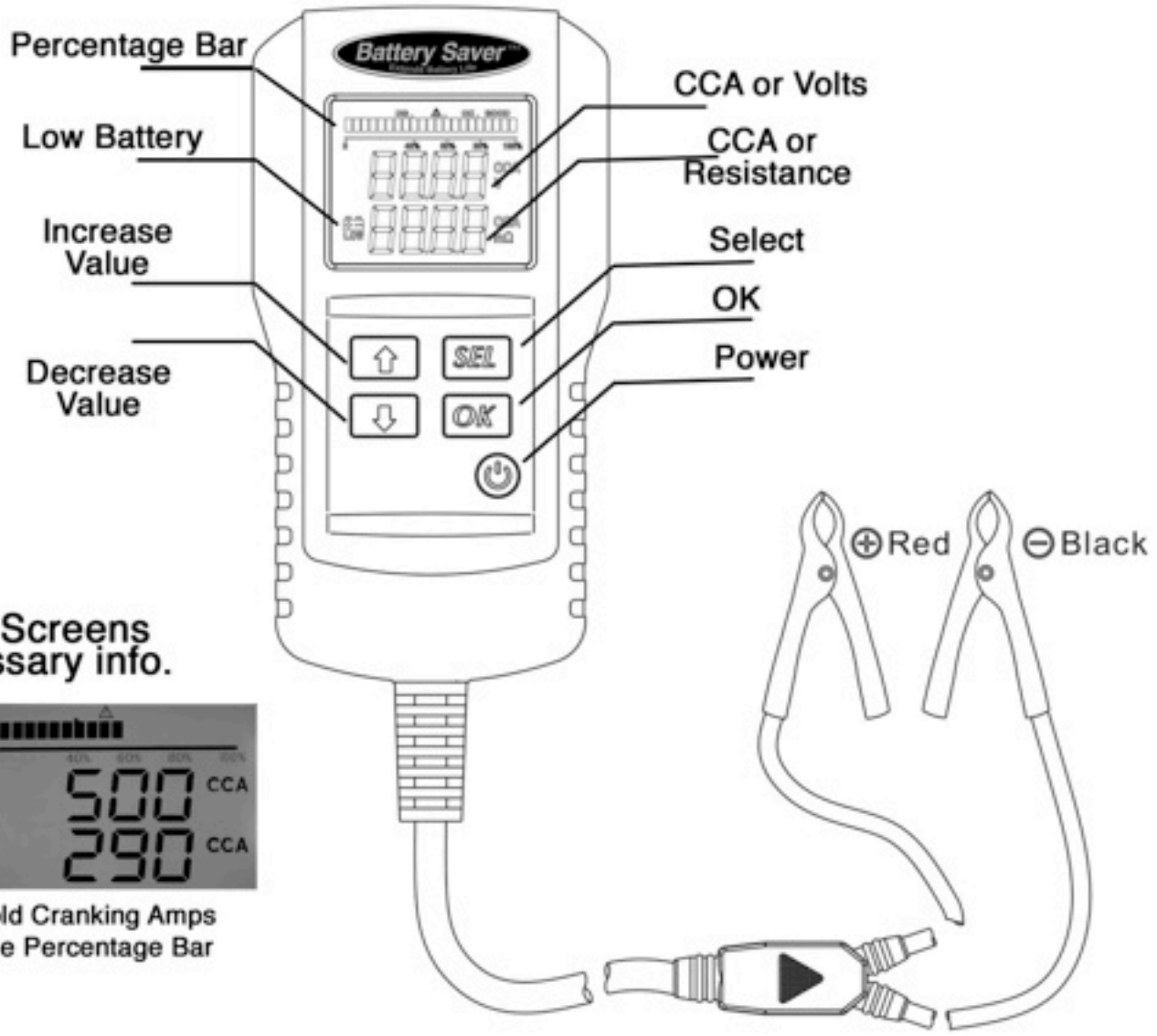
Battery Tester / Analyzer



Two Information Screens provide all necessary info.

Voltage - Ohms
Age Percentage Bar

Cold Cranking Amps
Age Percentage Bar

Operation:

1) First, charge the battery. If the battery voltage is too low an accurate reading is not possible. There is an indicator on the LCD display LOW that flashes if the voltage is too low.

2) If testing in the vehicle, disconnect at least one cable from the battery so that that the vehicle does not interfere with the test results.

3) Connect the Tester to the battery, (Red+) and (Black-) to corresponding battery terminals. The Alligator Clip-on Cables must have a good contact on both the top and bottom part of the clamp. The battery resistance is measured using a Four-Wire Inter-flow technique allowing for accurate reading of the internal battery impedance.

4) Press the Power ⏻ to start the tester sequence. Allow the sequence to cycle for a few seconds then press OK. Adjust the blinking CCA (cold cranking amps) to match the CCA of your battery. Information on this figure can be found on the battery itself or by typing in the model number on the Internet and finding it's value from the manufacturer.

Note: If the battery CCA numbers can't be found, the test can continue, but the Percentage Bar Graph will not be accurate. However, the true CCA that the battery is currently capable of will be accurate and indicative of the battery quality.

5) Press OK and the analyzer will start the test "On Test" stays on until the results are ready. The first results are the battery voltage and ohms. Press SEL and the preset CCA will be on the top line while the TRUE battery CCA will be on the bottom line. The Percentage Bar will also indication the battery strength and current capacity.

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Battery Saver™
Extends Battery Life

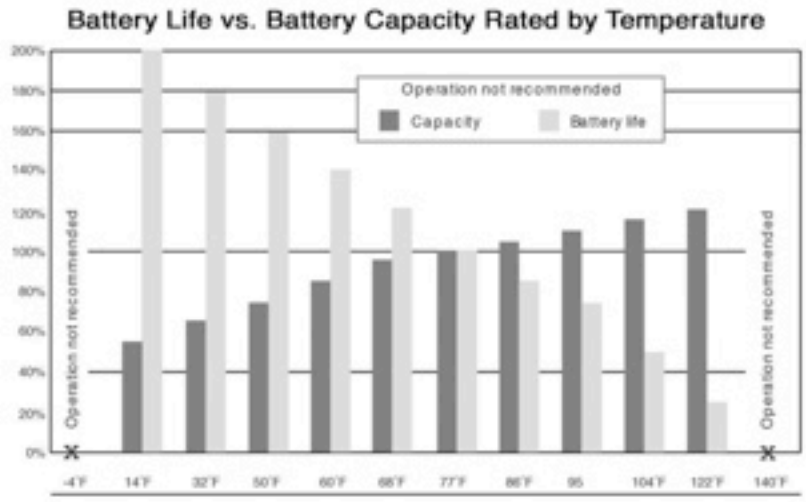
Battery Facts & Info.

CCA (Cold Cranking Amps)

One of the most important ways to rate Battery Capability is with CCA (Cold Cranking Amps). Each battery, as it comes from the manufacturer, has a CCA rating associated with it. As the battery gets older its CCA will go down until eventually the vehicle will not start and the battery needs replacing. The main reason for the CCA decrease is Battery Sulfation... the combining of the Sulfur from the Sulfuric Acid and the Lead from the Lead Plates. These two molecules combine to become Lead Sulfate and in most cases this eventually lowers the batteries capabilities until it is no longer usable. Because a battery is less efficient at lower temperatures the original value is derived from a test at 0°F. Basically the test lasts 30 seconds and ends when the battery reaches 7.2V. A small car battery might have a rating of 500CCA which means it held 500 amps for 30 seconds at 0°F before it hit 7.2V. So in testing the battery quality the reading that this Analyzer produces shows how much life you have left. For example, if you know the battery originally started with 500CCA and the test produces 250CCA your battery is about 50% depleted or Sulfated to that extent.

Why are cold batteries less efficient?

As batteries get colder their electrolyte fluidity deceases. The electron flow decreases and the battery does not produce the same amount of current for starting the vehicle. If you have less CCA then it's harder to get the vehicle started. Too low a figure and it won't turn over. This is why it's important to know the condition of the battery especially if the vehicle is going to be operated in cold weather.



As seen from the chart, as batteries get colder their ability to produce current diminishes. But as they warm, the ability to conduct electricity goes up. The opposite effect, Battery Life increase with colder weather while it's obvious that heat is one of the most common reasons for premature battery failure.

It is very important to keep the battery at full charge all the time, especially in extreme hot or cold weather. If batteries are to be stored they should be maintained with a high quality Battery Charger / Maintainer so that the sulfuric acid and water can prevent damage by not only being in a state of charge but also being mixed up properly. Both of these factors slow down the process of Sulfation and thus the battery will last longer.

What does AH (Amp Hours) mean?

AH (Amp Hours) is the common way of rating how much power a battery can store. Smaller batteries have lower AH rating while larger batteries have a higher rating. Some examples of this would be:

SMALL VEHICLES, Motorcycles, ATV, Snowmobiles, Jet Skis, Scooters... usually range from 10AH to 30AH

LARGE VEHICLES, Cars, Trucks, Boats... usually range from 40AH to 100AH

What the AH represents is the amount of energy the battery can store. A larger amount would give you more capacity to play a stereo, leave your lights on, or do anything else while the motor is off and the battery is not being charged. In vehicles such as golf carts the AH of the combined batteries can be 500AH to 1000AH. This large amount of storage energy allows the cart to drive all day where a lessor amount of AH would not.

AH are simple to calculated and the standard test lasts 20 hours. So lets say you have a 20AH battery. If you put a 1 Amp load on this battery it should stay above 10.5V for 20 hours. The simple math would be 20hours x 1Amp = 20AH. These tests are conducted at 80°F where the battery performance is not hindered by low temperatures.

Some batteries are rated in WH (Watt Hours). Watt Hours is simply the V x AH = WH. A 12V -- 20AH battery would be rated at 240WH. So if you see a battery rated in WH and you want to know the AH, simply divide that number by its voltage rating.

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