KONNWEI®

KW520

Car Battery Tester 12V 24V
Battery Charger 12V 10A & 24V 5A
Pulse Repair tool = 3 in one

User's Manual

1Product Summary

1.1 Product Profile

KW520 Battery Tester adopts the state-of-the -art conductance testing Technology in the word to easily, quickly and accurately measure the actual cold cranking amps capability of the vehicle starting battery, healthy state of the battery itself, and common fault of the vehicle starting system and charging system, which can help maintenance personnel to find the find the problem quickly and accurately, thus to achieve quick vehicle repair, charger is designed to charge 12V lead-acid batteries from 4AH-150AH, check battery manufacturer specifications before using this charger.

1. Test all automotive cranking lead acid battery, including ordinary lead acid battery, AGM flat plate battery, AGM spiral battery, and Gel battery, Lithium Battery etc.
2. Directly detect bad cell battery.
3. Feature reverse polarity protection; reverse connection may not damage the tester or affect the vehicle and battery.
4. Directly test the battery with loss of electricity, full charge is not required before testing.
5. Testing standards cover the majority of world's battery standards, such as CCA, BCI, CA, MCA, JIS, DIN, SAE.

KW520 Battery Charging can charge power for all automotive cranking lead acid battery, including ordinary lead acid battery, AGM flat plate battery, AGM spiral battery, and Gel battery, Lithium iron phosphate battery (LiFePO4) etc.

KW520 Battery Repair owns battery repair function to fix the battery 's aging issues, capable of detecting battery sulfation and acid stratification to restore lost battery performance by using pulse voltage and current with certain frequency.

KW520 Support multi-languages, customer can select different language package, which includes English, German, French, Dutch, Russian, Spanish, Italian, Portuguese.

1.2 Product Function

KW520 battery tester features the following functions: battery test, cranking test, charging test and other additional functions.

Battery test mainly aims to analyze the battery healthy status to calculate the actual cold cranking capability of the battery of the battery and the aging extent, which provide reliable analysis evidence for the test and maintenance of the battery. If may notify the user to replace battery in advance when the battery gets aged.

Cranking test is used to test and analyze the starting motor. Testing the actual required cranking current and cranking voltage of the starting motor is helpful to determine whether the starting motor works properly or not. If the starting malfunction may cause an increased starting loaded torque; or rotor friction of the starting motor generates an increasing friction of the starting motor itself.

Charging test is to check and analyze the charging system, including generator, rectifier, rectifier diode, etc., thus to find out whether the output voltage of the generator is normal, the rectifier diode works properly and the abnormal, it will lead to over charge or incomplete charge of the battery, thus cause quick damage to the battery and greatly shorthen the life of other loaded appliance.

1.3 Technical Parameters

1. Cold Craning Amps Measurement Range

Measurement Standard	Measurement Range
CCA	100-2000
BCI	100-2000
CA	100-2000
MCA	100-2000
JIS	26A17-245H2
DIN	100-1400
IEC	100-1400
EN	100-2000
SAE	100-2000

TECHNICAL SPECIFICATIONS:

AC input	100-240V/50-60Hz
Output Voltage	DC12V 24V
Output Current	10A / 5A
Output Volt No Load	13.8V
Minimum Start Volt	Battery tester >2.0V; Charger >5.0V
Input Power with Load	Max 150W
Input Power No Load	5W
Cooling	Fan

Voltage Measurement Range 8-16V DC

1.4 Working Environment Requirement

Working Environment Temp: 0° C- 50° C/ -32° F - 122° F.
It is applicable for automotive manufacturers, automotive maintenance and repair workshops, automotive battery factories, automotive battery factories, automotive battery distributors , and educational organizations , etc.

2. Battery Repair & Charge & Test

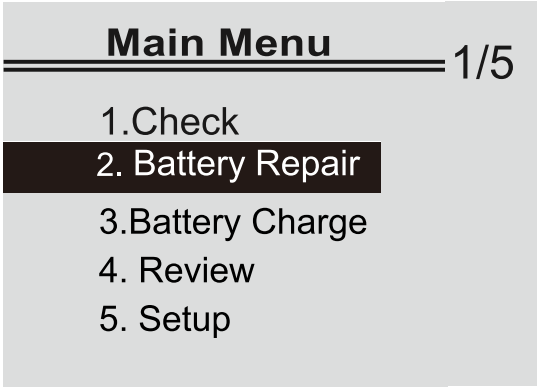
2.1 Battery Repair

Notice : Repair function can not be used with battery connected with vehicle , otherwise the pulse voltage will damage the vehicle electronic components.

Step1, Connect the red clamp to battery positive pole, black to negative pole. Reverse connection will not damage battery but not able to charge or repair.

Step2, Connect the KONNWEI KW520 power side to A/C supply 100-240V/ 50~60Hz. Select the "Battery Repair " from the main menu , the unit will automatically generate the pulse current and voltage to fix the battery and increase its performance.

From the startup screen, or press EXIT button to enter Main Menu.



Press UP/DOWN key to select Battery Repair, then press ENTER key to confirm. (You can also press Repair shortcut key to enter)

2.2 Battery Charge

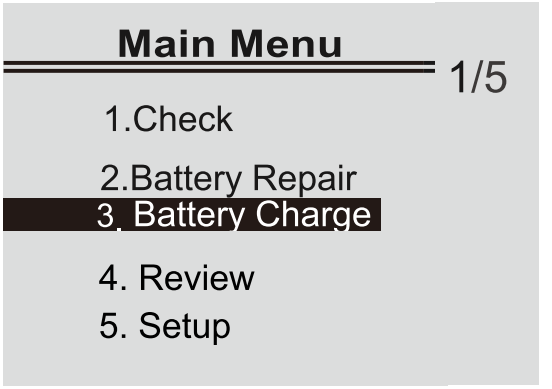
Operation

Step1 , Connect the red clamp to battery positive pole, black to negative pole. Reverse connection will not damage battery but not able to charge or repair;

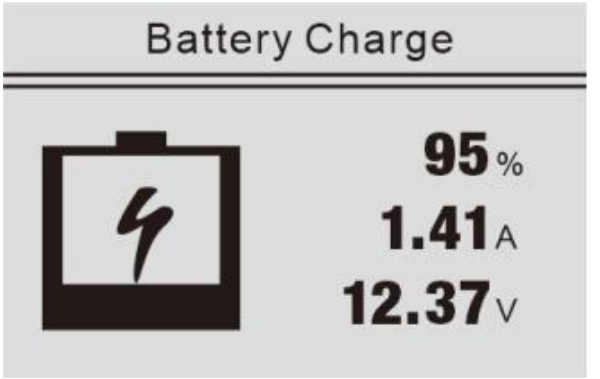
Step2 , Connect the KW520 power side to A/C supply 100-240V/50~60Hz;

Step3, Select the battery charge option from the main menu. The KW520 will automatically charge the battery with 7-stages output, and keep it at a trickle current at last, so no need to worry about the overcharge or overheat issues.

From the startup screen, or press EXIT button to enter Main Menu.

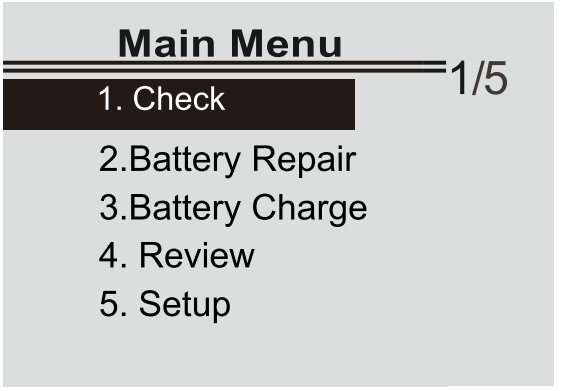


Press UP/DOWN key to select Battery Charge, then press ENTER key to onfirm. (You can also press Repair shortcut key to enter)



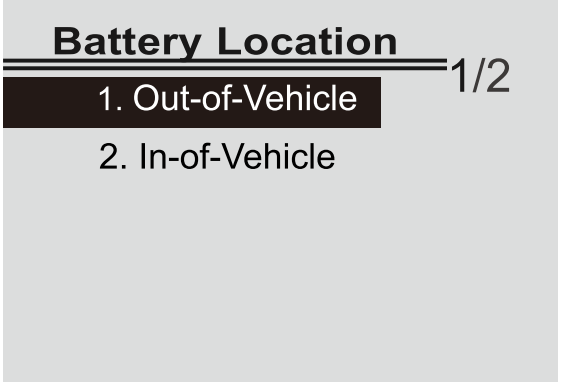
2.3 Battery Test

From the startup screen, or press EXIT button to enter Main Menu.



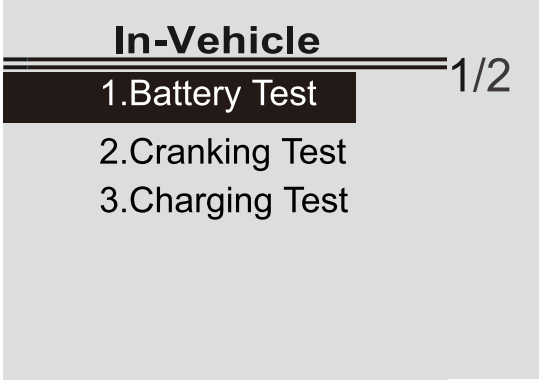
Press UP/DOWN key to select Check, then press ENTER key to confirm. Battery In-vehicle or Out-of-Vehicle.

Press UP/DOWN key to select the battery location, in vehicle or out of vehicle, then press ENTER key to confirm.



2.4 Battery Test in Vehicle

When surface charge detected by the tester, it prompts "Surface charge, turn lights on", Turn lights on as prompted to eliminate battery surface charge, tester will then display the following messages in a sequence.



Now the tester detects the surface char gehas been eliminated ,turn lights off as prompted, then press ENTER key, the tester will recover automatic test.

Select Battery Type: After the battery charge status selected, tester will promt to select battery type, For example Regular Flooded, AGM Flat plate or AGM Spiral, Gel and EFB battery, Press UP/DOWN key to select battery type, then press OK key to confirm.

Battery System Standard and Rating: Use UP/DOWN key to select CCA value according to the actual system standard and rating marked on the battery. See in the below picture, the arrow indicated location.

CCA: Cold Cranking Amps, specified by SAE&BCI, most frequently used value for starting battery at 0°F(-18C);

BCI: Battery Council international standard;

CA: Cranking Amps standard, effective starting current value at

O°C MCA: Marine Cranking Amps standard, effective starting current value at 0°C;

JIS: Japan Industrial Standard, displayed on the battery as combination of the numbers and letters, e.g. 55D23, 80D26;

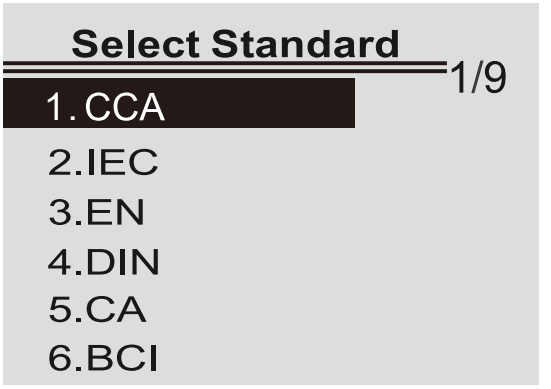
DIN: German Auto Industry Committee Standard;

IEC: Internal Electron technical Commission Standard;

EN: European Automobile Industry Association Standard ;

SAE: Society of Automotive Engineers Standard;

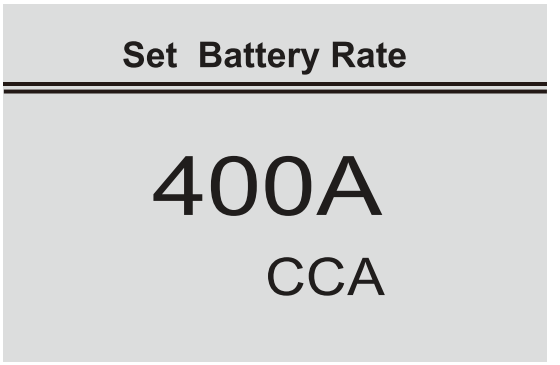
From the [Select Type] Screen, Press UP/DOWN key to select the Standard, then press ENTER key to confirm.



Rating range as following

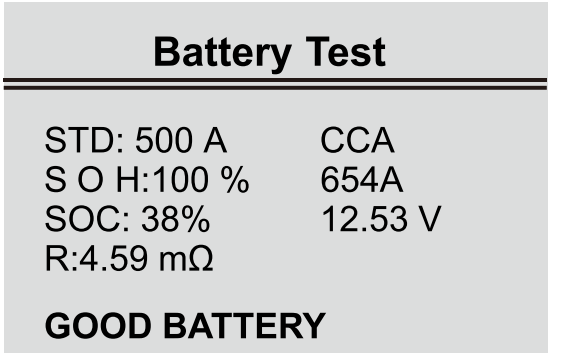
Measurement Standard	Measurement Range
CCA	100-2000
BCI	100-2000
CA	100-2000
MCA	100-2000
JIS	26A17-245H2
DIN	100-1400
IEC	100-1400
EN	100-2000
SAE	100-2000

Input correct test standard and rating, press ENTER key, tester starts to test, and dynamic interface "Under measurement..." prompted. See bellow



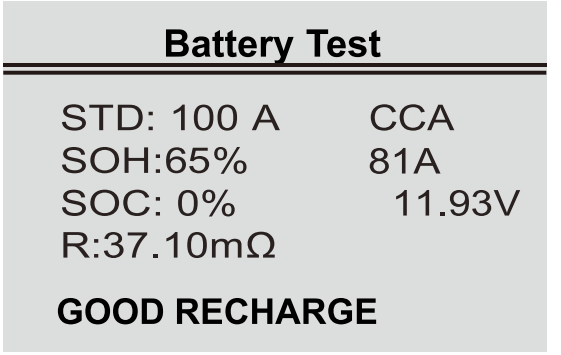
It takes around 1 seconds to display the battery test result.

1. Good Battery



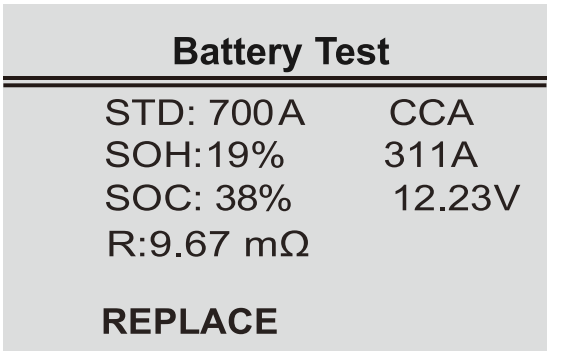
The battery is without any problem, please be relaxed to use

2. Good, Recharge



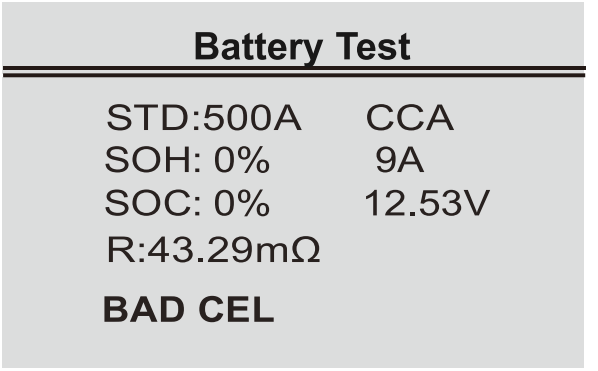
Good battery but low current, recharge before using

3. Replace



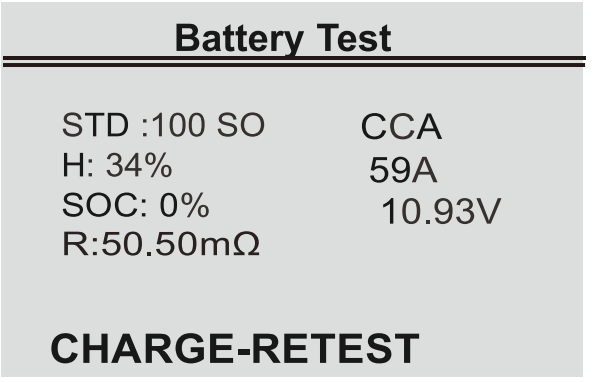
The battery is near to or already reached the end of the using life, replace battery otherwise, bigger danger will be followed

4. Bad cell, Replace



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

5. Charge, Retest



Unstable battery shall be recharged and retested to avoid error. If same test result appears after recharge and retest, the battery is

regarded as damaged, replace the battery.

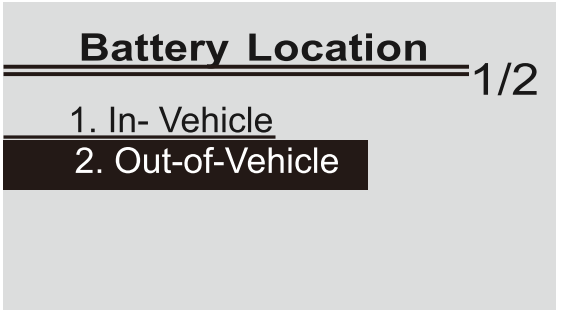
Attention: If "Replace" resulted from IN-VEHICLE mode, it might be the reason that vehicle cable is not well connected with the battery, Ensure to cut off the cable and retest the battery under OUT-OF-VEHICLE before making a decision to replace battery.

NOTE: After testing, if need to Exit , press EXIT key to directly Exit to the startup interface.

2.5 Battery out of vehicle test

OUT-OF-VEHICLE means battery is not connected with any of the vehicle loaded, i.e. battery connection is cut off.

From the startup screen, or press EXIT button to enter Main Menu. Press UP/DOWN key to select the battery location, in vehicle or out of vehicle, then press ENTER key to confirm.



Select Battery Type:

After the battery charge status selected, tester will promt to select battery type, for example Regular Flooded, AGM Flat plate or AGM Spiral, Gel and EFB battery, Lithium battery. Press UP/DOWN key to select battery type, then press OK key to confirm.

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DIN: German Auto Industry Committee Standard;

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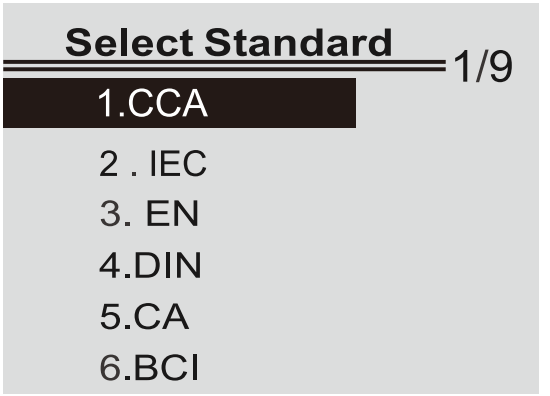
SAE: Society of Automotive Engineers Standard.

From the [Select Type] screen, Press UP/DOWN key to select the Standard, then press ENTER key to confirm.



Rating range as following:

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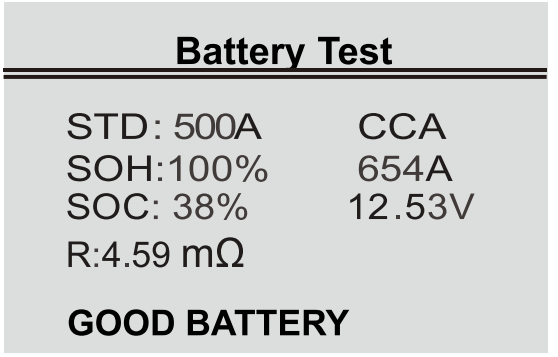
Input correct test standard and rating, press ENTER key, tester starts to test, and dynamic interface "Under measurement ..." prompted. See bellow:

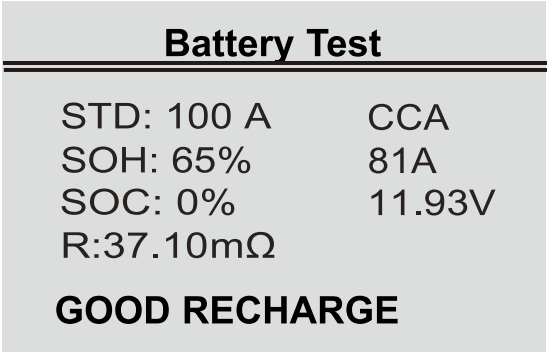
It takes around 1 seconds to display the battery test result.



1. Good Battery

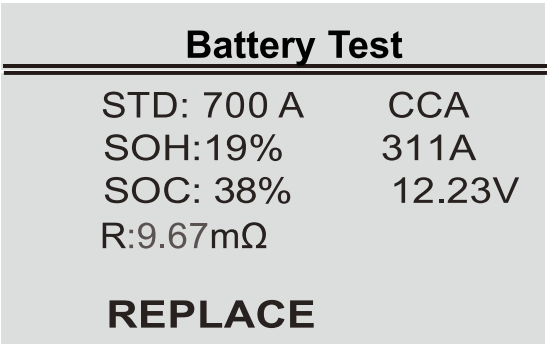
The battery is without any problem, please be relaxed to use.

2. Good, Recharge



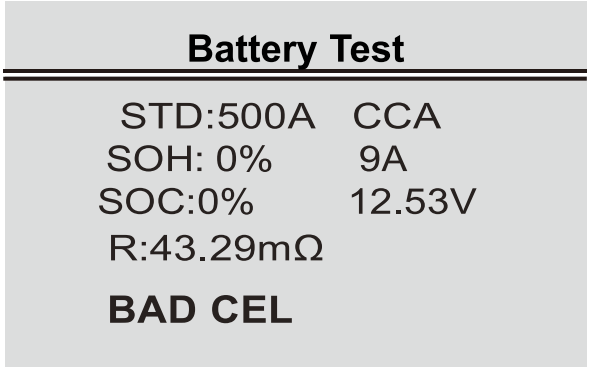
Good battery but low current, recharge before using

3. Replace



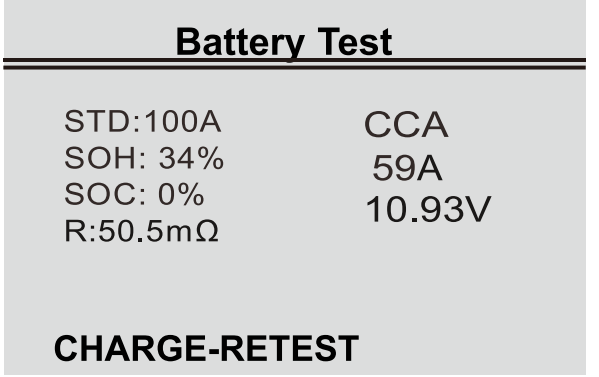
The battery is near to or already reached the end of the using life, replace battery otherwise, bigger danger will be followed

4. Bad cell, Replace



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

5. Charge, Retest



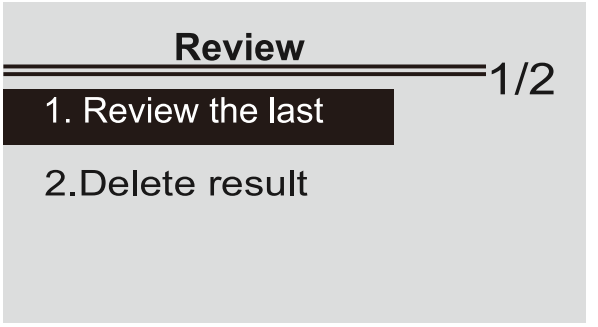
Unstable battery shall be recharged and retested to avoid error.

If same test result appears after recharge and retest, the battery is regarded as damaged, replace the battery

2.6 Review

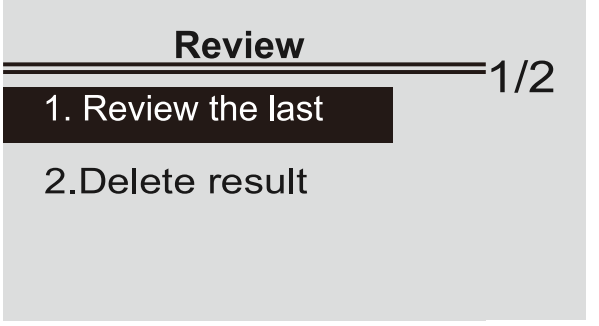
Review waveform

From the startup screen, or press EXIT button to enter Main Menu
Press UP/DOWN button to select the [Review] function in the Main Menu and press ENTER button, The screen will display the interface as shown below:

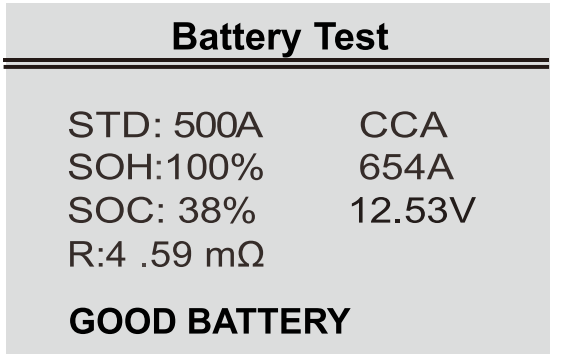


Review the last result

From the startup screen, or press EXIT button to enter Main Menu
Press UP/DOWN button to select the [Review] function in the Main Menu and press ENTER button, The screen will display the interface as shown below:



1) Press UP/DOWN button to select Review the last result function and press ENTER button, The screen will display the interface as shown below:



Press UP/DOWN button to select Review SOH or SOC

3. Service Procedures

If you have any questions, please contact your local store, distributor or visit our website at www.konnwei.com

If it becomes necessary to return the tool for repair, contact your local distributor for more information.