

## Currie Technologies

### Technical Bulletin

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### Re: Taking Care of your Batteries (Li-Ion and SLA batteries)

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Proper maintenance of batteries will maximize their lifespan and capacity. Currie Technologies® warranties your new batteries from the date of purchase only if properly cared for—refer to the limited warranty for details.

Currie uses SLA (Sealed Lead Acid) or Li-Ion (Lithium Ion) batteries in all of our hybrid electric bicycles and scooters. These are both very user-friendly types of batteries when cared for properly.

#### Care

Even with proper care, rechargeable batteries do not last forever. Every time the battery is discharged and subsequently recharged, its relative capacity decreases by a small percentage. You can maximize the life of your battery by following the instructions in this guide.

- Batteries should be fully charged immediately when they are received for the full recommended charge times.

**SLA recommended charge time:** 6-10 hours (depending on model)

**Li-Ion recommended charge time:** 4-6 hours. For a complete, 100% charge, leave the battery on the charger for one full hour after the charger indicator light turns green.

- Never charge batteries for longer than 24 hours.
- SLA and Li-Ion batteries do not have a “memory.” Partial discharge/charge cycles will not harm the batteries’ capacity or performance.
- The rated output capacity of a battery is measured at 77°F (25°C). Any variation in this temperature will alter the performance of the battery, and shorten its expected life. High temperatures especially reduce overall battery life & run time.
- Currie bikes and scooters are equipped with a five-minute sleep function. If no activity is detected after five minutes, the bike/scooter will go into “stasis” mode to conserve battery power. Simply cycle the bike/scooter off then on again to re-activate the battery.
- Always be sure to turn the bike/scooter power switch to “OFF” after each use. If you leave the power switch in the “ON” position, or your product has not been charged for a long period of time, the batteries may reach a stage at which they will no longer hold a charge.
- Be friendly to the environment! Be sure to recycle your old batteries at a local battery-recycling center. Do not throw them in the garbage! Check [www.call2recycle.org](http://www.call2recycle.org) for more information on free battery dropoff locations.

## Storage

### **When storing your batteries for a long period of time (longer than two months):**

- Charge your batteries every 90 days to avoid capacity loss. Batteries slowly self-discharge when left unused for a long period of time; if the battery cells are allowed to reach a critically low voltage, their lifespan and capacity will be permanently reduced.
- Always disconnect your charger from the wall outlet and battery before storing the battery.
- Avoid storing your batteries in extreme temperatures, whether hot or cold.
- Batteries are best kept in a cool, dry place. Do not allow batteries to accumulate condensation, as this could cause shorting or corrosion.
- The recommended storage temperature for both SLA and Li-Ion batteries is between 32-77 °F (0-25°C).
- Avoid exposing the battery to extreme heat (104°F or higher) for long periods of time.

## FAQ

### **Q: Do I need to “break-in” my batteries?**

A: Yes, it is recommended that you perform a “break-in” cycle consisting of ~ three discharge/charge cycles to allow your batteries to reach optimum performance. This involves three complete discharges and three complete recharges. After this initial “break-in” cycle the batteries will have maximum possible performance and less line voltage fluctuations under load.

### **Q: Is it normal that the batteries get warm when recharging?**

A: Yes, it is normal that the batteries will become warm to the touch during the recharging process. This is because the increase of internal resistance and less energy conversion efficiency from electric energy to chemical energy.

### **Q: How long will my batteries last before needing replacement?**

A: Average battery life depends on use and conditions. Even with proper care, rechargeable batteries do not last forever. Conservatively, an SLA battery will come to the end of its useful life after ~200 full discharge/charge cycles, while Li-Ion batteries will last about 500 cycles. A partial charge/discharge counts fractionally against those numbers; running the battery down halfway then recharging it completely uses up one half of a charge cycle.

“End of useful life” refers to the point at which a battery can no longer supply 80% of its original rated capacity in ampere-hours. After this point, the aging process will accelerate and the battery will need to be replaced.