



OWNER'S MANUAL

SHUTTLE 4 EFI



 WARNING

Read and comply with all of the instructions and safety precautions in this manual and on all product labels.

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

California Proposition 65



WARNING

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

 WARNING

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

OWNER'S MANUAL

GASOLINE EFI **Shuttle 4**

MODEL YEAR 2020 - Current

MANUFACTURER INFORMATION

Textron Specialized Vehicles, Inc.

1451 Marvin Griffin Road.

Augusta, Georgia, USA 30906-3852

Dealer: 800-296-4804

Consumer: 877-394-6727

www.cushman.com

www.trackeroffroad.com

WELCOME

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

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

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

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

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

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

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INTRODUCTION

MANUFACTURER'S INTENDED USE	1
WARRANTY AND REGISTRATION	1
EXHAUST EMISSIONS	1
BATTERY PROLONGED STORAGE	2
BATTERY DISPOSAL	2
VEHICLE IDENTIFICATION NUMBERS	2
REPAIR AND PARTS MANUALS	2

SAFETY LABELS

SAFETY LABELS	3
Operation (P/N 614121)	3
Operation (P/N 601781)	3
Instrument Panel Labels (P/N 71127G01 / 71131G01)	3
Engine Warning CE (P/N 74093G01)	4
Governor Warning (P/N 608527)	4
Governor Warning CE (P/N 608822)	4
Direction Selector CE (P/N 73317G01)	4
Load Bed (P/N 74821G01)	5
Rear-Facing Seat/Load Deck Warning (P/N 697425)	5
Patent Label (P/N 10005569)	5

SAFETY

MAXIMUM CARGO LOAD / MAXIMUM WEIGHT CAPACITY	7
TIRE PRESSURE	7
OPERATOR SAFETY	7
Unauthorized Operation	8
Operating without Instruction	8
Alcohol or Drugs	8
Passenger	8
Before Operating	9
Load Operation	9
Fuel Handling Guidelines	9
Carbon Monoxide Exposure	9
Driving in Reverse	9
Driving a Damaged Vehicle	9
Driving at Maximum Speeds	10
Driving on Pavement	10
Driving on Public Roads	10
Turning	10
Driving Uphill	10
Driving Downhill	10
Stalling on a Hill	10
Tires	10
Slippery Terrain	10
HOT EXHAUST SYSTEMS	10
VEHICLE LIFTING	10
VEHICLE MODIFICATION	11

TABLE OF CONTENTS

MAINTENANCE SAFETY 11

FEATURES AND CONTROLS

KEY SWITCH 13

FUEL GAUGE WITH LOW OIL PRESSURE INDICATOR 13

CUP HOLDER 13

STEERING WHEEL 13

TURN SIGNAL (IF EQUIPPED) 13

FRONT HYDRAULIC BRAKES (IF EQUIPPED) 13

BRAKE PEDALS 13

 Brake Pedal 13

 Parking Brake Pedal 13

HORN 14

ACCELERATOR PEDAL 14

DIRECTION SELECTOR 14

EFI MALFUNCTION INDICATOR LIGHT (MIL) 14

CHOKE 14

HIP RESTRAINTS 14

SEAT BOTTOM 14

GLOVE BOX / STORAGE COMPARTMENTS 14

FUEL FILL 14

CANOPY TOP AND WINDSHIELD 15

TRUCK BED 15

 Manual Bed Release Lever 15

OPERATION

SAFETY 17

BEFORE INITIAL USE 17

PRE-RIDE INSPECTION 17

ENGINE BREAK-IN 18

CVT BELT BREAK-IN 18

FUEL 18

ENVIRONMENTAL AWARENESS 19

STARTING AND STOPPING THE ENGINE 19

 Starting on a Hill 19

ACCELERATING 20

BRAKING 20

DRIVING PROCEDURE 20

 Coasting 20

DRIVING WITH A PASSENGER 20

SLIPPERY SURFACES 21

DRIVING UPHILL 21

TRAVERSING HILLSIDES 21

DRIVING DOWNHILL 21

STALLING ON A HILL 22

DRIVING IN REVERSE 22

PARKING THE VEHICLE 22

BATTERY 22

HAULING CARGO 23

Maximum Cargo Load / Maximum Weight Capacity	23
TRUCK BED OPERATION	24
Load Bed (P/N 74821G01)	24
DUMPING THE TRUCK BED	25
VEHICLE MAINTENANCE	
MAINTENANCE SAFETY	27
SCHEDULED MAINTENANCE	27
Initial Service Requirements	27
Severe Use Conditions	27
SCHEDULED MAINTENANCE CHART	28
RECOMMENDED LUBRICANTS AND FLUIDS	30
REPLACEMENT OF MAINTENANCE ITEMS	30
LIFTING THE VEHICLE	31
Lifting Front	31
Lifting Rear	31
Lowering Vehicle	31
VEHICLE CLEANING AND CARE	32
Washing the Vehicle	32
Polishing the Vehicle	32
TIRES	32
Tire Pressure	33
Tire Repair	33
Tire Replacement	33
WHEELS	33
Wheel Removal	33
Wheel Installation	34
LIGHTS	34
Halogen Headlight Bulb Replacement	34
LED Headlight Assembly Replacement	34
LED Taillight	35
FUSE REPLACEMENT	35
FOUR CYCLE ENGINE	35
Engine Specifications	35
CHECK THE OIL LEVEL	35
CHANGE THE ENGINE OIL	36
Remove the Engine Oil	36
Change the Oil Filter	37
Refill Oil	37
STARTER/GENERATOR BELT	38
Adjusting the Belt	38
AIR INTAKE AND COOLING FINS	38
REAR AXLE	39
Checking the Axle Oil Level	39
AIR FILTER	39
LUBRICATION	39
SPARK PLUG	40
.....	40

TABLE OF CONTENTS

MALFUNCTION INDICATOR LIGHT (MIL)41

BRAKES42

 Periodic Brake Test42

 Brake Fluid (If Equipped w/ Hydraulic Brakes)42

 Check Brake Fluid Level43

BATTERY43

 Battery Cleaning43

 Battery Charging44

 Discharged Battery44

 Battery Disposal44

 Battery Storage44

TRANSPORTING THE VEHICLE45

 Hauling the Vehicle45

 Towing the Vehicle45

VEHICLE STORAGE46

 Remove from Storage46

SPECIFICATIONS

SHUTTLE 447

INTRODUCTION

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



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



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



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



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



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



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

Register your vehicle at www.cushman.com.

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 your vehicle at www.cushman.com.

A literature package is included with the purchase of a new vehicle. The package contains the following items:

- Vehicle Warranty Statement
- EPA and California Emission Control Warranty Statement (EVAP emission)
- Emission Control System Warranty Statement (Engine emission)
- Vehicle Registration Card

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

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

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

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

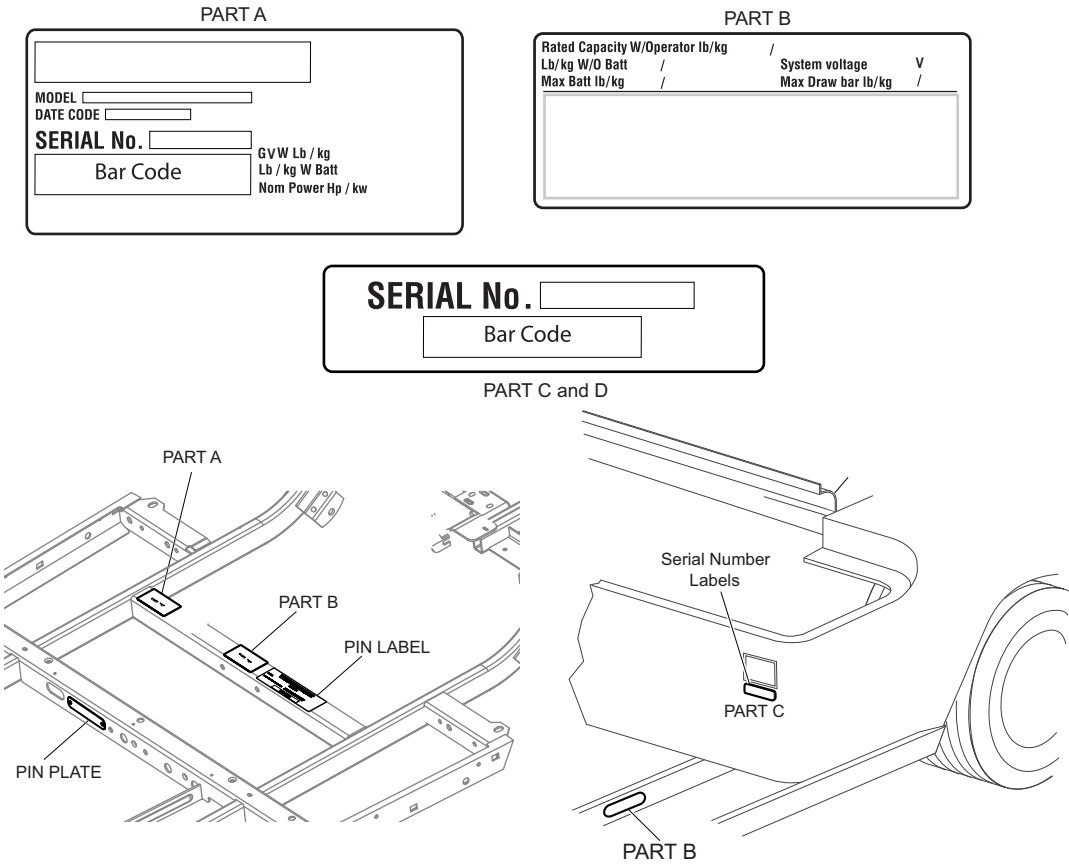
Batteries discharge over time. The rate of discharge changes according to the ambient temperature, the age and condition of the batteries.

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 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



Record the vehicle identification numbers in the spaces provided below. These identification numbers is required when ordering parts from your authorized dealer.

Vehicle Model Number: _____

Frame PIN: _____

REPAIR AND PARTS MANUALS

The following manuals can be purchased through your dealer:

- repair manual
- parts manual

SAFETY LABELS

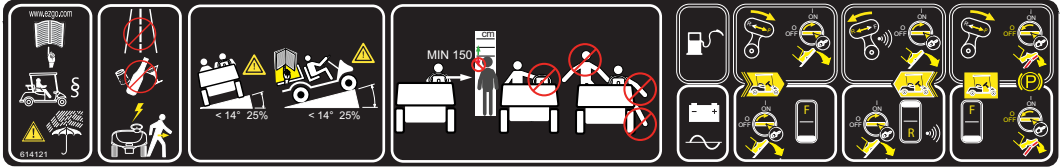
SAFETY LABELS

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

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

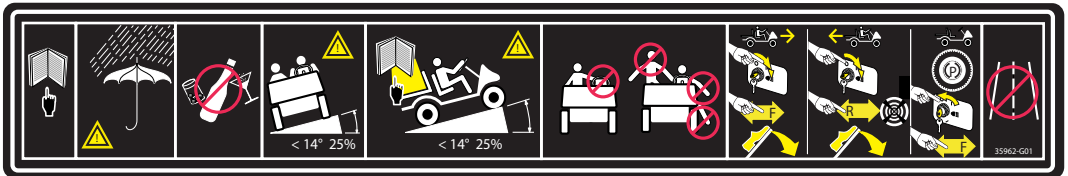
Operation (P/N 614121)

Located on the dash panel.



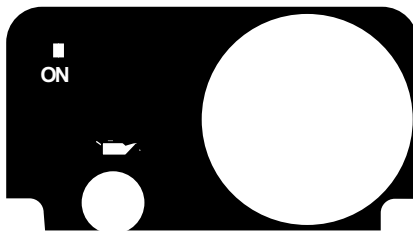
Operation (P/N 601781)

Located on the dash panel.

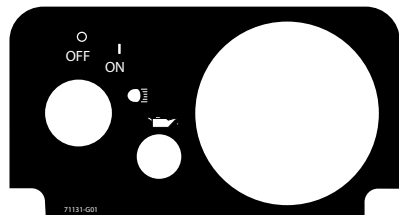


Instrument Panel Labels (P/N 71127G01 / 71131G01)

Located on the instrument panel (For CE vehicles only)



71127G01



71131G01

SAFETY

Engine Warning CE (P/N 74093G01)

NO TAMPERING
KEEP HANDS OUT

DO NOT EXPOSE
TO FLAME

GROUND
FUEL PUMP

NEGATIVE
GROUND BATTERY

SHORTING BATTERY TERMINALS
CAN CAUSE EXPLOSION

DO NOT SPILL FUEL ON
HOT ENGINE

CLEAN GASOLINE SPILLS WITH WATER
BEFORE STARTING ENGINE

Governor Warning (P/N 608527)

Located on the throttle-rod guard.

WARNING

DO NOT TAMPER WITH OR ATTEMPT TO CHANGE THE ADJUSTMENT OF THE GOVERNOR. GOVERNOR TAMPERING CAN RESULT IN SERIOUS PERSONAL INJURY AND WILL VOID THE VEHICLE WARRANTY.

608527

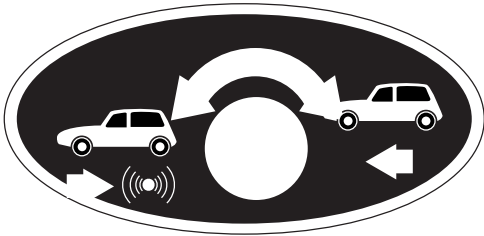
Governor Warning CE (P/N 608822)

www.ezgo.com

608822

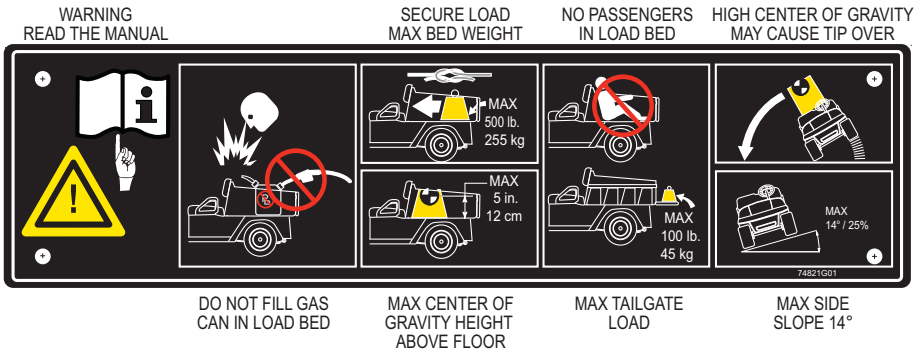
Direction Selector CE (P/N 73317G01)

Located at the direction selector on the front seat pod.

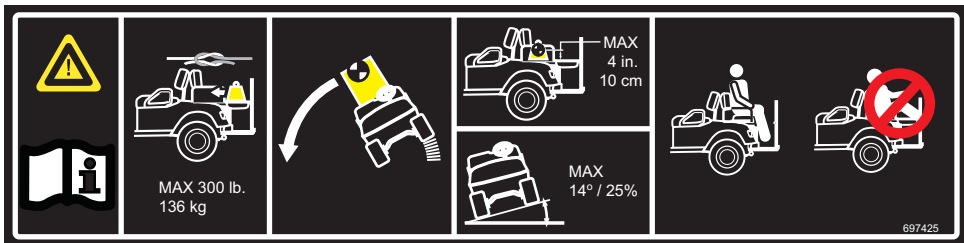


Load Bed (P/N 74821G01)

Located on the truck bed.



Rear-Facing Seat/Load Deck Warning (P/N 697425)



Patent Label (P/N 10005569)

Located in the glove box (driver side)

PATENT NOTICE

THIS PRODUCT OR COMPONENTS THEREOF MAY BE COVERED BY ONE OR MORE PATENTS OR PENDING APPLICATIONS.

See patents.txtsv.com for details.

10005569

SAFETY

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

Certain replacement parts can be used independently and/or in combination with other accessories to modify a manufactured vehicle to permit the vehicle to operate at or in excess of 20 mph. When a 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.

The manufacturer will NOT approve Distributor, Dealer or customer changes that change a 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 weight capacities can cause the loss of vehicle control and possible injury or death.

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

TIRE PRESSURE



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

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

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

OPERATOR SAFETY

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



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

- Read this entire manual and all product labels carefully. Follow the safety information and operating procedures described.
- Operate your vehicle responsibly to prevent dangerous conditions for the operator, passengers and other people in the area of operation
- Operate the vehicle responsibly and keep the vehicle in safe condition of operation.
- A damaged vehicle or a vehicle that is not functioning properly is dangerous and must not be operated until repairs are made.
- Do not carry a passenger until you have a minimum of two hours driving experience on this vehicle.

SAFETY

- 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 17.
- 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 you exit the vehicle.
- Remove the ignition key when the vehicle is not in use to prevent accidental starting, unauthorized use by someone below the age of 16, or someone without a driver's license and proper training.
- Drive the vehicle at appropriate speeds for the terrain and conditions. Be aware of environmental conditions that change the terrain and your ability to control the vehicle.
- Do not drive on excessively steep hills. Evaluate the terrain before descending a hill. Drive slowly and deliberately. Use the brake to limit speed and maintain control. Sudden braking or turning can cause the loss of vehicle control. Drive straight down the hill. Do not drive across the hill.
- Operate only in approved areas. Follow all applicable safety rules for the area.
- Avoid driving on terrain that is too rough for your vehicle's capabilities and your driving skills.
- Before you drive in the reverse direction, make sure the area behind the vehicle is clear. Accelerate slowly and avoid making sharp turns.
- Make sure the direction selector is in the correct position before pressing the accelerator pedal.
- Decrease the speed before and during turns.
- Decrease the speed when driving on wet or slippery surfaces.
- Bring the vehicle to a complete stop before moving the direction selector.
- Do not exceed the cargo or vehicle weight capacities. Do not exceed the occupant capacity. See *SPECIFICATIONS* on page 47 for the vehicle load and seat capacity.
- If there is a risk of lightning, leave the vehicle and look for a safe location to wait until the lightning has stopped.

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

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

Unauthorized Operation



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

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

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

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

Operating without Instruction



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

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

Alcohol or Drugs



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

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

Passenger

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

For additional safety and operational information, see *Driving with a Passenger* on page 20.

Before Operating

Perform the *PRE-RIDE INSPECTION* on page 17 before each use to make sure the vehicle is in safe operating condition. Failure to inspect and confirm that the vehicle is safe to operate increases the risk of an accident.

Follow all inspection and maintenance procedures and schedules described in this owner's manual. See *SCHEDULED MAINTENANCE* on page 27.

Load Operation

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

Do not exceed weight capacities specified for your vehicle. Capacities are listed in *Maximum Cargo Load / Maximum Weight Capacity* on page 7 of this manual, and also on the label affixed to the vehicle. As passenger weight increases, cargo weight needs to be adjusted to ensure the maximum vehicle weight capacity is not exceeded.

Tire pressure must be adjusted to accommodate the load being carried. See *Tire Pressure* on page 7 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 18.

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.

Driving in Reverse

Make sure the area behind the vehicle is clear before operating in reverse. After making sure it is clear and safe to operate in reverse, accelerate slowly. Avoid making sharp turns in reverse. Refer to *Driving in Reverse* on page 22 for operational information.

Driving a Damaged Vehicle

Driving a damaged vehicle is not safe.

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

SAFETY

Driving at Maximum Speeds

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

Driving on Pavement

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

If possible, avoid driving on paved surfaces. If unavoidable, drive slowly, travel short distances, and avoid sudden turns or stops.

Driving on Public Roads

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

Turning

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

Driving Uphill

Do not climb hills that are too steep for the vehicle or your driving abilities. Loss of vehicle control or rollover can result from climbing hills incorrectly. Refer to *Driving Uphill* on page 21 for operational information.

Driving Downhill

Inspect the terrain before descending a hill. Avoid driving across hills. Use the brake to limit speed and maintain control. Loss of vehicle control or rollover can result from driving downhill incorrectly. Refer to *Driving Downhill* on page 21 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 22 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 7.

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 21 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 31.

VEHICLE MODIFICATION

Do not install any accessory not approved by your dealer. 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 manufactured approved accessories, and familiarize yourself with their function and effect on the vehicle.

MAINTENANCE SAFETY

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



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

- Read this entire manual and all product labels carefully. Follow the procedures and comply with the safety information in this manual while performing vehicle service or maintenance.
- Use the tools shown in the tool list and wear the specified safety equipment when performing vehicle service or maintenance.
- Remove all jewelry before servicing the vehicle.
- Do not allow loose clothing or hair to contact the moving parts.
- Do not touch hot objects.
- The drive wheels must be lifted and supported on jack stands before performing any service to the power-train while the motor is in operation.
- Use wheel chocks and support the vehicle on jack stands. NEVER get under a vehicle that is supported by a jack. Lift the vehicle following the instructions. See *LIFTING THE VEHICLE* on page 31.



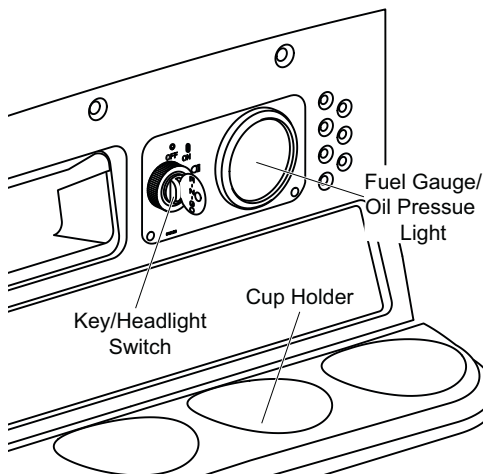
- When servicing the vehicle, always wear eye protection. Be careful when working around batteries, using solvents, or compressed air.
 - Use insulated tools within the battery area to prevent sparks or battery explosion.
 - To prevent the risk of battery explosion, keep all flammable materials, open 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

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

KEY SWITCH

- Located on the dash panel, the combination key/light switch controls the basic electrical system of the vehicle, as well as the front and rear lights. The switch has three positions; OFF, ON, and LIGHTS.
- OFF; vehicle is disabled.
- ON; activates vehicle electronics and accessory power.
- "HEADLIGHT SYMBOL" All functions are activated and the lights are on.



FUEL GAUGE WITH LOW OIL PRESSURE INDICATOR

The fuel gauge indicates the amount of gasoline in the fuel tank. F indicates a full tank and E indicates an empty fuel tank. The fuel gauge has a low oil pressure indicator. A low engine oil pressure condition is shown with a red indicator light.

CUP HOLDER

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

STEERING WHEEL

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

TURN SIGNAL (If Equipped)

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

FRONT HYDRAULIC BRAKES (IF EQUIPPED)

Some vehicles are equipped with optional hydraulic brakes. The master cylinder is located on the passenger side behind the front wheel.

Press the button and lower the lever to disengage the parking brake.

BRAKE PEDALS

The brake pedal on vehicles with mechanical brakes is a combination brake and parking brake pedal.

Brake Pedal

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

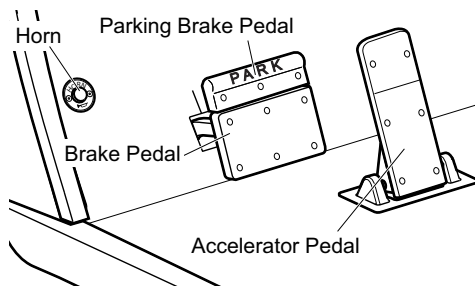
Press the brake pedal to slow the speed or bring the vehicle to a complete stop.

Parking Brake Pedal

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

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

Quickly press and release the lower pedal to disengage.



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

FEATURES AND CONTROLS

is not the recommended method to release the parking brake.

HORN

The horn switch is on the kick panel. Activate the horn by stepping on the horn switch.

ACCELERATOR PEDAL

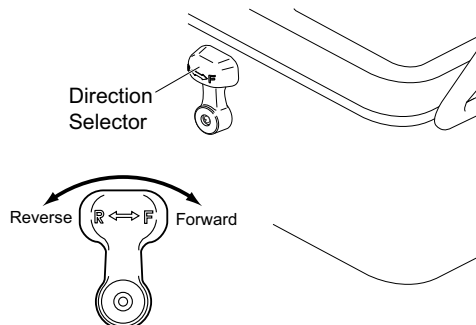
The accelerator pedal is the right pedal on the floorboard. It activates the engine and controls the acceleration of the vehicle.

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

DIRECTION SELECTOR

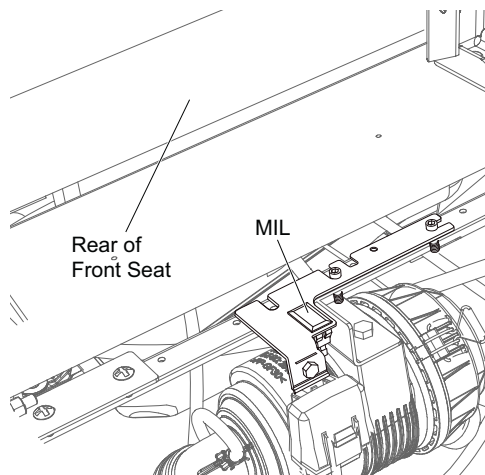
The direction selector is on the seat panel and allows the operator to select F (forward) or R (reverse) to control the direction of travel.

The direction selector has a reverse warning buzzer that activates when in the R position.



EFI MALFUNCTION INDICATOR LIGHT (MIL)

The MIL is located on the rear of the seat frame. The MIL is located under the rear forward facing seat. The MIL can be used to diagnose a problem and whether a technician will be required to service the vehicle. See *MALFUNCTION INDICATOR LIGHT (MIL)* on page 57.



CHOKE

This vehicle is equipped with Electronic Fuel Injection and does not require a choke.

HIP RESTRAINTS

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

SEAT BOTTOM

Each bench seat is designed for two occupants.

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

On the front seat pod, the two T-knobs must be removed prior to pivoting the seat bottom.

GLOVE BOX / STORAGE COMPARTMENTS

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

FUEL FILL

The fuel fill is located under the rear seat.

CANOPY TOP AND WINDSHIELD

⚠ WARNING

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

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

⚠ CAUTION

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

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

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

TRUCK BED

To prevent injury and property damage, follow all warnings, procedures, and weight capacities described on the label in the truck bed as well as the ones in this owner's manual. See *HAULING CARGO* and *DUMPING THE TRUCK BED* on page 25.

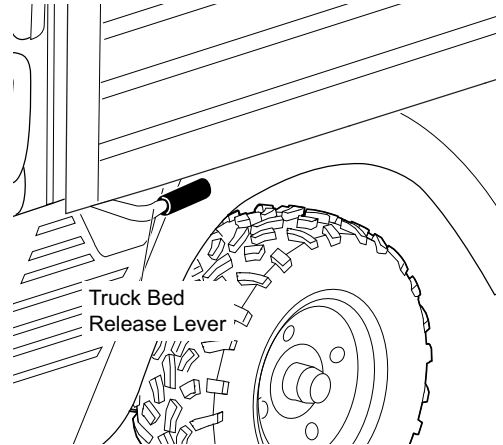
The tailgate can be opened for loading and unloading cargo.

Open the tailgate latches and lower the tailgate.

Lift the tailgate and secure the latches to close the tailgate.

Manual Bed Release Lever

can be tilted by lifting up the release lever on either side of the vehicle. See *DUMPING THE TRUCK BED* on page 25.



OPERATION

SAFETY



WARNING

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

this owner's manual.

BEFORE INITIAL USE

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

- Remove the protective plastic from the seats.
- Check for possible leaks that may have developed during shipment of the vehicle.
- Charge 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.	42
Hydraulic brakes (if equipped)	Check for brake fluid level.	
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.	
CV boots	Inspect for damage. Replace if necessary.	
Steering	Check for smooth and free operation.	
Tires	Check condition and pressure.	32
Wheel hardware	Check for loose or missing hardware.	
Frame hardware	Check for loose or missing hardware.	
Fuel and engine oil	Check for correct levels.	30
Fluid leakage	Inspect vehicle for leaks.	
Switches	Check operation.	
Reverse warning alarm	Check operation.	
Air filter	Inspect; clean or replace if necessary.	39
Headlights	Check operation.	34
Brake light / taillights	Check operation.	34
Starter / generator belt	Check condition.	38

OPERATION

ENGINE BREAK-IN

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

The engine break-in period is:

- the first 50 operating hours of a new engine
- the first 50 operating hours of an engine that has been completely disassembled
- the first few minutes until the engine is warm at each operation

During these break-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.

CVT BELT BREAK-IN

The CVT belt break-in period is the first hour of operation on each new belt.

During the CVT belt break-in period, follow the same guidelines as described for engine break-in operation. See *Engine Break-In* on page 18.

FUEL

Refer to *Fuel Handling Guidelines* on page 9 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 front seat on the passenger side of the vehicle.
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.

ENVIRONMENTAL AWARENESS

WARNING

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

CAUTION

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

Always be respectful of the environment.

Respect all wildlife and their habitat.

Respect private property and comply with all local laws and regulations governing the use of light duty utility vehicles.

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

If operating the vehicle on private property, obtain permission from the owner prior to entering their property.

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 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.

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

OPERATION

ACCELERATING

WARNING

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

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

Apply slow, steady pressure to the accelerator pedal to increase vehicle speed. When you release the accelerator pedal, the engine will stop running.

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

BRAKING

WARNING

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

1. Release the accelerator pedal completely.
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.

DRIVING PROCEDURE

1. Perform the pre-ride inspection. See page 17.
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 this 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 your 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 A PASSENGER

- All passengers must be at least 59 in. (150 cm) tall. Passengers must be able to sit with their back against the seat and both feet on the floor.
- Do not allow more than one passenger on the front seat and two 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 a passenger. Allow more time and distance for braking.

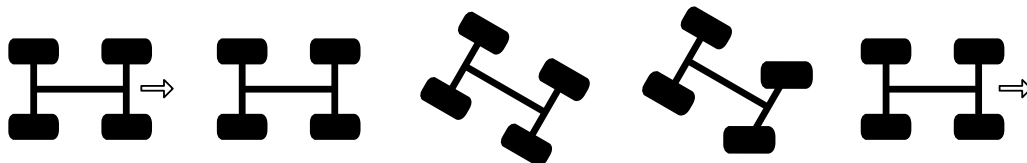
SLIPPERY SURFACES



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, muddy trails, loose gravel or freezing temperatures, follow these guidelines:

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



DRIVING UPHILL

When driving up a hill, follow these guidelines:

- Drive straight up the hill.
- Avoid excessively steep hills.
- Keep both feet on the floor or 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

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.

OPERATION

STALLING ON A HILL

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

If your vehicle completely stalls while climbing a hill:

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

If your vehicle begins to roll downhill:

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

DRIVING IN REVERSE

When driving in reverse, follow these guidelines:

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

PARKING THE VEHICLE

NOTICE: When parking the vehicle 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 as shown in the following illustration to keep the vehicle from rolling.

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

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 up to 35 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

⚠ 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. See the chart in *Maximum Cargo Load / Maximum Weight Capacity* on page 23.

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 a passenger to ride on the load deck. Passengers must always ride seated in the 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.

Always attach a tow load to the rear hitch of the vehicle.

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

Heavy loads affect braking and handling characteristics. Use extra caution when applying 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 or tow specific capacities. Read and comply with the load distribution warnings on the warning label affixed to the vehicle. The total load (operator, passenger, accessories, cargo and load on hitch) must never exceed the maximum weight capacity of the vehicle.

Maximum Cargo Load / Maximum Weight Capacity

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

OPERATION

TRUCK BED OPERATION

⚠ 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 front of the truck bed.

Do not allow passengers to ride in the truck bed. A sudden move or stop can cause severe injury or death to passengers in the truck bed.

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

Load Bed (P/N 74821G01)

WARNING READ THE MANUAL	DO NOT FILL GAS CAN IN LOAD BED	SECURE LOAD MAX BED WEIGHT 500 LBS or 227 KG	NO PASSENGERS IN LOAD BED	HIGH CENTER OF GRAVITY MAY CAUSE TIP OVER

A truck bed warning label is attached to the inside front of the truck bed. Understand and comply with the warnings on this label for safe operation of the vehicle.

- See the truck bed warning label for maximum load.
- Position the load in the truck bed as far forward as possible.
- Make sure the center of gravity of the load is within the height limit shown on label.
- Secure the load to the truck bed.
- Be aware of the load when you operate the vehicle.
- Do not allow passengers to ride in the truck bed. Do not drive the vehicle with the truck bed lifted or with the tailgate unsupported.

⚠ WARNING Never fill a gas container in the truck bed. 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 in the truck bed. Static electricity is built up during the fueling process and can discharge and cause the gasoline vapor to ignite.

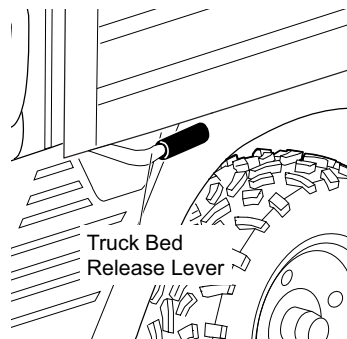
DUMPING THE TRUCK BED

WARNING

If the bulk of the cargo weight is at the rear of the bed, the bed may unexpectedly dump when the release lever is pulled and cause serious injury to anyone close by. Never pull the release lever unless the load is positioned evenly or located at the front of the truck bed.

Never leave the truck bed in the upright position after emptying the cargo. The bed can unexpectedly close and cause serious injury. Never drive the vehicle with the truck bed in the raised position.

1. Select a level location to dump the truck bed load. Do not attempt to dump or unload the vehicle if it is on an incline.
 2. Apply the brakes and engage the parking brake on vehicles with mechanical brakes.
 3. Put the direction selector in forward (F).
 4. Exit the vehicle.
 5. Make sure the cargo is positioned evenly or located at the front of the truck bed.
 6. Release the tailgate latches.
 7. Manual bed lift vehicles:
 - a. Stand clear and pull the release handle. Lift up on the truck bed to dump the cargo.
 - b. When the truck bed is empty, lower the bed back into place.
 - c. Push down to latch the bed.
- Electric lift vehicles:
- a. Press the top of the switch to activate the electric lift and raise the bed.
 - b. Press the bottom of the switch to lower the bed back into place.
8. Close and latch the tailgate.



VEHICLE LOADING	MAX. WEIGHT
Cargo Capacity	800 lbs. (226.8)
Vehicle Rated Capacity = Occupant + Cargo	1200 lbs. (544 kg)
VEHICLE WEIGHT	
Curb Weight (includes fuel)	926 lbs. (420 kg)
Gross Weight = Curb Weight + Rated Capacity	2126 lbs. (964 kg)

- The total capacity of the vehicle, operator, passenger, load bed contents, and accessories must be reduced to compensate for the trailer and load.
- Drive slowly and carefully.
- Hauling a load increases braking distances required for slowing or stopping the vehicle.
- Avoid parking on an incline.
- Do not operate on a grade exceeding 20%.
- Always secure the cargo.

VEHICLE MAINTENANCE

MAINTENANCE SAFETY

WARNING

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

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

Remove all jewelry before you service the vehicle.

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

Do not touch hot objects.

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

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



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.

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 if 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 28 for detailed requirements.

Inspect, clean, lubricate, adjust, and replace parts as necessary. Use only manufactured or equivalent replacement parts.

Record the maintenance items performed along with details in the *MAINTENANCE LOG* beginning on page 49.

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 28. The initial service is required for optimum performance and reliability.

- engine oil and filter
- starter/generator belt

Severe Use Conditions

Vehicles subjected to heavy or severe use must be inspected and serviced more frequently than those of normal use patterns. The following conditions are considered severe use:

- frequent or prolonged use in a dusty environment
- frequent use in mud, water or sand
- prolonged low speed operation
- short trips in cold weather
- prolonged heavy load operation

MAINTENANCE

SCHEDULED MAINTENANCE CHART

Perform all services at the maintenance interval reached first.

S – Indicates operations that need to be performed on vehicles subjected to severe use.

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 (perform at interval 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.	
CV boots	Pre-ride		Inspect. Replace as needed.	
Tires	Pre-ride		Check condition and pressure.	7, 43
Wheel lug nuts	Pre-ride		Check for loose or missing.	33
Accelerator	Pre-ride		Check for smooth operation.	
Brake system	Pre-ride		Check for proper operation.	42
Frame hardware	Pre-ride		Check for loose or missing.	
Fuel and engine oil level	Pre-ride		Check for correct level.	30
Air filter	Pre-ride		Inspect. Clean as needed.	39
Headlights and taillights	Pre-ride		Check operation. Replace bulbs as needed.	34
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 filter	Initial Service		Replace oil and filter at first 50 hours of operation.	35
Starter/generator belt	Initial Service		Check between first 15 and 20 hours.	
Wheels	Weekly		Check condition of rims, missing or loose lug nuts.	
S E Air filter	Weekly		Inspect. Clean as needed.	39
S Cooling fan	Weekly		Check for build-up of dirt inside blower housing and fins; clean as necessary.	
S Engine oil	Weekly		Check level; add as necessary.	
Starter/generator belt	Weekly		Check condition.	
S Brake pads	10	Monthly	Inspect. Replace as needed.	
Parking brake	20	Monthly	Conduct brake performance test; adjust as necessary	
Hydraulic brakes (if equipped)	Monthly		Check brake fluid.	
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.	
S 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.	

Item		Interval (perform at interval that comes first)		Remarks	Page
		Hours	Calendar		
S	General lubrication	50	3 Months	Lubricate all fittings, pivots, cables, etc. where required.	30
	Throttle/governor linkage	50	3 Months	Check operation and governed speed.	
E	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.	
	Parking brake	50	3 Months	Inspect linkage rods, latch arm, catch bracket. Lubricate with light oil (Do not lubricate cables or brake latch).	
S	Engine electrical system	50	3 Months	Check coil/spark plug wires for cracks or loose connections.	
S	Rear suspension	50	3 Months	Inspect shocks for leaks, worn bushings, loose or missing hardware.	
S	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.	
S	Battery	125	6 Months	Inspect terminals. Clean as needed.	43
	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.	
S E	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.	
S	Air Filter	250	Yearly	Replace.	
S	Oil filter	250	Yearly	Replace (with oil change).	
S	Engine oil	250	Yearly	Replace. See <i>RECOMMENDED LUBRICANTS AND FLUIDS</i> on page 30 for type and capacity.	30
S	Rear axle	250-300	Yearly	Check fluid level; add if required.	
S	Front wheel bearings	250-300	Yearly	Check and adjust as necessary.	
S	Brakes	250-300	Yearly	Clean and adjust. Check brake shoe linings; replace if necessary.	
S	Muffler/exhaust system	250-300	Yearly	Check hardware. Inspect for leaks at head and muffler gas-kets.	
	Valves - intake/exhaust	250-300	Yearly	Check cold.	
S E	Spark plug	250	Yearly	Replace and gap new.	40
	Cylinder head and piston	500	5 years	Remove carbon.	
	Cylinder head and piston	500	5 years	Check valve seats for carbon buildup; clean if necessary.	
	Rear axle	500	5 years	Replace fluid.	

MAINTENANCE

RECOMMENDED LUBRICANTS AND FLUIDS

Check and lubricate all components at the intervals shown in the *SCHEDULED MAINTENANCE CHART* beginning on page 28.

Item	Capacity	Lubricants/Fluids		Notes
Engine oil	1.3 qt. (1.25 L)	10W-30	Light duty use engines	See page 35.
		10W-30	Heavy duty use in air temperatures below 40° F (4° C)	
		10W-40	Heavy duty use in air temperatures above 40° F (4° C) after 100 hour break-in period	
Brake fluid	DOT 3			
Fuel	6.0 gal. (22.7 L)	Unleaded; 87 octane min 10% ethanol content max.		See page 18.
Rear axle oil	51 oz. (1.5 L)	MOBIL 424		
Rear axle friction modifier	2 oz. (60 ml)			
Grease fittings		Universal joint grease or equivalent		Do not exceed 3 pumps of grease in each fitting.

REPLACEMENT OF MAINTENANCE ITEMS

These items or their equivalents can be purchased through an authorized dealer or any other qualified source.

Item	Part Number
Oil Filter	607454
Air Filter	28463G01
Spark Plug (NGK BPR2ES)	607462
Starter/Generator Belt	26414G1
Clutch Belt	618630
15A Fuse	636455G13
10A Fuse	636455G12
Fuel Pump Relay	663593
LED Headlight Assembly	651411G03
Headlight Bulb	619100
Turn Signal Bulb	619102
LED Taillight	10023553

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 it's stability on the jack stands is verified; never get under a vehicle while it is on a jack alone.

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

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

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

Tools

- jack
- jack stands (4)
- wheel chocks

Lifting Front

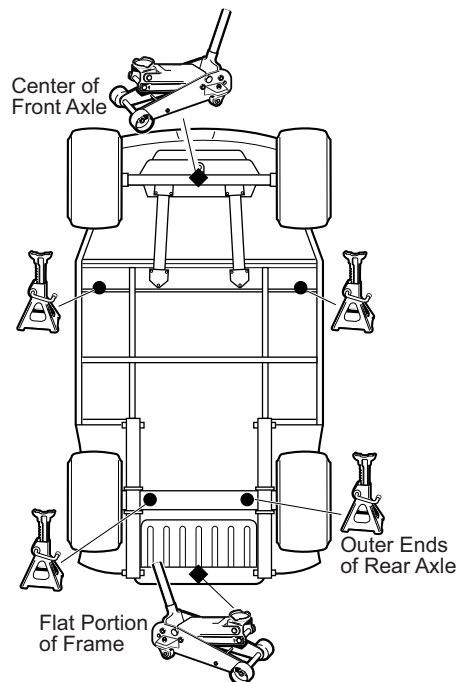
1. Chock the rear wheels to keep the vehicle from rolling backward.
2. Put a jack under the center of the front axle.
3. Raise the vehicle with the jack.
4. Install jack stands under the front frame cross member as shown.
5. Lower the vehicle until it rests on the jack stands.
6. Remove the jack.
7.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

Lifting Rear

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

Lowering Vehicle

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



MAINTENANCE

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. See *Tire Pressure* on page 7.

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

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

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

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

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.lbs.

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

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

1. Remove the wheel from the vehicle. See *Wheel Removal* on page 33.
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 34.
5. Fully inflate the tire. See *Tire Pressure* on page 7.

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.

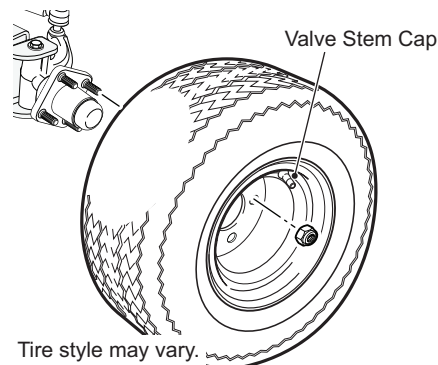
Check the lug nuts for tightness at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 28.

Wheel Removal

Tools

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

1. Lift the vehicle. See *LIFTING THE VEHICLE* on page 31.
2. Remove the lug nuts.
3. Remove the tire from the vehicle.



MAINTENANCE

Wheel Installation

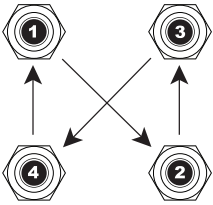
Lug Nut Torque	65 - 85 ft.lbs. (88 - 115 Nm)
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NOTICE: To decrease the risk of component damage, do not tighten the lug nuts to more than the specified torque.

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

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

Lug Nut Tightening Pattern



LIGHTS

- Clean the lights frequently to maximize visibility.
- Replace burned out bulbs promptly.

CAUTION Do not operate this vehicle at night or in low light if any bulbs are burned out. Poor lighting reduces visibility that could cause an accident resulting in severe injury or death.

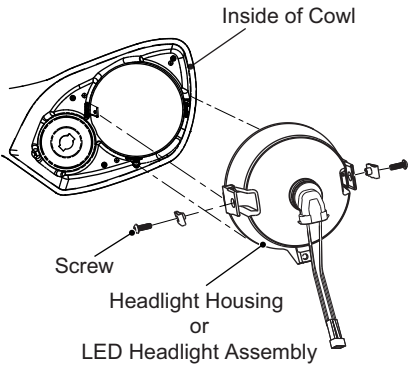
NOTICE: Replacement bulbs are available from a local Distributor, an authorized Branch or the Service Parts Department.

Halogen Headlight Bulb Replacement

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

NOTICE: Do not touch a halogen bulb with bare fingers. Oil from skin leaves a residue that causes a hot spot and will diminish the life of the bulb.

1. Disconnect the headlight harness from the headlight.
2. Rotate the bulb 1/4-turn to remove the headlight bulb from the housing.
3. Insert and rotate the new bulb to lock into place.
4. Connect the harness to the bulb.

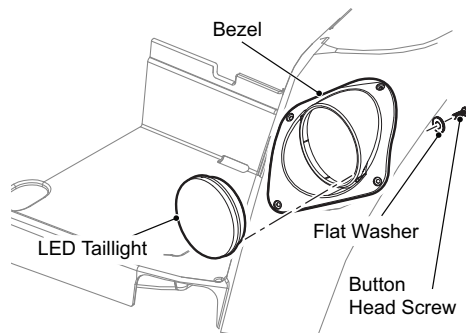


LED Headlight Assembly Replacement

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

LED Taillight

1. Remove three screws that secure the taillight to the bezel.
2. Remove the taillight.
3. Install the new taillight and secure the taillight using three screws.



FUSE REPLACEMENT

The fuse block is under the driver 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 with a new fuse of the same type and size.
3. Fuses are available from a local Distributor, an authorized Branch, or the Service Parts Department.

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 a cartridge type full flow oil filter 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	EFIA-1
Type.....	Four cycle, OHV
Number of Cylinders.....	1
Displacement.....	401 cc
Rated Horsepower	13.5 hp
Spark Plug Type	NGK BPR2ES
Spark Plug Gap	.028" - .031" (.70 - .80 mm)
Cooling	Forced Air Cooled
Oil Filter	Cartridge Type Full Flow Filter
Oil Pump.....	Positive Displacement Pump

CHECK THE OIL LEVEL

Check the engine oil at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 28.

Tools

- funnel
- clean lint-free cloth



Wear protective gloves to prevent scalding from hot engine oil.

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

1. Turn key switch to the OFF position and engage the parking brake.
2. Allow oil to drain into crankcase.
3. Wipe the top of the engine clean with a cloth to remove 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 oil from the dipstick and insert back into the opening.
6. Remove the dipstick again and check the level. The oil level must be in the area between L and H (in the cross-hatch) on the dipstick.

MAINTENANCE

7. The engine can be operated safely as long as 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 vehicle if oil level is below the safe area indicated on the dipstick.*

8. If the oil level is below the L line, add engine oil into the dipstick hole until the level is between L and H.

NOTICE: *Excessive oil can damage the engine. Oil expands as it gets hot, so do not overfill.*

9. If the oil level is above the H line, pump out the excessive oil with a siphon pump.

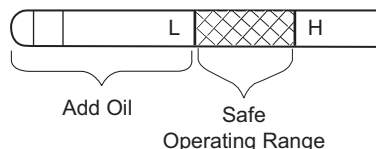
10. Replace the dipstick.

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

See RECOMMENDED LUBRICANTS AND FLUIDS on page 30 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.

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

11. When the level is correct, replace the dipstick.



CHANGE THE ENGINE OIL

Change the engine oil at the initial service and then intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 28.

Tools

- ratchet
- socket, 19 mm
- Extension, 8"
- universal strap wrench
- funnel
- drain pan

NOTICE: *See RECOMMENDED LUBRICANTS AND FLUIDS on page 30 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.*

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

If vehicle is to be stored over winter months, it can be stored with old oil left in engine. The oil should be changed as part of 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 to OFF 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.
4. Place a drain pan under the oil drain plug at the rear of the engine base.

5. Remove the drain plug and allow the oil to completely drain into the pan.

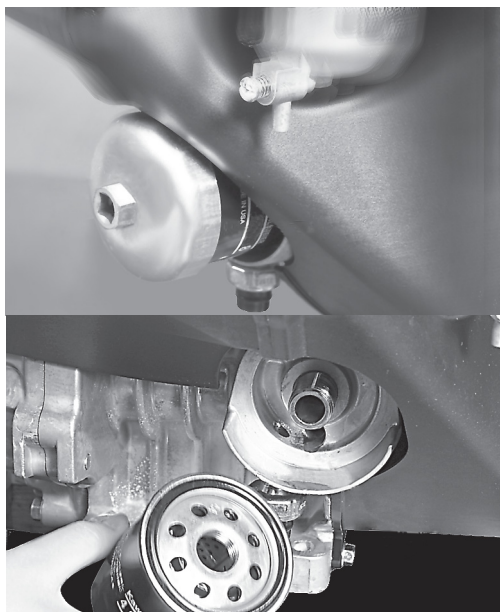
NOTICE: *At the first oil change, small metal chips and lint may be found. This is normal, resulting from the break-in period. Inspect the filter at every oil change. The presence of large metal chips could indicate possible damage to the engine.*

6. Before installing the drain plug, clean the area around the drain hole with a lint free cloth
7. Inspect the drain plug and o-ring for damage; replace if necessary.
8. Tighten the drain plug to 62 in. lbs. (7 Nm) torque.



Change the Oil Filter

1. Clean the area around filter.
2. Place a drain pan below the oil filter.
3. Remove the filter from the engine and allow the oil to drain.
4. If the filter o-ring remains on the engine surface, remove it and discard it along with the filter (7).
5. Inspect the new oil filter for any defects.
6. Apply engine oil to the oil filter o-ring (5).
7. Install the oil filter onto the engine until the o-ring contacts the mounting surface of the engine. Turn the filter 2/3 to 3/4 rotations by HAND(S).



Refill Oil

NOTICE: *See RECOMMENDED LUBRICANTS AND FLUIDS on page 30 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 30) into the fill hole.
2. Check the oil level on the dipstick. The oil should be slightly below the H level and within the crosshatch to allow for expansion.
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 H mark on the dipstick is calibrated for an engine at operating temperature. When the engine is cold, the oil will be below the full mark. The engine can be operated safely as long as the oil is within the safe operating range as indicated on the dipstick. *Do not operate the vehicle if the oil level is below the safe area indicated on the dipstick.*

MAINTENANCE

STARTER/GENERATOR BELT

Check the starter/generator belt at the initial service and then intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 28.

Tools

- Belt Tension Gauge
- Wrench, 3/4"
- Wrench, 9/16"
- Ratchet
- Socket, 3/4"

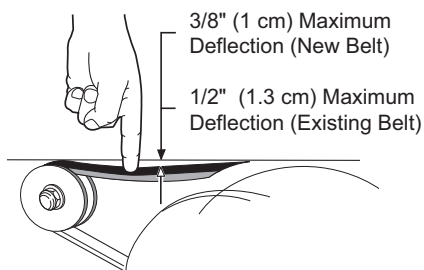
CAUTION

Never allow the tension to exceed 160 lbs (73 kg) while installing the belt.

At the time of installation, the belt must not be rolled over the installed edges of the starter/generator or drive clutch pulleys. Excessive stretch in the belt can cause cord failure.

NOTICE: A loose belt can cause audible vibration and squeal.

1. New belt:
 - a. Tighten a new starter/generator belt to 25 - 30 lbs. (110 - 130 N) tension when a gauge is applied half way between the two pulleys.
 - b. A new belt may be checked manually. A maximum deflection of 3/8" (10 mm) is acceptable.
2. Existing belt:
 - a. Tighten an existing belt to 17 - 18 lbs. (75 - 80 N) tension using the same technique.
 - b. Inspect for cracks or wear. A maximum deflection of 1/2" (13 mm) is acceptable.



Adjusting the Belt

1. Loosen the starter/generator pivot bolt.
2. While holding the lower adjusting nut with a wrench, loosen the upper jam nut with another wrench. Move the lower nut up or down the adjustment bolt until the correct belt tension is achieved.
3. Hold the lower nut in place and tighten the upper jam nut against it.
4. Tighten the starter/generator pivot bolt.

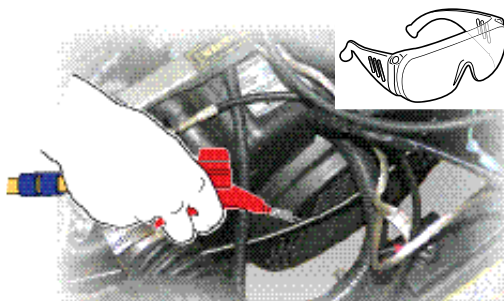
AIR INTAKE AND COOLING FINS

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 28.

REAR AXLE

The rear axle has an oil level check/fill plug located on the driver side at the rear of the housing. Unless leakage of axle oil is evident, an annual check is sufficient.

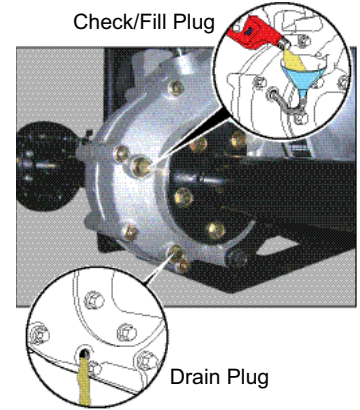
Change the axle oil at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 28. The drain plug is located at the bottom of the rear axle housing.

Checking the Axle Oil Level

Tools

- Socket, 13 mm
- Ratchet
- Funnel

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 until it starts to seep from the check/fill hole. Install the plug.

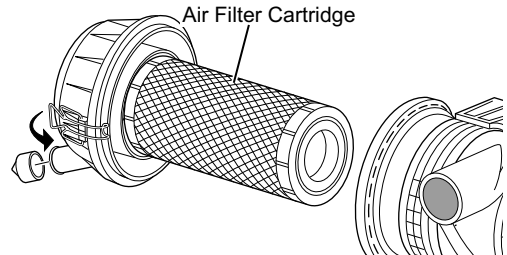


AIR FILTER

Inspect and replace the air filter cartridge at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 28.

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.



CAUTION

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

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 with the latches on the air cleaner cover.

LUBRICATION

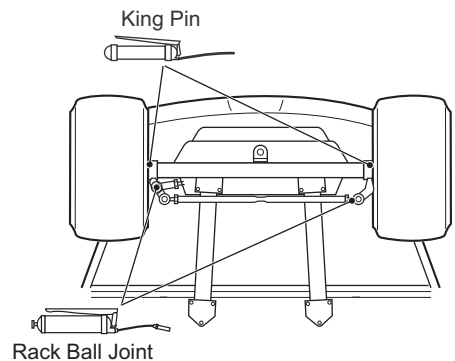
CAUTION

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

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

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

Lubricate components at the intervals indicated in the *SCHEDULED MAINTENANCE CHART* on page 28.



View from Underside of Vehicle

MAINTENANCE

SPARK PLUG

Tools

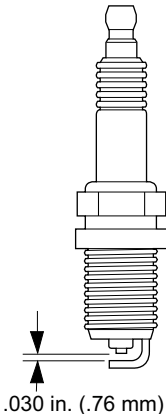
- spark plug socket, 13/16"
 - ratchet
 - anti-seize compound
- torque wrench, ft. lbs
 - feeler gauge

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 28.

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.
	• park 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 16 ft. lbs. (22 Nm) torque.

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 have been triggered since the key switch was last turned to the ON position.
- **Stored 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 rear of the vehicle's seat frame. The MIL can be viewed through the opening between the rear of the center console and the refresher unit. 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 under the rear forward facing seat.
3. Turn the key switch to the ON position
4. Observe the sequence of flashes. Each code is separated by five seconds of solid illumination.
 - a. Single-digit fault codes display as a sequence of one-second flashes, with the number of flashes matching the code value (e.g. 8 flashes for MIL code 8).
 - b. Double-digit fault codes display as a combination of 0.3-second flashes for the tens place and 1-second flashes for the ones place.
 - c. Active faults are displayed first, then stored faults are displayed.
 - d. Active faults are displayed whether the engine is running or not. Stored faults only display when the engine is not running.

If there are no active or stored faults, the MIL will illuminate continuously (no flashes) to demonstrate functionality.

The ECM will enter sleep mode after 60 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 and reveal any active fault codes.

MIL Flash Code	Fault	Recovery Steps
1	Temp Sensor Disconnected / Failure	1. Check that the sensor is connected. 2. If connected, contact an authorized service rep.
2	Throttle Position Sensor Failure	1. Contact an authorized service rep.
4	O ₂ Sensor Disconnected / Failure	1. Check that the sensor is connected. 2. If connected, contact an authorized service rep.
5	High Battery Voltage	1. Verify battery voltage is between 10-16 VDC. 2. If voltage is over 16 VDC, contact an authorized service rep.
5	Low Battery Voltage	1. Verify battery voltage is between 10-16 VDC. 2. If the voltage is below 10 VDC, replace the battery. 3. If the fault persists, contact an authorized service rep.
SOLID	Safeties Active	1. Press and release the accelerator pedal. 2. If the fault is still present while the accelerator pedal is pressed, contact an authorized service rep.
8	Engine Running Rich / Lean	1. Verify that the air filter is not clogged. 2. If the fault persists, contact an authorized service rep.
22	Limp Home	1. Contact an authorized service rep.

MAINTENANCE

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 28.

Periodic Brake Test

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

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

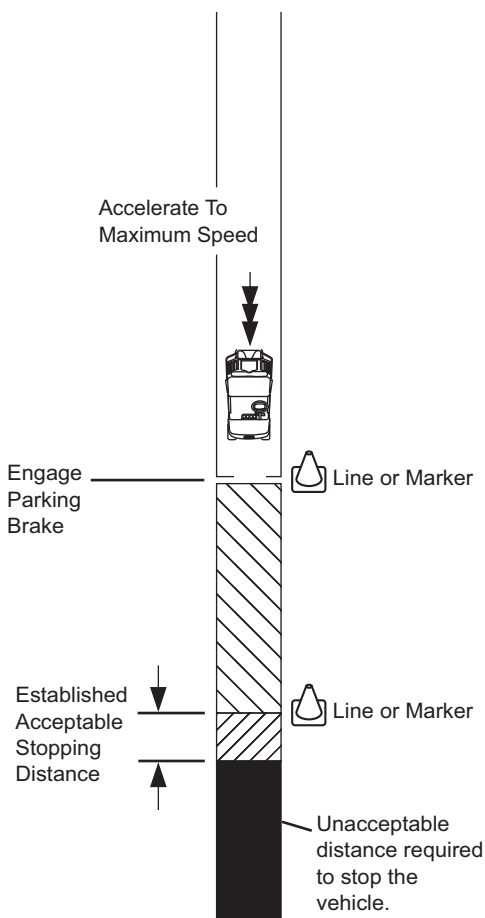
Actual stopping distances are influenced by weather conditions, terrain, road surface condition, vehicle weight and speed. No specific braking distance can be reliably specified, so it is important to establish a base to test with.

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

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

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

Dry, Level, Clean, Paved Surface



Brake Fluid (If Equipped w/ Hydraulic Brakes)

WARNING

When adding or changing brake fluid, always use brake fluid from an unopened bottle. After opening a bottle of brake fluid, always discard the unused portion. Do not store or use from an opened bottle. Brake fluid rapidly absorbs moisture from the air. The moisture causes the boiling temperature of the brake fluid to drop. This can lead to premature brake fade and the possibility of an accident that can result in severe injury or death.

The brake fluid reservoir is under the cowl at the passenger's side front wheel.

In addition to the scheduled maintenance interval for changing the brake fluid the brake fluid must also be changed in the following conditions:

- the fluid becomes contaminated
- the fluid level falls **BELOW** the MIN mark
- the type and brand of the fluid in the reservoir are unknown replace the brake fluid *according to the instructions in the vehicle repair manual*.

Check Brake Fluid Level

1. Park the vehicle on a level surface.
2. Check the brake fluid level at the reservoir. The fluid level should be between the upper MAX and lower MIN lines.
3. If the level is *below* the upper MAX line, add brake fluid:
 - a. Clean any dirt and debris from around the reservoir cap.
 - b. Remove the cap.
 - c. Add fluid until it reaches the upper MAX line.
 - d. Reinstall the cap.
 - e. Clean any spilled brake fluid from the area.
 - f. Dispose of the unused portion of the brake fluid.
4. Press and hold the brake pedal fully down for a few seconds.

Check for fluid leakage around the fittings.

BATTERY

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

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 28. 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, 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. Clean with water.

Battery Cleaning

CAUTION

To decrease the risk of damage to the vehicle or floor, neutralize any acid before you spray 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) waterWash 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 with a commercially available battery terminal spray.

MAINTENANCE

Battery Charging



WARNING

Hydrogen gas is produced as batteries are charged. Charge batteries 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 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 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 and 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 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 is going to 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 anyone to ride in a vehicle being transported on a trailer.

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

- If the vehicle is being hauled on a trailer or truck at highway speeds, the canopy top must be removed.
- The rated capacity of the hauling trailer or truck must be more than the weight of the vehicle and load plus 1000 lbs. (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.

Towing the Vehicle

⚠ 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.

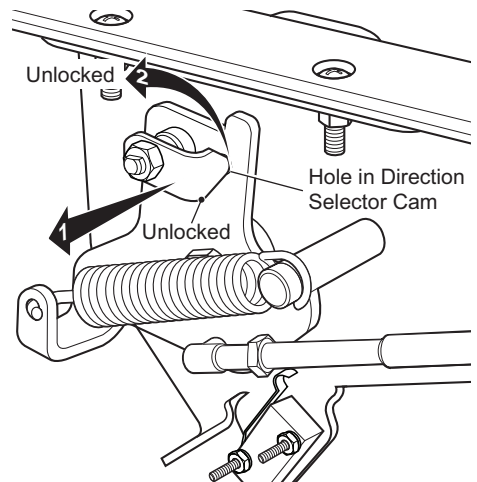
Do not tow the vehicle above 5 mph (8 kph).

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

1. Turn the key switch to OFF.

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.
 - a. Lift the seat to access the neutral lock.
 - b. 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.
 - c. 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.
3. Attach the vehicle to the towing vehicle with a tow bar that is approved by your dealer.
4. Release the parking brake if it is engaged.
5. After the vehicle has been towed, 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.



MAINTENANCE

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 your 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, or other appliance that uses a pilot light, or has a 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 and jewelry away from moving parts. Use caution not to contact hot objects. Raise the rear of the vehicle and support 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 32.
2. Turn the key switch to the OFF position and put the direction selector in the NEUTRAL position.
3. Chock the wheels to prevent the vehicle from rolling. Do not engage the parking brake.
4. Perform all required routine maintenance indicated in the *SCHEDULED MAINTENANCE CHART* on page 28.
5. Fully inflate the tires. See *Tire Pressure* on page 33.
6. Add fuel stabilizer (4 oz. for a full tank of fuel) to the fuel and install the cap securely.
7. Remove the spark plug and pour approximately 1/2 oz. (15 ml) of SAE 10 - 30 weight oil or fogging oil into the cylinder.
8. Rotate the crankshaft by hand several times, and reinstall the spark plug.

Remove from Storage

1. Change the oil.
2. Check the spark plug for tightness. Tighten if necessary.
3. Check all items in the daily pre-ride inspection. See *PRE-RIDE INSPECTION* on page 17.
4. Lubricate according to the *SCHEDULED MAINTENANCE CHART* on page 28.

SPECIFICATIONS

SHUTTLE 4

Item	Specification
Overall Length	135.0 in (343 cm)
Overall Width	48.5 in (123 cm)
Overall Height (No Canopy)	48.6 in (123 cm)(Top of steering wheel)
Overall Height (With Canopy)	72.0 in (183 cm)
Wheel Base	93.5 in (237 cm)
Front Wheel Track	34.2 in (87 cm)
Rear Wheel Track	38.0 in (97 cm)
Ground Clearance (at Differential)	4.3 in (11 cm)
Turning Radius	12.8 ft (3.9 m)
Engine	Walbro 4-Cycle 24.5 in ³ (401 cc)
Valvetrain	Single Cylinder OHV
Horsepower (kW)	13.5 hp (10.1 kW) Exceeds SAE J1940 Standard
Cooling System	Air Cooled
Balancer	Internal Counter Rotating Balance Shaft
Ignition	Electronic Inductive Spark / Magneto
Electrical System	Starter / Generator. Solid State Regulator
Battery	12-Volt Maintenance-Free (525 CCA, 85 minute reserve)
Key or Pedal Start	Pedal
Air Cleaner	Replaceable Dry Cartridge
Lubrication	Pressurized Oil System
Oil Filter	Spin-On
Fuel System	Closed-loop electronic fuel injection
Max Fuel Volume	5.96 Gallon (22.6 L)
Fuel Pump Operating Pressure	43.5 psi (3 bar)
Drivetrain	Automatic, 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	
Dry Weight	896 lb (406 kg) (without battery)
Curb Weight	926 lb (420 kg)
Vehicle Load Capacity	1200 lb (544 kg)
Outside Clearance Circle	25.5 ft (7.8 m)
Speed (Level Ground)	14 mph $\pm$ 0.5 mph (22.5 kph $\pm$ 0.80 kph)
Towing Capacity	N/A
Steering	Self-compensating reduction rack and pinion
Front Suspension	Leaf springs with hydraulic shock absorbers
Rear Suspension	Leaf springs with hydraulic shock absorbers
Brakes	Dual rear wheel mechanical self-adjusting drum

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
Front Body and Finish	Injection Molded TPO
Rear Body and Finish	Injection Molded TPO
Standard Color	Jacobsen Orange
Noise	Sound pressure; continued A-weighted equal to or less than 6db(A)
Vibration, WBV	Highest RMS value of weighted acceleration is less than 2.5 m/s².
Vibration, HAV	Highest RMS value of weighted acceleration is less than 2.5 m/s².
	The uncertainty of measurement is 0.69 m/s².
	Measurement methods were applied per the ISO 2631 and ISO 5349 standards under conditions of typical vehicle surfaces.
Some items shown may be optional equipment	

MAINTENANCE LOG

Record periodic maintenance in the following maintenance log.

[illegible]

MAINTENANCE LOG

[illegible]

MAINTENANCE LOG

[illegible]

MAINTENANCE LOG

[illegible]

INDEX

A

accelerator pedal 20

B

battery disposal 8

battery maintenance 49

brakes 48

fluid 48

pedal, hydraulic 19

break-in

CVT belt 24

engine 24

C

capacity

cargo load 13, 29

fluids 36, 53

hitch 53

load 53

towing 53

carbon monoxide 15

cargo

dumping 30

hauling 29

maximum load 13, 29

choke 20

cleaning the vehicle 38

cup holder 19

CVT belt break-in 24

D

direction selector 20

driving procedures

accelerating 26

braking 26

downhill 27

parking 28

passenger 26

reverse 28

slippery surfaces 27

stalling on hill 28

traversing hillsides 27

uphill 27

E

engine

break-in 24

starting 25

engine oil

capacity 36

recommended 36

F

fluids

brake 48

capacities 36

recommended 36

fuel

add 24

gauge 19

handling guidelines 15

specifications 24

tank cap 20

G

gasoline, see fuel

glove box 20

H

hauling, vehicle 51

headlights 40

horn switch 20

I

initial service items 34

L

labels, safety 9

lifting, vehicle 16, 37

low oil pressure indicator 19

lubricants, recommended 36

M

maintenance

chart 34

fluid capacities 36

recommended fluids and lubricants 36

scheduled 33

malfunction indicator light (MIL) 47

N

neutral lock 51

O

oil, engine

capacity 36

recommended 36

operator safety 13

P

PIN plate 8

pre-ride inspection 23

R

registration information, vehicle 7

INDEX

S

safety

- carbon monoxide 15
- cargo 13, 29
- driving downhill 16
- driving in reverse 15
- driving uphill 16
- driving with passenger 14
- engine exhaust 15
- fuel 15
- hot exhaust 16
- labels 9
- lifting, vehicle 16, 37
- operation 23
- operator 13
- pre-ride inspection 23
- slippery terrain 16
- stalling 16
- tire pressure 13, 39
- tires 16
- unauthorized use 14
- vehicle modification 17
- weight capacity 13, 29

safety symbols 7

scheduled maintenance chart 34

seat bottom 20

serial number labels 8

slippery surfaces 27

spark plugs 46

specifications, vehicle 53

steering wheel 19

storage compartments 20

switches

- horn 20

T

tires 38

- pressure 13, 39
- repair 39
- replacement 39

towing, vehicle 51

transporting the vehicle 51

truck bed 21

- dumping 30

V

vehicle

- hauling 51
- removing from storage 52
- specifications 53
- storage 52
- towing 51

transporting 51

vehicle identification numbers 8

W

warranty information, vehicle 7

washing the vehicle 38

weight capacity, maximum 13, 29

wheels 39, 40

- axle and wheel nut torques 39

- wheel installation 40

- wheel removal 39

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

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

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

⚠ WARNING

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

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

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

Operate in approved areas.

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

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

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

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

Decrease speed before and during turns.

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

See **SPECIFICATIONS** on page 47 for the vehicle load and seat capacity.

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

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

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

⚠ WARNING

Remove all jewelry before servicing the vehicle.

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

Do not touch hot objects.

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



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

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

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

Hydrogen gas is produced as batteries are charged. Charge batteries 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 if an unexpected situation occurs.



CUSHMAN®

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CONTACT INFORMATION

North America:

Technical Assistance & Warranty:
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Service Parts Phone:
1-888-GET-E-Z-GO (1-888-438-3946), FAX: 1-800-752-6175

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 are available for purchase from a local Distributor, an authorized Branch, Genuine Cushman Parts & Accessories Department or at www.cushman.com.

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