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1.0 Introduction

Welcome and congratulations on buying your new A2B Kuo+, the electric bike that's taking transport in a whole new direction. It's the revolutionary way to get to work, visit to the shops or just get some fresh air. Compared to jumping in the car, an ebike is a lot more fun, easier to park and will reduce your fuel costs as well as your impact on the environment... as you'll soon find out!

Feeling energetic?

You can ride your new A2B Kuo+ powered off and then switch the assistance on for hills and headwinds.

WARNING

- Wear light fluorescent clothing at night.
- Your existing insurance policies may not provide accident cover for your A2B Kuo+*. Contact your insurance company or agent for information.
- This owner's manual makes no representation about the safe use of the A2B Kuo+ under all conditions. See your A2B dealer for all service, repairs or maintenance and for referral to suitable classes, clinics and books on cycling.

2.0 Important Information

This owner's manual contains important safety, performance and service information.



Please ensure that users of your A2B Kuo+ read and understand the following important warnings and cautions before their first trip. If you have any questions or are not sure about any instructions in this owner's manual ask your A2B dealer.

Read and understand the following warnings and cautions.

If your A2B Kuo+ is used by others, please show this section to them so that they are aware of these important warnings to reduce the risk of an accident.

Important terms

Throughout the manual, the following symbols and terms call your attention to important warnings, cautions and notes. Read, understand and follow them whilst using your A2B Kuo+.

	WARNING: This indicates a potentially hazardous situation which, - if not avoided, could result in bodily injury or death, in addition to property damage.
	CAUTION: This indicates a potentially hazardous situation, - which if not avoided, may result in damage to equipment or inadvertent system failure.

3.0 Unpacking


LIFT WITH CARE: Two people are recommended. Your A2B Kuo+ weighs 19 kg (42 lbs).


3.1 Tools and equipment

- Pliers.
- Side cutters (for cutting cable ties used in packing).
- Blanket or tarpaulin (to avoid scratching unprotected surfaces).

3.2 Delivered fully assembled and battery charged

Your A2B Kuo+ should be fully assembled and the battery charged by your A2B dealer at the time of delivery. However, if you need to unpack your bike, follow these instructions:

1. Carefully open the flaps at the top of the carton. Remove all staples (with pliers if necessary), to avoid scratching yourself or your bike.
2. Carefully lift the bike out of the carton. Two people are recommended.
3. Lay the bike on a tarpaulin or blanket to avoid scratching any unprotected surface whilst you remove the packing materials.
4. Remove the accessory boxes from the carton.
5. Using the side cutters, clip the cable ties that hold various components to the frame. **ONLY** clip those cable ties that are used to attach components to the frame or prevent movement during shipment (and **NOT** those trimmed of excess length).
 -  The A2B Kuo+ has cable ties that manage electrical and control cable routing (and **ARE** trimmed of excess length). **DO NOT** clip these cable ties as they are necessary for the safe operation of the vehicle.
6. Remove all of the protective wrapping from the bike and dispose of the packaging responsibly.
7. The battery and charger should be tested when received. If the battery or charger is damaged in any way, a claim should be filed with the carrier. A full report of the damage should be obtained by the claim agent, and this report should be forwarded to Hero Eco. Hero Eco or its agent will advise the action required and arrange for repair or replacement.

 Make sure the battery is fully charged before using the A2B Kuo+ for the first time. How to handle the battery and how to charge please see section 7.2 & 7.3

4.0 Your A2B Kuo+


4.1 Components

1. Seat
2. Seat post
3. Seat post clamp
4. Main frame folding mechanism
5. Left side brake lever
6. Display
7. Gear shifter
8. Front brake
9. State of charge indicator
10. On / Off battery switch
11. Charger port
12. Handle bar folding mechanism
13. Frontlight
14. Front wheel
15. Front fork
16. Front brake
17. Pedal, crank arm and chain ring
18. Motor cable connector
19. Drive chain
20. Battery
21. Kickstand
22. Rear brake
23. Motor
24. Rear derailleur 7 speed gear set
25. Rear wheel
26. Rear light





4.2 Changing components or adding accessories


Read, understand and follow the instructions that accompany the products you purchase for your A2B Kuo+.

 Before installing any component or accessory, including a different size tyre, make sure that it is compatible with your A2B Kuo+ by checking with your A2B dealer.

ALWAYS: Follow the component manufacturer's instructions if they conflict with these instructions.

 Failure to confirm compatibility, properly install, and operate and maintain any component or accessory can result in serious injury or death.

 Using non-genuine components or replacement parts may compromise the safety of your bike and void the warranty. Check compatibility with your A2B dealer before changing any components.

 If you change components or add accessories, you do so at your own risk because Hero Eco may not have tested that component or accessory for compatibility, reliability or safety on your A2B Kuo+.

5.0 Assembly and adjustments

5.1 Delivered fully assembled and adjusted

Your A2B Kuo+ should be fully assembled and the battery charged by your A2B dealer at the time of delivery. However, if you need to unpack your bike, follow these instructions.

⚠ Failure to properly assemble and adjust your A2B Kuo+ prior to use may result in an accident resulting in death, serious injury and/ or property damage. If you are uncertain about any aspect of the assembly and adjustment of your bike contact your A2B dealer.

⚠ There are no user serviceable elements in the motor, motor controller, battery, battery charger, or wiring harness of your A2B Kuo+.

DO NOT disassemble or adjust any of these components. This may cause extensive damage to these components, void your warranty, and may cause hazard. If you cannot resolve a problem using the information in this owner's manual contact your A2B dealer.

5.2 Tools and equipment

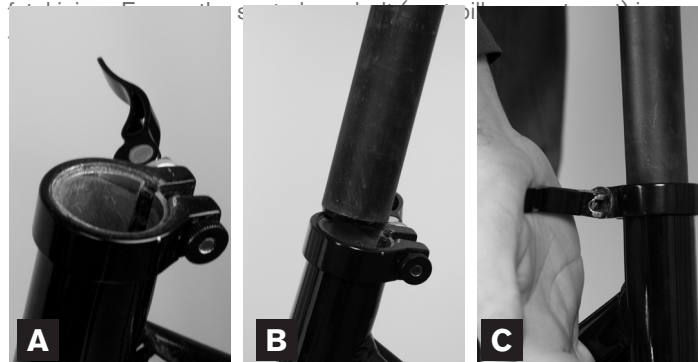
- 4mm allen key
- 5mm allen key
- 6mm allen key
- Small Phillips screwdriver
- Light grease (white lithium grease or equivalent)

5.3 Installing the Seat Post

1. Ensure that the seat post quick release lock is in the open position (image A).
2. Insert the saddle post stem into the seat post down tube (image B).
3. Lock the quick release mechanism by pushing the lever towards the frame, ensuring that it does not protrude so as to cause injury to the rider (image C). Ensure that the seat clamp bolt (seat pillar-seat post) is tightened to 27 Nm.

ⓘ It is recommended that you adjust the tightness of the quick release lever manually by either loosening or tightening the lock nut, prior to securing the seat post.

4. **⚠** Failure to correctly secure the seat can result in serious or fatal injury. Ensure the seat is correctly secured.




5.4 Installing pedals

The pedals on the A2B Kuo+ arrive fully fitted and functional

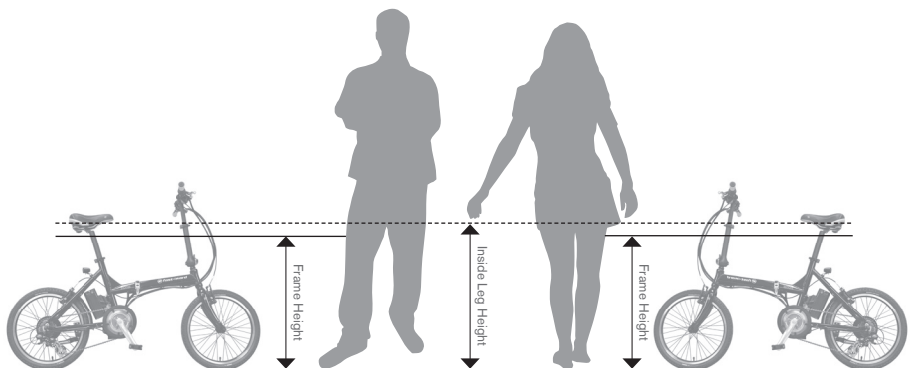
To fold the pedals:

1. Hold the bike secure and upright and press the outside of the pedal in direction of the bike.
2. The pedal will then depress, enabling you to fold the pedal to the left or to the right.
3. To open the pedal. Press again the pedal towards the bike and then move the pedal through 90 to the central open position.
4. Ensure that the pedals are locked tight before attempting to ride the bike.

 An improperly opened pedal may fold close whilst in use. This may cause an accident resulting in serious injury or death and property damage. Ensure that your pedals are properly unfolded and clicked into place before each ride.

5.5 Brake lever adjustment

Can you comfortably operate the brakes? If not, take your A2B Kuo+ to your A2B dealer and ask them to adjust the angle of the brake levers.



5.6 Seat height adjustment

The seat may require adjustment.

Ask your A2B dealer to adjust it before you ride.

To determine the correct height of the seat for the rider

1. Straddle the assembled A2B Kuo+ with your feet shoulder width apart and flat on the ground.
2. There must be at least 25 mm (1 inch) clearance between the intersection of the main tube and the seat post and the crotch of the rider.
3. The minimum inside leg height is measured from the intersection of the top tube and seat post plus 25 mm and the floor. The minimum inside leg height for this bicycle is 50 cm (20 inches)

Height adjustment:

1. The seat height can be adjusted by releasing the quick release lever, then raise or lower the seat accordingly and tighten the quick release lever when the desired height is achieved.
2. After adjustment, check to ensure the lever is tightly fastened and ensure there is no movement in the seat post in any direction.
3. The seat post clamp should be securely tightened. Ensure the seat clamp bolt (seat pillar - seat post) is tightened to 27 Nm.

⚠ Failure to correctly secure the seat can result in serious or fatal injury. Ensure the seat clamp bolt (seat pillar - seat post) is tightened to 27 Nm.


⚠ DO NOT raise the seat beyond the 'minimum insertion' mark identified on the seat post.


6.0 Getting to know your A2B Kuo+

Do you fully understand how to use your A2B Kuo+? If not, before your first ride, ask your A2B dealer to explain any functions or features that you do not understand.

6.1 Starting and stopping

1. Choose a quiet area away from cars, other cyclists, obstacles or other hazards.
2. Ensure that the power is OFF and raise the kickstand into the riding position.

 Mounting the bike with the power ON may result in activating the pedal operated torque sensor and the bike may surge forward, potentially resulting in serious injury or death and property damage. For the same reason, turn the power OFF before dismounting.

 DO NOT sit on the bike whilst it is supported by the kickstand, you will damage the kickstand and possibly the frame.

3. Mount your bike and get comfortable.
4. Turn the battery power ON.
5. Select the low setting on the power control module (S).
6. Gently pedal and away you go - assisted by the intelligently delivered A2B power hub.

7. Test the brakes at slow speed. Left lever actuates the rear brake and the right lever actuates the front brake for the UK, Australia and New Zealand. For all other countries the reverse applies. Put your weight forward and gently apply the brakes, rear brake first.
8. Check out the handling and response of your A2B Kuo+.

Sudden or excessive application of the front brake could throw you over the handlebars. Applying brakes too hard can lock up a wheel, which could cause you to lose control.

No power? Here are some solutions. If they DO NOT solve your problem ask your A2B dealer for help.

Problem	Possible Cause	Solution
The bike does not turn on.	Dead battery.	Recharge battery See sections 7.2 and 7.3.
The bike turns on, but the motor does not run (state of charge indicator LED's illuminate).	1. A brake lever is applied.	Do not apply the brakes when starting. Make sure brake levers are fully forward.
	2. The motor power connector is unplugged.	Ensure motor power connector is securely connected.

⚠ When applying the brake levers the motor will automatically cut out. This is a safety feature.

i Your A2B Kuo+ allows for gradual application of power, and allows for adjustment of power between OFF and FULL. This feature enables you to adjust the speed at which you are most comfortable by the amount of torque or pressure that you apply to the pedals. See Section 6.4.4

i Your A2B Kuo+ will provide instantaneous power when you are pedalling. To conserve battery power and increase your range, ALWAYS use the gears as much as possible – just like you would on a non-powered bicycle.

i Remember that there are power cut off switches integrated into the brake levers. When you apply the brakes, power to the motor will turn OFF. Therefore, DO NOT hold the brake lever(s) when you want the motor to run.




Motor power and motor control connectors

6.2 State-of-charge indicator

The state-of-charge (SOC) indicator on the command module displays the percentage of charge remaining in the battery whilst you are using your A2B. When the battery is below 20% it should be charged as soon as possible.

The motor controller and battery management system (BMS) are designed to turn off the power to the motor when the voltage of the battery drops to a predetermined point. This is to protect the battery from the harmful effect of over-discharge.


The display also shows the battery voltage. This allows you to keep track of the health of the battery. See Section 6.4.6.


 Never attempt to use remaining power once the BMS has switched off the battery. You will damage your battery. When the power turns off due to a low battery, plug the battery into the charger supplied with your A2B Kuo+ to recharge the battery. It will take 5-6 hours to fully recharge a completely discharged battery. See Sections 7.2 & 7.3.

6.3 Gears and shifting

Your A2B Kuo+ has a 7-speed Shimano gear set controlled by a trigger shifter on the right hand side of the handlebar. To shift gears, pedal at a steady pace and click through the gears until you find the gear most comfortable for you and the current conditions. To downshift, to make pedalling easier (when encountering a hill), click the lower thumb trigger to select a lower gear. This will down-shift your A2B Kuo+, but will also make you pedal faster to achieve any given speed.

To ride faster (on a flat section or a downhill), click the upper thumb trigger to select a higher gear. This action will up-shift your A2B Kuo+, allowing you to pedal more slowly for a given speed, but with more effort required.

 ALWAYS pedal forward at a steady pace when shifting gears. The gears operate independently of the motor. To maximise the range that you can ride with electric assistance, and to give yourself a pleasant aerobic workout, maximise use of the gears to assist the motor. The VPAC torque sensor uses a combination of pedal and motor power to achieve your desired speed. Using the trigger shifter, adjust the gear setting to find a gear that makes pedalling comfortable whilst assisting the motor.

 Consult your doctor before undertaking any form of physical exercise and for guidance regarding aerobic workouts.

6.4 Power Control Module (Display)

The A2B Kuo+ uses the display for controlling the amount of powered assistance the motor provides.

The Display on your A2B Kuo+ is mounted on the left side of the handlebar.

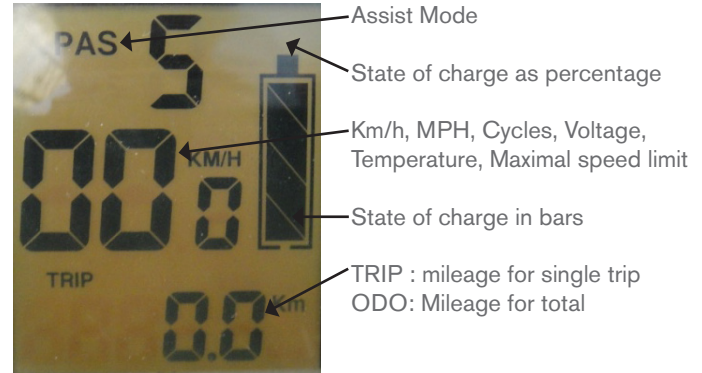


The Display has three buttons to operate the assistance system and to change in between the different displayed readouts.


6.4.1.Button Definition




6.4.2. Location of displayed information



6.4.3. Switching the bike On and Off


 Before switching on the display turn the battery on. To switch the bike on press the On/ Off button briefly (0.5 second).

 To turn the bike off hold the On/Off button (minimum 2 seconds) down for two seconds. This will switch off the display. Please also switch off the battery.


6.4.4 Changing Power modes:

The electrical system of the A2B Kuo+ is offering you six power modes.

Mode 0 is the mode without power supply from the system (rides without power assistance). Mode 1 to 5 gives you power assistance with Mode 1 giving the lowest assistance, ranging up to Mode 5 which maximum assistance, enabling you to reach a maximum speed up to 30.2 km/h = 18,7 mph (Europe 25 Km/H = 15.5Mph) pending on various external factors as e.g. rider weight, wind, terrain etc.


 The default Mode is Mode1; each time you press the Mode button increases the assistance by one level. Once you pass Mode 5 it returns back to Mode 0 without any assistance.


6.4.5. Riding speed indicator

Default speed unit is KM/H, by pressing the info button  its interchanges between km/h and mph.

6.4.6. Battery Management System (BMS)

BMS system will indicate battery state of charge in bars, the state of charge in percent, the total battery discharge cycles (CYCLES), the battery voltage (V) and the battery temperature (°C).


After switching on the system, push down  and  at same

time the screen will show the discharge cycles; push down  again then it will show the voltage of battery.

One more time press down  the temperature of the battery will be shown.

For returning back to the main interface press at the same time  and .

6.4.7. TRIP and ODO indicator

Default setting after switch on the display is TRIP. Pressing the  button alternates to ODO mode to show the total accumulated mileage.

To interchange between these two just press  button.

6.4.8. Backlight function

Switch on the display, hold the  button for 3 seconds switching on the backlight.

To switch off the backlight press the  button again for in 3 seconds.

6.4.9. Standby mode

With the system switched on and without any power output for 10 minutes the system will automatically go into the Standby mode in order to save energy.

6.4.10. Error codes

In the case of an error occurring, the display will indicate an error code from the list of errors defined below:

Error code	Definition
20	Battery communication abnormal
21	Current abnormal
22	Throttle signal abnormal
23	Phase of motor missing
24	Hall sensor of motor abnormal
25	Brake switch abnormal
30,31	Communication between display and controller abnormal

6.4.11. Power assistance options



The A2B Kuo+ has two types of assistance for you to choose from, Power on Demand via the Throttle, or Pedal Assist. They can either be used simultaneously or individually.

Left side of your display at your handlebar you will find the Thumb Throttle.

Power on demand via the throttle

Apply motor power by pressing the thumb throttle.

The electrical system of your A2B allows for gradual application of power, and allows for adjustment of power between OFF and FULL. This feature enables you to set that speed at which you are most comfortable.

The electrical system of your A2B will provide instantaneous power whether you are pedalling or not. Therefore, there is no need to pedal as you start-up.

However, the motor consumes more power during a start from a standing stop than at any other time. More power is consumed during start-up than even climbing a steep hill. Therefore, in order to conserve battery power, and increase your overall range, pedal during a start from a standing stop to reduce the load taken from the battery.

Remember that there are power cut-off switches imbedded in the brake levers. When you apply the brakes, power to the motor will turn "OFF". Therefore, do not hold the brake lever(s) when you want the motor to run.

Pedal assist

Choose a level of assistance on the display and begin pedalling.

The electrical system of your A2B allows for application of power according to the pedal assist settings chosen. There are five support levels (see also changing support modes). This feature enables you to set the speed at which you are most comfortable.

The electrical system of your A2B will provide instantaneous power when you begin pedalling. However, the motor consumes more power the higher the chosen assistance level is.

6.5 At the end of your ride

You should turn off your display and battery before storing.

If you have any questions, or if you feel anything about your A2B Kuo+ is not as it should be, ask your A2B dealer before you ride again.

6.6 Recharge your battery

Fully recharge your battery as soon as possible because a lithium ion battery left in a discharged condition deteriorates much faster than a fully charged battery. See Sections 7.2 & 7.3.

6.7 Understanding the range of your A2B Kuo+

Factors affecting range:

- Battery state-of-charge.
- Tyre inflation pressure.
- Front wheel bearings and both brakes (tight bearings or a dragging brake shoe reduces range).
- Rider weight (it takes more battery power to accelerate a heavier person).
- Your speed and local wind conditions (range is reduced when travelling fast against a strong wind).
- Terrain (travelling on a soft or rough surface or climbing a hill uses more power).
- Lots of starts and stops (full power from a standing start draws the most current or amperage from the battery).

Maximise your range

- Fully check your battery before each ride.
- Check tyre pressure regularly and inflate to 40 psi (or stated pressure printed on the tyre sidewall).
- Have your A2B Kuo+ serviced periodically to ensure that the front bearings turn freely and both brake caliper DO NOT rub the brake shoes when they are not applied.
- Minimise the weight that you carry.
- Ride at slower speeds.
- Accelerate more slowly as you move to your cruising speed.
- Keep the chain and derailleur lubricated with a chain spray recommended for bicycle use.

7.0 Battery use, storage and disposal



7.1 Using the battery

For the proper use, maintenance and storage of this battery it is important that you read and understand these instructions. Use **ONLY** the battery supplied with your A2B Kuo+.

⚠ Failure to properly use and store this battery will void the warranty and may cause a hazardous situation. **DO NOT** use this battery with any other vehicle or appliance. Use of this battery with any other product will void the warranty, and may create a hazardous condition and cause a fire resulting in severe injury or death and property damage. If you have any questions about this battery or its usage, contact your A2B dealer.

⚠ Never short-circuit the discharge terminals of the battery. A short circuit will damage the battery and could cause a fire resulting in severe injury or death and property damage.

i Keep the battery away from excessive heat and/or open flames. Avoid long-term exposure to direct sunlight.

i To avoid damage to the battery, never subject it to intense physical shock or severe vibration.

i Use of any battery not supplied with your A2B Kuo+ **WILL** void the warranty and may cause damage to the electrical system and the hub motor. Use only the battery supplied with your A2B Kuo+ or a battery provided by A2B as a replacement for the battery supplied.

i Failure to properly use, charge and store the battery supplied with your A2B Kuo+ will void the warranty and may cause a hazardous situation. Please read and follow all instructions for the use and care of the battery provided with your A2B Kuo+. If you are uncertain about any aspect of the use and care of your battery, please contact your A2B dealer.

i If you plan to store your A2B Kuo+ for more than 30 days consult section 7.4.

7.2 Charging the battery

⚠ Use only the battery charger supplied with this battery. If you use any other battery charger, you will void the warranty, you may damage the battery and you could cause a fire that would result in property damage and possible injury or death.

i You may recharge the battery at any time, regardless of its state of charge. As your battery ages, it will gradually lose capacity. With proper care and maintenance, your battery will retain up to 80% of its capacity over at least 500 discharge/recharge cycles. As capacity diminishes, you will notice a gradual drop off in maximum range capability

1. Check the Voltage on the charger to ensure that it is set to your local line voltage (220-230V for Europe or 110V for the USA).
2. Plug the charger into the wall outlet.
3. Ensure that the battery power switch is switched OFF before connecting the charger to the battery.
4. Locate the charger port cover. **A**
5. Carefully align the charger plug and connect the charger to the battery by plugging the connector into the charger socket. **B**
6. Turn ON the charger using the ON/OFF switch on the wall socket outlet. To check the battery charge state press the white button on top of the battery. The charge indicator will then highlight current charge status.
7. Charger LED Indications:
 - The Power LED will illuminate GREEN when the charger is plugged into a wall outlet when switched on.
 - The Indicator LED will illuminate RED while the charger is charging the battery.
 - The Indicator LED will change to GREEN when the battery is fully charged.
8. When charging is complete (the Indicator LED is GREEN), turn OFF the charger.
9. Carefully unplug the charger from the battery pack by pulling the connector out of the charger socket.
10. Your battery is now ready for use.



⚠ Never pull the cord to unplug the power cable as this will damage the cord and can result in a dangerous short circuit. ALWAYS connect the charger to the power source, with the charger turned OFF, before connecting the charger to the battery. ALWAYS disconnect the charger from the battery, with the power turned OFF, before disconnecting the charger from the power source.

i To avoid damage to the charger, never subject it to intense physical shock or severe vibration.

⚠ Improper use of the battery charger can result in a fire with property damage and physical injury or death.

i DO NOT cover the charger while charging the battery. This can cause the charger to overheat that may result in a fire with property damage and physical injury or death.

i The battery charger supplied with this bike is for INDOOR use only.

i Avoid any contact with water or other fluids whilst charging the battery. If the battery, charger or any connections become wet, immediately unplug the charger and thoroughly dry all components prior to charging the battery.

Attaching and connecting the battery to your A2B Kuo+

1. Carefully align the battery with the lockable battery unit fixed to the seat post tube.
2. Slide the battery in until fully locked in place.
3. Now lock the battery in place using the supplied key before attempting to ride your A2B Kuo+. Failure to lock the battery will result in the battery falling off the bike and causing permanent damage to the battery and other property.




7.3 Charging Times

Charging Times


Fully charge the battery before first use of bike	Hours 5-6
Fully discharged	5-6

To avoid deep discharge recharge the battery immediately when the battery is emptied before you store the bike. To maximise battery life A2B recommends to recharge the battery whenever the state of charge is below 20%.

 Avoid leaving the battery charger ON and plugged into your battery for more than 8 hours at a time. Once the battery is fully charged, turn OFF the charger and unplug it from the battery pack.

7.4 Long term storage of battery

Store the battery in a cool (10-21 °C, 50-70 °F) dry place. Avoid direct exposure from the sun.

 The Battery Management System (BMS) is always on, consuming a small amount of power from the battery. If the battery pack is not used for an extended period of time, this will eventually drain the battery resulting in permanent damage.

It is VERY IMPORTANT that you recharge the battery every 30 days if the pack is not in use. Failure to follow this battery maintenance procedure will void the warranty.

If you have any questions regarding this instruction, please DO NOT hesitate to contact your A2B dealer.

7.5 Battery disposal

DO NOT dispose of the battery as household waste. Dispose of or recycle according to local authority guidelines or contact your A2B dealer for guidance.

Battery Warranty

The battery is warranted against defects in material and workmanship for a period of 2 years from the date of purchase to the original purchaser.

8.0 Pre-ride checks

Ensure that your A2B Kuo+ is ready for safe and enjoyable use.

Always wear an approved bike helmet.

If you lend your A2B Kuo+ to someone else, make sure you also lend them an approved helmet.

Never carry a passenger:

Overloading your A2B Kuo+ with a second rider can lead to severe injury or death.

OBEY all traffic laws:

Always ride on the correct side of the road, with and not against the flow of traffic.

Reflectors:


Your A2B has reflectors to make you more visible at night. Ensure they are in place, properly positioned and clean before each ride.

Lights:

Your A2B Kuo+ is equipped with front and rear LED lights. Ensure the lights are functional and clean before each ride. These lights get their energy from the main battery pack. Using the lights is consuming some energy from your battery and may affect your riding range.


Brakes:

Check your brakes before each ride. Left lever actuates the rear brake and the right lever actuates the front brake for the UK, Australia and New Zealand. For all other countries the reverse applies.

 Brake shoes are subject to normal wear. To ensure the brake system works correctly brake shoes should never be worn down to their limit. Ask your A2B dealer to check and replace brake shoes.

Wheel Rims:

The rims must be smooth, without cracks, bulges or flat spots. Wheel rims are subject to normal wear as the rim brakes will also wear down the braking surface of the wheel rim. If the braking surface is worn slightly concave it shows your bike wheel rims are getting near the end of their useful life. Take your A2B Kuo+ to your A2B dealer or a qualified bicycle mechanic to repair and/or adjust and/or replace your wheel rims if necessary.

 Failure caused by worn down rims may result in heavy accidents which could result in serious or fatal injury.

Tyre Pressure:

Your tyres should be inflated to 40 psi (or as indicated on the sidewall of the tyre). Your A2B Kuo+ features heavy duty inner tubes to help avoid flat tyres. However, bicycle tyres normally lose pressure over time. An under-inflated tyre can cause premature tyre failure, and will require significantly more energy (electric and human) to propel your A2B Kuo+. Low tyre pressure will significantly reduce the range.

⚠ Failure to properly adjust and lock your front or rear wheel may result in the wheel falling off whilst you are riding which could result in serious injury or death and property damage. If you are uncertain about any aspect of the assembly and adjustment of the A2B Kuo+, ask your A2B dealer or a qualified bicycle mechanic.

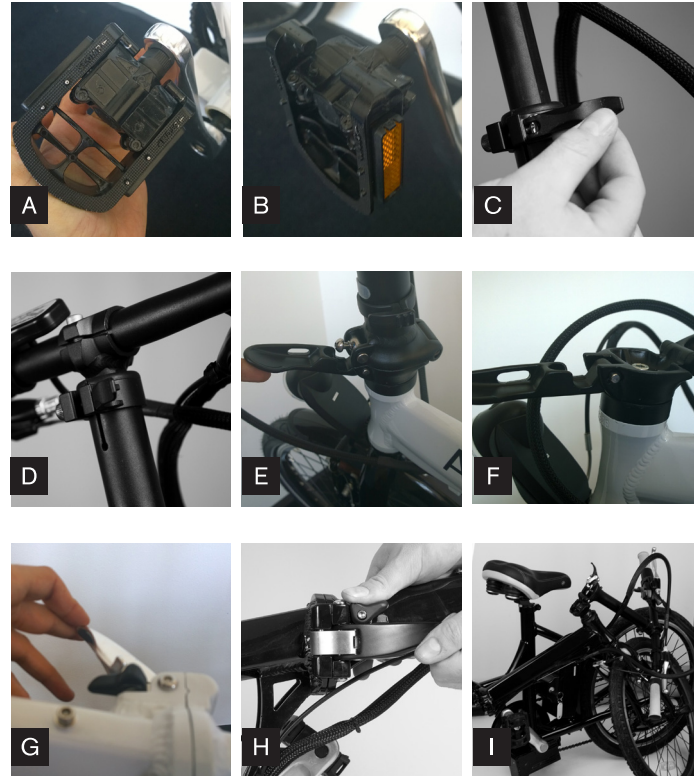
Quick release:

Make sure that your front wheel quick release is properly adjusted and tight. Failure to properly adjust and lock your front wheel quick release may result in the wheel falling off while riding which could result in serious or fatal injury and/or property damage.

Folding Method

1. Ensure that both pedals are folded as described under 3.4.
2. Open the lever to allow the handle bars to be pushed down (C & D)
3. Now rotate the safety catch (E) so that you can pull down the stem folding lever (F). The stem will now fold down to be positioned next to the front wheel.
4. With one hand hold open the safety catch on the frame (G) and with the other hand open the frame folding lever (H). You can now fold the frame so that the front wheel is next to the rear wheel.
5. The bike is now folded into its most compact state (I)

The folding mechanism



9.0 Maintenance

Have your Kuo+ serviced by your A2B dealer at least once a year.

⚠ As with all mechanical components, the bicycle is subjected to wear and high stresses. Different materials and components may react to wear or stress fatigue in different ways. If the design life of a component has been exceeded, it may suddenly fail possibly causing injuries to the rider. Any form of crack, scratches or change of colouring in highly stressed areas indicate that the life of the component has been reached and it should be replaced.

9.1 Wheels

The front and rear wheels should be centred in the fork and frame. Wheels should be checked regularly for proper spoke tension and rim alignment. DO NOT ride your A2B Kuo+ if it has broken or missing spokes. Wheels should rotate smoothly without wobbling from side-to-side or up-and-down.

9.2 Hub bearings

Check the hub bearing adjustment periodically by lifting the wheel off the ground and spinning it and try to move the rim from side to side between the fork or frame. No lateral movement should occur. If you detect lateral movement in either wheel, the hub bearings must be adjusted or replaced.

9.3 Wheel rims

The rims must be smooth, without cracks, bulges or flat spots. Wheel rims are subject to normal wear as the rim brakes will also wear down the braking surface of the wheel rim. If the braking surface is worn slightly concave it shows your bike wheel rims are getting near the end of their useful life. In case you detect any damage to the rim or the wear as described above take your A2B Kuo+ to your A2B dealer or qualified bicycle mechanic to repair and/or adjust or replace your wheels or wheel rims if necessary.


9.4 Drive chain

Your A2B Kuo+ has a high quality chain that needs to be cleaned and lubricated regularly with bicycle industry approved synthetic lubricant.

9.5 Brakes

Check cables for signs of wear and fraying. Squeeze the brake lever firmly and check proper brake function. Brake shoes should never be worn down to their limit, replace as necessary. Should your brake shoes appear to be worn down or your brakes are not as responsive as they used to be ask your A2B dealer or qualified bicycle mechanic to check and replace the brake shoes.


⚠ Brake shoes and wheel rims must be free of oil and grease.

 Brakes lose effectiveness when wet. Avoid riding in wet weather. If it is unavoidable, remember that stopping your A2B Kuo+ will require extra distance. Ride more slowly, keep a longer space between yourself and other traffic, and begin braking sooner than normal. Failure to take these precautions could lead to an accident causing serious injury or death and property damage. If you are uncertain about any aspect of the brake operation under any condition, ask your A2B dealer or a qualified bicycle mechanic. Test the function of your brakes by riding your vehicle in an area free from traffic and obstructions prior to every ride.

9.6 Tyres

Check tyres for any damage, cracking, unusual or excessive wear. The tyre should be properly seated in the rim and the fit of the tyre bead in the rim should be periodically checked. Check for foreign objects in the tyre tread and that the valve stem is straight in the rim.

Damaged or worn tyres should be replaced immediately. Take your A2B Kuo+ to your A2B dealer or a qualified bicycle mechanic to repair and/or replace your tyres if necessary. In the unlikely event of having a flat tyre you need to know the correct procedure for removing and re-installing the front or rear wheel.

 If you are uncertain about any aspect of the assembly and adjustment of your A2B Kuo+, ask your A2B dealer or a qualified bicycle mechanic.

9.6 Removing and re-installing the wheels

Removing front wheel

1. Release the lever on the front axle.
2. Whilst holding the lever, undo the nut on the other side 2 to 3 full turns ensuring not to remove it completely.
3. Drop the wheel from the fork.

Re-installing front wheel

1. Position the wheel in the front fork so that the rim looks central to the frame.
2. Ensure that the anti drop washer is securely located in the hole at the end of the forks. This washer ensures that the wheel will be prevented from dropping out of the fork under normal use.
3. With the lever open, turn the adjusting nut on the right hand side of the hub clockwise such that you feel resistance to tightening and then close the lever, ensuring that the axle is parallel to the centreline of the hub. The lever is securely tightened when it takes a significant amount of force to position it in the closed position. The appropriate amount of force necessary to close the lever when it is properly adjusted will result in an imprint of the lever in the palm of your hand. Once closed, the OPEN designation on the lever will no longer be visible. When properly closed, it is impossible to move unless you open it again by reversing the steps above. If you can easily move it, open the quick release lever and tighten the adjusting nut another 180° and try again.
4. Ensure that the brake calliper assembly and shoe is correctly inserted and adjusted.
5. Quick release. Make sure that your front wheel quick release is properly adjusted and tight.

⚠ Failure to properly adjust and lock your front wheel quick release may result in the wheel falling off while riding which could result in serious or fatal injury and/or property damage.

⚠ If you are unsure about this brake set-up and adjustment procedure, please take your bike to your A2B dealer or any qualified bicycle mechanic, and ask for assistance in adjusting the brakes. Improperly adjusted brakes may cause reduced braking performance, leading to an accident that could result in serious injury or death and property damage. DO NOT ride your ebike if you are not confident that the brakes are working properly.

Removing rear wheel

1. Ensure that the power is turned OFF and remove the battery.
2. Disconnect the motor power connector.
3. Using a 19 mm spanner, loosen and remove the hub axle nuts.
4. Remove the rear wheel by sliding it out of the frame while disengaging the chain from the freewheel.

Re-installing rear wheel

Reverse the removal instructions (4-1) above.

ⓘ Ensure that the rear wheel is properly centred in the frame before securely tightening the axle nuts.

5. Replace the chain on the front and rear chain rings.
6. Ensure that the brake calliper mechanism, the brake shoe and the wheel lock correctly line up, and the wheel rotates freely without interference from the brake shoes before tightening the wheel locking nuts to 60 NM

⚠ If you are unsure about this brake set-up and adjustment procedure, please take your A2B Kuo+ to your A2B dealer or any qualified bicycle mechanic, and ask for assistance in adjusting the brakes. Improperly adjusted brakes may cause reduced braking performance, leading to an accident that could result in serious injury or death and property damage. DO NOT ride your A2B Kuo+ if you are not confident that the brakes are working properly.

7. Reconnect the motor power connector.
8. Cable tie the motor cable to the frame.



10.0 Safe and responsible riding

Make certain that you and your A2B have been prepared for a safe and pleasant trip.

ALWAYS wear an approved bicycle helmet. If you lend your A2B to someone else, make sure you always lend them an approved helmet as well.

DO NOT carry a second passenger on your A2B. Overloading your A2B with a second passenger can lead to severe injuries or even death.

OBEY all traffic laws Always ride on the correct side of the street, with the direction of traffic and not against it.

Watch out for car doors. Remember that cars may open their doors while you are approaching.

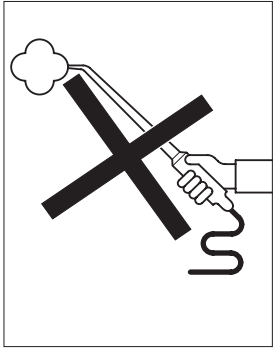
Be especially carefully during wet weather. Wet pavement may double or even triple the braking distance of your A2B. Ride more slowly, be prepared to stop in time and begin braking earlier. Wet roads are slippery – take corners carefully.

Make sure you are seen. In poor lighting conditions and at night you should wear bright clothes, with reflective strips at best.

Remain attentive while riding. Pay attention to moving and stationary vehicles.

Be aware that other traffic participants could underestimate your speed.

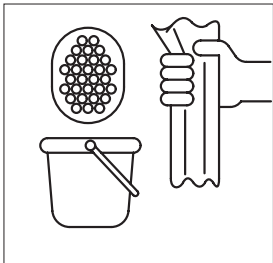
11.0 Cleaning the vehicle



i Rubber and plastic parts could be damaged by aggressive or penetrating cleaning agents or solvents.

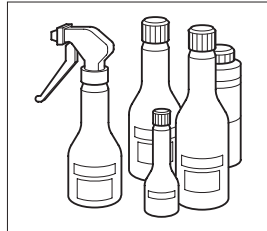
! After cleaning and before beginning your ride, always test your brakes!

! Do not use any steam or high-pressure cleaning devices! The high water pressure can damage the gaskets, the battery and the entire electrical system.



To wash, use only a soft sponge and clear water.

Polish only with a soft cloth or chamois
Do not wipe off dust and dirt with a dry rag (otherwise you may scratch the varnish and the panelling).



i Do not use paint polish on any of the plastic parts.

After longer rides, thoroughly clean the A2B and preserve with a commercially available anti-corrosion agent.

i In the interests of environmental protection, we would ask you to use care products sparingly and to only use such products that have been labelled 'environmentally friendly'. If the vehicle will be used during the winter months, road salt may cause considerable damage.

i Do not use warm water - as this can increase salt corrosion. At the end of the trip, immediately clean the vehicle with cold water; thoroughly dry off the vehicle; treat parts subject to corrosion with anti-corrosion agents on a wax basis.

12.0 Troubleshooting

No power? Here are a few suggested solutions. If they do not solve your problem, ask an A2B specialist dealer.

Problem	Possible cause(s)	Solution
The A2B will not switch on.	1. The battery is dead.	Recharge the battery. See sections 7.2 and 7.3.
A2B switches on but there is no motor assistance (display lights up and charge indicator shows charged battery).	1. A brake lever is applied.	Do not apply the brakes when starting the A2B. Ensure that the brake levers are aligned completely to the front.
	2. No power level has been pre-selected.	Pre-select a power level (see section 6.4).
	3. The controller did not wake up after switching on (note: the light does not illuminate even though the light is switched on).	Repeat the switching on procedure. Should the controller still not wake up, disconnect the battery from the connector and reconnect the battery after waiting 3 seconds. Repeat the switching on procedure.
	4. The connector for the power supply to the motor is unplugged.	Ensure that the connector to the motor is fastened securely.

13.0 Technical Data

General performance specification

- Curb weight without battery – 17 kg (37.5 lbs)
- Curb weight with battery – 19 kg (42 lbs)
- Maximum permitted with load 120 kg (264 lbs)
- Maximum Speed on flat level ground, motor power only, no wind, 20 degrees celsius, 55 kg rider,: 18,7 mph
 - *Worldwide (30,2 km/h)
 - *Europe (25 km/h)
- Continuous power output: 250 W

Electrical specification, battery

- Battery chemistry: lithium ion
- Nominal voltage: 36V
- Nominal voltage operating range: 36V to 42 V
- Nominal capacity: 9 Ah
- Charging method: CC/CV (Constant Current/Constant Voltage)

Battery Management System (BMS)

- Controls and stops over-charging
- Controls maximum charge current
- Controls over-discharge amperage (30 A max)
- Controls over-discharge voltage
- Over temperature shut-off
- Provides cell-to-cell balancing function.

Electrical specification, battery charger

- Input voltage: AC 110/230V, 50/60Hz
- Output Voltage: 42+-0,5VDC
- Output amperage: 2.0 A +/-0,4 A
- AC line fuse rating: 10A

Electrical specification, motor

- Motor type: brushless, single stage planetary gearing
- Motor voltage rating: 36 V

14.0 Warranty and safety notes

A2B Warranty

1. Definitions

The following definitions laid down in this provision apply to the warranty:

Goods mean: In conjunction with the A2B: the frame, the motor system (motor and motor controller), the lithium ion battery and all other components of the A2B with the exception of the tyres, hoses and brake pads.

A2B means: Light electric vehicle, manufactured and distributed by Hero Eco.

Periods mean: For the frame, five years as of delivery date of the A2B to you; for the motor system (motor and motor controller), two years as of the purchase date of the A2B to you; for the lithium ion battery, two years from the purchase date of the A2B for Europe

* Worldwide subject to local area regulations for all other A2B components with the exception of the tyres, hoses, brake pads, grips, chain, chain rings and sprockets.

*US one year Warranty.

Hero Eco means: Hero Eco Ltd.

You means: The original purchaser of the A2B from an authorised A2B specialist dealer.

2. Warranty

- 2.1 Hero Eco guarantees that the goods upon delivery of the A2B to you and for the specified periods:
- 2.1.1 are in agreement in all material respects with the relevant description, depending on any conditions or information in brochures, advertisement or in other documents;
 - 2.1.2 are of satisfactory quality;
 - 2.1.3 are suitable for the purposes specified by Hero Eco or for any appropriate purpose for which you utilise the goods;
 - 2.1.4 do not exhibit any significant defects with regard to the structure, material and processing;
 - 2.1.5 satisfy all applicable legal and regulatory requirements with regard to sales of the goods in Europe.
- 2.2 Hero Eco grants this warranty in addition to your legal claims with regard to goods that are defective or do not satisfy the warranty conditions in other respect. Your local consumer advice centre or authority for consumer protection will provide you with information about your legal claims.
- 2.3 This warranty is not applicable in the event of defects to the goods:
- 2.3.1 due to normal use and wear;
 - 2.3.2 due to intentional damage, accident or negligence by you or third parties;
 - 2.3.3 if your A2B was assembled by parties other than Hero Eco or an authorised A2B specialist dealer;

- 2.3.4 if you use the goods in a manner not recommended by Hero Eco, such as using the A2B for commercial purposes or in competitions or when training for such activities or events; owner's manual;
 - 2.3.5 due to your disregarding our instructions, such as in case of any modifications, alterations or repairs which you carry out without prior written permission by Hero Eco.
- 2.4 The warranty is also applicable to any goods repaired by Hero Eco or goods which they have ordered as spare parts in the improbable event that the original goods were defective or could not fulfil this warranty in other respects.

3. Defective goods and return

- 3.1 Consult either an authorised A2B specialist dealer or Hero Eco directly at A2B@heroeco.com
- 3.2 Hero Eco will ask you to take the A2B together with your proof of purchase to an authorised A2B specialist dealer. At its own discretion, after having verified that the goods are defective, Hero Eco will:
 - 3.2.1 refund, in whole or in part, the costs for the defective goods, or
 - 3.2.2 replace the defective goods or
 - 3.2.3 repair the defective goods.

15.0 Disposal

We at Hero Eco Ltd. support the proper disposal and recycling of our products. Please dispose of your ebike and associated components at your local recycling facility. Hero Eco will arrange for proper disposal if requested.

4. Limitation of liability

- 4.1 If you or Hero Eco do not abide by this warranty, then subject to provision 4.2 no party shall be liable for any of the resulting losses to the other party with the exception of losses representing a foreseeable consequence of non-compliance with this warranty.
- 4.2 Neither you nor Hero Eco shall be liable for losses due to Hero Eco's non-compliance with this warranty, specifically including the following:
 - 4.2.1 Loss of income or earnings;
 - 4.2.2 Loss of business;
 - 4.2.3 Loss of expected savings;
 - 4.2.4 Loss of data or
 - 4.2.5 Any lost time.
- 4.3 Provision 4.2, however, does not prevent claims with regard to foreseeable losses or damage to objects in your possession.
- 4.4 This provision in no way includes or limits the liability of Hero Eco for:
 - 4.4.1 Death or injuries due to negligence on the part of Hero Eco or
 - 4.4.2 Fraud or fraudulent misrepresentation or
 - 4.4.3 Any other matter in which it would be unlawful or illegal for Hero Eco to exclude its liability or to attempt such.



16.0 Owner Registration

Fill out and return your owner registration card immediately to receive important product information in the future. Thank you.

Your A2B and certain key components have unique serial numbers. Record these serial numbers for warranty purposes or in case your vehicle is ever lost or stolen.

Vehicle serial number is located on the underside of the frame near the pedal crank.

Vehicle serial number:

Motor serial number:

Battery serial number:

**Record important information in
a safe place for future reference:**

Date of purchase: _____


Selling dealer: _____

Street Address: _____

City/post code: _____

Telephone: _____

Sales person: _____

 To fully protect your A2B against theft, buy a high quality bicycle lock and chain. Secure your A2B to a stationary object every time it is left unattended and also lock your front and rear wheel and motor to the frame.

Hero Eco

UK office

Hero Eco Ltd.
Unit 16 Bessemer
Park
250 Milkwood Road
London SE 24 OHG

www.weareA2B.com

Edition 1.2

US office

Hero Eco, Inc.
207 97th St.
San Francisco, CA 94103
USA



A2B

