Use Guide
for Li-ion and Lifepo4 Batteries

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1 . Before beginning

1 - Technical support

In spite of all our efforts, there may still be some technical information difficult to understand. Cycloboost is at your disposal to make it clearer and to guide you if you need it :

You can contact us @ support@cycloboost.com

2 - Guarantee, sending back and after-sales service

Cycloboost's technical service is at your disposal to answer all questions related to :

- the dysfunctionning of one of the elements of the kit or battery
- the return of the material
- the after-sales service

3 - How to report an anomaly

Before reporting to the after-sales service, please check the wiring as well as the charging state of the battery.

If the anomaly remains, send an e-mail to the after-sales service @ support@cycloboost.com with the following information :

- Your name
- Your invoice number
- The serial number of your motor, controller of battery
- The precise description of the failure : how it happened (while cycling, at a standstill, at the start, while charging the battery, while braking, while speeding up …)
- The tests or handlings you made

2 . Getting started with your battery

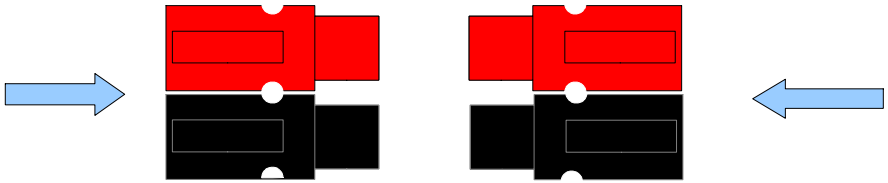
The batteries must be manipulated with caution.
The batteries with no case must be protected and fixed during the use on your vehicle.

1 - *Connection of the batteries (all types) to the controller*

You can use Anderson connectors to solder, to link the cable from the battery to the controller.

If you have no connector, you can solder directly the cables and put an electric insulated device on each soldered joint. Be careful of short-circuits.

Respect the polarity. Do not hesitate to use a voltmeter to check the tension.



Do not pinch *the Anderson connectors without special pliers, because you could damage them, prefer* ***tin soldering***.

2 - *First use*

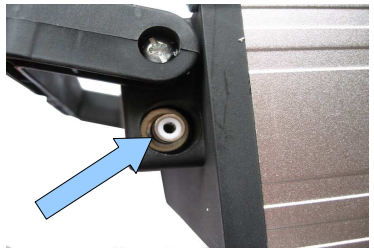
You need to charge the battery before you use it. The battery you receive is charged at about 80%.

You need to plan an initial charging duration of 2 to 4 hours depending on the battery.

See chapter « **Battery charge** ».

3 - *Connection of the Aluminium cased batteries to the charger*

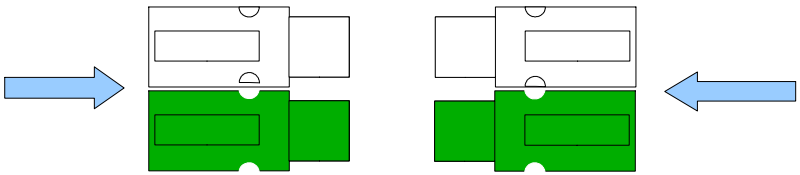
For Aluminium cased batteries, the charging plug is located under the handle (RCA plug).



4 - *Connection of Heat shrink batteries to the charger*

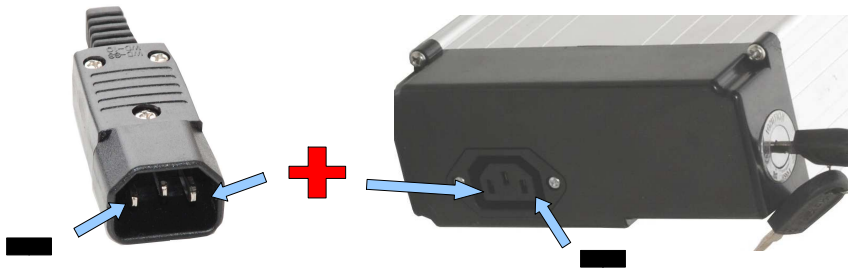
PC plugs

XLR plug



Green and **white** Anderson connectors (or **red** depending on the deliveries)

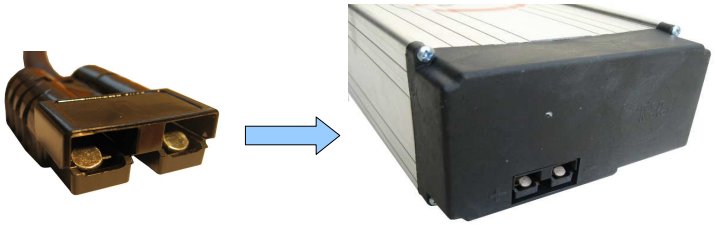
5 - Polarity of the PC plug of aluminium cased batteries



Important : check the polarity after making your connections

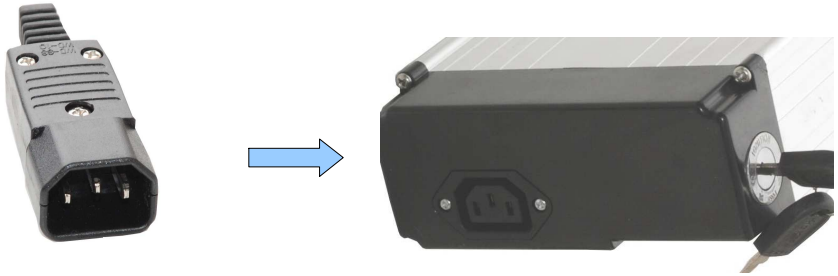
6 - Use of a switch key – Aluminium case battery

- Slide your battery on the sliding rack until the bump
- Connect the big Anderson plug at the back of the battery



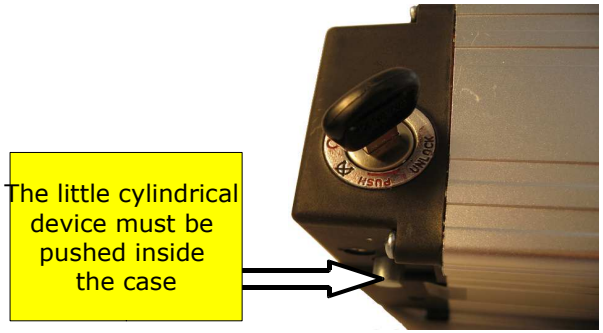
or

- Connect the PC plug at the back of the battery



- Insert the key in the Neiman

- Push the key slightly in and make a quarter turn



At this point, the battery is turned off and fixed to the sliding rack. You can **remove** the key, the battery is safely fastened to the rack.

- Make an extra quarter turn : the battery is on

At this point, the battery is on and fixed to the sliding rack. You can not remove the key, the battery is safely fastened to the rack and the vehicle is ready to go.

3 . Charge of the battery

First light **Second** light Fuse

1 - *Aluminium cased battery*

- Disconnect manually the battery from the controller (kit)
- **Put the power ON** as if you were going to use the battery
- Connect the charger on the battery (**first** **red** light on)
- Connect the charger on the mains (**second** **rouge** light on)
- Let the battery charge for 6 to 8 hours minimum
- **Note : if there is a switch**
  - switch on the charger thanks to the switch located on the side
- **do not stop** the charge of the battery
- at the end of the charge (**second** **green** light on) leave it at least 2 hours to enable a good balencing of the cells
- at the end of the charge and the balancing of the cells, disconnect the charger from the mains and the battery

Note : at the end of the charge, the **second** light can go from **green** to **red** (**orange**) during the balancing phase. This is normal, you have to leave the charger to the end of this phase.
The first **red** light stays on all the time, this is normal, it is the power light, showing that the charger is connected to the mains.

2 - *Heat shrink battery*

- Disconnect the battery from the controller before the charge
- Disconnect the charger from the battery (**first** **red** light on)
- Connect the charger to the mains (**second** **red** light on)
- **do not stop** the charge of the battery
- At the end of the charger (**second** **green** light on) leave it for at least 2 hours for a good balancing of the cells
- at the end of the charge and the balancing of the cells, disconnect the charger from the mains and the battery

Note : at the end of the charge, the **second** light can go from **green** to **red** (**orange**) during the balancing phase. This is normal, you have to leave the charger to the end of this phase.
The first **red** light stays on all the time, this is normal, it is the power light, showing that the charger is connected to the mains.

Recommendations :

- Do not cover the battery during the charge
- Do not store nor charge the battery next to inflammable products
- Do not immerse the battery
- Respect the running in of the batteries
- Do not clean with chemical products
- Do not open the battery (cancelling of the guarantee if opened)
- Do not remove the guarantee stickers (cancellation of the guarantee if removed)
- Do not leave the battery in the sun or the cold
- Do not store outside
- Do not store in the dampness

3 - Duration of the charge of the battery

The duration of the charge of the battery depends on the battery capacity (10AH, 15AH,...) and also on the charger (2A, 3A,...)

The duration of the charge is as follows :

Charging duration = Capacity of the battery AH / Intensity of the charger A

Example : Charger **2A** and battery **10AH**
Duration of the charge = **10** / **2** = **5 hours**

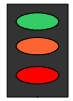
This is a rough size, it also depends on the **level of discharge** of the battery. You also need to take into account the balancing phase of the cells which may take **30mn more**.

Advice : to improve the lifetime and performances of the battery, it is better to **use only 90% of the battery's capacity**.

Of you notice an anomaly at 50km with your battery, it is advised to not cycle more 45km with each charge.

4 - Battery warning light

The thumb or twist throttles are equipped with a warning light with 3 lights :



Green : battery charged (**full**)
Orange : battery half-discharged (**half**)
Red : battery empty or half-empty (**empty**)

This gauge enables to have an idea of the charge of the battery : it is the same gauge whatever the battery type (Lead, Nimh, Nicd, Li-ion, Lifepo4).

Each type of battery has a **specific functionning range** which is not the same as the others. This gauge is not a reliable enough device to know the charge of your battery, it **simply gives an idea**.

For **more presision**, a **simple meter** with **kilometers tote** will enable you, with a regular use, to know precisely your autonomy.

The throttle gauges are calibrated according to the battery you are going to connect. A 36v gauge will have a functionning range corresponding to a 36v battery, same thing for 24 or 48v.

It is possible to connect a 48v battery with a **24v throttle**, the functionning of the kit will not be affected, only the gauge will give you a false idea of the charge because the functionning range will not be adapted.

In concrete terms, with a 48v throttle and a 36v battery, you will get the red light 'empty' on whereas the battery will be full.
On the contrary, with a 36v throttle and a 48v battery, you will have all lights on, even with an empty battery.

4 . Running in of the battery

IMPORTANT

- make **5 cycles** of complete charge/discharge when cycling
  - completely empty the battery
  - completely charge the battery (a whole night for example)
- **during the 5 cycles of running in**, do not overdo it with the bike because you would use 1000W. This can damage the future performances of the battery.

What must I do during the running in :

Drive softly with a moderate speed :

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

During the running in, you must not use more than **10A continuous**.

5 . Use advice

- Do not interrupt the charge of the battery
- After the running in, to improve the lifespan and performances of the battery, it is better to use only 90% of the battery's capacity
- Do not store the battery in a damp or cold environment (<10°C)
- Do not store the battery discharged (put the battery in charge every 3 months in case of long storage)
- Protect the battery and connectors from the rain and from shocks
- Plan a long enough cable to avoid tearing it
- Disconnect the battery from the controller or cut the power when you do not use the bike more than half a day

6 . Important recommendations

- Do not cover the battery during the charge
- Do not store nor charge the battery next to inflammable products
- Do not immerse the battery
- Do not wash the battery with water (karcher, tap…)
- Respect the running in of the batteries
- Do not clean with chemical products
- Do not open the battery (guarantee not valid if opened)
- Do not remove the guarantee stickers (guarantee not valid)
- Do not leave the battery in the sun or the cold
- Do not store the battery outside or in the damp
- Protect the battery in case of rain (heat shrink, aluminium cased or cylindrical battery…)
- Do not carry on a car rack (water can get into the material)

END OF DOCUMENT