

Lee

Forte

Owner's Manual

	Index	Page
1.	Forte in the fast lane	3
2.	Parts Identification	4
3.	About your eZee Forte	5
4.	How to assemble	6
5.	Before Riding	8
6.	Be Safe	9
7.	The working of the EPAC	11
8.	Power assisted cycling	13
9.	Electric Fault diagnostic system	15
10.	Things to Avoid	16

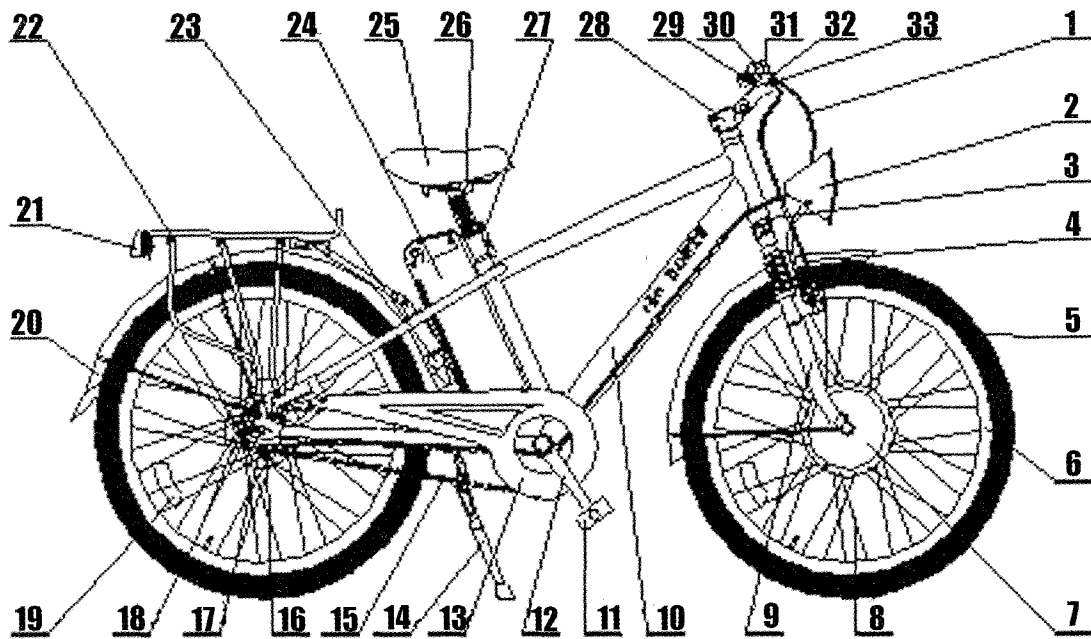
Forte in the fast lane

Thank you and congratulations on purchasing your very own eZee Forte. This manual will help you familiarize with the assembly, usage and maintenance of your bicycle. It is however not a comprehensive manual for all situations you might face throughout the lifetime of the product. While owning an eZee Forte will be great fun, please understand that this is a complicated piece of machinery. You should never attempt to repair, adjust the bicycle unless you are sure that you are doing it properly. If there are any doubts, please consult your local professional bicycle mechanic, contact your local distributor or email us at

ezeebike@gmail.com



Practice handling your bike in a safe area before using it in public traffic. Do not underestimate the power of the little motor and the speed at which are riding. With a total weight reaching or exceeding 100 kgs (220 lbs) and a speed of 25 kmh (16 mph), riding this bike can be considered extreme cycling, you should always brake with both front and rear brakes together.



Parts Identification

- | | |
|---|-------------------------------|
| 1. Brake Cable | 18. Tensioning bolt and plate |
| 2. LED head lamp | 19. Reflector |
| 3. Bearing race | 20. Mudguard / fender |
| 4. V-brake | 21. Rear LED light |
| 5. Tyre 26" x 1.9" | 22. Rear carrier |
| 6. Rim | 23. Rear support |
| 7. Hub motor | 24. Battery pack |
| 8. Spokes 13G | 25. Saddle |
| 9. Suspension front fork | 26. Saddle fixing bracket |
| 10. Frame Al alloy | 27. Sear post clamp QF |
| 11. Pedal | 28. Threadless Head set |
| 12. Crank | 29. Head stem |
| 13. Chainguard | 30. Bell |
| 14. Central kick stand | 31. Battery level gauge |
| 15. Rust resistant chanin $\frac{1}{2} \times \frac{3}{32}$ | 32. Handle bar |
| 16. Shimano Nexus Inter 8 Hub gear | 33. Brake lever |
| 17. Shimano Nexus BR IM 70R roller brake | |

About your eZee Forte

eZee bicycles are designed for your comfort and safety. It is a zero emission environmentally friendly vehicle, an ergonomically designed bicycle for comfortable cycling and an economically efficient vehicle, giving you ideal mileage and mobility at a fraction of regular transportation costs. The electrical consumption is about 1.0 Kwh for 100 km (62 miles) on e-bike mode.

Our pledge to quality ensures that our components are durable and reliable. Despite this, it is also your responsibility to understand all the safety implications and possible risks when riding a bicycle. Therefore please take some time to read and understand this manual thoroughly before riding your eZee Forte. Due to us constantly improving our products, the parts or the structure of the bike may vary from those illustrated in this manual. We kindly ask for your understanding in this aspect of the changes.

The motor is brushless and is therefore not subjected to wear of carbon brushes as in a normal DC motor, this is a state of the art technology called Pulse Wave Modulation (PWM) control. Planetary reduction gears are incorporated inside the motor hub giving it a very strong torque. The motor under normal cruising conditions (26km/h or 16mph on level roads) draws about 5 amps at 140 watts power with 5 Nm torque and has an efficiency of about 80%.

The motor power in the front wheel working with the Shimano Nexus 8 internal gear hub can take you up a 10% grade easily with little stress.

How to assemble



Please read instructions carefully before proceeding. Do not attempt to fix the bicycle until you are sure. Any damage on the bicycle resulting from proper assembly will not be covered under our warranty scheme.

It is your bicycle. You'll enjoy using it over and over again, so please start by assembling it correctly.

1. Tools required check: Ensure that you have the correct tools for the job. If you are not sure please do not attempt the assembly. Proper tools are the first step in safe assembly. You will need

Screwdriver Philips #1 and #2
Allen / Hex Keys metric set
Open-ended flat wrenches with metric measurements
6mm – 17mm

2. Get ready: Begin removing bicycle from packaging and lay it on a clean flat surface, be sure to remove any part packages that comes along with the bicycle. Discard the box and packaging material only.

3. Front wheel: Make sure the front wheel is securely inserted into the front fork. Tighten the nuts alternatively on both sides until the wheel is secured, do not tighten one side only with huge force. Tightening torque 35 Nm.

4. Seat Installation: Take the seat post and insert it into the seat tube of the bicycle frame and align the seat accordingly while tightening the seat clamps. Ensure that the seat is securely fastened to the bracket of the seat post. For your own safety and comfort do not adjust the seat post beyond its "Maximum Ext." mark.



An over-extended seat post can result in fracture and breakage of the seat tube due to stress exceeding design load. Warranty of the frame will be voided in such cases.

5. Installing handlebar / stem / threadless headset: The handlebar and stem comes pre-assemble. Remove packaging material, loosen all 3 bolts on the stem, turn the handle bar assembly so that it is perpendicular to the frame.

First tighten the stem bolt located at the top with hex key, then tighten the 2 side bolts. Wrong or reversed procedure will not enable the fork to be securely seated on the crown / bearings.

6. Installing the pedals: There are 2 pedals, each of them are marked with either "R" or "L" indicating right and left pedals respectively. Screw in clockwise for the right

pedal and counter-clockwise for the left, then tighten both with a wrench. The thread in the crank is made of Al Alloy and could be easily damaged during riding if the pedals are not tightened.

7. Front mudguard: The supports are attached to the sides and the top of the front fork, ensure all nuts and bolts are fastened. The mudguards are made from high quality polycarbonates and should not rattle when securely fastened.

8. Brakes: Brakes are one of the most important safety features on the bicycle. Please ensure that the brakes on your bicycle are always set right in order to minimize your risk being injured. Tighten brakes and ensure that the V-Brake pads are parallel to the rim and that the distance between rim and brake pad should not exceed by more than 2mm. Test by squeezing brakes and check for firmness. You may continue to fine tune with a Philips screwdriver. If you are unsure, we recommend that you visit your local professional bike mechanic to help you. The front brake is a rim brake / V-brake and the rear brake is a Shimano Roller brake. Ensure brakes are firm and working well. Please refer to the attached Shimano manual.

9. Accessories: Install any accessories options that you have purchased together or is all ready provided with your package.

10. Battery: Your bicycle comes with a steel seat post with suspension of which the saddle could be flipped upwards for easy removal of the battery. Release the saddle by pressing up on the cache located at the underside of the saddle. Place the battery into the battery slot holder following the slot guidelines then press the battery down firmly. Always lock the battery in the holder until you have a purpose of remove it (e.g. Charging or changing battery). Ensure that the key is in the "Off" position until you are ready to ride the bicycle.

For people with a charging A/C outlet conveniently located where the bicycle is parked you will not need to remove the battery in the case of charging it. An option of a lighter standard Al alloy seat post is available to those who would like one but in this case removal and installation of the battery would involve removing the seat post by releasing the clamps.

11. Tyres: Ensure that the tyres are inflated to the correct pressure of 40 psi. For a smooth and safe ride, do not over-inflate nor under-inflate the tyres. The Forte has 26" x 1.95" inch tyres with puncture resistant K-Shield, reflective bands but it is not puncture proof.

Before Riding

Check that your bicycle has met with all safety precautions before riding off. The following checklist is designed to be a rough guide to follow:

Frame and Fork

Visually check to see that the frame and fork are not amaged. Bent or fractured frames or fork will pose a serious safety hazard.

Wheels and Tyres

Check to see that your bicycle wheels have no missing or damaged spokes. Feel the spokes to ensure they are tight. If your wheels are not true (straight) take it to a professional for calibration. Check the tyres to see that they are properly inflated to the recommended tyre pressure. Tighten bolts and nuts accordingly.

Handlebar and Stem

Make sure that the handlebar and stem are correctly positioned to the 'face forward' position. Check the grips to ensure they do not slip.

Brakes

Check by squeezing the brake levers, your brake pads should not exceed beyond 2mm away from the rim. Make sure your brake cables are not interfered by other cables or accessories.

Chain

Turn the crank arms to ensure chain runs smoothly. Ensure that the chain is lubricated and clean. Tension of the chain can be changed by tightening or loosening the chain adjuster (located at the end of the frame by the rear wheel)

Electronics

Ensure that all wires through the electronic system are securely fastened and in place. Loose wires ay result in power failure and might even be cause of a short circuit, damaging sophisticated electronics beyond repair.

Gears

eZee Forte comes with Shimano Inter 8, 307% high low difference, 12,14,16,20,24,27,31,38T with Roller brake or for coaster brake with 60% more braking power than any other CB. Please consult the operation manual regarding gears that is provided with your purchase.

Night Riding

Riding a bicycle at night is many times more dangerous than during the day. You should not ride during dawn, dusk and night unless absolutely necessary.

In consideration of your safety eZee bikes have double installed high quality wide angle reflectors at the front, sides and rear. Front and rear light as connected to the main battery and a switch on the handlebar for "on and off"

Be Safe

If you are not sure that your bicycle will operate safely and efficiently, take the bicycle to a professional bicycle service centre for proper adjustment. We strongly advise that you wear a helmet whenever you ride the bicycle.



If your seat post projects from the frame beyond the Maximum Extension mark, the seat tube may break which could cause you to lose control and fall. The Maximum Extension label must not be visible after installation.



After any saddle adjustment, be sure to tighten the saddle adjusting mechanism properly before riding. A loose saddle clamp or seat post binder can cause damage to the seat post, causing you to lose control and fall. A correctly tightened saddle adjusting mechanism will allow no saddle movement in any direction. Periodically check to make sure saddle adjusting mechanism is properly tightened.



The shorter the brake lever reach, the more critical it is to have correctly adjusted brakes, so that the full braking power can be applied within available brake lever travel. Brake level travel insufficient to apply full braking power can result in loss of control, which may result in serious injury and death.



Many countries require specific safety devices. It is your responsibility to familiarize yourself with the laws of the country where you ride and to comply with all applicable laws, including properly equipping yourself and the bike as the law requires.



Pushing the bike.

If you have e-bike mode, the motor could be activated accidentally if you have the switch on and if your hand is resting on the throttle while pushing the bike. To avoid this do not turn the power on until you are ready to mount the bike. Always switch off the power key lock or the throttle switch as soon as you get down from the bicycle.



Never inflate a tyre beyond maximum pressure marked on the tyre's sidewall. Exceeding the recommended tyre pressure may blow the tyre off the rim, which could cause damage to the bike and injury to the rider and bystanders.



Riding at dawn, at dusk, after dark or at times of poor visibility without a bicycle lighting system which meets local and state laws and without reflectors is illegal, dangerous and can result in serious injury or death.

Safe and Responsible Riding

Like any sport, bicycling involves risk of injury and damage. By choosing to ride a bicycle, you assume the responsibility for that risk, not the people who sold you the bicycle, not the people who made it, nor the people who distribute it. Nor the people who manage the roads you ride on, but YOU. So you need to know – and to practice – the rules of safe and responsible riding.

Because the eZee Forze is designed as a comfort city bike, they are made for commuting purposes. We strongly do not recommend you treat this bicycle for other purposes such as going on mountain trails, speed cycling, downhill and stunt biking. There are other bicycles designed for such purpose, and the purpose of an eZee Forza is for quiet, easy and efficient commuting with fun.

The Basics

1. Always do mechanical and electronics inspections of the bicycle before you get on.
2. Always wear a cycling helmet which meets the latest Snell, ANSI or other approved standards.
3. Be careful to keep body parts away from the sharp teeth of the chainwheel, the moving chain; the turning pedal and cranks; and the spinning wheels of the bicycle.
4. Always wear shoes that will stay on your feet and will grip the pedals. Never ride barefooted or wearing sandals.
5. Be thoroughly familiar with controls of your bicycle.
6. Wear bright, visible clothing that is not so loose that it will catch onto the moving parts of the bicycle or be snagged by objects at the side of the road.
7. Think about your speed and keep your speed at a consistent level that meets with road conditions.
8. Be reminded that during wet weather conditions, brake distance will vary quite differently from dry weather conditions. We advise you pay extra attention during these conditions and brake earlier than you usually do during dry weather conditions.
9. Always follow road safety regulations in the country you are riding in, especially those applicable to bicycles. Avoid as much as possible riding a bicycle in wet

- weather conditions and in poor visibility conditions such as night cycling or cycling in a fog.
10. The electronic controls are installed with overload protections. When the power gets cut off in an overload situation, you have to turn the power off with the keys and start again. The second level overload protection is the 30 amps fuse installed at the battery box. If restarting fails, check the fuse. Replace fuse if it has blown, or otherwise check the number of blinks on the red LED with the self diagnostic system of the controller.
 11. Low voltage protection. To prevent the battery from deep discharge that will irreversibly damage the battery, the power will cut off when it reaches a certain low voltage protection. When you see that the battery level indicator shows the yellow/orange warning light it is necessary to charge your battery again. When the minimum battery level is reached the electric motor will not function smoothly

The working of the EPAC (electric power assist cycle)

It is important for your enjoyment and safety to understand how things work on your bicycle. Even if you're an experienced cyclist, don't assume that the way things work on your new bike is the same as how they work on older bikes. Especially in the case of power assisted cycles. Be sure to read and understand this section of the manual. If you even have the slightest doubt as to whether you understand something, please consult us.

Battery Charging Operations

As there are different battery types and they use different chargers ensure that you are using the right charger for the battery.

Nickel metal hydride (NiMH) 36V 9Ah
Lithium ion (Li+) 36V 10Ah



Ensure that the charger and a/c outlet is the same voltage type.

Plug the charging pin into the battery charging socket, and then the power cord to the a/c outlet (and then turn on the power on the a/c outlet if there is one) and then the power "on" switch of the charger. It is very important to follow this protocol.



Please ensure that the grooves on the charging pin must match the socket, failure to do so may result in short circuiting and the irreversible damage of electronic components. Always handle the charging plug by the metal piece. Do not take the plug off the battery by pulling the cord, always grab it by the charging socket head.

Connect the charger to an a/c outlet. Always ensure that the connection is secure and in place before turning the charger on. Check the charging indicator for the following:

Red	-	Indication that charger is connected to an a/c outlet.
Yellow	-	Charging
Green	-	Full

On occasions, the charger might switch to green when there is a temporary disconnection. To verify that your battery has a full charge, turn off the charger power, wait till the LED lights go off and then switch it back on again. The battery will continue to charge if its not full, but if it goes off to green within a minute or 2, the battery is full. The battery may be charged on the bicycle or off it. However, when it is attached to the bicycle, ensure that the bicycle is switched off before charging.

When the fuse is blown, the battery will not charge. Remove the fuse cap and the blown fuse (if the wire in the fuse has snapped) and replace the blown fuse. While spare fuses will be provided with the purchase of your bicycle, you may wish to purchase extra 30 A fuses from any electrical hardware store. If you are unsure of which fuse to buy, we strongly recommend you call up your distributor for advise.

The charging is automatic and there is no danger of over charging. There is no memory effet and the battery can be charged at any battery level. However, we advise disconnecting the battery and turning off the charger as soon as the charging process has been completed.

Recharge the battery as frequently as possible for a long service life.

New batteries must be conditioned with 2 or 3 full discharge and charge cycles before it comes on to full stated capacity.



Never charge the battery in wet conditions. Short circuitry might occur resulting in irreversible damage to electronic components. Fire and electrocution may also pose a serious safety hazard that might result in injury or death.



Never allow children to play with the battery or charger unit. Charging should only be done by adults or under direct aduly supervision.

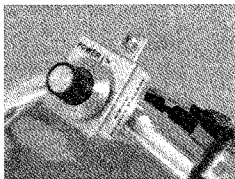


Do not leave your battery in a fully discharged state under long durations of storage. The battery will continue to self discharge resulting in irreversible damage.

Power Assisted Cycling

UK eZee Forte in the UK comes in 2 operative modes, e-bike mode that is allowed in the UK and EPAC mode for EU. The e-bike mode allows for power on demand i.e. just turning the throttle, the EPAC mode requires pedaling for the throttle to work. The selection is made at the switch at the battery gauge.

US eZee Forte comes only with e-bike mode, but there is nothing to stop you from pedaling and you are encouraged to put in some effort as it can give you considerable more mileage. On the throttle is a switch "on and off" for safety reasons to avoid turning the motor on without a rider.



EU market where regulations mandate that rider must pedal for the power to come on, the Forte has a motion sensor at the BB, and an eZee Assist Factor which you could set from 0 to 8.4 Max. assist. As soon as you pedal the power comes on and stop as soon as you stop pedaling. So you could conveniently choose any assist level or motor power you like. You could adjust this dial at anytime, while riding or when the power is off.

Loading the battery

Release the cache at the underside of the saddle life the saddle forwards/upwards or release the quick fit clamp and remove the seat tube as the case maybe. Mount the battery by sliding the battery along the guide plate into the slot of the battery holder. The fit is quite tight when new, and therefore it may be necessary to give it a push at the end. However, do not ram the battery down hard as this could result in the damage of the connecting sockets or pins. Ensure that the battery is positioned securely by turning the key at the lock.

The eZee Forte is powered by the motor an/or is activated by a motion sensor and the throttle. For the EPAC mode – As you pedal, the signal is picked up by the sensor at the bottom bracket which allows the power to be "on", power on demand could then be made by the twist of the throttle. The activated motor will reduce the load required for you to pedal by assisting you. Making pedaling long distances and gradients easy, this makes travelling more pleasant without compromising on speed.

For the e-bike mode, the motor will run as soon as you turn the throttle, ensure that you are seated and ready to ride off before you activate the throttle. (US version will require the throttle switch to be on)

eZee bikes conform to CEN draft prEN15194 regarding EPAC.

The following is taken directly from EU directive 2002/24/EC Chapter 1 Article 1 1(h)

Cycles with pedal assistance which are equipped with an auxiliary electric motor having a maximum continuous rated power of 0.25 kW, of which the output is progressively reduced and finally cut off as the vehicle reaches a speed of 25 km/h or if the cyclist stops pedaling.

eZee bikes also conforms to EN 14764 for safety requirements.

USA regulations allows a power assisted maximum speed of 20 mph. eZee Forte for the USA has a motor speed of 250 rpm for 20 mph top speed and a maximum rated power of 350 watts.

You may wish to travel faster than the regulated speed limit by pedaling with your own muscle power. We strongly recommend that you be considerate for your own safety and the safety of others regardless of speed. 25 km/h (15.6 mph) is already fast enough.



Do not attempt to modify any electrical components such as the motor, the control box or motion sensor. This will void warranty immediately. Electric system failure while cycling may pose a serious safety hazard that can result in lost of control, which may result in injury or death.



The Lithium battery pack contains sophisticated battery management circuitry. Do not open, once the seal is taken off, warranty is immediately voided. If there are any problems contact the distributor for assistance.

Periodic Maintenance

Technological advances have made bicycles and bicycle components more complex than ever before and the pace of innovation is increasing. This on-going evolution makes it impossible for this bicycle manual to provide all the necessary information to maintain and repair your bicycle. In order to help you minimize the chances of an accident or possible injury and damage to your bicycle, please check often at our website for operation manual updates and consult your local bicycle shop.

How much of your bike's service and maintenance you can do yourself depends on your skill and experience, and whether you have the necessary tools and parts required.



Many bicycle service and repair tasks require special knowledge and tools. Do not begin adjustment or service on your bicycle if you have the slightest doubt about your ability to properly complete them. Improper adjustment or service may result in damage to the bicycle or in an accident which may cause serious injury or death.

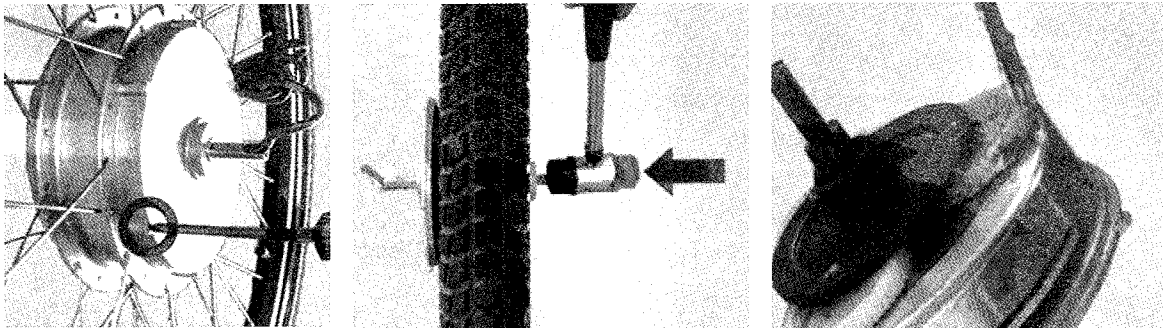
If you want to do some major service or repairs, please feel free to consult us first at ezeebike@gmail.com for detailed information and spare parts before proceeding.

Simple maintenance such as cleaning your bike with a damp cloth and spraying light lubricating oil on mechanical parts is recommended for extending the life of your bicycle.

If you notice or suspect any defect, please contact your distributor immediately.

It is recommended to lubricate the hub motor after every 5000 miles. Remove the front wheel and slowly ease it onto the floor without damaging the cable. Remove all 6 screws on the left side of the motor hub cover, knock the right side of the axle carefully. The hub cover opens, apply a clean coat of silicone grease onto the planetary gears. Ensure the washer and spring washer on the hub axle are back in place before you put the hub motor back together. Finally, make sure that the torque plate is aligned before putting all the nuts and bolts back in place.

Photo below illustrates the process of greasing the motor gears.



Electrical Fault self diagnostic system

The controller is programmed with a self diagnostic system to monitor the type of failure below, count the number of continuous blinks on the red LED located at the left of the controller box. The red LED stays lighted when everything is functioning normally when the power is turned on.

No. of blinks	Fault	Correction
LED on	Function is normal	
2	brake lever cut-off in contact	check brake lever spring
3	brake lever cut-off in contact	check brake lever / wire connection
4	throttle not returned to position	check throttle if spring is faulty
5	throttle failure	check throttle connections or replace
6	low voltage	charge battery
7	excessively high voltage	measure voltage with multi-tester

8	hall wires to motor disconnection	check motor hall wires for connection
9	wrong motor connected	contact distributor
10	temp. too high, thermostat activated	will return to normal when cooled
11	thermostat failure	replace controller
12	amps control, controller failure	replace controller
No light	Power wires disconnected, controller failure	Check power wires or replace controller

This however does not necessarily cover every possible failure.

In the event of water or moisture affecting the control board, haphazard signals may appear.

eZee bikes have triple layer coated electronic boards with a top coat of military grade Silicone insulating and water repelling compound.

Things to Avoid

1. Avoid sitting on the bicycle when the bicycle is parked with the central stand on. This is not designed to support the weight of a person on the bicycle when parked.
2. Avoid excessively loading items on the rear carrier, it is designed for a maximum weight of 25 kgs.
3. Avoid riding the bike in heavy rain.
4. Avoid sudden and hard braking.
5. Avoid dropping the battery
6. Avoid short circuiting the battery
7. Avoid deep discharge of battery.
8. Avoid carrying or lifting the bicycle by the saddle, this will cause damage to the plastic structure of the saddle.
9. Avoid excessively loading the motor on steep hills, climbs or during maximum acceleration as this will reduce the life span of motor and battery.