



## BATTERY ANALYSIS

### Field Testing: Process Steps

Battery testing is most effective as a diagnostic resource when employed at established scheduled intervals. When conducting field testing, it is your responsibility to ensure that inspection and test activities are deployed with maximum attention to **safe working practices and established test procedure norms.**

# Safety. First.

In today's renewable energy operating environment, condition-based battery management and routine field analysis practices have become the norm for assuring performance reliability and return-on-investment. System owners and users increasingly realize that storage battery and system analysis is a critical part of ensuring work is completed on-time and on-budget.

### AN EFFECTIVE BATTERY MANAGEMENT PROGRAM CAN:

1. Ensure equipment reliability
2. Reduce maintenance costs
3. Lower the total cost of battery ownership
4. Optimize warranty claim management
5. Build stronger customer relationships

Using the attached 3-Point test process, the Safety. First. battery inspection process simplifies battery inspection and testing while producing credible data that help guide equipment owners and users to the best decisions for their system. Periodic battery testing allows for battery data to be collected over the timeline of battery and system life that can be to provide insight about optimizing battery life and reliability while reducing maintenance costs.

Success begins when Crown Battery's authorized representatives are certified to conduct the testing activities described on the following page, and commit the initiative and resources that are necessary to deploy this program as a product management resource.

### Safety is Your Responsibility!

- Batteries produce hydrogen gas, which is highly flammable. Keep sparks, flames and cigarettes away from batteries at all times. Maintain good ventilation when working on or charging batteries.
- When working with batteries you need to wear proper protective gear such as safety glasses, protective foot-wear and gloves. Remove watches or jewelry and avoid causing sparks with tools.
- When handling lead-acid batteries, do not tip the product beyond a 45° angle in any direction. Keep vent caps tight and level before and after testing is complete. Do not operate or charge batteries without vent caps secured tightly to the battery.



### Battery Analysis Field Support

You can reach Crown Battery's Product Support Desk by telephone, 8:00 am - 4:30 pm North American Eastern Standard Time and via email:

**SLI Product Support Desk:**  
+1.419.334.7181 | ext. 50216  
+1.419.334.7124 Fax  
commercial@crownbattery.com



Authorized Crown Battery resellers can submit warranty claims to Crown Battery's SLI Product Support Desk via email or fax using the following inspection report. Reports must be submitted with all fields completed. It is the option of Crown Battery to request additional inspection details such as digital photos, manufacturing codes, electrolyte samples or to authorize the return of batteries to Crown Battery's factory for advanced inspection. Please refer to Crown Battery's Limited Warranty Policy for additional details.

# Safety First. Battery Test Report



### CUSTOMER, BATTERY & APPLICATION DETAILS:

|                   |   |                            |  |
|-------------------|---|----------------------------|--|
| Customer Name     |   | Place of Purchase          |  |
| Customer Location |   | Date of Purchase           |  |
| Phone Number      |   | System Installer           |  |
| Email Address     |   | Installer Phone Number     |  |
| Battery Model     |   | Battery Quantity Installed |  |
| System Voltage    | <input type="checkbox"/> 12 V <input type="checkbox"/> 24 V <input type="checkbox"/> 36 V <input type="checkbox"/> 48 V | Date of Installation       |  |

### RE SYSTEM INFORMATION:

RE System / Inverter Energy Generation Capacity (Watts)  
 Back Up Generator Energy Generation Capacity (Watts)  
 Absorption Voltage Setting  
 Equalization Voltage Setting  
 Float Voltage Setting

Absorption Time Setting  
 Equalization Time Setting  
 Equalization Frequency

Low Voltage Battery Cut Out Setting

Generator Start Voltage Setting

### PHYSICAL INSPECTION

#### Electrolyte Condition:

- Good
- Exposed Plates
- Overfilled
- Discolored

### BATTERY TEST RESULTS:

#### Record Battery Date Code Information & Open Circuit Voltage After Charging Service

Battery location starting at the positive cable connection to the machine, traveling from left-to-right, to the machine's negative cable.

| Battery Position | Battery 1 | Battery 2 | Battery 3 | Battery 4 | Battery 5 | Battery 6 | Battery 7 | Battery 8 |
|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Date Code        |           |           |           |           |           |           |           |           |
| Voltage          |           |           |           |           |           |           |           |           |

If fluid levels are insufficient to secure valid readings, add distilled water to just above the top of battery plates and recharge batteries. Record Hydrometer Specific Gravity ("S.G.") readings after charging service is completed. Battery location starting at the positive cable connection to the machine, traveling from left-to-right, to the machine's negative cable.

| Battery Position | Battery 1 | Battery 2 | Battery 3 | Battery 4 | Battery 5 | Battery 6 | Battery 7 | Battery 8 |
|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Cell No. 1 S.G.  |           |           |           |           |           |           |           |           |
| Cell No. 2 S.G.  |           |           |           |           |           |           |           |           |
| Cell No. 3 S.G.  |           |           |           |           |           |           |           |           |
| Cell No. 4 S.G.  |           |           |           |           |           |           |           |           |
| Cell No. 5 S.G.  |           |           |           |           |           |           |           |           |
| Cell No. 6 S.G.  |           |           |           |           |           |           |           |           |

*Test set batteries showing Specific Gravity below 1.250 batteries are undercharged and must be recharged to ensure an effective inspection. Batteries subjected to repeated undercharge may require multiple charge / discharge cycles to recover.*