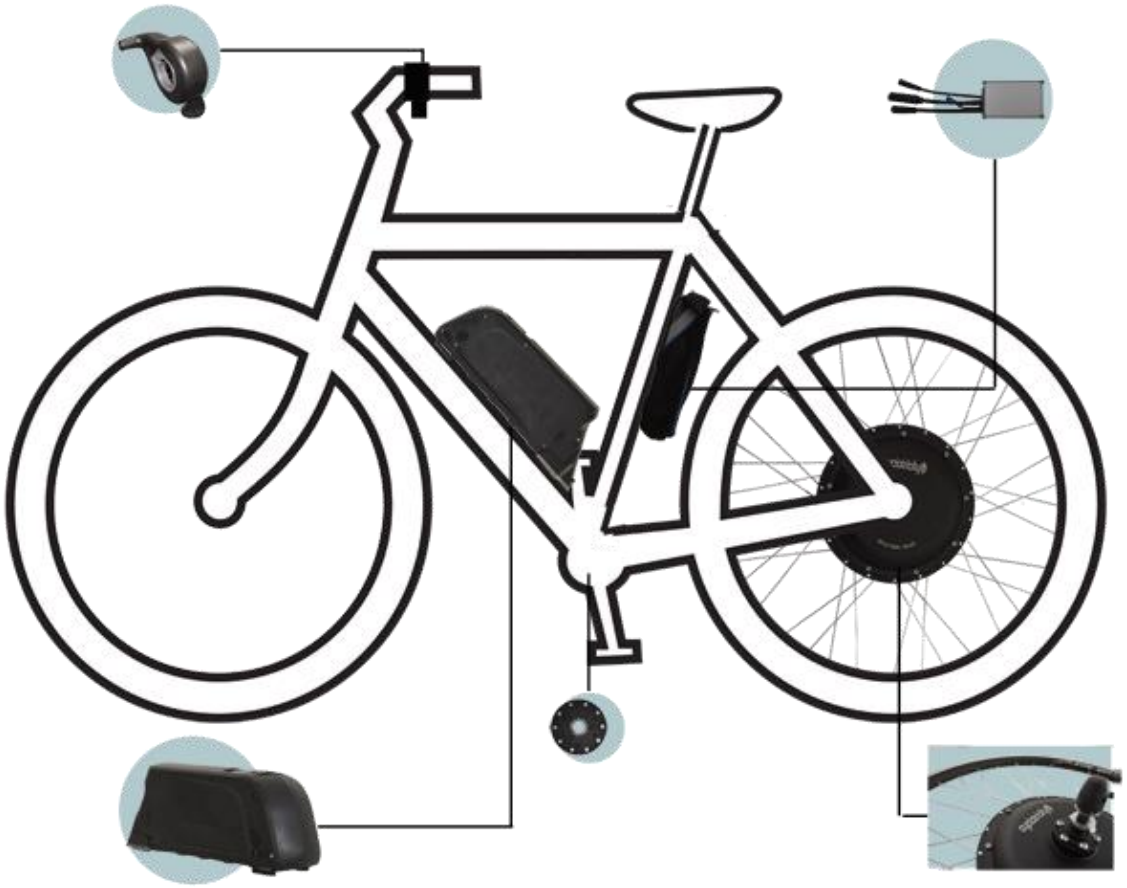
eKit User Manual

Cyclotricity e-bike Conversion Kit Assembly instructions

May 2020



The most recent version of the manual is always available online at cyclotricity.com.

Thank you for purchasing the Original CycloTricity eKit

The original CycloTricity eKit is constantly evolving based on your feedback and the improvements from the CycloTricity team, the eKit is getting new features and re-configuration of parts for easier assembly. We strongly suggest using the actual online version of this manual when assembling the kit. We also encourage browsing through the short video tutorials available.

Happy e-biking!

Disclaimer

The Cyclotricity eKit is supplied as a set of do-it-yourself parts for the user to install on their bicycle. Because this kit is installed, maintained and operated by the purchaser, Cyclotricity Ltd disclaims any responsibility for injury, damage or any other consequences arising from the use of this product.

Each installation will be different and therefore it is the responsibility of the purchaser to determine the best way to install the kit on their particular bicycle. The provided instructions should be considered as general guidelines only – every electric bike conversion will be slightly different. If you do not have the mechanical ability to correctly and safely install this electric bicycle conversion kit, you should obtain the services of a professional bicycle shop or other qualified technician.

Installation and use of this e-bike conversion kit will create an electric motor vehicle that has exposed moving parts, electrical connections and high powered batteries. Any or all of these components can be dangerous!

The purchaser is required to ensure their modified vehicle will remain compliant with local laws and regulations and is wholly responsible for any legal implications resulting from using this product.

Introduction

Chapter 1 - Before you start

The best way to understand how your eKit works is to connect all the parts together and test them before you mount them on your bicycle. By doing this, you will learn how to wire everything correctly and you'll have more clarity during the assembly process.

This will also help with any troubleshooting before you spend time assembling everything on your bicycle. So let's get started!

1. Locate the **Controller** inside your eKit box and place it in the center of your working area.

   The **Controller** is the brain of your eKit. All components must connect directly to it.

2. Next locate the **System-Cable** and the **Motor-Cable** and connect them to the **Controller**.

System-Cable
(Connect the stem of this cable to the **Controller**, not the 4 branches)

Motor-Cable
(The number of pins may vary depending on the motor you purchased)

Don't worry, these connections are uniquely shaped, so you cannot go wrong.

Some cables have arrows on the connections. If so, make sure the arrows are aligned.

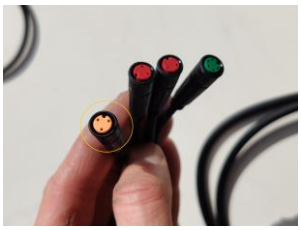
Push the connections firmly all the way in.

3. Connect the **Motor** to the **Motor-Cable**

- Remove the protective cover.
- Connect the **Motor** to the other end of the **Motor-Cable**.
- Ensure the arrows are aligned and push the connections all the way in firmly.

➢ The **Motor** should now be connected to the **Controller** via the **Motor-Cable**.

4. Connect the **Throttle** to the **System-Cable**



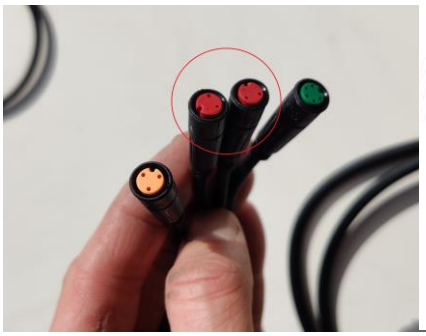
The **System-Cable** splits into 4 branches. The Yellow is for the **Throttle**.

Throttle (Yours may look slightly different)

Match the **Throttle** to the Yellow branch of the **System-Cable**.

Align the arrows and push them all the way in.

5. Connect the **E-brakes** to the **System-Cable**

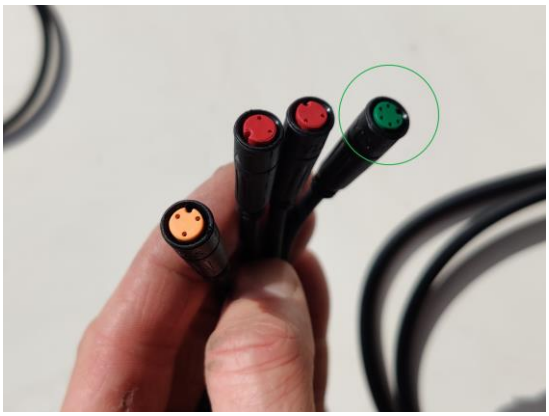


The red branches are for **e-brakes**.

E-brakes

Connect the **e-brakes** to any of the Red branches. Right or Left is irrelevant.

6. Connect the **Display** to the **System-Cable**



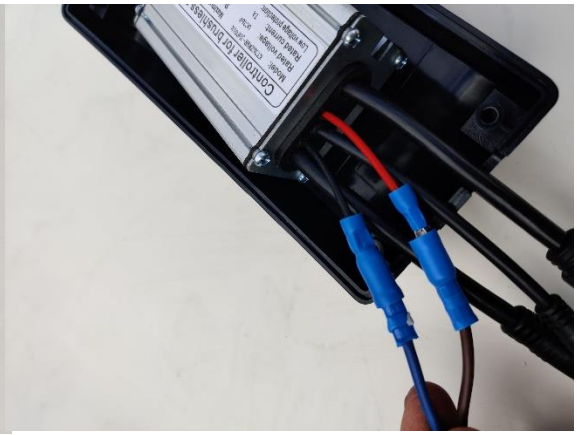
The green branch is for the **Display**

LCD Display
(Yours will look different if you purchased the **LED** version)

ATTENTION!
If you did not purchase a Display, you would have been provided with a small green cap to connect to the System-Cable instead. Please look into your eKit box carefully. In the absence of a Display, this Cap is necessary for the eKit to function.

7. Connect the **Battery** to the **Controller**

Battery
(The look of the **battery** you selected may vary but it will still have the same bullet connectors)



Controller
Insert the bullet connectors to the corresponding ones on the **Controller**. Ensure the battery is switched off first.

8. Connect the **Pedal Assistance System** (Optional) to the **Controller**

PAS

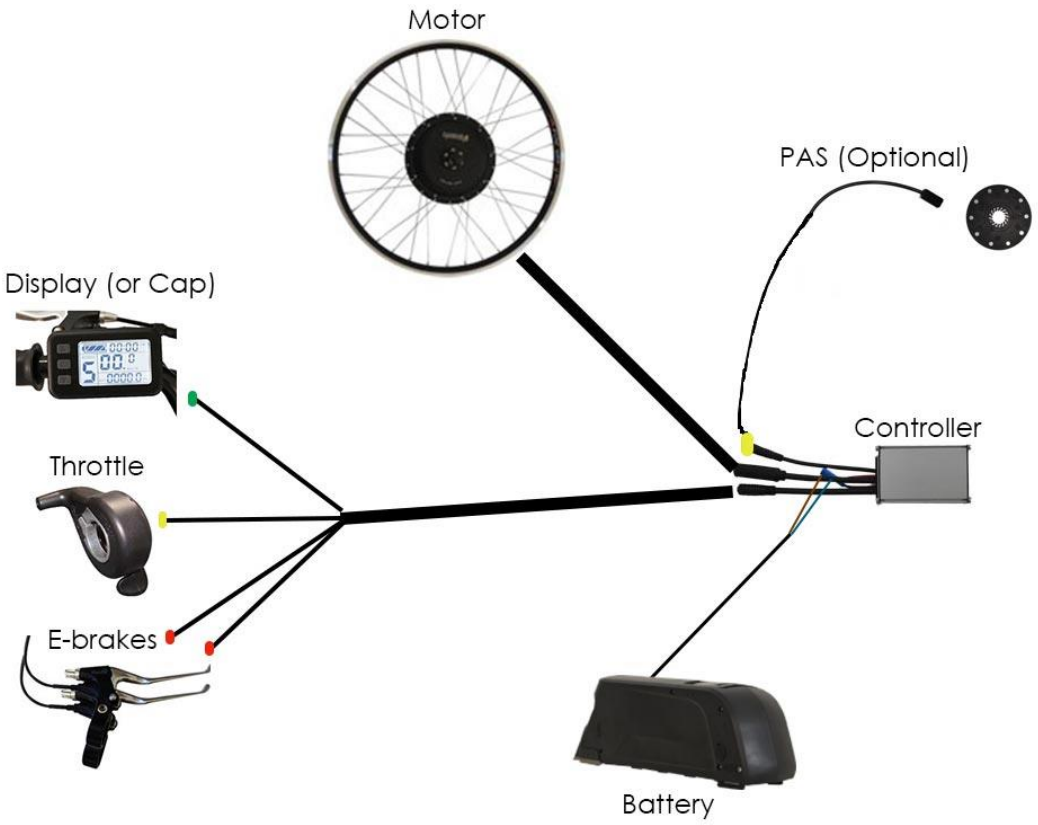
The **Pedal Assistance System** is an optional extra. Ignore this step if you have not purchased this option.

Controller

The yellow connection on the controller is for the **PAS**. If you have not purchased a **PAS**, you can leave this connection bare (and cover it with electrical tape to keep it protected).

9. Review the connections

By now, if you have done the previous steps correctly, your eKit should have been wired according to the following diagram:



10. First Test

This is the exciting part! We'll do a first test to verify that power flows through the system:

- Switch the battery on using the ON/OFF button on the battery.
- If you have a Display connected, switch it on by pressing and holding the ON/OFF button. (If it does not come on, please charge the battery).

  If you do not have a Display, double check that the little green Cap is connected instead of the Display.

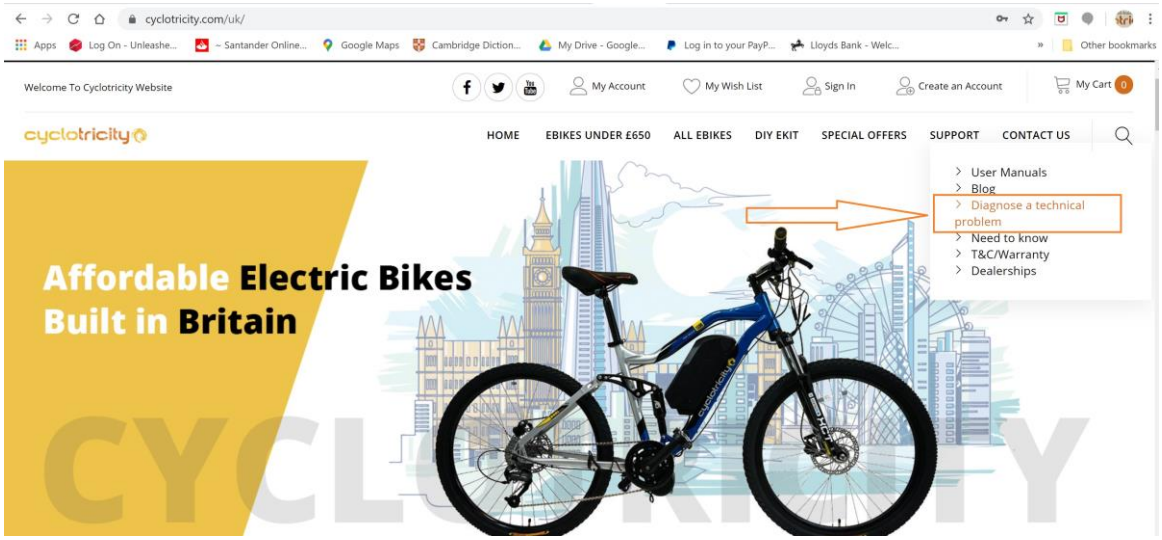
WARNING! Be extremely careful with the following step:
As soon as you press the Throttle, the shaft of the motor will spin! Doing this while the motor is resting on the ground could damage the shaft and the cable that goes through it.

- Press the Throttle for a milli-second. I.e. press the throttle and release it IMMEDIATELY! If you hear the motor reacting, then Bingo! This means power is flowing and you have completed the first part of this project. Great job!

Chapter 2 - We are here for you!

Lost in the instructions? Things didn't work? Missing parts? **Let us know!**

- You can contact us via our website cyclotricity.com
- Or for urgent troubleshooting, we have created an interactive diagnosis tool for you to tackle any issues like a pro! Try it out now: https://www.cyclotricity.com/uk/self-diagnosis



Assembly

Now that you have learnt how to power your eKit, it is time to disconnect all the parts so you can mount them on your bicycle.

Remember, every bike is different. These instructions are a general guide, some of which may not be suitable in your specific bike/kit configuration. So be prepared to improvise and do your own tweaks if necessary.

This is a DIY conversion project after all!

Chapter 3 - Tools

As each bike is different and may require different tools, no standard tools are supplied with this kit.

However, in the majority of cases, the following tools should be sufficient:

- Adjustable wrench
- A set of Allen keys
- Screw drivers
  (Both flat and crossed)
- Lubricant material
- Zip ties
- Pump
- For rear hub motors, if you haven't purchased
  a freewheel, you will need a freewheel remover tool to re-use your existing freewheel.

Chapter 4 - Mounting the Front Hub Motor

If your eKit comes with a Rear Hub Motor, skip to the next chapter.

1. Start by turning your bike upside down so it is resting on the saddle and handlebars.

2. Remove the front wheel.

3. The fork drop-out must be 10mm wide.

10mm drop-outs are standard for the vast majority of forks. However, some drop-outs may be 9mm wide. To enable the motor to fit inside, it is okay to use a metal file to scrape off excess paint and widen the drop-outs to 10mm. Be EXTREMELY careful not to file too much.

WARNING: If you have a carbon fiber fork, do NOT file it. It will compromise its structural integrity. You must either replace your fork with one that has a 10mm drop-out or contact us to replace your Hub-motor with a Crank-drive motor instead.

4. The distance between the drop-outs must be 100mm.

100mm is stadard for the vast majority of forks. If your fork is too narrow, it is okay to stretch it ONLY if your fork is made of steel material.

WARNING: Do NOT attempt to widen an Aluminum or Carbon Fiber fork. It will compromise its structural integrity and will pose a safety risk. Stretching the forks can only be done if you have a steel fork and by a qualified professional. If in doubt, ask a Bike mechanic to replace the fork or contact us to replace your hub motor kit with a Crank-drive motor kit instead.

5. Remove your existing tyre, air-tube and protection tape. Place them on the motor wheel instead.

(This step is best described visually. If you haven't replaced a tube/tyre on your bike before, you are recommended to watch one of the many video tutorials online).

6. If your bike is fitted with disc brakes, remove the disc from your wheel and add it unto the motor.

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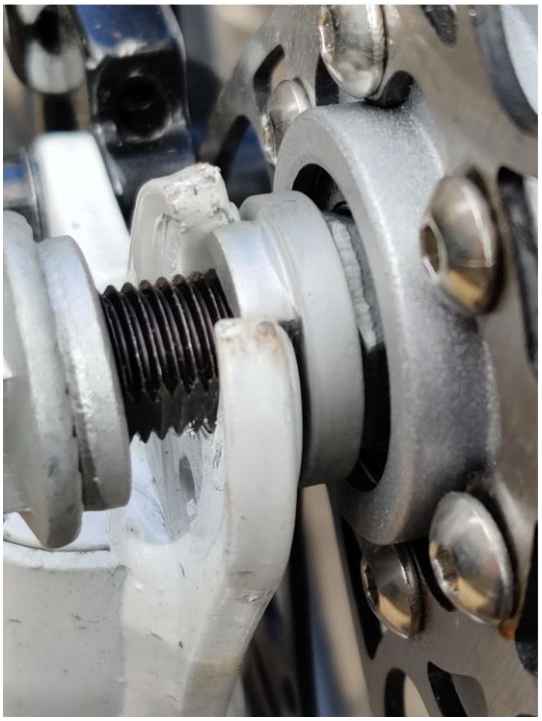
7. Insert the motor-wheel into the forks.

- IMPORTANT: The correct orientation is crucial. If the fork is resting upside-down, the **motor-cable** must be pointing in the direction as the above picture.

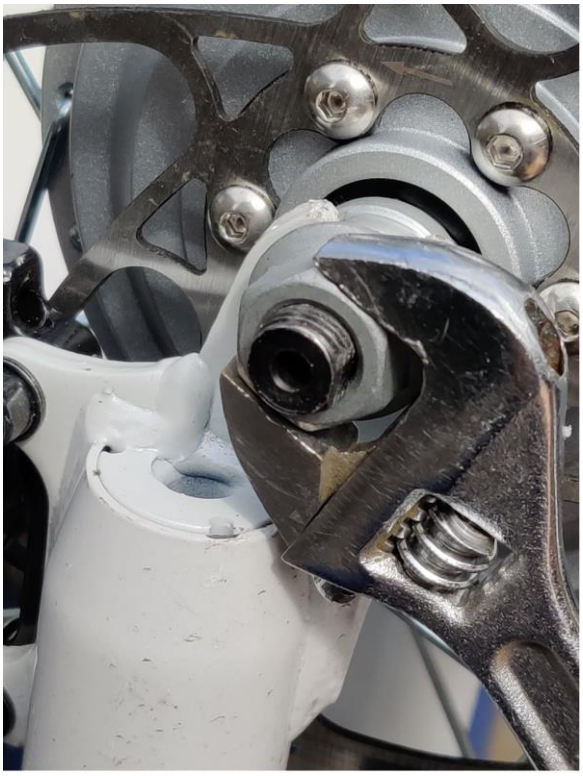
8. Torque Washer

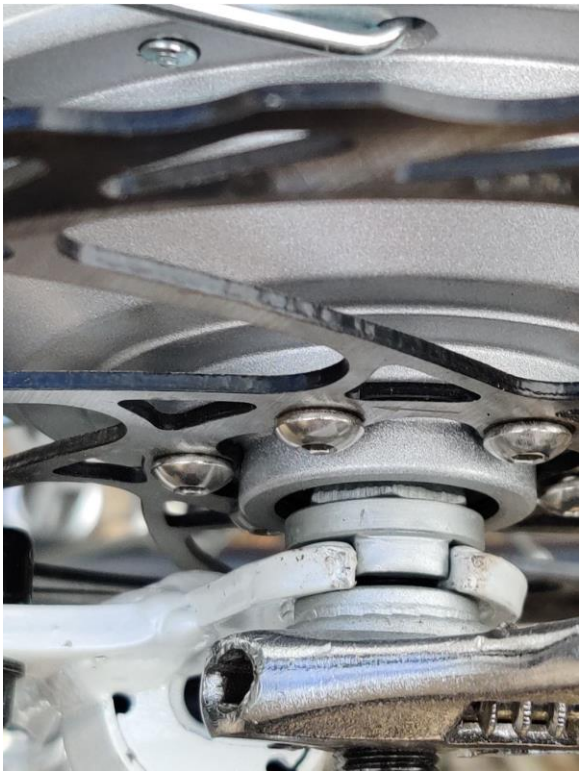
You will notice there is an unusual washer with a small flange sticking out (called torque washer) on the motor spindle.

Make sure that the flange slides into the fork drop-out from the inside like so:



9. Washers and nuts are provided on the motor spindle. Tighten them against the outside of the fork drop-outs.





10. Your motor should now be securely tight and can spin freely.

- Whether your bike is fitted with Disc brakes or V-brakes, you may need to adjust them now. If you haven't adjusted brakes before, we recommended searching for a video tutorial online.

Chapter 5 - Mounting the Rear Hub Motor

If your eKit comes with a Front Hub Motor, this chapter does not apply to you.

1. Start by turning your bike upside down so it is resting on the saddle and handlebars.
2. Remove the rear wheel.

3. The fork drop-out must be 10mm wide.

10mm drop-outs are standard for the vast majority of forks. However, some drop-outs may be 9mm wide. To enable the motor to fit inside, it is okay to use a metal file to scrape off excess paint and widen the drop-outs to 10mm. Be EXTREMELY careful not to file too much.

WARNING: If you have a carbon fiber fork, do NOT file it. It will compromise its structural integrity. Please return your hub motor kit and consider fitting a Crank-drive motor kit instead.

4. The ideal depth of the fork drop-outs is 14mm.

If your drop-outs are not deep enough (i.e. a portion of the spindle sticks out) you are required to fit a torque arm for your own safety (more on this later).

5. Remove your existing tyre, air-tube and protection tape. Place them on the motor wheel instead.

(This step is best described visually. If you haven't replaced a tube/tyre on your bike before, you are recommended to watch one of the many video tutorials online).

6. If your bike is fitted with disc brakes, remove the disc from your wheel and add it unto the motor.

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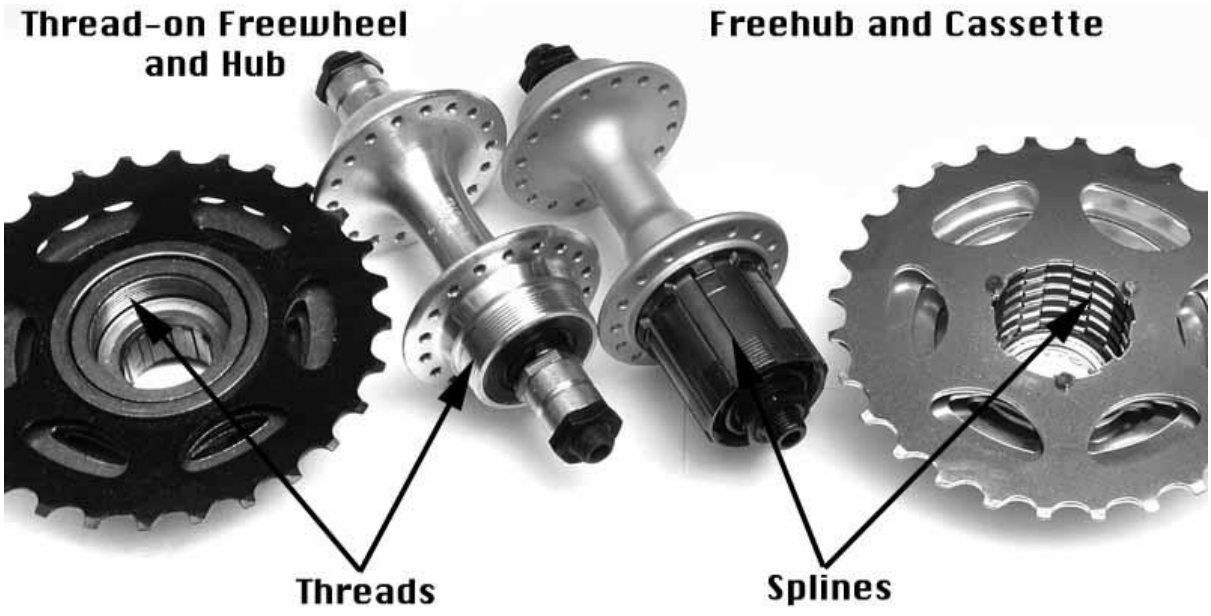
7. Prepare the Freewheel
   There are two types of gear cogs; Freewheel type and Cassette type. Here is the difference:



- The Rear Hub Motor is only compatible with Freewheels. I.e. threaded cogs.
  In other words, if your bicycle is fitted with a Cassette, you will need to purchase a Freewheel before you can proceed with installing this Rear Hub Motor.

- If your bicycle is already fitted with a Freewheel, you can remove it from your existing wheel and add it to the motor. To do this, you will need a special tool called “Freewheel Remover”.

If you purchased a separate Freewheel together with your eKit, you can mount it on the motor by hand without any specialist tools.
Although you are recommended to keep a Freewheel Remover as part of your toolset for future maintenance.

8. Freewheel alignment

Each bicycle is different. Depending on the frame geometry, the type of freewheel and derailleur you have, you may end up with slight misalignments.
Adding spacers before and after the freewheel may be necessary, but not always.
Trial and error is the only way to perfect this part of the project.

- A common issue is that your derailleur may be wider than usual.
  This means, your derailleur may rub against the motor when you try to shift to the biggest cogs.

Rather than changing your entire derailleur system, an easier workaround is to add a spacer between the motor and the freewheel.
This is not always necessary. You must make this determination by trial and error.

The thickness of the spacer depends on the geometry of your derailleur. Therefore, spacers are not included with your kit. Start by adding the freewheel without a spacer for now.
If you discover later that your derailleur is unable to reach the large cogs of your freewheel, you can then experiment with spacers until you achieve perfect alignment.

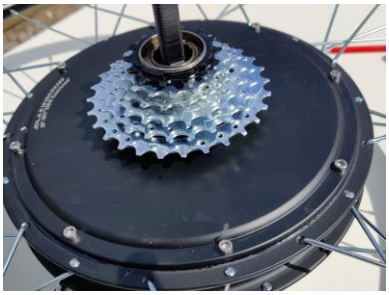
9. Lubricate the freewheel

Before fitting the freewheel on the motor, make sure the threads are cleaned and greased.

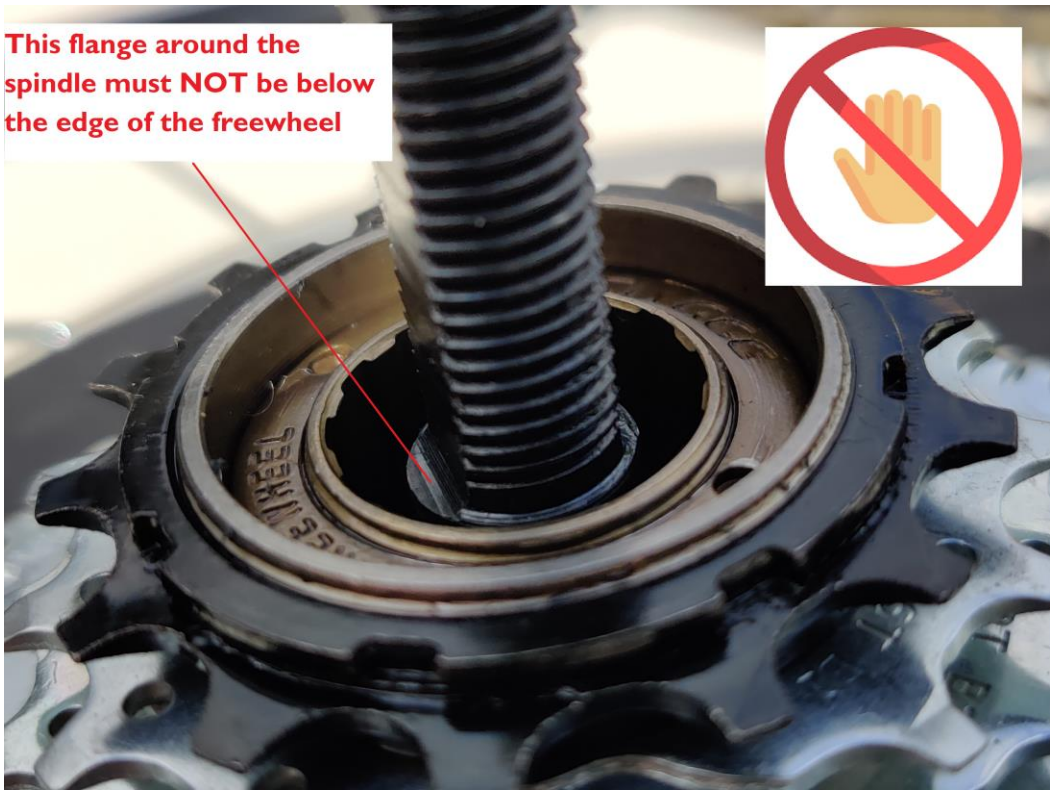
- Lubricating the threads prevents the metal from ceasing. This makes it much easier to remove the freewheel later to experiment with spacers if needed.

10. Now, fit the freewheel on the threaded part of the motor like so:

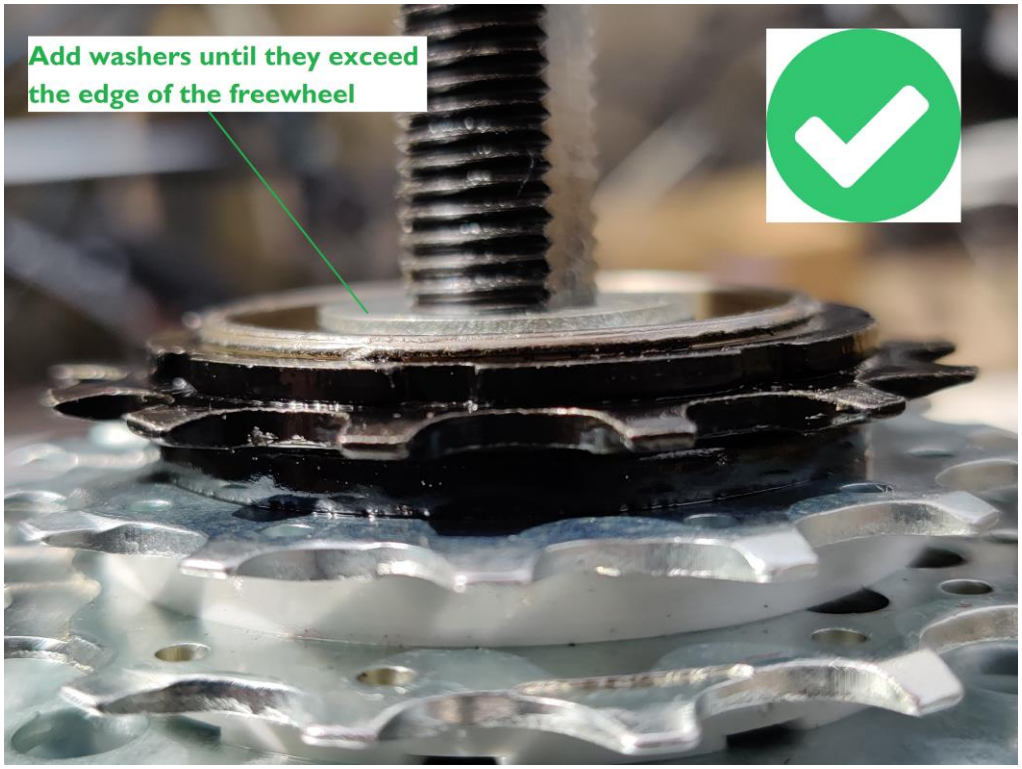




The Spindle of the motor has a flange. This must not be below the edge of the freewheel.

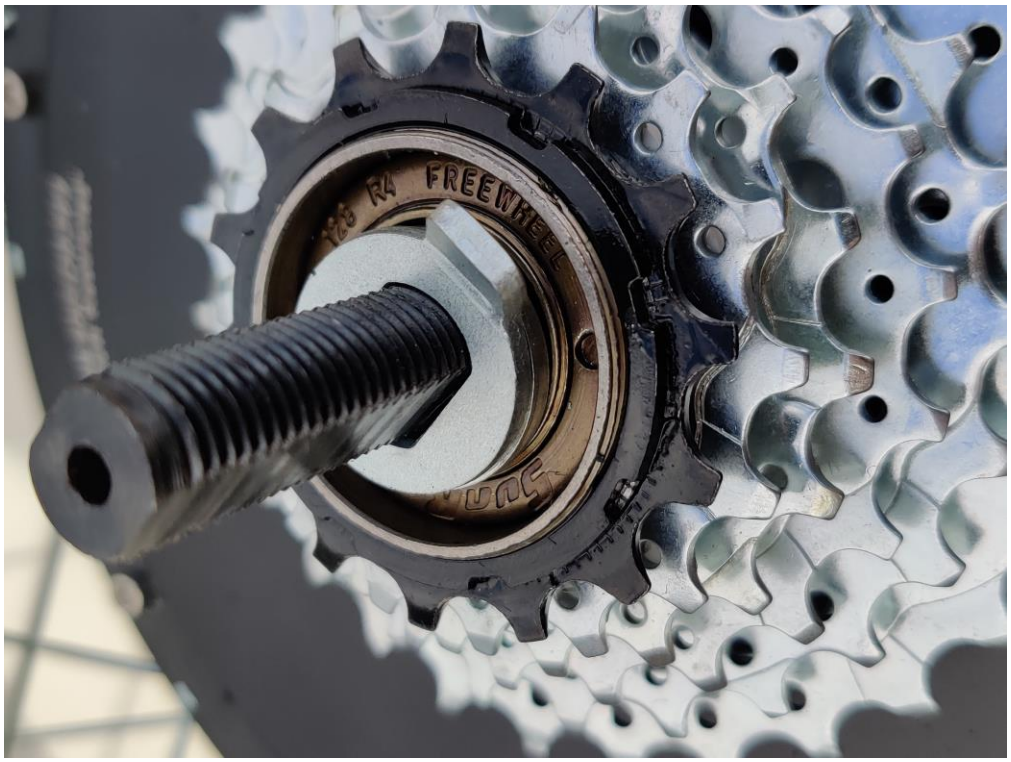


- This is likely to happen if you have a spacer behind the freewheel. It may also happen if your freewheel has 8 or more cogs.
  In which case, you must add washers (spacers) on the flange like so:

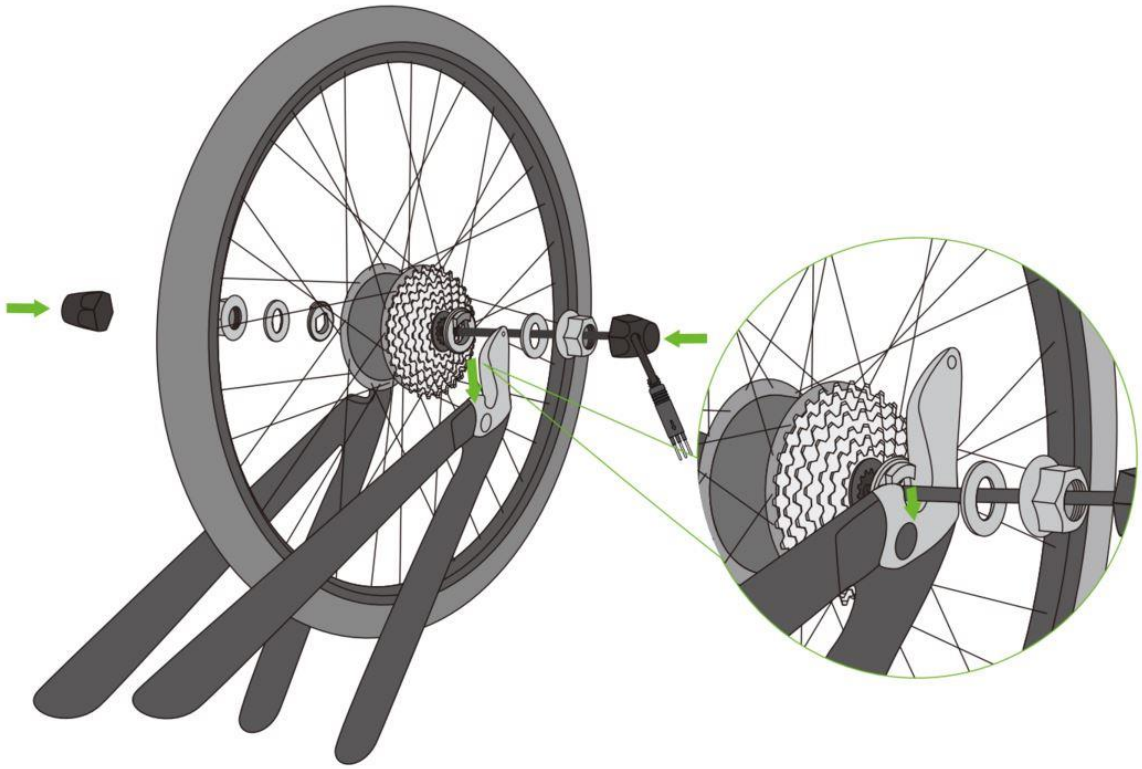


You may ‘pancake’ one washer on top of the other until they exceed the edge of the freewheel. This is to prevent the fork drop-outs from rubbing against the freewheel.

11. Add the torque-washer



12. Insert the motor-wheel into the forks.
    Ensure the torque-washer fits into the drop-outs from the inside, like so:



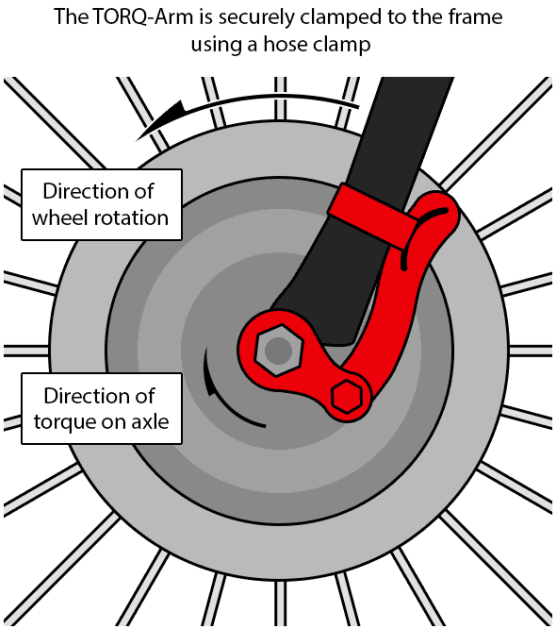
13. Torque-arm

You are recommended to fit a torque arm for extra safety. Remember, this is a high torque motor, and can be de-restricted for even more power!

Depending on the type of bicycle you have, your drop-outs may or may not cope with such power. The following pic shows what can happen to a weak drop-out.

Compromised drop-outs can be dangerous and result in an accidents.

It is therefore safer to use a torque-arm in order to reduce the pressure on the drop-outs.



- Torque arms are not provided with the eKit by default as not all bikes need them.
  If you have an aluminum, carbon-fibre, or a degraded steel frame, you're recommended to fit a torque arm.
  Also, if you had to file your drop-outs in order to fit the motor, you must use a torque arm.

- Visit cyclotricity.com to order yours should you need it.

The motor spindle must fit snugly all the way into the drop-outs, like so:

If your drop-outs are not deep enough (See Point 4 in this Chapter), you MUST use a torque-arm.

14. Fitting the Torque-arm

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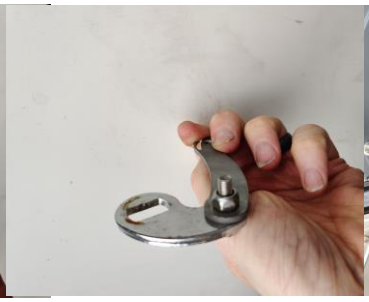

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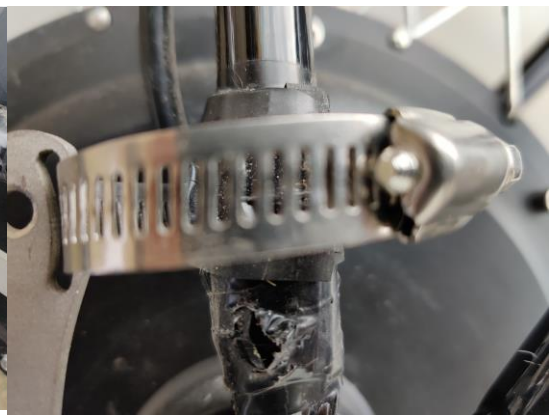

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10 *11* *12*

15. Put the chain back around the freewheel and derailleur.

- While the bike is upside down, rotate the pedals by hand so the motor starts spinning.
- Shift gears and adjust the derailleur if needed.
  (Adjusting derailleur is best described visually. If you are unsure of how to do that, you are recommended to watch one of the many great video tutorials online).
- If the derailleur rubs against the motor and cannot reach the bigger cogs, repeat steps 7 to 12. This time iterate with Spacers before and after the freewheel to achieve better alignment.
- Test the brakes and make adjustments accordingly.

Congratulations! You've completed the most demanding part of this project.

Chapter 6 - Fitting the Bottle Battery

Skip to the next chapter if you did not purchase this battery

1. Remove the Battery Holder (First unlock it with the key)

2. Fit the Battery Holder on the down-tube of your frame

- *Since each bike is different, the screws shown in this image typically come with your bike. They are not provided with the battery.*

- *If your down-tube does not have provision for a water bottle, a qualified bike mechanic can drill holes into the frame and install threaded rivet-nuts. This will enable you to fit the Battery Holder using screws.*

3. Slide the Battery into the Holder (and lock it with the key).

- Remember, the battery lock is only meant to prevent it from falling off during cycling and should not be regarded as a security lock against theft.

Chapter 7 - Fitting the Frame Battery

Skip to the next chapter if you did not purchase this battery

1. Remove the Battery Holder (First unlock it with the key)

2. Fit the Battery Holder on the down-tube of your frame

- *Since each bike is different, the screws shown in this image typically come with your bike. They are not provided with the battery.*

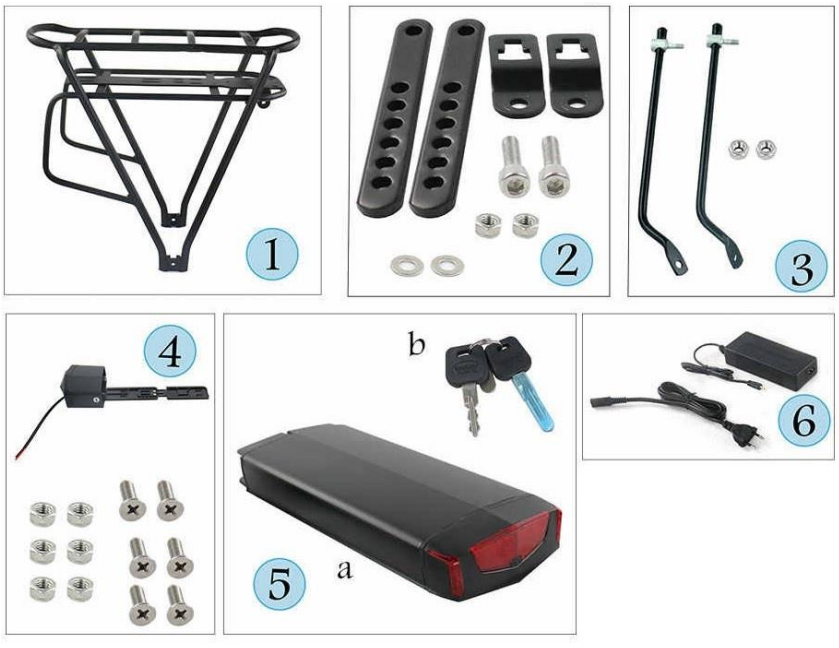
- *If your down-tube does not have provision for a water bottle, a qualified bike mechanic can drill holes into the frame and install threaded riv-nuts. This will enable you to fit the Battery Holder using screws.*

3. Slide the battery into the holder (and lock it with the key).

- Remember, the battery lock is only meant to prevent it from falling off during cycling and should not be regarded as a security lock against theft. We recommend you detach the battery and carry it with you whenever you leave the bike in public places as it is the most expensive part in your product to replace.

Chapter 8 - Fitting the Pannier Rack Battery

Skip to the next chapter if you did not purchase this battery



1- Pannier Rack
2- Rack fittings
3- Rack rods
4- Battery Plate
5- Battery
6- Charger

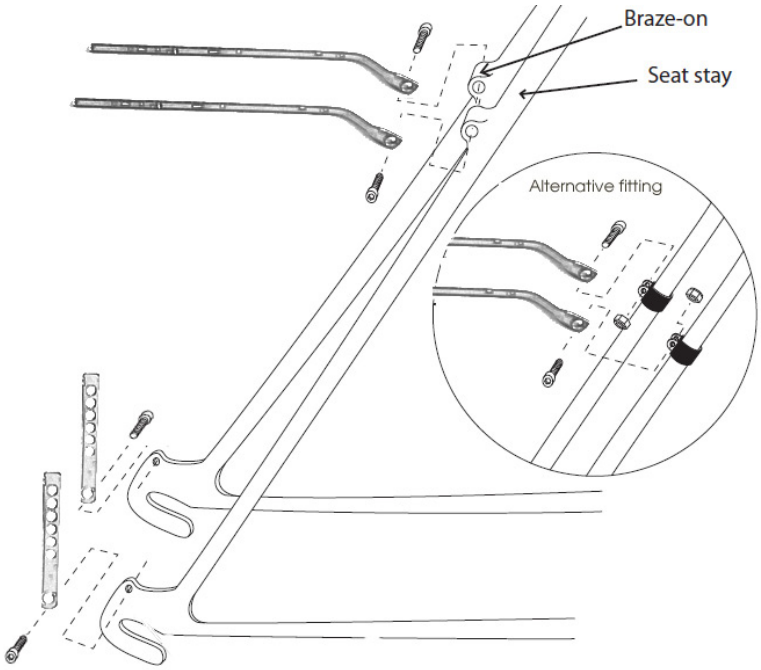
1. Prepare the Rack Rods

2. Assemble the Pannier Rack

➢ Put the Controller inside the plastic compartment and connect the bullet connectors.

➢ If you purchased the 500W Rear Drive Motor, your controller may be too large to fit inside the plastic compartment. In this case, you would have been provided with a Velcro Bag to mount the controller on your bike frame. Instructions below.

3. Mount the Pannier Rack on your bike

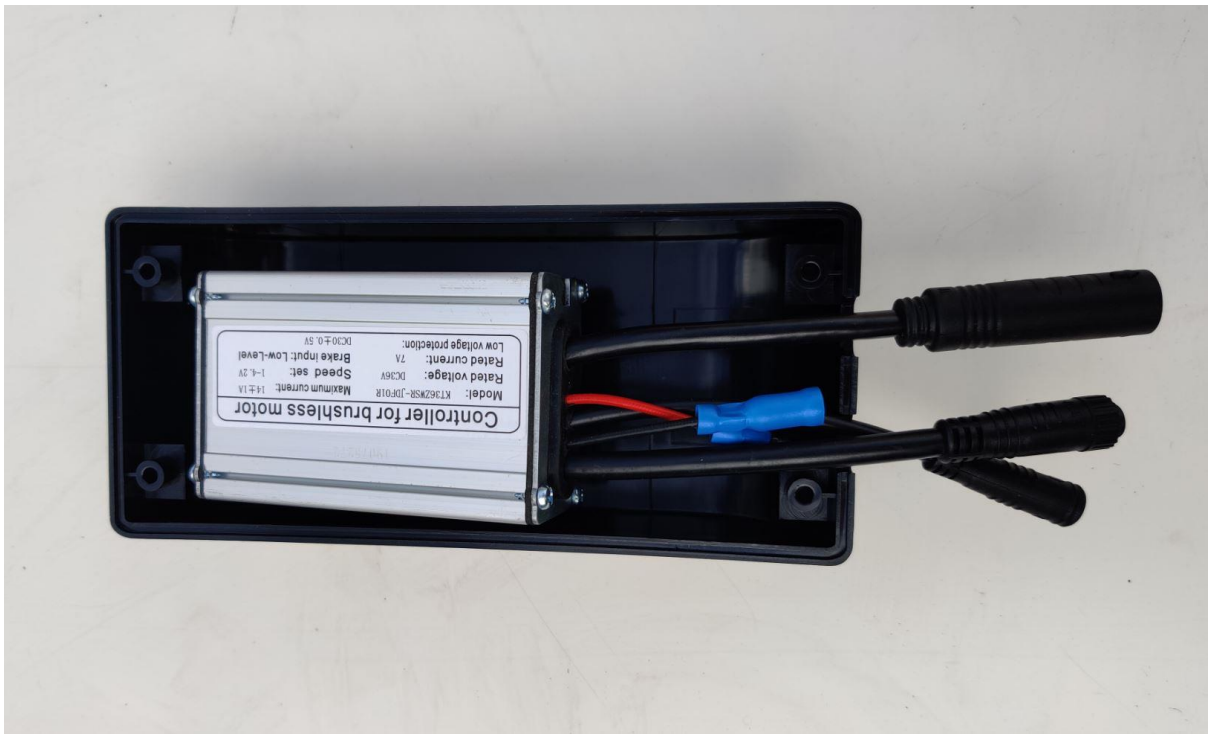


Note: *Since each bike is different, the screws (or alternative fittings) shown in this image typically come with your bike. They are not provided with the battery. If you do not have suitable screws for your bike frame, contact your local bike service shop for suitable fittings.*

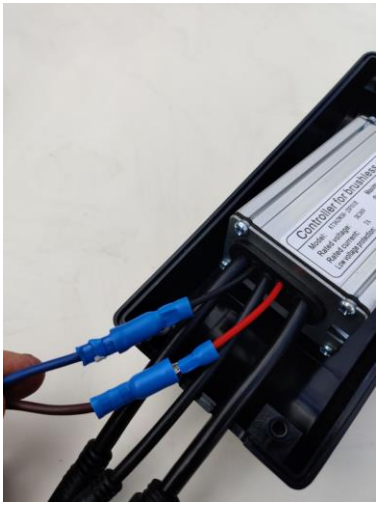
Chapter 9 - Plastic Controller Box

If your kit did not come with the following plastic housing, this chapter does not apply to you

1. Place the Controller inside the Plastic Box like so:



2. Connect the Battery bullet connectors:


- Ensure the bullet connectors for the battery remain inside the housing.

3. Close the lid of the plastic housing


- Ensure the bullet connectors for the battery remain inside the housing so they are protected.

4. Fasten the lid with screws

5. Use the brackets to mount the box on the Seat-tube of your bike

Chapter 10 - Velcro Controller Bag

If your kit did not come with the following Velcro bag, this chapter does not apply to you

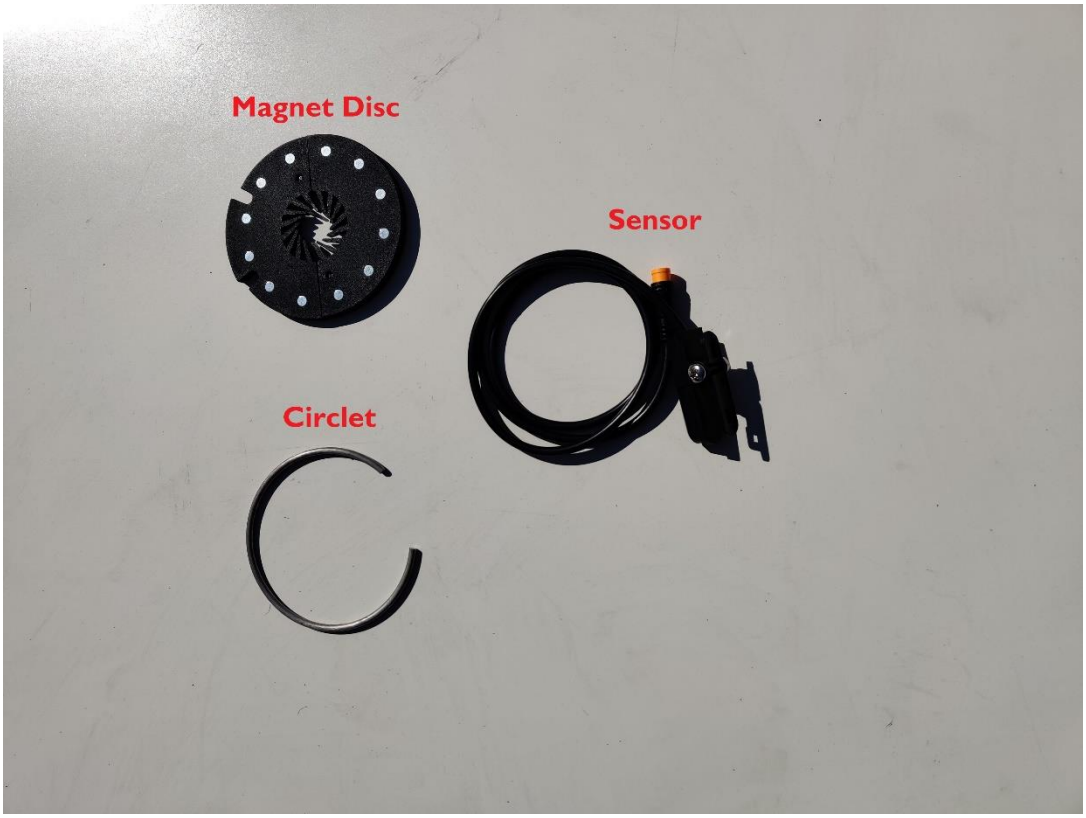
1. Open the bag and put the controller cables through the designated hole:

2. Ensure the bullet connectors for the battery remain on the inside to keep them protected

3. Use the Velcro strips to mount the bag on your frame as you see fit, for example:

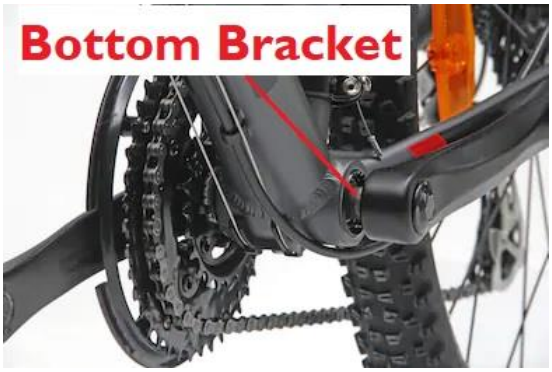
Chapter 11 - Fitting the PAS (Optional)

If you did not purchase a PAS with your kit, skip to the next chapter.

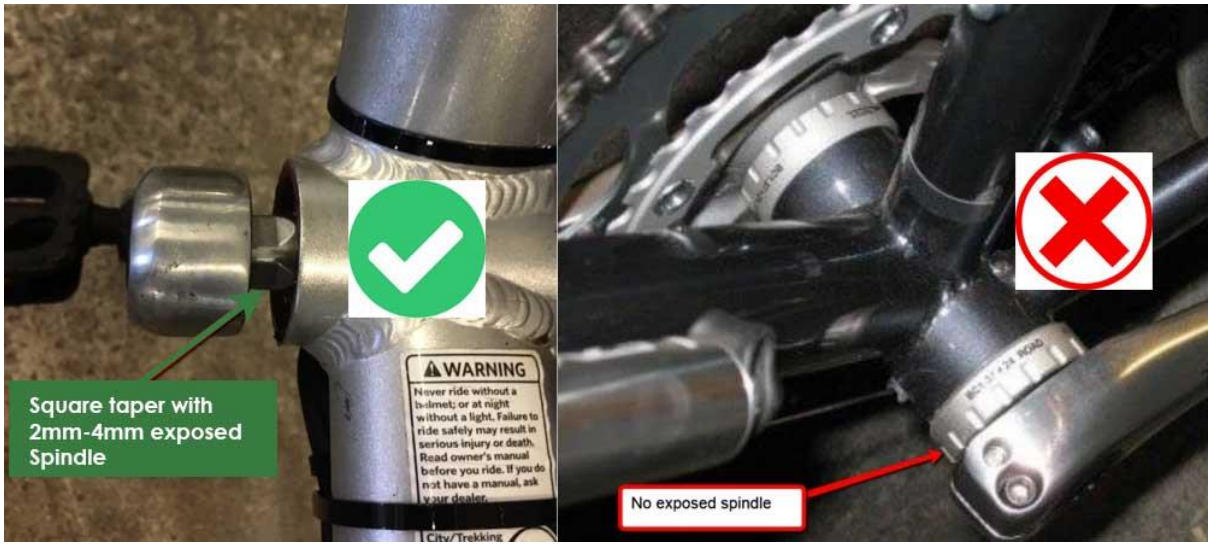


1. <u>Prerequisites</u>

The PAS fits on the Bottom Bracket of your bike. A Bottom Bracket is the spindle that holds your pedal arms.



There are different types of Bottom Brackets. The most common is what's called a "Square Taper" type. The **PAS** is only compatible with **Square Taper Bottom Brackets**.

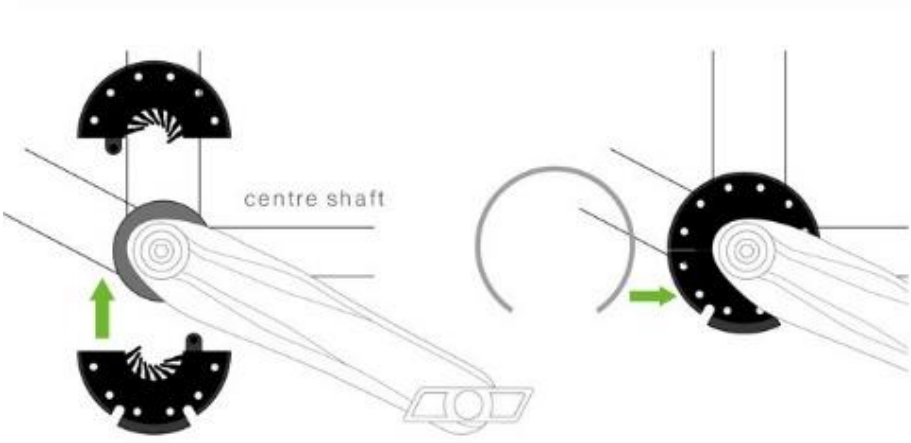


If your bike does not have an exposed spindle, you must change your Bottom Bracket before you can fit the PAS.
A bottom bracket is fairly inexpensive and simple to replace. But requires specialist tools. Therefore, it is best to have this done by a qualified bike mechanic.
Ask your local bike shop to fit a Square Taper type. The length of the spindle should have clearance of 2mm-4mm to allow for the Magnet disc to be fitted.
In the meantime, you can proceed with installing the rest of the eKit and use it without PAS for now.

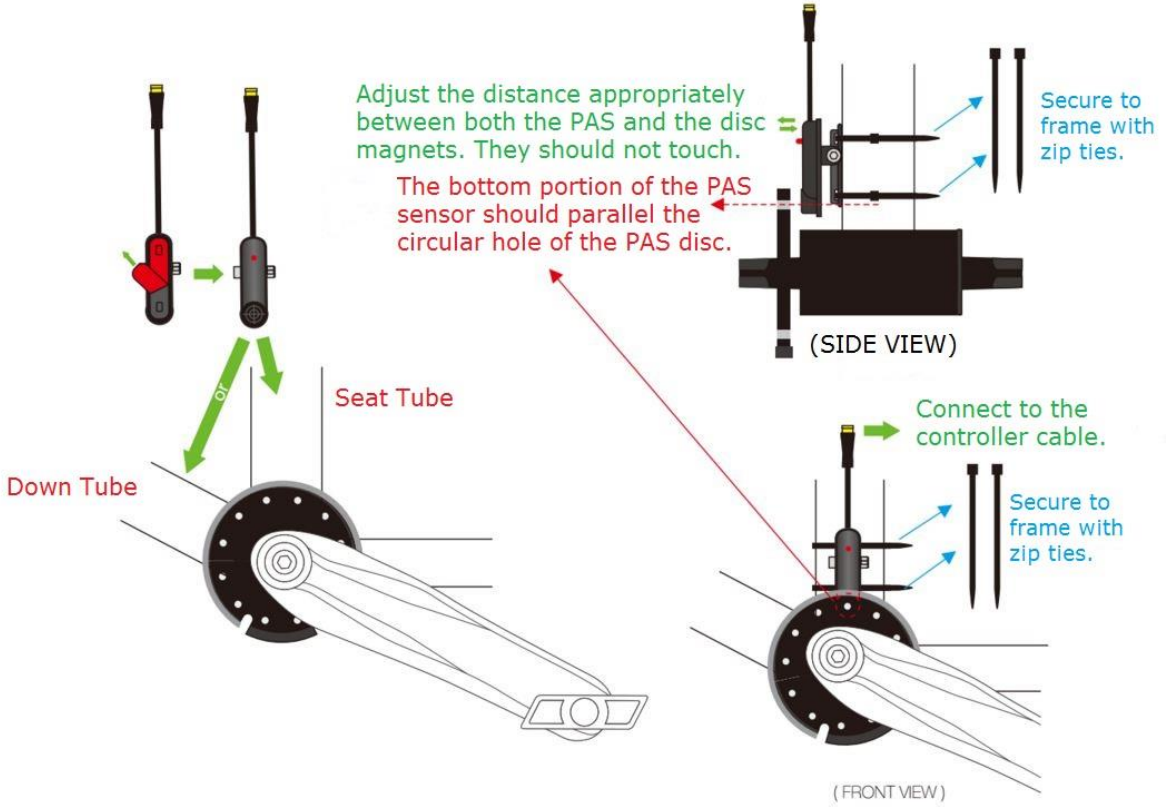
1. Dismantle the Magnet Disc.




2. Fit the magnet disc around the Bottom Bracket spindle



3. Fit the sensor on either the down-tube or the seat-tube
   (pick the tube that allows the sensor to be positioned closer to the Magnet disc)



4. Ensure the bottom portion of the sensor (the plus sign) can be seen through the crevice of the Magnet disc

- Make sure the sensor is as close to the Magnet disc as possible, but not touching it.
- If you've fitted the PAS correctly, the red light will blink as you rotate the magnet disc passed it.
- The adhesive on the sensor is not enough to cope with real life conditions. Secure the sensor firmly with zip ties.

ATTENTION: If the spindle of your bottom bracket is too long, the Magent disc may move away from the sensor as you ride your bike. This will result in the power cutting out.
If you experience this problem, push the magnet disc closer to the sensor. And consider using hot-glue to keep the Magnet disc firmly in place.

Chapter 12 - Handlebar controls

1. Start by removing the grips from your handlebar:

Tip: Lift the grip with a screw driver and squirt slippery material underneath. This can be WD-40, bike-oil or even a homemade mix of water and washing up liquid.
Hairspray also works great as it acts as a lubricant when wet and as an adhesive when dry. Perfect for working with grips!

1. E-brakes

E-brakes are like regular brake levers but with the added function that they cut the electrical power when used.

Your kit will function regardless whether you choose to fit the e-brakes or not.

- If your brake-levers are integrated with gear-shifters, you won't be able to fit the e-brakes.
- Same goes for Hydraulic Brakes.

Mechanical brake levers

Replace w/ E-brakes

Mechanical brake levers w/ integrated gear shifters

Do not replace

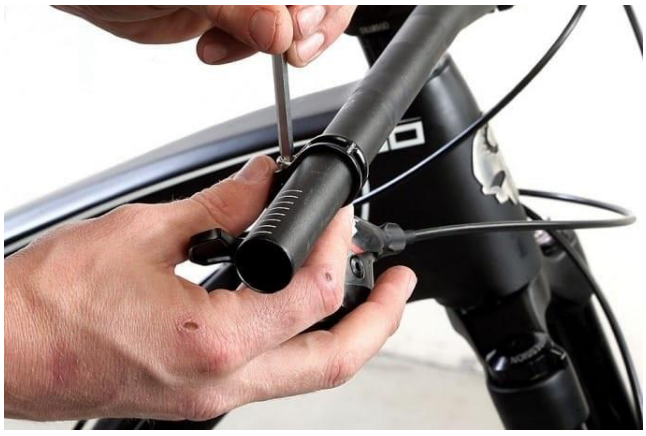
Hydraulic brake levers

Do not replace

If you have regular mechanical brake levers, you can swap them with the e-brakes provided with your kit.

- Remove the brake cable from your existing brake levers:

- Remove the brake levers:



- Fit the E-brakes on the handlebar and hook the brake cables back:



- Adjust the brakes as needed.
  (If you are unsure of how to do that, you are recommended to watch one of the many video tutorials online).

2. Throttle

The Thumb Throttle is a lever that fits on the handlebar to power your eKit. It is the equivalent of a gas pedal on a car.

- Mount the throttle on the handlebar:
- Before tightening the Throttle screw, consider the positions of the brake levers and any gear shifters you may have. Determine the best order in which these three items are mounted on the handlebar for best reach and ease of use.
- Put the grip back on.

Tip: Certain handlebars may be too wide for the Throttle to fit. Instead of replacing your entire handlebar, you can try sourcing a Handlebar-mount which you can fit your Throttle on.

3. Display (Optional)

Although fitting a display is optional, it's a great way to use your eKit especially as a complementary device to the PAS. It enables you to control how much or how little assistance you get from the PAS for a more intuitive ride. It also provides various useful functions like speedometer, odometer, battery load etc.

The eKit comes with two different displays to choose from:

LED **LCD**

- The LCD is required if you need to de-restrict the Rear Drive Motors beyond their 250W road-legal setting (for off-road use).

If you have purchased a Display with your eKit, go ahead and mount it anywhere you see fit on the handlebar (typically on the left hand side).

More on how to configure the Display later.

Chapter 13 - Connect the cables

1. System Cable

- Connect the system cable to the items on the handlebar (in the same way you did in Chapter 1).
- If you did not purchase a Display with your eKit, remember to connect the green cap to the green connector of the system cable instead.
- If you did not fit the e-brakes, seal the red connectors with electrical tape to keep them protected.
- Attach the System Cable to the down-tube of your bike.
- Use zip ties. But be careful not to pinch the derailleur and brake cables.
- Connect the System cable to the Controller.

2. Motor-cable

- Your motor-cable might look slightly different depending on the motor you purchased.
- Connect it to the motor.
- Find the best route along your bike frame so you can connect it to the controller.
- Use zip ties as needed. Be careful not to pinch other cables.

3. Connect the Battery

- The bullet connectors of the battery are not water-resistant. So make sure these connectors remain inside whatever controller-housing that your kit was supplied with.

4. Connect the PAS (if any)

- If you did no purchase a PAS, the yellow plug on the controller can remain bare. But it is best to seal it with electrical tape to keep it protected.
  Or better still, tuck it inside the controller housing.

Congratulations! You have now built your own fully functional e-bike!

Chapter 14 - Testing

- Switch the Battery on.
- Switch the Display on (if any) by pressing and holding the On/Off button.
- Lift the bike up in the air and press the Throttle. Your motor should spin. If not, disconnect and connect all the cables.
- If your LCD Display is showing Error Code 3 (or if the LED light is flashing), disconnect the motor-cable from both the motor and controller and plug it back in again. Make sure the arrows are aligned and it is strongly pushed all the way into the connectors.
- If you have fitted PAS, ask someone to help you rotate the pedals while the bike is in the air. The motor should spin. If not, check the position of the magnet disc in proximity to the

sensor. As the magnet disc runs passed the sensor, the light should blink indicating the sensor is registering a reading.

- If you are still having technical difficulties, follow the trouble shooting guide on Chapter 2.

Chapter 15 - LCD Display Settings

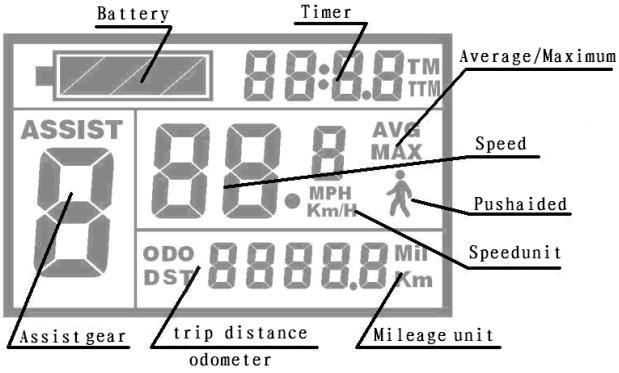
Ignore if you did not purchase an LCD Display

1- The LCD has an on/off switch. This must be switched on for the bike to receive power.
2- If you leave it on without using the throttle, the bike will start giving you automatic assistance as you pedal along (provided you have installed the PAS).
3- You can use the UP/DOWN buttons to increase/decrease the amount of assistance you would like the bike to provide.
4- Switching the power off will transform your bike into a normal push bike.
5- The LCD also provides other functions such as speed, time, distance of your journey etc (see below).
6- Please note that the battery bars on the LCD may not necessarily show the amount of capacity left on the battery, but the amount of load the battery is experiencing at any one point. Decreasing battery levels on the dashboard means you ought to be pedaling more. We do not recommend you run on the throttle alone for long distances as this will impact the performance and lifecycle of the battery.
7- The battery performs best with a payload less than 80Kg. Heavier cyclists may notice the battery levels dropping on the Display as the throttle is being used. This is an indication that the battery is getting overloaded and, therefore, sharing the load with some pedalling is strongly recommended.
8- To see the actual capacity left on the battery, check the indicators on the battery itself.

LCD Instructions and Setup

- Display under common running conditions

Main view



- Battery indicator
- Trip time (TM)
- Level of assistance
- Current speed
- Trip distance (DST)
- 6Km/h assistance power mode (push aid)

Riding History Data View

- Odometer (ODO)
- Maximum speed (MAX)
- Total trip time (TTM)
- Average speed (AVG)

- Function of buttons

The LCD device comes with three buttons; the centre button is market with SW, whiles the UP/DOWN buttons are marked with arrows accordingly.

On/Off

- To switch the device on, press and hold the SW button.
- To switch it off, press and hold the SW button (or the device will automatically switch off when the bike is left without use for 5 minutes).

Change level of assistance

- Under normal operating conditions, use the UP/DOWN buttons to change the level of assistance. Level 1 being the lowest, and 5 being the highest.

Illuminate screen

- Under normal operating conditions, press and hold the UP button to have the screen illuminate for use in the dark.

Push aided mode

- It is possible to use the 6km/h assistance mode while walking your bike. To do so, press and hold the DOWN button, the push aided indicator will start flashing. The bike will run at no more than 6km/h as you walk the bike along.
- Release the DOWN button to suspend this function.

- Trip Data View

- To enter the history trip data view, press the SW button once while the device is on. The ODO and TTM will appear.
- Press the UP/DOWN buttons to access the maximum speed and average speed information.
- Press SW again to exit this view (or it will automatically exit this view after 5 minutes of riding).

- User Setup

You must configure the following functions on your device:

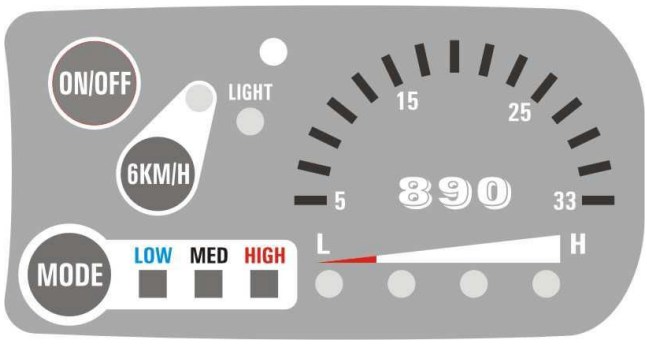
a. Maximum speed.
b. Wheel diameter (16”-28”).
c. Unit selection (Miles or Km, MPH or Km/h).

ATTENTION: Not configuring this will result in the LCD showing wrong Speed/Distance readings.

- If the device is on, press the SW button to switch it off.
- Press the SW button to switch it back on.
- As soon as the LCD turns on, press and hold both the UP and DOWN buttons at the same time for 3 seconds (till you see a number flashing on the screen). This will take you into the LCD setup view.
- Adjust the maximum speed. (Note: you cannot achieve speeds greater than 25km/h unless you obtain the CycloTricity de-restriction codes after signing the relevant disclaimer. Merely setting a high speed on this step will not unlock the full power of your Rear Drive Kit).
- Press the SW button to move on to the wheel diameter. Use the UP/DOWN button to set the correct diameter.
  NOTE: If the wheel diameter is not configured properly, the display will give you wrong outputs when it comes to power, speed, time distance etc.
- Having adjusted the wheel diameter, press the SW button to move on to the unit selection. Use the UP/DOWN buttons to change between Km/h and Mph. The distance units (miles or km) will be selected for you depending on which speed unit you pick.
- Press and hold the SW button to save the settings and switch off the Display.

Chapter 16 - LED Display Settings

Ignore if you did not purchase an LCD Display



1- The LED has an on/off switch. This must be switched on for the bike to receive power.
2- If you leave it on without using the throttle, the bike will start giving you automatic assistance as you pedal along (provided you have installed the PAS).
3- You can use the MODE buttons to set the amount of assistance you would like the bike to provide (LOW, MEDIUM, HIGH or OFF).
4- Setting the MODE to OFF will transform your bike into a normal push bike.
5- The LED also provides a speed function (see LED setup).
6- Please note that the battery indicators on the LED Display may not necessarily show the amount of capacity left on the battery, but the amount of load the battery is experiencing at any one point. Decreasing battery levels on the dashboard means you ought to be pedalling more. We do not recommend you run on the throttle alone for long distances as this will impact the performance and lifecycle of the battery.
7- The battery performs best with a payload less than 80Kg. Heavier cyclists may notice the battery levels dropping on the Display as the throttle is being used. This is an indication that the battery is getting overloaded and, therefore, sharing the load with some pedalling is strongly recommended.
8- To see the actual capacity left on the battery, check the indicators on the battery itself.

LED Instructions and Setup

- <u>Function of buttons</u>

On/Off

- To switch the device on/off, press and hold the on/off button (or the device will automatically switch off when the bike is left without use for 5 minutes).

Change level of assistance

- Under normal operating conditions, use the MODE button to change the level of assistance.

Push aided mode

- It is possible to use the 6km/h assistance mode while walking your bike. To do so, press and hold the 6km/h button, the push aided indicator will start flashing. The bike will run at no more than 6km/h as you walk the bike along.

- Release the 6km/h button to suspend this function.

- User Setup

You will need to configure the following functions on your device:

- Maximum speed.
- Wheel diameter (12”-28”).

ATTENTION: Not configuring this will result in the LED showing wrong Speed/Distance readings.

Speed Setup

- Press and hold the on/off button to switch the device on.
- Press and hold both on/off and MODE buttons simultaneously for 3-5 seconds. This will take you into the LED setup state.
- Once you enter the setup state, the LOW indicator as well as the speedometer indicators will blink. Press the on/off or MODE buttons to increase/decrease the maximum speed parameter (please note that 25km/h is the maximum legal speed limit allowed on the road in the UK/EU). Each light on the speedometer indicators equates to 1km/h.
- You can save this setting and exit the setup state by holding down the MODE button. Alternatively, you can stay on the setup state and move on to configuring the wheel diameter by pressing the 6km/h button.

Wheel Diameter Setup

- Having adjusted the maximum speed and pressed the 6km/h button, you are now in the wheel diameter setup state.
- You will notice that the MED indicator as well as the speedometer indicators is blinking. Press on/off or MODE to set the right size of your wheel:
    - The first of the speedometer lights corresponds to a 12” wheel.
    - The second light corresponds to a 14” wheel.
    - Thereafter 16”, 18”, 20”, 22”, 24”, 26”, 700c and 28” in this order. I.e. the 10th light will correspond with a 28” wheel.
- NOTE: Choosing the wrong wheel size will result in non-accurate speed readings on your LED speedometer.
- Press and hold the MODE button to save your settings and exit the setup state.
- NOTE: The LED will exit the setup state automatically if no buttons have been pressed for more than 1 minute. In which case, your settings will not be saved.

Chapter 17 - Things to remember

If you purchased a battery with your eKit:

1- Before you use the battery for the first time it is best to give it a full deep charge for 12 hours. Then use the bike until the battery is completely drained. Repeat this charge/discharge cycle 3 times. After this "conditioning" process, you can leave the battery charging as and when you require.

2- If you are going to leave your battery uncharged for more than eight weeks it is best left half charged. You should then re-charge it every four weeks for 1 hour to keep it in top condition.

Warning: By leaving the battery idle for longer than 8 weeks, you run the risk of loss in performance or other detrimental faults that won't be covered under the warranty.

3- Check the indicators on the actual battery to see how much power you have left.
Please note that the indicators on the handlebar Display (if purchased) lights/bars do not necessarily show the amount of power you have left, but the amount of load the battery is experiencing at any one point. If the LED lights/LCD bars go down to "Empty", then this is a strong indication that you ought to be pedaling more to take some of the load off the battery. This will improve the battery life cycle.
4- Do not expose the bicycle or battery pack to fire, heat sources, acid or alkaline substances. Keep it away from radiators.
5- For best results, always charge the battery at room temperature.
6- Always make sure the battery is turned off before detaching/connecting it.
7- If your battery is damaged or appears to be overheating for any reason immediately return it to your retailer for advice and a safety check.

IMPORTANT: Lithium-ion batteries must be safety-checked by a professional annually. Failure to do this can constitute a safety risk. Contact us or your local dealer for your battery service.

Charger

1- Red light on the charger means the battery is charging. When the red light turns green, the battery is fully charged. Please ignore the green light and carry on charging for 12 hours for the first 3 charges to condition your battery.
2- Always disconnect the charger from the mains before disconnecting the charger from the battery.
3- Do not leave the charger connected to the mains when not in use.

Water

Your eKit is rain and splash resistant and can be used in all weathers (within reason). However, it is not water-proof. In other words, the electrical components of the vehicle, such as motor, battery, and controller, must not be submerged in water. And must not be stored or used in wet conditions for longer than 30minutes.

WARNING**:** Do not attempt to open the casings of the battery or motor as it could be dangerous and all warranties will become void. If you experience problems, refer to the troubleshooting guide in this manual or ask your local dealer.

Maintenance

Now that you have fitted a conversion kit to your bike, it will need extra maintenance. Always check for loose parts and ensure everything is fitted securely.

Ensure your bike is serviced by a qualified mechanic more frequently. Your kit is only as safe as the bike it is fitted on.

Chapter 18 - Limited Warranty

Only use this product in accordance with this user manual. We offer a 1 year warranty on all items inside your eKit box. The warranty only covers technical faults which have not been in anyway caused by the user deliberately or accidentally.

Those parts and/or products which are determined by Cyclotricity to be defective and to qualify for warranty replacement will be provided at no charge, only after a valid warranty claim is processed by Cyclotricity.

Warranty claims must be made by the original purchaser by contacting the original Cyclotricity dealer within the warranty period. Shipping & Handling fees will apply to all orders placed for warranty parts and/or products and will be invoiced to the customer/warranty claimant prior to said parts and/or products are shipped from Cyclotricity.

Cyclotricity, at its sole discretion, has the option of replacing with a new part, or factory re-certified part. The Limited Warranty stated herein is in lieu of and expressly excludes all other warranties not expressly set forth herein, whether expressed or implied by law or otherwise, including, but not limited to, any warranties for merchantability and/or fitness for any particular purpose. Cyclotricity shall in no event be liable or responsible for incidental or consequential losses, damages or expenses in connection with their products. The liability of Cyclotricity hereunder is expressly limited to the replacement of goods complying with this warranty or at the sole discretion of Cyclotricity to the repayment of an amount equivalent to the purchase price of the part in question.

NOTE: Damage caused by water, dropping or any collision is NOT covered. Failure to maintain the battery as per the guidelines herein will void the battery warranty.

Exceptions to limited Warranty

“Spin Out” – Spinning out the axles inside of your dropouts – We are unable to be there when the kit is installed so it is up to you to understand the high torque involved at the dropouts and install them correctly.

If your dropouts are not correctly suited to fit the axle then you should not install the kit on those forks. Get new forks, file the forks to the axle fit “flush” or contact your dealership to return the kit. We will not refund or replace a motor that has been “spun out”.

“Over Voltage” – Connecting a battery larger than the voltage of this eKit can damage the controller, wires and/or connectors. Damaging any kit component or motor by connecting the wrong battery type will void the

warranty. The Cyclotricity eKit will work with a 36 volt Lithium-ion battery pack only (or 48V for our 1000W+ systems). We strongly recommend the use of a Cyclotricity battery for best compatibility and performance.

Water Damage -

The warranty does not include damage from power surges, use of improper charger, improper maintenance or other such misuse, or normal wear. The Cyclotricity eKit parts are water resistant and fine in the rain but should NEVER be submerged in liquid nor stored or used in wet conditions for longer than 30minutes.