



# OWNER'S MANUAL

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**RXV EX1 EFI**

**10036460-A**



# OWNER'S MANUAL

## **RXV EX1 EFI**

FLEET

FREEDOM

FREEDOM 2+2

VALOR 2

VALOR 4

*MODEL YEAR 2024 - CURRENT*

### CONTACT INFORMATION

**Textron Specialized Vehicles, Inc.**

1451 Marvin Griffin Road.

Augusta, Georgia, USA 30906-3852

1-800-774-3946 Technical Assistance & Warranty

1-888-438-3946 Service Parts

001-706-798-4311 International

## **WELCOME**

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

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

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

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

Textron Specialized Vehicles, Inc. maintains the right to change the design of the vehicle without responsibility to make the changes on units purchased before changes were made. The information in this manual can change without notice.

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

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[www.ezgo.com](http://www.ezgo.com)

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# INTRODUCTION

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



**DANGER**

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



**WARNING**

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



**CAUTION**

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

**NOTICE**

**NOTICE** provides key information by clarifying instructions.



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



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



**WARNING**

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

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

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

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

When servicing engines, all adjustments and replacement components must be per the original vehicle specifications to maintain the USA Federal and State emission certification applicable at the time of manufacture.

## MANUFACTURER'S INTENDED USE

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

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

## WARRANTY AND REGISTRATION

Register the vehicle at [www.ezgo.com](http://www.ezgo.com).

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

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

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

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

## EXHAUST EMISSIONS

The exhaust emissions of this vehicle's engine complies with regulations set forth by the Environmental Protection Agency (EPA) of the United States of America (USA) at time of manufacture. Significant fines could result from modifications or tampering with the engine, fuel, ignition, or air intake systems. Refer to the warranty statements provided with the vehicle for all information.

## ***INTRODUCTION***

### **BATTERY PROLONGED STORAGE**

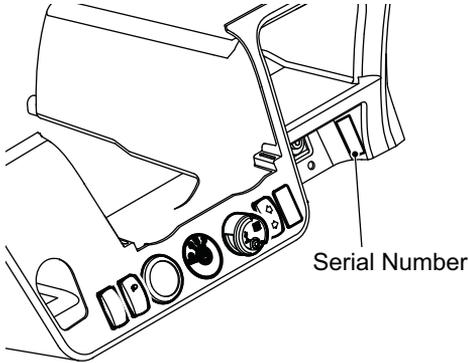
Batteries discharge over time. The rate of discharge changes according to the ambient temperature, the age of the battery, and the condition of the battery.

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

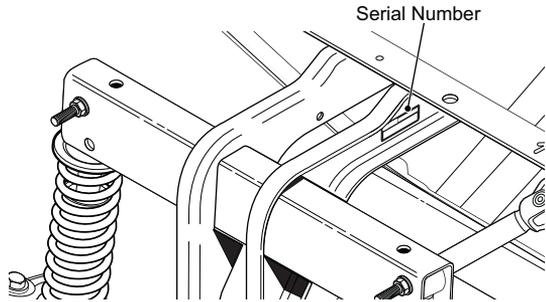
### **BATTERY DISPOSAL**

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

### **VEHICLE IDENTIFICATION NUMBERS**



Serial Number Location on Dash



Serial Number Location on Front Frame

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

|                       |  |
|-----------------------|--|
| Vehicle Serial Number |  |
| Vehicle PIN           |  |

### **SERVICE AND PARTS MANUALS**

The following manuals can be purchased through an authorized dealer:

- service manual
- parts manual

# SAFETY LABELS

## SAFETY LABELS

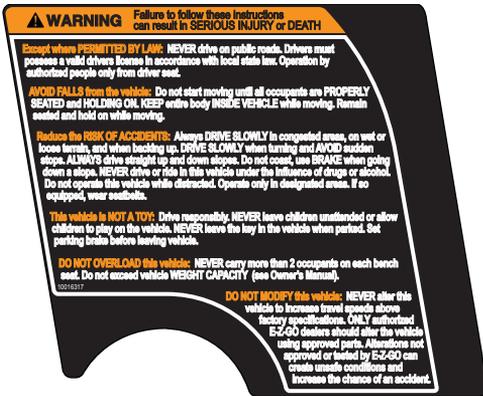
Safety and warning labels are on the vehicle for your protection. Read carefully and comply with the instructions on the labels. If any label shown in this manual is different from the label on your vehicle, always follow the instructions on the vehicle label.

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

### Warning

Located on the dash around the steering column.

P/N 10016317 or 10017005 for CE.



### Governor Warning

Located on the throttle rod guard.

P/N 697730.



### Tow Bar Warning (Fleet and Freedom Vehicles Only)

Located on top of the tow bar.

P/N 611716.

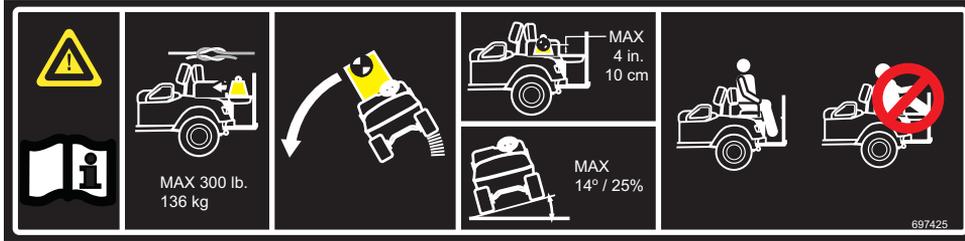


## SAFETY

### Flip Seat / Load Deck Warning (Freedom 2+2 and Valor 4 Vehicles Only)

Located on the rear-facing grab handle.

P/N 697425.



### Pinch Warning (Freedom 2+2 and Valor 4 Vehicles Only)

Located on the base of the rear facing seat.

P/N 651671.



# SAFETY

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

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

Information on FMVSS 571.500 is found at Title 49 of the Code of Federal Regulations, section 571.500. For information on-line, go to [www.ecfr.gov](http://www.ecfr.gov).

TSV will NOT approve Distributor, Dealer or customer changes that change a TSV product into a Low Speed Vehicle (LSV).

This vehicle meets the current applicable standard for safety and performance requirements.

## MAXIMUM CARGO LOAD / MAXIMUM WEIGHT CAPACITY

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

|                                   | Fleet           | Freedom         | Valor           | Freedom 2+2     | Valor 4         |
|-----------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Maximum Vehicle Weight Capacity   | 500 lb (227 kg) | 500 lb (227 kg) | 500 lb (227 kg) | 800 lb (363 kg) | 800 lb (363 kg) |
| Maximum Load Deck Weight Capacity | N/A             | N/A             | N/A             | 300 lb (136 kg) | 300 lb (136 kg) |

- Do not exceed the maximum vehicle weight capacity (includes weight of operator, passenger, cargo, and accessories).
- Always fill the forward facing seat to capacity prior to seating any passengers on the rear facing seat.

## TIRE PRESSURE

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

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

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

# SAFETY

## OPERATOR SAFETY

Safe and responsible use of this vehicle is necessary to prevent dangerous conditions for the operator, passengers, and other people in the area of operation. See *OPERATION* on page 21 for information on the safe operation of the vehicle. Make sure to read, understand, and comply with all of this information to decrease the risk of personal injury or death.

### **WARNING**

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

- Read this entire manual and all product labels carefully. Follow the safety information and operating procedures described.
- Operate your vehicle responsibly to prevent dangerous conditions for the operator, passengers, and other people in the area of operation
- A damaged vehicle or a vehicle that is not functioning properly is dangerous and must not be operated until repairs are made.
- Do not carry a passenger until you have a minimum of two hours driving experience on this vehicle.
- Keep feet, legs, hands, and arms inside the vehicle at all times.
- The driver must keep both hands on the steering wheel and both feet on the floor or pedals.
- Inspect the vehicle before each use to make sure it is in safe operating condition. Perform the pre-ride inspection described in this manual. See page 21.
- Always have the vehicle checked by an authorized dealer if it is involved in an accident.
- Always put the direction selector in forward (F) and engage the parking brake before exiting the vehicle.
- Remove the key from the key switch when the vehicle is not in use to prevent accidental starting, unauthorized use by someone below the age of 16, or someone without a driver's license and proper training.
- Drive the vehicle at appropriate speeds for the terrain and conditions. Be aware of environmental conditions that change the terrain and your ability to control the vehicle.
- Do not drive on excessively steep hills. Evaluate the terrain before descending a hill. Drive slowly and deliberately. Use the brake to limit speed and maintain control. Sudden braking or turning can cause the loss of vehicle control. Drive straight down the hill. Do not drive across the hill.
- Operate only in approved areas. Follow all applicable safety rules for the area.
- Avoid driving on terrain that is too rough for the vehicle's capabilities and your driving skills.
- Before driving in the reverse direction, make sure the area behind the vehicle is clear. Accelerate slowly and avoid making sharp turns.
- Make sure the direction selector is in the correct position before pressing the accelerator pedal.
- Decrease speed before and during turns.
- Decrease speed when driving on wet or slippery surfaces.
- Bring the vehicle to a complete stop before moving the direction selector.
- Do not exceed the cargo or vehicle weight capacities. Do not exceed the occupant capacity. See *SPECIFICATIONS* on page 49 for the vehicle load and seat capacity.
- If there is a risk of lightning, leave the vehicle and look for a safe location to wait until the lightning has stopped.

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

## OWNER RESPONSIBILITY



Improper use, maintenance, or modification of this vehicle can lead to serious injury or death.

Require proper use of your vehicle. Do not allow anyone to operate your vehicle or ride as a passenger unless they are properly instructed and you are sure they are willing to ride responsibly. To prevent unauthorized use, always remove the key when the vehicle is not in use.

### Unauthorized Use

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

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

Leaving the key in the key switch allows unauthorized operation of the vehicle by an unlicensed driver or someone who does not meet the height requirement. Always remove the key from the key switch when the vehicle is not in operation.



## Operating without Instruction



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

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

## Alcohol or Drugs



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

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

## Passengers

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

For additional safety and operational information, see *DRIVING WITH PASSENGERS* on page 24.

## Before Operating

Perform the *PRE-RIDE INSPECTION* on page 21 before each use to make sure the vehicle is in safe operating condition. Failure to inspect and confirm that the vehicle is safe to operate increases the risk of an accident.

Follow all inspection and maintenance procedures and schedules described in *SCHEDULED MAINTENANCE* on page 29.

## Load Operation

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

Do not exceed weight capacities specified for the vehicle. Capacities are listed in *MAXIMUM CARGO LOAD / MAXIMUM WEIGHT CAPACITY* on page 11 of this manual and also on the label affixed to the load deck (if equipped). As passenger weight increases, cargo weight should be adjusted to ensure the maximum vehicle weight capacity is not exceeded.

Tire pressure must be adjusted to accommodate the load being carried. See *TIRE PRESSURE* on page 11 for pressure specifications.

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

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

## Fuel Handling Guidelines

Gasoline is flammable and can be explosive in some conditions. Use the following guidelines when handling fuel:

- Always use caution when handling gasoline.
- Refuel in a well-ventilated area.
- Turn off the engine before refueling.
- Use an approved gasoline container to store fuel.
- Remove portable gasoline containers from the vehicle and place on the ground before filling to prevent ignition caused by electrical static discharge.
- Do not smoke or allow open flames or sparks in or near the area where refueling is done or where gasoline is stored.
- Do not overfill the tank. Do not fill the tank neck.
- If any gasoline contacts skin, immediately wash with soap and water. If any gasoline gets on clothing, change immediately.

For refueling procedure, refer to *FUEL* on page 22.

# SAFETY

## Carbon Monoxide Exposure

Carbon monoxide is an odorless gas that is formed as a natural part of the combustion of hydrocarbon fuels.

Carbon monoxide is poisonous and can cause loss of consciousness or death in a short period of time. Never start the engine or allow it to run in an enclosed area.

If you experience any of the following symptoms, stop the engine and get fresh air immediately:

- dizziness
- intense headache
- weakness and sleepiness
- vomiting
- muscular twitching
- throbbing in temples

Operate this vehicle outdoors or in well-ventilated areas only.

## Reverse Operation

Make sure the area behind the vehicle is clear before operating in reverse. After making sure it is clear and safe to operate in reverse, accelerate slowly. Avoid making sharp turns in reverse. Refer to *REVERSE OPERATION* on page 26 for operational information.

## Damaged Vehicle

Driving a damaged vehicle is not safe.

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

## Maximum Speeds

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

## Public Roads

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

## Turning

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

## Uphill Operation

Do not climb hills that are too steep for the vehicle or your driving abilities. Loss of vehicle control or rollover can result from climbing hills incorrectly. Refer to *UPHILL OPERATION* on page 25 for operational information.

## Downhill Operation

Inspect the terrain before descending a hill. Avoid driving across hills. Use the brake to limit speed and maintain control. Loss of vehicle control or rollover can result from driving downhill incorrectly. Refer to *DRIVING Downhill* on page 25 for operational information.

## Stalling on a Hill

A rollover can result from stalling or rolling backward while climbing a hill. Drive uphill at a constant speed. See procedure on page 25 for maintaining control of your vehicle if it stalls on a hill.

## Tires

Operating the vehicle with the incorrect tires or with the incorrect or uneven tire pressure can cause loss of control or an accident. Always use the size and type of tires specified for the vehicle. See Vehicle Specification for proper tire type and size. Always maintain the correct tire pressures as specified in *TIRE PRESSURE* on page 11.

## Slippery Terrain

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

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

Refer to *SLIPPERY SURFACES* on page 24 for operational information.

## HOT EXHAUST SYSTEMS

Exhaust system components are very hot during and after use. To avoid burn injuries, do not touch hot exhaust system components. Hot components can also cause a fire. Keep combustible materials away from the exhaust system. Check for buildup around the exhaust system after driving through high and dry grass.

## VEHICLE LIFTING

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

Read and comply with all warnings and follow the lifting procedures described on page 33.

## VEHICLE MODIFICATION

Do not install any accessory not approved by the manufacturer. Do not modify the vehicle to increase the speed or power. Any modifications or installation of accessories not approved by the manufacturer can create a safety hazard and increase the risk of injury.

The warranty will be terminated if the vehicle is modified to increase vehicle speed or power.

The warranty may be terminated if the original (or equivalent) replacement parts are not installed on the vehicle.

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

## MAINTENANCE SAFETY

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

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

- Read this entire manual and all product labels carefully. Follow the procedures and comply with the safety information in this manual and on the vehicle safety labels while performing vehicle service or maintenance.
- Use the tools shown in the tool list and wear the specified safety equipment when performing vehicle service or maintenance.
- Remove all jewelry before servicing the vehicle.
- Do not allow loose clothing or hair to contact the moving parts.
- Do not touch hot objects.
- The drive wheels must be lifted and supported on jack stands before performing any service to the power-train while the engine is in operation.
- Use wheel chocks and support the vehicle on jack stands. NEVER get under a vehicle that is supported by a jack alone. Lift the vehicle following the instructions in *LIFTING THE VEHICLE* on page 33.
- When servicing the vehicle, always wear eye protection. Be careful when working around batteries, using solvents, or compressed air.
- Use insulated tools within the battery area to prevent sparks or battery explosion.
- To prevent the risk of battery explosion, keep all flammable materials, open flames or sparks away from the battery.
- Hydrogen gas is produced as a battery is charged. Charge the battery only in well-ventilated areas.
- Maintain constant awareness that some components are heavy, spring loaded, corrosive, explosive, can cause high amperage, or get extremely hot. Battery acid and hydrogen gas can cause bodily injury.
- Keep your hands, face, feet, and body away from any area that can expose them to injury in the event that an unexpected situation occurs.
- After making repairs or performing maintenance, test the vehicle in a safe area that is free from vehicle and person traffic.



# FEATURES AND CONTROLS

Vehicle controls and indicators consists of:

1. Key Switch
2. Fuel Gauge (if equipped)
3. Head Light Switch (if equipped)
4. Turn Signal Switch (if equipped)
5. Malfunction Indicator Light (MIL)
6. USB Port (if equipped)
7. Accelerator Pedal
8. Brake Pedal
9. Parking Brake
10. Horn Button (if equipped)
11. Direction Selector
12. Hour Meter (if equipped)

## KEY SWITCH

**CAUTION** To decrease the risk of component damage, bring the vehicle to a complete stop before moving the key switch or the direction selector.

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

The key switch (1) is located on the dash panel. The switch controls the electrical system of the vehicle to be turned on and off by turning the key. To prevent accidental operation of an unattended vehicle, turn the key switch to the OFF position and remove the key from the switch.

## HEADLIGHT SWITCH (IF EQUIPPED)

The headlight ON/OFF switch (3) is located on the dash panel to the left of the key switch (1).

## TURN SIGNAL SWITCH (IF EQUIPPED)

The turn signal switch (4) is located on the center of the dash and is used to activate the turn signals.

## FUEL GAUGE (IF EQUIPPED)

The fuel gauge (2) is located on the dash panel to the left of the key switch (1). The fuel gauge indicates the amount of fuel remaining in the fuel tank. The fuel gauge operates only when the key switch is in the ON position and the accelerator is pressed.

## MALFUNCTION INDICATOR LIGHT (MIL)

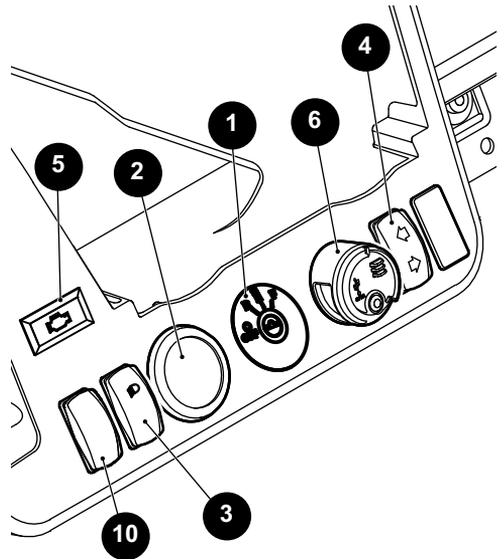
The MIL (5) is located on the dash panel above the light switch. The MIL can be used to diagnose a problem and to determine whether a technician will be required to service the vehicle. See *MALFUNCTION INDICATOR LIGHT (MIL)* on page 41.

## USB PORT (IF EQUIPPED)

A USB port (6) is located on the dash panel to the right of the key switch.

## HORN (IF EQUIPPED)

The horn switch is located on the center of dash to the left of the light switch. The horn is activated when the top of the rocker switch is pressed.



## FEATURES AND CONTROLS

### PREMIUM SWITCH (IF EQUIPPED)

The premium switch is mounted to the steering column. The switch includes self canceling turn signal, rotating light switch, and horn button.

#### Horn

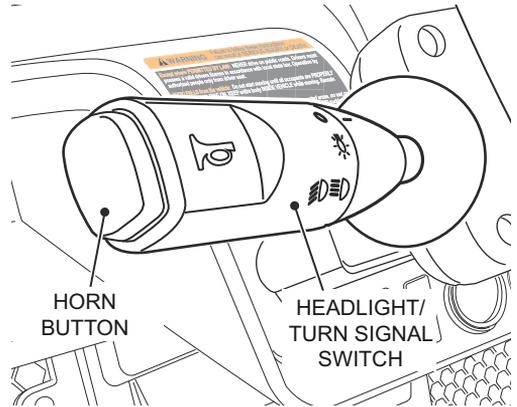
The button on the end of the switch activates the horn.

#### Turn Signal

- In the up position, the right turn signal is activated.
- In the down position, the left turn signal is activated.

#### Lights

- The accent lights are activated when the stalk is rotated forward one position.
- The headlights are activated when the stalk is rotated forward one position the accent lights are activated.
- The high beams are activated when the switch is pulled towards the driver.
- The low bow beams are activated when the switch is pulled towards the driver again.
- The light are off with the stalk rotated to the O position.



### DIRECTION SLECTOR

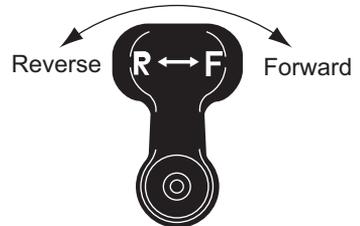


To reduce the possibility of component damage, the vehicle must be completely stopped before moving the direction selector.

The direction selector (11) is located on the seat panel and allows the operator to select F (forward) or R (reverse). The vehicle should be left in F when unattended.

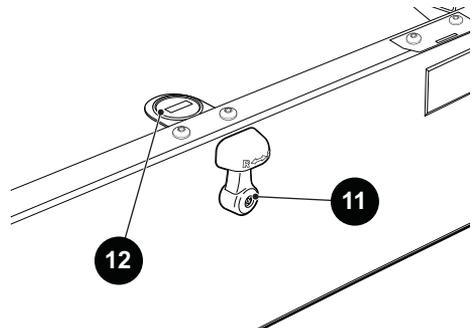
When leaving the vehicle, put the direction selector in the F position, engage the parking brake, turn the key switch to OFF position, and remove the key from the switch.

When the direction selector is moved to the R position, a reverse warning buzzer activates.



### HOUR METER (IF EQUIPPED)

The hour meter (12) is located under the seat and mounted to the front of the seat wrap. The hour meter shows the total run time for the life of the vehicle.



## ACCELERATOR PEDAL



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

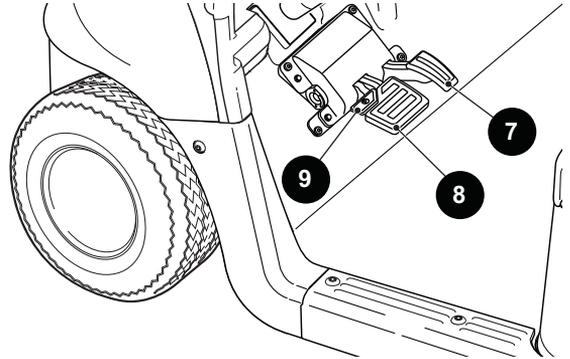
With the key switch in the ON position, press the accelerator pedal (7) to start the engine. When the pedal is released, the engine will stop. To stop the vehicle immediately, press the brake pedal (8).

When you press the accelerator pedal (7), the parking brake (9) will be released if it is engaged. This is a feature to assure the vehicle is not driven with the parking brake engaged.

## BRAKE AND PARKING BRAKE PEDAL

The foot operated parking brake is the top left corner of the brake pedal (9). To engage the parking brake, press on the upper section of the pedal until it locks in position. Press the accelerator pedal to release the parking brake.

A parking brake that is engaged releases when you press the accelerator pedal. This is a feature to make sure the vehicle is not driven with the parking brake engaged.



## FRONT SEAT

The seating capacity of the forward facing seat is two people, one person on each side of the seat.

## HIP RESTRAINT

The hip restraints help people stay in position while the vehicle is in motion.

## CUP HOLDER

The vehicle has a cup holder for the benefit of both the driver and passenger.

## STEERING WHEEL

The steering wheel controls the direction of vehicle travel.

## FEATURES AND CONTROLS

### REAR SEAT AND LOAD DECK (FREEDOM 2+2 AND VALOR 4 VEHICLES ONLY)

#### **WARNING**

Passengers must stay in the seat and hold both the hand rail and rear grab handle while the vehicle is in motion.

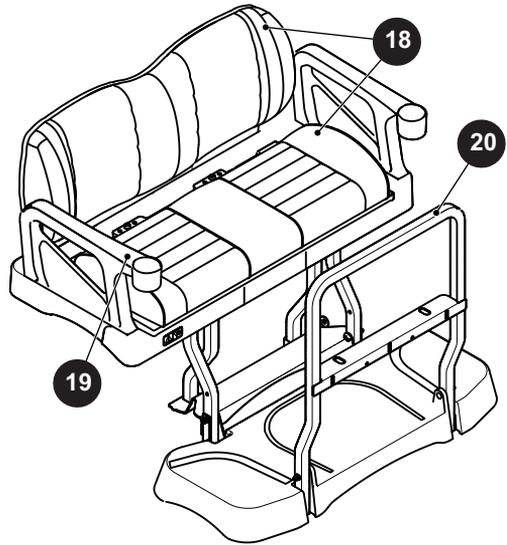
Always fill the front seat to capacity prior to seating any passengers on the rear facing seat.

Do not allow passengers to ride on the load deck. A sudden move or stop can cause severe injury or death to passengers on the load deck.

The rear facing seat capacity is two passengers, one person on each side.

Some vehicles have a feature that functions as a rear seat (18) or a load deck.

When in the upright position, it is a rear seat for two passengers. Fold the seat flat for a load deck.



#### Rear Hand Rail and Grab Handle

#### **WARNING**

Passengers must stay in the seat and hold both the hand rail and rear grab handle while the vehicle is in motion.

There is a hand rail (19) on each side of the rear seat and a rear grab handle (20) at the far rear of the vehicle to help passengers stay in position when the vehicle is in motion. The passengers must hold the rear hand rail and the rear grab handle whenever the vehicle is in motion.

## OPERATION

### NOTICE

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



### CAUTION

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

## SAFETY



### WARNING

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

## BEFORE INITIAL USE

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

- Check for possible leaks that may have developed during shipment of the vehicle.
- Charge the battery.
- Fill the tank with the correct fuel.
- Perform the following pre-ride inspection.

## PRE-RIDE INSPECTION

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

| Item                      | Check   | Page |
|---------------------------|---|------|
| Brake system/pedal travel | Check for proper operation.   | 43   |
| Parking brake             | Ensure vehicle does not roll when the parking brake is engaged.       |      |
| Front suspension          | Inspect. Lubricate if necessary. Check for loose or missing hardware. |      |
| Rear suspension           | Inspect. Lubricate if necessary. Check for loose or missing hardware. |      |
| Steering                  | Check for smooth and free operation.                                  |      |
| Tires                     | Check condition and pressure.   | 35   |
| Wheel hardware            | Check for loose or missing hardware.                                  |      |
| Frame hardware            | Check for loose or missing hardware.                                  |      |
| Fuel and engine oil       | Check for correct levels.   | 32   |
| Fluid leakage             | Inspect vehicle for leaks.  |      |
| Switches                  | Check operation.  |      |
| Reverse warning alarm     | Check operation.  |      |
| Air filter                | Inspect; clean or replace if necessary.                               | 41   |
| Headlights                | Check operation.  | 36   |
| Brake light / taillights  | Check operation.  | 36   |

## OPERATION

### ENGINE RUN-IN

Correct operation of the engine during the run-in period is essential to the performance, reliability, and life of the engine.

The engine break-in period is:

- the first 25 operating hours of a new engine
- the first 25 operating hours of an engine that has been completely disassembled

During these run-in periods, operate the vehicle in the following manner:

- Avoid high engine speeds.
- Avoid long periods of idle time.
- Avoid long operating times at low engine speed.
- Avoid long operating times at the same engine speed.
- Avoid long operating times with a full load.
- Vary the engine speed during operation.
- Apply quick bursts of acceleration after the engine has warmed up.

### ENGINE WARMUP

When the engine is cold, follow the engine run-in procedure for the first few minutes to allow the engine to warm up.

### FUEL

Refer to *Fuel Handling Guidelines* on page 13 for more information regarding handling and storage of fuel.

#### WARNING

**Refuel only in well-ventilated areas.**

**Do not add fuel near open flame or electrical items that can cause a spark.**



**Wear eye protection to protect from splashed fuel and fuel vapors.**



**Never use cigarettes in or near the area where refueling is done or fuel is stored.**

**Inspect the fuel cap, tank, and other components for leaks or damage that can cause a hazardous condition.**

**Do not overfill the tank. Do not fill the tank neck.**

**Never operate the vehicle with the fuel tank cap removed.**

#### NOTICE

***Oxygenated or reformulated gasoline is mixed with alcohols or ethers. Excessive amounts of these blends can damage the fuel system or cause performance problems. If any performance problems occur, use gasoline with a lower percentage of alcohol or ether.***

***Use clean, regular grade unleaded fuel. An Ethanol blend of no more than 10% is acceptable.***

1. Remove the fuel refill cap that is located under the forward facing seat.
2. Fill the tank with clean, automotive grade gasoline. See the following chart for requirements.

| Fuel              |                         | NOTES  |
|-------------------|-------------------------|--|
| Grade requirement | Regular 87 octane       | High altitude or heavy use/load applications can benefit from higher octane gasoline.                                    |
| Ethanol content   | 10% maximum permissible | Exceeding the maximum permissible ethanol concentration can deteriorate the engine fuel system and starting performance. |
| Methanol content  | Not permissible         | The use of fuels containing methanol is not permissible.   |

3. Replace the cap when refueling is complete.

## STARTING AND STOPPING THE ENGINE

### WARNING

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

### NOTICE

*Avoid full throttle starts and fast acceleration until the engine has warmed up.*

Always start the engine outdoors or in a well-ventilated space.

1. Sit in the driver's seat.
2. Press and hold the brake pedal.
3. Insert the key and turn the key switch to the ON position.
4. Move the direction selector to the appropriate position.

### NOTICE

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

5. Slowly press the accelerator pedal to start the engine.
6. When the accelerator pedal is released, the ignition circuit is de-energized and the engine stops. To stop the vehicle more quickly, press the brake pedal.
7. Engage the parking brake, turn the key switch to the OFF position, and remove the key from the switch before exiting the vehicle.

## Starting on a Hill

### WARNING

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

Turn the key switch to the off position and remove it when exiting the vehicle to prevent accidental starting or unauthorized use.

### CAUTION

To decrease the risk of permanent damage to the drive train, do not allow roll-back when starting the vehicle on a hill. Do not use the accelerator and engine to hold the vehicle at a stop on a hill.

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

## ACCELERATING

### WARNING

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

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

1. Move the key switch to the ON position and the direction selector to the desired direction.
2. Apply slow, steady pressure to the accelerator pedal to increase vehicle speed. The engine will stop running when the accelerator pedal is released.

## BRAKING

### WARNING

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

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

## OPERATION

### DRIVING PROCEDURE

1. Perform the pre-ride inspection on page 21.
2. Sit in the driver's seat.
3. Check the surroundings and determine the path of travel.
4. Release the parking brake.
5. Insert the key and turn the key switch to the ON position.
6. Move the direction selector to the appropriate position.
7. With both hands on the steering wheel, release the brake and immediately start to apply gradual and steady pressure to the accelerator pedal.
8. Practice maneuvering the vehicle using the accelerator and brake pedals. Drive slowly and cautiously until you are comfortable with the controls.
9. Do not drive with a passenger until you have at least two hours of experience driving the vehicle.

### Coasting



#### WARNING

**Vehicle speed can increase quickly when driving downhill. Allowing the vehicle to coast downhill at high speeds can cause a loss of control and result in severe injury or death. Limit the vehicle speed by pressing the brake.**

Do not allow the vehicle to coast at speeds that are above the maximum recommended speed. Apply constant brake pressure when descending a hill to control the speed of the vehicle.

### DRIVING WITH PASSENGERS

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

### SLIPPERY SURFACES

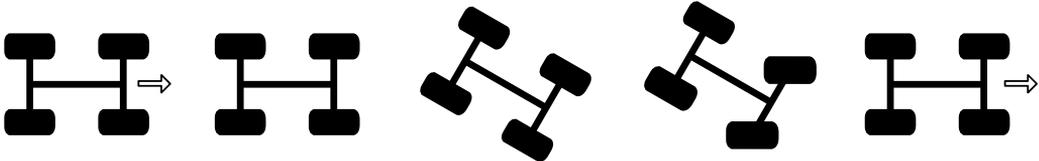


#### WARNING

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

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

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



## UPHILL OPERATION

When driving up a hill, follow these guidelines:

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

## TRAVERSING HILLSIDES



### WARNING

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

If traversing a hillside is unavoidable, follow these guidelines:

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

## DRIVING DOWNHILL



### WARNING

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

When driving down a hill, follow these guidelines:

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

## STALLING ON A HILL

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

If the vehicle completely stalls while climbing a hill:

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

If the vehicle begins to roll downhill:

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

## OPERATION

### REVERSE OPERATION

When driving in reverse, follow these guidelines:

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

### PARKING THE VEHICLE

#### WARNING

**When parking the vehicle inside a garage or structure, the space must be well ventilated. Park the vehicle away from any source of flame or sparks, including any appliance with a pilot light.**

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

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

### BATTERY

#### NOTICE

***Heavy use of accessories or leaving accessories turned on when the vehicle is not being used can drain the battery and leave insufficient reserve to start the vehicle.***

The vehicle uses a starter/generator to start the engine and charge the battery. The engine does not idle, so the battery does not charge while the vehicle is stopped. Do not operate lights and other accessory items excessively while the vehicle is stopped. Turn off all accessories when the vehicle is stopped.

The generator can supply 30 amps. Operation of all accessories can cause the discharge of the battery even if the engine is running and the generator is operating. Discharging the battery is known as deep cycling. The battery is not a deep cycle model. It is a starting battery. Multiple deep cycling causes early failure of the battery.

If the battery discharges, charge it with a 12-volt charger that is rated at 10 amps or less and according to the instructions supplied by the manufacturer of the charger.

**HAULING CARGO ON THE LOAD DECK (IF EQUIPPED)**



**WARNING**

Hauling cargo incorrectly can alter the vehicle handling characteristics and cause a loss of control, brake instability, and possibly lead to serious injury or death.

Never exceed the maximum weight capacity of the vehicle. The total load (operator, passenger, accessories, and cargo) must never exceed the maximum weight capacity of the vehicle.

Position the load as far forward and as low as possible on the load deck.

Secure all loads before operating. Unsecured loads can shift and create unstable operating conditions.

Operating the vehicle with passengers on the load deck can result in severe injury or death. Never allow passengers to ride on the load deck. Passengers must always ride seated in a passenger seat.

Drive slowly and carefully.

Operate only with stable and safely arranged loads. When handling loads that are impossible to center on the load deck, make sure the load is secured as tightly as possible and operate the vehicle with extra caution.

Reduce speed and allow greater distances for braking when hauling cargo.

Heavy loads affect braking and handling characteristics. Use extra caution when applying the brakes with a heavily loaded vehicle. Avoid terrain or situations that may require reverse downhill travel.

Use extra caution when operating with loads that extend over the load deck sides. Stability and maneuverability can be affected and increase the risk of a rollover.

This vehicle is designed to carry specific capacities. Read and comply with the load distribution warnings on the warning label affixed to the load deck. The total load (operator, passenger, accessories, and cargo) must never exceed the maximum weight capacity of the vehicle.



**WARNING**

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

|                                   | Fleet           | Freedom         | Valor           | Freedom 2+2     | Valor 4         |
|-----------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Maximum Vehicle Weight Capacity   | 500 lb (227 kg) | 500 lb (227 kg) | 800 lb (227 kg) | 800 lb (363 kg) | 800 lb (363 kg) |
| Maximum Load Deck Weight Capacity | N/A             | N/A             | N/A             | 300 lb (136 kg) | 300 lb (136 kg) |

- Do not exceed the maximum vehicle weight capacity (includes weight of operator, passenger, cargo, and accessories).
- Always fill the forward facing seat to capacity prior to seating any passengers on the rear facing seat.

## OPERATION

### FLIP SEAT / LOAD DECK OPERATION (FREEDOM 2+2 AND VALOR 4 VEHICLES)

Some vehicles are equipped with a rear facing seat that pivots to form a load deck. The rear facing seat is designed for two passengers maximum.

#### **WARNING**

**Do not allow more than two passengers on the rear facing seat. Never leave small children alone on the seat. Keep arms and legs inside the vehicle boundary at all times. Always fill the front seating capacity prior to seating any passengers on the rear seat.**

To convert the seat to a load deck:

1. Remove any items from the seat.
2. Rotate the seat bottom toward the rear of the vehicle. The seat bottom board will rest in the two side frame pieces.

#### **WARNING**

**To reduce the possibility of severe injury or death, DO NOT carry passengers on the load deck.**

To convert the load deck to a passenger seat:

1. Remove any cargo from the load deck.
2. Rotate the rear portion of the load deck toward the front of the vehicle.

### Load Deck

#### **WARNING**

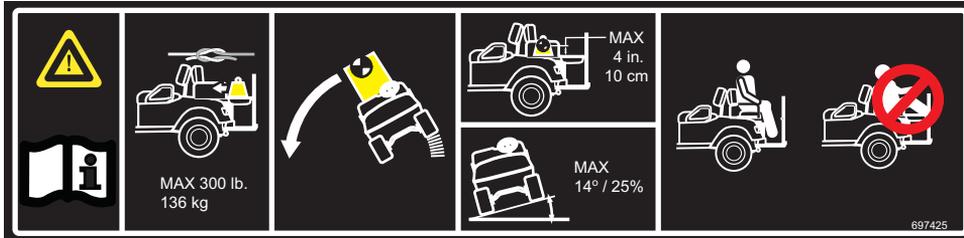
**Failure to follow these instructions can cause personal injury, damage the vehicle, or cause the vehicle to tip over. Be aware of the load when operating the vehicle. Read, understand, and follow the warning label attached to the rear grab handle.**

**Do not allow passengers to ride on the load deck. A sudden move or stop can cause severe injury or death to passengers on the load deck.**

**Before operating, make sure the area behind the vehicle is clear.**

### Safety Label

P/N 697425.



A warning label is attached to the outside of the grab handle. Understand and comply with the warnings on this label for safe operation of the vehicle.

- See the warning label for maximum load.
- Position the load as far forward as possible.
- Make sure the center of gravity of the load is within the height limit shown on the label.
- Secure the load to the load deck.
- Be aware of the load when you operate the vehicle.
- Do not allow passengers to ride on the load deck.

#### **WARNING**

**Never fill a gas container on the load deck. Static discharge can ignite gasoline vapor and cause an explosion.**

Always put the gasoline container on the ground before filling. Never fill a gasoline container on the load deck. Static electricity is built up during the fueling process and can discharge and cause the gasoline vapor to ignite.

# VEHICLE MAINTENANCE

## MAINTENANCE SAFETY



### WARNING

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

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

Remove all jewelry before servicing the vehicle.

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

Do not touch hot objects.

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

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



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

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

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

After performing maintenance, test the vehicle in a safe area that is free from vehicle and person traffic.

### NOTICE

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

## SCHEDULED MAINTENANCE

Consistent inspection, adjustment, and lubrication of some components are necessary to maintain the vehicle so that it remains in safe and reliable condition. Refer to the *SCHEDULED MAINTENANCE CHART* on page 30 for detailed requirements.

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

Record the maintenance items performed along with the details in the *MAINTENANCE LOG* on page 59.

### NOTICE

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

## Initial Service Requirements

Perform the additional inspection or maintenance at the initial service interval indicated in addition to regular intervals. See *SCHEDULED MAINTENANCE CHART* on page 30. An initial oil change is required after the 25 hour engine break in period.

# MAINTENANCE

## SCHEDULED MAINTENANCE CHART

Perform all services at the maintenance interval reached first.

**E** – Indicates emission-related services (Failure to do this maintenance will not void the emissions warranty but may affect emissions).

**D** – Indicates services that must be performed by an authorized dealer.

| Item                      | Interval<br>(perform at interval<br>that comes first) |          | Remarks  | Page   |
|---------------------------|---|----------|--|--------|
|                           | Hours   | Calendar |  |        |
| Steering                  | Pre-ride  |          | Check for smooth and free operation.   |        |
| Front suspension          | Pre-ride  |          | Inspect. Check for leaks and loose or missing hardware.                        |        |
| Rear suspension           | Pre-ride  |          | Inspect. Check for leaks and loose or missing hardware.                        |        |
| Tires                     | Pre-ride  |          | Check condition and pressure.  | 11, 43 |
| Wheel lug nuts            | Pre-ride  |          | Check for loose or missing.  | 36     |
| Accelerator               | Pre-ride  |          | Check for smooth operation.  | 43     |
| Brake system              | Pre-ride  |          | Check for proper operation.  | 43     |
| Frame hardware            | Pre-ride  |          | Check for loose or missing.  |        |
| Fuel and engine oil level | Pre-ride  |          | Check for correct level.   | 32     |
| Air filter                | Pre-ride  |          | Inspect. Clean or replace as needed.   | 41     |
| Headlights and taillights | Pre-ride  |          | Check operation. Replace bulbs as needed.                                      | 36     |
| Reverse warning alarm     | Pre-ride  |          | Check operation.   |        |
| Switches                  | Pre-ride  |          | Check operation.   |        |
| Fluid leakages            | Pre-ride  |          | Inspect entire vehicle for leaks   |        |
| CVT belt                  | Pre-ride  |          | Check Condition  |        |
| Engine oil and screen     | Initial Service                                       |          | Replace oil at first 25 hours of operation.                                    | 37     |
| Wheels                    | Weekly  |          | Check condition of rims, missing or loose lug nuts.                            |        |
| <b>E</b> Air filter       | Weekly  |          | Inspect. Clean as needed.  | 41     |
| Cooling fan               | Weekly  |          | Check for build-up of dirt inside blower housing and fins; clean as necessary. |        |
| Engine oil                | Weekly  |          | Check level; add as necessary.   |        |
| Brake shoes               | 10  | Monthly  | Inspect. Replace as needed.  |        |
| Parking brake             | 20  | Monthly  | Conduct brake performance test; adjust as necessary                            |        |
| Controller                | 20  | Monthly  | Check operation of controller braking force.                                   |        |
| Wiring                    | 20  | Monthly  | Inspect for loose connections, broken or missing insulation.                   |        |
| Direction selector        | 20  | Monthly  | Inspect attachment and mechanism; adjust as necessary.                         |        |
| Steering                  | 20  | Monthly  | Check for excess play, loose or missing hardware.                              |        |
| Tie rods                  | 20  | Monthly  | Check for excess play, bent rods, loose or missing hardware.                   |        |
| Engine                    | 20  | Monthly  | Check for unusual noise, vibration, acceleration, oil leaks.                   |        |
| Rear axle                 | 20  | Monthly  | Check for leakage; add oil as required.  |        |
| General lubrication       | 50  | 3 Months | Lubricate all fittings, pivots, cables, etc. where required.                   | 32     |
| Engine electrical system  | 50  | 3 Months | Check coil/spark plug wires for cracks or loose connections.                   |        |
| Throttle/governor linkage | 50  | 3 Months | Check operation and governed speed.  |        |
| <b>E</b> Fuel system      | 50  | 3 Months | Check for leakage at tank, cap, lines, filters, pump, fuel rail.               |        |
| Front axle                | 50  | 3 Months | Check for damage, loose or missing hardware.                                   |        |

| Item                              | Interval<br>(perform at interval that comes first) |          | Remarks  | Page |
|-----------------------------------|--|----------|--|------|
|                                   | Hours  | Calendar |  |      |
| Parking brake                     | 50   | 3 Months | Inspect linkage rods, latch arm, catch bracket. Lubricate with light oil (Do not lubricate cables or brake latch). |      |
| Rear suspension                   | 50   | 3 Months | Inspect shocks for leaks, worn bushings, loose or missing hardware.  |      |
| Front suspension                  | 50   | 3 Months | Inspect strut for leaks. Check hubs and kingpins, for excessive play, worn bushings, loose or missing hardware.    |      |
| Front wheel alignment             | 50   | 3 Months | Inspect for unusual tire wear; align if necessary.   |      |
| Engine Oil                        | 125  | 6 Months | Check level; add as necessary.   |      |
| Battery                           | 125  | 6 Months | Inspect terminals. Clean as needed.  | 44   |
| King pins                         | 125  | 6 Months | Check for excessive play and tightness of retaining nuts.  |      |
| Rear axle                         | 125  | 6 Months | Check for unusual noise, loose or missing hardware.  |      |
| <b>E</b> Air filter               | 125  | 6 Months | Inspect; clean as necessary.   |      |
| CVT belt                          | 125  | 6 Months | Inspect for cracks, fraying and excessive wear.  |      |
| Direction selector                | 125  | 6 Months | Check for wear and smooth movement; lubricate shaft with light oil if necessary.                                   |      |
| Steering                          | 125  | 6 Months | Inspect bellows and pinion seal for damage and leakage.  |      |
| Rack end ball joint               | 125  | 6 Months | Check for noise and loose or missing hardware.   |      |
| CVT Filter                        | 125  | 6 Months | Inspect. Clean as needed.  |      |
| Rear axle                         | 250-300  | Yearly   | Check fluid level; add if required.  |      |
| Front wheel bearings              | 250-300  | Yearly   | Check and adjust as necessary.   |      |
| Brakes                            | 250-300  | Yearly   | Clean and adjust. Check brake shoe linings; replace if necessary.  |      |
| Muffler/exhaust system            | 300  | 2 years  | Check for leaks. Check the graphite joint integrity.   |      |
| <b>E</b> Blow-by PVC              | 300  | 2 years  | Drain PVC drain tube.  |      |
| <b>E</b> Fuel System              | 300  | 2 years  | Check for leakage at tank, cap, lines, filters, pump, fuel rail.   |      |
| <b>E</b> Carbon Canister          | 300  | 2 years  | Check hoses for cracks. Check connections/clamps.  |      |
| Engine Oil                        | 400  | 2 years  | Replace. See <i>RECOMMENDED LUBRICANTS AND FLUIDS</i> on page 32 for type and capacity.                            | 32   |
| Oil screen                        | 400  | 2 years  | Clean at oil change.   |      |
| <b>E</b> Spark plug               | 500  | 2 years  | Replace and gap new.   | 42   |
| Transaxle & Differential          | 500  | 2 years  | Check Oil Level. Add oil as needed.  | 40   |
| <b>D</b> Cylinder head and piston | 500  | 5 years  | Remove carbon.   |      |
| <b>D</b> Cylinder head and piston | 500  | 5 years  | Check valve seats for carbon buildup; clean if necessary.  |      |
| <b>D</b> Rear axle                | 500  | 5 years  | Replace fluid.   |      |
| <b>D</b> CVT Rollers              | 500  | 5 years  | Inspect.   |      |
| <b>D</b> Valves - intake/exhaust  | 1000   | 4 years  | Check cold. Adjust if needed.  |      |
| <b>D</b> CVT Slipper Shoe         | 1000   | 4 years  | Inspect.   |      |
| <b>D</b> CVT Rollers              | 1000   |          | Replace.   |      |

## ***MAINTENANCE***

### **RECOMMENDED LUBRICANTS AND FLUIDS**

Check and lubricate all components at the intervals shown in the *SCHEDULED MAINTENANCE CHART* beginning on page 30.

| <b>Item</b>      | <b>Capacity</b>  | <b>Lubricants/Fluids</b>                            | <b>Notes</b>  |
|------------------|------------------|---|---|
| Engine oil       | 1.6 qt. (1.5 L)  | 5W-30   | See page 38.  |
| Fuel             | 5.82 gal. (22 L) | Unleaded; 87 octane min<br>10% ethanol content max. | See page 22.  |
| Transaxle oil    | 34 oz. (1 L)     | MOBIL 424   | See page 40.  |
| Differential Oil | 100 ml           | 80W-90 Gear Oil                                     | See page 40.  |
| Grease fittings  |                  | Universal joint grease or equivalent                | Do not exceed 3 pumps<br>of grease in each fitting. |

### **REPLACEMENT OF MAINTENANCE ITEMS**

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

| <b>Item</b>         | <b>Part Number</b> |
|---------------------|--------------------|
| Oil Screen          | 10005159           |
| Air Filter          | 28463G01           |
| Spark Plug          | 696497             |
| Clutch Belt         | 696533             |
| 10A Automotive Fuse | 35212G07           |
| 10A Fuse            | 636455G12          |
| Fuel Pump Relay     | 684135             |
| Accessory Relay     | 663593             |

## LIFTING THE VEHICLE

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

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

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

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

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

Do not get under a vehicle until the stability of the vehicle on the jack stands is verified. Never get under a vehicle while it is on a jack alone.

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

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

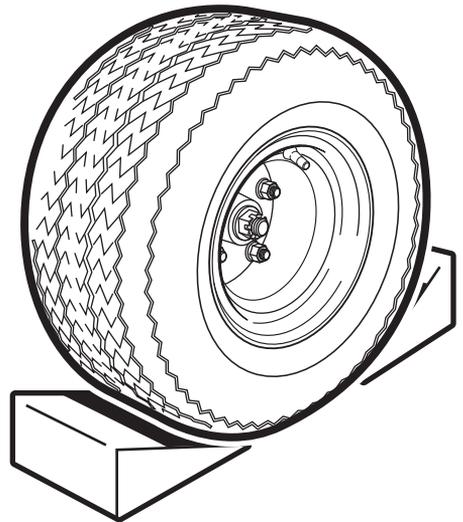
When performing any service to the drive train, lift the drive wheels off the ground.

### Tools

- jack
- jack stands (4)
- wheel chocks

### Lifting the Entire Vehicle

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



## MAINTENANCE

### Lifting the Rear of the Vehicle Only

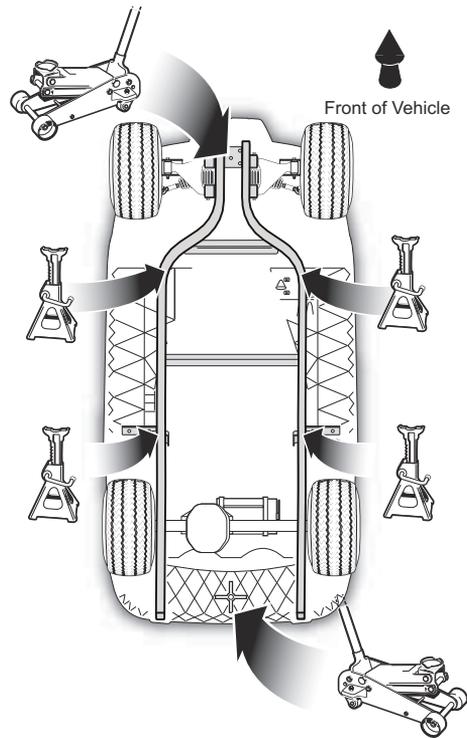
1. Install wheel chocks in front of and behind each front wheel.
2. Center the jack under the bagwell.
3. Lift the vehicle enough to place two jack stands under the frame where the leaf spring mounting brackets are welded to the frame.
4. Lower the jack and test the stability of the vehicle on the two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

### Lifting the Front of the Vehicle Only

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

### Lowering the Vehicle

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



## VEHICLE CLEANING AND CARE

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

### Washing the Vehicle

#### NOTICE

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

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

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

### Polishing the Vehicle

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

**TIRES**

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

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

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

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

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

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

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

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

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

**Tire Pressure**

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

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

**Tire Repair**

**Tools**

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

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

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

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

## MAINTENANCE

### Tire Replacement

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

### WHEELS

#### WARNING

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

#### CAUTION

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

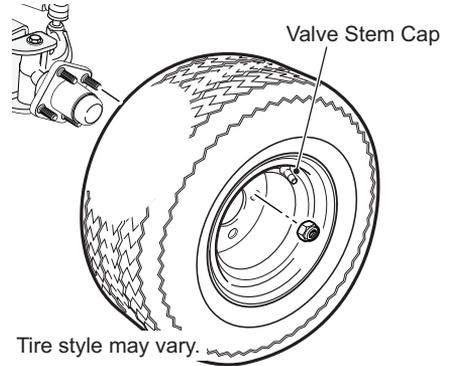
Check the lug nuts for tightness at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 30.

### Wheel Removal

#### Tools

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

1. Lift the vehicle. See *LIFTING THE VEHICLE* on page 33.
2. Remove the lug nuts.
3. Remove the tire from the vehicle.



### Wheel Installation

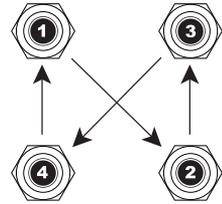
|                |                             |
|----------------|-----------------------------|
| Lug Nut Torque | 65 - 85 ft.lb (88 - 115 Nm) |
|----------------|-----------------------------|

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

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

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

Lug Nut Tightening Pattern



### LIGHTS (IF EQUIPPED)

All of the lights on the vehicle are LEDs. They do not require replacement.

### FUSE REPLACEMENT

The fuse block is under the forward facing seat.

#### NOTICE

Have the vehicle inspected by an authorized dealer if fuses continue to blow after they have been replaced.

1. Lift the seat bottom to access the fuses.
2. Remove the old fuse and replace it with a new fuse of the same type and size.
3. Fuses are available from a local dealer or the manufacturer.

**FOUR CYCLE ENGINE**

The engine is an air cooled, 4-stroke, OHV, single cylinder gasoline engine. It has a pressure fed lubrication positive displacement oil pump with an oil screen and a counter rotating balance shaft.

**NOTICE** *The engine uses more oil during the first hours of operation than after the internal parts are run-in. As the run-in process occurs, oil use will gradually decrease until it stabilizes.*

**Engine Specifications**

|                          |                            |
|--------------------------|----------------------------|
| Engine Model .....       | EX1 EFI                    |
| Type.....                | Four cycle, OHV            |
| Number of Cylinders..... | 1                          |
| Displacement.....        | 150 cc                     |
| Rated Horsepower .....   | 11.5 hp                    |
| Spark Plug Type .....    | NGK CR6HSA                 |
| Spark Plug Gap .....     | 0.6 - 0.7 mm               |
| Cooling .....            | Forced Air Cooled          |
| Oil Screen.....          | Screen Type Full Flow      |
| Oil Pump.....            | Positive Displacement Pump |

**CHECK THE OIL LEVEL**

Check the engine oil at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 30.

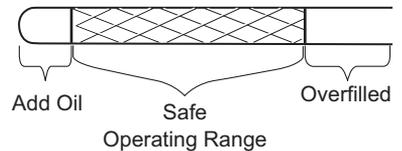
**Tools**

- funnel
- clean lint-free cloth

**CAUTION** **Wear protective gloves to prevent scalding from hot engine oil.**

Check the engine oil level when the engine is warm with the vehicle parked on a level surface.

1. Turn the key switch to the OFF position, remove the key from the switch, and engage the parking brake.
2. Allow the oil to drain into the crankcase.
3. Wipe the top of the engine clean with a cloth to remove any debris that could fall in the engine.
4. Remove the dipstick and wipe off the entire length with a clean lint-free cloth.
5. To get an accurate level reading, wipe any oil from the dipstick and insert it back into the opening.
6. Remove the dipstick again and check the level. The oil level must fall within the crosshatch on the dipstick.
7. The engine can be operated safely as long as the oil is within the safe operating range as indicated on the dipstick.



**NOTICE** *The lack of oil or low oil level can damage the engine. Do not operate the vehicle if the oil level is below the safe area indicated on the dipstick.*

8. If the oil level is below the crosshatch, add engine oil into the fill hole on the top of the rocker cover until the level within the safe operating range.

**NOTICE** *Excessive oil can damage the engine. Oil expands as it gets hot. Do not overfill.*

9. If the oil level is above the crosshatch, pump out the excessive oil with a siphon pump.
10. Replace the dipstick.

## MAINTENANCE

### NOTICE

**The oil dipstick and fill cap must be in place before operating the engine. Failure to install the dipstick and fill cap will result in oil contamination or oil being discharged into the engine compartment.**

**See RECOMMENDED LUBRICANTS AND FLUIDS on page 32 for oil capacity and grade. The use of an incorrect grade of engine oil can damage the engine. Always use the recommended grade. Do not mix engine oils of different grades or viscosities.**

**Do not overfill. Excessive oil can damage the engine. Add oil in small quantities with repeated level checks.**

11. Replace the dipstick when the level is correct.

## CHANGE THE ENGINE OIL

Change the engine oil at the initial service and then intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 30.

### Tools

- ratchet
- socket, 17 mm
- allen socket, 6 mm
- funnel
- clean, lint-free cloth
- drain pan
- floor jack
- jack stands
- wheel chocks
- parts washer or carburetor/brake clean

### NOTICE

**See RECOMMENDED LUBRICANTS AND FLUIDS on page 32 for oil capacity and grade. The use of an incorrect grade of engine oil can damage the engine. Always use the recommended grade. Do not mix engine oils of different grades or viscosities.**

**Do not overfill the oil tank. Excessive oil can damage the engine. Add oil in small quantities with repeated level checks.**

**If the vehicle is to be stored over the winter months, it can be stored with the old oil left in engine. The oil should be changed as part of the spring maintenance to remove any moisture that has accumulated during storage.**

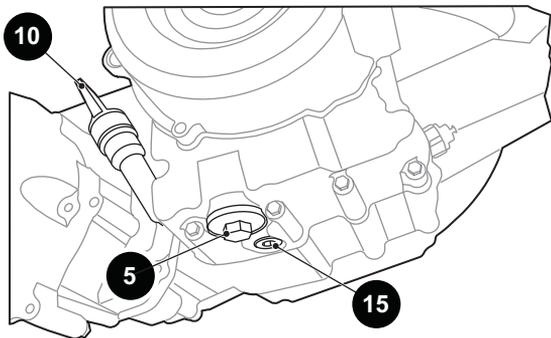
## Remove the Engine Oil

### CAUTION

**Wear protective gloves to prevent scalding from hot engine oil.**

Change the engine oil when the engine is warm and the vehicle is parked on a level surface.

1. Turn the key switch to the OFF position, remove the key from the switch, and engage the parking brake.
2. Wipe the top of the engine clean with a cloth to remove debris that could fall in the engine.
3. Remove the oil fill cap on the valve cover.
4. Chock the rear wheels.
5. Lift the front of the vehicle. See *LIFTING THE VEHICLE* on page 33.
6. Place a drain pan under the oil drain plug.
7. Remove the drain plug (15) and allow the oil to completely drain into the pan.
8. Before installing the drain plug and the area around the drain hole with a lint free cloth



### NOTICE

**At the first oil change, small metal chips and lint may be found. This is normal, resulting from the break-in period. Inspect the oil screen at every oil change. The presence of large metal chips could indicate possible damage to the engine.**

9. Remove the oil screen plug (5).
10. Clean the oil screen and tensioner spring in a parts washer or with carburetor/brake clean.

11. Before installing the oil screen plug, clean the area around the drain hole with a lint free cloth.
12. Inspect the plug, oil screen, and o-ring for damage. Replace any damaged items.
13. Insert the oil screen into the tensioner spring and the spring in the drain plug.
14. Reinstall the plug/oil screen assembly and tighten to 130 in./lb (14.7 Nm).

## Refill Oil

### NOTICE

See **RECOMMENDED LUBRICANTS AND FLUIDS** on page 32 for oil capacity and grade. The use of an incorrect grade of engine oil can damage the engine. Always use the recommended grade. Do not mix engine oils of different grades or viscosity.

**Engine oil must be high quality oil that meets or exceeds API SF, SG, CC standards.**

**Do not overfill. Excessive oil can damage the engine. Add oil in small quantities with repeated level checks.**

1. To allow for possible residual oil left in the engine, add slightly less than the rated engine capacity (**RECOMMENDED LUBRICANTS AND FLUIDS** on page 32) into the fill hole.
2. Check the oil level on the dipstick (10). The oil should fall within the crosshatch.
3. Add oil in small quantities with repeated level checks to make sure you are not overfilling the engine.
4. When the level is correct, replace the dipstick.
5. As a final check, check the oil level again with the vehicle on level ground.

Oil increases in volume when warm. The engine can be operated safely as long as the oil is within the crosshatch on the dipstick. Do not operate the vehicle if the oil level is below the safe area indicated on the dipstick.

## AIR INTAKE AND COOLING FINS

### WARNING

Keep the engine cooling components clean to reduce the risk of overheating and the possible ignition of accumulated debris.

Dirt and debris can clog the engine air cooling system. Allow the engine to cool and use the following guidelines after every off-road use:

- Check for a build up of dirt and debris in the air intake and cooling fins.
- Clean the areas shown to prevent engine damage.
- Make sure the linkages, springs and controls are clean.
- Make sure the area around the muffler is free of any combustible material.



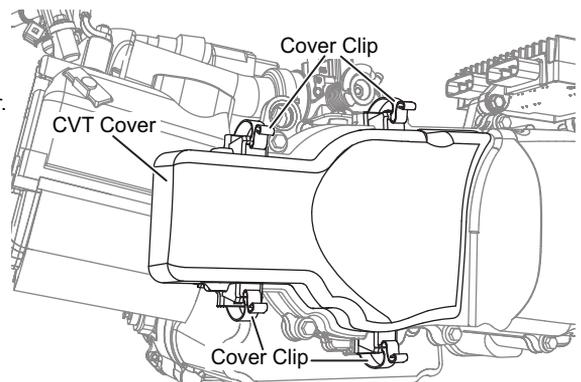
Regular maintenance of the cooling system is required to ensure an adequate supply of air to the cooling fins. Compressed air can be used for routine cooling system maintenance.

Clean the cooling system at the intervals indicated in the **SCHEDULED MAINTENANCE CHART** on page 30.

## CVT FILTER

Dirt and debris can clog the CVT filter and make cooling the engine difficult. Occasional cleaning is required.

1. Unlatch the CVT cover clips to access the CVT filter.
2. Remove the CVT Cover.
3. Clean the CVT filter using compressed air.
4. If the CVT is badly soiled, replace it.



# MAINTENANCE

## REAR AXLE

The rear axle has two separate oil cavities. Each cavity (transaxle and differential) has a drain plug and a check/fill plug. Unless leakage of axle oil is evident, an annual check is sufficient.

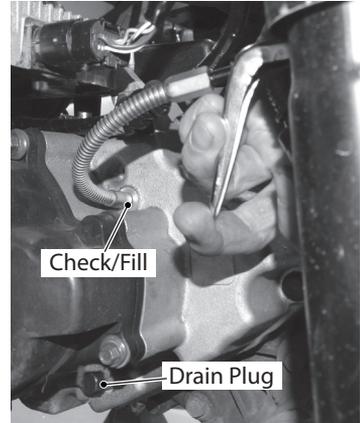
Change the transaxle and differential oil at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 30.

### Tools

- Socket, 13 mm
- Ratchet
- Funnel
- Oil Can

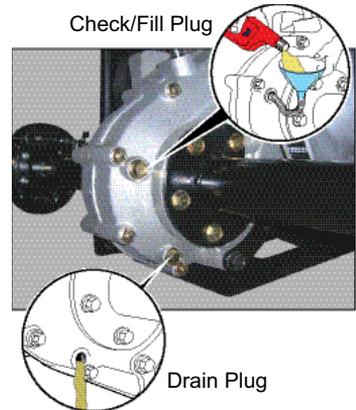
### Checking the Transaxle Oil Level

1. Clean the area around the check/fill plug.
2. Remove the plug. The correct axle oil level is **just** below the bottom of the threaded hole.
3. If axle oil is low, slowly add oil with an oil can until it starts to seep from the check/fill hole and install the plug.



### Checking the Differential Oil Level

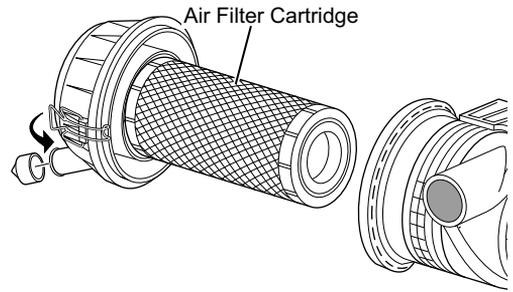
1. Clean the area around the check/fill plug.
2. Remove the plug. The correct axle oil level is **just** below the bottom of the threaded hole.
3. If axle oil is low, slowly add oil with a pump or oil can until it starts to seep from the check/fill hole. Install the plug.



## AIR FILTER

**CAUTION** Using compressed air to clean the filter cartridge will damage the filter which can cause engine damage.

Inspect and replace the air filter cartridge at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 30.



### NOTICE

*The filter is a dry filter. Do not apply oil.*

1. Unlatch the cover to access the air filter cartridge.
2. Remove the filter from the housing.
3. Inspect the cartridge.
4. A lightly soiled filter can be cleaned by tapping out dust. Do not use compressed air on the filter. If the filter is heavily soiled, it must be replaced.
5. Reinstall or replace the filter making sure it is fully seated in the housing.
6. Replace the housing and secure it with the latches on the air cleaner cover.

## MALFUNCTION INDICATOR LIGHT (MIL)

The EFI system uses Diagnostic Trouble Codes to report issues. Both active and stored faults are reported by the Engine Control Module (ECM).

- Active Faults – These are faults that are actively occurring at the moment.
- Occurred Faults – These are faults that have been triggered since the key switch was last turned to the ON position.
- Historical Faults – These are faults that are no longer active. These faults have not been triggered since the key switch was last turned to the ON position. They were active at one time but were stored when the key switch was turned to the OFF position sometime in the past.

These faults can be read from the MIL located on the instrument panel next to the key switch. A series of flashes indicates each fault code. A description of how to read codes from the MIL is detailed below. More information about each fault can be obtained from a service technician with the proper equipment.

Follow the below procedure to read active and stored vehicle faults from the MIL:

1. Lock the vehicle's direction selector in Neutral.
2. View the MIL on the control panel next to the key switch.
3. Turn the key switch to the ON position and back to the OFF position quickly 3 times.
4. Observe the sequence of flashes. The codes are presented after a brief 0.25 second flash to signify that codes will follow.
  - The double-digit fault codes display as a combination of 1-second flashes for the tens place and 0.5-second flashes for the ones place.
  - Faults are displayed in numerical order.
  - Active faults are displayed whether the engine is running or not. Stored faults only display when the engine is not running.
  - Codes will repeat in the same order five times.

If there are no active or stored faults, the MIL remains off or not illuminated.

The ECM will enter sleep mode after 10 minutes of inactivity. If the key switch is in the ON position and the MIL is not illuminated, press and release the accelerator pedal to wake the system.

# MAINTENANCE

| MIL Flash Code | Fault                         | Recovery Steps   |
|----------------|-------------------------------|--|
| 15             | Engine Over Temperature       | <ol style="list-style-type: none"> <li>1. Remove vehicle from service.</li> <li>2. Clean the CVT filter using compressed air.</li> <li>3. Clean air fins using compressed air.</li> <li>4. If fault returns, contact an authorized service rep.</li> </ol> |
| 31             | Crankshaft Sensor Malfunction | <ol style="list-style-type: none"> <li>1. Check that the electrical connection at the crankshaft position sensor is not loose.</li> <li>2. If connected, contact an authorized service rep.</li> </ol>   |
| 64             | Low Oil Pressure              | <ol style="list-style-type: none"> <li>1. Add oil as needed</li> <li>2. If oil level is acceptable, contact an authorized service rep.</li> </ol>  |
| 65             | Pedal Switch Protection       | <ol style="list-style-type: none"> <li>1. Contact an authorized service rep.</li> </ol>  |
| 66             | Stuck Throttle Protection     | <ol style="list-style-type: none"> <li>1. Verify that the throttle body is fully actuated with the pedal to the floor.</li> <li>2. If fully actuated or if the fault persists, contact an authorized service rep.</li> </ol>                               |

## SPARK PLUG

### Tools

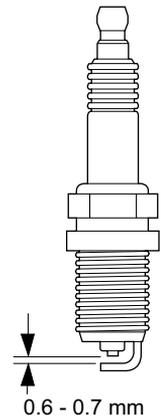
- spark plug socket, 5/8"
- ratchet
- anti-seize compound
- torque wrench, in. lb
- feeler gauge

### **CAUTION**

**Do not over tighten the spark plug. Over tightening the plug can cause damage to the aluminum cylinder head threads.**

1. Remove the spark plug when the engine is cold.
2. Inspect and replace the spark plug at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 30.

| INSPECT             | CONDITION OF SPARK PLUG   | ACTION                                      |
|---------------------|---|---|
| Electrode           | Sooty   | Clean carefully with a wire brush.          |
|                     | Worn or damaged   | Replace spark plug.                         |
| Condition of plug   | Fouled (indicated by a wet, black appearance) possibly caused by:         |   |
|                     | • dirty air filter element or other restrictions in the air intake system | Clean air system. Replace spark plug.       |
|                     | • incorrectly adjusted valves   | Adjust valves. Replace spark plug.          |
|                     | • spark plug wire in poor condition                                       | Repair or replace wire. Replace spark plug. |
|                     | • poor fuel quality   | Change fuel. Replace spark plug.            |
| Porcelain insulator | Visible cracks  | Replace spark plug.                         |
| Gap                 | Correct gap (see illustration at right)                                   | Reinstall spark plug.                       |
|                     | Incorrect gap (see illustration at right)                                 | Adjust to correct measurement.              |



3. Apply a light coat of anti-seize compound to the spark plug threads.
4. Tighten to 87- 121 in. lb (9.8 - 13.7 Nm) torque.

**BRAKES**



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

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



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

Test and service the brake system at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 30.

**Periodic Brake Test**



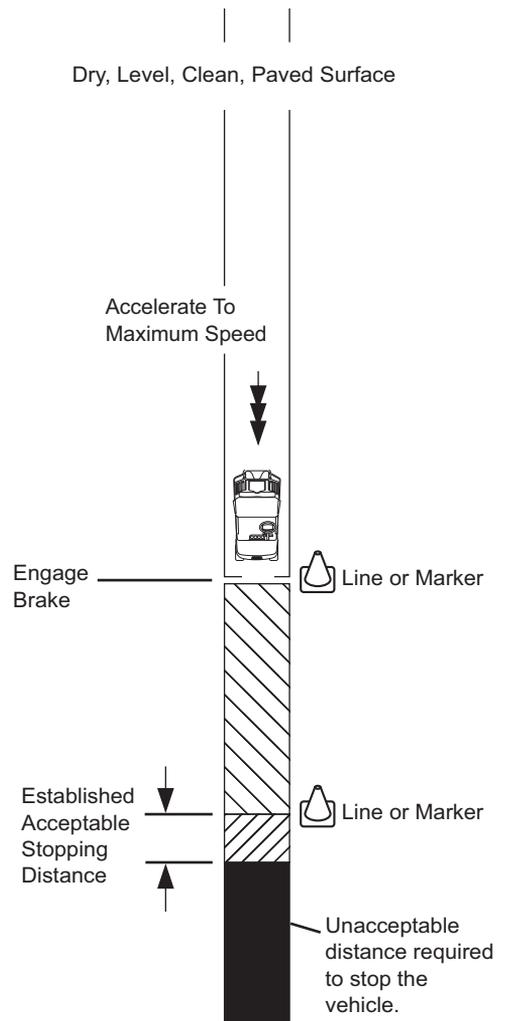
**NOTICE** You must have enough space to accelerate to maximum speed before engaging the brake. Use a marker to indicate the predetermined line to engage the parking brake that you will use for the performance test.

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

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

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

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



**BATTERY**

The vehicle has a sealed battery which requires no maintenance except to keep it corrosion-free and to test for functionality.

## MAINTENANCE

The sealed battery is filled with electrolyte and sealed at the factory. Never pry the seal strip off or add fluid to the battery.

Inspect the battery terminals at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 30. Clean and tighten as needed.

### WARNING

**Use insulated wrenches to prevent direct contact of a wrench with the battery terminals. Direct contact of a bare wrench with battery terminals can cause an explosion resulting in severe injury or death.**

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

### CAUTION

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

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

## Battery Cleaning

### CAUTION

**To decrease the risk of damage to the vehicle or floor, neutralize any acid before spraying the battery with water.**

**Always wear eye protection when cleaning the battery.**

### NOTICE

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

1. Remove corrosion with a wire brush.
2. Wash the top and sides of the battery with a solution of:
  - 1 tsp. (5 ml) baking soda
  - 1 cup (236 ml) water

Wash all metal components near the battery.

3. Rinse with tap water and dry with shop towels.
4. After the battery is clean and dry, coat the terminals with a commercially available battery terminal spray.

## Battery Charging

### WARNING

**Hydrogen gas is produced as batteries are charged. Charge the battery only in well-ventilated areas.**

**Do not overcharge the battery. Overcharging the battery can cause overheating and possible explosion resulting in severe injury or death.**

### NOTICE

***Use a battery charger that is designed for charging sealed batteries.***

***Keep the battery fully charged.***

***Heavy use of accessories can drain the battery and leave insufficient charge to start the vehicle.***

The sealed battery is a 12 V starter battery that supplies power to the starter and accessories. A starter starts the engine and an internal generator charges the battery while the engine is running. Due to heavy use of accessories, the battery can become discharged even if the engine is running and the generator is operating.

It is important to keep the battery fully charged. Since the battery is sealed, a voltmeter or multimeter is required to check the voltage.

1. Check the battery voltage with a voltmeter or multimeter.
  - If the voltage measured is 12.8 V or higher, the battery is fully charged and requires no further action.
  - If the voltage measured is less than 12.8 V, recharge the battery.
2. Charge the battery with a charger designed for sealed batteries. Follow the instructions supplied from the manufacturer of the charger.

## Discharged Battery

**⚠ WARNING** To decrease the risk of severe injury or death from accidental movement, do not use jumper cables to start a vehicle.

The vehicle has a starter/generator and does not idle. When you start the engine, the starter/generator functions as a starter. With the engine running, it functions as a generator.

The generator can keep the battery charged with short run times, but the generator will not charge a discharged battery.

When the engine starts, the clutches engage and cause the vehicle to move making jump starting both dangerous and impractical.

If the battery has discharged, charge it with a 12-volt charger that is rated at 10 amps or less and according to the instructions supplied by the manufacturer of the charger.

## Battery Disposal

Return used batteries to the manufacturer or lead smelter for recycling purposes. For neutralized spills, put any residue in acid-resistant containers with absorbent material such as sand. Dispose of the container in accordance with state and federal regulations for acid and lead compounds. Contact authorized environmental agencies for information about disposal.

## Battery Storage

### NOTICE

***A battery will self-discharge over time. The rate of discharge varies depending on the ambient temperature, age, and condition of the battery. Check the battery each month during storage and charge as needed to maintain a full charge.***

***A full charge will prevent the battery from freezing in winter conditions.***

If the vehicle will be out of operation for three (3) months or longer, do the following:

1. Remove the battery from the vehicle.
2. Make sure the battery is fully charged.
3. Store it out of the sun in a cool, dry place.
4. Check the battery voltage each month during storage and recharge as needed to maintain a full charge.

## TRANSPORTING THE VEHICLE

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

### Hauling the Vehicle

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

**Do not allow any people on a vehicle being transported on a trailer.**

**Remove the windshield before transporting a vehicle on a trailer.**

**Maximum speed with the canopy top installed is 50 mph (80 kph).**

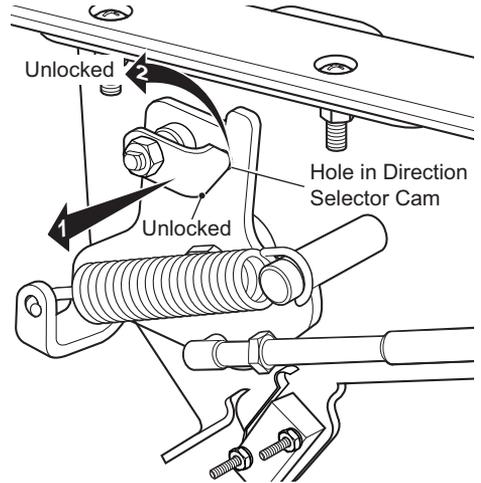
- If the vehicle is being hauled on a trailer or truck at highway speeds, the canopy top must be removed.
- If the vehicle is being hauled on a trailer or truck below highway speeds, check that canopy top hardware is tight and there are no cracks in the canopy top at the mounting points.
- The rated capacity of the hauling trailer or truck must be more than the weight of the vehicle and load plus 1000 lb (454 kg). See GENERAL SPECIFICATIONS for the weight of the vehicle.

1. Drive the vehicle onto the trailer or truck.
2. Engage the parking brake. Leave the direction selector in F (forward).
3. Turn the key switch to the OFF position.
4. To prevent the loss of the key, remove it from the key switch.
5. Make sure the fuel cap is tight.
6. Make sure the seats are secured.
7. Secure the vehicle to the trailer or truck with tie downs, straps, or ropes.

# MAINTENANCE

## Neutral Lock Procedure

1. Lift the seat to access the neutral lock.
2. Pull out and rotate the neutral lock pin handle so that the pointed portion of the handle is to the side of the direction selector cam.
3. Move the direction selector toward the area between F and R. During that motion the pin will snap into the hole in the direction selector mounting bracket preventing movement. When in this position, the direction selector remains locked in the neutral position.



## Towing the Vehicle (Freedom 2+2 Vehicles and Valor 4 Only)



### WARNING

Only tow the vehicle for recovery purposes. Ensure brakes and steering are operable. Always have a person driving the vehicle to steer and operate brakes when it is being towed.

Do not tow the vehicle above 5 mph (8 kph).

Failure to abide by these instructions could cause harm to vehicle and persons involved.

1. Turn the key switch to the OFF position and remove the key from the switch.

### NOTICE

*The direction selector has a neutral lock to prevent the driven clutch from turning the rear wheels when the vehicle is being towed by another vehicle.*

2. Lock the direction selector with the neutral lock to ensure the direction selector remains locked in the neutral position.
3. Attach the vehicle to the towing vehicle with a tow bar that is approved by the manufacturer.
4. Release the parking brake if it is engaged.
5. After towing the vehicle, unlock the direction selector.
  - a. Pull the neutral lock pin handle out.
  - b. Rotate until the pointed portion of the handle fits into the hole in the direction selector cam.

**VEHICLE STORAGE**

Storing a vehicle for 30 days or more requires proper preparation to prevent a build-up of varnish and gum in the fuel system and corrosion in the engine. The following procedure will prepare the vehicle for storage.

Store the vehicle in an area that is well ventilated. Cover the vehicle. Covers designed specifically for vehicles are recommended because they allow enough ventilation to prevent condensation and corrosion.

**⚠ WARNING** Store the vehicle in a clean, dry area. Do not store in an area with a stove, furnace, water heater, any appliance that uses a pilot light, or any device that can create a spark.

Do not handle fuel in an area that is not adequately ventilated. Do not smoke near the fuel tank or refuel near open flame or electrical items which could produce a spark.

When refueling, inspect the fuel cap for leaks or breaks that could result in fuel spillage.

Always wear safety glasses while refueling to prevent possible eye injury from gasoline or gasoline vapor.

Keep hands, clothing, hair, and jewelry away from moving parts. Use caution not to contact hot objects. Raise the rear of the vehicle and support it on jack stands before attempting to run the engine.

**NOTICE** The vehicle can be stored with the old oil left in the engine. The oil must be changed when the vehicle is removed from storage, before resuming operation. This removes condensation that may have accumulated in the crankcase.

Do not leave the parking brake engaged during the storage period. Use wheel chocks to prevent the vehicle from rolling.

1. Clean the vehicle. See *VEHICLE CLEANING AND CARE* on page 34.
2. Turn the key switch to the OFF position and remove the key from the switch.
3. Put the direction selector in the NEUTRAL position.
4. Chock the wheels to prevent the vehicle from rolling. Do not engage the parking brake.
5. Perform all required routine maintenance indicated in the *SCHEDULED MAINTENANCE CHART* on page 30.
6. Fully inflate the tires. See *Tire Pressure* on page 35.
7. Add fuel stabilizer (4 oz. for a full tank of fuel) to the fuel and install the cap securely.
8. Remove the spark plug and pour approximately 1/2 oz. (15 ml) of SAE 5W - 30 weight oil or fogging oil into the cylinder.
9. Rotate the crankshaft by hand several times, and reinstall the spark plug.

**Returning the Vehicle to Service**

1. Change the oil.
2. Check the spark plug for tightness. Tighten if necessary. See *SPARK PLUG* on page 42.
3. Check all items in the daily pre-ride inspection. See *PRE-RIDE INSPECTION* on page 21.
4. Lubricate according to the *SCHEDULED MAINTENANCE CHART* on page 30.



# SPECIFICATIONS

## RXV FLEET

| Item                               | Specification   |
|------------------------------------|---|
| Overall Length                     | 92.5 in (235 cm)  |
| Overall Width                      | 45.0 (120 cm)   |
| Overall Height (No Canopy)         | 47.5 in (116 cm) (Top of steering wheel)                      |
| Overall Height (With Canopy)       | 70 in (178 cm)  |
| Wheel Base                         | 65.7 in (167 cm)  |
| Front Wheel Track                  | 35.5 in (90 cm)   |
| Rear Wheel Track                   | 38.0 in (97 cm)   |
| Ground Clearance (at Differential) | 4 in (10 cm)  |
| Dash / IP Storage Capacity         | 926 in <sup>3</sup> (15,174 cm <sup>3</sup> )                 |
| Engine                             | 4-Cycle 9.15 cu in (150 cc)                                   |
| Valve Train                        | Single Cylinder OHV   |
| Horsepower (kW)                    | 11.5 hp (8.6 kW)  |
| Cooling System                     | Air Cooled  |
| Balancer                           | Internal Counter Rotating Balance Shaft                       |
| Ignition                           | Electronic Inductive Spark (Magneto)                          |
| Electrical System                  | Internal Starter / Generator                                  |
| Battery                            | One, 12-Volt U1 Maintenance-Free (340 CCA, 41 minute reserve) |
| Key or Pedal Start                 | Pedal   |
| Air Cleaner                        | Industrial Rated Dry Cartridge                                |
| Lubrication                        | Pressurized Oil System  |
| Oil Filter                         | No Oil Filter   |
| Fuel System                        | Closed-loop Electronic Fuel Injection                         |
| Fuel Pump Operating Pressure       | 43.5 psi (3 bar)  |
| Max Fuel Volume                    | 5.82 Gallon (22.0 L)  |
| Drive Train                        | Continuously Variable Transmission (CVT)                      |
| Transaxle                          | Differential with helical gears                               |
| Gear Selection                     | Forward - Reverse   |
| Rear Axle Ratio                    | 11.47:1 (Forward) 14.35:1 (Reverse)                           |
| Seating Capacity                   | 2 Person  |
| Dry Weight                         | 710 lb (322 kg) (without battery)                             |
| Curb Weight                        | 726 lb (329 kg)   |
| Maximum Vehicle Weight Capacity    | 500 lb (227 kg)   |
| Outside Clearance Circle           | 19 ft (5.8 m)   |
| Turning Radius                     | 9.5 ft (2.9 m)  |
| Speed (Level Ground)               | 12 mph ± 0.5 mph (19.3 kph ± 0.80 kph)                        |
| Towing Capacity                    | 3 E-Z-GO Golf Cars with approved tow bars                     |
| Steering                           | Double ended rack and pinion                                  |
| Front Suspension                   | Independent A-Arm coil over shock absorbers                   |
| Rear Suspension                    | Mono-Leaf springs with hydraulic shock absorbers              |

## SPECIFICATIONS

|   |  |
|---|--|
| Brakes  | Dual rear wheel mechanical self-adjusting drum   |
| Parking Brake                                     | Self-compensating, single point engagement   |
| Front and Rear Tires                              | 18 X 8.5 - 8 (4 Ply Rated)   |
| Frame   | Welded steel with DuraShield™ powder coat  |
| Body and Finish                                   | Injection Molded TPO   |
| Noise   | Sound pressure; continued A-weighted equal to or less than 67 db(A)  |
| Vibration, WBV                                    | Highest RMS value of weighted acceleration is less than 2.5 m/s <sup>2</sup> .   |
|   | The uncertainty of measurement is 0.16 m/s <sup>2</sup> .  |
| Vibration, HAV                                    | Highest RMS value of weighted acceleration is less than 2.5 m/s <sup>2</sup> .   |
|   | The uncertainty of measurement is 0.27 m/s <sup>2</sup> .  |
|   | Measurement methods were applied per the ISO 2631 and ISO 5349 standards under conditions of typical vehicle surfaces. |
| <i>Some items shown may be optional equipment</i> |  |

**RXV FREEDOM**

| <b>Item</b>                        | <b>Specification</b>  |
|------------------------------------|---|
| Overall Length                     | 92.5 in (235 cm)  |
| Overall Width                      | 45.0 (114 cm)   |
| Overall Height (No Canopy)         | 47.5 in (116 cm) (Top of steering wheel)                      |
| Overall Height (With Canopy)       | 70 in (178 cm)  |
| Wheel Base                         | 65.7 in (167 cm)  |
| Front Wheel Track                  | 35.5 in (90 cm)   |
| Rear Wheel Track                   | 38.0 in (97 cm)   |
| Ground Clearance (at Differential) | 4 in (10 cm)  |
| Dash / IP Storage Capacity         | 926 in <sup>3</sup> (15,174 cm <sup>3</sup> )                 |
| Engine                             | 4-Cycle 9.15 cu in (150 cc)                                   |
| Valve Train                        | Single Cylinder OHV   |
| Horsepower (kW)                    | 11.5 hp (8.6 kW)  |
| Cooling System                     | Air Cooled  |
| Balancer                           | Internal Counter Rotating Balance Shaft                       |
| Ignition                           | Electronic Inductive Spark (Magneto)                          |
| Electrical System                  | Internal Starter / Generator                                  |
| Battery                            | One, 12-Volt U1 Maintenance-Free (340 CCA, 41 minute reserve) |
| Key or Pedal Start                 | Pedal   |
| Air Cleaner                        | Industrial Rated Dry Cartridge                                |
| Lubrication                        | Pressurized Oil System  |
| Oil Filter                         | No Oil Filter   |
| Fuel System                        | Closed-loop Electronic Fuel Injection                         |
| Fuel Pump Operating Pressure       | 43.5 psi (3 bar)  |
| Max Fuel Volume                    | 5.82 Gallon (22.0 L)  |
| Drive Train                        | Continuously Variable Transmission (CVT)                      |
| Transaxle                          | Differential with helical gears                               |
| Gear Selection                     | Forward - Reverse   |
| Rear Axle Ratio                    | 11.47:1 (Forward) 14.35:1 (Reverse)                           |
| Seating Capacity                   | 2 Person  |
| Dry Weight                         | 710 lb (322 kg) (without battery)                             |
| Curb Weight                        | 726 lb (329 kg)   |
| Maximum Vehicle Weight Capacity    | 500 lb (227 kg)   |
| Outside Clearance Circle           | 19 ft (5.8 m)   |
| Turning Radius                     | 9.5 ft (2.9 m)  |
| Speed (Level Ground)               | 19 mph ± 0.5 mph (31 kph ± 0.80 kph)                          |
| Towing Capacity                    | 3 E-Z-GO Golf Cars with approved tow bars                     |
| Steering                           | Double ended rack and pinion                                  |
| Front Suspension                   | Independent A-Arm coil over shock absorbers                   |
| Rear Suspension                    | Mono-Leaf springs with hydraulic shock absorbers              |
| Brakes                             | Dual rear wheel mechanical self-adjusting drum                |
| Parking Brake                      | Self-compensating, single point engagement                    |

## SPECIFICATIONS

|   |  |
|---|--|
| Front and Rear Tires                              | 18 X 8.5 - 8 (4 Ply Rated)   |
| Frame   | Welded steel with DuraShield™ powder coat  |
| Body and Finish                                   | Injection Molded TPO   |
| Noise   | Sound pressure; continued A-weighted equal to or less than 67 db(A)  |
| Vibration, WBV                                    | Highest RMS value of weighted acceleration is less than 2.5 m/s <sup>2</sup> .   |
|   | The uncertainty of measurement is 0.16 m/s <sup>2</sup> .  |
| Vibration, HAV                                    | Highest RMS value of weighted acceleration is less than 2.5 m/s <sup>2</sup> .   |
|   | The uncertainty of measurement is 0.27 m/s <sup>2</sup> .  |
|   | Measurement methods were applied per the ISO 2631 and ISO 5349 standards under conditions of typical vehicle surfaces. |
| <i>Some items shown may be optional equipment</i> |  |

**RXV FREEDOM 2+2**

| Item                               | Specification   |
|------------------------------------|---|
| Overall Length                     | 104.5 in (265.5 cm)   |
| Overall Width                      | 45.0 (114 cm)   |
| Overall Height (No Canopy)         | 48 in (119 cm) (Top of steering wheel)                        |
| Overall Height (With Canopy)       | 75 in (191 cm)  |
| Wheel Base                         | 65.7 in (167 cm)  |
| Front Wheel Track                  | 35.5 in (90 cm)   |
| Rear Wheel Track                   | 38.0 in (97 cm)   |
| Ground Clearance (at Differential) | 4 in (10 cm)  |
| Dash / IP Storage Capacity         | 926 in <sup>3</sup> (15,174 cm <sup>3</sup> )                 |
| Engine                             | 4-Cycle 9.15 cu in (150 cc)                                   |
| Valve Train                        | Single Cylinder OHV   |
| Horsepower (kW)                    | 11.5 hp (8.6 kW)  |
| Cooling System                     | Air Cooled  |
| Balancer                           | Internal Counter Rotating Balance Shaft                       |
| Ignition                           | Electronic Inductive Spark (Magneto)                          |
| Electrical System                  | Internal Starter / Generator                                  |
| Battery                            | One, 12-Volt U1 Maintenance-Free (340 CCA, 41 minute reserve) |
| Key or Pedal Start                 | Pedal   |
| Air Cleaner                        | Industrial Rated Dry Cartridge                                |
| Lubrication                        | Pressurized Oil System  |
| Oil Filter                         | No Oil Filter   |
| Fuel System                        | Closed-loop Electronic Fuel Injection                         |
| Fuel Pump Operating Pressure       | 43.5 psi (3 bar)  |
| Max Fuel Volume                    | 5.82 Gallon (22.0 L)  |
| Drive Train                        | Continuously Variable Transmission (CVT)                      |
| Transaxle                          | Differential with helical gears                               |
| Gear Selection                     | Forward - Reverse   |
| Rear Axle Ratio                    | 11.47:1 (Forward) 14.35:1 (Reverse)                           |
| Seating Capacity                   | 4 Person  |
| Dry Weight                         | 884 lb (400 kg) (without battery)                             |
| Curb Weight                        | 900 lb (408 kg)   |
| Maximum Vehicle Weight Capacity    | 800 lb (363 kg)   |
| Maximum Load Deck Weight Capacity  | 300 lb (136 kg)   |
| Outside Clearance Circle           | 19 ft (5.8 m)   |
| Turning Radius                     | 9.5 ft (2.9 m)  |
| Speed (Level Ground)               | 19 mph $\pm$ 0.5 mph (31 kph $\pm$ 0.80 kph)                  |
| Towing Capacity                    | N/A   |
| Steering                           | Double ended rack and pinion                                  |
| Front Suspension                   | Independent A-Arm coil over shock absorbers                   |
| Rear Suspension                    | Mono-Leaf springs with hydraulic shock absorbers              |
| Brakes                             | Dual rear wheel mechanical self-adjusting drum                |

## SPECIFICATIONS

|   |  |
|---|--|
| Parking Brake                                     | Self-compensating, single point engagement   |
| Front and Rear Tires                              | 18 X 8.5 - 8 (4 Ply Rated)   |
| Frame   | Welded steel with DuraShield™ powder coat  |
| Body and Finish                                   | Injection Molded TPO   |
| Noise   | Sound pressure; continued A-weighted equal to or less than 67 db(A)  |
| Vibration, WBV                                    | Highest RMS value of weighted acceleration is less than 2.5 m/s <sup>2</sup> .   |
|   | The uncertainty of measurement is 0.16 m/s <sup>2</sup> .  |
| Vibration, HAV                                    | Highest RMS value of weighted acceleration is less than 2.5 m/s <sup>2</sup> .   |
|   | The uncertainty of measurement is 0.27 m/s <sup>2</sup> .  |
|   | Measurement methods were applied per the ISO 2631 and ISO 5349 standards under conditions of typical vehicle surfaces. |
| <i>Some items shown may be optional equipment</i> |  |

**VALOR**

| <b>Item</b>                        | <b>Specification</b>  |
|------------------------------------|---|
| Overall Length                     | 92.5 in (235 cm)  |
| Overall Width                      | 45.0 (114 cm)   |
| Overall Height (No Canopy)         | 48.5 in (124 cm) (Top of steering wheel)                      |
| Overall Height (With Canopy)       | 71 in (181 cm)  |
| Wheel Base                         | 65.7 in (167 cm)  |
| Front Wheel Track                  | 35.5 in (90 cm)   |
| Rear Wheel Track                   | 38.0 in (97 cm)   |
| Ground Clearance (at Differential) | 4 in (10 cm)  |
| Dash / IP Storage Capacity         | 926 in <sup>3</sup> (15,174 cm <sup>3</sup> )                 |
| Engine                             | 4-Cycle 9.15 cu in (150 cc)                                   |
| Valve Train                        | Single Cylinder OHV   |
| Horsepower (kW)                    | 11.5 hp (8.6 kW)  |
| Cooling System                     | Air Cooled  |
| Balancer                           | Internal Counter Rotating Balance Shaft                       |
| Ignition                           | Electronic Inductive Spark (Magneto)                          |
| Electrical System                  | Internal Starter / Generator                                  |
| Battery                            | One, 12-Volt U1 Maintenance-Free (340 CCA, 41 minute reserve) |
| Key or Pedal Start                 | Pedal   |
| Air Cleaner                        | Industrial Rated Dry Cartridge                                |
| Lubrication                        | Pressurized Oil System  |
| Oil Filter                         | No Oil Filter   |
| Fuel System                        | Closed-loop Electronic Fuel Injection                         |
| Fuel Pump Operating Pressure       | 43.5 psi (3 bar)  |
| Max Fuel Volume                    | 5.82 Gallon (22.0 L)  |
| Drive Train                        | Continuously Variable Transmission (CVT)                      |
| Transaxle                          | Differential with helical gears                               |
| Gear Selection                     | Forward - Reverse   |
| Rear Axle Ratio                    | 11.47:1 (Forward) 14.35:1 (Reverse)                           |
| Seating Capacity                   | 2 Person  |
| Dry Weight                         | 710 lb (322 kg) (without battery)                             |
| Curb Weight                        | 726 lb (329 kg)   |
| Maximum Vehicle Weight Capacity    | 500 lb (227 kg)   |
| Outside Clearance Circle           | 19 ft (5.8 m)   |
| Turning Radius                     | 9.5 ft (2.9 m)  |
| Speed (Level Ground)               | 19 mph ± 0.5 mph (31 kph ± 0.80 kph)                          |
| Towing Capacity                    | N/A   |
| Steering                           | Double ended rack and pinion                                  |
| Front Suspension                   | Independent A-Arm coil over shock absorbers                   |
| Rear Suspension                    | Mono-Leaf springs with hydraulic shock absorbers              |
| Brakes                             | Dual rear wheel mechanical self-adjusting drum                |
| Parking Brake                      | Self-compensating, single point engagement                    |

## SPECIFICATIONS

|   |  |
|---|--|
| Front and Rear Tires                              | KENDA K500, 20x8-10, 6 Ply   |
| Frame   | Welded steel with DuraShield™ powder coat  |
| Body and Finish                                   | Injection Molded TPO   |
| Noise   | Sound pressure; continued A-weighted equal to or less than 67 db(A)  |
| Vibration, WBV                                    | Highest RMS value of weighted acceleration is less than 2.5 m/s <sup>2</sup> .   |
|   | The uncertainty of measurement is 0.16 m/s <sup>2</sup> .  |
| Vibration, HAV                                    | Highest RMS value of weighted acceleration is less than 2.5 m/s <sup>2</sup> .   |
|   | The uncertainty of measurement is 0.27 m/s <sup>2</sup> .  |
|   | Measurement methods were applied per the ISO 2631 and ISO 5349 standards under conditions of typical vehicle surfaces. |
| <i>Some items shown may be optional equipment</i> |  |

**VALOR 4**

| Item                               | Specification   |
|------------------------------------|---|
| Overall Length                     | 104.5 in (265.5 cm)   |
| Overall Width                      | 45.0 (114 cm)   |
| Overall Height (No Canopy)         | 49 in (125 cm) (Top of steering wheel)                        |
| Overall Height (With Canopy)       | 76 in (193 cm)  |
| Wheel Base                         | 65.7 in (167 cm)  |
| Front Wheel Track                  | 35.5 in (90 cm)   |
| Rear Wheel Track                   | 38.0 in (97 cm)   |
| Ground Clearance (at Differential) | 4 in (10 cm)  |
| Dash / IP Storage Capacity         | 926 in <sup>3</sup> (15,174 cm <sup>3</sup> )                 |
| Engine                             | 4-Cycle 9.15 cu in (150 cc)                                   |
| Valve Train                        | Single Cylinder OHV   |
| Horsepower (kW)                    | 11.5 hp (8.6 kW)  |
| Cooling System                     | Air Cooled  |
| Balancer                           | Internal Counter Rotating Balance Shaft                       |
| Ignition                           | Electronic Inductive Spark (Magneto)                          |
| Electrical System                  | Internal Starter / Generator                                  |
| Battery                            | One, 12-Volt U1 Maintenance-Free (340 CCA, 41 minute reserve) |
| Key or Pedal Start                 | Pedal   |
| Air Cleaner                        | Industrial Rated Dry Cartridge                                |
| Lubrication                        | Pressurized Oil System  |
| Oil Filter                         | No Oil Filter   |
| Fuel System                        | Closed-loop Electronic Fuel Injection                         |
| Fuel Pump Operating Pressure       | 43.5 psi (3 bar)  |
| Max Fuel Volume                    | 5.82 Gallon (22.0 L)  |
| Drive Train                        | Continuously Variable Transmission (CVT)                      |
| Transaxle                          | Differential with helical gears                               |
| Gear Selection                     | Forward - Reverse   |
| Rear Axle Ratio                    | 11.47:1 (Forward) 14.35:1 (Reverse)                           |
| Seating Capacity                   | 4 Person  |
| Dry Weight                         | 884 lb (400 kg) (without battery)                             |
| Curb Weight                        | 900 lb (408 kg)   |
| Maximum Vehicle Weight Capacity    | 800 lb (363 kg)   |
| Maximum Load Deck Weight Capacity  | 300 lb (136 kg)   |
| Outside Clearance Circle           | 19 ft (5.8 m)   |
| Turning Radius                     | 9.5 ft (2.9 m)  |
| Speed (Level Ground)               | 19 mph ± 0.5 mph (31 kph ± 0.80 kph)                          |
| Towing Capacity                    | N/A   |
| Steering                           | Double ended rack and pinion                                  |
| Front Suspension                   | Independent A-Arm coil over shock absorbers                   |
| Rear Suspension                    | Mono-Leaf springs with hydraulic shock absorbers              |
| Brakes                             | Dual rear wheel mechanical self-adjusting drum                |

## SPECIFICATIONS

|   |  |
|---|--|
| Parking Brake                                     | Self-compensating, single point engagement   |
| Front and Rear Tires                              | KENDA K500, 20x8-10, 6 Ply   |
| Frame   | Welded steel with DuraShield™ powder coat  |
| Body and Finish                                   | Injection Molded TPO   |
| Noise   | Sound pressure; continued A-weighted equal to or less than 67 db(A)  |
| Vibration, WBV                                    | Highest RMS value of weighted acceleration is less than 2.5 m/s <sup>2</sup> .   |
|   | The uncertainty of measurement is 0.16 m/s <sup>2</sup> .  |
| Vibration, HAV                                    | Highest RMS value of weighted acceleration is less than 2.5 m/s <sup>2</sup> .   |
|   | The uncertainty of measurement is 0.27 m/s <sup>2</sup> .  |
|   | Measurement methods were applied per the ISO 2631 and ISO 5349 standards under conditions of typical vehicle surfaces. |
| <i>Some items shown may be optional equipment</i> |  |









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**International:**

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

**California Proposition 65**



**WARNING**

The Engine Exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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

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