

**elby®**

**S2 User Guide**

## Welcome to the Elby Neighborhood!

Many people see a bicycle as a simple conveyance - a way to get from here to there. But at Elby we believe a bike, before everything else is meant to put a smile on your face. Wherever you ride Elby, whatever you ride Elby for, it'll be your partner in discovering new places, new people and definitely new experiences. Sure Elby will get you "there and back", but like our founder Frank Stronach says, "The shortest distance between two points is BORING." So we encourage you to live a little more, pedal a lot more and discover something new everyday.

While you're out there exploring, smiling, making new friends, taking pictures and making new memories on two wheels please be mindful of others and use your best judgement on the road. That probably means minding local traffic laws, yielding for pedestrians, wearing a helmet to protect your big beautiful brain, gloves for your hands, switching on Elby's headlamp and taillight, using a bell and hand signals and securely locking your bike with a chain or u-lock to protect your new best friend. You get the idea.

This Elby User Manual is here to inform, encourage and motivate you to have the safest, most enjoyable experience every time you and Elby take a spin. We're available to help in a variety of ways - There's more information, helpful videos and FAQs at [www.elbymobility.com](http://www.elbymobility.com). We also have a toll-free customer service line, 1-844-866-3529, that's open Monday - Friday between 9am & 5pm Eastern Standard Time or send us an email to [info@elbymobility.com](mailto:info@elbymobility.com). We made Elby for you. Let us know what you think.

---

**Elby...You charge it, It charges you!**

---

## Elby Bicycle Identification

It's important to keep track of Elby's serial number and the serial numbers of the important components that come on Elby for warranty purposes. Once you've familiarized yourself with Elby and the names and locations of the components, feel free to use the following space to document each serial number for future reference.

Frame serial number:

---

Torque Sensor number:

---

Hub Motor number:

---

Battery serial number:

---

---

If you ever require assistance please call 844-866-3529  
or email [info@elbymobility.com](mailto:info@elbymobility.com)

## Intended Use

Elby and its components are designed around general purpose riding on paved roads, smooth gravel roads and improved trails only. It is recommended for commuting and/or recreational use and not intended for off-road or any kind of jumping or extreme riding.

Always check with your city to make sure electric bikes are allowed on your local bike paths or the streets and trails you will be riding on.

## What's in this manual?

Lots of useful information! Please read all warning and note sections in this user's manual before riding your Elby bicycle. Even if you're an experienced cyclist it's best to read through the whole manual in order to learn the specifics and understand the bicycle fully. If you lend your Elby to someone, please make sure they read and understand these instructions as well. We recommend you keep this user's manual for as long as you own your Elby.

**Take special note and care reading sections containing the following:**

---

**NOTE:**

**WARNING:**

**IMPORTANT:**

---

Make sure you have a good understanding of how all of Elbys systems operate before riding in varying conditions - and remember to avoid riding in any conditions that may pose hazards or unsafe riding conditions beyond your level of experience. Starting on page 16, we've supplied instruction and illustrations showing you how to adjust Elby to fit you best. If you share Elby with friends or family you'll probably need to change some of these adjustments for their best experience.

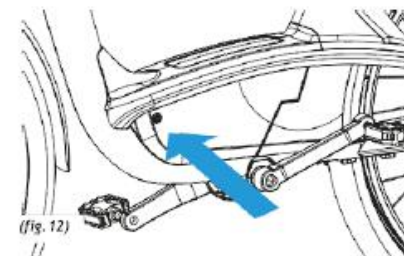
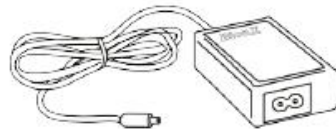
Educate yourself on the local traffic regulations and be sure to ride defensively and respectfully of other road users and pedestrians. Obey all laws and be aware that motorists, pedestrians and other cyclists may underestimate the speed of a pedal assist bicycle. Whenever possible utilize bike lanes and always ride in the correct direction of traffic. Remember that you represent all cyclists on the road, so stop at stop signs, red lights and be friendly and polite.

Above all, HAVE FUN!

## Charge Battery

At this point, you've got a few more things to do before your first ride so it's a good time now to make sure your battery is fully charged and to plug it in if it's not.

- Connect the 26V power supply (*fig. 7*) to the battery by inserting the charge connector into the TOUCH PORT (*fig. 12*) – the EM Tech system can be on or off.
- Connect the power supply to an outlet• The battery TOUCH PORT (LED ring around the charge connector) lights up red upon insertion and then turns to amber during the charging process.
- When fully charged, the color of the LED ring changes to green to indicate that the battery charging process is complete.
- Once the battery is fully charged, disconnect the charging connector from the charging port.



**WARNING:** The EM Tech power supply/charger should be used exclusively for EM Tech rechargeable batteries of the specified type. Keep the power supply or charger away from water or moisture when charging and/or connected to prevent electrical shock or short-circuits. Do not use a power supply or charger that has obvious signs of damage to the cable, housing, or the connector.

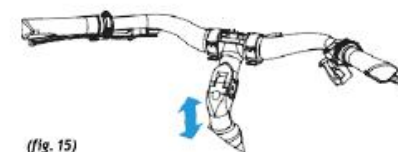
**NOTE:** The EM Tech 26V power supply is intended for use on the 48V Elby battery

## 4. Adjusting Elby to Fit You

You now have Elby fully assembled but, since everyone's body type is different, it's best to adjust Elby to fit YOU. Here are a number of simple adjustments you can make to ensure a comfortable ride.

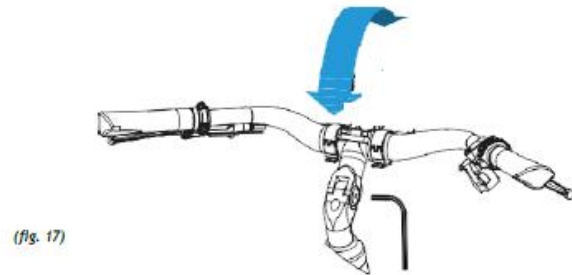
### A. Handlebar Height

The handlebar height should be adjusted so your body and arm meet at approximately a 90° angle or as upright as you feel comfortable (*fig. 14*). The main stem bolt that we tightened when removing Elby from its box will also allow the stem to slide up and down in the frame (*fig. 15*) to raise and lower the handlebar. When raising the stem, be sure the cable lines are long enough to allow you to turn the handlebar freely in both directions. Once you've adjusted the stem to a comfortable height, re-tighten the stem bolt [turn clockwise] until the 6MM hex wrench leaves a mild impression on your hand (specifically to 4.4 Nm / 14.5 lb-ft).



## B. Stem Angle

The stem can also be adjusted to bring the handlebars closer and allow you to have a more upright riding position. Using the 6MM hex wrench, loosen the bolt on the side of the stem. This releases the compression nut and allows you to rotate the stem back and forward. Once you've determined a comfortable stem angle, use the 6MM hex wrench to tighten the bolt on the side of the stem until it the tool leaves a moderate impression on your hand (specifically 10 Nm / 7.5 ft-lbs) (fig. 17).



**NOTE:** This same procedure is also used to change the angle of the seat which can be adjusted at the same time.

## E. Seat Height

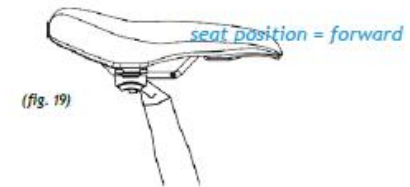
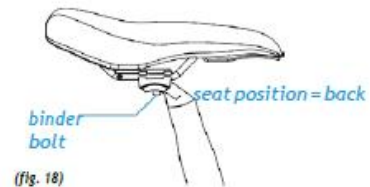
The seat height must be adjusted so when the pedal is at its lowest point in rotation, the knee is slightly bent (approximately 5 degrees). When the pedal is at the highest point in its rotation, the knee joint on that side should be NO LESS than a 90° angle (fig. 21).



**WARNING:** If the seat is too high, there is a chance of injury by hyper-extending the knee. If the seat is too low, it can cause difficulty in pedaling (fig. 22).

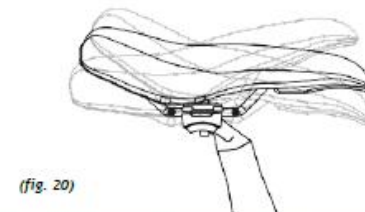
## C. Seat Position

In addition to rotating the stem, the seat can be positioned forward or backward on the bike to allow more or less stretch in your upper body while riding. To adjust, locate the two binder bolts on the underside of the seat post clamp (fig. 18). Use the supplied 5MM hex wrench to loosen the bolts and allow the seat rails slide forward and back (fig. 18, 19). This changes the location of the seat. Once you've determined a comfortable seat position, use the 5MM hex wrench to tighten the bolts again until the tool leaves a moderate impression on your hand (specifically 10Nm / 7.5 ft-lbs). Repeat and adjust until your upper body has the right amount of stretch.



## D. Seat Angle

It is recommended that the angle of the seat be adjusted to allow for a nice flat surface to sit on. To start, adjust the angle of the top of the seat so it is parallel with the ground while looking at the bike inside view. Use the supplied 5MM hex wrench to loosen the two binder bolts under the seat clamp and allow the seat rail cradle to rotate the seat up or down (fig. 20). This changes the angle of the seat. Once you've determined a comfortable seat angle, use the 5MM hex wrench to tighten the bolts until the tool leaves a moderate impression on your hand, (specifically 10 Nm / 7.5 ft-lbs). Repeat until you no longer have the sensation of sliding forward or backward while riding.



**NOTE:** This same routine is also used to change the forward or back location of the seat which can be adjusted at the same time.

**NOTE:** When the seat height is adjusted correctly, you should only be able to reach the ground with your toes. Although this may not feel right, it is normal and allows the correct leg extension when your feet are on the pedals. With that said, it might be best to adjust the seat height to a comfortable level at first and re-adjust higher once you are more experienced riding Elby

## 5. Turning Elby on to Ride

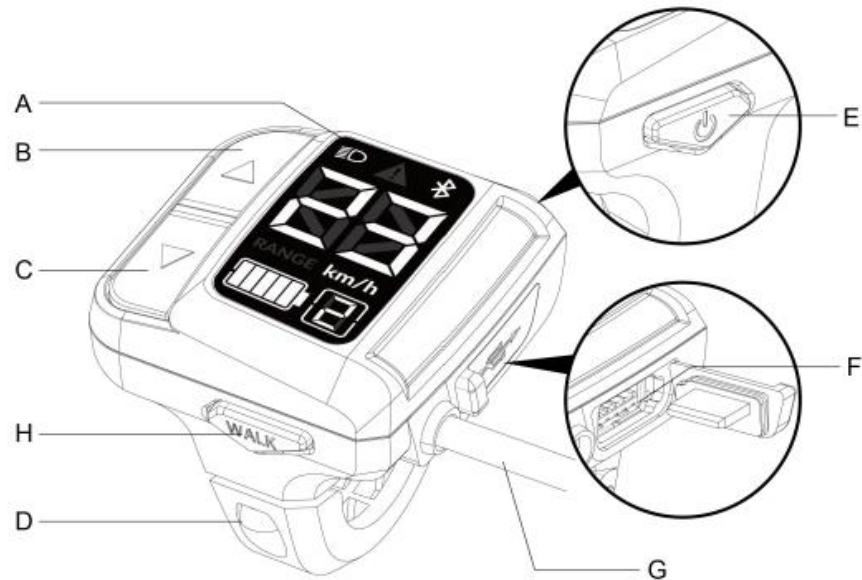
Elby is assembled, properly adjusted and ready to go. It's now time to turn Elby on and go for your first ride.

### Product features

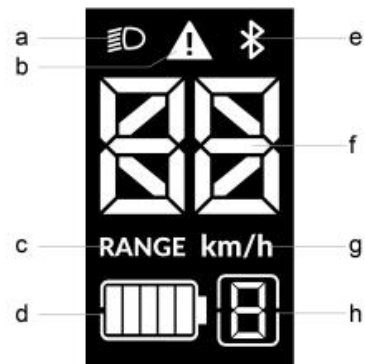
#### Product Description

The Hyena LCD Compact EX features all in one function: compact size with complete info and precise digital information, ergonomic large buttons. Supports app and service tool connection via Bluetooth.

#### Parts Description



- |   |                                      |   |                                      |
|---|--------------------------------------|---|--------------------------------------|
| A | Display screen                       | E | Power on/off button                  |
| B | Up & Increase support level button   | F | USB connection port (for diagnostic) |
| C | Down & Decrease support level button | G | Cable                                |
| D | Fastening screw                      | H | Walk-assist button                   |



## DISPLAY ELEMENT

- a Light
- b Error indicator
- c Display information type
- d Battery capacity
- e Bluetooth status
- f Speed/range
- g Unit indicator
- h Support level

## Operation

**Caution** - The e-Bike system can only be activated when the following requirements are met:

- A sufficiently charged battery is attached.
- The e-system is connected properly.

## Note

-Always switch off the e-Bike system when parking the e-Bike or before removing the battery.

## Operation Instructions

### Turn on/off the e-bike system

Long press the power button to turn on/off.

Long press (> 2 secs)



ON

Long press (> 2 secs)



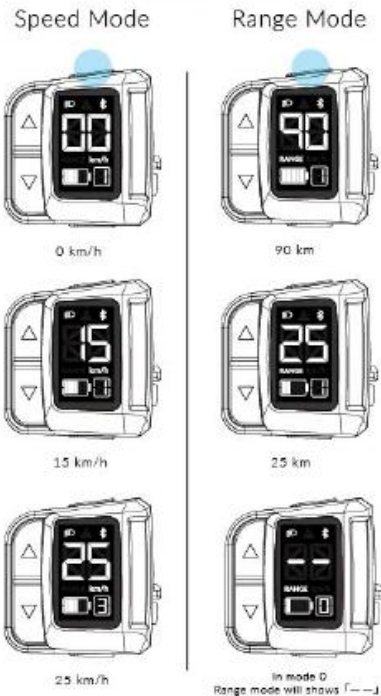
OFF



### Switch between speed mode/range mode

Short press the power button to switch information.

Short press (<0,5 secs)  
Power Button to Switch



### Support level adjusting

Short press up/down button to adjust the support level while you pedaling.

- Default on Off mode
- None circulation
- Automatic memory previous setting.



### Note

- The system is activated as soon as you start pedaling.
- The e-Bike drive output only supports a speed below 25/45 km/h, as soon as you have reached 25/45 km/h, e-system suspends the motor support, then automatically reactivated when your speed is below 25/45 km/h.

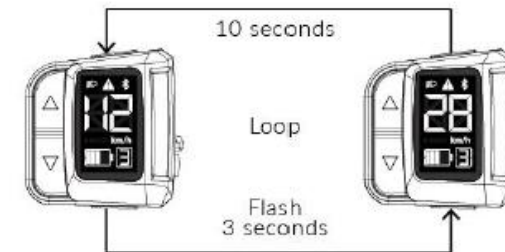
### Turn on/off light

Long press up button to turn on/off light.  
When e-bike equipped with front/rear lights.



### Error alert

The error code shows on screen when a system error is detected. Refer to the error code list for details.



When the number indicator returns to the general riding info, the alert icon stays on display. All the console function remains the same.

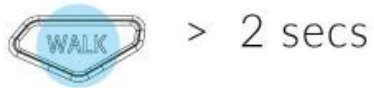
### Suspend the error alert

Press any button to suspend the error code flashing, the alert icon will still stay on until the system error is solved.

### Walk assistance mode

Long press and Hold the walk-assist button to activate the walk assistance mode. Release the button to cancel the walk assistance.

Long press and Hold



### Note

The walk assistance function must only be used when pushing the e-Bike. Make sure you are ready and stand steady before activating the walk assistance. Do not activate the walk assistance when you ride on the e-bike or if the wheels are not in contact with the ground

### Bluetooth connection

Bluetooth indicator shows when connected.



### Battery indicator

The icon shows the battery capacity.



## Handling and Care for the Battery

- It is best to store the battery in a cool location at temperatures between 10 °C (50 °F) and 25 °C (77 °F).
- Never store the battery in locations where the temperatures can reach more than 45 °C (113° F) or fall below -10 °C (14 °F). The battery should never be exposed to extreme temperature fluctuations or humidity, and always protect the battery during storage from humidity to prevent corrosion of the connectors. Never drop the battery. Always protect it from physical damage. Damage may lead to short circuits, and as a result cause overheating of the battery.
- Do not dispose of used batteries in regular household trash, be aware that used batteries must be disposed of properly!
- Extreme temperatures will affect battery life, especially during charging. Avoid charging in direct sunlight or in very hot or cold temperatures as this will reduce the life of the battery considerably. We recommend charging the battery at room temperature (approximately 20 °C / 68 °F). The battery should be warmed to room temperature before it is charged, particularly if it was exposed to cold temperatures during a ride.
- The battery can be charged when mounted on the bicycle or removed from the docking station. A Lithium Ion battery does not have a memory effect, which means that the battery's maximum energy capacity is not affected if it is repeatedly recharged after only being partially discharged. The battery does not need to be completely drained before charging. We recommend charging the battery after every ride, preferably when the state-of-charge display shows less than 50%. When the battery is fully depleted it will signal that a recharge is needed by beeping. The battery is fully charged after approximately 4 to 5.5 hours.

---

**WARNING: EM Tech batteries shall only be recharged with EM Tech chargers or EM Tech power supplies. The use of other power supplies/chargers can damage the battery. Never short circuit the battery by connecting the contacts of the battery.**

Never open the battery, as this could damage the battery and possibly lead to overheating. The battery cannot be serviced by the user. Opening the battery case voids all warranty and product liability claims. Never use a battery which has obvious damage to the case(s) or the battery connector.

---

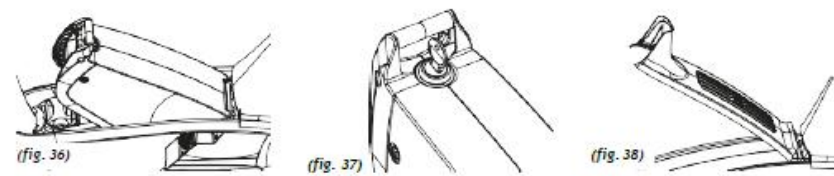
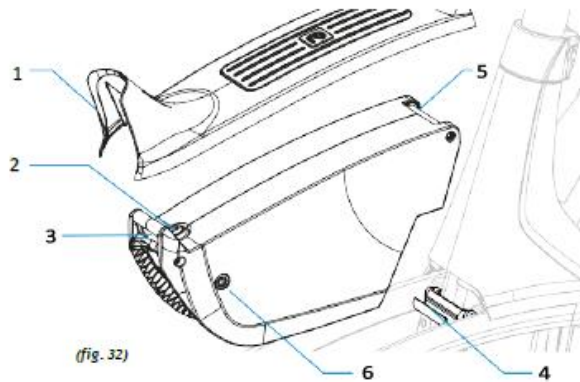
## Optimizing the range of the battery

The following factors influence the range of your battery:

1. **Climbing** - Riding up steep hills requires much more energy than riding on flat ground. More effort, proper cadence, and/or a change to a more gradual route can greatly affect overall range.
2. **Level of assistance** - Choose the level of assist required based on riding conditions, rather than just riding in one particular level all the time. Remember that energy consumption more than doubles from level 2 assist to level 4. Limit the use of the throttle as much as possible to reduce energy consumption.
3. **Battery state of charge** - Make sure the battery is fully charged before every ride. This will provide the best possible range from the battery each time.
4. **Weight and load capacity** - A heavier bike (and rider) lowers the range of the battery. Every ounce counts! Limit your cargo, think about getting an efficient type of bicycle for the system, even what type of gear you wear.
5. **Tire pressure** - Tires with pressure that is low will have increased rolling resistance, and require more energy from the battery. It is important to regularly check your tire pressure, the max. pressure is typically written on the sidewall of any tire. Slick, skinny, high pressure tires offer the most efficiency for you and your battery.
6. **Acceleration and constant speed** - It is important to ride efficiently; electric propulsion systems consume more energy when accelerating from a stand still. Try to keep your speed constant and retain momentum, starts and stops greatly affect your overall range.
7. **Outside influences/weather** - You will notice some difference in range when it is very hot or cold outside, this influences how quickly the battery will discharge. Headwinds can also greatly affect system performance. Expect more range on days with moderate climate.
8. **Cadence and Shifting** - Keeping your cadence high (between 80-90 rpm) is the most efficient pedaling range for most cyclists. A high pedaling rate in combination with the lowest level of assist will offer the most range, the more slowly you pedal and the more you rely on the electric assist, the less range you will get. Use your shifters to ride efficiently, just as you would with any other bicycle!

## The Battery compartment

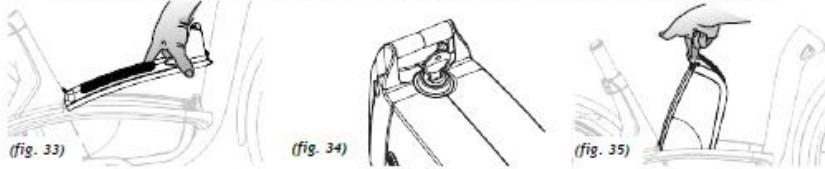
1. Battery cover
2. Keyhole
3. Handle
4. Pin cradle
5. Pin
6. Touch Port



**NOTE:** The system will not turn on if the battery lock is NOT in the locked position.

## Removing the Battery

- Make sure the system is off before removing the battery.
- Lift up on the battery cover from the front end (fig. 33). Pull up and forward and the cover will come off with ease - do not use force when removing as this will cause damage.
- Insert the supplied battery key into the keyhole and rotate counterclockwise until it's in the unlocked position (fig. 34).
- Pull up on the battery using the handle at the front end (fig. 35). This allows the battery to rotate up and out of the battery compartment from the back end.



## Installing the Battery

- Hold the battery by the handle on the top front end of the battery.
- Align the horizontal pin on the back end of the battery with the pin cradle inside the battery compartment (fig. 36).
- Once the pin is located in the cradle, lower the front end of the battery into the compartment and gently release the battery until it rests evenly in the battery compartment.
- Insert the supplied battery key in the keyhole and rotate clockwise until its in the locked position (fig. 37). Check that the battery is locked in by pulling up on the battery handle. If the battery comes out, pull it out completely and check for obstructions before reinstalling.
- Once the battery is locked in, reinstall the battery cover by aligning the tabs in the back of the cover with the slot in the seat mast (fig. 38).
- Push down firmly on the front end until it snaps into place.

## Removing the rear wheel

We recommend the removal and installation of the rear wheel to be done by a qualified retailer.

**IMPORTANT** Refrain from engaging the handlebar brake lever at anytime while the wheel is removed from the frame. This will cause the brake pads to be pushed together in the caliper and restrict the user from reinstalling the wheel.

**WARNING:** Never unplug any connection while the system is turned on - this includes the rear wheel communication and power cables. Unplugging a live part can render it inoperable.

## 10. Bicycle Maintenance Schedule

Just like owning any kind of vehicle, it's best to practice planned maintenance on Elby in order to make sure your bike is running right at all times. Failure to do so can cause premature wear and tear on the parts and/or an unsafe riding condition if something isn't adjusted or working properly. Some of these tasks you can do yourself and some should be done by a certified mechanic.

**NOTE: We recommend having the spoke tension of the rear wheel and the torque of all screws checked by a qualified bicycle retailer after the first 200km (125 miles).**

COMPONENT	ACTION	EVERY RIDE	125 MILES (200KM)	500 MILES (800KM) OR 1 MONTH	1000 MILES (1600KM) OR 3 MONTHS	2000 MILES (3200KM) OR 6 MONTHS	4000 MILES (6400KM) OR 1 YEAR
Tires	Check air pressure, inspect tread and sidewalls for cuts and punctures	X					
Brakes	Squeeze brakes and confirm function	X					
Chain	Add lube if needed	X					
Pedals	Check that the pedals are tight		X				
Stem	Check that the stem bolt is tight		X				
Wheels	Spoke tension and torque on wheel screws		X				
General	Clean complete bike of mud and debris			X			
Headset	Check adjustment			X			
Spokes	Inspect for damage, check tension			X			
Electrical	Clean all plug-in connections with a soft brush (no water)				X		
Deraileur Cables	Inspect and lube					X	
Seatpost	Clean and regrease interface with frame					X	
Headset	Disassemble stem, headset and fork. Check bearings for pitting and wear					X	
Hubs	Pull wheels off, check hub bearings for pitting and wear					X	
Bottom Bracket	Remove crank arms and check BB bearings for pitting and wear					X	
Brakes	Replace brake pads					X	
General	Complete Tune-Up and software update						X

## 12. Warranty

The Elby warranty covers a lifetime period on the frame and a two (2) year period for all parts of the bicycle and the EM Tech propulsion systems to the first owner within the framework of the following terms and conditions:

1. This warranty exclusively covers systems provided by EM Tech excluding all the other bicycle components provided by other bicycle manufacturers.
2. This warranty covers the repair and/or the replacement of the EM Tech propulsion system components provided the equipment concerned loses its functionality within the agreed warranty period and also provided the claim is not related to any of the following cases expressly excluded under this warranty.
3. Any other legal provisions, particularly with respect to warranty regulations, are not restricted by this warranty.
4. This warranty only covers material and manufacturing defects. It is only effective with a valid proof of purchase consisting of the original purchase document or receipt indicating the date of purchase, the serial number, the retailer's name and the designation of the system model. EM Tech reserves the right to reject the coverage of this warranty if the accompanying documentation of EM Tech components is not accurate or complete.
5. In the case of a warranty claim, EM Tech will undertake to either repair faulty system components and/or to replace such components, at EM Tech discretion (Service Replacement Unit).
6. Warranty repairs have to be exclusively performed by EM Tech. Any component to be repaired under the framework of this warranty has to be transferred to the retailer at the client's own expenses and risks, and, after the completion of such repair, has to be picked up at the retailer. In the case of rightful warranty claims, EM Tech reserves the right to bear or repay transportation expenses. In order to have a previous determination whether a warranty claim is justified or not, the end user has to submit his claim to the retailer from whom he purchased the product so that the respective retailer handles the shipment to EM Tech. Costs for repair work performed in advance by persons who have not been authorized by EM Tech will not be reimbursed. In such a case, any warranty claim will cease.
7. Repair work and/or replacement of components during the warranty period does not lead to an extension and/or a new start of the warranty period. Repair work and direct replacement during the warranty period may be performed with functional replacement components of equal value.
8. The two-year warranty period starts with the date of purchase. Warranty claims must be reported immediately.
9. If the battery/cell 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, EM Tech warranty only covers that within the two-year warranty period or within 500 charging cycles, whichever event occurs first, to the condition that the battery provides less than 70% of its initial capacity.
10. No warranty claims are accepted – without limitation to other reasons – 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 the special instructions set forth in the chapter "Handling and Charging of the Battery as specified in the EM Tech User Manual
  - d) Overcharging the battery or not adhering to the instructions of battery handling.
  - e) Abuse/mishandling of the connectors
  - f) In the case of malfunctioning internal and/or external components due to impact caused by drop- ping a part on the ground.
  - g) If the motor axle nut has been over tightened / improperly installed to the point where the threads of the axle have been damaged.
  - h) If the maximum weight on the bicycle (specifically – bicycle, rider, AND load) has been over 150kg.
  - i) If the functionality of the Touch Port feature is intermittent; this is a redundancy of the state of charge indicator that is available on the RC3 Controller.
11. No warranty claims are accepted - without limitation to other reasons:
  - a) In the case of test, maintenance, repair and replacement work due to normal use.
  - b) If the model, serial or product number on EM Tech product has been changed, deleted, blurred or removed. The seal and/or the serial number decal on the battery housing has been broken or obviously manipulated.
  - 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 EM Tech system with batteries other than the batteries designed for the EM Tech system (refer to user manual).
  - e) If one or more than one EM Tech part has been opened, altered or repainted
  - f) The bike has been used for rental or commercial application.
12. 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. EM Tech liability in connection with this warranty is limited to the respective acquisition value of the product.
13. This warranty only covers original EM Tech components. The use of spare parts from unknown sources, for example, replacement parts from third parties, is strictly prohibited.
14. 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.

## THE INFORMATION IN THIS MANUAL MEETS REQUIREMENTS

This manual meets the requirements of these standards:

- ANSI Z535.6
- AS/NZS 1927:1998
- BS 6102 : Part 1 : 1992
- CEN 14764, 14765, 14766, 14781, 14872, 16054
- CPSC 16 CFR 1512
- ISO 4210:2014
- ISO 8098:2014

2016 Elby Bicycle Co.

Elby and "e" logo are registered trademarks of the Stronach Group Inc. All rights reserved. This manual covers the requirements and scope of EN 14764, 14765, and 15194. Duplication, reprinting and translation as well as any commercial use (including excerpts, in printed or digital form) arise only permitted if specifically granted in writing in advance.

[www.elbymobility.com](http://www.elbymobility.com)



Toll-Free Customer Service Line: 844-866-3529  
Customer Service Email:  
[info@elbymobility.com](mailto:info@elbymobility.com)

[elbymobility.com](http://elbymobility.com)  
[@elbybike](https://www.instagram.com/elbybike)

**elby**