

OXG MOTOR ELECTIRC START KIT MANUAL



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Please take out all parts and compare them with the parts list in the video. If any parts are missing, please contact us.

Installation Instructions

Scan the QR code below to view the YouTube playlist, choose your model.



Operating Instructions

Starting the Engine

Before the initial start, please check that the bike is in a normal starting state. You can perform a kick start test; slowly kick the pedal a few times and listen for any unusual noises inside. If there are no issues, proceed with the normal kick start. If successful, the bike is functioning properly, and you can test the electric start.

Similar to kick start, when starting a cold engine, pull up the choke and then press the start button. If it does not start, release the start button and wait 5 seconds before trying again. Extended starting attempts can lead to overheating the motor and flooding the spark plug. It is recommended to limit the starting duration to no more than 3 seconds at a time.

If it fails to start multiple times, fully open the throttle while pressing both the kill switch and start button for 3 seconds. Repeat this process three times to dry out the spark plug. When attempting to start again, you can slightly open the throttle to help enrich the fuel mixture.

At different altitudes, temperatures, and engine conditions, the electric start may not operate smoothly. For specific carburetor adjustments, please refer to the manufacturer's maintenance manual. The electric start is designed to provide a more effortless and efficient starting method, but it cannot start a bike that does not meet the necessary conditions.

After the engine has fully warmed up, you can pull up the clutch and use the electric start while in drive gear. If the engine has not fully warmed up, and the clutch cannot disengage completely, the electric start must be used in neutral gear.

Charging

Due to the compact design of youth motorcycles, a built-in charging system could not be integrated. Therefore, we have set up an additional charging system that provides approximately 40W of power. This power fluctuates with engine RPM. If you need to connect external devices, such as fans or headlights, we recommend not exceeding this limit and having the necessary skills and knowledge for installation. Modifying the system may exceed our design parameters and cause unknown damage.

At maximum engine RPM while charging, the maximum output power is around 40W. An 85cc two-stroke engine can output about 20KW of maximum power, meaning that the power loss is only $40/20000=0.002=0.2\%$, and accounting for energy conversion losses, it should not exceed 1%. There's no need to worry about power loss from charging.

The charging system will not operate at idle because of the low torque of two-stroke engines. We set charging to engage above 3000 RPM to avoid stalling the engine at idle. When the battery is fully charged, the charging system will automatically go into sleep mode, consuming almost no engine power. When the battery level drops to a preset value, the charging system will automatically begin charging.

If you are a normal-level rider, regular training can fully meet the charging standards, keeping the battery in a saturated state. The charging system will then automatically go to sleep, resulting in negligible power loss. There is no need to install an external charging connector. Our calculations indicate that riding continuously for about 6 minutes at an average of 5000 RPM can provide enough energy for 4-5 starts.

If you are a beginner or a super competitive rider who has removed the charging system, you can purchase our quick charging kit. This kit provides a waterproof quick charging method without disassembly. Because you need extra way to charging.

If you are extremely concerned about engine power loss during competition, you can disconnect the charging coil and rectifier connectors during the race to prevent any power loss. You can even remove the rectifier and charging coil for ultimate weight reduction (make sure to seal the cable hole of the charging coil). A fully charged

battery can support approximately one hundred starts, sufficient for a full race.

Our battery includes a BMS (Battery Management System) that prevents permanent damage from over-discharge when the battery level is too low. Using our dedicated lithium battery charger, you can fully charge it from low power in about 1 hour. You can also purchase a lithium battery-specific charger with an output voltage of 14.6V and a current of 1-2A.

The entire electronic system has been optimized for unidirectional circuit disconnection, ensuring very low power loss while the bike is parked, comparable to the self-discharge of lithium batteries.

Maintenance Instructions

If the system malfunctions and cannot be repaired on-site, please use the original kick start feature as an emergency backup.

No Response When Pressing Start Button

Check the wiring connections, following the order of battery, start switch, relay, and motor for inspection. If the wiring is normal but the motor does not respond, remove the motor to check if it can rotate independently. If it can, check if the starting structure is obstructed by debris. If it cannot rotate, check for internal damage to the motor, which may require replacing the brushes or the motor itself.

Hearing a Rotating Sound but Unable to Start

Remove the outer case and manually rotate the components to check for normal contact. Remove the motor and take out the big bevel gear set; the small gear should rotate freely in one direction, and lock in the opposite direction. If it does not, replace this gear set.

Insufficient Battery Power to Use Electric Start

First, use the kick start to start the bike and warm up the engine. Make the engine over 4000 RPM, and check the battery voltage, which should be above 14V. If not, proceed to the next inspection.

Unable to Charge

Open the casing and check if the black magnetic ring mounted on the main gear is functioning correctly. Use a magnet to test the surface polarity, which should alternate between N and S poles. If the magnetic ring is normal, check the charging system wiring data, as detailed in the "Wiring Testing" section. Check the charging coil, rectifier, and battery in that order.

Water Ingress

If water is found inside the electric start housing, this indicates a failure in the outer seal. Check if the sealing of the charging coil output wire is intact and if the casing seal is effective. If a homemade seal is used, ensure that the thickness matches the original, as the generation system requires appropriate spacing.

Bracket Breakage

If the aluminum bracket is broken, it can be repaired by welding. We use 5032 aluminum alloy, which is weldable.

Wiring Testing

Battery:

If the fully charged battery voltage is below 13.2V, the battery is aging and should be replaced. Always use a dedicated lithium battery charger; other types of chargers may damage the battery. The charger should have a voltage between 14.5-15V and a current of 1-2A. Do not exceed or fall below this standard, or it may damage the battery.

Charging Coil:

Check if the resistance between the three wires of the coil is the same. If we designate the wires as A, B, and C, check the resistance for A to B, A to C, and B to C; the deviation should be less than 10%. Otherwise, the coil is burnt out and needs to be replaced.

Relay:

The relay contains two fuses, one being a spare. Under normal conditions, the blue and red wires at the connector should be positive, while the black wire is negative. When the start button is pressed, the white wire should be positive. If there's no response when pressing the start button and the relay does not click, check the fuses on the relay and the start switch. If those are normal, the relay may be faulty, though it is usually reliable.

Rectifier:

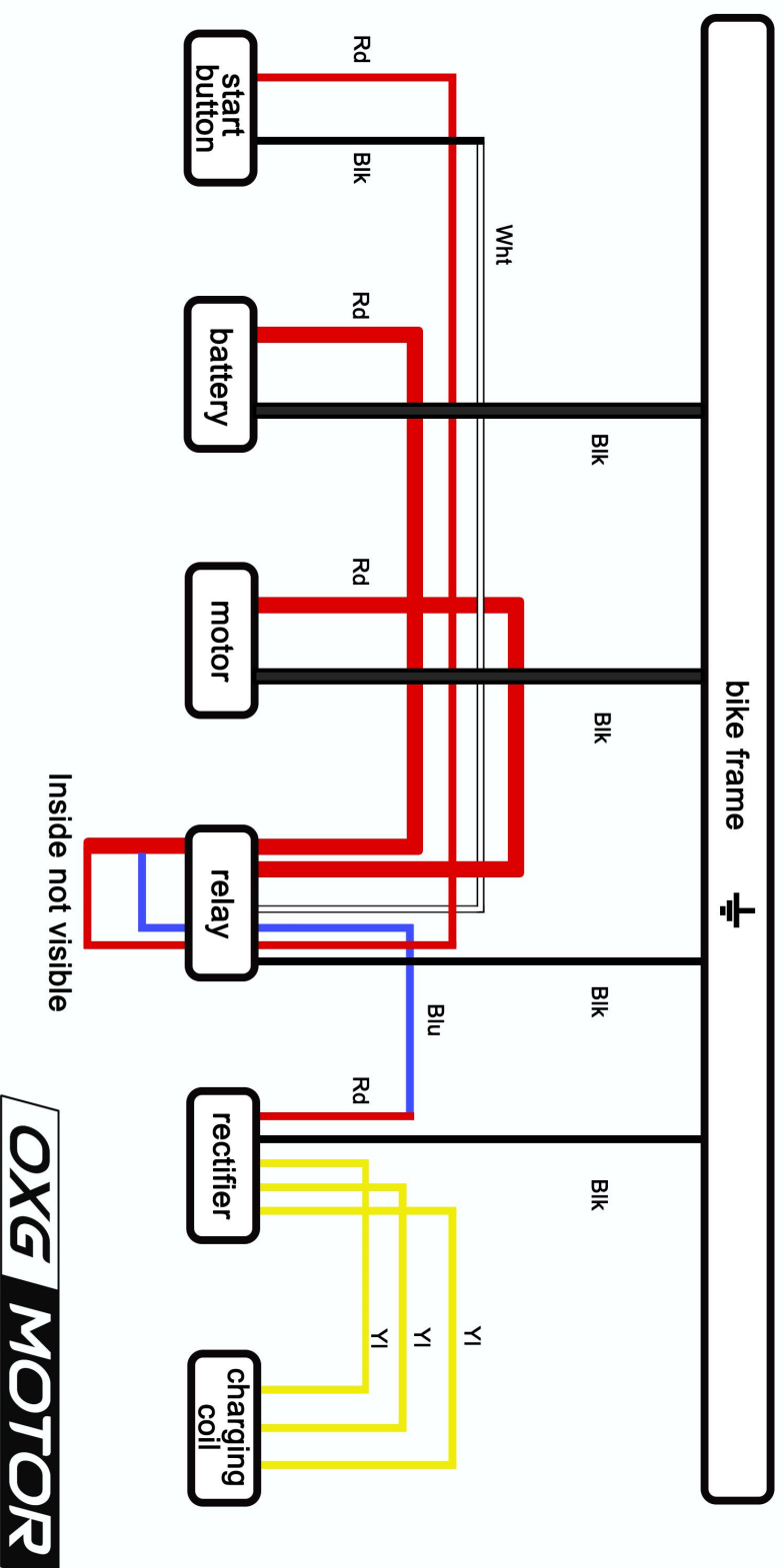
Check the output wires of the rectifier; the red wire should be positive, and the black wire should be negative. Start the bike and rev the engine above 4000 RPM; the voltage between the black and red wires should exceed 14V. If not, replace the rectifier. Our rectifier is specially customized to automatically enter sleep mode; do not use other rectifiers, as they may cause abnormal generation.

Motor:

Due to the hard-wearing treatment of the aluminum alloy body, conductivity is reduced. Use the negative wire to connect the motor housing to the frame for proper grounding; otherwise, the motor may not perform adequately. If you notice normal voltage but the motor has low starting power, check the positive and negative wires for breaks, ensure the relay is functioning properly, and check for wear on the motor's brushes.

SX / YZ / KX

e-start kit wiring diagram



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