



LIFE ON WHEELS

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Guide to Bosch eBike Battery Care

1. What is special about lithium-ion batteries?

Lithium-ion batteries are among the most up-to-date and common eBike batteries available. Thanks to their high energy density they can store more energy and are relatively light in weight. Bosch only use lithium-ion technology for all our Bosch eBike batteries (their PowerPacks). Bosch batteries weigh about two and a half kilograms and are among the lightest on the market. They also have the highest energy density.

2. How long does a battery last?

Lithium-ion batteries are not only light; they also have a long service life. Bosch PowerPacks are designed for many tours, distances and years of use. The smart electronic Bosch battery management system protects lithium-ion batteries from too high temperatures, overloading and deep discharging. A precise life span is impossible to forecast, however. The battery's service life will depend mainly on the nature and duration of the stress to which it is subjected.

3. How can you influence the service life?

To get the longest service life out of a battery eBikers need only to follow a few simple rules in respect of protection, transport and storage. They include storing the battery in a dry environment and protecting it from direct sunlight at a room temperature of around 15° to 20°C. The ideal charging level for a battery is between 30% and 60%. Ideally, the battery should be recharged at room temperature. When transporting an eBike it is important to remove the battery from the bike and store it safely in the car.

4. How long does it take to charge a battery?

The charging time depends on the battery's capacity. Using the standard charger, the PowerPack 300 takes about an hour to half-charge, the PowerPack 400 about an hour and a half and the PowerPack 500 around two hours. A totally flat PowerPack 300 takes two and a half hours to fully recharge, a PowerPack 400 three and a half and a PowerPack 500 four and a half hours.

5. How far can you travel on one battery?

Which factors affect the battery's range? For many eBikers these are crucial questions to which there are, however, no generally valid answers. The answer can differ enormously – from less than 20 to well over 100 kilometers on a full battery charge. Many different factors affect the range. They include the assistance level, cycling behaviour, air resistance, the cyclist's weight, tire pressure and, of course, the terrain. What are the ground conditions? Am I cycling on a paved road, a farm track or a forest trail? Does my route include ascents or consist solely of flat and open country? All of these factors influence the battery range. If you are planning a tour, a visit to www.bosch-ebike.com is highly recommended. The website includes a [range assistant](#) that takes the different factors into account and gives you an idea of how far you can expect to travel in the conditions that you specify.

6. What precautions should be taken in winter?

A general rule is that cold weather reduces battery performance. That is why, in winter at below-zero temperatures, it is advisable to wait until just before you set out before attaching your eBike battery (charged and stored at room temperature). If you have not used the eBike for quite a while – in winter, for example – the battery should be stored in an environment that is dry and cool at about 30% to 60% of its charge capacity.

7. Cleaning the battery?

A pressure washer is not suitable for cleaning an eBike, especially its electronic components. We recommend wiping the battery with a damp cloth. Do not use strong detergents that might affect the surface and **always remove the battery before cleaning the eBike**. Its plug connectors should also be cleaned and lightly greased from time to time.

8. How are batteries best charged?

PowerPacks with their lithium-ion cells can be charged for as short a period as you like irrespective of their charge status. The PowerPacks integrated battery management system, combined with a Bosch charger, protects the battery from overload when charging. Interrupting the charging process does the battery no harm. An important point to bear in mind is that eBike batteries should only be charged with the right charger because irreparable damage might otherwise result and warranty or guarantee claims might become invalid.

9. How often can a battery be recharged?

Even after 500 full charges the battery will still retain a high capacity. 60 to 70% of the original capacity will then still be available. In an ADAC (central testing facility of the European automobile clubs) test carried out in autumn 2015 a Bosch eBike battery was fully discharged and recharged 1,515 times before it retained only 30% of its original capacity and was no longer of any real use. This means that the battery would have been sufficient for up to 57,000 kilometers – or one and a half times round the globe.

10. Where can batteries be repaired?

High-quality lithium-ion batteries like the Bosch PowerPacks are complex, finely-tuned systems the repair of which requires special expertise and elaborate production facilities. That is why a defective battery must in nearly all cases be replaced. We recommend the following procedure. First, let Life on Wheels check whether the battery really is defective or has, for instance, a fault in its electronics. That is something we can check using the battery management system and the diagnostic tool. If the battery is defective, we will dispose of it with due regard for all safety regulations.

11. How do you dispose of an old battery?

Life on Wheels will ensure that a Bosch PowerPack is disposed of in an environmentally sound way, free of charge. Please return your old PowerPacks to Life on Wheels.