Lawn and Garden Batteries

New Battery Testing:

When checking the condition of a new battery prior to installation, ACDelco recommends only measuring open circuit voltage (OCV). ACDelco recommends a minimum installation OCV of 12.4 volts.

1. Batteries that fall below 12.4 volts should be recharged, prior to installation.
2. The battery should be tested with a known, good Digital Volt Ohm Meter (DVOM).
3. When testing side terminal or top stud batteries, always use Lead (Pb) terminal adapters. Make sure the terminal adapter makes good contact with the Lead pad of the battery or inaccurate readings will result. Basic hand tools may be needed to ensure the terminal is tight.
4. Never use steel bolts/nuts/washers, etc., when testing a side terminal battery.
5. Never clamp the tester’s leads directly to the threads when testing a top stud battery with a conductance tester.

Charging Instructions:

NOTE: Before charging a battery, visually inspect the battery. If there is any sign of damage or the battery is broken, replace the battery. If the battery appears to be in good condition follow the charging instructions below.

- Check the Open Circuit Voltage (OCV).
  - Test the battery with a Conductance Tester [used batteries only]
  - Three of the following results may occur: the battery is good, you may have to charge the battery and retest [you can follow the charging instructions below], or you may need to replace the battery. [This is on a battery that has been in service for a period of time.]

Fast charging at a high rate of current is not recommended; it may shorten battery life. Slow charging is preferred. General guidelines for charging ACDelco Batteries are given here:

1. Use terminal adapter tools when charging of testing stud or side-terminal batteries outside of the vehicle.
2. Connect charger leads to the terminal studs/nuts when charging or testing stud or side-terminal batteries in the vehicle.
3. Charge rates between three and 10 amps are acceptable as long as the battery charging voltage does not exceed 15.5 volts, the electrolyte doesn’t spew from the vent holes, or the battery does not feel excessively hot (>125°F). Estimate the battery temperature by feeling the case. Reduce the charging rate, as needed, to reduce electrolyte gassing or excessive heating.

4. Batteries under charge should be inspected every 2 hours, do not charge overnight. A confirmation OCV (open circuit voltage) can be performed 8 hours after charging and after the surface charge has been removed (30 second discharge at 300 amps; wait 30 seconds before measuring the OCV).
   - Once fully charged, charging must stop. *Do not leave battery on a continuous trickle charger.*

5. The time required for a proper charge will vary according to:
   - Battery size or capacity
   - Electrolyte temperature
   - State-of-charge
   - Battery age or condition
   - Charger capacity

**Checking Open Circuit Voltage:**

OCV may be used to estimate the battery state-of-charge. Observe the following guidelines:

- Use a voltmeter that has been verified as accurate. An inaccurate meter will give inaccurate results. The meter should read to the nearest 0.01 volts.

- When checking OCV, the vehicle engine and all current drains must be OFF. Any current flow into or out of the battery will cause an incorrect voltage reading.

- The battery must be stabilized before reading the OCV. If the battery has been charged or used in a vehicle in the past 12 hours, remove the surface charge (apply a 300amp load for 15 seconds). If the battery has just been discharged, allow at least 30 seconds for the voltage to stabilize, then read the OCV.
• Use the following table to estimate the state-of-charge based on the battery temperature:

<table>
<thead>
<tr>
<th>Stabilized OCV (Volts)</th>
<th>% Charge* at 0°C (32°F)</th>
<th>% Charge* at 25°C (75°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.75</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>12.70</td>
<td>100%</td>
<td>90%</td>
</tr>
<tr>
<td>12.60</td>
<td>90%</td>
<td>75%</td>
</tr>
<tr>
<td>12.45</td>
<td>75%</td>
<td>65%</td>
</tr>
<tr>
<td>12.20</td>
<td>65%</td>
<td>45%</td>
</tr>
</tbody>
</table>

*Estimates Only. Batteries vary ±10% by model.

• Keep batteries at 65% of full charge or higher. If the OCV falls below 12.4V, recharge the battery.

• IMPORTANT: When a battery needs charging, always charge it fully. If you don’t:
  β Retests with electronic testers may be inaccurate.
  β Full shelf life will not be available if returned to storage.