Form No. 3408-593 Rev C

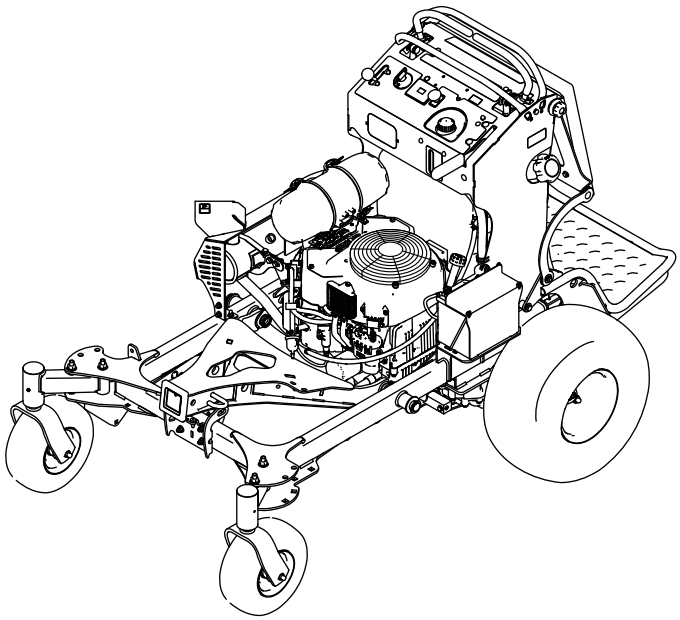
TORO®

Count on it.

Operator's Manual

GrandStand® Multi Force Snow Machine

Model No. 74527—Serial No. 4000000000 and Up



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

3408-593 C

This spark ignition system complies with Canadian ICES-002

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.

Please refer to the engine manufacturer's information included with the machine.

⚠ WARNING

Removing standard original equipment parts and accessories may alter the warranty, traction, and safety of the machine. Failure to use original Toro parts could cause serious injury or death. Making unauthorized changes to the engine, fuel or venting system, may violate EPA and CARB regulations.

Replace all parts including, but not limited to, tires, belts, blades, and fuel system components with original Toro parts.

⚠ WARNING

CALIFORNIA
Proposition 65 Warning

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

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.

Use of this product may cause exposure to chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Introduction

This snow machine is intended to be used by professional, hired operators or residential homeowners. It is designed to operate attachments to clear snow on residential or commercial properties.

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 safety and operation training materials, 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.

Important: **With your mobile device, you can scan the QR code on the serial number decal (if equipped) to access warranty, parts, and other product information.**

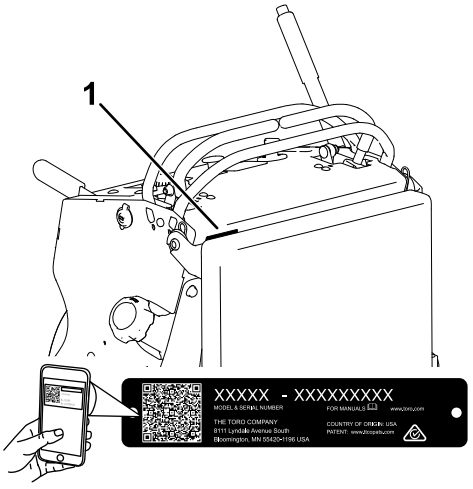


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Figure 1

1. Location of the model and serial numbers

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.

8111 Lyndale Avenue South
Bloomington, MN 55420

Contact us at www.Toro.com.
Printed in the USA

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Figure 2

1. Safety-alert symbol

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

Contents

Safety

The following instructions have been adapted from the ANSI and ISO standards.

General Safety

Always follow all safety instructions to avoid serious personal injury.

Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

- Read and understand the contents of this *Operator's Manual* before starting the engine.
- Do not put your hands or feet near moving components of the machine.
- Do not operate the machine without all guards and other safety protective devices in place and working on the machine.
- Keep clear of any discharge opening. Keep bystanders a safe distance away from the machine.
- Keep children out of the operating area. Never allow children to operate the machine.
- Stop the machine and shut off the engine before servicing, fueling, or unclogging the machine.

Improperly using or maintaining this machine 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 these instructions may result in personal injury or death.

You can find additional safety information where needed throughout this *Operator's Manual*.

Slope Indicator

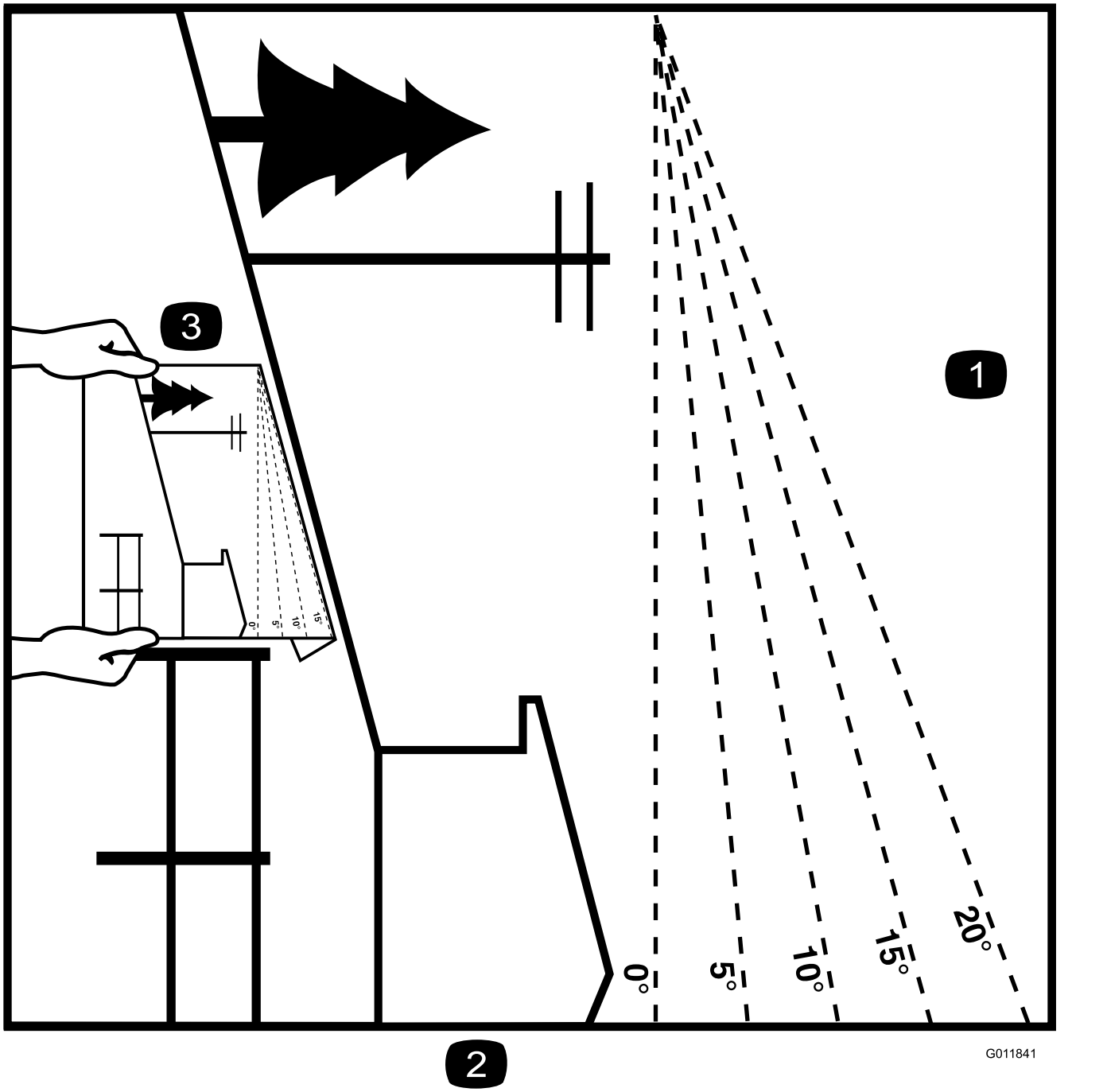

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Figure 3

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1. The maximum slope you can operate the machine on is **15 degrees**. Use the slope chart to determine the degree of slope of hills before operating. **Do not operate this machine on a slope greater than 15 degrees.** Fold along the appropriate line to match the recommended slope.
2. Align this edge with a vertical surface, a tree, building, fence pole, etc.
3. Example of how to compare slope with folded edge

Safety and Instructional Decals

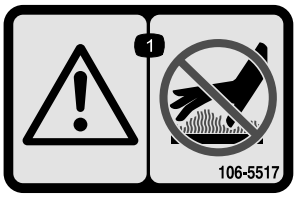
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.

decalbatterysymbols

Battery Symbols

Some or all of these symbols are on your battery

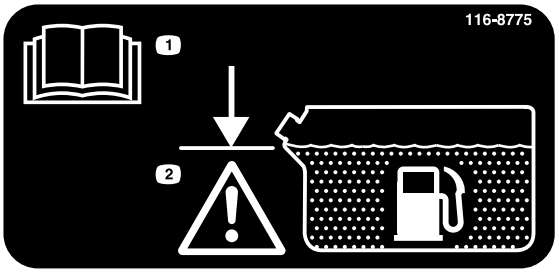
1. Explosion hazard
2. No fire, open flame, or smoking.
3. Caustic liquid/chemical burn hazard
4. Wear eye protection
5. Read the *Operator's Manual.*
6. Keep bystanders a safe distance from the battery.
7. Wear eye protection; explosive gases can cause blindness and other injuries
8. Battery acid can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



decal106-5517

106-5517

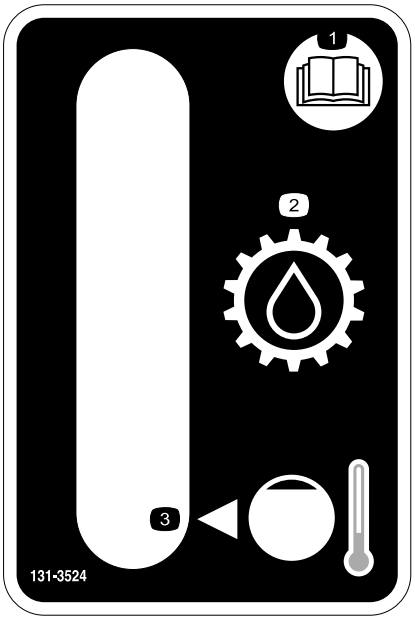
1. Warning—do not touch the hot surface.



decal116-8775

116-8775

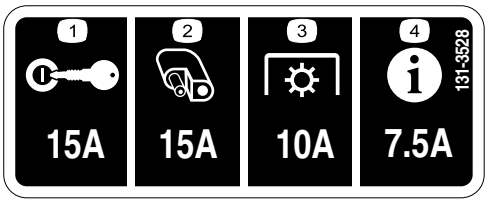
1. Read the *Operator's Manual.*
2. Warning—fill to the bottom of the filler neck; do not overfill the tank.



decal131-3524

131-3524

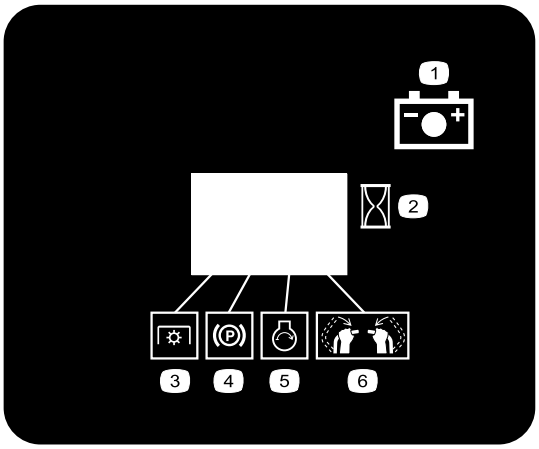
1. Read the *Operator's Manual*.
2. Transmission fluid
3. Fluid level



decal131-3528

131-3528

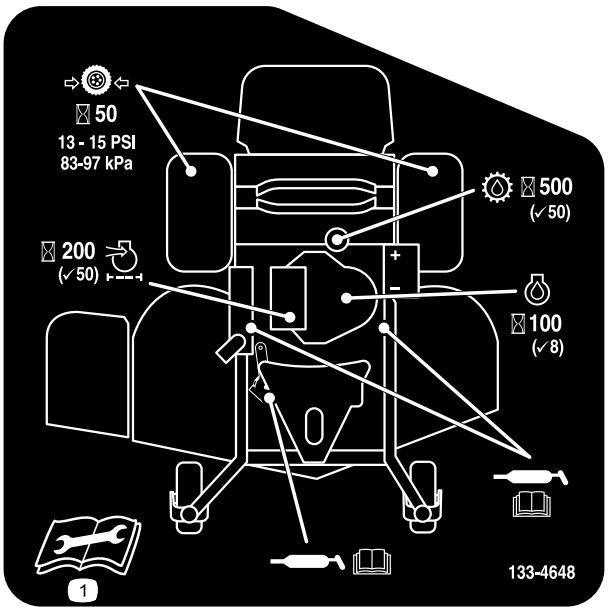
1. Key switch—15 A
2. Accessory port—15 A
3. Power takeoff (PTO)—10 A
4. Infocenter—7.5 A



decal131-3536

131-3536

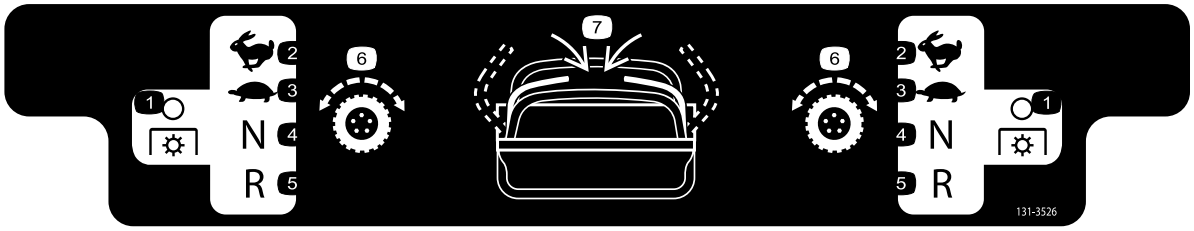
1. Battery
2. Time
3. Power takeoff (PTO)
4. Parking brake
5. Engine—start
6. Engage the handle bars.



decal133-4648

133-4648

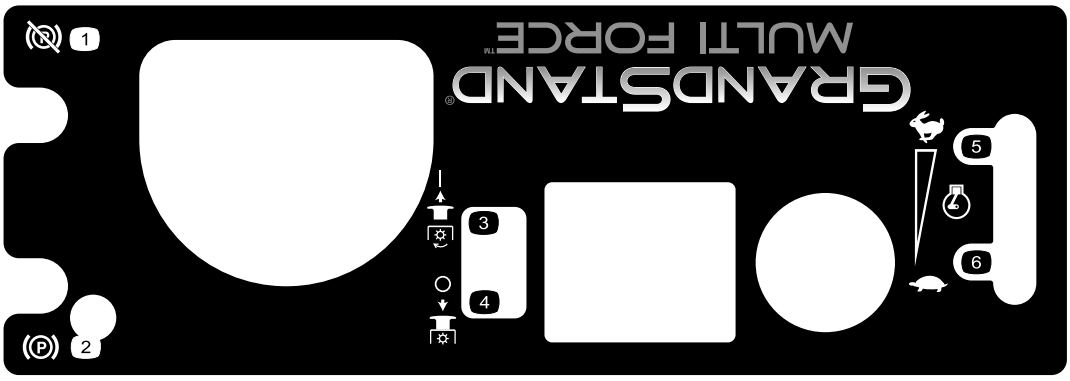
1. Read the *Operator's Manual* for more information on servicing the machine.



decal131-3526

131-3526

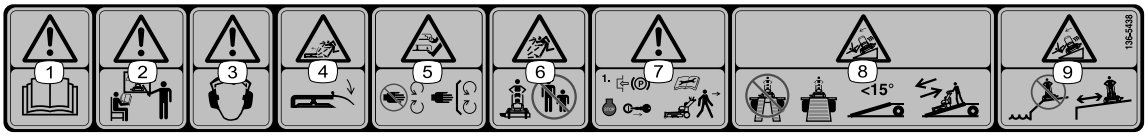
1. Power takeoff (PTO)—disengaged
2. Fast
3. Slow
4. Neutral
5. Reverse
6. Traction drive
7. Engage the handles.



decal133-1432

133-1432

1. Disengage the parking brake.
2. Engage the parking brake.
3. Pull up to turn on the PTO.
4. Push down to turn off the PTO.
5. Engine speed—fast
6. Engine speed—slow



decal136-5438

136-5438

1. Warning—read the *Operator's Manual*.
2. Warning—receive training before operating the machine.
3. Warning—hearing protection must be worn.
4. Thrown object hazard—keep the deflector lowered during operation.
5. Cutting/severing hazard of hand or foot—keep away from moving parts; keep all guards and shields in place.
6. Thrown object hazard—keep bystanders away from the machine.
7. Warning—engage the parking brake, stop the engine, and remove the key from the ignition before leaving the machine.
8. Ramp hazard—do not use dual ramps when loading onto a trailer; use 1 ramp wide enough for the machine; use a ramp with a slope less than 15°; back up the ramp when loading the machine and drive forward off the ramp when unloading.
9. Tipping hazard—do not operate near drop-offs or near water.

Product Overview

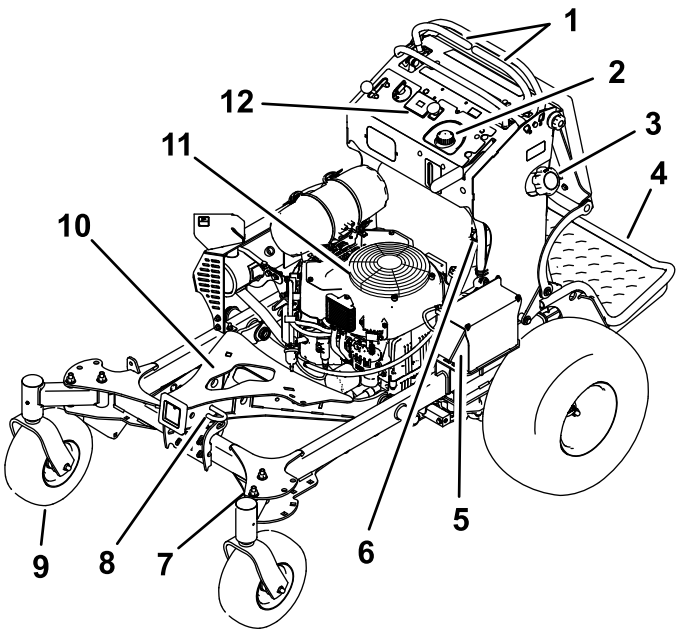


Figure 4

1. Control levers
2. Hydraulic tank
3. Fuel tank
4. Platform (down position)
5. Battery
6. Fuel-shutoff valve
7. Adjustable caster
8. Accessory-frame lock
9. Front caster wheel
10. Accessory frame
11. Engine
12. Controls

Controls

Become familiar with all the controls before you start the engine and operate the machine (Figure 5).

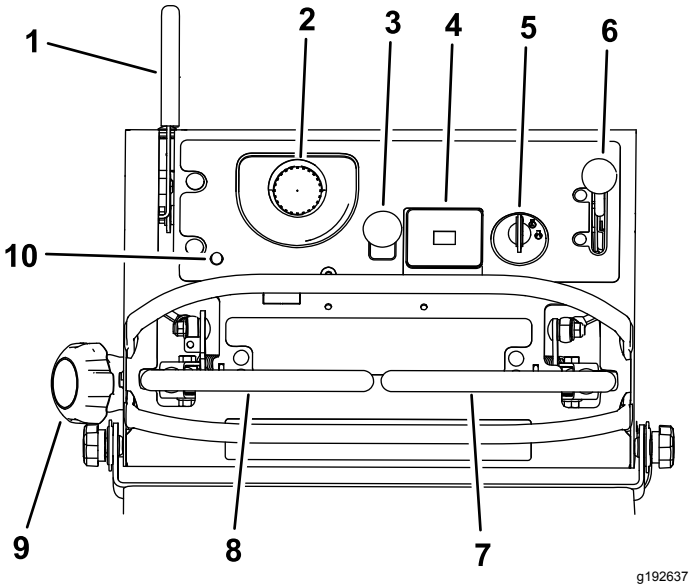


Figure 5

1. Parking-brake lever
2. Hydraulic-tank cap
3. Power-takeoff (PTO) switch
4. Hour meter
5. Ignition switch
6. Throttle control
7. Right motion-control lever
8. Left motion-control lever
9. Fuel cap
10. Malfunction-indicator light (MIL)

Hour Meter

The hour meter records the number of hours the engine has operated. It operates when the engine is running. Use these times for scheduling regular maintenance (Figure 5).

Safety-Interlock Indicators

There are symbols on the hour meter that indicate with a black triangle that the interlock component is positioned correctly (Figure 5).

Battery-Indicator Light

If the ignition key is turned to the ON position for a few seconds, the battery voltage displays in the area where the hours are normally displayed.

The battery light turns on when the ignition is turned on and when the charge is below the correct operating level (Figure 5).

Throttle Control

The throttle controls the engine speed, and it has a continuous-variable setting from the SLOW to FAST position (Figure 5).

Power-Takeoff (PTO) switch

Use the power-takeoff (PTO) switch to start and stop powered attachments (Figure 5).

Ignition Switch

Use this switch to start the engine. It has 3 positions: START, RUN, and OFF.

Motion-Control Levers

Use the motion-control levers to drive the machine forward, reverse, and turn either direction.

Fuel-Shutoff Valve

Close the fuel-shutoff valve (located on the left side of the fuel tank) when transporting or storing the machine (Figure 4).

Accessory Frame

Use the accessory frame to attach only Toro-approved accessories to the machine (Figure 4). Refer to the *Operator's Manual* for the accessory for installation instructions.

Accessory-Frame Lock

The accessory-frame lock holds the frame in place on the machine using the lock pin. Always lock the frame unless a hydraulic kit is installed with an accessory on the machine (Figure 4).

Electronic-Control Unit Malfunction-Indicator Light

The electronic-control unit (ECU) continuously monitors the operation of the EFI system.

If a problem or fault within the system is detected, the malfunction-indicator light (MIL) is illuminated (Figure 5).

The MIL is the red light located in the console panel.

When the MIL illuminates, make initial troubleshooting checks.

If these checks do not correct the problem, further diagnosis and servicing by an Authorized Service Dealer is necessary.

Adjustable Casters

When using the machine **with** an attachment, refer to the *Operator's Manual* for that attachment for the correct caster position (Figure 6). Do not operate the machine without an attachment installed on the front of the machine.

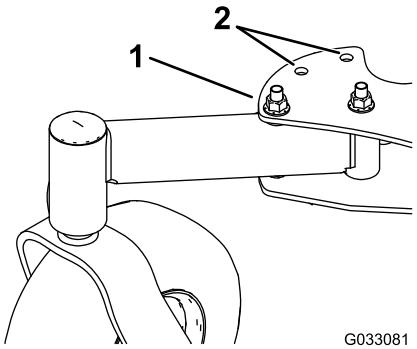


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Figure 6

Right Caster Shown

1. Caster bolt and nut in front caster hole
2. Caster holes

Specifications

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

Width	122 cm (48 inches)
Length with platform down	191 cm (75 inches)
Length with platform up	155 cm (61 inches)
Height	122 cm (48 inches)
Weight	308 kg (680 lb)

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.

To best protect your investment and maintain optimal performance of your Toro equipment, count on Toro genuine parts. When it comes to reliability, Toro delivers replacement parts designed to the exact engineering specification of our equipment. For peace of mind, insist on Toro genuine parts.

Operation

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

Before Operation

Before Operation Safety

General Safety

- Never allow children or untrained people to operate or service the machine. Local regulations may restrict the age of the operator. The owner is responsible for training all operators and mechanics.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- Know how to stop the machine and shut off the engine quickly.
- Check that operator-presence controls, safety switches, and shields are attached and functioning properly. Do not operate the machine unless they are functioning properly.
- Evaluate the terrain to determine the appropriate equipment and any attachments or accessories required to operate the machine properly and safely.
- Do not operate the machine without an attachment installed on the front of the machine.

Fuel Safety

- To avoid personal injury or property damage, use extreme care in handling fuel. Fuel vapors are flammable and explosive.
- Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
- Use only an approved fuel container.
- Do not remove the fuel cap or add fuel to the fuel tank while the engine is running or while hot.
- Do not refuel the machine indoors.
- Do not 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.
- Do not fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground, away from your vehicle before filling.
- Remove the equipment from the truck or trailer and refuel it while it is on the ground. If this is not possible, then refuel from a portable container rather than a fuel-dispenser nozzle.
- Do not operate the machine without the entire exhaust system in place and in proper working condition.
- Keep the fuel-dispenser nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
- If you spill fuel on your clothing, change your clothing immediately. Wipe up any fuel that spills.
- Never overfill the fuel tank. Replace the fuel cap and tighten it securely.
- 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 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.
  - Avoid prolonged breathing of vapors.
  - Keep your face away from the nozzle and fuel tank opening.
  - Avoid contact with skin; wash off spills with soap and water.

Adding Fuel

- 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 that 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 you use a fuel stabilizer.
- **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 equipment from the truck or trailer and refuel the equipment with its wheels on the ground.**
- **If this is not possible, then refuel 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 your face away from the nozzle and fuel tank or conditioner bottle opening.**
- **Avoid contact with skin; wash off spills with soap and water.**

Using Stabilizer/Conditioner

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

- Keeps fuel fresh during storage of 90 days or less. For longer storage, drain the fuel tank.
- 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 fuel stabilizer/conditioner to the fuel.

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

Filling the Fuel Tank

1. Park the machine on a level surface, disengage the PTO, move the motion-control levers to the NEUTRAL-LOCK position, and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Clean around the fuel-tank cap and remove the cap.
4. Fill the fuel tank to the bottom of the filler neck.

   Note: Do not fill the fuel tank completely full. The empty space in the tank allows the fuel to expand.
5. Install the fuel-tank cap securely. Wipe up any spilled fuel.

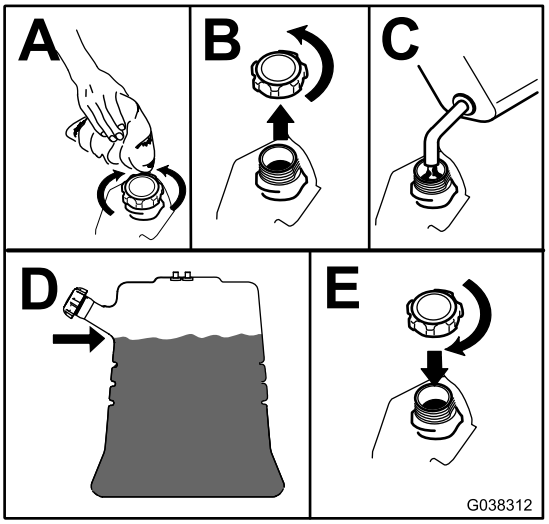

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Figure 7

Checking the Engine-Oil Level

Before you start the engine and use the machine, check the oil level in the engine crankcase; refer to Checking the Engine-Oil Level (page 30).

Breaking in a New Machine

New engines take time to develop full power. Drive systems have higher friction when new, placing additional load on the engine. Allow 40 to 50 hours of break-in time for new machines to develop full power and best performance.

Think Safety First

Carefully read all the safety instructions and decals in the safety section. Knowing this information could help you or bystanders avoid injury.

⚠ CAUTION

This machine produces sound levels in excess of 85 dBA at the operator's ear and can cause hearing loss from extended periods of exposure.

Wear hearing protection when operating this machine.

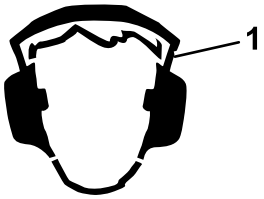

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Figure 8

1. Wear hearing protection.

Using the Safety-Interlock System

⚠ WARNING

If 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.**

Understanding the Safety-Interlock System

The safety-interlock system is designed to prevent powering the attachment unless you do 1 of the following:

- Move either motion-control lever to the center, unlocked position.
- Pull the PTO switch to the ON position.

  The safety-interlock system is designed to stop the attachment if you move or release both motion-control levers into the NEUTRAL-LOCK position.

  The hour meter has symbols to notify the user when each interlock component is in the correct

position. When the component is in the correct position, a triangle lights up in the corresponding square (Figure 9).

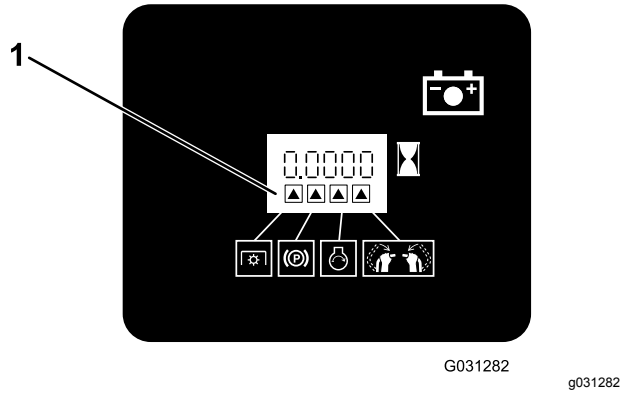


Figure 9

1. Triangles light up when the interlock components are in the correct position.

Testing the Safety-Interlock System

Service Interval: Before each use or daily

Test the safety-interlock system before you use the machine each time.

Note: If the safety system does not operate as described below, have an Authorized Service Dealer repair the safety system immediately.

1. Start the engine; refer to Starting the Engine (page 17).
2. Move the motion-control levers to the center, unlocked position.

   Note: The attachment should stop and the engine should stop running.
3. Start the engine and disengage the parking brake.
4. Move either motion-control lever to the center, unlocked position.
5. Continue holding the motion-control lever in the center, unlocked position, pull up on the PTO switch, and release the switch.

   Note: The clutch and attachment should engage.
6. Move or release the motion-control levers into the NEUTRAL-LOCK position.

   Note: The attachment should stop and the engine should continue to run.
7. Push the PTO switch down and move either motion-control lever to the center, unlocked position.
8. Continue holding the motion-control lever in the center, unlocked position, pull up on the PTO switch, and release the switch.

   Note: The clutch and attachment should engage.
9. Push the PTO switch down to the OFF position.

   Note: The attachment should stop.
10. With the engine running, pull up the PTO switch and release it without holding either motion-control lever to the center, unlocked position.

    Note: The attachment should not engage.

⚠ WARNING

The operator platform is heavy and may cause injury when you raise or lower it. Carefully lower or raise the operator platform, as suddenly dropping it could injure you.

- **Do not put your hands or fingers in the platform-pivot area when lowering or raising the operator platform.**
- **Make sure that the platform is supported when you pull the latch pin out.**
- **Make sure that the latch secures the platform when folding it up. Push it tight against the cushion for the latch pin to lock into place.**
- **Keep bystanders away from the machine when raising or lowering the platform.**

During Operation

During Operation Safety

General Safety

- The owner/operator can prevent and is responsible for accidents that may cause personal injury or property damage.
- Wear appropriate clothing, including adequate winter garments eye protection; slip-resistant, substantial footwear that will improve footing on slippery surfaces; and hearing protection. Tie back long hair and do not wear jewelry.
- Do not operate the machine while ill, tired, or under the influence of alcohol or drugs.
- Never carry passengers on the machine and keep bystanders and pets away from the machine during operation.
- Operate the machine only in good visibility to avoid holes or hidden hazards.
- Ensure that all drives are in neutral, the parking brake is engaged, and you are in the operating position before you start the engine.
- Look behind and down before backing up to be sure of a clear path.
- Use care when approaching blind corners, shrubs, trees, or other objects that may obscure your vision.
- Do not use the machine near drop-offs, ditches, or embankments. The machine could suddenly roll over if a wheel goes over the edge or if the edge gives way.
- Stop and inspect the machine after striking an object or if there is an abnormal vibration in the machine. Make all necessary repairs before resuming operation.
- Slow down and use caution when making turns and crossing roads and sidewalks with the machine. Always yield the right-of-way.
- Never run an engine in an area where exhaust gases are enclosed.
- Never leave a running machine unattended.
- Before leaving the operating position, do the following:
  - Stop the machine on level ground.
  - Disengage the power take-off and lower the attachments.
  - Engage the parking brake.
  - Shut off the engine and remove the key.
  - Wait for all moving parts to stop.
- Do not operate the machine when there is the risk of lightning.
- Do not use the machine as a towing vehicle.
- Do not change the governor speed or overspeed the engine.
- Use accessories and attachments approved by Toro only.

Slope Safety

- Slow down the machine and use extra care on hillsides. Travel up and down on hillsides. Turf conditions can affect the stability of the machine.
- Avoid turning the machine on slopes. If you must turn the machine, turn it slowly and gradually downhill, if possible.
- Do not turn the machine sharply. Use care when reversing the machine.
- Use extra care while operating the machine with attachments; they can affect the stability of the machine.

Operating the Parking Brake

Always engage the parking brake when you shut off the machine or leave it unattended. Before each use, check the parking brake for proper operation.

If the parking brake does not hold securely, adjust it; refer to Adjusting the Brakes (page 42).

Pull the parking-brake lever rearward to engage it (Figure 10).

Push the parking-brake lever forward to disengage it.

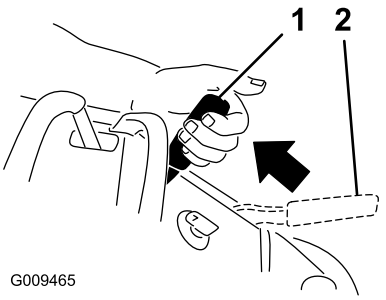


Figure 10

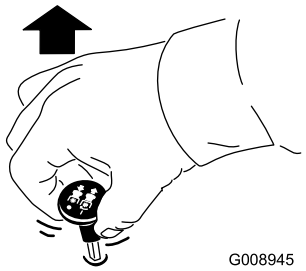
1. Parking brake—engaged
2. Parking brake—disengaged

Operating the Power-Takeoff (PTO) Switch

The power-takeoff (PTO) switch starts and stops any powered attachments.

Engaging the Power-Takeoff (PTO) Switch

Note: Engaging the power-takeoff (PTO) switch with the throttle position at half or less causes excessive wear to the drive belts.



g008945

Figure 11

Disengaging the Power-Takeoff (PTO) Switch

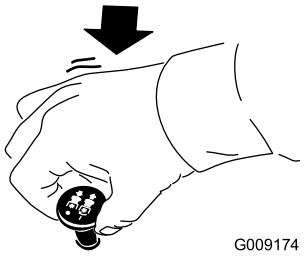


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Figure 12

Operating the Throttle

You can move the throttle control between the FAST and SLOW positions (Figure 13).

Always use the FAST position when turning on powered attachments with the power-takeoff (PTO) switch.

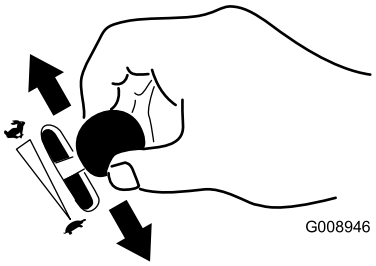

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Figure 13

Operating the Ignition Switch

Important: **Do not engage the starter for more than 5 seconds at a time. If the engine fails to start, wait 15 seconds between attempts. Failure to follow these instructions can burn out the starter motor.**

Note: You may need to repeat the cycle for starting the engine when you start it for the first time after you have filled a completely empty fuel system with fuel.

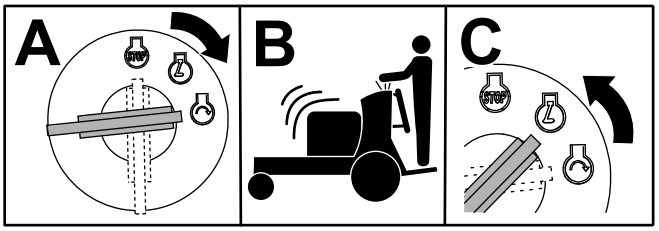

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Figure 14

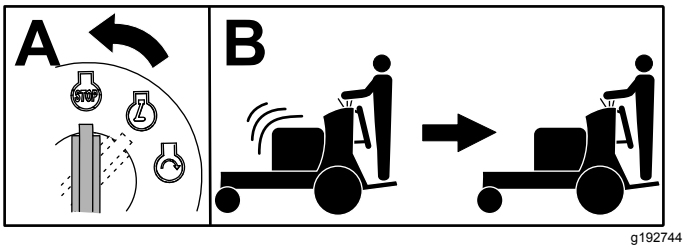

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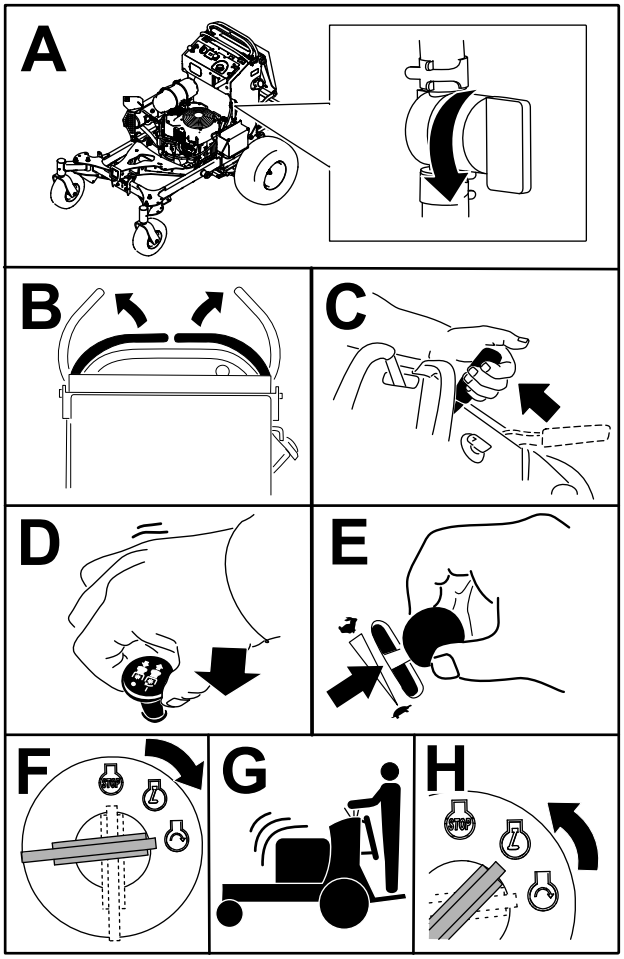
Figure 15

Starting the Engine

Important: **Do not engage the starter for more than 5 seconds at a time. If the engine fails to start, wait 15 seconds between attempts. Failure to follow these instructions can burn out the starter motor.**

Note: You may need to repeat the cycle for starting the engine when you start it for the first time after you have filled a completely empty fuel system with fuel.

Note: The machine may have difficulty starting under severe cold conditions. When starting a cold machine, keep the machine above -23°C (-10°F).



g192745

Figure 16

Shutting Off the Engine

⚠ CAUTION

Children or bystanders may be injured if they move or attempt to operate the machine while it is unattended.

Always remove the key and engage the parking brake when leaving the machine unattended.

Let the engine idle at slow throttle (turtle) for 60 seconds before turning the key switch to the OFF position.

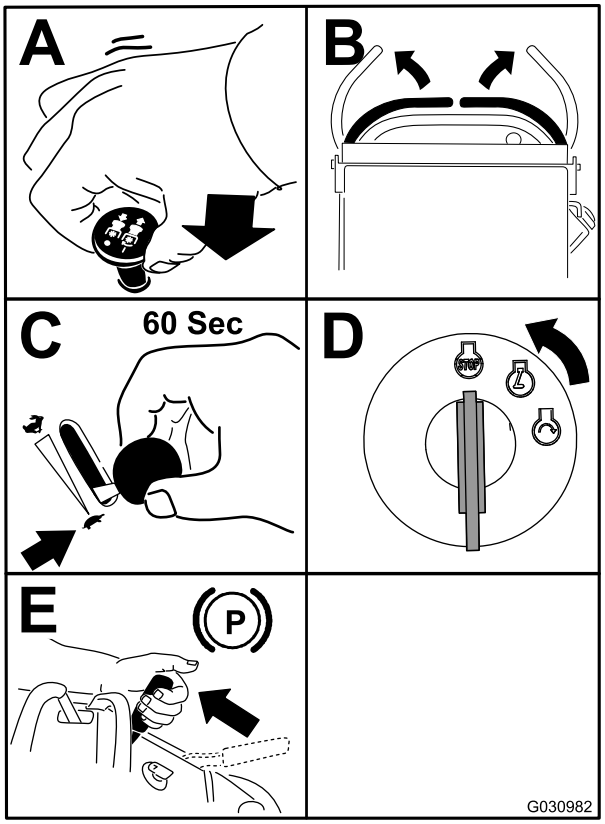


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Figure 17

Important: **Make sure that the fuel-shutoff valve is closed before transporting or storing the machine to prevent a fuel leak. Before storing the machine, disconnect the spark plug(s) to prevent the possibility of accidental starting.**

Operating the Platform

You can use the machine with the platform in the up or down position. It is your preference on which position to use.

Operating the Machine with the Platform Up

Operate the machine with the platform up for the following conditions:

- Using the machine near drop-offs
- Using the machine in small areas where the machine is too large
- Areas with low-hanging branches or obstacles
- Loading the machine for transport
- Driving up slopes

To raise the platform, pull the back of the platform up so that the latch pin and knob lock it into place. Push it tight against the cushion for the latch pin to lock it into place.

Operating the Machine with the Platform Down

Operate the machine with the platform down for the following conditions:

- Using the machine in most areas
- Driving across slopes
- Driving down slopes

To lower the platform, push the platform forward against the cushion to release pressure on the latch pin, then pull the knob out and lower the platform (Figure 18).

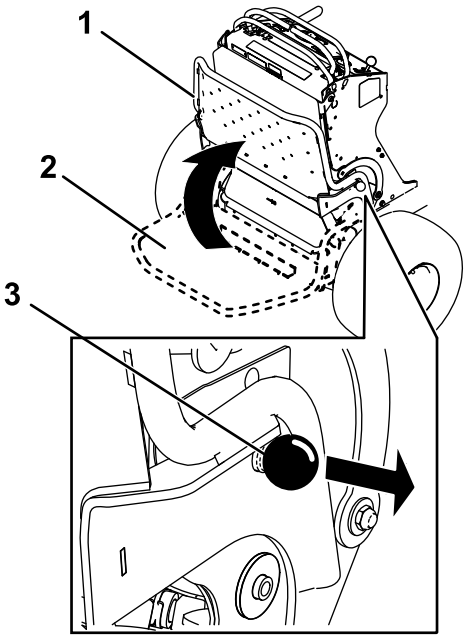

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Figure 18

1. Platform up
2. Platform down
3. Pull the knob out to release the platform.

Driving Forward or Backward

The throttle control regulates the engine speed as measured in rpm (revolutions per minute). Place the throttle control in the FAST position for best performance.

Important: **Back the machine over curbs, 1 wheel at a time; driving it forward over curbs could damage the machine.**

⚠ CAUTION

The machine can spin very rapidly, and you may lose control of the machine, causing personal injury to you and damage to the machine.

Slow down the machine before making sharp turns.

Driving Forward

1. Disengage the parking brake; refer to Operating the Parking Brake (page 15).
2. Move the motion-control levers to the center, unlocked position.

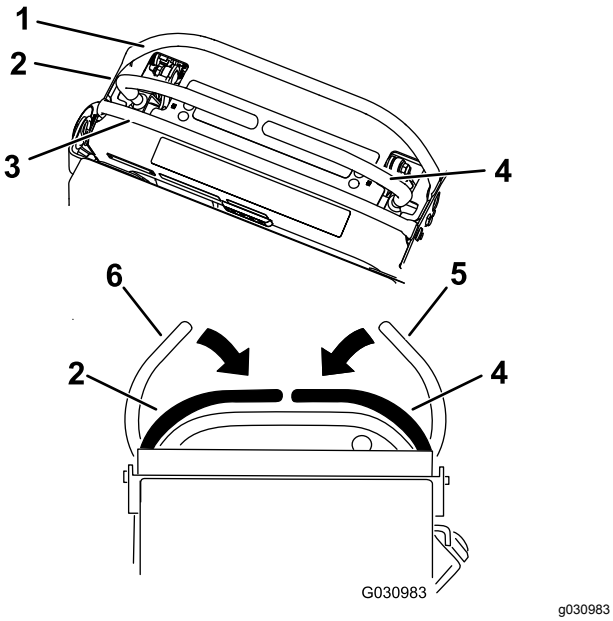

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Figure 19

1. Front reference bar
2. Left control lever
3. Rear reference bar
4. Right control lever
5. Right control lever in the NEUTRAL-LOCK position
6. Left control lever in the NEUTRAL-LOCK position

3. Slowly push the motion-control levers forward (Figure 20).

   Note: The engine shuts off if you move a motion-control lever while the parking brake is engaged.

   Note: The farther you move the motion-control levers in either direction, the faster the machine moves in that direction.

   Note: To stop, pull the motion-control levers back to the NEUTRAL position.

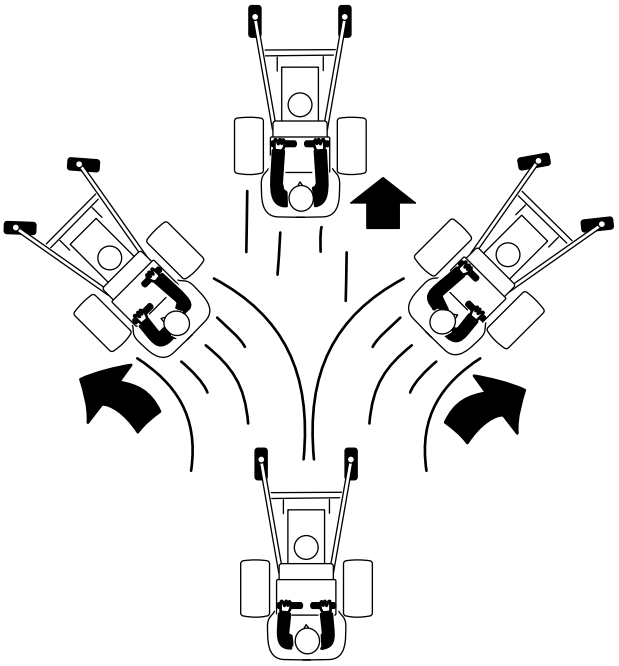

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Figure 20

Driving Backward

1. Move both motion-control levers to the center, unlocked position.
2. Slowly pull the motion-control levers rearward (Figure 21).

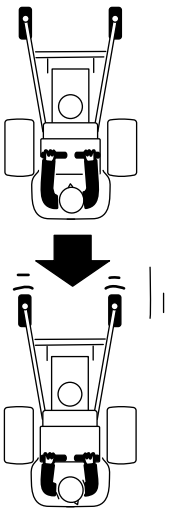

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Figure 21

Stopping the Machine

To stop the machine, move the motion-control levers to neutral, and then move them to the NEUTRAL-LOCK position, disengage the power takeoff (PTO), and turn the ignition key to the OFF position.

Engage the parking brake when you leave the machine; refer to Operating the Parking Brake (page 15).

Note: Remember to remove the key from the ignition switch.

⚠ CAUTION

Children or bystanders may be injured if they move or attempt to operate the machine while it is unattended.

Always remove the ignition key and engage the parking brake when leaving the machine unattended, even if just for a few minutes.

Using Weights

- Install weights to improve balance. You can add or remove weights to create optimized performance under different operating conditions and for your preference.
- Add or remove weights 1 at a time until you achieve the desired handling and balance.
- Refer to the *Operator's Manual* of attachments for recommended weights.

Note: Contact an Authorized Service Dealer to order a weight kit.

⚠ WARNING

Excessive weight changes can affect the handling and operation of the machine. This could cause serious injury to you or bystanders.

- **Make weight changes in small increments only.**
- **Evaluate the machine after each weight change to ensure that you can operate the machine safely.**

After Operation

After Operation Safety

General Safety

- Clean snow and debris from the drives, mufflers, and engine compartment to help prevent fires. Clean up oil or fuel spills.
- Shut off the fuel before storing or transporting the machine.
- Disengage the drive to the attachment whenever you are transporting or not using the machine.
- Use full-width ramps for loading the machine into a trailer or truck.
- Tie the machine down securely using straps, chains, cable, or ropes. Both front and rear straps should be directed down and outward from the machine.
- Allow the engine to cool before storing the machine in any enclosure.
- Shut off the fuel before storing or transporting the machine.
- 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.

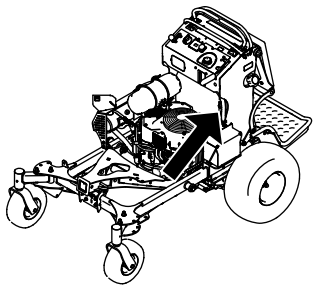
Preventing Freeze-up after Use

- In snowy and cold conditions, some controls and moving parts may freeze. **Do not use excessive force when trying to operate frozen controls.** If you have difficulty operating any control or part, start the engine and let it run for a few minutes. Thaw frozen parts before operating the machine.
- After using the machine, let the engine run for a few minutes to prevent moving parts from freezing. Shut off the engine, wait for all moving parts to stop, and remove all ice and snow from the machine.

Using the Fuel-Shutoff Valve

Close the fuel-shutoff valve for transport, maintenance, and storage (Figure 22).

Ensure that the fuel-shutoff valve is open when starting the engine.



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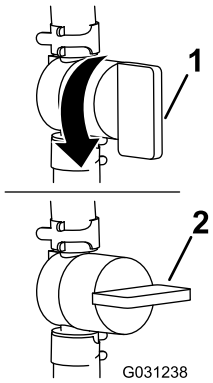

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Figure 22

1. ON position
2. OFF position

Pushing the Machine by Hand

The bypass valves allow you to push the machine by hand without the engine running.

Important: **Always push the machine by hand. Do not tow the machine, because hydraulic damage may occur.**

Important: **Do not start or operate the machine with the bypass valves open. Damage to system may occur.**

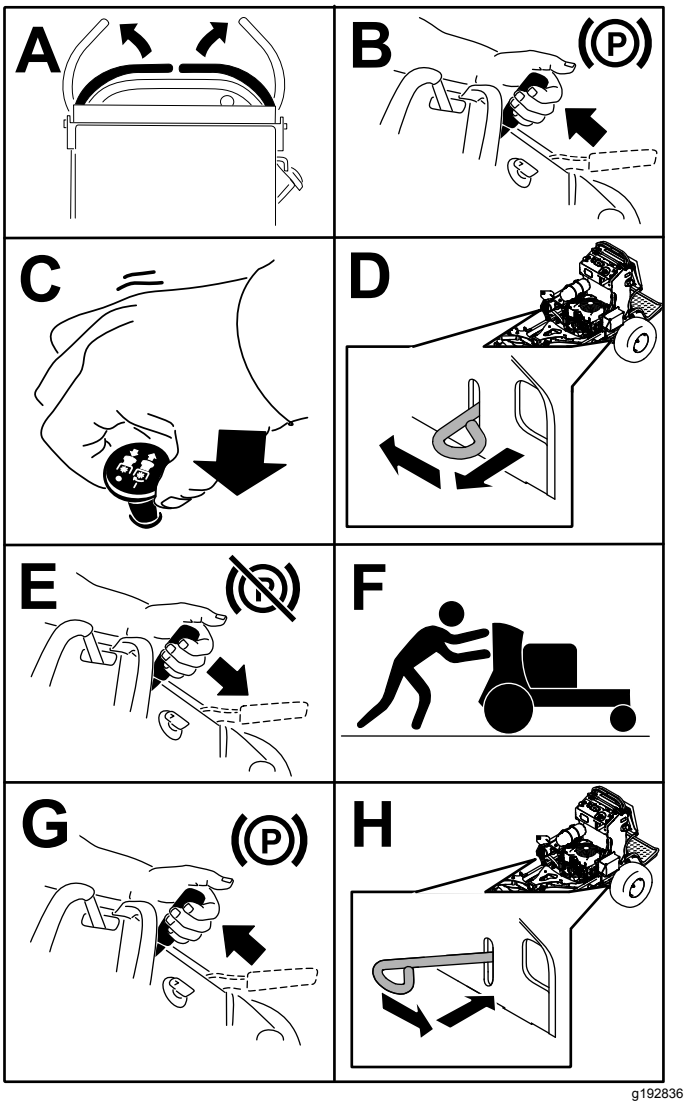

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Figure 23

Transporting the Machine

Use a heavy-duty trailer or truck to transport the machine. Ensure that the trailer or truck has all the necessary brakes, lighting, and marking as required by law. Please carefully read all the safety instructions.

1. Raise the platform of the machine before driving onto the trailer or truck.
2. If using a trailer, connect it to the towing vehicle and connect the safety chains.
3. If applicable, connect the trailer brakes.
4. Load the machine onto the trailer or truck.
5. Shut off the engine, remove the key, set the brake, and close the fuel valve.
6. Use the metal tie-down loops and the caster-wheel frames to securely fasten the machine to the trailer or truck with straps, chains, cable, or ropes (Figure 24).

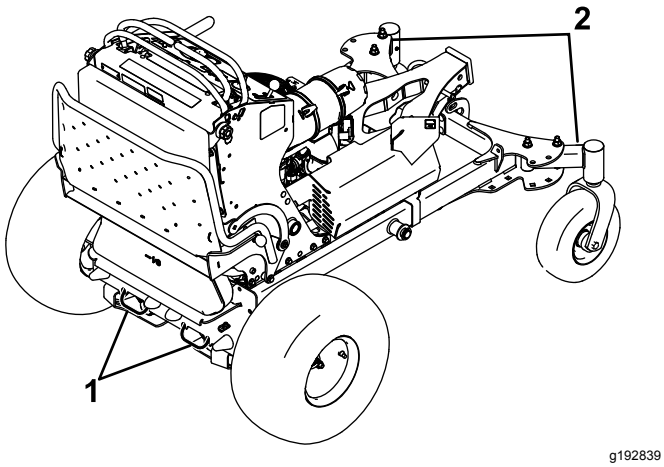

Figure 24

1. Traction unit tie-down loop
2. Caster-wheel frame

Loading the Machine

Use extreme caution when loading or unloading the machine onto a trailer or a truck. Use a full-width ramp that is wider than the machine for this procedure. Back the machine up the ramp and walk it forward down the ramp (Figure 25).

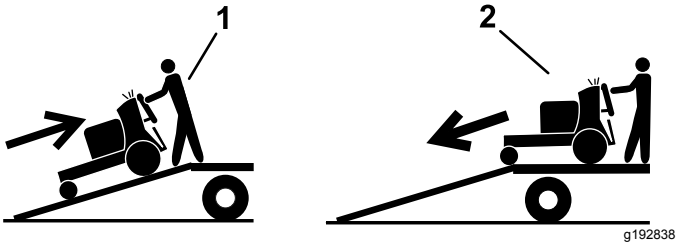

Figure 25

1. Back the machine up the ramp.
2. Walk the machine down the ramp.

Important: **Do not use narrow individual ramps for each side of the machine.**

⚠ WARNING

Loading a machine onto a trailer or truck increases the possibility of tip-over and could cause serious injury or death (Figure 26).

- **Use extreme caution when operating a machine on a ramp.**
- **Use only a full-width ramp; do not use individual ramps for each side of the machine.**
- **Do not exceed a 15-degree angle between the ramp and the ground or between the ramp and the trailer or truck.**
- **Ensure that the length of ramp is at least 4 times as long as the height of the trailer or truck bed to the ground. This ensures that the ramp angle does not exceed 15 degrees on flat ground.**
- **Back up ramps and drive forward down ramps.**
- **Avoid sudden acceleration or deceleration while driving the machine on a ramp as this could cause a loss of control or a tip-over situation.**

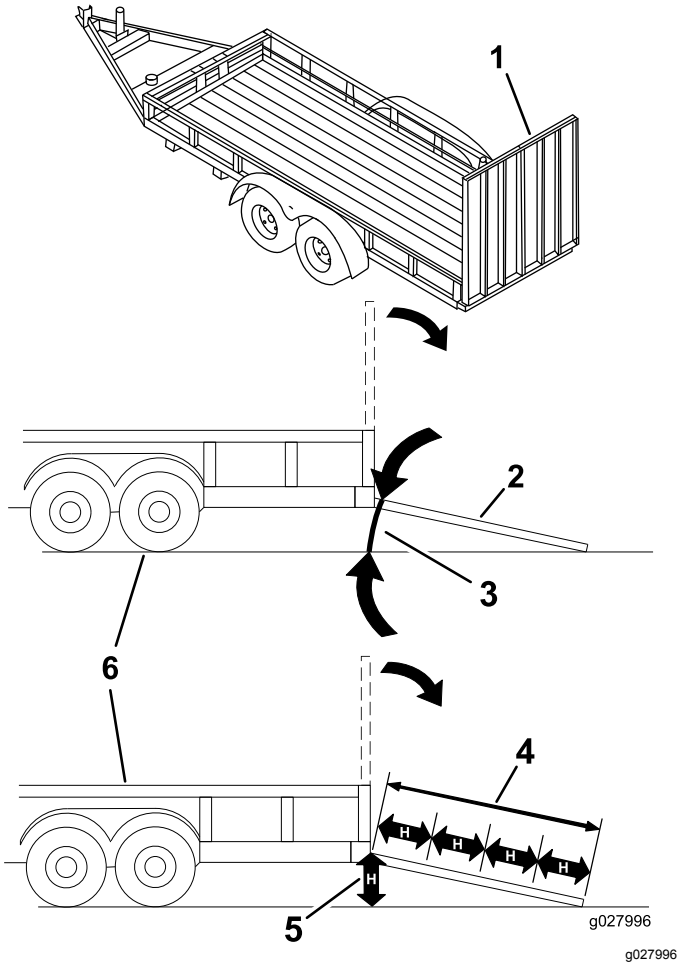

Figure 26

1. Full-width ramp in stowed position
2. Side view of full-width ramp in loading position
3. Not greater than 15 degrees
4. The ramp is at least 4 times as long as the height of the trailer or truck bed to the ground
5. H= height of the trailer or truck bed to the ground
6. Trailer

Maintenance

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

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 8 hours	• Change the engine oil. • Check the hydraulic-fluid level.
After the first 50 hours	• Change the hydraulic filters and hydraulic fluid.
After the first 100 hours	• Check the wheel-lug nuts. • Check the wheel-hub nuts.
Before each use or daily	• Check the safety-interlock system. • Check the engine-oil level. • Clean the air-intake screen. • Check the brakes.
Every 50 hours	• Check the spark arrester (if equipped). • Check the tire pressure.
Every 100 hours	• Change the engine oil. • Check the battery. • Check and clean the engine cooling fins and shrouds.
Every 150 hours	• Inspect the primary filter and the air-inlet screen.
Every 200 hours	• Change the engine-oil filter. • Check, clean and gap the spark plug.
Every 300 hours	• Grease the engine voltage regulator. (More often if grease is not present.) • Replace the primary air filter (more often in dusty or sandy conditions). • Check the inner air filter.
Every 500 hours	• Adjust the caster-pivot bearing. • Check the wheel-hub nuts. • Check the hydraulic-fluid level. • Change the hydraulic filters and hydraulic fluid.
Every 600 hours	• Replace the inner air filter.
Every 800 hours	• Replace the fuel filter.
Every 1,000 hours	• Replace the transmission belt.
Before storage	• Paint chipped surfaces. • Perform all maintenance procedures listed above before storage.
Yearly	• Grease the front caster pivots (more often in dirty or dusty conditions). • Grease the caster-wheel hubs. • Grease the brake calipers. • Grease the motion controls. • Apply anti-seize compound to the cushion knobs. • Wash the machine.

Important: **Refer to your engine owner's manual for additional maintenance procedures.**

⚠ CAUTION

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

Remove the key from the switch and disconnect the spark-plug wires from the spark plugs before you do any maintenance. Set the wires aside so that they do not accidentally contact the spark plugs.

Pre-Maintenance Procedures

Maintenance and Storage Safety

- Before repairing the machine do the following:
  - Disengage the drives.
  - Engage the parking brake.
  - Shut off the engine and remove the key.
  - Disconnect the spark-plug wire.
- Park the machine on a level surface.
- Clean snow and debris from the drives, mufflers, and engine to help prevent fires.
- Clean up oil or fuel spills.
- Let the engine cool before storing the machine.
- Do not store the machine or fuel near flames or drain the fuel indoors.
- Do not allow untrained personnel to service the machine.
- Use jack stands to support the machine and/or components when required.
- Carefully release pressure from components with stored energy.
- Disconnect the battery or remove the spark-plug wire before making any repairs. Disconnect the negative terminal first and the positive terminal last. Connect the positive terminal first and negative last.
- Keep your hands and feet away from moving parts. If possible, do not make adjustments with the engine running.
- Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.
- Never interfere with the intended function of a safety device or reduce the protection provided by a safety device. Check their proper operation regularly.
- To ensure optimum performance and continued safety certification of the machine, use only genuine Toro replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous, and such use could void the product warranty.
- Check the parking brake operation frequently. Adjust and service as required.

Releasing the Cushion for Rear Access

You can release the cushion for rear access to the machine for maintenance or adjustment.

1. Lower the platform.
2. Loosen the twist knobs on each side of the machine (Figure 27).

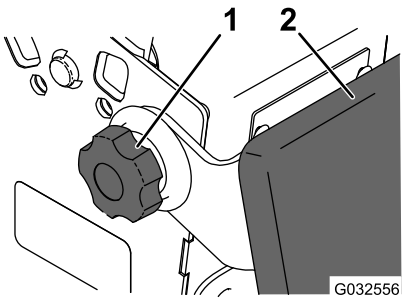

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Figure 27

1. Twist knob
2. Cushion

3. Remove the cushion and lower it to the platform.
4. Perform any maintenance or adjustment on the machine.
5. Raise the cushion, and slide it onto the pins on both sides of the machine.
6. Tighten the twist knobs.

Lubrication

Use high-temperature grease.

1. Disengage the PTO and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Clean the grease fittings with a rag.

   Note: Make sure to scrape any paint off the front of the fitting(s).
4. Connect a grease gun to the fitting.
5. Pump grease into the fittings until grease begins to ooze out of the bearings.
6. Wipe up any excess grease.

Greasing the Accessory Frame

Grease the pivots of the accessory frame at the locations shown in Figure 28.

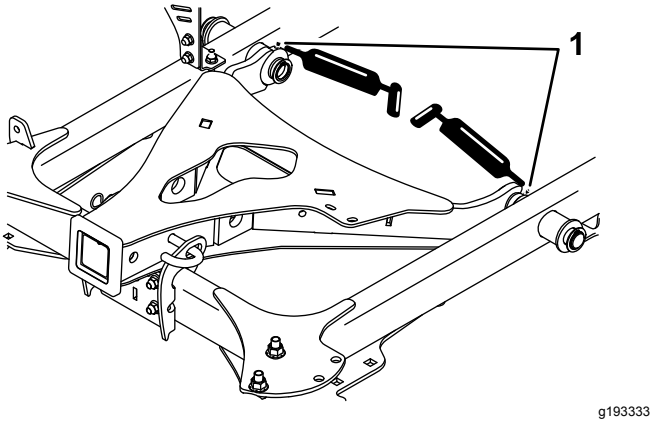

Figure 28

1. Grease these pivots.

Greasing the Front Caster Pivots

Service Interval: Yearly

1. Remove the dust cap and adjust the caster pivots; refer to Adjusting the Caster-Pivot Bearing (page 40).

   Note: Keep the dust cap off until you have finished greasing the caster pivots.
2. Remove the hex plug.
3. Thread a grease fitting into the hole.
4. Pump grease into the fitting until it oozes out around the top bearing.
5. Remove the grease fitting from the hole.
6. Install the hex plug and dust cap.

Greasing the Caster-Wheel Hubs

Service Interval: Yearly

1. Shut off the engine, wait for all moving parts to stop, engage the parking brake, and remove the key.
2. Remove the caster wheel from the caster forks.
3. Remove the seal guards from the wheel hub (Figure 29).

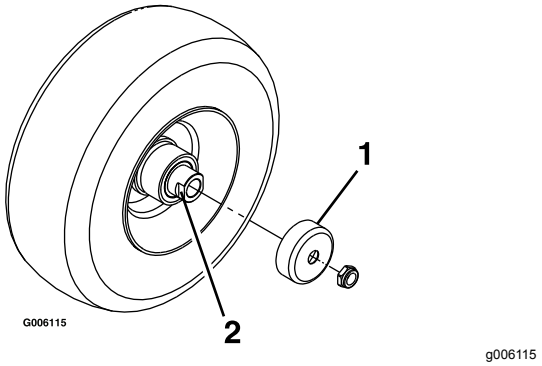

Figure 29

1. Seal guard
2. Spacer nut with wrench flats

4. Remove 1 spacer nut from the axle assembly in the caster wheel.

   Note: Thread-locking adhesive has been applied to lock the spacer nuts to the axle. Remove the axle (with the other spacer nut still assembled to it) from the wheel assembly.
5. Pry out the seals, inspect bearings for wear or damage, and replace them if necessary.
6. Pack the bearings with a general-purpose grease.
7. Insert 1 bearing and 1 new seal into the wheel.

   Note: You must replace the seals.
8. If both spacer nuts in the axle assembly have been removed (or broken loose), apply a thread-locking adhesive to 1 spacer nut, threading it onto the axle with the wrench flats facing outward.

   Note: Do not thread spacer nut all of the way onto the end of the axle. Leave approximately 3 mm (1/8 inch) from the outer surface of the spacer nut to the end of the axle inside the nut.

9. Insert the assembled nut and axle into the wheel on the side of the wheel with the new seal and bearing.
10. With the open end of the wheel facing up, fill the area inside the wheel around the axle full of general-purpose grease.
11. Insert the second bearing and the new seal into the wheel.
12. Apply a thread-locking adhesive to the second spacer nut, threading it onto the axle with the wrench flats facing outward.
13. Torque the nut to 8 to 9 N·m (71 to 80 in-lb), loosen it, then torque it to 2 to 3 N·m (20 to 25 in-lb).

    Note: Make sure that axle does not extend beyond either nut.
14. Install the seal guards over the wheel hub and insert wheel into caster fork.
15. Install the caster bolt and tighten the nut fully.

Important: **To prevent seal and bearing damage, check the bearing adjustment often by spinning the caster wheel. The tire should not spin freely (more than 1 or 2 revolutions) or have any side play. If the wheel spins freely, adjust the torque on the spacer nut until there is a slight amount of drag, and apply thread-locking adhesive.**

Greasing the Engine Voltage Regulator

Service Interval: Every 300 hours (More often if grease is not present.)

Grease type: Dielectric grease

1. Park the machine on a level surface, disengage the PTO, and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Disconnect the spark plug wires from the spark plug.
4. Lightly apply grease to the voltage regulator blades (Figure 30).

   Important: **Too much grease can cause water to pool at the connector and short the regulator.**
5. Connect the spark plug.

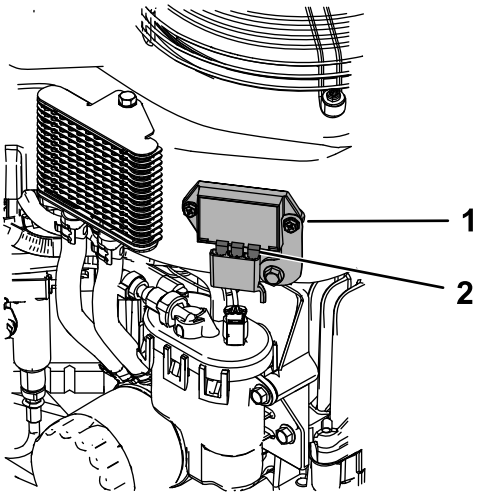

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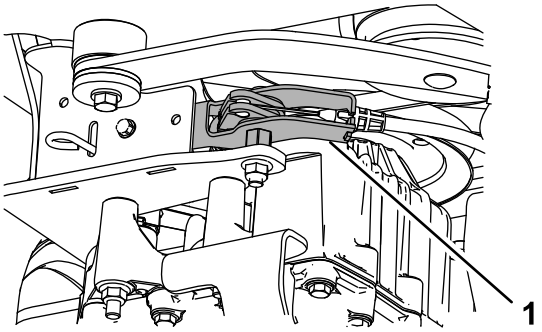
Figure 30

1. Voltage regulator
2. Regulator blades

Greasing the Brake Calipers

Service Interval: Yearly

Apply a rust-preventative spray to the brake calipers yearly.



g228033

Figure 31

1. Brake caliper

Greasing the Motion Controls

Service Interval: Yearly

Grease the operator-presence-control balljoint and the motion-control bushing for both levers.

Note: Use an oil drip between the lever brackets to grease the bushing, located in the pivot tube.

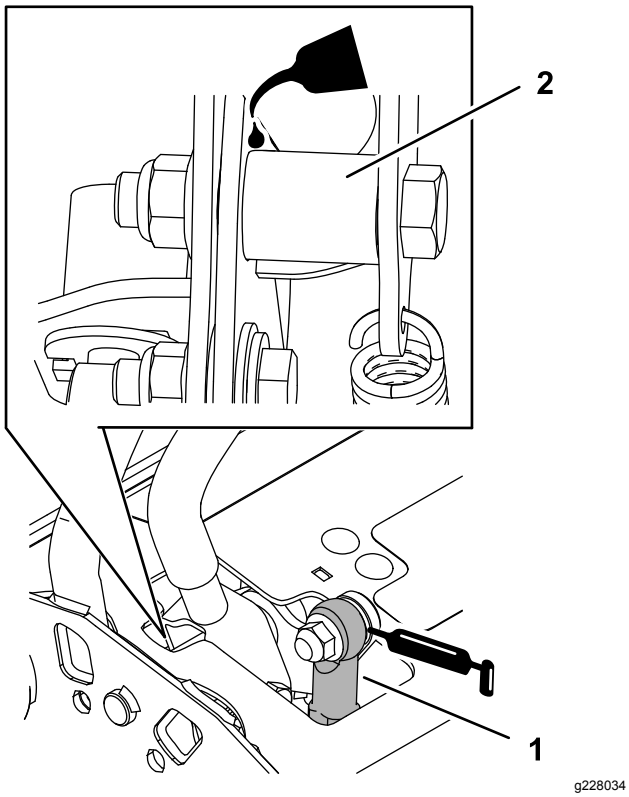


Figure 32

1. Operator-presence control balljoint
2. Pivot tube

Engine Maintenance

⚠ WARNING

Contact with hot surfaces may cause personal injury.

Keep your hands, feet, face, clothing, and other body parts away the muffler and other hot surfaces.

Engine Safety

Shut off the engine before checking the oil or adding oil to the crankcase.

Servicing the Air Cleaner

Service Interval: Every 150 hours

Every 300 hours/Yearly (whichever comes first)—Replace the primary air filter (more often in dusty or sandy conditions).

Every 300 hours—Check the inner air filter.

Every 600 hours—Replace the inner air filter.

Note: Check the filters more frequently if the operating conditions are extremely dusty or sandy.

Removing the Filters

1. Disengage the PTO, move the motion-control levers to the NEUTRAL-LOCK position, and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Release the latches on the air cleaner and pull the air-inlet cover off the air-cleaner body (Figure 33).
4. Clean the air-inlet screen and cover.
5. Install the air-inlet cover and secure it with the latches (Figure 33).

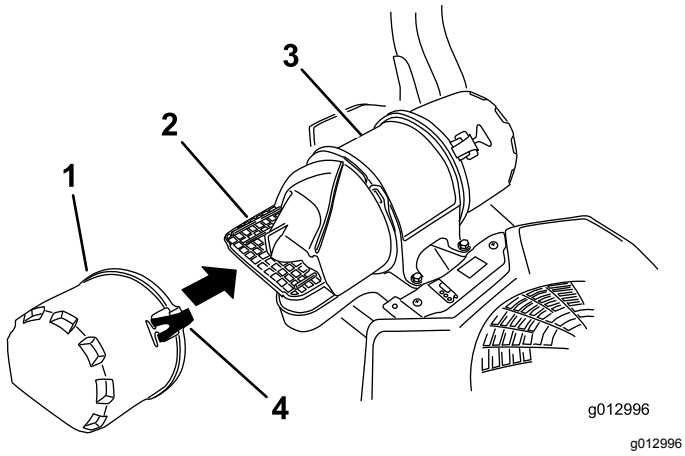


Figure 33

1. Air-inlet cover
2. Air-inlet screen
3. Air-cleaner body
4. Latch

6. Release the latches on the air cleaner and pull the air-cleaner cover off the air-cleaner body (Figure 34).
7. Clean the inside of the air-cleaner cover with compressed air.
8. Gently slide the primary filter out of the air-cleaner body (Figure 34).

   Note: Avoid knocking the filter into the side of the body.
9. Remove the inner filter only if you intend to replace it.

   Important: **Never attempt to clean the inner filter. If the safety filter is dirty, then the primary filter is damaged. Replace both filters.**

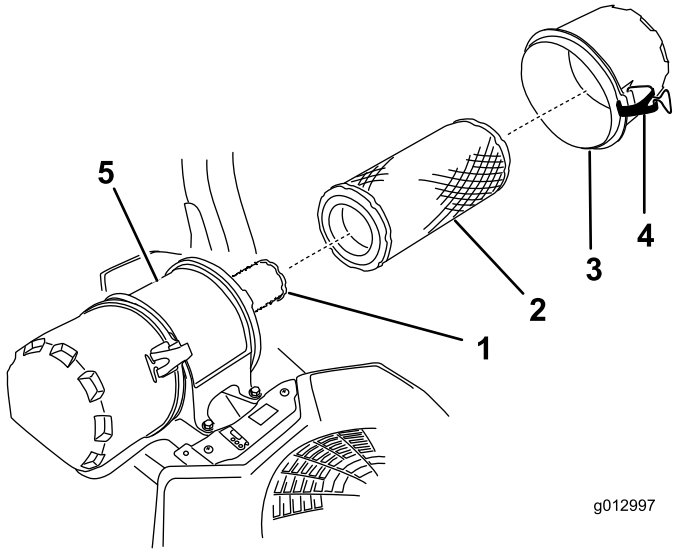


Figure 34

1. Inner filter
2. Primary filter
3. Air-cleaner cover
4. Latch
5. Air-cleaner body

10. Inspect the primary filter for damage by looking into the filter, while shining a bright light on the outside of the filter.

    Note: Holes in the filter will appear as bright spots. If the filter is damaged, discard it.

Servicing the Primary Filter

- If the primary filter is dirty, bent, or damaged, replace it.
- Do not clean the primary filter.

Servicing the Safety Filter

Replace the safety filter, never clean it.

Important: **Do not attempt to clean the safety filter. If the safety filter is dirty, then the primary filter is damaged. Replace both filters.**

Installing the Filters

Important: **To prevent engine damage, always operate the engine with both air filters and the cover installed.**

1. If installing new filters, check each filter for shipping damage.

   Note: Do not use a damaged filter.
2. If the inner filter is being replaced, carefully slide it into the filter body (Figure 34).
3. Carefully slide the primary filter over the inner filter (Figure 34).

Note: Ensure that the primary filter is fully seated by pushing on the outer rim while installing it.

Important: **Do not press on the soft, inside area of the filter.**

4. Install the air-cleaner cover and secure the latches (Figure 34).

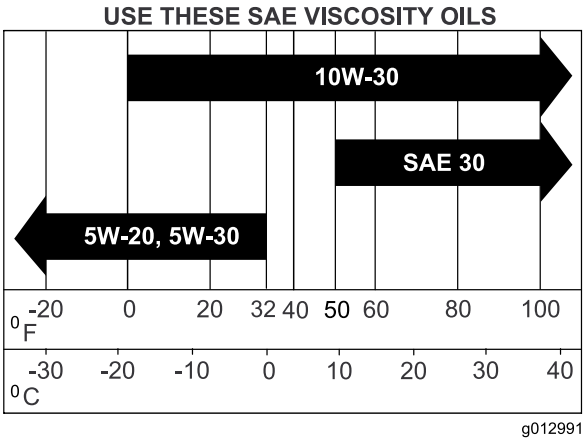
Servicing the Engine Oil

Engine-Oil Specifications

Oil Type: Detergent oil (API service SJ or higher)

Oil Capacity: 1.65 L (56 fl oz) with the filter; 1.50 L (51 fl oz) without the filter

Viscosity: See the table below.



g012991

Figure 35

Note: Use a synthetic oil with 5W-20 or 5W-30 rating, up to 4°C (40°F).

Note: Synthetic oils provide better starting when the temperature is below -23°C (-10°F).

Checking the Engine-Oil Level

Service Interval: Before each use or daily

Note: Check the oil when the engine is cold.

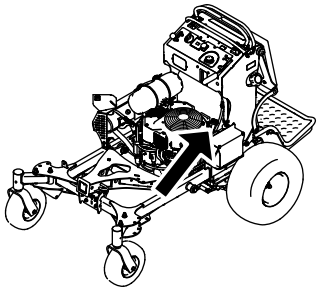
⚠ WARNING

Contact with hot surfaces may cause personal injury.

Keep your hands, feet, face, clothing and other body parts away the muffler and other hot surfaces.

Important: **Do not overfill the crankcase with oil because damage to the engine may result. Do not run engine with oil below the low mark because the engine may be damaged.**

1. Park the machine on a level surface, disengage the PTO, and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Check the engine-oil level as shown in (Figure 36).



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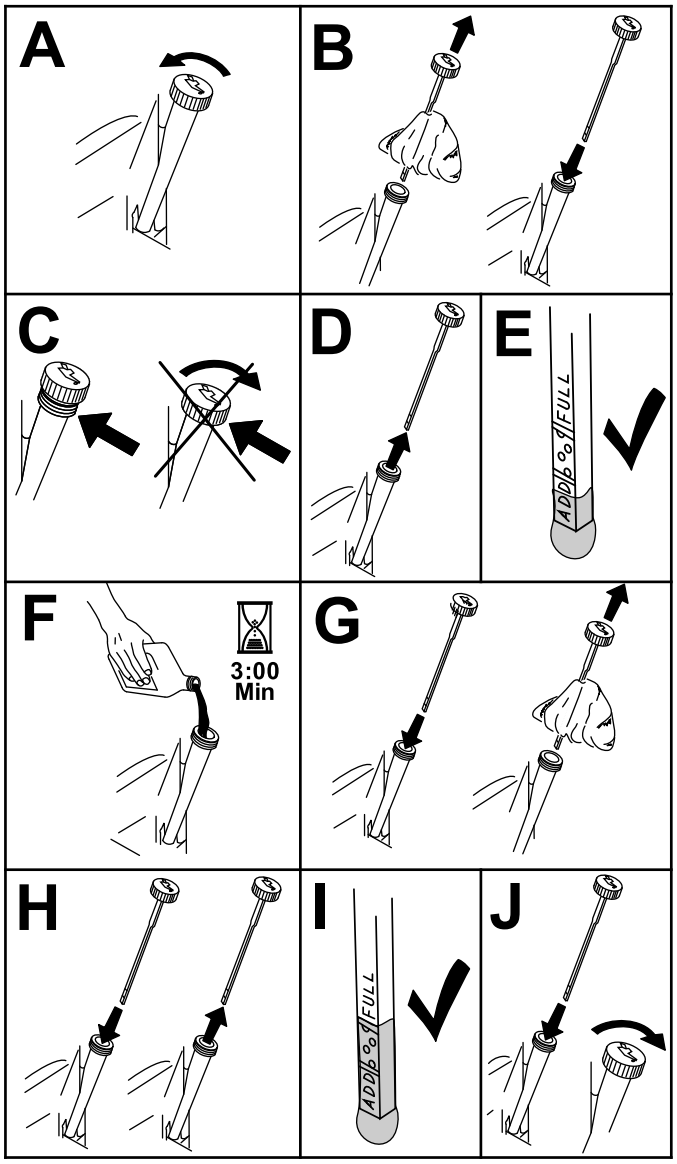


g194611

Figure 36

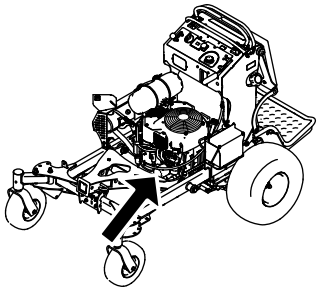
Changing the Engine Oil

Service Interval: After the first 8 hours

Every 100 hours

Note: Dispose of the used oil at a recycling center.

1. Park the machine so that the drain side is slightly lower than the opposite side to assure the oil drains completely.
2. Disengage the PTO, move the motion-control levers to the NEUTRAL-LOCK position, and engage the parking brake.
3. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
4. Change the engine oil as shown in Figure 37.



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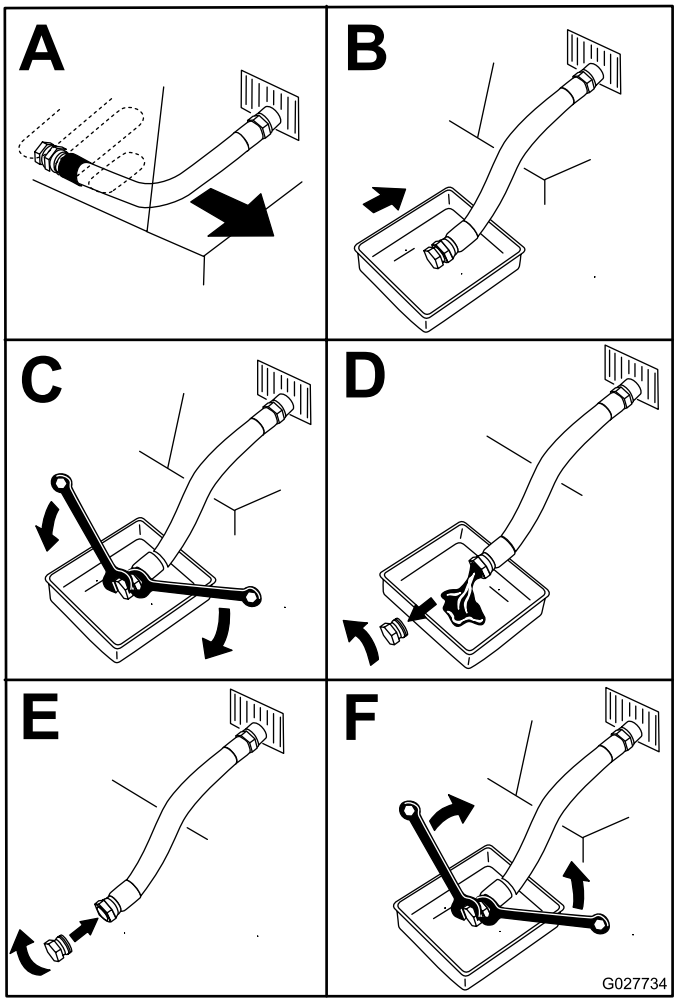

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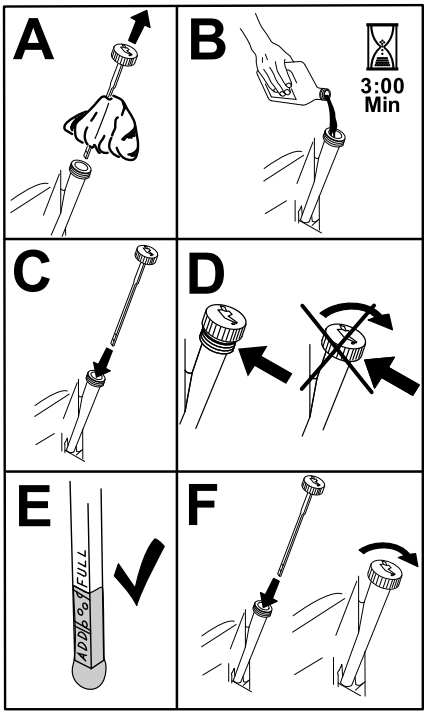
Figure 37

5. Slowly pour approximately 80% of the specified oil into the filler tube and slowly add the additional oil to bring it to the **Full** mark (Figure 38).



g194610

Figure 38

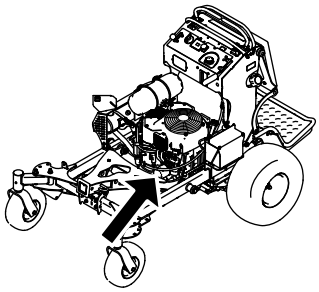
6. Start the engine and drive to a flat area.
7. Check the oil level again.

Changing the Engine-Oil Filter

Service Interval: Every 200 hours

Note: Change the engine-oil filter more frequently when operating conditions are extremely dusty or sandy.

1. Drain the oil from the engine; refer to Changing the Engine Oil (page 31).
2. Change the engine-oil filter (Figure 39).



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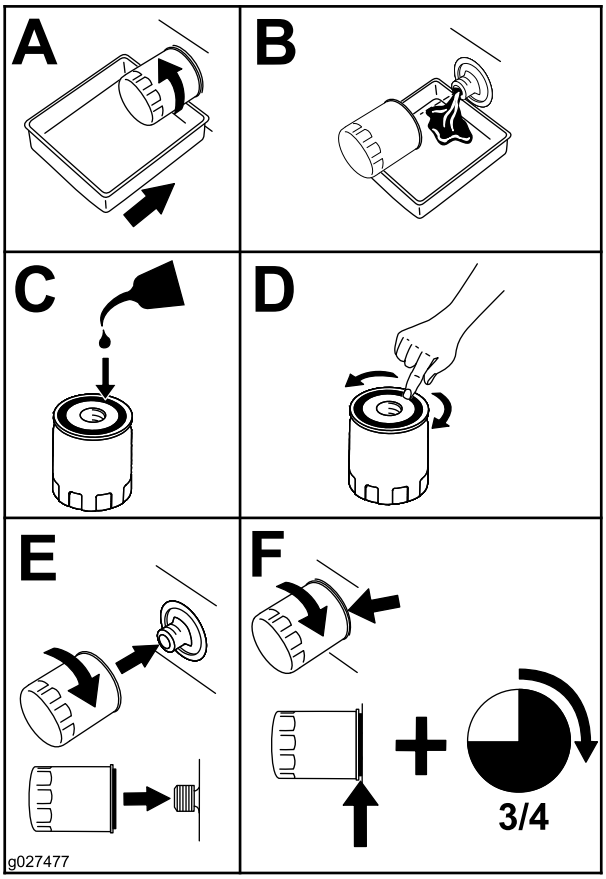

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Figure 39

Note: Ensure that the oil-filter gasket touches the engine, then rotate the filter an extra 3/4 turn.

3. Fill the crankcase with the proper type of new oil; refer to Engine-Oil Specifications (page 30).

Servicing the Spark Plug

Service Interval: Every 200 hours

Make sure that the air gap between the center and side electrodes is correct before installing the spark plug.

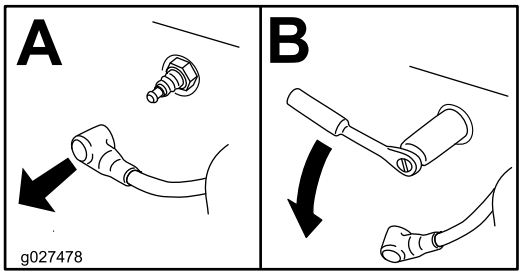
Use a spark plug wrench for removing and installing the spark plug(s) and a gapping tool/feeler gauge to check and adjust the air gap. Install a new spark plug(s) if necessary.

Type for all engines: Kohler 25 132 14-c, Champion XC12YC, or equivalent

Air gap: 0.75 mm (0.03 inch)

Removing the Spark Plug

1. Disengage the PTO, move the motion-control levers to the NEUTRAL-LOCK position, and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Remove the spark plug as shown in Figure 40.



g027478

Figure 40

Checking the Spark Plug

Important: **Do not clean the spark plug(s). Always replace the spark plug(s) when it has a black coating, worn electrodes, an oily film, or cracks.**

If you see light brown or gray on the insulator, the engine is operating properly. A black coating on the insulator usually means the air cleaner is dirty.

Set the gap to 0.75 mm (0.03 inch).

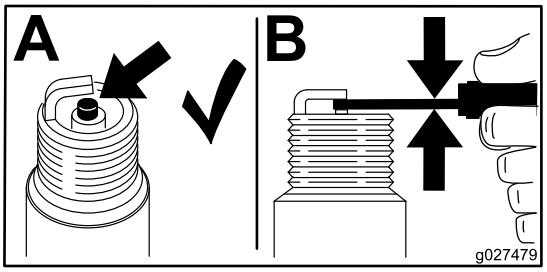


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Figure 41

Installing the Spark Plug

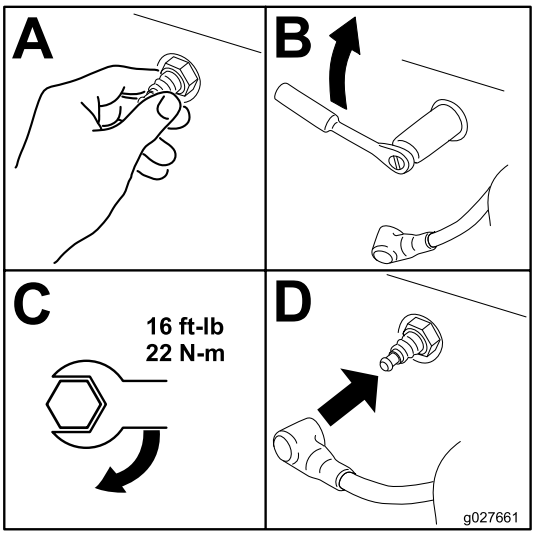

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Figure 42

Checking the Spark Arrester

For Models with a Spark Arrester

Service Interval: Every 50 hours

⚠ WARNING

Hot exhaust system components may ignite fuel vapors even after you shut off the engine. Hot particles exhausted during engine operation may ignite flammable materials. Fire may result in personal injury or property damage.

Do not fuel or run the engine unless a spark arrester is installed.

1. Shut off the engine, wait for all moving parts to stop, remove the key, and engage the parking brake.
2. Wait for the muffler to cool.
3. If there are any breaks in the screen or welds are observed, replace the arrester.
4. If the screen is plugged, remove the arrester and shake loose particles out of the arrester, and clean the screen with a wire brush (soak in solvent if necessary).
5. Install the arrester on the exhaust outlet.

Fuel System Maintenance

Draining the Fuel Tank

You can drain the fuel tank by removing it and pouring the fuel out of the fill neck; refer to Removing the Fuel Tank (page 35). You can also drain the fuel tank by using a siphon in the following procedure.

⚠ DANGER

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

- **Perform any fuel-related maintenance when the engine is cold. Do this outdoors in an open area. Wipe up any fuel that spills.**
- **Never smoke when draining fuel, and stay away from an open flame or where a spark may ignite the fuel fumes.**

1. Disengage the PTO, move the motion-control levers to the NEUTRAL-LOCK position, and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position
3. Clean around the fuel cap to prevent debris from getting into the fuel tank (Figure 43).
4. Remove the fuel cap.
5. Insert a syphon pump into the fuel tank.
6. Using the syphon pump, drain the fuel into a clean gas can (Figure 43).
7. Wipe up any spilled fuel.

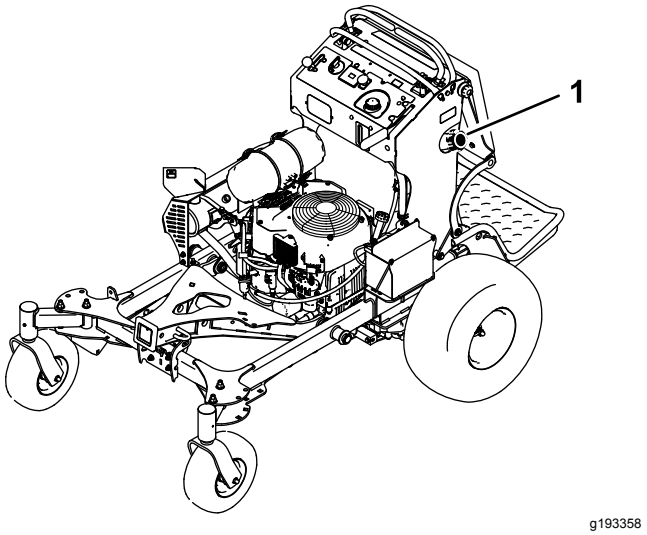

Figure 43

1. Fuel cap

Removing the Fuel Tank

1. Lower the platform.
2. Release the cushion; refer to Releasing the Cushion for Rear Access (page 25).
3. Remove the cross bracket.

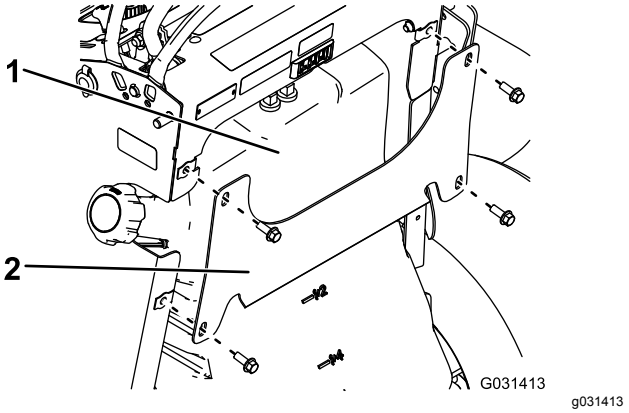

Figure 44

4. Remove the fuel tank and set it on the operator platform.

   Note: If you want to move the fuel tank further from the machine, remove the fuel and vent lines from the top of the tank.

Servicing the Fuel Filter

Replacing the Fuel Filter

Service Interval: Every 800 hours/Yearly (whichever comes first)

Do not install a dirty filter if it is removed from the fuel line.

Note: Wipe up any spilled fuel.

1. Disengage the PTO and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Close the fuel-shutoff valve; refer to Using the Fuel-Shutoff Valve (page 21).
4. Replace the fuel filter as shown in Figure 45.

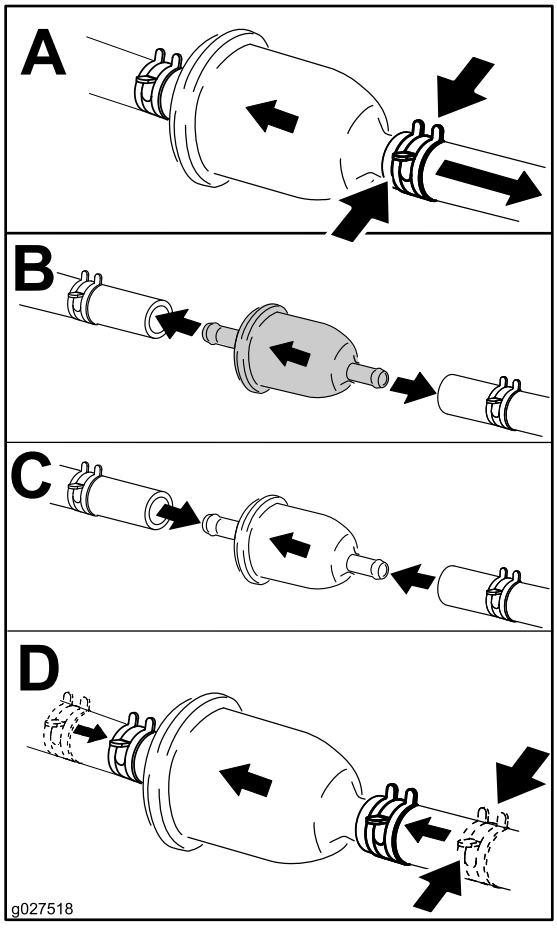

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Figure 45

Electrical System Maintenance

Electrical System Safety

- Disconnect the battery or remove the spark-plug wire before making any repairs. Disconnect the negative terminal first and the positive terminal last. Connect the positive terminal first and negative last.
- Charge the battery in an open, well-ventilated area, away from sparks and flames. Unplug the charger before connecting or disconnecting the battery. Wear protective clothing and use insulated tools.

Servicing the Battery

Service Interval: Every 100 hours

Always keep the battery clean and fully charged. Use a paper towel to clean the battery case. If the battery terminals are corroded, clean them with a solution of 4 parts water and 1 part baking soda. Apply a light coating of grease to the battery terminals to prevent corrosion.

Voltage: 12 V

Removing the Battery

⚠ WARNING

Battery terminals or metal tools could short against metal machine components causing sparks. Sparks can cause the battery gasses to explode, resulting in personal injury.

- **When removing or installing the battery, do not allow the battery terminals to touch any metal parts of the machine.**
- **Do not allow metal tools to short between the battery terminals and metal parts of the machine.**

⚠ WARNING

Incorrect battery cable routing could damage the machine and cables causing sparks. Sparks can cause the battery gasses to explode, resulting in personal injury.

- **Always disconnect the negative (black) battery cable before disconnecting the positive (red) cable.**
- **Always connect the positive (red) battery cable before connecting the negative (black) cable.**

1. Disengage the PTO, move the motion-control levers to the NEUTRAL-LOCK position, and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Remove the battery as shown in Figure 46.

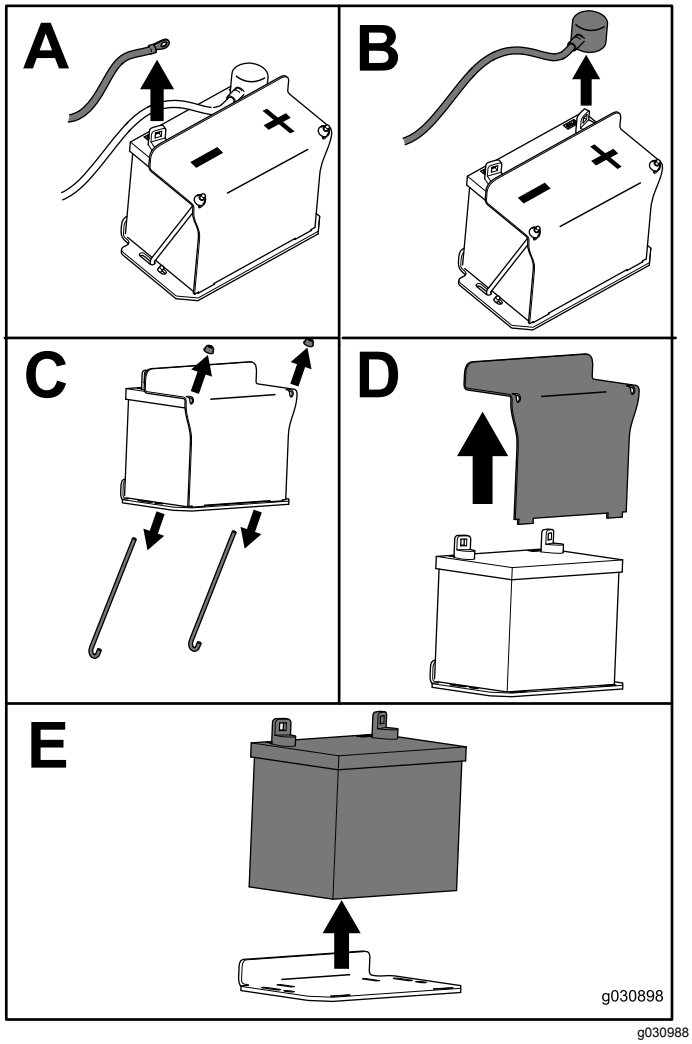

Figure 46

Installing the Battery

Install the battery as shown in Figure 47.

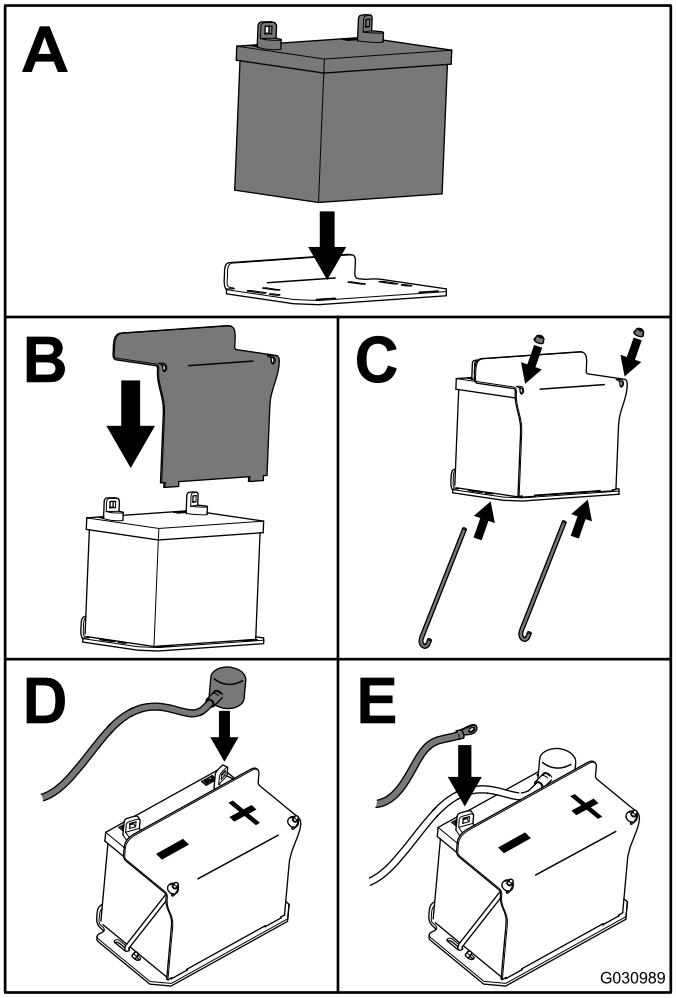

Figure 47

Charging the Battery

⚠ WARNING

Charging the battery produces gasses that can explode.

Never smoke near the battery and keep sparks and flames away from battery.

Important: **Always keep the battery fully charged (1.265 specific gravity) to prevent battery damage when the temperature is below 0°C (32°F).**

1. Remove the battery from the chassis; refer to Removing the Battery (page 36).
2. Check the electrolyte level.
3. Ensure that the filler caps are installed on the battery.
4. Charge the battery for 1 hour at 25 to 30 A or 6 hours at 4 to 6 A.
5. When the battery is fully charged, unplug the charger from the electrical outlet, and disconnect the charger leads from the battery posts (Figure 48).
6. Install the battery onto the machine and connect the battery cables; refer to Installing the Battery (page 37).

   Note: Do not run the machine with the battery disconnected; electrical damage may occur.

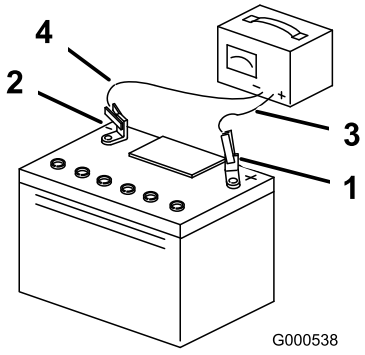

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Figure 48

1. Positive battery post
2. Negative battery post
3. Red (+) charger lead
4. Black (-) charger lead

Servicing the Fuses

The electrical system is protected by fuses and requires no maintenance. If a fuse blows, check the component or circuit for a malfunction or short.

1. Release the cushion from the rear of the machine.
2. Pull out the fuse to remove or replace it (Figure 49).
3. Install the cushion to the rear of the machine.

   Note: Ensure that the correct-size fuse is installed Figure 49.

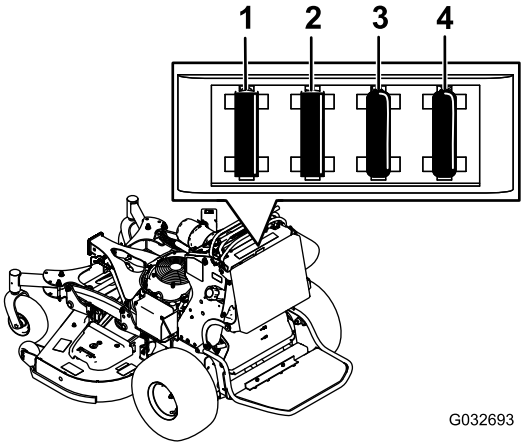

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Figure 49

1. Ignition fuse—15 A
2. Accessory-port fuse—15 A
3. Power takeoff (PTO) fuse—10 A
4. Infocenter fuse—7.5 A

Drive System Maintenance

Adjusting the Tracking

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

1. Push both control levers forward the same distance.
2. Check if the machine pulls to 1 side.

   Note: If it does, stop the machine and set the parking brake.
3. Release the cushion from the rear of the machine; refer to Releasing the Cushion for Rear Access (page 25).

   Note: For easier access, you can also remove the fuel tank; refer to Removing the Fuel Tank (page 35).
4. Rotate the left control rod in quarter-turn increments until the machine tracks straight (Figure 50).

   Note: If the machine pulls to the right, shorten the control rod by rotating it to the right. If the machine pulls to the left, lengthen the rod by rotating it to the left.

   Note: Only adjust the left control rod to match the left wheel speed to the right wheel speed. Do not adjust the right wheel speed, as this positions the right motion-control lever out of the center for the control panel neutral-lock slot.

   Important: **Do not rotate the control rod too far, as this may cause the machine to creep in neutral.**

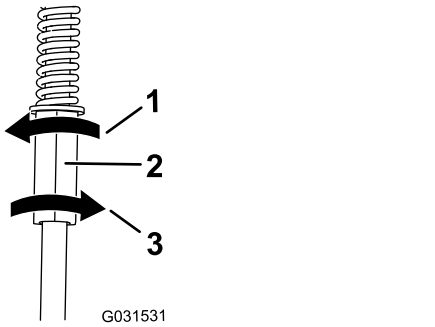

Figure 50

1. Rotate left to lengthen the rod.
2. Left control rod
3. Rotate right to shorten the rod.

5. Check for proper tracking, and adjust the rod as necessary.

   Note: If you are unable to achieve proper tracking by adjusting the left control rod, contact your Authorized Service Dealer.
6. Check that the machine does not creep from the neutral position with the park brakes disengaged.
7. Install the fuel tank, if you removed it.
8. Install the cushion.

Checking the Tire Pressure

Service Interval: Every 50 hours/Monthly (whichever comes first)

Maintain the air pressure in the rear tires at 83 to 97 kPa (12 to 14 psi).

Important: **Uneven tire pressure can cause an uneven cut.**

Note: The front tires are semi-pneumatic tires and do not require air-pressure maintenance.

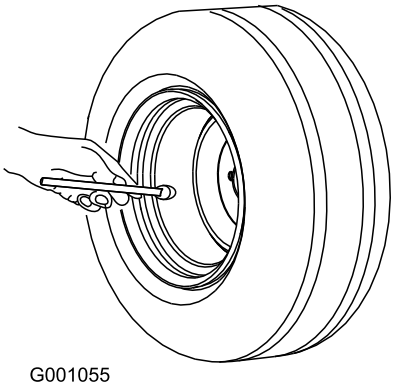

Figure 51

Adjusting the Caster-Pivot Bearing

Service Interval: Every 500 hours/Yearly (whichever comes first)

1. Disengage the PTO, move the motion control levers to the NEUTRAL-LOCK position, and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Remove the dust cap from the caster and tighten the locknut (Figure 52).
4. Tighten the locknut until the spring washers are flat, and then back off a 1/4 turn to properly set the preload on the bearings (Figure 52).

   Important: **Make sure that the spring washers are installed correctly as shown in Figure 52.**
5. Install the dust cap (Figure 52).

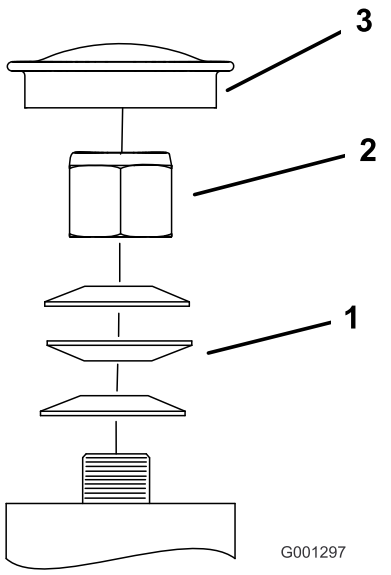

Figure 52

1. Spring washers
2. Locknut
3. Dust cap

Servicing the Caster Wheels and Bearings

The caster wheels rotate on a roller bearing supported by a spanner bushing. If the bearing is kept well lubricated, wear will be minimal. Failure to keep the bearing well lubricated causes rapid wear. A wobbly caster wheel usually indicates a worn bearing.

1. Remove the locknut and wheel bolt holding the caster wheel to the caster fork (Figure 53).

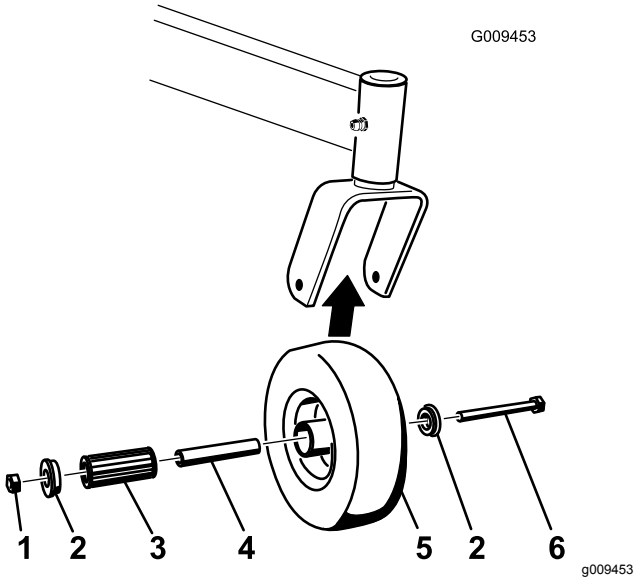

Figure 53

1. Locknut
2. Bushing
3. Spanner bushing
4. Roller bearing
5. Caster wheel
6. Wheel bolt

2. Remove 1 bushing, then pull the spanner bushing and roller bearing out of the wheel hub (Figure 53).
3. Remove the other bushing from the wheel hub and clean any grease and dirt from the wheel hub (Figure 53).
4. Inspect the roller bearing, bushings, spanner bushing and the inside of the wheel hub for wear.

   Note: Replace any damaged or worn parts (Figure 53).
5. Place 1 bushing into the wheel hub (Figure 53).
6. Grease the roller bearing and spanner bushing, and slide them into the wheel hub (Figure 53).
7. Place the second bushing into the wheel hub (Figure 53).
8. Install the caster wheel into the caster fork and secure it with the wheel bolt and locknut (Figure 53).

9. Tighten the locknut until the spanner bushing bottoms against the inside of the caster forks (Figure 53).
10. Grease the fitting on the caster wheel.

Checking the Wheel-Lug Nuts

Service Interval: After the first 100 hours—Check the wheel-lug nuts.

Check and torque the wheel lug nuts to 115 to 142 N·m (85 to 105 ft-lb).

Checking the Wheel-Hub Nuts

Service Interval: After the first 100 hours—Check the wheel-hub nuts.

Every 500 hours—Check the wheel-hub nuts.

Check and torque the wheel hub nuts to 286 to 352 N·m (211 to 260 ft-lb).

Cooling System Maintenance

Cleaning the Air-Intake Screen

Service Interval: Before each use or daily

Before each use, remove any buildup of snow, dirt, or other debris from the cylinder and cylinder-head cooling fins, air-intake screen on the flywheel end, and the carburetor-governor levers and linkage. This helps ensure that adequate cooling and correct engine speed, and reduces the possibility of overheating or mechanical damage to the engine.

Cleaning the Cooling System

Service Interval: Every 100 hours—Check and clean the engine cooling fins and shrouds.

1. Disengage the PTO and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Remove the air-intake screen and fan housing (Figure 54).
4. Clean the debris and grass from the engine parts.
5. Install the air-intake screen and the fan housing (Figure 54).

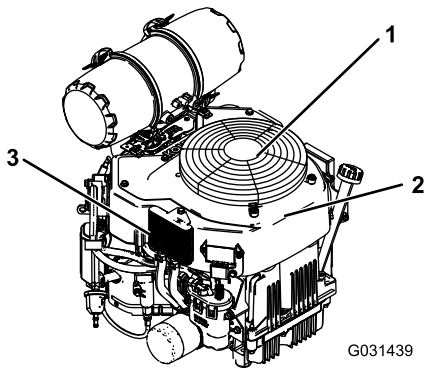

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Figure 54

1. Guard and engine air-intake screen
2. Fan housing
3. Engine-oil cooler

Brake Maintenance

Servicing the Brake

Before each use, check the brakes on a level surface and slope.

Always engage the parking brake when you shut off the machine or leave it unattended.

Important: **If the parking brake does not hold securely, adjust it.**

Checking the Parking Brake

Service Interval: Before each use or daily

1. Park the machine on a level surface and disengage the PTO.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Disengage the parking brake.
4. Engage the parking brake and ensure that the machine does not move.
5. Adjust the brake if needed; refer to Adjusting the Brakes (page 42).

Adjusting the Brakes

1. Remove the fuel tank; refer to Removing the Fuel Tank (page 35).
2. Loosen the bolt on the cable clamp on the left side of the machine.

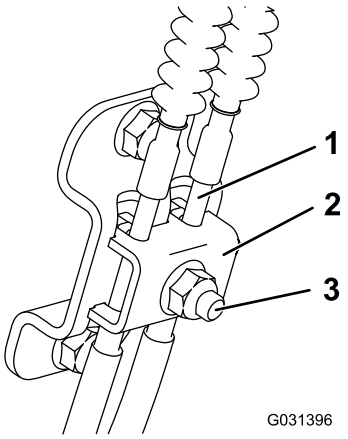

Figure 55

1. Cable
2. Cable clamp
3. Bolt and nut

3. Pull down on the cables until they are taut.
4. Tighten the nut.
5. Install the fuel tank, cross bracket, and cushion.

Belt Maintenance

Replacing the Transmission Belt

Service Interval: Every 1,000 hours—Replace the transmission belt.

1. Remove the fuel tank; refer to Removing the Fuel Tank (page 35).
2. Remove the hydraulic-reservoir cap.
3. Locate the drain plugs in the bottom of the transmission and place a drain pan under the plug (Figure 56).

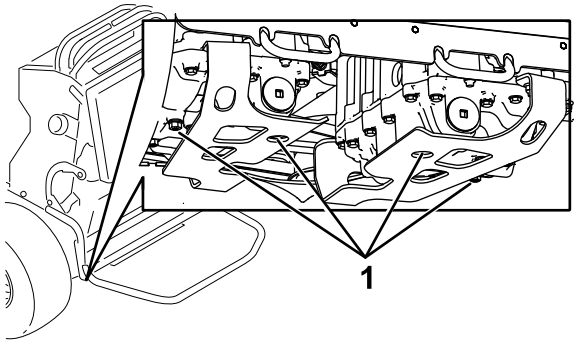

Figure 56

1. Drain plug

4. Allow the hydraulic fluid to drain from the machine.
5. Remove the lower hydraulic hose (Figure 57).

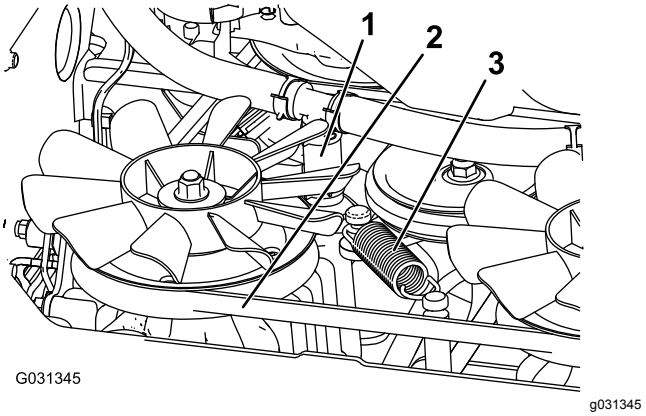

Figure 57

1. Lower hydraulic hose
2. Transmission belt
3. Tension spring

6. Remove the tension spring (Figure 57).

⚠ CAUTION

The spring is under tension when installed and can cause personal injury.

Wear safety glasses and be careful when removing the spring.

7. Remove the deck belt from the clutch and clutch stop (Figure 57).
8. Install the new belt.
9. Install the tension spring and lower hydraulic hose.
10. Install the drain plugs and torque to 22 to 27 N·m (16 to 20 ft-lb).
11. Add hydraulic fluid to the fill level.
12. Install the hydraulic-reservoir cap.
13. Run the machine for 10 minutes and verify that the hydraulic fluid is at the correct level.

Controls System Maintenance

Adjusting the Motion-Control Levers

If the motion-control levers do not align horizontally, adjust the right side motion-control lever.

1. Disengage the PTO, move the motion-control levers to the NEUTRAL-LOCK position, and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Push the motion-control levers down out of the NEUTRAL-LOCK position (Figure 58).
4. Check if the right motion-control lever aligns horizontally with the left motion-control lever (Figure 58).

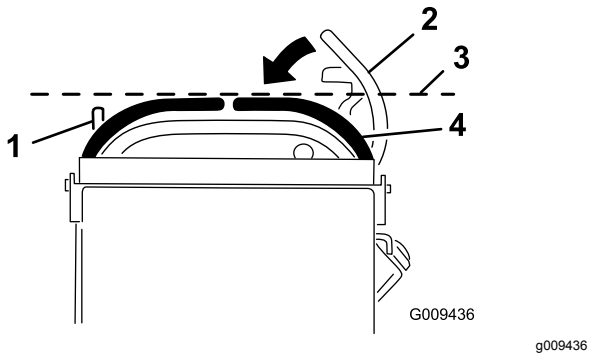

Figure 58

1. Left motion-control lever
2. Right motion-control lever in the Neutral-lock position
3. Check the horizontal alignment here
4. Right motion-control lever

5. To adjust the motion-control levers horizontally, you must adjust the cam.
6. Release the cushion from the rear of the machine.
7. Loosen the nut holding the cam (Figure 59).

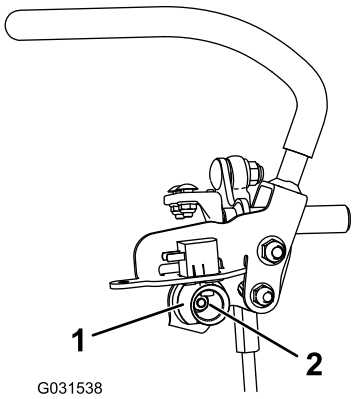

Figure 59

1. Cam
2. Nut

8. Adjust the cam until it aligns with the left motion-control lever and tighten the nut for the cam.

   Note: Moving the cam clockwise (in the vertical position) lowers the handle; moving the cam counterclockwise (in the vertical position) raises the handle.

   Important: **Ensure that the flat portion of the cam does not go above a vertical position (right or left); otherwise you may damage the switch.**

9. Repeat steps 3 through 8 for the left motion-control lever.

Hydraulic System Maintenance

Hydraulic System Safety

- **Ensure that all hydraulic-fluid hoses and lines are in good condition and all hydraulic connections and fittings are tight before applying pressure to the hydraulic system.**
- **Keep your body and hands away from pinhole leaks or nozzles that eject high-pressure hydraulic fluid.**
- **Use cardboard or paper to find hydraulic leaks.**
- **Safely relieve all pressure in the hydraulic system before performing any work on the hydraulic system.**
- **Seek immediate medical attention if fluid is injected into skin. Injected fluid must be surgically removed within a few hours by a doctor.**

Hydraulic System Specifications

Hydraulic Fluid Type: Toro® HYPR-OIL™ 500 hydraulic fluid

Hydraulic System Fluid Capacity: 4.7 L (159 fl oz)

Important: **Use the fluid specified. Other fluids could damage the system.**

Checking the Hydraulic Fluid

Service Interval: After the first 8 hours

Every 500 hours

Note: Check the hydraulic-fluid level when the fluid is cold.

1. Park the machine on a level surface, disengage the PTO, and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Clean the area around the cap and the filler neck of the hydraulic tank (Figure 60).

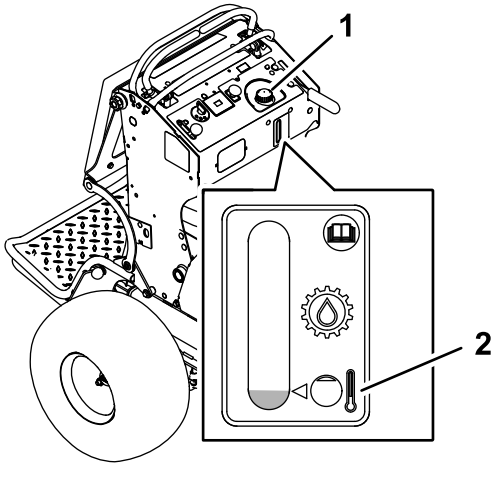

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Figure 60

1. Hydraulic-tank cap
2. Fill level

4. Remove the cap from the filler neck (Figure 60).

   Note: Look inside to check the fluid level in the reservoir.

5. Add fluid to the reservoir until it reaches the reaches the minimum cold fill level.
6. Install the cap on the filler neck.

Replacing the Hydraulic Fluid and Filters

Service Interval: After the first 50 hours

Every 500 hours/Yearly (whichever comes first)—Change the hydraulic filters and hydraulic fluid.

Change the hydraulic fluid more frequently in severe conditions or in a hot operating climate. Contact your Authorized Service Dealer for a hydraulic kit to replace the hydraulic filters.

⚠ WARNING

Hot hydraulic fluid can cause severe burns.

Allow the hydraulic fluid to cool before performing any maintenance on the hydraulic system.

1. Park the machine on a level surface, disengage the PTO, and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Remove the fuel tank; refer to Removing the Fuel Tank (page 35).
4. Remove the hydraulic-reservoir cap.
5. Locate the drain plug in the bottom of each transmission and place a drain pan under the plugs (Figure 61).

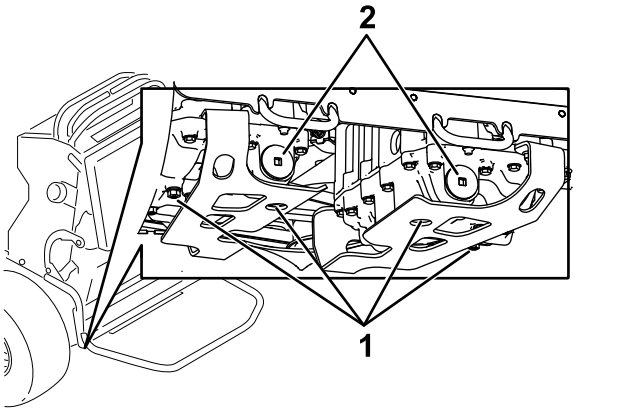

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Figure 61

1. Drain plug
2. Hydraulic filter

6. Remove the drain plugs.
7. Allow the hydraulic fluid to fully drain from the machine.
8. Remove the hydraulic filter cap and filter from each transmission.
9. Install new hydraulic filters with the spring side facing out and install the filter caps.

10. Install the drain plugs and torque to 22 to 27 N·m (16 to 20 ft-lb).
11. Loosen the vent plug in each transmission so that it is loose and wobbles (Figure 62).

    Note: This allows air to escape the hydraulic system as you add hydraulic fluid.

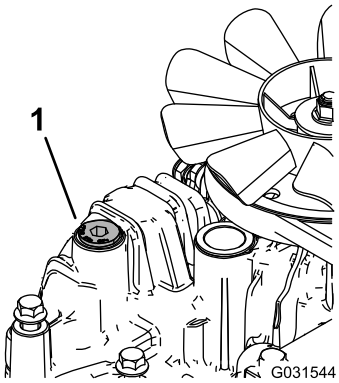

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Figure 62
Left transmission shown

1. Vent plug

12. Slowly add fluid to the hydraulic tank until it starts to come out 1 of the vent plugs.

    Important: **Use the fluid specified in Hydraulic System Specifications (page 44) or equivalent. Other fluids could cause system damage.**

    Important: **Monitor the level of fluid in the hydraulic tank so that you do not overfill it.**
13. Tighten the vent plugs.
14. Install the hydraulic-tank cap.
15. Install the fuel tank.
16. Start the engine and let it run for about 2 minutes to purge air from the system.
17. Shut off the engine and check for leaks.

    Note: If 1 or both wheels do not drive, refer to Bleeding the Hydraulic System (page 46).

Bleeding the Hydraulic System

The traction system is self-bleeding, however, it may be necessary to bleed the system if fluid is changed or after work is performed on the system.

1. Park the machine on a level surface, disengage the PTO, and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Raise the rear of the machine onto jack stands high enough to raise the drive wheels off the ground.
4. Start the engine and move the throttle control to the idle position.

   Note: If the drive wheel does not rotate, assist the purging of the system by carefully rotating the tire in the forward direction.
5. Check the hydraulic fluid level as it drops, and add fluid as required to maintain the proper level.
6. Repeat this procedure for the opposite wheel.

Cleaning

Disposing of the Waste

Engine oil, batteries, hydraulic fluid, and engine coolant are pollutants to the environment. Dispose of these according to your state and local regulations.

Storage

Cleaning and Storage

1. Disengage the PTO, engage the parking brake, turn the ignition key to off, and remove the key.
2. Remove snow, dirt, and grime from the external parts of the entire machine, especially the engine.

   Important: **You can wash the machine with a mild detergent and water. Do not pressure wash the machine. Avoid excessive use of water, especially near the drive system and engine. Pressure washing can force dirt and water into critical parts, such as spindle bearings and electrical switches.**
3. Clean any dirt and chaff from the outside of the engine cylinder head fins and blower housing.
4. Check the brake; refer to Checking the Parking Brake (page 42).
5. Service the air cleaner; refer to Servicing the Air Cleaner (page 28).
6. Grease the machine; refer to Lubrication (page 26).
7. Change the engine oil; refer to Changing the Engine Oil (page 31).
8. Check the tire pressure; refer to Checking the Tire Pressure (page 39).
9. For long-term storage, do the following:
   A. Add stabilizer/conditioner additive to the fuel in the tank.
   B. Run the engine to distribute the conditioned fuel through the fuel system (5 minutes).
   C. Shut off the engine, allow it to cool, and drain the fuel tank; refer to Draining the Fuel Tank (page 35), or operate the engine until it shuts off.
   D. Start the engine and allow it to run until it stops. Repeat, on Choke until engine does not start.
   E. Dispose of fuel properly. Recycle as per local regulations.

      Note: Do not store fuel with stabilizer/conditioner over 90 days.
10. Remove the spark plug(s) and check its condition; refer to Servicing the Spark Plug (page 33). With the spark plug(s) removed from the engine, pour 2 tablespoons of engine oil into the spark plug hole. Now use the starter to crank the engine and distribute the oil inside the cylinder. Install the spark plug(s). Do not install the wire on the spark plug(s).

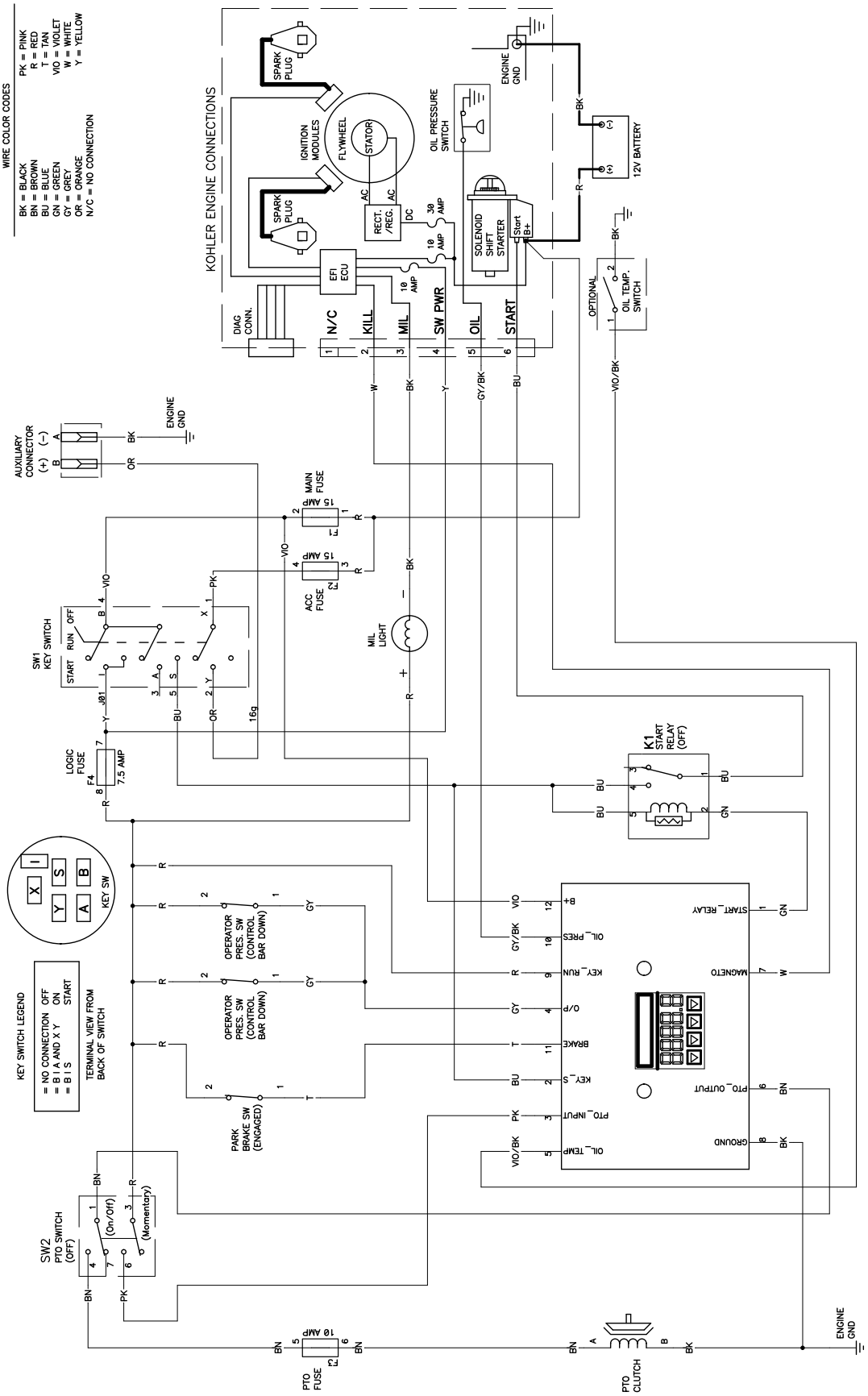
11. Check and tighten all of the bolts, nuts, and screws. Repair or replace any part that is damaged or defective.
12. Paint all of the scratched or bare metal surfaces. Paint is available from your Authorized Service Dealer.
13. Store the machine in a clean, dry, garage or storage area. Remove the key from the ignition switch and store it in a memorable place. 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 fuel tank is empty or the shutoff valve is closed. 2. A spark-plug wire is loose or disconnected. 3. A spark plug is pitted, fouled, or the gap is incorrect. 4. The air cleaner is dirty. 5. Dirt is in the fuel filter. 6. Dirt, water, or stale fuel is in the fuel system. 7. The gap between the safety-interlock switches is not correct.	1. Fill the fuel tank with gasoline and open the valve 2. Install the wire on spark plug. 3. Install a new, correctly gapped spark plug. 4. Service the air-cleaner element. 5. Replace the fuel filter. 6. Contact an Authorized Service Dealer. 7. Contact an Authorized Service Dealer.
The engine loses power.	1. The engine load is excessive. 2. The air cleaner is dirty. 3. The oil level in the crankcase is low. 4. The cooling fins and air passages under the engine blower housing are plugged. 5. A spark plug is pitted, fouled, or the gap is incorrect. 6. The vent hole in the fuel cap is plugged. 7. Dirt is in the fuel filter. 8. Dirt, water, or stale fuel is in the fuel system.	1. Reduce the ground speed. 2. Service the air cleaner element. 3. Add oil to the crankcase. 4. Remove the obstruction from the cooling fins and air passages. 5. Install a new, correctly gapped spark plug. 6. Clean or replace the fuel cap. 7. Replace the fuel filter. 8. Contact an Authorized Service Dealer.
The engine overheats.	1. The engine load is excessive. 2. The oil level in the crankcase is low. 3. The cooling fins and air passages under the engine blower housing are plugged.	1. Reduce the ground speed. 2. Add oil to the crankcase. 3. Remove the obstruction from the cooling fins and air passages.
The machine does not drive.	1. The hydraulic-fluid reservoir is low. 2. Air is in the hydraulic system. 3. A pump-drive belt slips. 4. A pump-drive belt idler spring is missing. 5. The pump-bypass valves are open.	1. Add hydraulic fluid to the reservoir. 2. Bleed the air out the hydraulic system. 3. Replace the pump drive belt. 4. Replace the pump drive belt idler spring. 5. Tighten the bypass valves. Torque to 12 to 15 N·m (9 to 11 ft-lb).
There is abnormal vibration.	1. The engine-mounting bolts are loose. 2. An engine pulley is loose. 3. An engine pulley is damaged.	1. Tighten the engine-mounting bolts. 2. Tighten the appropriate pulley. 3. Contact an Authorized Service Dealer.

Problem	Possible Cause	Corrective Action
The malfunction indicator light (MIL) comes on.	1. The engine is too hot.	1. Turn the engine off and let it cool.
	2. There is old fuel in the fuel tank.	2. Use new fuel.
	3. The fuel-shutoff valve is not open completely.	3. Open the fuel-shutoff valve.
	4. The air cleaner is dirty.	4. Make sure that the air cleaner and precleaner are clean. Replace them if necessary.
	5. The battery is not charged.	5. Charge or replace the battery.
	6. Incorrect fuel filters are being used or the fuel filters are dirty.	6. Contact an Authorized Service Dealer.
	7. The connections to the sensors electronic control unit (ECU) and fuel injectors are not secured properly.	7. Contact an Authorized Service Dealer.
	8. There is low voltage from the battery.	8. Ensure that a good 12 V battery is being used and is fully charged.
	9. A fuse is blown.	9. Check and replace any blown fuses.

Schematics



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Electrical Schematic (Rev. A)

The Toro Warranty

A Limited Warranty (see warranty periods below)

Landscape Contractor Equipment (LCE)

Riding Product

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly promise to repair the Toro Products listed below if defective in materials or workmanship.

The following time periods apply from the original date of purchase:

Products	Warranty Period
GrandStand® Mowers	5 years or 1,200 hours[2]
• Engines[3]	3 years
Z Master® 3000 Series Mowers	5 years or 1,200 hours[2]
• Engines[3]	3 years
Z Master® 5000 Series Mowers	5 years or 1,200 hours[2]
• Engines[3]	3 years
Z Master® 6000 Series Mowers	5 years or 1,400 hours[2]
• Engines[3]	3 years
Z Master®7000 Series Mowers	4 years or 1,200 hours[2]
• Engines[3]	2 years
Z Master®8000 Series Mowers	2 years
• Engines[3]	3 years
TITAN HD 1500 Series	4 years or 500 Hours [2]
• Engines	Toro – 4 years or 500 hours
TITAN HD 2000 Series	4 years or 750 Hours [2]
• Engines[3]	Kohler – 3 years
TITAN HD 2500 Series	4 years or 1000 Hours [2]
• Engines[3]	Kawasaki – 3 years
All Mowers	
• Battery	90 days Parts and Labor 1 year Parts only
• Belts and Tires	90 days
• Attachments	1 year

[1]Residential use means use of the product on the same lot as your home. Use at more than one location is considered commercial use and the commercial warranty would apply.

[2]Whichever occurs first.

[3]Some engines used on Toro Products are warranted by the engine manufacturer.

Owner Responsibilities

You must maintain your Toro Product by following the maintenance procedures described in the *Operator's Manual*. Such routine maintenance, whether performed by a dealer or by you, is at your expense.

Instructions for Obtaining Warranty Service

If you think that your Toro Product contains a defect in materials or workmanship, follow this procedure:

1. Contact any Authorized Toro Service Dealer to arrange service at their dealership. To locate a dealer convenient to you, access our web site at www.Toro.com. You may also call the numbers listed in item #3 to use the 24-hour Toro Dealer locator system.
2. Bring the product and your proof of purchase (sales receipt) to the Service Dealer. The dealer will diagnose the problem and determine if it is covered under warranty.
3. If for any reason you are dissatisfied with the Service Dealer's analysis or with the assistance provided, contact us at:

   Toro Warranty Company
   Customer Care Department, RLC Division
   8111 Lyndale Avenue South
   Bloomington, MN 55420-1196
   888-865-5676 (U.S. Customers)
   888-865-5691 (Canada customers)

Items and Conditions Not Covered

There is no other express warranty except for special emission system coverage and engine warranty coverage on some products. This express warranty does not cover the following:

- Cost of regular maintenance service or parts, such as filters, fuel, lubricants, oil changes, spark plugs, air filters, blade sharpening or worn blades, cable/linkage adjustments, or brake and clutch adjustments
- Components failing due to normal wear
- Any product or part which has been altered, misused, neglected, or requires replacement or repair due to accidents or lack of proper maintenance
- Pickup and delivery charges
- Repairs or attempted repairs by anyone other than an Authorized Toro Service Dealer
- Repairs necessary due to failure to follow recommended fuel procedure (consult *Operator's Manual* for more details)
  - Removing contaminants from the fuel system is not covered
  - Use of old fuel (more than one month old) or fuel which contains more than 10% ethanol or more that 15% MTBE
  - Failure to drain the fuel system prior to any period of non-use over one month

General Conditions

All repairs covered by these warranties must be performed by an Authorized Toro Service Dealer using Toro approved replacement parts.

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.

All implied warranties of merchantability (that the product is fit for ordinary use) and fitness for use (that the product is fit for a particular purpose) are limited to the duration of the 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.

Countries Other than the United States or Canada

Customers who have purchased Toro products outside 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. If all other remedies fail, you may contact us at Toro Warranty Company.

Australian Consumer Law: Australian customers will find details relating to the Australian Consumer Law either inside the box or at your local Toro Dealer.