Electric Bike Conversion Kit Installation & User's Manual

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Brief Introduction

To create an electric bicycle is a rewarding project, but caution is advised. Customers converting their own bike are responsible for the safe operation and installation of the kit. Please kindly read the user manual carefully before starting the conversion. We disclaim any responsibility injury, damage or other consequences arising from the use of this product.
Please read the user manual carefully before starting the conversion.
Please convert the bicycle on the basis of a full understanding of the manual.
It is assumed that the installer has enough technical knowledge about how to work with tools, how to torque nuts and screws, how to do general bike adjustment and how to do wiring with connections.

User Precautions

Even if you are an experienced rider, take the opportunity to familiarize yourself with this conversion kits before you take your first trip.
Read all of the enclosed installation and operating instructions and follow the instructions prior to first use.
The e-bike kit has lots of sealed electronic parts, do not dismantle the parts, let them fall or punctured them.

- The electric parts should NEVER be submerged in liquid or left in a wet state
- Storage temperature of lithium ion battery is -20~+60 °C
- Batteries should be charged immediately after every use and **never be stored for long periods of time without maintenance charging**, if you have to store them for a long period of time, please remember to charge once at least **every two months**
- The bike should be checked carefully after a long time idle
- Spoke tension should be checked after the first 50km and adjusted where necessary
- Make sure the tires have proper pressure before riding
- Make sure the brakes are operating properly before riding
- Always wear a helmet when riding an electric bicycle for your own safety
- Adhere to all valid traffic regulations
- Adhere to all national, state and local council laws
- Keep in mind that other traffic participants may underestimate the speed of an electric bicycle.
- Ride with both hands on the handlebars when riding your electric bicycle.

Warranty Terms:

All ebike kit components including motor, controller, display, battery, charger, throttle, PAS sensor, brake sensors are covered by 6months Free warranty or up to 24 months purchased warranty (each extra month will cost only 5CAD) which will be called full warranty period hereafter.
Ebike is a vehicle in real working condition with no limitation. It is always exposed to unwanted impact, shock, vibration, heat and cold, accident, water penetration, etc.
In case some defect comes up in a normal working condition we supply a free replacement part for you. you might be asked to pay the delivery or installation cost; ask for details prior to your request for part.
If the problem is caused by an accident, wrong installation by customer, careless actions, wire stretch, bad storage or not following instruction manual, customer should pay the cost of the part and replacement.
The cause of the failure will be recognized by our experts.

The EBIKEBC warranty covers the full warranty period for all parts of the ebike kit systems to the first owner, within the framework of the following conditions:
This warranty exclusively covers ebike kit components provided by EBIKEBC and there is a proof of purchase and serial numbers showing the right part, not any other bicycle parts
This warranty covers the repair and/or the replacement of ebike kit components.
This warranty only covers material and manufacturing defects.
Costs for repair work performed in advance by persons who have not been authorized by EBIKEBC will not be reimbursed. In such a case, any warranty claim will cease.
The warranty period starts with the date of purchase. Warranty claims must be reported immediately.
If the battery pack does not provide full capacity in the course of normal use or for batteries going through a normal aging process or reduction of performance, EBIKEBC warranty covers that within the warranty period if the capacity proved to be less than 70% of Initial condition.
No warranty claims are accepted in the case of damages due to the following:
a) External influences, particularly falling rocks, collision, accident and other external events with an immediate external effect due to mechanical powers.
b) Purposeful and/or malevolent acts, theft and robbery as well as natural hazard events and/or acts of mischief.
c) Inappropriate use, e.g. the product was exposed to liquids, chemicals of any type and/or extreme temperatures, wetness and humidity and/or if the battery suffers damages due to non-compliance with instructions.
d) Overcharging the battery or not adhering to the instructions of battery handling.
No warranty claims are accepted:
a) In the case of test, maintenance, repair and replacement work due to normal use.
b) If the model, serial or product number on EBIKEBC product has been changed, deleted, blurred or removed.
c) In the case of use of the battery in systems that are not approved for such use with this particular product.
d) In the case of the operation of the EBIKEBC system with batteries other than the batteries designed for the EBIKEBC system (refer to user manual).
e) If one or more than one EBIKEBC part has been opened, altered or repainted.
This warranty only covers the above mentioned repair work and/or the replacement of

defective or compromised components. It excludes any claims as to the reimbursement of property damages, downtimes, expenses for renting or leasing equipment, travel expenses, lost profit or any other claims. EBIKEBC liability in connection with this warranty is limited to the respective acquisition value of the product.
This warranty only covers original EBIKEBC components. The use of spare parts from unknown sources, for example, replacement parts from third parties, is strictly prohibited. Warranty will be voided on any system on which it will be concluded that there has been any case of modification or tampering with firmware.

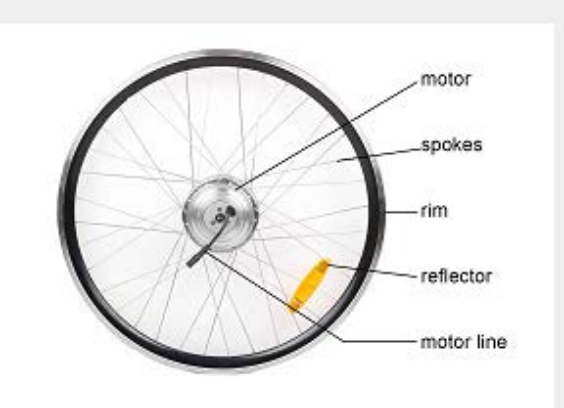
Liabilities

EBIKEBC will not take any responsibility and or liability for any accident, misuse, abuse, loss, injury for or by the rider nor a third-party evenif the cause is ebike kit power, speed, components defect or malfunction.
If you buy an ebike kit or parts with no installation and service or If the kit is installed by us, by testing and signing the check list provided , customer just take the ebike from us and all responsibilities and liabilities about bike, ebike components, brakes, bike mechanical parts and adjustments, electrical wirings, unforeseen occurrences, safety issues, maintenance and services, etc. is up to customer.
Ebike rider must obey all traffic regulations and is responsible to follow rules and updates for the kind of vehicle is using.

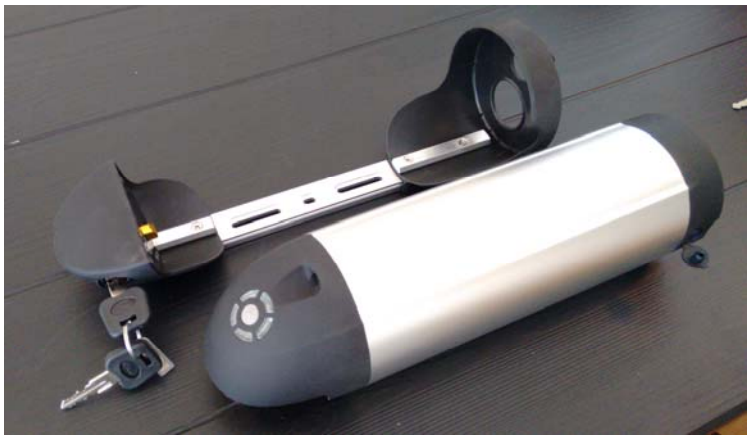
Parts Introduction

When you open the carton, please find the components as below.

1. **Hand-Built motor wheel**



2. **Battery (only one of the bellow options)**



Tube Battery Pack

Dolphin Battery Pack

3. Smart charger

4. Controller

5. Display (only one of the bellow options)

6. Micro switch Cut-Off Brakes (only one of the bellow options)

7. Thumb Accelerator or Throttle

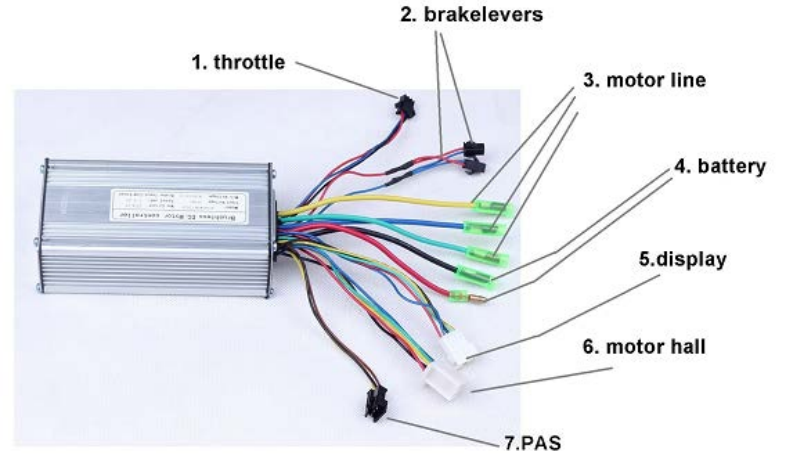
8. PAS (pedal assisted system/sensor)

9. **Motor Cable**
10. **Battery Cable**
11. **LCD Cable (if applicable)**
12. **Controller bag/Box**
13. **Nylon Bands and cable covers**

Installation Guide

Controller cables introduction

All controller Connections are designed to be connected to a unique counter connector. So no matter what the color of the wires is, once you just push the connections and lock them the entire wiring job is done. Bellow picture shows what the controller's wires are about. There might be changes for motor line to be a waterproof single connector instead of 3. There is no probability to connect a wrong connector if you just did not cut and replace any.



Tools

You are able to use similar tools, or you could buy specialized tool kits. You will not require Crank tool (No 10 and 11) if you have a 2 pieces PAS Magnet Sensor and in most cases a small adjustable wrench (No 3) is enough and you don't need any other wrench, however a set of Allen Key is necessary. If you use a Controller bag, you need a

sharp cutter to make an outlet opening for the cables way out of controller. This cutter can also be used to remove the paint layer in fork axle dropout to fit motor axle.

Step 1 Check that your bike is suitable for conversion:

Our e-bike kit is universal and can be used to convert most conversional bicycles; however there are criteria which must be met first.
Your front forks and rear dropouts must be wide enough to accept hub motor.

Front fork dropout MUST BE 98-102mm for regular bicycles: Rear conversions

require133-137mm for regular bicycles.

Generally the diameter of motor axle is 10mm

You may have to remove a layer or 2 of paint for the axels to fit in the dropout. They're designed to be a very tight fit. You're better off to remove a layer of paint to make the fit reasonable. You should have to exert a lot of force to get the axels to go in. If you use too much force instead of filing back a layer of paint, you risk damage to the fork and also that could result in a dropout failure due to stress fractures.
Damage to forks is not covered by warranty.

Step 2:
Transfer your tire &tube & install the motor wheel.

You will need to transfer your existing tire and tube or a new tire and tube to hand-built motor wheel. Rim tape is highly advisable. If you're existing wheel has rim tape, simply transfer the tape across to the new motor wheel. Otherwise, rim tape is inexpensive and available from any local bike shop. That will minimize the risk of puncture.

Front motor wheel (disk or caliper brakes):

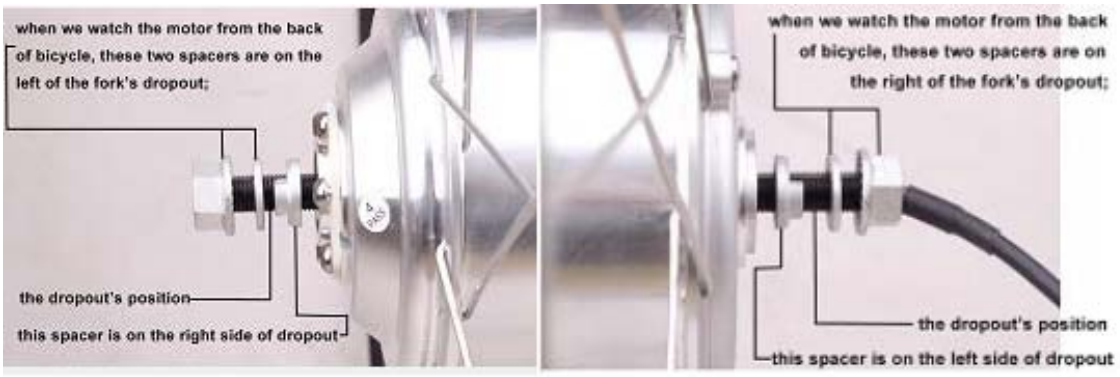
1. Take out the original bicycle wheel and release the caliper;

2. Dismantle the original disc and install it on the motor wheel (when tightening the screws for the disk, fasten in diagonally).

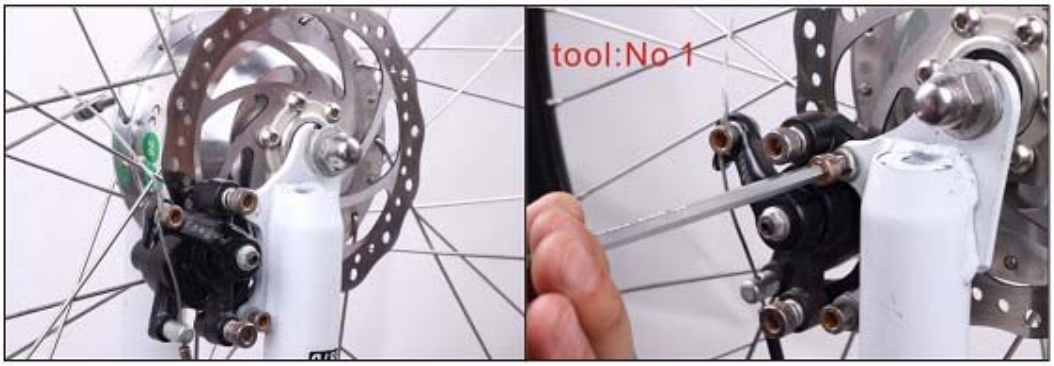
3. Fit the spacers close to motor: Spacer's quantities depend on your bicycle

4. Fit the spacers on the axle and insert the motor wheel;
Make sure the rotation direction is right. The motor cable shall come out of axle from right side of you bike when on wheels. The cable shall be taken out upward to handle bar, so control it before you fasten the bolts. The thicker spacer's appendix shall be out of fork sliding hole.

5. Tighten all nuts and put the seal caps of motor axle both sides:



6. Adjust caliper to suitable location and tighten the bolts:



Step 3 Install display

1. Release the screws on the back of the display and fit it on the handle bar
2. Adjust the display location and tighten the screws

Step 4 Install the brake levers & throttle & handle bars

1. Take out the orignal brake levers grips (left & right):

2. Insert the brake lines to new electric brake levers:

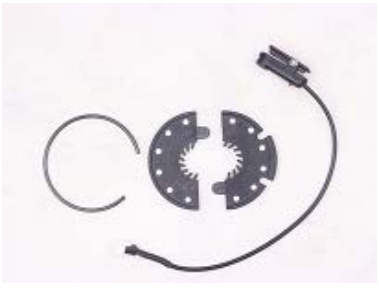
3. Fit the electric brake levers on the bike and tight the screws (left & right):

4. Fit the throttle (generally right side) and fit the new grips (left & right; you may to warm the grips using a hair dryer or blowing between the grip and handle bar by an air compressor if they are hard to remove or fit)
If you have rapid fire, twist grip, hydraulic brakes or any other sort of integrated shifter or hydraulic brake setup, please see how to use a magnet cut-off sensor instead.

Magnet sensor e-brake power cut-off

If the standard e-brake handles aren't going to work for your installation, please check out our e-brake sensors online. They're available separately and aren't exchangeable for the standard e-brake handles. Here are a couple of photos to illustrate 1 way they can be installed. The magnet should be stuck in a moving part of brake system in a way that one the brake is pulled the the distance increases and the sensor send the brake signal to controller. This is a procedure that needs try and error to suitably adjust the installation distance.

Step 5 Install PAS (pedal assist system/sensor) Removable PAS, installed on the left side of the bicycle (crank arm removal not required).



1. Fit the disc on the crank axle, pay attention to disk working face be inward faced to sensor




2. Apply the adhesive sensor to the frame and position the pivot so that the sensor is within 1-3mm of the disk. Fix it with nylon bands after you test it.


Step 6 Install battery and controller

Tube/canister/water-bottle battery

1. Remove the bottle cage on the bicycle;

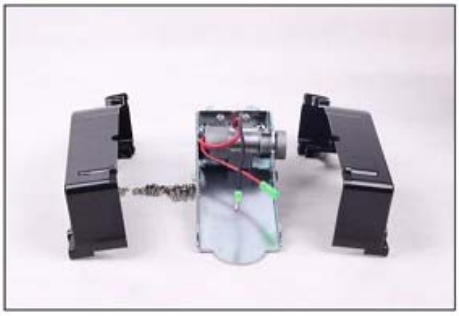
2. Insert the bracket of tub battery, tight the screws (may look different to photo);

3. Fit the tube battery, lock it, turn off the battery

4. Connect all controller plugs to the corresponding terminals on the wiring loom.

Seat post battery

1. Dismantle the controller box Please carefully keep these screws, they are a unique thread type.
2. Apply the rubber o-ring around the opening hole of controller box, insert the saddle seat stem, adjust the box location and tighten the screws;
3. Connect all cables with controller
4. Place the controller into the box, reassemble the box;
5. Insert the seat post battery.



Step 7 Make final adjustments

You have already installed all major component and it's time to pass the cables suitably and tie them up by nylon belts.

Make sure the brakes are adjusted, the wheel is secure, screws are tightened and

everything is functioning as expected.

Charging

To charge the battery connect the charging plug to local power and connect charging port to battery. Only use the specified charger to charge your battery and never use other Lead-Acid chargers of same voltage to recharge the Li-Ion batteries. You may recharge the battery whenever you like; since there is no history effect for Li-Ion batteries you don't need to wait for a complete depletion to perform a recharge.

1. Insert charging port on battery first, then insert charging plug to main socket.
2. The charging signal is red during charging, it turns to green when fully charged.

The charge light will glow red whilst charging, and then green when charged.

Some chargers have 2 lights. 2 lights red is charging, 1 red, 1 green means fully charged.

Load/Unload the batteries

1. Please turn the keys left/right to lock or unlock the batteries

2. The keys have two functions: to lock the battery and ignite the power (for some models, not All).

Because the battery is a relatively heavy component and likely to get loose as a matter of road vibration, make sure you have enough rigidity and support for your battery case assembly. If you cannot fit both water bottle bolts on battery frame, drill the required place on the battery frame. Use other type of belt fasteners in case you are not confident about the firmness of the fasteners. Try to fix the battery from other spot's back rest in order to prevent shaking. This could be done through leaning or sticking one other corner of battery to the vertical beam of bike frame via a flexible rubber material.

Additional Notes on the installation

Motor orientation:

Different series of kits have the cable coming out on different sides. The fool proof way to orientate the motor correctly is to make sure that the disk brake side of the motor is on the left. So when you're sitting on the bike, the disk brake holes should always be facing towards the left.

Spoke adjustment:

The spokes used on the e-bike hubs are very heavy duty. Because of the rigidity of the harder, heavier gauge spokes, they may have a tendency to come loose more often than a regular bike wheel spokes. That means that it's a good idea to check the spoke tension after the first 50km and then every 100km or so.

Vibration:

The motor hubs can at times be under quite a lot of load which can result in mild vibrations when accelerating or going up an incline. If there is a loose item anywhere on the bike, quite often that can exacerbate the moderate motor vibration into an almighty drone of a vibration, giving the rider the impression that the bike is about to come apart. If this happens to you, you have to look for anything that could be loose. Sometimes it might be an unused disk brake bolt or even something loose on the rear rack of the bike. If there's something wrong with a component on the kit (like a motor) it won't be that subtle.

BMS

Battery protection system or BMS (battery management system) is integrated in the battery box as well as charge indicator. It cuts-off the power once over current, over or under voltage.

Some Battery cases support USB output for mobile device charger only.

Trouble shooting

If you have any problems with the kit, the best way to find out what is causing the problem is to do the following.
All LCD controllers are supported by error diagnosis system. Check the **error code** in **LCD Display manual** which is accompanied with this manual and follow the case to resolve the error.
If there is no error disconnect all components, and then connect the battery, battery cable, controller, throttle, display and motor. In this basic installation mode you will more than likely have full function. Then go through one by one plugging in the other components (such as the PAS or the e-brake handles) to see which is the problem.
If there is a problem with the basic kit setup, check that the plugs are all correctly touching and that there is a good solid connection at each junction. Check the fuses in the battery (if applicable). Check the wires as they go into the motor axel for any signs of wear or tear. If you cannot isolate the problem, you may have to return the problem components to us.

Range extension
If you're not getting the approximate quoted range out of your e-bike system, take the following steps:

1. Pedal assist sensor
a. If you haven't installed the pedal assist sensor, you might not get the required range out of your kit. The pedal assist modes only work for pedal assist input, not throttle.
The throttle is awesome to use, but even moderate use of the throttle, with pedaling, is still going to burn through the juice a lot faster than on a low-medium pedal assist setting.

2. LED indicator lights or charge status bars– full charge
a. The LED and LCD battery level displays are a basic indication of battery charge, but the only indication of a full charge, is having charged the battery and the battery charger lights glowing green to indicate that the battery is fully charged. BMS voltage in LCD screen is a more exact way of recognizing charge status. Full charge will reflect 42V and 34V is better to be estimated as the battery complete depleted.

3. LED indicator light or charge status bars – running low
a. Some customers find that the LED charge lights can lead them astray in terms of how far the bike will go on low power. You don't risk damaging the system by riding all the way to the controller low voltage cutoff. Keep riding on pedal assist even after the last LED light starts blinking

4. Hills/riding style/other factors
a. The ranges quoted are from real world testing, with some hills and some flat areas. If your commute involves a lot of hills, that's going to impact on the range of the kit.
350W kits are especially susceptible to being zapped a lot more on hills (than 250's anyway).

5. General tips
a. Make sure the wheels are running free
b. Keep the battery topped up between uses (if Li-ion)
c. Make sure the tire pressures are at optimum
d. Pedal harder when taking off and select the right gear for assisting up hills

Maintenance

We recommend having the spoke tension of the motor wheel and the torque of all screws checked after the first 50km.

In order to ensure extended use of the electric system, all plug-in contacts of the system should be checked every two to three months and cleaned with a wire brush, if necessary.

Cleaning

Never use a high pressure washer or a garden hose to clean the e-bike system. The force of a water jet could damage the electrical components of the propulsion system. Do not use water to clean electric components. Use a wet rag or similar.

For practicality, the warranty period commences from the purchase date. All warranty details are available online at www.ebikebc.com

Visit our website for all kit information, order, FAQ and enquiries.

Full range of accessories and replacement parts can be found on our website at www.ebikebc.com;
For further question and in case of any problem contact us: Info@ebikebc.com