

gio **ELECTRIC**
ELECTRIFY YOUR WORLD



Lightning

FOLDING ELECTRIC BICYCLE

GIO Electric eBike Owners Manual - EN

PLEASE INSPECT YOUR GIO ELECTRIC LIGHTNING E-BIKE
UPON ARRIVAL AND REPORT ANY DAMAGES THAT MAY HAVE
OCCURRED DURING SHIPPING

ATTENTION

The following owners manual is a guide to assist you. This manual is not a complete document on all aspects of the maintenance and repair of your electric bicycle, or e-bike for short. Your GIO Electric Lightning is not a complex object, however it is recommended that you consult an e-bike repair specialist if you have concerns as to your ability to assemble, repair, or maintain this product.

It is important for you to understand your new e-bike. By reading this manual completely before the first ride, you will get better performance and enjoyment from this product; also it's helpful to extend the life of your e-bike.

Always follow safety instructions, nonobservance can lead to injury. Please keep this manual for future reference.

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Introduction

Thank you for choosing the GIO Electric Lightning electric bicycle, this manual contains information regarding safety, assembly and maintenance of your new e-bike. The pictures included in this manual are for reference and may differ from your bike/show similar components of a different model.

Please read the **entire** manual before riding your new bicycle and familiarize yourself with its operation. Refrain from allowing anyone else to ride your e-bike if they are not familiar with its use.

- **N E V E R** modify your e-bike with unapproved accessories.
- **N E V E R** ride through deep water.
- **N E V E R** perform wheelies, jumps, or trick stunts.
- **N E V E R** operate your e-bike after consuming any alcohol any drugs.
- **A V O I D** riding in the rain for long periods of time.
- **A V O I D** water contact to the motor and electric lines.
- **A V O I D** running your battery extremely low or completely dead.
- **A L W A Y S** keep both hands on handlebars.
- **A L W A Y S** apply brakes lightly when riding on rocks or loose surfaces.
- **A L W A Y S** inspect your e-bike before each ride to ensure a safe ride.
- **A L W A Y S** turn your e-bike off when stopped and when not in use.
- **A L W A Y S** charge your e-bike after riding and prior to first use.

Please ensure only one person at a time is riding the e-bike. Max weight 264lbs (120kg) Max Weight for rear rack 55lbs (25kg) and is not designed for a child seat.

Young children, pregnant women, and any person with vision, balance, or other condition that would prevent them from riding a standard bicycle should not use this e-bike.

This e-bike is for on-road, or maintained trail use only and should not be used for riding rough terrain. Damage to the bike may occur if used in such off-road conditions.

Under standard road conditions (paved asphalt, concrete, cement without wind resistance, with a temperature of 77°F (25°C), and with battery capacity attenuation $\leq 5\%$), the running distance per charge is approx. 18.6miles (30km).

When riding in slippery conditions, such as rain or snow, allow extra distance for braking. When the e-bike runs at the speed of 12.4mph (20km/h), the wet braking distance should be no longer than 50' (15m).

For your safety and that of other people, turn off your e-bike when it is not in use or if there is a problem with any electric component. Your battery will also drain while the e-bike is turned on even if not in use.

For saving energy and extending the life of the battery, please use the pedals for assistance on the e-bike when climbing a slope or heading into the wind.

Before your first ride...

Please learn and observe all the road rules while riding your e-bike on public roads, including ALWAYS wearing an approved helmet.

The correct helmet should:

- be comfortable to the rider
- be lightweight
- have good ventilation for the head
- fit snugly
- cover the forehead

It is your responsibility to familiarize yourself with the laws of the state/province/territory where you ride and to comply with those laws.

E-bike Components



a) Front Auriga Hydraulic Disc Brakes, Front Wheel Quick Release

a) 20" Fat CST Front Tire & Front Fender

c) Spanninga Headlight, Front Fork Suspension

d) Handlebar Quick Release Latch

e) Left Handlebar, Front Brake Lever, Push Grip Throttle, Function Buttons

f) Handlebar Stem, LCD Display

g) Right Handlebar, Rear Brake Lever, Gear Shifter

h) 12Ah, Lithium 48V Battery Pack, Battery Pack Dock w/lock, 9 Mosfet 48A 20Amp Controller (internal)

i) Double-Lock Quick Release Frame Lock (right side)

j) Folding Pedals & 44t 170mm Aluminum Alloy Prowheel Crankset

k) Seat Post with Quick Release Lever, Seat

l) Rear Rack, Taillight & Rear Fender

m) Rear Auriga Hydraulic Disc Brakes, Bafang 48V/500W Rear Drive Motor, Shimano Altus 8 speed Derailleur

p) Kickstand, 20" Fat CST Rear Tire

ASSEMBLY INSTRUCTIONS

First, unpack your e-bike carefully and save all packing material. Be sure to locate the small boxes with your charger, pedals, hardware, manual etc. Sometimes small parts like nuts or screws may come loose during shipping so be sure and check the bottom of the carton and protective wrapping carefully. We recommend you don't discard packing materials until after you are through assembling your e-bike and know that it is complete and running properly.

This e-bike was fully assembled, inspected, and tuned at the factory and then partially disassembled for shipping. Your bike arrives in the shipping carton about 98% assembled.

If you have questions about assembling, please call our technical support or consult a qualified bicycle technician. We recommend that two people work together to assemble the e-bike. A full video of the Lighting assembly process can be found at <https://youtu.be/3UO0c87nqTU>

Unfold the bike

Once removed from the box begin by grasping the handle bars and moving them upwards until they are in the correct position.



Ensure that they are fully extended and that the handlebar release latch is fully locked into place.



Carefully unfold the bicycle, from the center hinge, into the fully straight position. Make sure the frame release latch is firmly pressed towards the frame until it is securely locked into place.

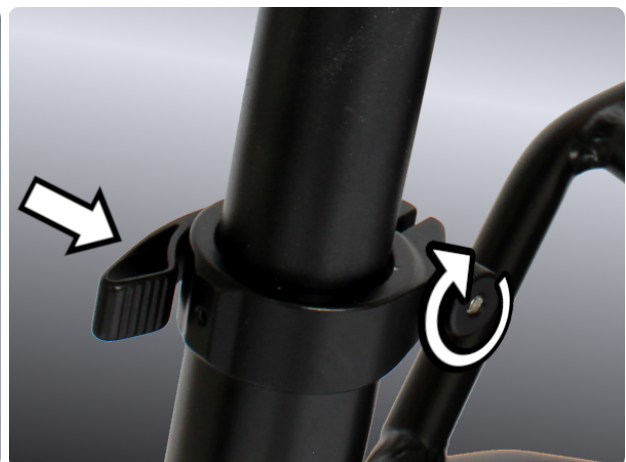


Adjust the seat and LCD screen

For protection the LCD screen on your Lighting ships twisted down toward the handlebar stem carefully twist it back into a position where it can be read while riding.



To adjust your seat, release the seat post latch and pull upward on the seat and set it to the correct height. Once at the correct position, ensure the quick release is tightened enough that the seat is secure with the latch completely closed.



To ensure your seat is correctly positioned, you can adjust the height with this simple method. Align the crank arm with the seat post, then place your heel on the pedal. A seat at the proper height should create a straight leg while seated in this position. (See picture below) This alignment will provide the most power and proper range of motion for the joints responsible for pedaling your e-bike.



Attach the pedals

The pedals for your e-bike should be packaged in the same box as the front axle quick release. Each pedal is marked on the threaded axle end, L for the left pedal and R for the right pedal. Place one of the included washers over the threaded end of each pedal and then thread it into the hole on the corresponding crank arm. Tighten using a wrench on the flattened section just below the thread, turning the specific direction listed for each pedal. The left pedal attaches to the left side arm and is turned counter-clockwise. The right pedal attaches to the chain side crank arm by turning clockwise.

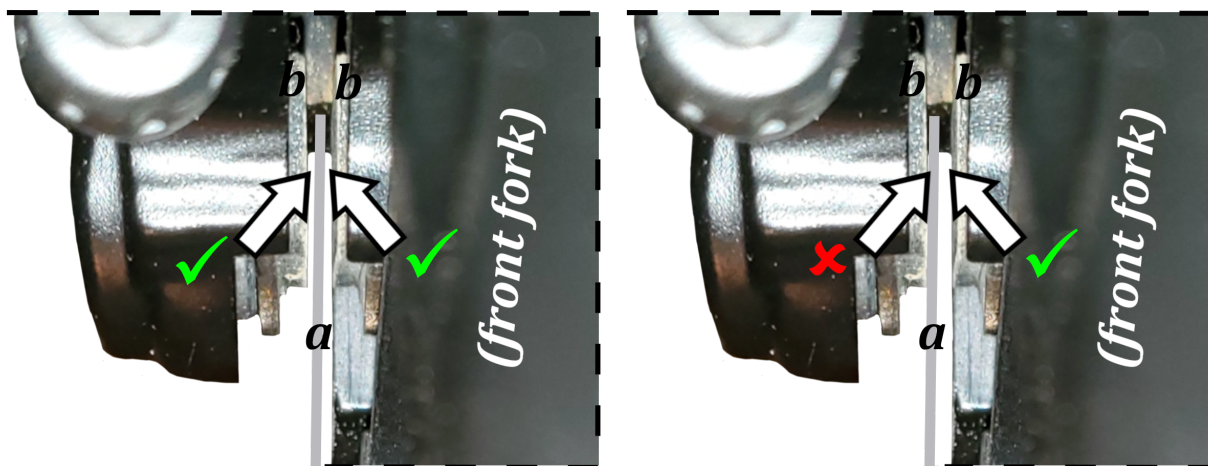


Check your pedals before each ride to ensure that they are tight. If you ride your bike with loose pedals, you may strip the threads that hold the pedal to the crank.

Check and adjust brakes

Your e-bike is equipped with hydraulic disc brakes. They offer a smoother braking motion and are an inclosed system that requires less maintenance than traditional disc brakes. Making sure that your brakes are correctly adjusted is not only crucial for proper stopping but also can affect your e-bikes overall performance.

To begin checking the brakes, use a stand, second person, some other object to hold the e-bike so you are able to freely spin the wheel. Visually inspect the clearance between the brake disc(a)and the brake pads(b). A light can be used to backlight the caliper making it easier to see. If, with the brakes not engaged, there is no rubbing between the pads and the spinning rotor, your brakes are ready for use.



If you do have contact or rubbing you can perform a simple realignment by loosening the caliper mounting bolts(c), squeeze and hold the brake lever to center the caliper on the rotor. While continuing to hold the brake, retighten the caliper mounting bolts. Release the brake and spin the wheel checking again that it has the correct clearance, if it does, your brakes are now aligned. In the event there is still contact, the mounting bolts can be loosened one at a time and fine adjustments can be made until your brake disc is spinning freely without contact.



e-bike Operations

Your GIO Electric Lightning e-bike is classified as a Class 2 e-bike in most areas. This means that the motor embedded in the hub of the rear wheel can cause the bicycle to achieve speeds up to 20mph (32km/hr) and can be powered with or without pedaling using the throttle. There are 3 powered drive modes: Walk, Cruise and PAS plus pressing the throttle switch at any time will engage the motor. The e-bike must be turned on for any motor functions to work.

Walk: In this mode, the motor will activate at a consistent speed, this can help push the bicycle while walking it up a hill or uneven surface that may be difficult or unsafe to ride seated.

Cruise: When activated this mode will propel the e-bike at a constant speed without using the pedals/PAS or the throttle.

Power Assist (PAS): In the power assist mode, the motor is engaged when you pedal forward. Even lightly pushing the pedals will activate the motor and maintain desired assistance level. Power assist will automatically shut off when the e-bike has reached the maximum speed, if the brakes are applied or if you stop pedalling.

You should use the SHIMANO gear shifter on the handlebar to set the gears appropriately according to road conditions and pedal as usual, you will find that you need to exert a lot less effort and the e-bike travels faster and at a more steady speed.

Shifting Gears

The gear shifter for your e-bike is located on the right handlebar just below the grip. It consists of a gauge with indicator that displays the current gear and 2 shifter levers. Pushing the front shifter(a) raises to a larger gear (smaller number) and pulling the rear shifter(b) lowers to a smaller gear (larger number).



Charging your battery

Fully charge your battery before your first ride and then after any use, especially after long-distance rides. The sooner you charge after riding the longer your battery pack will last. Your charger plugs directly into your battery pack and can be charged either on or off the bicycle.



Locate the charging port cover on the side of the frame and flip the cap open to reveal the charging port or if charging off the bike locate the port directly on the side of the battery. ALWAYS plug your charger into the battery FIRST and THEN to the wall outlet. DO NOT plug a power cord already plugged into a wall outlet directly into the battery. The battery charger included is designed specifically for your Lightning e-bike, connecting the battery to any other charger will void the warranty.

The light on the charger will be red while charging and turn green when finished. Always unplug your charger from the battery and the wall when charging is completed. Charge your battery before it gets too low, if you let your battery pack run completely dead, it may not re-charge. The Lithium battery is built with circuitry that prohibits over-charging and excessive discharging.

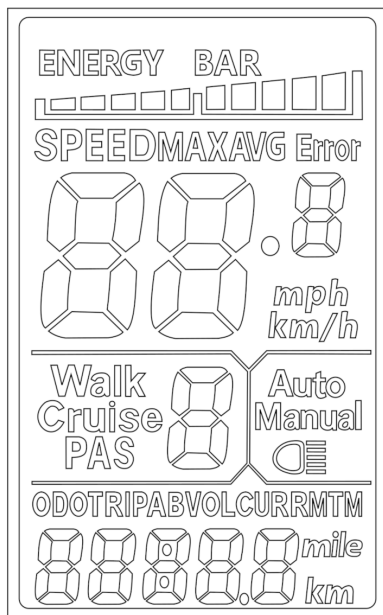
Your battery pack switch has 2 positions. Turning the key counter clockwise will set it to the 🔒 "locked" (ON) position and turning the key clockwise will turn it to 🔓 "unlocked" (OFF) position. It is a good idea to turn the key to the OFF position after any ride so that your e-bike will not be left on accidentally. Always remove the key from the lock before riding to prevent losing it.

To remove the battery pack, push the key in and turn to 🔓 "unlocked", until the battery catch releases, it can then be removed. Once the battery is clipped back into place it can be locked into position by turning the key to 🔒 "locked".

The battery level on your display will show the correct level only when power is not being drawn from the battery. In addition to the e-bikes display, when removed from the bicycle, the red button on top of the battery pack illuminates a set of lights that indicate the power level when pushed. The first light only comes on when the battery is too low to run the bike. The next lights indicate low, medium, and full power.

The Display Screen

Your GIO Electric Lightning e-bike features a backlit LCD screen on the center of the handlebars. This screen displays key information such as battery level, speed, powered drive mode/level, mileage, etc while the e-bike is in use. It is used in tandem with the function buttons on the left handlebar to change/set various settings within the e-bikes programming. Lastly it also functions as a display for e-bike system status and will indicate specific errors if they arise.



- Battery Display-
- Speed / Status Display-
- Drive Mode / Light-
Display
- Odometer/Multi
Display



Display Sections

Battery: Shows current battery level.

Speed/Status: Shows calculated speed and displays vehicle status (see status message code list), max speed and average speed.

Drive Mode / Light: Shows the current vehicle mode: Walk, Cruise, or Power Assist (PAS) and light status.

Odometer/Multi: Shows total mileage(ODO), mileage by trip (TRIPA, TRIPB), battery current voltage(VOL), current battery current(CUR), mileage remaining(RM), power on time(TM).

Function Buttons

Located on the left handlebar is a set of 3 buttons used to control the features and setting of your Lightning e-bike.

The 3 buttons are: **(▲)**-Up, **(▼)**-Down & **(M)**-Menu and are pressed in 3 ways: SHORT press - single quick press, LONG press - press and hold for 2 seconds, and HOLD press - press and hold for over 5 seconds.

Follow the chart below to perform the specific function or operation:

Turn your e-bike On/Off	LONG press (M)
Adjust Power Assist(PAS) level	SHORT press (▲) OR (▼) to your desired level (1-5)
Toggle Speed Display	LONG press (M) + (▲) to cycle
Turn Walk On/Off	LONG press and HOLD (▼) , release to stop
Turn Cruise On	LONG press (▼) while PAS or throttle is active
Turn Cruise Off	Apply brakes or start pedaling while in Cruise
Turn Headlight On/Off	LONG press (▲)
Toggle ODO/multi display options	SHORT press (M)
Enter parameter settings menu	LONG press (▲) + (▼)
Switch to next parameter	While in parameter settings menu, SHORT press (M)
Adjust current parameter	While in parameter settings menu, SHORT press (▲) OR (▼)
Save parameters and exit parameter settings menu	While in parameter settings menu, LONG press (▲) + (▼) OR after 10 seconds of inactivity it will auto-save and exit to the main display screens

The following page contains a list of parameters settings adjusted within your e-Bikes parameter settings menu. The Lightning features an operating system that has setting options for multiple e-bike models, we strongly recommend you do not adjust the highlighted settings below as their presets are specific to your GIO Electric Lightning.

#	Setting	Range	Preset
p01	Backlight	Darkest 1 - 3 Brightest	2
Adjusts LCD screen brightness low to high			
p02	Mileage Unit	0:Mile , 1:KM	0
Changes mileage between imperial and metric			
p03	Voltage Level (V)	24, 36, 48, 60, 64	48
Sets battery voltage - do not change			
p04	Dormancy Time	0:None , 1-60 (min of inactivity)	10
Sets amount of inactivity time before the e-bike automatically turns off			
p05	PAS Gears/Levels	0:3 gear mode , 1:5 gear mode:	1
Sets number of PAS levels available to use			
p06	Wheel Diameter	Varies by bike protocol - see below	2
(5S): wheel diameter value: 0:16", 1:18", 2:20", 3:22", 4:24", 5:26", 6:700C, 7:28" (P2): wheel diameter in inches (0.1" increments) range: 5.0 ~ 50 This parameter is linked to the speedometer and needs to be entered correctly			
p07	Speed Magnet Number	1-100	6
This parameter is linked to the speedometer and needs to be entered correctly. Ordinary hub motor: the number of magnetic steel is input directly. High-speed motor: it is also necessary to calculate the deceleration ratio, and the input data = the number of magnetic steel × deceleration ratio.			
p08	Speed Limit	(5S):1-41km/h, (P2):1-100km/h	32
Adjusts maximum speed, increasing speed limit will not change maximum motor output			
p09	Throttle Start Setting	0:zero start , 1:non zero start	0
Determines whether the throttle can be used without pedaling (zero start) or only while pedaling (non zero start).			
p10	Drive Mode	0:PAS Only 1:Throttle Only 2:Both	2
Toggles method to activate motor. GIO Electric Lightning runs using both regardless of this setting			
p11	PAS Sensitivity	Lowest 1-24 Highest	2
Adjusts PAS sensitivity The higher the setting the less PAS will engage. This will result in slightly longer battery life.			
p12	PAS Start Strength	1-5	5
Adjusts the strength the PAS engages in			
p13	Power Magnet Disc Type	5, 8, 12	12
Sets power magnet disc type specific to the installed motor, do not change			
p14	Controller Current Limit (A)	1-20	15
Sets amperage limit for controller, do not change			
p15	Controller Undervoltage		39
Sets undervoltage for controller, do not change			
p16	Odometer Reset	Hold (▲) for over 5 sec in p16	NA
Resets the total mileage accumulated on your odometer			
p17	Cruise Control	0:Enabled , 1:Disabled	0
Toggles the ability to turn cruise control on/off			
p18	Display Speed Ratio	50%-150%	100
Sets display speed ratio			
p19	PAS Level 0	0:0 lvl , 1:no 0 lvl	1
Toggles on/off the option of PAS lvl 0, allows for non powered use of the e-bike while still using lights, display instruments etc. Throttle will not work on PAS lvl 0!			
p20	Protocol	0:Protocol 2 1:5S Protocol	1
Sets the communication language for your e-bike, do not change! Please note certain parameters above have specific setting options by protocol for either Protocol #2 (P2) or 5S Protocol (5S)			

Care and Maintenance

General Care

Do not use high-pressure water streams to clean your e-bike, as water might seep inside the motor or the wiring compartment and cause rusting of electric parts or short circuits. Please use a damp cloth with a neutral detergent to clean the bike body. Do not use alkali-based or acid-based detergents such as rust cleaners as it may result in damage and/or failure of the bike body.

The electric components can only be cleaned on the outside, there is no need for them to be maintained on the inside. Opening these components may void the e-bike's warranty.

Avoid parking your e-bike outside during periods of rain or snow. At the end of a trip where it was ridden in precipitation, bring the e-bike inside and use a clean, dry towel to eliminate any wetness.

During daily use, please keep the controller clean and dry. Keep it away from water, vibration, and contamination, otherwise, it may be damaged.

The chain can throw off excess oil. Wipe excess oil off the chain and using soap and hot water, wash all oil off that may have gotten on pedals, tires, etc. Rinse with clean water and dry completely before you ride the bicycle.

Using a light machine oil (20W) and the following guidelines, lubricate the bicycle:

Pedals - Every 6 months

Put 4 drops of oil where catch pedal axle goes into the pedal

Chain - Every 6 months

Put 1 drop of oil on each roller of the chain

Motor - Every 1 year

Contact a professional technician

Warning! Do not over lubricate. It is also recommended to use a drip oil over spray lubricants as aerosol lubricant may contaminate the disc brakes.

Battery Care

The following will help ensure the longevity of your battery:

Charge the battery once a month during periods of inuse or storage.

Charge the battery for 6-10 hours after its energy is consumed for 50%-70% of its total energy.

Do not charge the battery for a longer than 10 hours especially in warmer temperatures such as during summer.

Environmental temperature for charging the battery should be between: 32°F (0°C) & 113°F (45°C)

The battery pack may not fully charge when the temperature is too low or too high. Discharge rate will also vary with temperature.

When the battery is charging, it may become warm, this is normal. The opposite is also normal, if your battery is not warm it does not indicate there is an issue with it. If your battery exceeds 122°F (50°C) disconnect it and seek service.

When charging, have the keyed switch on the battery dock turned to the "ON" position.

Always visually inspect the wall outlet before plugging in your charger. Do not use a wall outlet that may be defective.

The charger provided is specifically designed for your battery pack. Do not use another charger, this may cause damage to your battery, controller, etc and will void your warranty. Avoid dropping or damaging your charger. Keep it away from water.

Store the battery in a clean, dry location, at a temperature between: 32°F (0°C) & 113°F (45°C) Avoid storing the battery near fire, water, corrosive substances or in direct sunlight.

Regular e-Bike Inspection Checklist

Before every ride, it is important to carry out the following safety checks:

Brakes

- Ensure front and rear brakes work properly.
- Ensure brake lines are not leaking hydraulic fluid, & display no obvious wear.
- Ensure brake levers are tightly secured to the handlebar.

Wheels and Tires

- Ensure tires are inflated to within the recommended limit as displayed on the tire sidewall.
- Ensure tires have tread and have no bulges or excessive wear.
- Ensure rims run true and have no obvious wobbles, kinks or wear.
- Ensure all wheel spokes are tight and not broken.
- Make sure locking levers on your quick release axle are correctly tensioned and in the closed position.

Steering

- Ensure the handlebar and stem are correctly adjusted and tightened and allow proper steering.
- Ensure that the handlebars are set correctly in relation to the forks and the direction of travel.
- Check that the headset locking mechanism is adjusted & tightened.

Frame and Fork

- Check that the frame and fork are not bent or broken.

Chain

- Ensure the chain is oiled, clean, and runs smoothly.
- Ensure the chain is properly tensioned or seek a qualified technician for adjusting the chain tension if needed.

Bearings

- Ensure all bearings are lubricated, run freely, and display no excess movement, grinding, or rattling.
- Check headset, wheel bearing, pedal bearings, and bottom bracket bearings.

Cranks and pedals

- Ensure pedals are securely tightened to the cranks.
- Ensure cranks are securely tightened to the axle and are not bent.

Derailleurs

- Check that front & rear mechanisms are adjusted & work properly.
- Ensure control levers are securely attached
- Ensure derailleurs, shift levers, & control cables are lubricated

Miscellaneous

- Ensure that all reflectors are properly fitted and not obscured
- Ensure that the electric components of the e-bike are functioning properly and show no signs of wear or damage.
- Ensure all other fittings on the bike are properly and securely fastened, and functioning.

Troubleshooting:

Issue	Possible Cause	Solution
Display operates but e-bike does not	Power cord is not properly plugged into the battery	Properly plug-in power cord to the battery
	Brake cut-off engaged or fault	Disengage brake cut-off or replace
	Speed sensor adjusted too low	Adjust speed sensor
	Blown fuse	Replace fuse
	Loose motor wire connector	Check motor wire connector
	Loose or broken connection	Check all wires & connections
	Throttle disengaged or fault	Engage throttle or replace
E-bike operates but display does not	Loose or broken connection	Check display wires & connections
	Faulty or damaged display	Replace display
Bike has reduced speed and/or range	Speed sensor is not adjusted	Adjust speed sensor
	Low battery	Charge battery
	Faulty battery	Replace battery
	Low tire pressure	Inflate tires to pressure listed on sidewalls
	Brake drag	Adjust brakes
	Incorrect gear choice	Switch gears
	PAS lvl too low	Increase PAS lvl
Bicycle has intermittent power	Loose or broken connection	Check all wires & connections
	Loose fuse	Check fuse connection
Charger light does not operate	Power outlet fault	Check outlet power or use another outlet.
	Charger is not plugged to wall or battery proper	Ensure both ends of the charger are securely plugged in
	Charger light or charger is faulty	Replace charger
Charge cycle finishes in an unusually short amount of time	Faulty charger	Replace charger
	Faulty battery	Replace battery
Chain jumping off Freewheel sprocket or chain ring	Chain ring not true	Re-true if possible, or replace
	Chain ring loose	Tighten mounting bolts
	Chain ring teeth bent or broke	Repair or replace chain ring/set
	Rear or front derailleur side-to-side travel out of alignment	Adjust derailleur travel
Gear shift not working properly	Derailleur cables sticking/stretched/damaged	Lubricate/tighten/replace cable
	Front or rear derailleur not adjusted properly	Adjust derailleur
	Indexed shifting not adjusted properly	Adjust indexing

Status Display Codes

The following is a list of the codes used in the status section of your display. The error display and accompanying code corresponds to specific e-bike statuses. These can be used by the rider or technician to diagnose e-bike issues.

Code #	Status	Code #	Status
0	Normal	10	Communication reception failure
1	Reservation	11	Communication reception failure
2	Brakes	12	BMS communication failure
3	Power sensor fault	13	Headlight failure
4	6km/hr cruise control	30	Current anomaly
5	Real-time cruising	33	Turn the anomaly
6	Battery undervoltage	34	Motor phase deficiency
7	Motor failure	35	Motor Hall anomaly
8	Turning malfunction	36	Brake anomaly
9	Controller failure	37	Communication anomaly

Warranty

The limited warranty as contained herein is exclusive and in lieu of all other warranties expressed or implied. There are no warranties that extend beyond the description in this limited warranty.

GIO Electric guarantees this product, including charger, motor, controller, to be free of manufacturing defects for a period of 12 months, and the battery specifically for 24 months. All warranty periods commence from the date of shipment.

This limited warranty does not cover normal wear and tear items/parts. (tires, brake pads, cables, etc) It does not cover the product issues due to misuse, neglect, or accident. Nor any damage, failure, or loss caused by improper assembly, set up, storage, maintenance, or improper servicing.



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