Electric Bicycle Owner’s Manual

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This manual meets EN ISO-4210, 16 CFR 1512 and EN 15194 Standards

IMPORTANT:
This manual contains important safety, performance and service information. Read it before you take the first ride on your new electric bicycle (e-bike), and keep it for reference.

Additional safety, performance and service information for specific components such as suspension or pedals on your e-bike, or for accessories such as helmets or lights that you purchase, may also be available. Make sure that your authorized retailer has given you all the manufacturers’ literature that was included with your e-bike or accessories. In case of a conflict between the instructions in this manual and information provided by a component manufacturer, always follow the component manufacturer’s instructions.

If you have any questions or do not understand something, take responsibility for your safety and consult with your authorized retailer or the e-bike’s manufacturer.

NOTE: This manual is not intended as a comprehensive use, service, repair or maintenance manual. Please see your authorized retailer for all service, repairs or maintenance. Your authorized retailer may also be able to refer you to classes, clinics or books on bicycle use, service, repair or maintenance.
GENERAL WARNING:

Like any sport, bicycling involves risk of injury and damage. By choosing to ride an e-bike, you assume the responsibility for that risk, so you need to know — and to practice — the rules of safe and responsible riding and of proper use and maintenance. Proper use and maintenance of your e-bike reduces risk of injury.

This Manual contains many “Warnings” and “Cautions” concerning the consequences of failure to maintain or inspect your e-bike and of failure to follow safe cycling practices.

- The combination of the ▲ safety alert symbol and the word WARNING indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.

- The combination of the ▲ fire hazard alert symbol and the word WARNING indicates a potentially hazardous situation which, if not avoided, could cause a sudden and severe fire, which could result in serious injury or death.

- The combination of the ▲ trip hazard alert symbol and the word WARNING indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.

- The combination of the ▲ safety alert symbol and the word CAUTION indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury, or is an alert against unsafe practices.

- The combination of the ▲ hot surface alert symbol and the word CAUTION indicates a potentially hazardous situation which, if not avoided, could result in burns.

- The word CAUTION used without the safety alert symbol indicates a situation which, if not avoided, could result in serious damage to the e-bike or the voiding of your warranty.

Many of the Warnings and Cautions say, “You may lose control and fall”. Because any fall can result in serious injury or even death, we do not always repeat the warning of possible injury or death.

Because it is impossible to anticipate every situation or condition that can occur while riding, this Manual makes no representation about the safe use of the e-bike under all conditions. There are risks associated with the use of any e-bike which cannot be predicted or avoided, and which are the sole responsibility of the rider.
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1. Introduction

**IMPORTANT:** We strongly urge you to read this Manual in its entirety before your first ride. This Manual is intended to be an instructional Manual for youth and adult e-bikes. An e-bike is a bicycle or tricycle that may be powered by the rider AND a drive system, which includes an electric motor, battery, controls, sensors, connective wiring and typically one or more displays.

In the United States, e-bikes have drive systems of less than 750 watts and a top assisted speed of not more than 28 mph/45 km/h. In other markets, e-bike (or pedelec) drive systems may be limited to 250 watts and pedal-assisted speed of no more than 15 mph/25 km/h. Please note that not all e-bikes have all of the features described in this Manual. Ask your authorized retailer to point out the features of your e-bike.

An e-bike has many of the mechanical features of an unpowered bicycle, with the addition of an electrical drive system. This manual addresses both the mechanical and electrical aspects of e-bikes, and the user needs to understand both aspects of their e-bike to use it safely.

⚠️ **WARNING:** Ownership, operation, charging and maintenance of an e-bike involve certain risks and hazards, which can be minimized by following safe practices addressed in this Manual. Your knowledge of and adherence to those practices are essential to your safety, the safety of others, and the protection of property, including your e-bike.

Carefully read the information in this Manual and the model-specific manuals included with your e-bike, in order to learn how to properly operate and maintain your e-bike, as well as avoid damage to your e-bike. Proper and safe operation of your e-bike is your responsibility.

2. Safety Must Always Be First

⚠️ **WARNING:** Read all instructions in this Manual, as well as the model-specific instructions and documents provided with your e-bike. Failure to read and follow the instructions and warnings provided in this Manual and by the manufacturer may result in electric shock, fire or a crash resulting in serious personal injury or death.

⚠️ **WARNING:** It is not recommended to ride an e-bike if the rider is too young to do so safely, or has any mental or physical impairments (seizures or any impairments related to cognitive or physical, vision, hearing or speaking) or other limitations that may prevent the safe operation of the e-bike. Parents and guardians should carefully review Page 4, Section 4: “E-bike and Children: Attention Parents” of this Manual before allowing any minor child to operate an e-bike. If unsure, consult your physician.

⚠️ **WARNING:** Never loan your e-bike to another person or let another person operate your e-bike unless they are familiar with the
instructions and warnings in this Manual and competent to operate an
e-bike. Allowing a person to operate an e-bike who lacks the knowledge or
ability to safely do so may result in electric shock, fire or a crash, resulting
in serious personal injury or death.

A. How Is an E-bike Different from a Bicycle?
The addition of a motor and electric drive system means e-bikes are
very different from regular bicycles in several ways, and have different risks
associated with their use. When riding an e-bike for the first time, be sure to
familiarize yourself with your e-bike by reading all product documentation and
reviewing the features with your authorized retailer. Following are the major
differences between an e-bike and a regular bicycle:

• **General Battery Safety and Fire Risks:** E-bikes are equipped with an
electric drive system, battery and charger, which pose a risk of electrical
and fire hazards. Please refer to Page 3, Section 3: “General
Lithium-Ion Battery Safety” and Page 10, Section 6: “E-bike Battery
Safety” for additional information.

• **Children and Age Requirements:** Use of e-bikes by children and youth
may present additional risks. Age restrictions for operating or being a
passenger on an e-bike vary depending on the type of e-bike and on the
country or region where the e-bike is located. Operation may be limited by
the age of the rider, and local jurisdictions may have other requirements
for e-bike operation such as the use of helmets. Please refer to Page
4, Section 4: “E-bike and Children: Attention Parents” for additional
information.

• **Features, Functions and Restrictions on Use:** The addition of an
electric drive system means e-bikes are different from regular bicycles,
and you need to familiarize yourself with these differences. E-bikes are
also regulated differently depending on their speed and power settings,
and may have restrictions regarding where each type of e-bike can be
ridden. These regulations and restrictions vary depending on your country
or region. You must inform yourself of all applicable laws, requirements
and restrictions. Please refer to Page 6, Section 5: “Features and
Functions of your E-bike” for additional information on e-bike features, and
Page 10, Section 5(D): for additional information on e-bike laws and
where you can ride your e-bike.

• **Charging your E-bike:** Using proper charging practices and taking care of
your e-bike and its battery will maximize your use and enjoyment of your
e-bike. Please read all manufacturer instructions specific to your e-bike’s
battery and charger, and also refer to Page 10, Section 6: “E-bike
Battery Safety” for additional information.

• **Safely Operating your E-bike:** E-bikes are heavier, accelerate faster,
can achieve higher speeds more quickly and maintain those speeds for
longer periods of time compared to regular bicycles. These features can
dramatically affect the handling, braking and cornering of your e-bike, which
means you must exercise more caution around other people and when
cornering, accelerating and slowing down. It is recommended that you get to
know the functionality and intricacies of accelerating and decelerating your
e-bike in an area away from people and cars/traffic. Please refer to Page
22, Section 7: “Safely Operating your E-bike” for additional information.
• **Riding with Passengers, Cargo and Trailers:** Many e-bikes are designed to carry cargo or passengers. Riding with the additional weight from cargo or passengers requires practice and particular attention to your surroundings when riding. Please refer to **Page 37, Section 8:** “Best Practices for Riding and Carrying Passengers and Cargo” for additional information.

• **Drive Systems:** The drive system on your e-bike is a sophisticated electronic system that requires special care and maintenance. Any service to the drive system should be performed by a qualified technician. Please refer to **Page 42, Section 9:** “Drive Systems” for additional information.

### 3. General Lithium-Ion Battery Safety

⚠️ **WARNING:** Before charging or using your e-bike, you must carefully read, understand and follow all information contained in **Page 10, Section 6:** “E-Bike Battery Safety” of this Manual about safety, handling, charging, transportation, storing and disposing of your e-bike battery. It is recommended that you periodically review this information to ensure you are following all recommendations for safe use of this product. Failure to read, understand and follow all battery safety warnings and instructions can cause a fire, leading to serious personal injury, death or property damage.

⚠️ **WARNING:** Lithium-Ion batteries are powerful and store a tremendous amount of energy. While they are generally designed with safety features to protect the battery and the user, they must be handled with special care. When damaged, improperly charged or misused, Lithium-Ion batteries are susceptible to an uncontrollable energy release resulting in a sudden and severe fire. A Lithium-Ion battery fire generally cannot be put out until the energy contained therein is exhausted. Therefore, proper use, charging, discharging, care, maintenance, storage and transportation are all critical to the long-term use of the battery and the safety of the user and others.

⚠️ **WARNING:** Do not leave a battery unattended while charging, especially overnight. Once the charge cycle is complete, immediately disconnect the charger plug from the battery. Do not leave the battery connected to the charger for an extended period of time after it has reached full charge. If a battery fails while left to charge unattended, the failure can get progressively worse, and can result in fire or explosion resulting in serious personal injury, death, or property damage.

⚠️ **WARNING:** NEVER open a Lithium-Ion battery pack or modify the wiring or any electrical components of any product powered by a Lithium-Ion battery. Opening the battery or modifying the wiring or components can result in electric shock and can cause a fire leading to serious personal injury, death, or property damage.
General Safety Guidelines for All Lithium-Ion Batteries:

ALWAYS: Purchase and use devices and batteries certified by an accredited testing laboratory.
ALWAYS: Follow the manufacturer’s instructions for charging and storage.
ALWAYS: Use the correct battery, charger and cord.
ALWAYS: Plug directly into an electrical outlet for charging.
ALWAYS: Keep batteries and devices at room temperature.
ALWAYS: Store and charge batteries away from anything flammable.
ALWAYS: Keep batteries away from heat sources.
ALWAYS: Use proper methods for recycling old or damaged batteries.

NEVER: Use aftermarket or generic batteries or chargers.
NEVER: Plug into a power strip or overload an outlet.
NEVER: Overcharge or leave a battery charging overnight.
NEVER: Charge a battery or device on or close to any flammable material.
NEVER: Leave an e-bike or battery unattended while charging.
NEVER: Block your primary way in or out of a room or space.
NEVER: Place batteries in a trash or recycling bin.

4. E-Bikes and Children: Attention Parents

A. How Old Should a Child Be to Operate an E-bike?

This Manual covers e-bikes that may be used by both adults and older youth. The manufacturer of an e-bike cannot determine whether a particular child should or should not operate an e-bike. While e-bikes have a lot in common with regular bicycles, e-bikes also have a motor and battery, which means e-bikes weigh significantly more and can achieve significantly higher speeds, with much faster acceleration. A significant amount of strength and skill is required to safely control an e-bike. As a parent, you should read this Manual, as well as review its warnings and the e-bike’s functions and operating procedures with your child before letting your child ride the e-bike.

While it is up to a parent or guardian to make the determination of whether their child can safely operate an e-bike, you should be aware of these general guidelines. According to the United States Consumer Product Safety Commission (CPSC), motorized bicycles require cognitive skills and motor skills that usually develop after age 12.

The CPSC’s Age Determination Guidelines are available on their website at www.cpsc.gov.

Any youth or child riding an e-bike must have the necessary physical, mental and emotional capacity to ride the e-bike, as well as adequate bicycle riding experience and reaction time. They must also adhere to local laws, know how to manage different/changing road conditions, how to navigate traffic, and how to react quickly to unexpected situations.

NOTE: Local laws may vary regarding how old a child must be and what type of e-bike they can operate. It is up to the parents and child to conform to local laws.
WARNING: A child should never ride an e-bike that is too big for them. While some e-bikes have step-through frames (see fig. 2) that may allow a child to mount an e-bike, that does not mean the e-bike is the right size for them to operate safely. An e-bike that is too big for a child may lead to a loss of control and fall, resulting in serious personal injury or death.

WARNING: Some e-bikes may not be suitable for some children. Consult the documentation provided by the manufacturer of your e-bike for any information about age recommendations or restrictions. Parents must ultimately be responsible to determine whether their child is physically, mentally and emotionally capable of safely operating an e-bike, including understanding and following all warnings and instructions in this Manual. Allowing a child who lacks the capability to safely operate an e-bike to do so may lead to a crash resulting in serious personal injury or death.

WARNING: Some states have age restrictions for transporting passengers. A child must be of age to ride an e-bike independently, or be of age as specified by the manufacturer to be a passenger on an e-bike, unless the child is in an approved child carrier that has been properly fitted. Transporting a child that does not meet the age/physical requirements to be a passenger and/or is not in an approved child carrier can result in serious personal injury or death.

Read all relevant passenger-related information provided with your e-bike, and consult with your authorized retailer for any additional information. Assessing the passenger’s ability and safety is the parent’s responsibility. If you’re unsure, consult with your physician.

NOTE: For additional information regarding transporting passengers, please refer to Page 37, Section 8: ‘Best Practices for Riding and Carrying Passengers and Cargo’.

WARNING: A person must have the physical and mental ability to manage an e-bike in traffic, when facing varying road conditions or when in unexpected situations. They must also respect the laws of the road as they apply to bicycles. Failure to follow this warning could result in a crash leading to serious personal injury or death.

As a parent or guardian, you are responsible for the activities and safety of your minor child, including making sure that:

• your child wears a well-fitting and approved helmet at all times while operating or riding on the e-bike
• the e-bike is properly sized and fitted to your child
• the e-bike is in good repair and safe operating condition
• you and your child have learned and understand the safe operation of the e-bike as described in this Manual, and
• you and your child have learned, understand and obey not only the applicable local motor vehicle, e-bike and traffic laws, but also the common-sense rules of safe and responsible bicycling.
WARNING: Make sure that your child always wears an approved bicycle helmet when riding. Also make sure that your child understands that a bicycle helmet is for riding only, and must be removed when not riding. A helmet must not be worn while playing, in play areas, on playground equipment, while climbing trees or at any time while not riding. Failure to follow this warning could result in serious personal injury or death.

WARNING: Whether a child can safely operate an e-bike also depends on where the e-bike is being operated and the conditions present. Steep hills, wet or poor quality roads or trails, motor vehicle traffic, inclement weather, carrying passengers or cargo or other conditions may suddenly present risks that a child may lack the ability to respond to. The risks of operating an e-bike on public roads are different from operating an e-bike on natural-surface trails. Please read this Manual for more information on these risks and how to avoid them. Failure to follow this warning could lead to a crash resulting in serious personal injury or death.

5. E-Bike Features and Functions

E-bikes are manufactured by multiple companies and brands, each of which uses a variety of drive systems. These systems each have their own features and functions like motor and battery location, power output, battery capacity and maximum speed, as well as methods for charging and storing your battery and starting and operating the system. As such, you must familiarize yourself with the unique features and functions of your e-bike.

The e-bike-specific information included in this Manual covers universal topics shared by all e-bikes. For information that is specific to your e-bike, please refer to the model-specific manuals provided by your e-bike manufacturer, or consult your e-bike retailer or manufacturer.

Please refer to your authorized retailer or manufacturer for any questions about e-bike functions, local laws and regulations, parts compatibility, service intervals, as well as rider, cargo and passenger weight limits.

A. Electric Drive Systems

E-bikes differ from regular bikes with the addition of sophisticated components, engineered specifically for use on e-bikes. These components include:

- **Battery**: A sophisticated, high-performance, large-capacity Lithium-Ion battery, designed to safely contain a significant amount of energy and efficiently release it to the motor in order to supplement the rider’s power output for long distances.

- **Motor**: Provides power assistance to the rider when the pedals are engaged. Certain types of e-bike are also equipped with a throttle to engage the power.

- **Controls**: Buttons located on the display, handlebar, battery and/or frame that allow the rider to choose the level of motor assistance while pedaling.

- **Sensors**: Detect forces being applied to the pedals or rotation of the pedals, provide information to the system to control power output.

- **Display(s)**: Provide the rider with relevant information about the ride, such as speed, distance, power output, and battery charge (fig. 1).

- **Wiring system**: Connects the drive system components.
The addition of an integrated drive system means your e-bike is different from a regular bicycle. These differences mean you must follow all instructions in your manuals, and you should not treat your e-bike the same as a regular bicycle. This Manual will address how to handle and properly use an e-bike equipped with these unique components.

fig. 1
Typical mid-drive e-bike

fig. 2
Typical hub drive e-bike