteries will affect the test results. | | |

# FAQ

**1. What is the measurement principle of this tester?**
The battery will gradually aging with increase of time. The main reason is that it can no longer generate some effectively chemical reaction because of aging of the surface of the battery plate. That is why most of the batteries can longer be used mainly. International Electric and Electronic Engineer Association (IEEE) formally looks the Conductivity Test as one of the standard of checking lead acid storage battery. It points out from IEEE standard 1118-1996 that :Conductivity Test is used to test AC current generated by putting the known frequency and amplitude AC signal to both sides of the battery. AC conductivity value is the ratio of AC current signal which keeps same phase with AC voltage and the AC voltage. This tester is designed from this principle actually.

**2. Is the result affected by the installation of negative current for the vehicle?**
All the negative currency will affect the result. Therefore please remove the negative currency prior to checking, in order to achieve the accurate data.

**3. Can this tester predict when the battery goes down?**
The internal resistance of the sealed lead-acid battery is complicated. It is generated by ohm internal resistance, concentration polarization internal resistance, chemical reactions internal resistance and interference effect.. caused by double capacitance's charging. The ingredient of internal resistance and its relative content will change with different test method and different test moment, which can lead to different tested value of the internal resistance. And there is no strict relationship between internal resistance (or conductance) and capacitance of the sealed lead-acid battery. So it is impossible to predict the life of battery according to a single battery's internal resistance. But it can be predicted the life of the battery will be over soon from the sudden increase of its internal resistance and decrease of its conductance.

**4. Is the CCA value tested by this tester correct?**
CCA is considered as a control standard with the produce of the battery.
According to the accumulated records, the tested value of new battery is 10-15% higher than the standard value, and along with consuming of the battery, the value is getting close to standard, even lower afterward.

**5. What is the difference between the method of this tester and the load test method?**
The load test method: According to the physical formula R=V/1, test equipment forcibly make the high permanent DC current ( presently 40- 80A large current is available ) go through the battery shortly ( about 2-3 seconds). Then the tested voltage of the battery can be used to figure out the internal resistance by the formula.

**Disadvantages of load test method:**
(1) Just available for large capacitance battery or storage battery. The small capacitance battery can not load 40-80A large current in 2-3 seconds.
(2) When the large current going through the battery, there comes out polarization phenomenon from internal electrode, which can cause polarization internal resistance. As a result it has to be tested in a short time. Otherwise there is a large error of the internal resistance value.
(3) The internal electrode will be damage generally when large current go through the battery.
The method of this tester: Battery is actually equivalent to an active resistance. So we add a fixed frequency and small current to it, and then sample the voltage value. Eventually the internal resistance can be figured out after some operation such as rectification and smoothing.
**Advantages of this method:**
(1) It can be used for checking almost all the batteries including low capacity battery and internal resistance of the notebook battery exclusively.
(2) It will not harm the battery to use this method.

## OFFICE CONTACT DETAILS

Phone: 1300 657 528 Email: enquiries@kincrome.com.au Website: www.kincrome.com.au

## WARRANTY

1 YEAR WARRANTY

Our goods and services come with guarantees that cannot be excluded under the Australian Consumer Law. For major failures with the service, you are entitled: -to cancel your service contract with us; and -to a refund for the unused portion, or to compensation for its reduced value. You are also entitled to choose a refund or replacement for major failures with goods. If a failure with the goods or a service does not amount to a major failure, you are entitled to have the failure rectified in a reasonable time. If this is not done you are entitled to a refund for the goods and to cancel the contract for the service and obtain a refund of any unused portion. You are also entitled to be compensated for any other reasonably foreseeable loss or damage from a failure in the goods or service'. Kincrome Australia Pty Ltd of 3 Lakeview Drive, Caribbean Park, Scoresby, Victoria (Tel 1300 657 528) also provides the Kincrome Lifetime Guarantee and 12-Month Warranty (Kincrome Express Warranties) in respect of some of its products. If a product is covered by a Kincrome Express Warranty and it has materials or workmanship defects (other than defects caused by abnormal or non warranted use) which are covered under the terms of the relevant Kincrome Express Warranty, you can, at your cost, send the product to the above address for repair or replacement. Your rights under a Kincrome Express Warranty are in addition to any other rights you have under the Australian Consumer Law or other applicable laws. For further details and terms please check our product guide, visit www.kincrome.com.au or call us. Every effort is made to ensure advertised stock is available, but due to factors beyond the control of Kincrome Australia Pty. Ltd, not all products advertised in this catalogue may be available at all stores. Kincrome Australia Pty. Ltd. reserves the right to correct printing errors. All sizes shown are approximate only. Accessories shown do not come with the product unless otherwise specified. Due to printing process, colours in this catalogue may vary slightly to actual item. E. & O. E.© Copyright 2022. Reproduction in whole or in part is prohibited without written approval.