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Use recommendations for kits and batteries

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12.4 Use of the connections of the aluminium-cased batteries

The **connections** located at the back of the battery are **sensitive to the vibrations caused during the cycling.** A bad contact can damaged the male and female plugs.

It is very easy to replace the plugs but there is a risk of immobilising the bike and this **type of operation on wear and tear pieces is not covered by the contractual warranty.**

Female plug

(Spread the 2 metallic pins like this)

Female plug with tape

(or heat shrink tube)

To avoid immobilising the bike, we recommend the following :

- **Turn the power off** before connecting the plug, to avoif electric ars (*it is normal, the controller charges its condensers)*
- **Lightly spread the pins** (left and right) of the female plug to improve the contact with the male plug
- **Put some tape around the female plug** to improve the contact with the male plug

12.5 Charging the aluminium-cased batteries

- Disconnect the battery from the controller (from the kit)
- **Put the power on** as if your were going to use the battery
- Connect the charger on the battery
- Connect the charger on the mains (220v)
- Let it charge for 6 to 8hours (depending on the battery)

13 Contractual warranty

The contractual warranty does not cover the failures linked to a non-conform use of the products : competition, research, modifications of the kit (controller, motor …), use with no pedalling assistance (as a motorbike or scooter), use forced uphill, bad manipulation of the cables, inversion of the polarity...

The contractual warranty does not cover the failures linked to a non-conform use of the products as described in this guide, in our general terms and conditions (http://en.cycloboost.com/general-terms-and-conditions-of-sale/) as well as in our use guides (http://en.cycloboost.com/installation-kit-pour-velo-electrique/).

12.3 Important recommendations

- Do not cover the battery during the charge
- Do not store nor charge the battery next to inflammable products
- Do not put the battery in water
- Do not wash the battery with water
- Respect the running in of the battery
- Do not clean with chemical products
- Do not open the battery (the warranty is cancelled if it is opened)
- Do not remove the warranty labels (the warranty is cancelled if they are removed)
- Do not expose the battery to the sun or the cold
- Do not store the battery outside or in a damp space
- Protect the battery if it rains
- Protect the battery from watter spatters
- Do not carry the bike at the back of the car without a protection

The intensive use of the batteries (use in the mountain, uphill, at maximum speed) puts much constraints on the electronics. Cycloboost disclaims all responsibility in case of overheating or degradation of the functionning of the kit and the battery.

1 Presentation

Each of our products (kit & battery) **has been entirely tested with all accessories before the delivery**, to ensure a perfect functionning,

The use guides are available at the following link:

http://en.cycloboost.com/installation-kit-pour-velo-electrique/

The general explanations about the functionning of our products (FAQ) is available here :

http://en.cycloboost.com/functionning-electric-bike-kit/

2 Support

If you have any questions about the functionning, the assembly, the use … You can contact us directly from your personal space (After Sales Service) on our website and by e-mail support@cycloboost.com with the following information :

- Name
- Invoice number
- Series numbers on the products
- Your phone number so we can call you back
- A factual description of the problems
- Pictures, if necessary, to understand your request

3 How to use the Cycloboost kit

3.1 Important use recommendation of the kit :

An electric bike is a bike, it is the **association** of the **muscular strength** AND **the electric power** which enables to get a better output of the motor and a **good use.**

We strongly recommend to **pedal** when you use your bike on flat roads, but most of all **at the start** or when you **go uphill.**

The electric motor kits must not be used as scooters : **pedal regularly, choose the right battery and the right transmission (gears), the right speed** for your kit to function perfectly.

For little scooters, we recommend to push with the leg to help the motor in difficult situations and at the start.

If the kit is under too much strain, there is a risk of permanently damaging the electronics of the kit of the battery.

3.2 Handling the gears

To get the best output of the motor and to avoid overheating the electronics from your kit, **you need to adapt the transmission to your speed** and avoid crossing the chains.

If you pedal too quickly(>100 rpm), you will increase your heartbeat and get out of breath, you need to choose a little sprocket.

On the contrary, if you overdo it and do not pedal quickly enough, you will get tired and block your muscles, you need to choose a bigger sprocket.

A few examples :

- On flat roads, at 25km/h, the best choice is the 44 prongs chainwheel and the 21 prongs cogwheel.
- On a 20% hill at 10km/h, the best choice is the 32 prongs chainwheel and the 32 prongs cogwheel.
- On flat roads (closed track) at 40km/h, the best choice is the 44 prongs chainwheel and the 12 prongs cogwheel.

We precisely detail how to deal with the gears in chapter 4.

3.3 A few tips on the gears and chainwheels

IMPORTANT

You must not push strongly on the pedals when you change the gears or chainwheels : you need to **anticipate and change gears or chainwheels** before using **all your strength.**

Pedal smoothly without forcing and when the speed or the chainwheel has passed **you can pedal normally again**.

The passage of the gears and the chainwheels must always be done smoothly, **with no noise and no crack**.

If it is not the case, **you must practice** on flat roads at reduced speed (between 10 and 20km/h), it is easier.

3.4 How to avoid overheating the motor :

A motor turns correctly when it **makes very little noise.** If the motor **makes a sharp or low sound,** it means it is overdoing it : you need to **adapt the speed, the assistance and the transmission** to the situation.

You must not try to keep the same speed on flat roads and uphill as there is a risk of consumming too much energy **without feeling it and the motor will overheat.**

With a little practice, you will easily find the good combination and quickly enjoy driving.

Important : you must not force the motor uselessly. If you can not go uphill even when you are pedalling, you must not insist and walk the rest of the way.

3.5 The risks of a bad use

If you do not respect the use recommendations, you have a risk of overheating the motor, the electronics of the kit and the battery (cells unbalanced).

4 How to maximize the use of your kit

Your kit will be the most efficient with a good choice of transmission and the right dosage of the speed.

If you are not used to deal with the transmission, here are a few tips to master this technique.

12 Maintenance and use of the battery

Carefully read the use guide :
http://en.cycloboost.com/installation-kit-pour-velo-electrique?SID=hg4kkdtr71d7gq9slr7329v3d6&___store=en&___from_store=default

12.1 Run in of the battery

- Make **5 complete cycles** of charge/discharge using it on your bike
- Empty the battery completely
- Charge the battery completely (one night for example)
- **During the 5 cycles of run in,** do not force the motor, Otherwise, it would be like consumming 20A in continuous (around 720W in 36v and 960W in 48v), which can damage or reduce the future performances of the battery.

What should I do during the run in :

During this period, you should not use more than **10A (approx) continous** (about 360w in 36v and 480w in 48v).

3 solutions to run in the battery :

1. **Programme the controller** (Xtreme and Magic Pie kit) to limit the maximum current at 10A. The bike will have less energy at the start but the maximum speed will stay the same.
2. **Put a Cycle Analyst** in order to **check** the electric consumption. You can **manually adjust** the power of the throttle in order **to stay under 10A**.
3. Prefer a supple driving with a moderate speed.

- **Maximum 30km/h** on flat roads in **48v** with pedalling assistance
- **Maximum 25km/h** on flat roads in **36v** with pedalling assistance
- **Maximum 20km/h** on flat roads in **24v** with pedalling assistance

A bad running in can unbalance the cells of the battery. As a consequence, the performances and the autonomy of the battery may be reduced.

To extend the performances of the battery, we recommend to do a complete cycle of running in, once or twice a year.

12.2 Use recommendations

- Do not interrupt the charge of the battery : wait until the charge light goes to green and stays green at least for 1 hour. This means the cells are balanced
- After the running in, to improve the lifespan and performances of the battery, it is better to consumme more than 90% of the capacity of the battery
- Every 6 months, you can make a complete cycle of running in to extend the performances of the battery
- Do not store the battery in a damp or cold environment (<10°C)
- Do not store the battery when it is discharged (put the battery in charge every 3 months in case it is stored for a long time)
- Protect the battery and the connectors from the rain and watter spatters
- Protect the battery from shocks and important vibrations
- Make sure you have enough cable length to avoid wrenching

- Disconnect the battery from the controller or cut the power when you do not use the bike for half a day to avoid overheating
- Make sure the power connectors are rightly plugged in the battery. With the vibrations, the connectors may come out of their spaces and cause electric arcs in the plug. This can damage the plug and the electronics of the battery.

6 Electric maintenance

There is no particular maintenance to do on a motor or a controller. You just need to check from time to time if the connections have moved because of the vibrations or manipulations of the bike.

A bad contact can entail little failures which can entail a real complete failure. You have to make sure the connections can not disconnect and reinforce them if needs be with heat shrink tube (available on Cycloboost.com) or at least with electrician tape.

7 Mechanical maintenance

It is important to regularly check the tightening screws of your motor. A bad tightening can damage the fork ends or the frame.

We recommend to put torque arms (1 on each side of the fork ends) to block the rotation of the axis of the motor in case there is any problem.

Check the tension of the spokes : there is a big difference between a classical wheel and a motorized wheel. An electric motor entails much torque directly on the spokes. In peak, the power of the motor can vary from 500 to 1400W. The power of an electric motor is about 10x more important than the muscular force of a cyclist.

Sometimes, the spokes may need adjusting, they may even break. During the first trips with your new bike, you must check that the tension of the spokes is right : all spokes must be tight.

If the problem happens again, it means the tightening of the spokes is not regular. You need to tighten all the spokes, not only those which were not right the first time. This operation is quite simple but also long.

If you can not realize this operation by yourself, you can ask a cycle shop or send us back the motor : in that case, you need to send an e-mail to the technical team support@cycloboost.com.

We also draw your attention to the fact that this problem happens regularly with users who do not assist the kit efficiently at the start, or with users who carry a big load.

8 Cleaning

Use a damp sponge and wipe with a dry cloth.

Do not clean with a water pipe or with a Karcher© the elements of the electric kit : motor, accessories and battery.

9 Storage and transport

Do not store outside or in a damp space.

Do not carry the bike at the rear of a car when it is raining without protection (risk of seepage).

If the bike has been under the rain, let it dry for several days before connecting the battery again.

10 Use under the rain

The kit can perfectly be used when it is raining. In case of **extended use under the rain** or when there are **heavy rains, protect the accessories on the handlebar** (throttle, cruise control) with a plastic film.

Then, let the kit and its components dry in a dry and protected space.

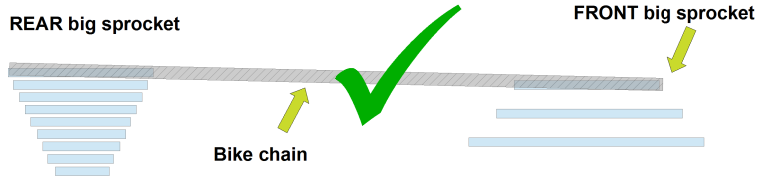
11 Other information

The use of **handmade batteries** is not covered by the contractual warranty.

4.1 The little gear ratio

Put « ***everything to the left »***, which means the chain on the little chainwheel and the big sprocket : this configuration enables to have more torque. It is ideal for the starts uphill and the steep hills.

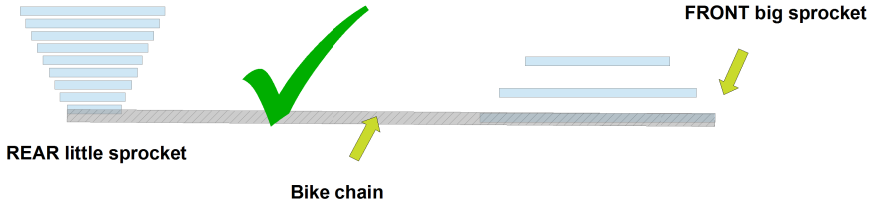
Pedal and speed up, you will notice that the association kit + muscular strength has much torque :



4.2 The big gear ratio

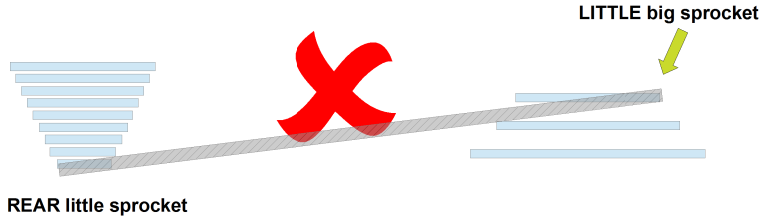
Put « ***everything to the right»***, which means the chain on the big chainwheel and the little sprocket : this configuration enables to have great speed with less torque.

You can assist the kit on flat roads and downhill at more than 40km/h (with a rear sprocket of 11 prongs).

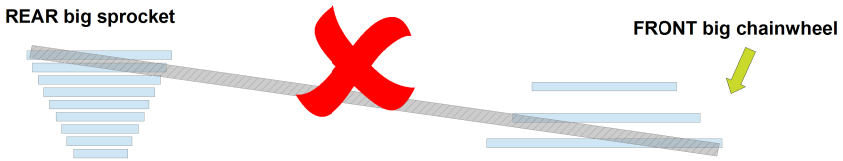


4.3 Crossing chains (or what you must never do)

If you go down on one of the little sprockets and you stay on the little chainwheel, the chain might touch the front transmission. It is normal, it is what we call 'crossing chains'.



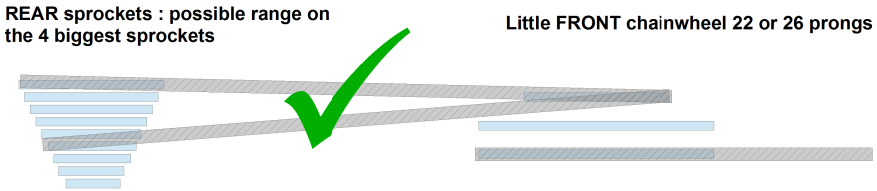
In the following drawing, you have the example of a reverse crossing of the chain : the big chainwheel with the big sprocket.



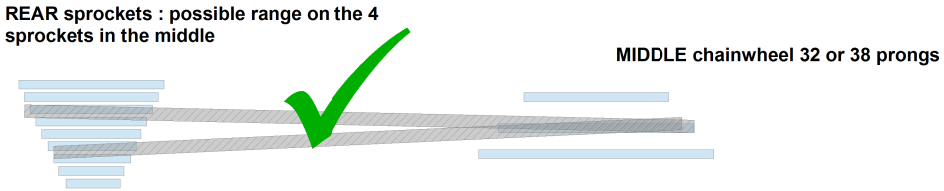
In these cases, there might be rubbing, a bad change of gears (or no change at all) and a premature wear and tear of the transmission.

4.4 What is the use range of the chainwheels ?

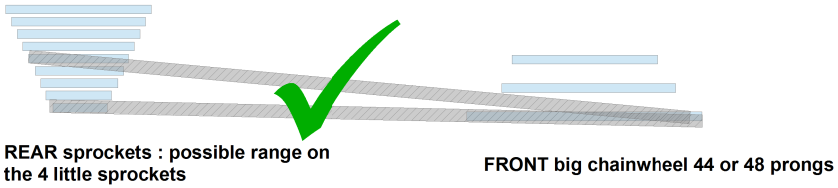
You can leave on the FRONT « **little chainwheel »** and vary the rear transmission on the 4 biggest sprockets.



You can leave on the MIDDLE «**chainwheel»** and make the rear tranmission vary on the 4 sprockets in the middle.



You can stay on the FRONT « **big chainwheel »** and make the rear transmission vary on the 4 little sprockets.



5 A few tips about the electric consumption

On our website (www.cycloboost.com) and in our recommandations, we stress the **importance of a good management of the electric consumption** to avoid damaging the kit, the battery and the connections.

Here is an explanation with a concrete case (*find the calculation method at the bottom of this page*) :

- You need **1400w** to cycle up a **hill of 10% at 15km/h** with a strong pedalling assistance of 150W
- **The maximal power of our kits (Xtrême and MP3) is of 1200w** during a few seconds (<30s), then the nominal power stabilizes **around 600w,** for a speed of 30 to 40km/h on flat roads with no wind

In order to cycle up such a hill efficiently for more than 1km in these conditions is more than the Xtrême and Magic Pie kits can bear) (*this is also true for all kits with strong powers, whatever the brand)*.

On the **1200w delivered** by the battery, **360w** are used for the motor function (30% : corresponds to the output of the motor), and **840w** will be lost in heat in the electronics (the 70% left).

If you use your kit without respecting the recommendations, the risks are the following :

- destruction of the connections and the cables because of the heat
- cells unbalanced (batteries in the period of running in or not correctly run in), this implies a great loss of the autonomy
- destruction of the fuses (aluminium cased batteries)
- **important risk of burning out** the electronic components (controller, BMS...)
- **loss of the contractual warranty**

Conclusion : kits will not enable you to do the impossible. For a better us of your kit and your battery uphill and at the start, reduce your power (just speed up a little), reduce your speed and choose the right transmission for an efficient pedalling (little chainwheel, big sprocket).