OWNER'S MANUAL

EV GO-KART

990W LITHIUM TWO-SEATER

Coleman

POWERSPORTS

4120 E. Scyene Road, Mesquite, Texas 75181

CHAMPMOTO.COM

CAUTION

This Go-Kart was shipped without engine oil. Always fill with the correct amount and grade of engine oil as listed in the owner's manual.

⚠ WARNING

NEVER ATTEMPT TO START THIS GO-KART WITHOUT READING AND UNDERSTANDING THE OWNER'S / OPERATOR'S MANUAL. THE OWNER'S OPERATOR'S MANUAL PROVIDES INFORMATION ON SAFETY, PARTS, FUNCTIONS, PRE-RIDE INSPECTION, STARTING AND MAINTENANCE

Provincial/Municipal governments have different regulations pertaining to owning and operating an off-road vehicle, learn the regulations in your area.

4120 E. Scyene Road, Mesquite, Texas 75181
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Table of Contents

Section 1-3 Introduction, Purpose of Use, Safety Warnings

Introduction

Dear Customer,
Thank you for purchasing this Champion Motorsports Group product. The correct use and maintenance of the product are outlined in this manual. Following these instructions will ensure your long-term safety and worry-free use of the vehicle.

Purpose of use

This vehicle is designed for flat, smooth, and barrier free road surfaces. Can be used for driving on rural roads. Children under 13 should not drive this vehicle. Children 13 and older must have adult supervision while operating. This vehicle cannot be used on rough terrain.
The vehicle is equipped with an AC motor with a rated power of 5KW. The vehicle speed is changed by the voltage of the electronic accelerator pedal. The vehicle is equipped with disc brakes to apply service brakes.

Safety Warning

This manual contains important safety information and introductions, which must be carefully read before using the vehicle. For the safety of yourself and others, please follow these rules. Unsafe and careless use of the vehicle can result in serious personal injury, and the driver can minimize potential danger by securing it. Drivers and passengers should fasten their seat belts before driving. Avoid rough road surfaces and obstacles. Always keep both hands on the steering wheel while driving.
It is not recommended to drive this product on roads with a slope greater than 30 degrees. Children under the age of 13 are not suitable to drive this product.
The following symbols appear throughout this manual and on vehicle labels. Your safety is involved when these symbols are used; become familiar with their meanings before reading the manual.

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE indicates a potentially hazardous situation which, if not avoided, could result in property damage.

Section 1-3 Introduction, Purpose of Use, Safety Warnings cont'd

This manual contains important safety information and instructions that must be read carefully before using the vehicle. For your own safety and the safety of others, please follow these rules.

- Unsafe and careless use of the vehicle can lead to serious personal injury. Drivers can minimize potential hazards by wearing safety belts. Drivers and passengers should fasten their seat belts before driving. Avoid rough roads and obstacles. Always keep both hands on the wheel when driving.
- It is not recommended to drive this product on the road surface with a slope greater than 30 degrees.
- Children under the age of 13 are not suitable for driving this product.

Failure to comply with the warnings in this manual can result in severe injury or death.

Read this entire manual carefully before operating this vehicle. Do not attempt to operate this vehicle until you have thorough knowledge of the controls and features.

Regular inspections and maintenance, along with good operating techniques, will help ensure your safe enjoyment of the capabilities and reliability of this vehicle.

The manufacturer maintains the right to change the design of the vehicle without responsibility to make the changes to units purchased before changes were made. The information in this manual can change without notice.

All information in this owner's manual is based on the latest product information at the time of publication. Due to constant improvements in the design and quality of production components, some discrepancies may be found between your vehicle and the information presented in this publication. The content in this publication is intended for reference use only. The manufacturer is not liable for omissions or inaccuracies. Any reprinting or reuse of the content in this publication, whether whole or in part, is expressly prohibited.

Section 4 Safety Labels

OPERATIONS – AGE WARNING

Located on the floorboard.
Age restriction warning for vehicle.

OPERATIONS – GENERAL WARNING

Located on the floorboard.
General warnings for the operations of the go-kart. Serious injury or death can occur if you do not follow the instructions and procedures shown in this owner's manual.

OPERATIONS – TIRE PRESSURE

Located on the floorboard.
Important information concerning go-kart's tire pressure.

OPERATIONS – OVERLOAD

Located on the cargo rack.
Important information concerning loading capacity for cargo rack.

Section 4 Safety Labels cont'd

OPERATIONS – PINCH POINTS

Located near the rear belt guard. Important information concerning pinch points. Ignoring this warning can result in serious injury.

OPERATIONS – HEAT POINTS

Located near the rear belt guard. Important information concerning heat points. Ignoring this warning can result in serious injury.

OPERATIONS – HAIR CATCH POINTS

Located on floorboard. Important information concerning hair catch points. Ignoring this warning can result in serious injury or death.

OPERATIONS – SEATBELT

Located on floorboard. Important information regarding the use of seatbelts.

OPERATIONS – RIDER

Located on floorboard. Important information regarding rider / passenger that ride in the go-kart.

Section 4 Safety Labels cont'd

OPERATION - SAFETY

Located on rear frame.
Important information regarding additional safety information.

OPERATION - VOLTAGE

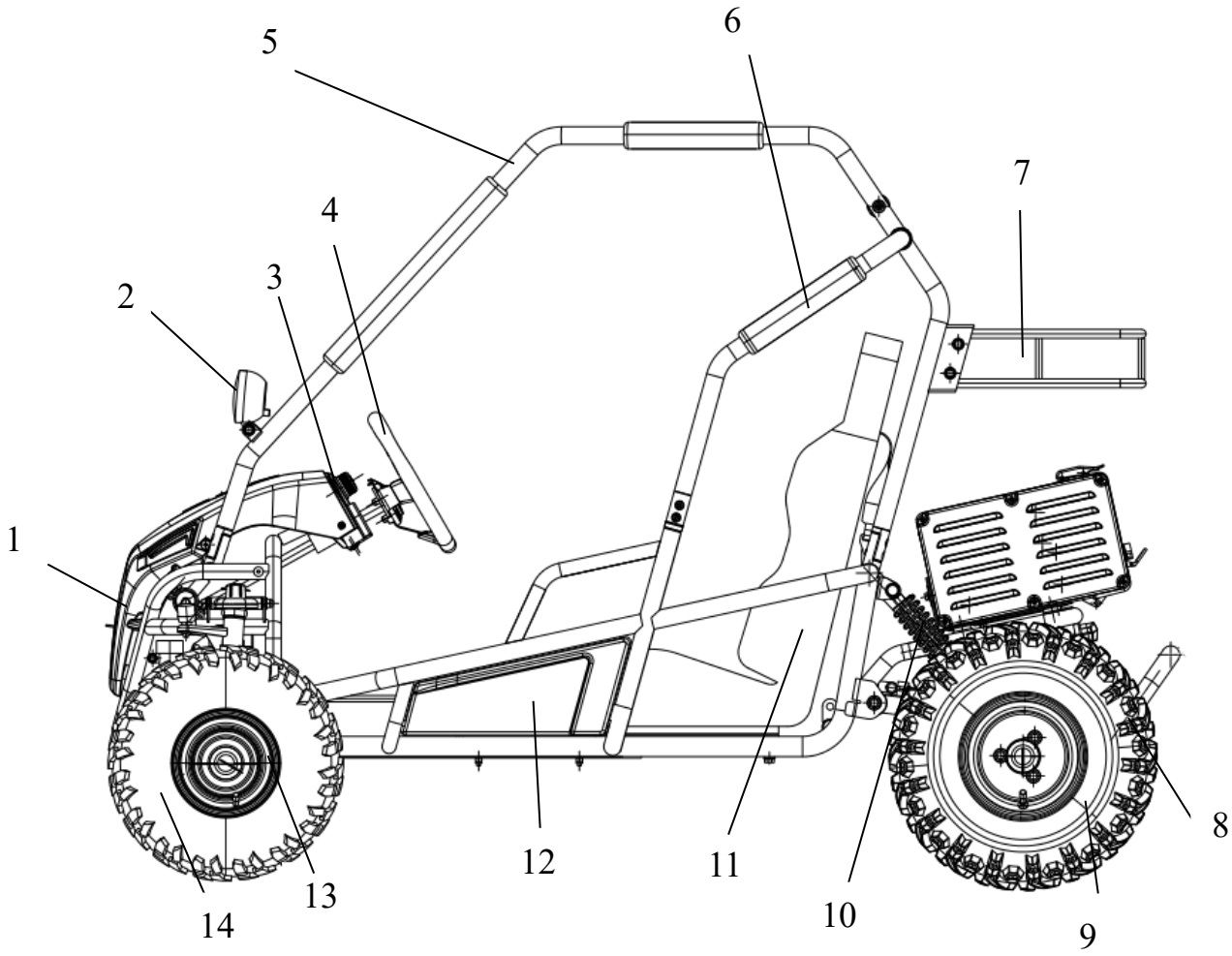
Located on rear frame.
Important information concerning electricity warnings.

Section 5 Technical specification

shift mode	automatic	gear	R-N-D-S
braking method	foot brake	load capacity (LBS)	275.6 lbs.
vehicle length	67.3 in.	front to rear wheelbase(L1)	49.6 in.
front wheelbase	39.4 in.	rear wheelbase	35.4 in.
vehicle width	44.5 in.	ground distance	4.7 in.
vehicle height	47.6 in.	seat height (H)	13 in.
vehicle unloaded weight	282.2 lbs.	steering wheel diameter	10.6 in.
gross weight	370.4 lbs.	turning radius	12.14 ft.
maximum speed (MPH)	D 15 MPH / S 21 MPH	shock absorption	front:8.5in±2/2 rear:8.1inmm±2/2
front wheel type	145/70-6	rear wheel type	18/9.5-8
braking method	foot brake/rear disc brake	braking distance	≤5M
rated total power of motor	990W/48V	ramp angle	≥12°
rated speed of motor	3000RPM	maximum total power of motor	2000W
start mode	electric	riding mode	sitting
battery specifications	lithium battery 48V/20AH	instrumentation and APP	LED

Section 6 Parts

5.1 Left view

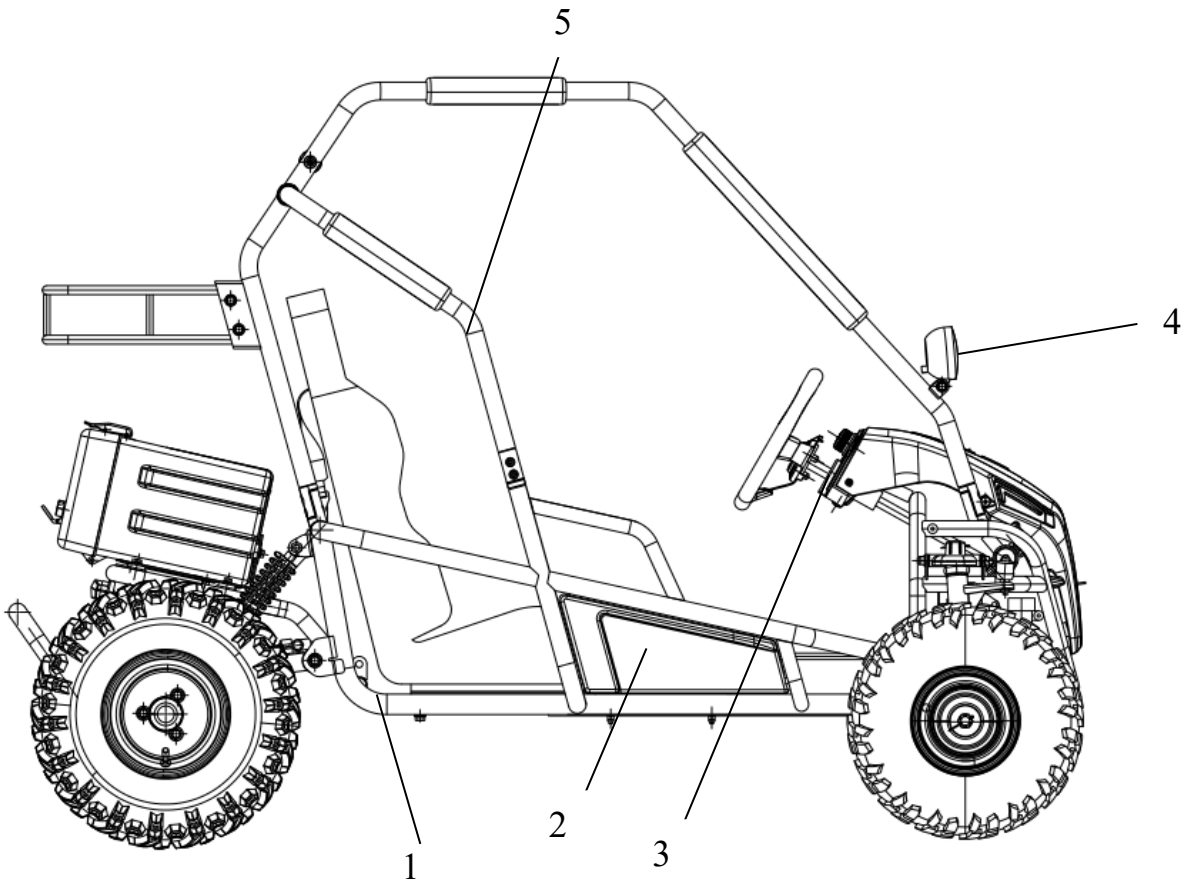


（Figure 1）

1. front panel 2. left running light 3. rotary gear switch 4. steering wheel 5. upper shed frame 6. left protective frame 7. rear shelf 8. rear tire 9. rear wheel hub 10. rear shock absorption 11. seat 12. left protective panel 13. front wheel hub 14. front tire

Section 6 Parts cont'd

5.2 right view

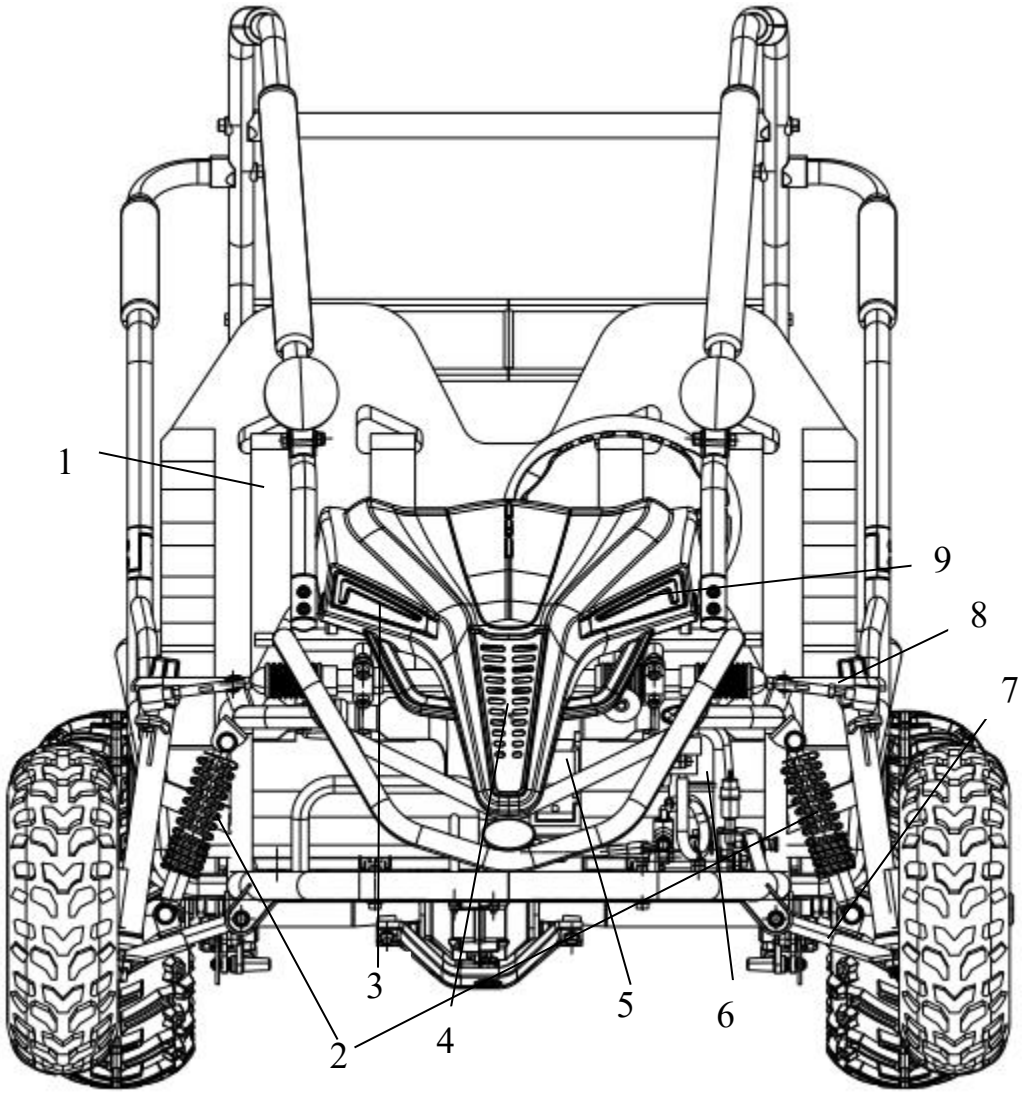


（Figure 2）

1. main frame 2. right protective panel 3. meter 4. right running light 5. right protective frame

Section 6 Parts cont'd

5.3 front view

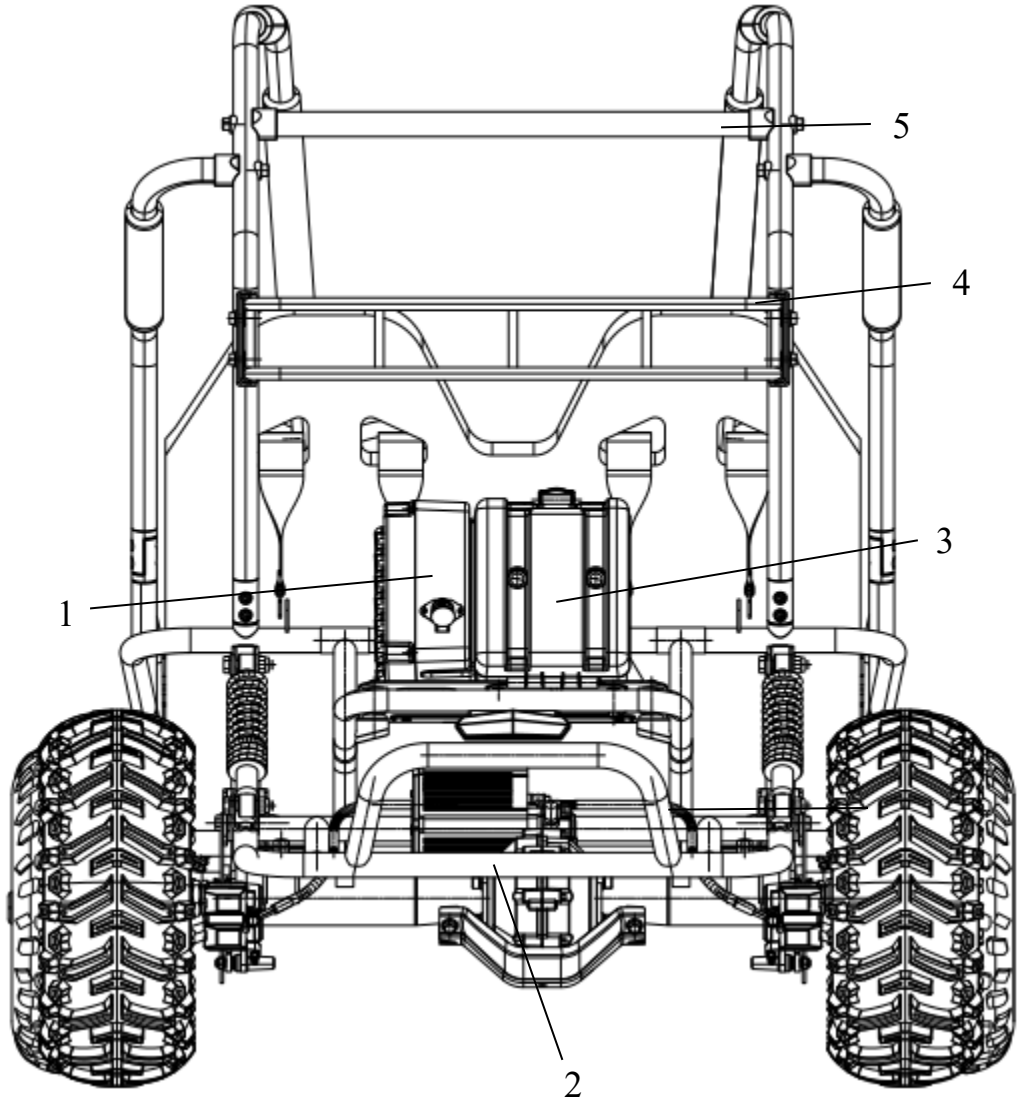


（Figure 3）

1.safety belt 2. front shock absorption 3. right daytime running light 4. front grille 5. accelerator pedal 6. brake pedal 7. lower rocker arm 8. upper rocker arm 9. left daytime running light

Section 6 Parts cont'd

5.4 rear view

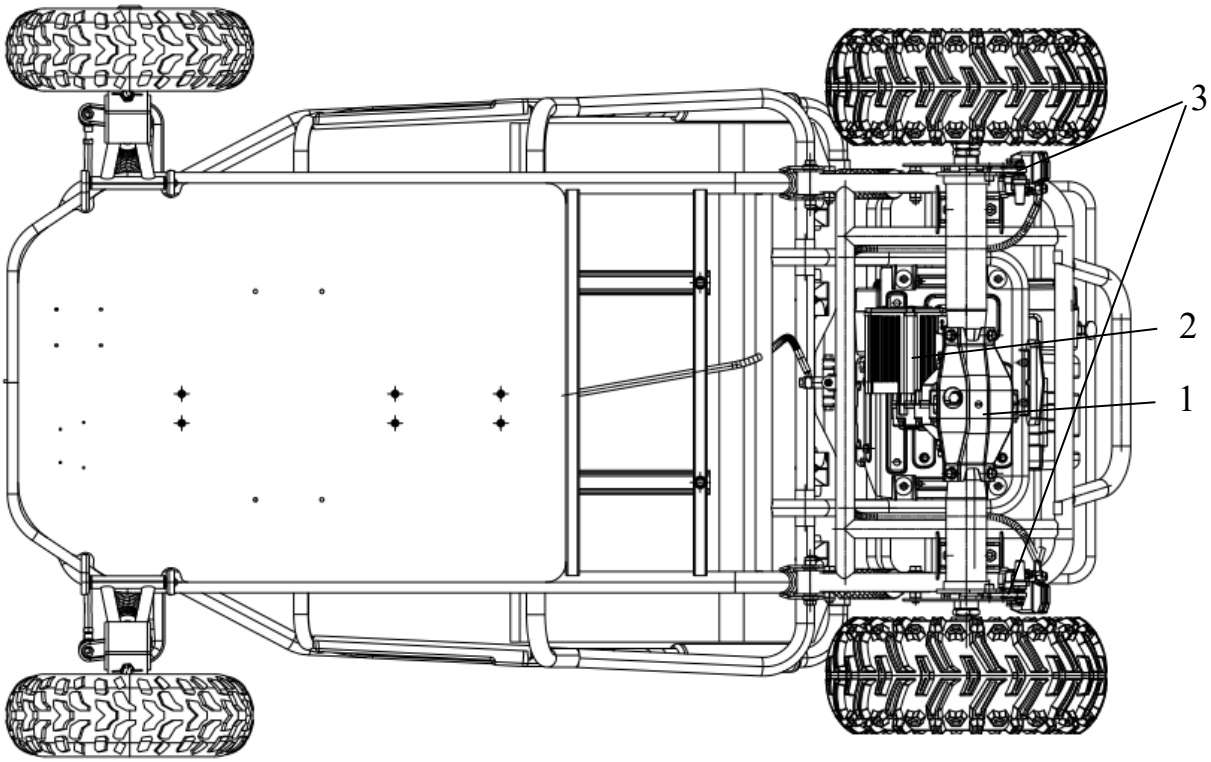


（Figure 4）

1. controller 2. rear fork 3. battery compartment 4. rear shelf 5. shed frame connecting pipe

Section 6 Parts cont’d

5.5 top view

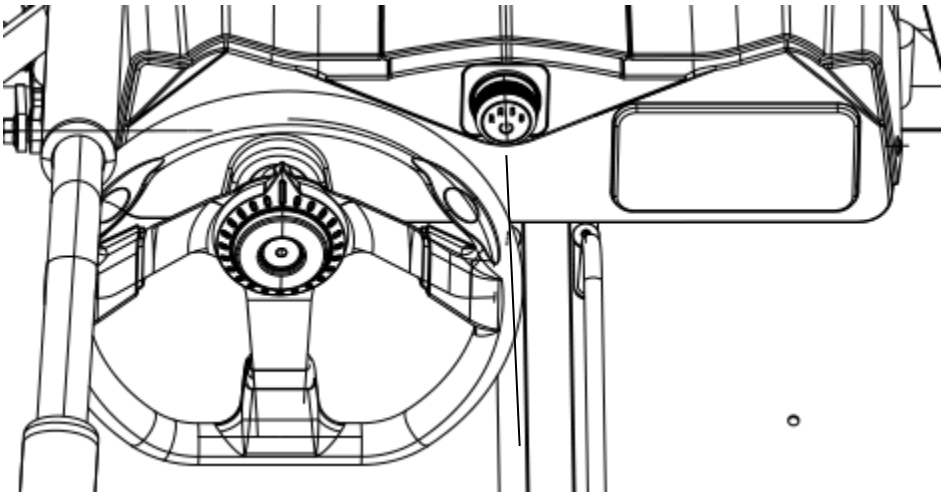


（Figure 5）

1. motor guard plate 2. motor 3. disc brake

Section 7 Part Functions and Usage

6.1 Rotary gear switch



gear switch

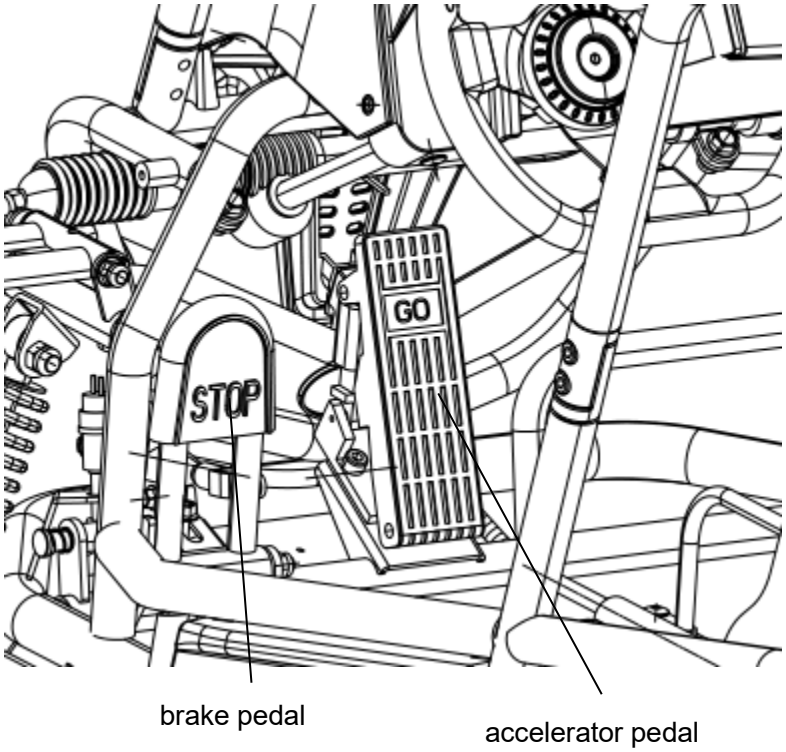
（Figure 6）

1.The gear switch will power ON / OFF the vehicle. The gear switch must be in the "N" position for the vehicle to start. Press and hold the gear switch to start the vehicle. The rotary gear switch lights up, the instrument panel lights up and the driver will turn the dial to shift gears; When the vehicle is stopped, turn the gear switch to "N" gear, then press and hold the gear switch to turn off the vehicle. The entire vehicle circuit will disconnect, and the vehicle is turned off.

2.The rotary gear switch of this cart adopts R-N-D-S shifting mode. Under normal conditions, the gear is in neutral position "N". When the gear switch is turned clockwise to point to “D”, the gear display is "D", and the vehicle is in slow forward gear; When the shift switch rotates clockwise towards “S”, the gear display shows "S", indicating that the vehicle is in high-speed forward gear; When the shift switch rotates counterclockwise towards “R”, the gear display shows "R", indicating that the vehicle is in reverse gear.

Section 7 Part Functions and Usage cont'd

6.2 Brake pedal and accelerator pedal



（Figure 7）

The brake pedal is used for braking. When braking is required during driving, the accelerator pedal "GO" must be released first, and then the brake pedal "STOP" must be pressed for effective braking. When the accelerator pedal is released, the vehicle will slow down on its own until it comes to a stop. When you need to drive, press the accelerator pedal and release the brake pedal so the vehicle can start normally.

⚠WARNING

Accidental movement of the accelerator pedal can cause the vehicle to suddenly move and cause severe injury or death.

NOTICE

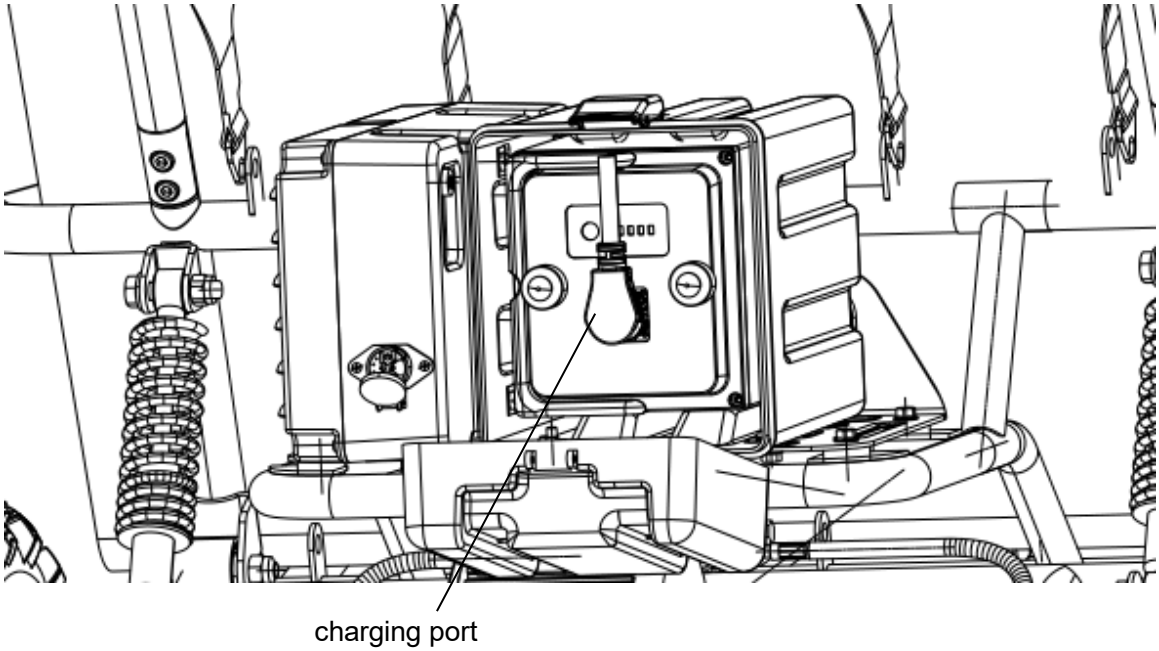
The speed of the motor is sensed and controlled by the controller.

⚠WARNING

The speed control system is not an alternative for the brake. Use the brake to control speed and decrease the risk of injury.

Section 7 Part Functions and Usage cont'd

6.3 Charging port charging operation



（Figure 8）

Charging instructions: Open the battery compartment cover, unplug the power plug, and you can insert the charging gun. Note: Before charging, you must first plug in the charging gun and connect it to AC power for charging. After charging is complete, you need to unplug the AC plug first and then unplug the charging gun. To avoid operational errors that may cause damage to the vehicle.

WARNING

The power AC cord has a plug with a ground post. Do not remove, cut or bend the ground post.

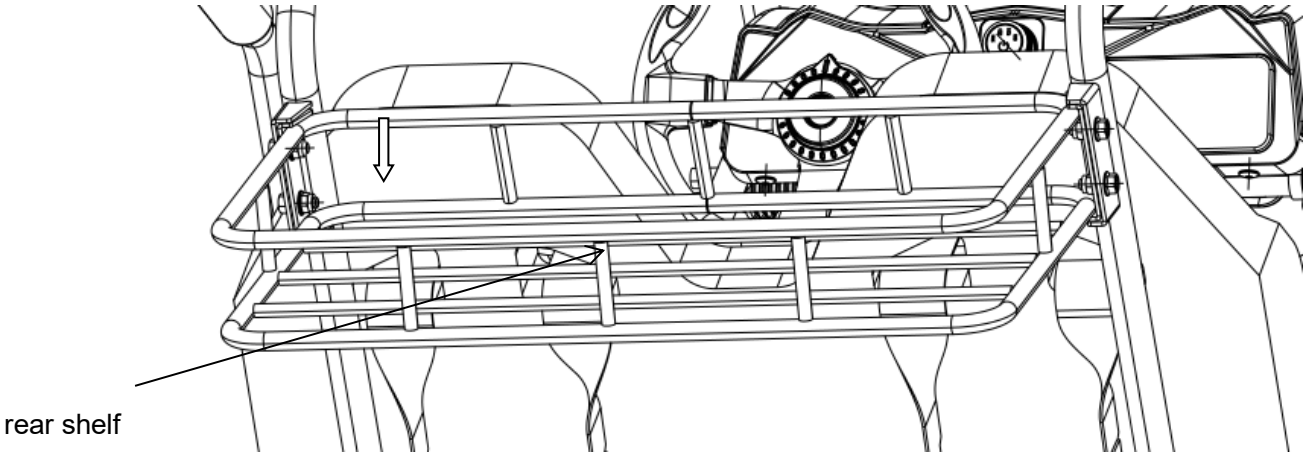
DANGER

Risk of electric shock. Connect the charger power cord to an outlet that is correctly installed and connected to an electric ground according to all codes and regulations. A grounded outlet is necessary to decrease the risk of electric shock – do not use ground adapters or replace the plug. Do not touch parts of output connector or battery terminals that do not have insulation.

Disconnect the AC plug before you make or break the connections to a battery that is charging. Do not open or disassemble the charger. Do not operate the charger if the AC cord is damaged. Make sure qualified personnel does all repair work to the charger.

Section 7 Part Functions and Usage cont'd

6.4 Rear shelf



（Figure 9）

6.5 Instrument Function Description

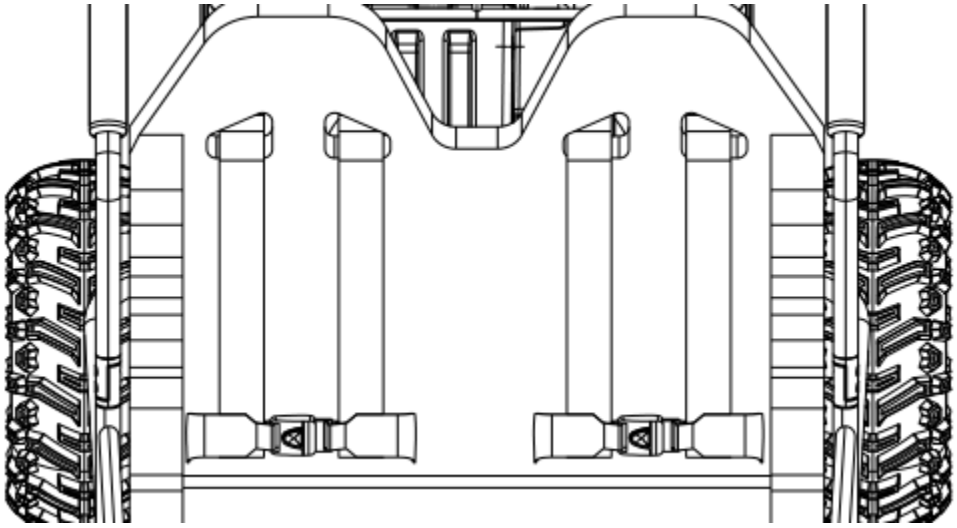
6.5.1 Main interface display

（Figure 10）

1. battery display bar 2. fault error display 3. gear display 4. vehicle speed dynamic display 5. battery level percentage display 6. preparation status display 7. speed unit display 8. total mileage and subtotal mileage display

Section 7 Part Functions and Usage cont'd

6.6 Safety belt



（Figure 11）

This car has a four-point seat belt.
Please fasten your seat belt before driving!

WARNING

Always fasten your seat belt, whether driver and/or passenger(s). Failure to do so could result in serious injury or death.

Section 8 Safe Driving

Failure to operate the vehicle correctly can result in a collision, loss of control, accident or rollover, and cause serious injury or death. Follow all operation procedures in this section of the manual. Read and comply with all safety warnings in the safety section of this owner's manual.

Pre-Ride Inspection

1) Inspecting and checking the condition of the go-kart before each ride is important. Following the pre-ride checklist (pg.17) will help ensure that you do not have mechanical problems which could result in injury or becoming stranded. Make sure the go-kart is in good operating condition before each ride.

2) Open the power lock and observe the battery display on the instrument panel. See if you can drive the mileage you need.

3) Before driving, lightly press the accelerator pedal first, then press the brake pedal to test if the brakes are effective.

Accidental movement of the accelerator pedal can cause the vehicle to suddenly move and cause severe injury or death.

4) Please fasten your seat belt before driving to ensure personal safety while the vehicle is in motion.

Always fasten your seat belt, whether driver and/or passenger(s). Failure to do so could result in serious injury or death.

Performing maintenance and checks while the motor is powered on could be hazardous. You could be severely injured by moving parts or hot surfaces.

Never perform maintenance or check procedures while the motor is running except for checking the rotary switch or throttle.

Section 8 Safe Driving cont'd

Pre-Ride Checklist

What to Check:	Check For:
Steering	• Smoothness • No restriction of movement
Brakes	• Correct fluid level • Inspect hoses for leaks • Inspect brake pads for wear
Tires	• Proper tire pressure • Proper tread depth • Rubber has no cracks
Battery	• Battery is fully charged • Battery compartment is clean and free of debris
Throttle Pedal	• Pedal snaps back to idle when released • Operates freely
Engine Rotary Switch	• Switch shuts off motor when activated • Gear shift is working properly
Engine Oil	• Correct oil level
Drive Chain	• Proper tension • Lubricated • No excessive wear or damage
General Condition	• All nuts and bolts are tight • No rattles from the motor or frame while running

⚠WARNING

Failing to inspect and maintain your Go-Kart could be hazardous. Not following the pre-ride inspection procedures could result in losing control of the Go-Kart resulting in an accident or damage to the Go-Kart. Always perform a pre-ride inspection before operating.

Section 8 Safe Driving cont'd

Operation steps

1) Set the gear switch to "N" and press and hold the gear switch to start the vehicle with one click.
2) Select the gear shift switch to the forward D or S/reverse R position and ensure that there are no obstacles on the road in the selected direction.
3) Step on the accelerator pedal gradually, and the kart will start. The lower the accelerator pedals, the higher the speed.
4) When parking, release the accelerator pedal and step on the brake pedal with the right foot. The kart slowly comes to a stop, and after the vehicle comes to a complete stop, place the gear shift switch in the N neutral position. When driving, select the direction and shift to the forward D or S/reverse R gear, press the accelerator pedal, and the kart will start.
5) Please make sure to turn off the vehicle's power before exiting the vehicle.

Operating this go-kart at excessive speeds could be hazardous.
Driving at excessive speeds increases your chances of losing control of the go-kart, which could result in severe injury or death.
Always go at a speed that is proper for the terrain, visibility, operating conditions, operator skill, and operator experience. Always know the terrain before operating.

Removing hands from the steering wheel and/or feet from the floorboard while operating the go-kart could be hazardous.
Removing both or one hand from the steering wheel and/or feet from the floorboard could result in loss of control of the go-kart resulting in severe injury or death.
Always operate with both hands on the steering wheel and both feet on the floorboard while operating the go-kart.

Applying the accelerator pedal to full throttle when starting off could be hazardous.
The go-kart could lurch forward causing the front wheels to leave the ground causing loss of control.
Always open the throttle gradually when starting off from a stopped position.

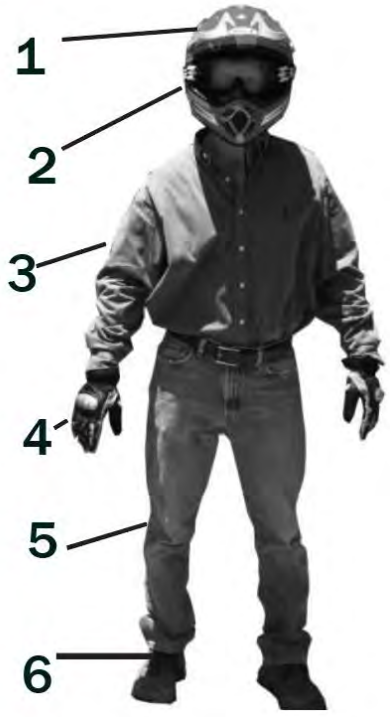
Section 8 Safe Driving cont'd

Helmet, Eye Protection, Protective Clothing

Always wear a DOT certified helmet (1). A helmet helps protect against serious head injuries in the event of an accident. A helmet is the most important safety gear item that you can wear. Consult with a motorcycle dealer for the correct size and type of helmet that is right for you.

Always wear eye protection when operating a go-kart such as a face shield or goggles (2). While operating a go-kart you can be hit in the eyes by any of the following: dust, branches, rocks, debris from other operators, bugs, etc. Good eye protection as well as a helmet and protective operating gear should be mandatory when operating a go-kart.

Wear protective clothing: long sleeve shirt (3), gloves (4), long pants (5), over the ankle boots (6). Operating a go-kart exposes the operator to many hazards, wearing protective clothing can help protect the operator from injury.



⚠WARNING

Operating a go-kart without a helmet increases the chance of severe head injury or death in the event of an accident.
Operating a go-kart without eye protection such as a face shield or goggles could result in severe injury in the event of an accident.
Operating a go-kart without protective clothing (closed toe shoes, long pants, gloves, long sleeve shirt) could result in severe injury in the event of an accident.
Always wear a helmet, eye protection, and protective clothing while operating a go-kart.

Section 8 Safe Driving cont'd

Driving note

⚠WARNING

Carrying more than one passenger on this go-kart could cause loss of control resulting in severe injury or death to the operator and/or passengers. This go-kart is designed for one operator and one passenger. Never allow more than one passenger.

1) Only individuals who have undergone learning and training are allowed to drive vehicles.
2) Before driving, ensure that all passengers are seated firmly and hold onto the handrails tightly. Passengers are not allowed to lean out of the vehicle while driving.

⚠WARNING

Riding in this go-kart without the seat belt harness worn and attached properly for both the operator and passenger could be hazardous.
Riding the go-kart without the seat belt harness worn by both the operator and passenger increases the chance of injury or death in the event of an accident.
Never operate or allow a passenger to ride in the go-kart without the seat belt harness worn and attached properly.

3) Slow down and drive carefully on slippery, crowded, or complex road sections.

⚠WARNING

Braking while turning could be hazardous.
Braking while turning could cause the go-kart to slide out of control or flip over which could result in severe injury or death.
Before making a turn, slow down and release the brake.

4) When driving on curves or slopes, pay attention to slowing down or braking, operate carefully, and avoid accidents.

⚠WARNING

Operating a go-kart on a hill could result in rolling over while traversing, flipping over backwards while climbing, flipping over while descending, or general loss of control of the go-kart. Any of these accidents on a hill could result in severe injury or death. Never operate a go-kart on steep hills.

Section 8 Safe Driving cont'd

5) As this vehicle is not designed for driving on highways, riders should not drive on highways, otherwise the consequences will be serious.

Operating on paved surfaces, including parking lots, driveways, streets, and highways can cause loss of control resulting in severe injury or death. Go-kart tires are designed for off-road use only, paved surfaces adversely affect handling and control.
Avoid operating the go-kart on paved surfaces. If you must cross a paved surface, go slow and do not make sudden turns or stops.

Operating this go-kart on any public road or highway could be hazardous. You could collide with another vehicle if you operate on public roads or highways resulting in severe injury or death. Never operate on public roads or highways.

6) As this vehicle is manufactured strictly according to the vehicle design standards, no modifications are allowed after leaving the factory, otherwise the consequences will be serious.
7) Overloading and driving are strictly prohibited.
8) It is strictly prohibited to drive this vehicle after drinking alcohol or taking stimulants or narcotics.
9) After use, go karts should be parked indoors because if left outdoors for a long time, rainwater (in rainy weather) will seep into the go kart, causing damage to electrical components and rusting of mechanical parts, reducing the service life of the go kart.
10) This go-kart is not suitable for working on long slopes with a gradient greater than 12% and a length greater than 165 feet for a long time (especially electric fixed flatbed trucks are only allowed to operate on flat roads), otherwise excessive working current may burn out the motor or electronic controller, seriously affecting driving safety.

Operating this go-kart in a irresponsible manner which includes jumping or other stunts could be hazardous.
Jumping or other stunts could result in loss of control of the go-kart resulting in severe injury or death.
Never attempt stunts, such as jumping.

Section 8 Safe Driving cont'd

Climbing a Hill

1) Stop and evaluate the hill before attempting to climb. Make sure the hill is not too steep; the terrain is not too loose or slippery and that there are no obstacles.
2) Approach the hill at a steady speed and maintain speed throughout the climb.
3) When approaching the top of the hill, slow down.

If it is determined that the go-kart will not make it to the top of the hill.

1) Do not try to turn the go-kart around while operating and come back down, this could cause the go-kart to roll over.
2) Slowly back the go-kart down the hill while applying the brakes.

Descending a Hill

To operate the go-kart going down a hill, follow the instructions below:

1) Stop and evaluate the hill before attempting to descend. Make sure the hill is not too steep; the terrain is not loose or slippery and that there are no obstacles.
2) Do not go down the hill on a sharp angle, this could cause the go-kart to flip over. Instead, go straight down the hill. Apply the brakes on the way down.

Traversing a hill could be hazardous.
Traversing a hill could result in losing control and flipping the go-kart over. This could result in severe injury or death.
Never attempt to traverse a hill that is too steep or has loose or slippery terrain.

Skidding or Sliding

In certain situations, you may experience skidding or sliding even though the brakes are not applied. Follow the operating techniques listed below to regain control.

1) Front wheel begins to slide or skid: to regain traction, let off the throttle, do not apply the brakes.
2) Rear wheels begin to slide or skid: to regain traction, let off the throttle and brakes until control of the go-kart is achieved, steer in the direction of the skid.

Skidding or sliding of the go-kart could be hazardous.
Skidding or sliding could result in the go-kart sliding into an object or overturning suddenly to regain traction resulting in severe injury or death.
Avoid skidding or sliding. Drive to stay in control.

Applying the brakes hard on slippery surfaces could be hazardous.
Applying the brakes too hard on a slippery surface can cause the wheels to lock up and the go-kart to slide out of control. The go-kart could turn over or slide into an object. This could result in severe injury or death.
Gently apply the brakes when on a slippery surface.

Section 8 Safe Driving cont'd

Operating Through Water

Operating through water can be hazardous, especially if it is fast moving. Make sure the water you are operating through is shallow and is not more than 5cm (2in.) deep. Before crossing any water look at the terrain entering and exiting the water, the terrain should have a gradual slope with no obstacles. The bottom of the river or pool of shallow water should be hard. If you do not know the terrain or are not sure about the bottom of the pool or river, do not attempt to enter. Remember to protect the environment, do not enter a river or pool of water if doing so could damage the river bank or shore line.

Brakes need to be inspected, cleaned and replaced more often if the go-kart is used in muddy, wet or sandy conditions. Inspect the go-kart brakes regularly, have a service center clean or replace as needed.

Operating this go-kart through fast or deep water could be hazardous.
Deep or fast-moving water could cause the go-kart to lose traction resulting in loss of control which could lead to severe injury or death.
Never operate this go-kart in water that is more than 4 in. (10cm) deep. Never operate this go-kart in fast moving water.
Always check brakes after operating through water, wet brakes can reduce stopping ability. Make sure brakes are dried out. The brakes can be dried out from friction by applying the brakes multiple times.

Parking

If the driver wants to stop the vehicle, they should first release the accelerator pedal, step on the brake pedal until it stops, and then long press the gear switch to turn off the vehicle. The gear switch will need to be in the "N" neutral gear.

Reminder: After using the go-cart, observe the battery level on the instrument panel. For the next convenient use, you can replenish the battery if the battery level is low. When parking the vehicle on a slope, the parking brake should be used.

Section 8 Safe Driving cont'd

Operating in Cold Weather – Pre-ride Inspection

1) Brake and throttle link ages - Cold weather requires additional pre-ride inspection of the go-kart before operating. Inspect brake and throttle linkages, making sure they operate freely and correctly. Ice and snow can cause these items to freeze. If the linkages are frozen, move the go-kart to a warm area until these items thaw and work properly.
2) Frozen tires – Check to make sure the go-kart tires are not frozen to the ground. If they are, pour warm water around the tires to release. Do not attempt to break the go-kart loose using motor power, this could damage the motor and drive train.
3) Brake inspection – Start the motor and allow to warm up. Check the braking ability of the go-kart by applying the brakes on level ground while traveling at a slow (walking rate) speed. Make sure the rear brakes work properly. If the rear brakes do not work, take the go-kart to a warm area to thaw out. Once brakes are thawed, check again for proper operation. If they still do not work, take the go-kart to an authorized service center. Do not attempt to operate the go-kart with brakes that do not work correctly.

Preventative maintenance in cold weather is important. After operating in cold weather with snow, slush, water or ice, dry off the go-kart including the brake and throttle linkages. Apply the brake several times making sure that the friction has dried off the brake pads and shoes. Cover the go-kart with a protective cover so ice and snow cannot accumulate.

⚠WARNING

Wet or frozen brakes will increase stopping distance which could result in loss of control which could result in severe injury or death.
Always inspect the brakes before each ride by following the procedures in this manual.

⚠CAUTION

Using motor power to release wheels that are frozen to the ground damage the go-kart.
Damage to motor and drive train may occur if attempting to use engine power to free frozen wheels.
Always make sure wheels move freely before starting the go-kart in cold weather.

Load Guidlines

Load guidelines including accessories – Never exceed the maximum load capability of the go-kart. This includes the weight of the operator and any cargo. This go-kart is rated at 400 lbs. The rear cargo rack is rated at 11 lbs.

Make sure all cargo is secure. Distribute the weight of cargo evenly and low so the center of gravity is not adversely affected. Do not add any accessory or cargo to the steering wheel that could impede the vision or make the go-kart harder to steer. Make sure accessories do not get in the way of any controls of the go-kart. Only carry cargo that is not bulky or too heavy. Make sure all cargo is held securely in place; loose cargo can become a hazard. While carrying cargo, go slow. Cargo can adversely affect handling at higher speeds. Allow plenty of distance to stop while carrying cargo. The more weight on the go-kart, the longer distance it will take to stop.

Section 8 Safe Driving cont'd

After Market Parts

After market parts and accessories are available from many manufacturers. Coleman Powersports cannot confirm the quality, safety or suitability of all the accessories available. When purchasing an accessory, use caution, the handling of the go-kart could become affected. Some accessories may make the go-kart unsafe to operate. If you have a question about a modification or accessory, contact your dealer or call Coleman Powersports.

Modifications to the go-kart, including adding accessories, could adversely affect the handling of the go-kart causing an accident which could result in severe injury or death.

Never modify this go-kart in any way, including adding accessories, unless the modification is a genuine certified modification or accessory approved by the manufacture. Never modify the go-kart with improper installation. Make sure to follow all instructions recommended in the certified modification. Use only genuine parts. For questions, contact your dealer.

Section 9 Precautions During Vehicle Operation

If you follow our recommendations during the first 60 miles, it can extend its service life and improve economic benefits.

1) Avoid sudden acceleration when starting the vehicle.
2) Avoid frequently stepping on the accelerator pedal.
3) Avoid pressing the accelerator pedal to the lowest position.
4) Regularly check whether the lithium battery connection wires, electronic control and motor connections, and fastening bolts are loose. If they are loose, they should be tightened immediately.
5) Excessive charging and discharging of lithium batteries is not allowed as it will shorten the battery's lifespan.
6) During the first 300 miles of the vehicle, check the airtightness of the steering system, front suspension, and wheel nuts.

Vehicle maintenance records

All vehicles must be regularly maintained and recorded to improve their lifespan, reduce costs, increase driving pleasure, and ensure safety.

Preventive maintenance

1) The maintenance area should be clean, safe, ventilated, and equipped with fire extinguisher(s).
2) When you perform maintenance, you need to turn off the power while in the parking brake state; When repairing motors, motor controllers, and high-voltage power lines, it is necessary to remove the positive battery power supply connection line to ensure that the main circuit is disconnected and avoid short circuits.
3) Do not get under the vehicle when it is lifted or lowered.

Battery Maintenance

1). Do not place flammable materials such as paper, clothing, etc. on or near the motor controller because of the heat generated by the motor controller.
2). Avoid having liquids around the motor controller. Motor controller should be kept dry.
3). Check the wiring connection of the motor controller every month and tighten it on time if it is loose.
4). When the motor is replaced and reconnected, the armature and motor end should not be incorrectly connected, otherwise the motor controller will be damaged.
5). When the battery is charged, the go-kart power should be turned off and taken away to ensure that the charging circuit and motor controller are powered off.

Improper handling of batteries and electrical components can result in serious injury or death.

Do not remove battery pack cover. Do not use the battery pack without the control module installed. All battery and electrical service must be performed by an authorized service facility.

All tools used in or around the battery pack area should be insulated. Do not intentionally cause a short to the power terminal (P+, P-, B+,B-) with a metallic object.

Section 9 Precautions During Vehicle Operation cont'd

⚠WARNING

Do not use the vehicle or charge the battery pack if the battery pack has become abnormally hot, is discolored, deformed, leaking or has an odd odor. If liquid from the battery pack leaks onto skin or clothes, wash well immediately with fresh, running water. If liquid gets into the eyes do not rub the eyes. Wash the eyes with fresh, running water and seek medical assistance immediately.

Do not cut, tear or remove the seal tape. Do not disassemble or modify the design, including the electrical circuit, of the battery pack or control module.

To prevent the risk of battery explosion, keep all flammable materials, open flames or sparks away from the batteries. Do not leave the battery pack near a fire or heat source. Do not throw Lithium-Ion batteries into a fire. Do not apply heat to any part of the battery pack or battery management module with a soldering iron. Do not place the battery pack in a microwave oven, dryer or high-pressure container.

Make sure that the power is OFF before you start to work on the vehicle.

Do not attempt to operate the vehicle or charge the battery pack at temperatures above 140°F (60°C).

Do not immerse or throw the battery pack in water. Do not pressure wash the battery pack.

Do not puncture the battery pack or control module. Do not strike the battery pack with a hammer or heavy weight. Do not step or stand on the battery pack. Do not throw or drop the battery pack on hard surfaces.

If the battery pack terminals are contaminated or dirty, clean them with a dry cloth before using the battery pack.

Section 9 Precautions During Vehicle Operation cont'd

Battery Maintenance

1)The charger should be placed in a safe working environment, free of dust, corrosive gas, rain and temperature not higher than 104°F.
2)Firmly insert the plug of the charger and the battery bank according to the polarity, and then connect the input power of the charger to charge the battery. Do NOT use an extension cord with the charger.

⚠WARNING ***The use of an extension cord with the charger could start a fire that results in property damage, personal injury or death.***

3) Do not use an adapter to plug the charger with a three-prong plug into a two-prong outlet. Improper connection of the equipment-grounding conductor can result in a fire or an electrical shock.
4) Place all cords so they will not be stepped on, tripped over, or otherwise subjected to damage or stress.
5) Good ventilation should be maintained during charging to avoid explosion caused by hydrogen accumulation.
6) When maintaining batteries, use tools with insulated handles to prevent battery short circuit and personal injury.

NOTICE ***Do not spray the battery module with water. Do not attempt to add water to the battery module.***

To reduce the risk of electric shock, the battery charger must be grounded. The charger is equipped with an AC electric cord having an equipment-grounding conductor and a grounding type plug. The AC plug must be connected to an appropriate receptable that is properly installed and grounded in accordance with the National Electrical Code and all local codes and ordinances.

⚠WARNING ***Never allow a lithium battery to drop below 10% state of charge or the battery will go into protection mode requiring the battery to be sent back to the factory for a reset and recharge to restore the battery to working order at owner's expense.***

⚠CAUTION ***The battery charger provided with this vehicle is approved for use only with the battery type originally shipped with the vehicle. Using a different battery type (different brand, different capacity, etc.) can cause under or overcharging and subsequent battery damage unless the charger is first reprogrammed with a new charging algorithm.***

Section 9 Precautions During Vehicle Operation cont'd

Battery Disposal

NOTICE

When Li-ion batteries are put into a municipal / household recycling bin, they are taken to a municipal recovery facility (MRF) that is typically equipped to recycle only household paper, plastic, metal and glass. At an MRF, Li-ion batteries may be damaged or crushed during processing and can become a fire hazard.

The chasing arrow symbol on Li-ion batteries means they are recyclable at specialized battery recyclers; it does NOT mean Li-ion batteries can be put in the municipal / household recycling bin.

⚠WARNING

Do not dispose of Li-ion batteries in household or shop garbage / recycling bins. They can cause fires during transport or at landfills and recyclers.

Before recycling or shipping battery pack, make sure that the battery pack terminals are insulated.

Always recycle Lithium-ion batteries:

- ***Contact the distributor or manufacturer for information on returning or recycling used or damaged battery packs.***
- ***Contact local or state environmental department for disposal information.***

Section 10 Common Fault Analysis & Troubleshooting

10.1 Determination of mechanical faults

Fault phenomenon	Reason	Processing method
Uneven tire wear	Low tire	Inflate to the recommended air pressure value
	Incorrect front wheel toe in	Adjust the front wheel toe in
Abnormal noise from drive motor	Drive motor bearing wear	Replace bearings
Inability to turn	Water ingress into the steering gear housing or solidification of lubricating oil	Clean the shell, replace the gasket, and inject an appropriate amount of lubricating oil
	Each motion hinge loses lubricating oil	Supplement lubricating oil for each motion hinge
	Rack deformation	Check the straightness of the rack, adjust and reinstall it
The steering wheel swings, shakes or vibrates	Uneven tire inflation pressure	Adjust tire inflation pressure
	Wheel swing	Repair or replace
	Loose wheel hub nut	Tighten the nut
	Wear or damage to wheel bearings	Replace
Brake deviation	Uneven tire inflation pressure	Adjust tire inflation pressure
	Uneven braking force of the wheels	Adjust the brake shoes
Insufficient braking force	Severe wear of brake shoes	Replace the brake shoe
	Poor contact between brake shoe and brake hub	Adjust clearances, repair worn areas, and improve contact
	Brake shoes have oil or water stains	Clean up
Anti drag braking function failure	Controller damaged	Check the controller and replace the relevant parts

Section 10 Common Fault Analysis & Troubleshooting cont'd

10.2 Determination of electrical faults

Fault phenomenon	Reason	Processing method
When the vehicle is moving, it stops	Circuit overcurrent or overheating protection system activated	Check and exclude whether the PSPK board has been opened, and whether it has been transported or climbed for a long time
The vehicle stops as soon as it starts	Low battery	Lithium battery charging
	Drive motor malfunction	Inspection and maintenance
The vehicle cannot be driven	Lithium battery is dead	Test the battery level, Recharge
	Loose wiring of lithium battery	Tighten the connecting nut
	The acceleration microswitch is damaged	Replace the micro switch
	Contactor damaged	Repair or replace the contactor
	Drive motor malfunction	Check the faulty area, repair or replace parts
Lithium batteries cannot be charged	The charger is damaged	Check for charger faults, repair or replace parts
	Loose or detached connecting wires	Check and tighten the installation nut
	Lithium battery damage	Replace lithium battery
	Charging voltage too low	Adjust the charging voltage
	Excessive discharge of lithium batteries results in complete depletion of power	Activate the battery with a blind charger and then use the car charger to charge or replace the battery
Unstable vehicle speed	Accelerator damage	Replace accelerator

Section 11 Fault Information

11.1 Fault indication

When the go-kart malfunctions and cannot operate normally, the fault indicator light on the instrument panel will be illuminated. When the "1" light is illuminated, it indicates that the controller has malfunctioned; When the "2" light is illuminated, it indicates that the battery has malfunctioned. At this point, the dynamic display of vehicle speed will also become a fault code.

11.2 Alarm level definition

Fault code display rules	
MCU	The letter M or K before the fault code represents the MCU fault code
BMS	The letter B before the fault code represents the BMS fault code
MCU BMS	1. BMS Level 1 malfunction M135 2. SOC Low fault code M170 3. BMS Level 2 malfunction M134 4. Alarm M176 5. Communication malfunction M101

Section 11 Fault Information cont'd

11.2 Fault indication

Fault identification: （LED indicator light）

state		LED Display information description
red light	green light	
off	off	System is not powered on
off	always on	System power on self-test or factory reset
off	breathing flicker	The system is running normally
flicker	flicker	system failure Fault code=Number of green light flashes×10+number of red-light flashes **Example:** *Fault code24: In unit time green light flashes 2 times, red light flashes 4 times*

11.3 Alarm level definition

- level **1: The** main circuit breaker is disconnected, the motor is prohibited from working, and the motor command (accelerator) is invalid.
- level **2:** The motor is prohibited from working, and the motor command (accelerator) has failed
- level **3:** Battery pack undervoltage, limiting the maximum motor speed
- level **5: Limit** the maximum output torque of the motor.
- level **6: Limit** the maximum speed of the motor.
- level **15:** Power output port overcurrent fault, the output of the faulty port is prohibited
- level **20:** Warning.

Section 11 Fault Information cont'd

11.4 Overview of fault codes

Fault codes		Fault level	Fault name	notes
Hexadecimal	Decimal			
1	1	1	Bus voltage too high	
2	2	1	Battery pack voltage too low	
3	3	20	Startup condition error	
4	4	20	The maintenance time has reached	
5	5	1	flash error	
6	6	1	Bus voltage too low	
7	7	20	Bus voltage too high, limiting brake current output	
8	8	1	Drive overcurrent	
B	11	1	Main contactor adhesion fault	
C	12	3	The battery pack capacity is too low	
D	13	5	The temperature of the traction motor is too high	
F	15	1	Traction motor current loss	
11	17	1	Contactor control coil overcurrent	
14	20	5	Drive temperature too high	
1B	27	1	Drive overcurrent	
25	37	1	Controller 5V output too low	
26	38	1	Controller 12V output too low	
27	39	2	Motor stall (locked rotor)	
28	40	15	DRIVE1 Output overcurrent	
29	41	15	DRIVE2 Output overcurrent	
2A	42	15	DRIVE3 Output overcurrent	
2B	43	15	DRIVE4 Output overcurrent	
2C	44	15	DRIVE5 Output overcurrent	
2D	45	15	DRIVE6 Output overcurrent	

Section 11 Fault Information cont'd

2E	46	15	DRIVE7Output overcurrent	
2F	47	2	Electromagnetic brake control coil open circuit fault	
30	48	6	Mechanical failure of electromagnetic brake	
31	49	1	Charging connection	
3D	61	2	The temperature of the traction motor is too high	
3E	62	2	Simultaneously activate the directional switch	
3F	63	20	Interlock switch not activated	
40	64	20	Startup sequence error	
42	66	2	Drive unit temperature too high	
47	71	2	Drive unit temperature sensor malfunction	
4A	74	1	Traction motor encoder malfunction	
53	83	1	Flash memory without parameters	
54	84	1	Flash data exceeds the limit	
55	85	20	Vehicle startup sequence error	
57	87	1	System parameters do not match firmware version	
58	88	1	System parameters do not match firmware type	
59	89	1	System parameters do not match firmware part number	
5B	91	6	Turning angle sensor error	
5C	92	2	Accelerator error	
5F	95	2	Short circuit fault of traction motor temperature sensor	
61	97	2	Traction motor temperature sensor open circuit fault	
62	98	1	Pre charging failed	
64	100	2	External instrument communication failure	
65	101	6	CAN bus communication failure	

Section 11 Fault Information cont'd

11.5 Fault description and Solution

Bus overvoltage protection

- Fault code:1
- Fault level:1
- Fault reason: Through internal measurement of the control unit, it was found that the bus voltage exceeded the maximum allowable threshold.
- Solution:
    1. Check if the connection cables between the battery pack and the electronic control system are well connected.
    2. Check if the battery voltage level is normal.
    3. Ensure the overvoltage threshold is reasonable
    4. Replace the controller.

Battery undervoltage fault

- Fault code:2
- Fault level:1
- Fault reason: Through internal measurement of the control unit, it was found that the battery pack voltage is lower than the set minimum allowable threshold.
- Solution:
    1. Detecting battery pack voltage
    2. Check if the battery pack wiring is incorrect and if the positive and negative electrode connectors are severely corroded.
    3. Check the battery pack status: If the battery electrolyte is partially depleted, it may trigger the controller's undervoltage protection fault
    4. Ensure the overvoltage threshold is reasonable
    5. Replace the controller.

Section 11 Fault Information cont'd

The accelerator pedal has been depressed before starting

- Fault code:3
- Fault level:20
- Fault reason: Before the LOCK signal is activated, the accelerator has already been activated
- Solution:
    1. Release the accelerator pedal
    2. Check the numerical setting of the accelerator pedal calibration to see if the minimum and maximum voltage values of the accelerator pedal are accurate. If they are not accurate, recalibrate by using the upper computer monitoring software or instrument for setting.
    3. Check the accelerator connection
    4. Replace accelerator
    5. Replace the controller.

The normal maintenance cycle has arrived

- Fault code:4
- Fault level:20
- Fault reason: The maintenance cycle has arrived
- Solution:
    1. Reassign the maintenance timer in the controller through FJ monitoring software or instruments
    2. Turn off this function (no maintenance prompt required), restart the electronic control

Section 11 Fault Information cont'd

Flash memory fault alarm

- Fault code:5
- Fault level:1
- Fault reason: The controller is unable to read or write data from the flash memory
- Solution:
- Replace the controller

Bus low voltage alarm

- Fault code:6
- Fault level:1
- Fault reason: Through internal measurement of the control unit, it was found that the bus voltage is lower than the set minimum allowable threshold.
- Solution:
    1. Check if the main circuit breaker is functioning properly.
    2. Check the wiring harness of the main circuit breaker coil connection
    3. Check if the main fuse is intact.
    4. Is the voltage level of the battery pack normal
    5. Determine the reasonable undervoltage threshold
    6. Replace the controller.

Overvoltage current limiting activation

- Fault code:7
- Fault level:20
- Fault reason: Bus voltage exceeds the set value, starting to limit output current
- Solution:
    1. Check if the battery connection is good
    2. Do the parameters related to the battery pack match

Section 11 Fault Information cont'd

Controller output overcurrent

- Fault code:8
- Fault level:1
- Fault reason: The output current of the controller exceeds the limit value.
- Solution:
    1. Check if there is a short circuit in the UVW three-phase cable connection between the drive module and the motor (if there is a short circuit between the three-phase cables or between a certain phase cable and the forklift frame), and check if there is a burnt smell in the motor coil.
    2. Disconnect the UVW cable connection of the power module and use a multimeter to check if the resistance value between the+/- B terminal and the UVW terminal of the module is symmetrical. If one phase's resistance value deviates significantly from the other phases, it can be determined that the controller has been burned out and needs to be replaced.

Main circuit breaker adhesive connection

- Fault code:11
- Fault level:1
- Fault reason: When the system is powered on, the voltage of the pre charged capacitor cannot be released.
- Solution:
    1. Replace the main circuit breaker.
    2. Replace the controller.

Low voltage alarm of battery pack

- Fault code:12
- Fault level:3
- Fault reason: The battery pack voltage is below the minimum discharge threshold.
- Solution:
    1. Monitor the voltage of the battery pack, stop working, and charge the battery pack
    2. Are the parameters related to the battery pack set accurately

Section 11 Fault Information cont'd

Motor high temperature alarm

- Fault code:13
- Fault level:**5**
- Fault reason: The measured temperature of the motor exceeds the temperature value set by the user for the "traction motor over temperature protection point".
- Solution:

Firstly, check if the connection between the motor temperature sensor and the main wire harness is normal

If the fault occurs when the motor is not hot:

1. Use a handheld multimeter and place it in resistance measurement mode to measure the resistance value between the two wires of the motor temperature sensor. Compare it with the true value meter of the motor temperature sensor. If the measured value does not match the actual temperature of the motor, replace the temperature sensor.
2. Replace control unit.

If the fault occurs when the motor is very hot:

1. If the temperature value read from the monitoring software or instrument on the upper computer matches the actual temperature of the motor, check whether the motor casing is clean and whether the motor heat dissipation is normal.
2. Check whether the motor is working properly, whether there is brake lock or other abnormal conditions.

During the self-test of the system, the motor phase current is not 0

- Fault code:15
- Fault level:1
- Fault reason: When the system is turned on, the current phase of the driving motor is not zero.
- Solution:
  1. Check if the insulation between the system battery and motor is good.
  2. Replace the controller.

Section 11 Fault Information cont'd

Main contactor coil overcurrent protection

- Fault code:17
- Fault level:1
- Fault reason: The current of the main contactor coil is too high, exceeding the operating range
- Solution:
    1. Check if there is a short circuit between the control coil of the main contactor and the wiring harness.
    2. Check if the resistance of the control coil of the main contactor is within the normal range.
    3. Replace control unit.

Controller power unit overheating

- Fault code:20
- Fault level:5
- Fault reason: The temperature of the power unit exceeds 176°F.
- Solution:
    1. This fault may be caused by insufficient heat dissipation. Check the heat dissipation between the control unit and the aluminum plate, as well as between the aluminum plate and the frame. A uniform and appropriate amount of thermal grease between the module and the aluminum plate, and between the aluminum plate and the frame, is a necessary guarantee for effective heat dissipation. Note: The temperature of the motor power module can be read through any upper computer software or instrument.
    2. If the heat dissipation measures of the above modules are all good, then it is necessary to check whether the drive motor is working properly. Motors that are not working properly can cause overheating of the power module; Next, consider replacing the power module.
    3. Replace the controller.

Section 11 Fault Information cont'd

Controller output current exceeds the limit value

- Fault code:27
- Fault level:1
- Fault reason: The output current of the controller exceeds the set threshold.
- Solution:
    1. Reasonably set the threshold.
    2. Check if there is a short circuit in the UVW three-phase cable connection between the drive module and the motor (if there is a short circuit between the three-phase cables or between a certain phase cable and the forklift frame), and check if there is a burnt smell in the motor coil.
    3. Disconnect the UVW cable connection of the power module and use a multimeter to check if the resistance value between the+/- B terminal and the UVW terminal of the module is symmetrical. If one phase's resistance value deviates significantly from the other phases, it can be determined that the power module has been burned out and needs to be replaced.
    4. Replace the controller

Control unit 5V voltage output fault

- Fault code:37
- Fault level:1
- Fault reason: The 5V output voltage of the control unit is lower than 4.3V.
- Solution:

1. Check if the 5V output is grounded and verify if the wiring of each motor encoder is correct.
2. Exclude external devices using the 5V output of the control unit one by one.
3. Replace control unit.

Section 11 Fault Information cont'd

Control unit 12V voltage output fault

- Fault code:38
- Fault level:1
- Fault reason: The voltage of K1-17 connector (12V output) of the control unit is lower than 10.5V.
- Solution:
    1. Check if the 12V output is grounded, which may usually be caused by wiring errors in the following devices:
        - ✧ Accelerator pedal
        - ✧ Raising sensor
        - ✧ Steering sensor
        - ✧ Instrument
    2. Exclude external components using the 12V output of the control unit one by one.
    3. Replace control unit.

Motor stall fault

- Fault code:39
- Fault level:6
- Fault reason: The motor has a rotation command, but the actual speed is 0
- Solution:
    1. Check if the motor encoder is functioning properly.
    2. Is the driving current setting reasonable and meets the requirements of the operating conditions.
    3. Actual working conditions (climbing slope) exceed the vehicle design value.

Section 11 Fault Information cont'd

Controller power port（Drive1~Drive7）output overcurrent

- Fault code:40~46（corresponding **Drive1~Drive7**）
- Fault level:15
- Fault reason: Through internal measurement of the control unit, it was found that the output current of **Drive1~Drive7** ports exceeded the threshold.
- Solution:
  1. Check if the connection load of Drive**1~Drive7** ports is too high
  2. Check if there is a short circuit in the wiring harness connecting the **Drive1~Drive7** ports
  3. Replace control unit.

Electromagnetic brake control coil disconnection fault

- Fault code:47
- Fault level:2
- Fault reason: Internal detection of controller, electromagnetic brake control coil disconnected
- Solution:
  1. Check if the resistance value of the broken wire in the control coil of the electromagnetic brake is reasonable.
  2. Replace the electromagnetic brake.
  3. Ensure that the controller drivers output port is correct.
  4. Replace the controller.

Section 11 Fault Information cont'd

Mechanical failure of electromagnetic brake

- Fault code:48
- Fault level:6
- Fault reason: The electromagnetic brake has been released, and the controller has detected that the motor is still running at a certain speed
- Solution:
    1. Check the matching of electromagnetic drive type and vehicle load.
    2. Check the wiring harness of the control coil corresponding to the electromagnetic driver.
    3. Replace the controller.

No charging allowed

- Fault code:49
- Fault level:1
- Fault reason: Charger connection, vehicle limited movement
- Solution: Warning

Direction and reverse motor speed commands are activated simultaneously

- Fault code:62
- Fault level:2
- Fault reason: The controller receives a motor speed command from the ECU that is not 0, but currently, both the forward direction and the given direction are activated.
- Solution:
    1. Check the direction switch.
    2. Check the wiring harness.

Section 11 Fault Information cont'd

Shutdown due to high motor temperature

- Fault code:61
- Fault level:1
- Fault reason: The measured temperature of the motor exceeds the maximum temperature allowed by the user's settings.
- Solution:

  Firstly, check if the connection between the motor temperature sensor and the main wire harness is normal.

If the fault occurs when the motor is not hot:

1. Use a handheld multimeter and place it in resistance measurement mode to measure the resistance value between the two wires of the motor temperature sensor. Compare it with the true value meter of the motor temperature sensor. If the measured value does not match the actual temperature of the motor, replace the temperature sensor.
2. Replace the controller.

If the fault occurs when the motor is very hot:

1. If the temperature value read from the monitoring software or instrument on the upper computer matches the actual temperature of the motor, check whether the motor casing is clean and whether the motor heat dissipation is normal.
2. Check whether the motor is working properly, whether there is brake lock or other abnormal conditions.

The LOCK switch is not closed during startup

- Fault code:63
- Fault level: Warning
- Fault reason: When the system is powered on, the LOCK switch is not closed; Or after the main circuit breaker is closed, the LOCK switch opens for more than the time set by the parameter "LOCK switch delay".
- Solution:

1. Check if the switch and connecting harness are functioning properly.
2. Replace the controller.

Section 11 Fault Information cont'd

Startup condition error

- Fault code:64
- Fault level: Warning
- Fault reason: When starting or the LOCK signal is activated, the forward/reverse switch is already activated.
- Solution:
    1. Release direction switch.
    2. If the direction switch is not activated, check whether the direction switch connection terminal is correctly connected to the main wire harness connection terminal. Auxiliary detection can be carried out through the monitoring software of the upper computer.
    3. Replace the direction switch.
    4. Replace the controller.

Power unit overheating shutdown

- Fault code:66
- Fault level:1
- Fault reason: The temperature of the power module of the drive motor has exceeded 95℃.
- Solution:

1. This fault may be caused by insufficient heat dissipation. Check the heat dissipation between the power module and the aluminum plate, as well as between the aluminum plate and the frame. A uniform and appropriate amount of thermal grease between the module and the aluminum plate, and between the aluminum plate and the frame, is a necessary guarantee for effective heat dissipation. Note: The temperature of the motor power module can be read through any upper computer software or instrument.
2. If the heat dissipation measures of the above modules are all good, then it is necessary to check whether the motor is working properly. Motors that are not working properly can cause overheating of the power module; Next, consider replacing the power module.
3. Replace the controller.

Section 11 Fault Information cont'd

Power unit temperature sensor malfunction

- Fault code:71
- Fault level:2
- Fault reason: The feedback voltage value of the power unit temperature sensor exceeds the normal range, which may result in a short circuit or open circuit
- Solution:

  Replace control unit.

Motor encoder malfunction

- Fault code:74
- Fault level:1
- Fault reason: During the operation of the motor, the encoder (A or B) channel signal is lost.
- Solution:
  1. Check if the encoder is connected correctly.
  2. If the wiring is correct and well connected, replace the encoder.
  3. Replace control unit.

Flash memory without parameters

- Fault code:83
- Fault level:1
- Fault reason: No default parameters in flash memory.
- Solution:
  1. Reset the controller and power on again.
  2. Replace the controller

Section 11 Fault Information cont'd

Parameter exceeds the limit

- Fault code:84
- Fault level:1
- Fault reason: The parameter values read from the flash memory exceed the normal limit range.
- Solution:
    1. Reset the controller and power on again.
    2. Replace the controller

Wrong driving start sequence

- Fault code:85
- Fault level:20
- Fault reason: When the direction switch is activated, the accelerator is already activated
- Solution:
    1. Release accelerator.
    2. Check if the accelerator connection harness is correct.

The firmware does not match the current default parameter version

- Fault code:87
- Fault level:1
- Fault reason: The firmware does not match the default parameter version (old or new version) of the system.
- Solution:
    1. Confirm the firmware version corresponding to the current default parameters and load the correct firmware or E2 file.

The firmware does not match the current default parameter type

- Fault code:88
- Fault level:1
- Fault reason: The firmware does not match the default parameter type of the system (not in the same application field).
- Solution:
    1. Confirm the type of firmware corresponding to the current default parameters and load the correct firmware or E2 file.

Section 11 Fault Information cont'd

The firmware does not match the current default parameter number

- Fault code:89
- Fault level:1
- Fault reason: The firmware does not match the default parameter part number of the system.
- Solution:
    1. Confirm the part number corresponding to the firmware and current default parameters, and load the correct firmware or E2 file

Steering sensor malfunction

- Fault code:91
- Fault level:6
- Fault reason: The feedback voltage of the steering sensor exceeds the calibration range.
- Solution:
    1. Check if the wiring of the steering sensor is correct:
    2. If there are no issues with the wiring, recalibrate the clockwise, intermediate, and counterclockwise values of the steering sensor.
    3. Replace the steering sensor and recalibrate it.
    4. Replace control unit.

Pedal accelerator malfunction

- Fault code:92
- Fault level:2
- Fault reason: When the feedback voltage value of the accelerator pedal is greater than half of the entire stroke, the switch signal is still not activated.
- Solution:
    1. Check the numerical setting of the "accelerator pedal calibration" to see if the minimum and maximum voltage values of the accelerator pedal are accurately set. If they are not accurate, recalibrate them using the upper computer monitoring software.
    2. Replace the accelerator pedal.
    3. Replace the controller.

Section 11 Fault Information cont'd

Motor temperature sensor short circuit fault

- Fault code:95
- Fault level:5
- Fault reason: The feedback resistance of the motor temperature sensor exceeds the normal range and approaches 0.
- Solution:
    1. Check if the temperature sensor of the drive motor and the wiring of the main harness are normal.
    2. Replace the temperature sensor of the drive motor.
    3. Replace the controller.

Motor temperature sensor open circuit fault

- Fault code:97
- Fault level:5
- Fault reason: The feedback resistance of the temperature sensor of the driving motor exceeds the normal range and approaches infinity.
- Solution:
    1. Check if the temperature sensor of the drive motor and the wiring of the main harness are normal.
    2. Replace the temperature sensor of the drive motor.
    3. Replace the controller.

Bus capacitor pre charging failed

- Fault code:98
- Fault level:1
- Fault reason: During the power on self-test process, the voltage of the pre charged capacitor increases too slowly.
- Solution:
    1. Confirm that the +B and - B connections are good.
    2. Replace the controller.

Section 11 Fault Information cont'd

External instrument communication timeout

- Fault code:100
- Fault level:1
- Fault reason: The controller did not receive external instrument data within the agreed time (configurable).
- Solution:
    1. Check the wiring harness and check if the CAN bus connection is good
    2. Determine if the external instrument status is normal
    3.Replace the controller.

Section 12 Lithium Battery Faults (FJ Communication Protocol)

Level 1 malfunction

Fault name	Code	Handling measures	Note
Serious overheating alarm	1	Alarm, Report the fault level and send the fault code 01. The discharge current has a power limit of 0 and follows the high-voltage discharge process; Disconnect all relays; UL 95 degrees C	UL/95℃/Power off after 10S
Severe discharge overcurrent	2	Alarm, Report the fault level and send the fault code 04; The discharge current has a power limit of 0 and follows the high-voltage discharge process; Disconnect all relays;	Reserved/Level 1 600A greater than 10S, power off the ring protection board/Level 2 overcurrent 800A/1S
The individual voltage is severely too low	3	Alarm, Report the fault level and send the fault code 06; The discharge current has a power limit of 0 and follows the high-voltage discharge process; Disconnect all relays;	The single unit is severely too low at 2.4V/without power interruption, Remind passengers to pull over to the side of the road
Low SOC	4	Alarm, Report the fault level and send a fault code of 13; Discharge current shall be executed according to SOP power limit meter	1%，Controller slows down and stops

Level 2 malfunction

Fault name	Code	Handling measures	Note
High temperature alarm	21	Alarm; Report the fault level and send a fault code of 21. Discharge current shall be executed according to SOP power limit meter	Temperature 75 degrees/warning
Low temperature alarm	22	BMS Report, motor power limit to 50%	
Low individual voltage	24	Alarm；Report the fault level and send a fault code of 22. The discharge current shall be executed according to the SOP power limit meter	
Current overcurrent	25	Alarm；Report the fault level and send a fault code of 25; Discharge current shall be executed at 50% according to the SOP power limit meter	270A，30S
BMS Internal communication malfunction	26	Alarm；Report the fault level and send fault code 26;	

SOC is 5% lower	27	Alarm；Report the fault level and send a fault code of 27; Discharge current executed according to SOP power limit meter%	Controller prompt
Large battery pressure difference	28	Alarm；Report the fault level and send a fault code of 28; The discharge current shall be executed at 50% according to the SOP power limit meter	
Large temperature difference in battery	29	Alarm; Report the fault level and send a fault code of 29. Discharge current shall be executed at 60% according to the SOP power limit meter	
Low total discharge voltage	31	Report the fault level and send a fault code of 31; Discharge current shall be executed according to 20% of the SOP power limit meter	
Charging overcurrent	32	Alarm；Report the fault level and send a fault code of 32; Simultaneously reducing the charging current to 8A	
Feedback overcurrent	33	Alarm；Report the fault level and send a fault code of 33; Feedback current shall be executed at 10% of the power limit meter according to SOP	
Temperature sensing cable fall off	37	Alarm, Report the fault level and send a fault code of 37	
Total voltage ultra-low	37	Report the fault level and send the fault code 03; The discharge current has a power limit of 0 and follows the high-voltage discharge process; Disconnect all relays	
Low temperature discharge	38	Alarm，Report the fault level and send the fault code 08; The discharge current shall be executed according to the SOP power limit meter, and the high-voltage discharge process shall be followed; Disconnect all relays	
Discharge cell pressure difference	39	Alarm；Report the fault level and send a fault code of 10; Discharge current shall be executed at 10% according to SOP power limit meter	
Charging overcurrent	40	Alarm, Report the fault level and send a fault code of 11; Reduce the charging current to 0A, power off according to the charging process diagram, and disconnect all relays	

Feedback overcurrent	41	Alarm；Report the fault level and send a fault code of 12; No feedback allowed, constantly high voltage relay	Level down two, Feedback current limit 100A

Feedback current greater than 150A

Level 3 malfunction

Fault name	Code	Handling measures	
Low SOC	61	Alarm；Report the fault level and send fault code 61; Discharge current shall be executed according to SOP power limit meter	10%
The battery pressure difference is relatively large	62	Alarm；Report the fault level and send a fault code of 62; Discharge current shall be executed at 70% according to the SOP power limit meter	
The battery temperature difference is large	63	Alarm；Report the fault level and send a fault code of 63	
Pre charging failed	72	Alarm, Report the fault level and send a fault code of 72; Follow the discharge/charging process and disconnect all relays	
High temperature discharge	73	Alarm；Fault level reporting, send fault code 73	
Low temperature discharge	74	Alarm；Report the fault level, send fault code 74, and execute the discharge current according to the SOP power limit meter	
Charging at high temperature	75	Alarm; Report the fault level and send a fault code of 75	
Charging at low temperature	76	Alarm；Report the fault level and send a fault code of 76	
Low discharge cell	78	Alarm；Report the fault level and send a fault code of 78; Discharge current shall be executed at 50% according to the SOP power limit meter	
Low total discharge voltage	80	Report the fault level and send a fault code of 80; Discharge current shall be executed at 50% according to the SOP power limit meter	

Charging overcurrent	81	Alarm；Report the fault level and send fault code 81; Simultaneously reducing the charging current to 16A	
Continuous discharge overcurrent	82	Alarm；Report the fault level and send fault code 82; Discharge current shall be executed at 80% of the power limit meter according to SOP	250A，60S
Feedback overcurrent	83	Alarm；Report the fault level and send a fault code of 83; Feedback current shall be executed at 50% according to the SOP power limit meter	Over 110A
Voltage cable detachment	89	Alarm，Report the fault level and send fault code 89; Under driving conditions, the discharge current limit is 0; In the charging state, the charging power limit is 0, and charging is stopped; Follow the discharge/charging process and disconnect all relays	
Low charging unit	90	Alarm，Report the fault level and send a fault code of 90; Power off according to the charging process diagram and disconnect all relays	
Heating malfunction	91	Alarm，Report the fault level and send the fault code 91; Follow the discharge/charging process and disconnect all relays	
The temperature sensing cable is detached	92	Alarm，Report the fault level and send a fault code of 37; The discharge current is limited to 0 according to SOP, and the charging current is limited to 0; Follow the discharge/charging process and disconnect all relays	
BMS Internal communication malfunction	93	Alarm，Report the fault level and send fault code 26; Under driving conditions, the discharge current limit is 0; In the charging state, the charging power limit is 0. Follow the discharge/charging power-off process and disconnect all relays	
Discharge temperature difference	94	Alarm；Report the fault level and send a fault code of 9; The discharge current has a power limit of 0	

Charging machine temperature fault	94	BMS request the charger to stop charging, the instrument displays a fault code	
Charging machine battery connection failure	96	BMS request the charger to stop charging, the instrument displays a fault code	
Total voltage is excessively high	97	Alarm，Report the fault level and send the fault code 02; Prohibit discharge and feedback, follow the high-voltage discharge process; Disconnect all relays	Downgraded to level 3 Notify not to charge/controller not to reverse charge Less than 60V

Section 13 Manufacture Warranty

Limited Warranty

90-DAY

THE WARRANTY

Champion Motorsports Group offers the following warranty to the initial purchaser of this new COLEMAN POWERSPORTS product. The initial purchaser is defined as the first person to purchase a new COLEMAN POWERSPORTS product from an Authorized Retailer.

The limited warranty period for this product is **90 DAYS** from the date of the purchase as shown on the original sales receipt.

WHAT IS A DEFECT?

The Product is warranted to be free from manufacture defects in material and workmanship for a period **90 DAYS** from the date of purchase shown on the sales receipt. During this period of time Champion Motorsports Group will, at its option, either repair, refund the purchase amount, or replace any original Coleman Powersports unit/part which is covered by this warranty that is proven to be defective in workmanship or material.

TO QUALIFY FOR THIS WARRANTY THE PRODUCT:

1. Must have been purchased from Champion Motorsports Group or from an Authorized Coleman Powersports Retailer.
2. Must not have been used in a manner inconsistent with the intended use of the vehicle such as competition or used in a manner not consistent with the intended use for the vehicle which would also include rental or commercial use.

WHO CAN PERFORM REPAIRS UNDER THIS WARRANTY?

Repairs under this warranty should be performed by an Authorized COLEMAN POWERSPORTS Retailer or comparable servicing dealer.

HOW TO GET SERVICE UNDER THIS WARRANTY

To get warranty service, call Champion Motorsports Group at 888-405-8725 for the location of your local service retailer/dealer. Please do not return the product to the retailer where the product was purchased unless instructed to do so by Champion Motorsports Group. The retailer of this product does not make any warranty on behalf of Champion Motorsports Group without the approval of Champion Motorsports Group. **A COPY OF YOUR VEHICLE SALES RECEIPT IS REQUIRED FOR WARRANTY SERVICE.**

Section 13 Manufacture Warranty cont'd

WHAT THIS WARRANTY DOES NOT COVER

This warranty does not cover the following:

1. Damage to lack or improper maintenance as described in this manual.
2. Damage which is caused by normal use and not caused by a defect in materials or workmanship.
3. Use of the product which is not consistent with the intended use as described in the operating instructions.
4. Any expendable maintenance items which need replacement or service as normal maintenance requires unless these normal maintenance items become defective prior to their normal life due to a material defect or a defect in workmanship.
5. Any product which has been altered or modified in a manner not consistent with the original design of the product or in a manner not approved by Champion Motorsports Group.
6. Wear and tear or other maintenance components are not included in the warranty. This includes but not limited to: tires, clutches, belts, rubber tools, & batteries.
7. Damage or failures due to abuse, neglect, or misuse of the product.

LIMITATIONS OF THIS WARRANTY

This warranty does not cover, and Champion Motorsports Group disclaims any responsibility for:

1. Loss of time or loss of use of the product.
2. Transportation costs to and from the authorized center.
3. Other loss or damage to other equipment or personal items.

LENGTH OF IMPLIED WARRANTIES

Any implied warranties are limited to the duration set forth in this warranty. Champion Motorsports Group does not make any claim as to the merchantability or fitness for a particular purpose which would extend longer than the duration of this written warranty.

Check your State Laws, as some State Laws do not allow limitations as to the duration of an implied warranty. Some States may also not allow limitation or exclusions based on incidental or consequential damages.