



# ZuGo E-bike Battery Storage Best Practices

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Winter approaches, you can feel that icy wind against your knuckles as you ride your ZuGo back into the garage.

You fear that might be the last ride of the season, but you know spring will come, and your trusty ZuGo will be waiting.

But what about your electric bike battery?

It's essential to properly store your ZuGo battery over long periods of time when not in use.

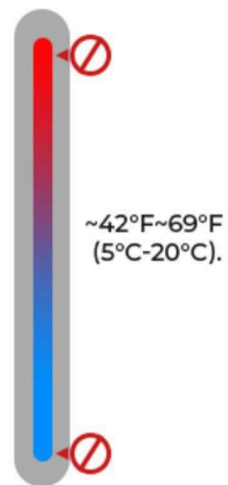
## **Understanding your e-bike's battery**

A primary feature of your **electric bike** is its removable lithium battery, which can be either a 15Ah or 21Ah battery. On the larger size — which offers one of the best e-bike battery types out there — you may be able to ride up to 90 miles on one charge! That allows for a long trip — and return journey — without charging your e-bike.

## **How to store the e-bike battery?**

Proper storage of lithium-ion batteries is becoming more common as more devices use them, and your bike is no different!

You know the phrase "if you're cold, they're cold" when it comes to your pet? The same is true for your ZuGo battery! We frequently tell our customers to treat their batteries like a puppy. Never keep them somewhere too hot or cold.



Thankfully, Rhino was designed to have the battery pop right out, so you don't have to keep it stored in the same location as the bike itself!

**The ideal temperature for your battery is around ~42°F~69°F (5°C-20°C).**

ZuGo electric bike battery charging level

Did you know the ideal percentage for storing your e-bike battery is 40-50% [two - three bars on your display]?



Lithium-ion batteries self-discharge, so storing the battery at 40%-50% (approximately 3.8 volts per cell) for an extended period of time is critical. Over-discharging the battery during storage causes an irreversible capacity loss or copper shunts to form on your anodes.

Contrary to what many people believe, do NOT store the battery at a full charge over the winter! Doing so can be very stressful on the lithium-ion and will most likely cause issues when brought back out. Overcharging your battery causes your cathodes to decompose over time.

It almost sounds like the battery is a Goldilocks, on the hunt for everything that's "just right"!

A lithium-ion battery will self-discharge about 5% in the first 24 hours after being charged and then an additional 1-2% per month.

We don't want to see your battery go into winter hibernation and never rise again for the spring -- your battery cells should never fall below 2 volts per cell (about 15% battery)

We recommend you try and plan your last ZuGo ride for the season if you are the kind of rider to put their bike away for the winter.



After your battery has reached 3 bars on the display (in its resting state, not under motor load), we suggest riding around another, say 5 miles, to drain the battery a little more before putting it away. This should put you in about the ideal voltage per cell for the winter.

## Check your e-bike battery periodically

It's always good practice to check on your ZuGo e-bike battery periodically over its long-term storage.

If possible, slide it into your electric bike and make sure it still powers up and the battery percentage is where it should be. This can help catch problems on the battery before anything gets any worse!

If you're storing your battery for a long time, you might need to top off the battery cells occasionally if you notice the "number of bars" falls too low!

Temperatures outside of the ideal range of ~42°F~69°F (5°C-20°C) will reduce the e-bike battery life as the battery self-discharges. This means you will get fewer miles per ride out of your bike per charge, so please make sure you take these words seriously!

Lithium-ion batteries can be stored for up to 10 years without significantly impacting their capacity if properly cared for!

## **Using a Bike Supercharger**

Even with the best e-bike battery, you are going to need to charge it eventually. That is where our bike supercharger comes in. This essential accessory allows for super-fast charging for your bike's battery, ensuring you can be back out on the road



in no time. The ZuGo supercharger kit comes with a 48V 5A lithium-ion battery charger, requiring a 110V AC input. Using the bike supercharger, you can charge a standard ZuGo battery in less than three hours, and a long-range battery in less than four!



Conclusion

If you've made it this far, you must care for your battery as much as we do. There, there are more tips for caring for your battery long-term to try and maximize the battery it's life. We recommend you look into the ever-expanding world of knowledge on lithium-ion batteries to help protect your investments. Additionally, you may be interested to find out [how to care for your e-bikes if you live on the coasts](#).

We hope to see everyone out and riding whenever they see fit, be it during the winter or if they need to wait for spring, until then.

A happy Rhino is a happy rider.