



GRAFFITI

OWNER'S HANDBOOK
USE & MAINTENANCE



T I M E *(less)* R I D E R S

Thank you for your investment in Lyric and embracing the change that electric bikes can offer. We sincerely hope you enjoy your purchase as much as we have enjoyed bringing these machines to life. Please take some time to read this owner's manual carefully before putting together and using your Lyric Cycle to become familiar with the features and controls of the bike as well as the correct care and maintenance.

We look forward to hearing about your experience and seeing you online on our social networks.



/LYRICCYLES

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WARNINGS IN THIS MANUAL

Throughout this manual we have provided warnings sections for information you should pay close attention to. These sections highlight warnings concerning the safe operation and consequences if proper setup, operation, and maintenance are not performed. Please ensure you understand these warnings and contact us if you have questions or concerns.



USAGE WARNING


Your new Lyric Electric bike is a powerful electric vehicle that can cause injuries or even death to you, your passengers, and others around you if used improperly. In some cases, Please learn to ride your new electric bike carefully and safely and respect the rules of the pathways, trails, and roads of your local areas.

To minimize the risk of serious injury, protective equipment should be worn at all times including a helmet for both you and your passengers. You are responsible for your own safety. Use this product with extreme caution and at your own risk.



CALIFORNIA PERCHLORATE ADVISORY

Certain components of this electric bike such as the provided lithium batteries may contain perchlorate material. Special handling may apply for service or end of life disposal. See www.dtsc.ca.gov.

 **ASSEMBLY WARNING:**

Incorrect assembly, maintenance, or use of your ebike can cause component or performance failure, loss of control, serious injury, or death. Even if you're an experienced bike rider, you must read and understand the entire manual and any documentation provided for subcomponents or accessories before riding. If you are not sure you have the experience, skills, and tools to correctly perform all assembly steps in the manual you should consult a local, certified, reputable bike mechanic experienced with electric bikes.

Damage caused to your electric bike from improper assembly will be considered a defect of negligence and not covered under your bikes warranty. So please take care in assembling and/or maintaining the components of your bike.

Damage to your ebike's electrical system caused in any manner, including water intrusion, can lead to battery failure, electrical system malfunction, or electrical fire and consequent property damage, injury, or death. Your electric bike is water resistant, not waterproof. Connections are IP54 rated and will safely function in light rain but exposure to submersion or high-pressure spray will cause damage. Follow all recommendations to minimize chance of water damage. If you have any questions please contact our support department.

Please ensure you get started safely by reading this section and ensuring you have checked all items in the quick start steps

LYRIC GRAFFITI QUICK START

New bike day is awesome. You've likely been hurrying through the build of your new electric bike as fast as you can so you can get it out on the road. We know, we're the same way. But we need to do a few things first to set your bike up for safe operation and to set your battery up for the first ride. Please ensure you follow all steps in the quick start in the bullet points to the right.

When we ship the battery, it is in storage mode which means that it is at about 50-75% charge. It is best to charge it up first as this will set the battery management system and the cells within your battery pack to a balanced state. '

Before your first ride, it is your responsibility as the owner of a Lyric Cycle to check a number of key things before your first ride. We suggest checking the items in the quick start steps before every ride to ensure a safe ride each time.

QUICK START STEPS

- Check the battery charge level. For the first charge, charge the battery to 100%. It is best to leave the battery plugged in for 12 hours on the first charge. After this first charge, ensure that your battery charge will be enough each time for the ride you're planning.
- Check the Headlight, tail light, and brake light for proper function
- Check wheel mount and rotation – wheels should spin straight, axles should be tight.
- Check tire pressure (we recommend 18-22 psi F&R)
- Check front & rear Brakes and alignment (You should not hear disc noise when the wheels are freely rotating) Adjust the brake alignment if you hear rubbing
- Check the brake rotors to ensure all bolts are tight
- Check battery charge level
- Check headset, axle, and handlebar nuts for tightness.
- Start your ride slowly and get used to the power of your bike whether it is your first time or you're a seasoned rider. Ensure you are using Power assist level 1 to start off.

GET TO KNOW YOUR GRAFFITI



1 - Twist Throttle w/
Throttle cancel button
2 - Headlight Switch

3 - Display Controls
Power On, Assist Lev-
els, Menu
4 - Display



5 - Carbon Belt Drive
6 - Kickstand

7 - Passenger Pegs
8 - Removable Battery
9 - Hub Motor

RIDING SAFELY AND PROTECTING YOUR BIKE

Please follow these tips to protect you and your bike while riding :

DO

- Wear a helmet.
- Find the right seating position by sliding forward or back on the seat.
- Ensure both batteries are locked to the bike and can't be removed.
- Ensure your tires are properly inflated
- Ensure you have enough battery charge level for the ride you want to do.
- Turn the throttle off when walking your bike to prevent unwanted acceleration.

DON'T

- Overload your bike beyond the 300lb weight capacity to prevent damage to the motor, frame, battery, rims, and brakes.
- Ride beyond the speed limit of your pathways and bike lanes in your area. Your ebike is shipped with the maximum federal speed limit for this bike but certain oathways will have a lower speed limit and you should get to know this limit for safer riding.



START UP OPERATIONS

After your bike has been properly assembled and all components are secured correctly, and you have read this entire manual, turn on the bike with the power button on the handlebar and select a power level (default 1-9) following the steps below:

1. Check that the battery is locked securely. Try tugging on the battery with the key removed; it should not move at all. If it does, push it down and turn the key again to ensure it latches. Use the velcro strap for the underseat battery to protect it in the case of the keyed lock failing.
2. Ensure you are wearing the correct safety gear (helmet, pads) to prevent injury should you have an accident.
3. Turn on the bike with the power button on in the middle of the handlebar controls on the left.
4. Select the assist level you wish to use with the “up” and “down” arrows.
5. Begin pedaling the bike or twist the throttle to begin forward motion of the bike.

WARNING: Engaging the pedal assist feature, especially at a high setting, will cause acceleration that may be greater than expected, especially for relatively new riders, and that can cause loss of control, serious injury, or death. To minimize risk, start at assist level 1.



Power On/Off

Power Assist Level Selectors



SPEED WARNING

Your new Lyric Electric bike comes limited to 20mph (32kmh) as a legal Class 2 ebike. Changing the settings in your ebikes display beyond this legal limit will make your bike illegal to ride on public roads and pathways and could void your insurance on this bike. We do not recommend making these changes for these reasons. Please ride responsibly and legally

YOUR BIKES ELECTRIC SYSTEM

All of the components of your new Lyric Electric Bike have been carefully selected to function together. This includes the batteries, battery management systems (inside the batteries), motor, motor controller, display, and lighting. Changing any of these components to anything other than original equipment provided by Lyric Cycles will compromise your warranty and could cause damage to other components in your bikes electric system. Please contact us if you have any questions or concerns.



OPERATING TEMPERATURE

Your electric bike has optimal operating temperatures ranges where it will perform best. Operating in below freezing temperatures will affect battery performance. More information on this subject is in the battery section of this manual.

Your controller and motor have temperature cut-offs programmed to ensure that they don't continue to operate hotter than is safe. If you experience your motor cutting out, a high temperature cut off could be the cause.

OVERVIEW OF ELECTRICAL COMPONENTS

In this section we will go over all of the components that make up your bikes electrical system. The components that will be reviewed in the next pages are:

- Battery
- Controller
- Motor
- Display
- Cadence Sensor
- Throttle
- Lighting
- Brakes

BATTERY OVERVIEW

Did you know that the battery in your bicycle is the most significant cost to repair and replace? Because of this we suggest that you take great care in charging, using, maintaining, and storing your battery. Proper care and maintenance will help you get the most out of your battery and extend its life as long a possible.

The battery in your Lyric Cycle is made of Lithium Polymer cells which have been the tried and tested technology in powertools, ebikes, and even electric cars. These batteries are high performance and will last you many miles of trouble free performance if taken care of properly.

On one side of your battery you will see a key hole that can be used to lock the battery to the bike. Your battery should always be locked to your bike when in use as the lock doubles as the safety measure to hold the battery securely while you ride. On the other side of your battery you will find a power switch to turn the power for the battery on or off. You will also find the charge port under a rubber protector. Keep the protector over the charge port when riding your bike and when storing the battery. This helps keep the charge port sealed and dry.

Your batteries each contain a battery management system which helps to charge the cells in your battery in balance as well as draw from each cell in balance during use. This battery management system also protects your batteries and will cut power if the battery gets too hot, or if there is a voltage draw that is too high.

RANGE

Range for electric bikes is a widely discussed topic and marketed feature. The challenge with determining an accurate range for an electric bike is that the range is impacted greatly by many different factors:

- Weight of the rider
- Number, size, and slope of hills on the ride
- Average travelling speed
- Number of instances of hard acceleration
- Amount of time travelling at the bikes top speed

You'll notice that easy riding, in a low assist setting, without hard acceleration, high speeds, and long hills increases your efficiency significantly. Conversely, you'll find that traveling at higher speeds, up more hills, under higher loads will decrease your range significantly. Because of this large variation, it is best for you to get to know your bike, how you ride, and on what usual terrain you travel to get to know what range you can predict from your bike.

EXPECTED BATTERY LIFE

The batteries in your Lyric Graffiti are removable, 52 volt batteries with a 20ah (1040wh) capacity. These batteries will have a useable life of 1000 full cycles. A full cycle is from fully charged to fully drained. So if you go for a ride and use only 20% of the battery, that is 0.2 cycles. So a typical battery will last 5-6 years for most people that use their bike often and even longer for more casual riders.

READING BATTERY LEVEL

Your Graffiti uses APT 860c display which works in harmony with your motor controller to read information from your batteries to give you information about your remaining battery power. Battery percentage is read by the system based on voltage (see previous section). 58.8V will be 100% charge, 44V will be 0% 52.4V will be 50%.

It's good to understand how your bike is calculating remaining battery level so that you can accurately judge how far you can keep traveling. Your remaining battery percentage can be affected by hard acceleration, big hills, top speed tests, etc. This riding uses large current draws that can create momentary reductions in the voltage reading that can make your remaining battery appear less than it is. A return to normal riding will slowly return the remaining battery to the correct reading soon after. It's most accurate to read to remaining battery percentage when the bike is fully stopped/parked.

For dual battery bikes, the bike will draw from both batteries at a time if both batteries are installed and turned on. This is automatic and does not require any manual intervention from the rider. If you manually switch one battery off the system will use power from only the battery that is turned on. This is sometimes helpful for dual battery bikes if you are planning a long ride as you'll know you have enough power to get back if you ride until the first battery is out of power.

Battery level can be seen on the top of the display and the green/yellow/red shade of the battery indicator helps to visually show how much charge is left.

CHARGING YOUR BATTERY

Ensure the battery is fully charged before your first ride. To connect your charger to your battery, locate the charge port on the side of the battery under the protective rubber plug. First, plug the charger into the battery and then into your wall outlet. The charger will show a red light indicating that the battery is charging. Once fully charged the light indicator will turn green.

The charger will automatically stop charging when the battery is full, however, unnecessary wear to the charging components can occur if the charger is left attached to the battery and power source for too long. Don't leave the battery plugged in for more than 24 hours. The battery can be charged after each use. Charging the battery after short rides will not cause damage.

TIPS:

- Do not charge the battery in a wet/humid place or anywhere exposed to strong sunlight.
- Don't cover the charger with anything, it has an internal fan to prevent it from overheating and will overheat and potentially melt if it is covered up by anything.
- Always charge your battery where temperatures are between 5 - 25 °C. Charging outside these temps can cause damage.
- Charge the battery with the supplied charger. Do not attempt to use another charger as it may damage the battery or cause a fire or an explosion.
- Do not leave the battery unattended while charging.
- The battery can be charged on or off the bike. To remove the battery, turn the key to the off and unlocked position.

BATTERY BALANCING

Your battery should be balanced when you first receive your bike and for the first three times you charge your battery. This is a process of ensuring that every battery cell in the pack is at the same voltage levels. Follow the steps below to balance the battery.

1. After the first, second, and third ride, regardless of distance ridden or the amount of battery used, charge the battery and leave the charger attached to the battery and the outlet for as close to 12 hours as possible (but not longer than 12 hours).
2. Disconnect the charger from the outlet then the battery once the first balance charge is complete.
3. On your next ride, ride as usual and discharge part (or all) of the battery capacity.
4. Repeat steps 1-3 for a total of three balance charging sessions (as close to, but not longer than, 12 hours).
5. After the third balance charge and fourth ride, begin normal charging procedures as per the battery charging tips (page 11).

Repeat this battery balancing procedure when your battery has been stored for periods of 3 months or more at a time.

REMOVING YOUR BATTERIES

You can easily remove your batteries from your bike with a simple operation. It is advised to remove your batteries when storing your bike in temperatures below 5 °C (41 °F), when you're not riding your bike for an extended period of time, or when left in a public place unattended for long periods of time (batteries are targets for theft!), or when transporting the bike.

Removing the Battery Pack(s)

1. Turn off the power on the bike.
2. Locate the keyhole on the battery in one of the front corners.
3. Unlock the battery using the provided key, by turning the key counterclockwise.
4. Remove the velcro safety strap from the underseat battery (if using)
5. Push the battery pack forwards, it should slide on its track.
6. Once it will no longer slide forward you should be able to lift the front of the battery pack.
7. The pack should now lift off its track. (careful it's heavy!)
8. If you own a bike with a second battery follow this procedure again for the second pack.

NOTE: If you have 2 battery packs and wish to ride with only one, you may choose to do. Both batteries do not need to be connected for your bike to function.

DUAL BATTERY SYSTEM

For dual battery models, the batteries will be used at the same time while you ride when both batteries are powered on. You may choose that you want to draw from only one battery at a time. This can be useful on a long ride where you want to be sure you have enough battery power to get back to your starting place. To do this, just turn off one of the batteries using the battery power switch on the battery itself. When you do this, your bikes electrical system will draw from only the battery with the power on. When this battery drains your bike will power down and this helps give you an indication that you should have the right amount of battery power to take you back to where you started from.

Utilizing both batteries will not allow the bike to achieve higher top speeds as this is limited by the controller and battery management systems to keep the electrical system in balance. What it does do, is it allows you to run a higher voltage for a longer period of time because the bike is drawing from both batteries and balancing the voltage between the two batteries. This allows you to maintain a higher speed for longer, but does not affect acceleration or top speed when compared to using the single battery.

BATTERY TROUBLESHOOTING

ISSUE	RESOLUTION OPTIONS
Bike won't power on	<ul style="list-style-type: none"> Remove and reinstall battery to test if battery is correctly installed. Check that battery switch is on Check the battery power level by pressing test button on the side of the battery Check battery connection under the seat (orange plugs)
Battery not powered to 100% after charge	<ul style="list-style-type: none"> If battery is charged to 95-97% this is expected behaviour. The last 3-5% charge will take 3-4 hours longer after the charge light goes green. This is only needed every 5th or 6th charge as a rebalance If charge levels are below 80% after charger completes charging contact Lyric Cycles
First battery is drained but second battery is still fully charged	<ul style="list-style-type: none"> Ensure the battery is installed correctly Ensure the battery is switched on Try swapping the battery positions
Battery power drains quickly	<ul style="list-style-type: none"> Reduce speed on your ride Reduce instances of hard acceleration Ensure overall weight of bike plus rider is not more than 300lbs

CONTROLLER

The controller is the heart and brains of your electric bike. It is located under the seat in a space between the seat and the batteries. Your Graffiti uses a 33A continuous controller with 40A peak capability. The controller is the central place where all of the wiring for your bike starts and the controller is involved with every function including:

- Pedal Sensor
- Throttle
- Battery Information
- Controller & Motor Temperature
- Acceleration and Speed Performance.

Your controller is an advanced technology hardware component and the Lyric Graffiti only uses high performance controllers that have been carefully programmed to get the best performance for your electric bike. The programming on your controller is locked and any attempt to change settings or wiring of your controller can damage the controller and will void your bikes warranty.

If you suspect a problem with the controller's function please contact us at support@lyriccycles.com

MOTOR

The Lyric Graffiti comes with a powerful geared hub motor. This motor drives the bike forward from the rear wheel using large magnets and internal gears. We use a tried and tested motor from Bafang and this motor should give you years of trouble free maintenance.

Under normal use, your motor will heat up and can overheat under some circumstances (Hot days, long or very steep hills, heavily loaded bike, etc.) Your motor controller monitors your motor temperature and will cut power to the motor when it detects an overheating condition. If you suspect this to be the case carefully feel the outer casing of the motor and if it feels hot it is best to wait some time for it to cool off before riding again. It is very important that you do not overload your bike as you can overheat the motor quickly to where your controller can't protect it. Please make sure you stay under the weight capacity.

Care Tips:

- The motor can be subjected to rain and gentle water pressure from a garden hose but high-pressure water should be avoided as this can penetrate the motor seals.
- Ensure that the axle bolts and torque plate bolts are always tight as a loose motor can wear down the frame or become dangerous to ride.
- When changing the rear tire, pay attention to the placement and securing of the motor wire. Incorrect installation can cause damage to the motor wire from other moving parts.

DISPLAY

The Lyric Graffiti uses the APT 860c display. This is a high definition display that allows you to see your speed, pedal assist level, remaining battery power, distance traveled and other information about your ride. This display has been created specifically for Lyric Cycles and replacement of this display with a different model could make some of your bikes features cease to function. For the basic features of your display:

- Power: Turns the bikes power on and off. (Press and hold for 3 secs)
- Up: Change the pedal assist level up
- Down: Change the pedal assist level down
- M: Mode button - this will access the menu of your display to change basic settings. Double pressing this button will access the advanced menu.



ADVANCED DISPLAY FUNCTIONS

In the advanced settings for the APT 860 display you will see settings for both current limit and speed limit. These features have been disabled for the Graffiti so making changes to these will not affect the performance of your bike. For the full features and functions for the APT 860c Display please visit the manual here:

<https://lyriccycles.com/pages/user-manuals>



- 1 - Power Button (Press and hold 3secs)
- 2 - Assist Level Up
- 3 - Assist Level Down
- 4 - Menu Button
- 5 - Battery Voltage / Power Remaining
- 6 - Speed (KMH or MPH can be selected)
- 7 - Watts being used currently
- 8 - Pedal Assist Level

PEDAL SENSOR

Your Lyric Graffiti has 2 different methods to engage the electric motor, the Pedal/Cadence Sensor and the Throttle. The Pedal/Cadence Sensor is a small disc with magnetic sensors located next to the crank. This sensor sends a signal to the motor controller when you turn the pedals to let the controller know you are trying to move the bike. The amount of power delivered to the wheel will depend on the pedal assist level you have set on the display and the mode you are in (speed selector button below the regen throttle).

The pedal assist levels are based on a percentage of total power and are automatically set by the display. In your display settings you may choose 3, 5, or 9 pedal assist levels. Your Graffiti has been set from the factory at 9 levels. Total power is 2300W at peak power and 1000W nominally.

You can choose to edit the pedal assist settings freely to your liking to get the desired amount of power out of certain assist settings. Doing so will not affect your bike's electrical system and will not cause an overall increase or decrease of the total power available.

THROTTLE

The throttle is a full twist throttle on the right hand side of the handlebar. Twisting this throttle towards you will activate the motor at different levels depending on the amount the throttle level is depressed. The button that is integrated with the throttle is a cancellation button to turn off the throttle. It is recommended to turn the throttle off when you are walking your bike to prevent any unwanted acceleration of the bike.

The throttle power provided depends on the power assist level selected and the amount you twist the throttle. In power assist level 1 the throttle response will be the least and power assist level 9 will be the most. You can choose to always have full power on your throttle by changing the settings in your display to "off".

We understand that some people prefer to use a thumb throttle, if you choose to change your throttle to a thumb throttle we can not guarantee the performance of your bike. Each throttle part has different voltage operating ranges and a different throttle can cause poor performance and/or error conditions that will prevent your bike from working.



THROTTLE USAGE

The Lyric Graffiti is a high-powered electric bike with a significant amount of torque in higher power settings. Be sure to use the throttle carefully by starting off in lower power level until you get used to the throttle response.

LIGHTING

The Lyric Graffiti is equipped with a tail light/brake light, a hi-beam and low-beam headlight, and daytime running lights. The taillight and daytime running lights can be turned on by pressing and holding the assist level up button for 2 seconds (when the bike is powered on first). These lights help to provide additional visibility to the bike for your safety and are recommended both day and night.

The headlight is operated with the switch located next to throttle. The headlight has a high-beam and low-beam setting. Low beam is the lower switch and hi-beam is upper switch. The headlight on the Graffiti is a powerful light that draws battery current separately from the controller. So use of the headlight will consume some of the available amps from the batteries and affect top end performance for the bike. Keep this in mind when you are using the headlight and drive the bike conservatively.

You can adjust the angle of your headlight by tilting it up and down. You may need to loosen the bolts on either side of the light if it is too difficult to tilt.

Your Lyric Graffiti is also equipped with brake lights. These lights will turn on when you pull the brake levers

Left Handlebar



Press and Hold 2 seconds to Turn Taillight and Daytime running lights on/off

Right Handlebar



Hi-Beam
Low-Beam



ADDITIONAL LIGHTING

The Graffiti is not wired for turn signals or a horn. If you choose to wire turn signals onto your bike this will void your warranty as we can't guarantee the wiring of additional peripherals, lights and switches.

BRAKES

Your Graffiti comes equipped with 4-piston hydraulic disc brakes. These brakes are actuated by pulling on the brake levers and the more you pull the more braking pressure will be applied. The brake levers are also part of the overall electrical system as they have electric switches in the levers that cut motor power from both the throttle and pedal cadence sensors when either one or both of the levers is pulled. This is a safety measure to ensure the bike doesn't continue to power itself while you are applying the brakes.

Your brakes will wear down with use as well and will require adjustment from time to time as they wear to prevent them from making friction noise while you ride. You should check your brake pads often to see the remaining pad material left and change the pads before they are completely worn. This can be done by looking through the middle of the caliper at the pads. It is most accurately done when you remove the brake calipers so that you can see the full wear of the pads.

You can purchase new brake pads in the Lyric Cycles online store any time you require them to ensure that you are purchasing the correct size pads for your brakes.

As part of regular maintenance, you will need to have the hydraulic brakes bled typically every 6-months. But if the brakes take more than 1 pull when you start your ride to feel brake power you should have the brakes bled immediately.



WEIGHT LIMIT OF YOUR BIKE

Your Lyric Graffiti has a weight capacity of 300lbs including both the bike and rider. This weight limit is due to the safe operating load for both the brakes and the motor/controller/battery. Choosing to load the bike beyond this capacity can cause the brakes to and power system to overheat. Overheated brakes significantly reduces braking power. Your bikes electrical components are all programmed to shut down if any one component reaches an unsafe temperature. When this happens you will need to shut the bike down and wait until components have a chance to cool off before continuing to ride.



WEIGHT LIMIT

Choosing to load your Lyric Graffiti beyond the weight capacity of 300lbs (bike plus rider plus cargo) can affect your bikes performance and can cause brake and electrical components to fail. This failure is most likely where riding conditions have significant hills involved. Understand the risks and proceed with caution.

CARRYING A PASSENGER

Respecting the weight limits of the bike, you can choose to carry a passenger. Your passenger should be able to comfortably reach the passenger pegs and be seated on the seat, not on the rear rack area of the bike. The passenger pegs are weight bearing and the passenger can mount the bike by standing on one pegs and stepping over the seat to place a foot on the other side. It's best to have the rider seated with both feet on the ground first before the passenger seats themselves.



REAR RACK

The integrated rear rack of the Lyric Graffiti is designed to hold no more than 90 pounds. Due to this, the rear rack is not intended to be a seat or a seat extension. Using the bike in this manner can cause metal fatigue of the frame and can cause the frame to fail.

The Rear rack extensions are rated for the same weight and it is best to center the load over the rack or rack extension (if installed) and rear axle. The further back the rack or rack extension is loaded the more stress it puts on the rack and frame

MAINTENANCE OVERVIEW

Your electric bike is a collection of parts that all need care and maintenance to keep in good operating order. On any bike, certain parts need to be replaced periodically due to wear, and sometimes parts become damaged for various reasons. This is to be expected over the lifetime of your bike, and the more that you are aware of and can check on each of the parts the better operating condition your bike will be. Check your bike frequently before each ride by following the directions in “Maintenance Checklists” on the following pages.

It is best to have your bike regularly serviced by a certified, reputable bike mechanic. Regular bike mechanics will be able to help you maintain the brakes, headset, bottom bracket, cranks, pedals, grips, stem and handlebars. See our “Recommended service intervals” on page 28 for more information for ongoing maintenance.

Components of any ebike are subject to higher wear compared to the components of bikes without power assistance. This is especially true of the Lyric Graffiti because of the higher top speed which causes more wear on brake pads and rotors. Higher wear is not a defect in the product and is not subject to warranty. “Consumable Components” not covered in warranty are the tires, brake pads and rotors, suspension forks, spokes, wheels, and the battery.

For all repairs to your electric system it is recommended to see a bike mechanic that understands how to service electric motors, controllers, and electric systems to help you diagnose your issue.



AFTERMARKET PARTS

Be extremely careful about using parts or accessories that are not originally equipped with the Lyric Graffiti. Using aftermarket accessories or components (Batteries, controllers, throttles, racks, forks, trailers, etc.) that have not been tested by Lyric Cycles for safety and compatibility with your specific bike may void your warranty, create an unsafe riding condition, result in bike/property damage, or cause serious injury or death. If you use replacement parts or accessories not tested and recommended by Lyric Cycles, you do so at your own risk and at risk of warranty.

MAINTENANCE CHECKLISTS

BEFORE YOUR FIRST RIDE

- Make sure handlebar cables were routed correctly when the handlebar was installed. Turn the handlebar fully to the left and right and make sure the cables and wires don't impede steering.
- Make sure your pedals are secure using a pedal wrench.
- Check that the cable connectors on the bike are all plugged in securely and that nothing loosened in shipping.
- Check the brakes for rubbing noises when you spin the wheel. Adjust if necessary. Note, the brakes pads may make noise a little the first few times you ride. This is okay and normal; any squeak or noise should go away with use.
- Check everything on the “Before every ride” list below.

BEFORE EVERY RIDE

Before every ride or every 40–72 km (25–45 miles), follow the safety checklist in the table below. If you find anything wrong with your bike, don't ride it until you're sure it's fixed. Consult a local, certified, and reputable bike mechanic to help you get the bike back in working order

Brake System

- Check brake pads and ensure the brake pad material isn't thinner than the backing plate it attaches to.
- Ensure brake pads are correctly positioned in relation to the brake rotors.
- Ensure brake housing shows no obvious wear.
- Ensure brake levers are properly positioned and tightly secured to the handlebar.
- Ensure that the brake levers don't need to be "pumped" (several squeezes of the lever) to get the brakes to actuate. This means your hydraulic system may need to be re-bled by a mechanic

Steering

- Ensure the handlebar and stem are correctly aligned, adjusted, and tightened for proper steering.
- Hold the front wheel between your legs and twist the handlebar to test that the steering is not loose.
- Ensure the handlebar is set correctly in relation to the fork and the direction of travel.
- Ensure the handlebar grips are secure and undamaged.

Wheels & Tires

- Ensure tires are holding air and inflated to 12-20 PSI
- Ensure tires have good tread, have no bulges or excessive wear, are seated on the rim and are free from damage.
- Ensure rims run true and have no obvious wobbles or warps
- Check each wheel spoke to make sure none are loose.
- Check the axle nuts on the front and rear wheel to ensure they are correctly tightened.

Bearings

- Check that headset, wheel, pedal, and bottom-bracket bearings are lubricated, run freely, and display no excess movement, grinding, or rattling. Oil and or replace as needed.

Drivetrain: Cranks, Pedals, Belt

- Ensure the cranks are not bent and are securely tightened to the bottom bracket.
- Ensure the belt is aligned and runs smoothly without noise. Adjust the rear wheel to ensure the rear cog is aligned perfectly straight to keep the belt on track.
- Ensure there is no wear or on the belt that would prevent it from operating.

Frame and Seat

- Check that the frame is not showing any signs of cracks or damage.
- Check that the seat is secured properly with all 3 bolts

Motor & Throttle

- Ensure the hub motor is spinning smoothly and is in good working order.
- Ensure the power cable running to the hub motor is securely screwed together and undamaged.
- Check the axle hub motor nuts to ensure they are correctly tightened.
- Ensure the throttle and pedal assistance are operating normally.

Battery

- Ensure the battery is charged.
- Ensure there is no damage to the battery.
- Ensure the battery is locked to the frame and is secured. Remove the key before riding.

Electrical

- Look over electrical cable connectors to make sure they are fully seated and free from debris or moisture.
- Check cables and cable housing for obvious signs of damage.
- Ensure cables are secured away from moving parts.
- Ensure headlight and taillight are functioning, adjusted properly, and unobstructed.



PARTS MAINTENANCE

Riding your bike when any component's useful life is surpassed can cause that component to fail, resulting in loss of control, serious injury, or death. Pay attention to signs of wear such as cracks, scratches, and operational changes that could indicate a component needs replacing. Pay close attention to brake pads and change before they wear completely out. Perform regular maintenance according to "Recommended service intervals" below. If you're not sure you have the experience, skills, and tools to perform safety checks and regular maintenance, consult a local certified, reputable bike mechanic for help.

SERVICE OVERVIEW

Regular maintenance of any bike is key to ensuring the best possible performance and reducing wear and tear on systems. Ideal service intervals vary depending on use conditions. We generally recommend inspections, service, and necessary replacements be performed at the time and distance intervals described below, but you should have your bike serviced more frequently if you ride aggressively, with heavy payloads, or in harsh conditions. Have your bike inspected immediately if you notice problems or your bike has been involved in a fall or other accident.



AFTER A CRASH

If you have an accident with your ebike, have your bike inspected by a certified, reputable bike mechanic to help identify any damage (visible or internal/not readily apparent), that might make your bike unsafe, and lead to serious injury or death. Be particularly cautious about using a battery that has experienced a significant impact from a fall or crash; a damaged battery may not show external signs of damage but can be a fire hazard.

SERVICE INTERVALS

WEEKLY, 160–320 KM (100–200 MILES)

- Inspect Check hardware for any loose fasteners
- Check your brake disc rotor bolts especially. These can come loose from the forces on the brake discs.
- Check drivetrain for proper alignment and tension of the belt (see belt tensioning page.)
- Check wheel trueness and spoke tension, and check for quiet wheel operation (without spoke noise).
- Check frame for any damage.
- Service Clean frame by wiping frame down with damp cloth.
- Check brake pad thickness to ensure pads don't need to be replaced
- Check tire pressure and adjust to within desired range 12-20 PSI

MONTHLY, 400–1200 KM (250–750 MILES)

- Inspect Check brake pad wear and alignment
- Check brake levers don't need more than one "squeeze" to actuate the brakes and have a mechanic "bleed" the brake system should you need it
- Check belt tension and adjust rear wheel for proper tension if needed (see "Adjust the Belt Drive" - Page 24)
- Check wheel trueness and spoke tension, and check for quiet wheel operation (without spoke or brake noise).
- Tension spokes and true wheels if any loose spokes are found.
- Check crankset and pedal torque.

SERVICE INTERVALS

EVERY 6 MONTHS, 1200–2000 KM (750–1250 MILES)

- Grease bottom bracket.
- Replace Replace brake pads.
- Replace tires if necessary.
- Re-align and re-tension the belt
- Bleed the hydraulic brake system
- Check fork air pressure and adjust if needed (see fork adjustment - next section)

FORK ADJUSTMENT

The front suspension on your Lyric Graffiti is and air adjustable fork with adjustable rebound. Proper adjustment of the fork along with the right tire pressure will greatly improve the comfort of your ride. On the top of your fork, below the handlebars you will see the adjustment caps for your fork. One side is for adjusting the air in your fork. This side determines the stiffness of the fork based on the amount of air pressure in the fork. Higher air pressure creates a stiffer fork and lower air pressure softens the fork. Using a setting that is too soft for your weight can cause the fork to bottom out and become ineffective. To adjust the air side of your fork you will need a shock adjustment pump. You may also choose to have the fork adjusted by a local mechanic should you wish not to purchase this tool or are not comfortable making this adjustment



Adjust Air Suspension Setting

- | | | |
|---|-----|---------|
| 1. Unscrew the protective cap that says "air" | LBS | PSI |
| 2. Attach a shock suspension pump tool to the air valve | 240 | 100-110 |
| | 220 | 75-95 |
| 3. Add or Reduce air based on the chart to the left (Rider weight in LBS and shock pressure in PSI) | 200 | 72-87 |
| | 170 | 68-80 |
| | 140 | 64-75 |
| 4. Ride and adjust as needed. If the shock is too soft add air, if it is too stiff reduce air | 120 | 55-72 |
| | 100 | 47-59 |

Adjust Spring Setting

1. After adjusting the air, turn the cap that say "ABS" all the way clockwise until it stops. This will lock the suspension.
2. Turn one full rotation clockwise and test ride. If the suspension is too stiff, keep turning counterclockwise until you reach the desired spring rate.

ADJUST THE BELT DRIVE

Your Lyric Graffiti has an innovative carbon belt drive system that can drive the rear wheel with or without assistance. Belt drives last 4-5 times longer than a chain under normal working conditions. The belt on your Lyric Graffiti is expected to have light use and would last up to 10 years before it needs to be replaced. Your belt drive requires no lubrication, no ongoing maintenance, and can be easily cleaned with water and a soft brush.

Out of the factory, we have properly aligned the front and rear cogs to ensure proper belt function and tension. When removing and re-installing the rear wheel and during monthly service intervals it is important to ensure the correct alignment of the rear cog as well as the correct belt tension to ensure the belt doesn't slip while operating the pedals.

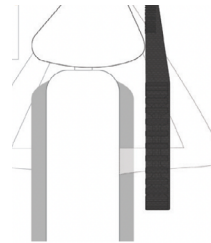
Adjust Belt Tension

Your belt needs to have appropriate tension to ensure that it doesn't slip during operation. Your bike includes tension adjustment bolts at the rear to adjust the belt tension. For tips on how to get the right tension please follow the link to [this video](#)

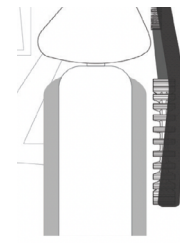
Adjust Belt Alignment

Your belt needs to have appropriate alignment with the rear cog. This is an important step along with the correct tension to ensure that the belt doesn't drift off the rear cog when operating the pedals.

1. With the rear bolts and tension bolts loosened on the rear wheel ensure the belt is on both the front and rear cogs
2. Pull the rear wheel towards the rear of the bike to put the belt under tension.
3. Tighten the tension bolts left and right to get the belt partially tightened
4. Look down the outside of the belt and cog (portion facing outwards) and align the edge of the belt to the edge of the rear cog teeth.
5. Adjust the tension on the left and right tension bolts until you get the right alignment and tension. [See video link for tension settings](#)



Correct Alignment



Incorrect Alignment

BRAKES OVERVIEW

The hydraulic brakes on your Lyric Graffiti are a power 4-piston system that are made up of several parts.

- Disc Rotors: 203mm front rotors and 180mm rear rotors
- Disc Calipers: Front and Rear 4-Piston Calipers
- Brake Levers: Attached to your handlebars including electric signal wires and hydraulic oil reservoirs.
- Brake Cables: Hydraulic cables filled with hydraulic fluid
- Brake Pads: Resin or Metallic Brake pads installed inside brake calipers

Making adjustments to your braking system should only be undertaken if you feel comfortable with regular bike maintenance. We recommend utilizing the services of a qualified bike mechanic to make any adjustments to the brake alignment, bleeding the brake system, and replacing pads and rotors.

REPLACEMENT BRAKE PADS

Your brake pads will wear out under normal use and due to the higher speed and weight of ebikes brake pads wear out more quickly than regular bikes. When your brake pads need to be replaced you can choose the following options:

- Logan Pads: Available through Lyric Cycles
- Shimano D02S: Metal pads - Strong and last long but produce more noise
- Shimano D03S: Resin Pads - Less Durable but produce less noise

WHEELS & TIRES OVERVIEW

With the important function of keeping you rolling smoothly, it's important to take care of your wheels and tires to ensure you have a good ride each time out. Both wheels and tires require maintenance and while this maintenance is best left to a certified bike mechanic, it is good to know what to be watching for to know when it is time to take your bike in for maintenance.

WHEEL MAINTENANCE

The spokes on your wheels can come loose, become damaged, and change the shape of your wheel rim over time. Before your ride it is a good idea to spin the wheels and watch to see if the wheels spin true and straight. While some slight inconsistency can be acceptable, it is best to use this early indication to check for damage to the rim or loose spokes that may be causing the wheel to no longer be true. Note that incorrect installation of the rear wheel can cause a wheel not to look true as well so it is good to check this first as well.

Tightening spokes and truing a wheel is a maintenance task that we recommend only be completed by a bicycle mechanic. Getting this done correctly is important to keeping your rims in good working order.

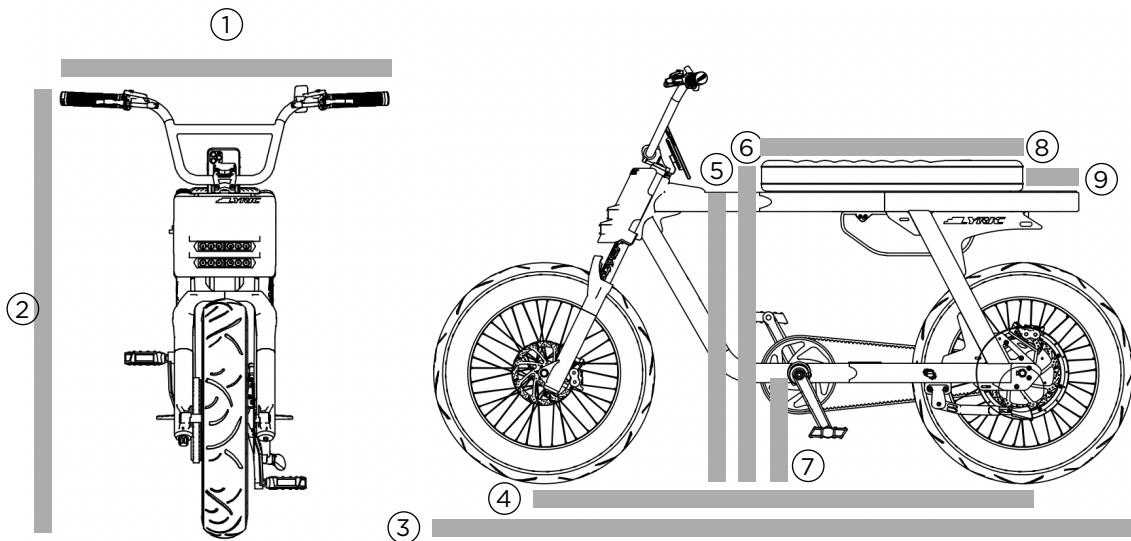
REPLACING TIRES

The tires on your Lyric Graffiti are a 20" bicycle fat tire. You can choose to use tires from 3" to 4.25" wide. Please do not use motorcycle tires on your Lyric Graffiti. The rims are not designed to take the additional weight of these tires and can damage the rims.

REPLACEMENT PARTS

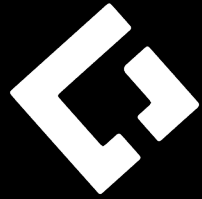
PART	SIZE SPECIFICATIONS
Brake Pads	Logan Resin Pads Shimano D02S - Metallic Pads Shimano D03S - Resin Pads Swiss Stop Resin Pads (available on Lyric Cycles Online Store)
Brake Rotors	203mm x 1.8mm Front 180mm x 1.8mm Rear
Brake Fluid	Standard Hydraulic Fluid (Shimano, Tektro)
Tires	20" x 3.0-4.25" Bicycle Tires
Inner Tubes	20x4" (OEM) 20x3" if using this tire width
Pedals	All standard pedals with threaded attachment
Handlebar	22mm at the stem
Grips	Standard Lock-on mountain bike, city bike, or bmx style grips
Seat	Custom Designed Seat (Contact Lyric Cycles for Custom Options)
Batteries	52V 20ah (Please contact Lyric Cycles for replacement, BMS specifications are important)
Drivetrain	Carbon belt and cogs (can be changed to 7-speed drivetrain, not offered through Lyric Cycles but can be found aftermarket though will not be covered under warranty)

GRAFFITI MEASUREMENTS



ITEM	DESCRIPTION	MEASUREMENT	
1	Handlebar Width	29"	737mm
2	Overall Height	43"	1090mm
3	Overall Length	69.5"	1740mm
4	Wheelbase	50"	1270mm
5	Standover Height	30"	760mm

ITEM	DESCRIPTION	MEASUREMENT	
6	Seat Height	31.5"	800mm
7	Bottom Bracket Height	10.5"	270mm
8	Seat Length	25.5"	650mm
9	Rear Rack Length	6.75"	170mm



Lyric Cycles

HIGH PERFORMANCE ELECTRIC VEHICLES

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