



OWNER'S MANUAL

Liberty

ELiTE
LITHIUM

10026113-F

 **WARNING**

Read and comply with all of the instructions and safety precautions in this manual and on all product labels. Failure to follow the safety precautions could result in serious injury or death.

California Proposition 65

 **WARNING**

Operating, servicing and maintaining a passenger vehicle or off-road vehicle can expose you to chemicals including phthalates and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, wear gloves and wash your hands frequently when servicing your vehicle.

For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

 **WARNING**

Never modify the vehicle in any way that will alter the weight distribution of the vehicle, decrease its stability or increase the speed beyond the manufacturer's specifications. Such modifications can cause serious personal injury or death. The manufacturer prohibits and disclaims responsibility for any such modifications or any other alteration which would adversely affect the safety of the vehicle.

OWNER'S MANUAL

ELECTRIC VEHICLE **Liberty ELiTE**

MODEL YEAR 2022 - Current

MANUFACTURER INFORMATION

Textron Specialized Vehicles, Inc.

1451 Marvin Griffin Road

Augusta, Georgia, USA 30906-3852

1-800-774-3946 Technical Assistance & Warranty

1-888-438-3946 Service Parts

011-706-798-4311 International

www.ezgo.com

WELCOME

Thank you for purchasing this vehicle. Before driving your new vehicle, read this owner's manual to familiarize yourself with safe driving practices, operation, features and controls.

This manual contains instructions for minor maintenance only. Information about major repairs can be found in the repair manual. Your dealer has thorough knowledge of your vehicle and wants your total satisfaction with your purchase. We recommend you return to your dealership for all of your service needs during, and after the warranty period.

Repair or replacement parts can be purchased from your dealer or through the manufacturer's parts and accessories department.

CAUTION

Certain replacement parts can be used independently or in combination with other accessories to modify an EZGO-manufactured vehicle to permit the vehicle to operate at or in excess of 20 mph (32 kph). When an EZGO-manufactured vehicle is modified in any way by the distributor, dealer or customer to operate at or in excess of 20 mph (32 kph) on public roadways, UNDER FEDERAL LAW, the modified product will be a Low Speed Vehicle (LSV) subject to the strictures and requirements of Federal Motor Vehicle Safety Standard 571.500. In these instances, pursuant to federal law, the distributor or dealer MUST equip the product with headlights, rear lights, turn signals, seat belts, top, horn and all other modifications for LSVs mandated in FMVSS 571.500. A Vehicle Identification Number (VIN) must be affixed to the product in accordance with the requirements of FMVSS 571.565. Pursuant to FMVSS 571.500, and in accordance with the state laws applicable in the place of sale and use of the product, the distributor, dealer or customer modifying the vehicle also will be the Final Vehicle Manufacturer for the LSV, and required to title or register the vehicle as mandated by state law.

EZGO will NOT approve distributor, dealer or customer modifications that convert EZGO products into LSVs.

The company recommends that all EZGO products sold as personal transportation vehicles BE OPERATED ONLY BY PERSONS WITH A VALID DRIVER'S LICENSE, AND IN ACCORDANCE WITH APPLICABLE STATE REQUIREMENTS. This restriction is important for the SAFE USE AND OPERATION of the product. All customers should adhere to this SAFETY RESTRICTION in connection with the use of all EZGO products, new and used.

Information on FMVSS 571.500 can be found in Title 49, U.S. Department of Transportation Code of Federal Regulations.

These are original instructions as defined by 2006/42/EC.

The manufacturer maintains the right to change the design of the vehicle without responsibility to make the changes on 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.

Printed in USA

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INTRODUCTION

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 a hazardous situation that, if not avoided, will result in death or serious injury.



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



CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.



The **PROHIBITION SAFETY SIGN** indicates an action **NOT** to take in order to avoid a hazard.



The **MANDATORY ACTION SIGN** indicates an action that **NEEDS** to be taken to avoid a hazard.



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



WARNING 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.



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

This vehicle was designed and manufactured in the United States of America (USA). The standards and specifications in the following information originate in the USA unless otherwise indicated.

MANUFACTURER'S INTENDED USE

This vehicle is designed and manufactured for off road use only. Use on public streets, roads, or highways is illegal in most areas and increases the risk of an accident involving other vehicles and people. This vehicle does not meet FMVSS (Federal Motor Vehicle Safety Standards) for public street, road, or highway use.

Check all laws and regulations before choosing an area to operate your vehicle.

As manufactured, this vehicle meets or exceeds ANSI/OPEI Z-135 Personal Transport Vehicles and SAE J2258 Light Utility Vehicles standards, and its top speed is set at 19.5 mph (31 kph). In the factory configuration, it is intended to be used on designated roadways, or within closed communities where permitted by law or by regulatory authority rules.

This vehicle has been designed so that certain authorized service professionals are capable of setting the vehicle's maximum level-ground speed to 25 mph (40 kph). When the maximum speed is set between 20 and 25 mph (32 to 40 kph), it complies with the requirements of SAE J2258 (so long as no other changes or modifications have been made to the vehicle), but does not meet ANSI/OPEI Z-135. In any configuration where the maximum speed exceeds 20 mph (32 kph), it is only permitted to be used off-road, on private property, or on private roadways where allowed. This vehicle does not meet State or Federal LSV (Low Speed Vehicle) requirements and cannot be used on public roadways of any kind when the maximum speed setting exceeds 20 mph (32 kph).

WARRANTY AND REGISTRATION

A vehicle warranty statement is included with the purchase of a new vehicle.

Register your new vehicle at www.ezgo.com.

Use Original Equipment Manufacturer (OEM) approved parts to keep the vehicle warranty effective.

Tampering with or adjusting the governor to allow the vehicle to operate above factory specifications will void the vehicle warranty.

All information, including coverage, limitations, exclusions and how to obtain warranty service is included in the literature package with the purchase of the vehicle. It can also be obtained from your dealer.

INTRODUCTION

BATTERY PROLONGED STORAGE

NOTICE: Improper storage may damage, destroy or cause permanent loss of battery capacity. Do not exceed storage time or temperature limits. Batteries must be charged to the correct level before storage. Storing fully depleted batteries will make them permanently unusable.

Storage Preparation

The optimum storage temperature range is between 65°F and 82°F (18°C and 28°C)

- Charge the battery module based on climate during storage period.
 - In cold climates, fully charge the battery module. Make sure that the charging operation is complete and there are no faults displayed on the charger. The green light on the charger should be on, indicating the charge cycle is complete.
 - In hot climates, store the vehicle with a 30% to 50% charge of battery pack capacity.
- Turn the key to the OFF position and remove it from the key switch.
- Check the run - tow switch under the seat, make sure it is set in the TOW/STORAGE position.
- Turn off all accessories.

The storage time for properly charged Lithium-Ion batteries supplied with this vehicle varies based on the ambient temperature.

Temperature	Length of Storage Time
-22°F to -4°F (-30°C to -20°C)	One month at 100% battery charge, all accessories turned off.
-4°F to 113°F (-20°C to 45°C)	Six months at 100% battery charge, all accessories turned off.
113°F to 140°F (45°C to 60°C)	One month at 30% - 50% charge, all accessories turned off.

Setting State of Charge (SOC)

The SOC meter or the hand held programmer may be used to determine the state of charge of the battery module. If the SOC is below 30%, charge the battery module until the state of charge reaches 50%. The charge cycle may be interrupted by disconnecting the charger from the AC power source first, then from the charging receptacle on the vehicle. If the SOC is above 50%, operate the vehicle until the SOC is below 50%.

During Storage

Check the state of charge every 30 days. If the SOC is below 30%, charge the battery module until the state of charge reaches 50%.

Extreme Low Temperature Storage

If the ambient temperature is below -4°F (-20°C) DO NOT:

- turn the vehicle key to the ON position
- drive the vehicle
- tow the vehicle
- charge the vehicle
- operate accessories
- turn the lights on (if equipped)

Returning Vehicle to Service

At the end of the storage period, charge the battery module to 100% before operating the vehicle.

Before charging the vehicle be sure that the ambient temperature is between 14°F (-10°C) and 113°F (45°C) and the vehicle has had time to adjust to the temperature.

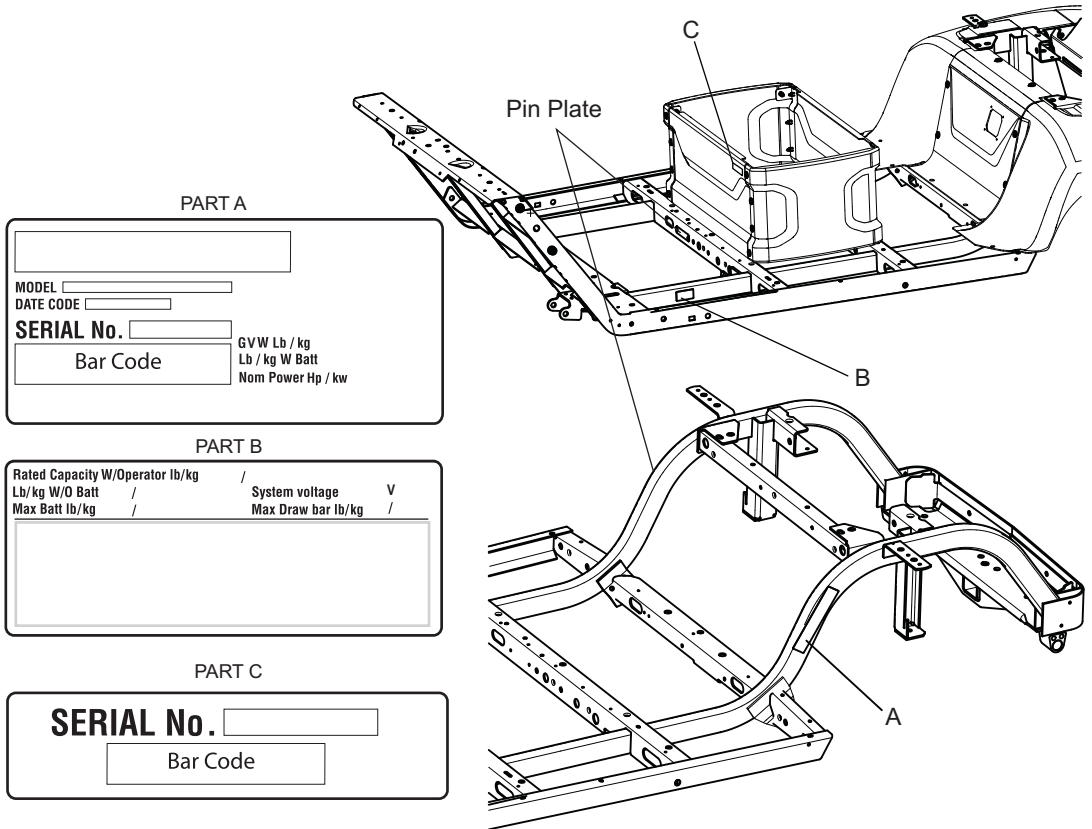
BATTERY DISPOSAL



Lithium-Ion batteries are recyclable:

- 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.
- Refer to the Maintenance section for additional information.

VEHICLE IDENTIFICATION NUMBERS



PART A

[]	
MODEL	[]
DATE CODE	[]
SERIAL No.	[]
Bar Code	[]
	GVW Lb / kg Lb / kg W Batt Nom Power Hp / kw

PART B

Rated Capacity W/Operator lb/kg	/	System voltage	V
Lb/kg W/O Batt	/	Max Draw bar lb/kg	/
Max Batt lb/kg	/		
[]			

PART C

SERIAL No.	[]
Bar Code	[]

Record the vehicle identification numbers in the spaces provided below. These identification numbers are required when ordering parts from the manufacturer.

Vehicle Model Number: _____

Frame PIN: _____

SERVICE AND PARTS MANUALS

The following manuals can be purchased through your dealer:

- service manual
- parts manual

SAFETY LABELS


SAFETY LABELS


Safety and warning labels are on the vehicle for your protection. Read carefully and comply with the instructions on the labels. If any label shown in this manual is different from the label on your vehicle, always follow the instructions on the vehicle label.

If a label comes off or becomes illegible, contact your dealer for a replacement. The part number is provided in this manual, printed on the label, or can be obtained from your dealer.

Operation (P/N 10013899)

Located on the dash panel.


www.ezgo.com


www.ezgo.com

⚠ WARNING

**READ AND OBEY THE FOLLOWING WARNINGS TO
DECREASE RISK OF SEVERE INJURY OR DEATH.**

SAFETY INSTRUCTIONS

BEFORE OPERATING


- READ the owner's manual and all warning labels. Contact an authorized dealer or go to the manufacturer's website for replacement manual or labels.
- This vehicle is equipped for personal use in most communities; however, state law or local rules may require additional equipment in your community.


SAFE OPERATION & PARKING

- Turn key to ON, select Forward or Reverse, release the parking brake (if required), and slowly press accelerator pedal.
- Always bring vehicle to a complete stop before shifting the direction selector.
- Always remain seated in a moving vehicle.
- Operate from the driver's seat only.
- Never drink alcohol or use drugs or medications before or during operation of the vehicle.
- ALWAYS engage the parking brake and remove the key before leaving the vehicle. In an electric vehicle, put the direction selector in OFF or Neutral; in a gasoline vehicle, put the selector in Forward.

MAINTENANCE & TOWING

- This vehicle requires regularly scheduled maintenance (see the periodic service schedule in owner's manual).
- ONLY qualified personnel should service this vehicle.
- Vehicle is not to be towed; consult owner's manual for transport instructions.


< 14" 25%


< 14" 25%

10013899

SAFETY LABELS


CE Operation (P/N 651654)



Run/Tow Switch Operation (P/N 679115)

Located on the run/tow switch.


⚠ WARNING

- **DO NOT** alter or tamper with this unit. Unauthorized modifications can result in **SERIOUS INJURY** or damage to the vehicle and will void the warranty.
- To disable electrical system, turn key switch to 'OFF' and set the RUN-TOW switch to TOW. Disconnect the battery cables.
-  **ALWAYS** set the RUN-TOW switch to TOW/STORAGE before disconnecting or connecting battery wires. **ELECTRICAL ARC** or **BATTERY EXPLOSION** can occur if the switch is **NOT** set to TOW/STORAGE.
- **WAIT 30 seconds** after reconnecting batteries **BEFORE** moving the RUN-TOW switch to the RUN position.

TOWING - Always select 'TOW' position before towing

RUN
| ←


TOW
STORAGE
→ ○



679115

Battery Warning

Located on the battery cover.



WARNING

To reduce the risk of injury, user must read instruction manual


SAMSUNG SDI

Composite module Li-ion battery

Minimum Capacity	54.66Ah @56.7V Charging	Nominal Voltage	50.34V
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Caution

1. Do not expose battery to temperature below -30°C(-22°F), above 60°C(140°F).
2. Do not disassemble or mistreat battery. Do not crush.
3. Do not drop or subject it to impact.
4. Use only OEM approved charger.
5. Failure to follow those instructions may present risk of explosion, fire or high temperatures.
6. Recommended torque for stud assembly is 24.5Nm on M12, 9.1Nm on M8 and refer to the application note for detail.



SAFETY LABELS

SAFETY

For questions about the vehicle or the material in this manual, see the contact information on page 1 or the back of this publication.

MAXIMUM WEIGHT CAPACITY



WARNING

Exceeding the weight capacities can cause the loss of vehicle control and possible injury or death.

Maximum Vehicle Weight Capacity	800 lb (363 kg)
---------------------------------	-----------------

Do not exceed the maximum vehicle weight capacity (includes weight of operator, passenger, cargo, and accessories and trailer tongue weight).

TIRE PRESSURE



WARNING

Improper tire pressure or uneven tire pressure can cause the loss of vehicle control and possible injury or death.

Maintaining the correct tire inflation pressure is essential for safe vehicle operation. The inflation pressure can vary within the recommended range to suit the condition of the terrain.

TIRE PRESSURE RANGE	TERRAIN CONDITIONS	RECOMMENDATION
18-22 psi (124 - 152 kPa)	Hard surfaces or pavement	Inflate to higher pressure within the range; never exceed maximum pressure indicated.
	Soft terrain or turf	Inflate to lower pressure within the range to reduce potential damage to the terrain or turf.

OPERATOR SAFETY

Safe and responsible use of this vehicle is necessary to prevent dangerous conditions for the operator, passengers and other people in the area of operation. This section of the manual provides information on the safe operation of the vehicle. Make sure to read, understand and comply with all of this information to decrease the risk of personal injury or death.



WARNING

Serious injury or death can occur if you do not follow the instructions and procedures shown in this owner's manual.

- Read this entire manual and all product labels carefully. Follow the safety information and operating procedures described.
- Operate your vehicle responsibly to prevent dangerous conditions for the operator, passengers and other people in the area of operation.
- Operate the vehicle responsibly and keep the vehicle in safe condition of operation.
- A damaged vehicle or a vehicle that is not functioning properly is dangerous and must not be operated until repairs are made.
- Do not carry a passenger until you have a minimum of two hours driving experience on this vehicle.
- Keep feet, legs, hands, and arms inside the vehicle at all times.
- The driver must keep both hands on the steering wheel and both feet on the floor or pedals.
- Inspect the vehicle before each use to make sure it is in safe operating condition. Perform the pre-ride inspection described in this manual. See page 23.
- Always have the vehicle checked by an authorized dealer if it is involved in an accident.
- Always turn the vehicle off and engage the parking brake before you exit the vehicle.
- Remove the ignition key when the vehicle is not in use to prevent accidental starting, unauthorized use by someone below the age of 16, or someone without a driver's license and proper training.
- Drive the vehicle at appropriate speeds for the terrain and conditions. Be aware of environmental conditions that change the terrain and your ability to control the vehicle.
- Do not drive on excessively steep hills. Evaluate the terrain before descending a hill. Drive slowly and deliberately. Use the brake to limit speed and maintain control. Sudden braking or turning can cause the loss of vehicle control. Drive straight down the hill. Do not drive across the hill.

SAFETY

- Operate only in approved areas. Follow all applicable safety rules for the area.
- Avoid driving on terrain that is too rough for your vehicle's capabilities and your driving skills.
- Before you drive in the reverse direction, make sure the area behind the vehicle is clear. Accelerate slowly and avoid making sharp turns.
- Make sure the direction selector is in the correct position before pressing the accelerator pedal.
- Decrease the speed before and during turns.
- Decrease the speed when driving on wet or slippery surfaces.
- Bring the vehicle to a complete stop before moving the direction selector.
- Do not exceed the cargo or vehicle weight capacities. Do not exceed the occupant capacity. See *Vehicle Load Capacity* on page 43 for the vehicle load and seat capacity.
- If there is a risk of lightning, leave the vehicle and look for a safe location to wait until the lightning has stopped.

Additional information about safety is included throughout this manual or can be obtained from your dealer.

⚠ WARNING Failure to operate this vehicle as instructed can cause collision, loss of control, or roll-over resulting in severe injury or death. Follow all safety warnings in this section of the owner's manual. See the **OPERATION** section of the owner's manual for operating procedures and additional safety information.

Unauthorized Operation



This vehicle is for adult use only. Any person below the age of 16 is not permitted to operate the vehicle.

Any person who does not have a valid driver's license is not permitted to operate the vehicle.

Any person who is below the height of 59 in. (150 cm) is not permitted to operate the vehicle.

Leaving the keys in the ignition allows unauthorized operation of the vehicle by someone under 16 years of age, an unlicensed driver or someone who does not meet the height requirement. Always remove the ignition key when the vehicle is not in operation.

Operating without Instruction



Operation of this vehicle without proper instruction increases the risk of an accident. The operator must understand how to operate the vehicle correctly in different situations and on different types of terrain.

All operators must read, understand, and comply with the owner's manual and all warning and instruction labels before operating the vehicle.

Alcohol or Drugs



Operation of the vehicle during or after consuming alcohol or drugs can adversely affect operator judgment, reaction time, balance and perception.

Never drink alcohol or use drugs or medications before or during operation of the vehicle.

Passenger

All passengers must be at least 59 in. (150 cm) tall. Passengers must be able to sit with their back against the seat, and both feet on the floor.

For additional safety and operational information, see *Driving with a Passenger* on page 27.

Before Operating

Perform the *PRE-RIDE INSPECTION* on page 23 before each use to make sure the vehicle is in safe operating condition. Failure to inspect and confirm that the vehicle is safe to operate increases the risk of an accident.

Follow all inspection and maintenance procedures and schedules described in this owner's manual. See *SCHEDULED MAINTENANCE* on page 31.

Load Operation

The weight of cargo and occupants affects vehicle operation. Carefully calculate how the vehicle is loaded and how to safely operate it. Follow the instructions in this manual for loading guidelines and tire pressure.

Do not exceed weight capacities specified for your vehicle. Capacities are listed in *Maximum Weight Capacity* on page 15 of this manual. As passenger weight increases, cargo weight needs to be adjusted to ensure the maximum vehicle weight capacity is not exceeded.

Tire pressure must be adjusted to accommodate the load being carried. See *Tire Pressure* on page 15 for pressure specifications.

Verify tire pressure, and drive slowly and carefully to maintain control of the vehicle if driving under any of the following conditions:

- passenger and/or cargo exceeds half the maximum weight capacity
- driving over obstacles
- towing
- climbing a hill

Driving in Reverse

Make sure the area behind the vehicle is clear before operating in reverse. After making sure it is clear and safe to operate in reverse, accelerate slowly. Avoid making sharp turns in reverse. Refer to *Driving in Reverse* on page 29 for operational information.

Driving a Damaged Vehicle

Driving a damaged vehicle is not safe.

If the vehicle has been involved in any type of accident, have it inspected by a qualified service dealer to verify that it is safe for operation.

Driving at Maximum Speeds

Maximum speed operation increases the risk of loss of control. Always drive at a speed that is appropriate for the terrain, visibility, operating conditions, and your skill and experience level. Use the brake to control speed and maintain control of the vehicle.

Driving on Pavement

Driving the vehicle on paved surfaces can affect handling characteristics and increase tire wear.

Driving on Public Roads

Driving this vehicle on public streets, roads or highways could result in a collision with another vehicle. Never drive this vehicle on any public street, road, or highway, including dirt and gravel roads, unless they are designated for off road use. Most areas prohibit the operation of this vehicle on public streets, roads, or highways and can result in traffic violations and fines.

Turning

Improper or careless turning can cause loss of traction, loss of control, accident, or rollover. Do not turn quickly or at sharp angles. Do not turn at high speeds. Practice turning at slow speeds before attempting to turn at faster speeds.

Driving Uphill

Do not climb hills that are too steep for the vehicle or your driving abilities. Loss of vehicle control or rollover can result from climbing hills incorrectly. Refer to *Driving Uphill* on page 28 for operational information.

Driving Downhill

Inspect the terrain before descending a hill. Avoid driving across hills. Use the brake to limit speed and maintain control. Loss of vehicle control or rollover can result from driving downhill incorrectly. Refer to *Driving Downhill* on page 28 for operational information.

Stalling on a Hill

A rollover can result from stalling or rolling backward while climbing a hill. Drive uphill at a constant speed. See procedure on page 29 for maintaining control of your vehicle if it stalls on a hill.

SAFETY

Tires

Operating the vehicle with the incorrect tires or with the incorrect or uneven tire pressure can cause loss of control or an accident. Always use the size and type of tires specified for the vehicle. See Vehicle Specification for proper tire type and size. Always maintain the correct tire pressures as specified in *Tire Pressure* on page 15.

Slippery Terrain

Driving on rough, wet, or loose terrain increases the risk of loss of traction or control and accident or rollover. Drive slowly and use the correct turning procedures when operating on slippery surfaces.

Tires that have lost traction and then regain traction suddenly can cause loss of vehicle control or rollover.

Refer to *Slippery Surfaces* on page 28 for operational information.

BATTERY CHARGING

Charging should be performed when ambient temperatures are between 40°F and 110°F (4°C and 42°C). The battery pack may be charged or topped off after every use.

The battery management system (BMS) and charger cooperate to make sure that charging occurs at the proper rate for the battery temperature. When the battery charger is connected to the vehicle, it will determine the charge rate based on the battery temperature. The charger will operate at the rates shown in the table below.

Charge Rate	Temperature
NO charging	below 14° F (-10°C) or above 140°F (60°C)
Pre-charge (charge at reduced rate, 6 amps)	between 14°F (-10°C) and 41°F (5°C) between 104°F (40°C) and 140°F (60°C)
Full charging	between 41°F (5°C) and 113°F (45° C)

The BMS will adjust the charge rate based on the temperature of the batteries.

Use only the OEM approved Lithium-Ion battery charger for your vehicle. Turn the key to the OFF position and remove it.

- Inspect the charger cord for cracks, frayed wires or loose connections, if damaged, replace it.
- Inspect the vehicle charger receptacle and charger plug for dirt, debris or damage. Clean if necessary and replace immediately if damage is found.
- Connect the charger to a wall receptacle. Do not use a multi-plug adapter or power strip. Do not connect anything else to the same receptacle.
- Connect the charger to the vehicle receptacle.
- When the battery pack is finished charging, disconnect the charger cord from the vehicle. If disconnecting before the charge cycle is complete, it is recommended that the charger be disconnected from the wall receptacle first, then unplug the charger from the vehicle receptacle.

VEHICLE LIFTING

The vehicle must be on a firm and level surface for lifting. Remain constantly aware that the vehicle is not stable during the lifting process. Do not get under a vehicle until you verify that it is stable on the jack stands. Never get under a vehicle while it is on a jack only. Put wheel chocks in front of and behind the wheels that are not being lifted. Do not allow anyone to remain or get on the vehicle at any time during the lifting process.

Read and comply with all warnings and follow the lifting procedures described on page 34.

VEHICLE MODIFICATION



Removing some items from the vehicle can change the designed handling characteristics and present a significant safety risk.

Do not install any accessory not approved by the manufacturer. Do not modify the vehicle to increase the speed or power beyond the manufacturer's specifications. Any modifications or installation of accessories not approved by the manufacturer can create a safety hazard and increase the risk of injury. The warranty will be terminated if the vehicle is modified to increase vehicle speed or power beyond manufacturer's specifications. The warranty may be terminated if the original (or equivalent) replacement parts are not installed on the vehicle.

The addition of some accessories can change the handling characteristics of the vehicle. Use only manufacturer approved accessories, and familiarize yourself with their function and effect on the vehicle.

MAINTENANCE SAFETY

Routine and scheduled maintenance of this vehicle is necessary to keep the vehicle in safe and reliable condition. This section of the manual provides safety information for performing maintenance on your vehicle. Make sure to read, understand, and comply with all of this information to decrease the risk of personal injury or death.



WARNING

Serious injury or death can occur if the instructions and procedures shown in this owner's manual are not followed.

- Read this entire manual and all product labels carefully. Follow the procedures and comply with the safety information in this manual while performing vehicle service or maintenance.
- Use the tools shown in the tool list and wear the specified safety equipment when performing vehicle service or maintenance.
- Remove all jewelry before servicing the vehicle.
- Do not allow loose clothing or hair to contact the moving parts.
- Do not touch hot objects.
- The drive wheels must be lifted and supported on jack stands before performing any service to the power-train while the motor is in operation.
- Use wheel chocks and support the vehicle on jack stands. NEVER get under a vehicle that is supported by a jack. Lift the vehicle following the instructions. See *LIFTING THE VEHICLE* on page 34.
 - When servicing the vehicle, always wear eye protection. Be careful when working around batteries, using solvents, or compressed air.
 - Use insulated tools within the battery area to prevent sparks or battery explosion.
 - To prevent the risk of battery explosion, keep all flammable materials, open flames or sparks away from the battery.
- Maintain constant awareness that some components are heavy, spring loaded, corrosive, explosive, can cause high amperage, or get extremely hot. Keep your hands, face, feet, and body away from any area that can expose them to injury in the event that an unexpected situation occurs.
- After making repairs or performing maintenance, test the vehicle in a safe area that is free from vehicle and person traffic.



FEATURES AND CONTROLS

NOTICE: Some accessories continue to operate with the key in the OFF position. Leaving these accessories activated after the vehicle is shut down can cause the battery to discharge.

KEY SWITCH

- Located on the dash panel, the key switch controls the basic electrical system of the vehicle. The switch has four positions: OFF, R, N, and F.
- OFF: vehicle is disabled.
- R: activates vehicle electronics and accessory power and puts the vehicle in reverse.
- N: activates vehicle electronics and accessory power and puts the vehicle in neutral.
- F: activates vehicle electronics and accessory power and puts the vehicle in forward.

STATE OF CHARGE METER

The state of charge meter is on the dash panel beside the key switch. It indicates the amount of usable power in the batteries, 100% indicating a full charge on the battery pack and 0% indicating no charge. "LOWBAT" indicates the batteries must be charged immediately. When vehicle is in motion, the meter functions as a speedometer and hour meter.

CUP HOLDER

The vehicle has a center cup holder that will accommodate two beverage containers. Another cup holder is located to the left of the steering column and will accommodate a larger beverage container.

HEADLIGHT SWITCH

The LED headlight switch is a three-position switch.

- Upper – Low Beam
- Middle -- Daytime Running Lights
- Lower – Off

HORN

The horn button is on the control panel. Activate the horn by moving the right rocker switch to the up position.

USB PORT

CAUTION Excessive use of accessories that are connected to the outlet can drain the battery.

A USB port is located on the control panel.

With the key switch in the ON position, the USB port supplies power for electronic devices via a USB cable.

STEERING WHEEL

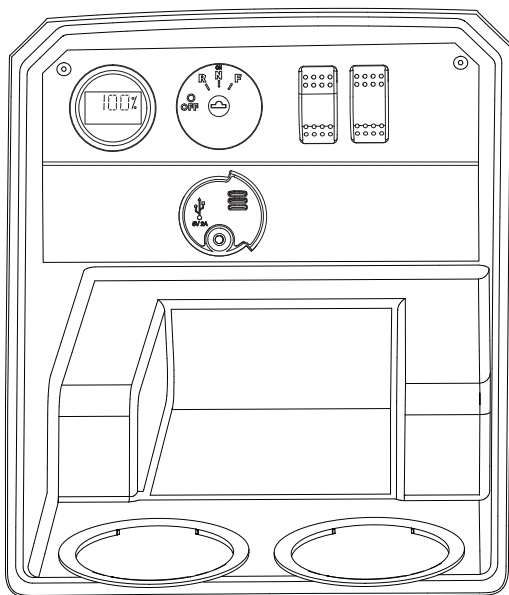
The steering wheel allows the driver to control the direction of travel.

TURN SIGNAL (If Equipped)

The turn signal switch is located on the steering column and is used to activate the turn signals.

BRAKE PEDALS

The brake pedal is a combination brake and parking brake pedal.



FEATURES AND CONTROLS

Brake Pedal

The brake pedal is the bottom left pedal on the floorboard.

Press the brake pedal to slow the speed or bring the vehicle to a complete stop.

Parking Brake Pedal

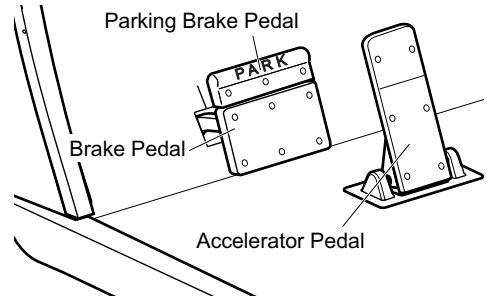
The parking brake is the upper part of the brake pedal. It allows the operator to lock the brake when the vehicle is parked to prevent accidental movement.

To engage the parking brake, press the upper pedal until it locks into place.

NOTICE: Vehicles equipped with the 4-wheel mechanical brake option have a parking brake with multiple engagement levels. Each additional level that the latch is engaged increases the amount of braking applied.

Quickly press and release the lower pedal to disengage.

NOTICE: If the key switch is in the ON position and the parking brake is engaged, the brake will release when you press the accelerator pedal and can cause the vehicle to move suddenly. This is a feature to make sure the vehicle is not driven with the parking brake engaged. Pressing the accelerator pedal is not the recommended method to release the parking brake.



ACCELERATOR PEDAL

The accelerator pedal is the right pedal on the floorboard. It activates the electric motor and controls the acceleration of the vehicle.

Apply slow and steady pressure to the accelerator pedal to increase vehicle speed.

HIP RESTRAINTS

The hip restraints are designed to help keep the occupants properly positioned in the event of a sudden vehicle position change. Make sure that all passengers are seated and holding onto the hip restraint when the vehicle is moving.

SEAT BOTTOM

Each bench seat is designed for two occupants.

Lift up on either hip restraint to pivot the seat bottom forward and access the components underneath. Pivot and lift up on the seat to completely remove it from the vehicle before operating the vehicle.

GLOVE BOX / STORAGE COMPARTMENTS

The glove box provides storage space for small items. Glove boxes may be equipped with optional shelf and/or glove box doors.

CHARGER RECEPTACLE

The polarized charger receptacle is located on the panel below the rear seat. Make sure the receptacle is free from dirt and debris before connecting the charger cord.

CANOPY TOP AND WINDSHIELD (IF EQUIPPED)



WARNING

The canopy top does not provide protection from rollover or falling objects.

The windshield does not provide protection from tree branches or moving objects.



CAUTION

To prevent damage to the vehicle, do not hold on to the canopy top struts.

The canopy top and windshield provide some protection from the elements, but do not keep the operator and passenger dry in heavy rain.

This vehicle is not equipped with seat belts, and the canopy top is not designed to provide rollover protection. In addition, the canopy top does not protect against falling objects, nor does the windshield protect against flying objects and tree limbs.

OPERATION

SAFETY

WARNING 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.

BEFORE INITIAL USE

To prepare the new vehicle for operation, complete the following:

- Remove the protective plastic from the seats.
- Check for possible leaks that may have developed during shipment of the vehicle.
- Charge batteries.
- Perform the following pre-ride inspection.
- Burnish brake pads.

Brake pads must be burnished to achieve full braking effectiveness. Brake distance will be extended until brake pads are properly burnished.

WARNING Do not attempt sudden stops or put yourself into a situation where a sudden stop will be required until the brake pads are properly burnished.

To properly burnish the brakes use the following procedure:

1. Brake burnishing must be performed on a level paved surface in a safe area with little to no loose gravel or other hazardous environmental conditions. Drive the vehicle forward at a minimum of 14 mph and quickly stop the vehicle in a safe manner without locking the brakes or causing the vehicle to skid.
2. After coming to a complete stop, check the area behind the vehicle is clear of obstacles and people. Change the vehicle's direction selector to Reverse and accelerate to a maximum speed of 6 mph. Safely and rapidly decelerate the vehicle to a stop without locking the brakes.
3. Alternate between the forward and reverse procedure ten times to burnish the brakes effectively.

PRE-RIDE INSPECTION

Inspect and verify that the vehicle is in safe operating condition before each use to decrease the risk of an accident. Check the items in the table to help ensure safe and reliable operation.

Item	Check	Page
Batteries	Check charge level	
Brake system/pedal travel	Check for proper operation.	39
Parking brake	Ensure vehicle does not roll when the parking brake is engaged.	
Front suspension	Inspect. Lubricate if necessary. Check for loose or missing hardware.	
Rear suspension	Inspect. Lubricate if necessary. Check for loose or missing hardware.	
Steering	Check for smooth and free operation.	
Tires	Check condition and pressure.	35
Wheel hardware	Check for loose or missing hardware.	
Frame hardware	Check for loose or missing hardware.	
Fluid leakage	Inspect vehicle for leaks.	
Switches	Check operation.	
Reverse warning alarm	Check operation.	
Headlights	Check operation.	37
Brake light / taillights	Check operation.	37

OPERATION

ENVIRONMENTAL AWARENESS

WARNING

When driving the vehicle, be careful of potential environmental hazards like steep slopes, rocks, tree branches, etc. that could cause an incident that could result in vehicle damage, personal injury or death.

CAUTION

There is a risk of fire when the vehicle is operated near combustible material.

- Always be respectful of the environment.
- Respect all wildlife and their habitat.
- Respect private property and comply with all local laws and regulations governing the use of light duty utility vehicles.
- Make sure you are permitted by property owners to operate the vehicle on their property.
- If operating the vehicle on private property, obtain permission from the owner prior to entering their property.

BATTERY CHARGER

The charger should be operated in accordance with the charger manufacturer's instructions. Always place the charger outside the vehicle before and during the charging cycle. Never charge batteries in a hazardous environment.

DANGER

Risk of electric shock. Connect the charger power cord to an outlet that is correctly installed and connected to an electrical 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.

If equipped with Delta-Q QuiQ charger model nos. 913-4830-E3/E38/E5/E58, refer to APPENDIX A for the charger manufacturer User's Guide for operating instructions, maintenance instructions and troubleshooting instructions.

WARNING

To prevent over-heating that can cause damage to the charger and possible fire, keep the air fins clear. Install portable chargers on a platform above the ground to allow maximum air flow around and below the charger.

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

On Board Charger

The on board charger (if equipped) is located under the rear seat. It is wired directly to the batteries. Before charging the batteries, park the vehicle in a well ventilated area, engage the parking brake, turn key switch to OFF and remove key. Plug charger cord into a dedicated 15 amp AC outlet to activate the charger. When the charging cycle is complete, unplug the charging cord and correctly store the cord.

Off Board Charger

The off board or portable charger must have a dedicated 15 amp AC circuit. The charger should be placed in an area that permits good air flow around and under the charger. Read and follow the operation instructions supplied by the manufacturer with the charger. Before charging the batteries, park the vehicle in a well ventilated area, engage the parking brake, turn the key switch to the OFF position, and remove the key. Connect the AC cord to a dedicated 15 amp AC outlet to activate the charger. Plug the charger cord into the charge receptacle on the vehicle. Unplug and properly store the cord when the charging cycle is complete.

The battery charger will test the temperature of the battery pack. If the temperature is too hot or too cold the charger will shutdown. If the battery pack temperature is within the safe to charge range, the charger will operate.

PERFORMANCE FEATURES

NOTICE: *The vehicle operates when the run/tow switch is in the RUN position.*

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

Speed Control



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

Speed control system vehicles are equipped with a regenerative motor control system.

Example: If all of the following events occur:

- the vehicle is being driven down a slope
- the vehicle attempts to exceed the specified top speed with the accelerator pedal pressed **or** released

the regenerative brake will limit the speed of the vehicle to the specified top speed but the warning beeper will **not** activate. When the regenerative braking system is activated by this sequence of occurrences, the motor generates power which is returned to the batteries.

If the operator tries to override the electronic brake feature by moving the direction selector or key switch to another position the vehicle will brake **quickly** until it reaches approximately 2 mph (3 kph).

Pedal-Up Braking

Pedal-up braking is regenerative braking that occurs when the accelerator pedal is released while the vehicle is moving.

Example: If all of the following events occur:

- the vehicle is being driven down a slope
- the accelerator pedal is released

the pedal-up braking decreases speed until the vehicle stops or the accelerator pedal is applied. The warning beeper will **not** activate. When pedal-up braking is activated by this sequence of occurrences, the motor generates power which is returned to the batteries.

Walk-Away Feature

Walk-Away limits vehicle movement without driver input, decreases vehicle speed to 2 mph (3 kph) and activates an alarm.

Example: If all of the following events occur:

- the vehicle is stopped for more than 2 seconds
- the accelerator pedal is released for more than one second
- the vehicle starts to move at more than 2 mph (3 kph)

the Walk-Away feature limits speed to approximately 2 mph (3 kph) and the warning beeper activates. When the accelerator pedal is pressed, the Walk-Away feature and warning beeper stops and normal vehicle operation continues.

Anti-Roll Back Feature

Anti-Roll Back, like Walk-Away, limits reverse motion of the vehicle down a slope to less than 2 mph (3 kph). See Walk-Away Feature for more information. An alarm will not be activated should the anti-roll back feature engage.

Anti-Stall Feature

Anti-Stall protection prevents motor damage if the vehicle is stalled against an object or on a hill.

Example: If all of the following events occur:

- the system senses that the accelerator pedal is pressed (power applied to motor)
- the motor is stopped long enough that additional time can cause damage to the motor

the Anti-Stall feature will interrupt power to the motor. To restore power to the motor, flip the run/tow switch to TOW position and then return the switch to RUN position.

High Pedal Disable Feature

High Pedal Disable prevents acceleration of the vehicle if the direction selector is changed or the key is turned on while the accelerator is pressed.

Diagnostic Mode Feature

Diagnostic mode helps with troubleshooting.

With some electrical system failures, the Diagnostic Mode feature defaults to a mode that allows the vehicle to operate at a decreased speed.

This feature allows you to return the vehicle to the storage facility and identify the problem.

OPERATION

STARTING AND STOPPING THE VEHICLE

WARNING

Unintentional roll-back of the vehicle could cause severe personal injury or vehicle damage. To reduce the possibility of vehicle roll-back, keep the brake fully pressed until the motor has started.

All vehicles have an *interlock system* that disables the controller and prevents operation of the vehicle while the charger is connected. Remove the charger plug from the receptacle and correctly store the cord before you move the vehicle.

1. Sit in the driver's seat.
2. Press and hold the brake pedal.
3. Insert the key and turn to the desired direction.

NOTICE: *When the direction selector is moved to the reverse position, a warning alarm will activate to indicate that the vehicle is ready to run in reverse.*

4. Slowly press the accelerator pedal to start the motor.
5. When the accelerator pedal is released, the motor decreases the speed of the vehicle. To stop the vehicle more quickly, press the brake pedal.
6. Engage the parking brake, turn the key to OFF and remove the key from the switch before exiting the vehicle.

Starting on a Hill

WARNING

Unintentional roll-back of the vehicle could cause severe personal injury or vehicle damage. To reduce the possibility of vehicle roll-back, keep the brake fully pressed until the motor has started.

CAUTION

Do not use the accelerator and motor to hold the vehicle on a hill. Doing so for more than 3 - 4 seconds will cause permanent damage to motor.

To decrease the risk of permanent damage to the drive system, do not allow roll-back when you start the vehicle on a hill.

1. Press the brake pedal with your left foot when releasing the parking brake. Keep pressure on the pedal to prevent the vehicle from rolling back.
2. Press the accelerator pedal with your right foot as you release the brake pedal.
3. Press the accelerator pedal with gradual and steady pressure until the vehicle reaches the desired speed.

Accelerating

WARNING

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

Make sure the key is in the OFF position and the parking brake is engaged any time the vehicle is parked.

1. Release the parking brake.
2. Move the key switch to the desired direction.
3. Apply slow, steady pressure to the accelerator pedal to increase vehicle speed. When you release the accelerator pedal, the motor decreases the speed of the vehicle.

NOTICE: *If the key switch is in the F, N, or R position and the parking brake is engaged, the brake releases when you press the accelerator pedal and can cause the vehicle to move suddenly. This is a feature to make sure the vehicle is not driven with the parking brake engaged. Pressing the accelerator pedal is not the recommended method to release the parking brake.*

Braking



WARNING When carrying cargo or towing a trailer, the weight of the load will increase the braking distance required to slow or stop the vehicle. Not allowing for increased braking distance under load can cause an accident or injury.

1. Release the accelerator pedal completely.

NOTICE: Pressing the top section of the brake pedal engages the parking brake.

2. Press the brake pedal to slow vehicle speed or stop the vehicle completely.
3. Practice slowing and stopping using the brake to become familiar with the controls.

Coasting



WARNING Do not allow the vehicle to coast at above recommended speeds. Control vehicle speed with the brake.

The vehicle has a braking feature (pedal-up) that decreases the speed when the accelerator pedal is released. The feature continues to decrease the speed until the vehicle stops. Press the brake if you need to decrease speed or stop the vehicle quickly.

DRIVING THE VEHICLE

1. Perform the pre-ride inspection. See page 23.
2. Sit in the driver's seat.
3. Check surroundings and determine the path of travel.
4. Press the brake pedal and release the parking brake.
5. Insert the key and turn to the desired direction.
6. With both hands on the steering wheel, release the brake and immediately start to apply gradual and steady pressure to the accelerator pedal.
7. Practice maneuvering the vehicle using the accelerator and brake pedals. Drive slowly and cautiously until you are comfortable with the controls.
8. Do not drive with a passenger until you have at least two hours of experience driving this vehicle.

Driving with a Passenger

- All passengers must be at least 59 in. (150 cm) tall. Passengers must be able to sit with their back against the seat, both feet on the floor.
- Do not allow more than three passengers in the vehicle.
- Do not allow a passenger to ride anywhere on the vehicle except the passenger seats.
- Travel at speeds appropriate for your skills, your passenger's skills and the operating conditions. Avoid unexpected or aggressive maneuvers that could cause discomfort or injury to the passenger.
- Handling characteristics can change with the added weight of a passenger. Allow more time and distance for braking.

OPERATION

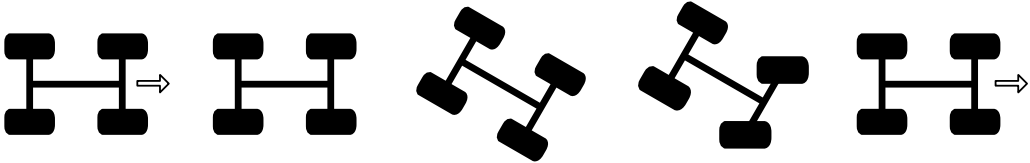
Slippery Surfaces

⚠ WARNING

Skidding or sliding can cause loss of control. Skidding or sliding can cause rollover if tires have lost traction, then regain traction suddenly. When operating on slippery surfaces, travel at reduced speed to help maintain control of the vehicle.

When operating in conditions such as ice, water, muddy trails, loose gravel or freezing temperatures, follow these guidelines:

- Do not operate on excessively rough, slippery or loose terrain.
- Slow down before entering potentially slippery areas.
- Maintain a high level of alertness, carefully evaluate the path of travel and avoid quick, sharp turns.
- Correct a skid by turning the steering wheel in the direction of the skid. *Never apply the brakes during a skid.*



Driving Uphill

When driving up a hill, follow these guidelines:

- Drive straight up the hill.
- Avoid excessively steep hills.
- Keep both feet on the floor or pedals.
- Check the terrain before driving up a hill. Do not try to climb hills that have excessively slippery or loose surfaces.
- Drive at a steady rate of acceleration and speed.
- Do not drive over the crest of a hill at high speed. An obstacle, sharp drop, or another person or vehicle could be on the other side of the hill.
- Do not attempt to drive up a hill that is beyond your skill level.

Traversing Hillsides

Traversing a hillside is not recommended. Improper procedure can cause loss of control or a rollover. Avoid crossing the side of a hill unless absolutely necessary. If traversing a hillside is unavoidable, check the terrain and determine if it can be accomplished safely. Do not proceed if the terrain is beyond the vehicle or driver's ability.

If traversing a hillside is unavoidable, follow these guidelines:

- Drive slowly.
- Use extreme caution.
- Avoid crossing the side of a hill that has a slippery surface.
- Avoid crossing the side of a steep hill.
- When traversing a hillside that has soft terrain, it may be necessary to steer slightly uphill to keep the vehicle traveling in a straight line.
- If you feel that you are losing control of the vehicle, steer downhill if possible to regain control.

Driving Downhill

⚠ WARNING

When carrying cargo or towing a trailer, the weight of the load will increase the braking distance required to slow or stop the vehicle. Not allowing for increased braking distance under load can cause an accident or injury.

When driving down a hill, follow these guidelines:

- Avoid excessively steep hills.
- Check the terrain carefully before descending any hill.
- Never drive down hills with excessively slippery or loose surfaces.
- Drive slowly.
- Drive straight down the hill. Avoid descending the hill at an angle that could cause the vehicle to lean sharply to one side.
- Apply light and constant pressure to the brakes to maintain slow speed and control of the vehicle.

Stalling on a Hill

A rollover can result from stalling or rolling backward while climbing a hill. Drive uphill at a constant speed.

If your vehicle completely stalls while climbing a hill:

1. Apply the brakes.
2. Verify that the area behind you is clear.
3. Put the direction selector in R (reverse).
4. Use steady brake pressure to control speed, and allow the vehicle to slowly roll straight downhill.

If your vehicle begins to roll downhill:

1. Do not press the accelerator.
2. Apply the brakes gradually until the vehicle fully stops.
3. Verify that the area behind you is clear.
4. Put the direction selector in R (reverse).
5. Use steady brake pressure to control speed, and allow the vehicle to slowly roll straight downhill.

Driving in Reverse

When driving in reverse, follow these guidelines:

- Check that the area behind the vehicle is clear of obstacles and people.
- Check left and right fields of vision before driving in reverse.
- Do not back down a steep hill.
- Drive in reverse slowly.
- Press the brakes lightly for stopping.
- Accelerate slow and steady.
- Avoid turning at sharp angles.

PARKING THE VEHICLE

NOTICE: *When parking the vehicle in cold climates (0°C, 32°F), the car should be stored in an enclosed garage.*

Park the vehicle away from any source of flame or sparks, including any appliance with a pilot light.

Park the vehicle on a flat surface if possible. If parking on an incline is unavoidable, be sure to chock the wheels as shown in the following illustration to keep the vehicle from rolling.

1. Press the brake to stop the vehicle.
2. Engage the parking brake.
3. Turn the key switch to OFF.
4. Remove the key from the ignition to prevent unauthorized use.
5. If parking on an incline, chock the wheels on the downhill end as shown in the following illustration.

OPERATION

TOWING A LOAD

WARNING

Attach a trailer to the tow hitch only. Attaching the trailer at any other location can cause a loss of vehicle control.

Do not attach unapproved accessories to the hitch receiver. Towing and hitch mounted accessories can change the performance qualities of the vehicle and cause dangerous handling characteristics, possible rollover, or vehicle damage.

When towing a load, follow these guidelines:

- Do not tow more than the recommended towing weight for the vehicle. See the following table and the Vehicle Specifications:

VEHICLE TOWING (0% - 20% GRADE)	
Maximum Vehicle Weight Capacity	800 lbs (362.9 kg)
Maximum Gross Trailer Weight	500 lbs (226.8 kg)

- Do not exceed the maximum vehicle weight capacity (includes weight of operator, passenger, cargo, accessories, and trailer tongue weight).
- The range of motion of the trailer is limited by the ball and hitch. Do not tow a trailer on rough terrain.
- Drive slowly and carefully. Towing may negatively impact vehicle handling, stability, braking, battery range, durability, and performance. Do not tow a trailer more than 19.5 MPH (31.4 km/h).
- Towing a load increases braking distances required for slowing or stopping the vehicle.
- Do not attach unapproved accessories to the hitch receiver.
- Trailer Tongue Weight must be between 8% and 12% of the gross trailer weight for safe towing.
- Avoid parking on an incline.
- Do not operate on a grade exceeding 20%.
- Always secure the cargo.

VEHICLE MAINTENANCE

MAINTENANCE SAFETY

WARNING

To prevent serious injury or death, follow the procedures and comply with the safety information in this manual while performing vehicle service or maintenance.

Use the tools shown in the tool list and wear the specified safety equipment when performing vehicle service or maintenance.

Remove all jewelry before you service the vehicle.

Do not allow loose clothing or hair to contact the moving parts.

Do not touch hot objects.

Make sure that the key switch is in the OFF position and the run/tow switch is in the TOW/STORAGE position before you start to work on the vehicle.

Disconnect the negative battery terminal before you service the vehicle to prevent accidental operation.

The drive wheels must be lifted and supported on jack stands before you do any service to the powertrain when the motor is in operation.

Chock the wheels and support the vehicle with jack stands. NEVER get under a vehicle that is supported by a jack. Lift the vehicle according to the manufacturers instructions.

Wear a face shield when working around the battery pack.

Be careful when working around batteries, using solvents or compressed air.

Use insulated tools within the battery area to prevent sparks or battery explosion.

To prevent the risk of battery explosion, keep all flammable materials, open flames or sparks away from the battery.

Maintain constant awareness that some components are heavy, spring loaded, corrosive, explosive, can cause high amperage or get extremely hot.

After you make repairs or do maintenance, test the vehicle in a safe area that is free from vehicle and pedestrian traffic.

NOTICE: *To decrease the risk of damage to the controller or motor, move the run/tow switch to the TOW position before you tow the vehicle.*

After you connect a battery or any other wires, wait a minimum of 30 seconds before you move the switch to the RUN position.

SCHEDULED MAINTENANCE

Consistent inspection, adjustment, and lubrication of some components are necessary to maintain the *vehicle* so that it remains in safe and reliable condition. Refer to the *SCHEDULED MAINTENANCE CHART* on page 32 for detailed requirements.

Inspect, clean, lubricate, adjust, and replace parts as necessary. Use *OEM* or equivalent replacement parts.

Record the maintenance items performed along with details in the *MAINTENANCE LOG* beginning on page 45.

NOTICE: *Service and adjustments are important for safe and reliable vehicle operation. If not familiar with safe service and adjustment procedures, have a certified dealer perform the operations.*

MAINTENANCE

SCHEDULED MAINTENANCE CHART

Perform all services at the maintenance interval reached first.

Item	Interval (perform at interval that comes first)		Remarks	Page
	Hours	Calendar		
Overall vehicle condition	Pre-ride		Inspect.	
Battery Module	Daily		Charge daily after use.	
Steering	Pre-ride		Check for smooth and free operation.	
Front suspension	Pre-ride		Inspect. Check for leaks and loose or missing hardware.	
Rear suspension	Pre-ride		Inspect. Check for leaks and loose or missing hardware.	
Tires	Pre-ride		Check condition and pressure.	36
Wheel lug nuts	Pre-ride		Check for loose or missing.	36
Accelerator	Pre-ride		Check for smooth operation.	
Brake system	Pre-ride		Check for smooth operation and acceptable stopping distance.	39
Frame hardware	Pre-ride		Check for loose or missing.	
Headlights and taillights	Pre-ride		Check operation. Replace LED assemblies as needed.	37
Reverse warning alarm	Pre-ride		Check operation.	
Switches	Pre-ride		Check operation.	
Fluid leakages	Pre-ride		Inspect entire vehicle for leaks	
Brake shoes	10	Monthly	Inspect. Replace as needed.	
Charger receptacle	20	Monthly	Clean connections.	
Parking brake	20	Monthly	Conduct brake performance test; adjust as necessary. Check for correct hold on an incline.	
Accelerator	20	Monthly	Check for smooth operation.	
Wiring	20	Monthly	Inspect for loose connections, broken or missing insulation.	
Steering	20	Monthly	Check for excess play, loose or missing hardware.	
Tie rods	20	Monthly	Check for excess play, bent rods, loose or missing hardware.	
Front suspension	20	Monthly	Inspect strut for leaks. Check hubs and kingpins, for excessive play, worn bushings, loose or missing hardware.	
Rear axle	20	Monthly	Check for leakage; add oil as required.	
Brakes	20	Monthly	Check for smooth operation and acceptable stopping distance.	39
Front wheel alignment	60	3 Months	Check for unusual tire wear.	
Rear Suspension	60	3 Months	Check for shock oil leakage, worn bushings, loose or missing hardware.	
General lubrication	50	3 Months	Lubricate all fittings, pivots, cables, etc. where required.	33
Rear axle	500	5 years	Replace fluid.	
Motor coupling	20,000 Amp Hours	5 years	Add anti-seize compound (approx. 1 tbsp.)	

RECOMMENDED LUBRICANTS AND FLUIDS

Check and lubricate all components at the intervals shown in the *SCHEDULED MAINTENANCE CHART* beginning on page 32.

Item	Capacity	Lubricants/Fluids	Notes
Rear axle oil	25 oz. (0.7 L)	Mobil 424	Part Number 603967
Rear axle oil	2.0 oz (59 mL)	Friction Modifier	Part Number 611242
Grease fittings		Universal joint grease or equivalent	Do not exceed 3 pumps of grease in each fitting.

REPLACEMENT OF MAINTENANCE ITEMS

These items or their equivalents can be purchased through an authorized dealer, directly from the manufacturer or any other qualified source.

Item	Part Number
58V, 10A Mini Fuse	636455G22
32V, 15A Mini Fuse	636455G13
32V, 5A Mini Fuse	636455G10
32V, 10A Mini Fuse	636455G12
Throttle Resistor	662004
12V, 20A Relay	643691
LED Headlight Assembly	651411G03
LED Tail Light Assembly	10014910

MAINTENANCE

LIFTING THE VEHICLE

⚠ WARNING

Read and comply with all of the following warnings and lifting procedures to prevent the possibility of the vehicle falling and causing serious injury or death.

For some maintenance procedures, it is necessary to lift the vehicle. Comply with the following warnings and follow the lifting procedure to ensure the safety of you, your vehicle and surroundings.

⚠ WARNING

The vehicle must be on a firm and level surface for lifting.

Remain constantly aware that the vehicle is not stable during the lifting process.

Place the jack and jack stands only in the areas indicated in the following illustration.

Do not get under a vehicle until its stability on the jack stands is verified; never get under a vehicle while it is on a jack alone.

Put wheel chocks in front and behind all wheels that are not being lifted.

Do not allow anyone to remain or get on the vehicle at any time during the lifting process or when the vehicle is lifted.

When performing any service to the drive train, lift the drive wheels off the ground.

Tools

- jack
- jack stands (4)
- wheel chocks

Lifting Front

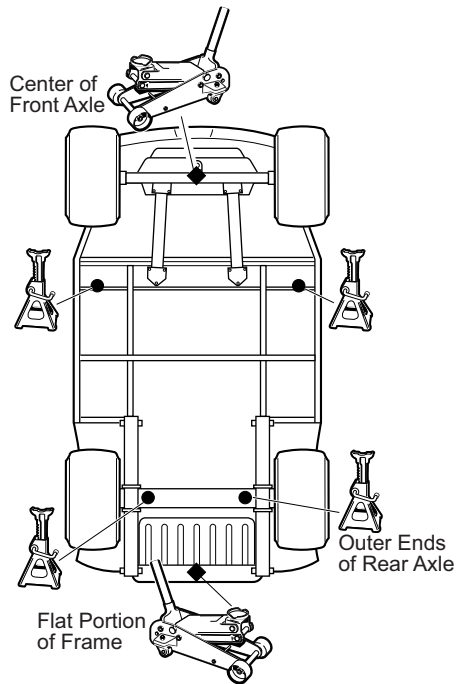
1. Chock the rear wheels to keep the vehicle from rolling backward.
2. Put a jack under the center of the front axle.
3. Raise the vehicle with the jack.
4. Install jack stands under the front frame cross member as shown.
5. Lower the vehicle until it rests on the jack stands.
6. Remove the jack.
7. Confirm that the vehicle is stable on the jack stands before proceeding with any service.

Lifting Rear

1. Chock the front wheels to keep the vehicle from rolling forward.
2. Put a jack under the center of the receiver hitch.
3. Raise the vehicle with the jack.
4. Install jack stands under each end of the rear axle.
5. Lower the vehicle until it rests on the jack stands.
6. Remove the jack.
7. Confirm that the vehicle is stable on the jack stands before proceeding with any service.

Lowering Vehicle

1. Make sure chocks are still in place on any wheels that remain on the ground.
2. Put the jack in the same location that was used to raise the vehicle.
3. Raise the vehicle enough to remove the jack stands. Remove the jack stands from underneath the vehicle.
4. Slowly lower the vehicle to the ground and remove the jack.



VEHICLE CLEANING AND CARE

Keeping your vehicle clean is not only beneficial to its appearance, but can also help extend the life of various components.

Washing the Vehicle

NOTICE: Do not use a pressure washer to wash the vehicle. High water pressure can damage components.

Some products, including insect repellents and chemicals, will damage plastic surfaces. Do not allow these types of products to contact the vehicle.

- Use an automotive type cleaner or mild soap to wash the vehicle. Harsh cleaners can scratch the finish.
- Use clean or new cloths and pads for washing. Reused cloths and pads can contain dirt particles that will scratch the finish.
- Inspect all grease fittings for dirt intrusion or lack of grease after washing. Apply grease as required to maintain proper function.
- Use a sponge or soft brush and a soap/water solution to clean the vinyl seats. Rinse with clean water.
- Use an automotive type wash cloth to wash the body of the vehicle. To prevent the soap from drying on the vehicle, rinse with clean water frequently.
- Clean the windshield with water and a clean cloth. Remove small scratches with a plastic polish.
- Clean the bottom of the vehicle where mud or dirt can collect. Loosen any packed sediment to help with removal. Be careful not to damage the paint.
- Dry the vehicle with a chamois before the water dries to prevent water spots.

Polishing the Vehicle

- Do not use medium to heavy duty compounds on the finish. Use wax that is for clear coat automotive finishes only. Do not apply wax or polish to matte finish surfaces.
- Use clean or new cloths and pads for polishing. Old or reused cloths and pads can contain dirt particles that will scratch the finish.

TIRES

Follow the tire maintenance procedures as instructed in this manual and on the labels on the vehicle.

Always use the approved size and type of replacement tires. See Vehicle Specifications for the proper tire type and size.

⚠ WARNING Worn, improperly inflated, improperly sized, or incorrectly installed tires will affect vehicle handling and could cause an accident resulting in severe injury or death.

Inflate all tires to the same pressure. Operating with unequal or incorrect pressure can adversely affect steering and handling and could cause an accident resulting in severe injury or death.

To decrease the risk of tire explosion, do not exceed the tire inflation rating on the tire sidewall. Make sure the tires are properly inflated at all times of operation. See *Tire Pressure* on page 15.

To decrease the risk of tire explosion, inflate small amounts of air into the tire at intervals to allow the bead to seat properly. Because of the low volume of the small tires, over inflation can occur in seconds. Never exceed the tire inflation pressure rating on the tire sidewall when seating a bead. Protect your face and eyes when you remove a valve core.

When you remove the wheels, use only sockets made for impact wrenches to decrease the risk of injury by a broken socket.

Do not use tires with a low rated pressure. Do not use tires that have a recommended tire inflation pressure less than the tire inflation pressure recommended in the owner's manual.

Do not over inflate the tires. Excess pressure can cause the tire to separate from the wheel or cause a tire explosion.

MAINTENANCE

Tire Pressure

Maintaining correct tire inflation pressure is essential for safe vehicle operation. You can vary the inflation pressure, within the recommended range to suit the condition of the terrain.

TIRE PRESSURE RANGE	TERRAIN CONDITIONS	RECOMMENDATION
18-22 psi (124 - 152 kPa)	hard surfaces or pavement	Inflate to higher pressure within the range; never exceed maximum pressure indicated.
	soft terrain or turf	Inflate to lower pressure within the range to reduce potential damage to the terrain or turf.

Tire Repair

Tools

- lug wrench, 3/4"
- impact socket, 3/4"
- impact wrench
- torque wrench, ft.lbs.

NOTICE: Tire plug tools and plugs are available at automotive outlets. The tire does not have to be removed from the wheel to install the tire plug.

Use a tire plug to repair small holes in the tread part of the tire. For large holes or holes/cuts in the tire sidewall, the tire must be replaced.

1. Remove the wheel from the vehicle. See *Wheel Removal* on page 36.
2. Locate the leak in the tire.
 - a. If the tire is very low or flat, fully inflate the tire.
 - b. Brush soapy water over the surface of the tire. Air bubbles will be visible where the air is leaking from the tire.
 - c. Mark the hole with chalk.
3. Install the plug according to the manufacturer's instructions.
4. Install the wheel on the vehicle. See *Wheel Installation* on page 37.
5. Fully inflate the tire. See *Tire Pressure* on page 15.

Tire Replacement

Tire replacement requires a tire mounting machine, and must be done by a qualified tire center or an authorized dealer.

WHEELS

⚠ WARNING

Worn, improperly inflated, improper sized, or incorrectly installed tires will affect vehicle handling and could cause an accident resulting in severe injury or death.

⚠ CAUTION

To decrease the risk of component damage, do not tighten the lug nuts to more than the torque specified below.

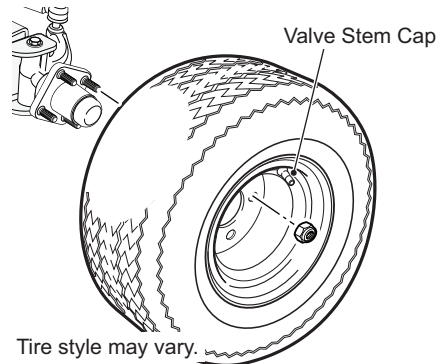
Check the lug nuts for tightness at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 32.

Wheel Removal

Tools

- lug wrench, 3/4"
- impact socket, 3/4"
- impact wrench
- torque wrench, ft.lbs.

1. Lift the vehicle. See *LIFTING THE VEHICLE* on page 34.
2. Remove the lug nuts.
3. Remove the tire from the vehicle.



Wheel Installation

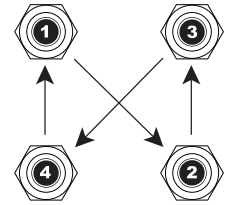
Lug Nut Torque	65 - 85 ft.lbs. (88 - 115 Nm)
----------------	-------------------------------

NOTICE: To decrease the risk of component damage, do not tighten the lug nuts to more than the specified torque.

Always install lug nuts using a cross sequence pattern to ensure the even seating of the wheel against the hub.

1. Install the wheel on the hub with lug nuts. Make sure the valve stem is to the outside.
2. Finger tighten the lug nuts.
3. Using the cross tightening pattern shown to the right, tighten the lug nuts to 65 - 85 ft.lbs. (88 - 115 Nm). Tighten in increments of 20 ft. lbs. (27 Nm).

Lug Nut Tightening Pattern



LIGHTS

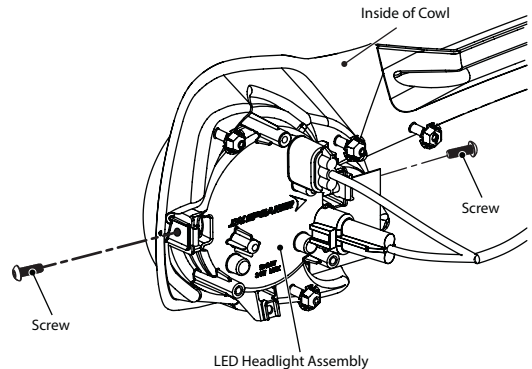
Clean the lights frequently to maximize visibility.

CAUTION Do not operate this vehicle at night or in low light if any lights are not properly and fully functioning. Poor lighting reduces visibility that could cause an accident resulting in severe injury or death.

CAUTION Light components can get hot if they have been in operation. Allow the lights to cool before servicing to prevent burns to the skin.

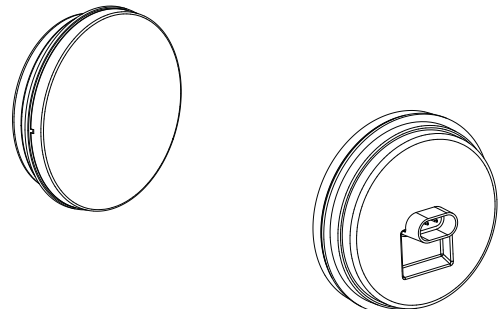
LED Headlight Assembly Replacement

1. Disconnect the headlight harness from the headlight.
2. Remove the screws securing the headlight assembly to the headlight bezel.
3. Remove the headlight assembly and install the new one with screws.
4. Connect the harness to the headlight assembly.



LED Tail Light/Brake Light Replacement

1. Disconnect the tail light harness from the tail light.
2. Press the tail light assembly out of the grommet by pushing on the back of the assembly.
3. Press the new tail light assembly into the grommet.
4. Connect the harness to the tail light assembly.

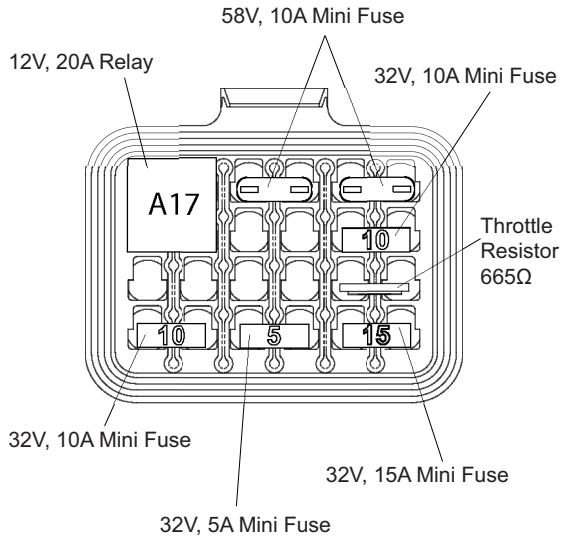


MAINTENANCE

FUSE REPLACEMENT

NOTICE: Have the vehicle inspected by your dealer if fuses continue to blow after they have been replaced.

1. Lift the rear seat bottom to access the PDM.
2. Open the PDM to access the fuses.
3. Remove the old fuse and replace with a new fuse of the same type and size.
4. Fuses are available from a local Distributor, an authorized Branch or the Service Parts Department.



CONTROLLER SYSTEM TEST

At monthly intervals, test the controller by allowing the vehicle to roll down an incline with the accelerator pedal released. Braking force should be felt at approximately 2 mph (3 kph) indicating that the system is functioning. If vehicle speed continues to rise, apply the brake and have vehicle inspected by a trained mechanic.

REAR AXLE

The only maintenance necessary for the first five years is the inspection of the rear axle for lubricant leakage. Unless leakage is visible, the lubricant needs to be replaced after five years. Refer to the Service and Repair Manual for the fluid replacement procedure.

Change the axle oil at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 32.

Checking the Lubricant Level

Clean the area around the check/fill plug and remove the plug. The correct lubricant level is just below the bottom of the threaded hole. If lubricant is low, add lubricant as required. Add lubricant slowly until lubricant starts to seep from the hole. Install the check/fill plug. In the event that the lubricant is to be replaced, the oil pan must be removed or the oil siphoned through the check/fill hole.

LUBRICATION

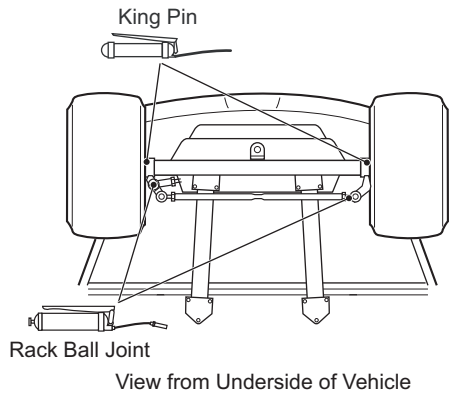


Do not use more than three pumps of grease in a grease fitting at any one time. Excess grease can cause grease seals to

fail, or allow grease into areas that could damage components.

Pumping more than three pumps of grease in a grease fitting could damage grease seals and cause premature bearing failure.

Lubricate components at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 32.



BRAKES



WARNING Always inspect the pedal travel before operating a vehicle to confirm some brake function is present.

All driving brake tests must be done in a safe location with regard for the safety of all personnel.

NOTICE: Over time, a subtle loss of performance may take place. It is, therefore, important to establish the standard with a new vehicle.

Test and service the brake system at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 32.

Periodic Brake Test

The *Periodic Brake Test* must be performed initially and regularly as an evaluation of your vehicle's brake system performance. It is a method of identifying a subtle loss of braking performance over time.

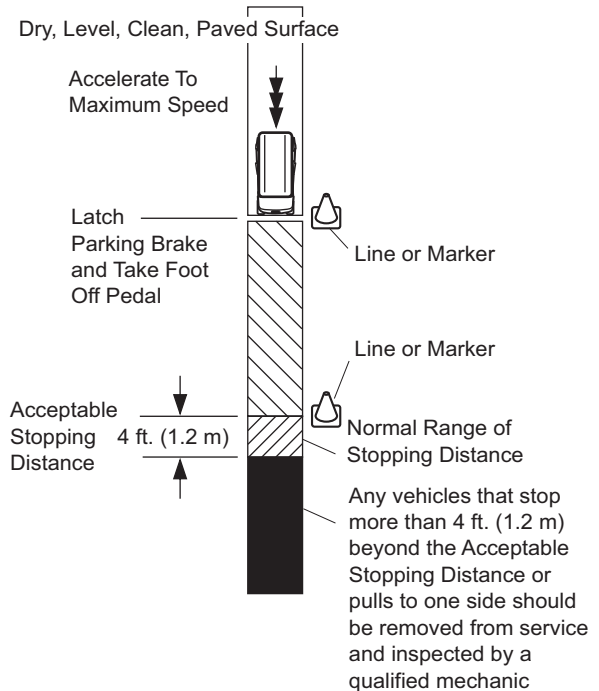
Establish the 'acceptable stopping distance' when your vehicle is new and the brakes are at their peak of performance. As your vehicle is used, a subtle loss of braking performance may be detected, so it is important to establish the standard with a new vehicle.

Actual stopping distances are influenced by weather conditions, terrain, road surface condition, vehicle weight and speed. No specific braking distance can be reliably specified, so it is important to establish a base to test with.

The test is conducted by engaging the park brake instead of the brake pedal to eliminate different pedal pressures, to include affects of linkage mis-adjustment and provide a more accurate test.

NOTICE: You must have enough space to accelerate to maximum speed before engaging the parking brake. Use a marker to indicate the predetermined line to engage the parking brake that you will use for the performance test.

1. On a dry, level, clean, paved surface, accelerate the vehicle to maximum speed.
2. Engage the parking brake at the predetermined and marked line.
3. Mark the line where the vehicle comes to a complete stop.
4. If the vehicle stops in a significantly greater distance than the established distance in future tests, or pulls to one side, it should be tested again.
5. If the vehicle fails the second test, discontinue use until it can be inspected and determined safe for operation by a qualified mechanic.



MAINTENANCE

LITHIUM-ION BATTERY PACK

Charge the battery pack using only the OEM approved Lithium-Ion battery charger.

WARNING

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

Do not attempt to remove batteries or battery cables. 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.

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.

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 key switch is in the OFF position and the run/tow switch is in the TOW/STORAGE position 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.

Keep the battery pack away from static electricity.

WARNING

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



Lithium-Ion batteries are recyclable:

- Return discarded batteries to distributor or manufacturer for recycling.
- Contact local or state environmental department for the disposal information.

BATTERY CHARGING AND MAINTENANCE

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

Do not charge the batteries if the ambient temperature is below -4°F (-20°C) or above 113°F (45°C).

Before connecting the battery charger:

- Park the vehicle, turn the key switch to OFF and remove the key.
- Inspect the charging receptacle for dirt or debris. Clean if necessary.
- Inspect the charger cords for cracks or damage. Replace any damaged cords before use.
- Plug the charger into a receptacle on a dedicated circuit. Do not connect any other devices to the receptacle.
- Connect the charger to the vehicle.

Battery Charging

The battery charger is designed to completely charge the battery set. The automatic charger determines the correct length of charge for the battery set and turns off when the batteries are charged. Always refer to the instructions supplied with the charger.

BATTERY PROLONGED STORAGE

Improper storage may damage, destroy or cause permanent loss of battery capacity. Do not exceed storage time or temperature limits. Batteries must be charged to the correct level before storage. Storing fully depleted batteries will make them permanently unusable.

Storage Preparation

The optimum storage temperature range is between 65°F and 82°F (18°C and 28°C)

- Charge the battery module based on climate during storage period.
 - In cold climates, fully charge the battery module. Make sure that the charging operation is complete and there are no faults displayed on the charger. The green light on the charger should be on indicating the charge cycle is complete.
 - In hot climates, store the vehicle with a 30% to 50% charge of battery pack capacity.
- Turn the key to the OFF position and remove it from the key switch.
- Check the run - tow switch under the seat, make sure it is set in the TOW/STORAGE position.
- Turn off all accessories.

The storage time for properly charged Lithium-Ion batteries supplied with this vehicle varies based on the ambient temperature.

Temperature	Length of Storage Time
-22°F to -4°F (-30°C to -20°C)	One month at 30%-50% battery charge, all accessories turned off.
-4°F to 113°F (-20°C to 45°C)	Six months at 100% battery charge, all accessories turned off.
113°F to 140°F (45°C to 60°C)	One month at 100% charge, all accessories turned off.

TRANSPORTING THE VEHICLE



Do not ride or allow other people on a vehicle being transported on a trailer or being towed with another vehicle.

Hauling the Vehicle



Loose cargo or vehicle components can fly off when the vehicle is being transported. Secure or remove all cargo. Inspect the vehicle for loose components prior to transport.

Do not allow anyone to ride in a vehicle being transported on a trailer.

Remove the windshield before you transport a vehicle on a trailer.

- If the vehicle is being hauled on a trailer or truck at highway speeds, the canopy top must be removed.
 - The rated capacity of the hauling trailer or truck must be more than the weight of the vehicle and load plus 1000 lb (454 kg). See *Liberty - VEHICLE SPECIFICATIONS* on page 43 for the weight of the vehicle.
1. Drive the vehicle onto the trailer or truck.
 2. Engage the parking brake.
 3. Turn the key switch to the OFF position.
 4. To prevent the loss of the key, remove it from the key switch.
 5. Make sure the seats are secured.
 6. Secure the vehicle to the trailer or truck with tie downs, straps or ropes.

Towing the Vehicle

⚠ WARNING Only tow the vehicle for recovery purposes. Before towing, turn the key switch to N and move the Run/Tow switch to the TOW position. Ensure brakes and steering are operable. Always have a person driving the vehicle to steer and operate brakes when it is being towed. Do not tow the vehicle above 5 mph (8 kph). Failure to abide by these instructions could cause harm to vehicle and persons involved.

See *Run/Tow Switch Operation (P/N 679115)* on page 13 for additional information.

LIBERTY - VEHICLE SPECIFICATIONS

Item	Specification
Overall Length	106 in (269 cm)
Overall Width	48 in (122 cm)
Overall Height (No Canopy)	52.5 in (133 cm)
Overall Height (With Canopy)	76 in (193 cm)
Wheel Base	76.5 in (194 cm)
Front Wheel Track	38 in (97 cm)
Rear Wheel Track	39 in (99 cm)
Ground Clearance (at Differential)	5.5 in (14 cm)
Turning Radius	12.85 ft (3.92 m)
Power Source	39.2 - 56.7V Li-ion Battery
Motor Type	AC Induction
HP Peak	11.7 hp (8.7 kW)
HP Continuous	4.4 hp (3.3 kW)
Electrical System	48 V primary, 12 V auxiliary
Battery Quantity and Type	Single, 56.7 Volt Li-Ion Composite Module (Standard Configuration)
Key or Pedal Start	Pedal
Battery Charger	56.7V 350 W Domestic Charger, 3 m charging cord
Speed Controller	Curtis 1206 AC Controller
Speed (Level Ground)	14.5 Mph (23 kph)
Drivetrain	Motor Shaft Direct Drive
Trans axle	Differential with helical gears
Gear Selection	Dash Mounted FNR/key switch
Rear Axle Ratio	16.99:1 (Forward)
Seating Capacity	4-Person
Dry Weight	914 lb (415 kg) (without batteries)
Curb Weight	960 lb (435 kg)
Dash / IP Storage Capacity	1123 in ³ (18403 cm ³)
Vehicle Load Capacity	800 lb (363 kg)
Towing Capacity	500 lb (227 kg)
Outside Clearance Circle	25.7 ft (7.83 m)
Steering	Self-compensating reduction rack and pinion
Front Suspension	Leaf springs with hydraulic shock absorbers
Rear Suspension	Leaf springs with hydraulic shock absorbers
Brakes	Dual rear wheel mechanical self-adjusting drum
Parking Brake	Self-compensating, single point engagement
Front and Rear Tires	Load Star 205/65-10
Frame	Welded steel with DuraShield™ e-coat and powder coat
Front Body and Finish	Injection Molded TPO
Rear Body and Finish	Thermo form ABS

Some items shown may be optional equipment

SPECIFICATIONS

MAINTENANCE LOG

Record periodic maintenance in the following maintenance log.

DATE	MILES (KM) AND HOURS	TECHNICIAN	SERVICE PERFORMED COMMENTS

MAINTENANCE LOG

DATE	MILES (KM) AND HOURS	TECHNICIAN	SERVICE PERFORMED COMMENTS

APPENDIX A

BATTERY CHARGER USER'S GUIDE



1 kW Industrial Battery Charger

QuiQ Charger - E-Z-GO Product Manual

This manual contains important safety and operating instructions for versions of the Delta-Q QuiQ (Model nos. 913-4830-E3/-E3B/-E5 /-E5B) installed on E-Z-GO brand vehicles. Please read this information before using your QuiQ Charger. For manufacturer contact information and technical support resources, please visit delta-q.com/support



SAVE THESE IMPORTANT SAFETY INSTRUCTIONS - This manual contains important safety and operating instructions – read before using charger.

INFORMATIONS IMPORTANTES DE SÉCURITÉ Ce manuel contient des instructions importantes concernant la sécurité et le fonctionnement.



Warning

Charge only 48 Volt Lithium-Ion type batteries activated by Samsung SDI. Other types of batteries may burst causing personal injury and damage. Never charge a frozen battery. Study the battery manufacturer's specific precautions.



Attention

Recharger uniquement les batteries de type Lithium-Ion 48V activées par Samsung SDI. Autres types de batteries pourraient exploser causant des blessures corporelles et des dommages. Ne jamais charger une batterie gelée. Prendre connaissance des mesures de précaution spécifiées par le fabricant de la batterie.



Danger

Risk of electric shock. Connect charger power cord to an outlet that has been properly installed and grounded in accordance with all local codes and ordinances. A grounded outlet is required to reduce risk of electric shock – do not use ground adapters or modify plug. Do not touch uninsulated portions of output connector or uninsulated battery terminals. Disconnect the charger from either the AC supply or from the golf cart, before making or breaking the connections to the battery. Do not open or disassemble charger. Do not operate this charger if the AC supply cord is damaged or if the charger has received a sharp blow, been dropped, or is damaged in any way – refer all repair work to the manufacturer, or qualified personnel. This charger is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge on electrical systems and battery charging, unless they have been given supervision or instruction concerning use of the charger by a person responsible for their safety. Children should be supervised to ensure that they do not play with the charger.



Danger

Risque de décharge électrique. Ne pas toucher les parties non isolées du connecteur de sortie ou les bornes non isolées de la batterie. Toujours connecter le chargeur à une prise de courant mise à la terre. Déconnectez la source AC avant de faire ou défaire les connexions à la batterie en chargement. Ne pas utiliser le chargeur si le cordon d'alimentation AC est endommagé ou si le chargeur est abimé suite à une chute ou autre incident. Ne pas ouvrir ni désassembler le chargeur – référer toute réparation aux personnes qualifiées. Cet appareil n'est pas destiné à un usage par des personnes (dont les enfants) avec des facultés motrices, sensorielles ou mentales réduites, ou ayant une expérience et des connaissances insuffisantes, à moins qu'elles sont sous la supervision ou reçoivent les instructions sur l'utilisation de l'appareil d'un répondant garant de leur sécurité. Les enfants devraient être surveillés afin qu'il ne jouent en aucun temps avec l'appareil.

Maintenance Instructions

1. Do not expose charger to high pressure water spray when cleaning vehicle.
2. The enclosure of the charger meets IP66, making it dust-tight and protected against powerful water jets. The AC connection is rated to IP20, which is not protected against water. Protect the AC connection if used in wet or dusty environments.
3. If the detachable input power supply cord set is damaged, replace with a cord that is appropriate for your region:
 - ✦ This charger is provided with a cord set for connection to outlets operating at nominal 120 Volts (or 240 Volts as appropriate). If the input plug does not fit the power outlet, contact Delta-Q Technologies for the proper cord set terminating in an attachment plug of the proper configuration for the power outlet.
 - ✦ North America: UL or CSA listed / approved detachable cord, 3 conductor, 16AWG minimum and rated SJT; terminated in a grounding type IEC 60320 C14 plug rated 250V, 13A minimum
 - ✦ For all other regions: Safety approved detachable cord, 3 conductor, 1.5mm² minimum, rated appropriately for industrial use. The cord set must be terminated on one end with a grounding type input connector appropriate for use in the country of destination and, on the other end, an output grounding type IEC 60320 C14 plug.

Operating Instructions

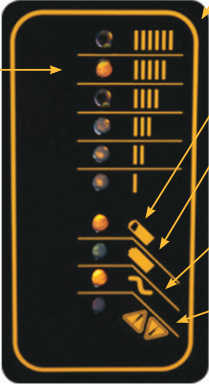
CAUTION: Charger enclosure may be hot during charging. Use hand protection if handling the charger while charging.

- + Extension cords must be 3-wire cord no longer than 30m(100') at 10AWG or 7.5m(25') at 16AWG per UL guidelines.
- + Only connect **ONE** QuiQ charger to a single 15A circuit or the circuit may become overloaded.

Ammeter

Displays scale of output current

- + If only ammeter and AC Indicator LEDs are lit: Less than 80% state of charge
- + If flashing: Output has been reduced due to high internal charger temperature.



Charger 10-LED Display

Charge Indicator (Orange Light)

- + If solid: Greater than 80% state of charge
- + If off: Less than 80% state of charge or pre-charge

Charge Completion Indicator (Green Light)

- + If solid: Charging is complete

AC Indicator (Orange Light)

- + If solid: AC power is present.
- + If flashing: Low AC voltage. Check electrical source and cord length.

Fault Indicator (Red Light)

- + Charger error. Refer to troubleshooting information below.



Receptacle Display

LED	Indication
Solid	Charge complete
Long flash	Greater than 80% state of charge
Short flash	Less than 80% state of charge
Off	See charger for indications.

Troubleshooting Instructions

If a fault occurs, count the number of red flashes between pauses and refer to the table below.

Flashes	Cause	Solution
Ⓜ 🔴 🔴 🔴 Ⓜ	Charger unable to apply wake-up pulse	Refer cart to service department
Ⓜ 🔴 🔴 🔴 🔴 🔴 Ⓜ	Charge timeout	Possible BMS error - refer cart to service department
Ⓜ 🔴 🔴 🔴 🔴 🔴 🔴 Ⓜ	BMS fault	Refer cart to service department
Ⓜ 🔴 🔴 🔴 🔴 🔴 🔴 🔴 🔴 Ⓜ	Charger shutdown due to high internal temperature.	Ensure sufficient cooling airflow. Reset the charger by interrupting AC power for 15+ seconds.
Ⓜ 🔴 🔴 🔴 🔴 🔴 🔴 🔴 🔴 🔴 🔴 Ⓜ	Internal charger fault	Reset the charger by interrupting AC power for 15+ seconds. Return to service department if fault persists.

Note: This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.



A

accelerating 26
accelerator pedal 22
anti-roll back feature 25
anti-stall feature 25

B

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 charging 40
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 storage 41
 warning 13
battery charger 24
battery maintenance 40
brake pedals 21
brakes 39
 periodic test 39
braking 27

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capacity
 fluids 33, 43
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Normal use, age, and wear on vehicle components can affect the safe operation and reliability of the vehicle. The recommended inspection and maintenance procedures are crucial for safety, performance, reliability and maximum longevity of your vehicle.

A damaged vehicle, or a vehicle that is not functioning properly is dangerous and must not be operated until repairs are made.

NOTICE: Read the following operational warnings before driving the vehicle:

⚠ WARNING

Before exiting the vehicle, turn the key switch to the OFF position and remove the key from the vehicle to prevent unauthorized use.

Drive the vehicle at appropriate speeds for the terrain and conditions. Be aware of any environmental conditions that change the terrain and your ability to control the vehicle.

Do not drive on excessively steep hills. Evaluate the terrain before descending a hill. Drive slowly and deliberately. Use the brake to limit speed and maintain control. Sudden braking or turning can cause a loss of vehicle control. Drive straight down the hill; do not drive across the hill.

Operate in approved areas.

Keep both feet, legs, hands and arms inside vehicle at all times.

Avoid driving on terrain that is too rough for the vehicle's capabilities and your driving skills.

Before driving in the reverse direction, make sure the area behind the vehicle is clear. Accelerate slowly and avoid making sharp turns.

Make sure the direction selector is in the correct position before pressing the accelerator pedal.

Decrease speed before and during turns.

Bring the vehicle to a complete stop before moving the direction selector.

See *Vehicle Load Capacity* on page 43 for the vehicle load and seat capacity.

NOTICE: Read the following maintenance information and warnings before servicing or repairing the vehicle:

Follow the procedures and comply with the safety information in this manual while performing vehicle service or maintenance.

Use the tools shown in the tool list and wear the specified safety equipment when performing vehicle service or maintenance.

⚠ WARNING

Remove all jewelry before servicing the vehicle.

Do not allow loose clothing or hair to contact the moving parts.

Do not touch hot objects.

The drive wheels must be lifted and supported on jack stands before performing any service to the powertrain while the motor is in operation.



When servicing the vehicle, always wear eye protection. Be careful when working around batteries, using solvents, or compressed air.

Use insulated wrenches to decrease the risk of a short-circuit if a wrench contacts the battery terminals. A short-circuit in a battery can cause an explosion.

To prevent the risk of battery explosion, keep all flammable materials, open flames, or sparks away from the batteries.

Maintain constant awareness that some components are heavy, spring loaded, corrosive, explosive, can cause high amperage, or get extremely hot. Keep your hands, face, feet and body away from any area that can expose them to injury if an unexpected situation occurs.



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International:

Phone: 001-706-798-4311, FAX: 001-706-771-4609

California Proposition 65



WARNING

Operating, servicing and maintaining a passenger vehicle or off-road vehicle can expose you to chemicals including phthalates and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, wear gloves and wash your hands frequently when servicing your vehicle.

For more information go to www.P65Warnings.ca.gov/passenger-vehicle

Parts Manuals and Service Manuals are available from a local Distributor, an authorized Branch, Genuine E-Z-GO Parts & Accessories Department or at www.shopezgo.com.

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