



# BATTERY TESTER

## Part # 45107

### OPERATOR'S MANUAL

#### READ SAFETY INSTRUCTIONS

#### CAUTION: ALWAYS WEAR EYE PROTECTION

#### WARNING

A RISK OF EXPLOSIVE GASES is always present when in the presence of a battery. Lead Acid batteries generate explosive gases during normal operation, charging or testing. Always follow these instructions when operating the battery tester.

#### TO HELP PREVENT EXPLOSIONS:

1. Only charge or test batteries in a well ventilated area.
2. Use distilled water to add to each cell until battery acid reaches battery manufacture's specified level. Do not over-fill the battery. Do not charge or test a battery without cell caps. Carefully follow manufacturer's instructions.
3. Do not smoke or allow sparks or open flames near any battery which is being charged or tested. It is good practice not to smoke or allow sparks or open flames around any battery.
4. Always follow battery manufacturer's instructions.
5. Always turn off battery tester before connecting or disconnecting the tester to or from the battery.

**CAUTION:** Automotive batteries contain sulfuric acid, which can cause severe damage to skin, eyes, and clothing. When skin, eyes or clothing comes in contact with battery acid, perform the following:

1. If acid comes in contact with eyes: Force eyes open and flood with cool running water at least for 10 minutes, then contact a doctor. Do Not Use eye drops or other medication before contacting a doctor.
2. If acid comes in contact with skin: Remove contaminated clothing and run cool water over skin for at least 10 minutes.

During the battery charging or testing process, an explosive gas forms inside each of the batteries cells. This gas may escape through vent holes in the caps and create an explosive condition. If sparks or a flame ignites this gas it can burn back into the battery and cause the battery to explode. An explosion such as this is very dangerous and can cause the battery acid to be sprayed in to the surrounding area.

#### PERSONAL PRECAUTIONS:

1. When working near or testing a battery always wear complete protection: Approved Eye Protection, Approved Gloves and Protective Apron.
2. When working near or handling a battery always thoroughly wash hands before touching skin or eyes.

3. If acid contacts skin or clothing; remove clothing and wash skin immediately with soap and water.
4. If acid comes in contact with eye; flood eye with running cold water for at least 10 minutes and contact a doctor immediately. Do Not Use eye drops or other medication before contacting a doctor.
5. Do not smoke or allow sparks or open flames near any battery which is being charged or tested. It is good practice not to smoke or allow sparks or open flames around any battery.
6. Do not use tools near a battery that could cause a spark or could contact both positive and negative terminals at the same time causing a spark and short circuiting the battery.
7. Personal items such as rings, bracelets, necklaces, and watches which are metal should not be worn when working with a lead-acid battery. Metal jewelry which comes in contact with a lead acid battery can cause a short circuit resulting in a sever burn.
8. Acid from a lead acid battery can be neutralize with a solution of baking soda (1 pound per gallon of water) or household ammonia (1 pint per gallon of water)

#### **PRIOR TO TEST**

1. If removing battery for testing always follow vehicle manufacturer instructions and battery manufacturer instructions.
2. If testing battery in vehicle, remove battery cables following vehicle manufacturer instructions. Make sure vehicle engine is off.
3. Locate battery information: cold cranking amps (CCA) either on battery or vehicle manual.
4. Clean battery and battery terminals.
5. Check the battery for loose terminals or any cracks in the battery. **DO NOT TEST A BATTERY THAT HAS LOOSE TERMINALS OR CRACKS IN THE BATTERY CASE.**
6. Check the water level in the battery. Fill the battery to the manufacturers specified level using the battery manufacturer's instructions.
7. Do not test a battery that is frozen.

#### **BATTERY TESTER PLACEMENT**

- a) Place battery tester as far away from battery as battery tester cables allow.
- b) Place battery tester in location for maximum air flow through battery tester.

#### **WARNING:**

**THE BATTERY TESTER WILL BECOME VERY HOT DURING THE BATTERY TEST. DO NOT TOUCH THE BATTERY TESTER ANYWHERE EXCEPT THE HANDLE AND THE SWITCH.**

**AFTER THE BATTERY TEST, DO NOT PLACE THE BATTERY TESTER ON ANY SURFACE THAT HIGH HEAT CAN CAUSE TO CATCH FIRE OR CAUSE DAMAGE TO UNTIL THE BATTERY TESTER HAS COOLED.**

#### **BATTERY TESTING INSTRUCTIONS**

#### **BATTERY LOAD TEST**

**Note: The battery tester creates heat during a load test. The battery tester may produce odors. This is a normal occurrence.**

1. Turn off vehicle engine and all electrical accessories. Make sure battery tester switch is in the off position.
2. Connect the RED battery tester clamp to the POSITIVE (POS / + / P) battery post terminal and the BLACK

battery tester clamp to the NEGATIVE (NEG/ - / N) battery post terminal. Make sure the battery tester clamps make a good contact with the battery terminals.

3. The battery tester should now read the battery voltage. This reading will be found on the far right side of the meter face. If the battery reads over 12.4 volts for a 12 volt battery and 6.2 volts for a 6 volt battery proceed to the next step. If the battery reads less than 12.4 volts for a 12 volt battery and 6.2 volts for a 6 volt battery, the battery needs to be charged before testing. If the battery cannot be charged to the required voltage, 12.4 volts for a 12 volt battery and 6.2 volts for a 6 volt battery, the battery is defective. NOTE: If battery tester meter does not show voltage, check for loose connections.
4. Depress battery tester load switch for 10 seconds and read the battery tester meter.
5. At the end of 10 seconds read the meter and then release the battery tester load switch.
  - a. If battery tester pointer is pointing in the green zone the battery is good.
  - b. If the battery tester pointer is pointing in the red zone the battery is defective. Battery should be replaced.
  - c. If the battery tester pointer is in the yellow the battery may need to be charged or replaced. Recharge and retest. If battery tester pointer is still in the yellow zone, replace battery.
  - d. The Temperature has an effect on the battery reading. In low temperatures use the "Battery Load Test Temperature Compensation Chart" to determine the cold cranking amperage (CCA) of the battery.

### **Battery Load Test Temperature Compensation Chart**

Temperature under 50°F - reduce battery cold cranking Amp (CCA) rating by 50 (CCA)

Temperature under 30°F - reduce battery cold cranking Amp (CCA) rating by 200 (CCA)

Temperature under 20°F - reduce battery cold cranking Amp (CCA) rating by 300 (CCA)

Temperature under 0°F - reduce battery cold cranking Amp (CCA) rating by 400 (CCA)

**Multiple Tests:** This battery tester creates a large amount of heat while testing a battery. Before using the battery tester to test another battery allow enough time for the battery tester to cool down. This could be as long as 2 to 5 minutes. Not allowing the battery tester to cool down between tests will reduce the life expectancy of the battery tester and could damage it.

### **ALTERNATOR AND REGULATOR CHARGING TEST**

This test is for 12 volt batteries only.

1. Turn off vehicle engine and all electrical accessories. Make sure battery tester switch is in the off position.
2. Connect the RED battery tester clamp to the POSITIVE (POS / + / P) battery post terminal and the BLACK battery tester clamp to the NEGATIVE (NEG/ - / N) battery post terminal. Make sure the battery tester clamps make a good contact with the battery terminals.
3. The battery tester should now read the battery state of charge. This reading will be found on the far right side of the meter face. If the battery reads over 12.4 volts for a 12 volt battery and 6.2 volts for a 6 volt battery proceed to the next step. If the battery reads less than 12.4 volts for a 12 volt battery and 6.2 volts for a 6 volt battery, the battery needs to be charged before testing. If the battery cannot be charged to the required voltage, 12.4 volts for a 12 volt battery and 6.2 volts for a 6 volt battery, the battery is defective. NOTE: If battery tester meter does not show voltage, check for loose connections.
4. Make sure battery tester and cables are not near the fan belt or fan area.
5. Start the vehicle.
6. **DO NOT TURN ON THE BATTERY TESTER LOAD SWITCH.**
7. Read the battery tester voltage meter.

- a. If the battery tester pointer is in the green zone the charging system is ok.
- b. If the battery tester pointer is in the red zone the charging system is not operating correctly.
- c. If the battery tester pointer is in the red zone, turn off vehicle, diagnose battery charging problem.

