

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 shorten the life of other loaded appliance.

1.3 Technical Parameters

1. Cold Cranking 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

2. Voltage Measurement Range : 8-16V DC

1.4 Working Environment Requirement

Working Environment Temp: 0°C – 50°C/ -32°F – 122°F

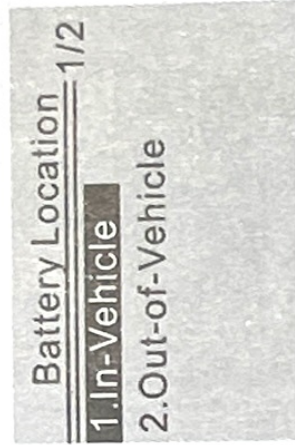
It is applicable for automotive manufacturers, automotive maintenance and repair workshops, automotive battery factories, automotive battery factories, automotive battery distributors, and educational organizations, etc.

2 Battery Test

After entering battery test program, tester displays Main Menu, Tester will display the following contents in a sequence, select accordingly.

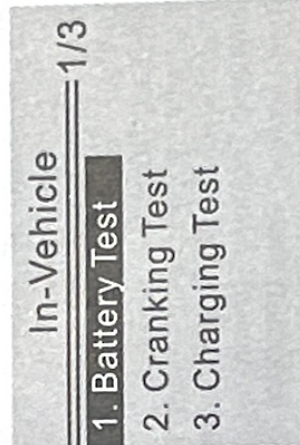
Battery In-vehicle or Out-of-Vehicle

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.



2.1 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 charge has been eliminated, turn lights off as prompted, then press ENTER key, the tester will recover automatic test

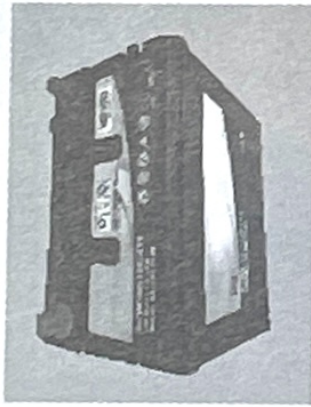
Select Battery Type

After the battery charge status selected, tester will prompt to select battery type, i.e. 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

KW208 battery tester each battery according to the selected system and rating.

Use UP/DOWN key to select according to the actual system standard and rating marked on the battery. Use UP/DOWN 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 Cranking Amps, specified by SAE&BCI, most frequently used value for starting battery at 0°F(-18°C).

BCI: Battery Council international standard.

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

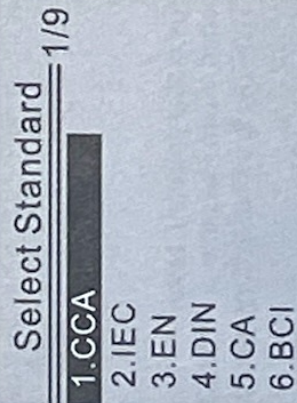
DIN: German Auto Industry Committee Standard.

IEC: Internal Electron technical Commission Standard.

EN: European Automobile Industry Association Standard.

SAE: Society of Automotive Engineers Standard.

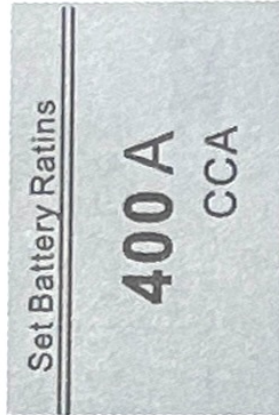
From the [Select Type] screen, Press UP/DOWN key to select the Standard, then press ENTER key to confirm.



Rating range as following:

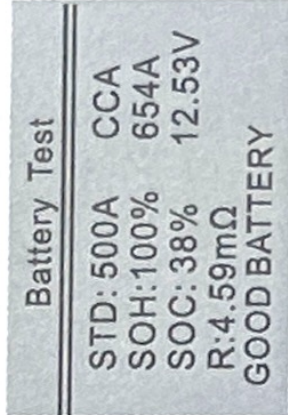
Measurement Standard	Measurement Range
CCA	100-2000
BCI	100-2000
CA	100-2000
MCA	100-2000
JIS	26A17-245H2
DIN	100-1400
IEC	100-1400
EN	100-2000
SAE	100-2000

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



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

Battery Test	
STD: 100A	CCA
SOH: 65%	81A
SOC: 0%	11.93
R: 37.10mΩ	
GOOD-RECHARGE	

Good battery but low current, recharge before using.

3 Replace

Battery Test	
STD: 700A	CCA
SOH: 19%	311A
SOC: 38%	12.23V
R: 9.67mΩ	
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 Test	
STD: 500A	CCA
SOH: 0%	9A
SOC: 0%	12.53V
R: 43.29mΩ	
BAD CEL	

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

5 Charge, Retest

Battery Test	
STD: 100A	CCA
SOH: 34%	59A
SOC: 0%	10.93V
R: 50.50mΩ	

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.

2.2 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.

Battery Location	
1.In-Vehicle	1/2
2.Out-of-Vehicle	

Select Battery Type

After the battery charge status selected, tester will prompt to select battery type, i.e. 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.