

The Power Behind Performance



## Limited Warranty Policy CROWN BATTERY

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### Renewable Energy ~ Energy Storage Applications

#### Embassy SLA Batteries

Valve Regulated Lead Acid Batteries: 1 Year Full Warranty Guaranty

#### Crown Deep Cycle Batteries

AGM & Flooded Lead Acid Construction: 2 Year Full Warranty Guaranty

#### Crown CRP 2-Volt Power Modules

Flooded Lead Acid Construction: 4 Year Full Warranty Guaranty

- 1. Scope of Limited Warranty:** Free Replacement Period: All Crown batteries are warranted to the original purchaser to be free from defects in material and workmanship. Any battery which demonstrates a defect in material and workmanship (discharged or sulfated batteries do not apply) within a Free Replacement Period specified by Crown Battery Manufacturing Company will be replaced or repaired at the option of Crown Battery, free of charge, except for the cost of transportation of the battery. The Free Replacement Period begins to run at the time of purchase. If the original receipt of purchase is not available, the Free Replacement Period will be based on Crown Battery's date code on the subject battery. There will be no Free Replacement Period for batteries for which the proof of purchase is more than six months after Crown Battery's date code on the subject battery. Batteries that are repaired or replaced during the Free Replacement Period will be warranted only for the remainder of the original Free Replacement Period. This limited warranty is non-transferrable.
- 2. Limitations:** In all sales other than direct retail sales by the seller of batteries considered to be consumer products to individual consumers, the foregoing warranty is in lieu of all other warranties not expressly set forth herein, whether express, implied or statutory, including those of merchantability or fitness for a particular purpose. The seller's liability for breach of this warranty or for any other purpose is limited, at seller's option, to the replacement of the battery or a refund of the purchase price of the battery. In any event, the seller's maximum liability shall be limited to the refund of the price paid for the battery. The seller is not responsible for any indirect, special, incidental or consequential costs, including any expenses for installation, electrical systems tests, charging a battery or loss of time. Please note: some states do not allow limitation on how long an implied warranty lasts, or exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This limited warranty gives you specific legal rights and you may have other rights that vary from state to state.
- 3. Exclusions:** The limited warranty does not apply to batteries that are only discharged, have broken containers, covers or damaged terminals, have battery vents that are broken or tampered with in any way, have been frozen, overcharged or sulfated, are operated with daily duty cycles greater than 50% of rated capacity, or when evidence of neglect or abuse is present. The warranty does not apply if Crown Battery's proprietary manufacturing code markings have been tampered with or destroyed, if the battery is used in applications for which it is not designed, or if it was installed or charged in reverse. The limited warranty does not apply to batteries sold more than six months after Crown Battery's date code on the subject battery. Batteries must not be used to power electrical loads that are unaccounted for by the battery charging system, and such use will void the warranty.
- 4. Warranty Service:** Report the suspect battery and the original receipt of purchase to the Advantage Batteries Store or their authorized representative. Advantage Batteries Store will administer the warranty claim through Crown Battery's Product Support Group.



## 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"/> 12V <input type="checkbox"/> 24V <input type="checkbox"/> 36V <input type="checkbox"/> 48V	Date of Installation	

## RE SYSTEM INFORMATION:

## PHYSICAL INSPECTION

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

**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.*