SelfPoweredBike MA01

User Manual

BEYOND MOTOR TECHNOLOGIES, INC

CONTNTS

Introduction:

Thank you for choosing the SelfPoweredBike electric assist bicycle. Our bike features an AI-based electromechanical system that intelligently determines the current road conditions and rider status to provide power assist as needed, making your ride easier while conserving energy and increasing the bike's range.

With our efficient magnetic power generation technology and intelligent power regenerative system, the front wheel generates electricity to recharge the battery without adding any resistance or reducing the bike's efficiency. This helps to maintain the battery's charge level and extend the bike's range.

The power assist has five levels ranging from 0 to 5, with level 0 being no power assist and level 5 being the highest power assist. The higher the power level, the more energy is consumed. If the power assist level is set to 0 or the battery level drops below 30V, the electric assist system will be turned off, and the front wheel's rotational energy will be stored in the battery without being consumed.

The bike also features a fully electric mode, allowing the bike to be powered entirely by the battery without pedaling. However, this mode will consume the battery's charge more quickly.

Safety is a top priority for us, and the bike's power safety system automatically cuts off the power when the brakes are applied. In this manual, you will learn how to use the SelfPoweredBike electric assist bicycle correctly and safely.

Purpose of the manual:

This manual is intended to provide you with essential information on how to operate and maintain your SelfPoweredBike electric assist bicycle safely and correctly. The manual explains the components of the bike and their functions, how to start and use the electric assist, how to maintain and care for the bike, how to troubleshoot common problems, legal information, and an appendix with additional details.

By following the instructions in this manual, you can ensure that your SelfPoweredBike electric assist bicycle operates correctly and safely, and you can extend the life of the bike and its components. Please read this manual carefully before using the bike for the first time and keep it for future reference.

Components of the bike:

The following are the components of the bike.

- Dashboard: displays information such as speed, distance traveled, battery level, and power assist level selection.
- Light and horn switch: controls the headlights and horn on the electric bike.
- Throttle: When the throttle is engaged, it activates the motor, which propels the bicycle forward without the need for pedaling.
- Seat: provides a place for the rider to sit.
- Fenders: protect the rider and bike from mud and water.
- Rear wheel: provides the driving force for the electric bike and is powered by the motor.
- Motor: provides power to the electric bike and assists the rider's pedaling effort.
- Pedals: used by the rider to pedal the electric bike.
- Power control box: houses the electronic components that control the motor, battery, and other systems.
- Front wheel: provides steering and support for the electric bike.
- Generator: Generating electricity for the entire electric-assisted bicycle, including the lighting, horn, and motor.
- Light and horn: used to increase visibility and signal other riders or pedestrians.

Getting Started:

Congratulations on your purchase of the SelfPoweredBike electric-assisted bicycle. Before you get started, please take a few minutes to read this guide to ensure proper and safe operation.

Power on and off:
To power on the bicycle, press and hold the power button on the dashboard until the power indicator light turns on. To power off the bicycle, press and hold the power button again until the power indicator light turns off.

Assist mode selection:
The electric assist mode has 5 levels, with 1 being the lowest power level and 5 being the highest power level. Each time the bicycle is powered on, it will automatically return to the last assist mode setting (user can also set it). To switch between the assist modes, press the up or down button on the dashboard. Assist mode 0 means turning off the electric-assist function.

Riding in electric assist mode:
Once the assist mode is selected, pedal the bicycle as normal, and the electric-assist system will automatically provide power according to your needs. The electric-assist system is intelligent and can judge the road conditions and the rider's situation in real-time, and provide the appropriate assist power to ensure a more comfortable and efficient riding experience. Please note that the higher the assist power level, the more power it will consume.

Riding in fully electric mode:
The SelfPoweredBike can also be ridden in fully electric mode without pedaling. Simply rotate the throttle to start the electric motor. Please note that riding in fully electric mode will consume the battery power faster than in electric assist mode.

Charging:
The electric bike has a high-efficiency magnetic power generation technology, coupled with an intelligent power recharge system, which can recharge the battery while cycling without increasing pedaling resistance or reducing efficiency. In normal usage conditions, users can almost not rely on external chargers to charge the bike. However, the charger can be used if necessary. When the charger's input and output terminals are connected, the charger's red indicator light will light up. The charger has an overcurrent protection device. Long-time charging (usually not more than 18 hours) will not affect the battery and charger's lifespan.

Safety:
The electric safety system will automatically cut off the power when the brakes are applied.

Battery status:
When the battery voltage is lower than 30V or the assist mode is set to 0, the electric-assist system will be disabled, and the bike will run like a regular bike. The bike's AI system is designed to optimize power consumption to increase the bike's mileage.

We hope that this guide has been helpful to you and wish you a safe and enjoyable riding experience.

Maintenance and Care:

Economic Riding:
To save energy, try to maintain a steady speed while riding and avoid frequent braking and starting.

Avoid Overloading:
Do not overload the bike or apply the brakes while twisting the throttle, as this can overload the motor and damage other components.

Overload Protection:
The controller is equipped with overload protection. If the system detects an overload, it will automatically shut down to prevent damage to the motor.

Charging:
Charging is generally not necessary if the bike is used conservatively. However, the bike can be charged using the charger provided. The charger has overcurrent protection, and charging time should not exceed 18 hours to avoid damage to the battery and charger.

Charging Guidelines

To ensure the safe use of your electric-assist bicycle and optimize battery performance, we provide you with the following charging guidelines. Please make sure to comply with them:

1. Initial Charging:
When charging your bicycle for the first time, ensure that you use the provided original charger and follow the instructions in the product manual. To ensure that the battery charges quickly, the product is set to fast charging mode for the first three charging cycles after leaving the factory.

2. Pedal-Assisted Power:
One unique feature of the electric-assist bicycle is the ability to supplement battery power by pedaling. This method not only promotes environmental friendliness but also extends the battery's usage time. We encourage you to make full use of pedal-assisted power to reduce reliance on the charger.

3. Charging Frequency:
To ensure battery stability and longevity, it is recommended to avoid frequent charging with the charger. The product system is designed to utilize fast charging mode for the first three charging cycles to ensure the battery charges quickly. Afterward, the charging mode will automatically switch to slow charging to protect the battery and minimize risks.

4. Charging Time:
Regarding the charging time for the electric-assist bicycle's battery, as the product system sets the first three charges to fast charging mode, it is advisable to ensure the battery is fully charged during these cycles. Subsequent charges will automatically switch to the system's default charging mode. Generally, it takes approximately 10-12 hours to fully charge the battery. Please observe the charging status indicator during use and follow the instructions in the product manual.

5. Safety Environment:
During charging, ensure that the surrounding environment is dry, well-ventilated, and free from moisture or potential sources of ignition. Additionally, avoid exposing the charger to high temperatures or extreme temperature conditions.

Please note that the above charging guidelines are intended to ensure the safety of your electric-assist bicycle and optimize battery performance. If you have any questions or require further guidance, please refer to the contact information in the product manual or consult a qualified professional.

Troubleshooting

In this chapter, we will provide some troubleshooting tips for common problems you may encounter while using your SelfPoweredBike electric assist bicycle.

Problem: The bike won't start
Solution: Make sure the power button on the dashboard is pressed and the battery is charged. If the battery is low, you may need to charge it before the bike will start. Check that the battery is properly installed and that all connections are secure.

Problem: The electric assist is not working
Solution: First, check that the electric assist is turned on. If it is on and still not working, check that the power level is set to a value greater than zero. If the battery charge is low, the electric assist may not work properly. In this case, charge the battery and try again. If the problem persists, contact our customer support team.

Problem: The bike is making strange noises
Solution: Inspect the bike for any loose or damaged components. Check the brakes, pedals, wheels, and chain. Tighten or replace any loose or damaged parts as needed. If the problem persists, take the bike to a qualified technician for further inspection.

Problem: The battery does not hold a charge
Solution: Check that the battery is properly installed and that all connections are secure. If the battery is old or has been exposed to extreme temperatures, it may need to be replaced. You can purchase a replacement battery from our website or contact our customer support team for assistance.

Safety Guidelines

The following important instructions must be followed by users of the SelfPoweredBike electric assist bike. Failure to follow these instructions may result in damage to the bike, injury, or other hazards. By using the bike, the user agrees to assume all responsibility for any consequences arising from their use of the bike.

1. Temperature Effects on Battery Performance:

Almost all types of batteries are affected by the environment. Generally, a higher temperature improves the battery's discharge performance, while temperatures below 0°C may cause the battery's power to decrease by more than one-third. Therefore, in winter or in cold regions, the range of a single charge may decrease, which is normal. When the temperature rises above 20°C, the function of the battery

will naturally recover.

2. Caution When Handling Battery:
When pulling the battery assembly, do not insert metal objects (such as wires, keys, etc.) into the battery charging port or touch the positive and negative contacts of the battery output with metal objects to avoid short circuits, fires, and other safety issues.

3. Avoid Water Damage:
This bike is resistant to rain and snow but not waterproof. When the water level submerges the controller, wire circuits, or motor hub, it will cause a short circuit and damage the electrical components. Please be sure to pay attention to this.

4. Use Only Authorized Chargers and Accessories:
Do not use chargers and accessories that are not authorized by the manufacturer. If an accident occurs as a result, the manufacturer is not responsible.

5. Prohibited Modification of the Bike:
Unauthorized modification or alteration of the bike is prohibited. The manufacturer will not be responsible for any damage caused by such modifications, and it may also invalidate the warranty. If there are internal malfunctions, please contact the local dealer or designated repair center.

6. Restriction on User Age:
Minors, pregnant women, and elderly people should not use electric bicycles.

7. Do Not Modify the Bike Body:
Unauthorized disassembly and modification of the bike body may cause safety hazards and danger to the rider.

8. Caution When Riding Downhill:
Do not ride downhill at excessive speeds, and do not use the front brake first when braking at high speeds to avoid danger caused by forward weight shift.

9. Do Not Lubricate the Brake Parts:
Do not add oil to the brake parts, as it may cause the brakes to fail and create danger.

10. Safety Check Before Riding:
Before riding, always check the safety and reliability of the brakes, saddle, frame, handlebars, and wheels to avoid accidents.

11. Avoid Rough Roads:
Avoid riding on uneven, muddy, stony roads or stairs to prevent tire punctures, wheel deformation, damage to the electric bike, and accidents.

12. Do Not Hang Objects on the Handlebars:
Do not hang objects on the handlebars while riding to avoid losing control and causing accidents.

13. Battery Safety:
The battery should not be placed near a fire source, or any flammable, explosive, or corrosive gases.

14. Prohibition of Battery Disassembly:
Do not disassemble the battery or the battery box, as it may damage internal components. Do not damage the labels on the battery or the battery box cover; otherwise, the warranty will be invalidated.

15. One Rider Only:
The electric bike is designed for one rider only. Do not carry passengers to avoid imbalance, instability, and danger.

16. Avoid Short Circuits:
Do not short-circuit the positive and negative terminals of the battery with wires or conductors to avoid danger and battery damage.

17. Handle the Battery with Care:
The battery should be handled with care, to avoid collisions, falls, and drops that may damage the casing and cause accidents.

18. Please note that electric bicycles are not suitable for long-distance travel.

The final interpretation of all the terms and conditions in this manual belongs to the company.

Appendix

Main Technical Specifications:

I. Main Technical Parameters of the Electric Vehicle:
Overall weight: 32kg
Payload capacity: 80kg
Recommended speed: 15km/h
Gradeability: 30°
Rated power: 250W
Energy consumption per 100km: 1.08 KWH

II. Main Technical Parameters of the Battery:
Type: Maintenance-free lithium iron battery
Capacity: 36V/20AH
Rated working voltage: DC36V
Charging time: 6-7 hours
Energy consumption per 100km: 1.08KWH

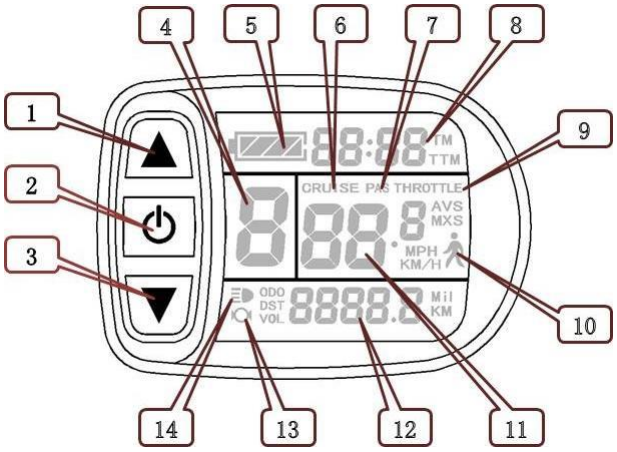
III. Main Technical Parameters of the Electric Motor:
Type: 36V motor
Rated continuous output power: 250W
Rated voltage: 36V
Rated current: 7A
Motor efficiency: 90%

IV. Main Technical Parameters of the Controller:
Type: 36V controller
Undervoltage protection value: 32V±1V
Overcurrent protection value: 15A±1A

Dashboard Operation:

Before using the dashboard, please read this operating manual carefully. The manual will guide you in the correct use of the dashboard and enable you to access various control and status display functions.

I、 Function and display



1		Up	11	Km/H	Real-time riding speed (metric)
2		Power ON/OFF		MPH	Real-time riding speed (imperial)
3		Down		MXS	Single maximum riding speed display
4	ASSIST	Assist level		AVS	Single average riding speed display
5		Remaining power display	12	Km	Cycling Mileage (Metric)
6	CRUISE	cruise function		Mil	Cycling mileage (imperial)
7	PAS	Assist function		DST	Single ride mileage display
8	TM	Single ride time		ODO	Cumulative mileage display
	TTM	Cumulative riding time display		VOL	Battery real-time voltage display
9	THROTTLE	Rolling handle turn on	13		brake sign
10		6Km/H assist rolling	14		Backlight on sign

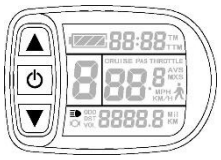
II、Operation Setting

1. Power on and off: Press and hold , power on, then press and hold again, power off. When the bike is stopped cycling and the dashboard is not been operated for 5 consecutive minutes, the dashboard will automatically shut down and turn off the power of the electric bike.

2. User Interface 01

Press and hold , power on, access to the User Interface 01

2.1 Turn on the backlight and headlights

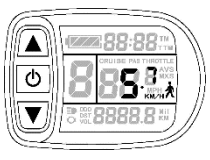


long press turns on the backlight and lights; then long press again to turn off the backlight and lights.

2.2 Switching of ASSIST Gear

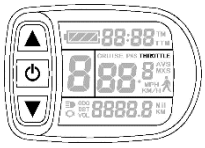
short press or switch gears from 1-5, 1 presents the lowest power level, 5 presents the highest. Each time you start the machine, the gear will be automatically restored to the last shutdown position (the user can set it separately). No power assist in gear 0.

2.3 6km/h assist rolling function



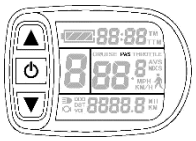
Hold , then flashing, bike rolls at a speed of no more than 6km/h. Release the function is cancelled.

2.4 Throttle



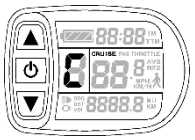
If the throttle is turned, this THROTTLE indicator will be displayed.

2.5 PAS



When pedaling the bicycle and triggering the system to provide assistance for riding, this PAS indicator will be displayed.

2.6 CRUISE



if the riding speed is more than 7km/h, press and hold ▼ to activate the Cruise function, deactivate if take brake or press any key.

2.7 Single data display and clear

After start the system in 5 seconds, press ▲ and ▼ at the same time, single ride time (TM) and single ride mileage (DST) flash. Press shortly ⏻ to clear both contents. If the button is not pressed within 5 seconds, it will automatically return to the display interface 01 after 5 seconds, and the original content will be retained.

3. User Interface 02

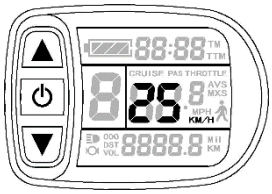
In User Interface 01, press the ⏻ key briefly to enter User Interface 02. In riding state, after 5 seconds, User Interface 02 will automatically return to User Interface 01.

4. User Interface 03

In User Interface 02, press the ⏻ key briefly to enter User Interface 03. In riding state, after 5 seconds, displaying the single maximum speed (MXS), it automatically returns to the real-time riding speed (Km/H) display.
At the bottom of this User Interface 03, the displayed information is VOL: battery voltage.
In User Interface 03, press the ⏻ key briefly to enter User Interface 01.

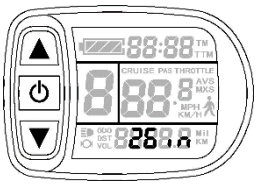
III、System Settings

1. Set the maximum riding speed



Within 5 seconds after turning on the power, press the ▲ and ▼ keys at the same time, and the maximum riding speed Km/H will flash. Press the ▲ or ▼ key briefly to set the maximum riding speed value (default 25Km/H). Press the ⏻ key briefly to switch to the next parameter setting.

2. Set the wheel diameter



After setting the maximum riding speed, set the wheel diameter, and the wheel diameter specification flashes. Press the ▲ or ▼ key briefly to set the wheel diameter specification. The selection range is 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26 and 28 inches. Press the ⏻ key briefly to switch to the next parameter setting.

3. Set metric/imperial units

   After completing the wheel diameter setting, the next step is to set the unit of measurement to metric or imperial. At this time, the symbols for km/h and km will flash. Press the ▲ or ▼ button briefly to synchronously select the unit of measurement for speed and distance traveled.

4. After completing the unit setting, the symbols “Km/h" and "Km" will stop flashing. Press the ⏻ button again to enter the maximum riding speed setting interface, or press and hold the ⏻ button to exit the regular system settings and save the settings, and return to the User Interface 01.

5. After each of the three Regular System Settings is completed, if you long-press the ⏻ button, you can exit the setup environment and return to User Interface 01, and the settings will be saved. In each setting interface, if there is no button operation for more than 1 minute, it will automatically return to User Interface 01 and the current setting will be invalid.

Installation Diagram:


Fix the headlight
9


Tighten the screw
10


To fix the front wheel,
remove the nuts firs
11

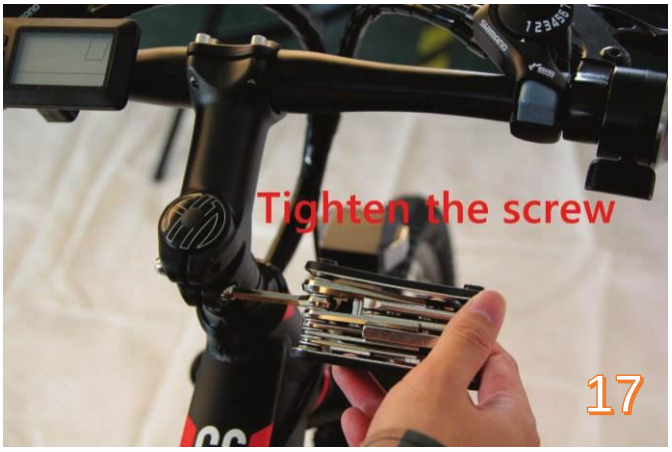

Insert the disc into
the gap of the brake
12


Put the front wheel in the
correct position of fork
13


Turn stem to this direction
14


Adjust the angle of
handlebar and stem
15


Tighten the stem on the fork
16


Tighten the screw
17


Turn spanner counterclockwise
to fix the Left Pedal
18


Turn the spanner clockwise
to fix the Right Pedal
19


Fix the battery
20


Align the battery with base
and push it downwards
21