CARNAGE TOOLS™


# CT210 BATTERY CONDUCTANCE TESTER USER MANUAL

The CT-210 Battery Conductance Tester utilizes the world's most advanced conductance testing technology to easily, quickly and accurately measure the actual cold cranking amps capability of the vehicle's battery, general battery state of health, and test for common faults of the vehicle starting system and charging system, which can help maintenance personnel to find battery and electrical system problems quickly and accurately, allowing quick vehicle repair.

**Product Specification:**

* One year warranty
* 12V automotive cranking lead acid battery and 12/24V car system test
* Measuring 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 |

* Working Environment Temp: -4°F through 120°F
* Special Test Clip: Double conductor Kelvin clamp
* Housing Material: Acid-resistant ABS plastic
* Cell Measure Range: 300AH - 200AH
* Voltage Measure Range: 7 - 30VDC

## How to use:

**1.** Connect the red test clamp with battery positive post and the black clamp with battery negative post, the tester will power on automatically. Voltage battery below 7.0VDC can't be tested properly, then press OK key to continue.

**2.** Accoring to the tester, you can press UP/DOWN key to choose:

① battery test
② starting system test
③ charging system test
④ battery test result
⑤ print test result
⑥ select language

## (1) Battery Test

Select the battery test and press OK key to continue:

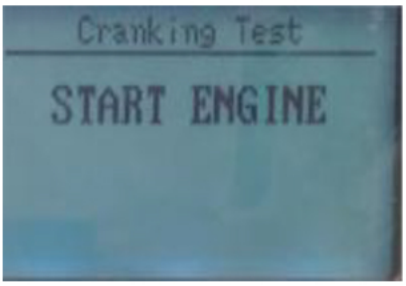
* Input testing standard: the standard which you can see the front of the battery, such as CCA, BCI, DIN. If you can't find any info about the standard, you can choose GB standard.
* Input rated capacity: you can see the starting current standards on the battery label, such as BCI/300A or CCA/550A.
* Then press OK key to start testing.

**NOTE**:

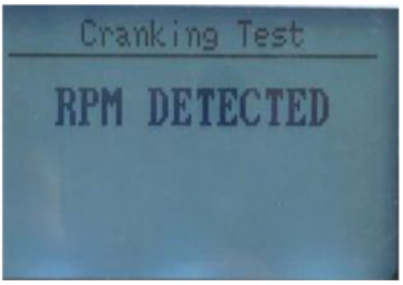
For deeply discharged batteries (the battery is not charged fully; such as a vehicle that sat for a long time, forgot to turn off the lights, etc...resulting in serious loss of battery power and the vehicle can not be started), in the actual testing process may be prompted to "Please replace the battery," for such batteries, please consult the battery manufacturers, recharge, and then retest.

## (2) Starting System Test

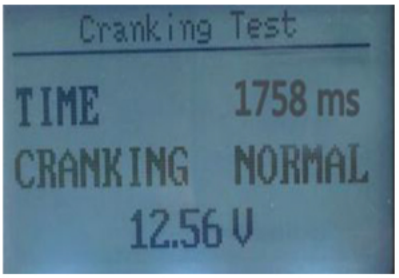
After entering the second start system test function, then press OK key as following:



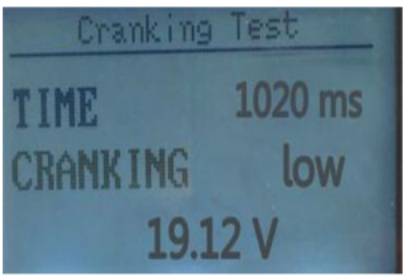

Starting the engine as prompted, tester will automatically complete the cranking test and display the result.




Battery cranking voltage value lower than 9.6V is considered as abnormal or low. Cranking voltage higher than 9.6V is considered OK or normal. Test results includes actual cranking voltage and actual cranking time



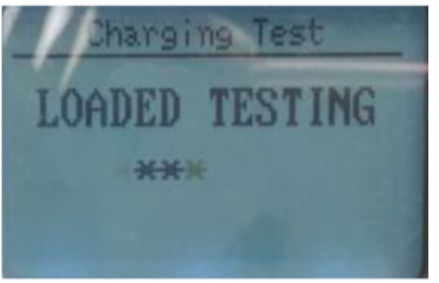

When cranking test is abnormal, battery test result will also be displayed at the same time.




This is for the convenience of the technician to quickly know the whole state of the starting system according to the displayed data.

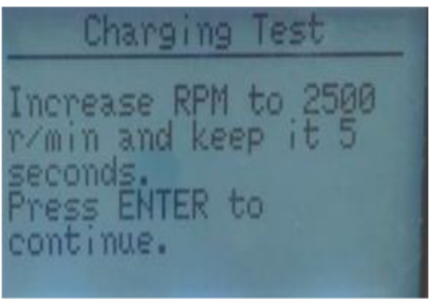
## (3) Charging System Test

When entering the charging test, tester will prompt “Loaded Testing”

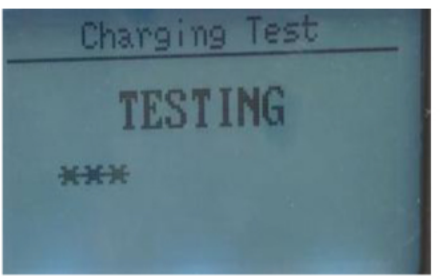



Note: Do not shut down the engine during the test. Ensure all electrical accessories and device are turned OFF. Turn on/off any electrical device in the vehicle during the test will affect the accuracy of the test result.

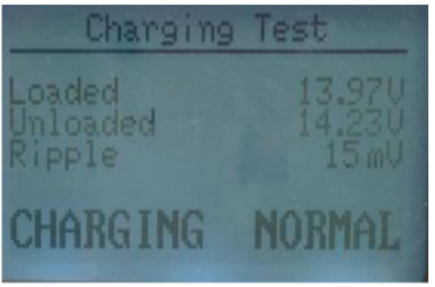
Follow the screen prompt and increase the engine rotating speed to 2500 RPM and hold the RPM for 5 seconds.




Tester automatically starts the charging volt test after the RPM increase is detected.




After the test is finished, the tester displays the effective charging volts, a diode ripple voltage test, and the overall charging test result.




**NOTE**: If no increase RPM detected, it may be the fault of generator regulator or connection with battery that has failed. The tester will try 3 times to further detect, if it still fails, it will skip the increase RPM detect and the test result displays "No Volt Output".

Check the connection between alternator and battery, then retest.

**Charging Test Result:**

1. Charging Volt: Normal
The alternator output normal, no problem detected.

2. Charging Volt: Low
Check drive belt of the alternator whether slip or running off. Check the connection between alternator and battery is normal or not. If both of the drive belt and the connection are in good condition, follow the manufacturer's suggestion to troubleshoot the alternator fault.

3. Charging Volt: High
Since most of the vehicle alternators are using internal voltage regulators, the entire alternator assembly has to be replaced. (Some old style cars are using external voltage regulators, then only replace the regulator.)
The normal high voltage of the voltage regulator is maximum 14.7 ± 0.5V. If charging voltage is too high, it will overcharge the battery and the battery life will be shortened.

4. No Volt Output:
No generator volt output is detected. Check the generator connection cable, the drive belt of generator and engine whether normal or not.

5. Diode Test:
Through the test of charging current ripple, tester will find out whether the diode is normal or not. When ripple volt is too high, it proves at least one diode is damaged. Check and replace the diode.

### (4) View Test Result

After entering the forth function, then press OK key you can view the final test result

### (5) Print Test Result

About Printing function, please contact with customer service

### (6) Select Language

After entering the language function, press up/down key to choose

Language options:
English, French, German, Spanish, Italian, Polish

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