

JOHN DEERE
WORLDWIDE COMMERCIAL & CONSUMER
EQUIPMENT DIVISION

GATOR™ Utility Vehicle
HPX 4x4

OMM157849 A9

OPERATOR'S MANUAL



JOHN DEERE

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

California Proposition 65 Warning

North American Version
Litho in U.S.A.



DCY



OMM157849

INTRODUCTION

Thank You for Purchasing a John Deere Product

We appreciate having you as a customer and wish you many years of safe and satisfied use of your machine.

Using Your Operator's Manual

This manual is an important part of your machine and should remain with the machine when you sell it.

Reading your operator's manual will help you and others avoid personal injury or damage to the machine. Information given in this manual will provide the operator with the safest and most effective use of the machine. Knowing how to operate this machine safely and correctly will allow you to train others who may operate this machine.

If you have an attachment, use the safety and operating information in the attachment operator's manual along with the machine operator's manual to operate the attachment safely and correctly.

This manual and safety signs on your machine may also be available in other languages (see your authorized dealer to order).

Sections in your operator's manual are placed in a specific order to help you understand all the safety messages and learn the controls so you can operate this machine safely. You can also use this manual to answer any specific operating or servicing questions. A convenient index located at the end of this book will help you to find needed information quickly.

The machine shown in this manual may differ slightly from your machine, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the machine will travel when going forward. When you see a broken line (-----), the item referred to is hidden from view.

Before delivering this machine, your dealer performed a predelivery inspection to ensure best performance.

Special Messages

Your manual contains special messages to bring attention to potential safety concerns, machine damage as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.



CAUTION: Avoid injury! This symbol and text highlight potential hazards or death to the operator or bystanders that may occur if the hazards or procedures are ignored.

IMPORTANT: Avoid damage! This text is used to tell the operator of actions or conditions that might result in damage to the machine.

NOTE: General information is given throughout the manual that may help the operator in the operation or service of the machine.

Attachments for Your Machine

There's a John Deere attachment or kit to make your new machine perform more tasks or be more versatile, whether your machine is a lawn tractor or compact utility tractor or a utility vehicle.

You can check out the entire line of attachments for your machine at JohnDeere.com or ask your John Deere dealer. From aerators to electric lift kits to tillers, there's a John Deere attachment or kit to fill every need.

PRODUCT IDENTIFICATION

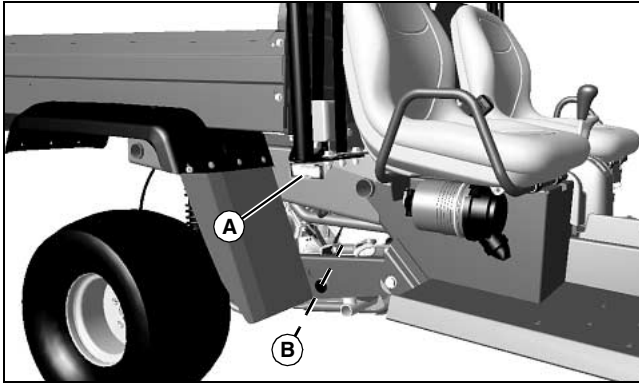
Record Identification Numbers

HPX 4x4

PIN (060001-)

If you need to contact an Authorized Service Center for information on servicing, always provide the product model and identification numbers.

You will need to locate the identification numbers for the product. Record the information in the spaces provided below.



MX35562

DATE OF PURCHASE:

DEALER NAME:

DEALER PHONE:

PRODUCT IDENTIFICATION NUMBER (A):

ENGINE SERIAL NUMBER (B):

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Consumer Equipment Division
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OMM157849 A9 - English

SAFETY LABELS



Understanding The Machine Safety Labels

The machine safety labels shown in this section are placed in important areas on your machine to draw attention to potential safety hazards.

On your machine safety labels, the words DANGER, WARNING, and CAUTION are used with this safety-alert symbol. DANGER identifies the most serious hazards.

The operator's manual also explains any potential safety hazards whenever necessary in special safety messages that are identified with the word, CAUTION, and the safety-alert symbol.

WARNING

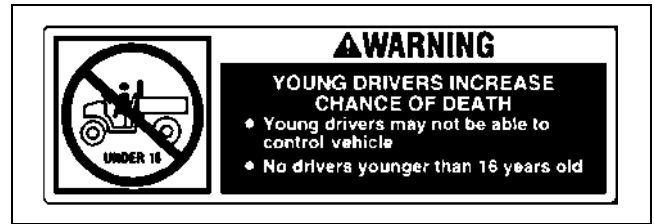
ROLLOVER OR FALLING OFF MAY CAUSE DEATH



M157900

- Read operator's manual.
- Drive slowly when turning.
- Always use brakes going down a slope. Vehicle can take-off (freewheel) downhill.
- No loads heavier than 1000 lb (454 kg). Spread load evenly. Tie loads down.
- Reduce speed and load on rough or hilly ground.
- Maintain 14 psi (97 kPa) tire pressure front and rear.
- Do not exceed gross vehicle weight rating 3050 lb (1383 kg). Follow loading instructions in operator's manual.

WARNING



VG12247

WARNING

YOUNG DRIVERS INCREASE CHANCE OF DEATH

- Young drivers may not be able to control vehicle.
- No drivers younger than 16 years old.

CAUTION

Before Leaving Vehicle:



VG12247

- Stop engine
- Set park brake
- Remove key

WARNING

AVOID INJURY FROM EXPLOSION



M152038

- Do not place gas container inside cargo box bed when filling.
- Place gas container on ground when filling.

SAFETY LABELS

WARNING M150930

RIDERS CAN FALL OFF AND BE KILLED



M150930

- Maximum of one person to a seat
- No riders in box or anywhere else

DANGER



MX31131

SHIELD EYES

- EXPLOSIVE GASES CAN CAUSE BLINDNESS OR INJURY.

NO

- Sparks
- Flames
- Smoking

SULFURIC ACID

CAN CAUSE BLINDNESS OR SEVERE BURNS.

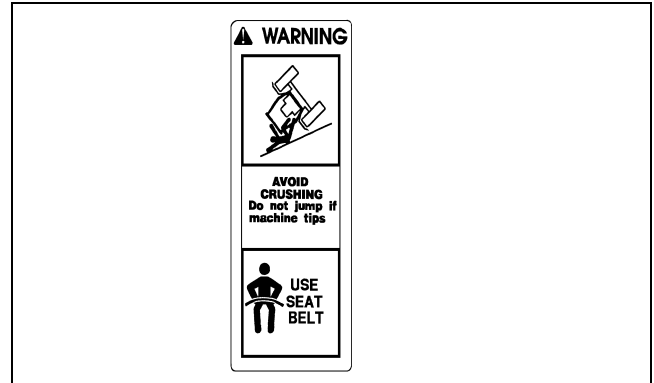
FLUSH EYES IMMEDIATELY WITH WATER. GET MEDICAL HELP FAST.

KEEP OUT OF REACH OF CHILDREN.

DO NOT TIP.

DO NOT OPEN BATTERY!

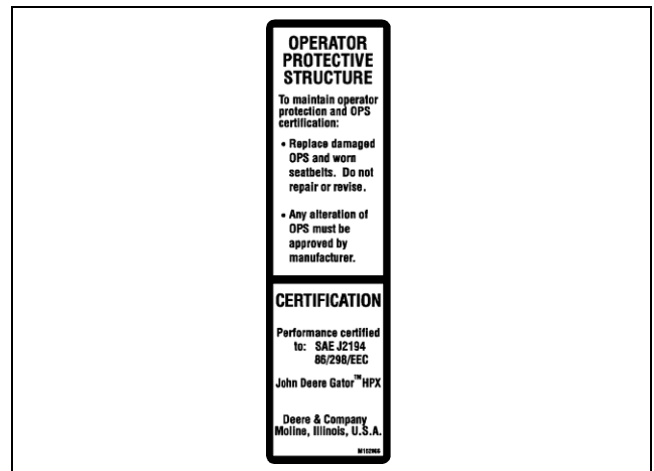
WARNING - M76637



M76637

- AVOID CRUSHING
- Do not jump if machine tips
- USE SEAT BELT

Operator Protective Structure Safety and Certification Label



M152866

OPERATOR PROTECTIVE STRUCTURE

To maintain operator protection and OPS certification:

- Replace damaged OPS and worn seatbelts. Do not repair or revise.
- Any alteration of OPS must be approved by manufacturer.

CERTIFICATION

Performance certified to: SAE J2194 86/298/EEC

John Deere Gator™ HPX

Deere & Company Moline, Illinois, U.S.A.

SAFETY LABELS

Emission Control System Certification Label

NOTE: Tampering with emission controls and components by unauthorized personnel may result in severe fines or penalties. Emission controls and components can only be adjusted by EPA and/or CARB authorized service centers. Contact your John Deere Commercial and Consumer Equipment Retailer concerning emission controls and component questions.

The presence of an emissions label signifies that the engine has been certified with the United States Environmental Protection Agency (EPA) and/or California Air Resources Board (CARB).

The emissions warranty applies only to those engines marketed by John Deere that have been certified by the EPA and/or CARB; and used in the United States and Canada in off-road mobile equipment.

Emission Compliance Period

If your engine has the emission compliance category listed on the emission control system certification or air index label, this indicates the number of operating hours for which the engine has been certified to meet EPA and/or CARB emission requirements. The following table provides the engine compliance period in hours associated with the category found on the certification label.

Agency	Category	Hours
EPA	C	250
EPA	B	500
EPA	A	1000
CARB	Moderate	125
CARB	Intermediate	250
CARB	Extended	500

Canadian Electromagnetic Compatibility (EMC) Compliance

This spark ignition system complies with Canadian ICES-002.

SAE J2258 and ASME B56.8 Compliance

This vehicle conforms to SAE J2258. With installation of the optional horn kit, this vehicle conforms to ASME B56.8.

Warning M159705



M159705

Picture Note: This label is required and installed on machines sold in California. This label may also be installed on machines sold in other locations.

Operation of This Equipment May Create Sparks that Can Start Fires Around Dry Vegetation. A Spark Arrestor May be Required. The Operator Should Contact Local Fire Agencies For Laws or Regulations Relating to Fire Prevention Requirements.

SAFETY

Supervisor Safety Responsibilities

- Make sure all operators of this machine are thoroughly trained and are familiar with the operator's manual and understand the machine warning labels.
- Be sure to establish any special safety procedures for existing work conditions and train operators in those procedures.
- Supervisors, operators and mechanics should be familiar with and practice the safety standards that apply to this machine.

Operator Training Required

- Read the operator's manual and other training material. If the operator or mechanic cannot read English, it is the owner's responsibility to explain this material to them. This publication is available in other languages.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- All operators and mechanics should be trained. The owner of the machine is responsible for training the users.
- Never let children or untrained people operate or service the equipment. Local regulations may restrict the age of the operator.
- The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people, or property.
- Operate the machine in an open, unobstructed area under the direction of an experienced operator.

Operating Safely

- Read, understand and follow all instructions in the operator's manual, on the machine and on the safety video before starting.
- Do not misuse the utility vehicle. It is a utility vehicle, not a recreation vehicle.
- The utility vehicle's tires are designed for off-road use only. Paved surfaces may seriously affect handling and control of the vehicle. If you must operate on a paved surface, travel slowly and do not make sudden turns or stops.
- Do not operate this vehicle on a frozen body of water. The vehicle could break through the ice, causing injury or even death.
- Go slowly and be extra careful when riding on snow-covered or ice-covered terrain.
- Slow down and be careful of traffic when operating near

or crossing roadways. Use care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

- The operator should always make sure that the passenger is aware of correct safety procedures while riding in the utility vehicle.
- The passenger should always use the hand holds.
- To avoid serious injury, always ensure that occupants have safely secured their seat belts prior to starting this vehicle.
- Horseplay or recreational riding can lead to accidents, severe bodily injury or death. Do not attempt stunts, jumps, or quick acceleration to raise front wheels off the ground. These actions can result in accidents or vehicle overturns.
- Sit on the center of the seat and keep both feet within the foot platform perimeter. Clean foot platform if dirty, and remove any debris from around foot controls.
- Check for debris in engine compartment, especially around brake linkage on each side of the transaxle.
- Always use both hands for steering.
- Know location of controls and how and what they operate.
- Never operate utility vehicle while standing.
- Never operate utility vehicle with the cargo box raised.
- Check brake action before beginning vehicle operation. Adjust or service the brakes as necessary.
- To provide adequate braking ability and traction, do not tow any attachment or loaded trailer unless the cargo box is fully loaded.
- Before shifting into reverse, always check for obstacles or people behind the machine.
- Always back slowly.
- Inspect vehicle before operating. Be sure hardware is tight. Repair or replace damaged, badly worn, or missing parts. Be sure guards and shields are in good condition and fastened in place. Make any necessary adjustments before operating.
- Do not leave vehicle unattended when it is running.
- Operate during daylight or with good artificial light and if you drive at night, use the lights.
- Do not operate vehicle if under the influence of alcohol or other drugs.
- Avoid sudden starts, stops, or turns.
- Always use a level turn-around area.
- Do not wear radio or music headphones. Safe service and operation require your full attention.

SAFETY

Using a Spark Arrestor

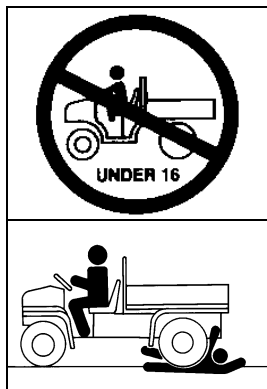
The engine in this machine is equipped with a spark arrestor muffler. The California Public Resources Code, section 4442.5 provides as follows:

No person shall sell, offer for sale, lease, or rent to any person any internal combustion engine subject to Section 4442 or 4443, and not subject to Section 13005 of the Health and Safety Code, unless the person provides a written notice to the purchaser or bailee, at the time of sale or at the time of entering into the lease or rental contract, stating that it is a violation of Section 4442 or 4443 to use or operate the engine on any forest-covered, brush-covered, or grass-covered land unless the engine is equipped with a spark arrestor, as defined in Section 4442, maintained in effective working order or the engine is constructed, equipped, and maintained for the prevention of fire pursuant to Section 4443. Cal. Pub. Res. Code 4442.5.

Other states or jurisdictions may have similar laws. A replacement spark arrestor for your machine is available from your authorized dealer. An installed spark arrestor must be maintained in good working order by the operator.

Parking Safely

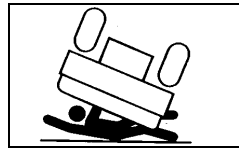
1. Stop vehicle on a level surface, not on a slope.
2. Lock park brake.
3. Stop engine.
4. Remove key.
5. Before you leave the operator's seat, wait for engine and all moving parts to stop.
6. Disconnect the negative battery cable or remove the spark plug wire (for gasoline engines) before servicing the machine.



Protect Children and Prevent Accidents

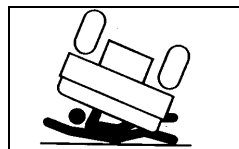
- This utility vehicle should not be operated by anyone under the age of 16 years.
- Young drivers may not be physically able to control the machine or may not be mature enough to make safe driving decisions.
- Do not allow children to ride as a passenger in this vehicle. Children may not be able to sit safely in the passenger seat and use handholds properly.

- Passengers should always use the handholds while the vehicle is moving.
- The seat belt installed on utility vehicles with an Occupant Protective Structure (OPS) is not designed to restrain a child.
- Never carry passengers, especially children, in the cargo box area. Do not tow children in a cart or trailer.
- Never assume that children will remain where you last saw them. Stay alert to the presence of children.
- Before backing or turning, look behind and around the utility vehicle for children.
- Be alert at all times, drive forward and in reverse carefully. People, especially children, can move quickly into an area of operation.
- Use extra care when coming to blind corners, shrubs, trees, or other objects that may block vision.
- Misuse and recreational riding can lead to accidents, severe bodily injury or death.



Avoid Excessive Speeds

- Always travel at a speed that is safe and proper for the terrain, visibility and operating conditions, and your experience operating the machine.
- Use caution when operating the machine in reverse. Use a slow speed and do not make sharp turns. Always look behind before backing.
- Never travel at excessive speeds on slopes, either going up or down. Use a slow speed and do not make sharp turns. Become experienced driving the machine on small slopes before driving on larger hills.



Avoid Tipping

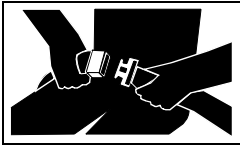
Accidents resulting in serious injury or death can occur from tipping the utility vehicle. Observe the following practices to help prevent accidents:

- Do not misuse the utility vehicle. The utility vehicle is not designed for recreational riding.
- Drive very slowly when turning. Sharp turns could cause the utility vehicle to tip over.
- Reduce speed and exercise extreme caution on slopes or on rough ground.
- Do not overload vehicle and avoid shifting loads. Reduce load when operating over rough or hilly terrain.
- Do not stop or start suddenly when going uphill or

SAFETY

downhill. Be especially cautious when changing direction on slopes.

- Stay alert for holes, rocks, and other hidden hazards in the terrain.
- Keep away from drop-offs, ditches, embankments, as well as ponds and other bodies of water. The machine could suddenly roll over if a wheel goes over the edge of a cliff or ditch or if the edge caves in.
- Keep front wheels straight at crest of hill or going over bumps.
- When descending a hill, remove foot from accelerator and apply brakes to reduce speed and maintain control.
- Do not make changes or modifications to the utility vehicle.



Use Seat Belt Properly

- Use a seat belt when you operate with a Roll-Over Protective Structure (ROPS) to minimize chance of injury from an accident, such as an

overturn.

- Never modify, disassemble or attempt to repair the seat belt.
- Replace entire seat belt if mounting hardware, buckle, belt, or retractor show signs of damage.
- Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear, discoloration, or abrasion. Replace only with John Deere-approved replacement parts.
- Layers of heavy clothing can interfere with proper positioning of the seat belt and can reduce the effectiveness of the seat belt.

Keep Occupant Protective System (OPS) Installed Properly

- Never operate the machine without the OPS installed.
- Make certain all parts of the OPS are installed correctly if the OPS structure is loosened or removed for any reason. All OPS hardware should be tightened to the proper torque per manufacturer's recommendations.
- Any alteration of the OPS must be approved by the manufacturer. The protection provided by the OPS will be impaired if the OPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting.

- Never attempt to repair a damaged or altered OPS. It must be replaced to maintain the manufacturer's certification of the structure.



Keep Riders Off Vehicle

- Seating is provided for operator and one adult passenger.
- Never allow riders in the cargo box or other areas where seats are not provided.
- Riders on vehicle are subject to injury such as being struck by foreign objects or being thrown off of the vehicle and severely injured or killed.
- Riders affect the operator's ability to control the vehicle as well as its center of gravity. Also, riders could obstruct the operator's view resulting in the vehicle being operated in an unsafe manner.

Before Driving

1. Clean foot platform if dirty, and remove any debris from around foot controls. Sit on the center of seat and keep both feet inside foot platform perimeter.
2. Inspect utility vehicle for signs of wear or damage.
3. All safety equipment must be in good condition and fastened in place:
 - Lights.
 - Shields.
 - Safety start devices.
4. Before moving, check around utility vehicle, be sure no one is near it.
5. Inspect mechanical condition of your vehicle before each use to minimize chance of injury or being stranded. Remember, you can ride farther in an hour than you can walk in a day.

Be sure to check condition of tires and wheels, wheel hardware torque, and maintain proper tire pressure.
6. Securely anchor all loads.

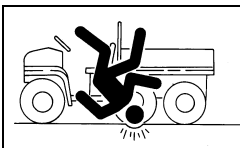
Transport Loads Safely

- Be sure load is evenly distributed in cargo box.
- Do not load above load guard.
- Securely anchor all loads in cargo box.
- Reduce cargo box load when operating on rough or hilly terrain.

SAFETY

Towing Loads Safely With Utility Vehicle

- To provide adequate braking ability and traction, weight of towed load (trailer plus cargo) must never exceed the vehicle payload (operator plus passenger plus cargo box load).
- Do not tow a load that exceeds the maximum allowable towing load for this vehicle, as specified in this operator's manual.
- Stopping distance increases with speed and weight of towed load. Travel slowly and allow extra time and distance to stop.
- Tow load at a speed slow enough to maintain control.
- Excessive towed load can cause loss of traction and loss of control on slopes. Reduce towed weight when operating on slopes.
- Never allow children or others in or on towed equipment.
- Use only approved hitches. Tow only with a machine that has a hitch designed for towing. Do not attach towed equipment except at the approved hitch point.
- Follow the manufacturer's recommendations for weight limits for towed equipment and towing on slopes.
- If you cannot back up a slope with a towed load, the slope is too steep to operate on with the towed load. Reduce the towed load or do not operate.
- Do not turn sharply. Use additional caution when turning or operating under adverse surface conditions. Use care when reversing.
- Do not shift to neutral and coast downhill.

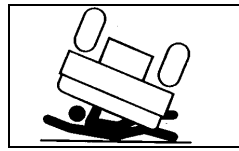


Driving On Rough Terrain

- Use existing trails. Avoid terrain such as dangerous slopes and impassable swamps. Watch carefully for bumps, holes, ruts, loose terrain,

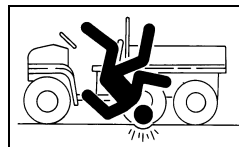
or other obstacles.

- Look ahead at terrain. Know what is coming and be prepared to react. Be alert for hazards.
- Keep front wheels straight at crest of hill or going over bumps.
- Reduce speed according to trail, terrain, and visibility conditions.
- The passenger should always use the hand holds.



Climbing Or Descending A Hill

- Always use the brakes when going down slopes, the utility vehicle can speed up (freewheel) going down a slope. Engine or clutch braking effect is minimal.
- Balance loads evenly and secure them. Braking could shift the load and affect vehicle stability.
- Sit on center of seat and keep both feet within foot platform.
- Never drive past the limit of visibility. Slow down near crest of hill until getting a clear view of the other side. Never go over the top of any hill at a high speed. An obstacle, sharp drop, another vehicle or person, could be on the other side of the hill.
- Keep front wheels straight at crest of hill or going over bumps.
- Do not stop or start suddenly when going uphill or downhill. Be especially cautious when changing direction on slopes.
- If vehicle stops or loses power going up a hill, lock park brake to hold vehicle on slope. Maintain direction of travel and release brake slowly. Back straight down hill slowly while maintaining control. Do not turn vehicle sideways. Vehicle is more stable in a straight forward or rearward position.
- When descending a hill, remove foot from accelerator and apply brakes to reduce speed and maintain control.



Driving Across Slopes

- Reduce speed and use caution on slopes and in sharp turns.
- Stay alert for holes, rocks and other hidden hazards in the terrain.
- When riding on soft terrain, turn front wheels slightly uphill to keep utility vehicle on a straight line across the hill.
- If utility vehicle begins to tip, turn front wheel downhill to gain control before proceeding.

Riding Through Water

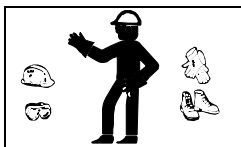
- Avoid water whenever possible. If drive belt becomes wet, slippage will occur and vehicle will lose power.
- Never cross any body of water where depth may be unknown to the operator. As an operational guideline, deep water is considered anything in excess of 152 mm (6 in.) in depth. Tires may float, making it difficult to maintain control.

SAFETY

- Choose a course within the waterway where both banks have a gradual incline. Cross at a point known to be safe.
- Proceed at a slow steady speed to avoid submerged obstacles and slippery rocks.
- Avoid water crossings where the operation of a utility vehicle may cause damage to waterway beds or erode waterway shoreline.
- Never operate this vehicle in fast-moving water.
- Stopping ability of vehicles with external disk brakes may be affected after driving through water. If necessary, apply brakes several times to dry them out.

Checking Wheel Hardware

- A serious accident could occur causing serious injury if wheel hardware is not tight.
- Check wheel hardware tightness often during the first 100 hours of operation.
- Wheel hardware must be tightened to specified torque using the proper procedure anytime it is loosened.



Wear Appropriate Clothing

- Wear close fitting clothing and safety equipment appropriate for the job.
- Certain operating conditions may dictate that the operator and any passenger wear appropriate safety equipment while operating the vehicle. Be prepared for any existing and potential conditions before operating machine.
- Local safety or insurance regulations may require additional safety equipment such as eye protection or a hard hat.
- Always wear substantial footwear and long trousers. Do not operate the equipment when barefoot or wearing open sandals.



Practice Safe Maintenance

- Only qualified, trained adults should service this machine.
- Understand service procedure before doing work. Keep area clean and dry.
- Never lubricate, service, or adjust machine while it is moving. Keep safety devices in place and in working condition.
- Keep hands, feet, clothing, jewelry, and long hair away

from any moving parts, to prevent them from getting caught.

- Disconnect battery(ies) or remove spark plug wire (for gasoline engines) before making any repairs.
- Keep all nuts and bolts tightened.
- Securely support any machine elements that must be raised for service work. Lock service latches before working on machine with raised attachments.
- Never run engine unless park brake is locked.
- Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Replace all worn or damaged safety and instruction decals.
- To prevent fires, remove any buildup of grease, oil, or debris from the machine, especially the engine.
- Do not modify machine or safety devices. Unauthorized modifications may impair its function and safety.
- Do not wear radio or music headphones while servicing the machine. Safe service requires your full attention.
- Disconnect battery ground cable(s) (-) on the machine or remove attachment from machine before welding on the machine.

Prevent Fires

- Remove grass and debris from engine compartment and muffler area, before and after operating machine.
- Always shut off fuel when storing or transporting machine, if the machine has a fuel shutoff.
- Do not store machine near an open flame or source of ignition, such as a water heater or furnace.
- Check fuel lines, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.

Do Not Modify Machine

Do not make any unauthorized modifications to the machine in anyway.

Modifications can result in making the machine unstable, increasing the possibility of rollover causing severe bodily injury or death.

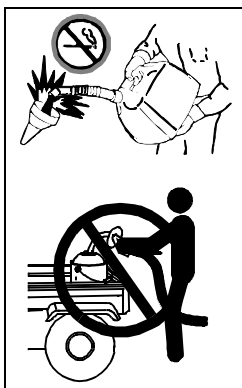


Tire Safety

Explosive separation of a tire and rim parts can cause serious injury or death:

SAFETY

- Do not attempt to mount a tire without the proper equipment and experience to perform the job.
- Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.
- When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly.
- Check tires for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.



Handling Fuel Safely

To avoid personal injury or property damage, use extreme care in handling fuel. Fuel is extremely flammable and fuel vapors are explosive:

- Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
- Use only an approved fuel container. Use only non-metal, portable fuel containers approved by

the Underwriter's Laboratory (U.L.) or the American Society for Testing & Materials (ASTM). If using a funnel, make sure it is plastic and has no screen or filter.

- Never remove the fuel tank cap or add fuel with the engine running. Allow engine to cool before refueling.
- Never add fuel to or drain fuel from the machine indoors. Move machine outdoors and provide adequate ventilation.
- Clean up spilled fuel immediately. If fuel is spilled on clothing, change clothing immediately. If fuel is spilled near machine, do not attempt to start the engine but move the machine away from the area of spillage. Avoid creating any source of ignition until fuel vapors have dissipated.
- Never store the machine or fuel container where there is an open flame, spark, or pilot light such as on a water heater or other appliance.
- Prevent fire and explosion caused by static electric discharge. Static electric discharge can ignite fuel vapors in an ungrounded fuel container.
- Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before fueling.
- Remove fuel-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment with a portable container, rather

than from a fuel dispenser nozzle.

- Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until the fueling is complete. Do not use a nozzle lock-open device.
- Never overfill fuel tank. Replace fuel tank cap and tighten securely.
- Replace all fuel container caps securely after use.
- For gasoline engines, do not use gas with methanol. Methanol is harmful to your health and to the environment.

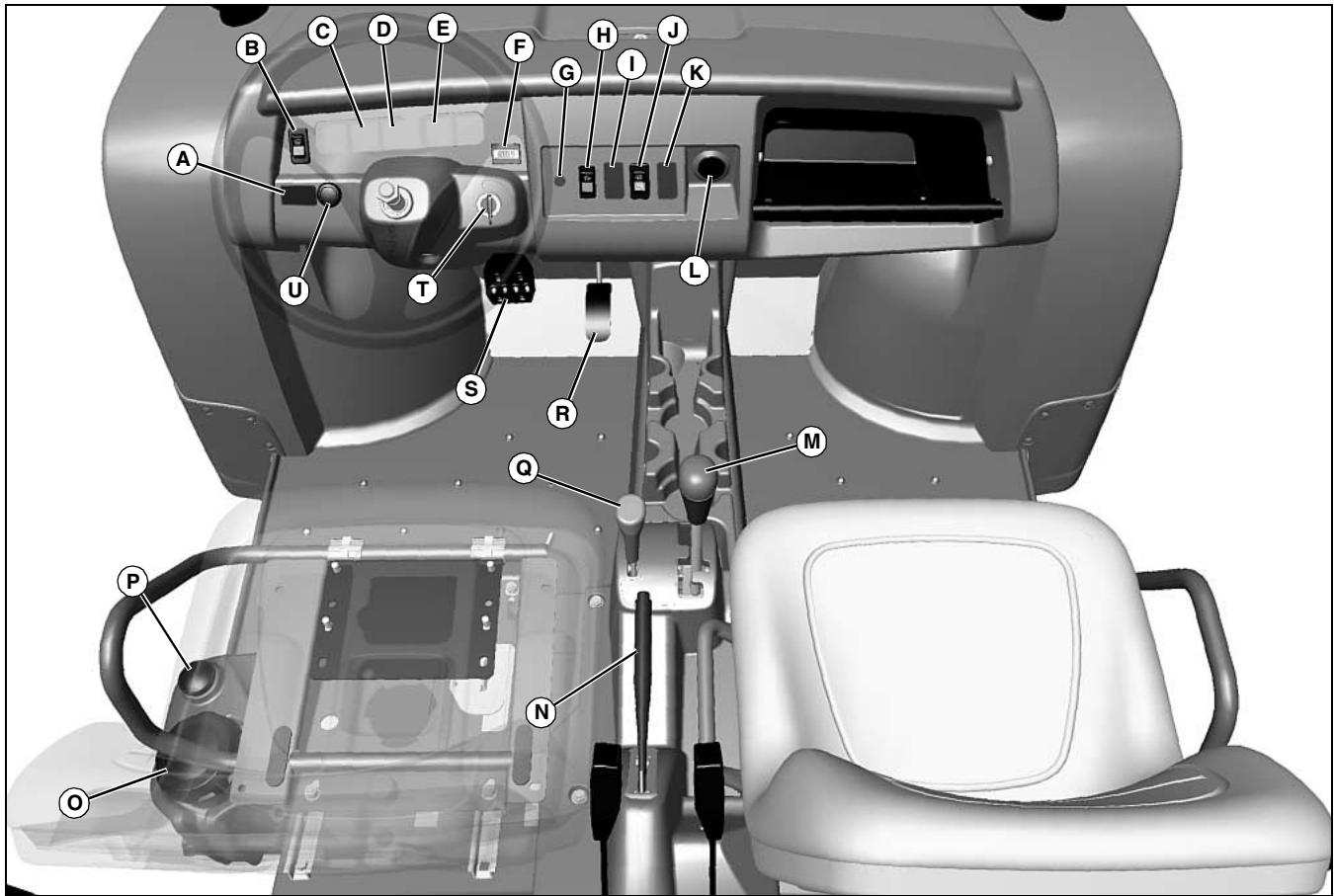
Handling Waste Product and Chemicals

Waste products, such as, used oil, fuel, coolant, brake fluid, and batteries, can harm the environment and people:

- Do not use beverage containers for waste fluids - someone may drink from them.
- See your local Recycling Center or authorized dealer to learn how to recycle or get rid of waste products.
- A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques. The seller of the chemical products used with your machine is responsible for providing the MSDS for that product.

OPERATING CONTROLS

Operator Station Controls



MX40335

Key	Description	Key	Description
A	Turn Signal Switch (Optional)	L	12V DC Accessory Outlet
B	Cargo Box Power Lift Switch (Optional)	M	Transaxle Shift Lever
C	Engine Oil Pressure Light	N	Park Brake Lever
D	Glow Plug / Engine Coolant Temperature Light	O	Fuel Tank Cap
E	Park Brake Indicator Light	P	Fuel Gauge
F	Hourmeter	Q	Traction Assist (Differential Lock) Lever
G	Horn Switch (Optional)	R	Accelerator Pedal
H	2WD / 4WD Switch	S	Brake Pedal
I	Front Blade Lift/Lower Switch (Optional)	T	Key Switch
J	Headlight Switch	U	Choke Knob
K	Hazard Lights Switch (Optional)		

OPERATING

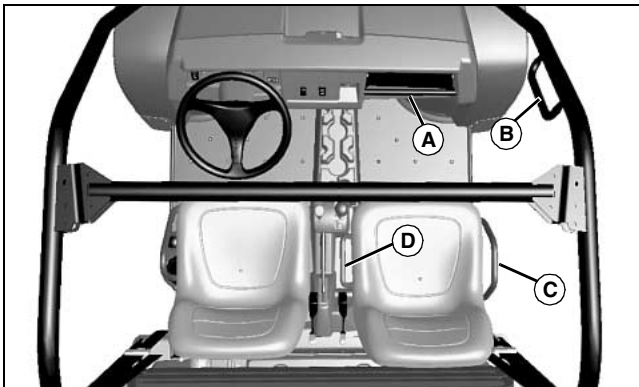
Daily Operating Checklist

- ☐ Test safety systems.
- ☐ Check tire pressure.
- ☐ Check fuel level.
- ☐ Check engine oil level.
- ☐ Remove grass and debris from engine compartment, muffler area, and front grille, before and after operating machine.
- ☐ Check area below machine for leaks.
- ☐ Check brakes and park brake operation.
- ☐ Check coolant level.
- ☐ Check air restriction indicator.
- ☐ Tighten any loose hardware.

Avoid Damage to Plastic and Painted Surfaces

- Do not wipe plastic parts unless rinsed first.
- Insect repellent spray may damage plastic and painted surfaces. Do not spray insect repellent near machine.
- Be careful not to spill fuel on machine. Fuel may damage surface. Wipe up spilled fuel immediately.

Using Hand Holds



Hand holds are provided for passenger balance. When a passenger is present, they shall use two of the three hand holds at all times while the machine is moving. The dash bar (A), OPS handle (B), side rail (C) and grab handle (D).

Adjusting Operator's Seat

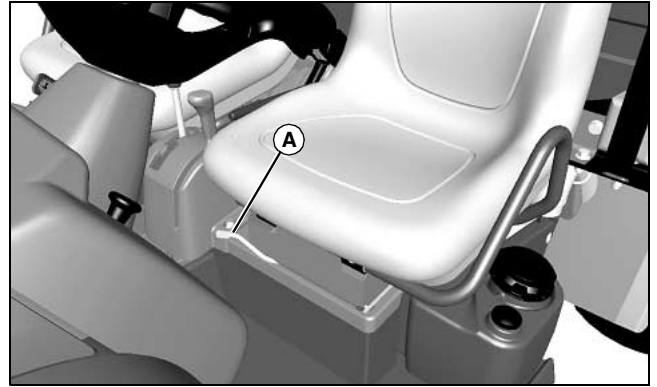
1. Stop machine and move transaxle shift lever to N

(neutral) position.

2. Lock park brake.



CAUTION: Avoid injury! Never adjust seat while machine is moving. Stop machine before adjusting seat to prevent loss of machine control.

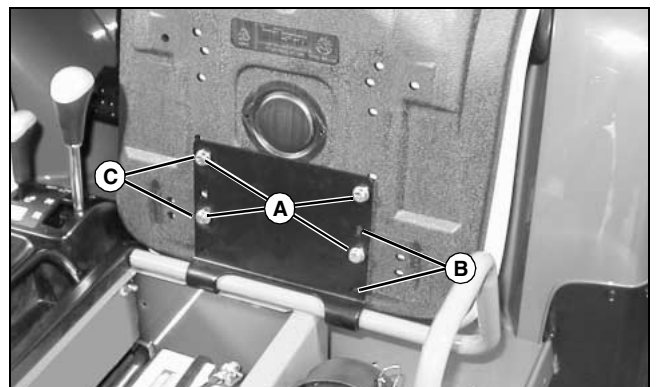


Picture Note: Seats removed for clarity.

3. Push lever (A) to the left.
4. Slide seat forward or rearward to desired position.
5. Release lever.

Adjusting Passenger Seat

1. Tip seat forward.



Picture Note: Rear position shown.

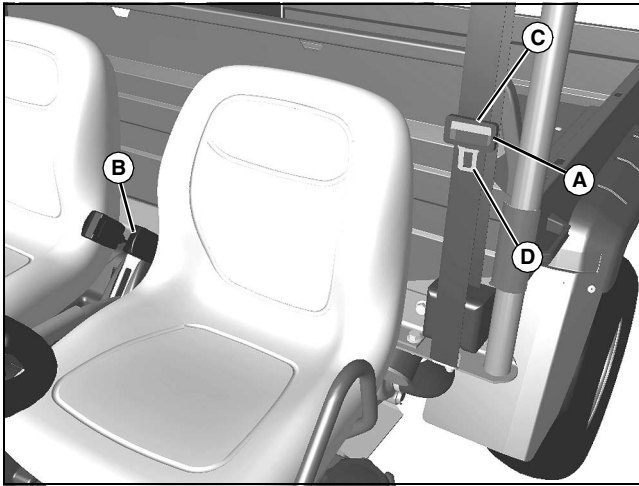
2. Hold onto seat and remove cap screws (A).
3. Slide seat to the forward (B) or rearward (C) position.
4. Position bottom of seat against bracket and align correct holes with holes in seat.
5. Install original hardware to secure seat.
6. Tighten seat bracket hardware to 10 N•m (7 lb-ft).

OPERATING

Using Seat Belt

NOTE: Shoulder harness is sensitive. An emergency lock device is built into the belt for your protection. To engage harness, pull harness slowly. Attempting to pull too fast or in a jerking motion will engage the locking mechanism and the harness will not release.

Periodically inspect seat belts for wear or damage. See Inspecting Seat Belt in the SERVICE MISCELLANEOUS section.



MX40287

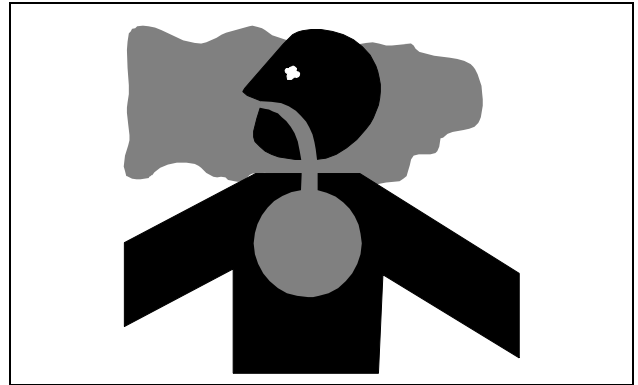
Fasten Belt

1. Grasp outer seat belt connector (A) from behind seat, pull out and across body to inner connector (B), at inside of seat.
2. To adjust outer connector for best fit, squeeze the upper (C) and lower (D) halves of outer connector together and adjust connector up or down along belt.
3. Push outer connector firmly into inner connector until it locks.

Release Belt

1. Press red button on inner connector to release seat belt.

Testing Safety Systems



CAUTION: Avoid injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

Move the machine to an outside area before running the engine.

Do not run an engine in an enclosed area without adequate ventilation.

- **Connect a pipe extension to the engine exhaust pipe to direct the exhaust fumes out of the area.**
- **Allow fresh outside air into the work area to clear the exhaust fumes out.**

The safety systems installed on your machine should be checked before each machine use. Be sure you have read the machine operator manual and are completely familiar with the operation of the machine before performing these safety system checks.

Use the following checkout procedures to check for normal operation of machine.

If there is a malfunction during one of these procedures, do not operate machine. **See your authorized dealer for service.**

Perform these tests in a clear open area. Keep bystanders away.

Testing the Safety Start System

1. Sit on the operator's seat.
2. Put key switch in OFF position.
3. Lock park brake.
4. Move transaxle shift lever forward to the high range position.
5. Turn key switch to start position. Engine should not

OPERATING

crank. Turn key switch off.

6. Move transaxle shift lever to reverse position.

7. Turn key switch to start position. Engine should not crank. Turn key switch off.

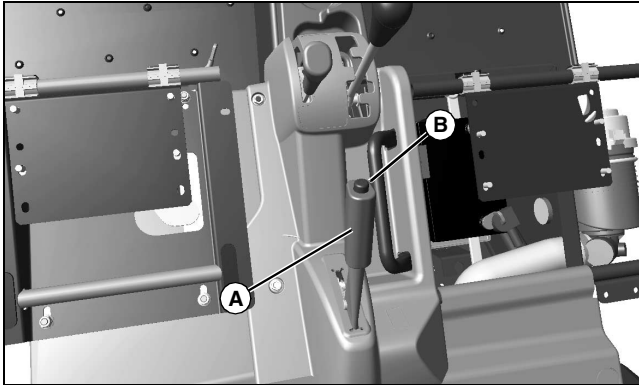
Using Park Brake



CAUTION: Avoid injury! Children or bystanders may attempt to move or operate an unattended machine.

Always lock the park brake and remove the key before leaving the machine unattended.

Locking the Park Brake:



MX31002

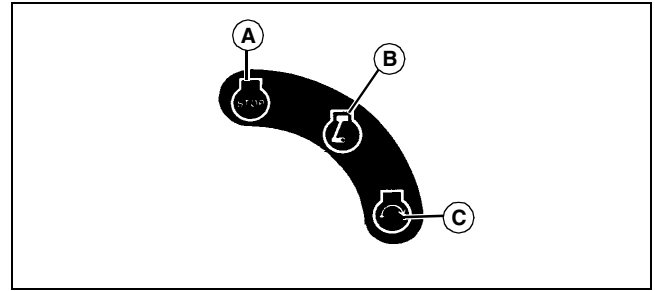
Picture Note: Seats removed for photo clarity.

1. Push down on brake pedal to hold machine in place.
2. Pull up on lever (A) and lock lever into position engaging park brake.

Unlocking the Park Brake:

1. Push down on brake pedal to hold machine in place.
2. Pull up on lever (A).
3. Depress button (B).
4. Release lever down completely.

Using Key Switch



W00927

A - OFF Position - With key in off position, all switched power is off, and engine should not run.

B - ON Position - Turn key from off to this position and all switched power circuits will be energized.

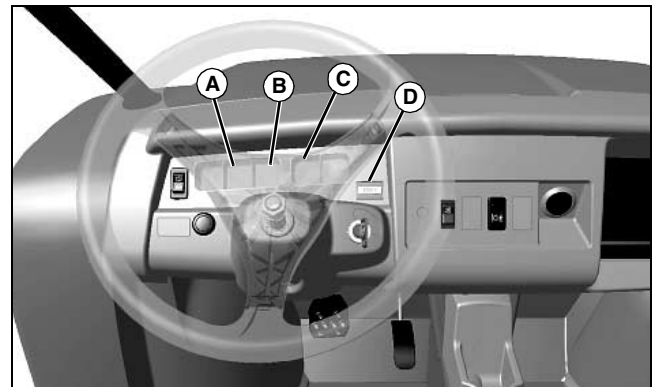
C - START Position - Turn key to start position to start the engine. Release key after engine has started and it will automatically return to the on position. The engine will continue to run.

Using Headlights

Key switch must be in the run position to operate the lights. If the key switch is in the run position and the engine is not running, the battery will discharge if the lights are allowed to remain on for an extended period of time.

- Press at top of light switch to turn headlights on.
- Press at bottom of light switch to turn headlights off.

Using and Checking Instrument Panel



MX35563

A - Engine Oil Pressure Light - This light will turn on when the ignition key is in the ON position and the engine is not running. If this light turns on while the engine is running, engine oil pressure is too low. Stop engine.

OPERATING



CAUTION: Avoid injury! The radiator will be hot and can burn skin. Built-up pressure may cause explosive release of coolant when the radiator cap is removed:

- Shut off the engine and allow to cool.
- Do not remove the cap unless the radiator and the engine are cool enough to touch with bare hands.
- Slowly loosen the cap to the first stop to release all pressure. Then remove the cap.

B - Engine Coolant Temperature Light - This light will turn on when the ignition key is in the START position and the transmission is in neutral. The light will turn off when the key is released to the ON position. This light will turn on when the engine coolant is approaching a dangerously hot temperature. If this light turns on during operation, remove load on machine immediately. Stop engine, move transaxle shift lever to neutral, and lock park brake. Check for something blocking air flow to the radiator and check engine coolant level.

C - Park Brake Light - This light will turn on when the key switch is in the ON position and the park brake is locked.

D - Hour Meter - The hour meter operates and displays when the engine is running. The hour meter shows the accumulated number of hours the engine has run. The hour meter is intended to provide a means of monitoring machine usage for maintenance purposes. Use the hour meter to determine when your machine has reached the recommended service intervals.

Using Accessory Outlet



CAUTION: Avoid injury! Safe operation requires your full attention. Do not wear radio or music headphones while operating machine.

NOTE: Accessory must be rated at 10 amps or less.

The accessory plug does not turn off with the key switch. Items connected to the accessory plug will continue to draw power draining the battery.

- Remove 12-volt outlet cover and install accessory cord in outlet.
- Install cover in outlet after use.

Using Turn Signal Switch (If equipped)

NOTE: Turn signals will continue to flash when the key is in the off position, draining the battery.

- Press at left end of turn signal switch to signal a left turn.
- Press at right end of turn signal switch to signal a right turn.
- Press at opposite end of turn signal switch until switch is centered to turn signal light off.

Using Hazard Lights (If equipped)

NOTE: Hazard lights will continue to flash when the key is in the off position, draining the battery.

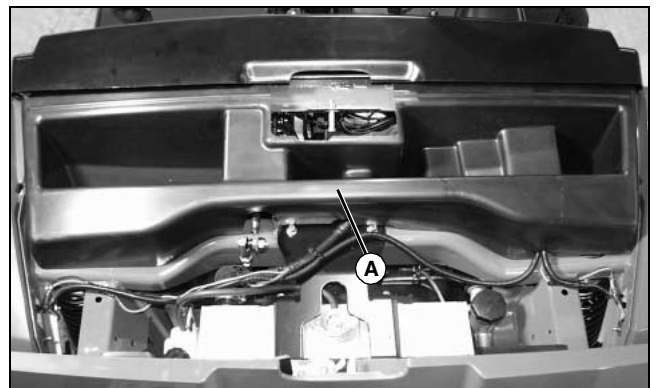
- Press at top of hazard light switch to turn hazard lights on.
- Press at bottom of hazard light switch to turn hazard lights off.

Using Storage Tray



CAUTION: Avoid injury! Never store flammable, heavy, or loose breakable objects in the storage tray. Always latch hood before operating machine.

IMPORTANT: Avoid damage! Do not store items that will not allow the hood to close properly. Properly secure loose or sharp items. These items may damage the storage tray or other items within the tray.



MX31762

Storage tray (A) is located in front of machine under the hood. This is a convenient location to carry personal articles such as an Operator's Manual, spare parts, first aid kit, and/or tools. The storage tray has a total volume of 7210 cc (440 in.).

OPERATING

1. Open hood to access the storage tray.
2. Secure all items to prevent damage from movement while operating the machine.
3. Close hood.

Starting the Engine



CAUTION: Avoid injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

Move the machine to an outside area before running the engine.

Do not run an engine in an enclosed area without adequate ventilation.

- Connect a pipe extension to the engine exhaust pipe to direct the exhaust fumes out of the area.
- Allow fresh outside air into the work area to clear the exhaust fumes out.

1. Sit on operator seat. Do not start engine at this time.
 2. Push down on accelerator pedal to check free movement of pedal assembly. Release pedal.
- NOTE: The machine has a neutral start safety switch. The engine will not start unless the transaxle shift lever is in N (Neutral) position.**
3. Verify that transaxle shift lever is in N (Neutral) position.
 4. Verify that park brake is locked.



CAUTION: Avoid injury! Do not start engine by shorting across starter terminals. Bypassing normal circuitry will allow vehicle to start in gear.

Do not use starting fluid to aid engine starting.
Never start engine while standing on ground.
Start engine only from operator's seat.

5. Turn key switch to the ON position.
6. Check that the oil pressure indicator light is on.

IMPORTANT: Avoid damage! Open the choke by pushing the knob in to its full off position as soon as possible. Running the engine with the choke on beyond the warm up period may lead to plug fouling.

NOTE: The choke is designed with a snap and seal option and can be utilized for maximum weather protection such as pressure washing or inclement weather. Under normal use this feature does not necessarily need to be used. Push in fully to snap and seal the knob. Pull out to unseal the knob for normal operation.



MX35567

7. Pull choke: Pull the choke knob (A) out fully if engine is cold.
8. Turn key to START position.
9. Push choke in as needed to obtain a stable engine idle and push knob all the way in once the engine is running smoothly.

IMPORTANT: Avoid damage! Starter may be damaged if operated continuously for extended periods of time. Allow starter to cool down after several starting attempts.

10. Release key to the ON position when engine starts.
 - If engine does not start within five seconds, turn key to OFF position and wait ten seconds before trying to start again.
 - In very cold conditions, attempt starting engine three times only, then wait 5 minutes before trying again. This will allow time for starter to cool and prevent damage to starter.
11. Push in on the choke.

IMPORTANT: Avoid damage! Do not operate the engine at full throttle or under load until engine has warmed up, or engine damage could occur.

12. Run engine at half speed for 2 or 3 minutes to warm the engine.

OPERATING

Stopping Engine



CAUTION: Avoid injury! Children or bystanders may attempt to move or operate an unattended machine.

Always lock the park brake and remove the key before leaving the machine unattended.

IMPORTANT: Avoid damage! Do not stop engine immediately after hard or extended operation. Keep engine running at low idle for about 2 minutes to prevent heat build-up.

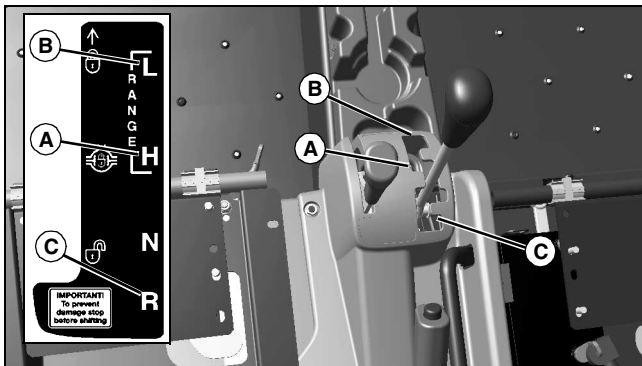
1. Stop machine.
2. Move transaxle shift lever to N (Neutral) position.
3. Lock park brake.
4. Turn key switch to OFF position.
5. Remove key.

Using Travel Controls

1. Stop machine.
2. Allow engine to come to a low idle speed.

IMPORTANT: Avoid damage! Do not shift gears when vehicle is moving or with engine running above low idle speed. Push down brake to stop vehicle motion and engage shift lever with a firm positive action.

Gears may grind when shifting if engine idle speed is set higher than factory specification.



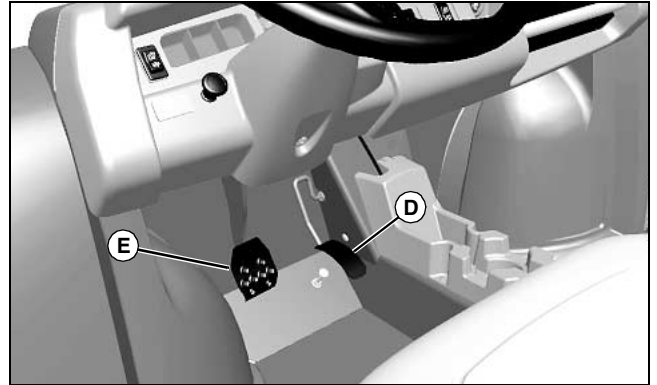
VG11348, MX31002

3. Select a gear position:
 - Forward - Push shift lever forward to either high (A) or low (B) range.
 - Reverse - Push shift lever to left, then pull rearward to reverse (C) gear.

4. Use the traction assist and/or 4WD-On-Demand as needed.
5. Look in the direction the vehicle will travel.



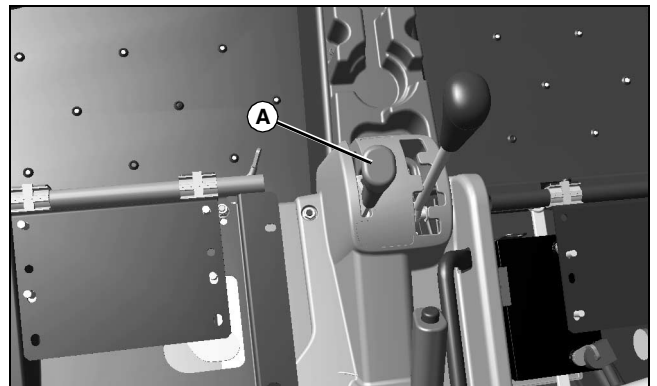
CAUTION: Avoid injury! Reduce speed before braking or turning, when hauling loads, and while operating around obstacles or on hazardous off-road conditions.



MX35571

6. Push down accelerator pedal (D) slowly and smoothly to begin machine travel.
7. Release accelerator and apply brake pedal (E) evenly and firmly to slow down or stop.

Using Traction Assist



MX31002

Traction Assist (A) provides better traction when rear wheels start to slip. Engaging the traction assist will cause both rear wheels to turn together at equal speed.

OPERATING



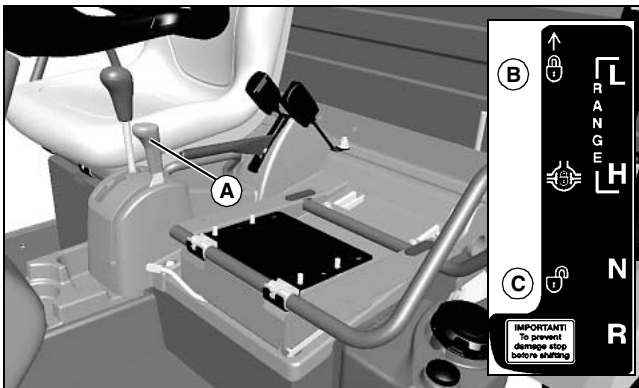
CAUTION: Avoid injury! Driving at high speeds with the traction assist engaged may result in loss of steering control. Do not engage traction assist or turn with the traction assist engaged while operating machine at high speeds or on slopes.

Engaging the Traction Assist:

IMPORTANT: Avoid damage! Incorrectly engaging traction assist may damage the transaxle.

Reduce speed before engaging or disengaging traction assist.

1. Stop or reduce engine speed to 1/3 throttle or less.



MX35572 VG11348

2. Push traction assist lever (A) forward to locked position (B):

- Traction assist will remain engaged as long as lever is forward.

Disengaging the Traction Assist

NOTE: To ensure true disengagement of traction assist, you must equalize torque on both axles.

1. Stop or reduce engine speed to 1/3 throttle or less.
2. Drive the vehicle straight ahead at a constant speed.
3. Pull lever rearward to unlocked position (C).

Using 4WD On-Demand

4WD On-Demand enables the front wheels to drive, but torque will not be applied until rear wheels begin to slip.

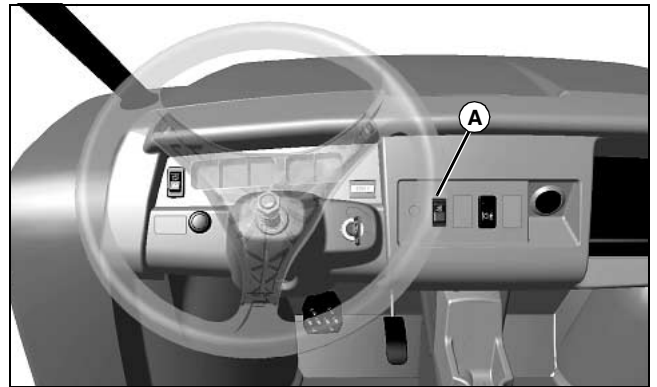


CAUTION: Avoid injury! 4WD On-Demand greatly increases traction and may make dangerously sloped terrain accessible, increasing possibility of a tip-over.

Use extra caution when driving on slopes. Use 4WD On-Demand when driving on slopes to increase traction.

Use 4WD On-Demand when driving on icy, wet or graveled surfaces; reduce speed to avoid skidding and loss of steering control.

IMPORTANT: Avoid damage! Engaging 4WD On-Demand when the machine is stopped and the rear wheels are spinning will damage the gears.



MX35563

- Push in on top of 2WD/4WD switch (A) to enable the 4WD On-Demand system.
- Push in on bottom of switch to disable the system.



CAUTION: Avoid injury! Front implements may cause decreased traction at the rear wheels resulting in loss of control. Always operate machine with 4WD On-Demand engaged when front implements are attached.

Tips for operating 4WD On-Demand:

NOTE: Occasionally the 4WD On-Demand system will not disengage after a change in vehicle travel direction. This is known as “wedging.” If this does occur, the vehicle will exhibit higher than usual steering efforts and driveline wind-up. To disengage (un-wedge) the system, reverse the direction of vehicle travel.

- Maintain recommended front and rear tire pressures to ensure optimum performance on all surface conditions.
- Disable 4WD On-Demand when driving machine on paved or hard packed surfaces to increase front tire life and

OPERATING

reduce drive train wear.

Raising and Lowering Cargo Box

Manual Lift

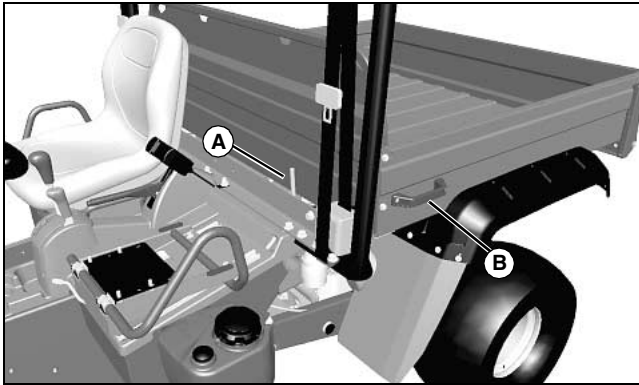


CAUTION: Avoid injury!

Park machine on a level surface and lock park brake before manually raising and securing cargo box in raised position.

A cargo box containing material can be heavy. Empty some or all material until cargo box can safely be raised manually.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Empty cargo box by hand.

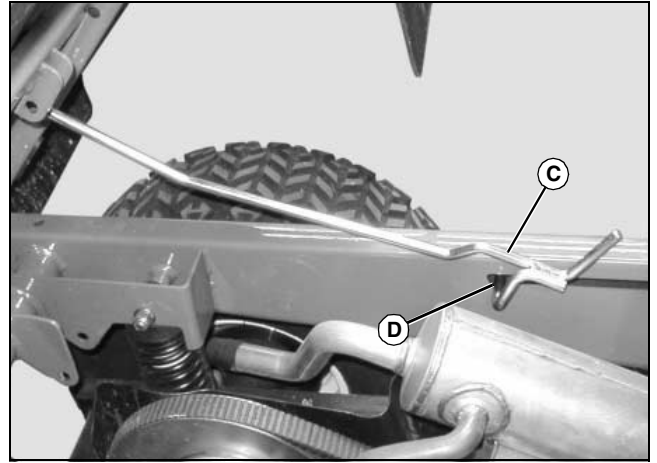


MX35573

3. Release latch (A) by pushing inward toward center of machine. Raise cargo box manually with lift handle (B) on side of cargo box.



CAUTION: Avoid injury! Cargo box can fall if not secured properly. Remove key from ignition and lock support rod securely before doing any service under raised cargo box.



MX31004

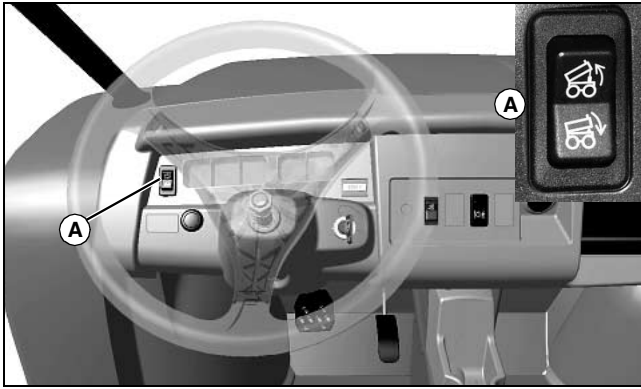
4. Push support rod (C) down to lock into slot (D) when cargo box is fully raised.
 5. To lower cargo box, raise cargo box slightly using lift handle.
 6. Release support rod from latch slot by pulling up on lower end of rod.
- NOTE: Lowering the box completely will allow the support rod to latch at the front of cargo box.**
7. Slowly lower cargo box. Support rod will slide along slotted channel.
 8. Push down on cargo box handle until support rod latches into cargo box with an audible snap.

Power Lift (If equipped)

IMPORTANT: Avoid damage! A “hissing” or “squealing” sound when cargo box is fully raised or lowered or when box is heavily loaded indicates hydraulic system operating at pressure relief. To prevent unnecessary wear or damage, minimize operation at pressure relief. Do not operate the Power Lift actuator beyond full stroke or exceed the cargo box weight capacity.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Turn key to ON position.

OPERATING



MX35563 MX30610

3. The cargo box switch (A) is located on the left side of the instrument panel.

4. Raise cargo box by pressing and holding top of switch (A). Release switch when box is at desired dump height or when reaching maximum height.

NOTE: Allowing the Power Lift hydraulics to operate at pressure relief briefly (less than one second) after cargo box is fully lowered will help keep cargo box secure and reduce rattling caused by travel vibrations.

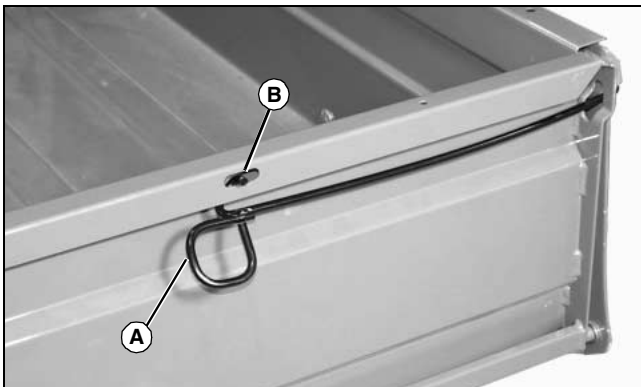
5. Completely lower cargo box by pressing and holding bottom of switch (A).

6. Turn key to OFF position.

Operating the Tailgate



CAUTION: Avoid injury! Seating is provided for the operator and one passenger. Do not allow riders in the cargo box or on the tailgate. Extra riders can fall off and be seriously injured or killed.



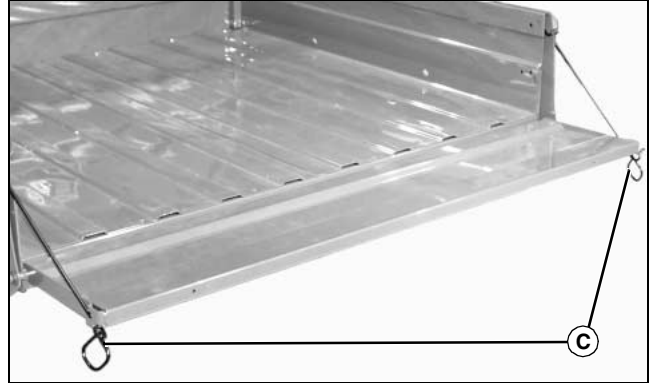
MX31765

1. Push in and down on loop (A) of tailgate latch rods to unhook rods from slot (B) in tailgate.

2. Pull latch rods out and down.



CAUTION: Avoid injury! When raising or lowering tailgate, latch rods can swing outward abruptly towards operator. Stand in center of tailgate and slowly lower or raise tailgate to make sure latch rods do not contact operator.



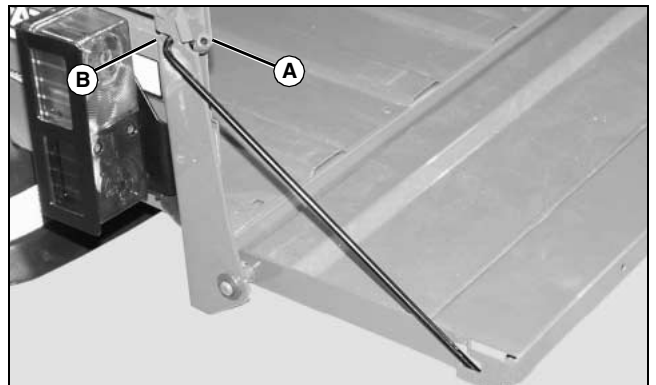
MX31766

3. Lower tailgate until it rests on ends of latch rods (C).

IMPORTANT: Avoid damage! Lower tailgate completely to unload cargo box only. Never drive with the tailgate hanging down. Tailgate can contact tires and cause damage.

4. To raise tailgate, slowly push tailgate upward. Push inward and upward on loop of latch rod to engage rod in slot in tailgate.

Removing Tailgate



MX31006

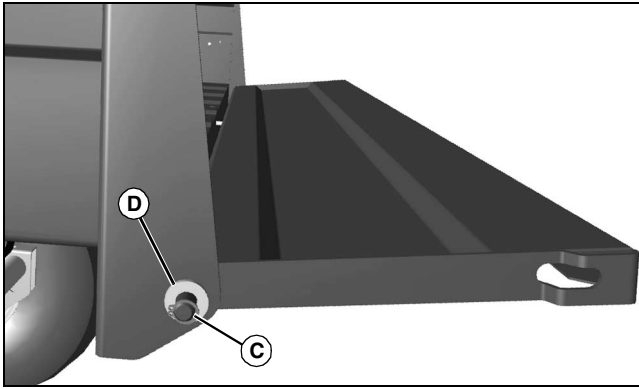
1. Remove and retain rubber hose sleeves from latch rod ends (A).

2. Raise tailgate slightly and rotate latch rods to disengage from slots (B) in cargo box sides.

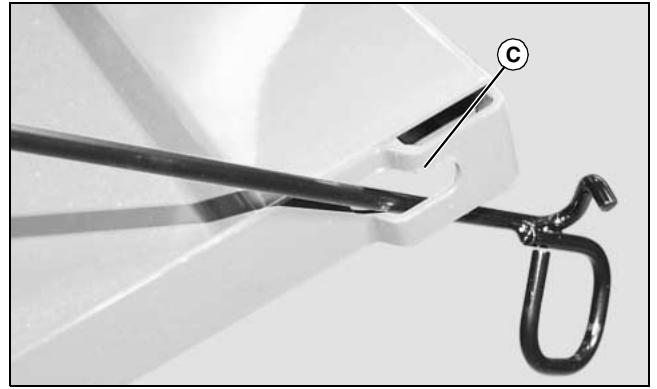
3. Remove latch rods from sides of tailgate.

4. Support tailgate by hand.

OPERATING



MX31008

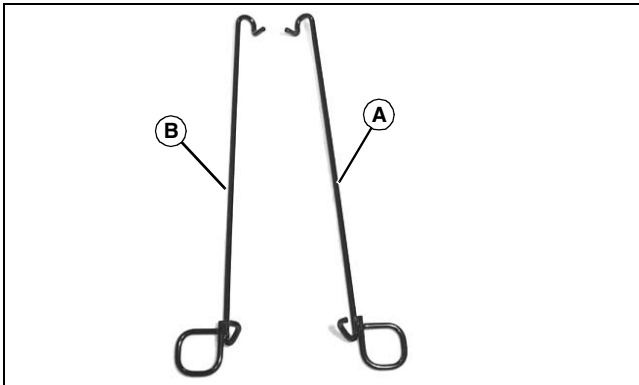


MX31769

Picture Note: Left side shown.

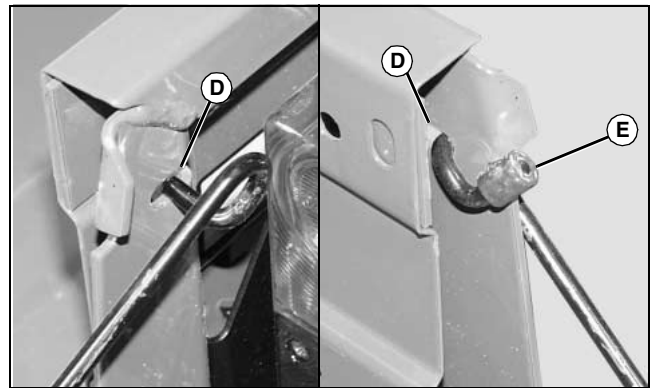
5. Remove retaining ring (C) and bushing (D) from each tailgate rod end.
6. Slide tailgate sideways so tailgate rod end is clear of the cargo box bracket.
7. Pull the detached end of tailgate away from the cargo box just enough to clear the cargo box bracket and allow the tailgate to slide in opposite direction to complete removal.
8. To install, reverse the steps.

Installing Tailgate Latch Rods



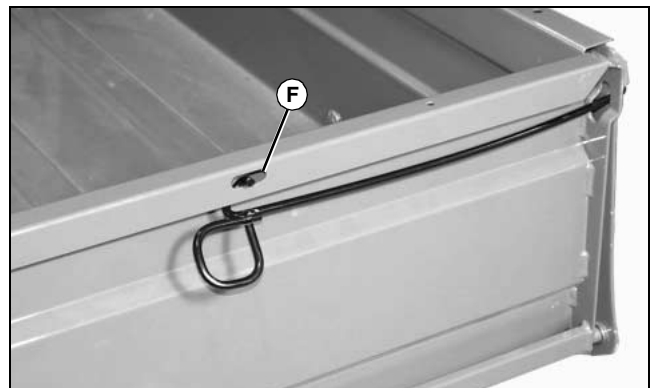
MX31768

1. Identify right (A) and left (B) latch rods.



MX31770, MX31771

3. Raise tailgate slightly from horizontal position. Insert end of latch rod through slot (D) in cargo box bracket. Rotate rod around the bracket to secure.
4. Install rubber hose sleeve onto rod end (E).



MX31765

5. Raise tailgate, push inward and upward on latch rod to engage rod in slot (F) in top rail.

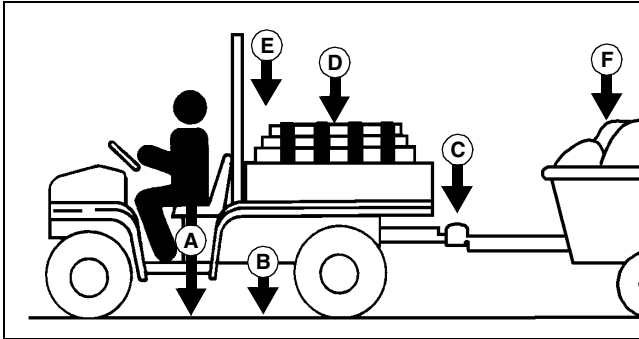
OPERATING

Determining Vehicle Load Capacity



CAUTION: Avoid injury! Overloading the vehicle or trailer can cause loss of control and could cause serious injury or death.

- Do not allow the Gross Vehicle Weight (GVW) to exceed the Gross Vehicle Weight Rating (GVWR) of the vehicle.
- Remove excess weight before operating vehicle.



Factors in Determining Vehicle Load Capacity

NOTE: Optional equipment or attachments that are not standard equipment, must be included when determining gross vehicle weight, and may reduce cargo box capacity.

- **Gross Vehicle Weight (GVW)** is the combination of the empty vehicle weight, payload, tongue weight, and the weight of any other kits or attachments on the vehicle.

$$GVW = A+B+C+D+E$$

- **Gross Vehicle Weight Rating (GVWR)** is the maximum permissible vehicle weight.

GVWR for gas and diesel HPX models = 1383 kg (3050 lb)

- **Payload** is the weight of all occupants plus the cargo box load. **Payload cannot exceed 635 kg (1400 lb).**

- **(A) Occupant load** is the combined weight of all occupants (operator and one passenger).

- **(B) Empty vehicle weight** is the weight of the vehicle (full fluids) without occupant(s) or load or attachments.

- 588 kg (1296 lb) - HPX Gas models
- 668 kg (1473 lb) - HPX Diesel models

- **(C) Cart tongue weight** is the weight measured if the tongue of a loaded cart was placed on a scale. The tongue weight should be approximately 10% of the total of the cart weight and the weight of its load.

- **(D) Cargo box load** is the weight of the cargo in the cargo

box. **Cargo box capacity cannot exceed 454 kg (1000 lb).** It may be less depending on the weight of the occupants, attachments and the cart tongue weight.

- **Vehicle Load capacity** is the remaining amount of weight that the vehicle can haul in the cargo box and/or the additional weight from the operator, passenger, cart tongue and attachments.

- **(E) Attachment and Option weight** is the combined weight of all attachments and options that were not standard equipment. Your John Deere dealer can help you with this information.

- **(F) Cart capacity** - Refer to Towing Loads in the Operating Section.

- **Determine maximum vehicle load capacity:**

- Calculate $GVW = A+B+C+D+E$
- Subtract the Gross Vehicle Weight (GVW) from the Gross Vehicle Weight Rating (GVWR).
- The weight difference between the two numbers is the vehicle load capacity.

$$\text{Vehicle Load Capacity} = GVWR - GVW$$

- The Gross Vehicle Weight must be less than or equal to the Gross Vehicle Weight Rating. If GVW exceeds GVWR, remove excess weight from vehicle before operating.

Example:

The example below is for an HPX diesel vehicle with, a 350 lb cargo load, a 200 lb operator, 220 lb of attachments and options (such as a heavy duty brush guard, OPS poly roof, cargo box power lift kit, etc), towing a trailer with 50 lb of tongue weight.

(A) Operator Weight:	200 lb
(B) HPX Diesel:	1473 lb
(C) Tongue Weight:	50 lb
(D) Cargo Load:	350 lb
(E) Attachments and/or options:	220 lb

$$GVW = 2293 \text{ lb } (200 + 1473 + 50 + 350 + 220)$$

$$\text{Vehicle Load Capacity} = GVWR (3050) \text{ less } GVW (2293)$$

$$\text{Vehicle Load Capacity} = 757 \text{ lb}$$

The remaining vehicle load capacity of 757 lb can be used to haul additional operator, passenger, cargo, cart tongue and attachment weight.

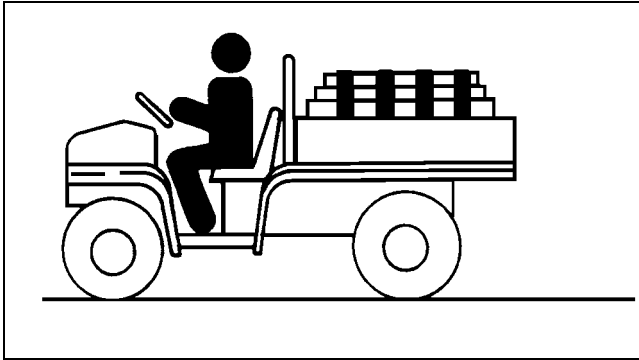
OPERATING

Loading the Cargo Box



CAUTION: Avoid injury! The utility vehicle may become unstable if the cargo box is loaded incorrectly. Avoid loose and shifting loads or uneven loading of material.

- Do not load above height of load guard.
- Securely anchor all loads in cargo box.
- Do not load beyond maximum capacity.



M78553

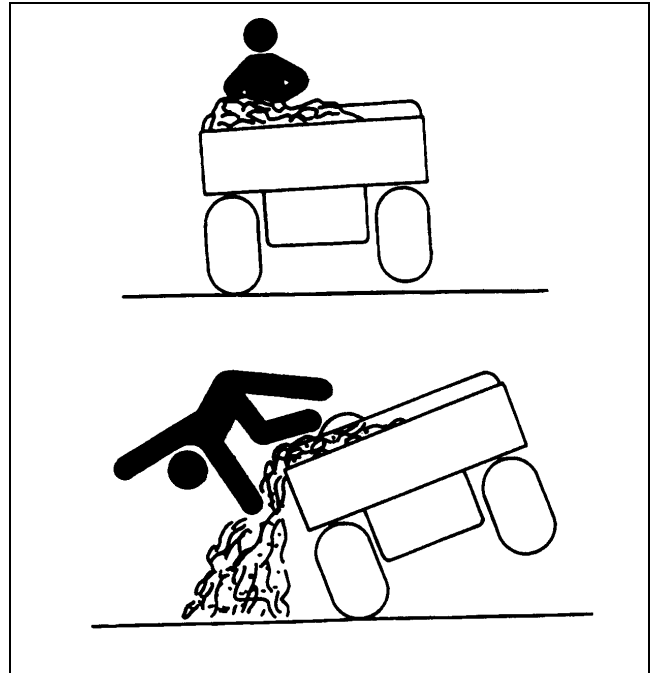
Maximum cargo box capacity on level terrain is 454 kg (1000 lb). Refer to Determining Vehicle Load Capacity in the Operating Section.

Reduce load by half when operating over rough, hilly, or steep terrain. Do not overload vehicle. Limit loads to those that can be safely controlled.

Reduce speed and exercise extreme caution when operating over rough, hilly, or steep terrain.

Securely anchor and evenly distribute loads in cargo box, when loading objects into vehicle. Shifting loads will affect stability.

Do not load above load guard.



M78556

Avoid concentrated loads at rear or side of cargo box to prevent vehicle from tipping over. Be sure load is evenly distributed.

Because there is a big difference in weight between dry and wet sand, the only way of getting true weight of the load you are carrying is by using a scale.

For example, dry sand weighing 250 kg (550 lb) would be approximately 1/2 of cargo box volume.

Printed weight is normally on bagged and other material.

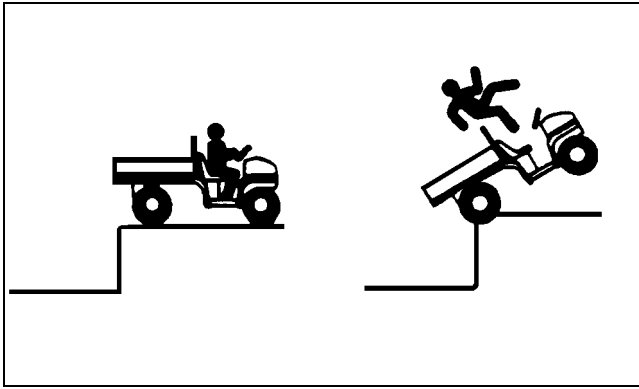
Emptying Cargo Box



CAUTION: Avoid injury! Raising a loaded cargo box changes the center of gravity. Keep vehicle a safe distance from the edge of ravine or drop-off when raising cargo box to empty.

A loaded cargo box can be very heavy. Do not attempt to manually raise a loaded cargo box. Unload cargo box before raising it by hand.

OPERATING



M78552

1. Back up vehicle to dump site.
2. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
3. Open tailgate.

IMPORTANT: Avoid damage! Stop emptying immediately if actuator clutch slippage occurs. Lower cargo box completely and remove excess load by hand before dumping.

4. Raise cargo box to dump load.
5. Lower cargo box when empty.
6. Close tailgate. Do not drive vehicle with cargo box in raised position.

Towing Loads

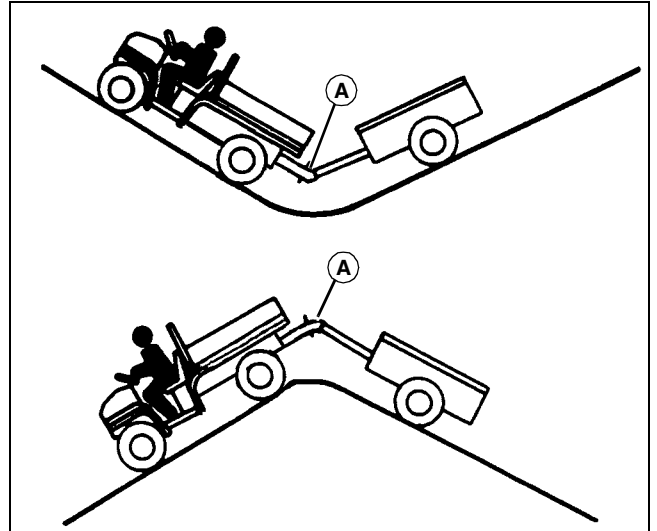


CAUTION: Avoid injury! Excessive towed load can cause loss of traction and loss of control on slopes. Stopping distance increases with speed and weight of towed load.

Do not tow a load that exceeds the maximum allowable towing load for this vehicle, as specified in this operator's manual.

- To provide adequate braking ability and traction, weight of towed load (trailer plus cargo) must never exceed the vehicle payload (operator plus passenger plus cargo box load).
- Do not tow a load that exceeds the maximum allowable towing load for this vehicle, as specified in this operator's manual.
- Do not tow a load that exceeds 590 kg (1300 lb).
- Do not exceed a tongue weight of 59 kg (130 lb).
- Tow load at a speed slow enough to maintain control.

IMPORTANT: Avoid damage! Extreme angles such as high railroad crossings can place high bending loads on hitch connection (A). Traversing terrain where the preceding conditions exist, use a ball type hitch.



M78554

- Always use approved hitch and hitch point provided for the utility vehicle. Do NOT modify the hitch or hitch point in any way.

Using Correct Tires and Inflation

When replacing tires, always check the tire on the opposite side of the vehicle for excessive tread wear. Excessive variations in tread wear between opposite tires may cause the vehicle to pull to one side.

Tires



CAUTION: Avoid injury! Help prevent severe bodily injury or death, failure to observe these recommendations may result in loss of stability and operator control.

Use of John Deere approved original equipment or optional equipment is recommended. To ensure maximum machine performance and ride quality, do not mix size, type, or placement of tires. Failure to place tires per the guidelines could result in reduced machine performance, diminished traction and poor handling.

All Trail II tires

- 24x9.5-10 tires installed on front.
- 24x10.5-10 tires installed on rear.

OPERATING

AT489 tires

- 24x9.5-10 tires installed on front.
- 24x12.0-10 tires installed on rear.

These are directional tires. Directional type tires have directional arrows located on the tire sidewall. These tires should be installed with the directional arrow pointing in the forward direction of travel.

Turf Trac RS tires

- 24x9.5-10 tires installed on front.
- 24x12.0-10 tires installed on rear.

Inflation



CAUTION: Avoid injury! Explosive separation of tire and rim parts is possible when they are serviced incorrectly:

- Do not attempt to mount a tire without the proper equipment and experience to perform the job.
- Do not inflate the tires above the recommended pressure.
- Do not weld or heat a wheel and tire assembly. Heat can cause an increase in air pressure resulting in an explosion. Welding can structurally weaken or deform the wheel.
- Do not stand in front or over the tire assembly when inflating. Use a clip-on chuck and extension hose long enough to allow you to stand to one side.

IMPORTANT: Avoid damage! Over inflation may damage tires and diminish ride quality. Under inflation could cause wheel damage when riding over rough terrain.

NOTE: Improper tire pressure can make it difficult to disengage 4WD On-Demand.

An accurate low pressure gauge is available at your John Deere dealer.

1. Check tires for damage.
2. Check tire pressure with an accurate gauge.
3. Add or remove air, if necessary.

Tire	Pressure
Front	97 kPa (14 psi)
Rear	97 kPa (14 psi)

Tire Chains

IMPORTANT: Avoid damage! Loose tire chains can cause machine damage. Periodically check chain tightness and adjust as necessary.

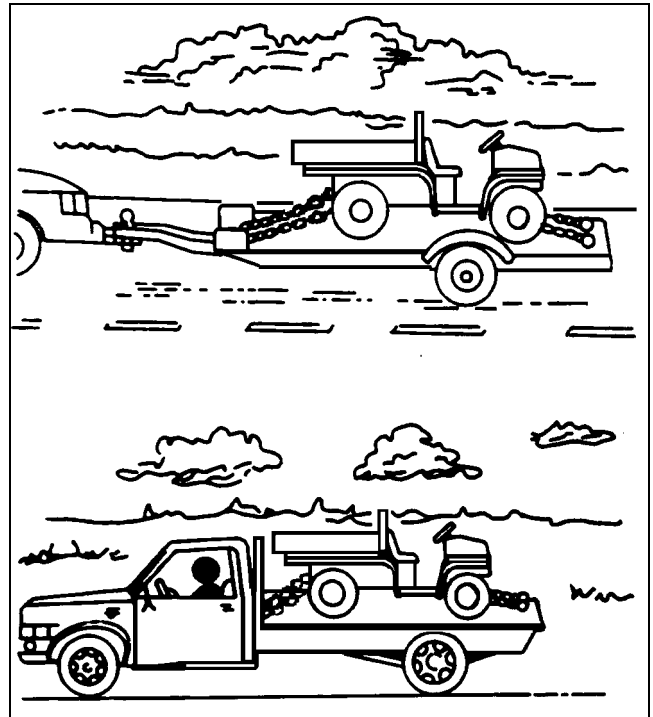
Chains are available for all four wheels from your John Deere dealer.

Transporting Vehicle

IMPORTANT: Avoid damage! Never tow the machine above 40 km/h (25 mph). Towing a machine at speeds above 40 km/h (25 mph) will result in transaxle damage. To avoid damage, haul the machine on a heavy-duty trailer or on a full-size truck.

Never use a car type dolly with the front wheels on the dolly.

NOTE: Space limitations may vary from one truck manufacturer to another. Short bed trucks do not have the necessary length requirement to accommodate the machine.



M78557

1. Drive utility vehicle onto the trailer or truck.
2. Leave transaxle shift lever in forward or reverse gear.
3. Park vehicle safely (See Parking Safely in the SAFETY section.)

OPERATING

4. Fasten vehicle to trailer or truck with straps, chains, or cables.
5. Equip the trailer or truck with all the necessary lights and signs required by local, state, provincial, or federal laws.

REPLACEMENT PARTS

Service Literature

If you would like a copy of the Parts Catalog or Technical Manual for this machine call:

- **U.S. & Canada:** 1-800-522-7448.
- **All Other Regions:** Your John Deere dealer.

Parts

We recommend John Deere quality parts and lubricants, available at your John Deere dealer.

Part numbers may change, use part numbers listed below when you order. If a number changes, your dealer will have the latest number.

When you order parts, your John Deere dealer needs the serial number or product identification number (PIN) for your machine or attachment. These are the numbers that you recorded in the Product Identification section of this manual.

Order Service Parts Online

Visit <http://JDParts.deere.com> for your Internet connection to parts ordering and information.

Part Numbers

ITEM	PART NUMBER
Engine Oil Filter	AM107423
Air Filter Element	M113621
Fuel Filter	AM116304
Spark Plug	M138938
Drive Belt	VG10928
Fuses:	
10 Amp	57M7121
15 Amp	99M7065
20 Amp	57M7120
25 Amp	99M7069
30 Amp	57M7146
40 Amp	99M7104
Battery	VGA10529

ITEM	PART NUMBER
Light Bulbs:	
Head Lamps	AM118013
Front Amber Lamps	M148478
Turn Signals and Tail Lamps	R133301, R133302
Brake Lamps	AR48041
Instrument Panel Lamps	AR62407

(Part numbers are subject to change without notice. Part Numbers may be different outside the U.S.A.)

SERVICE INTERVALS

Servicing Your Machine

IMPORTANT: Avoid damage! Operating in extreme conditions may require more frequent service intervals:

- Engine components may become dirty or plugged when operating in extreme heat, dust or other severe conditions.
- Engine oil can degrade if machine is operated constantly at slow or low engine speeds or for frequent short periods of time.

Please use the following timetables to perform routine maintenance on your machine.

Break In

After First 8 Hours:

- Change engine oil and filter.
- Check and tighten wheel bolts to correct torque.
- Check brake fluid level.

Every 50 Hours

- Lubricate drive line (three locations).
- Check brake fluid level.
- Inspect park brake for proper function and adjust as necessary.

Every 100 Hours or Annually (whichever comes first)

- Change engine oil and filter.
- Check transaxle oil level.

Every 200 Hours or Annually (whichever comes first)

- Change fuel filter.
- Change spark plugs.
- Check spark arrestor.
- Check air cleaner dust unloading valve.
- Clean radiator.
- Check drive belt condition.

- Check driven clutch wear buttons.
- Clean primary drive clutch.
- Inspect battery. Clean if necessary.
- Check and tighten wheel bolts to correct torque.
- Check and tighten all hardware.

Every 300 Hours

- Adjust engine valve clearance (see your John Deere dealer for this service).

Every 400 Hours or 24 Months (whichever comes first)

- Change engine coolant.

Every 800 Hours or 24 Months (whichever comes first)

- Change transaxle oil.
- Change 4WD front differential oil.
- Replace drive belt.

SERVICE LUBRICATION

Grease

IMPORTANT: Avoid damage! Use recommended John Deere greases to avoid component failure and premature wear.

The recommended John Deere greases are effective within an average air temperature range of -29 to 135 degrees C (-20 to 275 degrees F).

If operating outside that temperature range, contact your Servicing dealer for a special-use grease.

front tire and wheel removed.

Lubricate three grease fitting (A) on drive line with one or two shots of grease.

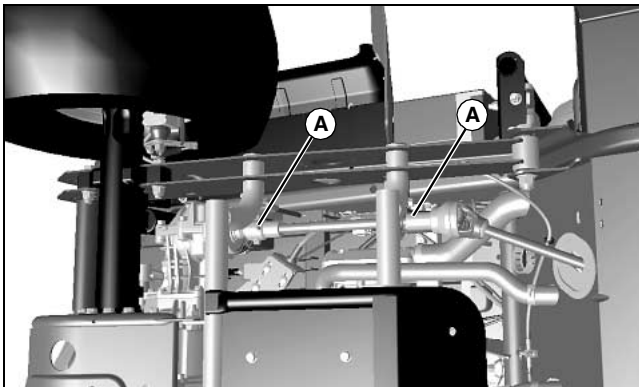
The following greases are preferred:

- John Deere Multi-Purpose SD Polyurea Grease
- John Deere Multi-Purpose HD Lithium Complex Grease

If not using any of the preferred greases, be sure to use a general all-purpose grease with an NLGI grade No.2 rating.

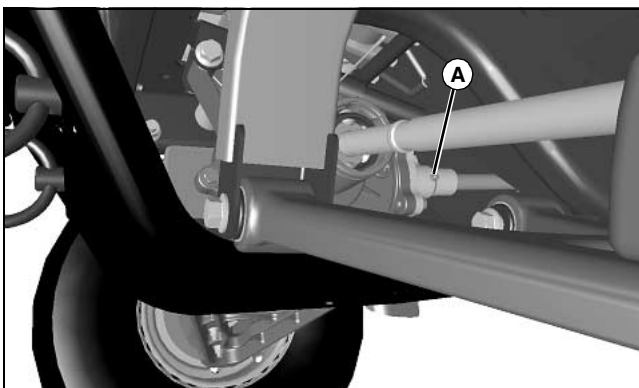
Wet or high speed conditions may require use of a special-use grease. Contact your Servicing dealer for information.

Lubricating Drive Line - HPX 4x4 and Trail HPX 4x4



MX35808

Picture Note: Viewed from under the machine.



MX35807

Picture Note: View toward front differential with left

SERVICE ENGINE

Engine Warranty Maintenance Statement

Maintenance, repair, or replacement of the emission control devices and systems on this engine, which are being done at the customer's expense, may be performed by any non-road engine repair establishment or individual. Warranty repairs must be performed by an authorized John Deere dealer.

Avoid Fumes



CAUTION: Avoid injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

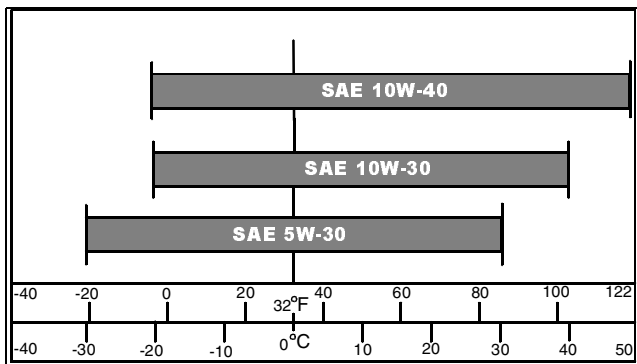
Move the machine to an outside area before running the engine.

Do not run an engine in an enclosed area without adequate ventilation.

- **Connect a pipe extension to the engine exhaust pipe to direct the exhaust fumes out of the area.**
- **Allow fresh outside air into the work area to clear the exhaust fumes out.**

Engine Oil

Use oil viscosity based on the expected air temperature range during the period between oil changes.



The following John Deere oils are preferred:

- TURF-GARD™
- PLUS-4™

Other oils may be used if above John Deere oils are not available, provided they meet the following specification:

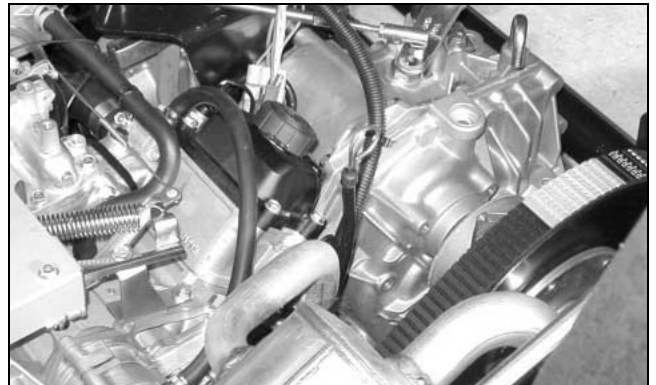
- API Service Classification SG or higher

Checking Engine Oil Level

IMPORTANT: Avoid damage! Failure to check the oil level regularly could lead to serious engine problems if oil level is out of the operating range:

- **Check oil level before operating.**
- **Check oil level when the engine is cold and not running.**
- **Keep oil level between the dipstick marks.**
- **Shut off engine before adding oil.**

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Raise and secure cargo box.



MX31011

3. Remove dipstick (A) and wipe it clean.
4. Install dipstick.
5. Remove dipstick.
6. Check oil level:
 - Oil level must be between fill marks on dipstick.
 - If oil level is low, add oil to bring oil level no higher than upper mark on dipstick.
 - If oil level is above upper mark, drain to proper level. Determine cause of this condition and correct.
7. Install dipstick.
8. Lower the cargo box.

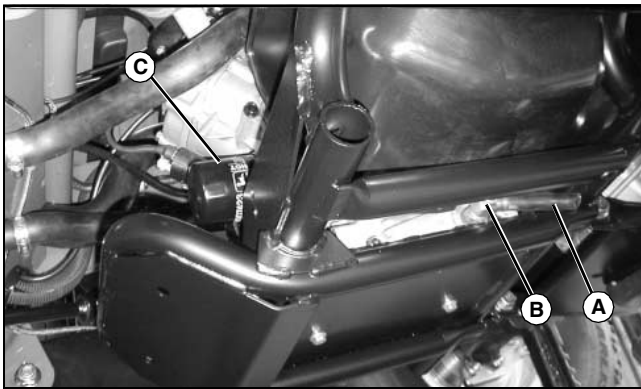
SERVICE ENGINE

Changing Engine Oil and Filter

IMPORTANT: Avoid damage! Change the oil more often if the vehicle is used in extreme conditions:

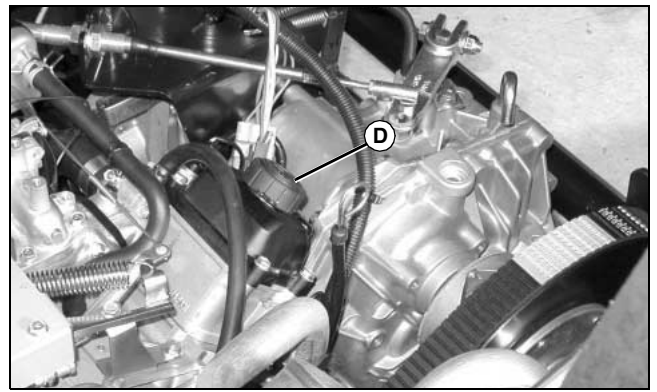
- **Extremely dusty conditions.**
- **Frequent slow or low-speed operation.**
- **Frequent short trips.**

1. Run engine to warm the oil.
2. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
3. Raise and secure cargo box.
4. Place drain pan under engine drain valve.
5. Clean any debris from drain funnel under oil filter.



MX31015

6. Route drain tube (A) below skid plate.
7. Open drain valve (B) on the left side of engine and drain oil into oil drain pan. Allow oil to drain completely.
8. Remove and discard oil filter (C) on front of engine. Wipe off filter base on engine.
9. Put a light coat of clean engine oil on gasket of new oil filter.
10. Install new filter until rubber gasket contacts filter base. Tighten filter an additional one-half turn.
11. Close drain valve and route drain tube above skid plate.



MX31011

12. Pull off oil fill cap from filler opening (D).

IMPORTANT: Avoid damage! Do not overfill crankcase with oil. Oil capacities given are with engine and crankcase completely dry. Some oil will remain in engine after draining.

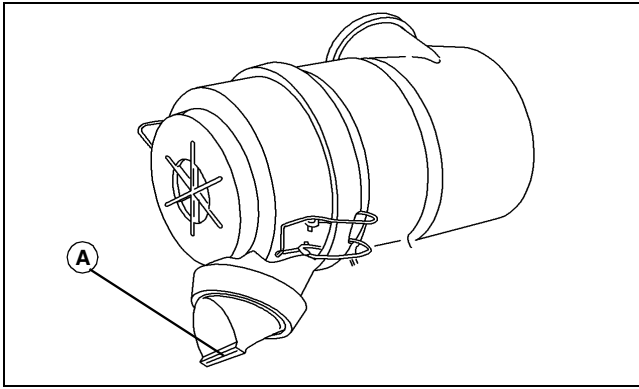
13. Add oil no higher than upper mark on dipstick. Use approximately 1.3L (1.37 qt) of oil. Do not overfill.
14. Install oil fill cap.
15. Start and run engine at idle to check for leaks. Stop engine. Fix any leaks before operating.
16. Check oil level, add oil if necessary.
17. Lower the cargo box.

Cleaning Dust Unloading Valve

IMPORTANT: Avoid damage! Do not operate engine without air cleaner element and rubber dust unloading valve installed.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.
3. Access the engine compartment.

SERVICE ENGINE



MX22502

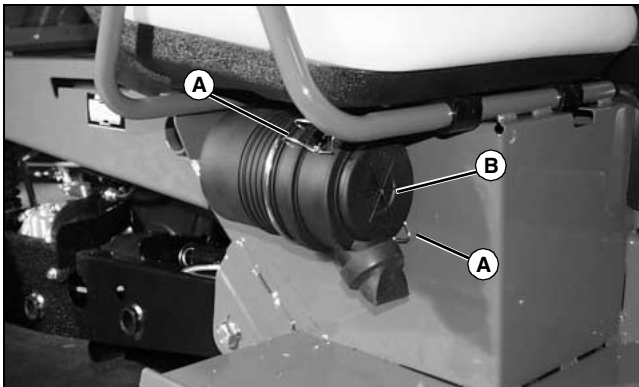
4. Squeeze dust unloading valve (A) to clean. Remove and replace if damaged.

Servicing Air Cleaner Element

IMPORTANT: Avoid damage! Dirt and debris can enter engine when air cleaner canister is opened. Do not open canister unless required for scheduled service. This will keep contamination of the intake system to a minimum.

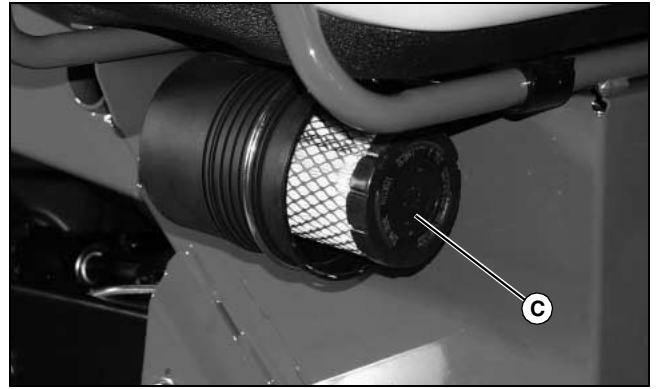
Check filter element more frequently if operating in dusty conditions.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.



MX31016

3. Release latches (A) and remove air cleaner canister cover (B).



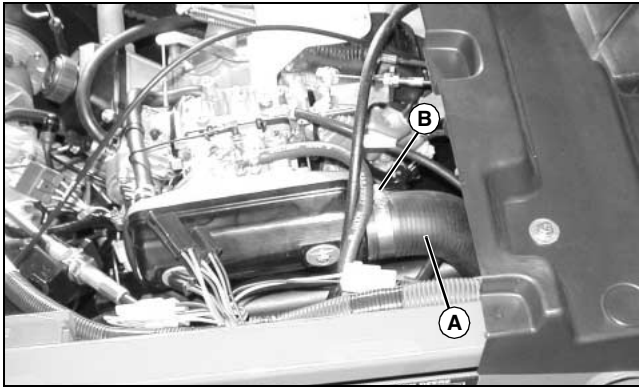
MX31017

4. Remove and discard filter element (C). Replace with a new filter element.
5. Install air cleaner canister cover with rubber dust unloading valve pointing downward. Check instruction molded into canister cover for proper installation.
6. Hook the canister cover latches.

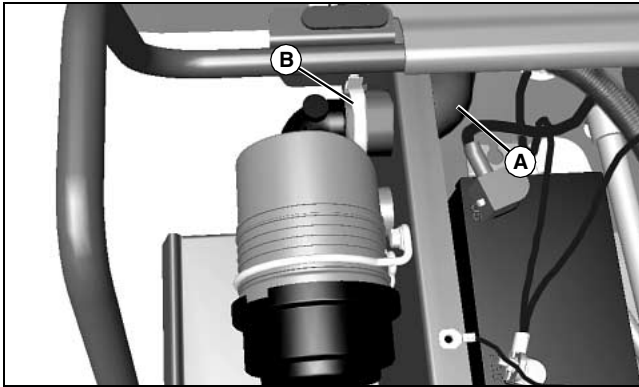
Checking Air Intake, Hoses and Clamps

1. Park the machine safely. (See Parking Safely in the SAFETY section.)
2. Tip passenger seat forward.
3. Raise and secure cargo box.

SERVICE ENGINE



MX31018



MX35577

4. Check intake hose (A) for damage or cracking. Replace if necessary.
5. Check and tighten air intake hose clamps (B) as needed.
6. Lower the cargo box.
7. Tip seat back.

Checking Spark Plug



CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine, components, and fluids will be hot if the engine has been running. Allow the engine to cool before servicing or working near the engine and components.

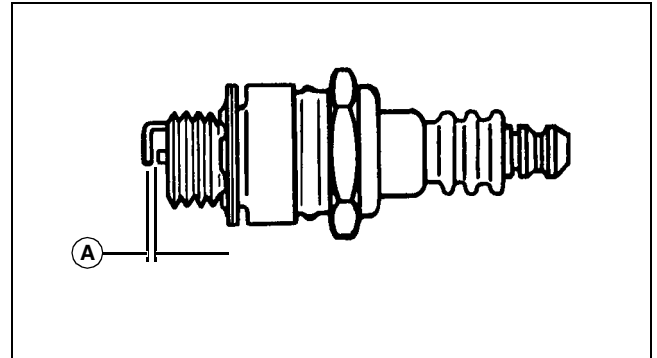
1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Raise and secure cargo box.
3. Disconnect spark plug wire(s).
4. Remove spark plug(s) using appropriate spark plug socket.
5. Inspect spark plug(s) for:
 - Cracked porcelain.

- Pitted or damaged electrodes.
- Other wear or damage.

6. Clean spark plug(s) carefully with a wire brush.

NOTE: In Canada, replace with resistor spark plug only.

7. Replace spark plug(s) if necessary.



M85200A

8. Check and adjust spark plug gap (A):
 - Gap must be 0.75 mm (0.029 in.).
9. Install and tighten spark plug(s). Tighten to 25 N•m (18 lb-ft).
10. Install spark plug wire(s).
11. Lower the cargo box.

Replacing Fuel Filter

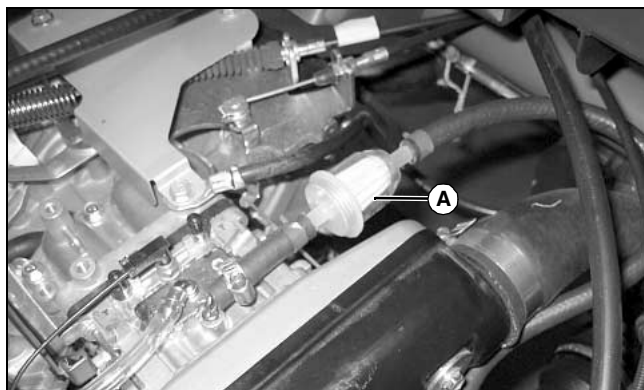


CAUTION: Avoid injury! Fuel vapors are explosive and flammable:

- Do not smoke while handling fuel.
- Keep fuel away from flames or sparks.
- Shut off engine before servicing.
- Cool engine before servicing.
- Work in a well-ventilated area.
- Clean up spilled fuel immediately.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Raise and secure cargo box.

SERVICE ENGINE



MX35806

3. Locate the fuel filter (A) at the front of the engine compartment.
 4. Check element of fuel filter for debris. Replace if dirt or sediment is visible on element.
 5. Slide hose clamps away from the fuel filter.
 6. Place a drain pan or cloth under hoses to catch any fuel left in hoses.
 7. Disconnect hoses from the filter.
- NOTE: Install fuel filter with arrow pointing in direction of fuel flow towards the engine.**
8. Install new filter.
 9. Connect hoses to new filter.
 10. Install clamps.
 11. Lower the cargo box.

Adjusting Carburetor

NOTE: The carburetor is calibrated by the engine manufacturer and should not require any adjustments.

If engine is operated at altitudes above 1829 m (6,000 ft.), some carburetors may require a special high altitude main jet. See your John Deere dealer.

If engine is hard to start or runs rough, check the TROUBLESHOOTING section of this manual.

After performing the checks in the troubleshooting section and your engine is still not performing correctly, contact your John Deere dealer.

Cleaning Engine Compartment



CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine, components, and fluids will be hot if the engine has been running. Allow the engine to cool before servicing or working near the engine and components.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Raise and secure cargo box.

IMPORTANT: Avoid damage! Do not spray water on a hot engine or transaxle. Damage may occur to cast aluminum parts. Allow engine to cool before servicing.

3. Remove any debris in engine compartment.
4. Check and remove any obstructions around the control cables and linkages.

Cleaning Grille

IMPORTANT: Avoid damage! Grille screen must be clean to prevent engine from overheating and to allow adequate air intake.

1. Check grille screen for dirt, grass clippings and debris.
2. Clean grille screen by washing or with a brush or cloth.

Cleaning Radiator Cooling Fins



CAUTION: Avoid injury! Compressed air can cause debris to fly a long distance.

- Clear work area of bystanders.
- Wear eye protection when using compressed air for cleaning purposes.
- Reduce compressed air pressure to 210 kPa (30 psi).

IMPORTANT: Avoid damage! Cooling fins must be clean to prevent engine from overheating and to allow adequate air intake.

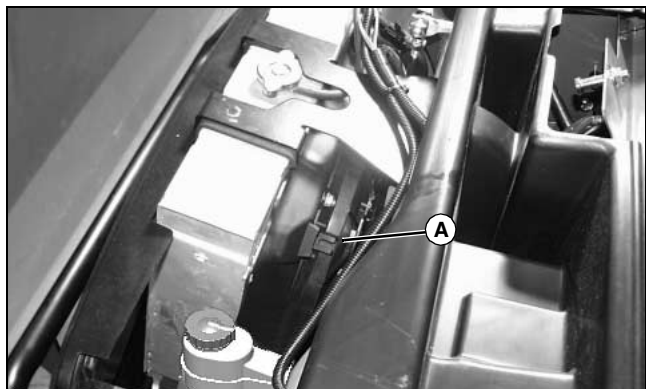
1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Open hood.

SERVICE ENGINE

3. Remove storage tray.

IMPORTANT: Avoid damage! High-pressure water or air can damage cooling fins or other engine components. Use water from a hose or reduce compressed air pressure to 210 kPa (30 psi).

Turn engine off before cleaning radiator screen and fins.

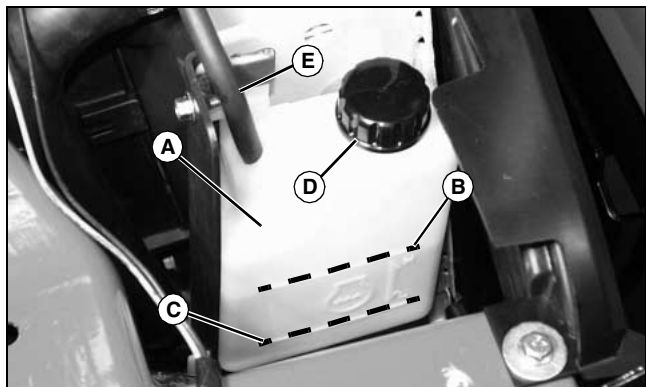


MX35578

4. Remove all dirt and debris from radiator fins and fan shroud (A) using compressed air or water. Flow of compressed air or water should be from back to front.
5. Install storage tray.
6. Close hood.

Checking Coolant Level

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.
3. Open hood.



MX31022

4. Check recovery tank (A) coolant level:
 - If engine is warm, coolant level should be between the FULL line (B) and the LOW line (C).

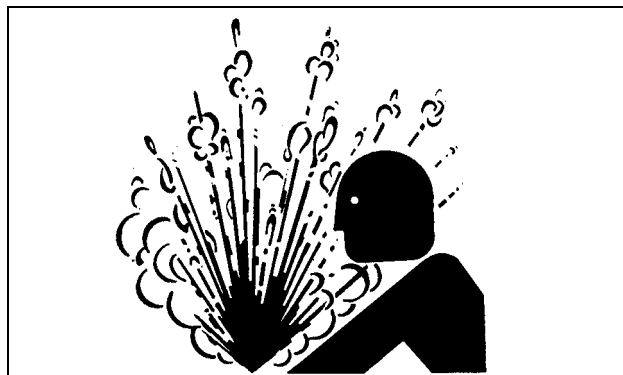
- If engine is cold, coolant level should be at the LOW line (C) on the recovery tank.

5. Remove recovery tank cap (D) if necessary to add coolant.
6. Add coolant mixture to recovery tank.

IMPORTANT: Avoid damage! Installing suction hose incorrectly will not allow coolant into the coolant system. Do not allow bottom of hose to touch bottom of bottle or bend upwards out of coolant.

7. Install and tighten recovery tank cap.
8. Close hood.

Service Cooling System Safely



TS281



CAUTION: Avoid injury! The radiator will be hot and can burn skin. Built-up pressure may cause explosive release of coolant when the radiator cap is removed:

- Shut off the engine and allow to cool.
- Do not remove the cap unless the radiator and the engine are cool enough to touch with bare hands.
- Slowly loosen the cap to the first stop to release all pressure. Then remove the cap.

Servicing Cooling System

IMPORTANT: Avoid damage! Follow all service procedures exactly. If not equipped to perform this work, see your John Deere dealer for service.

Prepare Vehicle

1. Park the vehicle safely. (See Parking Safely in the

SERVICE ENGINE

SAFETY section.)

2. Raise cargo box.
3. Tip seats forward.
4. Open hood.
5. Remove storage tray.
6. When the coolant system service is completed:
 - Install storage tray.
 - Close hood.
 - Tip seats back.
 - Lower cargo box.

Draining Cooling System

1. Make sure engine has cooled completely.
2. Place drain pan under engine.



MX31021

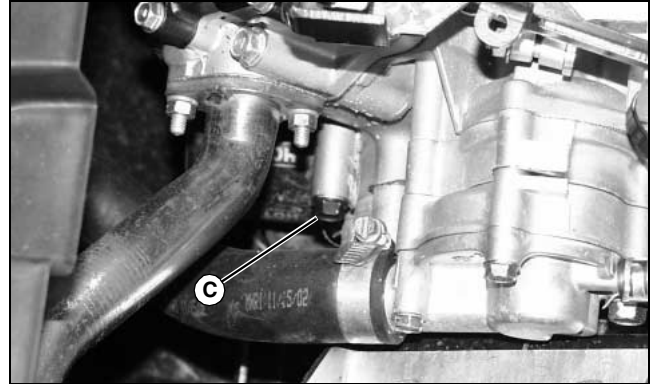
3. Slowly open radiator cap (A) to the first stop to release all pressure.
4. Remove cap after all pressure is released.



MX31015

5. Disconnect radiator hoses (B) from intermediate tubes.
6. Route radiator hoses over the drain pan and allow coolant to drain into drain pan.

NOTE: Engine block drain screws may be black in color.



MX31024

7. Loosen engine block drain screw (C) on left side of engine. Allow coolant to drain into a drain pan.
8. After all coolant has drained, connect radiator hoses and tighten the engine block drain screw.



MX31022

9. Remove overflow hose (D) from recovery tank.
10. Remove the screw (E) and lift recovery tank out of machine.
11. Remove cap and empty recovery tank into drain pan.
12. Check condition of all hoses. Replace as needed. Check all hose clamps and tighten as needed.
13. Install recovery tank in machine and secure with screw (E).

IMPORTANT: Avoid damage! Install overflow hose properly to ensure proper function of the cooling system. Position hose slightly above bottom of reservoir. Do not allow hose to contact bottom of reservoir or bend upwards out of the coolant.

14. Install overflow hose (D) and cap (F).
15. Fill and bleed cooling system.

SERVICE ENGINE

Filling and Bleeding Cooling System

IMPORTANT: Avoid damage! Using incorrect coolant mixture can damage the radiator:

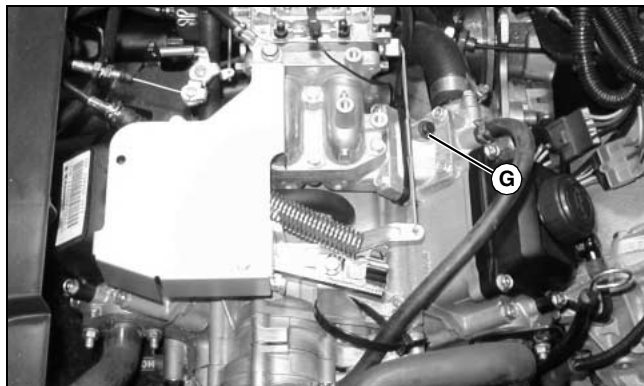
- Do not operate engine without coolant or with plain water.
- Use antifreeze approved for use in aluminum engines.
- Do not exceed a 50% antifreeze mixture for the coolant.
- Do not pour coolant or water into radiator when engine is hot.
- Do not add Stop Leak or other additives.

NOTE: John Deere COOL-GARD coolant is recommended when adding coolant to the cooling system. Follow the directions on the container for correct mixture ratio.

Cooling system capacity is approximately 5.0 L (5.2 qt.) including recovery tank.

IMPORTANT: Avoid damage! Bleed screw uses a special aluminum seal washer. Do not lose or substitute with any other type of washer.

NOTE: Engine block bleed screw may be black in color.



MX31023

1. Remove bleed screw and seal washer (G) located by carburetor.
2. Remove radiator cap and add recommended coolant mixture to radiator until coolant runs out of bleed port.
3. Install and tighten bleed screw with seal washer.
4. Add additional coolant mixture to radiator until coolant run out of overflow port and into the recovery tank.
5. Install radiator cap.

IMPORTANT: Avoid damage! Installing suction hose incorrectly will not allow coolant into the coolant system. Do not allow bottom of hose to touch bottom of recovery tank or bend upwards out of coolant.

6. Remove recovery tank cap and add coolant mixture to recovery tank until it is approximately half full.
7. Install recovery tank cap.

IMPORTANT: Avoid damage! If coolant temperature indicator comes on while engine is running, stop engine and add more coolant mixture to radiator.

8. Start and run engine at medium speed until upper and lower radiator hoses have become warm (10 - 15 minutes), indicating thermostat has opened and coolant is circulating.
9. Allow engine to cool.
10. Loosen bleed screw and allow air to bubble out until air bubbles are no longer visible at bleed port. Tighten bleed screw completely.
11. Remove radiator cap and add recommended coolant mixture to radiator until coolant runs out of overflow port and into the recovery tank.
12. Install radiator cap.
13. Run engine until cooling fan starts, indicating the engine and coolant has reached operating temperature.
14. Stop engine and remove key.
15. Allow engine to cool and suction back any needed coolant from overflow recovery tank. Fill recovery tank as needed to lower line.

Flushing Cooling System

1. Drain cooling system.
2. Prepare a cooling system flushing solution using clean water and John Deere Cooling System Cleaner, John Deere Cooling System Quick Flush, or an equivalent.
3. Fill radiator completely with flushing solution. Install and tighten radiator cap.
4. Start and run engine until it reaches operating temperature.
5. Stop engine.



CAUTION: Avoid injury! Engine and coolant will be hot. Use a thick rag or gloves to protect your skin.

6. Turn radiator cap slowly to the stop to release system pressure. Remove radiator cap.
7. Drain cooling system immediately into a container before

SERVICE ENGINE

rust and dirt settle:

- Disconnect radiator hoses from engine.
- Loosen engine block drain screws.

8. After all solution has drained, connect radiator hoses and tighten engine block drain screws.

9. Remove and clean recovery tank.

10. Install the recovery tank.

11. Fill cooling system with recommended coolant mixture.

Recommended Engine Coolant

IMPORTANT: Avoid damage! Using incorrect coolant mixture can cause overheating and damage to the radiator and engine:

- Do not operate engine with plain water.
- Do not exceed a 50% mixture of coolant and water.
- Aluminum engine blocks and radiators require approved ethylene-glycol based antifreeze.

The following John Deere coolants are preferred:

- COOL-GARD II® PRE-DILUTED SUMMER COOLANT (TY26576).
- COOL-GARD II® CONCENTRATED SUMMER COOLANT (TY26573).

If neither of the recommended coolants is available, use a glycol base coolant that meets the following specification:

- ASTM D4985 (JDM H24A2).

Check container label before using to be sure it has the appropriate specifications for your machine. Use coolant with conditioner or add conditioner to coolant before using.

If using concentrate, mix approximately 50 percent antifreeze with 50 percent distilled or deionized water before adding to cooling system. This mixture will provide freeze protection to -37 degrees C (-34 degrees F).

Certain geographical areas may require lower temperature protection. See the label on your antifreeze container or consult your John Deere dealer to obtain the latest information and recommendations. Never exceed the maximum dilution rate for the coolant you are using. Exceeding the maximum rate will greatly reduce the coolant effectiveness.

Checking Radiator Hoses and Clamps

1. Park the vehicle safely. (See Parking Safely in the

SAFETY section.)

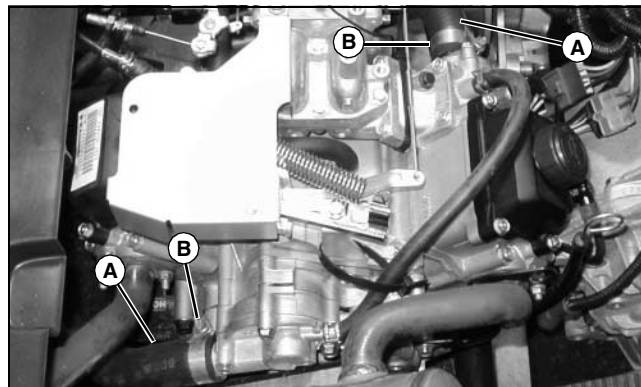
2. Raise cargo box.

3. Tip seats forward.

4. Open hood.

5. Remove storage tray.

NOTE: Visually inspect hoses for cracks and wear. Squeeze hoses to check for deterioration. Hoses should not be hard and brittle, nor soft or swollen.



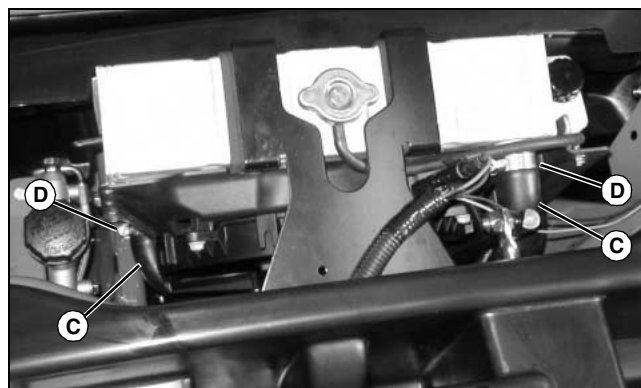
MX31023



MX31015

6. Check radiator hoses (A) between intermediate tubes and engine for damage or cracking. Replace if necessary.

7. Check hose clamps (B) and tighten or replace as needed.



MX31025

8. Check radiator hose (C) between intermediate tubes and

SERVICE ENGINE

radiator for damage or cracking. Replace if necessary.

9. Check hose clamps (D) and tighten or replace as needed.

10. Install storage tray.

11. Close hood.

12. Tip seats back.

13. Lower cargo box.

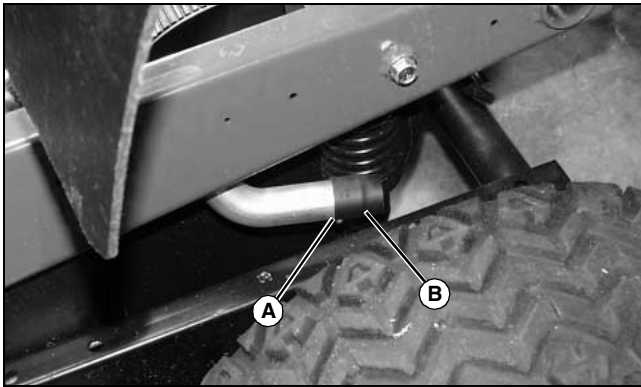
Checking Spark Arrestor



CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine, components, and fluids will be hot if the engine has been running. Allow the engine to cool before servicing or working near the engine and components.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)

2. Allow vehicle to cool completely.



MX31026

3. Remove screw (A) securing spark arrestor (B) to muffler exhaust pipe. Retain the screw.

4. Remove spark arrestor.

5. Make sure deflector screen inside arrestor is not plugged or damaged:

- If plugged, spray with carburetor/choke cleaner and blow dry with low pressure compressed air.
- If damaged, replace spark arrestor.

6. Install spark arrestor with original hardware.

SERVICE TRANSMISSION

Transaxle Oil

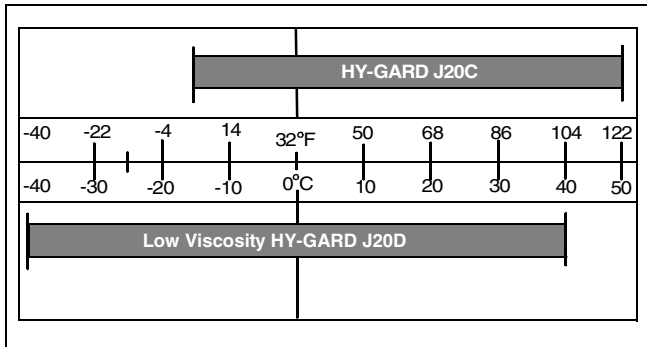
Use the appropriate oil viscosity based on these air temperature ranges. Operating outside of these recommended oil air temperature ranges may cause premature hydrostatic transmission or hydraulic system failures.

IMPORTANT: Avoid damage! Mixing of LOW VISCOSITY HY - GARD™ and HY - GARD™ oils is permitted. DO NOT mix any other oils in this transmission. DO NOT use engine oil or “Type F” (Red) Automatic Transmission Fluid in this transmission.

John Deere J20C HY-GARD™ transmission and hydraulic oil is recommended. John Deere J20D Low Viscosity HY-GARD™ transmission and hydraulic oil may be used, if within the specified temperature range.

Other oils may be used if above recommended John Deere oils are not available, provided they meet one of the following specifications:

- John Deere Standard JDM J20C;
- John Deere Standard JDM J20D.



4WD Front Differential Oil

Use the appropriate oil viscosity based on these air temperature ranges. Operating outside of these recommended oil air temperature ranges may cause premature hydrostatic transmission or hydraulic system failures.

IMPORTANT: Avoid damage! Mixing of LOW VISCOSITY HY - GARD™ and HY - GARD™ oils is permitted. DO NOT mix any other oils in this transmission. DO NOT use engine oil or “Type F” (Red) Automatic Transmission Fluid in this transmission.

John Deere J20D Low Viscosity HY-GARD™ transmission and hydraulic oil is recommended.

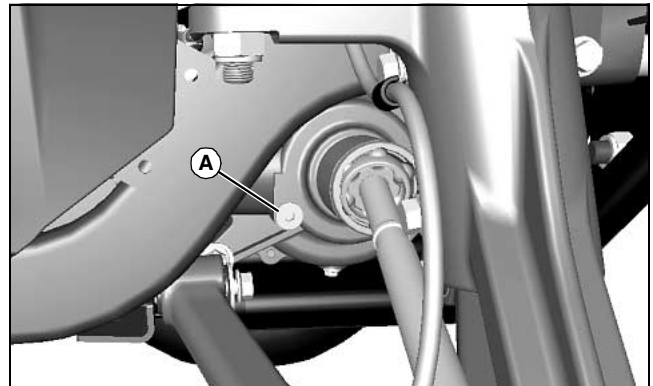
Other oils may be used if above recommended John Deere oils are not available, provided they meet the following specifications:

- John Deere Standard JDM J20D.

Checking 4WD Front Differential Oil Level

1. Park machine safely. (See Parking Safely in the SAFETY section.) Allow machine to cool down for at least one hour.

IMPORTANT: Avoid damage! Dirt and debris in oil may cause damage to the 4WD differential. Clean area around opening before removing plug.



MX35582

Picture Note: Left front wheel removed for clarity.

2. Remove fill plug (A) located on right side of 4WD front differential.

3. Oil should be level with the bottom of the fill port. If oil level is low:

- a. Add oil through fill port until level is correct.
- b. Install and tighten fill plug to 11 - 40 N•m (8 - 30 lb-ft).

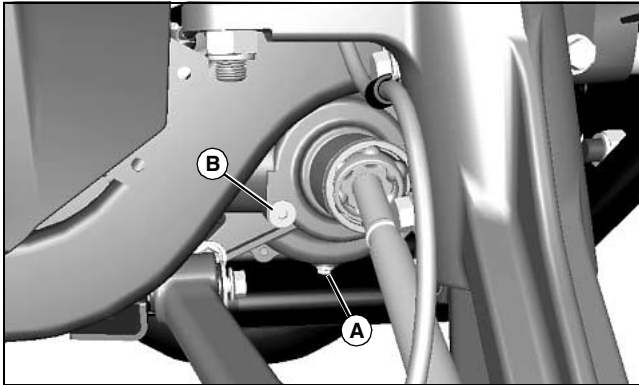
Changing 4WD Front Differential Oil

NOTE: It may be necessary to remove front skid plate to access drain plug.

1. Operate machine to warm 4WD front differential oil.
2. Park machine safely. (See Parking Safely in the SAFETY section.)

SERVICE TRANSMISSION

IMPORTANT: Avoid damage! Dirt and debris in oil may cause damage to the 4WD differential. Clean area around opening before removing plug.



MX35582

Picture Note: Left front wheel removed for clarity.

3. Position drain pan under 4WD front differential drain plug (A) at bottom of housing.
4. Remove fill plug (B) located on right side of 4WD front differential.
5. Remove 4WD front differential drain plug (A) and allow oil to drain.
6. Check washer on drain plug. Replace if missing or in poor condition.
7. Install and tighten drain plug to 7-14 N•m (5-10 lb-ft) after all oil has drained.
8. Add approximately 150 ML (5 oz) of oil until the level is even with the bottom of the fill port.
9. Install and tighten fill plug to 11-40 N•m (8-30 lb-ft).
10. Check 4WD front differential oil level again after the first several hours of operation.

Checking Transaxle Oil Level

IMPORTANT: Avoid damage! Hot hydraulic oil will expand and show incorrect oil level. Check oil level:

- When oil is cold.
- With engine not running.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Raise and secure cargo box.

IMPORTANT: Avoid damage! Dirt and debris in oil may cause damage to the transaxle. Clean area around opening before removing dipstick.



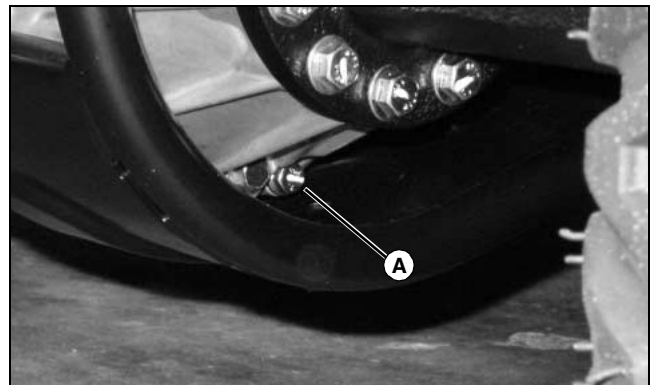
MX31029

3. Remove dipstick (A) located on the top of the transaxle housing. Wipe dipstick clean.
4. Check oil level by setting dipstick on threads in transaxle case, then removing and checking oil level.
5. Add oil as needed through the dipstick fill hole.
6. Install and tighten dipstick.
7. Lower the cargo box.

Changing Transaxle Oil

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Raise and secure cargo box.

IMPORTANT: Avoid damage! Dirt and debris in oil may cause damage to the transaxle. Clean area around opening before removing dipstick.



MX31028

3. Position drain pan under transaxle drain plug (A).
4. Remove plug and drain oil.

SERVICE TRANSMISSION

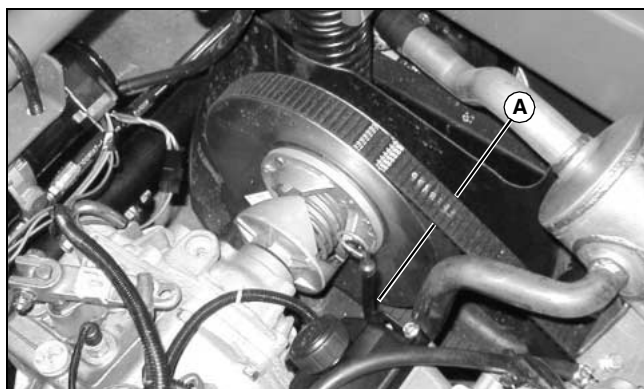
5. Check washer on drain plug. Replace if missing or in poor condition.
6. Install and tighten drain plug to 44 - 54 N•m (32.5 - 39.9 lb-ft).
7. Remove dipstick located on top of transaxle housing. Wipe dipstick clean.
8. Add approximately 4.0 L (4.2 qt) of oil.
9. Check oil level by setting dipstick on threads in transaxle case, then removing and checking oil level.
10. Wait for two minutes then check oil level. Add oil if necessary.
11. Install dipstick and tighten.
12. Lower the cargo box.

Checking Drive Belt



CAUTION: Avoid injury! Rotating parts can catch fingers, loose clothing, or long hair. Wait for engine and all moving parts to stop before leaving operator's station to adjust or service machine.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Raise and secure cargo box.
3. HPX Trail Gator 4x4: Remove clutch enclosure cover.
4. Rotate and inspect belt for wear or damage.



MX31031

5. Measure the top surface of the belt width at (A). Dimension should be a minimum of 29 mm (1.1 in.).
6. Replace belt if worn beyond limit.
7. HPX Trail Gator 4x4: Install clutch enclosure cover.
8. Lower the cargo box.

Replacing Drive Belt



CAUTION: Avoid injury! Rotating parts can catch fingers, loose clothing, or long hair. Wait for engine and all moving parts to stop before leaving operator's station to adjust or service machine.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Raise and secure cargo box.
3. HPX Trail Gator 4x4: Remove clutch enclosure cover.



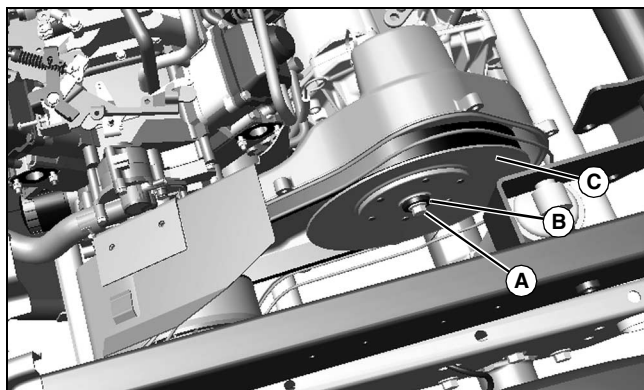
MX31030

4. Route the belt over pulley (A) of the driven clutch. Rotating the driven pulley will aid in removing the belt.
5. Route belt over drive pulley (B) to remove.
6. Install new belt by routing over drive pulley and then over the driven clutch pulley.
7. HPX Trail Gator 4x4: Install clutch enclosure cover.
8. Lower the cargo box.

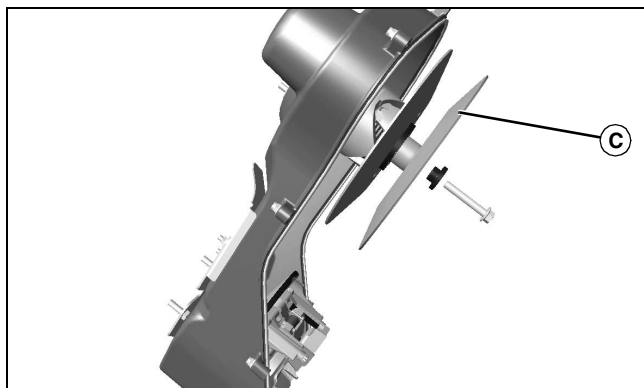
Checking Secondary Driven Clutch Buttons

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Raise and secure cargo box.
3. HPX Trail Gator 4x4: Remove clutch enclosure cover.

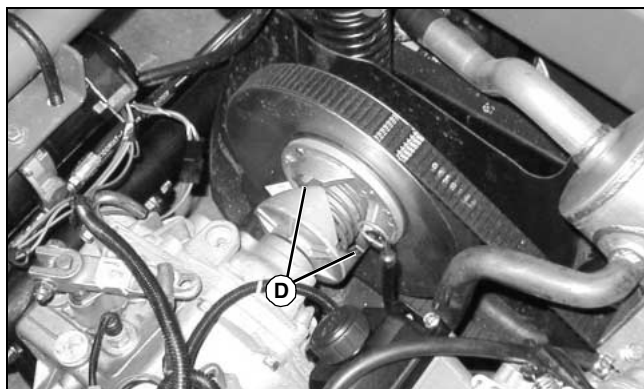
SERVICE TRANSMISSION



4. HPX Trail Gator 4x4: Remove secondary clutch mounting bolt (A) and washer (B).



5. HPX Trail Gator 4x4: Slide secondary clutch (C) away from transaxle far enough to see clutch buttons.



6. Check for missing or worn clutch buttons (D).

- There should not be any excessive wear, or metal-to-metal contact.
- If replacement is necessary, see your John Deere dealer.

7. HPX Trail Gator 4x4: Slide secondary clutch in towards transaxle.

8. HPX Trail Gator 4x4: Install secondary clutch mounting bolt and washer and tighten to 70 N•m (52 lb-ft).

9. HPX Trail Gator 4x4: Install clutch enclosure cover.

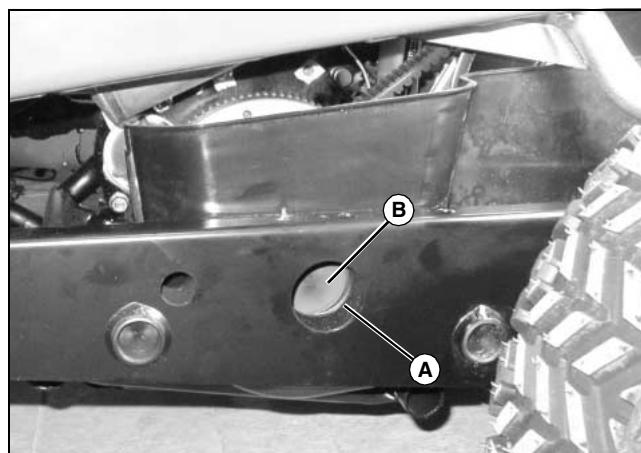
10. Lower the cargo box.

Cleaning Primary Drive Clutch

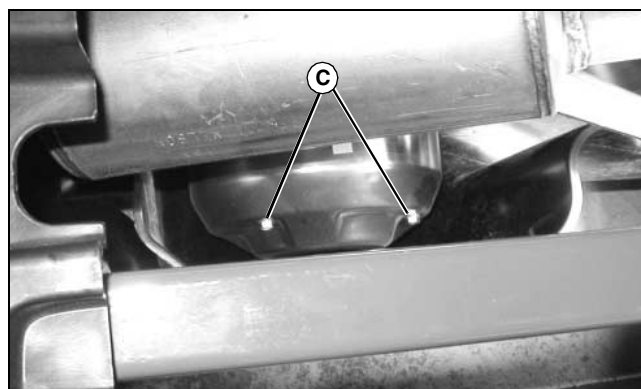
IMPORTANT: Avoid damage! Never lubricate any part of the primary drive clutch.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)

2. Raise and secure cargo box.

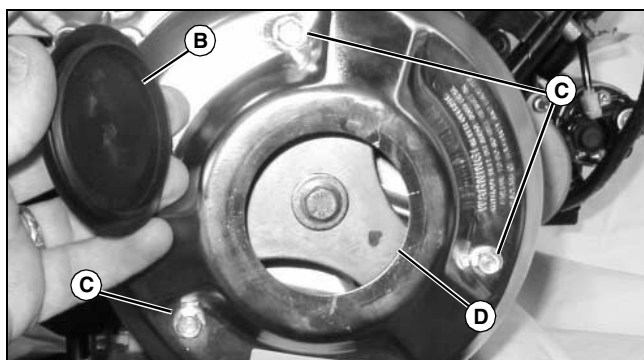


3. Through access hole (A), remove clutch cover plug (B).



4. Remove three screws (C) securing clutch cover. Pull cover away from clutch.

SERVICE TRANSMISSION



MX31485

Picture Note: Engine removed for clarity. Engine does not need to be removed to clean clutch.

5. Through access hole (D), use compressed air to blow dust and debris out of clutch. Also blow dust and debris out from underneath the belt along the main shaft.
6. Install clutch cover and tighten screws (C) to 8 - 11 N•m (6 - 8 lb-ft).
7. Install clutch cover plug (B).
8. Lower the cargo box.

SERVICE STEERING & BRAKES

Brake Fluid

The following heavy duty brake fluid is **PREFERRED** for all drum and disc brakes:

- Brake Fluid - DOT3

Other brake fluids may be used if they provide the following:

- Conforms to Motor Vehicle Safety Standard No. 116.
- Minimum wet boiling point 140°C (284°F).
- Minimum dry boiling point 232°C (450°F) to prevent vapor lock.

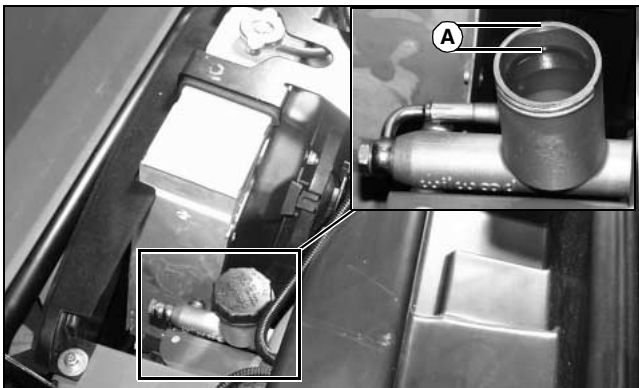
Checking Brake Fluid Level

IMPORTANT: Avoid damage! Avoid contamination of the brake fluid. Thoroughly clean area around the filler cap before removing. Do not open the brake fluid reservoir cap unless absolutely necessary.

Use extreme care when filling the reservoir. Fluid spilled on painted surfaces can cause damage.

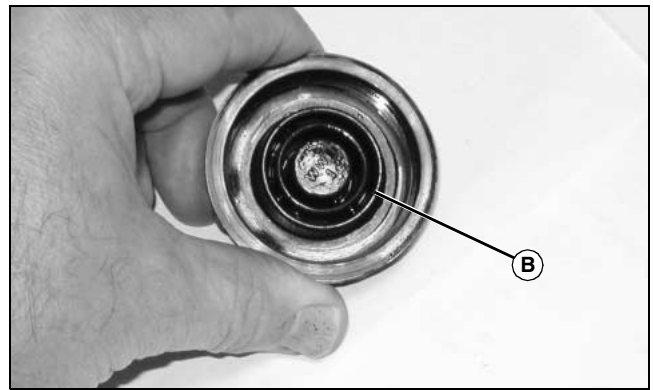
Use only DOT3 brake fluid from a sealed container.

1. Park vehicle safely. (See Parking Safely in the Safety section.)
2. Open hood.
3. Carefully clean area around reservoir cap.



MX31032, MX31021

4. Remove reservoir cap and visually check fluid level.
 - Fluid levels must be maintained to 12 - 13 mm (0.47 - 0.51 in.) below top of filler (A).
5. If fluid is low:
 - Add fluid to maintain level within specification.



MX31482

6. Check reservoir cap bellows (B) are in place and not damaged.
7. Install reservoir cap.
8. Close hood.

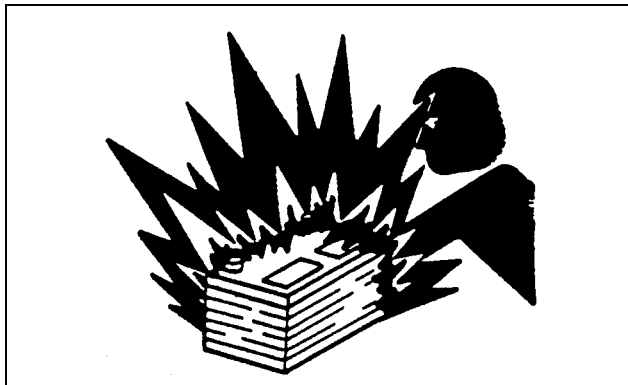
Adjusting Park Brake

For proper adjustment of the park brake system, see your John Deere Dealer.

SERVICE ELECTRICAL

WARNING: Battery posts, terminals and related accessories contain lead and lead components, chemicals known to the State of California to cause cancer and reproductive harm. **Wash hands after handling.**

Service the Battery Safely



CAUTION: Avoid injury! Battery electrolyte contains sulfuric acid. It is poisonous and can cause serious burns:

- Wear eye protection and gloves.
- Keep skin protected.
- If electrolyte is swallowed, get medical attention immediately.
- If electrolyte is splashed into eyes, flush immediately with water for 15-30 minutes and get medical attention.
- If electrolyte is splashed onto skin, flush immediately with water and get medical attention if necessary.

The battery produces a flammable and explosive gas. The battery may explode:

- Do not smoke near battery.
- Wear eye protection and gloves.
- Do not allow direct metal contact across battery posts.
- Remove negative cable first when disconnecting.
- Install negative cable last when connecting.

Checking the Battery (Sealed Batteries)

NOTE: Do not attempt to open, add fluid or service battery. Any attempt to do so will void warranty.

- Keep battery and terminals clean.
- Keep battery bolts tight.
- Keep small vent holes open.

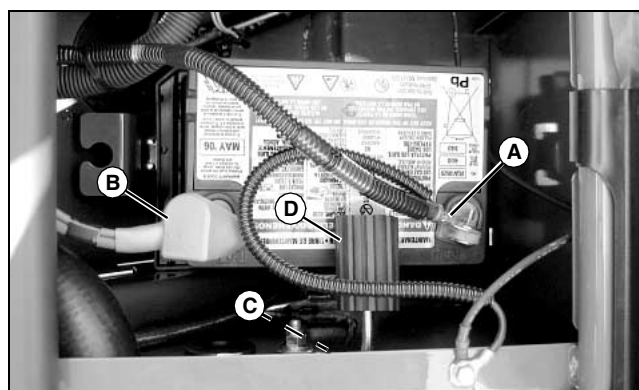
IMPORTANT: Avoid damage! This battery comes fully charged. If the machine is not used by the service expiration date indicated on the battery, charge the battery.

- Recharge, if necessary, at 6-10 amperes for 1 hour.

Removing and Installing Battery

Removing

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Raise passenger seat.



MX35587

3. Disconnect all black negative cables (A) from battery first.
4. Slide back rubber protective cover (B) and disconnect all red positive cables.
5. Loosen hardware (C) that secures battery hold-down (D) and pivot hold-down away from battery.
6. Lift battery from vehicle.

Installing

1. Install battery into vehicle with negative (-) terminal positioned toward front of vehicle and the battery seated properly in the battery tray.
2. Pivot battery hold-down firmly against battery and tighten retaining hardware to secure.
3. Connect all red positive cables to positive (+) battery

SERVICE ELECTRICAL

terminal first. Tighten the connections.

4. Connect all black negative cables to negative (-) battery terminal. Tighten the connections.
5. Apply spray lubricant to battery terminals to help prevent corrosion.
6. Slide protective cover down the battery positive cable and seat it over the positive (+) terminal.

Cleaning Battery and Terminals

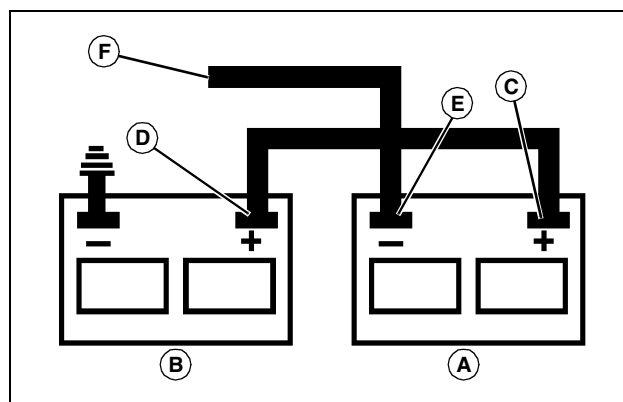
1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Disconnect and remove battery.
3. Wash battery with solution of four tablespoons of baking soda to one gallon of water. Be careful not to get the soda solution into the cells.
4. Rinse the battery with plain water and dry.
5. Clean terminals and battery cable ends with wire brush until bright.
6. Install battery.
7. Attach cables to battery terminals using washers and nuts.
8. Apply spray lubricant to terminal to prevent corrosion.

Using Booster Battery



CAUTION: Avoid injury! The battery produces a flammable and explosive gas. The battery may explode:

- Do not smoke or have open flame near battery.
- Wear eye protection and gloves.
- Do not jump start or charge a frozen battery. Warm battery to 16°C (60°F).
- Do not connect the negative (-) booster cable to the negative (-) terminal of the discharged battery. Connect at a good ground location away from the discharged battery.



M71044

A - Booster Battery

B - Disabled Vehicle Battery

1. Connect positive (+) booster cable to booster battery (A) positive (+) post (C).
2. Connect the other end of positive (+) booster cable to the disabled vehicle battery (B) positive (+) post (D).
3. Connect negative (-) booster cable to booster battery negative (-) post (E).

IMPORTANT: Avoid damage! Electric charge from booster battery can damage machine components. Do not install negative booster cable to machine frame. Install only to the engine block.

Install negative booster cable away from moving parts in the engine compartment, such as belts and fan blades.

4. Connect the other end (F) of negative (-) booster cable to a metal part of the disabled machine engine block away from battery.
5. Start the engine of the disabled machine and run machine for several minutes.

SERVICE ELECTRICAL

6. Carefully disconnect the booster cables in the exact reverse order: negative cable first and then the positive cable.

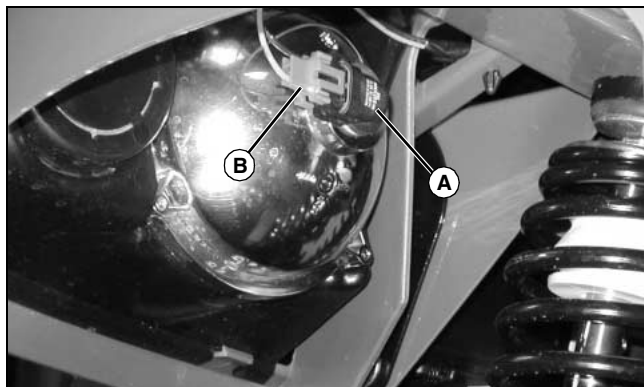
Replacing Headlight Bulb

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Locate headlight housing under the front fender.



CAUTION: Avoid injury! Halogen light bulb contains gas under pressure. The bulb may shatter if the glass is scratched or dropped. Wear eye protection and handle bulb with care when replacing.

IMPORTANT: Avoid damage! Do not touch glass portion of new bulb with bare skin. Contact with oils or dirt will reduce bulb life. Handle bulb by the base or with a clean cloth or gloves.

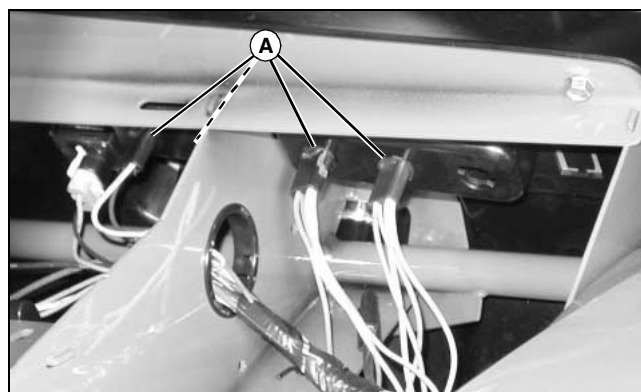


MX31034

3. Rotate bulb socket (A) 1/8 of a turn counterclockwise and remove socket from housing.
4. Disconnect wire connector (B) from socket. Discard the bulb/socket assembly.
5. Connect wiring connector to new bulb/socket assembly. Install the assembly into housing and rotate 1/8 turn to lock in place.
6. Test head lamp function.

Replacing Instrument Panel Bulbs

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Open hood.
3. Remove storage tray.



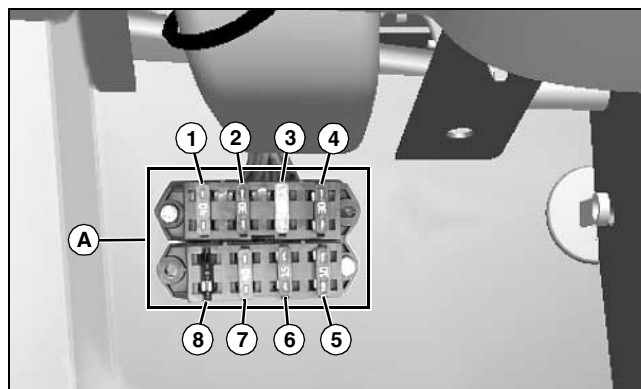
MX31035

4. Reach under instrument panel and remove appropriate bulb socket (A) from plastic housing.
 - Rotate bulb socket 1/3 turn.
 - Pull socket straight outward.
5. Remove bulb from socket. Discard bulb.
6. Install new bulb in socket.
7. Align and insert bulb socket into plastic housing. Turn socket 1/3 turn to lock in place.
8. Install storage tray.
9. Close hood.

Checking and Replacing Fuses

IMPORTANT: Avoid damage! The electrical system may be damaged if incorrect replacement fuses are used. Replace the bad fuse with a fuse of the same amp rating.

1. Park machine safely. (See Parking Safely in the SAFETY section.)



MX35588

2. Fuse identification:

SERVICE ELECTRICAL

Position	Circuit	Fuse Size
1	Rear Attachments Circuit	40 amp
2	Charging Circuit	25 amp
3	Cooling Fan Motor Circuit	15 amp
4	Starting Motor Solenoid Circuit	30 amp
5	Accessory Power Plug	10 amp
6	Ignition Switch ON Circuit	15 amp
7	Front Attachments Circuit	40 amp
8		Open

3. Pull fuse from fuse block (A).
4. Check visually for broken filament in fuse.
5. Push new fuse of correct amp rating into proper position in fuse block.

SERVICE MISCELLANEOUS

Using Proper Fuel

Use regular grade unleaded fuel with an octane rating of 87 octane or higher. Fuel blends containing up to 10% ethanol or up to 15% MTBE reformulated fuel are acceptable. Do not use fuel or additives containing methanol as engine damage can occur.

Always use fresh, clean fuel that is purchased in a quantity that can be used within approximately 30 days, or add fuel stabilizer.

Fuel is blended to give best seasonal performance. To avoid engine performance problems such as hard starting or vapor lock, use in-season fuel. Use fuel during warm weather that was purchased during that season, and use fuel during cold weather that was purchased during that season.

Fuel can become stale in machines with engines that are used seasonally or infrequently during a season. Stale fuel can produce varnish and plug carburetor components which can affect engine performance.

Keep fuel storage container tightly covered and in a cool area out of direct sunlight. Fuel can break down and degrade if not sealed properly or exposed to sun and heat.

Condensation may collect in the fuel tank because of a variety of operating or environmental conditions and, over time, may affect your machine's operation. Fill fuel tank at the end of daily use and store fuel in plastic containers to reduce condensation.

For best year-round performance and fuel-handling, add stabilizer to fuel immediately after fuel purchase. Such practice helps prevent engine performance problems and allows fuel storage in the machine all year without draining.

Filling Fuel Tank



CAUTION: Avoid injury! Fuel vapors are explosive and flammable:

- Shut engine off before filling fuel tank.
- Allow engine to cool before refueling.
- Do not smoke while handling fuel.
- Keep fuel away from flames or sparks.
- Fill fuel tank outdoors or in well ventilated area.
- Clean up spilled fuel immediately.
- Use clean approved non-metal container to prevent static electric discharge.
- Use clean approved plastic funnel without screen or filter to prevent static electric discharge.

IMPORTANT: Avoid damage! Dirt and water in fuel can cause engine damage:

- Clean dirt and debris from the fuel tank opening.
- Use clean, fresh, stabilized fuel.
- Fill the fuel tank at the end of each day's operation to keep condensation out of the fuel tank.
- Use a non-metallic funnel with a plastic mesh strainer when filling the fuel tank or container.

Fill fuel tank at the end of each day's operation to prevent condensation and freezing during cold weather.

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.
3. Remove any trash from area around fuel tank cap.
4. Remove fuel tank cap slowly to allow any pressure built up in tank to escape.
5. Fill fuel tank only to bottom of filler neck.
6. Install fuel tank cap.

Removing and Installing Wheel Assembly

Removing

1. Park machine safely. (See Parking Safely in the Safety section.)

SERVICE MISCELLANEOUS

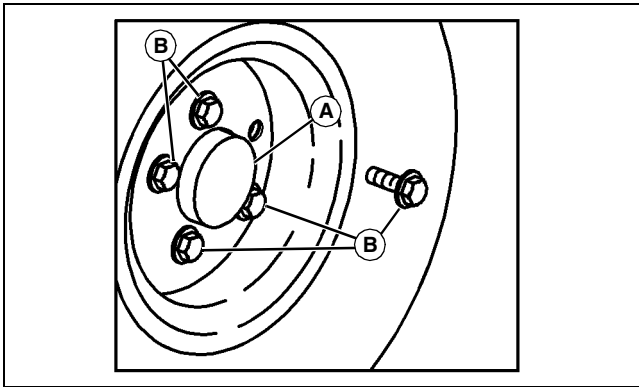


CAUTION: Avoid injury! The machine can fall or slip from an unsafe lifting device or supports.

- Use a safe lifting device rated for the load to be lifted.
- Lower machine onto jack stands or other stable supports and block wheels before servicing.

IMPORTANT: Avoid damage! Place jack stands under frame, not under transmission or engine, when raising or supporting machine.

2. Raise machine with a safe lifting device and lower machine onto jack stands or other stable supports. Block wheels remaining on the ground to prevent machine movement.



MX23093

Picture Note: Wheel may or may not have a cap (A) to remove when removing the wheel.

3. Remove the wheel bolts (B).
4. Remove the wheel assembly.



CAUTION: Avoid injury! Explosive separation of tire and rim parts is possible when they are serviced incorrectly:

- Do not attempt to mount a tire without the proper equipment and experience to perform the job.

5. Take wheel assembly to an authorized service dealer for repairs.

Installing

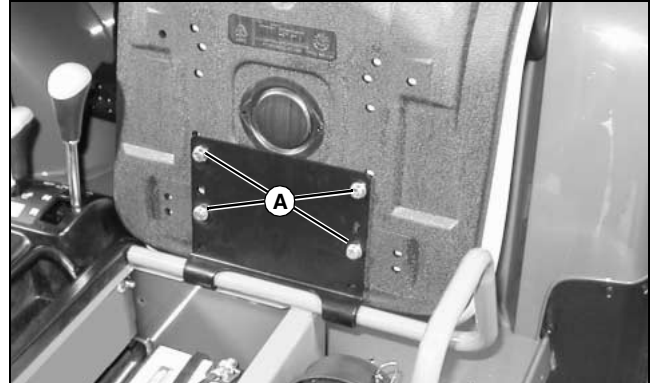
1. Apply multipurpose grease to spindle shaft before installing wheel assembly.
2. Install wheel assembly with valve stem to the outside.
3. Tighten wheel bolts evenly in alternating sequence until snug.

4. Lower machine completely to the ground.
5. Tighten wheel bolts to 81 N•m (60 lb-ft).

Removing and Installing Seats

Removing

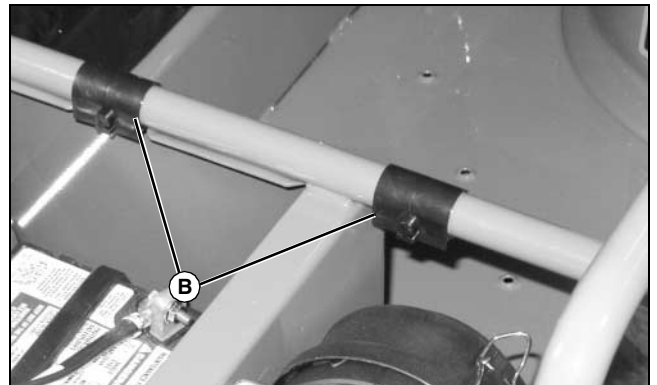
1. Tip seat forward.



MX35575

2. Hold onto seat and remove all screws (A).
3. Remove seat and seat bracket from support rail.

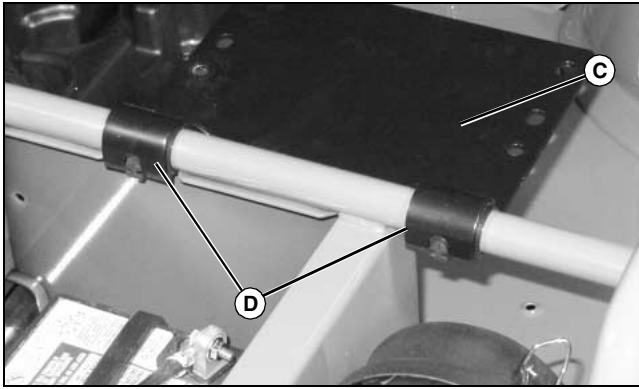
Installing



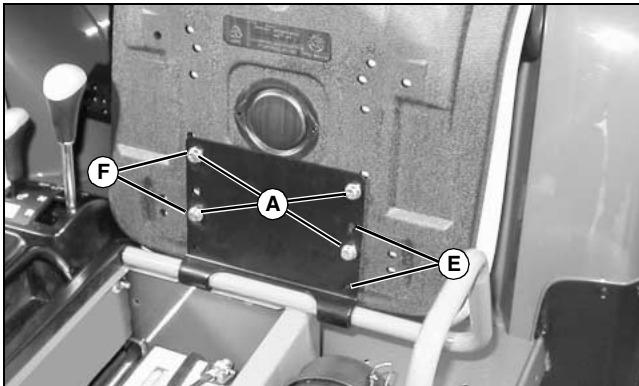
MX31039

1. Position seat bushings (B) on support rail so tabs face toward rear of vehicle.

SERVICE MISCELLANEOUS



2. Position seat bracket (C) onto support rail so hinges (D) fit around rubber bushing tabs.



Picture Note: Rear position shown.

3. Rotate seat bracket upward. Position bottom of seat against bracket and align correct holes with holes in seat.
4. Slide seat to the forward (E) or rearward (F) position.
5. Install original screws (A) to secure seat.
6. Tighten seat bracket hardware to 10 N•m (88.5 lb-in.).

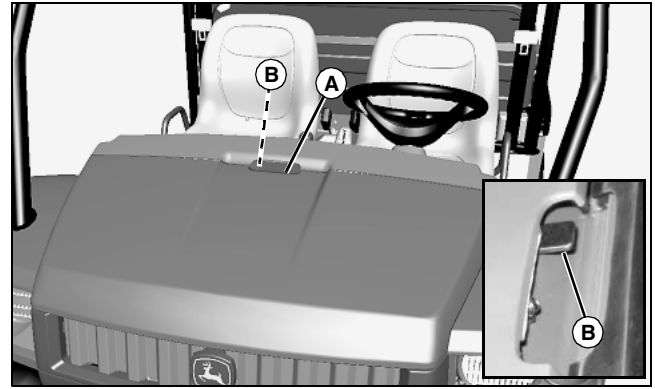
Opening and Closing Hood

Opening Hood



CAUTION: Avoid injury! Rotating parts can catch fingers, loose clothing, or long hair. Wait for engine and all moving parts to stop before leaving operator's station to adjust or service machine.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)



2. Stand in front of machine and grasp hood lift handle (A).
3. Pull up on hood release handle to unlock latch (B).
4. When the hood latch is released, pull upward on the hood to pivot to full open position.

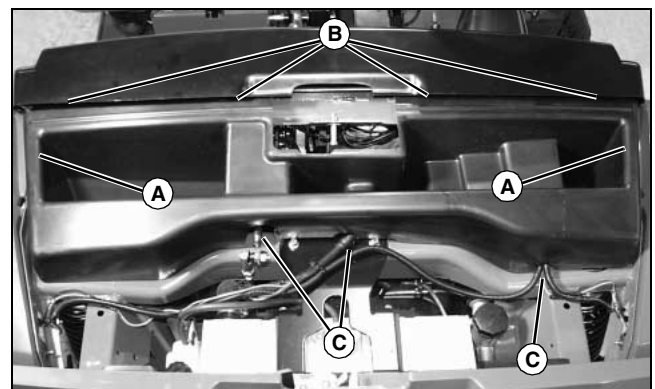
Closing Hood

1. Grasp hood lift handle (A).
2. Pivot hood downward to closed position.
3. Press down on hood to latch hood in closed position.

Removing and Installing Storage Tray

Removing

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Open hood.
3. Remove all contents from storage tray.

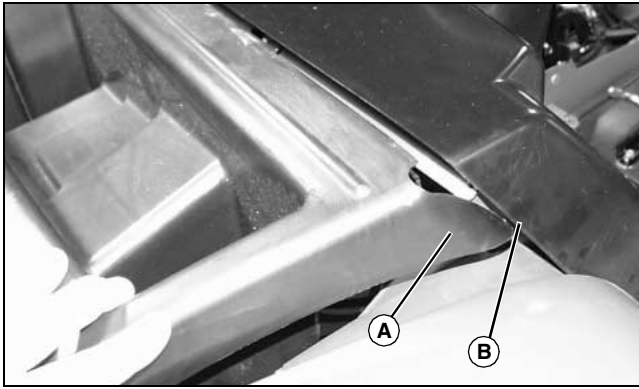


4. Grasp outer edges of the storage tray (A).
5. Flex storage tray to fit past dash panel (B) while lifting the storage tray out of machine.

Installing

1. Position storage tray over frame.

SERVICE MISCELLANEOUS



2. Flex storage tray (A) to fit under dash panel (B) while lowering storage tray into position.
3. Check alignment of cables and harnesses with routing notches (C).
4. Secure all items to prevent damage from movement while operating the machine.
5. Close hood.

Inspecting Seat Belt



IMPORTANT: Avoid damage! Do not bleach or re-dye webbing. Webbing could become severely weakened by this process. Do not use a pressure washer or other automatic washing machine to clean belt or connectors.

- Hand wash webbing (A) with warm water and mild soap. Rinse thoroughly and air dry.
- Inspect outer seat belt connector (B) and inner connector (C) for damage or wear. If assembly does not operate properly or if the webbing is torn or frayed, the seat belt must be replaced.

Cleaning Plastic Surfaces

IMPORTANT: Avoid damage! Improper care of machine plastic surfaces can damage that surface:

- Do not wipe plastic surfaces when they are dry. Dry wiping will result in minor surface scratches.
- Use a soft, clean cloth (bath towel, diaper, automotive mitt).
- Do not use abrasive materials, such as polishing compounds, on plastic surfaces.

1. Rinse hood and entire machine with clean water to remove dirt and dust that may scratch the surface.
2. Wash surface with clean water and a mild liquid automotive washing soap.
3. Dry thoroughly to avoid water spots.
4. Wax the surface with a liquid automotive wax. Use products that specifically say "contains no abrasives."

IMPORTANT: Avoid damage! Do not use a power buffer to remove wax.

5. Buff applied wax by hand using a clean, soft cloth.

Cleaning and Repairing Metal Surfaces

Cleaning:

Follow automotive practices to care for your vehicle painted metal surfaces. Use a high-quality automotive wax regularly to maintain the factory look of your vehicle's painted surfaces.

Repairing Minor Scratches (surface scratch):

1. Clean area to be repaired thoroughly.

IMPORTANT: Avoid damage! Do not use rubbing compound on painted surfaces.

2. Use automotive polishing compound to remove surface scratches.
3. Apply wax to entire surface.

Repairing Deep Scratches (bare metal or primer showing):

1. Clean area to be repaired with rubbing alcohol or mineral spirits.
2. Use paint stick with factory-matched colors available from your authorized dealer to fill scratches. Follow directions included on paint stick for use and for drying.
3. Smooth out surface using an automotive polishing

SERVICE MISCELLANEOUS

compound. Do not use power buffer.

4. Apply wax to surface.

TROUBLESHOOTING

Using Troubleshooting Chart

If you are experiencing a problem that is not listed in this chart, see your authorized dealer for service.

When you have checked all the possible causes listed and you are still experiencing the problem, see your authorized dealer.

Engine

IF	CHECK
Engine will not start	Battery has low voltage. Loose or corroded battery connections. Blown fuse(s). Spark plug wire(s) is loose or disconnected. Faulty spark plug(s) or coil. No fuel or improper fuel. Plugged fuel filter. Defective starter solenoid. Open-circuit in wiring.
Engine is hard to start	Engine is cold. Plugged fuel filter. Engine oil viscosity too heavy. Spark plug(s) is fouled. Faulty spark plug(s) or wire(s). Loose or corroded electrical connections. Stale or improper fuel. Choke not being used or adjusted incorrectly.
Engine misses under load	Faulty spark plug(s). Stale or dirty fuel. Plugged fuel filter. Air inlet restrictor missing. Faulty coil or wire.
Engine vapor locks	Poor quality fuel or methanol. Very hot weather conditions and very high loading condition. Fuel tank vent plugged. Dirt in fuel filter.

TROUBLESHOOTING

IF	CHECK
Engine runs unevenly	Loose electrical connections. Choke or throttle cable sticking. Fuel line or fuel filter plugged. Stale or dirty fuel. Improper fuel. Air cleaner element plugged. Air inlet restrictor missing. Spark plug(s) is fouled.
Engine overheats	Air cleaner element missing or plugged. Carburetor air intake tube plugged. Engine oil low. Engine operated too long at slow engine speed. Bleed cooling system. Check cooling fan switch. Check thermostat. Check water pump. Clean radiator screens. Check coolant level.
Engine loses power	Engine overheating. Too much oil in engine. Faulty spark plug(s). Fuel supply being restricted. Fuel filter plugged Fuel line pinched or kinked. Improper fuel. Air cleaner element plugged.
Engine knocks	Low engine speed. Stale or low octane fuel. Engine overloaded.

Electrical

IF	CHECK
Starter does not work	Loose or corroded connections. Low battery output. Sulfated or worn out battery. Faulty starter.

TROUBLESHOOTING

IF	CHECK
Starter cranks slowly	Low battery output. Sulfated or worn out battery. Engine oil too heavy. Loose or corroded connections.
Entire electrical system does not work	Blown fuse. Loose or corroded connections. Sulfated or worn out battery.
Dead battery	Shorted starter solenoid. Key switch not turned to "OFF" position. Component connected to accessory outlet left ON with engine off. Turn signal and/or hazard lights left ON with engine off. Sulfated or worn out battery. Low engine speed or excessive idling. Battery cables and terminals are dirty. Dead cell in the battery. Faulty charging system. Current draw higher than charging system output. (If several attachments are added and used frequently at the same time with the standard charging system. Especially at low engine speeds.)
Correct indicator light(s) do not come on when checking instrument panel.	Faulty bulb. Faulty wiring. Faulty switch or sensor.
Battery will not take a charge	Dead cell in battery. Loose or corroded connections. Sulfated or worn out battery. Electrolyte level low. Low engine speed or excessive idling. Faulty charging system.

Brakes

IF	CHECK
Brakes not working correctly	Brake fluid level low - check fluid level. Air in brake system, system not bleed properly. Replace worn brake pads. (See your John Deere dealer.)

STORAGE

Storing Safety



CAUTION: Avoid injury! Fuel vapors are explosive and flammable. Engine exhaust fumes contain carbon monoxide and can cause serious illness or death:

- Run the engine only long enough to move the machine to or from storage.
- Do not store vehicle with fuel in the tank inside a building where fumes may reach an open flame or spark.
- Allow the engine to cool before storing the machine in any enclosure.

Preparing Machine for Storage

1. Repair any worn or damaged parts. Replace parts if necessary. Tighten loose hardware.
2. Repair scratched or chipped metal surfaces to prevent rust.
3. Remove grass and debris from machine.
4. Wash the machine and apply wax to metal and plastic surfaces.
5. Run machine for five minutes to dry belts and pulleys.
6. Apply light coat of engine oil to pivot and wear points to prevent rust.
7. Lubricate grease points.
8. Check tire pressure.

Preparing Fuel and Engine For Storage

Fuel:

If you have been using "Stabilized Fuel," add stabilized fuel to tank until the tank is full.

NOTE: Filling the fuel tank reduces the amount of air in the fuel tank and helps reduce deterioration of fuel.

If you are not using "Stabilized Fuel:"

1. Park machine safely in a well-ventilated area. (See Parking Safely in the SAFETY section.)

NOTE: Try to anticipate the last time the machine will be used for the season so very little fuel is left in the fuel tank.

2. Turn on engine and allow to run until it runs out of fuel.
3. For machines equipped with key switch, turn key to off

position.

IMPORTANT: Avoid damage! Stale fuel can produce varnish and plug carburetor or injector components and affect engine performance.

- Add fuel conditioner or stabilizer to fresh fuel before filling tank.

4. Mix fresh fuel and fuel stabilizer in separate container. Follow stabilizer instructions for mixing.
5. Fill fuel tank with stabilized fuel.
6. Run engine for a few minutes to allow fuel mixture to circulate through carburetor on gas engine or fuel injectors on diesel engine.

Engine:

Engine storage procedure should be used when vehicle is not to be used for longer than 60 days.

1. Change engine oil and filter while engine is warm.
 2. Service air filter if necessary.
 3. Clean debris from engine air intake screen.
 4. On gas engines:
 - Remove spark plugs. Put 30 mL (1 oz) of clean engine oil in cylinder(s).
 - Install spark plugs, but do not connect spark plug wires.
 - Crank the engine five or six times to allow oil to be distributed.
 5. Clean the engine and engine compartment.
 6. Remove battery.
 7. Clean the battery and battery posts. Check the electrolyte level, if your battery is not maintenance free.
 8. Close fuel shut-off valve, if your machine is equipped.
 9. Store the battery in a cool, dry place where it will not freeze.
- NOTE: The stored battery should be recharged every 90 days.**
10. Charge the battery.

IMPORTANT: Avoid damage! Prolonged exposure to sunlight could damage the hood surface. Store machine inside or use a cover if stored outside.

11. Store the vehicle in a dry, protected place. If vehicle is stored outside, put a waterproof cover over it.

STORAGE

Removing Machine From Storage

1. Check tire pressure.
2. Check engine oil level.
3. Check battery electrolyte level, if your battery is not maintenance free. Charge battery if necessary.
4. Install battery.
5. On gas engines: Check spark plug gap. Install and tighten plugs to specified torque.
6. Lubricate all grease points.
7. Open fuel shut-off valve, if your machine is equipped.
8. Run the engine 5 minutes without the mower or any attachments running to allow oil to be distributed throughout engine.
9. Be sure all shields and guards or deflectors are in place.

SPECIFICATIONS

Engine Specifications

Make	Kawasaki FD620
Type	Gasoline
Displacement	0.617 L (37.65 cu. in.)
Bore	76 mm (2.99 in.)
Stroke	68 mm (2.68 in.)
Intake and Exhaust Valve Clearance	0.25 mm (0.01 in.)
Cylinders	2
Strokes/Cycle	4
Oil Filter	Spin On Filter
Air Cleaner	Replaceable, Paper Elements
Cooling	Liquid

Drive Train

Type	Belt-Driven Torque Converter With Gear-Driven Transaxle
Gear Ranges	Forward HI and LO - Neutral - Reverse
Travel Speeds (Forward HI)	40 km/h (25 mph)
Travel Speeds (Forward LO and Reverse)	20 km/h (12 mph)

Electrical System

Type	12 Volt
Battery Size	340 Cold Cranking Amps @ -18°C (0°F)
Alternator	20 Amp
Spark Plug Gap	0.75 mm (0.029 in.)

Fuel System

Fuel Filter	Replaceable Element
Fuel	Gasoline

Fluid Capacities

Fuel Tank	20.0 L (5.25 gal)
Crankcase (with filter)	1.3 L (1.37 qt)
4WD Front Differential	150 ML (5 oz)
Transaxle	4.0 L (4.2 qt)
Cooling system (Including recovery tank)	5.0 L (5.2 qt)

SPECIFICATIONS

Steering and Brakes

Steering	Rack and Pinion
Brakes	Hydraulically Operated Four Wheel Disk

Tires

Turf Trac RS and AT489

Front	24 x 9.5-10
Rear	24 x 12.0-10

All Trail II

Front	24 x 9.5-10
Rear	24 x 10.5-10

Inflation Pressure

Front	97 kPa (14 psi)
Rear	97 kPa (14 psi)

Travel Speeds

Travel Speeds (Forward HI)	40 km/h (25 mph)
Travel Speeds (Forward LO)	20 km/h (12 mph)
Travel Speeds (Reverse)	20 km/h (12 mph)

Dimensions

Width (overall)	1.52 m 60.0 in.)
Length (with bumper)	2.87 m (113.0 in.)
Height (with OPS)	1.87 m (73.5 in.)
Weight (includes fuel/fluids)	589 kg (1296 lb)
Ground Clearance	15.2 cm (6.0 in.)
Cargo Box Capacity	454 kg (1000 lb)
Towing Capacity	590 kg (1300 lb)

Recommended Lubricants

Engine Oil	John Deere PLUS-4™
.....	John Deere TURF-GARD™
Grease	John Deere Multi-Purpose SD Polyurea Grease
.....	John Deere Multi-Purpose HD Lithium Complex Grease
Transmission Oil (Transaxle)	John Deere HY-GARD™ (JDM J20C)
Transmission Oil (4WD Front Differential)	John Deere Low Viscosity HY-GARD™ (JDM J20D)

SPECIFICATIONS

(Specifications and design subject to change without notice.)

WARRANTY

Product Warranty

Product warranty is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual.

Engine related warranties stated in this manual refer only to emissions-related parts and components of your engine. The complete engine warranty, less emission-related parts and components, is provided separately as the Limited Warranty for New John Deere Commercial & Consumer Equipment.

John Deere and Federal Emissions Control System Warranty Statement (Off-Road Utility Vehicle Gas Engines for Use in Vehicles Operated at Speeds of 25 MPH or More)

Your Warranty Rights and Obligations

The United States Environmental Protection Agency (EPA) and John Deere are pleased to explain the emissions control system warranty on your off-road utility vehicle engine and equipment. 2008 and later model year off-road utility vehicle engines and equipment must be designed, built and equipped to meet the U.S. EPA regulations for off-road utility vehicles with spark ignition engines. John Deere must warrant the emissions control system on your off-road utility vehicle engine and equipment for the period of time listed below provided there has been no abuse, neglect or improper maintenance of your off-road utility vehicle engine and equipment.

Your emissions control system may include parts such as the carburetor, fuel hose, fuel-injection system and ignition system. Also included may be connectors and other emissions related assemblies.

Where a warrantable condition exists, John Deere will repair your off-road utility vehicle engine and equipment at no cost to you including diagnosis, parts and labor.

John Deere Emissions Control System Warranty Coverage

2008 and later off-road utility vehicle engines and equipment are warranted relative to emissions control parts for 30 months after initial purchase. If any emissions related part on your engine or equipment is defective, the part will be repaired or replaced by John Deere.

Owner's Warranty Responsibilities

As the off-road utility vehicle engine and equipment owner, you are responsible for the performance of the required maintenance listed in your owner's manual. John Deere recommends that you retain all receipts covering maintenance on your off-road utility vehicle engine and equipment, but John Deere cannot deny warranty solely for lack of receipts or for your failure to ensure all scheduled maintenance is performed.

As the off-road utility vehicle engine and equipment owner, you should however be aware that John Deere may deny you warranty coverage if your off-road utility vehicle engine and equipment or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your off-road utility vehicle engine and equipment to an authorized John Deere Commercial and Consumer Equipment Retailer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact your John Deere Commercial and Consumer Equipment Retailer, or the John Deere Customer Contact Center at 1-800-537-8233.

Length Of Warranty Coverage

John Deere warrants to the initial owner and each subsequent purchaser that the off-road utility vehicle engine and equipment is:

- Designed, built and equipped so as to conform with all applicable regulations of the United States Environmental Protection Agency (EPA) for 2008 and later equipment engines; and
- Free from defects in materials and workmanship which can cause the failure of an emissions warranted part for a period of 30 months after the engine and equipment is delivered to the initial retail purchaser. John Deere is liable for damages to other engine components caused by the failure of a warranted part during the warranty period. If any emissions related part on your engine or equipment is defective, the part will be repaired or replaced by John Deere.

Warranted Parts

Coverage under this warranty extends only to the parts listed below (the emissions control system parts) to the extent these parts were present on the engine and equipment purchased.

Fuel Metering System:

- Carburetor and internal parts (or fuel injection system).
- Air/fuel ratio feedback and control system.
- Cold start enrichment system.

Evaporative System:

- Fuel tank, fuel cap and tether.
- Fuel hose, line, fittings, clamps.
- Fuel pump, fuel shut-off valve.
- Fuel vapor hoses, fittings.

Air Induction System:

- Air cleaner
- Intake manifold.

Ignition System:

- Spark plugs.
- Magneto or electronic ignition system.
- Spark advance/retard system.

Exhaust System:

- Exhaust manifold.
- Catalyst muffler.

Miscellaneous Items Used in Above Systems

- Vacuum and temperature switches.
- Electronic controls.
- Hoses, belts, connectors and assemblies.

Since emissions related parts may vary slightly from model to model, certain models may not contain all of these parts and certain models may contain functionally equivalent parts.

Warranty Service And Charges

Warranty service shall be provided during customary business hours at any authorized John Deere Commercial and Consumer Equipment Retailer. Repair or replacement of any warranted part will be performed at no charge to the owner, including diagnostic labor which leads to the determination that a warranted part is defective, if the diagnostic work is performed at an authorized John Deere Commercial and Consumer Equipment Retailer. Any parts replaced under this warranty shall become the property of John Deere.

WARRANTY

Maintenance Warranty Coverage

- a) Any warranted part that is not scheduled for replacement as required maintenance is warranted as to defects for the warranty period. Any such part repaired or replaced under the warranty is warranted for the remaining warranty period.
- b) Any warranted part that is scheduled only for regular inspection to the effect of repair or replace as necessary is warranted as to defects for the warranty period. Any such part repaired or replaced under the warranty is warranted for the remaining warranty period.
- c) Any warranted part which is scheduled for replacement as required maintenance is warranted as to defects only for the period of time up to the first scheduled replacement for that part. Any such part repaired or replaced under the warranty is warranted for the remainder of the period prior to the first scheduled replacement point for that part.
- d) Normal maintenance, replacement or repair of emissions control devices and systems, which are being done at the customer's expense, may be performed by any repair establishment or individual; however, warranty repairs must be performed by an authorized John Deere Commercial and Consumer Equipment Retailer.
- e) Any replacement part that is equivalent in performance and durability may be used in the performance of any non-warranty maintenance or repairs, and shall not reduce the warranty obligations of John Deere.

Consequential Warranty Coverage

Warranty coverage shall extend to the failure of any engine components caused by the failure of any warranted part still under warranty.

Limitations

This Emissions Control System Warranty shall NOT cover any of the following:

- a) Repair or replacement required as a result of (i) misuse or neglect, (ii) improper maintenance or unapproved modifications, (iii) repairs improperly performed or replacements improperly installed, (iv) use of replacement parts or accessories not conforming to John Deere specifications which adversely affect performance and/or durability, (v) alterations or modifications not recommended or approved in writing by John Deere.
- b) Replacement parts, other services and adjustments necessary for normal maintenance.
- c) Transportation to and from the John Deere Commercial and Consumer Equipment Retailer, or service calls made by the Retailer.

Limited Liability

- a) The liability of John Deere under this Emissions Control System Warranty is limited solely to the remedying of defects in materials or workmanship. This warranty does not cover inconvenience or loss of use of the off-road utility vehicle engine and equipment or transportation of the equipment to or from the John Deere Commercial and Consumer Equipment Retailer. JOHN DEERE SHALL NOT BE LIABLE FOR ANY OTHER EXPENSE, LOSS, OR DAMAGE, WHETHER DIRECT, INCIDENTAL, CONSEQUENTIAL (EXCEPT AS LISTED ABOVE UNDER COVERAGE) OR EXEMPLARY ARISING IN CONNECTION WITH THE SALE OR USE OF OR INABILITY TO USE THE OFF-ROAD UTILITY VEHICLE ENGINE AND EQUIPMENT FOR ANY OTHER PURPOSE.
- b) NO EXPRESS EMISSIONS CONTROL SYSTEM WARRANTY IS GIVEN BY JOHN DEERE WITH RESPECT TO THE ENGINE AND EQUIPMENT EXCEPT AS SPECIFICALLY SET FORTH IN THIS DOCUMENT. ANY EMISSIONS CONTROL SYSTEM WARRANTY IMPLIED BY LAW, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS EXPRESSLY LIMITED TO THE EMISSIONS CONTROL SYSTEM WARRANTY TERMS SET FORTH IN THIS DOCUMENT.

c) No dealer is authorized to modify this John Deere and Federal Emissions Control System Warranty.

Tire Warranty

John Deere warranty applies for tires available through the John Deere parts system. For tires not available through the John Deere parts system, the tire manufacturer's warranty applicable to your machine may not apply outside the U.S. (See your John Deere dealer for specific information.)

Limited Battery Warranty

NOTE: Applicable in North America only. For complete machine warranty, reference a copy of the John Deere warranty statement. Contact your John Deere dealer to obtain a copy.

TO SECURE WARRANTY SERVICE

The purchaser must request warranty service from a John Deere dealer authorized to sell John Deere batteries, and present the battery to the dealer with the top cover plate codes intact.

FREE REPLACEMENT

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship within 90 days of purchase will be replaced free of charge. Installation costs will be covered by warranty if (1) the unserviceable battery was installed by a John Deere factory or dealer, (2) failure occurs within 90 days of purchase, and (3) the replacement battery is installed by a John Deere dealer.

PRO RATA ADJUSTMENT

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship more than 90 days after purchase, but before the expiration of the applicable adjustment period, will be replaced upon payment of the battery's current list price less a pro rata credit for unused months of service. The applicable adjustment period is determined from the Warranty Code printed at the top of the battery and chart below. Installation costs are not covered by warranty after 90 days from the date of purchase.

THIS WARRANTY DOES NOT COVER

- A. Breakage of the container, cover, or terminals.
- B. Depreciation or damage caused by lack of reasonable and necessary maintenance or by improper maintenance.
- C. Transportation, mailing, or service call charges for warranty service.

LIMITATION OF IMPLIED WARRANTIES AND PURCHASER'S REMEDIES

To the extent permitted by law, neither John Deere nor any company affiliated with it makes any warranties, representations, or promises as to the quality, performance or freedom from defect of the products covered by this warranty. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TO THE EXTENT APPLICABLE, SHALL BE LIMITED IN DURATION TO THE APPLICABLE ADJUSTMENT PERIOD SET FORTH HERE. THE PURCHASER'S ONLY REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON JOHN DEERE BATTERIES ARE THOSE SET FORTH HERE. IN NO EVENT WILL THE DEALER, JOHN DEERE OR ANY COMPANY AFFILIATED WITH JOHN DEERE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. (Note: Some states do not allow limitations on how long an implied warranty lasts

WARRANTY

or the exclusion or limitation of incidental or consequential damages. So these limitations and exclusions may not apply to you.) This warranty gives you specific legal rights, and you may also have some rights which vary from state to state.

NO DEALER WARRANTY

The selling dealer makes no warranty of its own and the dealer has no authority to make any representation or promise on behalf of John Deere, or to modify the terms or limitations of this warranty in any way.

PRO RATA MONTHS OF ADJUSTMENT

NOTE: If your battery is not labeled with a warranty code, it is a warranty code B.

Warranty Code	Warranty Period
A	40 Months
B	36 Months
C	24 Months

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JOHN DEERE QUALITY STATEMENT

John Deere Quality



John Deere equipment is more than just a purchase, it's an investment in quality. That quality goes beyond our equipment to your John Deere dealer's parts and service support. This support is needed to keep you a satisfied customer.

That's why John Deere has initiated a process to handle your questions or problems, should they arise. The following three steps will help guide you through the process.

Step 1

Refer to your operator's manual

- | | |
|---|---|
| A. It has many illustrations and detailed information on the safe and proper operation of your equipment. | C. It gives ordering information for parts catalogs, service and technical manuals. |
| B. It gives troubleshooting procedures, and specification information. | D. If your questions are not answered in the operator's manual, then go to Step 2. |

Step 2

Contact your dealer

- | | |
|---|---|
| A. Your John Deere dealer has the responsibility, authority, and ability to answer questions, resolve problems, and fulfill your parts and service needs. | C. If the parts and service people are unable to resolve your problem, see the dealership manager or owner. |
| B. First, discuss your questions or problems with your dealer's trained parts and service staff. | D. If your questions or problems are not resolved by the dealer, then go to Step 3. |

Step 3

Call the John Deere Customer Contact Center

- A. Your John Deere dealer is the most efficient source in addressing any concern, but if you are not able to resolve your problem after checking your operator's manual and contacting your dealer, call the Customer Contact Center.
- B. For prompt, effective service, please have the following ready before you call:
- | | |
|---|--|
| The name of the dealer with whom you've been working. | Your 13-digit serial number which you recorded on the inside front cover of this manual. |
| Your equipment model number. | If the problem is with an attachment, your attachment identification number. |
| Number of hours on machine (if applicable). | |
- C. Then call 1-800-537-8233 and our advisor will work with your dealer to investigate your concern.

SERVICE RECORD

Record Service Dates

Oil Change	Oil Filter Change	Lubricate Machine	Air Cleaner Element Check/Clean	Fuel Filter Change	Coolant Change