Form No. 3401-134 Rev A

TORO®

Count on it.

Operator's Manual

Workman® HD Utility Vehicle with Bed

Model No. 07369—Serial No. 316000001 and Up

Register at www.Toro.com.
Original Instructions (EN)

3401-134 A

This machine is a utility vehicle intended to be used by professional, hired operators in commercial applications. It is primarily designed for the transport of implements used in such applications. This vehicle allows for the safe transport of an operator and one passenger in the identified seats. The bed of this vehicle is not suitable for any riders.

⚠ WARNING

CALIFORNIA
Proposition 65 Warning

This product contains a chemical or chemicals known to the State of California to cause cancer, birth defects, or reproductive harm.

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

It is a violation of California Public Resource Code 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 arrester, as defined in Section 4442, maintained in effective working order or the engine is constructed, equipped, and maintained for the prevention of fire.

Introduction

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

You may contact Toro directly at www.Toro.com for product and accessory information, help finding a dealer, or to register your product.

Whenever you need service, genuine Toro parts, or additional information, contact an Authorized Service Dealer or Toro Customer Service and have the model and serial numbers of your product ready. Figure 1 identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.

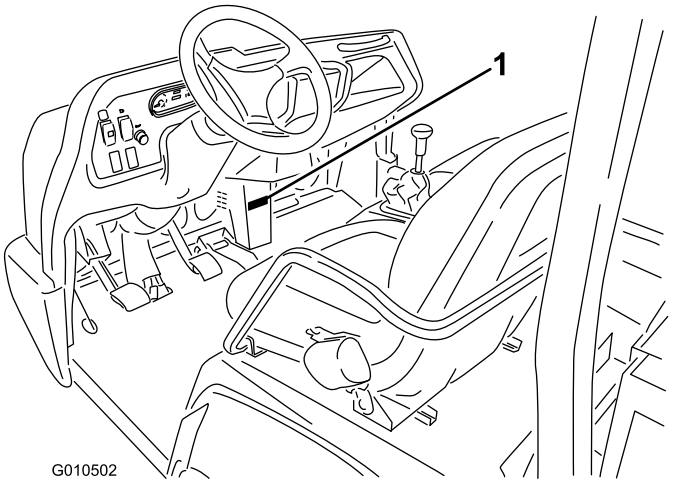


Figure 1

1. Model and serial number location

Model No. _____

Serial No. _____

This manual identifies potential hazards and has safety messages identified by the safety-alert symbol (Figure 2), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.



Figure 2

1. Safety-alert symbol

This manual uses 2 other words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

© 2015—The Toro® Company
8111 Lyndale Avenue South
Bloomington, MN 55420

Contact us at www.Toro.com.
Printed in the USA
All Rights Reserved

Contents

Safety 4
Safe Operating Practices 4
Safety and Instructional Decals 8
Setup 14
1 Checking the Fluid Levels 14
2 Installing the Rollover-Protection System (ROPS) 14
Product Overview 15
Controls 15
Specifications 19
Attachments/Accessories 19
Operation 19
Operating the Cargo Box 19
Checking the Engine-Oil Level 20
Adding Fuel 21
Checking the Transaxle/Hydraulic-Fluid Level 23
Checking the Torque of the Wheel Nuts 23
Checking the Tire Pressure 23
Checking the Brake-Fluid Level 24
Starting the Engine 24
Driving the Machine 25
Stopping the Machine 25
Shutting off the Engine 25
Breaking in a New Machine 25
Checking the Safety-Interlock System 25
Ensuring Passenger Safety 26
Ensuring Proper Speed 26
Ensuring Proper Turning 26
Ensuring Proper Braking 27
Preventing Tip Overs 27
Operating on Hills 27
Loading and Dumping 28
Using the Differential Lock 28
Transporting the Machine 29
Towing the Machine 29
Towing a Trailer with the Machine 29
Using the Hydraulic Control 30
Maintenance 32
Recommended Maintenance Schedule(s) 32
Service-Interval Chart 33
Operating in Adverse Conditions 33
Premaintenance Procedures 34
Using the Bed Support 34
Removing the Full Bed 35
Installing the Full Bed 35
Raising the Machine 36
Removing the Hood 37
Installing the Hood 37
Lubrication 38
Greasing Bearings and Bushings 38
Engine Maintenance 39
Inspecting the Carbon Canister Air Filter 39
Servicing the Air Cleaner 39
Changing the Engine Oil and Filter 40
Replacing the Spark Plugs 40
Fuel System Maintenance 41
Replacing the Fuel Filter 41
Inspecting the Fuel Lines and Connections 41
Electrical System Maintenance 41
Servicing the Fuses 41
Jump-Starting the Machine 42
Servicing the Battery 43
Drive System Maintenance 43
Adjusting the Shift Cables 43
Adjusting the High–Low Cable 43
Adjusting Differential-Lock Cable 44
Inspecting the Tires 44
Checking the Front-Wheel Alignment 44
Cooling System Maintenance 45
Removing Debris from the Engine-Cooling System 45
Brake Maintenance 46
Adjusting the Parking Brake 46
Adjusting the Brake Pedal 46
Belt Maintenance 47
Checking the Pump-Belt Tension 47
Adjusting the Pump-Drive Belt 47
Controls System Maintenance 48
Adjusting the Clutch Pedal 48
Adjusting the Accelerator 48
Adjusting the Choke 49
Converting the Speedometer 49
Hydraulic System Maintenance 50
Changing the Hydraulic Fluid and Cleaning the Strainer 50
Replacing the Hydraulic Filter 50
Raising the Cargo Box in an Emergency 51
Cleaning 52
Washing the Machine 52
Storage 53
Troubleshooting 54

Safety

Improper use or maintenance by the operator or owner can result in injury. To reduce the potential for injury, comply with these safety instructions and always pay attention to the safety alert symbol, which means **Caution**, **Warning**, or **Danger**—personal safety instruction. Failure to comply with the instruction may result in personal injury or death.

The machine meets the requirements of SAE J2258.

Safe Operating Practices

Important: This machine is designed primarily as an off-road vehicle and is not intended for extensive use on public roads.

When using the machine on public roads, follow all traffic regulations and use any additional accessories that may be required by law, such as lights, turn signals, slow-moving vehicle (SMV) signs, and others as required.

This machine was designed and tested to offer safe service when operated and maintained properly. Although hazard control and accident prevention are dependent upon the design and configuration of the machine, these factors are also dependent upon the awareness, concern, and proper training of the operator, maintenance, and storage of the machine. Improper use or maintenance of the machine can result in injury or death.

This machine has a different feel than what drivers experience with passenger cars or trucks. So take time to become familiar with your machine.

Not all of the attachments that adapt to the machine are covered in this manual. See the specific *Operator's Manual* provided with each attachment for additional safety instructions.

To reduce the potential for injury or death, comply with the following safety instructions:

Supervisor's Responsibilities

- Make sure that the operators are thoroughly trained and familiar with the *Operator's Manual* and all labels on the vehicle.
- Be sure to establish your own special procedures and work rules for unusual operating conditions (e.g., slopes too steep for the safe operation of the machine).

Before Operating

- This machine is designed to carry **only you**, the operator, and **1 passenger** in the seat provided by the manufacturer. **Never** carry any other passengers on the vehicle.
- Become familiar with the controls and know how to stop the engine quickly.
- **Never** operate the machine when tired, ill, or under the influence of drugs or alcohol.
- Always wear substantial shoes. Do not wear loose-fitting clothing, tie back long hair, and do not wear jewelry.
- Wearing safety glasses, safety shoes, and long pants are required by some local regulations.
- **Never** allow children to operate the machine. **Never** allow adults to operate it without proper instructions. Only trained and authorized persons should operate this machine.
- Always be aware of where bystanders are.
- Keep all shields, safety devices and decals in place. If a shield, safety device or decal is malfunctioning, illegible, or damaged, repair or replace it before operating the machine.
- Avoid driving when it is dark, especially in unfamiliar areas. If you must drive when it is dark, be sure to drive cautiously, use the headlights.
- Before operating the vehicle, always check all parts of the vehicle and any attachments. If something is wrong, **stop using vehicle**. Make sure that the problem is corrected before vehicle or attachment is operated again.
- Operate the machine only outdoors or in a well-ventilated area.

Safe Handling of Fuels

- To avoid personal injury or property damage, use extreme care in handling fuel. Fuel is extremely flammable and the vapors are explosive.
- Do not smoke near the machine.
- Use only an approved nonmetal, portable fuel container.
- Static electric discharge can ignite fuel vapors in a fuel container that is not grounded. Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Remove the fuel container from the bed of the machine and place it on the ground and away from the vehicle before filling.
- Keep the nozzle in contact with the container while filling the fuel container. Remove equipment from bed of the machine before fueling it. Do not use a nozzle-lock-open device.
- Never remove the fuel cap or add fuel with the engine running.
- Allow engine to cool before refueling.
- Never refuel the machine indoors.
- Never store the machine or fuel container where there is an open flame, spark, or pilot light, such as on a water heater or on other appliances.
- Remove 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.

- If fuel is spilled on clothing, change clothing immediately.
- Never overfill the fuel tank. Replace the fuel cap and tighten it securely.

Operation

- The operator and passenger must use seat belts and remain seated whenever the machine is in motion. Keep both hands on the steering wheel, whenever possible, and the passenger should use the hand holds provided. Keep your arms and legs within the vehicle body at all times. Never carry passengers in the box or on attachments. Remember, your passenger may not be expecting you to brake or turn, and may not be ready.
- Do not overload your machine. The name plate (located under the middle of the dash) shows the load limits for the machine. Never overfill attachments or exceed the machine maximum gross vehicle weight (GVW).
- When starting the engine:
  - Sit on the operator's seat and ensure that the parking brake is engaged.
  - Disengage the PTO (if so equipped) and return the hand-throttle lever to the OFF position (if equipped).
  - Make sure that the hydraulic-lift lever is in the center position.
  - Move the shift lever to the NEUTRAL position and press the clutch pedal.
  - Keep your foot off the accelerator pedal.
  - Turn ignition switch to the ON position. When the glow-plug indicator goes off, the engine is ready to start.
  - Turn the ignition key to the START position.
- Failure to operate machine safely may result in an accident, tipping over the machine, and/or serious injury or death. To prevent tipping or loss of control, take the following precautions:
  - Use extreme caution, reduce your speed, and maintain a safe distance around sand traps, ditches, creeks, ramps, any unfamiliar areas, or other hazards.
  - Watch for holes or other hidden hazards.
  - Use caution when operating the machine on a steep slope. Normally, travel straight up and down slopes. Reduce your speed when making sharp turns or when turning on hillsides. Avoid turning on hillsides whenever possible.
  - Use extra caution when operating the vehicle on wet surfaces, at higher speeds, or with a full load. Stopping time will increase with a full load. Shift into a lower gear before starting up or down a hill.
  - When loading the bed, distribute the load evenly. Use extra caution if the load exceeds the dimensions of the machine/bed. Operate the vehicle with extra caution when handling off-center loads that cannot be centered. Keep loads balanced and secure to prevent them from shifting.
  - Avoid sudden stops and starts. Do not go from reverse to forward or forward to reverse without first coming to a complete stop.
  - Do not attempt sharp turns or abrupt maneuvers or other unsafe driving actions that may cause a loss of machine control.
  - When dumping, do not let anyone stand behind the machine, and do not dump the load on anyone's feet. Release the tailgate latches from the side of box, not from behind.
  - Keep all bystanders away. Before backing up, look to the rear and ensure that no one is behind the machine. Back up slowly.
  - Watch out for traffic when near or crossing roads. Always yield the right of way to pedestrians and other machines. This machine is not designed for use on streets or highways. Always signal your turns or stop early enough so other persons know what you plan to do. Obey all traffic rules and regulations.
  - Never operate the machine in or near an area where there is dust or fumes in the air which are explosive. The electrical and exhaust systems of the machine can produce sparks capable of igniting explosive materials.
  - Always watch out for and avoid low overhangs such as tree limbs, door jambs, overhead walkways, etc. Make sure that there is enough room overhead to easily clear the machine and your head.
  - If you are ever unsure about safe operation, **stop work**, and ask your supervisor.
- Do not touch the engine, transaxle, radiator, muffler, or muffler manifold while the engine is running or soon after it has stopped, because these areas may be hot enough to cause burns.
- If the machine ever vibrates abnormally, stop immediately, shut the engine off, wait for all motion to stop, and inspect for damage. Repair all damage before resuming operation.
- Before getting off the seat:
  1. Stop the machine.
  2. Set the parking brake.
  3. Turn the ignition key to the OFF position.
  4. Remove the ignition key.

  Note: If the machine is on an incline, block the wheels after getting off the machine.
- Lightning can cause severe injury or death. If lightning is seen or thunder is heard in the area, do not operate the machine; seek shelter.

Braking

- Slow down the machine before you approach an obstacle. This gives you extra time to stop or turn away. Hitting an obstacle can injure you and your passenger. In addition, it can damage the machine and its contents.
- Gross Vehicle Weight (GVW) has a major impact on your ability to stop and/or turn. Heavy loads and attachments make the machine harder to stop or turn. The heavier the load, the longer it takes to stop.
- Decrease the speed of the machine if the cargo box has been removed and there is no attachment installed on the machine. The braking characteristics change and fast stops may cause the rear wheels to lock up, which will affect the control of the machine.
- Turf and pavement are much more slippery when they are wet. It can take 2 to 4 times longer to stop the machine on wet surfaces as on dry surfaces. If you drive through deep-standing water and get the brakes wet, they will not work well until they are dry. After driving through water, you should test the brakes to make sure that they work properly. If they do not, drive slowly on a level ground while putting light pressure on the brake pedal. This will dry out the brakes.

Operating on Hills

⚠ WARNING

Operating the machine on a hill may cause tipping or rolling of the machine, or the engine may stall and you could lose headway on the hill. This could result in personal injury.

- **Do not operate the machine on excessively steep slopes.**
- **Do not accelerate quickly or slam the brakes when backing down a hill, especially with a load.**
- **If the engine stalls or you lose headway on a hill, slowly back straight down the hill. Never attempt to turn the machine around.**
- **Operate the machine slowly on a hill and use caution.**
- **Avoid turning on a hill.**
- **Reduce your load and the speed of the machine.**
- **Avoid stopping on hills, especially with a load.**

Take these precautions when operating the machine on a hill:

- Slow the machine down before starting up or down a hill.
- If the engine stalls or you begin to lose momentum while climbing a hill, gradually apply the brakes and slowly back the machine straight down the hill.
- Turning while traveling up or down hills can be dangerous. If you have to turn while on a hill, do it slowly and cautiously. Never make sharp or fast turns.
- Heavy loads affect stability. Reduce the weight of the load and your ground speed when operating on hills or if the load has a high center of gravity. Secure the load to the cargo box of the machine to prevent the load from shifting. Take extra care when hauling loads that shift easily (liquid, rock, sand, etc.).
- Avoid stopping on hills, especially with a load. Stopping while going down a hill will take longer than stopping on level ground. If you must stop the machine, avoid sudden speed changes, which may initiate tipping or rolling of the machine. Do not slam on the brakes when rolling backward, as this may cause the machine to overturn.
- We strongly recommend installing the optional ROPS kit before riding on hilly terrain.

Operating on Rough Terrain

Reduce the ground speed of the machine and load carried in the machine when operating on rough terrain, uneven ground, and near curbs, holes, and other sudden changes in terrain. Loads may shift, causing the machine to become unstable.

⚠ WARNING

Sudden changes in terrain may cause abrupt steering wheel movement, possibly resulting in hand and arm injuries.

- **Reduce your speed when operating on rough terrain and near curbs.**
- **Grip the steering wheel loosely around the perimeter keeping thumbs up and out of the way of the steering wheel spokes.**

Loading and Dumping

The weight and position of cargo and passenger can affect the stability and handling of the machine. Be aware of the following condition to avoid losing control of the machine or tipping it over:

- Do not exceed the rated weight capacity of the machine when operating it with a load in the cargo box, when towing a trailer, or both; refer to Specifications (page 19).
- Use caution when operating the machine on a hillside or on rough terrain, particularly with a load in the cargo box or when towing a trailer or both.
- Be aware that the stability and control of the machine are reduced when the load in the cargo box is poorly distributed.
- Carrying oversized loads in the cargo box changes the stability of the machine.
- The steering, braking , and stability of the machine are affected when carrying a load where the weight of the material cannot be bound to the machine, such as the liquid in a large tank.

⚠ WARNING

The weight of the box may be heavy. Hands or other body parts could be crushed.

- **Keep hands and other body parts clear when lowering the box.**
- **Do not dump materials on bystanders.**

- Never dump a loaded cargo box while the machine is sideways on a hill. The change in weight distribution may cause the machine to overturn.
- When operating with a heavy load in the cargo box, reduce your speed and allow for sufficient braking distance. Do not suddenly apply the brakes. Use extra caution on slopes.
- Be aware that heavy loads increase your stopping distance and reduce your ability to turn quickly without tipping over.
- The rear cargo space is intended for load carrying purposes only, not for passengers.
- Never overload your machine. The name plate (located under the middle of the dash) shows the load limits for the machine. Never overfill attachments or exceed the machine maximum gross-vehicle weight (GVW).

Maintenance

⚠ WARNING

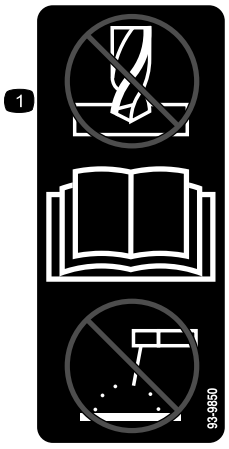
Hydraulic fluid escaping under pressure can have sufficient force to penetrate skin and do serious damage. If fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

Keep your body and hands away from pinhole leaks or nozzles that eject hydraulic fluid under high pressure. Use paper or cardboard, not your hands, to search for leaks.

- Before servicing or making adjustments to the machine, shut off the engine, set the parking brake, and remove the key from the ignition to prevent accidental starting of the engine.
- Never work under a raised bed without placing the bed safety support on the fully extended cylinder rod.
- Make sure that all hydraulic-line connectors are tight, and that all hydraulic hoses and lines are in good condition before applying pressure to the system.
- Before disconnecting or performing any work on the hydraulic system, all pressure in the system must be relieved by stopping the engine, cycling the dump valve from raise to lower and/or lowering box and attachments. Place the remote hydraulics lever in the float position. If the box must be in raised position, secure it with the safety support.
- To make sure that the entire machine is in good condition, keep all nuts, bolts, and screws properly tightened.
- To reduce the potential fire hazard, keep the engine area free of excessive grease, grass, leaves, and accumulation of dirt.
- If the engine must be running to perform a maintenance adjustment, keep hands, feet, clothing, and any parts of the body away from the engine and any moving parts. Keep everyone away.
- Do not overspeed the engine by changing the governor settings. The maximum engine speed is 3,650 rpm. To ensure safety and accuracy, have an Authorized Toro Distributor check the maximum engine speed with a tachometer.
- If major repairs are ever needed or assistance is required, contact an Authorized Toro Distributor.
- To be sure of optimum performance and safety, always purchase genuine Toro replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous. Altering this vehicle in any manner may affect the operation of the vehicle, performance, durability or its use may result in injury or death. Such use could void the product warranty of The Toro® Company.

Safety and Instructional Decals

Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.



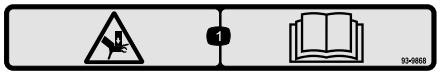
93-9850

1. Do not repair or revise—read the *Operator's Manual.*



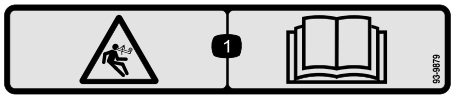
93-9852

1. Warning—read the *Operator's Manual.*
2. Crushing hazard—install the cylinder lock.



93–9868

1. Crushing hazard of hand—read the *Operator's Manual*.



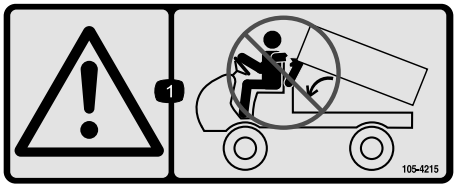
93-9879

1. Stored energy hazard—read the *Operator's Manual.*



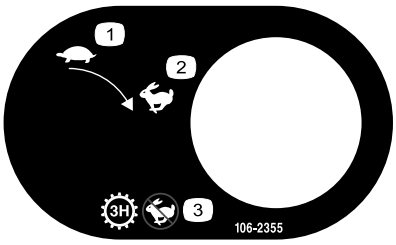
93-9899

1. Crushing hazard—install the cylinder lock.



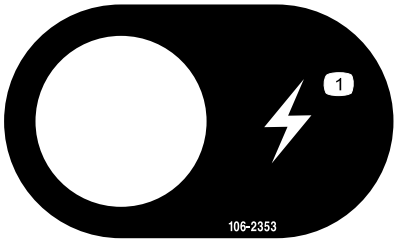
105-4215

1. Warning—avoid pinch points.



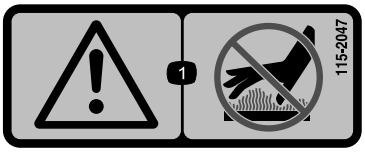
106-2355

1. Slow
2. Fast
3. Transmission—third high; no fast speed



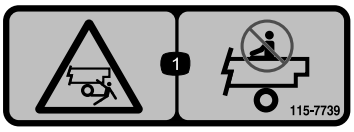
106-2353

1. Electrical power point



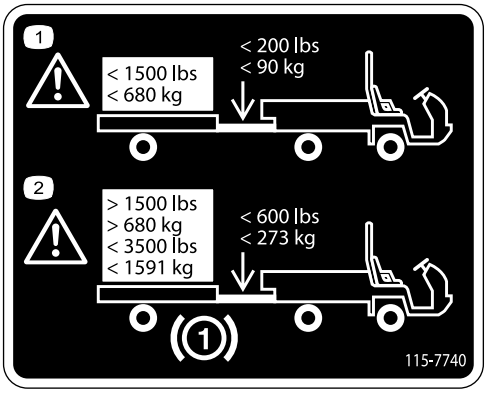
115-2047

1. Warning—do not touch the hot surface.



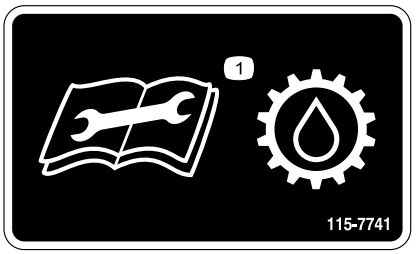
115-7739

1. Falling, crushing hazard, bystanders—no riders on machine.



115-7740

1. Warning—maximum trailer weight is 680 kg (1,500 lb); maximum tongue weight is 90 kg (200 lb).
2. Warning—trailer brakes are required when towing greater than 680 kg (1,500 lb); maximum trailer weight with trailer brakes is 1591 kg (3,500 lb); maximum tongue weight with trailer brakes is 273 kg (600 lb).



115-7741

1. Read the *Operator's Manual* before servicing transmission fluid.



Battery Symbols

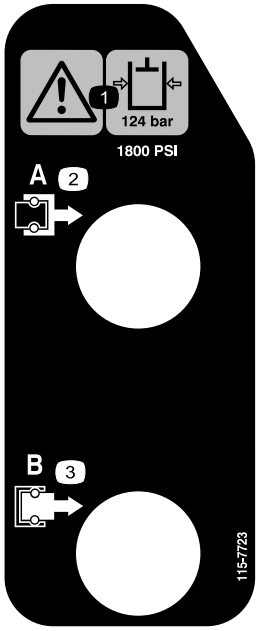
Some or all of these symbols are on your battery.

1. Explosion hazard
2. No fire, open flame, or smoking.
3. Caustic liquid/chemical burn hazard
4. Wear eye protection.
5. Read the *Operator's Manual.*
6. Keep bystanders a safe distance from the battery.
7. Wear eye protection; explosive gases can cause blindness and other injuries
8. Battery acid can cause blindness or severe burns.
9. Flush eyes immediately with water and get medical help fast.
10. Contains lead; do not discard.



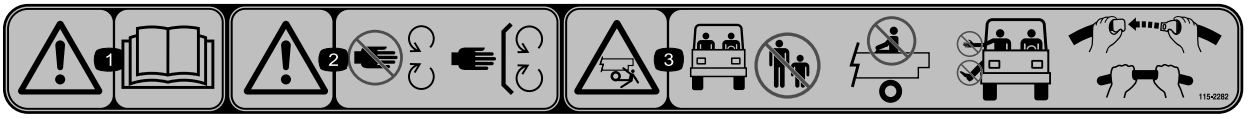
106-7767

1. Warning—read the *Operator's Manual*; avoid tipping the machine; wear the seat belt; lean away from the direction the machine is tipping.



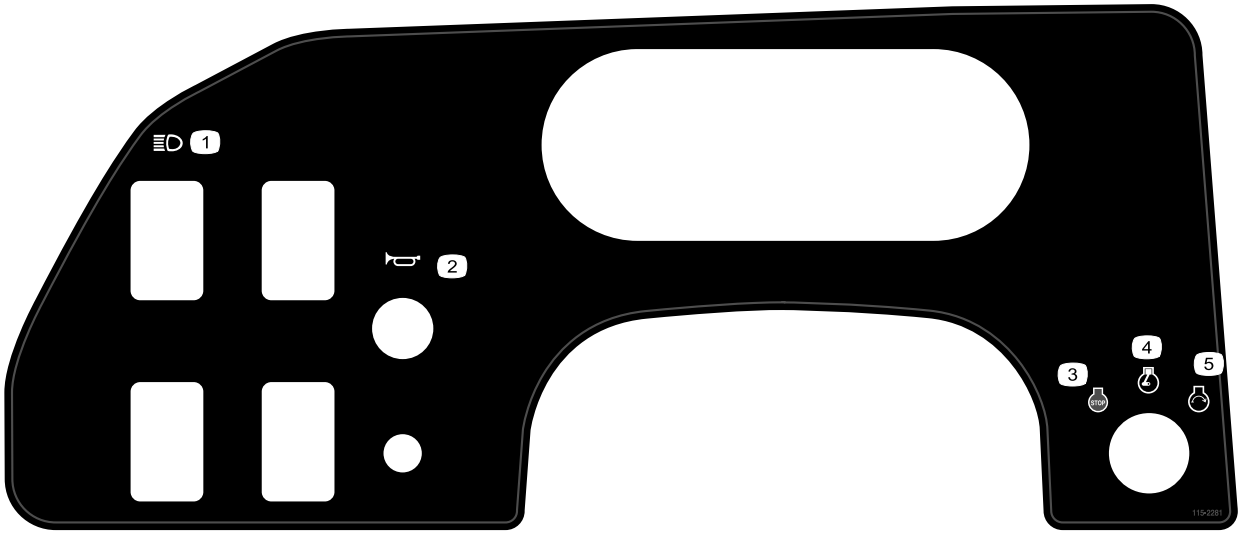
115-7723

1. Warning—the hydraulic oil pressure is 124 bar (1,800 psi).
2. Coupler A
3. Coupler B



115-2282

1. Warning—read the *Operator's Manual.*
2. Warning—stay away from moving parts, keep all guards and shields in place.
3. Crushing/dismemberment hazard of bystanders—keep bystanders a safe distance from the vehicle, do not carry passengers in the cargo bed, keep arms and legs inside of the vehicle at all times, and use seat belts and handholds.



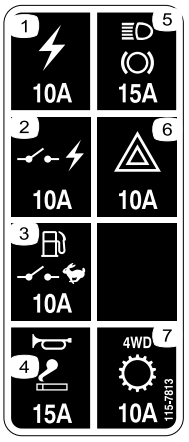
115-2281

1. Headlights
2. Horn
3. Engine—stop
4. Engine—run
5. Engine—start

CALIFORNIA SPARK ARRESTER WARNING

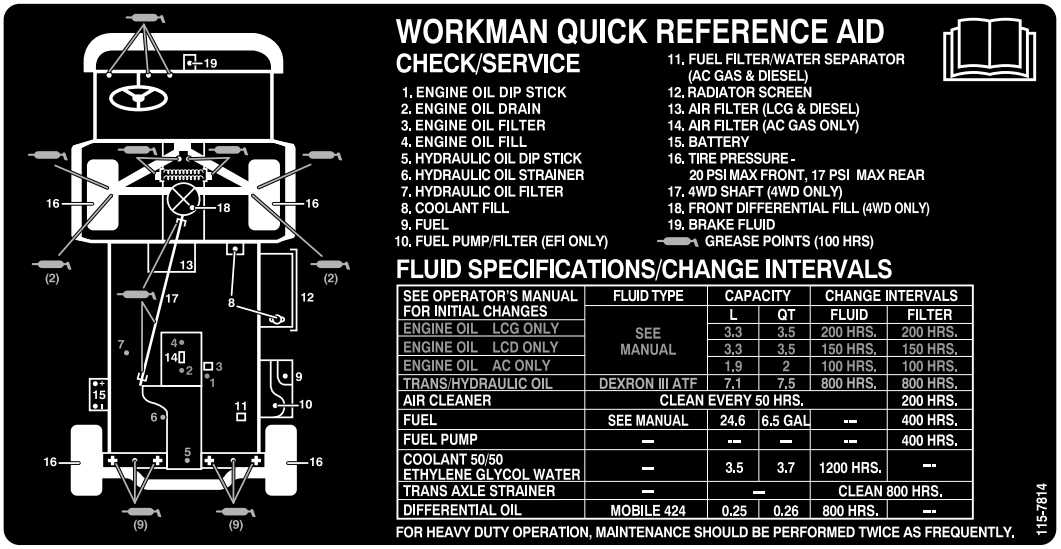
Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrester may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements. 117-2718

117–2718

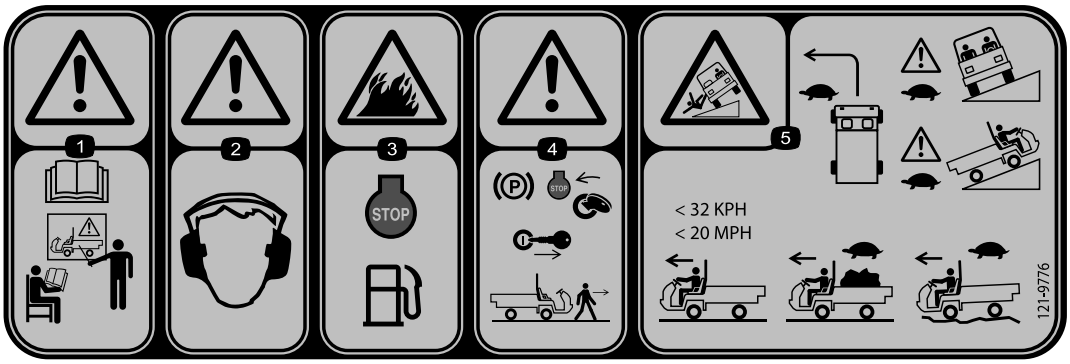


115-7813

1. Power outlet—10 A
2. Switched power—10 A
3. Fuel pump, supervisor switch—10 A
4. Horn, power point—15 A
5. Lights, brake—15 A
6. Hazard—10 A
7. 4WD, Transmission—10 A

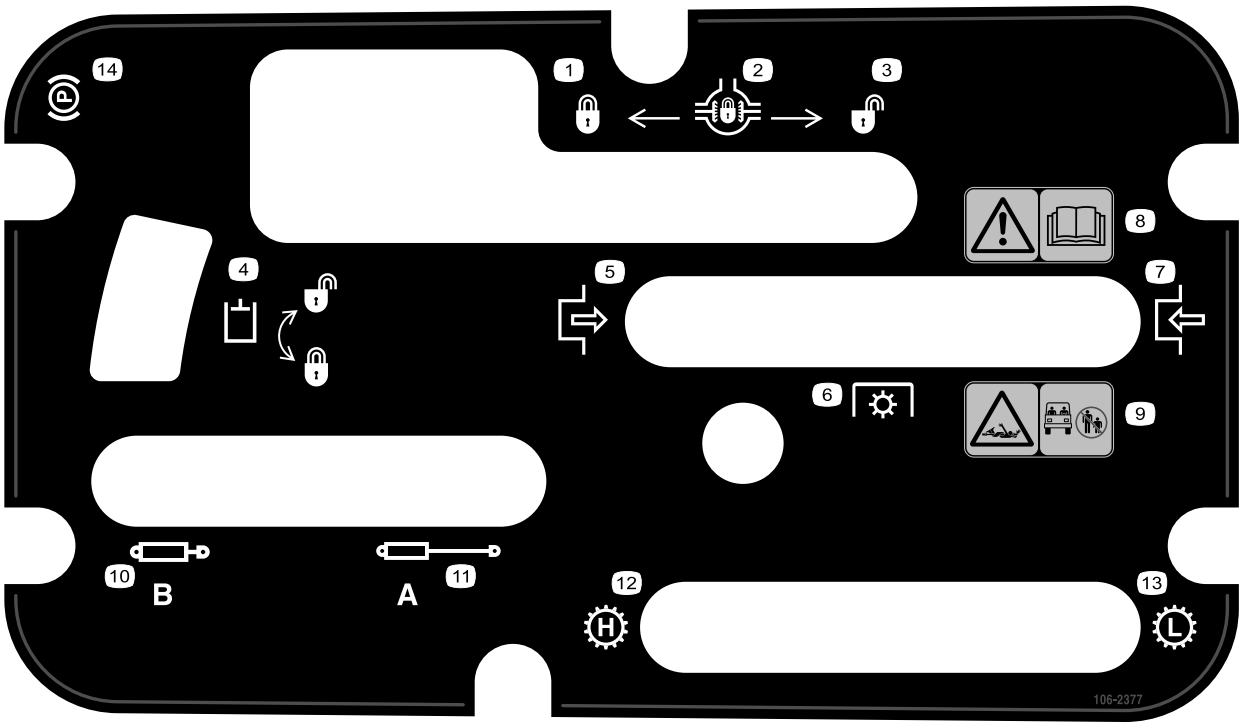


115-7814



121-9776

1. Warning—read the *Operator's Manual* and receive proper training before operating the machine.
2. Warning—wear hearing protection.
3. Fire hazard—stop the engine before refueling the machine.
4. Warning—engage the parking brake, stop the engine, and remove the key from the ignition before walking away from the machine.
5. Tipping hazard—take turns slowly; drive slowly up and across cliffs; with no load, do not exceed 32 kph (20 mph); while carrying a load or when driving on uneven terrain, drive slowly.



106-2377

1. Locked
2. Differential lock
3. Unlocked
4. Hydraulic lock
5. Engage
6. Power take-off (PTO)
7. Disengage
8. Warning—read the *Operator's Manual*.
9. Entanglement hazard, shaft—keep bystander's a safe distance from the vehicle.
10. Retract hydraulics
11. Extend hydraulics
12. Transmission—high speed
13. Transmission—low speed
14. Parking brake

Setup

Loose Parts

Use the chart below to verify that all parts have been shipped.

Procedure	Description	Qty.	Use
1	No parts required	–	Check the engine oil, the transaxle/hydraulic fluid, and the brake-fluid levels.
2	ROPS frame Flange-head bolt (1/2 x 1-1/4 inches)	1 6	Mount the Rollover-Protection System (ROPS).

Media and Additional Parts

Description	Qty.	Use
Operator's Manual	1	Read before operating machine
Parts Catalog	1	Use to reference part numbers
Operator Training Material	1	View before operating machine

Note: Determine the left and right side of the machine from the normal operating position.

1

Checking the Fluid Levels

No Parts Required

Procedure

1. Check the engine-oil level before and after the engine is first started; refer to Checking the Engine-Oil Level (page 20).
2. Check the transaxle/hydraulic-fluid level before the engine is first started; refer to Checking the Transaxle/Hydraulic-Fluid Level (page 23).
3. Check the brake-fluid level before you start the engine for the first time; refer to Checking the Brake-Fluid Level (page 24).

2

Installing the Rollover-Protection System (ROPS)

Parts needed for this procedure:

1	ROPS frame
6	Flange-head bolt (1/2 x 1-1/4 inches)

Procedure

1. Apply medium-grade (service-removable) thread locking compound to the threads of the 6 flange-head bolts (1/2 x 1-1/4 inches).
2. Align each side of the ROPS with the mounting holes on each side of frame of the machine (Figure 3).

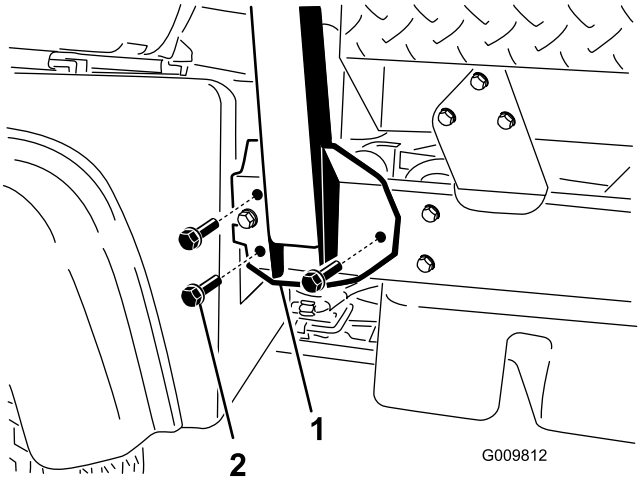


Figure 3

1. ROPS mounting bracket
2. Flange-head bolt (1/2 x 1-1/4 inches)

3. Secure each side of the ROPS mounting bracket to frame of the machine with 3 flange-head bolt (1/2 x 1-1/4 inch).
4. Torque the flange-head bolts to 115 N·m (85 ft-lb).

Product Overview

Controls

Note: Determine the left and right sides of the machine from the normal operating position.

Accelerator Pedal

The accelerator pedal (Figure 4) gives the operator the ability to vary the engine and ground speed of the machine when the transmission is in gear. Pressing the pedal increases the engine speed and ground speed. Releasing the pedal decreases the engine speed and ground speed of the machine.

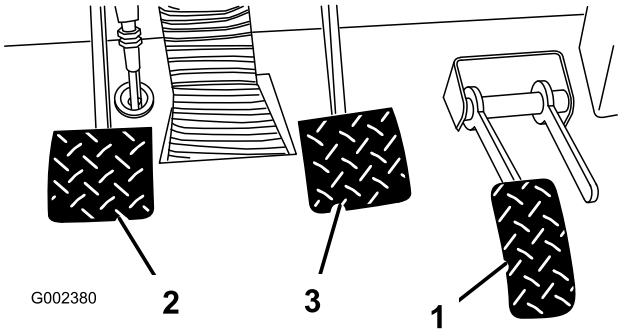


Figure 4

1. Accelerator pedal
2. Clutch pedal
3. Brake pedal

Clutch Pedal

You must fully press the clutch pedal (Figure 4) to disengage the clutch when starting the engine or shifting transmission gears. Release the pedal smoothly when the transmission is in gear to prevent unnecessary wear on the transmission and other related parts.

Important: Do not ride the clutch pedal during operation. The clutch pedal must be fully out or the clutch will slip, causing heat and wear. Never hold the machine stopped on a hill using the clutch pedal. Damage to the clutch may occur.

Brake Pedal

Use the brake pedal (Figure 4) to apply the service brakes to stop or slow the machine.

⚠ CAUTION

Worn or maladjusted brakes may result in personal injury.

If the brake pedal travels to within 3.8 cm (1-1/2 inches) of the machine floor board, adjust or repair the brakes.

Gear-Shift Lever

Fully press the clutch pedal and move the shift lever (Figure 6) into the desired gear selection. A diagram of the shift pattern is shown inFigure 5.

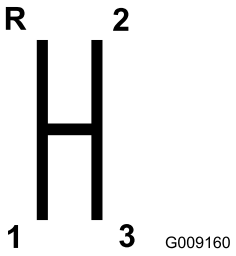


Figure 5

Important: Do not shift the transaxle to the reverse or forward gear unless the vehicle is standing still. Damage to the transaxle may occur.

⚠ CAUTION

Down shifting from too high a speed can cause the rear wheels to skid, resulting in loss of machine control as well as clutch and/or transmission damage.

Use care when shifting; do not down shift when the machine is moving at too high a speed.

Differential Lock

The differential lock allows the rear axle to lock for increased traction. You can engage the differential lock when the machine is in motion (Figure 6) Move the lever forward and to the right to engage the lock.

Note: Machine motion plus a slight turn is required to engage or disengage the differential lock.

⚠ CAUTION

Turning with the differential lock on can result in loss of machine control.

Do not operate the machine with the differential lock on when making sharp turns or at high speeds; refer to Using the Differential Lock (page 28).

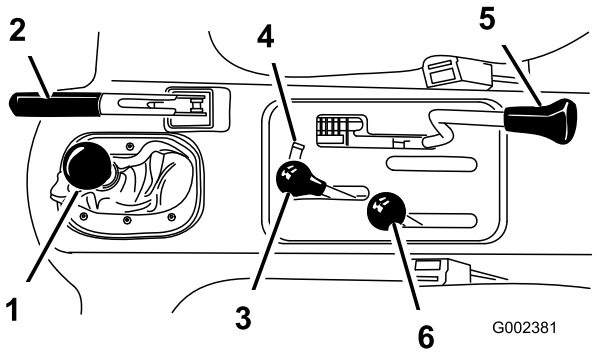


Figure 6

1. Gear-shift lever
2. Parking brake
3. Hydraulic-bed lift
4. Hydraulic-lift lock
5. Differential lock
6. High–low range shifter

Parking Brake

Whenever the engine is shut off, the parking brake (Figure 6) in order to prevent the machine from accidentally moving.

- To set the parking brake, pull back on the lever.
- To release, push the lever forward.

  Note: Release the parking brake before moving the machine.

If you park the machine on a steep grade, set the parking brake, shift the transmission into first gear on a uphill grade or reverse gear on a downhill grade, and place chocks at the downhill side of the wheels.

Hydraulic Lift

The hydraulic lift raises and lowers the bed. Move it rearward to raise the bed, and forward to lower it (Figure 6). It also locks the lift lever in the ON position when using the hydraulics for attachments.

Important: When lowering the bed, hold the lever in the forward position for 1 or 2 seconds after the bed contacts the frame to secure it in the lowered position. Do not hold the hydraulic lift in either the raise or lower position, for more than 5 seconds, once the cylinders have reached the end of their travel.

Hydraulic-Lift Lock

The hydraulic-lift lock locks the lift lever, so the hydraulic cylinders do not operate when the machine is not equipped with a bed (Figure 6). It also locks the lift lever in the ON position when using the hydraulics for attachments.

High–Low Range Shifter

The high–low range shifter adds 3 additional speeds for precise speed control (Figure 6).

- The machine must be completely stopped before shifting between the High and Low range.
- Shift only on level ground.
- Press the clutch pedal fully.
- Move the lever fully forward for High and fully rearward for Low.

High is for higher speed driving on level, dry surfaces with light loads.

Low is for low-speed driving. Use this range when greater than normal power or control is required. For example, steep grades, difficult terrain, heavy loads, slow speed but high-engine speed (spraying).

Important: There is a location between High and Low in which the transaxle is in neither range. Do not use this position as a neutral position because the vehicle could move unexpectedly if the High–Low shifter is bumped and the gear-shift lever is in gear.

Ignition Switch

Use the ignition switch (Figure 7) to start and shut off the engine. It has 3 positions: OFF, ON, and START. Rotate the key clockwise to the START position to engage the starter motor. Release the key when the engine starts. The key moves automatically to the ON position. To shut off the engine, rotate the key counterclockwise to the OFF position.

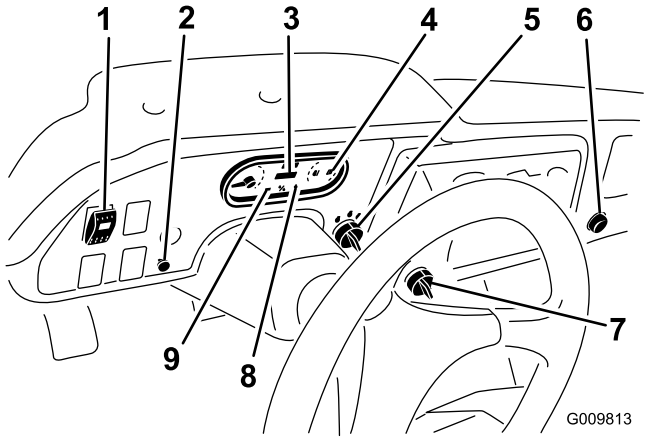


Figure 7

1. Light switch
2. Choke
3. Hour meter
4. Fuel gauge
5. Ignition switch
6. Power point
7. Third-high-lockout switch
8. Oil-pressure-warning light
9. Charge indicator

Hour Meter

The hour meter indicates the total hours of machine operation. The hour meter (Figure 7) starts to function whenever the key switch is rotated to the ON position or if the engine is running.

Third-High-Lockout Switch

Move the third-high-lockout switch (Figure 7) to the SLOW position and remove the key to prevent the use of third gear when in the High range. The engine shuts off if the shift lever moves to third gear when in High range. The key is removable in either position.

Light Switch

Push the light switch (Figure 7) to toggle the headlights on or off.

Oil-Pressure-Warning Light

The oil-pressure-warning light glows (Figure 7) if the engine-oil pressure drops below a safe level while the engine is running. If the light flickers or remains on, stop the vehicle, shut off the engine, and check the oil level. If the oil level is low, but adding oil does not cause the light to go out when the engine is started, shut off the engine immediately and contact your local Toro distributor for assistance.

Check the operation of warning lights as follows:

1. Apply the parking brake.
2. Turn the ignition key to the ON position, but do not start the engine.

   Note: The oil-pressure light should glow red. If the light does not function, either a bulb is burned out or there is a malfunction in the system which must be repaired.

   Note: If engine was just turned off, it may take 1 to 2 minutes for the light to come on.

Charge Indicator

Illuminates when the battery is being discharged. If the light illuminates during operation, stop the machine, turn off the engine, and check for possible causes (Figure 7).

Important: If the alternator belt is loose or broken, do not operate the machine until adjustment or repair is complete. Failure to observe this precaution may result in damage to the engine.

Important: If the alternator belt is loose or broken, do not operate the machine until adjustment or repair is complete. Failure to observe this precaution may result in damage to the engine.

Check the operation of the warning lights as follows:

- Apply the parking brake.
- Turn the ignition key to the ON/PREHEAT position, but do not start the engine. The coolant temperature, charge indicator, and oil-pressure lights should glow. If any light does not function, either a bulb is burned out or there is a malfunction in the system which must be repaired.

Fuel Gauge

The fuel gauge shows the amount of fuel in the tank. It operates only when ignition switch is in the ON position (Figure 7). Red indicates a low fuel level and blinking red indicates near empty.

Power Point

Use the power point (Figure 7) to power optional 12 V electrical accessories.

Choke Control

To start a cold engine, close the carburetor choke by pulling the choke control (Figure 7) out to the ON position. After the engine starts, regulate the choke to keep the engine running smoothly. As soon as possible, open the choke by pushing in the choke control to the OFF position. A warm engine requires little or no choking.

Passenger Hand Hold

The passenger hand hold is located on the dashboard (Figure 8).

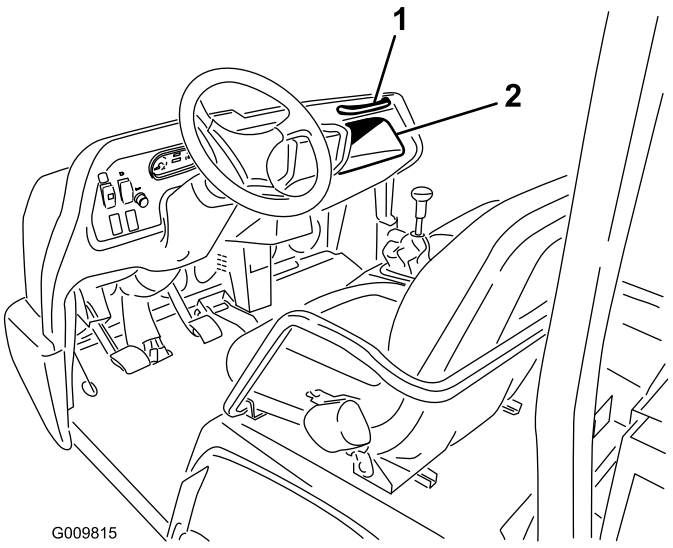


Figure 8

1. Passenger hand hold
2. Storage compartment

Seat-Adjustment Lever

You can adjust the seats forward and rearward for your desired comfort (Figure 9).

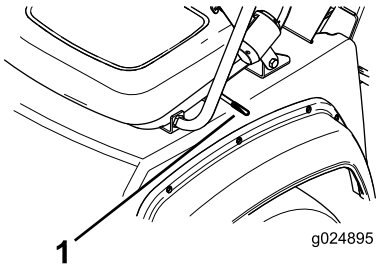


Figure 9

1. Seat-adjustment lever

Specifications

Note: Specifications and design are subject to change without notice.

Overall Width	160 cm (63 inches)
Overall Length	Without bed: 326 cm (128.25 inches) With full bed: 331 cm (130.38 inches) With 2/3 bed in rear-mounting location: 346 cm (136.38 inches)
Base Weight (Dry)	838 kg (1,848 lb)
Rated Capacity (includes 91 kg (200 lb) operator, 91 kg (200 lb) passenger and loaded attachment)	1,362 kg (3,002 lb)
Maximum Gross Vehicle Weight	2,359 kg (5,200 lb)
Tow Capacity	Tongue weight 272 kg (600 lb) Maximum trailer weight 1,587 kg (3,500 lb)
Ground Clearance	18 cm (7 inches) with no load
Wheel Base	118 cm (70 inches)
Wheel Tread (center line to center line)	Front: 117 cm (46 inches) Rear: 121 cm (47.7 inches)
Height	190.5 cm (75 inches) to top of ROPS

Attachments/Accessories

A selection of Toro approved attachments and accessories is available for use with the machine to enhance and expand its capabilities. Contact your Authorized Service Dealer or Distributor or go to www.Toro.com for a list of all approved attachments and accessories.

Operation

Note: Determine the left and right sides of the machine from the normal operating position.

⚠ CAUTION

A raised bed full of material without the proper safety support rod may lower unexpectedly. Working under an unsupported raised bed may cause injury to you or others.

- **Before servicing or making adjustments to the machine, shut off the engine, set the parking brake, and remove the key from the ignition switch.**
- **Remove any load material from the bed or other attachment and insert the safety support on a fully extended cylinder rod before working under a raised bed.**

Operating the Cargo Box

Note: If possible, center loads in the cargo box.

Note: Remove all cargo from the box before lifting the box up to service the machine.

Raising the Cargo Box

⚠ WARNING

Driving the machine with the cargo box raised may cause the machine to tip or roll easier. The box structure may become damaged if you operate the machine with the box raised.

- **Operate the machine only when the cargo box is down.**
- **After emptying the cargo box, lower it.**

⚠ CAUTION

If a load is concentrated near the back of the cargo box when you release the latches, the box may unexpectedly tip open, injuring you or bystanders.

- **Center loads in the cargo box if possible.**
- **Hold the cargo box down and ensure that no one is leaning over the box or standing behind it when releasing the latches.**
- **Remove all cargo from the box before lifting the box up to service the machine.**

Move the lever rearward to raise the cargo box (Figure 10).

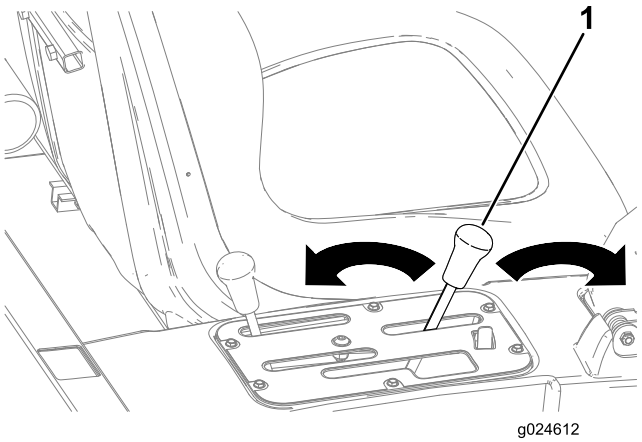


Figure 10

1. Cargo-box lever

Lowering the Box

⚠ WARNING

The weight of the box may be heavy. Hands or other body parts could be crushed.

Keep hands and other body parts clear when lowering the box.

Move the lever forward to lower the cargo box (Figure 10).

Opening the Tailgate

1. Ensure that the cargo box is lowered completely.
2. Open the latches on the left and right side of the cargo box and lower the tailgate (Figure 11).

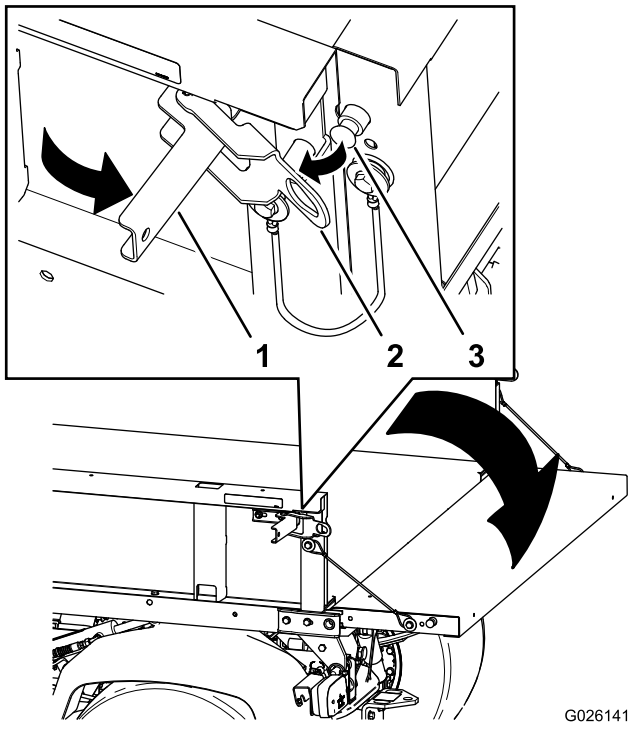


Figure 11

1. Latch handle
2. Latch gate
3. Latch pin

Checking the Engine-Oil Level

Service Interval: Before each use or daily

Engine-oil type: Detergent engine oil API SJ or higher

Engine-oil viscosity: 10W-30; Choose an engine-oil viscosity according to the ambient-air temperature to the table in Figure 12.

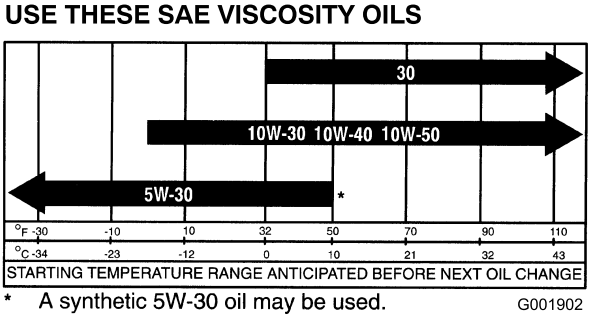


Figure 12

The engine is shipped with oil in the crankcase; however, you should check the oil level before and after the engine is first started.

Note: The best time to check the engine oil is when the engine is cool before it has been started for the day. If it has already ran, allow the oil to drain back down to the sump for at least 10 minutes before checking. If the oil level is at or below the Add mark on the dipstick, add oil to bring the

oil level to the Full mark. **Do not overfill the engine with oil.** If the oil level is between the Full and Add marks, no additional oil is required.

1. Position the machine on a level surface.
2. Remove the dipstick and wipe it with a clean rag (Figure 13).

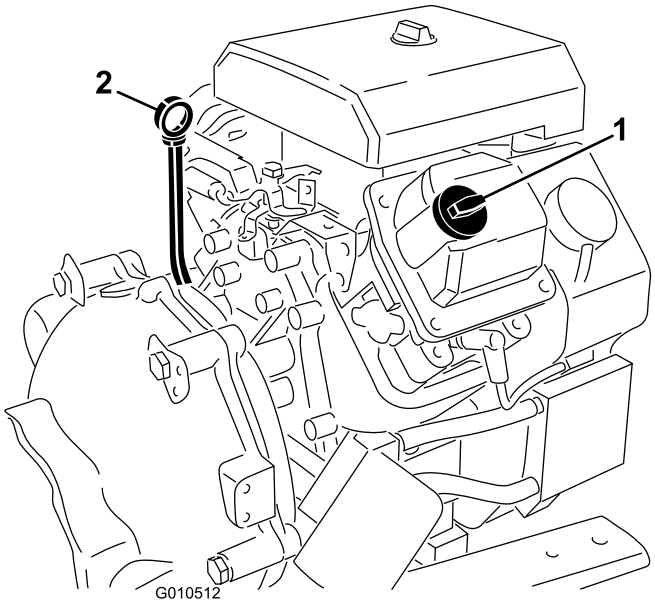


Figure 13

1. Filler cap
2. Dipstick

3. Insert the dipstick into the tube and make sure that it is seated fully.
4. Remove dipstick and check the level of the oil.
5. If the oil level is low, remove the filler cap (Figure 13), and add enough oil to raise the level to the Full mark on the dipstick.

   Note: When adding oil, remove dipstick to allow proper venting. Pour the oil slowly and check the level often during this process. **Do not overfill the engine with oil.**

   Important: When adding engine oil or filling oil, there must be clearance between the oil fill device and the oil fill hole in the valve cover as shown in Figure 14. This clearance is necessary to permit venting when filling, which prevents oil from overrunning into the breather.

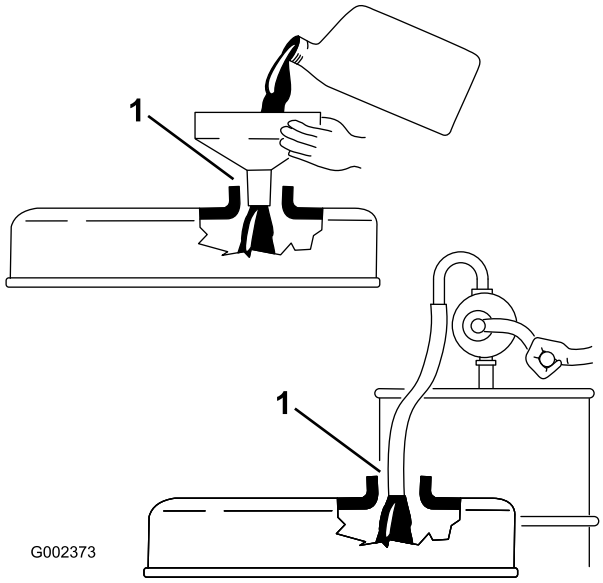


Figure 14

1. Note clearance

6. Install the dipstick firmly in place.

Adding Fuel

Fuel-tank capacity: 25 L (6.5 US gallons).

- For best results, use only clean, fresh (less than 30 days old), unleaded gasoline with an octane rating of 87 or higher ((R+M)/2 rating method).
- **Ethanol**: Gasoline with up to 10% ethanol (gasohol) or 15% MTBE (methyl tertiary butyl ether) by volume is acceptable. Ethanol and MTBE are not the same. Gasoline with 15% ethanol (E15) by volume is not approved for use. **Never use gasoline that contains more than 10% ethanol by volume**, such as E15 (contains 15% ethanol), E20 (contains 20% ethanol), or E85 (contains up to 85% ethanol). Using unapproved gasoline may cause performance problems and/or engine damage which may not be covered under warranty.
- **Do not** use gasoline containing methanol.
- **Do not** store fuel either in the fuel tank or fuel containers over the winter unless a fuel stabilizer is used.
- **Do not** add oil to gasoline.

⚠ DANGER

In certain conditions, fuel is extremely flammable and highly explosive. A fire or explosion from fuel can burn you and others and can damage property.

- **Fill the fuel tank outdoors, in an open area, when the engine is cold. Wipe up any fuel that spills.**
- **Never fill the fuel tank inside an enclosed trailer.**
- **Do not fill the fuel tank completely full. Add fuel to the fuel tank until the level is 6 to 13 mm (1/4 to 1/2 inch) below the bottom of the filler neck. This empty space in the tank allows fuel to expand.**
- **Never smoke when handling fuel, and stay away from an open flame or where fuel fumes may be ignited by a spark.**
- **Store fuel in an approved container and keep it out of the reach of children. Never buy more than a 30-day supply of fuel.**
- **Do not operate without entire exhaust system in place and in proper working condition.**

⚠ DANGER

In certain conditions during fueling, static electricity can be released, causing a spark which can ignite the fuel vapors. A fire or explosion from fuel can burn you and others and can damage property.

- **Always place fuel containers on the ground away from your vehicle before filling.**
- **Do not fill fuel containers inside a vehicle or on a truck or trailer bed because interior carpets or plastic truck bed liners may insulate the container and slow the loss of any static charge.**
- **When practical, remove gas-powered equipment from the truck or trailer and refuel the equipment with its wheels on the ground.**
- **If this is not possible, then fuel such equipment on a truck or trailer from a portable container rather than from a fuel-dispenser nozzle.**
- **If you must use a fuel-dispenser nozzle, keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete.**

⚠ WARNING

Fuel is harmful or fatal if swallowed. Long-term exposure to vapors can cause serious injury and illness.

- **Avoid prolonged breathing of vapors.**
- **Keep face away from nozzle and fuel tank or conditioner bottle opening.**
- **Avoid contact with skin; wash off any spills with soap and water.**

Using Stabilizer/Conditioner

Use a fuel stabilizer/conditioner in the machine to provide the following benefits:

- Keeps gasoline fresh during storage of 90 days or less. For longer storage it is recommended that the fuel tank be drained.
- Cleans the engine while it runs
- Eliminates gum-like varnish buildup in the fuel system, which causes hard starting

Important: Do not use fuel additives containing methanol or ethanol.

Add the correct amount of gas stabilizer/conditioner to the gas.

Note: A fuel stabilizer/conditioner is most effective when mixed with fresh gasoline. To minimize the chance of varnish deposits in the fuel system, use fuel stabilizer at all times.

Filling the Fuel Tank

1. Clean the area around the fuel-tank cap.
2. Remove the fuel-tank cap (Figure 15).

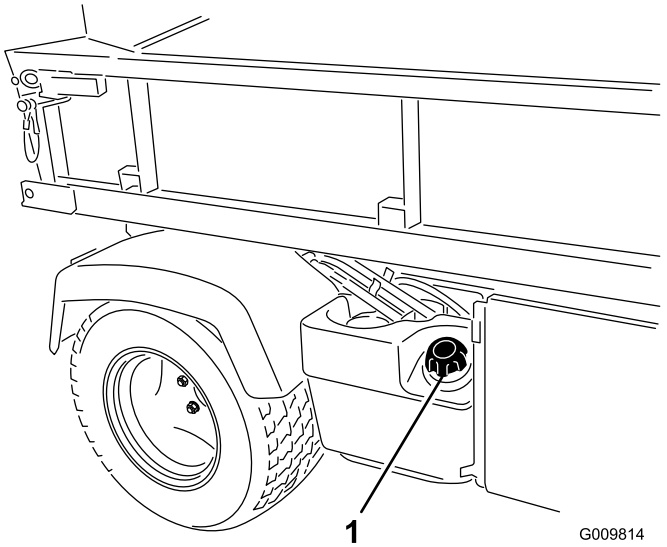


Figure 15

1. Fuel-tank cap

3. Fill the tank to about one inch below the top of the tank, (bottom of the filler neck), then install the cap.

   Note: Do not overfill the fuel tank.

4. Wipe up any fuel that may have spilled to prevent a fire hazard.

Checking the Transaxle/Hydraulic-Fluid Level

Service Interval: Before each use or daily (Check the fluid level before the engine is first started and every 8 hours or daily, thereafter.)

Transaxle fluid type: Dexron III ATF

1. Position the machine on a level surface.
2. Clean the area around the dipstick (Figure 16).

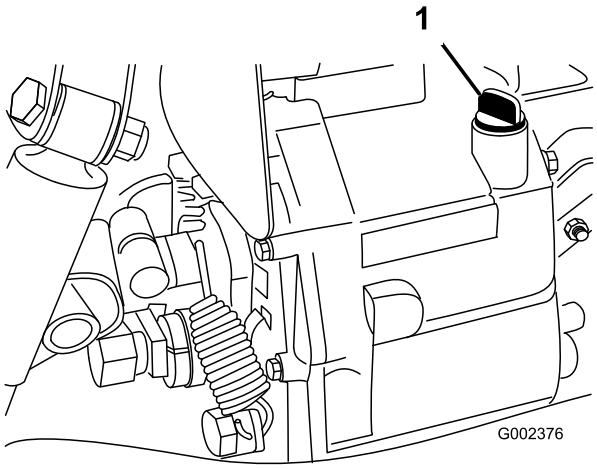


Figure 16

1. Dipstick

3. Unscrew the dipstick from the top of the transaxle and wipe it with a clean rag.
4. Screw the dipstick into the transaxle and ensure that it is fully seated.
5. Unscrew the dipstick and check the fluid level.

   Note: The fluid should be up to top of the flat portion of the dipstick.

6. If the level is low, add enough of the specified fluid to achieve the proper level.

Checking the Torque of the Wheel Nuts

Service Interval: After the first 2 hours
After the first 10 hours
Every 200 hours

⚠ WARNING

Failure properly torque of the wheel nuts could result in failure or loss of a wheel and may result in personal injury.

Torque the front and rear wheel nuts to 109 to 122 N m (80 to 90 ft-lb) after 1 to 4 hours of operation and again after 10 hours of operation. Torque every 200 hours thereafter.

Checking the Tire Pressure

Service Interval: Before each use or daily

The air pressure in the front tires should be 220 kPa (32 psi) and the rear tires should be 124 kPa (18 psi).

Important: Check the tire pressure frequently to ensure proper inflation. If the tires are not inflated to the correct pressure, the tires will wear prematurely.

Figure 17 is an example of tire wear caused by under inflation.

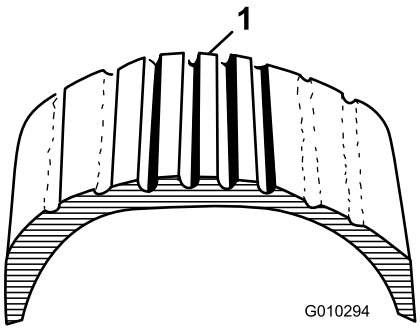


Figure 17

1. Under-inflated tire

Figure 18 is an example of tire wear caused by over inflation.

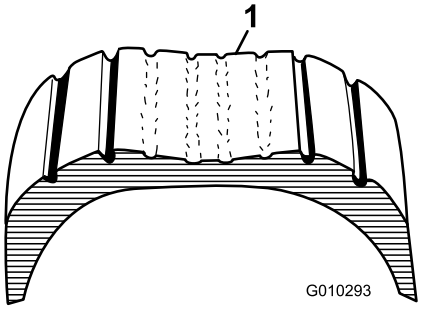


Figure 18

1. Over-inflated tire

Checking the Brake-Fluid Level

Service Interval: Before each use or daily—Check the brake-fluid level. (Check the level before the engine is first started and every 8 hours or daily, thereafter.)

Every 1,000 hours/Every 2 years (whichever comes first)—Change the brake fluid.

Brake fluid type: DOT 3 brake fluid

The brake-fluid reservoir is located under the dash.

1. Park the machine on a level surface.
2. Ensure that the fluid level is up to the Full line on the reservoir (Figure 19).

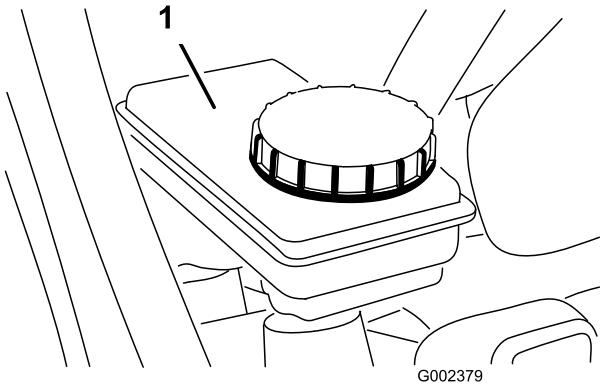


Figure 19

1. Brake-fluid reservoir

3. If the fluid level is low, clean the area around the cap, remove the reservoir cap, and fill the reservoir to the proper level with the specified brake fluid (Figure 19).

   Note: Do not overfill the reservoir with brake fluid.

Note: You can remove the hood access to the reservoir from the front of the machine (Figure 20).

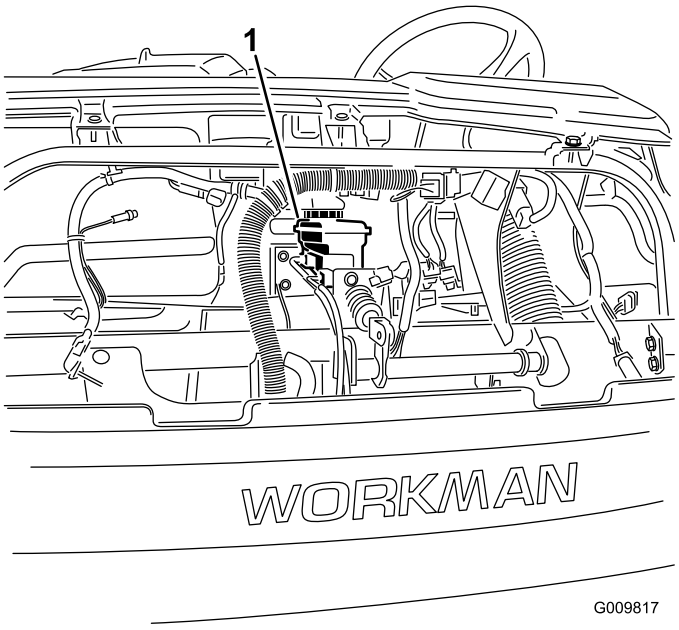


Figure 20

1. Brake-fluid reservoir

Starting the Engine

1. Sit on the operator's seat and engage the parking brake.
2. Disengage the PTO and the high-flow hydraulics (if equipped) and move the throttle lever to the OFF position (if equipped).
3. Move the shift lever to the NEUTRAL position and press the clutch pedal.
4. Ensure that the hydraulic-lift lever is in the center position.
5. Keep your foot off the accelerator pedal.
6. Insert the key into the ignition switch and rotate it clockwise to start the engine.

   Note: Release the key when the engine starts.

Important: To prevent overheating of the starter motor, do not engage starter longer than 15 seconds. After 15 seconds of continuous cranking, wait 60 seconds before engaging the starter motor again.

Driving the Machine

1. Release the parking brake.
2. Fully press the clutch pedal.
3. Move the gear-shift lever to first gear.
4. Release the clutch pedal smoothly while pressing the accelerator pedal.
5. When the machine gains enough speed, remove your foot from the accelerator pedal, fully press the clutch pedal, move the gear-shift lever to the next gear, and release the clutch pedal while pressing the accelerator pedal.
6. Repeat the procedure until the desired speed is attained.

Important: Always stop the machine before shifting to reverse from a forward gear or to a forward gear from reverse.

Note: Avoid long periods of engine idling.

Use the chart below to determine the ground speed of the vehicle at 3,600 rpm.

Gear	Range	Ratio	Speed (kmh)	Speed (mph)
1	L	82.83 : 1	4.7	2.9
2	L	54.52 : 1	7.2	4.5
3	L	31.56 : 1	12.5	7.7
1	H	32.31 : 1	12.2	7.6
2	H	21.27 : 1	18.5	11.5
3	H	12.31 : 1	31.9	19.8
R	L	86.94 : 1	4.5	2.8
R	H	33.91 : 1	11.6	7.1

Important: Do not attempt to push or tow the machine to get it started. Damage to the drive train could result.

Stopping the Machine

To stop the machine, remove your foot from the accelerator pedal, press the clutch pedal, then press the brake pedal.

Shutting off the Engine

To shut off the engine, rotate the ignition key to the OFF position, and engage the parking brake. Remove the key from the switch to prevent accidental starting.

Breaking in a New Machine

To provide proper performance and long machine life, follow these guidelines for the first 100 operating hours.

- Check the fluid and engine-oil levels regularly and be alert for indications of overheating in any component of the machine.
- After starting a cold engine, let it warm up for about 15 seconds before shifting into gear.
- Avoid racing the engine.
- To ensure optimum performance of the brake system, burnish (break-in) the brakes before use. To burnish the brakes, bring the vehicle up to full speed, apply the brakes to rapidly stop the vehicle without locking up the tires. Repeat this 10 times, waiting 1 minute between stops to avoid overheating the brakes. This is most effective if the machine is loaded with 454 kg (1,000 lb).
- Vary the machine speed during operation. Avoid excessive idling. Avoid fast starts and quick stops.
- A break–in oil for the engine is not required. The original engine oil is the same type specified for regular oil changes.
- Refer to the Maintenance (page 32) section for any special low-hour checks.

Checking the Safety-Interlock System

Service Interval: Before each use or daily

The purpose of the safety-interlock system is to prevent the engine from cranking or starting unless the clutch pedal is pressed.

⚠ CAUTION

If the safety-interlock switches are disconnected or damaged, the machine could operate unexpectedly causing personal injury.

- **Do not tamper with the interlock switches.**
- **Check the operation of the interlock switches daily and replace any damaged switches before operating the machine.**

Note: Refer to *Attachment Operator's Manual* for procedures on checking the attachment interlock system.

Verifying the Clutch-Interlock Switch

1. Sit on the operator's seat and engage the parking brake.
2. Move the shift lever to the NEUTRAL position.

   Note: The engine does not start if the hydraulic-lift lever is locked in the forward position.
3. Without pressing the clutch pedal, rotate the ignition key clockwise to the START position.

   Note: If the engine cranks or starts, there is a malfunction in the interlock system that must be repaired before operating the machine.

Verifying the Hydraulic-Lift Lever Interlock Switch

1. Sit on the operator's seat and engage the parking brake.
2. Move the shift lever to the NEUTRAL position and ensure that the hydraulic-lift lever is in the center position.
3. Press clutch pedal.
4. Move the hydraulic-lift lever forward and rotate the ignition key clockwise to the START position.

   Note: If engine cranks or starts, there is a malfunction in the interlock system that must be repaired before operating the machine.

Ensuring Passenger Safety

Whenever you have a passenger riding in the machine, make sure that he or she is wearing the seat belt and holding on securely. Drive slower and turn less sharply because your passenger does not know what you are going to do next and may not be prepared for turning, stopping, accelerating, and bumps.

You and your passenger should remain seated at all times, keeping arms and legs inside the vehicle. The operator should keep both hands on steering wheel, whenever possible, and the passenger should use the hand holds provided (Figure 21 and Figure 22).

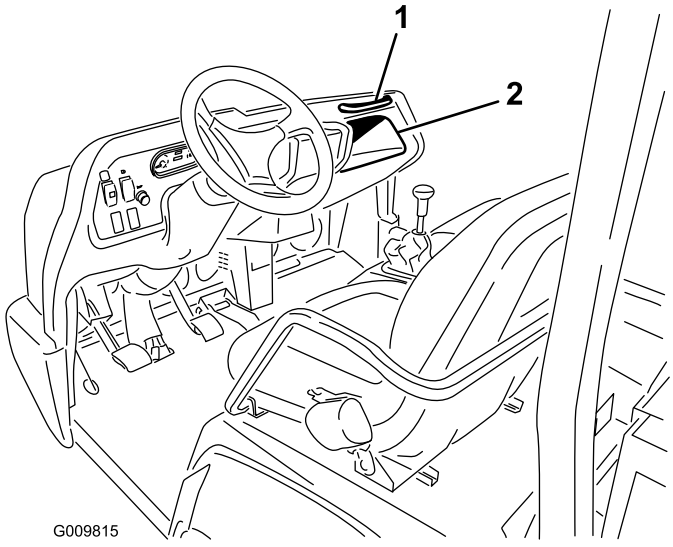


Figure 21

1. Passenger-hand hold
2. Storage compartment

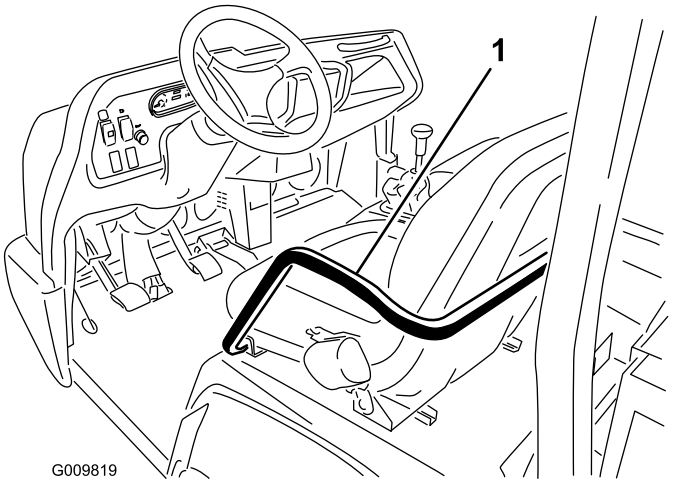


Figure 22

1. Hand hold and hip restraint

Never allow passengers in the cargo box or on any attachments. The vehicle is meant to have 1 driver and only 1 passenger.

Ensuring Proper Speed

Speed is an important variable leading to accidents. Driving too fast for the conditions can cause you to lose control and have an accident. Speed can also make a minor accident worse. Driving head on into a tree at slow speed can cause injury and damage, but, driving into a tree at high speed can destroy the vehicle and kill you and your passenger.

Never drive too fast for the conditions. If there is any doubt about how fast to drive, slow down.

When using heavy attachments, more than 454 kg (1,000 lb), such as sprayers, top dressers, or spreaders, etc., restrict your operating speed by moving the supervisor switch to the slow position.

Ensuring Proper Turning

Turning is another important variable leading to accidents. Turning too sharply for the conditions can cause the vehicle to lose traction and skid, or even tip over.

Wet, sandy, and slippery surfaces make turning more difficult and risky. The faster you are going, the worse this situation becomes so, slow down before turning.

During a sharp turn at higher speeds, the inside rear wheel may lift off the ground. This is not a flaw in the design, it happens with most 4-wheel machine including passenger cars. If this happens, you are turning too sharply for the speed at which you are traveling.

Ensuring Proper Braking

It is good practice to slow down before you get near an obstacle. This gives you extra time to stop or turn away. Hitting an obstacle can damage the machine and its contents. More important, it can injure you and your passenger. Gross machine weight has a major impact on your ability to stop and/or turn. Heavier loads and heavier attachments make a vehicle harder to stop or turn. The heavier the load, the longer it takes to stop.

The braking characteristics also change with no bed or attachment on the machine. Fast stops may cause the rear wheels to lock up before the front wheels lock up, which may affect the control of the machine. It is a good idea to decrease machine speed with no bed or attachment.

Turf and pavement are much slipperier when they are wet. It can take 2 to 4 times as long to stop on wet surfaces as on dry surfaces.

If you drive through standing water deep enough to get the brakes wet, they will not work well until they are dry. After driving through water, you should test the brakes to make sure that they work properly. If they do not, drive slowly in first gear while putting light pressure on the brake pedal. This will dry out the brakes.

Do not downshift for braking on icy or slippery surfaces (wet grass) or while going down a hill because engine braking may cause skidding and loss of control. Shift to a lower gear before starting down a hill.

Preventing Tip Overs

The machine is equipped with a roll bar, hip restraints, seat belts, and hand hold. The Rollover-Protection System (ROPS) used on the machine reduces the risk of serious or fatal injury in the unlikely event of a tip over, although the system cannot protect the operator from all possible injuries.

Replace a damaged ROPS; do not repair or revise. Any alteration of the ROPS must be approved by the manufacturer.

The best way to prevent accidents involving utility machine is through continuous supervision and training of operators and paying constant attention to the area where they are operating the vehicle.

The best way for operators to prevent serious injury or death to themselves or others is to familiarize themselves with the proper operation of the utility vehicle, to stay alert and to avoid actions or conditions which could result in a accident. In the event of a tip over, the risk of serious injury or death will be reduced if the operator is using the ROPS system and seat belts and is following the instructions provided.

Operating on Hills

⚠ WARNING

Tipping or rolling the machine on a hill could cause serious personal injury.

- **Do not operate the vehicle on steep slopes.**
- **If engine stalls or you lose headway on a hill, never attempt to turn vehicle around.**
- **Always back straight down a hill in reverse gear.**
- **Never back down in neutral or with the clutch depressed, using only the brakes.**
- **Never drive across a steep hill, always drive straight up or down.**
- **Avoid turning on a hill.**
- **Don't "drop the clutch" or slam on the brakes. Sudden speed change can initiate a tip over.**

Use extra care when on hills. Never go on hills that are extremely steep. Stopping while going down a hill takes longer than on level ground. Turning while going up or down a hill is more dangerous than turning on the level. Turning while going downhill, especially with the brakes on, and turning uphill while traversing a hill are particularly dangerous. Even at a slow speed and without a load, tip overs are more likely if you turn on a hill.

Slow down and shift into a lower gear before starting up or down a hill. If you have to turn while on a hill, do it as slowly and cautiously as possible. Never make sharp or fast turns on a hill.

If you stall or begin to lose headway while climbing a steep hill, quickly apply the brakes, shift to neutral, start the engine and shift to reverse. At idle speed, the engine and transaxle drag will aid the brakes in controlling the vehicle on the hill and help you back down the hill more safely.

Reduce the weight of the load if it is a steep hill or if the load has high center of gravity. Remember, loads can shift, secure them.

Note: The machine has excellent hill-climbing ability. The differential lock increases this ability. Hill climbing traction can also be increased by adding weight to the rear of the vehicle in 1 of the following ways:

- Adding weight to the inside of the box, making sure that it is secured.
- Mounting wheel weights to rear wheels.
- Adding liquid ballast (calcium chloride) to rear tires.
- Traction increases with no passenger in the front seat.

Loading and Dumping

The weight and position of the cargo and passenger can change the machine center of gravity and machine handling. To avoid loss of control resulting in personal injury, follow these guidelines.

Do not carry loads which exceed the load limits described on the machine-weight label.

⚠ WARNING

The bed will lower whenever the dump lever is pushed down, even when the engine is off. Turning off the engine will *not* prevent the box from lowering, which could cause possible injury.

Always place the safety support on the extended lift cylinder to hold the box up if you are not going to lower it right away.

The machine has several combinations of boxes, platforms, and attachments available. These can be used in various combinations that allow for maximum capacity and versatility. The full sized box is 140 cm (55 inches) wide by 165 cm (65 inches) long and can hold up to 1,477 kg (3,249 lb) of evenly-distributed cargo.

Loads vary in how they are distributed. Sand spreads out evenly and quite low. Other items, such as bricks, fertilizer or landscape timbers, stack higher in the box.

The height and weight of the load has a significant influence on tip overs. The higher a load is stacked, the more likely the vehicle is to tip over. You may find that 1,477 kg (3,249 lb) stacks too high for safe operation. Reducing the total weight is one way to reduce the risk of a tip over. Distributing the load as low as possible is another way to reduce the risk of a tip over.

If the load is positioned toward one of the sides, it will make the machine much more likely to tip over on that side. This is especially true when turning if the load is on the outside of the turn.

Never position heavy loads behind the rear axle. If the load is positioned so far to the rear that it is behind the rear axle, it will reduce the weight on the front wheels, and this will reduce steering traction. With the load all the way to the back, the front wheels can even come off of the ground when going over bumps or up a hill. This will result in a loss of steering and may lead to the machine tipping over.

As a general rule, position the weight of the load evenly from front to rear and evenly from side to side.

If a load is not secured, or you are transporting a liquid in a large container such as a sprayer, it can shift. This shifting happens most often while turning, going up or down hills, suddenly changing speeds, or while driving over rough surfaces. Shifting loads can lead to tip overs. Always secure loads so that they do not shift. Never dump the load while the machine is sideways on the hill.

Heavy loads increase stopping distance and reduce your ability to turn quickly without tipping over.

The rear cargo space is intended for load carrying purposes only, not for passengers.

Using the Differential Lock

The differential lock increases the machine traction by locking the rear wheels so 1 wheel does not spin out. This can help when you have heavy loads to haul on wet turf or slippery areas, going up hills, and on sandy surfaces. It is important to remember, however, that this extra traction is only for temporary limited use. Its use does not replace the safe operation, already discussed concerning steep hills and heavy loads.

The differential lock causes the rear wheels to spin at the same speed. When using the differential lock, your ability to make sharp turns is somewhat restricted and may scuff the turf. Use the differential lock only when needed, at slower speeds and only in first or second gear.

⚠ WARNING

Tipping or rolling the machine on a hill will cause serious injury.

- **The extra traction available with the differential lock can be enough to get you into dangerous situations, such as climbing slopes that are too steep to turn around. Be extra careful when operating with the differential lock on, especially on steeper slopes.**
- **If the differential lock is on when making a sharp turn at a higher speed and the inside rear wheel lifts off the ground, there may be a loss of control, which could cause vehicle to skid. Use the differential lock only at slower speeds.**

Transporting the Machine

For moving the machine long distances, use a trailer. Make sure that the machine is secured to the trailer. Refer to Figure 23 and Figure 24 for the location of the tie-down points.

Note: Load the machine on the trailer with the front of the machine facing forward. If that is not possible, secure the machine hood to the frame with a strap, or remove the hood and transport and secure it separately or the hood may blow off during transport.

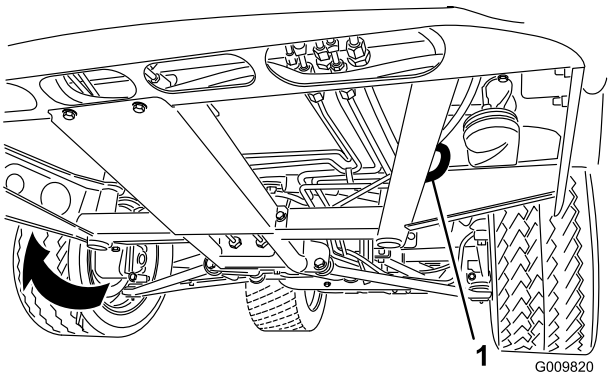


Figure 23

1. Eye hole in the frame (each side)

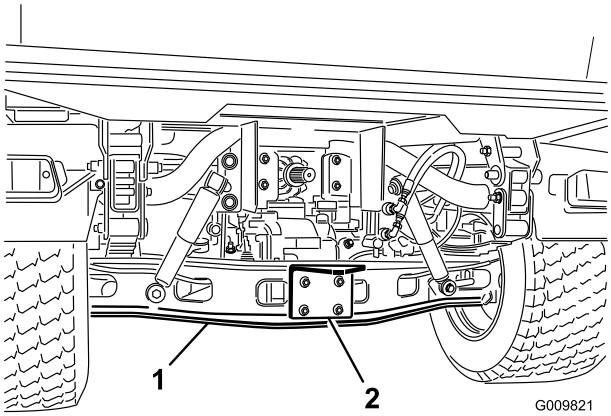


Figure 24

1. Axle
2. Hitch plate

Towing the Machine

In case of an emergency, the machine can be towed for a short distance. However, Toro does not recommend this as a standard procedure.

⚠ WARNING

Towing at excessive speeds could cause the machine to lose steering control.

Never tow the machine at faster than 8 kph (5 mph).

Towing the machine is a 2-person job. Affix a tow line to holes in the front frame member. Move the shift lever to the NEUTRAL position and release the parking brake. If you must move the machine a considerable distance, transport it on a truck or trailer.

Note: The power steering does not function, making it difficult to steer.

Towing a Trailer with the Machine

The machine is capable of pulling trailers and attachments of greater weight than the machine itself.

Several types of tow hitches are available for the machine, depending on your application. Contact your Authorized Toro Distributor for details.

When equipped with a tow hitch bolted onto the rear axle tube, your machine can tow trailers or attachments with a Gross Trailer Weight (GTW) up to 1,587 kg (3,500 lb). Always load a trailer with 60% of the cargo weight in the front of the trailer. This places approximately 10% (272 kg (600 lb) max.) of the Gross Trailer Weight (GTW) on the tow hitch of the machine.

Trailer brakes are required whenever you tow a trailer over 680 kg (1,500 lb) GTW is towed behind a machine.

When hauling cargo or towing a trailer (attachment), do not overload your machine or trailer. Overloading can cause poor performance or damage to the brakes, axle, engine, transaxle, steering, suspension, body structure, or tires.

Important: To reduce potential for drive line damage, use low range.

When towing fifth-wheel attachments, like a fairway aerator, always install the wheel bar (included with the fifth wheel kit) to prevent the front wheels from lifting off the ground if the towed attachments movement is suddenly impaired.

Using the Hydraulic Control

The hydraulic control supplies hydraulic power from the machine pump whenever the engine runs. The power can be used through the quick couplers at the rear of the machine.

⚠ CAUTION

Hydraulic fluid escaping under pressure can have sufficient force to penetrate skin and do serious damage.

Use care when connecting or disconnecting hydraulic quick couplers. Shut off the engine, apply the parking brake, lower the attachment, and place the remote hydraulic valve in the float detent position to relieve the hydraulic pressure before connecting or disconnecting the quick couplers.

Important: If multiple machines use the same attachment, cross contamination of the transmission fluid may occur. Change the transmission fluid more frequently.

Using the Hydraulic-Bed-Lift Lever to Control Hydraulic Attachments

- OFF Position

  This is the normal position for the control valve when it is not being used. In this position, the work ports of the control valve are blocked and any load is held by the check valves in both directions.

- RAISE (Quick Coupler "A") Position

  This is the position which lifts the bed, rear hitch attachment or applies pressure to quick coupler A. This also allows hydraulic fluid to return from quick coupler B to flow back into the valve and then out to the reservoir. This is a momentary position and when the lever is released it spring returns to the center, OFF position.

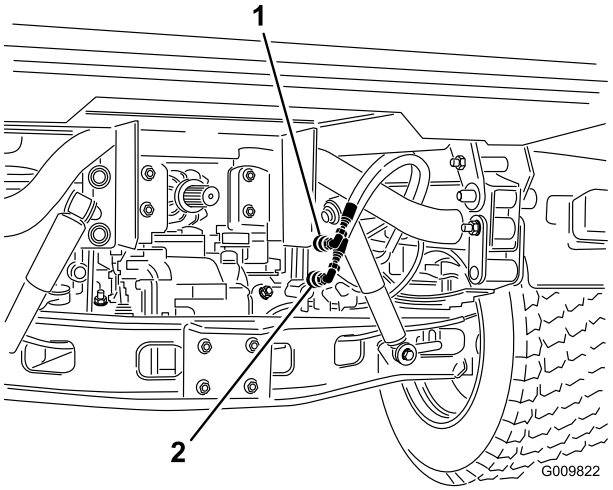


Figure 25

1. Quick coupler A position 2. Quick coupler B position

- LOWER (Quick Coupler "B") Position

  This position lowers the bed, rear hitch attachment, or applies pressure to quick coupler B. This also allows hydraulic fluid to return from quick coupler A to flow back into the valve and then out to the reservoir. This is a momentary position and when the lever is released it spring returns to the center off position. Momentarily holding and then releasing the control lever in this position will provide hydraulic-fluid flow to quick coupler B which provides power down on the rear hitch. When released, it holds the down pressure on the hitch.

  Important: If used with a hydraulic cylinder, holding the control lever in the lower position causes the hydraulic-fluid flow to go over a relief valve, which can damage the hydraulic system.

- ON Position

  This position is similar to Lower (quick coupler B position). It also directs hydraulic fluid to quick coupler B except that the lever is held in this position by a detent lever in the control panel. This allows hydraulic fluid to flow continuously to equipment that uses a hydraulic motor. **This position must only be used on attachments with a hydraulic motor attached.**

  Important: If used with a hydraulic cylinder or no attachment, the ON position causes the hydraulic-fluid flow to go over a relief valve, which can damage the hydraulic system. Use this position only momentarily or with a motor attached.

  Important: Check the hydraulic-fluid level after installation of an attachment. Check the operation of the attachment by cycling the attachment several times to purge air from the system, then check hydraulic-fluid level again. The attachment cylinder will slightly affect the fluid level in the transaxle. Operating the vehicle with a low hydraulic-fluid level can damage the pump, remote hydraulics, power steering, and the vehicle transaxle.

Connecting the Quick Couplers

Important: Clean dirt from quick couplers before connecting. Dirty couplers can introduce contamination into the hydraulic system

1. Pull back the locking ring on the coupler.
2. Insert the hose nipple into the coupler until it snaps into position.

Note: When attaching remote equipment to the quick couplers, determine which side requires pressure, then attach that hose to quick coupler B, which will have pressure when the control lever is pushed forward or locked in the ON position.

Disconnecting the Quick Couplers

Note: With both the vehicle and attachment turned off, move the lift lever back and forth to remove the system pressure and ease the disconnection of the quick couplers.

1. Pull back the locking ring on the coupler.
2. Pull the hose firmly from the coupler.

   Important: Clean and install the dust plug and dust covers to the quick coupler ends when not in use.

Troubleshooting the Hydraulic Control

- Difficulty in connecting or disconnecting quick couplers.

  The pressure not relieved (the quick coupler is under pressure).

- The power steering is turning with great difficulty or it is not turning at all.
  - The hydraulic-fluid level is low.
  - The hydraulic-fluid temperature is hot.
  - The pump is not operating.
- There are hydraulic leaks.
  - The fittings are loose.
  - The fitting is missing the O-ring.
- An attachment does not function.
  - The quick couplers are not fully engaged.
  - The quick couplers are interchanged.
- There is a squealing noise.
  - Remove the valve left in the ON detent position causing hydraulic fluid to flow over the relief valve.
  - The belt is loose.
- The engine does not start.

  The hydraulic lever is locked in the forward position

Maintenance

Determine the left and right sides of the machine from the normal operating position.

⚠ CAUTION

Only qualified and authorized personnel should maintain, repair, adjust, or inspect the machine.

Avoid fire hazards and have fire protection equipment present in the work area. Do not use an open flame to check level or leakage of fuel, battery electrolyte, or coolant. Do not use open pans of fuel or flammable cleaning fluids for cleaning parts.

⚠ CAUTION

If you leave the key in the ignition switch, someone could accidently start the engine and seriously injure you or other bystanders.

Remove the key from the ignition before you do any maintenance.

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 2 hours	• Torque the front and rear wheel nuts.
After the first 10 hours	• Torque the front and rear wheel nuts. • Check the adjustment of the shift cables. • Check the adjustment of the parking brake. • Check the condition and tension of the pump-drive belt. • Replace the hydraulic filter.
After the first 50 hours	• Inspect opening on filter. • Change the engine oil and filter.
Before each use or daily	• Check engine oil level. • Check the transaxle/hydraulic-fluid level. (Check the fluid level before the engine is first started and every 8 hours or daily, thereafter.) • Check the tire pressure. • Check the brake-fluid level. (Check the level before the engine is first started and every 8 hours or daily, thereafter.) • Check the operation of the safety-interlock system.
Every 50 hours	• Clean and oil the air cleaner foam pre-cleaner. (Every 25 hours if operating conditions are extremely dusty or sandy) • Inspect the air cleaner paper element. • Check the battery-fluid level (every 30 days if in storage). • Check the battery-cable connections.
Every 100 hours	• Grease all bearings and bushings. (Lubricate more frequently in heavy duty applications) • Change the air cleaner paper element. • Change the engine oil and filter. • Inspect the condition of the tires. • Remove the debris from the engine-cooling system (Clean more frequently in dirty conditions).

Maintenance Service Interval	Maintenance Procedure
Every 200 hours	• Torque the front and rear wheel nuts. • Inspect opening on filter. • Check the adjustment of the shift cables. • Check the adjustment of the high–low cable. • Check the adjustment of the differential-lock cable. • Check the adjustment of the parking brake. • Check the adjustment of the brake pedal. • Check the condition and tension of the pump-drive belt. • Check the adjustment of the clutch pedal. • Check the adjustment of the accelerator. • Inspect the service and parking brakes.
Every 400 hours	• Inspect or replace the spark plugs. • Replace the fuel filter. • Check the fuel lines and connections. • Check the front-wheel alignment. • Visually inspect the brakes for worn brake shoes.
Every 800 hours	• Change the hydraulic fluid and clean the strainer. • Replace the hydraulic filter.
Every 1,000 hours	• Change the brake fluid. • Drain/flush the fuel tank.
Yearly	• Complete all yearly maintenance procedures specified in the engine operator's manual.

Service-Interval Chart

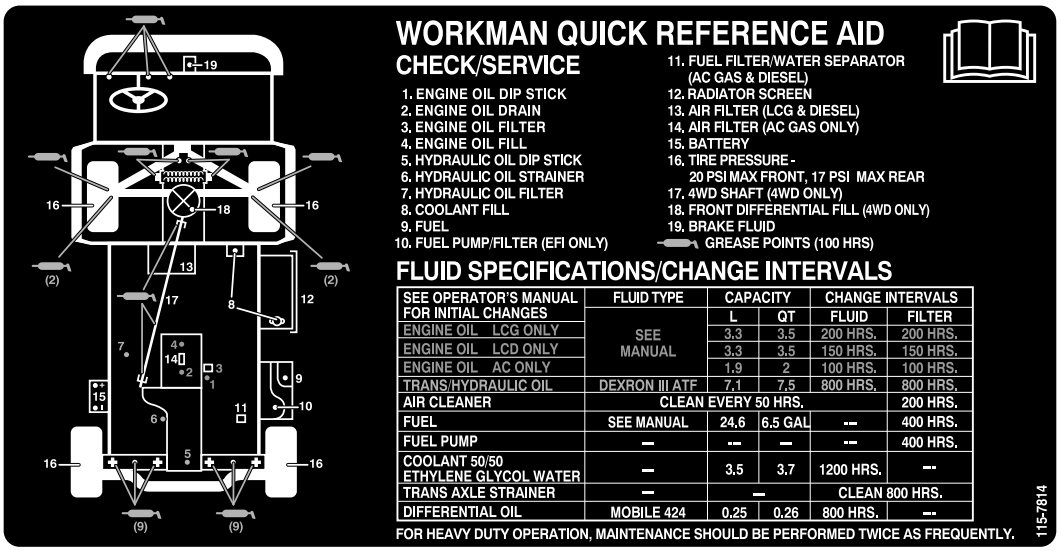


Figure 26

Operating in Adverse Conditions

Important: **If the machine is subjected to any of the conditions listed below, perform maintenance twice as frequently:**

- Desert operation
- Cold-climate operation below 0°C (32°F)
- Trailer towing
- Frequent operation on dusty roads

- Construction work
- After extended operation in mud, sand, water, or similar dirty conditions, have your brakes inspected and cleaned as soon as possible. This prevents any abrasive material from causing excessive wear.

Premaintenance Procedures

Many of the subjects covered in this maintenance section require raising and lowering the bed. The following precautions must be taken or serious injury or death could result.

⚠ WARNING

A raised bed full of material without the proper safety support rod may lower unexpectedly. Working under an unsupported raised bed may cause injury to you or others.

- **Before servicing or making adjustments to the machine, shut off the engine, set the parking brake, and remove the key from the ignition switch.**
- **Remove any load material from the bed or other attachment and insert the safety support on a fully extended cylinder rod before working under a raised bed.**

Using the Bed Support

Important: Always install or remove the bed support from the outside of the bed.

1. Raise the bed until the lift cylinders are fully extended.
2. Remove the bed support from the storage brackets on the back of the ROPS panel (Figure 27).

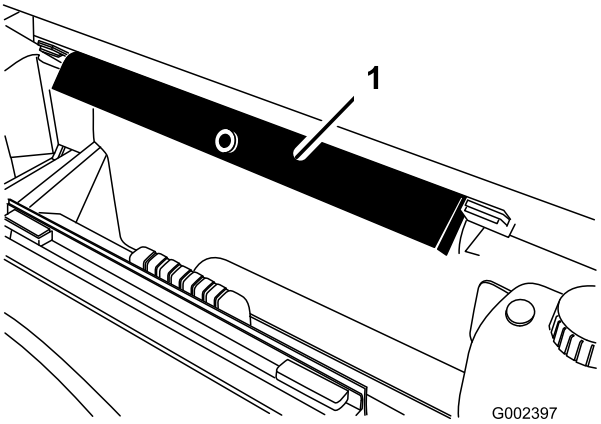


Figure 27

1. Bed support

3. Push the bed support onto the cylinder rod, ensuring that the support end tabs rest on the end of cylinder barrel, and on the cylinder rod end (Figure 28).

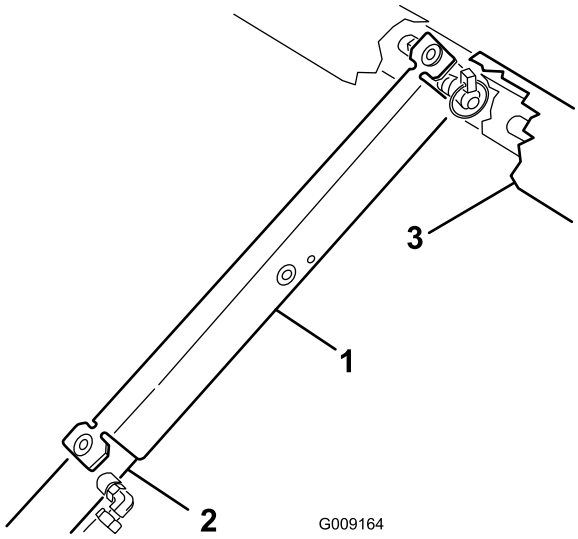


Figure 28

1. Bed support
2. Cylinder barrel
3. Bed

4. Remove the bed support from the cylinder and insert it into the brackets on the back of the ROPS panel.

Important: Do not try to lower the bed with the bed-safety support on the cylinder.

Removing the Full Bed

1. Start the engine, engage the hydraulic-lift lever, and lower the bed until the cylinders are loose in the slots.
2. Release the lift lever and turn off the engine.
3. Remove the lynch pins from the outer ends of the cylinder rod clevis pins (Figure 29).

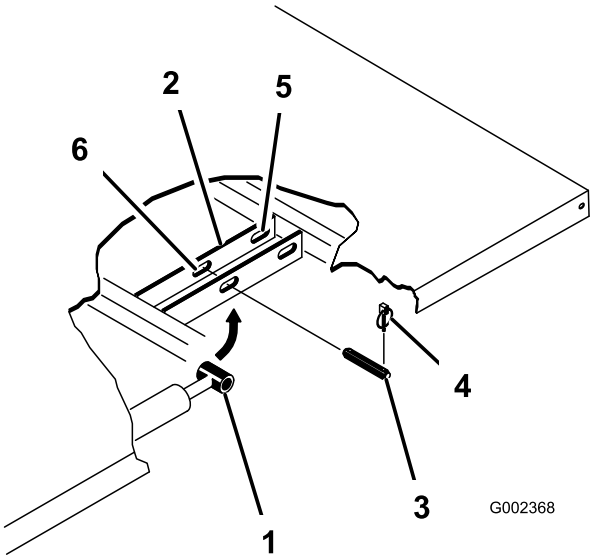


Figure 29

1. Cylinder rod end
2. Bed-mounting plate
3. Clevis pin
4. Lynch pin
5. Rear slots (full bed)
6. Front slots (2/3 bed)

4. Remove the clevis pins securing the cylinder rod ends to the bed-mounting plates by pushing the pins toward the inside (Figure 29).
5. Remove the lynch pins and clevis pins securing the pivot brackets to the frame channels (Figure 29).
6. Lift the bed off the machine.

⚠ CAUTION

The full bed weighs approximately 148 kg (325 lb), so do not try to install or remove it by yourself.

Use an overhead hoist or get the help of 2 or 3 other people.

7. Store the cylinders in the storage clips.
8. Engage the hydraulic-lift-lock lever on the machine to prevent accidental extension of the lift cylinders.

Installing the Full Bed

Note: If the bed sides will be installed on the flat bed, it is easier to install them before installing the bed on the machine.

Note: Ensure that the rear pivot plates are bolted to the bed frame/channel so that the lower end angles to the rear (Figure 30).

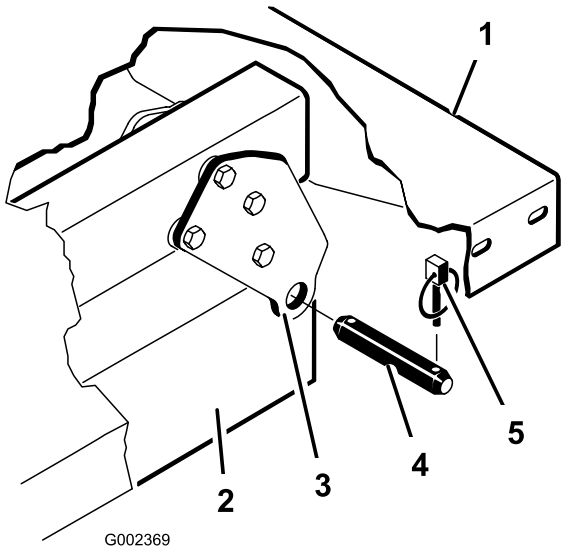


Figure 30

1. Left, rear corner of bed
2. Machine frame channel
3. Pivot plate
4. Clevis pin
5. Lynch pin

⚠ CAUTION

The full bed weighs approximately 148 kg (325 lb), so do not try to install or remove it by yourself.

Use an overhead hoist or get the help of 2 or 3 other people.

Note: Ensure that the spacer brackets and wear blocks (Figure 31) are installed with the carriage-bolt heads positioned inside the machine.

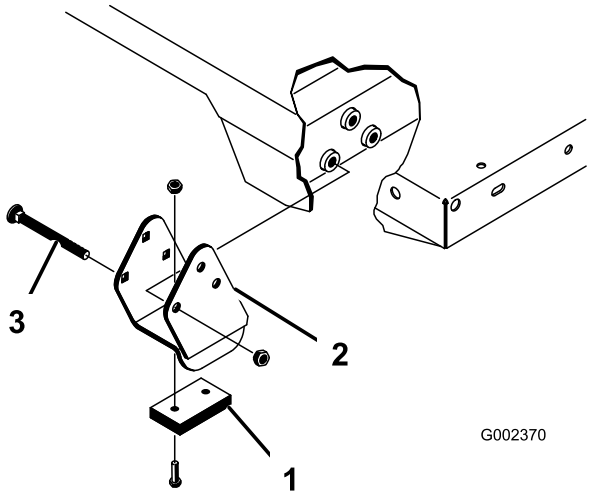


Figure 31

1. Wear block
2. Spacer bracket
3. Carriage bolt

1. Ensure that the lift cylinders are fully retracted.
2. Carefully set the bed onto the machine frame, aligning the rear bed pivot-plate holes with the holes in the rear frame channel and install 2 clevis pins and lynch pins (Figure 31).
3. With the bed lowered, secure each cylinder rod end, to the appropriate slots in the bed-mounting plates with a clevis pin and lynch pin.
4. Insert the clevis pin from outside of the bed with the lynch pin toward the outside (Figure 31).

   Note: The rear slots are for a full bed installation and front slots are for a 2/3 bed installation.

   Note: The engine may need to be started to extend or retract the cylinders for alignment with the holes.

   Note: The unused slot can be plugged with a bolt and nut to prevent assembly errors.
5. Start the engine and engage the hydraulic-lift lever to raise the bed.
6. Release the lift lever and turn off the engine.
7. Install the bed-safety support to prevent accidental lowering of the bed; refer to Using the Bed Support (page 34).
8. Install the lynch pins to the inside ends of the clevis pins.

   Note: If the automatic-tailgate release has been installed on the bed, ensure that the front dump link rod has been placed on the inside of the left side clevis pin before you install the lynch pin.

Raising the Machine

⚠ DANGER

A machine on a jack may be unstable and slip off of the jack, injuring anyone beneath it.

- **Do not start the machine while the machine is on a jack.**
- **Always remove the key from the switch before getting off the machine.**
- **Block the tires when the machine is on a jack.**

- Do not start the engine while the machine is on a jack, because the engine vibration or wheel movement could cause the machine to slip off the jack.
- Do not work under the machine without jack stands supporting it. The machine could slip off a jack, injuring anyone beneath it.
- When jacking up the front of the vehicle, always place a wooden block (or similar material) between the jack and the machine frame.
- The jacking point at the front of the machine is under the front center frame support (Figure 32) and at the rear it is under the axle (Figure 33).

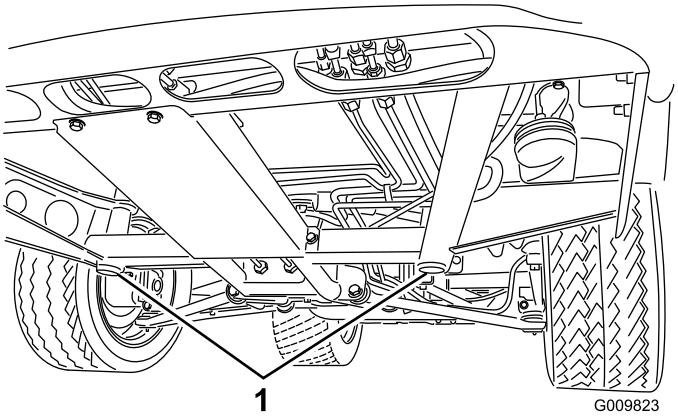


Figure 32

1. Front jacking points

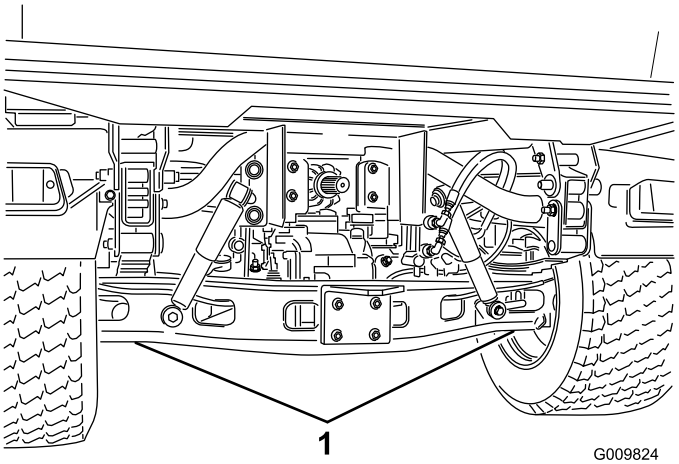


Figure 33

1. Rear jacking points

Removing the Hood

1. While grasping the hood in the headlight openings, lift up the hood to release the lower mounting tabs from the frame slots (Figure 34).

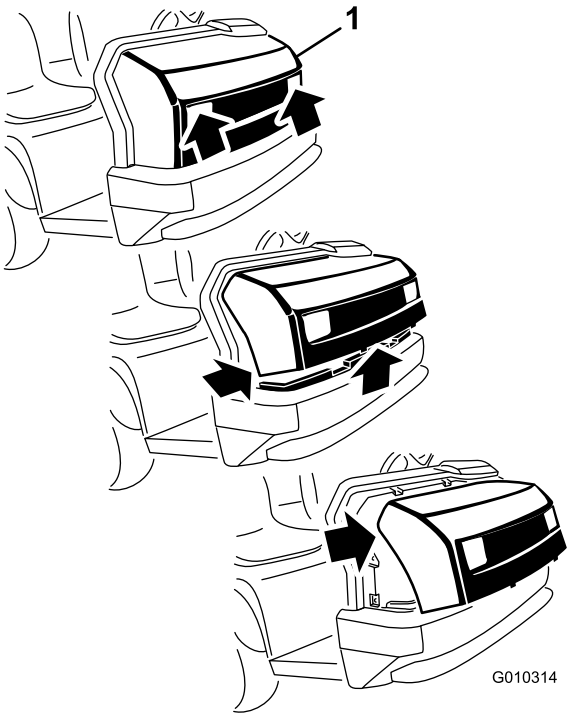


Figure 34

1. Hood

2. Pivot the bottom of the hood upward until the top mounting tabs can be pulled from the frame slots (Figure 34).
3. Pivot the top of the hood forward, and unplug the wire connectors from the head lights (Figure 34).
4. Remove the hood.

Installing the Hood

1. Connect the lights.
2. Insert the top mounting tabs into the frame slots.
3. Insert the lower mounting tabs into the frame slots.
4. Ensure that the hood is fully engaged in the top, sides and bottom grooves.

Lubrication

Greasing Bearings and Bushings

Service Interval: Every 100 hours (Lubricate more frequently in heavy duty applications)

The machine has grease fittings that must be lubricated regularly with No. 2 lithium grease.

The grease-fitting locations and quantities are as follows:

- Ball joints (4), tie rods (2), pivot mounts (2) and steering cylinder (2) as shown in Figure 35
- Spring tower (2) as shown in Figure 36
- Clutch (1), accelerator (1), brake (1) as shown in Figure 37
- U-joint (18) as shown in Figure 38

Important: When greasing the drive shaft universal shaft bearing crosses, pump grease until it comes out of all 4 cups at each cross.

1. Wipe each grease fitting clean so foreign matter cannot be forced into the bearing or bushing.
2. Pump grease into each bearing or bushing.
3. Wipe off excess grease.

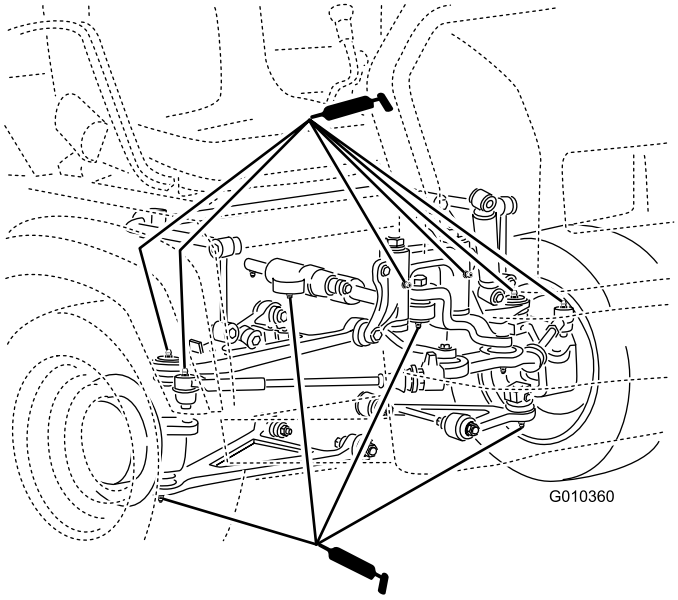


Figure 35

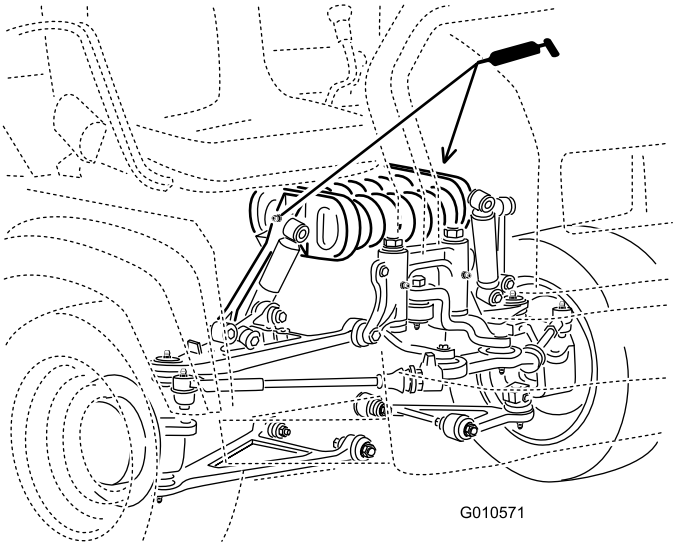


Figure 36

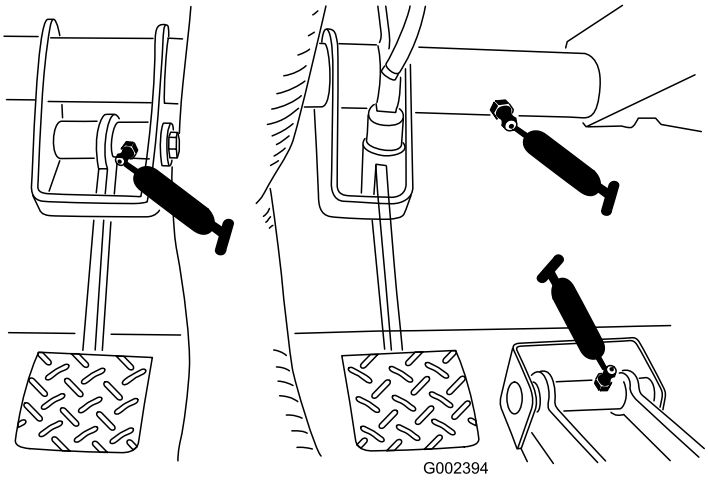


Figure 37

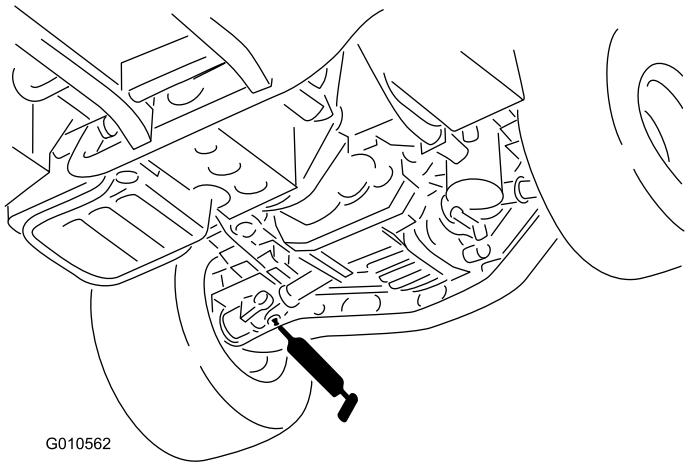


Figure 38

Inspecting the Carbon Canister Air Filter

Service Interval: After the first 50 hours

Every 200 hours

1. Locate the air filter on the bottom of the carbon canister (Figure 39).

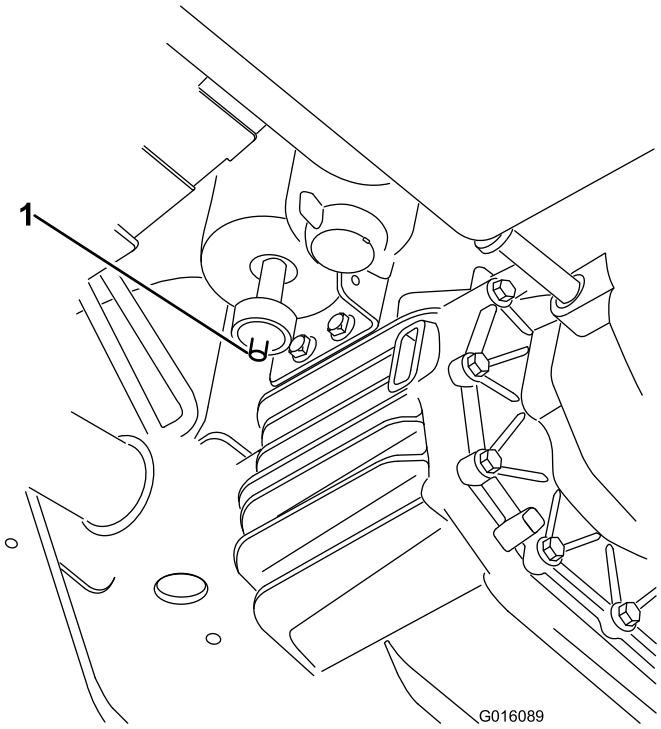


Figure 39

1. Filter opening

2. Ensure that the opening on the bottom of the filter is clear and open.

Servicing the Air Cleaner

Service Interval: Every 50 hours—Clean and oil the air cleaner foam pre-cleaner. (Every 25 hours if operating conditions are extremely dusty or sandy)

Every 50 hours—Inspect the air cleaner paper element.

Every 100 hours—Change the air cleaner paper element.

1. Remove the knob, O-ring, and cover (Figure 40).

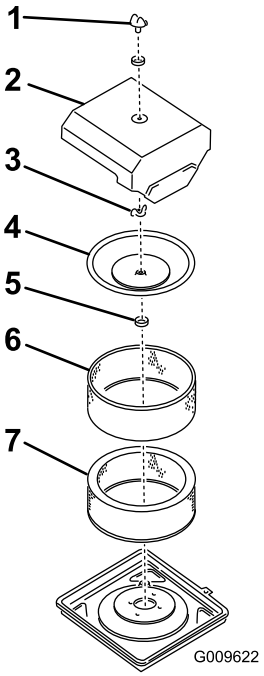


Figure 40

1. Knob and O-ring
2. Air-cleaner cover
3. Wing nut
4. Inner cover
5. Breather seal
6. Foam pre-cleaner
7. Paper element

2. Remove the foam pre-cleaner by sliding it off the paper element, and clean it as follows:
   A. Wash the foam pre-cleaner in detergent and warm water.
   B. Wrap the foam pre-cleaner in cloth and press dry.

      Note: Do not wring the pre-cleaner. Allow it to air dry.

   C. Saturate the foam pre-cleaner in clean engine oil and press it to remove any excess oil.
3. Install the foam pre-cleaner onto the paper element.

   Important: Do not wash the paper element or clean it with compressed air, as damage will occur.

   Note: With the air cleaner disassembled, check the air cleaner components for damage. Replace and damaged parts.
4. Install the element with the pre-cleaner, breather seal, inner cover, wing nut, air cleaner cover, O-ring, and knob (Figure 40).
5. Tighten the knob 1/2 to 1 turn after knob contacts the cover. **Do not overtighten.**

Changing the Engine Oil and Filter

Service Interval: After the first 50 hours

Every 100 hours

Engine-oil quantity: 1.9 L (2 US qt) (with a filter)

Engine-oil type: Detergent engine oil API SJ or higher

Engine-oil viscosity: 10W-30; Choose an engine-oil viscosity according to the ambient-air temperature to the table in Figure 41.

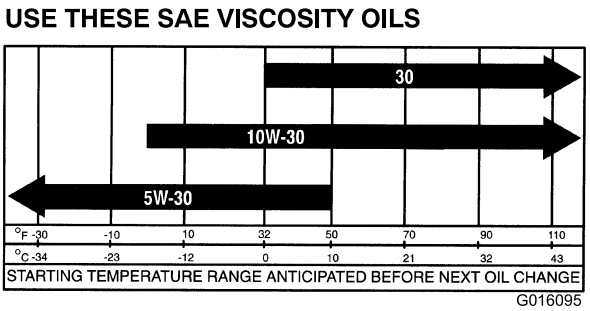


Figure 41

1. Raise the bed (if equipped), and place the safety support on the extended-lift cylinder to hold up the bed.
2. Remove the drain plug and let the oil flow into a drain pan (Figure 42).

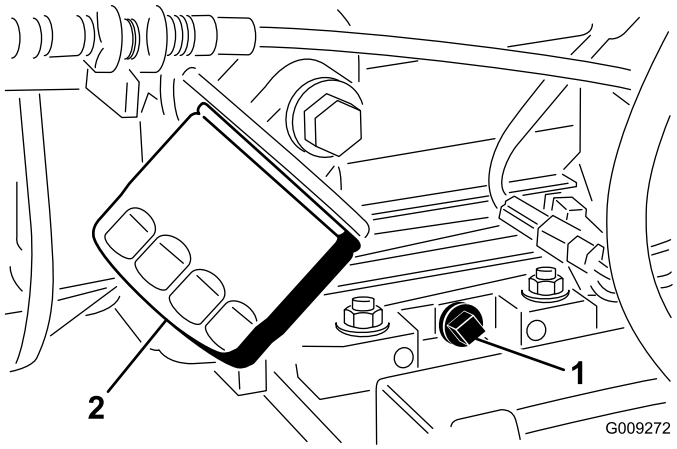


Figure 42

1. Engine-oil-drain plug
2. Engine-oil filter

3. When the oil stops, install the drain plug.
4. Remove the oil filter (Figure 42).
5. Apply a light coat of clean oil to the new filter seal before screwing it on.
6. Screw the filter on until the gasket contacts the mounting plate, then tighten the filter 1/2 to 2/3 of a turn.

Note: Do not overtighten.

7. Add the specified oil to the crankcase; refer to Checking the Engine-Oil Level (page 20).

Replacing the Spark Plugs

Service Interval: Every 400 hours

The spark plugs usually lasts a long time; however, the plugs should be removed and checked whenever the engine malfunctions, or every 400 hours. Replace the spark plugs to ensure proper engine performance and reduce exhaust emission level.

Use the following spark plug: Champion RC 12YC

The recommended air gap is 1 mm (0.04 inch).

1. Clean the area around the spark plugs, so that foreign matter cannot fall into the cylinder when you remove the spark plug.
2. Pull wires off the spark plugs and remove the plugs from the cylinder head.
3. Check the condition of the side electrode, center electrode, and the center electrode insulator to ensure that there is no damage.

Important: A cracked, fouled, dirty, or otherwise malfunctioning spark plug must be replaced. Do not sand blast, scrape, or clean electrodes by using a wire brush because grit may eventually release from the plug and fall into the cylinder. The result is usually a damaged engine.

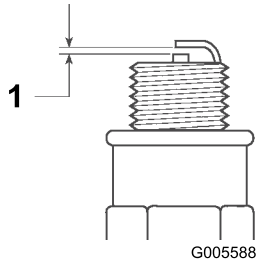


Figure 43

1. Air gap at 1 mm (0.04 inch)

4. For each spark plug, set the air gap between the center and side electrodes to 1 mm (0.040 inch).
5. Install the correctly gapped spark plugs and tighten each one to 24.5 to 29 N·m (18 to 22 ft-lb).
6. Install the spark-plug wires.

Fuel System Maintenance

Replacing the Fuel Filter

Service Interval: Every 400 hours

1. Raise the bed (if equipped), and place the safety support on the extended-lift cylinder to hold up the bed.
2. Place a clean container under the fuel filter (Figure 44).

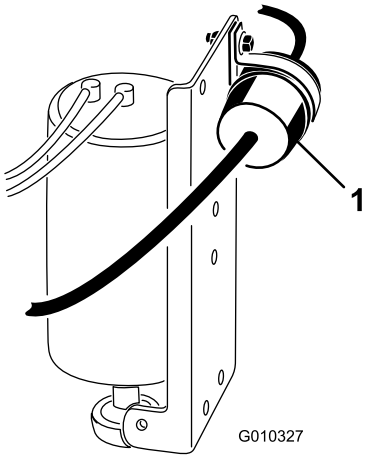


Figure 44

1. Fuel filter

3. Loosen the R-clamp securing the filter to the frame.
4. Remove the clamps securing the fuel filter to the fuel lines.
5. Install a new fuel filter to fuel lines with the clamps previously removed.

   Note: The filter must be mounted so the arrow points toward the carburetor.
6. Tighten the R-clamp securing the filter to the frame.
7. Wipe up and spilled fuel.

Inspecting the Fuel Lines and Connections

Service Interval: Every 400 hours/Yearly (whichever comes first)

Every 1,000 hours/Every 2 years (whichever comes first)

Inspect the fuel lines and connections for deterioration, damage, or loose connections.

Electrical System Maintenance

Servicing the Fuses

The fuses for the electrical system are located under the center of the dash panel (Figure 45 and Figure 46).

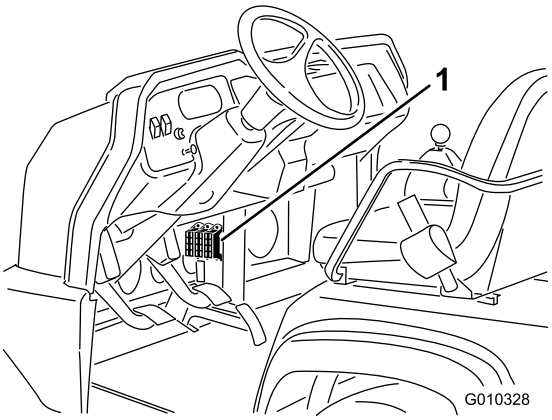


Figure 45

1. Fuses

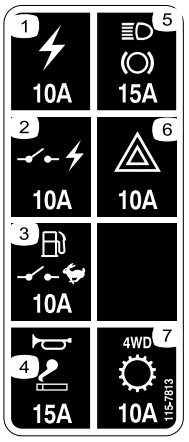


Figure 46

1. Power outlet—10 A
2. Switched power—10 A
3. Fuel pump, supervisor switch—10 A
4. Horn, power point—15 A
5. Lights, brake—15 A
6. Hazard—10 A
7. 4WD, Transmission—10 A

Jump-Starting the Machine

⚠ WARNING

Jump-starting can be dangerous. To avoid personal injury or damage to electrical components in machine, observe the following warnings:

- **Never jump start with a voltage source greater than 15 VDC; this will damage the electrical system.**
- **Never attempt to jump-start a discharged battery that is frozen. It could rupture or explode during jump starting.**
- **Observe all battery warnings while jump-starting your machine.**
- **Be sure that your machine is not touching the jump-start machine.**
- **Connecting cables to the wrong post could result in personal injury and/or damage to the electrical system.**

1. Squeeze the battery cover to release the tabs from the battery base, and remove the battery cover from the battery base (Figure 47).

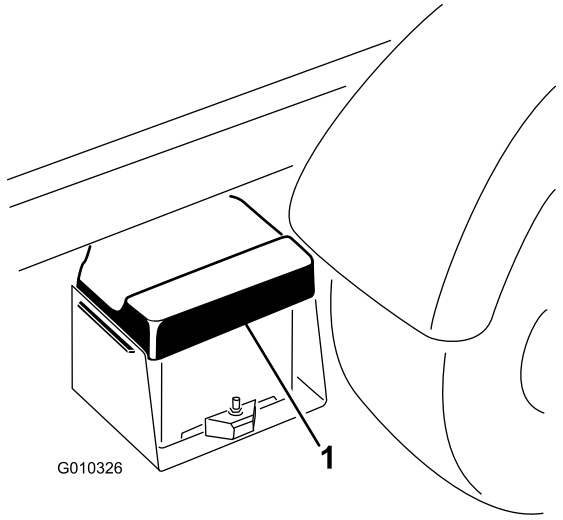


Figure 47

1. Battery cover

2. Connect a jumper cable between the positive posts of the 2 batteries (Figure 48).

   Note: The positive post may be identified by a + sign on top of the battery cover.

3. Connect 1 end of the other jumper cable to the negative terminal of the battery in the other machine.

   Note: The negative terminal has "NEG" on the battery cover.

   Note: Do not connect the other end of the jumper cable to the negative post of the discharged battery. Connect the jumper cable to the engine or frame. Do not connect the jumper cable to the fuel system.

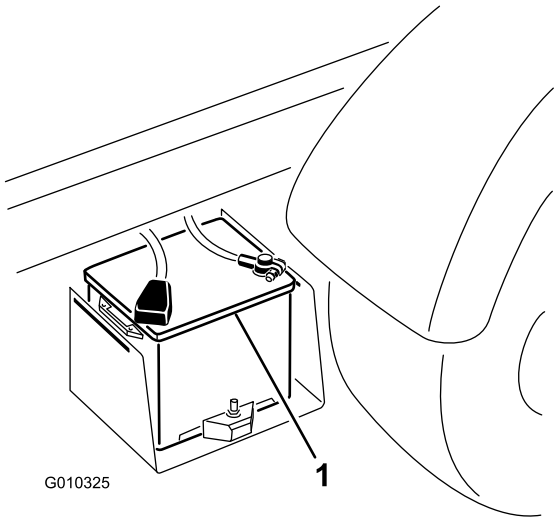


Figure 48

1. Battery

4. Start the engine in the machine providing the jump start.

   Note: Let it run for a few minutes, then start the engine.

5. Remove the negative jumper cable first from the engine, then the battery in the other machine.

6. Install the battery cover to the battery base.

Servicing the Battery

Service Interval: Every 50 hours—Check the battery-fluid level (every 30 days if in storage).

Every 50 hours—Check the battery-cable connections.

⚠ WARNING

CALIFORNIA
Proposition 65 Warning

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

⚠ DANGER

Battery electrolyte contains sulfuric acid, which is a deadly poison and causes severe burns.

- **Do not drink electrolyte and avoid contact with skin, eyes or clothing. Wear safety glasses to shield your eyes and rubber gloves to protect your hands.**
- **Fill the battery where clean water is always available for flushing the skin.**

- Keep the battery-electrolyte level properly maintained.
- Keep the top of the battery clean by washing it periodically with a brush dipped in ammonia or bicarbonate of soda solution. Flush the top surface with water after cleaning. Do not remove the fill cap while cleaning.
- Ensure that the battery cables are kept tight on the terminals to provide good electrical contact.
- If corrosion occurs at terminals, remove the battery cover, disconnect the cables (negative (–) cable first), and scrape the clamps and terminals separately. Connect the cables (positive (+) cable first) and coat the terminals with petroleum jelly.
- Maintain cell electrolyte level with distilled or demineralized water. Do not fill the cells above the bottom of the fill ring inside each cell.
- If you store the machine in a location where temperatures are extremely high, the battery runs down more rapidly than if the machine is stored in a location where temperatures are cool.

Drive System Maintenance

Adjusting the Shift Cables

Service Interval: After the first 10 hours

Every 200 hours

1. Move the shift lever to the NEUTRAL position.
2. Remove the clevis pins securing the shift cables to the transaxle-shift arms (Figure 49).

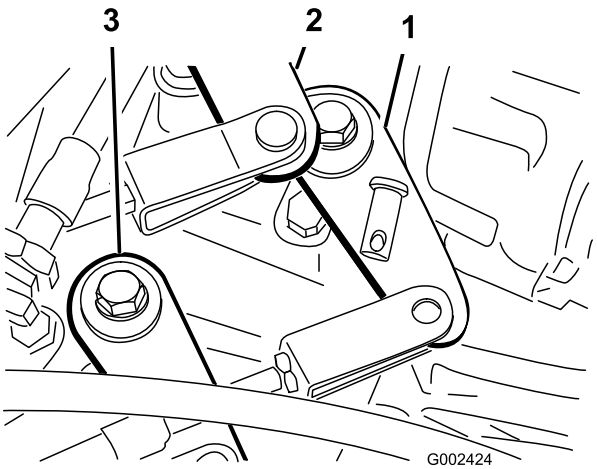


Figure 49

1. Shift arm (1st to reverse)
2. Shift arm (2nd to 3rd)
3. Shift arm (High to low)

3. Loosen the clevis jam nuts and adjust each clevis, so that the cable free play is equal forward and backward relative to the hole in the transaxle-shift arm (with the transaxle lever free play taken up in the same direction).
4. Install the clevis pins and tighten the jam nuts when finished.

Adjusting the High–Low Cable

Service Interval: Every 200 hours

1. Remove the clevis pin securing the High–Low cable to the transaxle (Figure 49).
2. Loosen the clevis jam nut and adjust the clevis so that the clevis hole aligns with the hole in the transaxle bracket.
3. Install the clevis pin and tighten the jam nut when finished.

Adjusting Differential-Lock Cable

Service Interval: Every 200 hours

1. Move the differential-lock lever to the OFF position.
2. Loosen the jam nuts securing the differential-lock cable to the bracket on the transaxle (Figure 50).

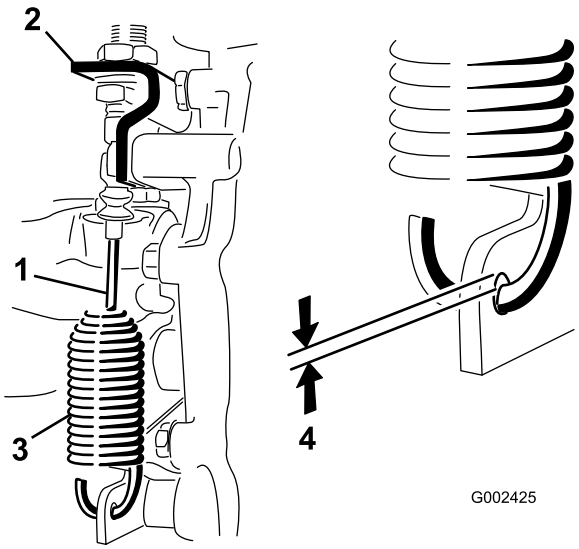


Figure 50

1. Differential-lock cable
2. Transaxle bracket
3. Spring
4. 0.25 to 1.5 mm (0.01 to 0.06 inch) gap

3. Adjust the jam nuts to obtain a 0.25 to 1.5 mm (0.01 to 0.06 inch) gap between the spring hook and the OD of the hole in the transaxle lever.
4. Tighten the jam nuts when finished.

Inspecting the Tires

Service Interval: Every 100 hours

The air pressure in the front tires should be 220 kPa (32 psi) and the rear tires should be 124 kPa (18 psi).

Operating accidents, such as hitting curbs, can damage a tire or rim and also disrupt wheel alignment, so inspect the tire condition after an accident.

Important: Check the tire pressure frequently to ensure proper inflation. If the tires are not inflated to the correct pressure, the tires will wear prematurely.

Figure 51 is an example of tire wear caused by under inflation.

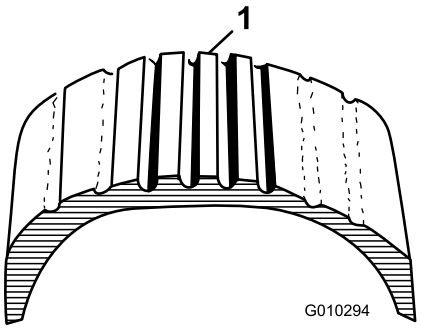


Figure 51

1. Under-inflated tire

Figure 52 is an example of tire wear caused by over inflation.

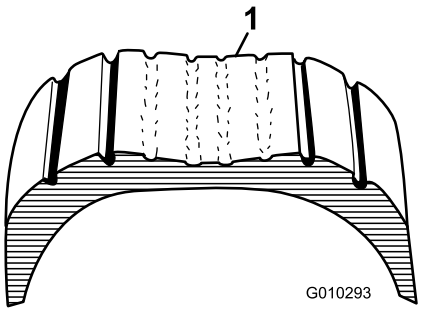


Figure 52

1. Over-inflated tire

Checking the Front-Wheel Alignment

Service Interval: Every 400 hours/Yearly (whichever comes first)

1. Make sure that the tires are facing straight ahead.
2. Measure the center-to-center distance (at axle height) at the front and rear of the steering tires (Figure 53).

   Note: The measurement must be within 0 ± 3 mm (0 ± 0.12 inch) at the front of the tire then at the rear of the tire. Rotate the tire 90° and check the measurement.

   Important: Check the measurements at consistent locations on the tire. The machine should be on a flat surface with the tires facing straight ahead.

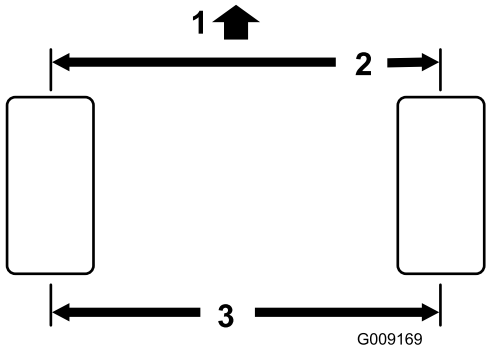


Figure 53

1. Front of the machine
2. 0 ± 3 mm (0 ± 0.12 inch) front to rear of the tire
3. Center to center distance

3. Adjust the center-to-center distance as follows:
   A. Loosen the jam nut at the center of the tie rod (Figure 54).

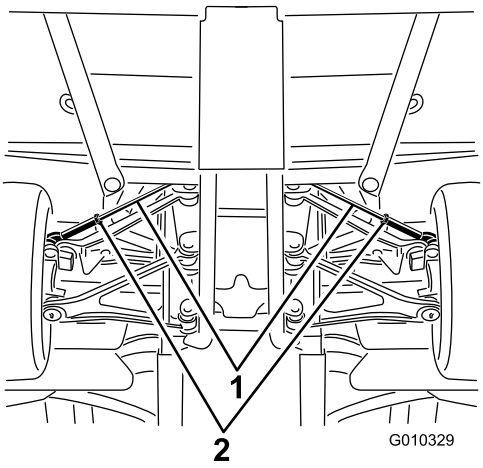


Figure 54

1. Tie rods
2. Jam nuts

   B. Rotate the tie rod to move the front of the tire inward or outward to achieve the center to center distances from front to back.
   C. Tighten the tie rod jam nut when the adjustment is correct.
   D. Check to ensure that the tires turn an equal amount to the right and to the left.

   Note: If the tires do not turn equally, refer to the *Service Manual* for the adjustment procedure.

Cooling System Maintenance

Removing Debris from the Engine-Cooling System

Service Interval: Every 100 hours—Remove the debris from the engine-cooling system (Clean more frequently in dirty conditions).

To ensure proper cooling, clean the blower housing and other cooling shrouds and clean the cooling fins and external surfaces.

Note: Operating the engine with dirty or plugged cooling fins or with the cooling shrouds removed, causes engine damage due to overheating.

Brake Maintenance

Adjusting the Parking Brake

Service Interval: After the first 10 hours

Every 200 hours

1. Remove the rubber grip from the parking-brake lever (Figure 55).

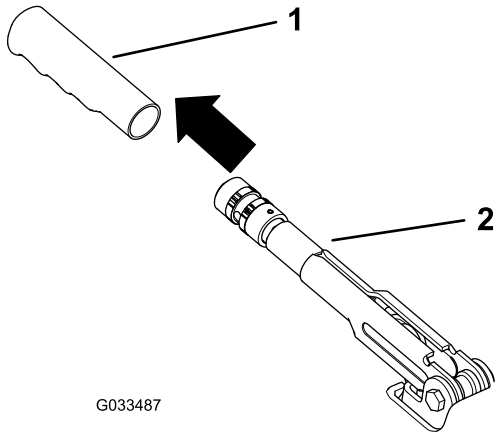


Figure 55

1. Grip
2. Parking-brake lever

2. Loosen the set screw securing the knob to the parking-brake lever (Figure 56).

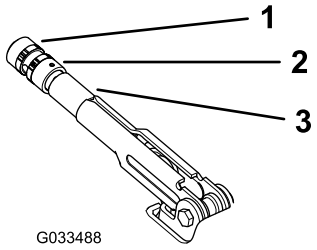


Figure 56

1. Knob
2. Set screw
3. Parking-brake lever

3. Rotate the knob until a force of 20 to 22 kg (45 to 50 lb) is required to actuate the lever.
4. Tighten the set screw when finished.

   Note: If no adjustment is left at the handle, loosen the handle to the middle of the adjustment and adjust the cable at the rear, then repeat step 3.
5. Install the rubber grip onto the parking-brake lever.

Adjusting the Brake Pedal

Service Interval: Every 200 hours

Note: Remove the font hood to make the adjustment procedure easier.

1. Remove the cotter pin and clevis pin securing the master-cylinder yoke to the brake-pedal pivot (Figure 57).

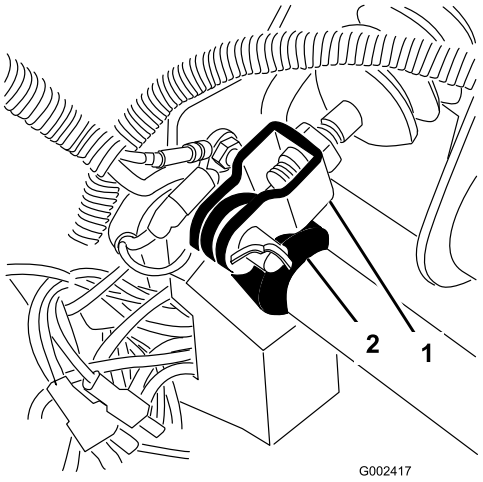


Figure 57

1. Master-cylinder yoke
2. Brake-pedal pivot

2. Lift up on the brake pedal (Figure 58) until it contacts the frame.

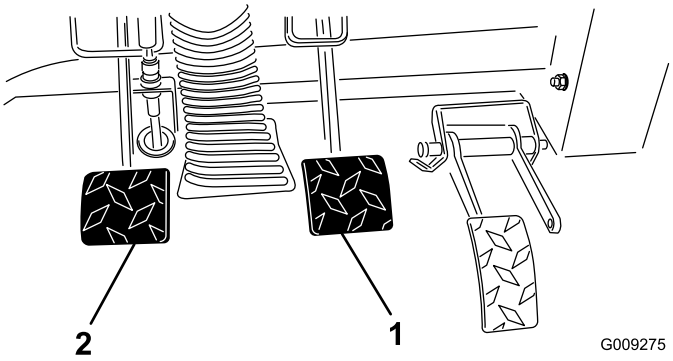


Figure 58

1. Brake pedal
2. Clutch pedal

3. Loosen the jam nuts securing the yoke to the master-cylinder shaft (Figure 57).
4. Adjust the yoke until its holes align with the hole in the brake-pedal pivot.
5. Secure the yoke to the pedal pivot with the clevis pin and cotter pin.
6. Tighten the jam nuts securing the yoke to the master-cylinder shaft.

   Note: The brake master cylinder must relieve pressure when properly adjusted.

Belt Maintenance

Checking the Pump-Belt Tension

Service Interval: After the first 10 hours

Every 200 hours

Check the pump belt for wear, cracking, or improper tension. Check the tension by pressing belt at mid span between the crankshaft and pump pulleys with 10 kg (22 lb) of force. A new belt should deflect 12 to 15 mm (0.48 to 0.58 inch) A used belt should deflect 14 to 16.5 mm (0.55 to 0.65 inch). If the deflection is incorrect, refer to Belt Maintenance for the tensioning procedure. If correct, continue operation.

⚠ CAUTION

Improper belt tension may result in increased steering effort or may damage the pump/engine if the belt is overtightened.

Adjusting the Pump-Drive Belt

1. Raise the bed (if equipped) and position the safety support on the extended-lift cylinder to hold up the bed.
2. Check the tension by pressing the belt at mid span between the crankshaft and the pump pulleys with 10 kg (22 lb) of force.

   Note: A new belt should deflect 12 to 15 mm (0.48 to 0.58 inch) A used belt should deflect 14 to 16.5 mm (0.55 to 0.65 inch). If the deflection is incorrect, proceed to next step. If correct, continue operation.
3. To adjust belt tension, complete the following:
   A. Loosen the nuts securing the hydraulic pump to the engine frame (Figure 59).

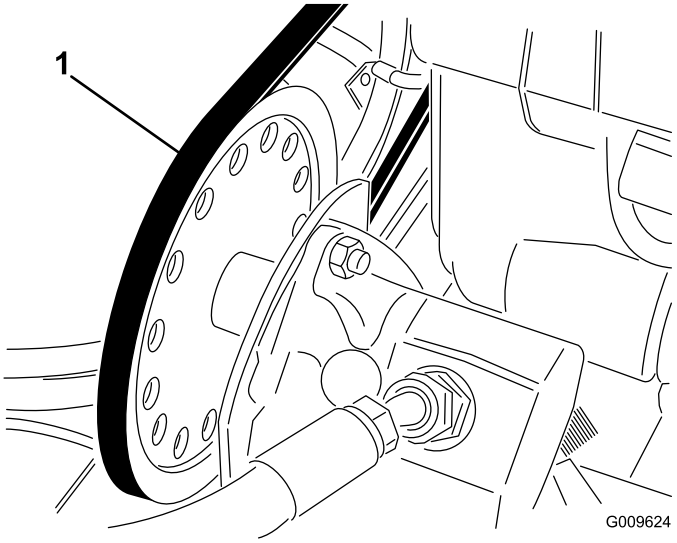


Figure 59

1. Pump-drive belt

   B. Rotate the pump until you attain the desired belt tension and tighten the nuts.

Controls System Maintenance

Adjusting the Clutch Pedal

Service Interval: Every 200 hours

Note: You can adjust the clutch-pedal cable at the bell housing or at the clutch-pedal pivot. You can remove the front hood to gain access to the pedal pivot.

1. Loosen the jam nuts securing the clutch cable to the bracket on the bell housing (Figure 60).

   Note: You may remove and rotate the ball joint if additional adjustment is required.

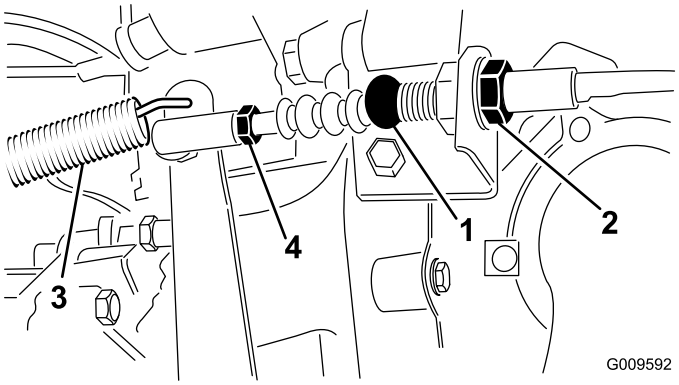


Figure 60

1. Clutch cable
2. Jam nuts
3. Return spring
4. Ball joint

2. Disconnect the return spring from the clutch lever.
3. Adjust the jam nuts or ball joint until the rear edge of the clutch pedal is 9.2 to 9.8 cm (3-5/8 to 3-7/8 inches) from the top of the floor plate diamond pattern, when an 1.8 kg (4 lb) force is applied to the pedal (Figure 61).

   Note: Force is applied so the clutch release bearing lightly contacts the pressure-plate fingers.

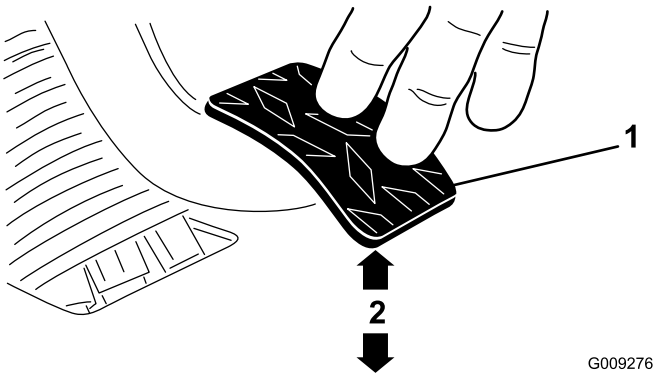


Figure 61

1. Clutch pedal
2. 9.2 to 9.8 cm (3.63 to 3.87 inches)

4. Tighten the jam nuts after you have attained the adjustment.
5. Check the 9.2 to 9.8 cm (3-5/8 to 3-7/8 inches) dimension after the jam nuts have been tightened to ensure proper adjustment.

   Note: Adjust again if it is necessary.
6. Connect the return spring to the clutch lever.

   Important: Ensure that the rod end is positioned squarely on the ball, not twisted, and remains parallel to the clutch pedal after the jam nut is tightened (Figure 62).

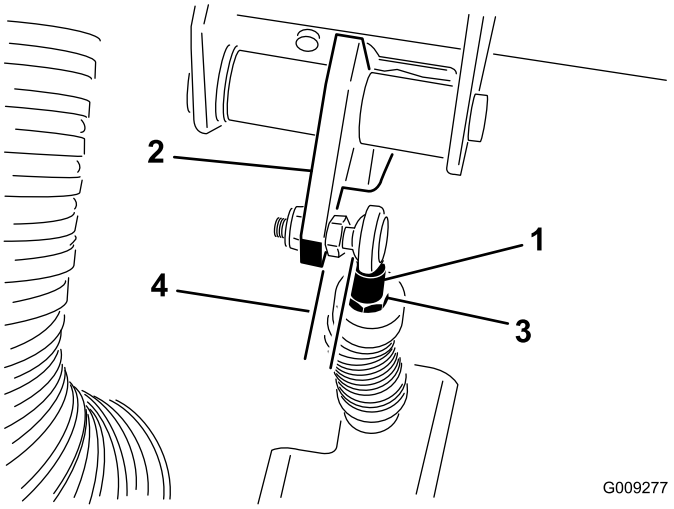


Figure 62

1. Clutch-cable rod end
2. Clutch pedal
3. Rod end jam nut
4. Parallel

Note: The clutch free play should never be less than 19 mm (3/4 inch).

Adjusting the Accelerator

Service Interval: Every 200 hours

1. Position the machine on a level surface, stop the engine, and engage the parking brake.
2. With the return spring installed, hold the engine governor arm toward the operator's side of the machine and adjust the low idle stop to obtain a 0.25 to 1.25 mm (0.01 to 0.05 inch) gap between the outside diameter of the hole in the throttle lever and the inside of the governor spring hook (Figure 63).

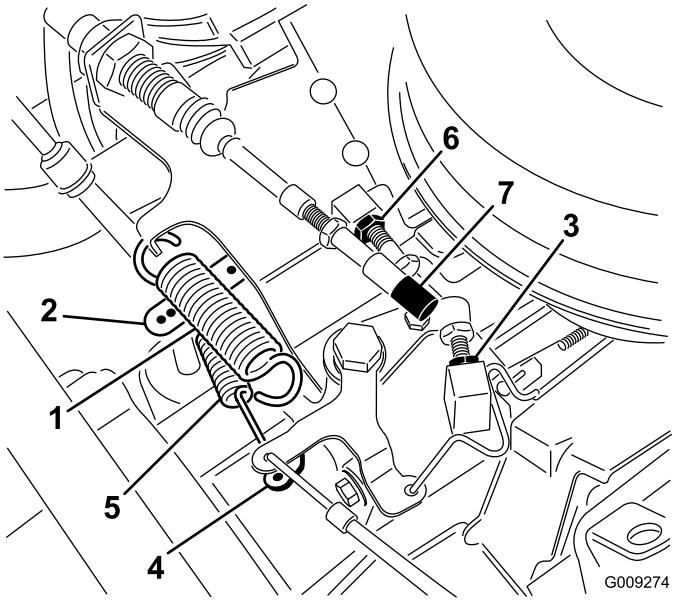


Figure 63

1. Return spring
2. Engine-governor arm
3. Low-idle stop
4. Throttle lever
5. Governor spring
6. High-idle stop
7. Ball joint

⚠ WARNING

The engine must be running so that you can perform the final adjustment of the accelerator. Running the engine while performing maintenance on the machine may cause injury.

To guard against possible personal injury, engage the parking brake and keep hands, feet, face, and other parts of your body away from any moving parts.

3. Start the engine and allow it to warm up to normal operating temperature. Verify the low idle setting of 1200 ± 100 rpm.
4. Adjust the high idle stop to obtain 3600 ± 50 rpm when the throttle lever contacts the stop.
5. Stop the engine.
6. Adjust the ball joint on the accelerator cable and/or cable jam nuts while the throttle lever is against the high-idle stop to allow 2.54 to 6.35 mm (0.100 to 0.250 inch) of clearance between the accelerator pedal arm and the top of the diamond tread floor plate, when you apply a 11.3 kg (25 lb) force to the center of the pedal (Figure 64). Tighten the locknut.

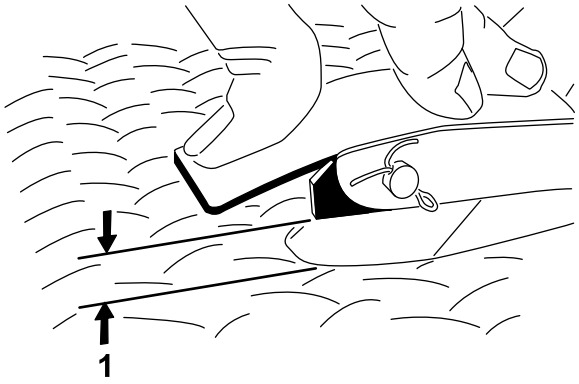


Figure 64

1. 2.54 to 6.35 mm (0.100 to 0.250 inch) clearance

Note: The engine must not be running and the return spring must be attached.

Adjusting the Choke

1. Raise the bed (if equipped) and position the safety support on the extended-lift cylinder to hold up the bed.
2. Shut off the engine and engage the parking brake.
3. Loosen the cable-clamp screw securing the cable to the engine.
4. Push the choke knob to the OFF position.
5. Push the choke cable firmly toward the operator's side of the machine and tighten the cable-clamp screw.

Converting the Speedometer

You can convert the speedometer from mph to km/h or km/h to mph.

1. Position the machine on a level surface, shut off the engine, engage the parking brake, and remove the key from the ignition switch.
2. Remove the hood; refer to Removing the Hood (page 37).
3. Locate the 2 loose wires next to the speedometer.
4. Remove the connector plug from the harness wire and connect the wires together.

   Note: The speedometer switches to km/h or mph.
5. Install the hood.

Hydraulic System Maintenance

Changing the Hydraulic Fluid and Cleaning the Strainer

Service Interval: Every 800 hours

Hydraulic-fluid capacity: 7 L (7.5 US qt)

Hydraulic-fluid type: Dexron III ATF

1. Position the machine on a level surface, shut off the engine, engage the parking brake, and remove the key from the ignition switch.
2. Remove the drain plug from the side of the reservoir, and let the hydraulic fluid flow into a drain pan (Figure 65).

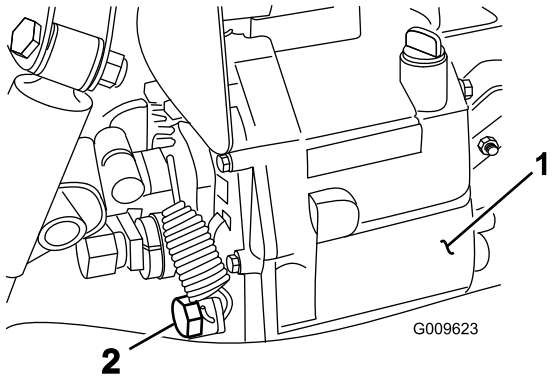


Figure 65

1. Hydraulic reservoir
2. Drain plug

3. Note the orientation of the hydraulic hose and 90° fitting connected to the strainer on the side of the reservoir (Figure 66).
4. Remove the hydraulic hose and 90° fitting.
5. Remove the strainer and clean it by back flushing it with a clean degreaser.

   Note: Allow it to air dry before installing.

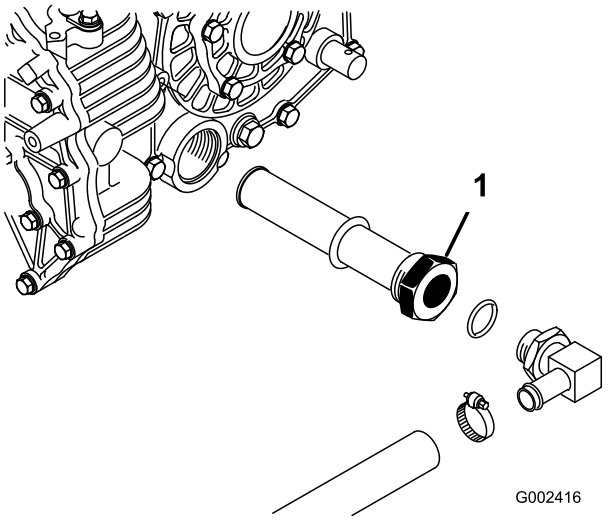


Figure 66

1. Hydraulic strainer

6. Install the strainer.
7. Install the hydraulic hose and 90° fitting to the strainer in the same orientation.
8. Install and tighten the drain plug.
9. Fill the reservoir with approximately 7 L (7.5 US qt) of the specified hydraulic fluid; refer to Checking the Transaxle/Hydraulic-Fluid Level (page 23).
10. Start the engine and operate the machine to fill the hydraulic system.
11. Check the hydraulic-fluid level and replenish it, if required.

Important: Use only the hydraulic fluid specified. Other fluids could cause system damage.

Replacing the Hydraulic Filter

Service Interval: After the first 10 hours

Every 800 hours

Important: Use of any other filter may void the warranty on some components.

1. Position the machine on a level surface, shut off the engine, engage the parking brake, and remove the key from ignition switch.
2. Clean the area around the filter-mounting area.
3. Place a drain pan under the filter and remove the filter (Figure 67).

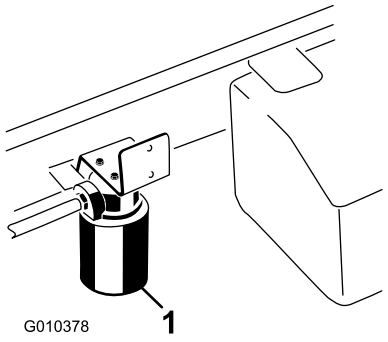


Figure 67

1. Hydraulic filter

4. Lubricate the gasket on the new filter.
5. Ensure that the filter-mounting area is clean.
6. Screw the filter on until the gasket contacts the mounting plate, and tighten the filter 1/2 turn.
7. Start the engine and let it run for about 2 minutes to purge air from the system.
8. Shut off the engine and check the hydraulic-fluid level and for leaks.

Raising the Cargo Box in an Emergency

The cargo box can be raised in an emergency without starting the engine by cranking starter or by jumping hydraulic system.

Raising the Cargo Box using the Starter

Crank the starter while holding the lift lever in the Raise position. Run the starter for 10 seconds, then wait 60 seconds before engaging the starter again. If the engine will not crank, you must remove the load and box (attachment) to service the engine or transaxle.

Raising the Cargo Box by Jumping the Hydraulic System

⚠ CAUTION

A raised bed full of material without the proper safety support rod may lower unexpectedly. Working under an unsupported raised bed may cause injury to you or others.

- **Before servicing or making adjustments to the machine, shut off the engine, set the parking brake, and remove the key from the ignition switch.**
- **Remove any load material from the bed or other attachment and insert the safety support on a fully extended cylinder rod before working under a raised bed.**

You will need 2 hydraulic hoses, each with a male and female quick coupler, that fit the vehicle couplers, to perform this operation.

1. Back another machine up to the rear of the disabled machine.

   Important: The machine hydraulic system uses Dexron III ATF. To avoid system contamination, make sure that the vehicle used to jump the hydraulic system uses an equivalent fluid.

2. On both machine, disconnect the 2 quick-coupler hoses from the hoses secured to the coupler bracket (Figure 68).

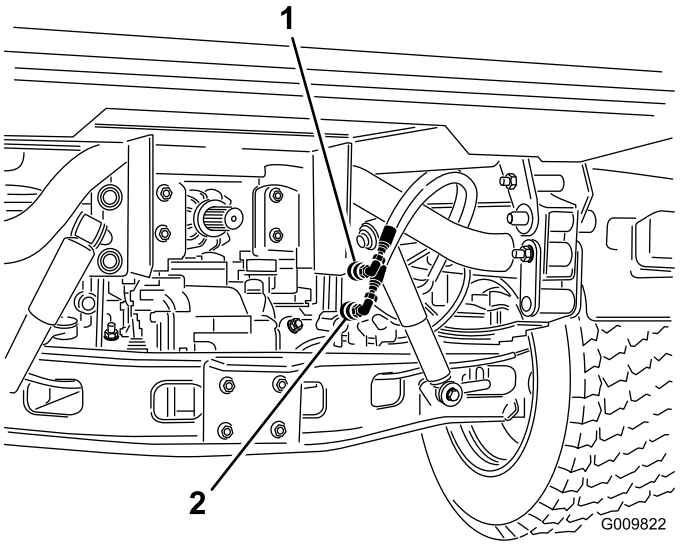


Figure 68

1. Quick-coupler hose A
2. Quick-coupler hose B

3. On the disabled machine, connect the 2 jumper hoses to the hoses that were disconnected (Figure 69).
4. Cap the unused fittings.

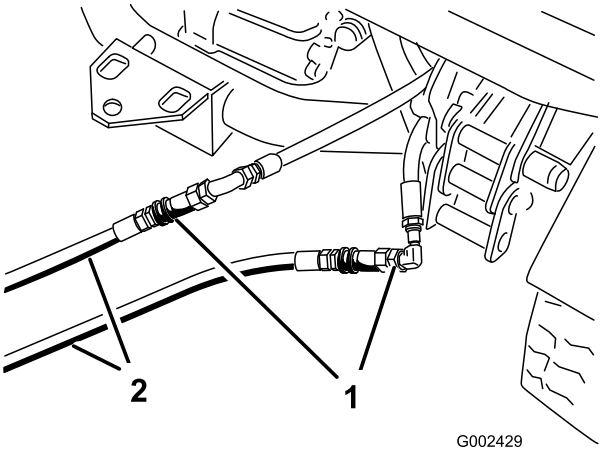


Figure 69

1. Disconnected hoses
2. Jumper hoses

5. On the other machine, connect the 2 hoses to the coupler still in the coupler bracket (connect the top hose to the top coupler and the bottom hose to the bottom coupler) (Figure 70).
6. Cap the unused fittings.

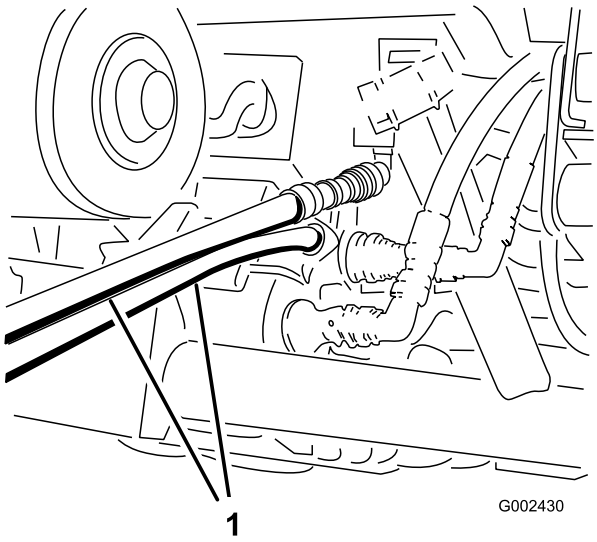


Figure 70

1. Jumper hoses

7. Keep all bystanders away from the machines.
8. Start the second machine, and move the lift lever to the raise position which will raise the disabled cargo box.
9. Move the hydraulic-lift lever to the NEUTRAL position, and engage the lift-lever lock.
10. Install the bed support onto the extended lift cylinder; refer to Using the Bed Support (page 34).

    Note: With both the machine turned off, move the lift lever back and forth to remove the system pressure and ease the disconnection of the quick couplers.
11. After completing the operation, remove the jumper hoses and connect the hydraulic hoses to both machines.

    Important: Check the hydraulic fluid levels, in both vehicles, before resuming operation.

Cleaning

Washing the Machine

Wash the machine as needed. Use water alone or with a mild detergent. You may use a rag when washing the machine; however, the hood will loose some of its luster.

Important: Do not use power-washing equipment to wash the machine. Power-washing equipment may damage the electrical system, loosen important decals, or wash away necessary grease at friction points. Avoid excessive use of water near the control panel, engine, and battery.

Important: Do not wash the machine with the engine running. Washing the machine with the engine running may result in internal engine damage.

Storage

1. Position the machine on a level surface, set the parking brake, shut off the engine, and remove the ignition key.
2. Clean dirt and grime from the entire machine, including the outside of the engine-cylinder-head fins and blower housing.

   Important: You can wash the machine with mild detergent and water. Do not use high-pressure water to wash the machine. Pressure washing may damage the electrical system or wash away necessary grease at friction points. Avoid excessive use of water, especially near the control panel, lights, engine, and the battery.
3. Inspect the brakes; refer to Checking the Brake-Fluid Level (page 24).
4. Service the air cleaner; refer to Servicing the Air Cleaner (page 39).
5. Grease the machine; refer to Greasing Bearings and Bushings (page 38).
6. Change the engine oil and filter; refer to Changing the Engine Oil and Filter (page 40).
7. Check the tire pressure; refer to Checking the Tire Pressure (page 23).
8. For storage over 30 days, prepare the fuel system as follows:

   A. Add a petroleum based stabilizer/conditioner to fuel in the tank.

      Follow mixing instructions from stabilizer manufacturer. Do not use an alcohol based stabilizer (ethanol or methanol).

      Note: A fuel stabilizer/conditioner is most effective when mixed with fresh gasoline and used at all times.

   B. Run the engine for 5 minutes to distribute conditioned fuel through the fuel system.

   C. Shut off the engine, allow it to cool, and drain the fuel tank.

   D. Start the engine and run it until it stops.

   E. Choke the engine.

   F. Start and run the engine until it does not start again.

   G. Dispose of fuel properly. Recycle as per local codes.

      Important: Do not store stabilizer/conditioned gasoline over 90 days
9. Remove the spark plugs and check their condition; refer to Replacing the Spark Plugs (page 40).
10. With the spark plugs removed from the engine, pour 2 tablespoons of engine oil into the spark-plug hole.
11. Use the starter to crank the engine and distribute the oil inside the cylinder.
12. Install the spark plugs and tighten to recommended torque; refer to Replacing the Spark Plugs (page 40).

    Note: Do not install the wire on the spark plug(s).
13. Remove the battery from the chassis and charge it fully; refer to Servicing the Battery (page 43).

    Note: Do not connect the battery cables to the battery posts during storage.

    Important: The battery must be fully charged to prevent it from freezing and being damaged at temperatures below 32°F (0°C). A fully charged battery maintains its charge for about 50 days at temperatures lower than 40°F (4°C). If the temperatures will be above 40°F (4°C), check the water level in the battery and charge it every 30 days.
14. Check and tighten all bolts, nuts, and screws. Repair or replace any part that is damaged.
15. Paint all scratched or bare metal surfaces.

    Paint is available from your Authorized Service Distributor.
16. Store the machine in a clean, dry garage or storage area.
17. Remove the ignition key and put it in a safe place out of the reach of children.
18. Cover the machine to protect it and keep it clean.

Troubleshooting

Problem	Possible Cause	Corrective Action
The engine does not start, starts hard, or fails to keep running.	1. The hydraulic lever is locked in forward position	1. Move the hydraulic lever out of forward position.
	2. The fuel tank is empty.	2. Fill the fuel tank.
	3. The fuel-shutoff valve is closed.	3. Open the fuel-shutoff valve.
	4. The oil level in the crankcase is low.	4. Add oil to the crankcase.
	5. The throttle is not in the correct position.	5. Be sure that the throttle control is midway between the SLOW and FAST positions.
	6. There is dirt, water, or stale fuel is in the fuel system.	6. Contact an Authorized Service Dealer.
	7. The air cleaner is dirty.	7. Clean or replace the air-cleaner element.
	8. The spark plug is fouled or improperly gapped.	8. Adjust or replace the spark plug.
	9. The spark-plug wire is not connected.	9. Check the spark-plug wire connection.
The hydraulics do not work properly.	1. Connecting or disconnecting quick couplers is difficult.	1. Releive the pressure on the couplers.
	2. There are hydraulic leaks.	2. The fittings are loose or are missing the O-ring.
	3. The belt is loose or damaged.	3. Check the belt and adjust or replace the belt (if necessary).
The power steering is not working properly.	1. The hydraulic-fluid level is low.	1. Add hydraulic fluid.
	2. The hydraulic fluid is hot.	2. Allow the hydraulic fluid to cool.
	3. The pump is not operating.	3. Check and ensure the pump is working.
	4. The belt is loose or damaged.	4. Check the belt and adjust or replace the belt (if necessary).
There is a squealing noise.	1. The valve left in the On detent position.	1. Disengage the valve left in the ON detent position.
	2. The belt is loose.	2. Ensure that the belt has the correct tension.

Notes:

The Toro Warranty

A Two-Year Limited Warranty

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your Toro Commercial product ("Product") to be free from defects in materials or workmanship for two years or 1500 operational hours*, whichever occurs first. This warranty is applicable to all products with the exception of Aerators (refer to separate warranty statements for these products). Where a warrantable condition exists, we will repair the Product at no cost to you including diagnostics, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.
* Product equipped with an hour meter.

Instructions for Obtaining Warranty Service

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists. If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Toro Commercial Products Service Department
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196

952–888–8801 or 800–952–2740
E-mail: commercial.warranty@toro.com

Owner Responsibilities

As the Product owner, you are responsible for required maintenance and adjustments stated in your *Operator's Manual*. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, or modified non-Toro branded accessories and products. A separate warranty may be provided by the manufacturer of these items.
- Product failures which result from failure to perform recommended maintenance and/or adjustments. Failure to properly maintain your Toro product per the Recommended Maintenance listed in the *Operator's Manual* can result in claims for warranty being denied.
- Product failures which result from operating the Product in an abusive, negligent, or reckless manner.
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, brake pads and linings, clutch linings, blades, reels, rollers and bearings (sealed or greasable), bed knives, spark plugs, castor wheels and bearings, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves, etc.
- Failures caused by outside influence. Conditions considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved fuels, coolants, lubricants, additives, fertilizers, water, or chemicals, etc.
- Failure or performance issues due to the use of fuels (e.g. gasoline, diesel, or biodiesel) that do not conform to their respective industry standards.
- Normal noise, vibration, wear and tear, and deterioration.
- Normal "wear and tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.

Parts

Parts scheduled for replacement as required maintenance are warranted for the period of time up to the scheduled replacement time for that part. Parts replaced under this warranty are covered for the duration of the original product warranty and become the property of Toro. Toro will make the final decision whether to repair any existing part or assembly or replace it. Toro may use remanufactured parts for warranty repairs.

Deep Cycle and Lithium-Ion Battery Warranty:

Deep cycle and Lithium-Ion batteries have a specified total number of kilowatt-hours they can deliver during their lifetime. Operating, recharging, and maintenance techniques can extend or reduce total battery life. As the batteries in this product are consumed, the amount of useful work between charging intervals will slowly decrease until the battery is completely worn out. Replacement of worn out batteries, due to normal consumption, is the responsibility of the product owner. Battery replacement may be required during the normal product warranty period at owner's expense. Note: (Lithium-Ion battery only): A Lithium-Ion battery has a part only prorated warranty beginning year 3 through year 5 based on the time in service and kilowatt hours used. Refer to the *Operator's Manual* for additional information.

Maintenance is at Owner's Expense

Engine tune-up, lubrication, cleaning and polishing, replacement of filters, coolant, and completing recommended maintenance are some of the normal services Toro products require that are at the owner's expense.

General Conditions

Repair by an Authorized Toro Distributor or Dealer is your sole remedy under this warranty.

Neither The Toro Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty.

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Note regarding engine warranty:

The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA) and/or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the Engine Emission Control Warranty Statement supplied with your product or contained in the engine manufacturer's documentation for details

Countries Other than the United States or Canada

Customers who have purchased Toro products exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the Toro importer.

374-0253 Rev D