



**Deltran Battery Tender®**  
**12Volt / 6Volt**  
**Battery Tester/**  
**Charging System Analyzer**

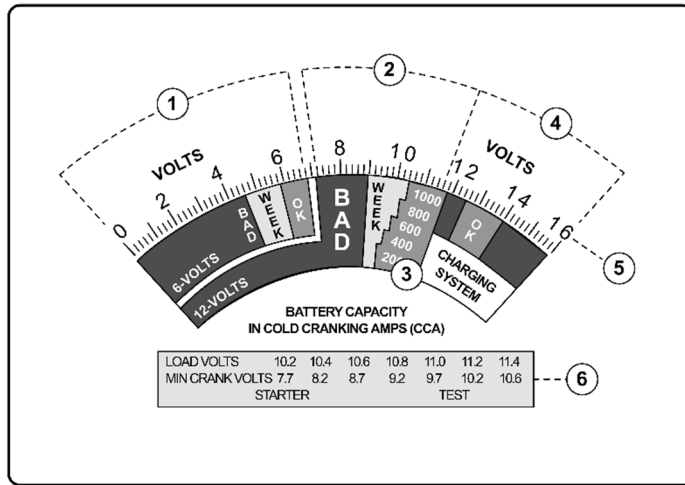
## IMPORTANT SAFETY INSTRUCTIONS

- 1) **SAVE THESE INSTRUCTIONS** – This manual contains important safety and operating instructions for battery tester model P/N 026-0020.
- 2) Do not expose to rain or snow.
- 3) Do not operate the tester with damaged cords or alligator clips.
- 4) Do not operate the tester if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.
- 5) Do not disassemble the tester; take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
- 6) This tester is NOT to be used by children.
- 7) **WARNING – RISK OF EXPLOSIVE GASES.**
  - a) **WORKING IN VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS.** BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT YOU FOLLOW THE INSTRUCTIONS EACH TIME YOU USE THE CHARGER.
  - b) Follow these instructions and those published by the battery manufacturer and manufacturer of any equipment you intend to use in vicinity of battery. Review cautionary marking on these products and on engine.
- 8) **WARNING – HOT METAL BATTERY TESTER HOUSING**
  - a) During regular operation the metal housing of the unit will get hot enough to **BURN SKIN** or cause **PROPERTY DAMAGE**. Always carry using the handle. The heat will not affect the performance of the tester.
- 9) **PERSONAL SAFETY PRECAUTIONS**
  - a) Consider having someone close enough by to come to your aid when you work near a lead-acid battery.
  - b) Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
  - c) Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.
  - d) If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.
  - e) NEVER smoke or allow a spark or flame in vicinity of battery or engine.
  - f) Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause explosion.
  - g) Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.
  - h) Use the tester in a well-ventilated area.
  - i) Determine voltage of battery by referring to vehicles owner's manual.

## USER INSTRUCTIONS



## METER



1. Range for 6 volt battery load testing
2. Range for 12 volt battery load testing
3. Cold cranking Amps range
4. Charging system test range
5. Voltage scale
6. Starter test voltage table.

### BATTERY TEST

#### IMPORTANT:

The first time you use your tester you will notice a little smoke and burning smell. This is normal and will stop after the short burn in period.

- a) Turn off the vehicle's ignition, any accessories or electrical loads.
- b) Clean the battery terminals so a good contact can be made.
- c) Attach the RED clip to the positive (POS+) battery terminal post.
- d) Attach the BLACK clip to the negative (NEG-) battery terminal post.

### 6V BATTERY RESULTS

- a) Read the meter and confirm the battery voltage needle is in the "OK" green section. (see METER illustration).
- b) Press and hold the load switch in the ON position for a maximum of 10 seconds while reading the meter at the same time. The needle should remain in the "OK" green section.
- c) If it does not do so then the battery is either week or bad.

### CAUTION

To prevent over heating let the tester cool for 5 minutes before performing any further testing with the load on.

### 12V BATTERY RESULTS

- a) Find the Cold Cranking Amps (CCA) range on the meter (see METER illustration) that matches the CCA rating of the battery being tested.
- b) Press and hold the load switch in the ON position for a maximum of 10 seconds while reading the meter at the same time.
- c) Then refer to Table 1 (below) or the label on the back of the tester.

### CAUTION

To prevent over heating let the tester cool for 5 minutes before performing any further testing with the load on.

TABLE 1	
12V LOAD TEST RESULTS	BATTERY CONDITION
Good (green)	The battery capacity is good. The battery still may or may not be fully charged. Check for an electrical drain or possible charging system issue. Recharge the battery to a full level.
Week or Bad. The needle remains steady in the yellow or red section.	The battery capacity is not satisfactory. The battery maybe either defective or not in a fully charged state. If charging the battery does not bring the battery to a full charge level, the battery should be replaced.
Week or Bad. The needle continues to fall in the yellow or red section.	The battery may be defective or very run down. Release the load switch and note the voltmeter reaction. If the voltage recovers to 12 volts or above within a few seconds this indicates a defective battery. A slow recovery indicates a run down battery.

## TESTING THE CHARGING SYSTEM

- a) Connect the tester to the battery.
- b) Make sure the tester and leads are clear of all moving parts.
- c) The charging section is located at the far-right side of the meter.
- d) Start the engine and run it at 1200 to 1500 rpm.
- e) The meter should be in the "OK" green section of the charging system scale with all electrical accessories off.
- f) With the headlights and fan motor on high the meter should remain in the "OK" green section.
- g) If the meter reads in the red section or outside the charging system zone, then there is an issue with the charging system. The alternator is most likely defective.

## STARTER MOTOR TEST

This test identifies excessive starter current draw, which can make starting difficult and shorten battery life. Perform the battery load test first to ensure the battery is in good condition. If the battery tests either weak or bad, then this test cannot be performed.

### NOTE

The engine must be at a normal operating temperature.

- a) Perform a basic load test. Note the exact voltage with the load test on (see meter diagram).
- b) Using the voltage obtained from the above, see table 2 (below) or the meter face to find the minimum cranking voltage listed. If the engine is less than 200 CID use the next higher minimum cranking voltage. For example, if the load voltage is 11.00, use 10.2 for the minimum cranking voltage instead of 9.7.
- c) If possible, disable the vehicle's ignition system so that it will not start. The test works best if the starter cranks for 2 to 5 seconds.
- d) Crank the engine and note the voltage reading during engine cranking.
- e) If the cranking voltage is below the minimum cranking voltage in Table 2 (below), the starter current draw is excessive. If the starter cranks slowly, check for high resistance or poor connections.

**TABLE 2**

**STARTER TEST VOLTAGE**

LOAD VOLTAGE	10.2	10.4	10.6	10.8	11.0	11.2	11.4
MINIMUM CRANKING VOLTAGE	7.7	8.2	8.7	9.2	9.7	10.2	10.6

## WARRANTY

**This product is covered by a  
1 Year general limited warranty**

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