HUAIHAI

OPERATION MANUAL
HUAIHAI VEHICLE MAINTENANCE

H21-150



http://www.huaihaiglobal.com

HUAIHAI-H21-150

Preface

Dear user:

Thank you for choosing our brand of electric vehicles. Our company is dedicated to the development and production of various types of fuel, electric and mini vehicles.

This manual is divided into two parts: user instructions and vehicle maintenance and care. It clearly defines the guarantee responsibilities regarding product quality and the rights and obligations of after-sales service between our company and you. At the same time, you will learn about the relevant functional features, operation and vehicle maintenance methods. While enjoying the pleasure of using it, you will ensure that your beloved car is in the best condition and increase the service life of the vehicle.

Due to the continuous update of our company's products, the model pictures and content in this manual may differ from the actual vehicle you purchase. We apologize for any inconvenience. The specific situation shall be subject to the actual item.

Special reminder:

1. Before using the vehicle, please be sure to read this manual to understand the basic features and driving operation methods of the vehicle. Do not hand over your beloved vehicle to minors, pregnant women, people with mobility issues or those who do not know how to operate it. When you transfer your vehicle to others for use, you should transfer this manual along with the vehicle.

2. It is prohibited to disassemble or modify the vehicle privately. No items are allowed to be hung on the handlebars and overloading is prohibited.

3. After purchasing a vehicle from our company, please promptly go to the vehicle management department to handle the relevant procedures in accordance with the local traffic regulations

Ensure that the driving meets the requirements;

4. Please maintain an appropriate air pressure inside the tires to avoid increasing driving resistance, accelerating tire wear and energy consumption, and affecting the driving range.

5. Used batteries should be disposed of in accordance with local policies. Do not discard them at will to avoid environmental pollution.

6. It is recommended that you use the original factory parts to avoid affecting the vehicle performance.

7. Please carry out regular maintenance of your vehicle in accordance with the relevant requirements of the manual to ensure its normal use, eliminate potential hazards, prevent faults and extend its service life.

The symbols in this manual have the following meanings:

▲Warning: This indicates a potential danger that may cause serious injury to personnel or damage to vehicles!

▲Note: There is a potential danger. Improper operation may cause damage to your beloved car!

▲Suggestion: Provide prompt service information to make maintenance simpler and more understandable!

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User Instructions

(—) Vehicle Driving Instructions

Pre-driving inspection

1. Front and rear braking: Check the handling conditions. If necessary, adjust the free travel between the brake pedal and the parking brake, and adjust the brake pull the nut on the rod is fine.

2. Tires: Check the air pressure of the front and rear tires, as well as their wear or damage conditions, and inflate or replace the tires in a timely manner.

3. Battery: Check if the battery power is sufficient. If it is insufficient, charge it in time. Check whether the battery connection wires are loose or glued the softening condition of the skin;

4. Lighting and Horns: Check whether the working conditions of the headlights, position lights, brake lights, turn signal lights and horns are normal.

5. Steering control mechanism: Check the flexibility and stability of operation.

Driving Precautions

1. Please strictly abide by local traffic regulations and drive civilly.

2. When going uphill, use a mechanical low gear and drive at a constant speed. Do not exceed the speed limit and do not shift gears during the journey.

3. When driving in the rain or on icy and snowy roads and braking, the tires are prone to skidding. Please pay attention to controlling your speed, focus your attention, drive carefully at a low speed and pay attention to the braking advance. Do not brake suddenly.

4. When starting the vehicle, turn the handlebars slowly. When turning, slow down in advance, observe the surrounding vehicles, and turn on the turn signal to alert others. Never make a sudden turn to avoid accidents.

5. When driving at night, turn on your headlights, pay attention to other vehicles and pedestrians, and never speed (for details, see the left and right combination switches).

6. Do not ride through water. When water submerges the motor or controller, it may cause damage to related components and prevent the vehicle from moving normally.

Parking Precautions

1. When driving on the road and needing to stop, release the speed control lever, brake slowly (front and back), observe the surrounding environment, and park by the roadside.

2. After coming to a complete stop, turn off the power lock, apply the parking brake tightly, and remove the key when leaving.

3. When not in use for a long time, the circuit breaker should be disconnected.

(二) Model photo



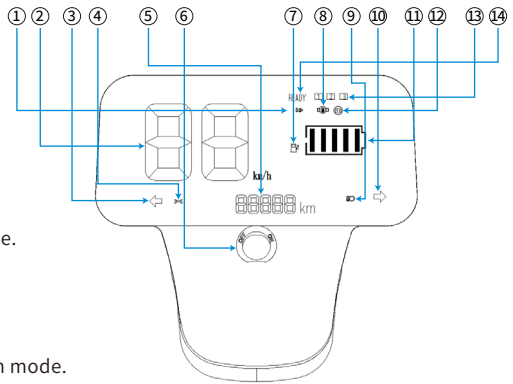






(三) Introduction to Operation Functions

一、Instrument



1. Turn handle fault light: At this time, the turn handle is faulty.
2. Speed: Display the current speed of the vehicle's operation;
3. Left turn signal: Indicates that the vehicle is turning left
4. Position lights: Display the vehicle's profile;
5. Total Mileage: Displays the total mileage that the vehicle has traveled.
Fault: Display that the current vehicle is in a fault state.
Determine the fault based on the characteristics of the fault icon (see page 22).
6. Locking: Insert the key, turn the key to the right and then power on the entire vehicle.
7. Charging indicator light: It shows that the current battery is completely drained and it is recommended to charge it as soon as possible.
8. Motor failure: Display that the current motor of the vehicle is faulty.
9. High beam: Indicates that the vehicle's headlights have been switched to high beam mode.
10. Right turn signal: Indicates that the vehicle is turning to the right.
11. Battery power: Displays the remaining battery power of the current vehicle;
12. Ecu failure: Display the current controller ECU failure，When there is a self-check error in the controller program or when the MOS transistor is damaged, the ECU icon will remain constantly illuminated;
13. Speed gear: Displays the current electronic gear of the vehicle, which can be divided into electronic low gear (1), electronic medium gear (2), and electronic high gear (3).
14. Vehicle ready: It indicates that the vehicle is ready. Press the brake pedal to release the P gear. After the ready symbol disappears, turn the handlebar and the vehicle will move.

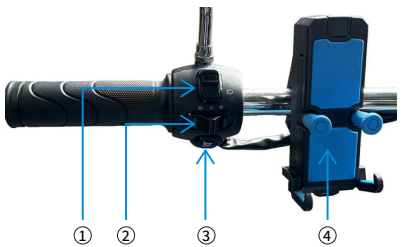
Left combination switch

1、High and low beam switch: Turn on the headlights and switch to “ ” Location，It is a low beam headlamp；Turn the switch to “ ” Location，For high beams；

Turn signal switch：Move left and right “ ” Switch，Control the front left/right turn signals、Rear taillights, left/right turn signals、The turn signal light on the instrument panel is flashing；Turn the switch back to the middle position，The flashing of the turn signal and the turn signal indicator light on the instrument panel can be cancelled；

Horn button：Press“ ”Button，The horn sounds and stops when released；

Mobile phone stand, with a built-in USB interface, can be used for charging mobile phones；



Right combination switch

1.1. Brake lock: Pinch the brake lever to secure the locking latch into the slot, allowing the vehicle to be parked.

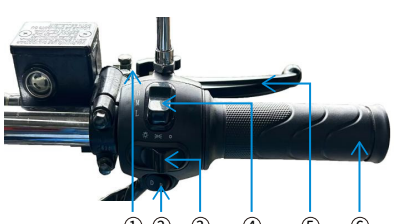
2. Forward and reverse switch: When the switch is at "D", the vehicle moves forward. When the switch is at "R", the vehicle moves backward.

3. Light switch: When the switch is set to the “ . ” position, all the lights will be turned off. When the switch is set to the “ ” position，the instrument lights and running lights will be turned on.When the switch is set to the “ ” position，turn on the high and low beams of the headlamps.

4. Three-speed adjustment: Adjust to the "H", "M", and "L" gears respectively (if any), and in combination with the steering wheel, it can enable the vehicle to travel at high, medium, and low speeds.

5. Left brake lever. Pinch the brake lever to cut off the power when braking.

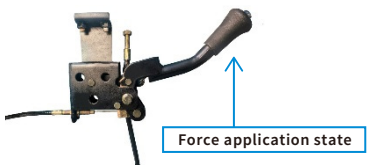
6. Speed control lever: Use the key to turn on the vehicle's power, release the handbrake and foot brake, and then slowly turn it inward. The vehicle can then move.

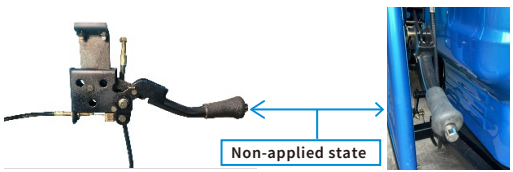


Gear Shifting Mechanis

1.When the operating handle is placed in the non-applied force state, the rear axle deceleration is relatively small, and the speed is relatively high at this time, which is suitable for no-load or heavy-load conditions Used when relatively small.

2. When the operation handle is placed in the applied force state, the rear axle decelerates significantly. At this time, the speed is relatively low, which is suitable for heavy loads or climbing use on slopes.





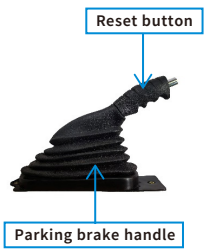
▲ Attention

Shifting gears is strictly prohibited while the vehicle is in motion; otherwise, it may cause damage to the shifting gears and affect driving safety.

Parking brake

1. Parking brake handle: Pull up 6 to 8 teeth. The rear wheels of the vehicle will be locked and the vehicle cannot continue to move.

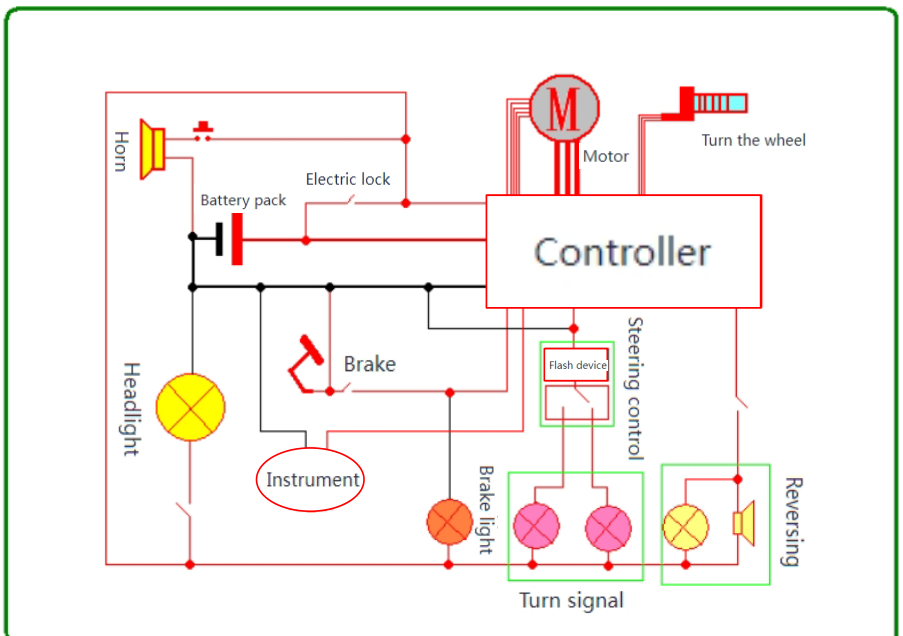
2. Reset button: Press this button and push the handle down to the bottom simultaneously to release the brake.



▲ Attention

Do not use the parking brake when the vehicle is in motion. When parking on a slope, be sure to apply the parking brake tight.

(四) Electrical schematic diagram



Vehicle usage and maintenance

(一)Regular maintenance and servicing

During the operation of electric vehicles, they will experience varying degrees of loosening and mechanical wear. If regular maintenance is not carried out, it will lead to a decline in the power performance, economy, reliability and safety of the electric vehicles, and also shorten their service life. Therefore, electric vehicle drivers must perform correct regular maintenance on the electric vehicles to ensure their best performance. Through proper and regular maintenance, faults can be eliminated in a timely manner, which can extend the service life of electric vehicles, reduce maintenance costs, and achieve the goal of safe operation of electric vehicles. The maintenance and upkeep of electric vehicles have the following requirements:

① Keep the motor differential clean, free of oil leakage, with good acceleration performance and power performance, and no abnormal noise.

② Ensure that the speed-regulating handle rotates freely without any jamming.

③ Ensure that the brake handle is easy and flexible to operate, and the braking effect meets the requirements. When the brake is released, the brake shoes automatically reset, and the frictionless electric vehicle has good coasting performance.

④ The front and rear shock absorbers are stable and reliable, the tire pressure is normal, and the performance of all electrical components is normal.

⑤ There is no loosening of all the connecting fasteners in the vehicle, and the overall appearance of the vehicle is clean and tidy.

All lubrication points are fully lubricated and there is no oil leakage.

⑦ The battery connection is not loose and the fixation is reliable.

(二)Daily inspection

The condition of a vehicle may change every day. To ensure driving safety, the following items should be checked before each trip

Vehicle:

① The working conditions of indicator lights and instruments;

② The working condition of the lighting system;

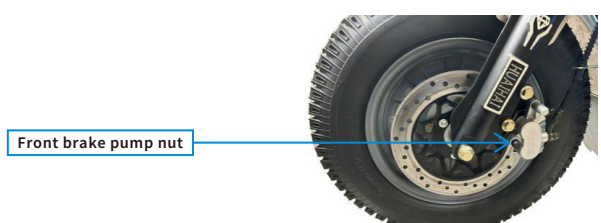
③ The working condition of the horn turn signal light;

④ Travel of the brake pedal;

⑤ The travel of the parking brake handle;

⑥ Tire pressure and wear condition;

⑦ The liquid level height of the electrolyte in lead-acid water batteries.



(三)Inspection and adjustment of the front brake

The brake is directly related to personal safety and should be adjusted appropriately on a regular basis. The front brake handle is on the front brake

The distance that can be moved before starting an action is called clearance. The clearance should be no less than half of the adjustment amount. If the clearance is incorrect, it should be adjusted as follows:

①Check whether there is any oil leakage at both ends of the oil pipe of the front brake pump, and at the same time observe whether the oil level in the brake fluid tank is within the normal range.

② Turn the oil pipe adjustment bolt clockwise to prevent oil leakage. After the adjustment is completed, lift the front wheel off the ground. There should be no resistance when turning the front wheel.

▲Note

When the stroke of the current brake lever cannot be adjusted, it indicates that the wear of the front brake pump has exceeded the maintenance limit value and the front brake pump needs to be replaced.

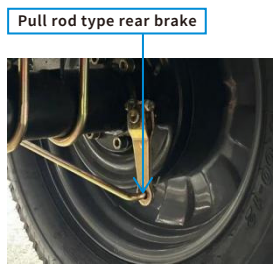
(四)Inspection and adjustment of the rear brake

The distance that the rear brake pedal can move before the rear brake starts to act is called the free travel.

The free travel of the rear brake pedal is 10-20mm. If the free travel is incorrect, adjust it according to the following method.

①Loosen the lock nut of the rear brake pull rod.

② After turning the brake adjustment nut, turning it clockwise reduces the clearance, while turning it counterclockwise increases the free travel.



▲Note

If the travel of the rear brake pedal is too large to be adjusted, it indicates that the wear of the rear brake shoes has exceeded the limit value.

Check the wear condition of the rear brake shoes. If the wear of the rear brake shoes has reached or exceeded the wear limit, replace them.

(五) Parking brake

Pull the parking control handle upwards to move the pawl relative to the gearplate by 4 to 6 teeth, and check if the rear wheels can be braked. if When the idle travel of the handle is too large, it should be adjusted to brake.



▲Note

When adjusting the steel wire rope, loosen the nut, tighten the steel wire to the appropriate position, and lock the nut.

Regularly clean the front fork handle tube.

(六) Front shock absorber

During use, it is necessary to pay attention to checking the shock absorbers. If any damage or failure is found, they should be replaced in time.

Regularly clean the front fork handle tube.



(七) Inspection of leaf springs

The pin bushing of the leaf spring should be replaced in time when it is damaged.

Before using a new car or after reassembly, every 200 kilometers of driving, check the U-bolts under load and evenly tighten the nuts. Repeat this process 2 to 3 times.



(八)Maintenance and care of tires

Only by using the tire pressure correctly can the comfort and stability of electric vehicle driving be guaranteed, and the service life of the inner and outer tires of the electric vehicle be prolonged. The tire pressure should be checked frequently and adjusted as needed.

Inspection of tires

Before driving, check the tire pressure when the tires are "cold", and inspect if there are any cuts, nails or other sharp objects embedded in the tires. Check if the rim is dented or deformed.



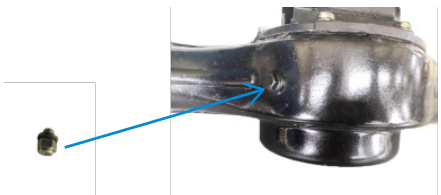
▲Note

Improper inflation of tires can cause abnormal tire wear, leading to safety accidents. Low tire pressure can result in tire blowouts

(九) Rear axle usage and maintenance

The use of the rear axle

When assembling the vehicle, the nut on the rear axle should be replaced with the exhaust cap first, and then it can be used, as shown in the following figure.



Maintenance of the rear axle

After the vehicle has traveled 250 kilometers (about one week), drain all the lubricating oil from the rear axle differential and refill the gear oil as required in the table below. Continue with the aforementioned maintenance after 500 kilometers (about two weeks). After driving 1,000 kilometers, the third aforementioned maintenance should be carried out. Thereafter, maintenance should be conducted every three months, during which the lubricating oil in the rear axle differential needs to be changed。

The lubricating oil used in the differential should be of the specifications shown in the following table：

Ambient temperature	Differential	Oil quantity
Winter	GL-5/GB13895/80W/90	0.7kg
Summer	GL-5/GB13895/85W/90	0.7kg

(十)Vehicle cleaning and storage

1. Vehicle cleaning: It is recommended that you regularly clean your beloved car to keep its appearance clean and polish important parts
Inspect the damage and injury conditions：

A：To prevent the remaining detergent from rusting the alloy parts, after cleaning, rinse the entire vehicle thoroughly with clean water from top to bottom.

B：When cleaning plastic parts, use a soft cloth or sponge dipped in a mild detergent solution for cleaning. Gently wipe the stained areas clean, then rinse them several times with clean water and wipe them dry with a dry cloth.

C：Do not use high-pressure water jet cleaning to prevent internal electronic components and circuits from short-circuiting due to water ingress, which may cause malfunctions or potential hazards. After cleaning and drying, the moving parts such as the front axle and chain should be lubricated in a timely manner. It is strictly prohibited to drip oil onto the front brake, rear brake or tires.

2、Vehicle Storage: If your vehicle is to be stored for a long time, you need to carry out appropriate maintenance on it regularly to prevent the moving parts from rusting, malfunctioning or getting damaged. The specific maintenance methods can be as follows:

A：Vehicle needs to be inspected every three months for long-term storage, and the parts that require lubrication should be maintained.

B：Battery should be charged to 50% of its capacity and the vehicle or battery should be placed in a cool and dry area. At the same time, regular charging and discharging maintenance should be carried out in accordance with the battery maintenance rules.

C：When storing the entire vehicle, cover it with a cloth. Regularly check if the tire pressure is normal and replenish it in a timely manner.

D：After being stored for a long time, before resuming normal driving, the entire vehicle should undergo comprehensive maintenance and be test-ridden on an open area. Only after confirming
that all performance aspects are normal can it be used.

(十一) Battery usage and maintenance

Regarding Chargers



1、Before use, please confirm that the battery model is the vehicle's matching battery. We recommend that you use our company's dedicated battery. Do not install the wrong battery, which may cause the vehicle to fail to function properly.

2. Check whether the battery's appearance is intact, without any damage, overheating, water immersion or other phenomena. If there are any abnormalities, please repair it in time

3. Due to self-consumption during transportation and storage, the power consumption of the new battery may be insufficient when used for the first time. This is a normal phenomenon. Just charge it according to the charging instructions.

Precautions for Using the Charger

Please abide by the following "Warnings" and "precautions"

1. Due to the influence of battery characteristics, when the ambient temperature drops below 0°C, the battery capacity will decrease accordingly and the driving range will also be reduced. This is a normal phenomenon. Please calculate the distance before traveling and charge it in time.

2. As the ambient temperature rises, the battery capacity will gradually increase. However, do not use it in an environment with a temperature exceeding 45° C. Exceeding this temperature will cause irreversible damage to the battery.

▲Warning

Avoid exposing the battery to rain or water, and never let it get soaked in water. When the entire vehicle wades through water above the battery height, it may cause damage to the battery

Water ingress, short circuit, and permanent battery failure. Charging is strictly prohibited at this time; otherwise, it is highly likely to cause the battery to catch fire or explode.

Battery Charging

Charging begins: Before charging, please turn off the power of the vehicle first. Then, insert the charging plug of the charger into the vehicle's charging port in the correct direction. Next, plug the AC power plug of the charger into the city power socket. The battery in the vehicle can then be charged. Do not reverse the sequence.

Charging status judgment: The charger has two indicator lights, red and green. When the red indicator light on the charger is on, it indicates that the power is connected and it is in a normal charging state. When the charger indicator light changes from red to green, it indicates that the battery is basically fully charged. At this point, it is recommended that you charge it for another 1-2 hours, which can effectively fully charge the battery, balance the battery voltage and extend the battery life.

Charging duration: The battery should not be fully charged for more than 8 hours.

When charging is complete: After the battery is fully charged, first unplug the connection end of the AC power plug, then unplug the connection end of the charging port. Do not reverse the sequence, otherwise it may cause damage to the charger.

▲Note

1. Please charge with the original charger that comes with the battery. Do not use chargers of other brands or models.

2. Please charge the vehicle in an environment with a temperature ranging from 0°C to 45°C. If the temperature is below 0°C, charging may not be possible. Therefore, it is recommended that in colder regions, after use, the entire vehicle or battery be placed indoors in an environment above 0°C for charging.

3. Avoid charging for more than 12 hours at a time to prevent overcharging which may affect the battery's service life. If the charger does not turn on the light after continuous charging for more than 12 hours, please stop charging in time.

4. The charger should not be used in damp, harmful gas or heat source areas. It must be used in a well-ventilated place free of flammable items. The charger's casing is equipped with heat dissipation holes. It is strictly forbidden for liquids or foreign objects to enter. In case of any abnormality, the power should be turned off immediately and sent to the dealer for repair. Do not disassemble it by yourself.

5. Some models are equipped with a charging protection function, and the vehicle cannot be started during charging.

6. When using or storing the charger, it should be placed securely. Please keep it out of the reach of children to prevent them from touching it and causing the battery to fall, which could lead to danger. When you need to carry a charger out, you should properly protect it and avoid jolting or bumping it, otherwise the charger's casing and wires may be damaged.

▲Warning

During the operation of the charger, no items should cover or block its bottom; otherwise, due to poor heat dissipation, the charger may be damaged or even cause a fire. There is high voltage inside the charger. Be careful of electric shock.

Storage and maintenance of batteries

1.It is best to store the battery in an environment with a temperature ranging from 10°C to 30°C and a humidity of 45% to 85%. Do not store the battery in an environment above 40°C, otherwise it will cause irreversible capacity attenuation of the battery.

2. The most suitable capacity for storing a battery is around 50%. If a battery with a capacity lower than 10% or higher than 90% is stored for a long time, it will cause irreversible capacity decline in the battery. At the same time, the battery should undergo a charge and discharge cycle every 1 to 2 months to maintain its activity.

3. Do not store the battery together with metal objects to prevent them from touching the positive and negative terminals of the battery, causing a short circuit, damaging the battery or even posing a danger.

Battery life

1. As the number of charge and discharge cycles increases, the capacity of a battery gradually decreases. Under normal usage conditions, the battery's lifespan is approximately three years. Beyond this period, the battery's capacity will significantly decline or it may fail to charge, affecting the vehicle's usage experience. At the same time, the battery will age internally, and continued use may easily lead to safety accidents. We suggest that you purchase a brand-new battery specially designed by our company that matches your car

2. Please read the battery usage method carefully. Good usage habits can effectively increase the battery's service life and save money cost.

3. Do not discard used batteries at will to avoid polluting the environment。

(十二) Analysis and handling of common faults

Fault phenomenon	Cause of malfunction	Exclusion method
When the power switch is turned on, the instrument light does not light up and the motor does not rotate	The air switch is not on	Open it
	The fuse is blown.	Replace the fuse
	The electric door lock is broken.	Have it repaired at the technical service center or a dealer
	The battery connection wire is broken or fallen off	
When the power is turned on, the instrument shows normal, but the motor does not rotate	Low battery voltage	Full battery power
	The speed control lever has poor contact or is	Have it repaired at the technical service center or a dealer
	The left brake lever or the brake power-off switch is not installed properly or is malfunctioning	
	Controller or motor failure	
The battery cannot be charged or is undercharged	The charger is not plugged in properly	Check and replace the plug board
	The charger is broken.	Replace the charger
	Battery life ends	Replace the battery
	Battery failure	Repair the battery
	The battery charging socket is not properly connected	Check the wiring of the charging socket
The subsequent driving range after one charge is insufficient	Insufficient battery charging	Full battery power
	Battery life ends	Replace the entire battery pack
	Insufficient tire pressure	Be well-ventilated
	The whole vehicle is overloaded	Load and drive according to the approved cargo capacity
	When a vehicle is in motion, the brakes are worn down or in place	Adjust the brakes