Owner's Manual

The electric motorcycle can be used on road only and by one driver.

The user should read the user's manual carefully prior to using the product. The user shall have a proper command of basic operation functions, usage method and other common sense for the model. The data, technical specifications and performance parameters labeled in the manual are compiled based on the latest status. The company reserves the right to amend the manual at any time without a separate notice and does not assume any liabilities. Please understand this. No entities or individuals shall be allowed to reproduce any part of the manual without the company's written approval. We sincerely wish that you can tell us your opinions on the design, manufacture or quality of the product. If you have any positive recommendations and opinions, please inform us by letter for timely improvement.

There is no description of repairing in this manual. For repairing, the users can refer to *Component Catalogue and Service Manual* for a better understanding of the name of the components, installation structure, faults, service method and others. For more information, please contact the dealers or the service station. The company will provide you with the best and fastest services.

Please dispose of the used battery responsibly to protect the environment. Please check with your local government for disposal guidelines.

The contents and images of this manual are for reference only. Specifications are subject to the physical product.

Please purchase the original genuine parts and accessories manufactured by our company.

In order to ensure the safety of users and others, please operate strictly in accordance with the safety information and driving steps provided in the operation manual. The safety information reminds users to pay attention to potential hazards and avoid endangering yourself and others.

This manual contains important safety information that could help prevent injury or death. Please read it carefully.

Symbolic Meaning of Safety Information in the User's Manual

It indicates there is potential high hazard. Failure to follow the instructions will lead to personal injury or death.

It indicates there is potential moderate hazard. Improper operation may cause harm to personal and property safety.

It indicates a potential danger that may cause damages to the motorcycle if any misoperation.

The most efficient service information is available for faster warranty service and more understandable instructions.

CSC Motorcycles

Address: 1331 W Foothill Blvd, Azusa, CA

Customer service hotline: 1-800-884-4173

For details, please click the website of our company: www.cscmotorcycles.com.

Please read this manual carefully before using the electric vehicle!

⚠Danger

1. Strictly abide by traffic regulations and drive safely.
2. Users who don't have motor vehicle driver's license should not drive electric vehicles.
3. It is not allowed to lend electric vehicles to the one without driving license.
4. In order to ensure driving safety, it is forbidden to drive after drinking and taking drugs.
5. This vehicle is not intended for use in motorcycle racing. Any mechanical failures or personal injuries resulting from its use in such events are the sole responsibility of the user.
6. People with mental illness, history of mental illness, heart disease, deaf-mutes and the disabled are prohibited from driving electric vehicles.

⚠ Warning

1. We recommend wearing a helmet, eye protection, gloves and other protective equipment while driving.
2. Do not hang anything on the steering wheel, as this could interfere with safe driving.
3. To prevent battery damage, please use only the original charger that was provided with your motorcycle by our company.
4. It is forbidden to wear loose clothes, slippers, etc., otherwise the clothing is easy to hook on the handle and accessories, resulting in potential safety hazards.
5. Before unplugging the power plug, please turn off the air switch and switch lock first.

⚠ Caution

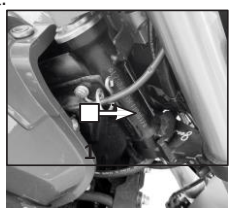
1. After unpacking, please check the attached accessories and various materials according to the packing list.
2. This model is a single-rider vehicle. The maximum payload for the electric vehicle is 330 pounds, and the maximum payload for the trunk is 6.6 pounds.
3. It is forbidden to refit any part of the electric vehicle, otherwise it will affect the reliability, stability and comfort of the electric vehicle.
4. To prevent battery damage, please fully charge the battery each time. Do not turn the battery upside down while charging. Do not wash the electric vehicle with high-pressure water, as this could damage the internal electronic components and circuits.

⚠Suggestion

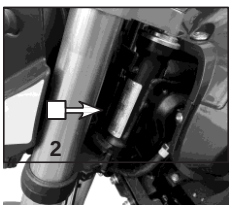
1. This operation manual is an essential part of the electric vehicle. It must be attached to the vehicle when it is transferred to another person for use.
2. To prevent battery degradation due to prolonged discharge, charge your electric motorcycle at least once a month even if you are not using it.
3. During the running-in period or warranty period, the user shall regularly go to the dealer or the company's maintenance service station for regular maintenance and adjustment.

Vehicle Identification Number (VIN) and Engine Number

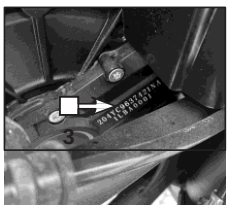
Vehicle identification number (VIN), engine number and vehicle certificate are used to apply for driving license and motorcycle account.



1.The vehicle identification number (VIN) is printed on the right frame riser.



2. The vehicle nameplate is riveted on the left frame riser.



3. The motor number is engraved on the right housing of the motor.

Please fill in the corresponding number for future inquiry:

Frame VIN Code		Motor Number	

Motorcycle Introduction

1. Rear view mirror 2. Left steering handle 3. Left control switch 4. Instrument assembly
5. Right control switch 6. Throttle 7. Ignition lock 8. Storage box lock

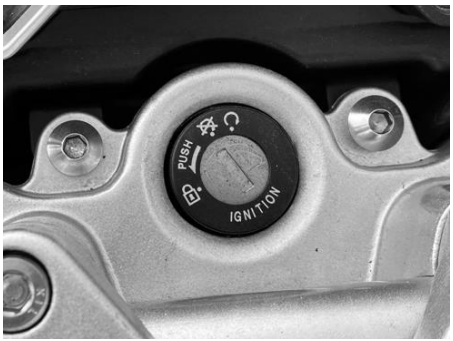
Motorcycle Introduction

1. Rear armrest 2. Seat cushion 3. Storage box 4. Headlight 5. Rear wheel
6. Rear disc brake 7. Motor 8. Rear brake pedal 9. Front shock absorber 10. Front wheel

Motorcycle Introduction

1. Front wheel 2. Front brake 3. Engine guard 4. Charging interface
5. Kickstand 6. Center stand 7. Drive belt 8. Taillight 9. Drive pulley 10. Rear wheel

Electric Switch

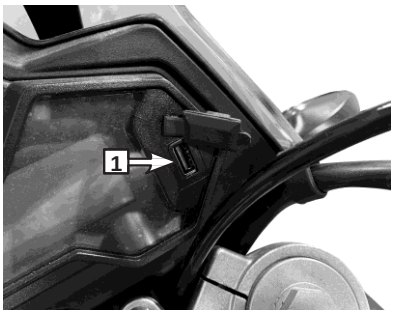


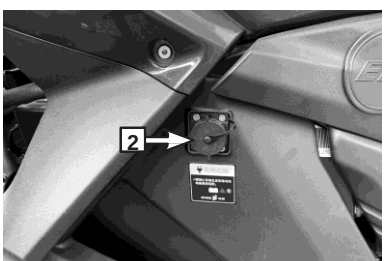
Name	Functional Description
1. How to turn on the switch	Turn the key to the position "" and turn on the circuit to start the motor.
2. How to turn off the switch	Turn the key to the position "". Do not start the vehicle when the circuit is disconnected.
3. Steering lock	Press down and rotate to the position"" to lock the steering.

⚠ Warning

Park the motorcycle in a safe place and use the steering lock to avoid theft.

USB, Charging Port



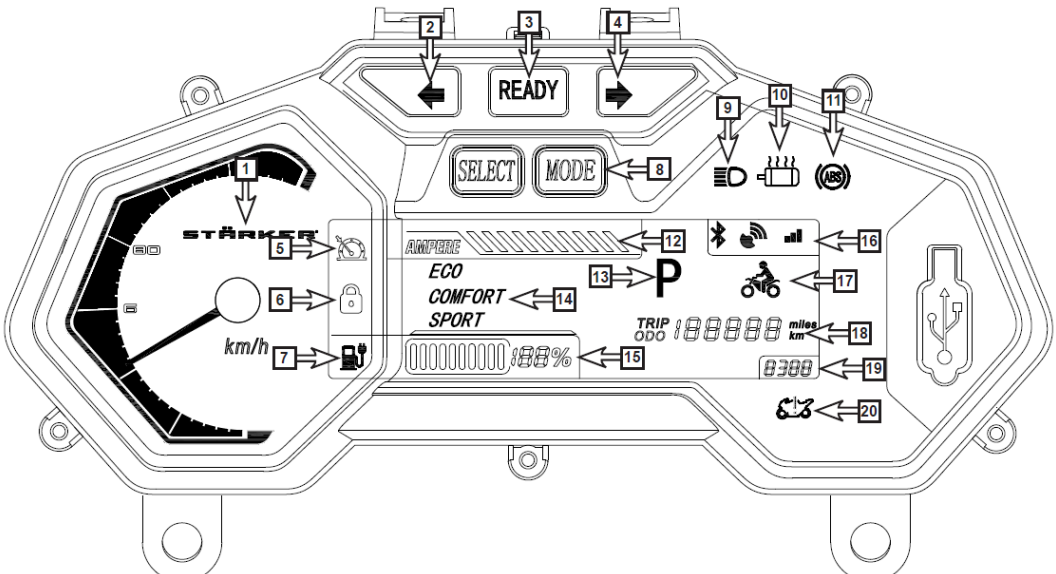


Name	Direction for Use
1.USB port	The USB interface is located on the right side of the instrument panel and connected to the mobile phone charging line for mobile phone charging.
2. Charging interface	The charging port for the motorcycle battery is located on the left side of the motorcycle, under the body panel that covers the battery. To charge the battery, connect the charging cable to the port.

Vehicle Modification Instructions

Do not connect devices that use more than 20W of power to the USB port. We do not recommend modifying the vehicle. You will lose your warranty and we will not be liable for any problems caused by the changes.

Instrument Indicator

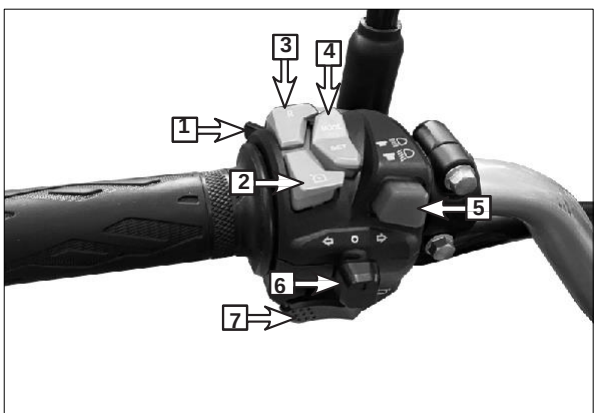


Name	Functional Description
1. Speedometer	Displays the running speed of the vehicle.
2. Left turn indicator	When the left turn indicator is on, “ ” light flashes.
4. Ready light READY	After the electric vehicle is powered on, the Ready light will be on when there is no fault in the self-test, and it will be off when there is fault.
10. Right turn indicator	When the right turn indicator is on,“ ” light flashes.
5. Cruise control indication	When the indicator light is on, the cruise control function is on.
6. Vehicle locking indication	When the indicator light is on, the vehicle is locked, and do not ride the locked vehicle.
7. Charging reminder	When the indicator light flashes, it indicates that the electric quantity is low, please charge it as soon as possible.
8. LCD setting key	Press the MODE key > 2s to reset TRIP. Press the MODE + SELECT key to display the odometer in Inch or Metric Mode.
9. High beam indicator	When using the high beam, the high light indicator “ ” is on.
10. Motor over temperature fault	When the light is on, it indicates the motor over temperature fault state.

Name	Functional Description
11. ABS fault light	When starting, the ABS fault light is on and it will be off if the speed is above 20km / h.
12. Ammeter	The actual bus current of the controller is 18A per grid.
13. P mode lamp	When the indicator light is on, the vehicle cannot be started. Press the P mode key of the handle switch to release it before starting the vehicle.
14. Riding mode display	Display the driving mode of the vehicle, including ECO, COMFORT, SPORT
15. Power display	It is used to display the current battery capacity of the electric vehicle.
16. Bluetooth signal GPS signal GPRS signal	The indicator light is on when the vehicle is connected with a Bluetooth signal. GPS positioning system signal display. GPRS mobile app system signal display
17. Riding status	When the vehicle speed is ≥ 1, this sign is displayed
18. Odometer	TRIP is the display of subtotal mileage, and the subtotal mileage can be cleared. ODO is the accumulated mileage generated by the vehicle during driving.
19. Fault display	It will display the fault code and fault code information. If it is displayed, please visit the company's special maintenance service center for troubleshooting.
20. Fault indicator	Prompt for faults of motor, controller, beam steering handle, battery, etc.

Left handle switch

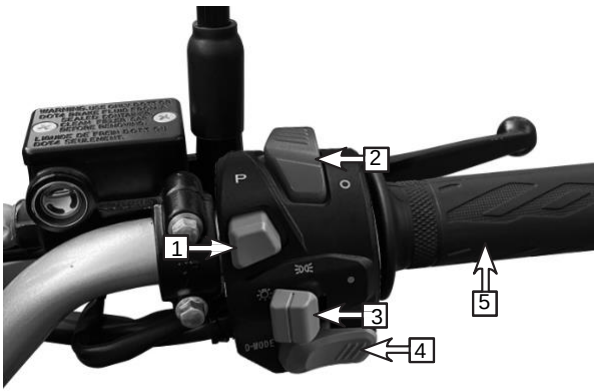
The main functions of the left handle switch are as follows:



Name	Direction for Use
1. Passing light switch.	To flash your high beams at night when passing another vehicle, press this “PASS” switch.
2. Cruise control button	To activate cruise control, press this button while driving at a steady speed and do not touch the throttle. Cruise control will turn off when you brake.
3. Reverse button	Press the reverse button and then twist the throttle to make the vehicle go backwards.
4. LCD setting key	The operation method is the same as the corresponding function key of the instrument.
2. Dimmer switch	When the lighting switch button is pressed to the position“≡D”, the high beam lamp is turned on. When the lighting switch button is pressed to the “≡D” position, the low beam lamp is turned on.
4. Turn signal switch	Push the turn signal button to the “⇦” position to signal a left turn. Push the turn signal button to the “⇨” position to signal a right turn.
3. Horn button	Press the “” button to sound the horn.

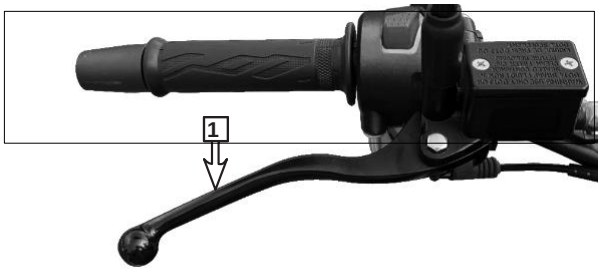
Right handle switch

The main functions of the right handle switch are as follows:



Name	Direction for Use
1.Pmodekey	When the vehicle is parked, the indicator light on the instrument is on; When the user presses this key, the indicator light will be off and the vehicle can be started.
2.Emergency switch	When the switch is pulled to the position “△ ”, the left and right turn signals flash simultaneously.
3.Lighting switch	Pull the switch to ☼ the position, and the headlamp is on; Pull the switch to "O " position, the position light is on; Pull the switch to the position "≡D◁", turn off the electric vehicle lighting system.
4.Speed control switch	You can change the driving mode as needed while riding the vehicle. The dashboard will show you the current mode.
5. Throttle control	Turn the throttle control handle to control the running speed of the electric vehicle.

Control part



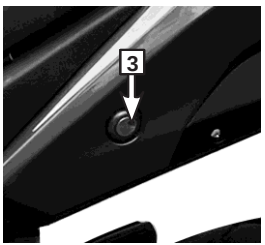
The brakes of this model are equipped with front and rear disc brakes, and the braking performance is reliable. Braking is related to personal and property safety and must be regularly and correctly adjusted and maintained to achieve the goal of safe driving.

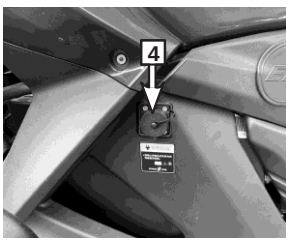
Name	Direction for Use
1. Front brake handle lever	Control the running speed of the front wheel, and its working stroke is: 10 mm ~20 mm.
2. Rear brake pedal	Control the running speed of the rear wheel, and its working stroke is: 20 mm ~ 30 mm.

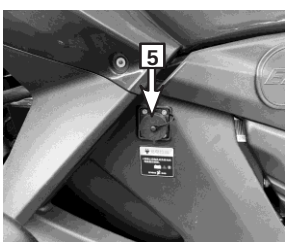
⚠ Suggestion

For adjustment and maintenance of braking, it is recommended to visit our special service center for this service from time to time.

Control part







Name	Direction for Use
3. Seat lock	Insert the key and turn clockwise to open the seat cushion.
4. Locker lock	Insert the key and turn clockwise to turn on the locker light under the seat cushion.
5. Charging interface	Connect the charger to charge the battery

Load limit

This model is made for one rider and one passenger only. Do not exceed this limit or you could compromise the safety and stability of the vehicle.

Factory-determined maximum payload of the finished vehicle : 330 lbs. The maximum load of the locker : 11 lbs.

⚠ Danger

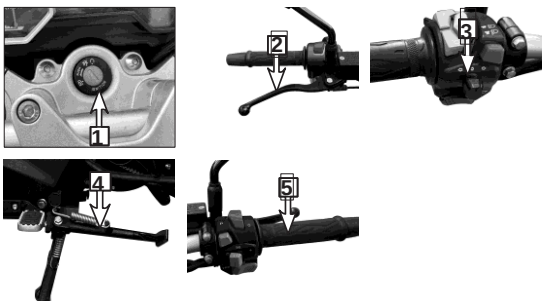
1. Follow these instructions carefully. If you overload the vehicle and cause a crash that injures or kills someone, you will be responsible for the outcome.
2. The company will not cover any damage to the luggage rack, such as peeling paint, warping, or chipping chrome, that results from improper use by the user. The warranty does not include repair, replacement or refund for such damage.
3. Please secure your cargo before driving to avoid any hazards from loose items. For the best stability, place your cargo near the center of the motorcycle and make sure it is evenly distributed on both sides.

Inspection before driving

Before driving, check in accordance with the following requirements to ensure users' safe driving and successful driving.

NO.	Items	Check	Remark
1	Battery	Check if the battery has enough power.	Depending on how far and how often you ride your motorcycle, you should perform three levels of maintenance regularly: **Level I Maintenance:** From 600 to 1,500 miles, focus on lubricating and tightening the parts. **Level II Maintenance:** From 1,500 to 3,700 miles, check, adjust, lubricate and tighten the parts. **Level III Maintenance:** From 3,700 to 6,200 miles, do a thorough analysis, cleaning, inspection and adjustment of the parts. Lubricate and tighten them as well. Replace any worn-out parts and fix any potential problems. We recommend that you take your motorcycle to our authorized service center for installation, tuning and maintenance.
2	Drive device	Check whether the controller and drive motor are working properly.	
3	Brake oil	Check whether the oil is deteriorated and whether the capacity is lower than the lower scale line.	
4	Brake handle	Check whether the front brake has pressure.	
5	Shock absorber	Check whether the suspension works properly.	
6	Throttle	Check for smooth operation of the throttle.	
7	Handlebar	Check for smooth movement and full turning range of bars.	
8	Tire/wheel	Check tire pressure and wear	
9	Lighting/signal indicator	Check whether the lighting lamp/signal lamp/indicator lamp is working.	
10	Brake	Check the wear of brake shoes and whether the braking performance is good.	
11	Side stand	Check the side stand for bending, deformation, and good return.	
12	All-vehicle fasteners	Check whether the fasteners of the finished vehicle are tightened securely.	

Starting and Driving Operation



1. Turn the switch lock to the position“ ” and turn on the ignition of the electric vehicle.
2. Hold the front and rear brake levers to prevent the motorcycle from sliding.
3. Please use the left blinker to warn pedestrians and cars when exiting your spot.
4. Retract the kickstand to unlock the controller’s safety mode.
5. Release the front and rear brakes, turn the throttle slightly with your right hand to move the electric vehicle slowly, and then put your feet on the pedals.

Caution

1. When you park the bike and lower the kickstand, it goes into safety mode where the controller cuts the power and the motor stops the bike from moving. This stops someone from accidentally turning the handlebars and making the bike take off.
2. The motorcycle takes 2 seconds for the bike to do a self-check, and it’s good to go when the light on the dashboard turns green.
3.Please wear protective equipment (e.g. helmet, protective gloves, protective glasses, protective clothing, etc.) before driving.

Inspection and Adjustment after the Breaking-in Period

When you get a new motorcycle, you need to take care of it during the break-in period (the first 500 miles on the odometer). How well you break in your new motorcycle affects how long it will last. The break-in period is when the new parts of your motorcycle get used to working together and become smoother and more efficient. After the break-in period is over, you should have your motorcycle checked and adjusted to make sure everything is working properly and to get the best performance and durability out of your bike. Some of the main things to check and adjust are:

1. Bearing adjustment

After the break-in period, the bearings will work better under pressure and the surfaces of the balls and the races will fit together more smoothly and evenly, but you need to adjust the clearance as needed.

2. Adjustment of brake system

After using your motorcycle for a while, the different parts of the brake system will work better together, especially the brake pads and the brake disc will match up more closely after breaking in. To make sure you can stop safely, you need to adjust the amount of slack in the brake lever and make sure the brake system has good pressure.

3. Fastener adjustment

After the break-in period, some of the bolts or nuts might get loose from the bumps and vibrations of riding, so you need to check and tighten them regularly to keep your motorcycle running smoothly.

Safe driving guidance

1. Precautions for driving up and down ramps

When driving on mountain roads with twists and turns and undulating slopes, the driving speed shall be adjusted according to the actual situation to avoid motor overload.

2. Precautions for driving on wet and slippery road (or in rain and fog)

When you ride on rainy days or on wet roads, the tire and the ground don't stick together well, which can make your motorcycle hydroplane. So you shouldn't ride too fast, because you could lose control and fall off, which is very dangerous. To stay safe when you ride in these conditions, please follow these tips:

① Maintain a reasonable speed and avoid sudden acceleration or braking. Do not use severely worn tires. If the tire wear exceeds the maintenance limit by 2mm, reduce the vehicle speed and do not brake urgently.

② When driving on muddy roads, try to drive at low speeds to avoid sudden start, acceleration, steering and braking.

3. Precautions for driving on ice and snow ground

When driving on ice and snow roads, install tire anti-skid chains on tires or use anti-skid tires.

①Ride at a slow speed as much as you can to avoid falling; Don't speed up, slow down or turn sharply. When you need to slow down, ease off the throttle to let the motorcycle slow down naturally, which helps with the braking efficiency. Don't slam on the brake pedal all at once, but brake gradually from light to heavy.

② When turning, reduce the speed and turn the steering handle slowly. Avoid driving at high speed to avoid wheel slip and idling.

4. Precautions for driving braking

The faster you ride your motorcycle, the more space you need to stop. So when you brake, you need to adjust the brake according to how fast you're going and how much space you have to stop.

① On rainy and foggy days, you can't see very well, and the tire and the ground don't stick together well, which can make your motorcycle slide around. This makes it hard to control the steering and the braking. You should ride slower on rainy days, foggy days and on wet roads. When you ride fast through mountain passes, pass other vehicles or go through the tunnel entrance, you might feel a side wind. At that time, you need to control your speed to avoid shaking your motorcycle. When you use the brake, start with the rear brake, and then use the front brake to slow down your motorcycle.

② When you ride, keep your finger on the brake lever to be ready for emergencies. When you ride through wet surfaces or after washing your bike, ride slowly and lightly squeeze the front and rear brake levers on and off to dry the front and rear brakes. After riding on muddy surfaces, sand dunes and rough roads, you need to clean the brake drum, brake pads and brake disc to avoid too much wear and tear and to keep the brakes working well.

Safe driving guidance

③ When you ride down steep or long hills, don’t keep your foot on the brake pedal or brake too often, because the brake will get too hot and won’t work well. You need to brake according to the situation. When you ride on rainy, wet and slippery roads, don’t ride too fast.

Periodic maintenance schedule

Maintenance times / Maintenance items	Odometer miles				Remark
	500 miles	2,000 miles	4,000 miles	7,500 miles	
※Controller		Check	Check	Check	1. ※ This item can only be maintained by our after-sales personnel. 2. When driving in abnormally wet or dusty areas, the periodic maintenance cycle shall be appropriately shortened.
Control cable	Cleaning	Cleaning	Cleaning	Cleaning	
Brake handle	Adjustment	Adjustment	Adjustment	Adjustment	
※Battery	The user charges in accordance with the mileage				
※Brake shoe	Check	Check	Check	Replace	
Brake	Adjustment	Check	Adjustment	Adjustment	
Indicator bulb	Check	Check	Check	Check	
Lighting bulb	Check	Check	Check	Check	
※Shock absorber	Check	Inspection/lubrication	Check/add grease	Check/add grease	
Fasteners	Check Torque	Check Torque	Check Torque	Check Torque	
front, rear tires	Check	Check	Check	Replace	
Steering mechanism bearing	Check	Check	Check	Check	
Front and rear wheel bearings	Inspection	Inspection	Inspection	Inspection	
Motor	Inspection	Inspection	Inspection	Inspection	
Belt	Inspection	Inspection	Inspection	Inspection	
Radiator	Inspection	Inspection	Inspection	Inspection	

Maintenance requirements

In the process of driving an electric vehicle, various parts will have different degrees of looseness and mechanical wear and tear, it is necessary to carry out correct periodic maintenance of the vehicle, in order to extend the service life of the vehicle, reduce maintenance costs, to achieve the goal of safe driving.

1. Maintain the cleanliness of the vehicle's exterior, ensure adequate battery charge, facilitate smooth start-up, optimize acceleration and power performance, and prevent abnormal noises.

2. Ensure that the operating mechanism and transmission system are flexible, the connection and fastening of the whole vehicle are free from looseness, and the lubrication points are fully lubricated.

3. Verify that the front and rear brake levers operate smoothly and effectively. The braking performance should meet operational standards. The brake pads should automatically return to their original position when the brakes are released, and there should be no friction noise when the bike is moving. The electric motorcycle has optimal sliding performance.

4. The front and rear shock absorbers work stably and reliably, the tire pressure is normal, and all power supply parts, power consumption parts and control parts are normal.

5. Verify the battery terminal is securely fastened, fully equipped, and free of any signs of wear or corrosion.

Use and maintenance of charger

Chargers are an important part of electric vehicles, and the quality of chargers affects the service life of batteries a lot. The charger is mainly composed of rectification filter, high voltage switch, voltage exchange, constant voltage and charging control.

This charger features a trickle mode to prevent overcharging. Do not charge the battery for more than 12 hours at a time, as this may damage the charger. Place the charger in a dry and well-ventilated area when charging. Keep away from any sources of ignition when charging batteries. Do not cover the charger with anything to avoid fire hazards.

When charging, connect the charger plug with the charging socket properly, and then insert the power plug into the common power socket. After the charging is completed, the power supply should be unplugged first, and then the output plug shall be unplugged from the socket of the battery box. Store the charging cable properly or put it in the glove box with the vehicle.

Warning

1. Chargers must be protected from water and moisture. Store and use them in a dry location and avoid dropping them to prevent electrical shocks.

2. Leave the charger alone while it is charging. Do not touch, move, disassemble, or tamper with it, as it contains high voltage current that can cause electric shock injuries.

3. The charger gets hot during charging, it should be kept in a well-ventilated place, and should not be charged near inflammable and explosive dangerous goods such as carpets and wooden floors to avoid fire or explosion accidents.

4. When charging, the voltage and current of the battery must be consistent with the specifications of the charger, and the polarity of the output plug of the charger should be consistent with that of the battery pack, otherwise the charger and battery will be damaged.

5. If the charger's indicator light stays red for a long time (more than 8 hours) and does not change color, stop the charger immediately and take it to the service department for inspection.

6. If the charger fails, professional personnel must repair and handle the charger.

Use and maintenance of battery

The battery of the RX1E is installed near the front of the frame. The battery has the advantages of large capacity, small self discharge, high energy, long service life, safety and reliability. It is an ideal power battery. Please read the instructions carefully before using the battery.

1. The lithium battery of this motorcycle is delivered at 40 ~ 60% of the charge. If the delivery time is short, the user can directly load it for use. If the delivery time is long (more than 2 months), the user should recharge the battery before use. After 7 to 8 hours of charging, the green indicator of the charger is on, indicating that the battery is fully charged and charging is completed.

2. The vehicle's battery uses a fully sealed energy-saving design with advanced technology. This makes the battery maintenance-free, safe and eco-friendly. The battery has a much longer lifespan than traditional batteries and a significantly increased range.

3. Keep the battery out of closed containers, open flames, fire or water. Do not expose the battery to direct sunlight.

4. If the battery shell is found broken or leaking, replace the battery.

5. If the motorcycle is unused for a long time, check the battery level weekly and charge it as needed to prevent battery drain and reduced lifespan.

Caution

1. Store the battery in a dry, cool and shaded place. Keep it upright and away from heavy objects that could crush it.
2. Charge the battery in a well-ventilated area with an ambient temperature between 32°F and 95°F. A lower temperature will reduce the charging efficiency. A higher temperature will alter the charger parameters, or even cause thermal runaway and overcharge the battery.
3. Please do not dispose of the used battery improperly, as this may harm the environment. The used battery of this motorcycle should be recycled by a government-approved process.

Maintenance of drive motor

This vehicle features a permanent magnet DC motor mounted at the center, which achieves an efficiency of over 92%. This design offers several benefits, such as enhanced hill-climbing capability, high speed, low current draw, extended range, and smooth coasting.

1. If the inside of the motor gets wet, the insulation may deteriorate. To dry the motor, take it apart and drain the water. Use a blower or let it air dry in the sun. Check the motor resistance and the position sensor. Replace them if they are damaged.

2. Inadequate battery charging will result in short continuous driving range of electric vehicles and weak driving motor, so the battery should be kept fully charged.

Caution Low-speed and high-speed brushless motors are not interchangeable with each other.

Inspection of wheels

1. Maintaining the proper tire pressure is important for the performance and safety of the vehicle. Overinflated tires will reduce the ride quality and increase the wear of various components. Underinflated tires will increase the rolling resistance and the energy consumption. In severe cases, underinflation may cause local separation of the tire layers and lead to tire blowout.

2. When the inner tube valve core leaks, repair or replace the valve core. Repair or replace the inner tube when it leaks.

3. Regularly check and adjust the wheels.

Outer tire wear limit value

Outer tire wear limit value	Front wheel	2.0mm
	Back wheel	3.0mm

Yaw limit value of wheel

Yaw limit value of wheel	Axial direction	Spoked wheel 2.0mm	Aluminum wheel 0.8mm
	Radial direction	Spoked wheel 2.0mm	Aluminum wheel 0.8mm

Inspection and adjustment of brakes

Inspection of hydraulic brake 1. Make sure the brake lever has the correct amount of free play according to the manufacturer's specifications. If the brake lever travel cannot be adjusted properly, it means that the brake pads are worn beyond the service limit and need to be replaced.

2. Check the oil level of the oil storage cylinder from the observation hole. When the oil level of the oil storage cylinder is lower than the lower limit position, the brake oil shall be replenished to the upper limit position.

Recommended brake oil: DOT4

Standard value of free travel of brake handle: 10 mm ~ 20 mm

Caution

1. After you adjust the brake, squeeze and release the brake lever several times by hand. Then let go of the brake lever, spin the wheel, and check if the wheel spins freely. Make sure you also adjust the rear brake light switch after you adjust the rear brake.

2. When adjusting the brake and replacing the brake pads, please be sure to replace the original OEM genuine parts.

3. Schedule and perform the recommended maintenance service as recommended.

Cleaning and storage

1. Cleaning of electric vehicles

(1) Do not use high-pressure water to clean your electric motorcycle. This could cause damage or malfunction of the internal electronic components and circuits due to water intrusion.

(2) After cleaning, wipe the surface of the motorcycle with a clean cotton cloth or clean towel.

(3) Apply wax on the surface of pained parts and anti-rust oil on the chrome plated surfaces.

2. Storage of electric vehicles

(1). For long-term parking (over 60 days), it should be thoroughly cleaned before storage.

(2). If you store the battery after fully discharging it, it will lose its charge over time. Storing the battery with low power for a long time will reduce its lifespan. You should recharge the battery every 3 to 4 weeks. Store the battery in a dry, dark, and indoor environment. Do not store the battery in a hot or humid environment.

(3). Remove the control cable for cleaning and lubrication. After filling the tire pressure to the specified value, use wood blocks to raise the tire so that the tire does not contact the ground.

(4). Store the vehicle in a place that is well-ventilated, dry, clean, and protected from rain and sunlight. Keep the vehicle away from fire, chemicals, and other hazardous substances.

(5). Before you use the vehicle after storing it, you should clean it thoroughly and inspect it once. Turn on the power lock of the electric vehicle and check the condition of the entire circuit. Charge the battery slowly once.

Common Fault Diagnosis and Troubleshooting Methods

I. Fault: motor does not turn.

Fault causes and solutions:

1. Fault cause: the battery voltage is too low, causing the controller to be under-voltage protected;
   Solution: charge the battery.
2. Fault cause: the battery voltage is too high, which causes the controller to be in overvoltage protection state;
   Solutions: a. check the reason of high battery voltage and troubleshooting; b. replace the battery
3. Fault cause: speed control handle malfunctioning;
   Solution: replace speed control handle.
4. Fault cause: brake failure causes the controller to be in brake protection state;
   Solutions: check whether the brake switch and brake light are short-circuited. If they are short-circuited, please replace the corresponding parts.
5. Fault cause: the side bracket is not retracted or the side bracket switch is short-circuited, resulting in the side bracket being in a protected state;
   Solution: a. retract the side support; b. or replace the side bracket switch.
6. Fault cause: motor phase line short circuit or open circuit, resulting in controller protection;
   Solution: repair or replace the motor assembly.

II. Fault: the motor can operate normally, but the speed is too slow.

1. Fault cause: low battery voltage;
   Solution: measure the battery voltage with a multimeter. If the voltage is too low, recharge the battery immediately.
2. Fault cause: the gear is at low speed;
   Solution: adjust the gear to high gear.
3. Fault cause: the handle is faulty, and its signal output voltage is too low;
   Solution: replace speed control handle.

III. Fault: the motor can rotate by twisting the speed knob, but it stops again after a few seconds and there are repeated failures.

1. Fault cause: this fault is mostly caused by low battery voltage of electric vehicles. The battery has a floating phenomenon, that is, the battery voltage is relatively high when no load is applied, and the battery voltage drops sharply after the load is applied, which will be lower than the under-voltage protection value, causing the controller to under-voltage protection and stop the motor drive output.
   Solution: measure the battery voltage with a multimeter. If the voltage is too low, recharge the battery immediately.

IV. Fault: the noise and current of ordinary speed riding motor are relatively large.

1. Fault cause: the controller MOS tube is damaged;

Solution: replace the controller.

2. Malfunction cause: the motor is damaged; Such as turn-to-turn short circuit of the motor winding, large interference of Hall signal output, etc. .

Solution: this kind of fault is difficult to be measured, detected and processed by multimeter, so replacement method can be used to replace the new motor to see if the problem still exists, and if the problem is solved, the motor is faulty.

3. Fault cause: the mismatch between the controller and the motor Hall will also cause the motor noise;

Solution: replace the controller.

V.Fault: When riding on a steep hill or under heavy load, twist the throttle to the maximum position to activate the electric motor. Sometimes, you may feel the motor pushing forward, but the bike does not move. After a few seconds, the power fades away. You need to release and twist the throttle again, but the same issue occurs repeatedly.

Fault cause: This phenomenon is often called "locked-rotor" in electric vehicles. When starting, the load is very large, but the motor does not rotate, so the controller will not produce commutation action. Large current will pass through the same set of MOS tubes on the upper and lower bridges of the controller and the same winding of the motor, which will easily burn down the controller and the motor for a long time. In order to protect the controller and the motor, the motor drive output must be stopped in a safe time period, which is the "locked-rotor protection" of the controller.

Solution: in case of the above situation, it is necessary to reduce the load of the electric vehicle or wait for the electric vehicle to restart at a place with a small slope.

Tips: do not let low-power electric vehicles run for a long time under heavy load (heavy load or climbing a steep slope), so as not to affect the service life of the motor or controller.

VI. Fault: when the electric vehicle starts, sometimes it needs help.

1. Fault cause: controller fault;

Solution: replace the controller.

2. Fault cause: poor contact of motor phase line;

Solution: reconnect the motor phase line.

VII. Fault: While riding, the motorcycle will walk for a moment and stop for a moment

1. Fault cause: poor contact of power cord, handle cable, motor phase cable and Hall cable;

Solution: check the connection of each node to ensure that the contact parts are firmly contacted without poor contact.

2. Fault cause: low battery voltage;

Solution: check the battery voltage and replenish it in time.

VIII. Fault: If you keep the throttle twisted while riding, the brake will not cut off the power supply to the motor.

1.Fault cause: the brake switch is damaged;

Solution: test and replace the brake switch (or brake handle).

2.Fault cause: the brake switch circuit is not connected or falls off;

Solution: check the circuit and eliminate corresponding faults.

3.Fault cause: the brake input circuit inside the controller is broken;

Solution: replace the controller.

IX. Fault: Sometimes, after applying the brake while riding, the throttle does not respond.

Failure cause: the lever fails or is damaged after being used for a long time; Solution: replace the brake switch.

X. Fault: short cruising range.

Failure cause analysis: The range of the bike depends on various factors, some of which are determined by the manufacturer: the efficiency and performance of the motor, the capacity and lifespan of the battery;

Some other factors that affect the range are related to the external conditions: the rider's weight, the road surface, the frequency of braking, the riding style, etc. 1. Regarding the motor itself :

a. Low efficiency-the motor converts less electric energy into mechanical energy and more into heat. This type of motor cannot run for long and usually overheats.;

b. Magnet degradation-over time, the magnets will lose some of their strength, but the degree varies. However, if the magnets are of low quality and have poor resistance to demagnetization, they will weaken quickly, resulting in a significant drop in motor performance, an increase in operating current and a reduction in range.

2. From other aspects:

a. The quality, capacity and temperature performance of the battery; b. The compatibility of the controller and the optimal undervoltage level of the controller; c. Whether the selected motor specification and the supporting of the whole vehicle are reasonable.

3. From the objective situation:

a. a. Vehicle load; b. The rolling resistance of the riding road is different from that of the road; c. Cyclists' riding habits, whether they start and brake frequently.

Solutions:

a. Select high efficiency motor; b. Match the parameters of controller and motor and set reasonable undervoltage value; c. Select batteries with high energy density; d. Do not overload; e. Develop good riding habits.

Fault code display

Faulty component	Fault name	Fault code
Power system P (motor, controller)	Controller overvoltage failure	P301
	Controller undervoltage failure	P302
	Controller overcurrent failure	P303
	Motor locked failure	P304
	Motor position sensor failure	P305
	Power tube failure	P306
	Controller phase loss failure	P307
	Motor controller self-test failure	P310
	Controller over temperature fault 1	P111
	Controller over temperature fault 2	P211
	Controller over temperature fault 3	P311
	Motor over temperature fault 1	P124
	Motor over temperature fault 2	P224
	Motor over temperature fault 3	P324
	Acceleration handle failure	P314
	Brake failure	P320
	Communication failure	P321
	Precharge fault	P322
	Motor controller system fault level 1	P123
	Motor controller system fault level 2	P223
	Motor controller system fault level 3	P323
Battery system b	Cell failure	b302
	Total discharge voltage overvoltage fault	b309
	Discharge monomer undervoltage fault 1	b110
	Discharge monomer undervoltage fault 2	b210

Faulty component	Fault name	Fault code
Battery system b	Discharge monomer undervoltage fault 3	b310
Battery system b	BMS discharge over temperature fault 1	b119
	BMS discharge over temperature fault 2	b219
	MBS discharge over temperature fault 3	b319
	BMS charging over temperature fault 1	b120
	BMS charging over temperature fault 2	b220
	BMS charging over temperature fault 3	b320
	BMS discharge under temperature fault 1	b121
	BMS discharge under temperature fault 2	b221
	BMS discharge under temperature fault 3	b321
	BMS charging under temperature fault 1	b122
	BMS charging under temperature fault 2	b222
	BMS charging under temperature fault 3	b322
	BMS charging overcurrent fault 1	b114
	BMS charging overcurrent fault 2	b214
	BMS charging overcurrent fault 3	b314
	BMS discharge overcurrent fault 1	b130
	BMS discharge overcurrent fault 2	b230
	BMS discharge overcurrent fault 3	b330
	Cell differential pressure fault 1	b103
	Cell differential pressure fault 2	b203
	Cell differential pressure fault 3	b303
	Battery insulation fault 1	b131
	Battery insulation fault 2	b231
	Battery insulation fault 3	b331
	Battery short circuit failure	b332

Faulty component	Fault name	Fault code
Battery system b	BMS internal communication failure	b333
	BMS internal MOS failure or relay failure	b307
	Charging monomer battery undervoltage fault level 1	b140
	Charging monomer battery undervoltage fault level 2	b240
	Charging monomer battery undervoltage fault level 3	b340
	Uneven temperature fault 1	b141
	Uneven temperature fault 2	b241
	Uneven temperature fault 3	b341
	Total charging voltage overvoltage fault	b342
	Total discharge voltage undervoltage fault	b343
	Total charging voltage undervoltage fault	b344
	Discharge monomer overvoltage fault	b345
	Charging monomer overvoltage protection	b346
	Delay bonding	b349
	Power tube temperature failure	b347
	Communication failure	b348
Charger C faulty component	Charger fault 1	C101
	Charger fault 2	C201
	Charger fault 3	C301
	Hardware fault 3	C302
	Communication fault 3	C303
	Short circuit protection 3	C304
	Open circuit protection 3	C305
	Temperature state 1	C106
	Temperature state 2	C206
	Temperature state 3	C306

Faulty component	Fault name	Fault code
	Input overvoltage protection 1	C107
	Input overvoltage protection 2	C207
	Input overvoltage protection 3	C307
	Input undervoltage protection 1	C108
	Input undervoltage protection 2	C208
	Input undervoltage protection 3	C308
	Output overcurrent protection 1	C109
	Output overcurrent protection 2	C209
	Output overcurrent protection 3	C309
	Output overvoltage protection 1	C110
	Output overvoltage protection 2	C210
	Output overvoltage protection 3	C310
	Output undervoltage protection 1	C111
	Output undervoltage protection 2	C211
	Output undervoltage protection 3	C311

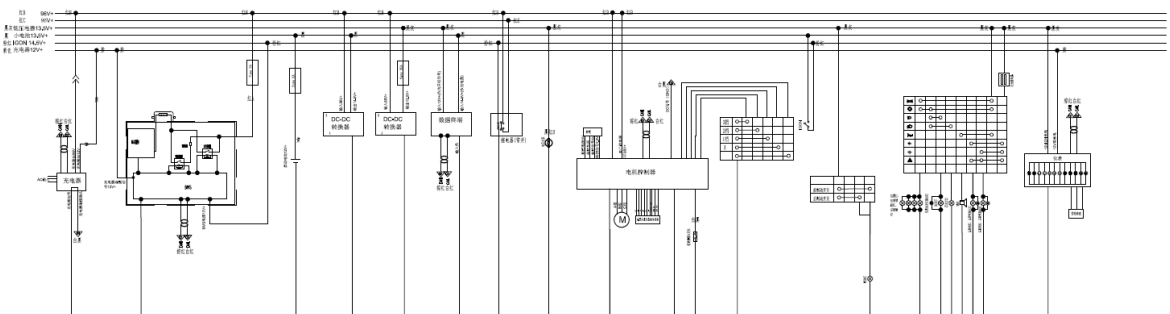
Fault code:
Bits 1, 3 and 4 of fault code: displayed according to the actual value
Bit 2 of fault code: no matter it is actually 1, 2 or 3, only 3 is displayed.
Fault prompt:
When the bit 2 of the fault code is 1, it flashes once (the flashing frequency is 1Hz, repeated after 3 seconds until it stops 5 seconds after the fault is removed)
When the bit 2 of the fault code is 2, it flashes twice (the flashing frequency is 1Hz, repeated after 3 seconds until it stops 5 seconds after the fault is removed)
When the bit 2 of the fault code is 3, it flashes for three times (the flashing frequency is 1Hz, repeated after 3 seconds until it stops 5 seconds after the fault is removed)

Items	ZS8000D-2 Specifications / Parameters
Outline dimension L × W × H	82.2×34×47.4in/2090×865×1205mm
Wheelbase	55.5 in/1400mm
Minimum ground clearance	6in/150mm
Complete vehicle curb mass	436.5lbs/198kg
Maximum capacity	331lbs/150kg
Maximum speed	75mph/120km/h
Driving range (working condition method / isokinetic method)	112 miles – 62 miles/180km-100km
Motor specification and model	96V / 8KW water cooled motor , 204YC9637421NA
Peak power	18.5kW
Maximum torque	530N.m
Energy consumption rate (working condition method / isokinetic method)	42Wh/km,75Wh/km
Controller	96V 48G sine wave
Battery Specification	Lithium battery 96V64Ah
Undervoltage protection	82V
Overcurrent protection	210A
Charger	External charger AC220V, output current 15A
Charging time	6h
Braking system	ABS, front: disc; Rear: disc
Transmission mode	Belt drive
Tire size/Air pressure	Front Tire 100/80-17M/C, 250kpa; Rear Tire 120/80-17M/C, 250kPa

Note: the continuous mileage refers to the distance from continuous riding on a flat road with a fully charged battery and rated load to the start of the controller undervoltage protection function. In practical use , the continuous mileage will vary with the road conditions, the number of parking starts, the size of negative number, wind resistance temperature and other factors.

Electrical Schematic Diagram

1. Power supply system	2. DC-DC converter and auxiliary system	3. Power drive system	4. Control switches and lamps	5.Instrument
1.电源系统	2.DC-DC转换器及辅助系统	3.动力驱动系统	4.控制开关及灯具	5.仪表



Rear brake switch	Horn
Flash relay	Left turn signal
Position lamp	Left turn signal indicator
Instrument lighting lamp	Right turn signal
Rear license plate lamp	Right turn signal indicator
Indicator light of instrument high beam	Power supply
High beam light	Constant power supply
Low beam light	Instrument
	Front wheel speed

First edition in April 2023