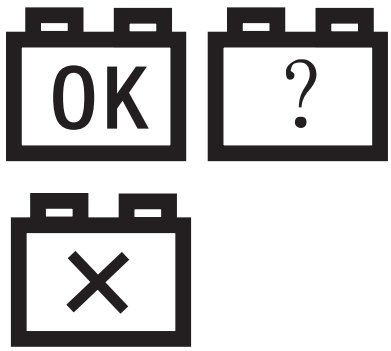
# Auto Battery Analyzer

# User's Manual

# Item: QP2261




## Safety precautions

Batteries usually contain toxic and corrosive chemicals, please kindly avoid battery overcharge, short circuit, leakage and so on. Before using this product, please learn and comply with the using rules of the batteries.

When working with batteries, you need to have plenty of ventilation, remove your jewelry, wear protective eyewear (safety glasses) and clothing, and exercise caution.

During testing on the battery while it is still in the car, make sure the engine is OFF. Do not near to the engine running and heating parts.

Before the test, please use the wire brush and alkaline cleaner clean battery pole column, as well as grease and dust have error on test results.

Please don't store the machine in high temperature or humidity place. It'll damage the machine.

This machine is for 12V battery only.

# Table of Contents

# 1.Product Summary

## 1.1 Product Profile

QP2261 Battery Tester adopts currently the world's most advanced conductance testing technology to easily, quickly and accurately measure the actual cold cranking amps capability of the vehicle starting battery, healthy state of the battery itself, which can help maintenance personnel to find the problem quickly and accurately,thus to achieve quick vehicle repair. Test all automotive cranking lead acid battery, including ordinary lead acid battery,AGM flat plate battery,AGM spiral battery,and Gel battery,etc.

Directly detect bad cell battery.

Polarity reverse connection protection,reverse connection will not damage the tester or affect the vehicle and battery.

Directly test the battery with loss of electricity,no need to full charge before testing.

Testing standards include currently the world's majority of battery standards,CCA,BCI,CA,MCA,JIS,DIN,IEC,EN,SAE,GB.

Support multi-languages, customer can select different language package, which includes: English,German,Dutch,Finnish,Polish,French,Italian,etc. Other languages can also be customized according to user's need.

## 1.2 Product Function

Battery test is mainly targeted to analyze the battery healthy status to calculate the actual cold cranking capability of the battery and the aging extent,which provide reliable analysis evidence for the test and maintenance of the battery. It notifies the user to replace battery in advance when the battery getting aged.

## 1.3 Technical Parameters

### 1. Cold Cranking Amps Measure Range:

| Measure Standard | Measure Range |
|---|---|
| CCA | 100-2000 |
| BCI | 100-2000 |
| CA | 100-2000 |
| MCA | 100-2000 |
| JIS | 26A17--245H52 |
| DIN | 100-1400 |
| IEC | 100-1400 |
| EN | 100-2000 |
| SAE | 100-2000 |
| GB | 100-1400 |

### 2. Voltage Measure Range: 6-30V DC

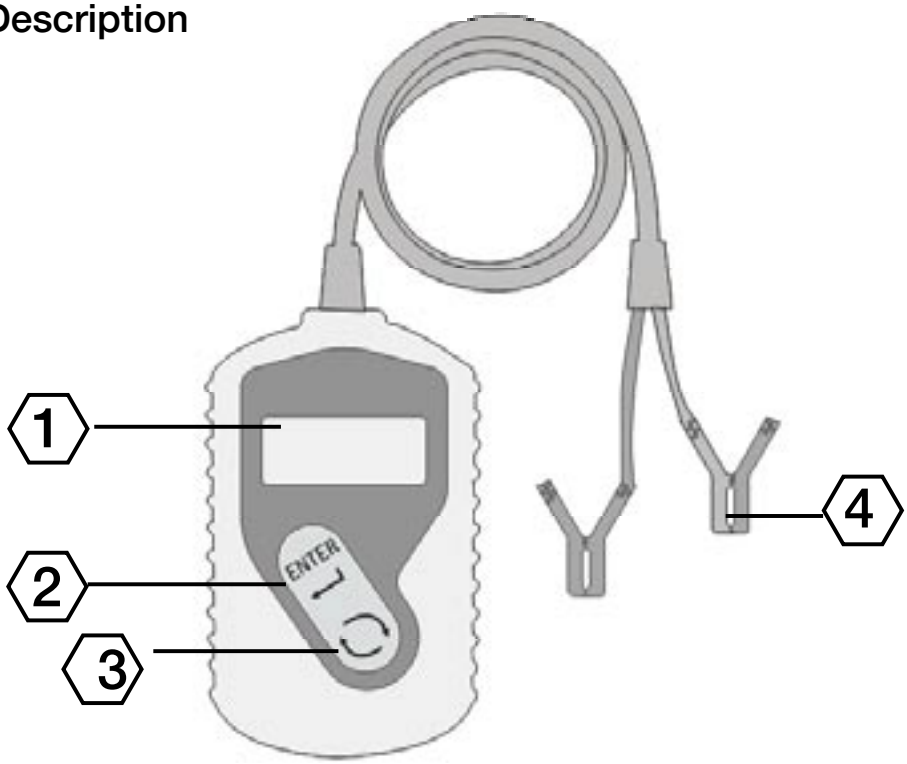
## 1.4 Working Environment Requirement

Working Environment Temp.: -20˚C-60˚C

It is applicable for DIYers mostly, also for automotive manufacturers, automotive maintenance and repair workshops,automotive battery factories, automotive battery distributors, and ship manufacturers, ship maintenance and repair workshops,etc.

## 2. Tester Structure

### 2.1 Tool Description




**1.LCD DISPLAY**--Indicates test results. It is a backlit 2-line display with 8 characters on each line.
**2.ENTER BUTTON**--Confirms a selection (or action) from a menu list, or returns to the main menu.
**3.SCROLL BUTTON**--Scrolls through menu items or cancel an operation .
**4.Clip**--Connects the battery test to the vehicle's battery with + and - point.

### 2.2 Battery Internal Resist Explanation

IR is an important indicator for judging battery capability. When internal resist exceed a special value,the engine can't be started. The normal IR value of cars should be under 10mΩ,
But there will be a little differences between different batteries. And greater CCA with minor resist.
Normally, for the same kind batteries, the IR is smaller, the healthy is better except for short circuitt.

### 2. 3 Battery Voltage Explanation

Normally,It is impossible for the voltage of the battery after charged to show 100%,The max value is 98%

| | |
|---|---|
| Charged | 98% Above 12.59V |
| | 75% 12.45V |
| | 50% 12.15V |
| Discharged | below 12.00V |

# 3. Operating Instructions

## 3.1 Before Test

### 3.1.1 Notice before test

For testing batteries of low-frequency use,it is necessary to cycle (charge and discharge) the battery several times before testing,normally 3-5 times will achieve a reliable test result. Because only after the cycling of the battery can the chemical properties of battery be restored,after a long periods of no use. if after 3-5 times of battery charge and discharge,the battery health state is still lower than 60%,then battery replacement should be considered.

1. Low use batteries should be charged once every 1-2 months to extend the battery life for the vehicle or boat..

2. Please turn off the engine before testing.

3. Even when testing an in vehicle battery,after the engine is turned off (for the most accurate results) wait 10 minutes before testing.

4. In general,if the battery voltage below 12.40V,please kindly recharge it.

5. When charging is finished,do not test immediately,wait at least 10 minutes to allow the battery to stabilise,then test.

### 3.1.2 Connecting the Analyzer Before Testing

Before the test,please use the wire brush and alkaline cleaner clean battery pole column,as well as grease and dust have error on test results.

At the start of the test,to ensure that all of the car electronics has closed the door closed,and the ignition key is turned off.

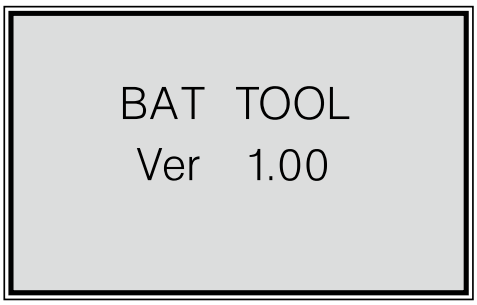
The red test clip to the battery positive electrode,the black test clip to battery cathode. again. Tester has an automatic protection function,if the red and black clip is negative,screen is not bright,but it will not have any adverse effects on tester and the motor load.

In order to ensure a good connection,please waggle a few times to test clips..

Tester require two clips polar to contact with the battery polarity is good, but with bad connection,the tester will not be able to boot. If this happens, please clean the terminal after properly connected

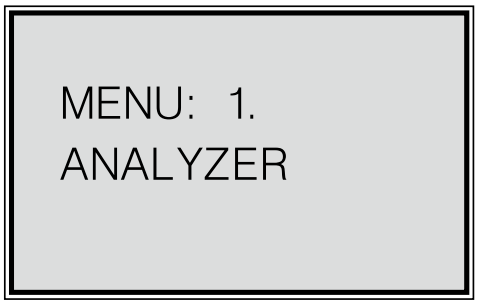
## 3.2 Tester Startup

Tester automatically starts up after the clamps are correctly connected,and displays the BAT TOOL startup interface. After 2seconds,it automatically enters the battery test program.



## 3.3 Battery Test

Enter the main menu, there are two sub-menus: ANALYZER and LANGUAGE, as below,they can swift by pressing SCROLL button

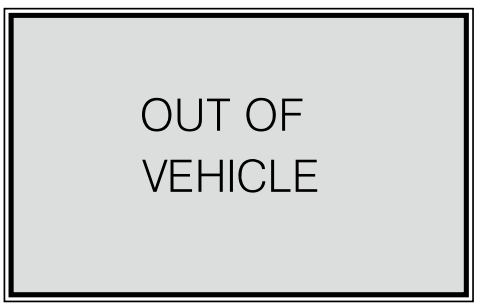


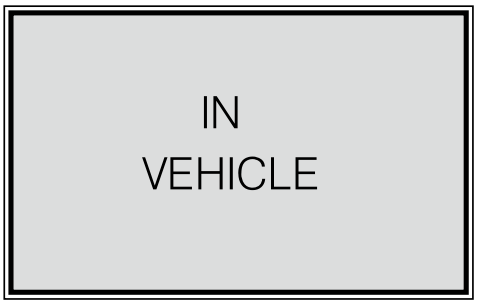


### 3.3.1 Out of Vehicle & In Vehicle

Use "SCROLL" to choose battery's in actual position.

After confirmation,put "ENTER" button.



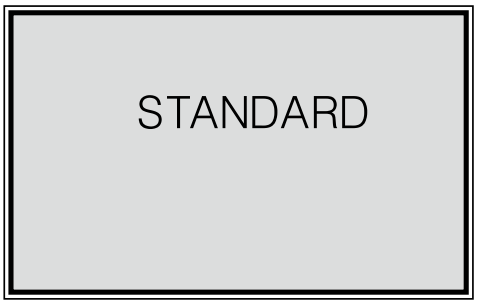



In Vehicle: battery connect with engine or vehicle electric.

Out of vehicle: disconnect the battery connection

### 3.3.2 Battery System Standard and Rating

Use "SCROLL" to choose the types of battery, it has CCA, DIN, JIS, EN, IEC, GB, SAE, MCA, BCI, CA. And then put "ENTER" button.




Follow the battery actually marked Rating System standards and select the input rated capacity battery rated by SCROLL button.

QP2261 battery tester will test each battery according to the selected system and rating.

Use SCROLL key to select according to the actual system standard and rating marked on the battery. See in the below picture, the arrow indicated location.


CCA: Cold start current value of the most common specifications developed by the SAE & BCI,is the most common starting battery rated O ˚ F (-18 ˚ C).

BCI: International Battery Standards Committee.

CA: Effective starting current rating at O ˚ C.

MCA: Marine Battery Standard,Effective starting current rating at O ˚ C.

JIS: Japanese Industrial Standard display a combination of numbers and letters on the battery,like 55D23,80D26.

DIN: German automotive industry standards committee.

EN: The European Automobile Manufacturers Association standards.

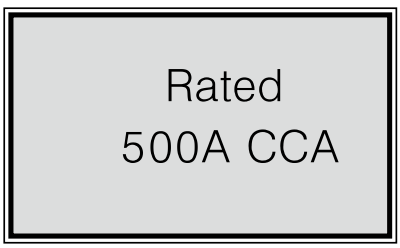
SAE: American Society of Engineers Standards.

GB: China National Standard.

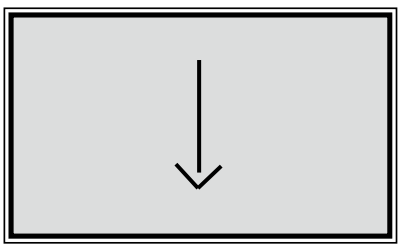
Rating range as following:

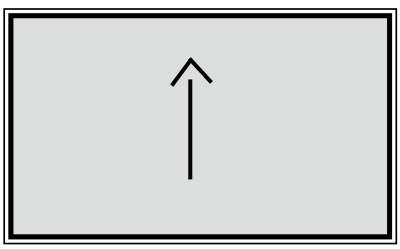
| Measure Standard | Measure Range |
|---|---|
| CCA | 100-2000 |
| BCI | 100-2000 |
| CA | 100-2000 |
| MCA | 100-2000 |
| JIS | 26A17--245H52 |
| DIN | 100-1400 |
| IEC | 100-1400 |
| EN | 100-2000 |
| SAE | 100-2000 |
| GB | 100-1400 |

Choose the right measure standard,press ENTER,then come up the below menu.




Press SCROLL to increase or reduce 5 units,then to the right rated volume, if wanto change it,press SCROLL button last to 3 seconds,then it will come as below menu,press SCROLL again,then turn to the opposite mark.



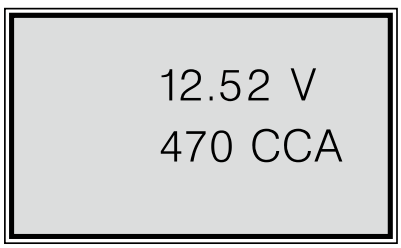


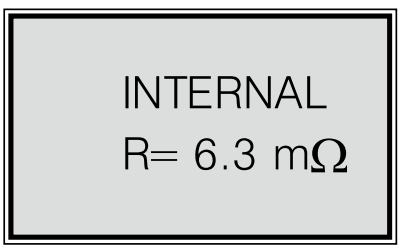
If the battery does not show the standard in the label,please select CCA;
If the battery does not mark the rating value,please take 7 times of Quantity of electric charge as reference value,such as 12V,60AH,then input 60 * 7 = 420 CCA;

After choose the correct test standard and rated capacity, put "ENTER" button,and the analyzer is testing as below:

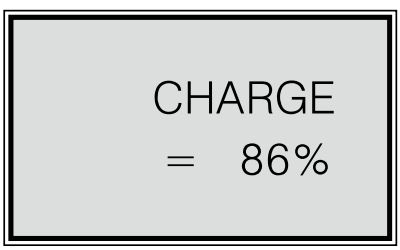

### 3.3.3 Test result

For less than 3 seconds, the results of the testing will be displayed on the LCD screen.








Press ENTER button to exit.

**As the battery test results to The battery test data to determine the battery condition description:**

**1. Healthy>60%, Voltage>12.4V-- Good battery**

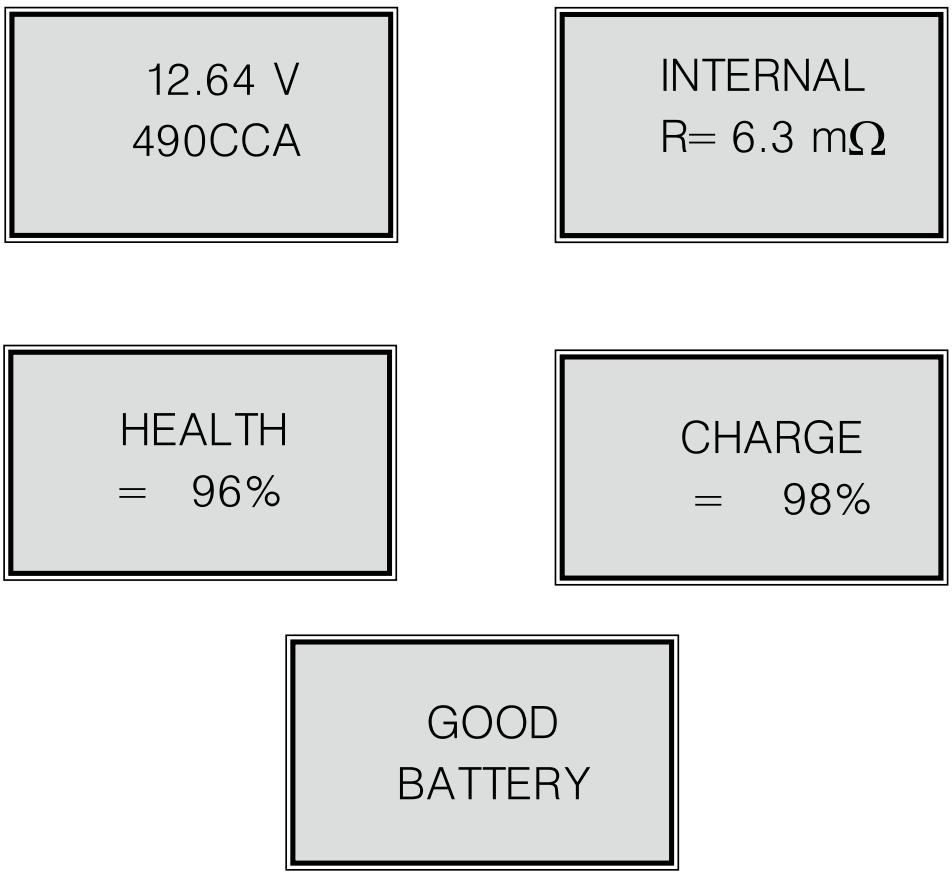
**2. Healthy>60%, Voltage<12.4V-- Good, Recharge**

**3. Healthy<60%, Voltage>12.4V-- Replace**

**4. Healthy<60%, Voltage<12.4V-- Charge, Retest**

Battery test result includes 5 types as following:

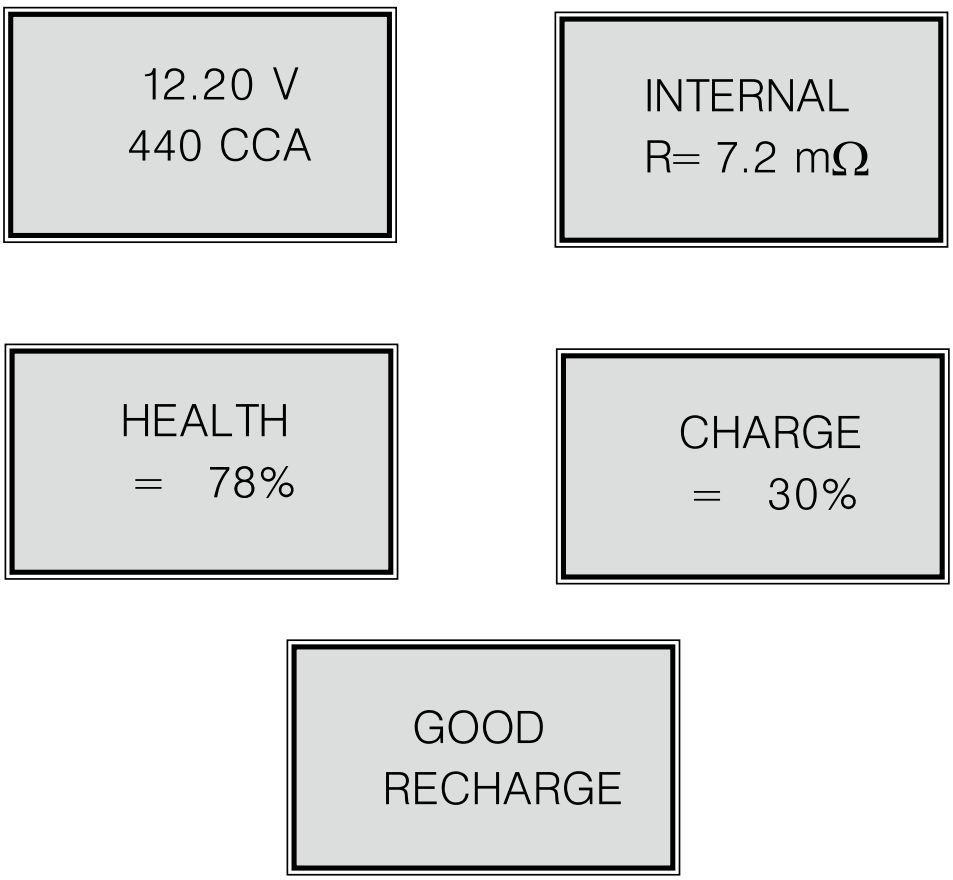
**1) Good Battery**



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

**(Healthy>60%, Voltage>12.4V)**

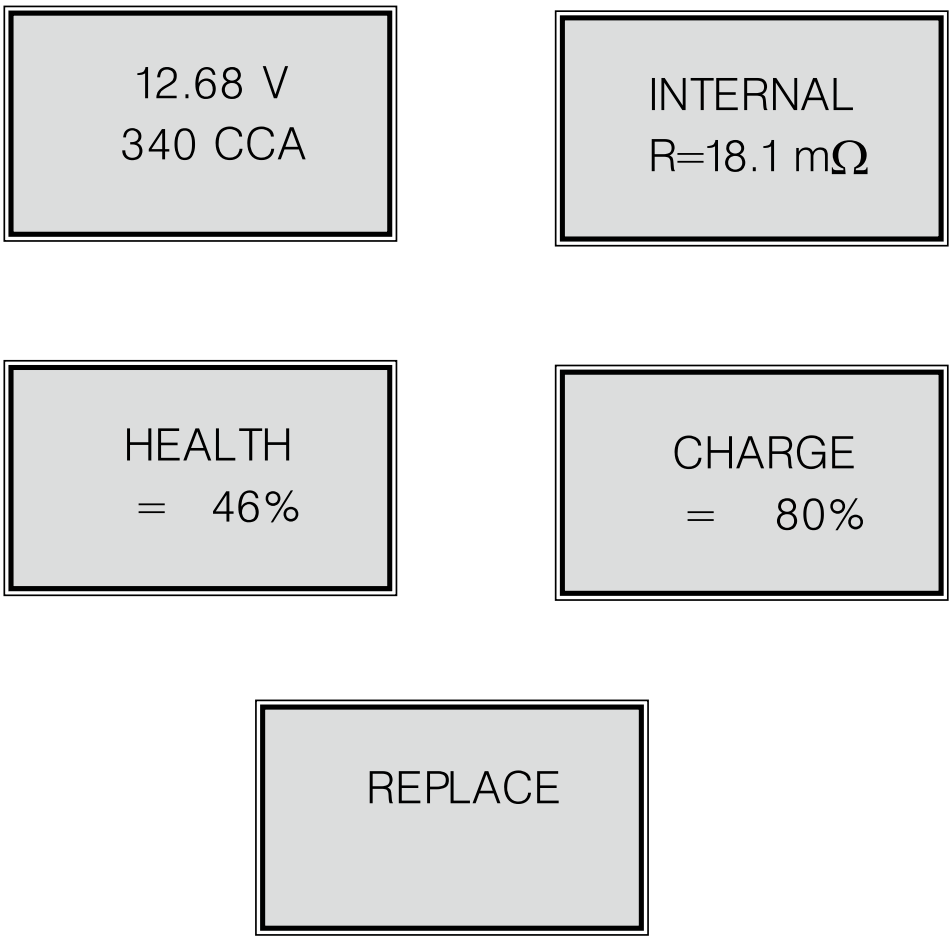
**2) Good, Recharge**




Good battery but low current,recharge before using.

**(Healthy>60%, Voltage>12.4V)**

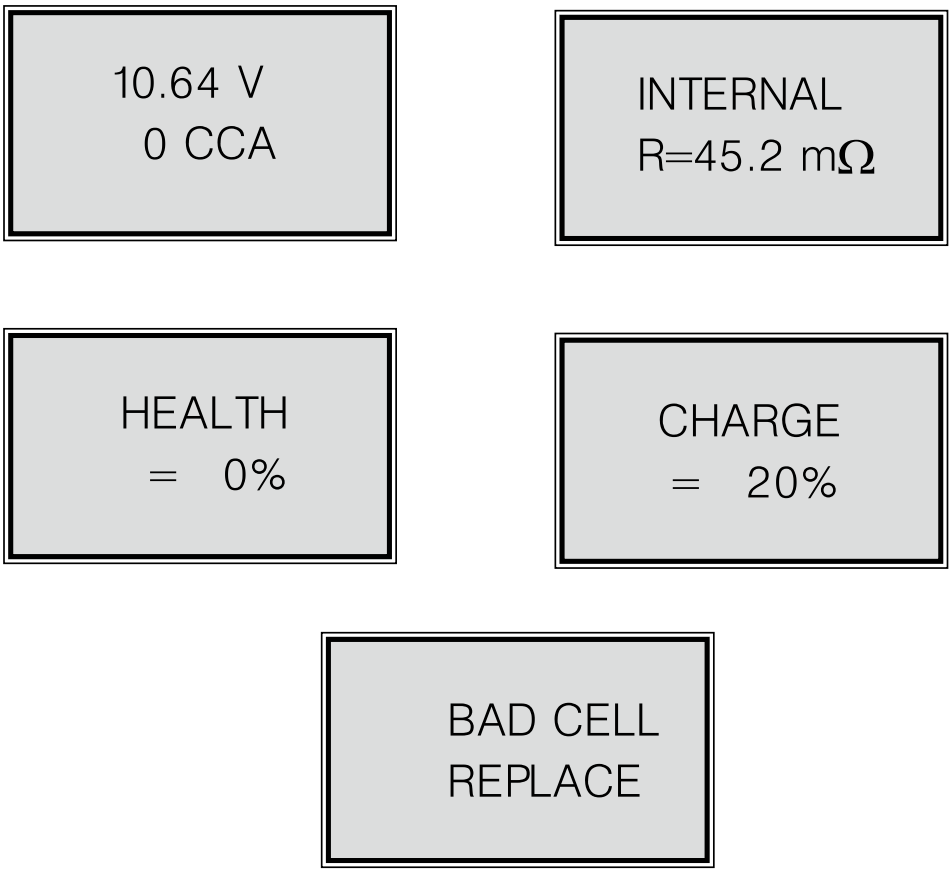
### 3) Replace




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

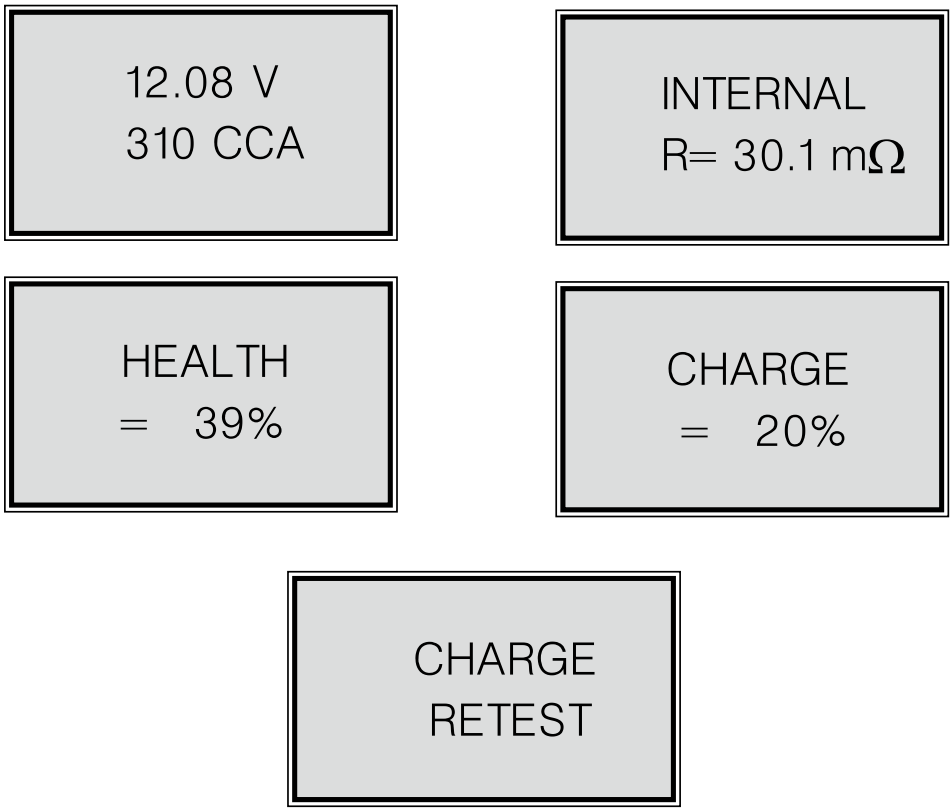
**Healthy<60%, Voltage>12.4V**

**4) Bad Cell, Replace**




Battery interior damaged,broken cell or short circuit,replace battery.
**(Healthy=0, Voltage<12.4V, Electric Current=0A or 0CCA)**

### 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.

**(Healthy<60%, Voltage<12.40V)**

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 return,press SCROLL key to directly return to the startup interface.

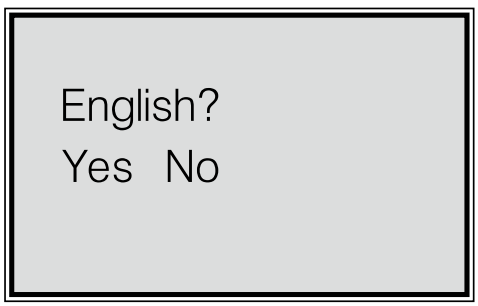
### 3.3.4 24V system testing.

It should not be tested on 24V directly. It will cause damage the unit. For 12V x 2 batteries (in series or parallel), disconnect the connections and test them individually.
The battery in parallel must be disconnected from the negative connection, and then tested on a single battery. If you do not cut off the negative connection, will lead to erroneous battery test results.

## 3.4 Additional Functions:

### 3.4.1 Language Choice.

If the machine has a multi-language version, go to the menu 2 and select the language you use appropriate language, choose YES and press enter to confirm it, so you can use the language version of the machine; or Use Scroll button to look through next language till the suitable one. Once confirm the language, press enter again, then exit it.

## 3. 4.2 Appendix:

| JIS | CCA | JIS | CCA |
|---|---|---|---|
| 26A17L | 185 | 115D31L | 740 |
| 26A19L | 185 | 95E41L | 475 |
| 30A19L | 210 | 100E41L | 505 |
| 34A19L | 245 | 105E41L | 540 |
| 26B17L | 185 | 110E41L | 575 |
| 28B17L | 195 | 115E41L | 610 |
| 28B19L | 190 | 120E41L | 635 |
| 34B17L | 240 | 130E41L | 680 |
| 34B19L | 240 | 115F51 | 575 |
| 36B20L | 260 | 130F51 | 680 |
| 38B19L | 265 | 145F51 | 735 |
| 38B20L | 265 | 150F51 | 765 |
| 40B19L | 270 | 170F51 | 925 |
| 42B19L | 290 | 145G51 | 685 |
| 44B19L | 310 | 155G51 | 720 |
| 44B20L | 300 | 165G51 | 820 |
| 46B24L | 295 | 180G51 | 860 |
| 50B24L | 325 | 195G51 | 930 |
| 55B24L | 370 | 190H52 | 765 |
| 60B24L | 390 | 210H52 | 910 |
| 65B24L | 425 | 225H52 | 995 |
| 32C24L | 195 | 245H52 | 1170 |
| 48D26L | 250 | NS40Z | 280 |
| 50D20L | 310 | NS50Z | 300 |
| 55D23L | 320 | NS60Z | 325 |
| 55D26L | 290 | NS70Z | 450 |

| JIS | CCA | JIS | CCA |
|---|---|---|---|
| 65D23L | 370 | N100Z | 560 |
| 65D23L | 370 | N100Z | 560 |
| 65D26L | 370 | N120Z | 640 |
| 65D31L | 340 | 54801 | 360 |
| 70D23L | 420 | 55415 | 440 |
| 75D23L | 465 | 55530 | 370 |
| 75D26L | 450 | 55566 | 450 |
| 75D31L | 380 | 54801 | 360 |
| 80D23L | 500 | 56093 | 480 |
| 80D26L | 490 | 56318 | 500 |
| 85D23L | 530 | 56618 | 550 |
| 85D26L | 525 | 56620 | 550 |
| 90D26L | 560 | 57069 | 640 |
| 95D31L | 565 | 58500 | 500 |
| 105D31L | 655 | 58815 | 660 |
| 110D26L | 670 | 78550 | 550 |