

GEM

OWNER'S MANUAL

2026

GEM E2
GEM E4
GEM E6
GEM eL XD
GEM eX

WAEV



WARNING

Read, understand, and follow all of the instructions and safety precautions in this manual and on all product labels.

Failure to follow the safety precautions could result in serious injury or death.



WARNING

Operating, servicing, and maintaining a passenger vehicle or off-road vehicle can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle.

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



2026 Owner's Manual for
Maintenance and Safety

WAEV

This vehicle was manufactured by GEM WAEV LLC, a wholly-owned subsidiary of Waev Inc.

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The original instructions for this vehicle are in English. Other languages are provided as translations of the original instructions.

This vehicle is compliant with Regulation (EU) 2023/1230 of the European Parliament and of the Council of 14 June 2023 on machinery and applicable standards, directives and regulations.

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ML-436-09 English, ML-436-10 French



SAFETY SYMBOLS AND SIGNAL WORDS

The following signal words and symbols appear throughout this manual and on your vehicle. Your safety is involved when these words and symbols are used. Become familiar with their meanings before reading the manual.

DANGER

DANGER indicates a hazardous situation which, if not avoided, WILL result in death or serious injury.

WARNING

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

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, COULD result in minor to moderate injury.

NOTICE

NOTICE provides key information by clarifying instructions.

IMPORTANT

IMPORTANT provides key reminders during disassembly, assembly, and inspection of components.

The Prohibition Safety Sign indicates an action NOT to take in order to avoid a hazard.



The Mandatory Action Sign indicates an action that NEEDS to be taken to avoid a hazard.



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INTRODUCTION

OVERVIEW

Please familiarize yourself with all laws and regulations concerning the operation of the vehicle in your area.

This manual applies to the following GEM vehicles:

- GEM e2 (two-passenger)
- GEM e4 (four-passenger)
- GEM e6 (six-passenger)
- GEM eL XD (two-passenger extra duty long-bed)
- GEM eX (two-passenger all terrain with dump bed)

GEM CUSTOMER SERVICE

Phone	855-RIDEGEM (855-743-3436)
Web	www.gemcar.com

For the most up-to-date owner's manual and product information, see the GEM WAEV website.

GENERAL WARNINGS

WARNING

Failure to follow the warnings contained in this manual can result in severe injury or death.

Special precautions must be followed when owning and operating a battery-powered vehicle. This vehicle is not a toy and can be hazardous to operate. This vehicle handles differently than other vehicles. A collision or rollover can occur quickly, even during routine maneuvers, if you fail to take proper precautions.

- Read this owner's manual. Understand all safety warnings, precautions and operating procedures before operating the vehicle. Keep this manual with the vehicle at all times.
- Never permit a guest to operate this vehicle unless the guest has read this manual and all product labels.
- Never use this vehicle with drugs or alcohol, as these conditions impair judgment and reduce operator reaction time.
- Operate this vehicle only on public or private roads where speed limits are appropriate for low speed vehicles. Be familiar with motor vehicle laws in your area of operation. Do not operate this vehicle in situations where it could become an obstacle or an annoyance for faster-moving traffic.

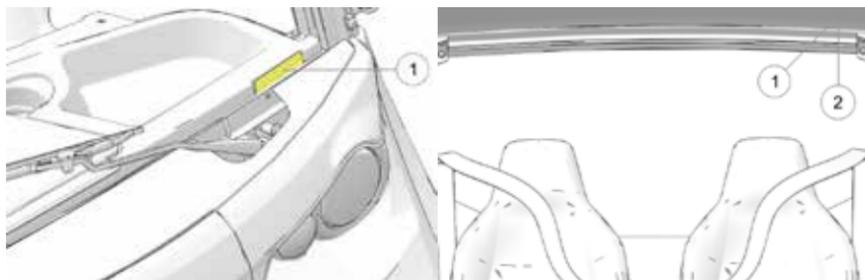
INTRODUCTION

MANUFACTURER'S LABEL

Record your vehicle's identification numbers in the spaces provided.

The Vehicle Identification Number (VIN) is stamped on a tag affixed to the left dash at the base of the windshield ①. The VIN is also printed on the manufacturer's label ①, which is located on the left rear section of the interior roof panel.

The VIN indicates the model year, model type and serial number of your vehicle. The manufacturer's label also contains the Gross Vehicle Weight Rating (GVWR) and Gross Axle Weight Rating (GAWR) information for your vehicle. *Never exceed the GVWR or the GAWR.* See page 18.



Vehicle Identification Number (VIN):	
Vehicle Model Number:	

VEHICLE EMISSION CONTROL INFORMATION (VECI)

The Vehicle Emission Control Information (VECI) label ② is located on the left rear section of the interior roof panel, below the manufacturer's label.

RADIO COMPLIANCE STATEMENTS

The following statements apply to radio components offered with this vehicle. These include but may not be limited to the touchscreen display.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device complies with FCC RF radiation exposure limits for general population.

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

CAUTION

This equipment complies with part 15 of the Federal Communications Commission (FCC) rules.

These requirements are intended to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

REPLACEMENT KEYS

For an extra or replacement key for the ignition or accessory locks, a blank can be ordered from any GEM dealer. The necessary blank can be identified by providing the key number stamped on the original key. The blank will be cut using your existing key to create a spare, but not all dealers are able to cut key blanks and it may need to be taken elsewhere to be cut. If both of your keys have been lost, the ignition will need to be replaced.

SAFETY

AUDIBLE WARNING DEVICE

Your new GEM product is equipped with an Acoustic Vehicle Alerting System (AVAS). This system includes a noise emitting device designed in compliance with FMVSS-141 *Minimum Sound Requirements for Hybrid and Electric Vehicles*. The purpose of this device is to provide an audible alert to aid in pedestrian awareness of an active vehicle. The vehicle will emit a specific audible alert to enhance its ability to be detected during critical operating scenarios including: stationary, reverse and constant speeds up to 18.64 mph (30 km/h).

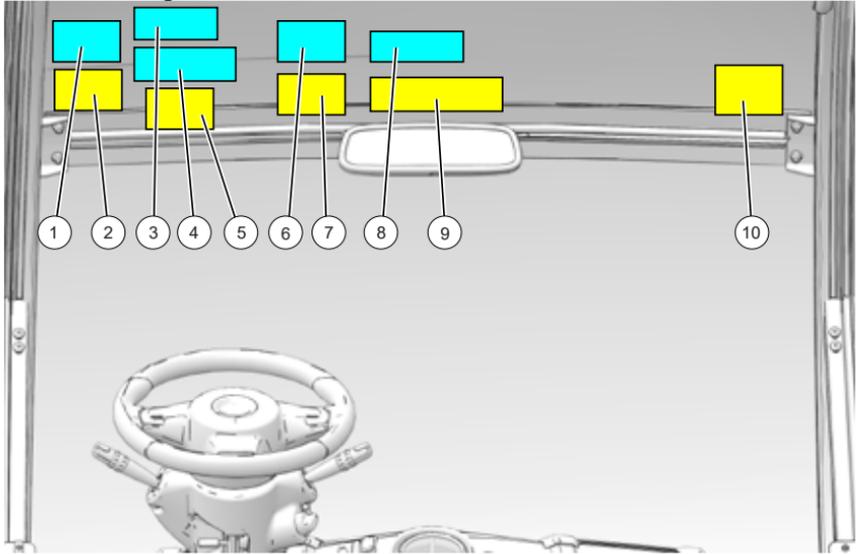
SAFETY LABELS AND LOCATIONS

Warning labels have been placed on the vehicle for your protection. Read and follow the instructions of the labels on the vehicle carefully. If any of the labels depicted in this manual differ from the labels on your vehicle, always read and follow the instructions of the labels *on the vehicle*.

If any label becomes illegible or comes off, contact your authorized GEM dealer to purchase a replacement. The part number is printed on the label.

ROOF WARNINGS AND DISCLOSURES

The roof warnings and disclosures are located on the underside of the roof.



- ① Rollover Risk (French-Canadian)
- ② Rollover Risk
- ③ Canada Low Speed Vehicle Alert
- ④ Canada Low Speed Vehicle Alert (French-Canadian)
- ⑤ Low Speed Vehicle Alert
- ⑥ Warning, General Use (French-Canadian)
- ⑦ Warning, General Use
- ⑧ Payload Warning (eL XD) (French-Canadian)
- ⑨ Cargo Limit (eL XD)
- ⑩ Seatbelt Warning
- ⑪ Cargo Limit, Bed Warning
- ⑫ Pinch Point Warning (eX)

ROLLOVER RISK WARNING

Avoid Abrupt Maneuvers and Excessive Speed. See Owner's Manual for further Information.

CANADA LOW SPEED VEHICLE ALERT

This Canada-model low speed vehicle is designed for use primarily on streets and roads where access and the use of other classes of vehicles are controlled by law or agreement.

The use of this low speed vehicle may be restricted by provincial authorities to certain roads.

LOW SPEED VEHICLE DISCLOSURE

This Vehicle:

- Has a maximum speed of greater than 20 miles per hour, but not greater than 25 miles per hour;
- May be a hazard on the roadways if it impedes traffic;
- May subject the driver to citations for impeding traffic;
- May not be equipped with such safety features as bumpers, a padded dashboard, visors, and a tamper-resistant odometer;
- May be subject to other restrictions specific to the state or local jurisdiction in which it is operated; and
- Shall not be operated on a public highway with a speed limit in excess of the maximum specified by the state or local jurisdiction in which it is operated, including:
 - NY: Shall not be operated on a public highway with a speed limit in excess of 35 miles per hour.
 - MD and IL: Shall not be operated on a public highway with a speed limit in excess of 30 miles per hour.

ONTARIO LOW SPEED VEHICLE WARNING LABEL (CANADIAN MODELS ONLY)

In accordance with the Ontario, Canada LSV program, warning label 7188616 will be placed by the dealer on models sold in Ontario to support Low Speed Vehicle Registration in this region. The recommended location for this label is on the left section of the interior roof panel.

 **WARNING**

- This low-speed vehicle cannot attain a rate of speed greater than 40 kilometers per hour.
- This low-speed vehicle is not equipped with the safety features customarily found in passenger cars, and low-speed vehicle owners and drivers are advised to confirm the vehicle's safety features with the manufacturer or importer.
- The operation of this low-speed vehicle is restricted to highways the rate of speed for which is not greater than 50 kilometers per hour, and may be subject to other operating requirements imposed by law. Low-speed vehicle owners and drivers are advised to confirm the operating requirements that apply with respect to the highways on which they intend to operate the vehicle.
- This low-speed vehicle emits little or no noise, and low-speed vehicle owners and drivers are advised that, as a result, other road users may not be alerted to the presence of the vehicle.

WARNING, GENERAL USE **WARNING**

- Read your Owner's Manual before operating this vehicle.
- Do not operate this vehicle under the influence of alcohol, drugs or medication.
- Although most states prohibit this vehicle from operating on streets having posted speed limits of more than thirty-five miles per hour (35 mph), state and local rules may vary.
- Check with your local law enforcement (city and state officials) for variations in your area.
- This vehicle is not intended to be driven at more than twenty-five miles per hour (25 mph).
- Never exceed the passenger and cargo limits of this vehicle.
- Do not start or operate vehicle until all occupants are seated with seat belts fastened.
- Keep arms and legs inside vehicle at all times.
- Avoid sharp turns on inclines and at high speeds (may cause rollover).
- Reduce speed on wet and slippery surfaces and in turns.
- Do not leave children unattended in vehicle.
- Set handbrake before leaving the vehicle.
- Remove key when leaving vehicle unattended.
- Stop vehicle before reversing direction.
- Be aware of small children and objects behind you before reversing direction.

ALWAYS DRIVE SAFELY.

FAILURE TO FOLLOW THESE WARNINGS COULD RESULT IN SERIOUS OR FATAL INJURY.

CARGO LIMIT WARNING (EL XD ONLY) **WARNING**

- Never carry passengers on rear platform.
- Passengers can be thrown off. This can cause serious injury or death.

 **WARNING**

- Distribute weight evenly.
- Ensure loads are properly secured.
- Do not exceed gross vehicle weight rating in owner's manual.

SAFETY

RATING	EL XD
A. Occupant Capacity	300 lb (136 kg)
B. Cargo Capacity (includes cargo, bed load, and optional equipment)	1250 lb (567 kg)*
C: Maximum Trailer Tongue Weight	150 lb (68 kg)
D: Maximum Gross Trailer Weight	1250 lb (567 kg)
A + B = Vehicle Rated Capacity	1550 lb (703 kg)
A + B + D, not to exceed stated Vehicle Combination Rated Capacity	1550 lb (703 kg)
Vehicle Dry Weight (Base Model)	1545 lb (701 kg)
A + B + Vehicle Dry Weight = Maximum Gross Vehicle Weight	2999 lb (1360 kg)
A + B + D + Vehicle Dry Weight, not to exceed stated Maximum Gross Vehicle Combination Weight	2999 lb (1360 kg)
* Cargo Capacity and Vehicle Dry Weight are directly affected by the vehicles features, options & accessories and will be unique to each specific configuration.	

SEAT BELT WARNING

 **WARNING**

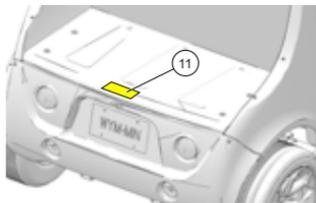
TO AVOID PERSONAL INJURY OR DEATH:
Always fasten your seat belt.



SAFETY

CARGO LIMIT WARNING (E2/E4/E6)

The cargo limit cargo warning label ① is located at the rear of the vehicle on the battery cover.



⚠ WARNING

- Never carry passengers on rear platform
- Passengers can be thrown off. This can cause serious injury or death.

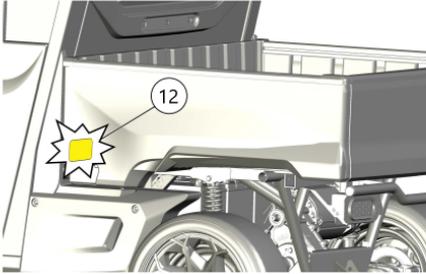
⚠ WARNING

- STANDARD CARGO LIMIT 15 kg / 33 lbs.
- S-BED/TRUNK-BACK CARGO LIMIT 150 kg / 330 lbs.
- Distribute weight evenly. Ensure loads are properly secured. Total weight of passengers, accessories, and cargo must not exceed gross vehicle weight rating in owner's manual.



PINCH POINT WARNING

The pinch point warning label is located on the vehicle body near the front of the utility bed.



OPERATOR SAFETY

⚠ WARNING

Serious injury or death can result if you do not follow these instructions and procedures, which are outlined in further detail within this owner's manual.

- Read this manual and all labels carefully. Follow the operating procedures described.
- Never allow anyone under age 16 to operate this vehicle and never allow anyone without a valid driver's license to operate this vehicle.
- Never permit a guest to operate this vehicle unless the guest has read this manual and all product labels.
- Always make sure the seat belts are secured for operator and all passengers before operating.
- Never exceed the maximum occupant capacity of your vehicle:

GEM e2	2 occupants
GEM e4	4 occupants
GEM e6	6 occupants
GEM eL XD	2 occupants
GEM eX	2 occupants

- Never exceed the gross vehicle weight rating (GVWR) of your vehicle.
- The cab frame is not designed or intended to provide rollover protection. Avoid situations that could result in a rollover.
- Always be sure there are no obstacles or people behind your vehicle when operating in reverse. When it's safe to proceed in reverse, move slowly. Avoid turning at sharp angles in reverse.

SAFETY

- Always use the proper size and type of tires and always maintain proper tire pressure as specified in this manual and on safety labels.
- Never modify this vehicle with non GEM-approved parts and/or accessories.
- Always set the park brake and remove the key when leaving the vehicle unattended.
- The voltage in the battery pack is sufficient to cause death by electrocution. With the exception of battery inspections and fluid level maintenance, if applicable, never attempt to perform service on the electric drive system, including the battery pack, unless you are properly trained to work on electrical systems. Your authorized GEM dealer can provide battery-related service.
- Do not carry a passenger until you have at least two hours of driving experience with this vehicle.
- Always keep arms and legs inside the cab frame while the vehicle is in motion.
- Always keep both hands on the steering wheel and both feet on the floorboards of the vehicle during operation.
- Never consume alcohol or drugs before or while operating this vehicle. Never operate at excessive speeds. Always travel at a speed proper for the traffic, visibility and operating conditions, and your experience.
- Never attempt wheelies, jumps, doughnuts or other driving stunts.
- Always inspect your vehicle each time you use it to make sure it's in safe operating condition. Always follow the inspection and maintenance procedures and schedules described in this manual.
- Never operate on excessively rough, slippery or loose terrain.
- Always follow proper procedures for turning. Practice turning at slow speeds before attempting to turn at faster speeds. Never turn at excessive speeds.
- Always have this vehicle inspected by an authorized GEM service dealer if it has been involved in an accident.

GROSS VEHICLE WEIGHT RATING (GVWR)

 **WARNING**

Exceeding the gross vehicle weight rating of your vehicle can reduce stability and handling and could cause loss of control. **NEVER** exceed the GVWR of your vehicle.

The maximum *payload capacity* of your vehicle is the maximum weight you may add to your vehicle *without exceeding the GVWR*. This capacity is determined by calculating the difference between your vehicle's GVWR and wet weight.

Refer to the specification section of this manual or the Manufacturer's Label on the vehicle for model-specific information.

When determining the weight, you will be adding to your vehicle, and to ensure you do not exceed the maximum payload capacity, include the following:

- Operator body weight
- Passenger body weight
- Weight of all occupants' apparel and items in or on apparel
- Weight of any options or accessories and their contents
- Weight of any additional cargo on the vehicle
- Weight is distributed evenly. Do not exceed the GAWR, see page 85.
- Weight distribution does not extend beyond the boundaries of the vehicle

SAFETY

EQUIPMENT MODIFICATIONS

Never install any accessory that grounds to the vehicle chassis. The chassis is a floating ground to protect against electrical short circuits and hazards.

Do not install any non-GEM-approved accessory or modify the vehicle including for the purpose of increasing speed or power.

A warranty claim on your GEM vehicle may be rejected if the failure is believed to be caused by non-GEM-approved equipment and/or modifications.

WARNING

Any modifications or installation of non-GEM-approved accessories could create a substantial safety hazard and increase the risk of bodily injury.

The addition of certain accessories, including (but not limited to) accessory boxes or large racks, may change the handling characteristics of the vehicle. Use only GEM-approved accessories, and familiarize yourself with their function and effect on the vehicle.

SEAT BELTS

Riding in this vehicle without wearing the seat belt increases the risk of serious injury in the event of an accident or sudden stop. Occupants must wear seat belts at all times. Always make sure the seat belts are secured for operator and all passengers before operating.

WARNING

Always wear your seat belt. Ensure the seat belts are secured for operator and all passengers before operating. Failure to do so could result in the risk of serious injury or death.

OPERATING WITHOUT INSTRUCTION

Operating this vehicle without proper instruction increases the risk of an accident. The operator must understand how to operate the vehicle properly in different situations and on different types of terrain. All operators must read and understand the Owner's Manual and all warning and instruction labels before operating the vehicle.



FAILURE TO INSPECT BEFORE OPERATING

WARNING

Failure to inspect and verify that the vehicle is in safe operating condition before operating increases the risk of an accident. Always inspect the vehicle before each use to make sure it's in safe operating condition. Always follow all inspection and maintenance procedures and schedules described in the owner's manual. See "Periodic Maintenance Chart" on page 67.

USING ALCOHOL OR DRUGS

WARNING

Operating the vehicle after consuming alcohol or drugs could adversely affect operator judgment, reaction time, balance and perception..

Never drink alcohol or use drugs or medications before or while operating this vehicle.

OPERATING A DAMAGED VEHICLE

CAUTION

Operating a damaged vehicle can result in an accident. After any rollover or accident, have an authorized GEM dealer or qualified service dealer inspect the entire machine for possible damage, including (but not limited to) brakes, accelerator, steering system and electrical system.

OPERATING AT EXCESSIVE SPEEDS

CAUTION

Operating this vehicle at excessive speeds increases the operator's risk of losing control. Always operate at a speed that's appropriate for your skills and the traffic, visibility and operating conditions.

EXHIBITION DRIVING

CAUTION

Exhibition driving increases the risk of an accident or rollover. Never attempt wheelies, jumps, doughnuts or other stunts. Avoid exhibition driving.

TURNING IMPROPERLY

 CAUTION

Turning improperly could cause loss of traction, loss of control, accident or rollover. Always follow proper procedures for turning. Never turn abruptly or at sharp angles. Never turn at high speeds. Practice turning at slow speeds before attempting to turn at faster speeds.

VEHICLE ROLLOVER

 WARNING

Vehicle rollover could cause serious injury or death. The cab frame is not designed or intended to provide rollover protection. Always make sure the seat belts are secured for operator and all passengers before operating. Avoid situations that could result in a rollover. Avoid sharp turns and abrupt steering maneuvers.

CARRYING CARGO

Carrying loads on the roof could damage the roof and affect vehicle handling, which could result in an accident or rollover. Never carry loads on the roof of the vehicle without the approved cargo rack installed. See page 52 for more information regarding the roof rack.

 CAUTION

Operating this vehicle with cargo loaded on the roof rack will affect vehicle handling even when loaded properly and within the roof rack load requirements.. Rollover risk is increased when carrying cargo on the roof rack. Never exceed the recommended capacity for the roof rack cargo.

Never exceed the stated load capacity for this vehicle. Cargo should be properly distributed and securely attached.

Reduce speed and follow the instructions on cargo warning labels for hauling cargo. Allow a greater distance for braking.

IMPROPER TIRE MAINTENANCE

CAUTION

Operating this vehicle with improper tires or with improper or uneven tire pressure could cause loss of control or accident. Always use the size and type of tires specified for your vehicle.

Always maintain proper tire pressure as described in the owner's manual and on safety labels.

UNAUTHORIZED USE OF THE VEHICLE

Leaving the keys in the vehicle can lead to unauthorized use of the vehicle by someone without a driver's license or without proper training. This could result in an accident or rollover. Always remove the key when the vehicle is not in use.

HOT COMPONENTS

WARNING

The motor, controller, and components are very hot during and after use of the vehicle. Hot components can cause burns and fire. Do not touch hot drive system components. Always keep combustible materials away from the drive system. Use caution when traveling near or through grass, brush or muddy conditions, especially dry grass or brush, and always inspect areas near the drive system afterwards. Promptly remove any grass or debris clinging to the vehicle.

PRECAUTIONS DURING MAINTENANCE

DANGER

The voltage in the battery pack is sufficient to cause death by electrocution. With the exception of battery inspections, never attempt to perform service on the electric drive system, including the battery pack, unless you are properly trained to work on electrical systems.

Your authorized GEM dealer can provide battery-related service.

WARNING

Do not work in or near the battery compartment or on any other electrical component of the vehicle while charging the batteries.

SAFETY

WARNING

Before servicing the vehicle's electrical system, always remove the BMS fuse first, then disconnect any 48-volt electrical accessories, then disconnect the negative terminal from the main battery pack. For more information, see "Disconnecting Power" page 44. Always follow all safety instructions in the maintenance portion of this owner's manual, as well as the following:

- Park the vehicle on an level surface.
- Make sure the vehicle is properly immobilized before beginning any maintenance.
- Always block the chassis securely before working under the vehicle.
- Turn the key off and remove it from the vehicle.
- Insulate any tools used within the battery area to prevent sparks or battery explosion caused by shorting the battery terminals or wiring. Remove the battery, or cover the exposed terminals with an insulating material.

**FOR MORE INFORMATION ABOUT SAFETY, PLEASE CONTACT GEM
CUSTOMER SERVICE.**

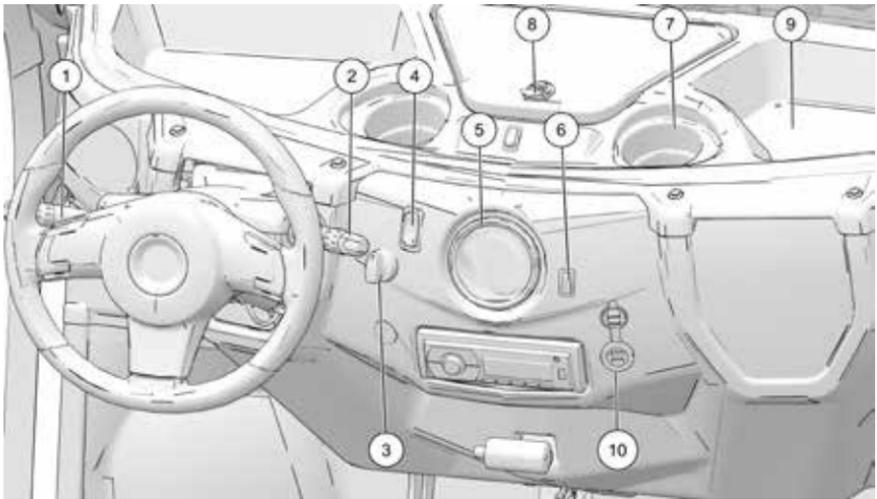
GEM CUSTOMER SERVICE

Phone: 855 - RIDEGEM (855-743-3436)

Web: www.gemcar.com

FEATURES AND CONTROLS

CONSOLE



- | | |
|---------------------------|------------------|
| ① Left Control Lever | ⑦ Cup Holder |
| ② Right Control Lever | ⑧ Glove Box Lock |
| ③ Key Switch | ⑨ Storage Tray |
| ④ Drive Mode Switch | ⑩ USB Port |
| ⑤ Gauge | |
| ⑥ Trip Switch/MODE Switch | |

FEATURES AND CONTROLS

LEFT CONTROL LEVER

The left control lever contains the turn signal switch, the horn switch, the headlight on/off switch and the high/low headlight beam switch.

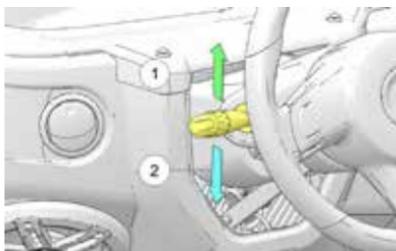
TURN SIGNAL SWITCH

NOTICE

The key must be in the ON position to activate the turn signals.

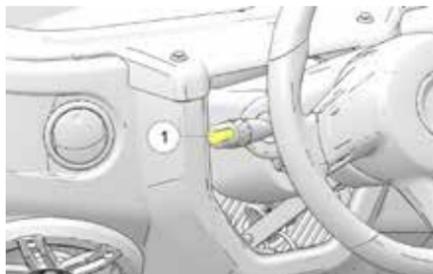
Check turn signal lamps before each ride. When driving, activate a turn signal before turning to alert others of your intentions.

Move the lever upward ① to signal a right turn. Move the lever downward ② to signal a left turn. The corresponding turn signal lamps on the front and rear of the vehicle will flash. The corresponding turn indicator in the LCD display will also flash.



HORN SWITCH

Press the tip of the left control lever ① inward to sound the horn.



HEADLIGHT HIGH BEAM/LOW BEAM SWITCH

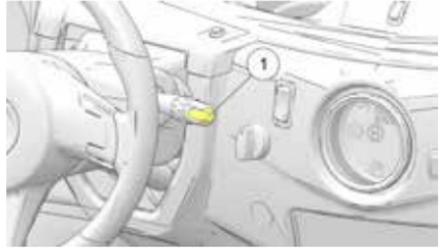
Pull the control lever toward the driver's seat to toggle the headlights between high beam and low beam.

RIGHT CONTROL LEVER

The right control lever contains the hazard signal switch, and the windshield wiper and washer switches (if equipped).

HAZARD SIGNAL SWITCH

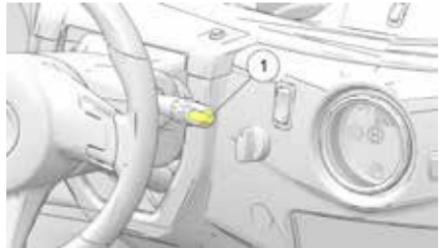
Press the tip of the lever inward ① to cause all turn signal lamps to flash simultaneously. Use this feature to alert others of an emergency or other situation requiring caution, especially if your vehicle becomes disabled on or near a road. Press the switch again to cancel the hazard signals.



WINDSHIELD WIPER

Rotate the knurled barrel ① forward to turn the windshield wipers on. Pull the control lever toward the driver's seat to activate the washer (if equipped).

If the wiper fails to work, check for a blown fuse at the fuse block. See page 70.



CAUTION

A worn or damaged wiper blade could impair operator vision and result in an accident. A worn wiper blade could also damage windshield glass. Always replace worn or damaged wiper blades promptly.

FEATURES AND CONTROLS

KEY SWITCH

When the key is turned to the OFF position ①, the vehicle will not operate.

To start, turn and hold the key to the START position ③ for approximately one second and release to the ON position ②. This will power up the vehicle systems and allow operation.



Leaving the key in the ON position will discharge the battery. Always turn the key to the OFF position when not operating. Remove the key from the ignition to prevent unauthorized use.

If the key is left in the ON position and there are no user inputs from: the brake pedal, parking brake, seat belt, hazard or turn signal switches, the gear selector, and the headlight switch; the vehicle will enter sleep mode after some time to prevent the batteries from fully discharging. To exit the sleep mode, cycle the key switch to OFF and back to the ON position.

WARNING

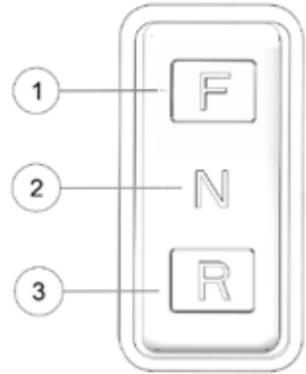
Never turn the key to the OFF position while the vehicle is in motion. This could lead to loss of speed control and loss of vehicle control, which could result in serious injury or death.

DRIVE MODE SWITCH

NOTICE

The malfunction light will illuminate after reversing direction if you press the accelerator pedal before coming to a complete stop.

Always come to a complete stop before reversing direction. To choose the forward option, push the top of the switch ①. Push the bottom of the switch to choose reverse operation ③. When the drive mode switch is in the center position ②, the vehicle is in neutral. The vehicle will not move if the accelerator is depressed.



DIGITAL/ANALOG GAUGE

High-pressure water may damage components. Wash the vehicle by hand or with a garden hose using mild soap. Certain products, including insect repellents and chemicals, will damage the speedometer lens and other plastic surfaces. Do not use alcohol to clean the instrument cluster. Do not allow insect sprays to contact the lens.



SPEEDOMETER

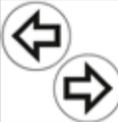
When driving, the speedometer displays vehicle speed in miles per hour (MPH) and kilometers per hour (Km/H).

MODE BUTTON

Use the MODE button to toggle through mode options.

FEATURES AND CONTROLS

INDICATOR LAMPS

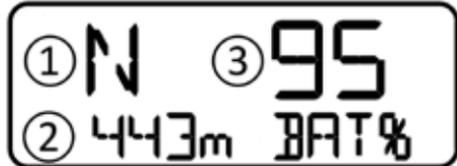
LAMP	INDICATES	CONDITION
	Turtle Mode	Will illuminate when battery pack reaches 0% - Vehicle speed will be limited to 12mph.
	Brake Indicator	The brake indicator illuminates when the park brake is engaged.
	Direction Indicators	A direction indicator flashes when a turn signal is active.
	Low Beam	This lamp illuminates when the headlamp switch is set to low beam.
	High Beam	This lamp illuminates when the headlamp switch is set to high beam.
	Chassis Fault	This lamp illuminates with the fault indicator on the rider information center to indicate a vehicle fault. See page 31. This lamp may also illuminate when the vehicle battery is charging.
	Seat Belt	When the key is turned on, the seat belt indicator lamp will illuminate if the driver's seat belt is not fastened. The lamp is a reminder to the operator to ensure all riders are wearing seat belts before operating.

RIDER INFORMATION CENTER

It consists of four main screens that can be navigated with the mode button. It displays state of charge when charging. It also displays the new drive mode when it is changed. See page 33 for more information on Drive Modes.

PRIMARY DISPLAY

This is the default display at startup. It displays the direction selected ①, the odometer ②, and the battery percentage remaining ③.



SPEED DISPLAY

This displays the direction selected ①, the current speed in MPH ②, and the battery percentage remaining ③.



MILES REMAINING

This displays the direction selected ①, and the estimated miles remaining ②.



TRIP METER

This displays the miles incurred ① since the last trip meter reset. To reset the trip meter, hold the mode button.



CHARGING METER

This displays the percentage state of charge ① when the unit is connected for battery charging.



FEATURES AND CONTROLS

DIRECTION SELECTED

This indicates the current position of the direction switch:.

F = Forward

N = Neutral

R = Reverse

STATE OF CHARGE AND MILES REMAINING

These are estimations of the remaining percentage of battery charge or the remaining miles to battery depletion. These are estimates based on stored battery parameters. This is only an estimate and can vary based on battery break in, vehicle load, driving style, terrain, component wear, and weather conditions

COLD TEMPERATURE OPERATION

Cold weather affects your electric vehicle's performance. The colder the ambient storage temperature, the slower the rate of charge and discharge of batteries. In the application of an electric vehicle like GEM, cold weather could decrease the achieved range on a charge.

ODOMETER

The odometer displays the distance traveled by the vehicle since manufacture.

TRIP METER

The trip meter displays distance traveled since the last reset of the trip meter. To reset, toggle to the trip meter display. Press and hold the MODE button until the meter resets to zero

CHARGING METER

The charging meter displays the current percentage state of charge while the unit is connected for battery charging. This will display as long as the machine is connected.

DRIVING MODES

SINGLE PEDAL MODE - OFF

Machine is in the standard driving mode. Regenerative braking is at its standard setting. Off pedal deceleration will be normal

SINGLE PEDAL MODE - ON

Machine is in single pedal mode. In this mode the level of regenerative braking is increased. Off pedal deceleration will be increased noticeably. Machine will decelerate and hold to under 3 mph when coasting off throttle. Machine will attempt to eliminate roll back in the opposite direction of the current direction selected. Some movement will always be present on a grade; the brake pedal must be used to hold the vehicle stationary.

SELECTING DRIVING MODE

To switch between driving modes hold the Mode Button until the Driving Mode status is displayed. The machine has now been switched to the displayed mode.

SINGLE PEDAL OFF

This displays once Single Pedal Mode has been set to 'OFF'.



SINGLE PEDAL ON

This displays once Single Pedal Mode has been set to 'ON'.



⚠ WARNING

In snowy or icy conditions, the GEM may experience loss of traction during regenerative braking

FEATURES AND CONTROLS

GLOVE BOX

The glove box is equipped with a lock to protect items from theft or damage. Use the accessory lock key to lock and unlock the glove box door. Turn the key 1/4 turn counter-clockwise to unlock the door.

USB PORT

The fuse for the USB port ① is located under the hood in the fuse block. Always use fuses with the same type and rating.



NOTICE

Do not plug in devices requiring power exceeding 10.5 watts. Damage to the vehicle electrical system may occur or an accessory fuse may blow.

BATTERIES

BATTERY

Your vehicle is equipped with a Lithium Battery. This battery supplies the power needed to operate your vehicle.

The battery automatically enters sleep mode if the key switch has not been activated for 48 hours.

To wake the battery:

- Start the vehicle
- Push and hold the wake button for 3 seconds until the status LED illuminates. See Wake Button on page 43 for more information.

WARNING

A powered off Status LED indicates that the battery pack has entered Sleep Mode and is disconnected from the motor.

It does not indicate that the battery pack is disabled.
HIGH VOLTAGE will be present at the battery terminals.
HIGH BATTERY VOLTAGE IS ALWAYS PRESENT.
DO NOT TOUCH THE BATTERY TERMINALS.

BATTERY PERFORMANCE TIPS

- Battery should be fully charged before the first use
- Only operate the vehicle in the allowed battery temperature range
- Recharge the battery daily, or after each use of the vehicle
- Always maintain a full charge on the battery. For best battery life, avoid discharging the battery more than 80%
- Battery should be charged at room temperature. See 'BATTERY CHARGING' for full details
- Range may be affected by road conditions, terrain, temperature, and driving habits

BATTERY OPERATING TEMPERATURE

Minimum	-20°F (-29°C)
Maximum	140°F (60°C)

ON-BOARD CHARGER

The on-board charger is located behind the front fascia.

The state of charge of the battery is displayed in the rider information center and will also display when the vehicle is charging.

FEATURES AND CONTROLS

IMPORTANT

Avoid temperature extremes when choosing a storage area

BATTERY CHARGING

Your vehicle is equipped with a standard or a fast charger.

The battery charge receptacle is located at the rear of the hood, just below the windshield.

WARNING

Using a non-recommended charge cord could result in fire, heat damage, or charger failure, which could lead to serious injury or death. Always use the recommended type of cord to charge your battery.

WARNING

Charging from a circuit of lesser capacity and/or using a cord from the outlet to the vehicle that is not sufficient in wire gauge could create a fire hazard.

NOTICE

A GFI (Ground Fault Interrupt) receptacle is recommended.

Always follow these precautions when charging:

- Ensure the ambient temperature is within the allowable range
- Position the vehicle on a level surface. Make sure the charging area is well ventilated.
- Make sure the key is off.
- Always use the recommended cord type
- Inspect the charge cord for cracks, loose connections and frayed wiring. NEVER use a damaged charge cord.
- Make sure the charger uses a dedicated circuit to prevent overloading. If charging multiple vehicles, each vehicle should use a dedicated circuit.

BATTERY CHARGING TEMPERATURE

Minimum

0°F (-18°C)*

Maximum

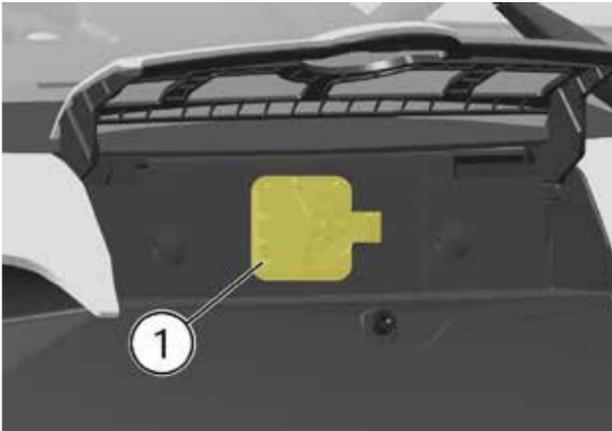
110°F (43°C)

*If charging is attempted below 32°F (0°C) the battery heaters will engage to warm the battery to a minimum of 32°F (0°C) before charging can begin. This will lead to increased charge time.

CHARGE RECEPTACLE

The charge receptacle ①, located at the front of the GEM, is compatible with the MY24+ standard charge cord as well as J1772 compatible EVSE's and public charge stations.

1. Always use SAE J1772 approved charge stations and connectors.
2. To begin charging, align and insert the charge station connector into the receptacle until it latches.
3. Charging will begin.
4. To remove the connector after the charge cycle is complete, press the release button and pull the connector out



FEATURES AND CONTROLS

EVSE (OPTIONAL)

OVERVIEW

The EVSE is a compact portable power supply for charging your vehicle.

It features an integrated GFCI circuit for safety. It includes adapters for 120V AC (1kw charging) and 240V AC (up to 4.4kw charging).

⚠ WARNING

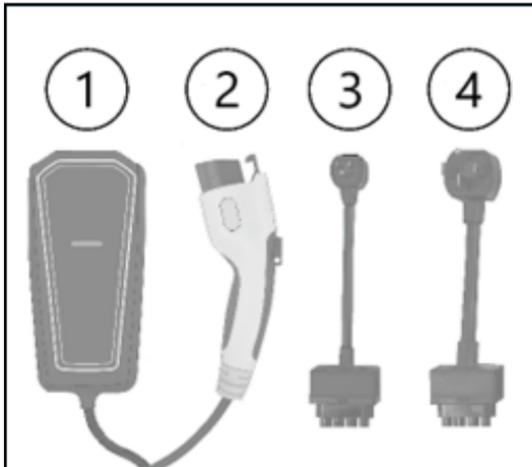
DO NOT plug the EVSE into an electrical outlet submerged in water or covered in snow. DO NOT use the EVSE during severe rain, snow or an electrical storm. Avoid moisture, water, snow and foreign objects at all times.

⚠ CAUTION

DO NOT connect or disconnect the AC Adapter from the control box while it is in use or charging, i.e., the adapter plug is connected to a power outlet or the vehicle connector coupler is engaged to a vehicle inlet.

⚠ CAUTION

DO NOT operate the EVSE in a temperature outside its operating range of -22°F to +122°F (-30°C to +50°C).



- ① EVSE
- ② COUPTER
- ③ 120v adpater
- ④ 240v adpater

CHARGING

5. Position the vehicle on a level surface.
6. Make sure the key is off.
7. Confirm that the Status LED is illuminated. If it is not, the vehicle has entered sleep mode. Push and hold the Wake Button for three seconds or until the status LED illuminates. See Wake Button on page 43 for additional information.
8. Insert the appropriate AC adapter firmly into the control box then insert the other end of the adapter into the appropriate wall outlet. Note: an audible click will be heard when the adapter is correctly inserted into the control box.
9. Allow the EVSE to perform the startup system check.
10. Once the EVSE LED indicator is Solid Blue, connect the J1772 coupler to the vehicle's charge port.
11. When charging begins, the blue status indicator pulses on and off.
12. When charging ends, the blue status indicator illuminates solid blue.
13. Press the release button on the coupler and pull the coupler away from the vehicle.

NOTICE

To safely discontinue charging at any time, follow the instructions in Step 8. Charging will automatically and safely stop. The blue status indicator remains ON (without blinking) when the coupler is removed.

INDICATOR LIGHTS

An indicator LED panel is located on the front of the EVSE.

It will display Blue, Amber, or Red LEDs, flashing or solid.

See the chart below for full details:

AMBER	BLUE	RED	MODE
Off	Off	Off	Off / No AC power
Off	Pulse	Off	Charging
Off	On	Off	Standby – Ready to charge
On	On	On	Rebooting

FEATURES AND CONTROLS

AMBER	BLUE	RED	MODE
On	Pulse	Off	Overheating – cycle power. If charger is warm or in a hot environment, move to cooler area
1 Flash	Pulse	Off	Ac input overheating – ensure adapter is properly connected. If charger is warm or in a hot environment, move to a cooler area.
On	Off	Off	EVSE faulted – ensure adapter is properly connected, disconnect and reconnect adapter. If charger is warm or in a hot environment, move to a cooler area
Off	Off	On	EVSE internal fault. Try another adapter.
Off	Off	1 flash	AC adapter fault. Try another adapter.
Off	Off	Pulse	GROUND LEAKAGE FAULT (SEE WARNING BELOW).

 **WARNING**

If a GROUND LEAKAGE FAULT is present there is a POTENTIAL SHOCK HAZARD. IMMEDIATELY turn off circuit breaker for the outlet. Discontinue use and contact customer support

BATTERY HANDLING PRECAUTIONS

WARNING

Do not work in or near the battery compartment or on any other electrical component of the vehicle while charging the batteries.

Before servicing the vehicle's electrical system, always remove the BMS fuse first, then disconnect any 48-volt electrical accessories, then disconnect the negative terminal from the main battery pack.

For more information, see "Disconnecting Power" page 44. This will disable the vehicle by disconnecting the battery from the motor.

It does not disable the battery. HIGH VOLTAGE will be present at the battery terminals and contactor.

HIGH BATTERY VOLTAGE IS ALWAYS PRESENT. DO NOT TOUCH THE BATTERY TERMINALS.

- Always make sure that all 12-volt electrical accessories are grounded directly to the negative (GND) post on the terminal board. Never use the chassis or body as a ground connection. See page 42.
- Never connect a 12-volt accessory directly to the battery. Always connect any powered accessory to the 12-volt terminal board. See page 42.
- Never connect jumper cables to the battery of this vehicle.

CAUTION

Always wear safety glasses or approved eye protection when servicing the vehicle. Wear a full-face shield and gloves when working with or around batteries and electrical connectors.

- Use only insulated tools when working in the battery compartment.
- Always keep battery terminals and connections clean and free of corrosion at all times. See page 80.

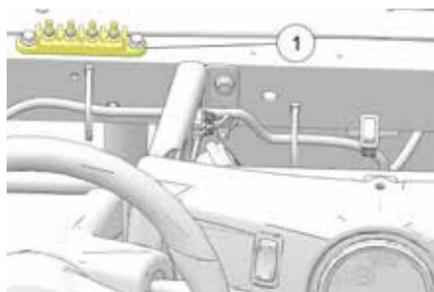
FEATURES AND CONTROLS

12-VOLT TERMINAL BOARD CONNECTIONS

Remove the upper dash to access the 12-volt terminal board ①. It is comprised of four posts: 1 for Ground (GND), two for key switch 'On' (+12V Acc & +12V Stereo), and one for constant on (+12 Constant). The labels for the posts are on the primary wires attached to them. See the table below for post labels and function.

POST LABEL	FUNCTION
+12V Constant	Constant 12-volt battery voltage. Always on, regardless of ignition switch position. Turns off when the Storage Switch is in the 'off' position.
+12V Acc	Switched 12-volt accessory power. Circuit powers on and off with the key switch.
+12V Stereo	Switched 12-volt accessory power. Circuit powers on and off with the key switch. Dedicated to the stereo.
GND	Negative accessory connection.

Always make sure that all 12-volt electrical accessories are grounded directly to the negative post on the terminal board. Never use the chassis or body as a ground connection. Use the constant terminal only for accessories that require constant power. Use the accessory terminals for accessories that require power only when the ignition key is on.



SLEEP MODE

The vehicle will enter sleep mode after 48 hours without charging or key switch activation. Once the vehicle enters sleep mode the hazard lights and charging system will no longer activate.

To wake the vehicle:

Key Switch: Use the key to start the vehicle normally. See Key Switch (page 28).

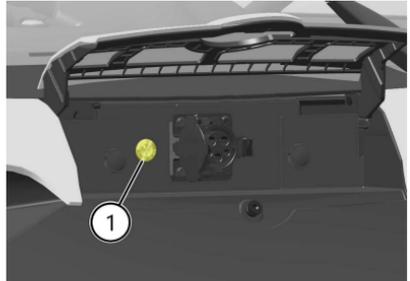
Wake Button: Press and hold the Wake Button until the green Status LED illuminates (approx. 3 seconds).

To power down the battery: The battery will automatically enter sleep mode after 48 hours without key switch activation.

WAKE BUTTON AND STATUS LED

The Wake Button ① with integrated Status LED is located at the front of the GEM behind the charge port door.

That Status LED remains lit until the vehicle enters Sleep Mode. If the vehicle has entered Sleep Mode, the LED will no longer be illuminated. The key switch or the Wake Button must be used to wake the vehicle.



To wake the vehicle:

Key Switch: Use the key to start the vehicle normally. See Key Switch (page 28) for full details.

Wake Button: Press and hold the Wake Button until the green Status LED illuminates (approx. 3 seconds)

To power down the battery: The battery will automatically enter sleep mode after 48 hours without Key Switch activation.

WARNING

Vehicle Sleep Mode disconnects the battery from the motor. It does not disable the battery. HIGH VOLTAGE will be present at the battery terminals.
HIGH BATTERY VOLTAGE IS ALWAYS PRESENT.
DO NOT TOUCH THE BATTERY TERMINALS.

FEATURES AND CONTROLS

DISCONNECTING POWER

1. Position the vehicle on a dry, firm, level surface.
2. Set the park brake.
3. Turn the key off.
4. Open the charge door and verify the Status LED is off. If not, remove the BMS Fuse. See Status Led (page 43) and Fuses (page 71)
5. Locate and disconnect electrical accessory connectors (such as heater or a heated windshield if equipped).
6. Disconnect the main NEGATIVE cable from the traction battery. Isolate the cable end to ensure the circuit cannot be completed during service.

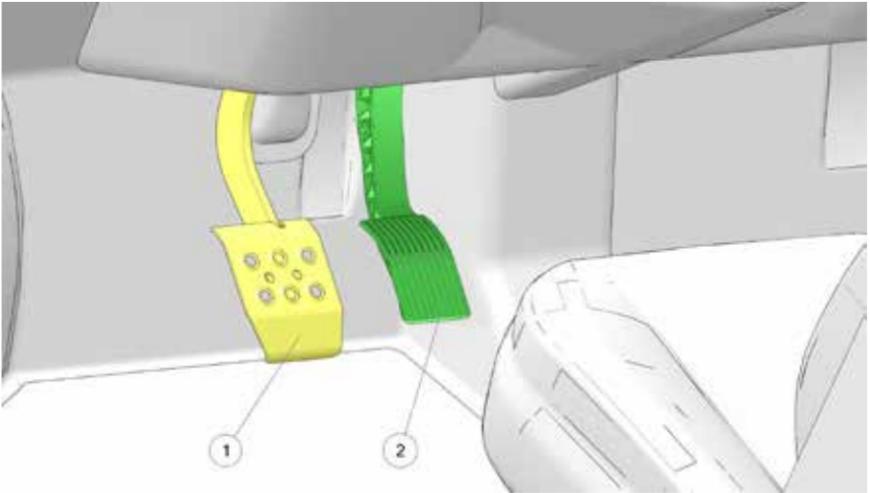
RECONNECTING POWER

1. Reconnect the negative cable to the traction battery. Torque the nut to 8 ft-lbs (10.8 N·m) for standard (non-Lithium) batteries.
2. Reconnect electrical accessory connectors (if equipped).

 **WARNING**

Insulate any tools used within the battery area to prevent sparks or battery explosion caused by shorting the battery terminals or wiring. Remove the battery, or cover the exposed terminals with an insulating material.

BRAKE AND ACCELERATOR PEDALS



BRAKE PEDAL

The brake pedal ① is located on the floor to the left of the accelerator pedal ②. Push the brake pedal toward the floor to slow or stop the vehicle. Apply the brakes before turning the key on.

WARNING

Constant brake use (riding the brakes) can cause brakes to overheat and fail, which could lead to an accident resulting in serious injury or death. Do not drive with your foot resting or riding on the brake pedal.

ACCELERATOR PEDAL

The accelerator pedal ② is located on the floor to the right of the brake pedal. To begin moving or to increase vehicle speed, gradually push the accelerator pedal toward the floor. Holding the accelerator pedal down continuously will accelerate the vehicle to the maximum speed.

The accelerator pedal will function only if the key is on.

To slow the vehicle, release the accelerator pedal and apply the brake. The electric motor provides additional braking force when the brake pedal is applied.

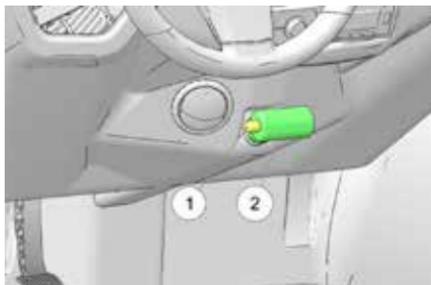
FEATURES AND CONTROLS

PARK BRAKE LEVER

WARNING

A rolling vehicle can cause serious injury. Always set the park brake when leaving the vehicle unattended.
Remove the key from the ignition to prevent unauthorized use.

Always apply the brakes before setting or releasing the park brake. To release the park brake, press and hold the park brake release ① and move the lever to the disengaged position. To set the park brake, pull the park brake lever ② slightly upward and toward the center of the vehicle. If the key is turned off without setting the park brake, an alert will sound. Set the park brake to end the alert.



When the park brake is set and the brake indicator is illuminated, the vehicle will not move.

NOTICE

Be sure the park brake is fully disengaged before driving. Failure to do so can lead to overheating of the rear brakes.

NOTICE

The park brake is adjustable and should be checked periodically as outlined in the Periodic Maintenance Chart in the Maintenance chapter. Your authorized GEM dealer can assist.

DOMEST LIGHT

Turn the dome lights on or off by pressing the switch ① located on the dash between cup holders.



DOORS

Accessory doors are available for all models.

WARNING

Doors do not offer structural protection in the event of an accident and do not change the open body characteristics of the vehicle. The doors provide protection from the weather only. Always use seat belts. Failure to use the seat belts puts the driver and passengers at greater risk of serious injury or death in the event of an accident.

SEAT ADJUSTMENT

Seats can be adjusted forward or rearward. The seat adjustment lever  is directly under the front of the seat.

1. Move the adjustment lever to the left and slide the seat to the desired position.
2. Release the lever.
3. Make sure the seat latches securely in position. Test the latch by attempting to slide the seat forward and rearward while seated.



FEATURES AND CONTROLS

SEAT BELTS

Riding in this vehicle without wearing the seat belt increases the risk of serious injury in the event of an accident or sudden stop. Occupants *must* wear seat belts at all times. Always make sure the seat belts are secured for operator and all passengers before operating.

WARNING

Always wear your seat belt. Ensure the seat belts are secured for operator and all passengers before operating. Failure to do so could result in the risk of serious injury or death.

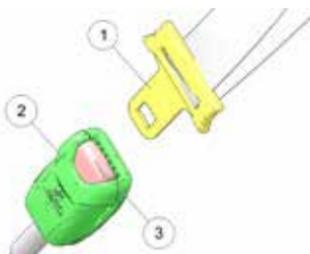
PROPER SEAT BELT USE

This vehicle is equipped with three-point lap and diagonal seat belts for all occupants. Always make sure the seat belts are secured for operator and all passengers before operating.

When the key is turned on, the seat belt indicator lamp will illuminate if the driver's seat belt is not fastened.

To wear the seat belt properly, follow this procedure:

1. Pull the seat belt latch plate ① downward and across your chest toward the buckle ② at the inner edge of the seat.
2. Slide the latch plate up the webbing as far as needed for the belt to reach across your hips. The belt should fit snugly across your hips and diagonally across your chest. Make sure the belt is not twisted.
3. Push the latch plate into the buckle until it clicks.
4. Release the strap, it will self-tighten.
5. To remove slack in the lap belt portion of the belt, pull upward on the shoulder belt. To loosen the lap belt if it is too tight, tilt the buckle and pull the lap belt slightly longer.
6. To release the seat belt, press the square red button ③ in the buckle's center. If necessary, slide the buckle down the webbing to allow it to retract fully.



SEAT BELT SAFETY TIPS

- In a rear seat, you may have trouble tightening the lap/shoulder belt on the restraint because the buckle or latch plate is too close to the belt path opening on the restraint. Disconnect the latch plate from the buckle and twist the short buckle-end belt several times to shorten it. Insert the latch plate into the buckle with the release button facing outward.
- If the belt still cannot be tightened when using a safety seat, or if pulling and pushing on the restraint loosens the belt, disconnect the latch plate from the buckle, turn the buckle around and insert the latch plate into the buckle again. If you still cannot make the restraint secure, try a different seating position.

SEAT BELT INSPECTION

Inspect all seat belts for proper operation before each use of the vehicle.

1. Push the latch plate into the buckle until it clicks. The latch plate must slide smoothly into the buckle. A click indicates that it's securely latched.
2. Push the red release latch in the middle of the buckle to make sure it releases freely.
3. Pull each seat belt completely out and inspect the full length for any damage, including cuts, wear, fraying or stiffness. If any damage is found, or if the seat belt does not operate properly, have the seat belt system checked and/or replaced by a GEM authorized service dealer.
4. To clean dirt or debris from the seat belts, sponge the straps with mild soap and water. Do not use bleach, dye or household detergents.

STEREO SYSTEM (OPTION)

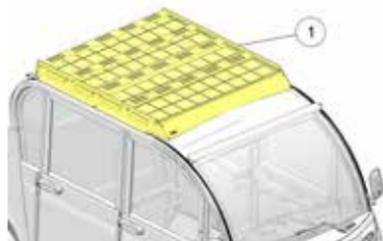
Optional stereo systems with different features are available. The stereo system ① is mounted in the middle of the dash. Refer to your stereo system's user manual for detailed operating instructions.



FEATURES AND CONTROLS

SOLAR PANEL (OPTION)

The optional solar panel ① is mounted on top of the vehicle. Refer to your solar panel user manual for details.



WARNING

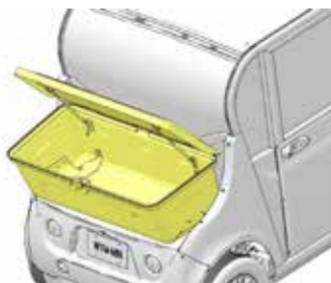
Do not stack items on the solar panel. Never exceed the GVWR or GAWR.

REAR ACCESSORY BACKS (OPTION)

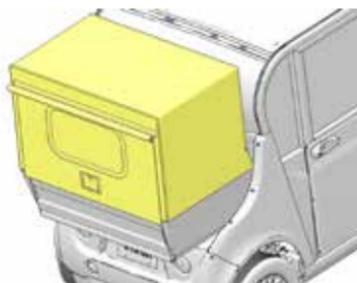
Many rear accessory options are available, a couple are shown below. Accessory backs are interchangeable.

1. Remove the contents of the installed rear accessory back.
2. Remove the attachment bolts.
3. Firmly grasp the installed back and remove it from the vehicle.

Trunk back



Cargo Carrier



WARNING

Never carry a passenger on a rear accessory back. Do not overload an accessory back. Overloading the vehicle can reduce stability and handling and could cause loss of control. *Never exceed the GVWR or the GAWR of the vehicle.* See page 19.

NOTICE

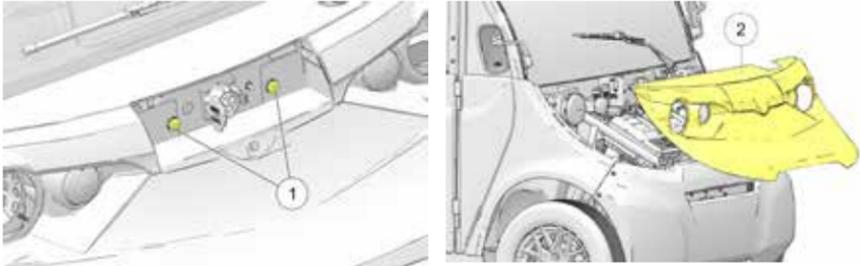
Use only GEM-approved rear accessories. Others may cause damage to the locking system or vehicle, and may void warranty.

GRAB HANDLE PACKAGE (STANDARD)

Grab handles can be added at each seat position to assist riders in entering and exiting the vehicle. Interior grab handles are not intended to retain passengers in the vehicle. Always make sure the seat belts are secured for operator and all passengers before operating.

HOOD

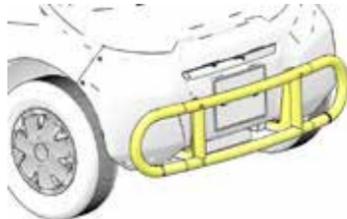
Remove the hood to access the fuse box, windshield washer fluid tank (if equipped), service disconnect and electrical accessory connectors.



1. Remove the two hood screws ① located under the charge port door.
2. Keeping the hood ② parallel with the ground, pull the hood forward to release it from the grommets. Carefully lift the hood away from the vehicle.

PREMIUM BUMPERS/RUGGED BUMPERS (OPTION)

Front bumpers are for appearance only and will protect the body panels only from minor dents and scratches. They will not provide protection to the vehicle in front-end collisions.



NOTICE

Never use your GEM vehicle for pushing. Damage to the vehicle may result.

HEATER/FAN (OPTION)

The heater unit can be used to provide heat inside the vehicle. The switch is located on the console. Move the switch to the HEAT position. Move the switch to the FAN position to operate air flow without heat.

HEATED WINDSHIELD (OPTION)

The heated windshield has heating elements within the glass to assist in defogging the windshield.

Press the heated windshield switch on the console to turn on the heating elements. A light on the switch illuminates when the elements are heating.

Press the switch again to turn off the heating elements. If the heating elements are not turned off, they will automatically turn off after five minutes of operation.

WINDSHIELD WASHER (OPTION)

Rotate the knurled barrel ① forward to turn the windshield wipers on.

Pull the control lever toward the driver's seat to activate the washer. Check the washer reservoir fluid level frequently.

When the level is low, remove the cap and add windshield solvent rated for -25°F (-31°C).

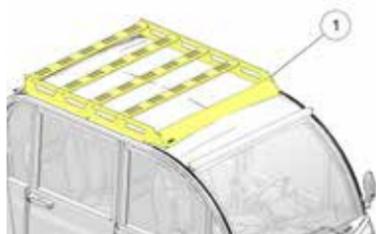


WARNING

Commercial windshield washer solvents are flammable. Keep sparks, flames and cigarettes away. Handle with caution.

ROOF RACK (OPTION)

The optional roof rack ① is mounted on top of the vehicle. The rack is designed to hold up to 75 lbs of cargo.



The roof rack does not increase the total load carrying capacity of the vehicle.

Be sure that the total occupant and load inside and outside of the vehicle does not exceed the GVWR. See page 22 and page 19 for more information.

WARNING

- Maximum roof rack capacity is 75 lbs.
- Distribute weight evenly on roof rack.
- Always ensure that the cargo is secure.
- Rollover risk is increased when carrying cargo on roof rack.

UTILITY BED (EX ONLY)

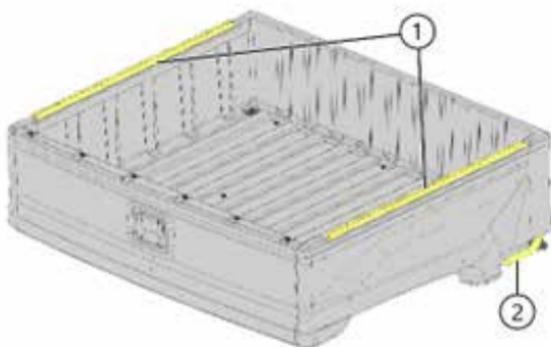
WARNING

NEVER EXCEED THE MAXIMUM WEIGHT CAPACITY OF THE VEHICLE.

- Maximum Utility Bed capacity is 1250 lbs.
- Distribute weight evenly with more weight towards the front of the utility bed
- Always ensure that the cargo is secure
- Vehicle handling and braking will be affected when carrying a load

L-TRACK SYSTEM

The L-Track is a cargo securement system featuring aluminum rails  with regularly spaced, round openings for attaching fittings that can be used to secure a variety of cargo and attachments.



UTILITY BED DUMP

The utility bed can be tilted for easy unloading. The release handles  are located on the forward ends of the left and right sides of the utility bed, near the vehicle passenger compartment.

WARNING

Improperly distributed weight in the utility bed can lead to unexpected tilt operation when released. See DUMPING UTILITY BED on page 60 for full details.

OPERATION

OPERATION WARNING

 WARNING

Failure to operate the vehicle properly can result in a collision, loss of control, accident or rollover, which may result in serious injury or death. Read and understand all safety warnings outlined in the safety section of this owner's manual.

PRE-RIDE INSPECTION

 WARNING

Failure to inspect and verify that the vehicle is in safe operating condition before operating increases the risk of an accident. Always inspect the vehicle before each use to make sure it's in safe operating condition.

Item	Remarks	Page
Accelerator	Ensure Proper Operation	Page 45
Brake System/Pedal travel	Ensure Proper Operation	Page 67
Brake Fluid	Ensure Proper Level	Page 67
Indicator Lights/Switches	Ensure Operation	-
Headlamp	Check Operation	Page 77
Brake Light/Tail lamp	Check Operation	-
Turn Signals	Ensure Operation of all Signal Lamps	Page 26

OPERATION

Item	Remarks	Page
Mirrors	Adjust mirrors for proper side and rear view	-
Horn	Ensure operation	Page 26
Seat belts	Check length of belt for damage, check latches for proper operation	Page 48
Steering	Ensure free operation	Page 68
Tires	Check tire condition and pressure	Page 73
Latches (doors/seats/ accessory back)	Ensure all latches are secure	-
Batteries	Ensure full charges, proper water levels, clean terminals	Page 78
Battery cables	Inspect for proper cable routing, secure connections	Page 80
Wheels/fasteners	Inspect, ensure fastener tightness	Page 72
Utility Dump Bed (eX only)	Ensure dump bed and tailgate are securely latched	-

DRIVING PROCEDURE

1. Disconnect the charging cable.
2. Sit in the driver's seat and fasten the seat belt. Make sure passengers are seated with seat belts secured.
3. Adjust mirrors as needed.
4. Turn the key clockwise to the START position and release to the ON position.
5. Apply the brakes.
6. Release the park brake.
7. Move the direction switch to the desired position.
8. Check your surroundings and determine your path of travel.
9. Keeping both hands on the steering wheel, release the brake pedal and gradually push the accelerator toward the floor to begin driving.
10. Drive slowly. Practice maneuvering and using the accelerator and brakes on level surfaces.
11. Before turning, activate a turn signal to alert others of your intentions.
12. Do not carry a passenger until you have at least two hours of driving experience with this vehicle. Allow a passenger to ride only in a designated passenger seat with seat belt secured.
13. To stop the vehicle, release the accelerator pedal completely and brake to a complete stop.

NOTICE

Always bring the vehicle to a complete stop before changing the position of the direction switch.

14. Set the park brake.

WARNING

A rolling vehicle can cause serious injury or death. Always set the park brake when leaving the vehicle unattended.

15. Turn the key off.
16. Recharge the batteries daily, or after each use of the vehicle.

OPERATION

DRIVING IN REVERSE

Your vehicle comes with a reverse camera located on the rear-view mirror. Operation of the camera is automatic and is activated when the vehicle's drive mode switch is in the reverse position.

Follow these precautions when operating in reverse:

- Always check for obstacles or people behind the vehicle. Always inspect left and right fields of vision before backing.
- Avoid backing downhill.
- Back slowly.
- Apply the brakes *lightly* for stopping.
- Avoid turning at sharp angles.
- Never accelerate suddenly.

DRIVING ON SLIPPERY SURFACES

 **WARNING**

Skidding or sliding can cause loss of control or rollover (if tires regain traction unexpectedly). When operating on slippery surfaces, reduce speed and use extra caution to reduce the chance of skidding or sliding out of control. Do not operate on excessively slippery surfaces.

Whenever driving on slippery surfaces such as wet or icy pavement or loose gravel, follow these precautions:

- Do not operate on excessively slippery surfaces.
- Slow down before driving onto a slippery surface.
- Avoid quick, sharp turns, which can cause skids.
- Correct a skid by turning the steering wheel in the direction of the skid. *Never apply the brakes during a skid.*
- Regenerative braking can increase chances of traction loss.

PARKING THE VEHICLE

1. Apply the brakes. Stop the vehicle on a level surface.
2. When parking inside a garage or other structure, be sure that the structure is well ventilated and that the vehicle is not close to any source of flame or sparks, including any appliance with pilot lights.
3. Move the direction switch to the neutral position.
4. Set the park brake.
5. Turn the key off. Remove the key from the ignition to prevent unauthorized use.

PARKING ON AN INCLINE

1. Apply the brakes.
2. Set the park brake.
3. Place the direction selector in neutral.
4. Turn the key off.

Avoid parking on an incline if possible. If it's unavoidable, follow these precautions:

- If parking in an open area, block the wheels on the downhill side of the vehicle after turning the key off.
- If parking parallel to a curb, stop the vehicle close to the curb. If the vehicle is facing downhill, turn the steering wheel toward the curb. The forward part of the front tire should be turned into the curb. If the vehicle is facing uphill, turn the steering wheel away from the curb. The rear part of the front tire should be turned into the curb.
- Set the park brake.

OPERATION

DUMPING THE UTILITY BED

Follow the steps below to dump the utility bed

1. Park the vehicle on a level surface.
2. Set the parking brake.
3. Ensure that the cargo is either distributed evenly or more towards the front of the utility bed.
4. Open the tailgate
5. Actuate the utility bed dump release while standing clear of the utility bed
6. Lift the front of the utility bed to dump the cargo
7. Lower the utility bed and securely latch the bed
8. Close the tailgate and ensure it is securely latched

 **WARNING**

NEVER operate the vehicle with the utility bed in the dump position.

 **WARNING**

ALWAYS ensure the cargo in the utility bed is evenly distributed. Failure to ensure the cargo is distributed could result in unwanted dump operation when the bed is released.

HAULING CARGO

Your vehicle has been designed to carry or tow specific capacities. Handling and braking will be affected when hauling loads. Drive accordingly. If planning on operating in rough or hilly terrain, reduce cargo size and vehicle speed.

 **WARNING**

Hauling or towing cargo can alter the vehicle handling and braking. **REDUCE SPEED AND EXERCISE CAUTION WHEN HAULING OR TOWING.**

- ALWAYS distribute loads evenly while ensuring cargo box load is as far forward as possible
- ALWAYS ensure loads are properly secured
- NEVER exceed the weight capacity of the vehicle
- Allow for increased braking distance

 **WARNING**

NEVER CARRY FUEL OR OTHER FLAMMABLE LIQUIDS ON THIS VEHICLE.

TOWING LOADS

Your vehicle has been designed to carry or tow specific capacities. Always read and understand the load distribution warnings listed on the warning labels. See "Safety Labels and Locations" on page 9.

The total load (operator, passenger, accessories, cargo and weight on hitch) must not exceed the maximum weight capacity of the vehicle.

Always follow these precautions when towing:

1. Never load more than 150 lb (68 kg) tongue weight on the towing bracket.
2. Slow down when towing. Towing a trailer increases braking distance.
3. Do not tow more than the recommended weight for the vehicle.
4. Attach a trailer to the trailer hitch bracket only. Do not attach a trailer to any other location on the vehicle.

WARNING

- Hitch is not equipped for on-road towing – do not use on public roads.
- Do not exceed 10mph while towing.
- Trailer Max Weight: 1100 lbs (499 kg)
- Trailer Max Weight (EX): 1250 lbs (567 kg)
- Hitch Max Vertical Weight: 150 lbs (68 kg)
- Do not exceed GVWR.

TRANSPORTING THE VEHICLE

LOADING AND UNLOADING

The weight distribution of the cargo loaded onto the trailer is important and will have an impact on how the vehicle handles on the road. Ensure the weight of the cargo is distributed properly and the trailer is not rear, front, or side heavy.

Always use a spotter if you are uncomfortable loading the vehicle on your own. A wheel chock or marker can also be used as an indication of how close you will park the vehicle from the front of the trailer.

WARNING

When loading or unloading a vehicle onto a trailer, always wear the appropriate safety gear.

OPERATION

MINIMUM WORKING LOAD LIMIT

 **WARNING**

Always secure cargo properly. Improperly securing a load can result in severe injury or death.

Securing devices, such as tie-down straps, are manufactured to support a load that can be applied during normal service. This is known as the Working Load Limit (WLL).

VEHICLE TYPE	TIE-DOWN MINIMUM WLL
All Vehicles	3,300 lb (1497 kg)

TRANSPORTING THE VEHICLE

Follow these procedures when transporting the vehicle.

NOTICE

Do not tow your GEM vehicle behind a car or other vehicle except on a trailer. Vehicle failures resulting from dolly towing will void warranty.

1. Properly load the vehicle onto the trailer or towing vehicle.
2. Apply the park brake.
3. Turn the key off and remove to prevent loss during transporting.
4. Ensure that all seats are attached correctly and are not loose.
5. Secure the vehicle and rear accessory back doors (if equipped).

WARNING

Cargo and other loose vehicle parts may fall off while transporting the vehicle. Secure or remove all cargo, and inspect the unit for loose parts prior to transport.

WARNING

Do not exceed the towing vehicle's or trailer's capacity when transporting. Refer to the towing vehicle and trailer's specifications.

WARNING

If transporting the vehicle in a non-enclosed trailer, the vehicle must FACE FORWARD. Failure to comply may allow airflow, vibration, or other factors to separate the roof from the vehicle and cause an accident, resulting in serious personal injury or death.

WARNING

If transporting the vehicle in a non-enclosed trailer and the vehicle is equipped with hard doors, put all windows down.

6. Using tie-down straps of suitable Working Load Limit (WLL), secure the vehicle to the trailer at the designated tie-down points (front and rear). The straps must be secured in a manner that provides support in both vertical and lateral directions. Ensure that they are set with enough tension as to compress the suspension and prevent vehicle movement during transport. Do not allow the secured straps to make contact with any other part of the trailer or cargo.

OPERATION

 CAUTION

Always use the provided tie-down points. Not using the provided vehicle tie-down points could lead to premature component failure and/or excess wear on the tie-down straps.

 WARNING

Always secure the vehicle with at least four straps when trailering. Use two straps in the front, and two in the rear.

 WARNING

Never use chains to tie down the vehicle.

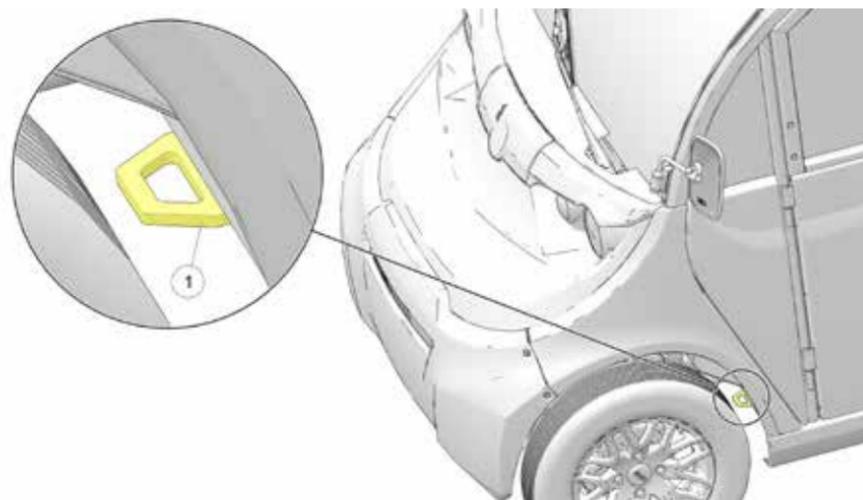
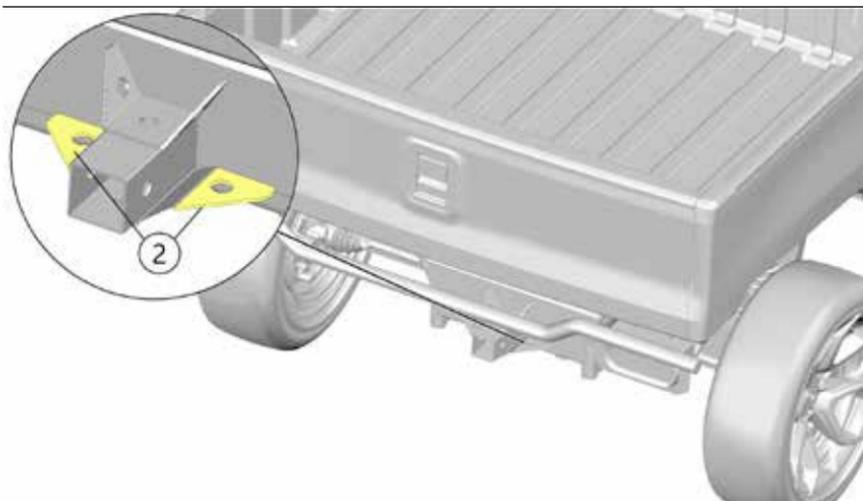
 WARNING

Never place tie straps across any plastic body or floor panel components.

 WARNING

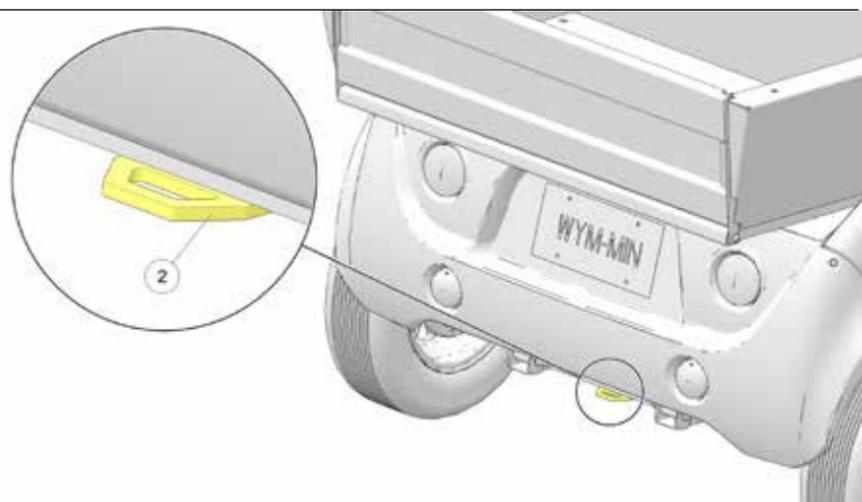
Do not lay straps over any sharp edges. Sharp edges may damage straps during transportation.

7. Periodically inspect the vehicle and trailer during transit. Adjust cargo and straps as needed to ensure that the cargo cannot shift, or fall from the trailer or towing vehicle



① Front tie-down point

OPERATION



- ② Rear tie-down points

MAINTENANCE

PERIODIC MAINTENANCE CHART

 **WARNING**

Always wear safety glasses or approved eye protection when servicing the vehicle. Wear a full-face shield and gloves when working with or around the battery and electrical connectors. Always use insulated tools when working with or near the battery. Failure to follow these instructions could result in serious injury or death.

NOTICE

Damage to electrical connections and components will occur if they are unplugged before the service disconnect is unplugged.

 **WARNING**

Before servicing the vehicle's electrical system, always remove the BMS fuse if necessary, then disconnect any electrical accessories, then disconnect the negative terminal from the main battery pack. For more information, See "Disconnecting Power" on page 44.

Careful periodic maintenance will help keep your vehicle in the safest, most reliable condition. Inspect, clean, lubricate, adjust and replace parts as necessary. When inspection reveals the need for replacement parts, genuine GEM parts are available from your authorized GEM dealer.

Record maintenance and service in the Maintenance Log at the back of the book.

NOTICE

Service and adjustments are important for proper vehicle operation. If you're not familiar with safe service and adjustment procedures, your authorized GEM dealer can perform these operations..

MONTHLY MAINTENANCE	SEE
Check cables and terminal connections.	Page 79
Check for worn insulation or frayed wires.	Page 79
Check battery hold-down bar to ensure batteries are tightly secured.	Page 79
Check tires for correct air pressure and wear.	Page 73

MAINTENANCE

MONTHLY MAINTENANCE	SEE
Check wheels for proper torque after first 100 miles (160 km) driven, and after first 100 miles (160 km) after any wheel if removed.	Page 74
Rotate wheels every 5000 miles (8000 km), or more frequently if needed.	Page 74
Check brake fluid reservoir for proper brake fluid level.	Page 69
Check brake lines for leaks.	-
Check seat belts for proper operation.	Page 48
Check headlights, horn, turn signals, windshield wiper and brake lights for proper operation.	-
Check steering wheel free play.	Page 68
Change gearcase oil annually or every 15,000 miles (24,140 km) (EX only)	See your authorized GEM Dealer

STEERING WHEEL INSPECTION

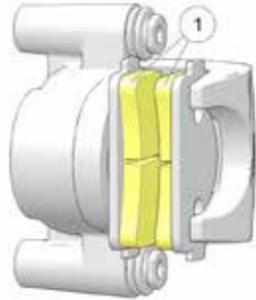
Check the steering wheel for specified free play and smooth operation at the intervals outlined in the Periodic Maintenance Chart.

1. Position the vehicle on a level surface.
2. Lightly turn the steering wheel left and right. There should be 0.8-1.0 in (20-25 mm) of free play at the outer rim of the steering wheel.
3. If there is excessive free play or strange noises, or the steering feels rough or "catchy," have the steering system inspected by an authorized GEM service dealer.

BRAKES

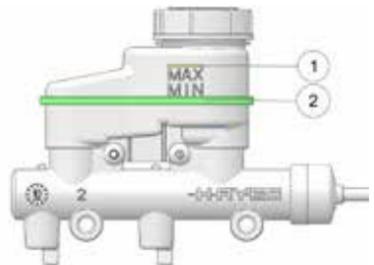
BRAKE INSPECTION

1. Check the brake system for fluid leaks.
2. Check the brake pedal for excessive travel or a spongy feel.
3. Check the friction pads for wear, damage and looseness.
4. Inspect the brake disc spline and pad wear surface for excessive wear.
5. Change pads when worn to 0.030 in (0.762 mm) ①.



BRAKE FLUID

Inspect the brake system routinely. Inspect the brake fluid level before each operation. If the level drops between fluid checks, add brake fluid as needed. Your authorized GEM dealer can provide service.



1. Position the vehicle on a level surface.
2. Open the hood. The brake fluid reservoir is located on the driver's side of the vehicle, above and to the rear of the front tire.
3. View the brake fluid level in the reservoir. The level should be between the upper (MAX) ① and lower (MIN) ② level lines.
4. If the fluid level is lower than the upper level line, add brake fluid to the upper (MAX) line.
5. Apply the brake forcefully for the few seconds and check for fluid leakage around the fittings.

Change the brake fluid every two years and any time the fluid becomes contaminated, the fluid level is below the minimum, or if the type and brand of the fluid in the reservoir are unknown. Always use DOT4 brake fluid.

MAINTENANCE

WARNING

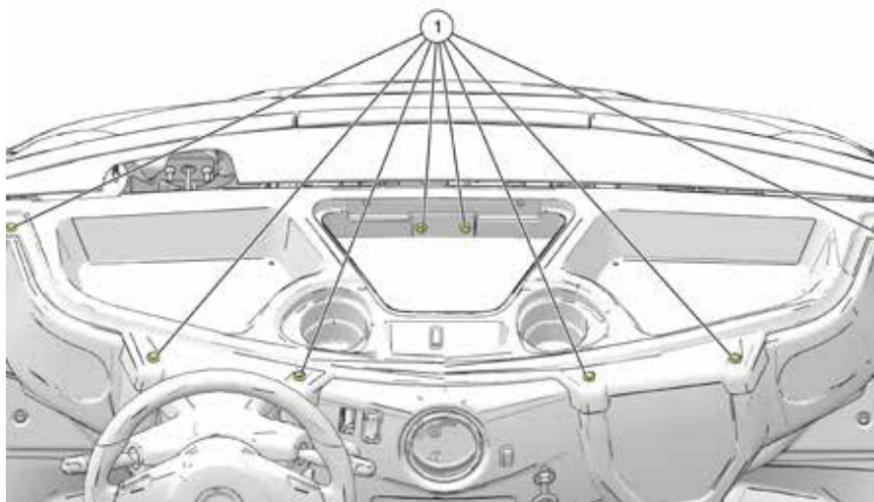
After opening a bottle of brake fluid, always discard any unused portion. Never store or use a partial bottle. Brake fluid is hygroscopic, meaning it rapidly absorbs moisture from the air. The moisture causes the boiling temperature of the brake fluid to drop, which can lead to early brake fade and the possibility of accident or severe injury.

NOTICE

Brake fluid may cause damage to painted and finished surfaces. Use caution when refilling the brake fluid reservoir.

UPPER DASH REMOVAL/INSTALLATION

Some maintenance procedures require removal of the upper dash to access components.

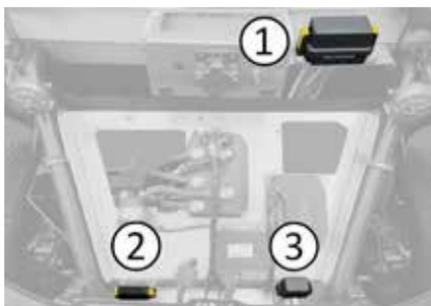


1. Remove the eight (8) plastic push rivets ① securing the dash to the frame. Two of the rivets are located inside the glove box.
2. Slightly raise the dash and unplug any switch connections located between the cup holders.
3. Carefully remove the dash from the vehicle.
4. Reverse this procedure to reinstall the dash.

FUSES AND RELAYS

If you experience electrical failures not related to the batteries, a fuse may need replacement. Locate and correct any short circuits that may have caused the blown fuse, then replace the fuse. If you suspect a relay or diode needs replacement, your authorized GEM dealer can assist.

Remove the hood to access the 12V Fuse Center ①, the 48V Fuse Center ②, and the High Amp Fuse Center ③.



①

BMS 5A	BMS 5A	LIGHTING 5A	START RELAY	CHASSIS RELAY 1
CHASSIS 1 30A	WIPER 10A	HEADLIGHT 5A		
BCU 10A	ACC 15A	INT LIGHT 5A	REV LIGHT RELAY	CHASSIS RELAY 2
CHASSIS 2 30A	REV LIGHT 5A	STEREO 20A		
EPS PWR 30A	HORN 10A	EPS COMM 5A		

②

PRIMARY DCDC 15A	START 5A	SECONDARY DCDC 15A
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③

MAIN 12V 40A	

MAINTENANCE

WARNING

Before servicing the vehicle's electrical system, always remove the BMS fuse if necessary, then disconnect any electrical accessories, then disconnect the negative terminal from the main battery pack. For more information. See "Disconnecting Power" on page 44.

FUSE AND RELAY RECOMMENDATIONS

STANDARD 12V FUSES		
APPLICATION	SIZE	LOCATION
BMS, Eps Comm, Headlight, Int Light, Lighting, Rev Light	5 amp	12V Fuse Center
BCU, Horn, Wiper	10 amp	12V Fuse Center
ACC	15 amp	12V Fuse Center
Stereo	20 amp	12V Fuse Center
Chassis 1, Chassis 2, EPS Power	30 amp	12V Fuse Center

OPTIONAL 12V FUSES		
APPLICATION	SIZE	LOCATION
Beacon Light	7.5 amp	Beacon Harness
Security Light	7.5 amp	Security Light Harness
Stereo	10 amp	Stereo Harness
Under Dash Lighting	10 amp	Under Dash Light Harness
EPS	30 amp	EPS Harness

STANDARD HIGH AMP FUSE		
APPLICATION	SIZE	LOCATION
Main 12V	J Case Fuse 40A / 32V	High Amp Fuse Center

STANDARD 48V FUSES		
APPLICATION	SIZE	LOCATION
Start Switch	5 amp	48V Fuse Center
Primary DC-DC	15 amp	48V Fuse Center
Secondary DC-DC	15 amp	48V Fuse Center

OPTIONAL 48V FUSES		
APPLICATION	SIZE	LOCATION
Heater	30 amp	Heater Harness
Heated Windshield	30 amp	Heated W/S Harness

NOTICE

12V fuses must not be used in 48V applications. 48V fuses must not be used in 12V applications. Always install fuses with the recommended amperage to avoid damage to the electrical system.

TIRES

WARNING

Operating your vehicle with worn tires, improperly inflated tires, non-standard tires or improperly installed tires will affect vehicle handling and could cause an accident resulting in serious injury or death. Always follow all tire maintenance procedures as outlined in this manual and on the labels on the vehicle. Always use original equipment size and type when replacing tires.

TIRE PRESSURE

WARNING

Improper tire pressure can cause loss of control resulting in severe injury or death.

Proper tire pressure is essential to the safe and comfortable operation of your vehicle. Check tire pressure daily, or before each use of the vehicle. For recommended tire pressures, see the manufacturer's label on your vehicle or the specifications section.

MAINTENANCE

NOTICE

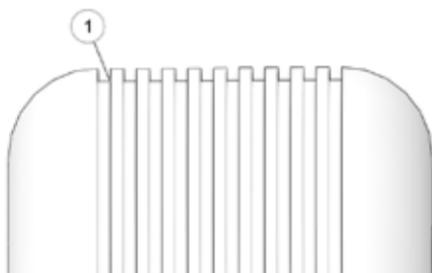
After inspecting or adjusting the tire pressure, always reinstall the valve stem cap (if equipped). This will prevent moisture and dirt from entering the valve stem, which could cause damage.

TIRE TREAD DEPTH

Any accelerated wear of tires may be an indicator of improper alignment or poor driving habits. Your authorized GEM dealer can assist.

Rotate wheels every 5000 miles (8000 km), or more frequently if needed.

Always replace tires when tread depth is worn to 1/8 in (3 mm) or less. ①



WHEEL NUT TORQUE



Inspect the following items occasionally for tightness, and if they've been loosened for maintenance service. Do not lubricate the stud or lug nut.

Check wheels for proper torque after first 100 miles (160 km) driven and the first 100 miles (160 km) after any wheel is removed.

- ① 13 inch Steel wheels: 63 ft-lbs (85.4 N·m)
- ② 14 inch Cast Aluminum wheels: 63 ft-lbs (85.4 N·m)
- ③ 16 inch Cast Aluminum wheels: 63 ft-lbs (85.4 N·m)

WHEEL REMOVAL

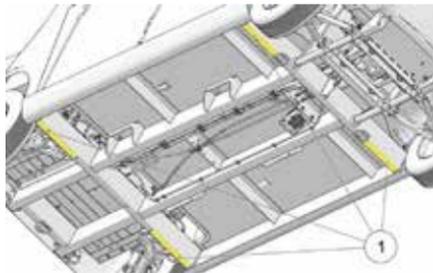
WARNING

A falling vehicle can cause serious injury or death. Never place any part of your body under an elevated vehicle. If you need access to the bottom of the vehicle, use automotive jack stands to support the vehicle on a firm, level surface. Your authorized GEM dealer can assist.

1. Position the vehicle on a dry, firm, level surface.
2. Set the park brake.
3. Turn the key off.
4. Block both the front and rear of the tire that is located diagonally opposite the jacking position. For example, if the right front tire is being changed, block the left rear wheel.
5. Use a small floor style jack or low profile scissors jack only. Jack the vehicle only from the side of the vehicle, on the main frame rail, at the point where the tub or floor panel support and the main frame rail are welded . Alternative locations include the rear frame rail and the center of the front cross member.
6. Remove the wheel nuts and cone washers (for vehicles with factory steel wheels).
7. Remove the wheel

NOTICE

Jacking at any location other than the recommended jacking points may cause significant damage to the vehicle frame and body.



MAINTENANCE

WHEEL INSTALLATION

WARNING

Improperly installed wheels can adversely affect tire wear and vehicle handling, which can result in serious injury or death. Always ensure that all nuts are torqued to specification. Do not service axle nuts that have a cotter pin installed. Your authorized GEM dealer can provide service.

NOTICE

To ensure that the washers fully seat in the wheel taper, use other hand to position and center wheel, if necessary.

1. Set the park brake.
2. Place the wheel in the correct position on the wheel hub. Be sure the valve stem is toward the outside and rotation arrows on the tire point toward forward rotation.
3. Attach the wheel nuts and finger tighten. For vehicles with steel wheels, install cone washers then install new lug nuts. With hand tools, lightly tighten the nuts.
4. Carefully lower the vehicle to the ground.
5. Torque the wheel nuts to specification in the same criss-cross pattern as shown.



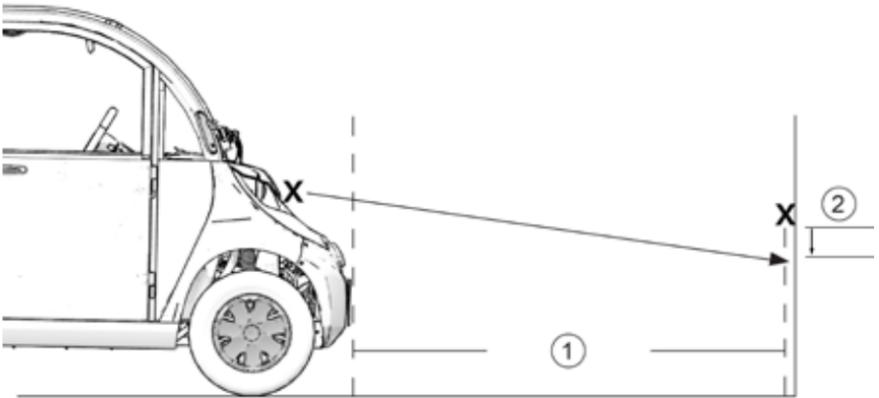
LIGHTS

Poor lighting can result in reduced visibility when driving. Headlight and taillight lenses become dirty during normal operation. Clean lights frequently and replace burned out lamps promptly. Do not operate this vehicle at night or in low light conditions until the headlight is replaced. Always make sure lights are adjusted properly for best visibility.

HEADLIGHT, TURN SIGNAL, AND BRAKE LIGHT REPLACEMENT

If an LED light fails to work properly, the entire assembly must be replaced. Your authorized GEM dealer can provide service.

HEADLIGHT BEAM ADJUSTMENT



1. Place the vehicle on a level surface with the headlight approximately 25 ft (7.6 m) from a wall ①.
2. Measure the distance from the floor to the center of the headlight and make a mark on the wall at the same height.
3. Apply the brakes. Turn the key on. Turn the headlights on.
4. Observe the headlight aim. The most intense part of the headlight beam should be aimed 8 in (20 cm) below the mark placed on the wall ②. Include the weight of a rider on the seat while performing this step.
5. If a headlight needs adjustment, access the adjustment screw under the hood or through the wheel well.
6. Loosen the headlight adjustment screw, adjust the headlight, and tighten the screw.
7. Repeat steps 4-6 until the lamp is properly adjusted.

BATTERIES

 **DANGER**

The voltage in the battery pack is sufficient to cause death by electrocution. With the exception of battery inspections, never attempt to perform service on the electric drive system, including the battery pack, unless you are properly trained to work on electrical systems. Your authorized GEM dealer can provide battery-related service.

 **WARNING**

Battery posts, terminals and related components contain lead and lead compounds, chemicals known to cause cancer and reproductive harm. Always wash your hands after touching or handling the batteries.

 **WARNING**

Charging a damaged battery can result in serious injury. Never attempt to charge a damaged battery. Discard the battery appropriately and install a new battery.

TRACTION BATTERY CONFIGURATIONS

NOTICE

Before accessing the batteries, make sure any wire or metal items remain clear of the battery compartment to avoid causing a short circuit to the electrical system.

Two battery pack configurations exist for GEM vehicles.

- One 8kW lithium battery
- One 16kW lithium battery

TRACTION BATTERY LOCATIONS

To access the battery pack, remove any rear accessory back installed on the vehicle. Release the battery pack access cover fasteners and remove the cover.

ALL BATTERY CONFIGURATIONS	
MODEL	LOCATION
GEM e2	Under rear compartment
GEM e4	Under rear compartment
GEM e6	Under rear compartment
GEM eI XD	Under rear bed compartment
GEM eX	Under utility bed

BATTERY INSPECTIONS/MAINTENANCE

WARNING

Do not work in or near the battery compartment or on any other electrical component of the vehicle while charging the batteries. Before servicing the vehicle's electrical system, always disconnect power. See "Disconnecting Power" on page 44 for more information. This will disable the vehicle by disconnecting the battery pack from the motor. It does not disable the battery pack. HIGH VOLTAGE will be present at the battery terminals. HIGH BATTERY VOLTAGE IS ALWAYS PRESENT. DO NOT TOUCH THE BATTERY TERMINALS.

MAINTENANCE

CHECK BATTERY CONNECTIONS

WARNING

Improper handling of high voltage wiring, batteries or control systems could result in serious injury or death by electric shock. Only qualified GEM technicians should repair or access high voltage wiring, battery packs and associated systems.

Inspect and clean battery terminal connections monthly. Carefully remove corrosion with a stiff wire brush. Coat battery terminals with dielectric grease or petroleum jelly. Using an insulated wrench, torque bolts to 8 ft-lbs (10.8 N·m).

CHECK BATTERY CABLES AND WIRING

Check the battery compartment for any signs of worn insulation, frayed cables or damaged cable ends. If found, see your authorized GEM dealer or other qualified service person for service before operating.

WARNING

If battery cable ends are damaged or corroded, they should be replaced or cleaned as necessary. Failure to do so may cause them to overheat during operation, possibly leading to fire, which may result in serious injury or death.

BATTERY REPLACEMENT

WARNING

Handling the battery and electrical components improperly can result in serious injury or death. Do not attempt to remove the battery or battery cables. Battery posts are identified on the battery case as positive (+) and negative (-). Your authorized GEM dealer can provide battery-related service.

With proper care and maintenance, as outlined in this owner's manual, battery life can be maximized, but the battery will eventually reach the end of its useful life. When battery replacement is necessary, your authorized GEM dealer can provide this service.

NOTICE

Always install a battery of the exact type and make originally supplied with the vehicle to prevent damage to the vehicle's electrical system.

BATTERY CARE DURING STORAGE

When the vehicle will not be used for a period of 10 days or longer, perform one of the battery storage procedures listed in the chart below.

BATTERY STORAGE OPTIONS	
STORAGE PERIOD	CHARGING PROCEDURE
Less than 10 days	Fully charge the battery, turn the ignition switch to OFF. The battery will lose some of its charge during this period.
10 days to 24 weeks	Leave the charger connected. See "Battery" on page 35.
Indefinitely to Unknown	Fully charge the battery, turn the ignition switch to OFF. Arrange for weekly SOC (State Of Charge) checks. Charge battery if SOC drops below 80%.

CLEANING AND STORAGE

CLEANING WINDSHIELDS, WINDOWS AND SOLAR PANELS

Use a liquid household glass cleaner to remove normal dust and dirt. To remove oil, grease or road tar, use isopropyl alcohol, then wash these surfaces with water. Dry gently with a soft cloth or chamois.

NOTICE

Be very careful when cleaning acrylic surfaces as they can be scratched or damaged. Do not use a cleaner with an abrasive, a combination cleaner and wax or any solvent that contains ethyl or methyl alcohol. Do not use products containing ammonia, soaps, or abrasives. Never use gasoline or cleaning solvent. These products scratch or destroy acrylic surfaces.

CLEANING SEATS

WARNING

Do not allow excess water to pool in the seams or anywhere else on the seat.
Do not use harsh chemicals.
Do not use abrasives to remove dirt or debris.

Using a circular motion, remove excess dirt from seats with a clean, damp cloth and warm water. Substances such as tar, asphalt and other soils will stain if not removed quickly. Use a clean cloth and solvent type vinyl cleaner, then wash the area thoroughly with a damp cloth and mild liquid detergent. Rinse with cool water. Towel dry any remaining water.

CLEANING THE INTERIOR

Use mild liquid detergent and warm water to clean the interior. Remove detergent or deposits with a clean, damp cloth.

NOTICE

Do not spray the interior of your vehicle. Liquids can damage electrical components. Handle liquids with care. Do not spray water directly into the upper or lower console.
Do not use high-pressure water on seats or any interior components.

STORAGE TIPS

CLEAN THE EXTERIOR

Make any necessary repairs and clean the vehicle as recommended.

CHECK FLUID LEVELS

Inspect the fluid levels. Add or change fluids as recommended. Change brake fluid every two years and any time the fluid looks dark or contaminated.

STORING THE VEHICLE

Any time the vehicle will be parked for more than 10 days, follow the recommended storage procedures:

1. Make any necessary repairs and clean the vehicle. See page 81.
2. Clean and prepare batteries for storage. See "Batteries" on page 78 for more instruction.

NOTICE

Batteries can be permanently damaged (and the warranty voided) if allowed to remain in a low state of charge. Fully charge batteries before storing. In hot climates, battery self-discharge will increase. In cold climates, batteries could freeze if not properly charged.

3. Store the vehicle out of the sun in a cool, dry place.
4. Be sure the storage area is well ventilated.
5. Turn the key off.
6. Verify that tire pressure is at specification.
7. Block the wheels to prevent rolling.
8. If the vehicle is not connected to a charger, change the storage switch to the off position. Cover the vehicle with a genuine GEM vehicle cover. Do not use plastic or coated materials. They do not allow enough ventilation to prevent condensation and may promote corrosion and oxidation.

SPECIFICATIONS

	GEM E2	GEM E4	GEM E6
DIMENSIONS			
Dry Weight	985 lb (447 kg)	1,135 lb (515 kg)	1,481 (672 kg)
Length	103 in (262 cm)	135 in (343 cm) Width	167 in (424 cm)
Width	55.5 in (141 cm)	55.5 in (141 cm)	55.5 in (141 cm)
Height	73 in (185 cm)	73 in (185 cm)	73 in (185 cm)
Wheelbase	69 in (175 cm)	101 in (257 cm)	133.5 in (339 cm)
Turning Circle/Radius	150 in (381 cm)	207 in (526 cm)	264 in (671 cm)

LOAD CAPACITY			
Payload Capacity (occupants, cargo, options)	1,014 lb (460 kg)	1,364 lb (619 kg)	1,518 lb (689 kg)
Gross Vehicle Weight Rating (GVWR)	1,999 lb (906.7 kg)	2,499 lb (1133.5 kg)	2999 lb (1360.3 kg)
Gross Axle Weight Rating (GAWR), Front and Rear	1,280 lb (581 kg)	1,600 lb (726 kg)	1920 lb (871 kg)
Seating	2	4	6

PERFORMANCE			
Motor	5 kW (optional 6.5 kW) AC electric	5 kW (optional 6.5 kW) AC electric	6.5 kW AC electric
Motor peak	13.3 kW (optional 18.5 kW)	13.3 kW (optional 18.5 kW)	18.5 kW
Controller	Curtis 450AAC	Curtis 450AAC	Curtis 450AAC
Maximum speed	25 mph (40 km/h)	25 mph (40 km/h)	25 mph (40 km/h)
Range	Varies with conditions	Varies with conditions	Varies with conditions
Drive System	17.05:1 Single speed	17.05:1 Single speed	17.05:1 Single speed
On-board charger	Standard 1 kW	Standard 1 kW	Standard 1 kW

SPECIFICATIONS

	GEM E2	GEM E4	GEM E6
BRAKE / SUSPENSION SYSTEM			
Brakes	4-Wheel hydraulic brakes, disc front, drum rear	4-Wheel hydraulic brakes, disc front, drum rear	4-Wheel hydraulic brakes, disc front, drum rear
Park Brake	Dash-mounted lever-activated mechanical park brake	Dash-mounted lever-activated mechanical park brake	Dash-mounted lever-activated mechanical park brake
Front suspension	MacPherson® Strut	MacPherson® Strut	MacPherson® Strut
Rear suspension	Independent w/coil over shock	Independent w/coil over shock	Independent w/coil over shock
Tires	155/80R13 165/70R14 (opt.) 195/45R16 (opt.)	155/80R13 165/70R14 (opt.) 195/45R16 (opt.)	155/80R13 165/70R14 (opt.) 195/45R16 (opt.)
Tire pressure	35 psi (241 kPa)	35 psi (241 kPa)	35 psi (241 kPa)

	GEM EL XD	GEM EX
DIMENSIONS		
Dry Weight	1,370 lb (621 kg)	1,550 lb (567 kg)
Length	145.5 in (370 cm)	118 in (300 cm)
Width	55.5 in (141 cm)	55.5 in (141 cm)
Height	73.1 in (186 cm)	73 in (185 cm)
Wheelbase	114 in (289.6 cm)	86 in (218 cm)
Turning Circle/Radius	233 in (592 cm)	167 in (424 cm)

LOAD CAPACITY		
Payload Capacity (occupants, cargo, options)	1,629 lb (739 kg)	1,518 lb (689 kg)
Gross Vehicle Weight Rating (GVWR)	2999 lb (1360.3 kg)	2999 lb (1360.3 kg)
Gross Axle Weight Rating (GAWR), Front and Rear	1920 lb (871.9 kg)	1920 lb (884.5 kg)
Maximum Trailer Tongue Weight	150 lb (68 kg)	150lb (68 kg)
Maximum Gross Trailer Weight	1100 lb (499 kg)	1,250 lb (567 kg)
Seating	2	2

SPECIFICATIONS

	GEM EL XD	GEM EX
PERFORMANCE		
Motor	6.5 kW AC electric	6.5 kW AC electric
Motor peak	18.5 kW	18.5 kW
Controller	Curtis 450 AC	Curtis 450 AC
Maximum speed	25 mph (40 km/h)	25 mph (40 km/h)
Range	Varies with conditions	Varies with conditions
Drive System	17.05:1 Single speed	17.05:1 Single Speed Limited Slip
On-board charger	Standard 1 kW	Standard 1 kW

BRAKE / SUSPENSION SYSTEM		
Brakes	4-Wheel hydraulic brakes, disc front, drum rear	4-Wheel hydraulic disc
Park Brake	Dash-mounted lever activated mechanical parking brake	Dash-mounted lever activated mechanical parking brake
Front suspension	MacPherson® Strut	MacPherson® Strut
Rear suspension	Independent w/coil over shock	Independent w/coil over shock
Tires	155/80R13 165/70R14 (opt.) 195/45R16 (opt.)	155/80R13
Tire pressure	35 psi (241 kPa)	35 psi (241 kPa)

SPECIFICATIONS

WARRANTY

LIMITED WARRANTY

GEM WAEV LLC, 2114 Ball Road, Anaheim, CA 92804, provides a FOUR-YEAR/20,000 mile (32,200 km) LIMITED WARRANTY on all components of your GEM electric vehicle against defects in material or workmanship. Mileage is unlimited for the first 6 months. After month 6, coverage expires at 20,000 miles or 4 years, whichever comes first. This warranty is transferable to another consumer during the warranty period through a GEM dealer, but any such transfer will not extend the original term of either warranty.

LITHIUM BATTERY LIMITED WARRANTY

Battery coverage in this LIMITED WARRANTY begins on the date of purchase by the original retail purchaser and continues for EIGHTY-FOUR MONTHS or 30,000 miles (48,300 km), whichever comes first. During this period, GEM WAEV LLC warrants your vehicle's battery against defects in materials or workmanship. After the first forty-eight months in service, a defective battery will be replaced on a manufacturer/customer shared basis provided that the warranty limit of 30,000 miles (48,300 km) has not yet occurred.

Review the table below for guidelines.

TERM FOR VEHICLES WITH LESS THAN 30,000 MILES (48,300 KM)	WARRANTY COVERAGE OF LITHIUM BATTERY DEEMED DEFECTIVE BY GEM
Purchase date – 48th Month of Service	100% of the cost of an approved GEM battery at a GEM dealer
49th – 60th Month of Service	75% of the cost of an approved GEM battery at a GEM dealer
61st – 72nd Month of Service	50% of the cost of an approved GEM battery at a GEM dealer
73rd – 84th Month of Service	25% of the cost of an approved GEM battery at a GEM dealer

WARRANTY REGISTRATION

Both warranties begin on the date of purchase by the first owner, or one year after it is manufactured, whichever comes first. At the time of sale, the Warranty Registration Form must be completed by your dealer and submitted within three days. Purchasers must obtain a copy at time of signing as this serves as proof of coverage. **NO WARRANTY COVERAGE WILL BE ALLOWED UNLESS YOUR VEHICLE IS REGISTERED WITH GEM WAEV LLC.** Initial dealer preparation and set-up of your vehicle is very important in ensuring trouble-free operation.

WARRANTY

WARRANTY COVERAGE AND EXCLUSIONS

This GEM WAEV LLC limited warranty excludes any failures that are not caused by a defect in material or workmanship. THIS WARRANTY DOES NOT COVER CLAIMS OF DEFECTIVE DESIGN. This warranty also does not cover acts of God, accidental damage, abuse or improper handling.

Additional exclusions:

- Normal wear and tear, abuse, or improper handling.
- Altered, modified, neglected, improperly maintained, or racing/competition use.
- Damages during trailer transit or from unauthorized service/parts.
- Consumables and wear items: wheels, tires, suspension, steering, brakes, bushings, bearings, surfaces, upholstery, lubricants, sealants, bulbs, lamps, fuses and circuit breakers.

Battery coverage also excludes:

- Over-charging, under-charging, neglect, improper storage, or abuse.
- Damage from fire, flooding, freezing, wreckage, explosion, or submersion.
- Charging with non-OEM or unapproved chargers/software.
- Improper installation, loose/corroded hardware, or use of additives.
- Entering or otherwise tampering with the battery power module.
- Use of unauthorized battery management system or motor controller or related software

LIMITATIONS/EXCLUSIONS OF WARRANTIES AND REMEDIES

The exclusive remedy is repair or replacement of defective components. GEM WAEV LLC is not liable for incidental, consequential, or special damages (transportation costs, rentals, loss of use, profits, or personal time). The implied warranty of fitness for a particular purpose is excluded from this limited warranty. All other implied warranties are limited to the same duration as above. Some states do not allow these limitations, so they may not apply to you.

HOW TO OBTAIN WARRANTY SERVICE

If your vehicle requires warranty service, you must take it to a GEM Servicing Dealer. When requesting warranty service you must present your copy of the Warranty Registration Form to the dealer. (THE COST OF TRANSPORTATION TO AND FROM THE DEALER IS YOUR RESPONSIBILITY). GEM WAEV LLC suggests that you use your original selling dealer; however, you may use any GEM Servicing Dealer to perform warranty service.

In the country where your product was purchased:

Warranty or Service Bulletin repairs must be done by an authorized GEM dealer. If you move or are traveling within the country where your product was purchased, Warranty and Service Bulletin repairs may be requested from any authorized GEM dealer that sells the same line as your product.

Outside the country where your product was purchased:

If you are traveling temporarily outside the country where your product was purchased, you should take your product to an authorized GEM dealer. You must show the dealer photo identification from the country of the selling dealer's authorized location as proof of residence. Upon residence verification, the servicing dealer will be authorized to perform the warranty repair.

If you move:

If you move to another country, be sure to contact GEM Customer Assistance and the customs department of the destination country before you move. Product importation rules vary considerably from country to country. You may be required to present documentation of your move to GEM in order to continue your warranty coverage. You may also be required to obtain documentation from GEM in order to register your product in your new country. You should warranty register your product at a local GEM dealer in your new country immediately after you move to continue your warranty coverage and to ensure that you receive information and notices regarding your vehicle.

If you purchase from a private party:

If you purchase a GEM vehicle from a private party, to be kept and used outside of the country in which the product was originally purchased, all warranty coverage will be denied. You must nonetheless register your product under your name and address with a local GEM dealer in your country to ensure that you receive safety information and notices regarding your product.

WARRANTY

EXPORTED PRODUCTS

EXCEPT WHERE SPECIFICALLY REQUIRED BY LAW, THERE IS NO WARRANTY OR SERVICE BULLETIN COVERAGE ON THIS PRODUCT IF IT IS SOLD OUTSIDE THE COUNTRY OF THE SELLING DEALER'S AUTHORIZED LOCATION. This policy does not apply to products that have received authorization for export from GEM WAEV LLC. Dealers may not give authorization for export. You should consult an authorized dealer to determine this product's warranty or service coverage if you have any questions. This policy does not apply to products registered to government officials or military personnel on assignment outside the country of the selling dealer's authorized location. This policy does not apply to Safety Bulletins.

NOTICE

If your product is registered outside of the country where it was purchased and you have not followed the procedure set above, your product will no longer be eligible for warranty or service bulletin coverage of any kind, other than safety recalls. Products registered to government officials or military personnel on assignment outside of the country where the product was purchased will continue to be covered by the Limited Warranty.

Please work with your dealer to resolve any warranty issues. Dealership contacts can be found via this website, if needed:

www.gemcar.com

Should your dealer require any additional assistance, they will contact the appropriate person at GEM WAEV LLC.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state or in different countries. If any of the above terms are void because of federal, state, local law, all other warranty terms will remain in effect.

For questions call GEM WAEV Owner Connections:

United States & Canada: 855-RIDEGEM (855-743-3436)

To report a safety defect to Transport Canada, you may either fill out an online defect complaint form at their website:

English: <http://www.tc.gc.ca/recalls>

French: <http://www.tc.gc.ca/rappels>

Or contact their Defect Investigations and Recalls Division by calling toll-free 1-800-333-0510 (Canada) or 819-994-3328 (Ottawa-Gatineau area /International).

DATE	MILES (KM) OR HOURS	TECHNICIAN	SERVICE PERFORMED / COMMENTS

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