QIFAN - Golf cart user manual

Environmental protection, efficiency and intelligence

I. Product overview

1.1 Productuse

Low-speed electric vehicles designed for golf courses,resorts,communities and industrial parksfor short distance transportation on flat roads.

1.2 Technical parameters

Project | Specifications |

Motor power | 3.5kW-7.5 KW AC motor |

Battery type | 48V-72V lead-acid/lithium (optional) |

Maximum load | 600kg (including 2-10 seats) |

Top speed | 30km/h (adjustable mode) |

Charging time | 8 hours (standard charge) |

Braking system | front disc rear drum |

II. Safety warning:The following operations are strictly prohibited

-Overloading (load > 450kg)

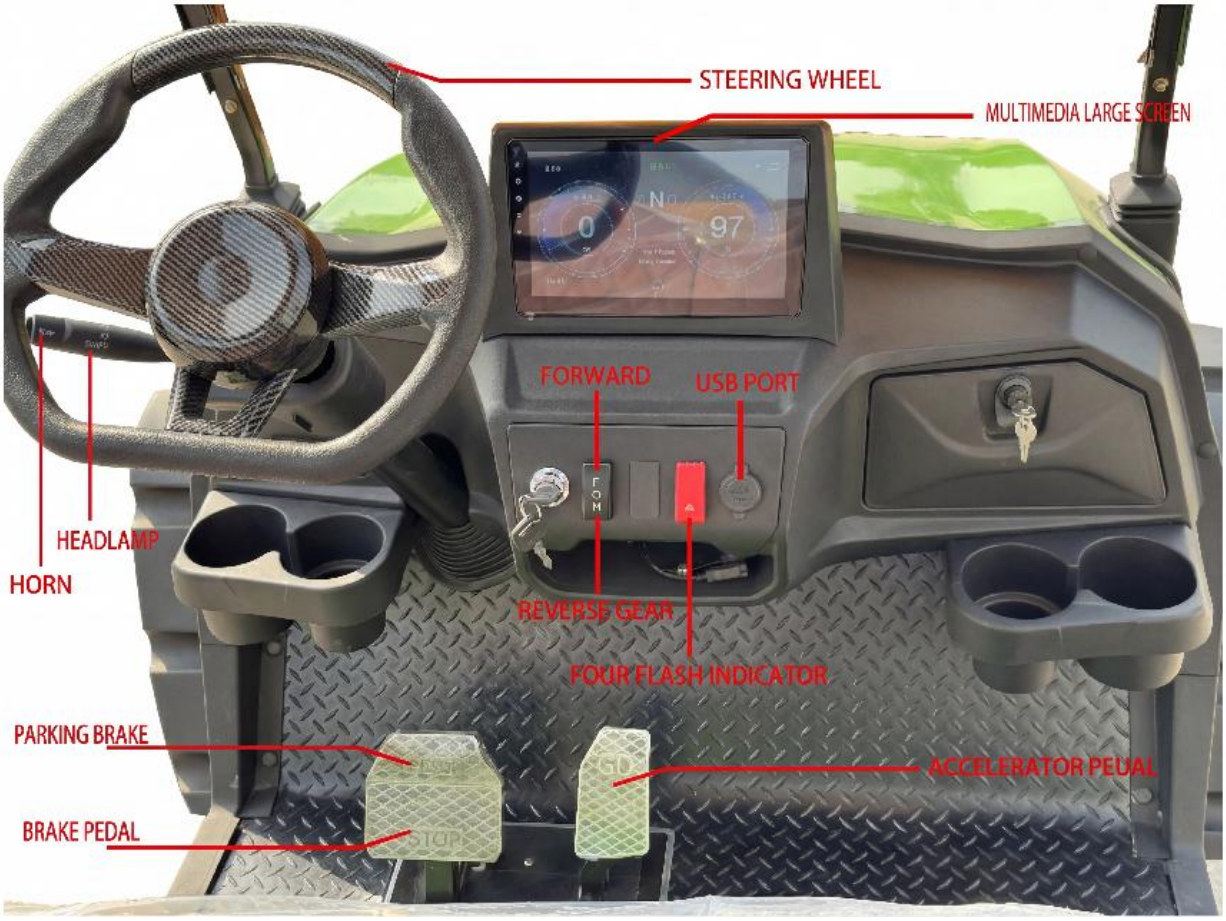
-Park on a slope with a gradient> 15°

The water depth exceeds 10cm in rainy days

-Privately modifying the circuit or removing the speed limiter

-Use non-original charging equipment





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Ⅲ. Operation Guide

3.1 Start and drive

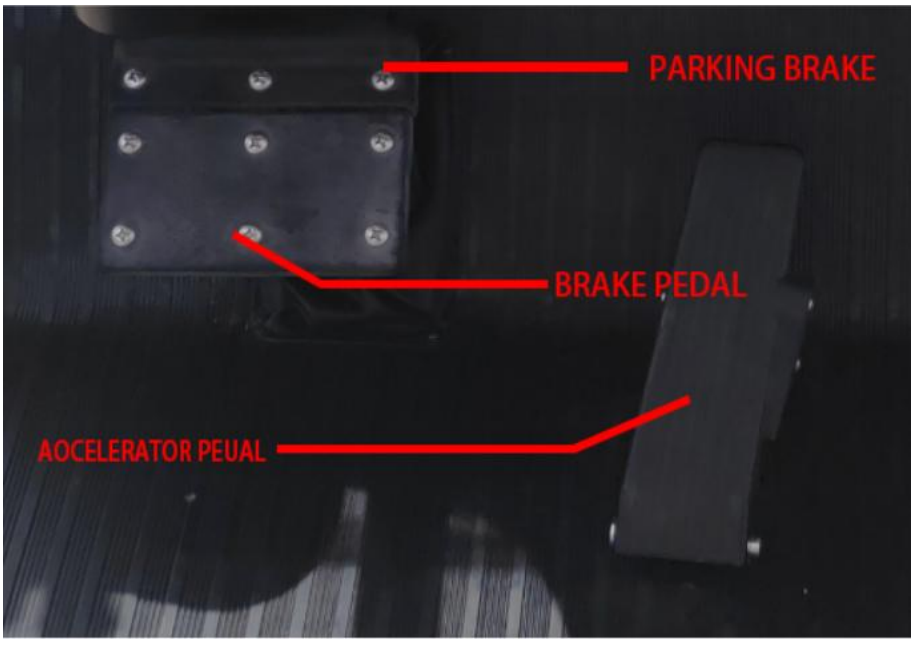
1. Key start

- Insert the key into the "ON" position and the dashboard lights up.

- Select the direction gear (F forward / R reverse).

- Start by pressing the accelerator pedal lightly (Continuously variable transmission).





2. Slope operation

The ramp assist function is designed to provide temporary vehicle stability when starting on steep inclines (≥ 10% gradient). It prevents the vehicle from rolling backward for approximately 2–3 seconds after releasing the brake pedal, allowing you to smoothly transition to the accelerator.

IMPORTANT RESTRICTION: Do not rely on the ramp assist function for prolonged use (e.g., idling on a slope for more than 5 seconds). Continuous activation can overheat the brake system, leading to reduced braking performance and potential component damage.

3. Light switch

4. Horn switch, turn signal switch



IV.Battery and charging

4.1 Charging specifications

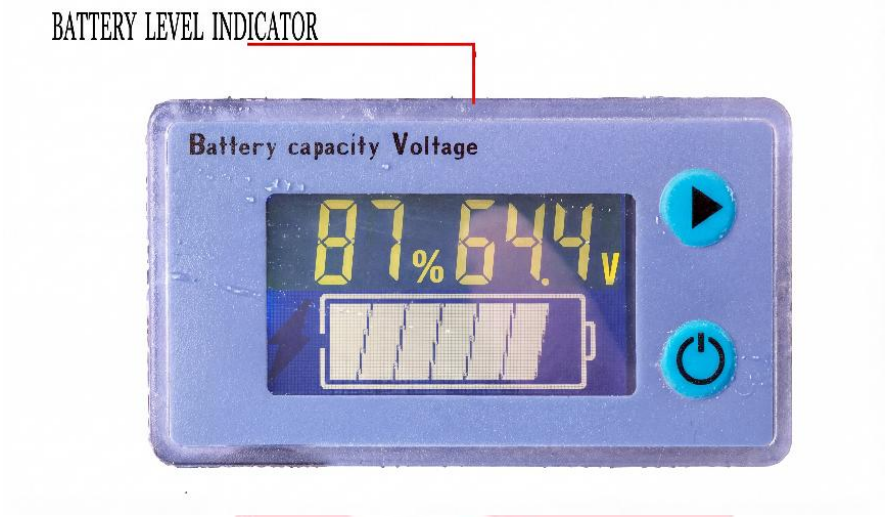
When charging the battery, there are the following aspects to pay attention to:

PREPARATION BEFORE CHARGING

Check the battery and charger: Check whether there is any damage, leakage or deformation of the battery appearance, clean the electrode to ensure good contact; check whether the charger model and parameters match with the battery, whether there is any damage to the appearance and wiring.

• Confirm the battery status: understand whether the capacity, voltage, internal resistance and other parameters of the battery meet the requirements; before the first charge of the new battery,check the appearance without problems before operation; avoid charging after the battery is completely exhausted, generally around **20%-40%** of the battery charge is appropriate.

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CHARGING PROCESS

Correct wiring: Connect the output end of the charger to the positive and negative terminals of the battery, pay attention to the corresponding color of the positive and negative terminals. Usually,red is the positive terminal and black is the negative terminal.

CONTROL CHARGING PARAMETERS:

- **Current:** the charging current should not be too large, generally not more than **1/3 or 1/10 of the rated capacity.**
- **Voltage:** Set according to the rated voltage and keep stable.
- **Time:** generally charge for 8 hours, float charge for 30-60 minutes after full charge; the first charge time may be longer, up to more than 10 hours.

Monitoring status: regularly check the voltage, internal resistance, temperature and other parameters of the battery, observe the working status of the charger and the battery. If the charger overheats, smoke, the battery heats up seriously, has an odor or bulges, stop charging immediately and check.

CHARGING ENVIRONMENT

• **Temperature:** The optimal working temperature is **between 15°C and 40°C**, the ideal charging environment temperature is about 25 °C, avoid charging in high temperature and low temperature environment, and charge in a warm place indoors in winter.

• **Humidity:** avoid charging in a humid environment to prevent the electrolyte inside the battery from being corroded

• **Ventilation:** Ensure good ventilation in the charging area to facilitate heat dissipation and prevent battery overheating.

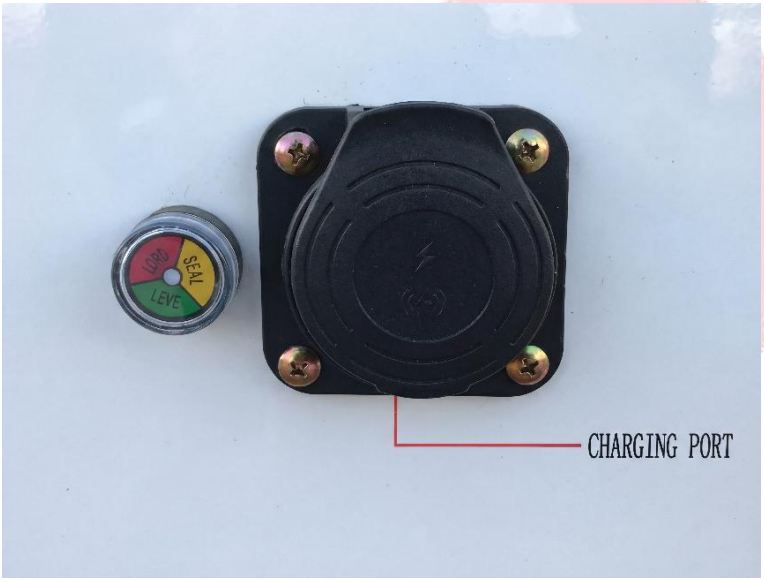
OTHER POINTS TO NOTE

• **Avoid bad charging habits:** avoid long time floating charge, overcharge, over discharge and excessive frequent charging, try to use fast charging less, no more than twice a month under non-essential circumstances.

• **Daily maintenance:** regularly check whether the battery case is damaged, whether the electrolyte is sufficient, whether the connection is firm frequently remove dust and dirt on the battery cover to keep it dry and clean; deep discharge every 1 to 2 months to activate the active substance.

• **Safety matters:** avoid fire and smoke when charging. do not use objects to cover the charger, do not soak the charger in water or rain; prevent short circuit of the wire, you can install a fuse or protect the circuit between the charger and the battery; when the plug is hot, remove the oxide or replace the plug in time.

• **Idle maintenance:** after a long time of not using, it should be fully charged and placed in a cool and dry place. It should be charged every half a month to two months.-Lithium battery: avoid complete discharge, long-term storage should maintain 50% of the charge



-CHARGING STEPS:

1. Turn off the power and pull out the key

2. Connect the charger to the vehicle socket

3. Connect the vehicle first, then plug in the power supply (to prevent arc)

4.2 Range optimization

-Economic mode: The speed limit is 15km/h to extend the range by 20%

-Avoid frequent acceleration/braking.

V.Maintenance table

| **Cycle** | Project | standard |

| **Daily** | Check tire pressure | 20-25PSI |

| **Monthly** | Brake pad thickness test | >3mm |

| **Every six months** | Gear box lubricant change | Gear oil |

| **Every year** | Whole vehicle line safety test | Insulation resistance>5MΩ |

VI.FAULT DIAGNOSIS AND EMERGENCY TREATMENT

6.1 Common problem

PROBLEM: THE VEHICLE SUDDENLY LOSES POWER

-Check if the battery connection terminals are loose.

PROBLEM: BRAKE NOISE

-Clean the sand and stones inside the brake drum.

-Contact our after-sales service to replace the brake pads.

6.2 Emergency rescue

-Release the parking brake and turn off the power when towing-Disconnect the battery negative terminal (red marked terminal) immediately after the accident.



6.3 Controller alarm

• **One long and one short sound:**

magnetic field over current. The fault may be caused by a short circuit between the rotor and stator during rotation, or too many short circuits between the stator and rotor to cause damage to the controller's magnetic field drive unit.

• **One long and two short sound:**

armature over current. The causes include rotor short circuit of the motor, short circuit of motor connection Al and A2, serious wear of carbon brush, or serious sparking of carbon brush resulting in damage to the controller rotor drive unit.

• **One long and three short sound:**

The alarm from the AC controller indicates an excessive current, such as in models like MC3526 and 3527 (excluding high-speed electric vehicle controllers). For example, if the alarm sounds when you turn the key to shift gears and press the accelerator, or when the car starts moving, or when it can run at high speeds even at low speeds, it may be due to a damaged controller; if the alarm sounds when you turn the key but do not operate the vehicle, it could be due to a burned motor or short circuit in the motor coil; if the alarm sounds after driving a few kilometers (and then stops for a few hours before starting again), it might be due to a minor short circuit in the motor coil.

. It could also be a hardware failure such as a power tube blowing up.

One long and four short sound:

The controller is overheated. If the controller is hot, check whether the ventilation and heat dissipation are normal; if the temperature of the controller is normal, it may be a fault in the controller itself, and it is recommended to repair or replace it.

· It may also be an accelerator failure, such as the accelerator position switch line and signal line reversed, the maximum acceleration signal exceeds 4.8V, the internal micro switch of the accelerator is bad, the negative power supply line of the accelerator is broken or disconnected.

• **One long and five short sound:**The relay is lost. The alarm is suddenly stopped during driving, which may be due to battery failure or poor contact of the main line; when the car stops, the alarm is good, but when the key is opened, it may be due to the main contactor sticking together. The reasons include the contactor contacts sticking together and being stuck without returning (the controller housing can be excluded by tapping lightly).

It also represents the loss of the main contactor. The fault causes include open circuit of the coil inside the contactor, poor connection of the S1 terminal of the controller, and failure of the main contactor drive unit of the controller.

· One long and six short: current detection fault, which may also be the main contactor loss fault.

• **One long and seven short sound:** Encoder fault. For example, if the vehicle cannot move and the controller triggers an over voltage protection alarm, it might be due to a damaged encoder, simply replace it. If the encoder is measured to be undamaged but still triggers an alarm, it could be because the controller is not providing 5V power to the encoder, or there is poor contact or short circuit in the encoder's wiring, or water ingress. When the vehicle experiences jolts on bumpy roads or passes over speed bumps and stops due to power loss, restarting with the key off usually resolves the issue; this could be due to poor contact in the encoder harness, or problems such as motor bearing damage or loose motor windings that interfere with the encoder signal.

• **One long and nine short sound:**

The voltage is too low. Measure the actual voltage. If the voltage is normal, it is a controller fault; otherwise, charge the battery.

It may also be that the voltage is too high. When the voltage is higher than 1.25 times the controller voltage, an alarm will be triggered. If the actual voltage is not high but the alarm is triggered, the controller is faulty.

One long and ten short: the voltage is too high, or the direction switch is faulty. The reasons for the direction switch fault include the damage of the direction switch, water in the terminal, short circuit of the forward and backward signal lines, etc.

Longing: high pedal fault (high pedal prohibited), that is, there is a problem between the accelerator pedal and the controller. The power supply of the accelerator pedal and related signal lines can be detected to determine the specific fault point.

Rooted in integrity, we achieve mutual success. We sincerely thank you again for your choice and trust.

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