Safety. First.

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**.

In today's EV & battery-powered mobile equipment operating environment, condition-based battery management and routine field analysis practices have become the norm for assuring performance reliability and return-on-investment. Equipment owners and users increasingly realize that deep cycle battery and charger 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 operations. Periodic battery testing allows for battery data to be collected over the timeline of battery and machine life that can be to provide insight about optimizing battery life and reliability while reducing maintenance costs.

Success begins when Crown Battery's commercial partners are certified to conduct the field testing 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

The Power Behind Performance

CROWN® DEEP CYCLE BATTERIES

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.

Deep Cycle Battery

Safety.First. Battery Test Report

The Power Behind Performance

CROWN® BATTERY SINCE 1926

CUSTOMER, BATTERY & APPLICATION DETAILS:

Customer Name	
Customer Location	
Phone Number	
Email Address	
Battery Model	
System Voltage	❑ 12 V ❑ 24 V ❑ 36 V ❑ 48 V

Application / Machine	
Machine Model Number	
Battery Charger Make / Model	
Charger Algorithm / Setting	
Battery Quantity Installed	
Date of Installation	

PHYSICAL INSPECTION DETAILS:

Terminal Condition:	Cable Condition:	Battery Container:	Electrolyte Condition:	Compartment Condition:
❑ Good	❑ Clean	❑ Good	❑ Good	❑ Clean
❑ Corrosion	❑ Corrosion	❑ Cracked	❑ Exposed Plates	❑ Dirty
❑ Melted	❑ Loose	❑ Punctured	❑ Overfilled	❑ Wet
❑ Broken / Over-Torque	❑ Broken / Torn	❑ Side Wall Bulging	❑ Discolored	

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
Date Code						
Voltage						

HYDROMETER TEST:

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
Cell No. 1 S.G.						
Cell No. 2 S.G.						
Cell No. 3 S.G.						
Cell No. 4 S.G. *(8 & 12 Volt Only)*						
Cell No. 5 S.G. *(12 Volt Only)*						
Cell No. 6 S.G. *(12 Volt Only)*						

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.

DISCHARGE / LOAD TEST:

Discharge Current:

Note: Conduct load test at a discharge current equal to the battery C/20 rating. (Example: CR-220 at 220 amps for 15 - 30 seconds.)

Battery Position	Battery 1	Battery 2	Battery 3	Battery 4	Battery 5	Battery 6
Voltage Under Load						

If available, use a 36 Volt / 75 Amp or 48 Volt / 56 Amp battery discharge tester	Discharge Minutes:	Electrolyte Temperature:

Printed in the U.S.A.
Form No. DC-TestRpt-B0615