



A Textron Company

WELCOME

Thank you for purchasing this vehicle. Before you drive the vehicle, read this Owner's Guide. This guide contains maintenance and operation information. The illustrations can show items that are optional for your vehicle.

You can do most of the service procedures in this guide with common, automotive hand tools. If necessary, contact your service representative for information about how to service the vehicle as shown in the Periodic Service Schedule.

Repair or replacement parts are available from your E-Z-GO dealer or E-Z-GO Service Parts Department.

When you contact E-Z-GO about service or parts for your vehicle, the information below is needed.

VIN		 	
Vehicle Model_		 	
Manufacturing	Date Code		

NOTICE

E-Z-GO 2Five is a motor vehicle that can only be operated by a licensed driver, and must be driven in accordance with all State traffic laws and the insurance requirements for motor vehicles.

2Five OWNER'S GUIDE

ELECTRIC POWERED LOW-SPEED VEHICLE

2Five TWO-PASSENGER 2Five FOUR-PASSENGER

STARTING MODEL YEAR 2016

ISSUED MAY 2015

646299

CALIFORNIA Proposition 65 Warning

WARNING: Motor vehicles may contain fuels, oils and fluids, battery posts, terminals, and related accessories which contain lead, lead compounds and other chemicals identified by the State of California to potentially cause cancer, birth defects and other reproductive harm. These chemicals are found in vehicles, vehicle parts and accessories, both new and replacements. During maintenance, these vehicles generate used oil, waste fluids, grease, fumes and particulates, all identified by the State of California to potentially cause cancer, birth defects, and other reproductive harm.

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 factory specifications. Such modifications can cause serious personal injury or death. E-Z-GO Division of Textron Inc. prohibits and disclaims responsibility for any such modifications or any other alteration which would adversely affect the safety of the vehicle.

E-Z-GO Division of Textron Inc. reserves the right to incorporate engineering and design changes to products in this manual, without obligation to include these changes on units sold previously.

The information contained in this manual may be revised periodically by E-Z-GO, and therefore is subject to change without notice.

E-Z-GO DISCLAIMS LIABILITY FOR ERRORS IN THIS MANUAL, and SPECIFICALLY DISCLAIMS LIABILITY FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES resulting from the use of the information and materials in this Manual.

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

CONTACT US:	North America:						
E-Z-GO Division of Textron Inc.	Technical Assistance & Warranty PHONE: 1-800-774-3946						
1451 Marvin Griffin Road.	FAX: 1-800-448-8124						
Augusta, Georgia, USA 30906-3852	Service Parts PHONE: 1-888-GET-EZGO (1-888-438-3946) FAX: 1-800-752-6175						
	International: PHONE: 001-706-798-4311 FAX: 001-706-771-460						

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

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

If you do not correctly maintain the batteries, you will cancel the warranty. Refer to the MAINTENANCE section for instructions on the correct maintenance of the batteries.

BATTERY PROLONGED STORAGE

The batteries discharge over time. The rate of discharge changes according to the ambient temperature, the age and condition of the batteries.

Completely charged batteries will not freeze in winter temperatures unless the temperature is less than -75°F (- 60°C).

For winter storage, the batteries must be clean, completely charged and disconnected from any electric drain.

NOTES

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

The battery charger can remain connected to the vehicle to keep a full charge on the batteries while the charger is connected to an active electrical supply. If the power to the electrical supply is disconnected or interrupted, the battery charger will continuously check the charge on the battery pack. A continuous check of the battery pack will pull power from the battery pack and drain the batteries.

The batteries must be checked and charged again as required or at a minimum of 30-day intervals.

Check and keep correct fluid level in all battery cells during the storage period. Correct fluid level is necessary for maximum battery performance.

BATTERY DISPOSAL

Lead-acid batteries are recyclable. Return discarded batteries to distributor, manufacturer or lead smelter for recycling. For neutralized spills, put residue in acidresistant containers with absorbent material such as sand. Dispose in accordance with local, state and federal regulations for acid and lead compounds. Contact local or state environmental authorized people for the disposal information.

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SAFETY

GENERAL

For any questions about material in this manual, contact an authorized representative.

Read and understand all labels on the vehicle. Always replace any damaged or missing labels.

On steep hills it is possible for vehicles to coast at greater speeds. To prevent loss of vehicle control and possible serious injury, speeds should be limited to no more than 25 mph.

Catastrophic damage to the drivetrain components due to excessive speed may result from driving the vehicle above 25 mph. Damage caused by excessive speed may cause a loss of vehicle control, is costly, is considered abuse, and will not be covered under warranty.

NOTICES, CAUTIONS, WARNINGS AND DANGERS

Read the **NOTICES, CAUTIONS, WARNINGS** and **DANGERS**. The person who services a vehicle needs the mechanical skill and experience to see possible hazardous conditions. Incorrect service or repairs can cause damage to the vehicle or make the vehicle dangerous to operate.



NOTICE

A NOTICE indicates and describes information not related to personal injury.



A CAUTION indicates a dangerous condition that can cause injury that is not life threatening.

A WARNING

A WARNING indicates a dangerous condition that can cause death or serious injury.

A DANGER

A DANGER indicates a dangerous condition that will cause death or serious injury.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

This manual contains recommended maintenance procedures from the manufacturer. Follow these procedures and fault diagnosis information to get the best service from the product. To decrease the risk of personal injury or property damage, obey all the information in this manual.



THE E-Z-GO 2Five SHALL BE OPERATED ONLY BY PERSONS WITH VALID DRIVERS LICENSES, AND IN ACCORDANCE WITH APPLICABLE STATE REQUIREMENTS. THIS IS A LEGAL REQUIREMENT AND IS IMPORTANT TO THE SAFE USE AND OPERATION OF THE PRODUCT.

All customers should adhere to this SAFETY RESTRICTION, in connection with the use of all E-Z-GO products, new and used, in personal transportation applications.

Federal Low-Speed Vehicle Standard (FMVSS 571.500) can be obtained at Title 49 of the Code of Federal Regulations, section 571.500, or through the Internet at the website for the U.S. Department of Transportation - at Dockets and Regulation, then to Title 49 of the Code of Federal Regulations (Transportation).

All vehicles can be used for a variety of tasks often beyond the original intended use of the vehicle; therefore, it is impossible to anticipate and warn against every possible combination of circumstances that may occur. No warning can replace good common sense and prudent driving practices.

Good common sense and prudent driving practices do more to prevent accidents and injury than all warnings and instructions combined. E-Z-GO strongly suggests that all users and maintenance personnel read this entire manual paying particular attention to the CAUTIONS, WARNINGS, and DANGERS contained therein.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

If you have any questions regarding this vehicle, contact your authorized E-Z-GO 2Five dealer or write to the address on the back cover of this publication, Attention: Customer Quality Department.

E-Z-GO reserves the right to make design changes without obligation to make these changes on units previously sold. The information contained in this manual is subject to change without notice.

E-Z-GO IS NOT LIABLE FOR ERRORS IN THIS MANUAL. E-Z-GO IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES THAT RESULT FROM THE USE OF, AND THE RELIANCE ON, THE MATERIAL IN THIS MANUAL.

This vehicle is designed and manufactured in accordance with FMVSS 571.500.

Be sure that all electrical accessories are grounded directly to the battery (-) post. *Never use the chassis or body as a ground connection.*

Refer to GENERAL SPECIFICATIONS for vehicle seating capacity.

🛦 WARNING

Never modify the vehicle in any way that will alter the weight distribution of the vehicle, decrease its stability, or increase the speed or extend the stopping distance beyond the factory specification. Such modifications can result in serious personal injury or death.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Do not change the vehicle in any manner that changes the weight distribution, decreases stability, increases speed or extends the necessary distance to stop more than the factory specification. E-Z-GO is not responsible for changes that cause the vehicle to be dangerous.

Vehicles that are capable of higher speeds must limit their speed to no more than the speed of other vehicles when used in a golf course environment. Additionally, speed should be further moderated by the environmental conditions, terrain, and common sense.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

GENERAL OPERATION

Read the following warnings before attempting to operate the vehicle.



When you leave the vehicle, turn the key to the OFF position and remove the key from the vehicle.

Drive the vehicle only as fast as terrain and conditions allow. Consider the terrain and traffic conditions. Consider environmental conditions that change the terrain and your ability to control the vehicle.

Do not drive fast downhill. Sudden stops or change of direction can cause a loss of control.

Use the brake to control the speed of the vehicle when you drive down a slope.

When possible, stay in approved areas and do not drive on steep slopes.

Always keep feet, legs, hands and arms inside vehicle.

Do not drive on rough terrain.



Before you drive in the reverse direction, make sure the area behind the vehicle is clear.

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

Decrease speed before and during turns.

Make sure you completely stop the vehicle before you move the direction selector.

See 'GENERAL SPECIFICATIONS' for the vehicle load and seat capacity.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

NOTICE

Read the following text and warnings before you service the vehicle.

Normal use, wear or abuse can cause some components on the vehicle to fail. The manufacturer can not know all possible component failures or the methods that failures can occur.

A vehicle in need of repair does not function properly and can be dangerous.

Be careful when you service the vehicle. Be aware of your safety and the safety of other people in the area.

Some components are heavy, spring loaded, corrosive, explosive, can cause high amperage or get hot. Battery acid and hydrogen gas can cause injury. Do not put your hands, face, feet or body in a location that can expose them to injury if an unexpected situation occurs.

Always use the correct tools shown in the tool list and wear safety equipment.



Remove all jewelry before you service the vehicle.

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

Do not touch the hot objects.



When you service the vehicle, always wear eye protection. Be careful when you do work around batteries or you use solvents or compressed air.

Hydrogen gas is formed when charging batteries. Do not charge batteries without adequate ventilation.

Do not permit open flame or anyone to smoke in an area that is being used for charging batteries.

ALWAYS:

- Use the vehicle in a responsible manner and maintain the vehicle in safe operating condition.
- Read and observe all warnings and operation instruction labels affixed to the vehicle.
- Use extreme caution in areas where pedestrians are present.
- Maintain adequate distance between vehicles.
- Follow all safety rules established in the area where the vehicle is being operated.
- Reduce speed to compensate for poor terrain or conditions.
- Apply brake to control speed on steep grades.
- Reduce speed in wet areas.
- Use extreme caution when approaching sharp or blind turns.
- Use extreme caution when driving over loose terrain.

MAINTENANCE

ALWAYS:

- Replace damaged or missing warning, caution or information labels.
- Service the vehicle according to the periodic service schedule in this manual.
- Make sure that approved and qualified personnel do all repairs.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

- Follow the manufacturers maintenance procedures.
- Use insulated tools within the battery area to prevent sparks or battery explosion.
- Use specified replacement parts, DO NOT use replacement parts of less quality.
- Use recommended tools.Make sure that tools and procedures not specified by the manufacturer will not be a safety risk to personnel or operation of the vehicle.
- Use wheel chocks and support vehicle with jack stands. NEVER get below a vehicle that is supported by a jack. Lift the vehicle according to the manufacturers instructions.
- Make sure you service the vehicle in an area away from open flame or sparks.
- Know that a vehicle in need of repair does not operate correctly and can be dangerous to operate.
- After you do the repairs or maintenance, test the vehicle in a safe area that is without vehicle and person traffic.
- Make sure you record and keep all of the maintenance history of the vehicle.

VENTILATION

ALWAYS:

- Charge the vehicle in a well ventilated area.
- Charge in an area free of flammable liquids and items.
- Charge a vehicle in an area that is free from flame or spark. Pay particular attention to natural gas or propane water heaters and furnaces.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

- Use a dedicated circuit for each battery charger, DO NOT permit other appliances to be plugged into the receptacle when the charger is in operation.
- Operate the charger in accordance with manufacturers recommendations or applicable electrical codes.

SEAT BELTS

🛦 WARNING

Always operate the vehicle with seat belts properly fastened.

Be certain the seat belts are latched securely and are free from twists.

Position the shoulder belt across the top of the shoulder. Do not place the shoulder belt under an arm.

Loose fitting safety belts significantly reduce protection. Keep belts snug and positioned low on the hips.

Do not exceed the recommended number of occupants for the vehicle;

Bucket seats are designed for one occupant only.

Bench seats are designed for a maximum of two occupants.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

The driver and all passengers must wear seat belts, one person per belt.

The two-passenger 2Five has two bucket seats and is equipped with two safety belts, one for the driver and one for the passenger. The four-passenger 2Five has a rear-facing bench seat with two additional passenger seat belts. The safety belts must be used at all times while operating the vehicle.

This vehicle has not been tested for use with automotive style child safety seats or booster seats.

A CAUTION

Do not use automotive style child safety seats or booster seats with this vehicle.

Inspect the safety belt webbing and hardware periodically. Check for cuts, frays or loose parts. Replace components if excessive wear or damage is noticed.

Keep safety belts clean and dry. To clean, use mild soap and warm water. Do not use bleach, dye or abrasive cleaners as this will weaken the belt webbing material.

Do not insert any foreign objects into the retractor mechanism.

Periodically check for smooth operation and replace if the mechanism is not operating properly.

Pregnant, disabled, or injured persons should consult their doctor for specific recommendations before using the 2Five.

Seat Belt Operation

To properly secure the seat belts, pull the metal tab out away from the retractor and insert into the appropriate buckle located near the center of the seat. A click will be heard when the tab is securely latched. Position the lap belt as low as possible on the hips, not the waist. Properly adjust and ensure a snug fit by pulling the shoulder portion upward.

The retractor will lock the belt during sudden stops. It may also lock if the person leans forward too quickly. Slow, easy motions will allow for free travel.

To release the safety belt, press the buckle release button and allow the belt to retract. If the belt does not retract, check for twists.

REPORTING SAFETY DEFECTS

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying E-Z-GO Division of Textron Inc.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or E-Z-GO Division of Textron Inc.

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to http://nhtsa.safercar.gov; or write to:

> Administrator, NHTSA 1200 New Jersey Avenue SE Washington, DC 20590

You can also obtain other information about motor vehicle safety from http://www.safercar.gov

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

LABELS AND PICTOGRAMS



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.



Owner's Guide

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Notes:

GENERAL SPECIFICATIONS

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

GENERAL SPECIFICATIONS A Textron Company MODEL: 2FIVE - 2 Passenger TYPE: ELECTRIC LOW SPEED VEHICLE MODEL YEAR: 2016 Part No:. 643508G01 PRODUCT SPECIFICATION CONFIGURATION HIGHLIGHTS Programmable AC Drive System: Factory programmable to application Solid State variable frequency AC speed controller 235 Amp AC Controller Drive-by-wire electronic throttle control Full torque, reduced speed reverse • Dash mounted direction selector switch (Forward-Neutral-Reverse) Sealed Hall effect throttle sensor Descent speed control and automatic hill hold Full diagnostic capability (Hand held diagnostic unit) · Full-time regenerative braking Dash mounted High/Low speed selector switch 48 Volt AC induction motor, solid copper windings. 4.4 hp (3.3 kW) Continuous, 15 hp (11.2 kW) peak. AC system reads motor speed for Motor: accurate speed control in all conditions. Regenerative braking for maximum economy Battery Charger: On-board 48 VDC PowerWise™ High Frequency, 120/230 VAC 50/60 Hz with 30 amp DC-DC Convertor. (U.L. & C.S.A. Certified) Electrical System: 48 Volt DC, four, 12 volt deep cycle storage batteries (60 minute minimum, 150 amp-hour @ 20 hr. discharge rate) Drive Train: Direct motor shaft connected to transax le pinion shaft Transaxle: Differential with reverse helical gears Brakes: 4-wheel hydraulic disc brakes and Induction motor. Electro-magnetic parking brake is applied automatically Body Protection: Front, Rear & Side energy transfer bumpers

PRODUCT OVERVIEW								
Dimensions			DC-DC Convertor	30 amp - Integrated into On-board Charger				
Overall Length	94.8 in	241 cm	Performance					
Overall Width	47.3 in	120 cm	Seating Capacity & Style	2 Persons - Bucket Seats				
Overall Height	71.4 in	181 cm	Dry Weight	822 lb	373 kg			
Overall Height (with Strobe)	75.2 in	191 cm	Curb Weight	1,150 lb	522 kg			
Wheel Base	65.9 in	167 cm	Vehicle load capacity	800 lb	363 kg			
Front Wheel Track	36.7 in	93 cm	Gross Axle Weight Rating - F	575 lb	261 kg			
Rear Wheel Track	39.7 in	101 cm	Gross Axle Weight Rating - R	2,000 lb	907 kg			
Gnd Clearance @ Differential	4.7 in	12 cm	Outside Clearance Circle	19.7 ft	6.0 m			
Vehicle Power			Speed - Low (Level Ground)	14.0 mph	22.5 kph			
Power Source	48 Volts DC		Speed - High (Level Ground)	25.0 mph	40.2 kph			
Motor Type	48 Volts AC		Speed - Reverse	8.0 mph	12.9 kph			
Horsepower (kW)	4.4 hp	3.3 kW	Steering & Suspension					
Electrical System	48 Volt		Steering	Double Ended Rack & Pinion -	3.69 turns to lock			
Batteries (Qty, Type)	Four, 12 Volt Deep Cycle		Front Suspension	Independent A-arm with Coil Over Shock				
Key or Pedal Start	Pedal Start		Rear Suspension	Mono-Leaf Springs with Hydraulic Shocks				
Speed Controller	235 amp		Service Brake	4-Wheel Hydraulic Disc with Motor Regen				
Drive Train	Motor Shaft Direct Drive		Parking Brake	Spring Applied Electro-magnetic				
Transax le	Helical Gears		Front & Rear Tires	DOT Street Legal 205-50-10 Radial				
Direction Selection	Dash mounted Forward-Neutral-Reverse		Body & Chassis					
Speed Selection	Dash mounted High-Low switch		Frame	Welded Steel with DuraShield powder coat				
Rear Axle Ratio	14.76:1 (F)		Body & Finish	Injection Molded TPO & Automotive Style Paint				
Battery Charger	Onboard 48 VDC PowerWise™		Standard Color	Black				
Some items shown may be optional equipment								

GENERAL SPECIFICATIONS

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.



		PRODUCT	OVERVIEW		
Dimensions			DC-DC Convertor	30 amp - Integrated into On-board	d Charger
Overall Length	107.1 in	272 cm	Performance		
Overall Width	47.3 in	120 cm	Seating Capacity & Style	4 Persons/Bucket(F) & Bench(R) Seats
Overall Height	71.2 in	181 cm	Dry Weight	872 lb	396 kg
Overall Height (with Strobe)	75.2 in	191 cm	Curb Weight	1,200 lb	544 kg
Wheel Base	65.9 in	167 cm	Vehicle load capacity	800 lb	363 kg
Front Wheel Track	36.7 in	93 cm	Gross Ax le Weight Rating - F	575 lb	261 kg
Rear Wheel Track	39.7 in	101 cm	Gross Ax le Weight Rating - R	2,000 lb	907 kg
Gnd Clearance @ Differential	4.5 in	11 cm	Outside Clearance Circle	19.7 ft	6.0 m
Vehicle Power			Speed - Low (Level Ground)	14.0 mph	22.5 kph
Power Source	48 Volts DC		Speed - High (Level Ground)	25.0 mph	40.2 kph
Motor Type	48 Volts AC		Speed - Reverse	8.0 mph	12.9 kph
Horsepower (kW)	4.4 hp	3.3 kW	Steering & Suspension		
Electrical System	48 Volt		Steering	Double Ended Rack & Pinion - 3	3.69 turns to lo
Batteries (Qty, Type)	Four, 12 Volt Deep Cycle		Front Suspension	Independent A-arm with Coil Ov	er Shock
Key or Pedal Start	Pedal Start		Rear Suspension	Mono-Leaf Springs with Hydrauli	ic Shocks
Speed Controller	235 amp		Service Brake	4-Wheel Hydraulic Disc with Mo	tor Regen
Drive Train	Motor Shaft Direct Drive		Parking Brake	Spring Applied Electro-magnetic	
Transaxle	Helical Gears		Front & Rear Tires	DOT Street Legal 205-50-10 Radi	ial
Direction Selection	Dash mounted Forward-Neutral-Reverse		Body & Chassis		
Speed Selection	Dash mounted High-Low switch		Frame	Welded Steel with DuraShield powder coat	
Rear Axle Ratio	14.76:1 (F)		Body & Finish	Injection Molded TPO & Automotive Style Paint	
Battery Charger	Onboard 48 VDC PowerWise™		Standard Color	Black	
	Some	e items shown may	be optional equipment		

GENERAL SPECIFICATIONS

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

APPROXIMATE VEHICLE DIMENSIONS



Figure 1 2Five Two-Passenger Dimensions

GENERAL SPECIFICATIONS

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.



Figure 2 2Five Four-Passenger Dimensions

Owner's Guide
Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.



Figure 3 2Five Four-Passenger Dimensions

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.



Figure 4 2Five Four-Passenger Dimensions

Owner's Guide

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers. TURNING DIAMETER AND INCLINE INFORMATION



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Notes:

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

INTRODUCTION

FEATURES

General Information

NOTICE

If the vehicle has accessories that were installed at the factory, some accessories continue to operate with the key switch in the OFF position.



ALL accessories that do NOT use the accessory wiring harness MUST be connected to the DC to DC converter to pull from the full 48-Volt battery pack.

A DC to DC converter is necessary for the accessories that need voltage different from 48 volts to operate correctly.



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

All accessories connected to the vehicle that do not use the accessory harness must be connected to the DC to DC converter.

Parking Brake

This vehicle is equipped with an automatic parking brake; when the vehicle is stopped the parking brake is automatically set. The parking brake is released when the key switch/direction selector is in forward (F) or reverse (R) and the accelerator is pressed. The parking brake is also released when the Run/Tow switch is placed in the TOW position with the key switch turned to neutral (N).

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

1. Key Switch and Direction Selector



To decrease the risk of component damage, stop the vehicle before you move the key switch and direction selector.

A WARNING

To prevent the loss of control, do not move the direction selector while the vehicle is in motion. If you move the switch, the vehicle speed will immediately decrease and a warning device activates.

Located on the instrument panel, the key switch and direction selector enables the electrical system of the vehicle to be turned on and off by turning the key; it also functions as the direction selector for forward, neutral or reverse. To prevent inadvertent operation of the vehicle when left unattended, the key should be turned to the OFF position and removed.

2. State Of Charge Meter

The vehicle is equipped with a state of charge meter located in the dash panel below the speedometer. The state of charge meter indicates the amount of usable power in the batteries. The state of charge meter shows the condition of the battery pack with F indicating a full charge on the battery pack and E indicating the battery pack needs to be charged.

3. Speedometer

The digital speedometer is located on the instrument panel to the left of key switch and indicates vehicle speed in miles per hour.

4. Odometer

The digital odometer is located directly below the speedometer and indicates total miles driven on the vehicle. The odometer will also display warning or error codes to alert the driver to potential problems with the vehicle.

5. Headlight Switch

The headlight ON/OFF switch is located on the dash panel to the left of the speedometer.

6. Turn Signal/Hazard Switch

The turn signal switch is on steering column and controls the operation of the right and left turn signal lights. To activate the hazard lights, pull the hazard switch away from the steering column. To deactivate, temporarily flip the turn signal switch in either direction.

7. Brake Pedal

This vehicle is equipped with 4 wheel hydraulic disc brakes; the brake master cylinder is located under the seat on the driver-side of the vehicle.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

8. Accelerator Pedal



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

With the key switch in the F or R position, press the accelerator pedal to starts the motor and will move the vehicle in the direction indicated on the key switch and direction selector. When the pedal is released, the motor will stop. To stop the vehicle immediately, press the brake pedal.

9. Cup Holder

The vehicle has a cup holder for the benefit of both the driver and passenger. No cup holder is available for rear seat occupants.

10. Horn

The horn button is located on turn signal switch, below steering wheel. Pressing the button will sound the vehicle's horn.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

11. Run/Tow Switch

The Run/Tow switch is used when the vehicle has become stalled or inoperative. The switch is located below the seat on the passenger side of the vehicle.





Chock tires before placing the vehicle in neutral and moving Run/Tow switch to TOW position. Vehicle could roll and cause serious injury or death.

A CAUTION

Before attempting to move the vehicle, turn the key switch to N and move the Run/Tow switch to the TOW position. Failure to do so will damage the controller or motor.

NOTICE

The Run/Tow switch should always be returned to the RUN position after moving a stalled vehicle. If the switch is left in the TOW position for an extended period of time, it will drain the batteries.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

The Run/Tow switch is located under the seat on the passenger side of the vehicle.

With the switch in the TOW position and the key in N:

- The electronic parking brake is deactivated, which allows a stalled vehicle to be moved or roll freely, except in the event of a controller failure
- The brake is still active
- The reverse warning beeper is deactivated

With the switch in RUN position:

• The electronic parking brake is activated and the reverse warning beeper features are activated.

12. Speed Selector Switch

Speed selector switch is located on left of center compartment. This switch allows operator to select between High/Rabbit and Low/Turtle speeds for on-road and golf course operation.

- High/Rabbit allows maximum speed of 25 mph for on-road use.
- Low/Turtle allows maximum speed of 14 mph for golf course use.

13. USB Port

USB port is located on the right of center compartment.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.



14. 12V Accessory Plug

The 12-volt accessory plug is located on the left of center compartment. The 12-volt accessory plug can be used to run a variety of approved 12-volt accessories. Total current draw must be 10 amps or less. The accessory plug can be used with the key switch in any position.

15. Locking Glove Box

A passenger-side locking glove box is standard, driver-side is offered as an option. A separate key is used for locking the glove boxes.

16. Steering Wheel

The steering wheel located in front of the driver seat is used to steer the vehicle. The steering wheel does not contain an airbag.

17. Windshield Wiper Switch

The windshield wiper switch is located on the wiper motor cover plate. It is a two-speed rocker switch that has LOW/HIGH/OFF positions.

18. Windshield Wiper

The vehicle is equipped with a two-speed windshield wiper.

19. Weather Enclosure (if equipped)

A weather enclosure provides protection from strong weather conditions.

20. Rear View Mirror

The rear view mirror is a two-position mirror manually adjusted for day and nighttime conditions.

21. Front Hip Restraint

The front hip restraints are designed to help keep the occupants properly positioned in the event of sudden vehicle position changes.

22. Grab Handle

The vehicle is equipped with grab handles for front and rear passengers.

23. Rear Restraints

There is a hand rail on each side of the rear seat to help passengers stay in position when the vehicle is in motion. The passengers must hold the rear hand rail whenever the vehicle is in motion.

24. Rear Handle

The rear handle is located at the far end of the vehicle in the center of the rear seat. The handle helps the passengers stay in position when the vehicle is in motion. The passengers must hold the handle when the vehicle is in motion.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.



25. Front Seat

The front seat is for two people, one person on each side of the seat. There is a seat belt for the passenger and one for the driver.

26. Head Lamps

The vehicle is equipped with two single element head lamps.

27. Front Turn Signals

Vehicle is equipped with front and rear turn signals.

28. Rear Seat Belts

Two rear seat belts are provided for the rear seat occupants.

29. License Plate Holder

The rear license plate is mounted to the rear crossmember behind the front seats on the two-passenger vehicle. The license plate is mounted to the rear hand hold on the four-passenger vehicle.

30. Brake Light (Overhead)

The vehicle is equipped with an overhead brake light.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

31. Rear Storage Compartment

The rear storage compartment can be accessed by raising the back edge of the rear seat bottom.

32. Brake Light/Turn Signal

The combination brake light/turn signal assemblies are located on the rear fenders.

33. Rear Seat

The rear seat is for two passengers only.

34. Side View Mirrors

A driver side mirror is standard, passenger side is offered as an option. Side view mirrors are manually adjusted.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.



35. Brake Master Cylinder

The Brake Master Cylinder fluid level must be kept between the MIN and MAX lines on the master cylinder.

36. On-board Charger with DC to DC Converter

On-board charger is used to charge battery while vehicle is parked and the DC to DC converter is used to power accessories.

37. On-board Charger Receptacle

The charging cord is to be connected to this receptacle while the vehicle is being charged.

38. Battery Compartment

Lift the front seat to access the battery compartment for maintenance of the batteries and for access to the Run/Tow switch.

39. Fuse Block

The Fuse Block is used to provide electrical protection to some accessories and options.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Notes:

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

OPERATING PROCEDURES

SERIAL NUMBER LOCATION

Three serial number and manufacture date code labels are on the vehicle. One of the labels is found on the steering column, the second label is found on the frame member under the front splash shied on the driver side and the third is found on the passenger side frame rail at the rear of the vehicle.

Design changes occur on a continuous basis. To get the correct components for the vehicle, the PIN number, manufacture date code, serial number or vehicle model, must be supplied.



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.





Serial Number Location on Rear Frame

VEHICLE IDENTIFICATION NUMBER (VIN)

The Vehicle Identification Number (VIN) is located on the far left side of the header. It may be necessary to provide the VIN when service or parts are needed for the vehicle. The VIN must not be removed from the vehicle.

VEHICLE DATA PLATE

The vehicle data plate is located on the inside surface of the canopy strut. The data plate contains information concerning the Date of Manufacture, GVWR, GAWR (Front), GAWR (Rear), Tire and Rim Dimensions, VIN, and Type of Vehicle.

MFD BY: E-Z-GO DIVISION OF TEXTRON INC. DATE OF MANUFACTURE: MM/YY GVWR: XXXX LBS. (XXX KGS) GAWR (Front): XXX LBS (XXX KGS) GAWR (Rear): XXXX LBS (XXX KGS) **TIRE & RIM DIMENSIONS:** FRONT 205/50-10 10X7 @ 16 - 20 PSI (110 - 138 KPA)-COLD TYPE OF VEHICLE: LSV REAR 205/50-10 10X7 @ 16 - 20 PSI (110 - 138 KPA)-COLD

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT AT THE DATE OF MANUFACTURE SHOWN ABOVE VIN XXXXXXXXXXXXXXXX

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

BEFORE INITIAL USE

Read, understand and follow the safety label on the cup holder. Make sure you understand how to safely operate the vehicle and its equipment.

A WARNING

Explosive hydrogen gas is created during the charge cycle of batteries. Do not charge batteries without enough ventilation. A 4% concentration of hydrogen gas is explosive. To prevent battery explosion, keep all flammable materials, open flame or sparks away from the batteries.

Explosive hydrogen gas is created during the charge cycle of the batteries. Good ventilation is necessary to remove gas from enclosed spaces. The air must change every 12 minutes.

Never charge a vehicle near flammable materials, open flame or sparks. Never charge a vehicle near gas water heaters and furnaces.

Before a new vehicle is put into operation, the items shown in the *INITIAL SERVICE CHART* must be done.

INITIAL SERVICE CHART							
ltem	Service Operation						
Batteries	Charge batteries						
Seats	Remove protective plastic covering						
Brakes	Check master cylinder fluid level & brake operation						
	Perform brake burnishing procedure						
	Establish acceptable stopping distance						
Tires	Check air pressure (see SPECIFICATIONS)						

Brake Burnishing Procedure

For new vehicles or after replacement of brake pads or rotors, it is recommended that approximately 20 stops with moderate braking from 20 mph to 5 mph should be made without coming to a complete stop. This procedure will assure that your new brakes will function to their full potential and maintain maximum wear resistance.

Determine and record the braking distance required to stop the vehicle for future brake performance tests.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

SEAT BELT OPERATION



The seat belts must be worn by all persons when the vehicle is in motion.

Make sure seat belts are free from twists and latch securely.

Position shoulder belt across the top of the shoulder. Do not put shoulder belt below the arm.

Keep the belts tight and positioned low on hips. Loose fitting belts decrease protection.

The vehicle has seat belts for the number of persons it is designed to carry. Do not exceed the recommended number of persons for the vehicle.

The seat belts are designed for one person for each belt. Do not try to secure more than one person in a seat belt.

The seat belts must always be worn by all persons when the vehicle is in motion.

To keep seat belts in correct, working condition, do the following:

- Inspect the seat belt webbing and hardware periodically. Check for cuts, worn or loose parts. Replace the components if wear or damage is seen.
- Keep seat belts clean and dry. To clean, use mild soap and warm water. Do not use bleach, dye or abrasive cleaners as this will weaken the belt webbing material.
- Do not put any objects into the retractor mechanism.
- Periodically check for normal operation. Replace the mechanism if it is not operating correctly.

To secure the seat belts:

- 1. Pull the metal tab on the seat belt across the body toward the correct buckle found near the center of the seat.
- 2. Insert the tab into buckle. (A click will be heard when the tab is securely latched).
- 3. Position the lap belt as low as possible on the hips, not at the waist.

Adjust to make sure of a tight fit by pulling the shoulder portion upward.

The retractor will lock the belt during sudden stops. It can lock if a person bends forward quickly. Slow, easy motions allow the belt to travel freely. To release the safety belt, press the buckle release button and allow the belt to retract. If the belt does not retract, check for twisted straps.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

ON-BOARD CHARGER WITH DC TO DC CONVERTER



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 DC 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 do all repair work to the charger.

🛦 WARNING

Do not allow children to use the charger.

Use the charger on 48-volt battery systems. Other use can cause personal injury and damage.

Lead acid batteries can create explosive hydrogen gas during normal operation. Keep sparks, flames and flammable materials away from batteries.

Supply enough ventilation during the charge cycle.

Never charge a frozen battery.

Read all of the manufacturers specified precautions for the battery. For example, recommended rates of charge and removal of cell caps during charge cycle.

An ungrounded electrical device may become a physical hazard that could result in an electrical shock or electrocution.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Understand the Charger

The vehicle is equipped with an on-board charger and DC to DC converter to power 12 volt accessories. This allows your accessories to draw from the full battery pack, so that one battery is not damaged due to the increased current draw on a single battery.

The charger automatically starts as the AC plug is plugged into the receptacle. NOTE: a spark may be visible when as the plug is connected, this is normal and not a safety issue. The charger must be connected to a dedicated 15-amp (minimum) circuit.

Within two seconds after the AC plug has been engaged, the receptacle LED shall perform a <3 second RED/GREEN self-test flash. The receptacle LED will then flash SHORT GREEN to indicate "CHARGING <80%" and a low charge current shall be applied for a minimum of five seconds until the battery voltage reaches a minimum 1.95Vpc, or a time-out error condition has occurred. Receptacle LED will flash SHORT AMBER if charger is operating in reduced output mode due to thermal cutback.

The charger output will turn off and the receptacle LED will continuously illuminate GREEN to indicate 'CHARGED'. If left plugged into the vehicle, the charger will automatically restart if the battery pack drops below 2.08 Vpc (Volts per cell).

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

If the AC is removed, the charger will turn off the receptacle LED and the charger will terminate charging.

- Charger input voltage 95 to 230 VAC power
- 9 Amp input current required
- Frequency 45-65 hertz

The charger will output 13A at 48V, and the DC to DC converter will output 30A at 12V.



To prevent a physical hazard that could result in an electrical shock or electrocution, be sure that the charger plug is not damaged and is inserted into a grounded receptacle.

The optional charging (AC) cord is equipped with a polarized connector that fits into a matching receptacle on the vehicle. The receptacle is located on the driver side of the vehicle just below the seat bottom.



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

E-Z-GO offers a charging cord with a ground fault circuit interrupt (GFCI). If the car is not charged from a GFCI receptacle, E-Z-GO recommends that the GFCI charging cord be purchased. If using a charging cord other than one purchased from E-Z-GO, the cord must be a 3 conductor #14 SJO, or equivalent.

Maintenance Instructions

- 1. For flooded lead-acid batteries, regularly check the water levels of each battery cell after charging and add distilled water as required to the level specified by the battery manufacturer. Follow the safety instructions recommended by the battery manufacturer.
- 2. Make sure the charger connections to the battery terminals are tight and clean. Check for any deformations or cracks in the plastic parts. Check the charger harness for chaffing and rubbing. Inspect all wiring for fraying, loose terminals, chaffing, corrosion or deterioration of the insulation.
- 3. Keep the cooling fins free of dirt and debris. Do not expose the charger to oil, dirt, mud or to direct heavy water spray when cleaning equipment.
- 4. Inspect the ends of the charge cord and the vehicle receptacle housing for dirt or debris. Clean the connector monthly or more often if needed.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

HOW TO OPERATE THE VEHICLE



Incorrect use of the vehicle or lack of maintenance can cause damage or decreased performance.

Read the following warnings before you operate the vehicle.

A WARNING

To decrease the risk of severe injury or death resulting from the loss of vehicle control, the following warnings must be obeyed:

When driving the vehicle, understand the terrain, traffic conditions and the environmental conditions which change the terrain and the ability to control the vehicle. When possible, stay in approved areas and do not drive on steep slopes.

Maintain a safe speed when driving down hill. Use the brake to control speed when traveling down a slope. A sudden stop or change of direction can cause loss of control.

Slow down before and during turns. All turns should be made at reduced speed.

Never drive the vehicle up or down a slope that exceeds 14° (25% grade).

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

A WARNING

To prevent loss of control, do not move the direction selector while the vehicle is in motion. If you move the selector, the speed will immediately decrease and a warning device activates.

See GENERAL SPECIFICATIONS for the vehicle load and seat capacity.

When you leave the vehicle, turn the key to the OFF position and remove from the switch to prevent accidental operation.

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

Make sure you completely stop the vehicle before you move the direction selector to a different position.

Do not take vehicle out of gear while in motion.

Before you drive in the reverse direction, make sure the area behind the vehicle is clear.

Driver and passengers must stay in their seats while the vehicle is in motion. Keep entire body inside vehicle and hold on while vehicle is in motion.
Incorrect and irresponsible operation of this vehicle can cause dangerous conditions for the operator, passengers and other people in the area. Do not allow children or anyone without a license to operate the vehicle. Children may not have the skill and ability to make good decisions or strength to operate the vehicle.

Drugs and alcohol decrease the ability of the driver to operate the vehicle safely. Always check with a medical professional before you operate the vehicle.

When you drive the vehicle at full speed on a dirt road, loose surface or wet grass, the necessary distance to stop the vehicle will increase. The necessary distance to stop a loaded vehicle is more than the necessary distance to stop a vehicle without a load. In wet weather conditions, apply light pressure to the brakes to supply enough friction to dry the brake unit. Wet brakes lose much of their effect.

If you drive on a steep hill and can not get enough traction, do not try to turn around on the hill. Slowly drive in the reverse and use the brake to control the speed.

NOTICE

Reduced vehicle range and performance can occur in steep terrain and low temperature operating conditions.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Regenerative Braking



To prevent the possibility of loss of control that could cause severe injury or death, use brake to reduce speed.

This vehicle is equipped with a regenerative motor control system.

Example: If both of the following events occur:

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

The regenerative braking will limit the speed of the vehicle to the specified top speed. When the regenerative braking system is activated by this sequence of events, the motor generates power that is returned to the batteries.

When the vehicle speed is reduced below the maximum by using the brake, the speed will not increase unless the throttle is increased. When the brake pedal is released the vehicle will slow down as it does with pedal up braking.

Pedal-Up Braking

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

Example: If both of the following events occur:

- a. The vehicle is being driven down a slope
- b. The accelerator pedal is released

The pedal-up braking will slow the vehicle until the vehicle stops, or the accelerator pedal is applied. When pedal-up braking system is activated by this sequence of events, the motor generates power that is returned to the batteries.

High Pedal Disable Feature

High pedal disable prevents acceleration if the key is turned on while the accelerator or brake are pressed. To reset the controller after a High Pedal Disable, place both feet on the floor, turn the key to the OFF position. With both feet on the floor turn the key to the desired direction and press the accelerator.

Parking Brake

In the event that the vehicle will not move in forward or reverse, the automatic parking brake can be released using the instructions located on the controller splash shield beneath the seat on the passenger side of the vehicle. Refer to the Maintenance Procedures section of this manual for in-depth instructions.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Rear Seat and Cargo Platform Operation (if equipped)



To prevent damage to the rear seat, move any accessories that are installed on the hand rail, when you fold the seat.

Fold the seat to the flat position to access the cargo platform.



🛦 WARNING

Secure the loads on the platform to prevent movement.Put the load on the platform as far forward as possible.

The center of gravity of the load must be less than 4 inches (10 cm) above the platform.

Do not put more than the specified capacity on the platform. Increased loads can change drive properties of the vehicle. Do not allow passengers to ride on the cargo platform.

When you put cargo on the platform, make sure you follow the information below to decrease the risk of injury or damage to the vehicle.

- Put the load on the platform as far forward as possible.
- Secure the loads on the platform to prevent movement.
- The center of gravity of the load must be less than 4 inches (10 cm) above the platform.
- The load capacity of the cargo platform is a maximum of 250 lbs. (115 kg). Do not put more than the specified capacity on the platform.

Increased loads can change the drive properties of the vehicle.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Starting and Driving

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 cable before you move the vehicle.

To operate the vehicle:

- Apply the brake, put the key in the key switch and turn the direction selector to the correct direction.
- Slowly press the accelerator pedal to start the motor and release the brake pedal.
- When the accelerator pedal is released, the motor decreases the speed of the vehicle. To stop the vehicle quickly, press the brake pedal.

NOTICE

When the direction selector is in the reverse position, a warning signal activates to indicate that the vehicle is ready to run in the reverse.

Starting Vehicle On A Hill

The parking brake will activate automatically when the vehicle comes to a stop. To start the vehicle on a hill, press the accelerator pedal and the parking brake will be released.

Coasting

Uncontrolled coasting does not occur with this model. However, this is not a substitute for the brake which should be used to slow the speed of the vehicle quickly.

NOTICE

This model is equipped with a feature (pedal-up braking) that slows the vehicle's speed when the accelerator pedal is released, until the vehicle stops.

Labels and Pictograms

The vehicle can have labels with pictograms to supply information or warnings. Refer to the SAFETY section of this manual for the description of the labels.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Top And Windshield



The top does not supply protection from roll-over or falling objects. The windshield does not supply protection from tree branches or moving objects.

The top and windshield are designed to provide protection from the elements, but the operator and passengers may not remain dry during severe weather. The windshield does not provide protection from flying objects. If the vehicle is equipped with optional strobe light overhead clearance will be reduced.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Notes:

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Notes:



MAINTENANCE

VEHICLE CLEANING AND CARE



To decrease the risk of severe injury read and understand all instructions supplied by the manufacturer of the pressure washer before use.



When you clean the outside of the vehicle with a pressure washer, do not use more than 700-psi pressure. Keep a minimum distance of 12 inches from the spray nozzle to the painted surface. Do not clean the plastic parts with abrasive or reactive solvents.

Make sure you use correct methods and cleaning materials to prevent risk of damage to the outside of the vehicle. The use of more than 700-psi water pressure can cause injury to anyone in the area or damage to vehicle.

Clean the windshield with water and a clean cloth. Remove small scratches with a plastic polish or Plexus[®] plastic cleaner, available from the service parts department.

Apply a soap and water solution with a sponge or soft brush to clean the vinyl seats and plastic or rubber trim. Dry with a cloth.

Use a commercially available vinyl and rubber cleaner to remove oil, tar, asphalt, shoe polish, etc.

Wash the vehicle frequently with cool water and mild detergent to protect the painted surfaces.

Apply wax that is for clear coat automotive finishes to improve the appearance and protection of the painted surfaces. Do not apply wax to matte finish surfaces.

Occasional cleaning and waxing with non-abrasive products designed for 'clear coat' automotive finishes will enhance the appearance and durability of the painted surfaces.

Materials used as fertilizers or for dust control can collect on the bottom of the vehicle. These materials will cause corrosion of components, unless cleaned with water. Clean areas where mud or dirt can collect. Loosen the sediment that is packed in closed areas to help with removal. Be careful not to damage the paint.

ENVIRONMENTAL CONCERNS

A WARNING

As a responsible user, practice respect for all wildlife and their habitat. Respect private property and comply with all local laws and regulations governing the use of light duty utility vehicles.

Always be respectful of the environment.

Make sure you are permitted by property owners to operate the vehicle on their property.

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

Be careful of environmental hazards like steep slopes, tree branches, etc.

Battery Disposal

Return used batteries to the manufacturer or lead smelter for recycling purposes. For neutralized spills, put residue in acid-resistant containers with absorbent material, sand or earth and discard according to state and federal regulations for acid and lead compounds. Contact authorized environmental people for information about disposal.

LIFTING THE VEHICLE

You must lift the front, the rear or the entire vehicle for some service and maintenance operations.

A WARNING

The vehicle is not stable during the lifting process.

Make sure the vehicle is on a hard and level surface.

Never get below a vehicle that is supported by a jack only.

Make sure a vehicle that is supported on jack stands is stable before you get below the vehicle.

Put wheel chocks in front and behind the wheels that remain on the ground.

Do not allow any person in or on the vehicle being lifted.



When you lift the vehicle, put the jacks and jack stands at the areas indicated only.

Tool List	Quantity	Tool List	Quantity
Floor Jack	1	Jack Stands	4
Wheel Chock	4		

Remove payload from vehicle before lifting. No person(s) should be in or on the vehicle while lifting.

How to lift the entire vehicle:

- 1. Install wheel chocks in front and behind each front wheel.
- 2. Center the jack under the rear axle tube next to the differential housing.
- 3. Lift the vehicle enough to place two jack stands under the frame where the leaf spring mounting brackets are welded to the frame.
- 4. Lower the jack and test the stability of the vehicle on the two jack stands.
- 5. Place the jack under the center front just behind the bumper.
- 6. Lift the vehicle and place two jack stands under the frame where the instrument panel support is attached to the frame.
- 7. Lower the jack and test the stability of the vehicle on the jack stands.



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

How to lift the rear of the vehicle only:

- 1. Install wheel chocks in front and behind each front wheel.
- 2. Center the jack under the rear axle tube next to the differential housing.
- 3. Lift the vehicle enough to place two jack stands under the frame where the leaf spring mounting brackets are welded to the frame.
- 4. Lower the jack and test the stability of the vehicle on the two jack stands.

How to lift the front of the vehicle only:

- 1. Install the wheel chocks in front and behind each rear wheel.
- 2. Place the jack under the center front just behind the bumper.
- 3. Lift the vehicle enough to place two jack stands under the frame where the instrument panel support is attached to the frame.
- 4. Lower the jack and test the stability of the vehicle on the two jack stands.

Lower the vehicle:

- 1. Lift the vehicle enough to remove the jack stands.
- 2. Carefully lower the vehicle to the ground with the jack.



WHEELS AND TIRES

Recommended tire inflation pressure: 16 - 20 psi



To decrease the risk of tire explosion, do not exceed the tire inflation pressure rating on the tire sidewall.

To decrease the risk of tire explosion, inflate small amounts of air into the tire at intervals to seat beads. 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 the 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 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 guide.

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

Tire Repair

Tool List	Quantity	Tool List	Quantity
Lug Wrench, 3/4"	1	Impact Socket, 3/4"	1
Impact Wrench	1	Torque Wrench, ft. Ibs	1

Use caution when you inflate the tires. Because of the low volume of the small tires, over inflation can occur in seconds. Over inflation can cause the tire to separate from the wheel or cause a tire explosion.

The general recommended tire inflation pressure is 16 - 20 psi, but know that tire inflation pressure can change according to the condition of the terrain.

For outdoor applications with primary use on areas with grass, consider the following:

- Slightly higher tire inflation pressure is suitable on hard turf
- A lower pressure decreases the risk of tires cutting into a soft turf

For hard surfaces or pavement, tire inflation pressure must be in the higher allowed range, but not more than recommended on the tire sidewall.

All four tires must have the same pressure for best control qualities. Always install the valve stem cap after you check or inflate the tires.

The vehicle has low-pressure tubeless tires, installed on one-piece rims.

Use a tire plug to repair small holes in the tread part of the tire. For large holes and cuts, replace the tire.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

NOTICE

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

If the tire is flat, remove the wheel and inflate the tire to the recommended maximum pressure for the tire. Submerge the tire in water to find the leak and mark with chalk. Install the tire plug according to manufacturers instructions.

Wheel Installation



To decrease the risk of component damage, do not tighten lug nuts to more than 77 ft. lbs. (105 Nm) torque.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

NOTICE

Always follow the cross-sequence pattern when you install the lug nuts to make sure the wheel is evenly seated against the hub.

- With the valve stem to the outside of the wheel, install the wheel on the hub with lug nuts.
- Tighten the lug nuts (1) with your fingers in the cross-sequence pattern shown.
- Tighten the lug nuts to 63 to 77 ft. lbs. (85 to 105 Nm) torque in 20 ft. lbs. (27 Nm) increments.
- Continue to follow the cross-sequence pattern until the correct torque is reached.



LIGHT BULB REPLACEMENT



To decrease the risk of premature bulb failure, do not allow your fingers to contact new bulbs. Use clean, dry paper towels to touch the glass part of the bulb.

Headlight Bulb Replacement

Make sure that the vehicle key switch is in the OFF position and the key has been removed. For vehicles equipped with lights mounted in the cowl, locate the headlight bulb socket on the backside of the light assembly.

- Disconnect the accessory harness (2) from the light bulb.
- Turn the headlight bulb (1) clockwise and pull to remove.
- Align the new bulb with the opening in the back of the headlight assembly.
- Turn the bulb (1) counter clockwise until it stops.
- Connect the accessory harness (2) to the light bulb (1).



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Turn Signal Bulb Replacement

Make sure that the vehicle key switch is in the OFF position and the key has been removed.

- Remove the two Phillips head screws (1) that secure the lens (2) to the fascia (3).
- Remove the light bulb.
- Install the new light bulb.
- Install the lens (2) and secure in place with the two Phillips head screws (1).

Taillight/Brake Light Bulb Replacement

Make sure that the vehicle key switch is in the OFF position and the key has been removed.

- Remove the two phillips head screws (4) that secure the lens (5) to the taillight assembly.
- Remove the light bulb
- Install the new light bulb
- Install the lens (5) and secure in place with the two phillips head screws (4).





FUSE REPLACEMENT

The fuse block is found below the driver seat. Lift the seat bottom to access the fuses. Remove the old fuse and replace with a new fuse of the same type and size. Fuses are available from a local Distributor, an authorized Branch or the Service Parts Department.

TRANSPORTING VEHICLE

Hauling



To reduce the possibility of severe injury or death while transporting the vehicle:

Secure the vehicle and contents. Never ride on the vehicle being transported. The vehicle must be transported in the forward-facing position. Maximum speed while hauling the vehicle is 70 mph (112 kph).

If the vehicle is to be transported at highway speeds, the seat bottom and controls must be secured. Always check that the vehicle and contents are adequately secured before transporting. The rated capacity of the trailer or truck must exceed the weight of the vehicle (see GENERAL SPECIFICATIONS for vehicle weight)

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

and the load plus 1000 lbs. (454 kg). Secure the vehicle using ratchet tie downs.

In the event that the vehicle will not move in forward or reverse, the parking brake can be released using the Run/Tow switch located under the seat on the passenger side. With the switch toggled to the TOW position and the key switch in neutral (N) position, the vehicle will roll freely without activating the reverse warning beeper or damaging the controller and motor. After moving the vehicle, return the Run/Tow switch to the RUN-STORAGE position; leaving the switch in the TOW position will drain the batteries.

In Case of Total Power Loss

In case of total power loss and the Run/Tow does not release the parking brake, the instructions under the controller splash shield must be used. Chock the tires to prevent the vehicle moving when the brake is released.



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

To access the instructions remove three re-usable plastic rivets securing the controller splash shield to the body and the controller. To remove the re-usable rivets, press the center of the rivet with the vehicle key, when the center pin snaps into place the rivet can be removed, repeat the process for each remaining rivet. Turn the splash shield over to reveal the instructions for releasing the parking brake.

To reinstall the controller splash shield, position the splash shield by aligning the mounting holes with the holes in the body, push the center pin of each rivet upward so that the top of the pin is above the rivet head.

Place a rivet in each mounting hole of the controller splash shield and push down on the center pin until the top of the pin is flush with the rivet head.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

A WARNING

This procedure should only be performed by qualified trained personnel.

- 1. Locate the auxiliary power line (C) and remove the weather pack seal (D) from the connector.
- 2. Locate the primary power line connector (A) and disconnect it from line (B).
- 3. Connect the auxiliary power line (C) to the primary power line (A) which will release the brake. If the tires are not chocked and the vehicle is not on flat ground the vehicle will move immediately.



- 4. Move the vehicle to desired, safe location and chock the tires immediately.
- 5. Disconnect the auxiliary power line (C) from the primary power line (A).
- 6. Connect the primary power line (A) to line (B).
- 7. Replace the weather pack seal (D) on the auxiliary power line connector (C).

SERVICE AND MAINTENANCE

🛦 WARNING

Read all notices, cautions and warnings in this manual before you do any type of service operations.

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.

To decrease the risk of motor damage, do not operate the vehicle at full throttle for more than 5 seconds with the drive wheels lifted off the ground.

To decrease the risk of motor damage, do not operate the vehicle at full throttle for more than 5 seconds with the drive wheels lifted off the ground.

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

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.





Wear eye protection when you service the vehicle. Be careful when you do work around batteries, use solvents or compressed air.

To decrease the risk of electrical arc, which can cause a battery explosion, disable all electrical loads from the battery before you remove the battery wires.



Use wrenches with insulation to decrease the risk of a short-circuit if a wrench falls across the battery terminals. A battery short-circuit can cause an explosion.

The electrolyte in a battery is an acid solution which can cause burns to the skin and eyes. Completely clean all electrolyte spills that contact the body and eyes with clear water. Contact a physician immediately.

Neutralize electrolyte spills with a solution of 2 teaspoons (10 ml) sodium bicarbonate (baking soda) mixed in 1 quart (1 liter) of water. Clean with water.

Be careful when you use the aerosol containers near battery terminals. Use a metal container that has insulation to prevent an explosion.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

The vehicle owner and service technician must carefully follow the procedures recommended in this manual. The preventative maintenance, applied at recommended intervals, keeps the vehicle dependable and decreases costs for repairs. Refer to the Periodic Service Schedule for service and intervals. Refer to Lubrication Points for correct lubrication locations.



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.

Before you disconnect or connect a battery or any other wires, move the run/tow switch to the TOW position.

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

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

ROUTINE MAINTENANCE



To increase the life of a vehicle that is used in rough conditions, some maintenance must be done more often than recommended in the Periodic Service Schedule. For example: high or low temperatures, high dust and dirt conditions, high use with maximum load.

To access the powertrain for normal maintenance, lift or remove the seat and remove the rear access panel. For major repairs, refer to the applicable Technician's Repair and Service Manual.

Some service procedures make it necessary to lift the vehicle. Refer to LIFTING THE VEHICLE for correct lift procedure and safety information.

Brake Master Cylinder

Fluid level in the Brake Master Cylinder should be checked per the Periodic Service Schedule. Brake fluid level must be maintained between the MIN and MAX indicators on the master cylinder body. Make sure that the area is clean and free of dirt before removing cap from the master cylinder to add fluid.

Tire Inspection

Inspect the tire condition according to the Periodic Service Schedule. Tire inflation pressures must be checked when the tires are cool. Always install the valve dust cap after you check or inflate the tires.

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.

ERROR AND WARNING CODES

Error and Warning Codes will display in the odometer window as a four or five digit number to indicate a potential problem with the vehicle. If an error or warning code is displayed contact your E-Z-GO service representative.

CODE	DESCRIPTION	CODES	DESCRIPTION
1000	Parking Brake Pad Wear Warning	12818	Battery Voltage High
1001	Power Reduction to Motor	12833	Battery Voltage Low
1002	Motor Speed Sensor	20753	15V Supply Low Voltage
1003	Controller Default Parameter	20755	Sensor Power Error
1004	State of Charger Meter Calibration	21008	Current Sensor Error
1005	Controller Temperature Low	21520	Electrical Short Detected
1006	Charger Connected	16912	Motor Temperature High
1007	Throttle Switch Closed at Start Up	17912	Controller Temperature High
1008	Reverse Alarm Test Failed	20755	Sensor Power Error
8976	Controller AC Over Current	21008	Current Sensor Error
9024	Controller AC Short Circuit	21520	Electrical Short Detected
12576	Controller Charging Time-out	25108	Parking Brake Sensor Error

CAPACITIES AND REPLACEMENT PARTS

Capacities	
Rear Axle Lubricant Mobil 424 Gear Oil	25 oz (740 ml)
Brake Fluid, DOT 3	As Required

Replacement Parts								
Fuse (15 amp)	ATC 10A (E-Z-GO P/N 35212G07)							
Headlight Bulb	894 (E-Z-GO P/N 74004G01							
Front Turn Signal Bulb	2057 (E-Z-GO P/N 604311)							
Taillight/Brake Light Bulb	2057 (E-Z-GO P/N 604311)							
*Vehicle Key	E-Z-GO P/N 609680							



*If replacing a lost key, the number on the key must match the number on the ignition.



HARDWARE

Periodically, the vehicle should be inspected for loose fasteners. Use care when tightening fasteners. Refer to the Technician's Repair and Service Manual for specific torque values.

Generally, three classes of standard hardware and two classes of metric hardware are used in the vehicle. Grade 5 hardware can be identified by the three marks on the hexagonal head and grade 8 hardware is identified by six marks on the head. Metric hardware is marked on the head with 8.8 or 10.9. Unmarked hardware is Grade 2.

	T installe	Unless o his chart sp d are consid	ALL T otherwise no ecifies 'lubri dered 'wet' a	ORQUE Flo oted in text, cated' torqu and require	GURES AR tighten all h le figures. F approximate	E IN FT. LB ardware in a asteners tha ely 80% of th	S. (Nm) accordance at are plated ne torque re	with this cha or lubricate quired for 'c	art. ed when Iry' fasteners	5.
BOLT SIZE	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"	1"
Grade 2	4 (5)	8 (11)	15 (20)	24 (33)	35 (47)	55 (75)	75 (102)	130 (176)	125 (169)	190 (258)
Grade 5	6 (8)	13 (18)	23 (31)	35 (47)	55 (75)	80 (108)	110 (149)	200 (271)	320 (434)	480 (651)
Grade 8	6 (8)	18 (24)	35 (47)	55 (75)	80 (108)	110 (149)	170 (230)	280 (380)	460 (624)	680 (922)
BOLT SIZE	M4	M5	M6	M8	M10	M12	M14			
Class 5.8 (Grade 2) 5.8	1 (2)	2 (3)	4 (6)	10 (14)	20 (27)	35 (47)	55 (76.4)			
Class 8.8 (Grade 5)	2 (3)	4 (6)	7 (10)	18 (24)	35 (47)	61 (83)	97 (131)			
Class 10.9 (Grade 8)	3 (4)	6 (8)	10 (14)	25 (34)	49 (66)	86 (117)	136 (184)			

Torque Specifications and Bolt Grades

BATTERY CHARGING AND MAINTENANCE

Safety

Always obey the following warnings when working on or near batteries.

🛦 WARNING

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

Hydrogen gas is made as batteries are charged. Do not charge batteries without good ventilation. A 4% concentration of hydrogen gas is explosive.



Make sure that the key switch is in the OFF position and all electrical accessories are off before you start to work on the vehicle.

Turn off all accessories before disconnecting from the battery terminal.

Use safe procedures to move the batteries. Always lift the battery with a commercially available battery lifting device.

Do not tilt the batteries during removal or installation. An electrolyte spill can cause burns and damage.

The electrolyte in a storage battery is an acid solution which can cause burns to the skin and eyes. Treat all electrolyte spills to the body and eyes with extended flushing with clear water. Contact a physician immediately.



Always wear a safety shield or approved safety goggles when you add water or charge the batteries.

Neutralize electrolyte spills with a solution of 2 teaspoons (10 ml) sodium bicarbonate (baking soda) mixed in 1 quart (1 liter) of water. Clean with water.

If you fill the batteries with electrolyte above the maximum level, you can cause an electrolyte spill during the charge cycle. An electrolyte spill can cause damage to the vehicle and storage facility.

Be careful when you use aerosol containers near the battery terminals. Use a container with insulation to prevent an explosion.

BATTERY WARNING

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to cause cancer and reproductive harm.


Use wrenches with insulation to decrease the risk of a short-circuit if a wrench falls across the battery terminals. A battery short-circuit can cause an explosion.

Battery Disposal

Lead-acid batteries are recyclable. Return used batteries to distributor, manufacturer or lead smelter for recycling. For neutralized spills, put residue in acid-resistant containers with absorbent material, sand or earth and discard according to state and federal regulations for acid and lead compounds. Contact state environmental officials for disposal information.

Battery

A battery is described as two dissimilar metals immersed in an acid. If the acid is absent or if the metals are not dissimilar, a battery has not been created. The batteries in this vehicle are lead acid.

A battery does not store electricity, but it can produce electricity as the result of a chemical reaction which releases stored chemical energy in the form of electrical energy. The chemical reaction occurs faster in warm conditions and slower in cold conditions. Temperature is important when conducting tests on a battery and test results must be corrected to adjust for temperature differences.

An older battery can perform adequately except that its capacity is decreased. Capacity describes the time that a battery can continue to supply its design amperes from a full charge.

A battery has a maximum life. Good maintenance maximizes the available life and decreases the conditions that can decrease the life of the battery.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Battery Maintenance

Tool List	Quantity	Tool List	Quantity
Insulated Wrench, 9/16"	1	Battery Carrier	1
Hydrometer	1	Battery Maintenance Kit P/N 255	587G011
Battery Protective Spray	1	Socket, 9/16"	1
Torque Wrench	1		

At Each Charging Cycle

- Before you charge the batteries, inspect the plug of the battery charger and vehicle receptacle housing for dirt or other particles.
- Charge the batteries after each use.

Monthly

- Inspect all wires for wear, loose connections, corrosion or damage of insulation.
- Make sure that the electrolyte level is correct and add clean water as required.
- Clean the batteries and wire connections.
- Torque battery terminal nuts to 98 105 in. lbs. (11 12 Nm).
- Apply battery protectant to the battery terminals.

Electrolyte Level and Water

The correct level of the electrolyte is 1/2" (13 mm) above the plates in each cell. This level will leave approximately 1/4" - 3/8" (6 - 10 mm) of space between the electrolyte and the vent tube. The electrolyte level is important because any part of the plates open to air will be damaged.

Do not overfill with water. Too much water pushes the electrolyte from the battery by release of gas and a decrease in volume of the electrolyte.

A CAUTION

DO NOT overfill batteries. The charge cycle will expel electrolyte and cause component damage.

A battery being charged will 'gas' with most gassing occurring at the end of the charging cycle. This gas is hydrogen which is lighter than air. Water and sulphuric acid droplets will be carried out of the battery vents by the hydrogen gas, however, this loss is minimum. If the electrolyte level is high, the electrolyte will block the vent tube and the gas will push it out the vent tube and battery cap. The water will dry but the sulphuric acid will stay and damage the vehicle components and the storage facility floor. Sulphuric acid loss will weaken the amount of acid within the electrolyte and decrease the life of the battery.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.



Impurity	Parts Per Million
Color	Clear
Suspended	- Trace
Total Solids	100
Calcium & Magnesium Oxides	40
lton	5
Ammonia	8
Organic & Volatile Matter	50
Nitrites	5
Nitrates	10
Chloride	5

Water Purity Table

Electrolyte level should be at least 1/2" (13mm) above the plates and 1/4" to 3/8" (6 to 10 mm) below vent

Correct Electrolyte Level

Over the life of the battery, a large amount of water is used. The water used must be clean and without contamination. Water that is not clean decreases the life of the battery by reducing the chemical reaction. Use distilled water or filtered water only. Test water that is not distilled water and filter if needed. Refer to the water purity table for requirements.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Hand held watering devices available at an automotive parts store, or automatic watering devices like the one included in the E-Z-GO Battery Maintenance Kit (P/N 25587G01) can be used with an approved water supply. These watering devices are accurate, easy to use and allow for fast fill. They also keep the correct electrolyte level within the battery cells.

NOTICE

The watering device must only be used if the electrolyte level is less than 1/2" (13 mm) above top of plates.

Watering gun similar to the type included in the Battery Maintenance Kit



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

A WARNING

The electrolyte in a battery is an acid solution which can cause severe burns to the skin and eyes. Clean all electrolyte spills to the body and eyes with clear water. Contact a physician immediately.



To clean an electrolyte spill, use a solution of 2 teaspoons (10 ml) sodium bicarbonate (baking soda) mixed with 1 quart (1 liter) of water.

Always wear a safety shield or approved safety goggles when you add water or charge the batteries.

Battery Cleaning



To prevent battery damage, make sure you correctly install all battery caps.

To decrease the risk of damage to vehicle or floor, neutralize acid before you spray the battery with water.

To decrease the risk of damage to the electrical components while cleaning, do not use a pressure washer.

Clean the batteries according to the Periodic Service Schedule.

When you clean the battery cases and terminals, do not use a water hose without neutralizing any acid deposits first. The water hose moves the acid from the top of the batteries to another area of the vehicle or storage facility, where it can cause damage. After spraying the batteries, a conductive residue remains on the batteries and contribute to the discharge of the batteries.

The correct cleaning method is to spray the top and sides of the batteries with a solution of baking soda and water. Apply this solution with a plastic spray bottle. The solution is 2 teaspoons (10 ml) sodium bicarbonate (baking soda) mixed with 1 quart (1 liter) of water. Spray the solution on all metal components near the batteries also.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.



Allow the solution to set a minimum of three minutes. Use a soft bristle brush or cloth to clean the top of each battery to remove residue that can cause the discharge of the battery. Clean the area with low pressure clear water.



Be careful when you use aerosol containers near the battery terminals. Use a container with insulation to prevent an explosion.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Clean one time a month or more often in harsh conditions. After the batteries are clean and dry, apply a commercially available protectant to the terminals.

Battery Removal and Installation



If the batteries are replaced, make sure they are the exact type and model originally supplied with the vehicle. Failure to follow this caution can result in damage to the vehicle's electrical system.

Before you disconnect or connect a battery or any other wires, move the run/tow switch to TOW position.

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

Remove the battery hold downs and cables. Remove the batteries with a commercially available lifting device.

If the batteries are cleaned and acid in the battery rack area is neutralized as recommended, no corrosion to the battery racks or surrounding area should be found. Any corrosion found must be removed with a putty knife and a wire brush. The area must be washed with a solution of sodium bicarbonate (baking soda) and water and dried before primer and corrosion resistant paint is applied.

Put the batteries in the battery rack, install the battery hold downs and tighten the hardware to 44 - 55 in. lbs.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

(5 - 6.2 Nm) torque. The hold downs must be tight enough to prevent movement of the battery, but do not tight enough to cause distortion of the battery cases. Inspect all wires and terminals. Clean corrosion from the battery terminals or the wire terminals with a solution of sodium bicarbonate (baking soda) and soft brush if needed.

A WARNING

Be careful when you use aerosol containers near the battery terminals. Use a container with insulation to prevent an explosion.

Make sure you connect the battery wires as shown.

Tighten the battery terminal hardware to 98 - 105 in. lbs. (11 -12 Nm) torque. Do not over-tighten the terminal stud nut, this will cause a "mushroom" effect on the battery post which will prevent the terminal nut from being correctly tightened.

Protect the battery terminals and battery wire terminals with a commercially available coating.



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Prolonged Storage



Disconnect the battery charger, controller and other electronic devices for extended storage. All connected electronic components cause the discharge of batteries.

NOTICE

Put the run/tow switch in the RUN position for extended storage of the vehicle to prevent draining of batteries.

During storage, the batteries need attention to keep them maintained and prevent discharge. In high temperatures the chemical reaction is faster, while low temperatures cause the chemical reaction to slow. A vehicle that is stored at 90° F (2° C) will lose.002 of specific gravity each day. If a completely charged battery has a



specific gravity of 1.275, and the battery is not used, it will become partially discharged.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

When it reaches 1.240, which it will do in less than 20 days, it must be charged again. If a battery stays in a discharged state, sulfating occurs on and within the plates. This condition is not reversible and will cause permanent damage to the battery. To prevent damage, the battery must be charged again. Use a hydrometer to find the specific gravity and the state of charge of a battery.

In winter conditions, the battery must be completely charged to prevent the risk of freezing. A completely charged battery will not freeze in temperatures above -75° F (-60° C). Although the chemical reaction is decreased in cold temperatures, the battery must be stored completely charged, and disconnected from circuits that can discharge the battery.

For portable chargers, disconnect the charger plug from the vehicle receptacle.

For on-board chargers, disconnect the charging harness from the batteries.

The batteries must be cleaned and all deposits neutralized and removed from the battery case to prevent self discharge. The batteries must be tested or charged again at 30 day minimum intervals.

Battery Charging

The battery charger is designed to completely charge the battery set. If the batteries are severely deep cycled, some automatic battery chargers contain an electronic module that will not activate and the battery charger will not operate. Automatic chargers determine the correct length of charge to the battery set and turns off when the batteries are charged. Always refer to the instructions of the charger used.



Do not overfill batteries. The charge cycle will expel electrolyte and cause component damage.

Before charging, the following must be observed:

- The electrolyte level in all cells must be at the recommended level and above the plates.
- The charging must occur in an area with good ventilation to remove hydrogen gas that is made during the charge cycle. A minimum of five air replacements for each hour is recommended.
- The charger connector components must be in good condition and free from dirt and particles.
- The charger connector must be completely installed in the vehicle receptacle.
- The charger connector and cord set must be protected from damage. The charger connector and cord set must be used in an area where it is not possible for personnel to run over or trip over the cord set.
- The charger automatically turns off during the connect and disconnect cycle so no electrical arc is generated at the DC plug and receptacle contacts.

AC Voltage

The battery charger output is directly related to the input voltage. If the vehicle receives an incomplete charge in a normally adequate time period, low AC voltage can be the cause. Consult an electrician if necessary.

Fault Diagnosis

Fault diagnosis is done for two reasons:

- A battery that performs poorly and is outside of the manufacturers specification must be identified to replace it within the terms of the manufacturer's warranty. Different manufacturers have different requirements. Refer the battery manufacturer or the manufacturer's representative for specified requirements.
- Find the reason a vehicle does not perform adequately. Performance problems can cause a vehicle to run slowly or can not operate for the time needed.

A new battery must mature before it develops its maximum capacity. Maturing can take 100 or more charge and discharge cycles. After the maturing phase, the older a battery gets, the lower the capacity. The only method to find the capacity of a battery is a load test with a discharge machine. Refer to the discharge machine manufacturer instructions.

A hydrometer is used to identify a poorly performing battery in a set with a low specific gravity. When the particular cell or cells that are the problem are identified, the battery can be removed and replaced. The battery can not be restored. The individual battery should be replaced with a good battery of the same brand, type and approximate age.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Hydrometer

A hydrometer is used to test the state of charge of a battery cell. This is performed by measuring the density of the electrolyte, which is accomplished by measuring the specific gravity of the electrolyte. The greater the concentration of sulfuric acid, the more dense the electrolyte becomes. The higher the density, the higher the state of charge.

A WARNING

To prevent battery explosion, never insert a metal thermometer into a battery. Use a hydrometer with a built in thermometer that is designed for testing batteries.



Specific gravity is the measurement of a liquid that is compared to a baseline. The baseline is water which is assigned a base number of 1.000. The concentration of sulfuric acid to water in a new golf car battery is 1.280 which means that the electrolyte weighs 1.280 times the weight of the same volume of water. A fully charged battery will test at 1.275 - 1.280 while a discharged battery will read in the 1.140 range.

NOTICE

Do not perform a hydrometer test on a battery that has just been watered. The battery must go through at least one charge and discharge cycle in order to permit the water to adequately mix with the electrolyte.

The temperature of the electrolyte is important since the hydrometer reading must be corrected to 80° F (27° C). High quality hydrometers are equipped with an internal thermometer that will measure the temperature of the electrolyte and will include a conversion scale to correct the float reading. It is important to recognize that the electrolyte temperature is significantly different from the ambient temperature if the vehicle has been operated.

Using A Hydrometer

- 1. Draw electrolyte into the hydrometer and release it several times to permit the thermometer to adjust to the electrolyte temperature and note the reading. Examine the color of the electrolyte. A brown or gray coloration indicates a problem with the battery and is a sign that the battery is nearing the end of its life.
- 2. Draw the minimum quantity of electrolyte into the hydrometer to permit the float to float freely without contacting the top or bottom of the cylinder.
- 3. Hold the hydrometer in a vertical position at eye level and note the reading where the electrolyte meets the scale on the float.
- 4. Add or subtract four points (.004) to the reading for every 10° F (6° C) the electrolyte temperature is above or below 80° F (27° C). Adjust the reading to conform with the electrolyte temperature, e.g., if the

reading indicates a specific gravity of 1.250 and the electrolyte temperature is 90° F (2° C), add four points (.004) to the 1.250 which gives a corrected reading of 1.254. Similarly if the temperature was 70° F (21° C), subtract four points (.004) from the 1.250 to give a corrected reading of 1.246.

 Test each cell and note the readings (corrected to 80° F or 27° C). A variation of fifty points between any two cell readings (example 1.250 - 1.200) indicates a problem with the low reading cell(s).

As a battery ages the specific gravity of the electrolyte will decrease at full charge. This is not a reason to replace the battery providing all cells are within fifty points of each other.

Since the hydrometer test is in response to a vehicle exhibiting a performance problem, the vehicle should be recharged and the test repeated. If the results indicate a weak cell, the battery or batteries should be removed and replaced with a good battery of the same brand, type and approximate age.

Battery Charger Maintenance

Connect the charger plug into the vehicle receptacle and wait for the relay to activate. Move the plug back and forth in the receptacle. If the charger turns off, check the plug for a broken red wire in the DC cord.



Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

PERIODIC SERVICE SCHEDULE

✓ - CHECK C&A - CHECK & ADJUST CL - CLEAN R - REPLACE

REMARKS	before each use DAILY	250 miles/415 kms MONTHLY	750 miles/1250 kms QUARTERLY	1500miles/2500 kms SEMI-ANNUAL	3000miles/5000 kms ANNUAL	REPLACE AFTER
Tires - pressure, condition of tires and rims	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Hardware - loose or missing	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Reverse Warning Indicator	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Overall Vehicle Condition	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Batteries - state of charge, condition, loose terminals, corro- sion, hold down and hardware	\checkmark	CL	CL	CL	CL	

Figure 1 Periodic Service Schedule

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

REMARKS	before each use DAILY	250 miles/415 kms MONTHLY	750 miles/1250 kms QUARTERLY	1500miles/2500 kms SEMI-ANNUAL	3000miles/5000 kms ANNUAL	REPLACE AFTER
Batteries* - check electrolyte level, fill after charging if required (if plates are exposed before charging add only enough water to cover any exposed plates and fill after charging)		C&A	C&A	C&A	C&A	
Brakes - check fluid level in master cylinder		\checkmark	\checkmark	\checkmark	\checkmark	3000 mi/5000 km
Brakes - smooth operation of pedal, stopping distance	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Brakes - aggressive stop test, does brake hold on a hill		\checkmark	\checkmark	\checkmark	\checkmark	
Accelerator - smooth operation	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Wiring - loose connections, broken or missing insulation		\checkmark	\checkmark	\checkmark	\checkmark	
Charger Receptacle - clean connections		CL	CL	CL	CL	

Figure 1 Periodic Service Schedule (Continued)

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

REMARKS	before each use DAILY	250 miles/415 kms MONTHLY	750 miles/1250 kms QUARTERLY	1500miles/2500 kms SEMI-ANNUAL	3000miles/5000 kms ANNUAL	REPLACE AFTER
Steering Assembly - excessive play, loose or missing hardware		\checkmark	\checkmark	\checkmark	\checkmark	
Tie Rods - excessive play, bent rods, loose or missing hard- ware		\checkmark	\checkmark	\checkmark	\checkmark	
Rear Axle - oil leakage, noise, loose or missing hardware		\checkmark	\checkmark	\checkmark	\checkmark	
Rear Axle - drain and replace fluid						5000 mi/8000 km
Front Suspension - strut oil leakage, excessive play in hubs or kingpins, worn bushings, loose or missing hardware		\checkmark	\checkmark	\checkmark	\checkmark	
Front Wheel Alignment - unusual tire wear			C&A	C&A	C&A	
Rear Suspension - shock oil leakage, worn bushings, loose or missing hardware			\checkmark	\checkmark	\checkmark	

Figure 1 Periodic Service Schedule (Continued)

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

REMARKS	before each use DAILY	250 miles/415 kms MONTHLY	750 miles/1250 kms QUARTERLY	1500miles/2500 kms SEMI-ANNUAL	3000miles/5000 kms ANNUAL	REPLACE AFTER
Motor Coupling - Add Anti - Sieze compound (Approx 1 table- spoon)						20,000 AMP-Hrs
*Use only distilled or purified water that is free of contaminants	s to fil	l batt	eries.			

Figure 1 Periodic Service Schedule (Continued)

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

REGISTRATION AND WARRANTY

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

REGISTRATION AND WARRANTY

To register your vehicle, go to <u>http://www.ezgo.com</u>

For warranty information, go to <u>http://www.ezgo.com</u>

For Genuine E-Z-GO Parts & Accessories, contact your local E-Z-GO dealer or visit www.shopezgo.com

REGISTRATION AND WARRANTY

Read all of SAFETY and this section before attempting any procedure. Pay particular attention to Notices, Cautions, Warnings and Dangers.

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Notes:

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