Form No. 3462-474 Rev B

TORO®

Count on it.

Operator's Manual

e-Dingo 500 Compact Tool Carrier

Model No. 22219—Serial No. 400000000 and Up
Model No. 22219G—Serial No. 400000000 and Up

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

CE UK CA

3462-474

This product complies with all relevant European directives; for details, please see the separate product specific Declaration of Conformity (DOC) sheet.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by Toro could void the user's authority to operate the equipment.

In addition, while in charging mode this equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

⚠ WARNING

CALIFORNIA
Proposition 65 Warning

The power cord on this product contains lead, a chemical known to the State of California to cause birth defects or other reproductive harm. Wash hands after handling.

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 machine is a compact tool carrier intended for use in various earth and materials moving activities for landscaping and construction work. It is designed to operate a wide variety of attachments, each of which performs a specialized function. Use this machine in temperatures of -18 to 38°C (0 to 100 °F). Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

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.

Visit 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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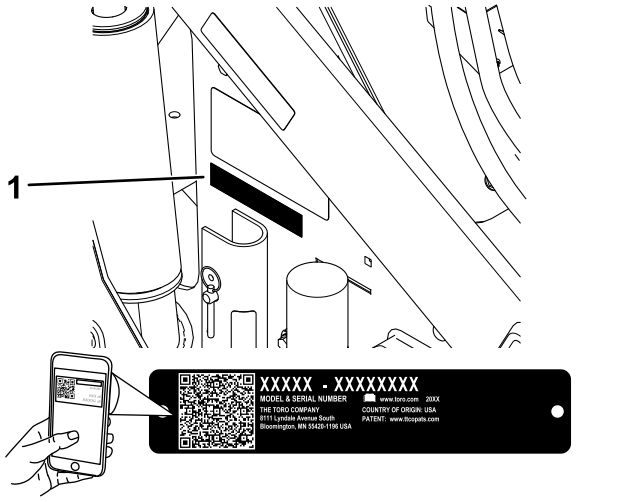

g414804

Figure 1

1. Model and serial number location

Model No. _____

Serial No. _____

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

g000502

Figure 2

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.

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Safety

General Safety

⚠ DANGER

There may be buried utility lines in the work area. Digging into them may cause a shock or an explosion.

Have the property or work area marked for buried lines and do not dig in marked areas. Contact your local marking service or utility company to have the property marked (for example, in the US, call 811 or in Australia, call 1100 for the nationwide marking service).

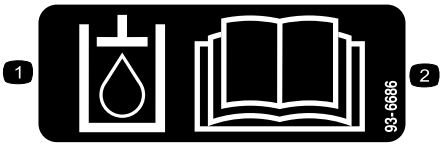
Always follow all safety instructions to avoid serious injury or death. Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

- Do not exceed the rated operating capacity, as the machine may become unstable, which may result in loss of control.
- Do not carry a load with the arms raised; always carry loads close to the ground.
- Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. **Operating the machine on any slope or uneven terrain requires extra caution.**
- **Operate the machine up and down slopes with the heavy end of the machine uphill and the load close to the ground.** Weight distribution changes with attachments. An empty bucket makes the rear of the machine the heavy end, and a full bucket makes the front of the machine the heavy end. Most other attachments make the front of the machine the heavy end.
- Have the property or work area marked for buried lines and other objects, and do not dig in marked areas.
- Read and understand the content of this *Operator's Manual* before starting the machine.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Never allow children or untrained people to operate the machine.
- Keep your hands and feet away from the moving components and attachments.
- Do not operate the machine without the guards and other safety protective devices in place and working on the machine.
- Keep bystanders and children out of the operating area.
- Stop the machine, shut off the machine, and remove the key before servicing 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.

Safety and Instructional Decals

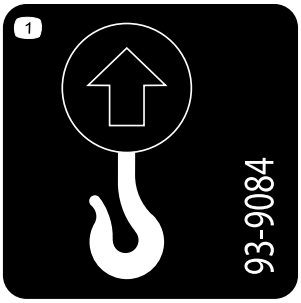
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



decal93-6686

93-6686

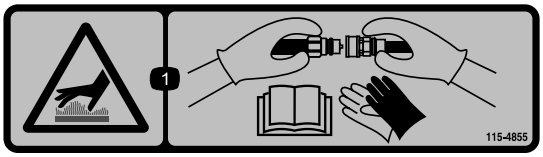
1. Hydraulic fluid
2. Read the *Operator's Manual*.



decal93-9084

93-9084

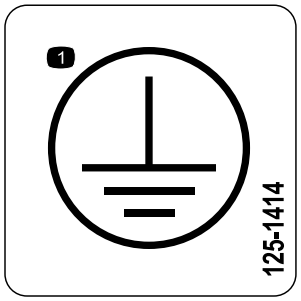
1. Lift point



decal115-4855

115-4855

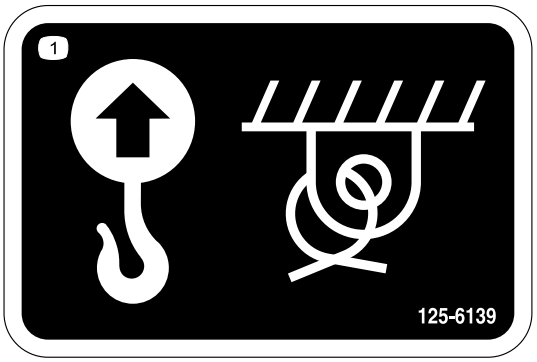
1. Hot surface/burn hazard—wear protective gloves when handling the hydraulic couplers and read the *Operator's Manual* for information on handling hydraulic components.



decal125-1414

125-1414

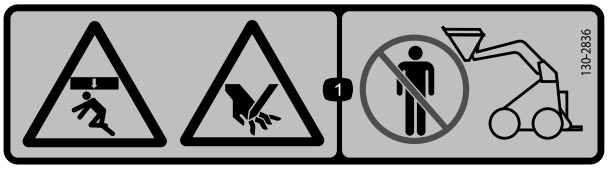
1. Earth (ground) terminal location



decal125-6139

125-6139

1. Lift point and tie-down point



decal130-2836

130-2836

1. Crushing hazard from above; cutting hazard of the hand—keep away from the attachment and the lift arm.

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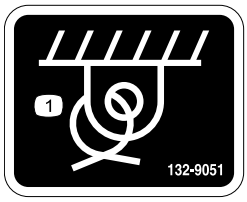
decal130-2837

130-2837

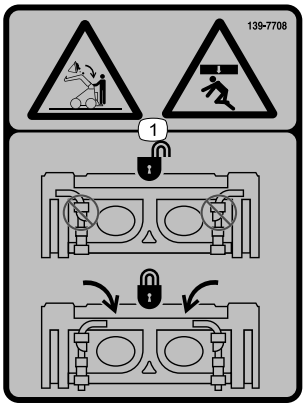
1. Warning—do not carry passengers in the bucket.



decal132-9051

132-9051

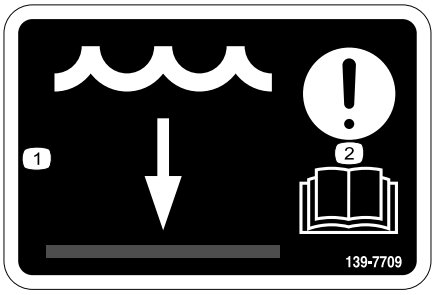
1. Tie-down point



decal139-7708

139-7708

1. Crushing hazard from above, falling load—ensure that the quick-attach levers are locked.



decal139-7709

139-7709

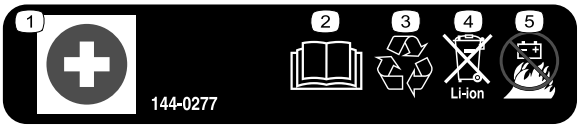
1. Water level
2. Attention—read the *Operator's Manual*.

---

decal144-0275

144-0275

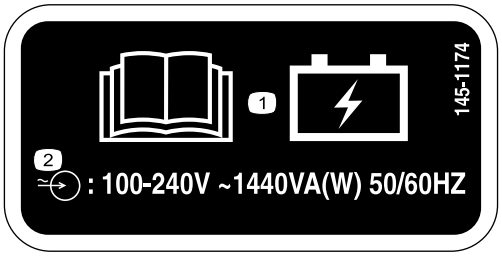
1. Batteries are flammable.



decal144-0277

144-0277

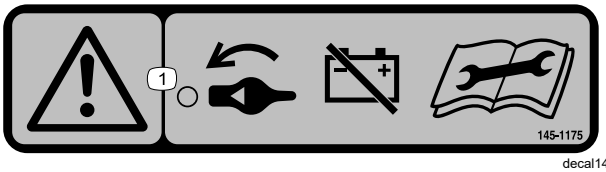
1. Positive terminal
2. Read the *Operator's Manual*.
3. Recycle the battery.
4. Do not dispose improperly.
5. Do not expose to fire.



decal145-1174

145-1174

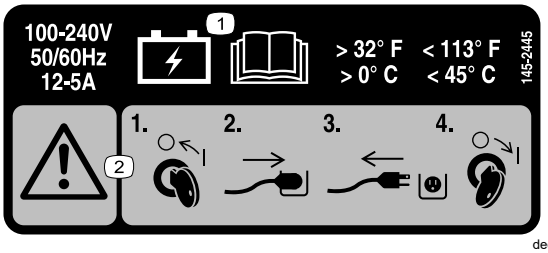
1. Read the *Operator's Manual* for battery charging information.
2. Battery charger input specifications.



decal145-1175

145-1175

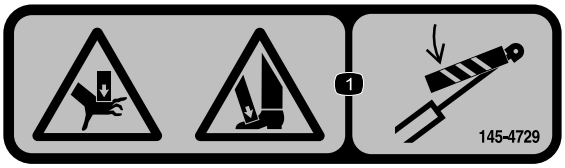
1. Warning—turn the battery disconnect switch to the OFF position before performing maintenance.



decal145-2445

145-2445

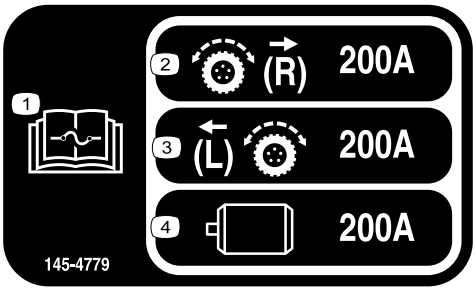
1. Keep the battery at a temperature above 0°C (32°F) and below 45°C (113°F); read the *Operator's Manual*.
2. Warning—turn the machine off before plugging it in; unplug the machine before turning it on.



decal145-4729

145-4729

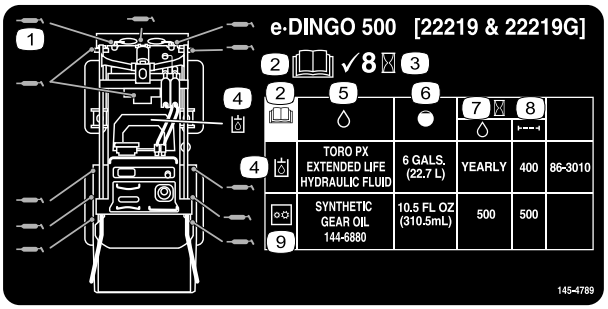
1. Crushing hazard of hands or feet—install the cylinder lock.



decal145-4779

145-4779

1. Read the *Operator's Manual* for fuse information.
2. Right traction
3. Left traction
4. Hydraulic motor



decal145-4789

145-4789

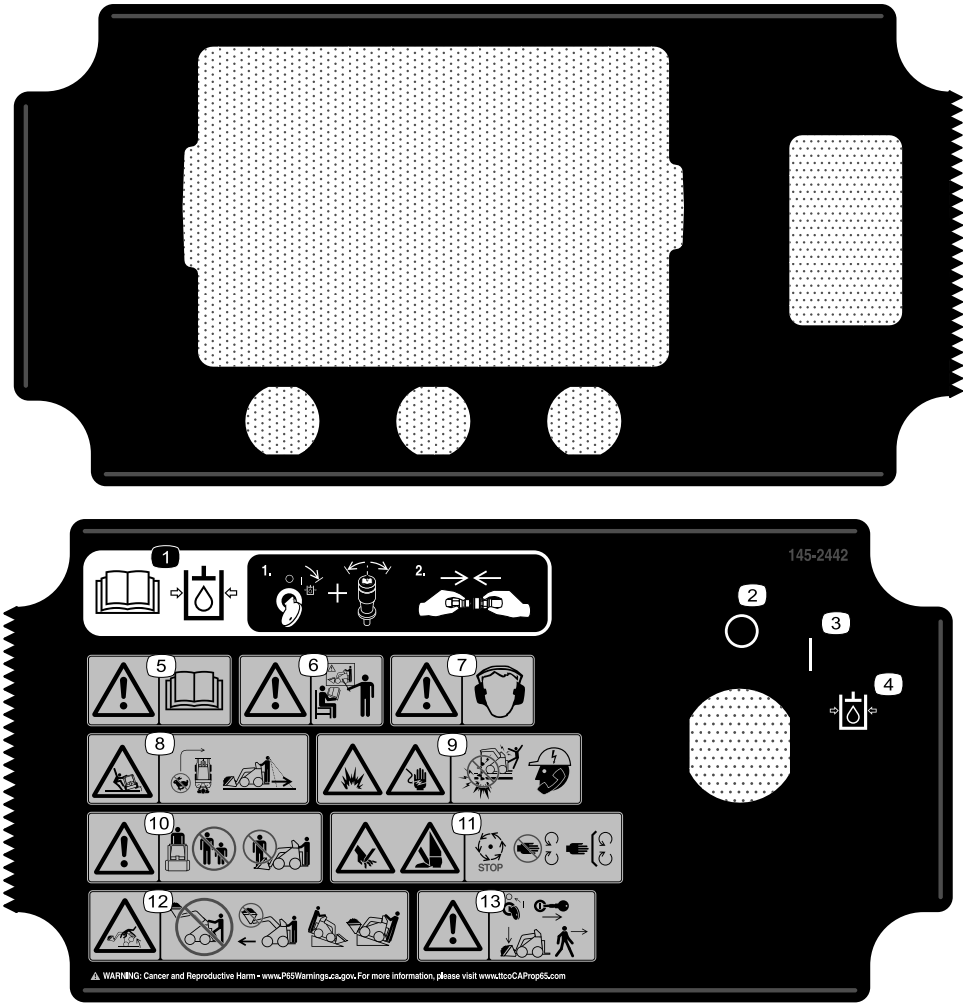
1. Grease points
2. Read the Operator's Manual.
3. Check every 8 hours.
4. Hydraulic fluid
5. Fluids
6. Capacity
7. Fluid interval (hours)
8. Filter interval (hours)
9. Gearbox

---

decal147-0290

147-0290

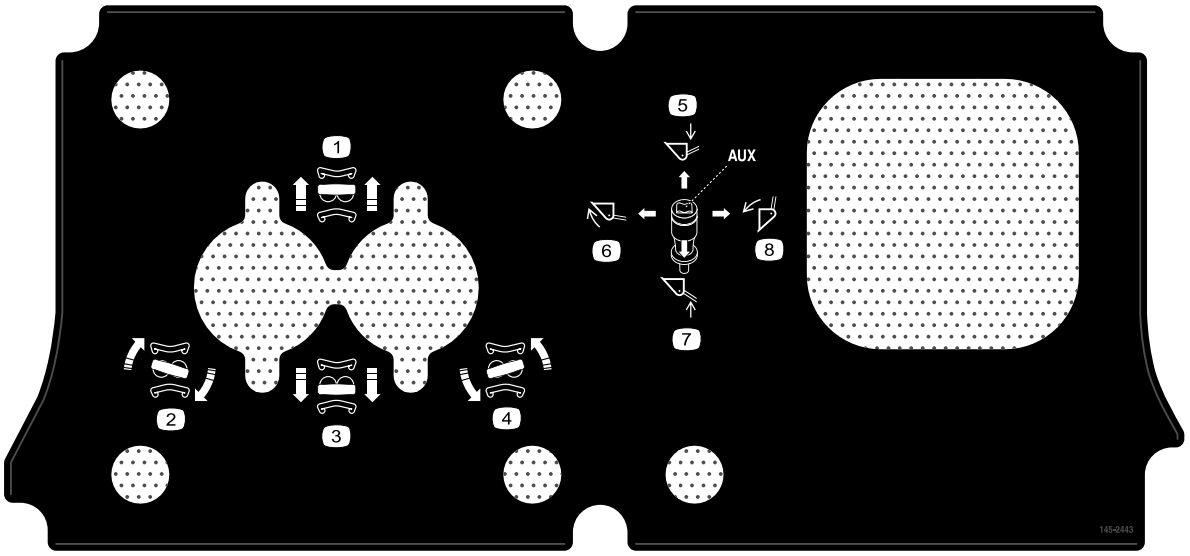
1. Warning—light is bright; do not look directly into the light.



decal145-2442

145-2442

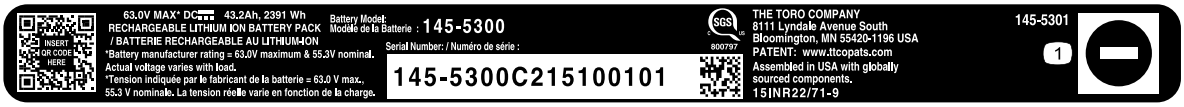
1. Read the *Operator's Manual* before connecting or disconnecting the auxiliary hydraulic couplers—1) Turn and hold the key in the auxiliary hydraulic relief position and press the auxiliary-hydraulic control switch back and forth to relieve hydraulic pressure; 2) Connect or disconnect the auxiliary hydraulic couplers.
2. Off
3. On
4. Auxiliary hydraulic relief position
5. Warning—read the *Operator's Manual*.
6. Warning—receive training before operating the machine.
7. Warning—wear hearing protection.
8. Tipping hazard—do not make fast turns; always check behind you before reversing the machine.
9. Explosion hazard; electrocution hazard—call the local utilities hotline before beginning work in an area.
10. Warning—keep away from the attachment when operating the machine; keep bystanders away from the machine.
11. Cutting/severing hazard of hand or foot—wait for all moving parts to stop before servicing; keep away from moving parts; keep all guards and shields in place.
12. Tipping hazard—do not step off the operator platform with the load raised; do not drive the machine with the load raised; always move up or down slopes with the attachment lowered; never drive on a slope with the attachment raised; always operate with the heavy end uphill; always carry loads low; never jerk the control levers; use a steady, even motion.
13. Warning—engage the parking brake, lower the attachment to the ground, shut off the machine, and remove the key from the key switch before leaving the machine.



decal145-2443

145-2443

1. Move forward
2. Turn right
3. Move rearward
4. Turn left
5. Lower the attachment
6. Tilt the attachment rearward
7. Raise the attachment
8. Tilt the attachment forward



decal145-5301

145-5301

1. Negative battery terminal

---

decal145-5338

145-5338

1. Warning—read the *Operator's Manual*.
2. Warning—do not open the battery; do not use a damaged battery.
3. Explosion hazard—do not expose to sparks or open flame.
4. Electric shock hazard—do not perform maintenance on the battery.
5. Electric shock hazard

Setup

1

Checking the Hydraulic Fluid Level

No Parts Required

Procedure

Before starting the machine for the first time, check the hydraulic-fluid level; refer to Checking the Hydraulic-Fluid Level (page 35).

2

Charging the Batteries

No Parts Required

Procedure

Charge the batteries; refer to Charging the Batteries (page 24).

Product Overview

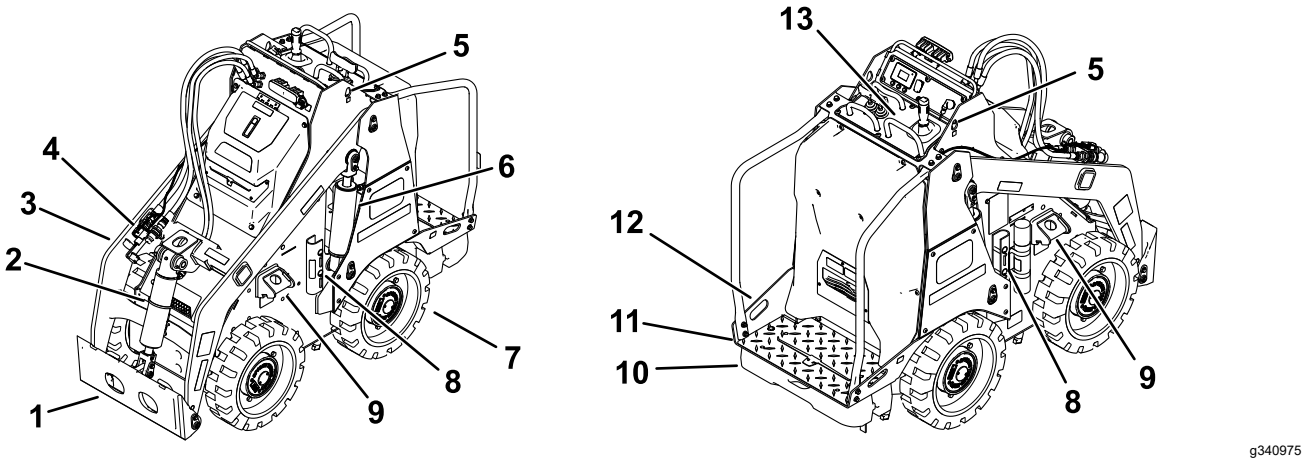


Figure 3

1. Attachment mount plate
2. Tilt cylinder
3. Loader arm
4. Auxiliary hydraulic couplers
5. Lift point
6. Lift cylinder
7. Wheel
8. Cylinder locks
9. Tie-down/lift point
10. Counterweight
11. Operator platform
12. Tie-down point
13. Control panel

Controls

Control Panel

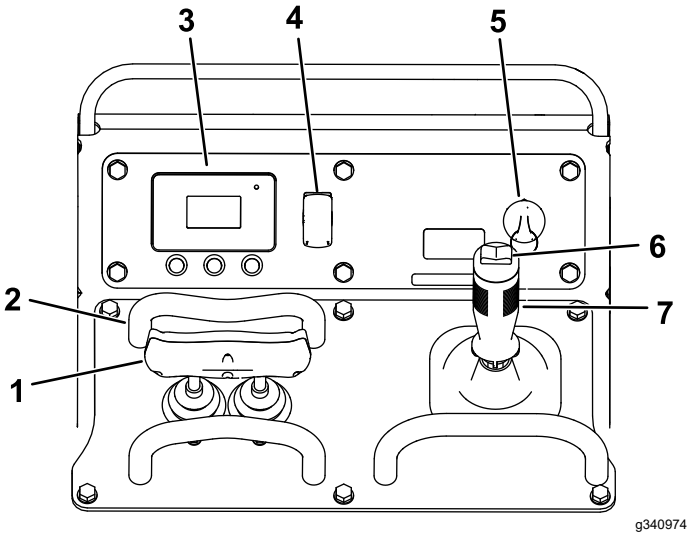


Figure 4

1. Traction control
2. Reference bar
3. InfoCenter
4. Light switch
5. Key switch
6. Auxiliary-hydraulics control
7. Loader-arm/attachment tilt lever

Key Switch

The key switch has 3 positions: ON, OFF, and AUXILIARY HYDRAULIC RELIEF.

Use the key switch to start, shut off, and relieve auxiliary hydraulic pressure on the machine.

Parking Brake

The parking brake engages automatically when you stop the machine and release the traction control to neutral. An icon appears on the InfoCenter display when the parking brake is engaged.

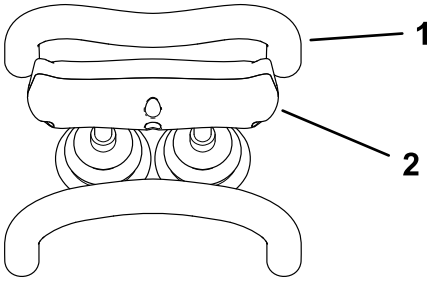
The parking brake disengages when you move the traction control.

Reference Bar

When driving the traction unit, use the reference bar as a handle and a leverage point for controlling the traction control and the auxiliary-hydraulics lever. To ensure smooth, controlled operation, do not take your hands off the reference bars while operating the machine.

Traction Control

Use the traction control to move the machine. The farther you move the traction control in any direction, the faster the machine moves in that direction. Release the traction control to stop the machine.

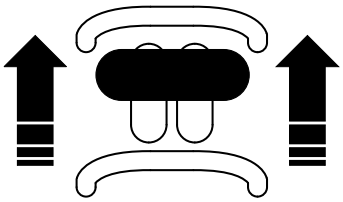


g264835

Figure 5

1. Reference bar
2. Traction control

- To move forward, move the traction control forward.

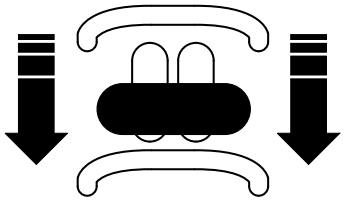


g264830

Figure 6

- To move rearward, move the traction control rearward.

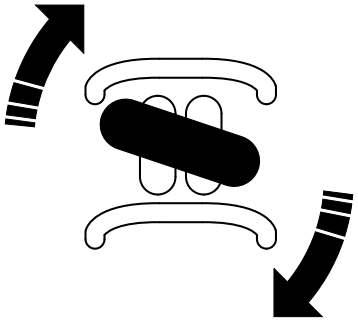
  Important: **When reversing, look behind you for obstructions and keep your hands on the reference bar.**



g264831

Figure 7

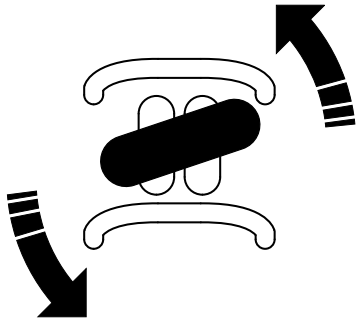
- To turn right, rotate the traction control clockwise.



g264833

Figure 8

- To turn left, rotate the traction control counterclockwise.



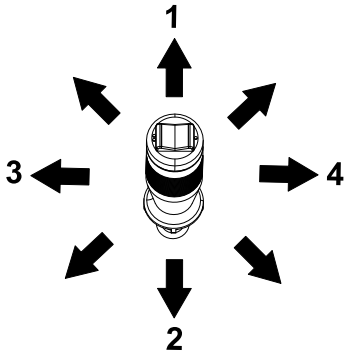
g264832

Figure 9

- To stop the machine, release the traction control.

Loader Arm/Attachment-Tilt Lever

Slowly move the lever to operate the loader arms and tilt the attachment.



g386336

Figure 10

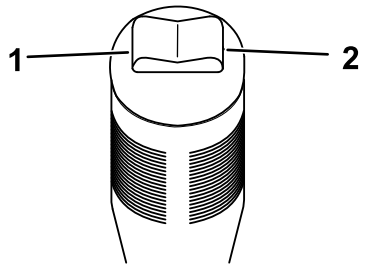
1. Lower the loader arms.
2. Raise the loader arms.
3. Tilt the attachment rearward.
4. Tilt the attachment forward.

By moving the lever to an intermediate position (e.g., forward and left), you can move the loader arms and tilt the attachment at the same time.

Loader-Control-Reference Bar

The loader-control-reference bar helps stabilize your hand while operating the loader arm/attachment-tilt lever (Figure 4).

Auxiliary-Hydraulics Controls



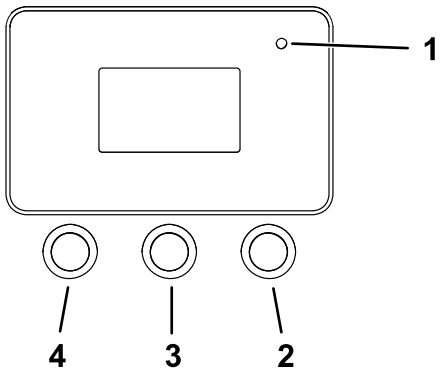
g386338

Figure 11

1. Operate auxiliary hydraulics in the forward direction.
2. Operate auxiliary hydraulics in the reverse direction.

InfoCenter Display

The InfoCenter LCD display shows information about your machine, such as the operating status and various diagnostics. There is a splash screen and main information screen of the InfoCenter. To switch between the splash screen and main information screen at any time, press any InfoCenter button and then press the right button.



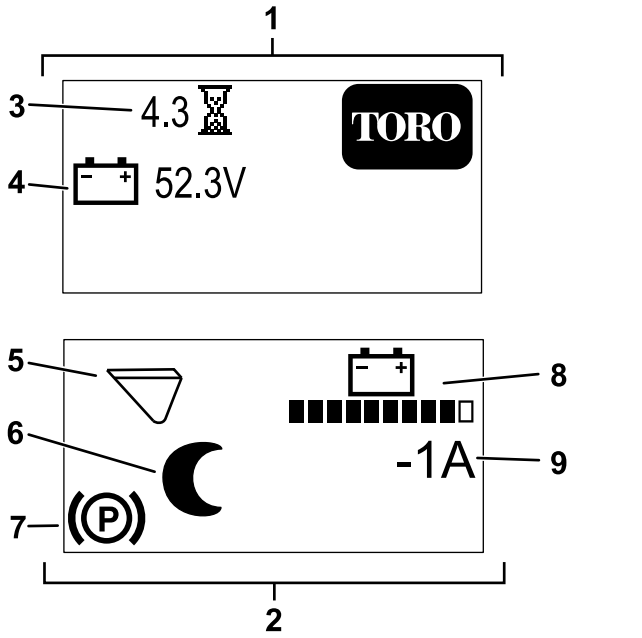
g264015

Figure 12

1. Indicator light
2. Right button—open a menu where a right arrow indicates additional content
3. Middle button—scroll down menus
4. Left button—access menus and exit any menu

Note: The purpose of each button may change depending on what is required at the time. Each button is labeled with an icon displaying its current function.

The splash screen displays for a few seconds after you turn the key to the ON position and then the run screen displays.



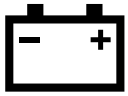
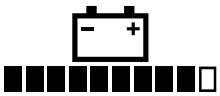
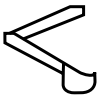
g390675

Figure 13

1. Splash screen
2. Run screen
3. Hours operated
4. Battery voltage
5. Attachment mode (Bucket Mode shown)
6. Sleep mode is active.
7. Parking brake is engaged.
8. Battery charge
9. Instantaneous machine amperage

InfoCenter Icon Descriptions

	Menu access
	Next
	Previous
	Scroll down
	Enter
	Change the current selection.
	Increase
	Decrease
	Exit menu

	Check PIN entry
	Parking brake is engaged.
	Hour meter
	Battery voltage
	Battery charge—each solid bar represents the charge in 10% increments.
	Sleep Mode is active.
	Cold Start Mode is active.
	Bucket Mode is active.
	Backhoe Mode is active.

InfoCenter Menus

To access the InfoCenter menu system, press the menu access button while at the main screen. This will bring you to the main menu. Refer to the following tables for a synopsis of the options available from the menus:

Main Menu

Menu Item	Description
FAULTS	The FAULTS menu contains a list of the recent machine faults. Refer to the *Service Manual* or your Authorized Service Dealer for more information on the FAULTS menu.
SERVICE	The SERVICE menu contains information on the machine such as hours of use and other similar numbers.
DIAGNOSTICS	The DIAGNOSTICS menu displays the state of each machine switch, sensor, and control output. Use this information to troubleshoot certain issues, as it quickly tells you which machine controls are on or off.
SETTINGS	The SETTINGS menu allows you to customize and modify configuration variables on the InfoCenter display.
ABOUT	The ABOUT menu lists the model number, serial number, and software version of your machine.

Faults

Menu Item	Description
CURRENT	Lists the total number of key-on hours (i.e., hours that the key has been in the ON position).
LAST	Indicates the last key-on hour that the fault occurred on.
FIRST	Indicates the first key-on hour that the fault occurred on.
OCCURRENCES	Indicates the number of fault occurrences.

Service

Menu Item	Description
HOURS	Lists the total number of hours that the key, motors, and attachment modes have been on and the hours that the traction controls and hydraulics have been engaged.
COUNTS	Lists the number of hydraulic motor starts, charge cycles, and low battery alerts.
TRACTION CALIBRATION	Calibrates the traction control.

Diagnostics

Menu Item	Description
BATTERY	Indicates the inputs and outputs for the battery. Inputs include the current battery voltage; outputs include the battery current and percentage state of charge.
CAN	Indicates the status, health, and utilization of the CAN bus.
MOTOR CONTROL	Indicates the inputs and outputs for the motor control. Inputs include key run, key start, parking brake, auxiliary, raise/lower, bucket curl, backhoe seat, logic voltage, motor voltage, DC current; use these to check input feedback on the machine. Outputs include motor speed (in rpm), phase current, motor torque, controller temperature, motor temperature, electromechanical brake, contactor, auxiliary, 5 and 12 V supply, and drivers.

Settings

Menu Item	Description
LANGUAGE	Controls the language used on the InfoCenter.
BACKLIGHT	Controls the brightness of the LCD display
CONTRAST	Controls the contrast of the LCD display.
PROTECTED MENUS	Allows you to access protected menus by inputting a passcode.

About

Menu Item	Description
MODEL	Lists the model number of the machine
SERIAL	Lists the serial number of the machine
S/W REV	Lists the software revision of the master controller.
MOTOR CTRL SW	Lists the software revision of the motor control.
BATTERY SW	Lists the software revision of the battery.

Specifications

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

Width	76 cm (30 inches)
Length	168 cm (66 inches)
Height	138 cm (54 inches)
Weight (without attachment)	1062 kg (2342 lb)
Rated operating capacity—with 74.8 kg (165 lb) operator and the standard bucket	234 kg (515 lb)
Tipping capacity—with 74.8 kg (165 lb) operator and the standard bucket	567 kg (1251 lb)
Wheelbase	71 cm (28 inches)
Dump height (with standard bucket)	160 cm (63 inches)
Reach—fully raised (with standard bucket)	55 cm (22-1/2 inches)
Height to hinge pin (narrow bucket in standard position)	206 cm (81 inches)
Average ground pressure (with empty standard bucket)	579 kPa (84 psi)
Average ground pressure (at rated operating capacity)	620 kPa (90 psi)

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 authorized Toro distributor or go to www.Toro.com for a list of all approved attachments and accessories.

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.

Operation

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 or require certified training 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 decals.
- Always engage the parking brake, shut off the machine, remove the key, wait for all moving parts to stop, and allow the machine to cool before adjusting, servicing, cleaning, or storing the machine.
- Know how to stop the machine and shut off the machine quickly.
- Check that the safety switches and shields are attached and functioning properly. Do not operate the machine unless they are functioning properly.
- Locate the pinch-point areas marked on the machine and attachments; keep your hands and feet away from these areas.
- Before operating the machine with an attachment, ensure that the attachment is properly installed and that it is a genuine Toro attachment. Read all the attachment manuals.
- Evaluate the terrain to determine what accessories and attachments you need to properly and safely perform the job.
- Have the property or work area marked for buried lines and other objects, and do not dig in marked areas; note the location of unmarked objects and structures, such as underground storage tanks, wells, and septic systems.
- Inspect the area where you will use the equipment for uneven surfaces or hidden hazards.
- Ensure that the area is clear of bystanders before operating the machine. Stop the machine if a bystander enters the area.

Performing Daily Maintenance

Before starting the machine each day, perform the Each Use/Daily procedures listed in Maintenance (page 25).

During Operation

During Operation Safety

General Safety

- Do not exceed the rated operating capacity, as the machine may become unstable, which may result in loss of control.
- Do not carry a load with the arms raised. Always carry loads close to the ground.
- Use only Toro-approved attachments and accessories. Attachments can change the stability and the operating characteristics of the machine.
- For machines with a platform:
  - Lower the loader arms before stepping off the platform.
  - Do not try to stabilize the machine by putting your foot on the ground. If you lose control of the machine, step off the platform and away from the machine.
  - Do not place your feet under the platform.
  - Do not move the machine unless you are standing with both feet on the platform and your hands are holding onto the reference bars.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Look behind and down before backing up to ensure that the path is clear.
- Never jerk the controls; use a steady motion.
- The owner/user can prevent and is responsible for accidents that may cause personal injury or property damage.
- Wear appropriate clothing including gloves, eye protection, long pants, substantial slip-resistant footwear, and hearing protection. Tie back long hair and do not wear loose clothing or loose jewelry.
- Do not operate the machine when you are tired, ill, or under the influence of alcohol or drugs.
- Never carry passengers and keep pets and bystanders away from the machine.
- Operate the machine only in good light, keeping away from holes and hidden hazards.
- Ensure that all the drives are in neutral before starting the machine. Start the machine only from the operator's position.
- Use care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

- Slow down and use caution when making turns and crossing roads and sidewalks. Watch for traffic.
- Stop the attachment when you are not working.
- Stop the machine, shut off the machine, remove the key, and inspect the machine if you strike an object. Make any necessary repairs before resuming operation.
- Never leave a machine on when unattended.
- Before leaving the operating position, do the following:
  - Park the machine on a level surface.
  - Lower the loader arms and disengage the auxiliary hydraulics.
  - Shut off the machine and remove the key.
- Do not operate the machine when there is the risk of lightning.
- Operate the machine only in areas where there is sufficient clearance for you to safely maneuver. Be aware of obstacles in close proximity to you. Failure to maintain adequate distance from trees, walls, and other barriers may result in injury as the machine backs up during operation if you are not attentive to the surroundings.
- Check for overhead clearance (i.e., electrical wires, branches, ceilings, and doorways) before driving under any objects and do not contact them.
- Do not overfill the attachment and always keep the load level when raising the loader arms. Items in the attachment could fall and cause injury.

Slope Safety

- **Operate the machine up and down slopes with the heavy end of the machine uphill.** Weight distribution changes with attachments. An empty bucket makes the rear of the machine the heavy end, and a full bucket makes the front of the machine the heavy end. Most other attachments make the front of machine the heavy end.
- Raising the loader arms on a slope affects the stability of the machine. Keep the loader arms in the lowered position when on slopes.
- Slopes are a major factor related to loss of control and tip-over accidents, which can result in severe injury or death. Operating the machine on any slope or uneven terrain requires extra caution.
- Establish your own procedures and rules for operating on slopes. These procedures must include surveying the site to determine which slopes are safe for machine operation. Always use common sense and good judgment when performing this survey.
- Slow down and use extra care on hillsides. Ground conditions can affect the stability of the machine.
- Avoid starting or stopping on a slope. If the machine loses traction, proceed slowly, straight down the slope.
- Avoid turning on slopes. If you must turn, turn slowly and keep the heavy end of the machine uphill.
- Keep all movements on slopes slow and gradual. Do not make sudden changes in speed or direction.
- If you feel uneasy operating the machine on a slope, do not do it.
- Watch for holes, ruts, or bumps, as uneven terrain could overturn the machine. Tall grass can hide obstacles.
- Use caution when operating on wet surfaces. Reduced traction could cause sliding.
- Evaluate the area to ensure that the ground is stable enough to support the machine.
- Use caution when operating the machine near the following:
  - Drop-offs
  - Ditches
  - Embankments
  - Bodies of water

  The machine could suddenly roll over if a track goes over the edge or the edge caves in. Maintain a safe distance between the machine and any hazard.
- Do not remove or add attachments on a slope.
- Do not park the machine on a hillside or slope.

Utility Line Safety

- If you strike a utility line, do the following:
  - Shut off the machine and remove the key.
  - Remove all individuals from the work area.
  - Immediately contact the proper emergency and utility authorities to secure the area.
  - If you damage a fiber-optic cable, do not look into the exposed light.
- Do not leave the operator's platform if the machine is charged with electricity. You will be safe as long as you do not leave the platform.
  - Touching any part of the machine may ground you.
  - Do not allow another individual to touch or approach the machine when charged.
  - Always assume the machine is charged if you strike an electrical or communication line. Do not attempt to leave the machine.
- Leaking gas is both flammable and explosive and may cause serious injury or death. Do not smoke while operating the machine.

Starting the Machine

1. Ensure that the battery-pack is connected to the machine.
2. Ensure that the battery-disconnect switch is in the ON position.
3. Stand on the platform.
4. Ensure that the loader-arm/attachment-tilt lever and traction control are in the NEUTRAL position.
5. Insert the key into the key switch and turn it to the ON position.

Note: The machine may have difficulty starting under severe cold conditions. When starting a cold machine, keep the machine above -18°C (0°F).

Note: When the machine temperature is below -1°C (30°F), the cold-start symbol will appear on the InfoCenter while the hydraulic fluid warms. Hydraulic function may be reduced during this time. The cold-start symbol disappears when the fluid is warm.

g304012

Figure 14

Shutting Off the Machine

1. Park the machine on a level surface and lower the loader arms.
2. Disengage the auxiliary hydraulics.
3. Ensure that the loader-arm/attachment-tilt lever and traction control are in the NEUTRAL position.
4. Turn the key switch to the OFF position and remove the key.

Note: The parking brake engages automatically when you stop the machine and release the traction control to the NEUTRAL position.

⚠ CAUTION

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

Always remove the key when leaving the machine unattended.

Sleep Mode

After 30 seconds of inactivity, the machine goes into sleep mode and displays the sleep mode icon on the InfoCenter. Hydraulics and traction controls are disabled during sleep mode.

To resume normal operation, rapidly move the traction control twice.

After 5 minutes, the machine shuts off; cycle the key to start the machine again.

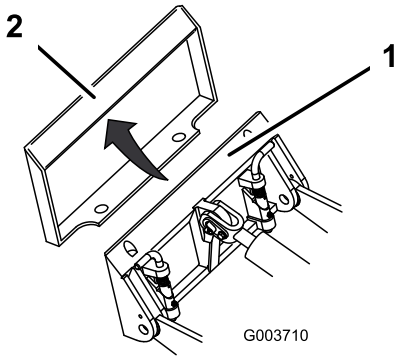
Using Attachments

Installing an Attachment

Important: **Use only Toro-approved attachments. Attachments can change the stability and the operating characteristics of the machine. The warranty of the machine may be voided if you use the machine with unapproved attachments.**

Important: **Before installing the attachment, ensure that the mount plates are free of any dirt or debris and that the pins rotate freely. If the pins do not rotate freely, grease them.**

1. Position the attachment on a level surface with enough space behind it to accommodate the machine.
2. Start the machine.
3. Tilt the attachment mount plate forward.
4. Position the mount plate into the upper lip of the attachment receiver plate.



g003710

Figure 15

1. Mount plate
2. Receiver plate

5. Raise the loader arms while tilting back the mount plate at the same time.

   Important: **Raise the attachment enough to clear the ground and tilt the mount plate all the way back.**

6. Shut off the machine and remove the key.
7. Engage the quick-attach pins, ensuring that they are fully seated in the mount plate.

   Important: **If the pins do not rotate to the engaged position, the mount plate is not fully aligned with the holes in the attachment**

receiver plate. Check the receiver plate and clean it if necessary.

⚠ WARNING

If you do not fully seat the quick-attach pins through the attachment mount plate, the attachment could fall off the machine, crushing you or bystanders.

Ensure that the quick-attach pins are fully seated in the attachment mount plate.

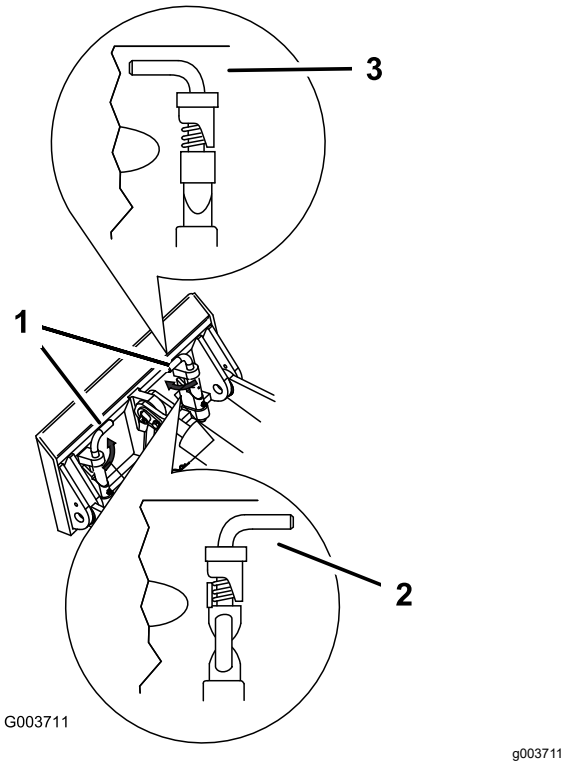


Figure 16

1. Quick-attach pins (engaged position)
2. Disengaged position
3. Engaged position

Connecting the Hydraulic Hoses

⚠ WARNING

Hydraulic fluid escaping under pressure can penetrate skin and cause injury. Fluid injected into the skin must be surgically removed within a few hours by a doctor familiar with this form of injury; otherwise, gangrene may result.

- **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; never use your hands.**

⚠ CAUTION

Hydraulic couplers, hydraulic lines/valves, and hydraulic fluid may be hot. If you contact hot components, you may be burned.

- **Wear gloves when operating the hydraulic couplers.**
- **Allow the machine to cool before touching hydraulic components.**
- **Do not touch hydraulic fluid spills.**

If the attachment requires hydraulics for operation, connect the hydraulic hoses as follows:

1. Turn and hold the key in the AUXILIARY HYDRAULIC RELIEF position and press the auxiliary hydraulic control switch back and forth to relieve pressure at the hydraulic couplers.
2. Turn the key to the OFF position and remove the key.
3. Remove the protective covers from the hydraulic connectors on the machine.
4. Ensure that all foreign matter is cleaned from the hydraulic connectors.
5. Push the attachment male connector into the female connector on the machine.

   Note: When you connect the attachment male connector first, you relieve any pressure built up in the attachment.
6. Push the attachment female connector onto the male connector on the machine.

7. Confirm that the connection is secure by pulling on the hoses.

Removing an Attachment

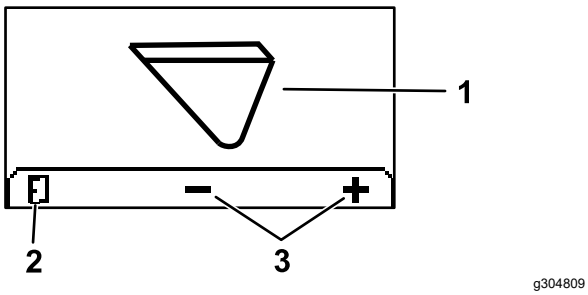
1. Park the machine on a level surface.
2. Lower the attachment to the ground.
3. If the attachment uses hydraulics, turn and hold the key in the AUXILIARY HYDRAULIC RELIEF position and press the auxiliary hydraulic control switch back and forth to relieve pressure at the hydraulic couplers.
4. Shut off the machine and remove the key.
5. Disengage the quick-attach pins by turning them to the outside.
6. If the attachment uses hydraulics, slide the collars back on the hydraulic couplers and disconnect them.

   Important: **Connect the attachment hoses together to prevent hydraulic system contamination during storage.**
7. Install the protective covers onto the hydraulic couplers on the machine.
8. Start the machine, tilt the mount plate forward, and back the machine away from the attachment.

Changing the Attachment Mode

1. From the Run screen, press the middle button to access the Attachment Change screen.
2. Press the middle or right button to switch between Backhoe or Bucket mode.

   Note: Backhoe Mode limits the traction speed and disables the traction controls when an operator is in the seat of a backhoe. Bucket Mode maintains the traction speed.
3. Press the left button to return to the Run screen.



g304809

Figure 17

1. Current attachment mode
2. Return to Run screen
3. Change attachment mode

After Operation

After Operation Safety

General Safety

- Engage the parking brake (if equipped), lower the loader arms, shut off the machine, remove the key, wait for all movement to stop, and allow the machine to cool before adjusting, cleaning, storing, or servicing it.
- Clean debris from the attachments and drives to help prevent fires.
- Keep all parts in good working condition and all hardware tightened.
- Do not touch parts that may be hot from operation. Allow them to cool before attempting to maintain, adjust, or service the machine.
- Use care when loading or unloading the machine into a trailer or truck.

Battery and Charger Safety

- Confirm the voltage that is available in your country before using the charger.
- Do not charge the machine in a wet environment; do not get the charger wet; keep it protected from rain and snow.
- A risk of fire, electric shock, or injury may result from using an accessory not recommended or sold by Toro.
- To reduce risk of a battery explosion, follow these instructions and the instructions for any equipment that you intend to use near the charger.
- Batteries could emit explosive gasses if they are significantly overcharged.
- Refer to an Authorized Service Dealer to service or replace a battery.
- Never allow children or untrained people to operate or service the charger. Local regulations may restrict the age of the operator. The owner is responsible for training all operators and mechanics.
- Keep bystanders and children away while charging.
- Wear appropriate clothing while charging, including eye protection; long pants; and substantial, slip-resistant footwear.
- Shut off the machine and wait until the machine has completely powered down before charging. Failure to do this may cause arcing.
- Ensure that the area is well ventilated while charging.

- The charger is for use on only nominal 120 to 240 VAC operation. For use with 240 V circuits, contact your Authorized Service Dealer for the correct power cord.
- Do not charge a frozen battery.
- Do not abuse the cord. Do not yank on the power supply cord to disconnect the charger from the receptacle. Keep the cord from heat, oil, and sharp edges.
- Connect the charger directly to a grounding receptacle. Do not use the charger on an ungrounded outlet, even with a grounding adapter.
- Do not alter the provided power cord or plug.
- Remove metal items such as rings, bracelets, necklaces, and watches when working with a lithium-ion battery. A lithium-ion battery can produce enough current to cause a severe burn.
- Never operate the charger without good visibility or light.
- Use an extension cord capable of handling 15 A or more. If you are charging outdoors, use an extension cord rated for outdoor use.
- If the power supply cord is damaged while it is plugged in, disconnect the cord from the wall receptacle and contact an Authorized Service Dealer for a replacement.
- Unplug the charger from the electrical outlet when not in use, before moving it to another location, or prior to servicing it.
- Do not disassemble the charger. Take the charger to an Authorized Service Dealer when service or repair is required.
- Unplug the power cord from the outlet before starting any maintenance or cleaning to reduce risk of electric shock.
- Maintain or replace safety and instruction labels as needed.
- Do not operate the charger with a damaged cord or plug. Contact an Authorized Service Dealer to obtain a replacement cord.
- If the charger has received an impact, been dropped, or otherwise damaged, do not use it; take it to an Authorized Service Dealer.

Moving a Non-Functioning Machine

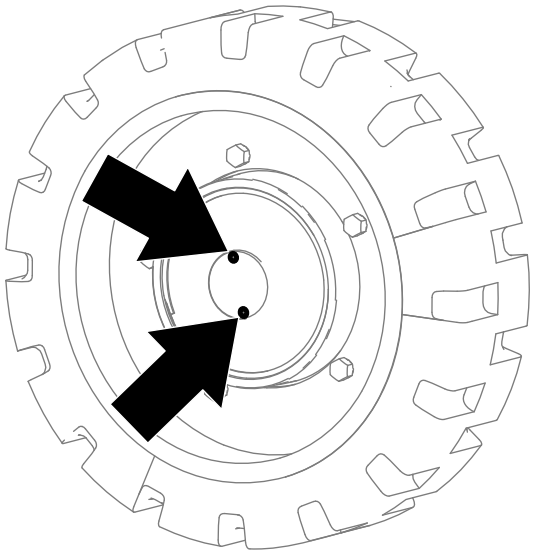
In an emergency, you can push or tow the machine.

⚠ WARNING

The wheels will spin freely once the gear is removed; the machine could unintentionally move and injure you or bystanders.

Do not move the machine on slopes and install the gear after moving the machine.

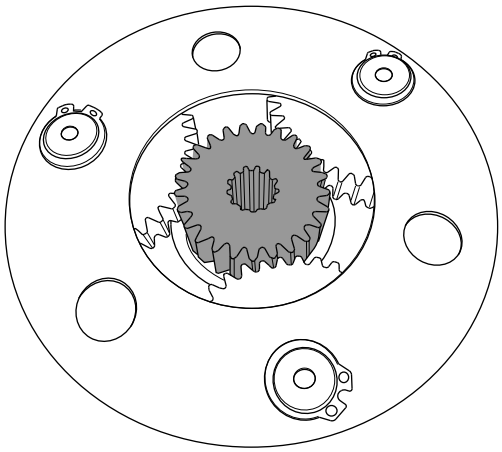
1. Shut off the machine and remove the key.
2. Remove the 2 screws and the cover from the gearbox.



g392174

Figure 18

3. Remove the gear from the gearbox.



g392587

Figure 19

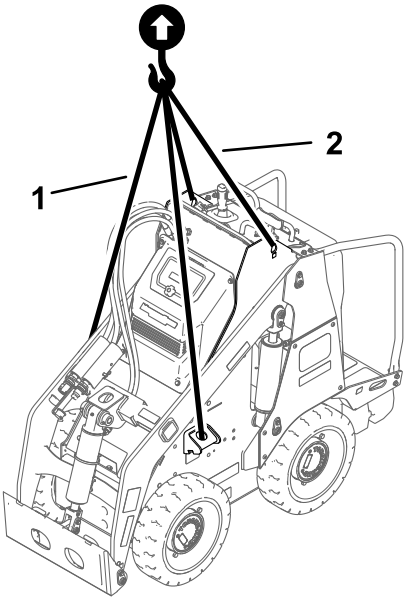
4. Repeat the procedure for the other 3 gearboxes.

5. Tow the machine as required using the tie-down locations.
6. Clean and install the gear and cover for each gearbox to resume normal operation.
7. Torque the screws to 2.8 to 3.4 N·m (25 to 30 in-lb).
8. Add gear oil to each motor; refer to Changing the Drive-Motor Gear Oil (page 32).

Lifting the Machine

Remove any attachments and lift the machine using the 4 lift points.

Do not exceed a 30-degree angle when lifting the machine; use the minimum chain lengths provided below.



g388352

Figure 20

1. Chain length for front lift point (2)—155 cm (61 inches)
2. Chain length for rear lift point (2)—80 cm (31-1/2 inches)

Hauling the Machine

Use a heavy-duty trailer or truck to haul the machine. Use a full-width ramp. 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. Knowing this information could help you or bystanders avoid injury. Refer to your local ordinances for trailer and tie-down requirements.

Loading the Machine

⚠ WARNING

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

- **Use extreme caution when operating a machine on a ramp.**
- **Load and unload the machine with the heavy end up the ramp.**
- **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.**

1. If using a trailer, connect it to the towing vehicle and connect the safety chains.
2. If applicable, connect the trailer brakes.
3. Lower the ramp(s).
4. Lower the loader arms.
5. Load the machine onto the trailer with the heavy end up the ramp, carrying loads low, as shown.
   - If the machine has a **full** load-bearing attachment (e.g., bucket) or a non-load-bearing attachment (e.g., trencher), drive the machine forward up the ramp.
   - If the machine has an **empty** load-bearing attachment or no attachment, back the machine up the ramp.

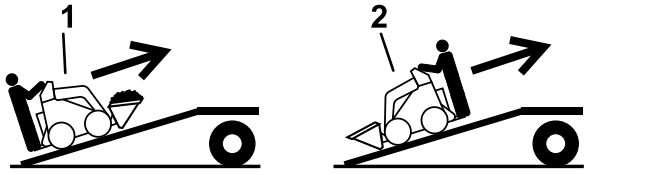


Figure 21

1. Machine with full attachment or non-load-bearing attachment—drive the machine forward up the ramp(s).
2. Machine with empty or no attachment—back the machine up the ramp(s).

6. Lower the loader arms all the way down.
7. Engage the parking brake (if equipped), shut off the machine, and remove the key.
8. Use the metal tie-down loops on the machine to securely fasten the machine to the trailer or truck with straps, chains, cable, or ropes. Refer to local regulations for tie-down requirements.

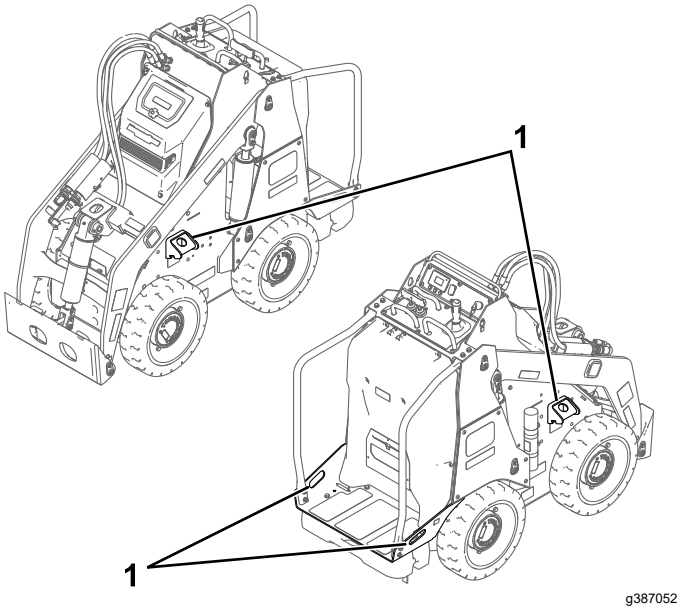


Figure 22

1. Tie-down loops

Unloading the Machine

1. Lower the ramp(s).
2. Unload the machine from the trailer with the heavy end up the ramp, carrying loads low.
   - If the machine has a **full** load-bearing attachment (e.g., bucket) or a non-load-bearing attachment (e.g., trencher), back it down the ramp.
   - If the machine has an **empty** load-bearing attachment or no attachment, drive it forward down the ramp.

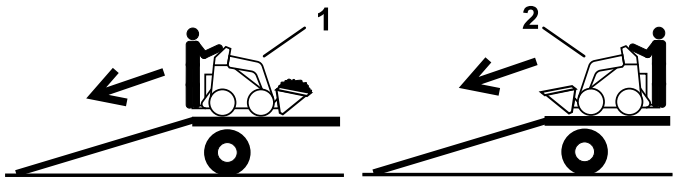


Figure 23

1. Machine with full attachment or non-load-bearing attachment—back the machine down the ramp(s).
2. Machine with empty or no attachment—drive the machine forward down the ramp(s).

Transporting the Lithium-Ion Batteries

The US Department of Transportation and international transportation authorities require that lithium-ion batteries be transported using special packaging and only be transported by carriers certified to haul them. In the US, you are allowed to transport a battery when it is installed on the machine as battery powered equipment, with some regulatory requirements. Contact the US Department of Transportation or the appropriate government body in your country for detailed regulations on transportation of your batteries or the machine with the batteries equipped.

For detailed information on shipping a battery, contact your Authorized Service Dealer.

Charging the Batteries

⚠ DANGER

Contact with water while charging the machine could cause electric shock, causing injury or death.

- **Do not handle the plug or the charger with wet hands or while standing in water.**
- **Do not charge the batteries in the rain or in wet conditions.**

To reduce the risk of electric shock, this charger has a 3-prong grounded plug (type B). If the plug does not fit into the wall receptacle, other grounded plug types are available; contact an Authorized Service Dealer.

Do not change the charger or the power-supply-cord plug in any way.

Important: **Check the power supply cord periodically for holes or cracks in the insulation. Do not use a damaged cord. Do not run the cord through standing water or wet grass.**

Recommended temperature range for charging: 0° to 55°C (32° to 131°F)

Important: **Charge the batteries only in temperatures that are within the recommended range.**

Note: The charger will not function in temperatures exceeding the minimum or maximum temperatures.

1. Park the machine in the designated location for charging.
2. Shut off the machine and remove the key.
3. Ensure that the battery-disconnect switch is in the ON position.
4. Plug the charger cord into the machine.

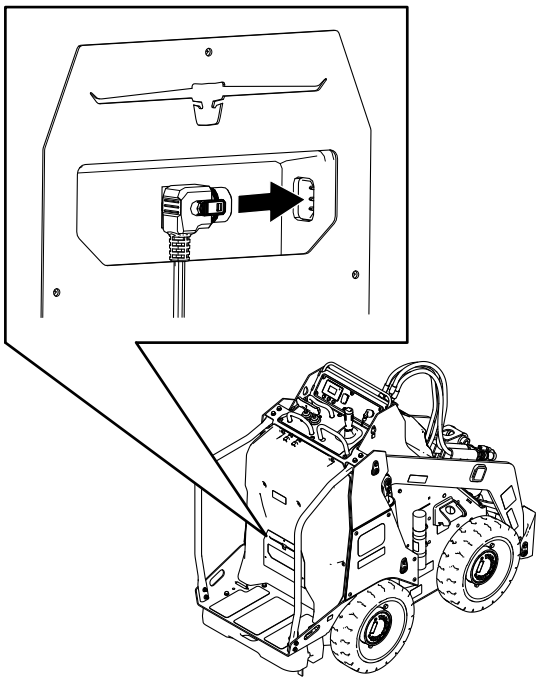


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Figure 24

5. Plug the other end of the charger cord into a grounded electrical outlet.
6. Observe the InfoCenter to ensure that the batteries are charging.

   Note: The InfoCenter shows the battery charge percentage and amperage. Batteries with a lower voltage charge first; once they reach the voltage of the other batteries, all batteries charge simultaneously. The fan may turn on while the machine is charging.

   When charging is complete, the InfoCenter shuts off.

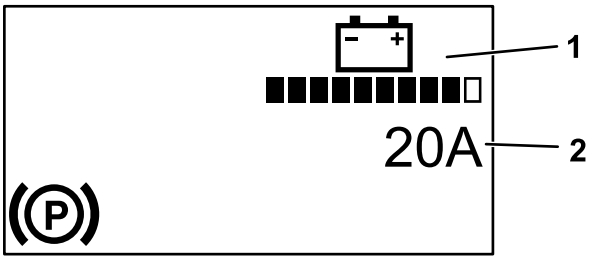

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Figure 25

1. Battery charge
2. Amperage

7. When the machine reaches a sufficient level, disconnect the charger cord from the outlet.
8. Store the cord in the storage compartment.
9. Start the machine.
10. Verify the charge level using the InfoCenter display.

Maintenance

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

Maintenance Safety

⚠ CAUTION

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

Remove the key from the switch before you perform any maintenance.

- Park the machine on a level surface, disengage the auxiliary hydraulics, lower the attachment, ensure that the parking brake is engaged, shut off the machine, and remove the key. Wait for all movement to stop and allow the machine to cool before adjusting, cleaning, storing, or repairing it.
- Do not allow untrained personnel to service the machine.
- Use jack stands to support the components when required.
- Carefully release pressure from components with stored energy; refer to Relieving Hydraulic Pressure (page 33).
- Disconnect the battery before making any repairs; refer to Using the Battery-Disconnect Switch (page 29).
- Keep your hands and feet away from the moving parts. If possible, do not make adjustments with the machine running.
- Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.
- Do not tamper with the safety devices.
- Use only Toro-approved attachments. Attachments can change the stability and the operating characteristics of the machine. You may void the warranty if you use the machine with unapproved attachments.
- Use only genuine Toro replacement parts.
- If any maintenance or repair requires the loader arms to be in the raised position, secure the arms in the raised position with the hydraulic-cylinder lock(s).

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 8 hours	• Torque the wheel-lug nuts. • Replace the hydraulic filter.
After the first 50 hours	• Change the drive-motor gear oil.
Before each use or daily	• Grease the machine. (Grease immediately after every washing.) • Check the static strap; replace it if worn or missing. • Check the tire treads. • Remove debris from the machine. • Check for loose fasteners.
Every 25 hours	• Check the hydraulic lines for leaks, loose fittings, kinked lines, loose mounting supports, wear, weather, and chemical deterioration. • Check the hydraulic-fluid level.
Every 100 hours	• Torque the wheel-lug nuts.
Every 400 hours	• Replace the hydraulic filter.
Every 500 hours	• Change the drive-motor gear oil.
Every 1,000 hours or 2 years, whichever comes first	• Replace all moving hydraulic hoses.
Yearly	• Change the hydraulic fluid.
Yearly or before storage	• Touch up chipped paint.

Pre-Maintenance Procedures

Using the Cylinder Locks

⚠ WARNING

The loader arms may lower when in the raised position, crushing anyone under them.

Install the cylinder lock(s) before performing maintenance that requires raised loader arms.

Installing the Cylinder Locks

1. Remove the attachment.
2. Raise the loader arms to the fully raised position.
3. Shut off the machine and remove the key.
4. Position a cylinder lock over each lift-cylinder rod.

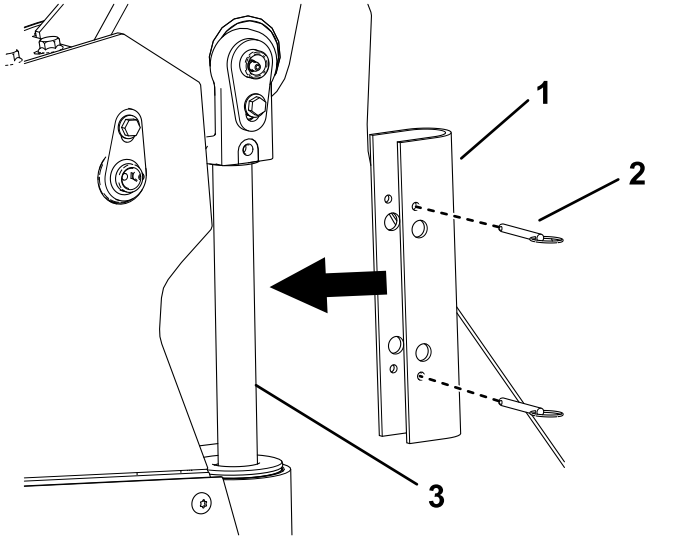

Figure 26

1. Cylinder lock
2. Pin (2)
3. Lift-cylinder rod

5. Secure each cylinder lock with 2 pins.
6. **Slowly** lower the loader arms until the cylinder locks contact the cylinder bodies and rod ends.

Removing and Storing the Cylinder Locks

Important: **Remove the cylinder locks from the rods and fully secure them in the storage position before operating the machine.**

1. Start the machine.
2. Raise the loader arms to the fully raised position.
3. Shut off the machine and remove the key.
4. Remove the pins securing each cylinder lock.
5. Remove the cylinder locks.
6. Place the cylinder locks on the posts on the sides of the machine and secure with the pins.
7. Lower the loader arms.

Accessing Internal Components

⚠ WARNING

Opening or removing covers, hoods, and screens while the machine is running could allow you to contact moving parts, seriously injuring you.

Before opening any of the covers, hoods, and screens, shut off the machine, remove the key from the key switch, and allow the machine to cool.

⚠ WARNING

The rotating fan can cause personal injury.

- **Do not operate the machine without guards in place.**
- **Keep your fingers, hands, and clothing clear of the rotating fan.**
- **Shut off the machine and remove the key before performing maintenance.**

Removing the Hood

1. Park the machine on a level surface.
2. Shut off the machine, remove the key, and wait for moving parts to stop.
3. Remove the 4 bolts (3/8 x 1-1/2 inches) securing the hood.

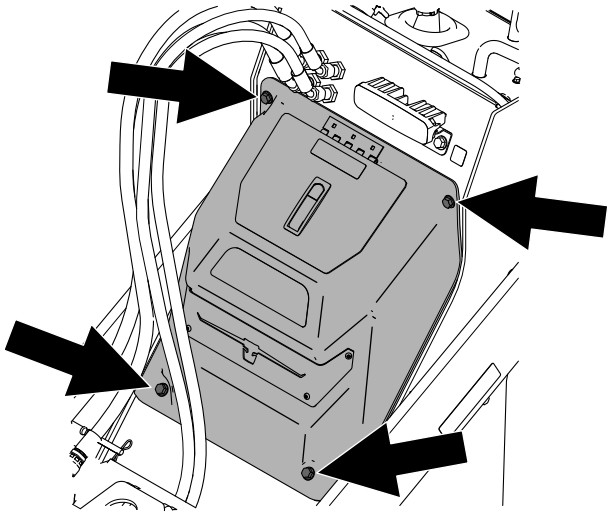

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Figure 27

4. Pull the hood off the machine.

Reverse the procedure to install the hood.

Removing the Lower Front Cover

1. Park the machine on a level surface.
2. Raise the loader arms and install the cylinder locks.

   Note: If you cannot raise the loader arms using the machine power, pull the loader-arm lever rearward and use a hoist to lift the loader arms at their lift points.
3. Shut off the machine, remove the key, and wait for moving parts to stop.
4. Remove the hood.
5. Remove the 2 bolts (3/8 x 1 inch) securing the cover.

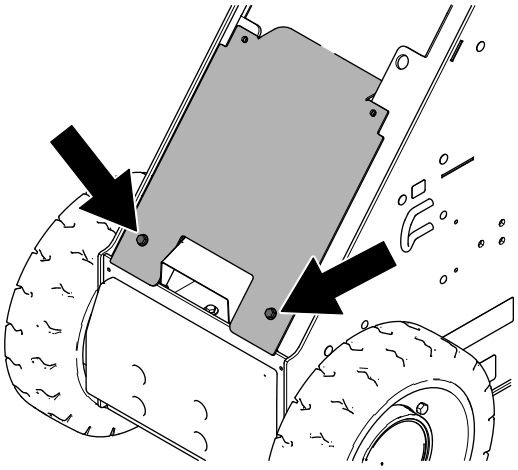

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Figure 28

6. Remove the cover.

Reverse the procedure to install the cover.

Lubrication

Greasing the Machine

Service Interval: Before each use or daily (Grease immediately after every washing.)

Grease Type: General-purpose grease

1. Park the machine on a level surface and lower the loader arms.
2. Shut off the machine and remove the key.
3. Clean the grease fittings with a rag.
4. Connect a grease gun to each fitting.

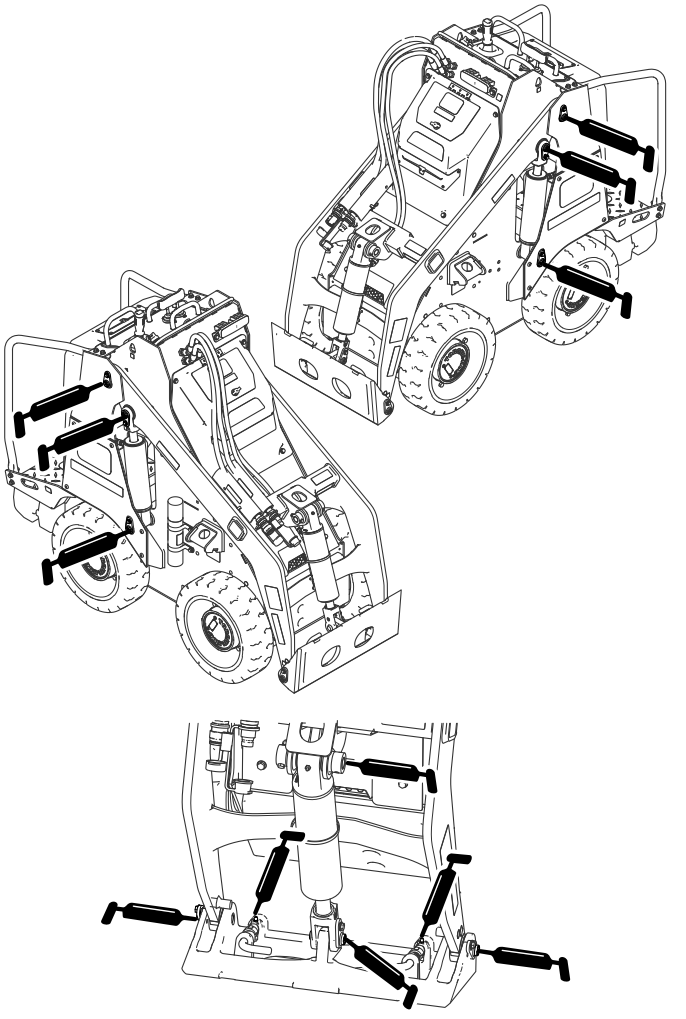

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Figure 29

5. Pump grease into the fittings until grease begins to ooze out of the bearings (approximately 3 pumps).
6. Wipe up any excess grease.

Electrical System Maintenance

Electrical System Safety

- Disconnect the battery before making any repairs; refer to Using the Battery-Disconnect Switch (page 29).
- 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.

Using the Battery-Disconnect Switch

1. Park the machine on a level surface and lower the loader arms.
2. Shut off the machine and remove the key.
3. Push the button on the latch and open the hood cover.

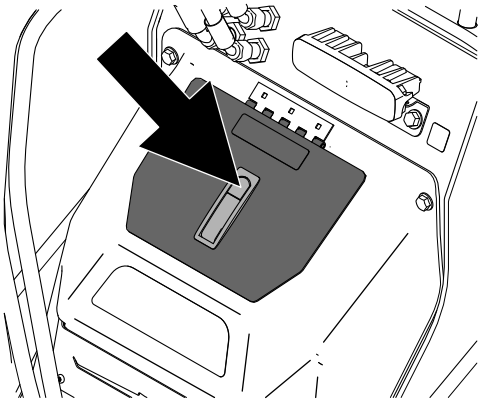

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Figure 30

4. Turn the battery-disconnect switch to the ON or OFF position to perform the following:
   - To energize the machine electrically, rotate the battery-disconnect switch clockwise to the ON position.
   - To de-energize the machine electrically, rotate the battery-disconnect switch counterclockwise to the OFF position.

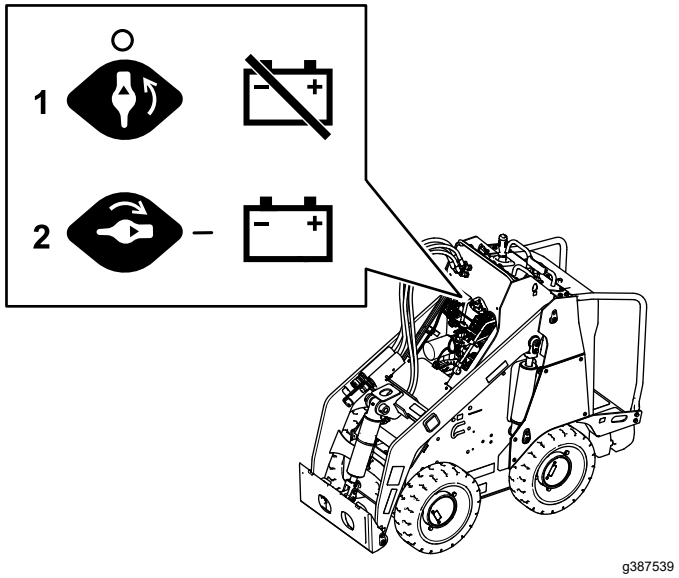

Figure 31

1. Battery-disconnect switch—OFF position
2. Battery-disconnect switch—ON position

5. Close the cover and push the latch down.

Replacing the Static Strap

Service Interval: Before each use or daily—Check the static strap; replace it if worn or missing.

1. Park the machine on a level surface and lower the loader arms.
2. Shut off the machine and remove the key.
3. Under the platform, replace the static strap as shown.

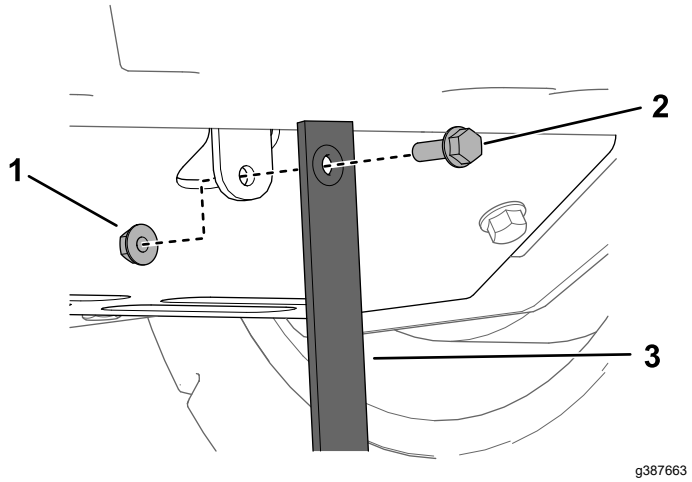

Figure 32

1. Nut
2. Bolt
3. Static strap

Servicing the Batteries

Note: The machine is equipped with 6 lithium-ion batteries.

A lithium-ion battery must be disposed of or recycled in accordance with local and federal regulations. If a battery requires service, contact your Authorized Service Dealer for assistance.

Do not open the battery. If you are having problems with a battery, contact your Authorized Service Dealer for assistance.

Maintaining the Lithium-Ion Batteries

⚠ WARNING

The batteries contain high voltage, which could burn or shock you.

- **Do not attempt to open the batteries.**
- **Use extreme care when handling a battery with a cracked case.**
- **Use only the charger designed for the batteries.**

The lithium-ion batteries hold a sufficient charge to perform intended work during its life span.

To achieve maximum life and use from your batteries, follow these guidelines:

- Do not open the battery.
- Store/park the machine in a clean, dry garage or storage area, **away from direct sunlight, heat sources, rain, and wet conditions.** Do not store it in a location where the temperature exceeds the range specified in Battery Storage Requirements (page 39).

  Important: **Temperatures outside of this range will damage your batteries. High temperatures during storage, especially at a high state of charge, reduces the life of the batteries.**
- When storing the machine for more than 10 days, ensure that the machine is in a cool and dry location, out of sunlight, rain, and wet conditions.
- If you are using the machine hot conditions or in strong, direct sunlight, the battery may overheat. If this happens, a high-temperature alert appears on the InfoCenter and machine functionality may be reduced.

Immediately drive the machine to a cool location out of the sun, turn off the machine, and allow the batteries to cool fully before resuming operation. If the batteries continue to overheat, another alert appears on the InfoCenter and the machine will shut off.

- Use lights only when it is necessary.

Maintaining the Battery Charger

Important: **All electrical repairs should be performed by an Authorized Service Dealer only.**

The operator can perform very little maintenance other than protecting the charger from damage and weather.

- Clean the charger cord with a slightly damp cloth after each use.
- Coil the cord and place it into the storage compartment when not in use.
- Periodically examine the cord for damage, and replace them when necessary with Toro-approved parts.

Servicing the Fuses

1. Park the machine on a level surface.
2. Shut off the machine and remove the key.
3. Remove the hood; refer to Removing the Hood (page 28).
4. Turn the battery-disconnect switch to the OFF position.
5. Test or replace the fuses as described in the *Service Manual* for the machine.

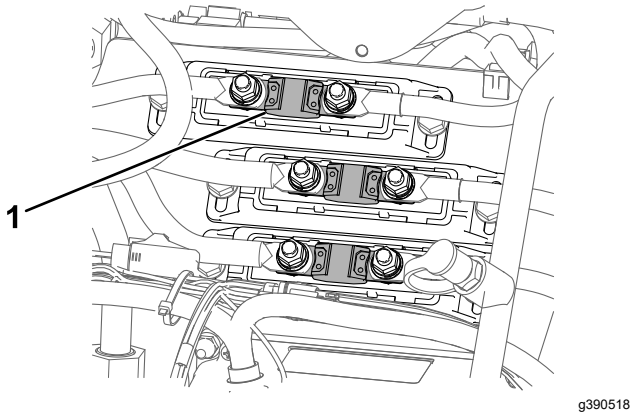

Figure 33

1. Fuse—200 A (3)

6. Turn the battery-disconnect switch to the ON position.
7. Install the hood.

Drive System Maintenance

Checking the Tire Treads

Service Interval: Before each use or daily

Check the tire treads for wear. Replace the tires when the treads are worn and shallow.

Checking the Wheel-Lug Nuts

Service Interval: After the first 8 hours

Every 100 hours

Check and torque the wheel lug nuts 61 to 75 N·m (45 to 55 ft-lb).

Drive-Motor Gear Oil Specifications

Oil type: Mobil 626 SHC

Capacity: 0.31 L (10.5 fl oz) per gearbox

Changing the Drive-Motor Gear Oil

Service Interval: After the first 50 hours

Every 500 hours

1. Start the machine and drive it for 5 minutes.

   Note: This warms the gear oil so that it drains better.

2. Park the machine on a level surface so that a drain plug on the motor is in the **6 o'clock** position.

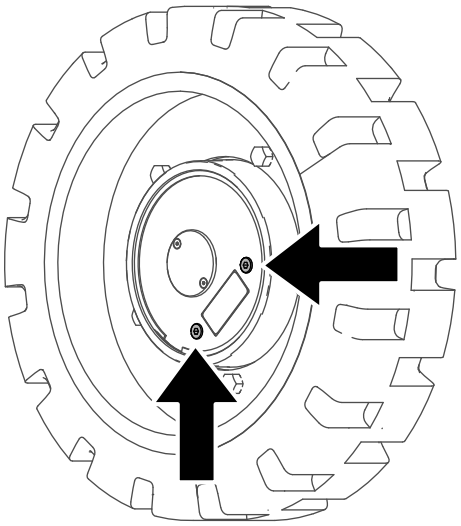

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Figure 34

3. Shut off the machine and remove the key.
4. Raise the machine off the ground so that the wheels are off the ground. Support the machine using jack stands.

   Note: Use jack stands rated for your machine. Refer to the Specifications (page 15) for the weight.

   ⚠ WARNING

   Mechanical or hydraulic jacks may fail to support the machine and cause serious injury.

   Use jack stands when supporting the machine.

5. Remove the rear wheels.
6. Place a drain pan under the drive motor.
7. Remove both plugs and allow the gear oil to drain.
8. Install the lower plug.
9. Fill the drive motor with gear oil through the open hole until the oil is up to the bottom of the hole.

   Note: You may not need the full capacity amount due to residual oil in the motor.

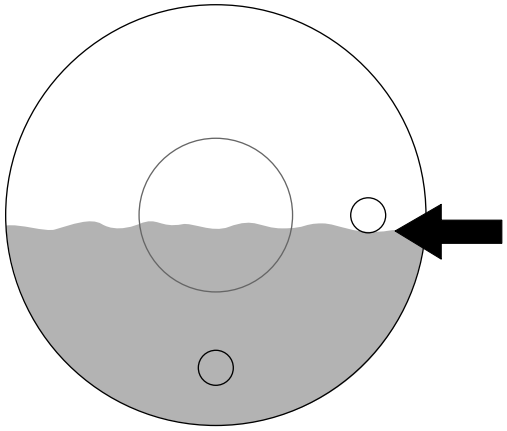

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Figure 35

10. Install the plug.
11. Repeat the procedure for the other drive motors.
12. Start the machine and engage the traction control it for a few minutes.
13. Stop the machine so that a drain plug on each motor is in the **3 o'clock** position, shut off the machine, and remove the key.
14. Remove the plug in the 3 o'clock position, and verify that the oil level is at the bottom of the hole. Add oil as needed.
15. Install the plug and torque all plugs to 5 to 6 N·m (50 to 60 in-lb).
16. Install the tires and torque the lug nuts 61 to 75 N·m (45 to 55 ft-lb).
17. Lower the machine to the ground.

Controls System Maintenance

Adjusting the Controls

The factory adjusts the controls before shipping the machine. However, after many hours of use, you may need to adjust the traction control alignment, the NEUTRAL position of the traction control, and the tracking of the traction control in the full forward position.

Contact your Authorized Service Dealer to adjust the controls of your machine.

Hydraulic System Maintenance

Hydraulic System Safety

- Seek immediate medical attention if fluid is injected into skin. Injected fluid must be surgically removed within a few hours by a doctor.
- 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.

Relieving Hydraulic Pressure

To relieve hydraulic pressure while the machine is on, disengage the auxiliary hydraulics and fully lower the loader arms. Turn the key switch to the AUXILIARY HYDRAULIC RELIEF position and press the auxiliary-hydraulic switch back and forth.

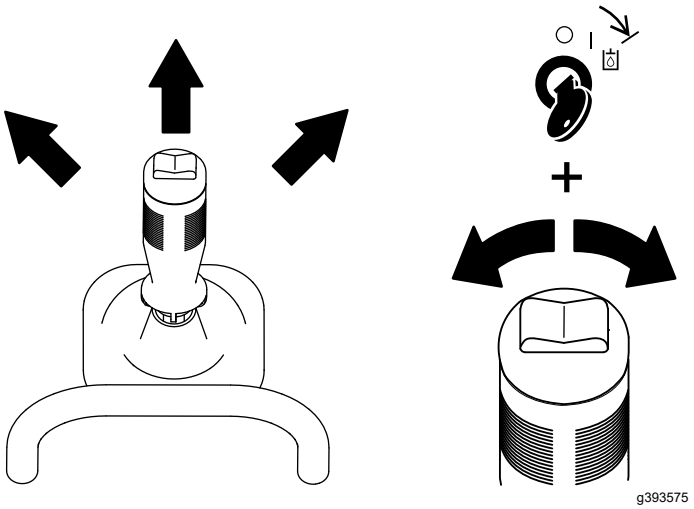

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Figure 36

To relieve the pressure on the loader arms and attachment plate while the machine is off, cycle the joystick between the forward positions to lower the loader arms.

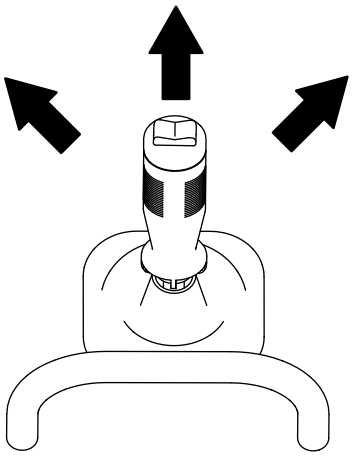

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Figure 37

Hydraulic Fluid Specifications

Hydraulic Tank Capacity: 22.7 L (6 US gallons)

Recommended hydraulic fluid: Toro PX Extended Life Hydraulic Fluid

Note: A machine using the recommended replacement fluid requires less frequent fluid and filter changes.

Alternative hydraulic fluids: If Toro PX Extended Life Hydraulic Fluid is not available, you may use another conventional, petroleum-based hydraulic fluid having specifications that fall within the listed range for all the following material properties and that it meets industry standards. Do not use synthetic fluid. Consult with your lubricant distributor to identify a satisfactory product.

Note: Toro does not assume responsibility for damage caused by improper substitutions, so use products only from reputable manufacturers who will stand behind their recommendation.

High Viscosity Index/Low Pour Point Anti-wear Hydraulic Fluid, ISO VG 46

Material Properties:

Viscosity, ASTM D445	cSt @ 40°C (104°F) 44 to 48
Viscosity Index ASTM D2270	140 or higher
Pour Point, ASTM D97	-37°C to -45°C (-34°F to -49°F)
Industry Specifications:	Eaton Vickers 694 (I-286-S, M-2950-S/35VQ25 or M-2952-S)

Note: Many hydraulic fluids are almost colorless, making it difficult to spot leaks. A red dye additive for the hydraulic fluid is available in 20 ml (0.67 fl oz) bottles. A bottle is sufficient for 15 to 22 L (4 to 6 US gallons) of hydraulic fluid. Order Part No. 44-2500 from your Authorized Service Dealer.

Checking the Hydraulic-Fluid Level

Service Interval: Every 25 hours

Check the hydraulic-fluid level before the machine is first started and after every 25 operating hours.

Refer to Hydraulic Fluid Specifications (page 34).

Important: **Always use the correct hydraulic fluid. Unspecified fluids will damage the hydraulic system.**

1. Park the machine on a level surface, remove any attachment, raise the loader arms, and install the cylinder locks.
2. Shut off the machine, remove the key, and allow the machine to cool.
3. Remove the hood and lower front cover.
4. Remove the fan shroud.

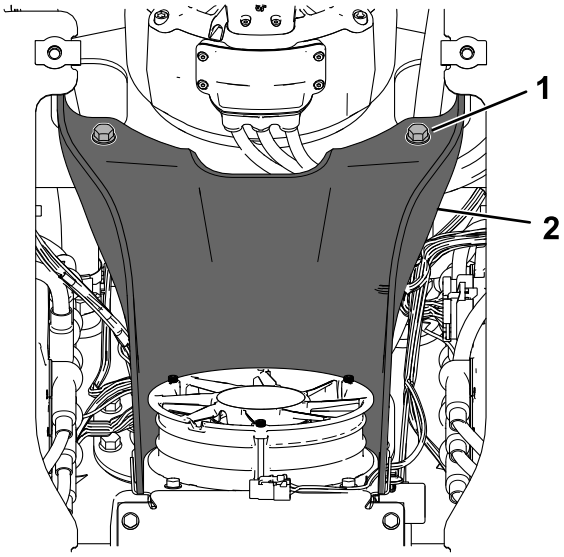

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Figure 38

1. Bolt—3/8 x 1 inch (2)
2. Fan shroud

5. Clean the area around the filler neck of the hydraulic tank.

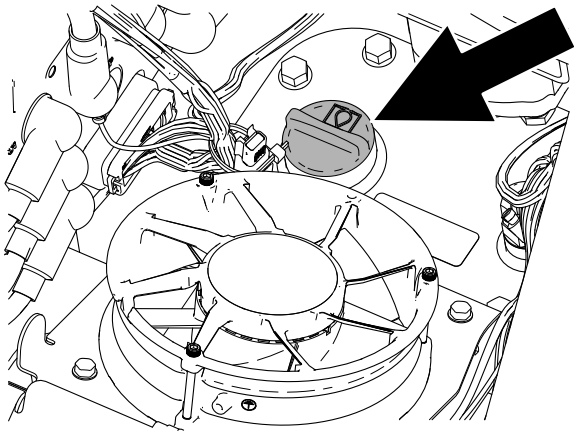

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Figure 39

6. Remove the filler-neck cap and check the fluid level on the dipstick.

   The fluid level should be between the marks on the dipstick.

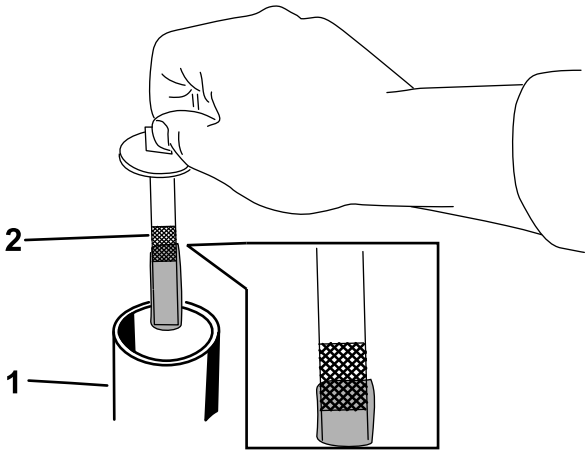

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Figure 40

1. Filler neck cap
2. Dipstick

7. If the level is low, add enough fluid to raise it to the proper level.
8. Install the filler-neck cap.
9. Install the fan shroud.
10. Install the lower front cover and hood.
11. Remove and store the cylinder locks and lower the loader arms.

Replacing the Hydraulic Filter

Service Interval: After the first 8 hours

Every 400 hours

Important: **Do not substitute an automotive oil filter; otherwise, severe hydraulic system damage may result.**

1. Park the machine on a level surface and lower the loader arms.
2. Shut off the machine and remove the key.
3. Remove the hood and lower front cover.
4. Place a drain pan under the filter.
5. Remove the old filter (Figure 41) and wipe the surface of the filter adapter clean.

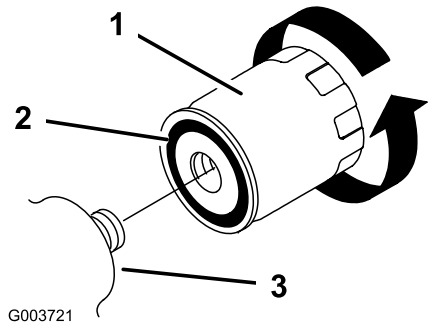

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Figure 41

1. Hydraulic filter
2. Gasket
3. Filter adapter

6. Apply a thin coat hydraulic fluid to the rubber gasket on the replacement filter (Figure 41).
7. Install the replacement hydraulic filter onto the filter adapter (Figure 41). Tighten it clockwise until the rubber gasket contacts the filter adapter, then tighten the filter an additional 1/2 turn.
8. Clean up any spilled fluid.
9. Start the machine and let it run for about 2 minutes to purge air from the system.
10. Shut off the machine and check for leaks.
11. Check the fluid level in the hydraulic tank; refer to Checking the Hydraulic-Fluid Level (page 35). Add fluid to raise the level to mark on dipstick. Do not overfill the tank.
12. Install the lower front cover and hood.

Changing the Hydraulic Fluid

Service Interval: Yearly

1. Park the machine on a level surface, remove any attachment, raise the loader arms, and install the cylinder locks.
2. Shut off the machine and remove the key.
3. Remove the hood and lower front cover.
4. Remove the fan shroud.

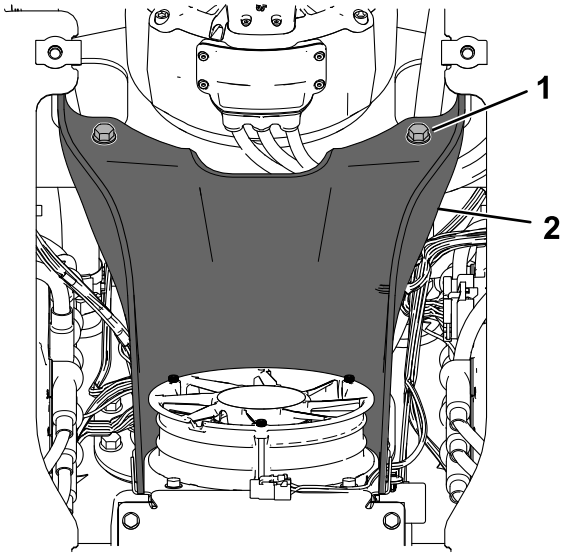

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Figure 42

1. Bolt (2)
2. Fan shroud

5. Place a large drain pan under the machine that can hold the fluid capacity listed in Hydraulic Fluid Specifications (page 34).
6. Remove the drain plug from the bottom of the hydraulic tank and allow the fluid to completely drain (Figure 43).

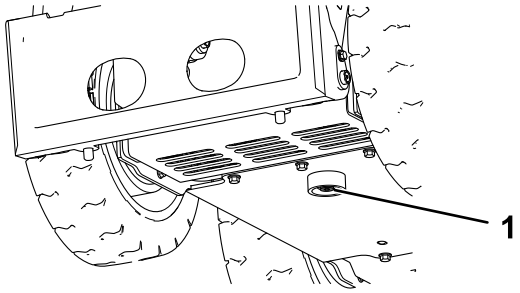

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Figure 43

1. Drain plug

7. Install the drain plug.
8. Fill the hydraulic tank with hydraulic fluid; refer to Hydraulic Fluid Specifications (page 34).

Note: Dispose of used fluid at a certified recycling center.

9. Install the fan shroud.
10. Install the lower front cover and the hood.
11. Remove and store the cylinder locks and lower the loader arms.

Cleaning

Removing Debris

Service Interval: Before each use or daily

⚠ WARNING

Using compressed air improperly to clean the machine could result in serious injury.

- **Wear appropriate personal protective equipment, such as eye protection, hearing protection, and a dust mask.**
- **Do not aim compressed air at any part of your body or at anyone else.**
- **Refer to the manufacturer's instructions for the air compressor for operating and safety information.**

1. Park the machine on a level surface, remove any attachment, raise the loader arms, and install the cylinder locks.
2. Shut off the machine and remove the key.
3. Clean any debris from the machine.

   Important: **Blow the dirt out rather than wash it out. If you use water, keep it away from electrical items and hydraulic valves. Clean electrical connectors using compressed air; do not use contact cleaner.**
4. Remove and store the cylinder locks and lower the loader arms.

Washing the Machine

If you must pressure wash the machine, do the following:

Important: **Do not clean the machine with water while it is charging. Ensure machine is dry before charging.**

- Wear appropriate personal protective equipment for the pressure washer.
- Keep all guards in place on the machine.
- Avoid spraying at electronic components.
- Avoid spraying at edges of decals.
- Spray the exterior of the machine only. Do not spray directly into openings in the machine.
- Spray only the dirty parts of the machine.
- Use a 40-degree or larger spray nozzle. 40-degree nozzles are usually white.
- Keep the tip of the pressure washer at least 61 cm (2 ft) away from the surface being washed.

- Use only pressure washers with pressure below 13790 kpa (2000 psi) and flow below 7.6 L (2 US gallons) per minute.
- Replace damaged or peeling decals.
- Grease all grease points after washing; refer to Greasing the Machine (page 29).

Storage

Storage Safety

- Shut off the machine, remove the key, wait for all moving parts to stop, and allow the machine to cool before storing it.
- Do not store the machine near flames.

Storing the Machine

1. Park the machine on a level surface and lower the loader arms.
2. Shut off the machine and remove the key.
3. Remove dirt and grime from the external parts of the entire machine.

   Important: **Wash the machine using mild detergent and water. Avoid excessive use of water, especially near the control panel, hydraulic pumps, and motors.**
4. Grease the machine; refer to Greasing the Machine (page 29).
5. Torque the wheel lug nuts; refer to Checking the Wheel-Lug Nuts (page 31).
6. Check the hydraulic fluid level; refer to Checking the Hydraulic-Fluid Level (page 35).
7. Check and tighten all fasteners. Repair or replace any worn, damaged, or missing parts.
8. Paint all scratched or bare metal surfaces with paint available from your Authorized Service Dealer.
9. Store the machine in a clean, dry garage or storage area. Remove the key from the key switch and keep it in a memorable place.
10. For prolonged storage, follow the battery storage requirements; refer to Battery Storage Requirements (page 39).
11. Cover the machine to protect it and keep it clean.

Battery Storage Requirements

Note: You do not need to remove the batteries from the machine for storage.

Refer to the temperature limits for storage in the following table:

Temperature Limits for Storage

Storage Temperature	Appropriate Storage Time
45° to 55°C (113° to 131°F)	1 week
25° to 45°C (77° to 113°F)	3 weeks
-20° to 25°C (-4° to 77°F)	52 weeks

Important: **Temperatures outside of these ranges will damage your batteries.**

The temperature that the batteries are stored at will affect their long-term life. Storage for long periods of time at extreme temperatures will reduce the battery life. For temperatures above 25°C (77°F), only store the machine for the appropriate amount of time indicated in the table.

- Before you store the machine, charge or discharge the batteries between 40% to 60% (54.3V to 57.3V).

  Note: A 50% charge is optimal to ensure a maximum battery life. When the batteries are charged to 100% before storage, the battery life shortens.

  If you anticipate that the machine will be stored for a longer period of time, charge the batteries to around 60%.
- For every 6 months of storage, check the battery-charge level and ensure that it is between 40% to 60%. If the charge is below 40%, charge the batteries between 40% to 60%.
- You can use a multimeter to check the charge level when the machine is off. Refer to the following table for the amount of voltage that is equal to the charge level:

Voltage	Charge Level
57.3V	60%
55.4V	50%
54.3V	40%

- After charging the batteries, disconnect the battery charger plug from power during storage to minimize the discharging of the batteries.
- If you leave the charger plug connected to power, it will shut off after the batteries are fully charged and does not turn back on unless the charger plug is disconnected and reconnected.

Troubleshooting

Machine Troubleshooting

Problem	Possible Cause	Corrective Action
When at rest, the loader arms lower more than 7.6 cm (3 inches) per hour (less than 7.6 cm or 3 inches an hour is normal for the machine).	1. The valve spool is leaking.	1. Contact your Authorized Service Dealer.
When at rest, the loader arms lower 5 cm (2 inches) quickly and then stop.	1. The cylinder seals are leaking.	1. Replace the seals.
The machine does not charge.	1. The temperature is above 55°C (131°F) or below 2°C (35.6°F).	1. Charge the machine in conditions between 2°C (35.6°F) and 55°C (131°F).
The machine does not start immediately after shutting it off.	1. The machine did not power down completely.	1. Allow the machine to completely power down before starting it again.
The machine does not resume operation after idling.	1. The machine is in Power Save Mode.	1. Rapidly move a traction lever twice or shut off and start the machine again.

Battery-Charger Error Codes

The battery-charger error codes display on the machine InfoCenter as shown in Figure 44.

- SPN: Suspect Parameter Number
- FMI: Failure Mode Indicator
- OC: Number of occurences

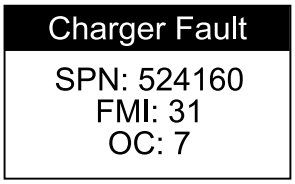

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Figure 44

Problem	Possible Cause	Corrective Action
SPN 4992, FMI 16 or FMI 3	1. Battery high voltage	1. Ensure that the battery voltage is correct and the cable connections are secure; ensure that the battery is in good condition.
SPN 4990, FMI 31	1. BMS or battery fault detected	1. Contact an Authorized Toro Dealer.
SPN 520196, FMI 16	1. Battery amp hour limit exceeded	1. Possible causes include poor battery health, very deeply discharged battery, poorly connected battery, and/or high parasitic loads on battery while charging. Possible solutions: Replace batteries. Check DC connections. Disconnect parasitic loads. This error will clear once the charger is reset by cycling DC.
SPN 4992, FMI 4	1. Reverse polarity error	1. The battery is connected to the charger incorrectly. Ensure that the battery connections are secure.
SPN 520193, FMI 3	1. High AC voltage error (>270VAC)	1. Connect charger to an AC source that provides stable AC between 85 - 270 VAC / 45-65 Hz.

Problem	Possible Cause	Corrective Action
SPN 524032, FMI 3	1. Charger failed to initialize	1. The charger failed to turn on properly. Disconnect the AC input and battery connection for 30 seconds before retrying.
SPN 520193, FMI4	1. Low AC voltage oscillation error	1. The AC source is unstable. Could be caused by undersized generator or severely undersized input cables. Connect charger to an AC source that provides stable AC between 85 - 270 VAC / 45-65 Hz.
SPN 524033, FMI 31	1. Re-programming failed	1. Software upgrade failure or script operation failure. Ensure that the new software is correct.
SPN 524035 or SPN 524042, FMI 9	1. Communication error with battery	1. Ensure that the connection of the signal wires to the battery is secure.

Battery-Charger Fault Codes

Problem	Possible Cause	Corrective Action
SPN 524160, FMI 31	1. Internal charger fault	1. Remove the AC connection and battery connection for a minimum of 30 seconds and retry. If it fails again, please contact an Authorized Toro Dealer.

Notes:

EEA/UK Privacy Notice

Toro's Use of Your Personal Information

The Toro Company ("Toro") respects your privacy. When you purchase our products, we may collect certain personal information about you, either directly from you or through your local Toro company or dealer. Toro uses this information to fulfil contractual obligations - such as to register your warranty, process your warranty claim or to contact you in the event of a product recall - and for legitimate business purposes - such as to gauge customer satisfaction, improve our products or provide you with product information which may be of interest. Toro may share your information with our subsidiaries, affiliates, dealers or other business partners in connection these activities. We may also disclose personal information when required by law or in connection with the sale, purchase or merger of a business. We will never sell your personal information to any other company for marketing purposes.

Retention of your Personal Information

Toro will keep your personal information as long as it is relevant for the above purposes and in accordance with legal requirements. For more information about applicable retention periods please contact legal@toro.com.

Toro's Commitment to Security

Your personal information may be processed in the US or another country which may have less strict data protection laws than your country of residence. Whenever we transfer your information outside of your country of residence, we will take legally required steps to ensure that appropriate safeguards are in place to protect your information and to make sure it is treated securely.

Access and Correction

You may have the right to correct or review your personal data, or object to or restrict the processing of your data. To do so, please contact us by email at legal@toro.com. If you have concerns about the way in which Toro has handled your information, we encourage you to raise this directly with us. Please note that European residents have the right to complain to your Data Protection Authority.

California Proposition 65 Warning Information

What is this warning?

You may see a product for sale that has a warning label like the following:

WARNING: Cancer and Reproductive Harm—www.p65Warnings.ca.gov.

What is Prop 65?

Prop 65 applies to any company operating in California, selling products in California, or manufacturing products that may be sold in or brought into California. It mandates that the Governor of California maintain and publish a list of chemicals known to cause cancer, birth defects, and/or other reproductive harm. The list, which is updated annually, includes hundreds of chemicals found in many everyday items. The purpose of Prop 65 is to inform the public about exposure to these chemicals.

Prop 65 does not ban the sale of products containing these chemicals but instead requires warnings on any product, product packaging, or literature with the product. Moreover, a Prop 65 warning does not mean that a product is in violation of any product safety standards or requirements. In fact, the California government has clarified that a Prop 65 warning "is not the same as a regulatory decision that a product is 'safe' or 'unsafe.'" Many of these chemicals have been used in everyday products for years without documented harm. For more information, go to https://oag.ca.gov/prop65/faqs-view-all.

A Prop 65 warning means that a company has either (1) evaluated the exposure and has concluded that it exceeds the "no significant risk level"; or (2) has chosen to provide a warning based on its understanding about the presence of a listed chemical without attempting to evaluate the exposure.

Does this law apply everywhere?

Prop 65 warnings are required under California law only. These warnings are seen throughout California in a wide range of settings, including but not limited to restaurants, grocery stores, hotels, schools, and hospitals, and on a wide variety of products. Additionally, some online and mail order retailers provide Prop 65 warnings on their websites or in catalogs.

How do the California warnings compare to federal limits?

Prop 65 standards are often more stringent than federal and international standards. There are various substances that require a Prop 65 warning at levels that are far lower than federal action limits. For example, the Prop 65 standard for warnings for lead is 0.5 µg/day, which is well below the federal and international standards.

Why don't all similar products carry the warning?

- Products sold in California require Prop 65 labelling while similar products sold elsewhere do not.
- A company involved in a Prop 65 lawsuit reaching a settlement may be required to use Prop 65 warnings for its products, but other companies making similar products may have no such requirement.
- The enforcement of Prop 65 is inconsistent.
- Companies may elect not to provide warnings because they conclude that they are not required to do so under Prop 65; a lack of warnings for a product does not mean that the product is free of listed chemicals at similar levels.

Why does Toro include this warning?

Toro has chosen to provide consumers with as much information as possible so that they can make informed decisions about the products they buy and use. Toro provides warnings in certain cases based on its knowledge of the presence of one or more listed chemicals without evaluating the level of exposure, as not all the listed chemicals provide exposure limit requirements. While the exposure from Toro products may be negligible or well within the "no significant risk" range, out of an abundance of caution, Toro has elected to provide the Prop 65 warnings. Moreover, if Toro does not provide these warnings, it could be sued by the State of California or by private parties seeking to enforce Prop 65 and subject to substantial penalties.