

Electric Vehicle Maintenance Manual

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1 Maintenance Interval Quick Reference Table

Here are the recommended maintenance intervals for key components of electric vehicles to help you schedule upkeep appropriately:

Maintenance Parts Maintenance Matters Recommended Schedule Notes

Battery: Check the battery level, clean contacts, store at full charge. Charge once a month even if not in use for a long period.

Fully charge and discharge each time after use. Charge promptly after use to avoid loss of power during storage.

Tire Check Air Pressure Monthly Maintain Proper Tire Pressure

Check for wear and cracks every quarter; replace promptly if wear is severe.

Brake system Check sensitivity and travel adjustment Monthly Ensure effective braking

Replace brake pads when necessary due to severe wear or brake noise.

Chain Check tension and lubrication Monthly (if chain is present) Add chain oil when lubrication is insufficient

Frame and Fasteners Check for Loose Screws Every Six Months Tighten Front and Rear Wheel Large Screws etc.

Comprehensive Inspection: Thorough inspection by professional maintenance personnel every six months or every 1000 kilometers of riding, including comprehensive debugging of fasteners, brakes, battery, etc.

2 Battery system maintenance

Batteries are the power source of electric vehicles, equivalent to the heart of the vehicle, and proper maintenance is crucial.

- Charging Habits: It is recommended to fully charge the battery once a day, with each charge lasting around 6-8 hours, keeping the battery fully charged at all times, which greatly benefits its lifespan. Try to avoid completely draining the battery before recharging. When the red low voltage display light on the dashboard turns on, it indicates that the battery is low and should be charged promptly.
- Charging Environment: Charging should be done in an environment with good air circulation, avoiding proximity to fire sources, and avoiding high temperatures or

extreme cold environments (optimal temperature is 15-40 degrees Celsius). In summer when temperatures are high, the battery should be kept away from direct sunlight; in winter when temperatures are low, the battery should be stored indoors and charged indoors.

- Long-term storage: If the electric vehicle is not used for an extended period, it should be fully charged and recharged once a month. Otherwise, it will greatly affect the lifespan of the battery, and in severe cases, it may lead to battery scrapping.
- Note: Only use the manufacturer's designated charger for charging. If you smell an odor or the battery overheats during charging, stop immediately and check the situation.

3 Vehicle and brake system maintenance

Keeping the vehicle body and braking system in good condition is related to riding safety.

- Cleaning and maintenance: Regularly use a solution mixed with clean water and neutral detergent (such as soapy water), gently wipe the frame and body with a sponge or soft brush to remove dust and dirt. Avoid using high-pressure water guns for direct rinsing to prevent damage to internal electronic components and circuits. After cleaning, use a dry cloth to wipe the car body to keep it dry.
- Brake System: Regularly check the wear of brake pads. If they are severely worn or

you hear sharp brake noises, replace them promptly. At the same time, check whether the brake line is loose and if the braking performance is sensitive and reliable. Brake adjustment should be such that the brake can be applied when the grip is 10mm away from the handle.

- **Frame Inspection:** Regularly check the frame for loose welds and screws. When cracks appear at the welding points of the frame, they need to be repaired promptly; when the frame screws become loose, they need to be tightened promptly.

4 Motor and controller maintenance

The motor and controller are the core components of an electric vehicle and generally do not require frequent maintenance. However, the following points should be noted:

- **Motor maintenance:** The motor should be kept dry during operation to avoid water ingress, and it should be wiped clean after riding in rainy weather. Regularly check whether the motor connection wires are loose, worn, or short-circuited. The motor operates normally without needing adjustment or maintenance; only some surface dusting and cleaning work is required.

- **Controller Protection:** The controller has been adjusted to optimal state before leaving the factory; please do not disassemble or adjust it yourself. If an electrical fault occurs while cycling, only non-professionals can inspect the cables and connectors. If the fault cannot be resolved, it should be taken to a professional repair

station for maintenance.

- **Waterproof Measures:** When riding on rainy days, be careful to prevent water from entering the controller and motor to avoid short circuit damage. If there is water accumulation due to rain, it should not submerge the center of the wheel hub.

5 Tire and drivetrain maintenance

Tires and transmission systems directly affect riding experience and safety:

- **Tire maintenance:** Keep tire pressure normal and check tire pressure once a month. When the air pressure is low, it needs to be inflated promptly. Check the wear status of the tires; if they are severely worn, they need to be replaced. Regularly clean out stones and other foreign objects embedded in tire treads.
- **Chain maintenance:** For electric bicycles with chains, it is necessary to check the chain tension and apply lubricant regularly to ensure smooth operation. Regularly clean the chain and use specialized chain lubricant for lubrication to reduce wear and extend its lifespan.
- **Transmission system:** Check if the transmission belt or gears are damaged or loose, and adjust or replace them if necessary.

6 Best Practices for Daily Use

Developing good cycling habits can significantly extend the lifespan of an electric bike:

- **Starting and Acceleration:** Try to avoid starting from zero; it's best to start by pedaling manually before activating the motor to avoid excessive starting current that could affect battery and motor lifespan. When cycling, you should accelerate slowly to reduce impact on the battery and motor.
- **Load Control:** Do not ride with overload. The standard load for electric bicycles is generally 75kg. When the load exceeds 90kg, the battery and motor will be damaged.
- **Road selection:** Try to avoid roads with excessive bumps and vibrations to prevent impact on the controller, connectors, plugs, and motor bearings. When climbing slopes, crossing bridges, or riding against the wind, it is best to have human assistance for cycling.
- **Parking habits:** When not riding, the electric lock should be turned off to prevent power consumption from the controller, battery indicator light, and other circuit components.

7 Seasonal maintenance recommendations

Different seasons require appropriate protection measures for electric vehicles:

- Summer maintenance: Avoid prolonged exposure to sunlight, as it can cause the plastic parts to fade, the seat cushion to crack, and the battery to spontaneously ignite. Avoid charging in high-temperature environments and do not charge immediately after driving.
- Winter maintenance: During winter low temperatures, the battery should be stored indoors and charged indoors. At an ambient temperature of -10 degrees Celsius, the battery can only discharge 60% of its capacity. Therefore, it is normal for the range to decrease during winter.
- Rainy Day Maintenance: Try not to go out on rainy days, and if the water is more than half way up the wheels, avoid it. Do not rush to charge the vehicle when it gets wet; instead, park it and cover it with plastic sheeting. After wading through water, check it thoroughly.

8 Long-Term Storage Guidelines

If you plan to not use the electric vehicle for an extended period, please follow these steps:

1. Clean the vehicle: Thoroughly wash and completely dry the body, especially applying a thin layer of engine oil to prevent rust on metal parts.
2. Battery handling: Store the battery after fully charging it and recharge once a month to prevent damage from discharging.
3. Storage Environment: Choose a cool, dry, and ventilated indoor environment for storage, avoiding moisture and extreme temperatures.
4. Tire protection: Inflate the tire pressure slightly to reduce the pressure at the tire contact point.
5. Cover and Protect from Dust: Use a dust cover to cover the electric scooter, but do not wrap it directly with plastic sheet to avoid moisture due to tight sealing.

Regular maintenance of your electric scooter not only ensures riding safety but also extends the vehicle's lifespan and improves the travel experience. The value of maintenance lies in preventing minor issues; many major problems are gradually accumulated from small oversights. Therefore, by following the recommendations in this manual for regular inspections and maintenance, your electric scooter will provide you with reliable service for a longer period.