



## Care tips for ebike batteries

Lithium batteries are really excellent devices for storing large amounts of energy and if looked after properly will last a very long time. These tips will help you care for your battery and avoid expensive replacement.

### 1. Keep your lithium battery charged

Lithium batteries are generally best kept fully charged, even after journeys of just a few miles. Completely discharging a lithium battery regularly will significantly reduce its ability to hold a charge, diminishing its capacity. If you do "flatten" your battery fully recharge it as soon as possible.

### 2. Keep your electric bike battery clean and dry

There is little danger from a wet battery and ours are designed to cope with riding in the rain. Contacts on the battery should be dried to avoid oxidation and corrosion which would weaken the ability of the battery to power the bike. Check the contacts every few months and clean if necessary. You could use emery cloth if there is any corrosion.

### 3. Keep your lithium batteries cool

The lithium powder inside the battery cells decreases its electrical resistance as it warms up. This means that in warmer conditions your battery will discharge more quickly and will need charging more often.

You should notice that on cold days your bike will travel less far and this is due to this same property of lithium powder its resistance increases with colder conditions. This means that you will travel further on warmer days. A lithium battery is best stored in cold conditions where its internal resistance is greatest and will remain fully charged for longer. Camera batteries made of lithium are often recommended by manufacturers to be stored in the fridge to prolong their life. This isn't as easy with ebike batteries! Store your ebike battery in as cold a place as possible.

While storing batteries in cool conditions is good, always remember to warm the battery to room temperature before charging, charging from frozen can damage the battery.

### 4. Plan for longterm storage of your electric bike

If you know you will not be using your battery for a few months then it is wise to take some extra precautions: The rate at which a lithium battery self-discharges (goes flat) is highest when fully charged and lowest when almost flat. So over a long time your battery will loose

capacity least by being partly discharged. However almost flattening a battery we know is a bad thing to do. A compromise that reduces the loss of capacity over time, yet still preserves the battery, is to store it at about 80% charge. You can estimate this by riding your ebike for about 20% of the normal full charge time or distance.

It's best then to store the battery in the coldest convenient place you can find and then, if possible, give short charges every 5 to 10 weeks.

#### **5. Never open an electric bicycle battery**

There is absolutely no point in opening your ebike battery to examine and repair the contents. Opening a lithium battery would be very dangerous! Lithium powder is extremely flammable and will combust on contact with oxygen, explosively!

If you suspect your battery is faulty or has lost its capacity you will have to return it for testing and then possible repair.

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