



# 48cm Super Bagger Lawn Mower

Model No. 20838—Serial No. 400000000 and Up

## Operator's Manual

## Introduction

This rotary-blade, walk-behind lawn mower is intended to be used by residential homeowners. It is designed primarily for cutting grass on well-maintained lawns on residential properties. It is not designed for cutting brush or for agricultural uses.

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

You may contact Toro directly at [www.Toro.com](http://www.Toro.com) for product and accessory information, help finding a dealer, or to register your product.

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

**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

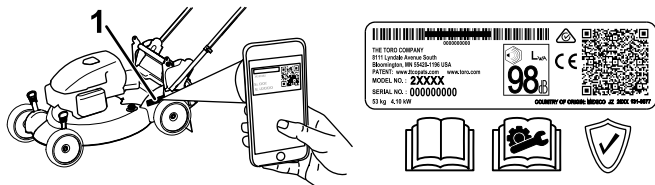


Figure 1

1. Model and serial number plate

Model No.	_____
Serial No.	_____

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



Figure 2

Safety-alert symbol

g000502

This manual uses 2 words to highlight information.

**Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

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

**Gross or Net Torque:** The gross or net torque of this engine was laboratory rated by the engine manufacturer in accordance with the Society of Automotive Engineers (SAE) J1940 or J2723. As configured to meet safety, emission, and operating requirements, the actual engine torque on this class of mower will be significantly lower. Please refer to the engine manufacturer's information included with the machine.

Do not tamper with or disable safety devices on the machine, and check their proper operation regularly. Do not attempt to adjust or tamper with the engine speed control; doing so may create an unsafe operating condition, resulting in personal injury.

**Important:** If you are using this machine above 1500 m (5,000 ft) for a continuous period, ensure that the High Altitude Kit has been installed so that the engine meets CARB/EPA emission regulations. The High Altitude Kit increases engine performance while preventing spark-plug fouling, hard starting, and increased emissions. Once you have installed the kit, attach the high-altitude label next to the serial decal on the machine. Contact any Authorized Toro Service Dealer to obtain the proper High Altitude Kit and high-altitude label for your machine. To locate a dealer convenient to you, access our website at [www.Toro.com](http://www.Toro.com) or contact our Toro Customer Care Department at the number(s) listed in your Emission Control Warranty Statement.

Remove the kit from the engine and restore the engine to its original factory configuration when running the engine under 1500 m (5,000 ft). Do not operate an engine that has been converted



for high-altitude use at lower altitudes; otherwise, you could overheat and damage the engine.  
If you are unsure whether or not your machine has been converted for high-altitude use, look for the following label:

NOTE: THE ENGINE ON THIS PRODUCT HAS BEEN MODIFIED FOR USE AT ABOVE 5,000 FEET ELEVATION. IF USING BELOW 5,000 FEET, IT MUST BE REVISED BACK TO ORIGINAL SPECIFICATIONS.

127-9363

decal127-9363

Changing the Engine Oil ..... 17  
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Replacing the Blade ..... 20  
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Safety

This machine has been designed in accordance with EN ISO 5395:2013.

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General Safety

This product is capable of amputating hands and feet and of throwing objects. Always follow all safety instructions to avoid serious personal injury.

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

- Read, understand, and follow the instructions and warnings in this *Operator’s Manual* and on the machine and attachments before starting the engine.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Do not put your hands or feet near moving parts of or under the machine. Keep clear of any discharge opening.
- Do not operate the machine without all guards and other safety protective devices in place and working on the machine.
- Keep bystanders and children a safe distance away from the machine. Do not allow children to operate the machine. Allow only people who are responsible, trained, familiar with the instructions, and physically capable to operate the machine.
- Stop the machine, shut off the engine, remove the electric-start button (if equipped), and wait for all moving parts to stop before servicing, fueling, or unclogging the machine.

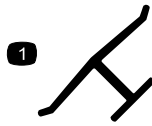
Improperly using or maintaining this machine can result in injury. To reduce the potential for injury, comply with these safety instructions and always pay attention to the safety-alert symbol, which means Caution, Warning, or Danger—personal safety instruction. Failure to comply with these instructions may result in personal injury or death.

You can find additional safety information where needed throughout this manual.

# Safety and Instructional Decals



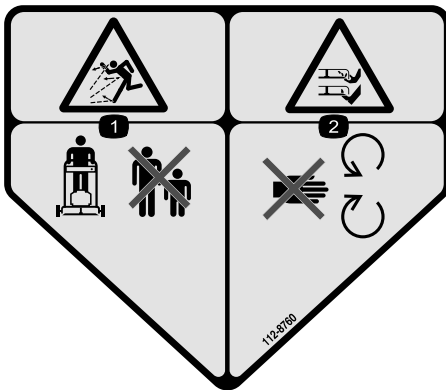
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



decaloemmark

## Manufacturer's Mark

1. This mark indicates that the blade is identified as a part from the original machine manufacturer.



decal112-8760

## 112-8760

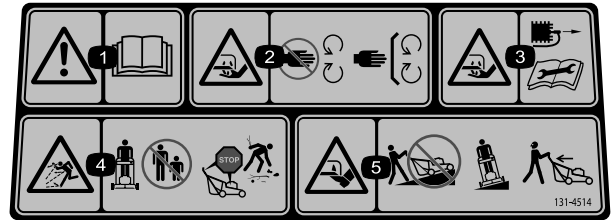
1. Thrown object hazard—keep bystanders a safe distance away from the machine.
2. Cutting/dismemberment of hand or foot—stay away from moving parts.



decal119-2283

## 119-2283

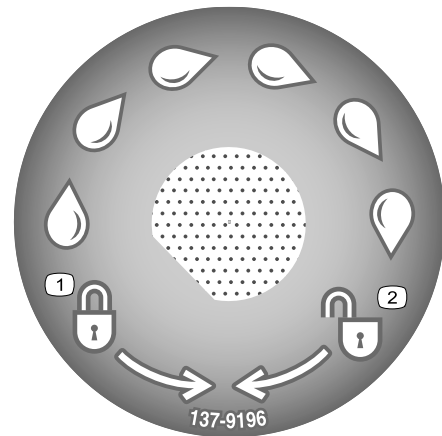
1. Height-of-cut settings



decal131-4514b

## 131-4514

1. Warning—read the *Operator's Manual*.
2. Cutting/dismemberment hazard of hand, mower blade—stay away from moving parts; keep all guards and shields in place.
3. Cutting/dismemberment hazard of hand, mower blade—disconnect the spark-plug wire and read the instructions before servicing or performing maintenance.
4. Thrown object hazard—keep bystanders a safe distance away from the machine; shut off the engine before leaving the operating position; pick up any debris before mowing.
5. Cutting/dismemberment hazard of hand, mower blade—do not operate up and down slopes; operate side to side on slopes; look behind you when backing up.



decal137-9196

## 137-9196

1. Lock
2. Unlock

# Setup

## 1

### Unfolding the Handle

No Parts Required

#### Procedure

**Important:** Remove and discard the protective plastic sheet that covers the engine and any other plastic or wrapping on the machine.

**Important:** To prevent accidental starting, do not insert the electric-start button into the electric-start ignition (if equipped) until you are ready to start the engine.

#### ⚠ WARNING

Unfolding the handle improperly can damage the cables, causing an unsafe operating condition.

- Do not damage the cable(s) when folding or unfolding the handle.
- Ensure that the cable(s) are routed to the outside of the handle.
- If a cable is damaged, contact an Authorized Service Dealer.

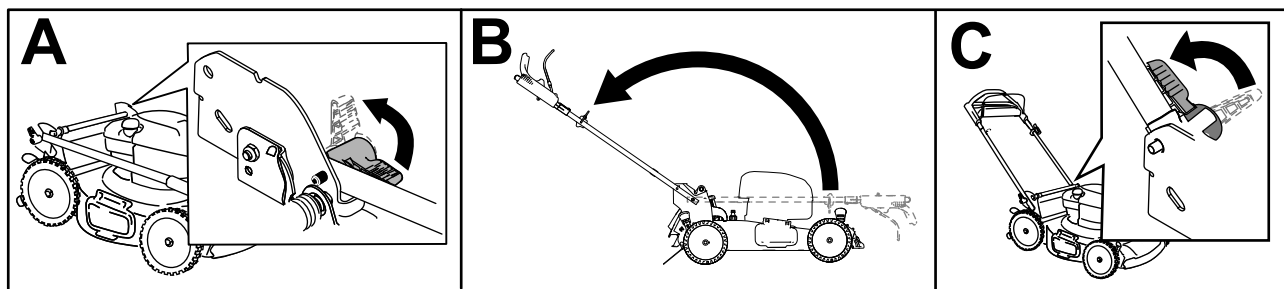


Figure 4

g232815

# 2

## Installing the Recoil-Starter Rope in the Rope Guide

No Parts Required

### Procedure

**Important:** To start the engine safely and easily whenever you use the machine, install the recoil-starter rope in the rope guide.

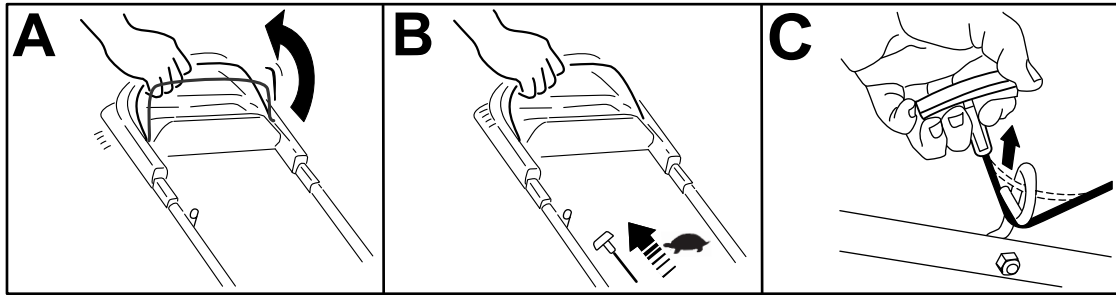


Figure 5

g230719

# 3

## Filling the Crankcase with Oil

No Parts Required

### Procedure

**Important:** If the oil level in the crankcase is too low or too high and you run the engine, you may damage the engine.

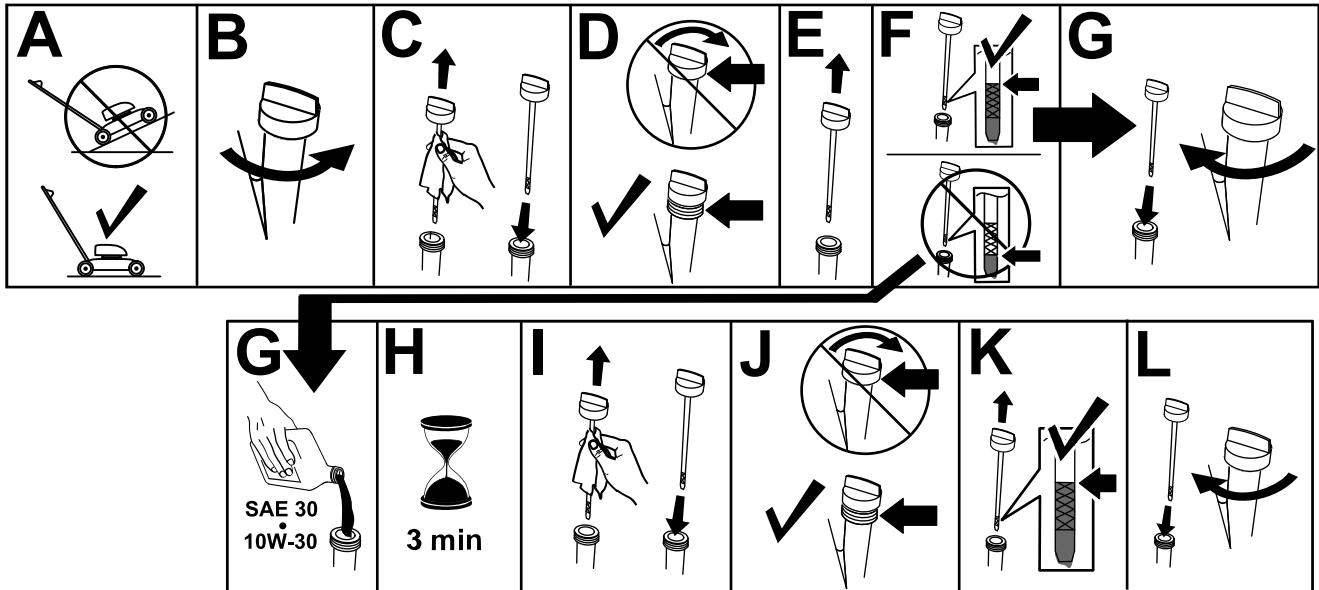


Figure 6

g235721

# 4

## Assembling the Grass Bag

No Parts Required

### Procedure

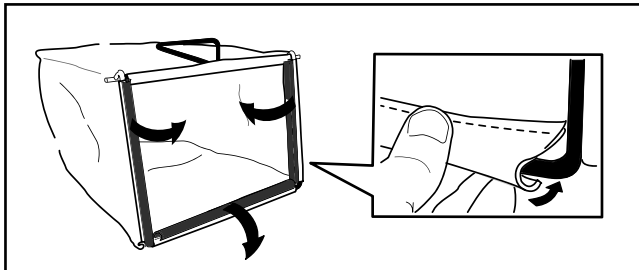


Figure 7

g241560

# 5

## Charging the Battery

No Parts Required

### Procedure

Electric-Start Model Only

Refer to [Charging the Battery \(page 18\)](#).

# Product Overview

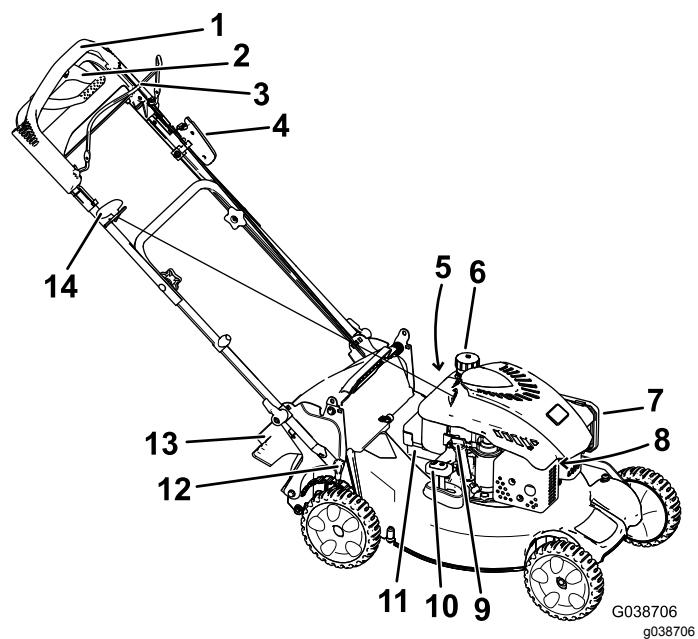


Figure 8

- |                             |                           |
|-----------------------------|---------------------------|
| 1. Upper handle             | 8. Spark plug (not shown) |
| 2. Traction-assist handle   | 9. Oil-fill tube/dipstick |
| 3. Blade-control bar        | 10. Bag-on-demand lever   |
| 4. Electric-start button    | 11. Battery               |
| 5. Washout port (not shown) | 12. Cutting-height lever  |
| 6. Fuel-tank cap            | 13. Rear-deflector door   |
| 7. Air filter               | 14. Recoil-start handle   |

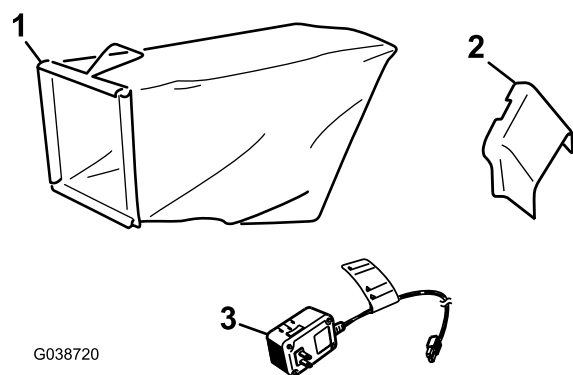


Figure 9

- |                         |                    |
|-------------------------|--------------------|
| 1. Grass bag            | 3. Battery charger |
| 2. Side-discharge chute |                    |

# Specifications

Model	Weight	Length	Width	Height
20838	41 kg (91 lb)	152 cm (60 inches)	53 cm (21 inches)	109 cm (43 inches)

## 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](http://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

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

## Before Operation

### Before Operation Safety

#### General Safety

- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- Check that all guards and safety devices, such as deflectors and/or grass catcher, are in place and working properly.
- Always inspect the machine to ensure that the blades, blade bolts, and cutting assembly are not worn or damaged.
- Inspect the area where you will use the machine, and remove all objects that could interfere with the operation of the machine or that the machine could throw.
- Adjusting the cutting height may bring you into contact with the moving blade, causing serious injury.
  - Shut off the engine, remove the electric-start button (electric-start model only), and wait for all moving parts to stop.
  - Do not put your fingers under the housing when adjusting the cutting height.

#### Fuel Safety

- Fuel is extremely flammable and highly explosive. A fire or explosion from fuel can burn you and others and can damage property.
  - To prevent a static charge from igniting the fuel, place the container and/or machine directly on the ground before filling, not in a vehicle or on an object.
  - Fill the fuel tank outdoors, in an open area, when the engine is cold. Wipe up any fuel that spills.
  - Do not handle fuel when smoking or around an open flame or sparks.
  - Do not remove the fuel cap or add fuel to the tank while the engine is running or hot.
  - If you spill fuel, do not attempt to start the engine. Avoid creating a source of ignition until the fuel vapors have dissipated.

- Store fuel in an approved container and keep it out of the reach of children.
- Fuel is harmful or fatal if swallowed. Long-term exposure to vapors can cause serious injury and illness.
  - Avoid prolonged breathing of vapors.
  - Keep your hands and face away from the nozzle and the fuel-tank opening.
  - Keep fuel away from your eyes and skin.

### Filling the Fuel Tank

- For best results, use only clean, fresh, unleaded gasoline with an octane rating of 87 or higher ((R+M)/2 rating method).
- Oxygenated fuel with up to 10% ethanol or 15% MTBE by volume is acceptable.
- **Do not** use ethanol blends of gasoline, such as E15 or E85, with more than 10% ethanol by volume. Performance problems and/or engine damage may result, which may not be covered under warranty.
- **Do not** use gasoline containing methanol.
- **Do not** store fuel either in the fuel tank or in fuel containers over the winter unless fuel stabilizer has been added to the fuel.
- **Do not** add oil to gasoline.

Fill the fuel tank with fresh unleaded regular gasoline from a major name-brand service station (Figure 10).

**Important:** To reduce starting problems, add fuel stabilizer to the gasoline all season. Mix the stabilizer with gasoline less than 30 days old.

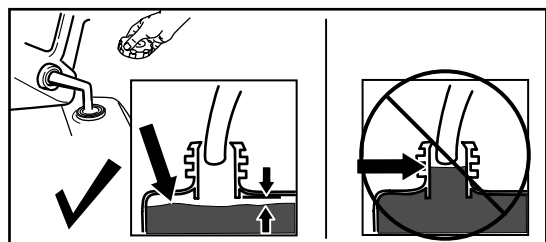


Figure 10

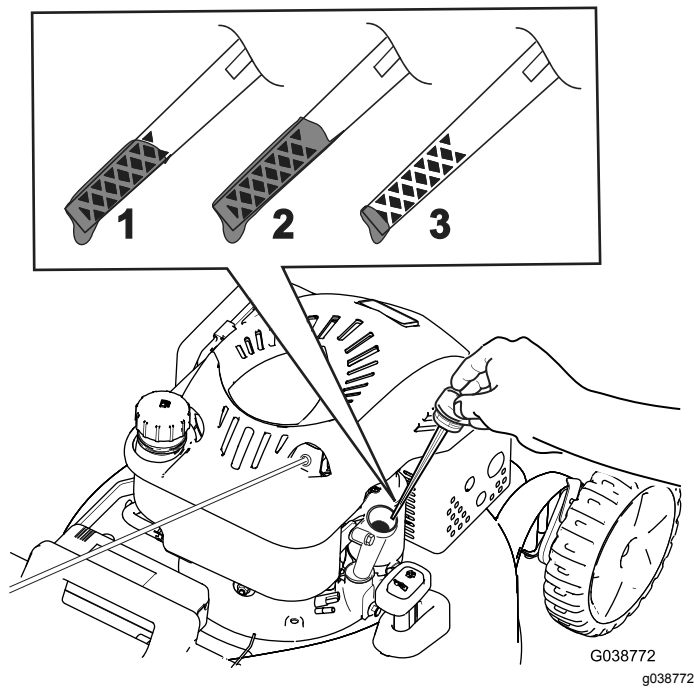
g230458

### Checking the Engine-Oil Level

**Service Interval:** Before each use or daily

1. Move the machine to a level surface.
2. Remove the dipstick by rotating the cap counterclockwise and pulling it out (Figure 11).





**Figure 11**

1. Full
2. High
3. Add

3. Wipe the dipstick clean with a clean cloth.
4. Insert the dipstick into the oil-fill tube, but do not screw it in, then remove the dipstick.
5. Read the oil level on the dipstick (Figure 11).
  - If the oil level on the dipstick is too low (Figure 11), carefully pour a small amount of SAE 30 or SAE 10W-30 detergent oil into the oil-fill tube, wait 3 minutes, and repeat steps 3 through 5 until the oil on the dipstick is at the correct level.
  - If the oil level on the dipstick is too high (Figure 11), drain the excess oil until the oil on the dipstick is at the correct level; refer to [Changing the Engine Oil \(page 17\)](#).

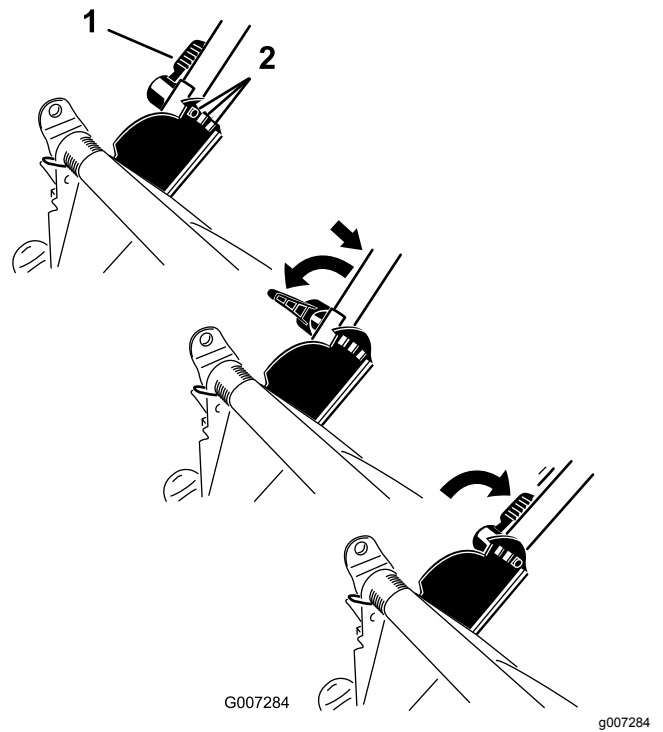
**Important:** If the oil level in the engine is too low or too high and you run the engine, you may damage the engine.

6. Install the dipstick into the oil-fill tube securely.

## Adjusting the Handle Height

You may raise or lower the handle to a position comfortable for you.

Rotate the handle lock, move the handle to 1 of 3 positions, and lock the handle into position (Figure 12).

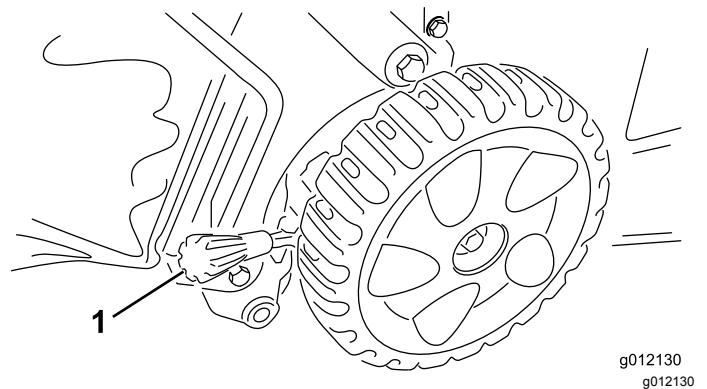


**Figure 12**

1. Handle lock
2. Handle positions

## Adjusting the Cutting Height

Adjust the cutting height as desired. Set all the cutting-height levers to the same height. To raise and lower the machine, refer to [Figure 13](#).



**Figure 13**

1. Cutting-height lever

**Important:** The cutting height settings are 25 mm (1 inch); 38 mm (1-1/2 inch); 51 mm (2 inches); 64 mm (2-1/2 inches); 83 mm (3-1/4 inches); 95 mm (3-3/4 inches); 108 mm (4-1/4 inches).

# During Operation

## During Operation Safety

### General Safety

- Wear appropriate clothing, including eye protection; long pants; substantial, slip-resistant footwear; and hearing protection. Tie back long hair, secure loose clothing, and do not wear loose jewelry.
- Do not operate the machine while ill, tired, or under the influence of alcohol or drugs.
- The blade is sharp; contacting the blade can result in serious personal injury. Shut off the engine, remove the electric-start button (electric-start model only), and wait for all moving parts to stop before leaving the operating position.
- When you release the blade-control bar, the engine should shut off and the blade should stop within 3 seconds. If not, stop using your machine and contact an Authorized Service Dealer.
- Keep bystanders, especially small children, out of the operating area. Stop the machine if anyone enters the area.
- Always look down and behind you before moving the machine in reverse.
- Operate the machine only in good visibility and appropriate weather conditions. Do not operate the machine when there is the risk of lightning.
- Wet grass or leaves can cause serious injury if you slip and contact the blade. Avoid mowing in wet conditions.
- Use extreme care when approaching blind corners, shrubs, trees, or other objects that may block your view.
- Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could cause the machine to overturn or cause you to lose your balance or footing.
- If the machine strikes an object or starts to vibrate, immediately shut off the engine, remove the key (if equipped), wait for all moving parts to stop, and disconnect the wire from the spark plug before examining the machine for damage. Make all necessary repairs before resuming operation.
- Before leaving the operating position, shut off the engine, remove the electric-start button (electric-start model only), and wait for all moving parts to stop.
- If the engine has been running the muffler will be hot and can severely burn you. Keep away from the hot muffler.

- Check the grass catcher components and the discharge chute frequently for any wear or deterioration and replace them with the manufacturer's recommended parts when necessary.
- Use accessories and attachments approved by The Toro® Company only.

### Slope Safety

- Mow across the face of slopes; never up and down. Use extreme caution when changing direction on slopes.
- Do not mow on excessively steep slopes. Poor footing could cause a slip-and-fall accident.
- Mow with caution near drop-offs, ditches, or embankments.

## Starting the Engine

1. Pull the blade-control bar to the handle and hold it (Figure 14).

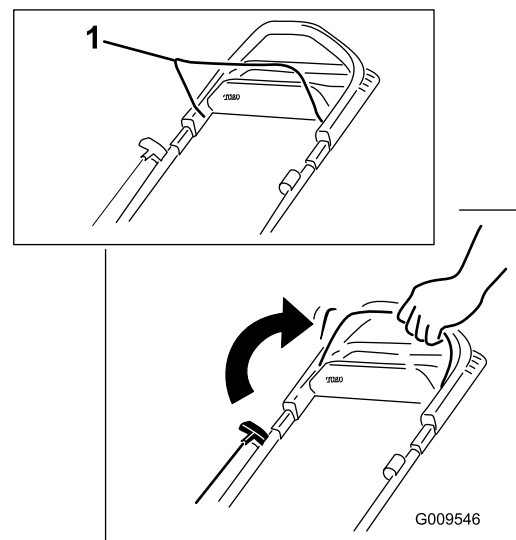
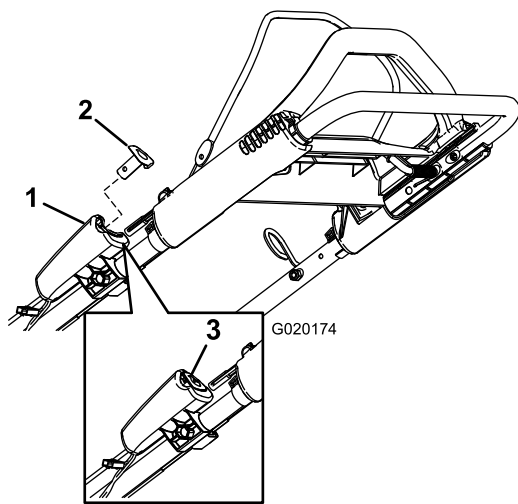


Figure 14

g009546

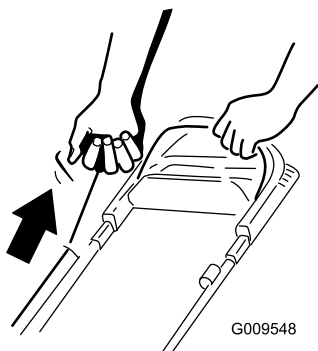
1. Blade-control bar
2. Push the electric-start button (Figure 15) or pull the recoil-start handle (Figure 16) lightly until you feel resistance, then pull it sharply, and allow it to return to the rope guide on the handle slowly.

**Note:** If the electric-start button has been removed, insert it in the electric starter.



**Figure 15**

1. Electric starter
2. Electric-start button
3. Electric-start button (installed)

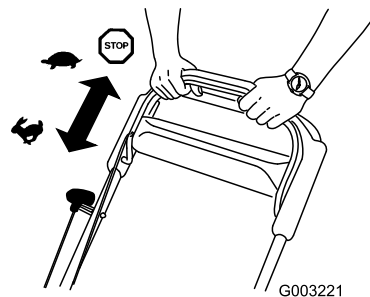


**Figure 16**

**Note:** If the machine does not start after several attempts, contact an Authorized Service Dealer.

## Using the Self-Propel Drive

To operate the self-propel drive, simply walk with your hands on the upper handle and your elbows at your sides, and the machine will automatically keep pace with you ([Figure 17](#)).



**Figure 17**

**Note:** If the machine does not freely roll backward after self-propelling, stop walking, hold your hands in place, and allow the machine to roll a couple of centimeters (inches) forward to disengage the wheel drive. You can also try reaching just under the upper handle to the metal handle and pushing the machine forward a couple of centimeters (inches). If the machine still does not roll backward easily, contact an Authorized Service Dealer.

## Shutting Off the Engine

**Service Interval:** Before each use or daily—Ensure that the engine shuts off within 3 seconds after releasing the blade-control bar.

To shut off the engine, release the blade-control bar.

**Note:** Remove the electric-start button whenever you leave the machine.

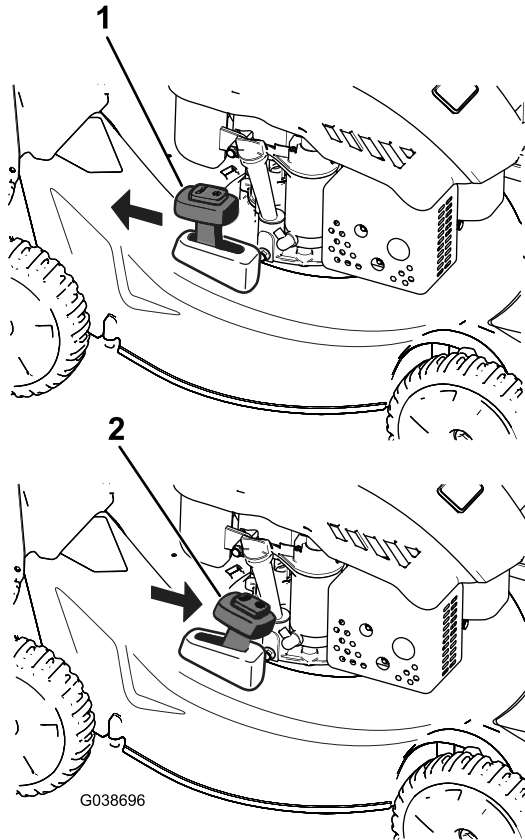
**Important:** When you release the blade-control bar, the engine should shut off and the blade should stop within 3 seconds. If they do not, stop using your machine immediately and contact an Authorized Service Dealer.

## Recycling the Clippings

Your machine comes from the factory ready to recycle the grass and leaf clippings back into the lawn.

**Note:** The grass bag may remain on the machine while you are recycling the clippings.

To recycle the clippings, move the bag-on-demand lever to the RECYCLING position ([Figure 18](#)).



**Figure 18**

1. RECYCLING position      2. BAGGING position

## Bagging the Clippings

Use the grass bag to collect grass and leaf clippings from the lawn.

### **⚠ WARNING**

A worn grass bag could allow small stones and other similar debris to be thrown toward you or bystanders, resulting in serious personal injury or death.

Check the grass bag frequently. If it is damaged, install a new Toro replacement bag.

### **⚠ WARNING**

The blade is sharp; contacting the blade can result in serious personal injury.

Shut off the engine and wait for all moving parts to stop before leaving the operating position.

1. Shut off the engine and wait for all moving parts to stop.
2. Install the grass bag; refer to [Installing the Grass Bag \(page 12\)](#) and move the bag-on-demand lever to the BAGGING position as shown in [Figure 18](#).

## Installing the Grass Bag

1. Shut off the engine, remove the electric-start button, and wait for all moving parts to stop.
2. Raise and hold up the rear deflector, install the bag in the notches, and lower the rear deflector ([Figure 19](#)).

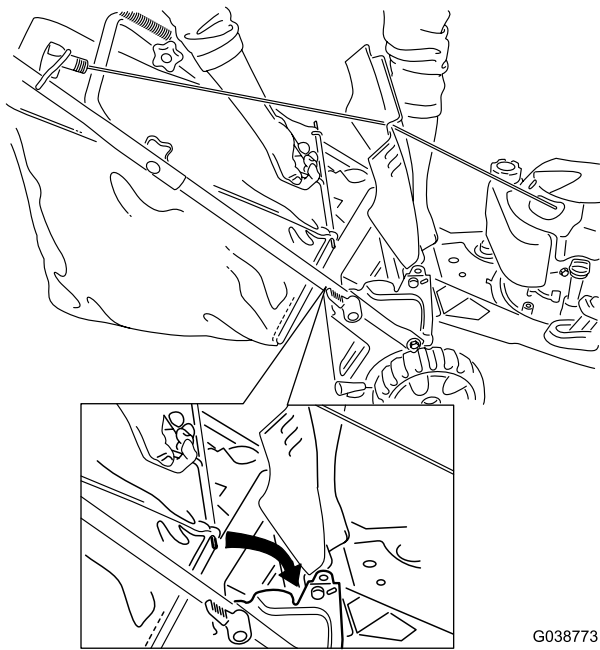


Figure 19

## Removing the Grass Bag

1. Shut off the engine and wait for all moving parts to stop.
2. Lift up the grass bag up and away from the handle.

**Note:** Tilt the grass bag slightly backward to prevent the collected grass clippings from falling out.

## Rear-Discharging the Clippings

Use the rear discharge for cutting very tall grass.

**Note:** If the grass bag is on the machine, remove it before rear-discharging the clippings; refer to [Removing the Grass Bag \(page 13\)](#). The bag-on-demand lever should be in the BAGGING position as shown in [Figure 18](#).

### ⚠ WARNING

The blade is sharp; contacting the blade can result in serious personal injury.

Shut off the engine and wait for all moving parts to stop before leaving the operating position.

## Operating Tips

### General Mowing Tips

- Inspect the area where you will use the machine and remove all objects that the machine could throw.
- Avoid striking solid objects with the blade. Never deliberately mow over any object.
- If the machine strikes an object or starts to vibrate, immediately shut off the engine, disconnect the wire from the spark plug, remove the electric-start button (if equipped), and examine the machine for damage.
- For best performance, install a new blade before the cutting season begins.
- Replace the blade when necessary with a Toro replacement blade.

### Cutting Grass

- Cut only about a third of the grass blade at a time. Do not cut below 51 mm (2 inches) unless the grass is sparse or it is late fall when grass growth begins to slow down.
- When cutting grass over 15 cm (6 inches) tall, mow at the highest cutting height setting and walk slower; then mow again at a lower setting for the best lawn appearance. If the grass is too long, the machine may plug and cause the engine to stall.
- Wet grass and leaves tend to clump on the yard and can cause the machine to plug or the engine to stall. Avoid mowing in wet conditions.
- Be aware of a potential fire hazard in very dry conditions, follow all local fire warnings, and keep the machine free of dry grass and leaf debris.
- Alternate the mowing direction. This helps disperse the clippings over the lawn for even fertilization.
- If the finished lawn appearance is unsatisfactory, try 1 or more of the following:
  - Replace the blade or have it sharpened.
  - Walk at a slower pace while mowing.
  - Raise the cutting height on your machine.
  - Cut the grass more frequently.
  - Overlap cutting swaths instead of cutting a full swath with each pass.

### Cutting Leaves

- After cutting the lawn, ensure that half of the lawn shows through the cut leaf cover. You may need to make more than a single pass over the leaves.

- If there are more than 13 cm (5 inches) of leaves on the lawn, mow at a higher cutting height and then again at the desired cutting height.
- Slow down your mowing speed if the machine does not cut the leaves finely enough.

## After Operation

## After Operation Safety

### General Safety

- Clean grass and debris from the machine to help prevent fires. Clean up oil or fuel spills.
- Allow the engine to cool before storing the machine in any enclosure.
- Never store the machine or fuel container where there is an open flame, spark, or pilot light, such as on a water heater or on other appliances.

### Hauling Safety

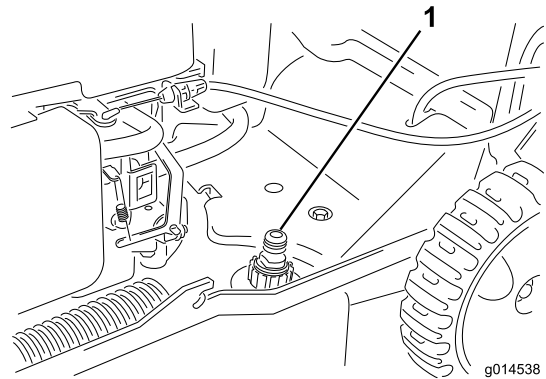
- Remove the electric-start button (if equipped) before loading the machine for hauling.
- Use care when loading or unloading the machine.
- Secure the machine from rolling.

## Cleaning under the Machine

**Service Interval:** Before each use or daily

For best results, clean the machine soon after you have completed mowing.

1. Lower the machine to the lowest cutting-height setting. Refer to [Adjusting the Cutting Height \(page 9\)](#).
2. Move the machine onto a level surface.
3. Attach a garden hose that is connected to a water supply to the washout port ([Figure 20](#)).



**Figure 20**

1. Washout port

4. Turn the water on.
5. Start the engine and run it until there are no more clippings that come out from under the machine.
6. Shut off the engine.
7. Shut off the water and disconnect the garden hose from the machine.
8. Start the engine and run it for a few minutes to dry the underside of the machine.
9. Shut off the engine and allow it to cool.



# Folding the Handle

## ⚠ WARNING

Folding or unfolding the handle improperly can damage the cables, causing an unsafe operating condition.

- Do not damage the cables when folding or unfolding the handle.
- If a cable is damaged, contact an Authorized Service Dealer.

1. Remove the electric-start button (if equipped); refer to [Figure 21](#).

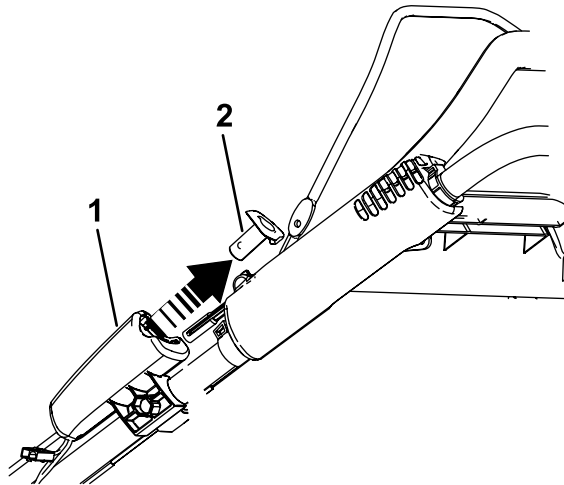


Figure 21

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1. Electric starter
2. Electric-start button

2. Loosen the handle knobs.
3. Rotate the entire handle forward ([Figure 22](#)).

**Important:** Route the cables to the outside of the handle knobs as you fold the upper handle.

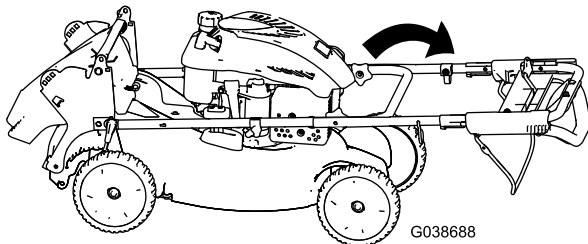


Figure 22

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4. Rotate the upper portion of the handle back toward the engine; refer to [Figure 23](#).

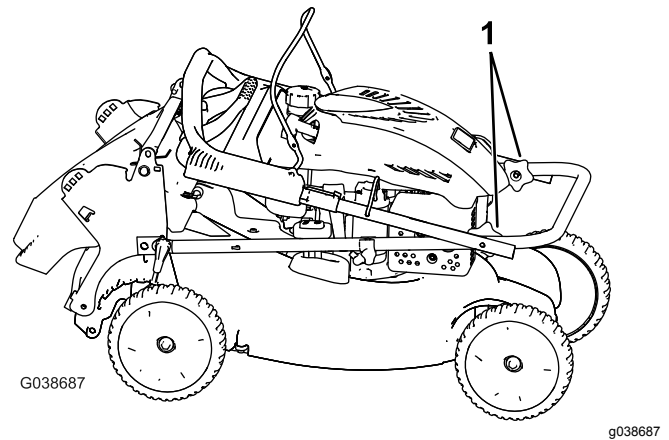


Figure 23

1. Handle knobs

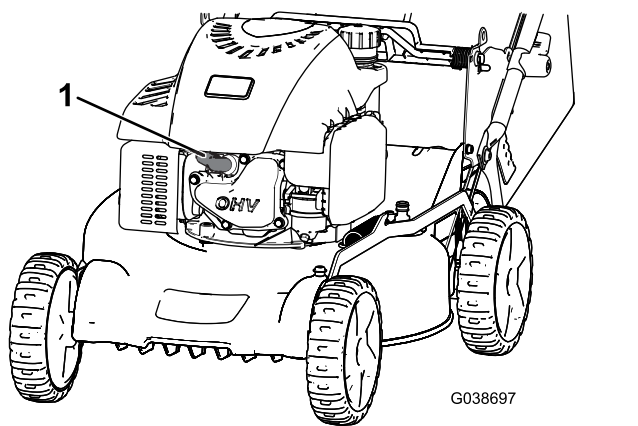
# Maintenance

## Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 5 hours	<ul style="list-style-type: none"> <li>Change the engine oil.</li> </ul>
Before each use or daily	<ul style="list-style-type: none"> <li>Check the engine-oil level.</li> <li>Ensure that the engine shuts off within 3 seconds after releasing the blade-control bar.</li> <li>Clean grass clippings and dirt from under the machine.</li> </ul>
Every 25 hours	<ul style="list-style-type: none"> <li>Charge the battery for 24 hours.</li> </ul>
Every 100 hours	<ul style="list-style-type: none"> <li>Service the spark plug.</li> </ul>
Yearly	<ul style="list-style-type: none"> <li>Service the air filter.</li> <li>Change the engine oil.</li> <li>Replace the blade or have it sharpened (more frequently if the edge dulls quickly).</li> <li>Clean the engine by removing dirt and debris from its top and sides; clean it more frequently in dusty operating conditions.</li> </ul>
Yearly or before storage	<ul style="list-style-type: none"> <li>Empty the fuel tank before repairs as directed and before yearly storage.</li> </ul>

## Maintenance Safety

- Disconnect the spark-plug wire from the spark plug and remove the electric-start button before performing any maintenance procedure.
- Wear gloves and eye protection when servicing the machine.
- The blade is sharp; contacting the blade can result in serious personal injury. Wear gloves when servicing the blade. Do not repair or alter the blade(s).
- Never tamper with safety devices. Check their proper operation regularly.
- Tipping the machine may cause the fuel to leak. Fuel is flammable and explosive, and can cause personal injury. Run the engine dry to remove the fuel with a hand pump; never siphon the fuel.
- 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.



**Figure 24**

- Spark-plug wire
- 
- After performing the maintenance procedure(s), connect the spark-plug wire to the spark plug.

**Important:** Before tipping the machine to change the oil or replace the blade, allow the fuel tank to run dry through normal usage. If you must tip the machine prior to running out of fuel, use a hand fuel pump to remove the fuel. Always tip the machine onto its side, with the dipstick down.

## Preparing for Maintenance

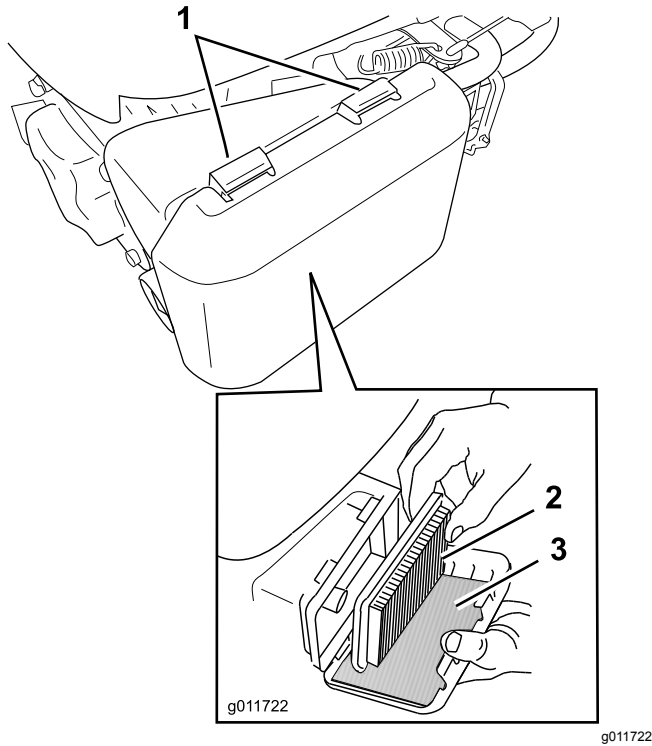
- Shut off the engine, remove the electric-start button (if equipped), and wait for all moving parts to stop.
- Disconnect the spark-plug wire from the spark plug (Figure 24).



# Servicing the Air Filter

**Service Interval:** Yearly

1. Press down on the latch tabs on top of the air-filter cover ([Figure 25](#)).



**Figure 25**

1. Latch tabs
  2. Paper air filter
  3. Foam pre-filter
- 
2. Open the cover.
  3. Remove the paper air filter and the foam pre-filter ([Figure 25](#)).
  4. Inspect the foam pre-filter, and replace it if it is damaged or excessively dirty.
  5. Inspect the paper air filter.
    - If the air filter is damaged or is wet with oil or fuel, replace it.
    - If the air filter is dirty, tap it on a hard surface several times or blow compressed air less than 207 kPa (30 psi) through the side of the filter that faces the engine.
- Note:** Do not brush the dirt off the filter; brushing forces dirt into the fibers.
6. Remove the dirt from the air-filter body and the cover using a moist rag.
- Important:** Do not wipe dirt into the air duct.
7. Install the foam pre-filter and the paper air filter into the air filter.
  8. Install the cover.

# Changing the Engine Oil

**Service Interval:** After the first 5 hours

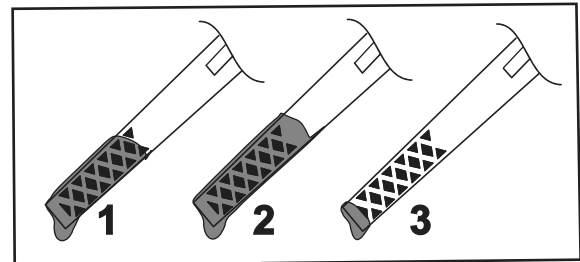
Yearly

**Note:** Run the engine a few minutes before changing the oil to warm it. Warm oil flows better and carries more contaminants.

## Engine Oil Specifications

Engine oil capacity	0.55 L (18.6 fl oz)
Oil viscosity	SAE 30 or SAE 10W-30 detergent oil
API service classification	SJ or higher

1. Move the machine to a level surface.
2. Refer to [Preparing for Maintenance](#) (page 16).
3. Remove the dipstick by rotating the cap counterclockwise and pulling it out ([Figure 26](#)).



**Figure 26**

1. Full
  2. High
  3. Add
- 
4. Tip the machine onto its side (so that the air filter is up) to drain the used oil from the oil-fill tube ([Figure 26](#)).

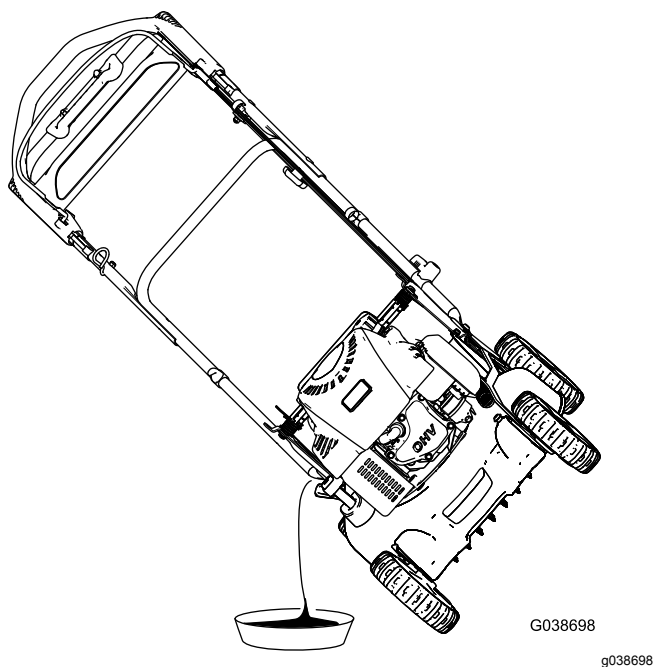


Figure 27

## Charging the Battery

**Service Interval:** Every 25 hours

Charge the battery for 24 hours initially, then monthly (every 25 starts) or as needed. Always use the charger in a sheltered area and charge the battery at room temperature (22°C or 70°F) whenever possible.

1. Connect the charger to the wire harness located below the electric-start button (Figure 28).

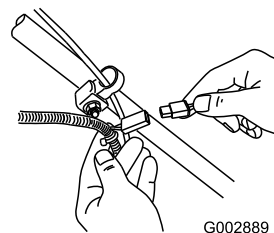


Figure 28

5. After draining the used oil, return the machine to the operating position.
6. Carefully pour about 3/4 of the engine capacity of oil into the oil-fill tube.
7. Wait 3 minutes for the oil to settle in the engine.
8. Wipe the dipstick clean with a clean cloth.
9. Insert the dipstick into the oil-fill tube, **but do not screw it in**, then remove the dipstick.
10. Read the oil level on the dipstick ( [Checking the Engine-Oil Level \(page 8\)](#)).
  - If the oil level on the dipstick is too low, carefully pour a small amount of oil into the oil-fill tube, wait 3 minutes, and repeat steps [8](#) through [10](#) until the oil level on the dipstick is correct.
  - If the oil level on the dipstick is too high, drain the excess oil until the oil level on the dipstick is correct.

**Important:** If the oil level in the engine is too low or too high and you run the engine, you may damage the engine.

11. Install the dipstick into the oil-fill tube securely.
12. Recycle the used oil properly.

2. Plug the charger into a wall outlet.

**Note:** When the battery no longer holds a charge, recycle or dispose of the lead-acid battery according to local codes.

**Note:** Your battery charger may have a 2-color LED display that indicates the following states of charging:

- A red light indicates that the charger is charging the battery.
- A green light indicates that the charger is fully charged or the charger is disconnected from the battery.
- A flashing light that alternates between red and green indicates that the battery is nearly fully charged. This state lasts only a few minutes until the battery is fully charged.

## Replacing the Fuse

If the battery does not charge or the engine does not turn with the electric starter, the fuse may be blown. Replace it with a 40 A plug-in type fuse.

**Important:** You cannot start the machine with the electric starter or charge the battery unless you install the fuse.

1. Refer to [Preparing for Maintenance \(page 16\)](#).
2. Unclip both ends of the battery cover and remove it ([Figure 29](#)).

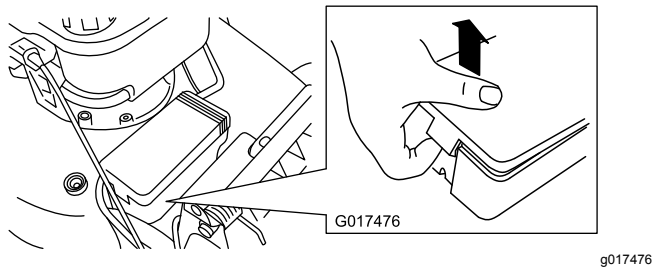


Figure 29

3. Replace the fuse in the fuse holder ([Figure 30](#)).

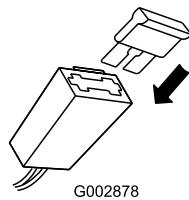


Figure 30

**Note:** Your machine comes with a spare fuse in the battery compartment.

4. Install the battery cover.

## Servicing the Spark Plug

**Service Interval:** Every 100 hours

Use a **Champion RL87YC** spark plug or equivalent.

1. Shut off the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug ([Figure 24](#)).
3. Clean around the spark plug.
4. Remove the spark plug from the cylinder head.

**Important:** Replace a cracked, fouled, or dirty spark plug. Do not clean the electrodes because grit entering the cylinder can damage the engine.

5. Set the gap on the plug to 0.76 mm (0.030 inch) as shown in [Figure 31](#).

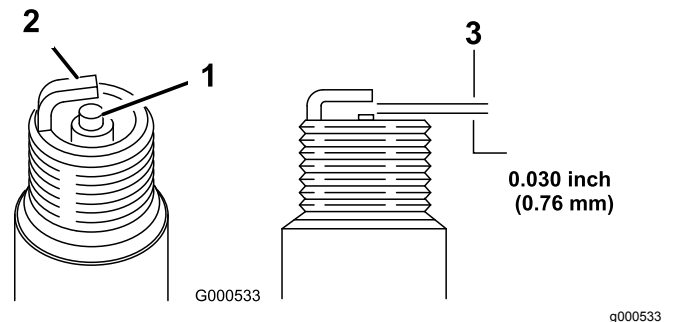


Figure 31

1. Center electrode insulator
2. Side electrode
3. Air gap (not to scale)

6. Install the spark plug.
7. Torque the plug to 20 N·m (15 ft-lb).
8. Connect the wire to the spark plug.

# Replacing the Blade

Service Interval: Yearly

**Important:** You will need a torque wrench to install the blade properly. If you do not have a torque wrench or are uncomfortable performing this procedure, contact an Authorized Service Dealer.

Examine the blade whenever you run out of fuel. If the blade is damaged or cracked, replace it immediately. If the blade edge is dull or nicked, have it sharpened and balanced, or replace it.

## ⚠ WARNING

The blade is sharp; contacting the blade can result in serious personal injury.

Wear gloves when servicing the blade.

1. Refer to [Preparing for Maintenance \(page 16\)](#).
2. Tip the machine onto its side with the air filter up.
3. Use a block of wood to hold the blade steady ([Figure 32](#)).

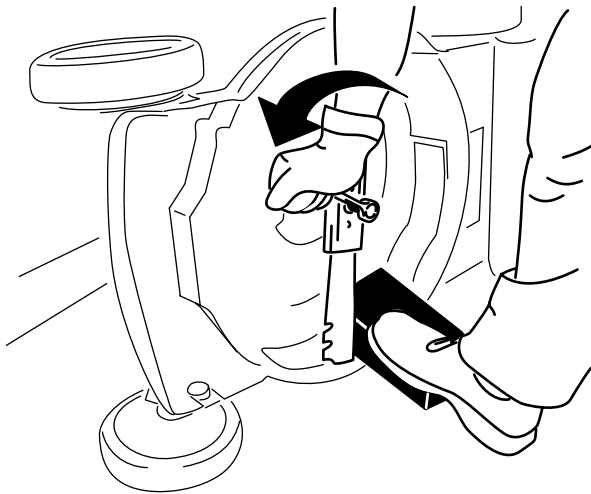


Figure 32

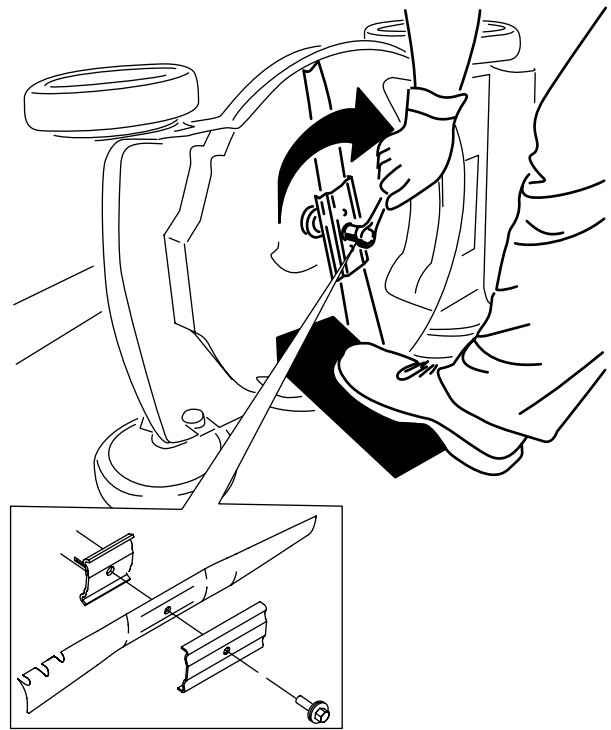


Figure 33

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**Important:** Position the curved ends of the blade to point toward the machine housing.

6. Use a torque wrench to tighten the blade bolt to 82 N·m (60 ft-lb).

**Important:** A bolt torqued to 82 N·m (60 ft-lb) is very tight. While holding the blade with a block of wood, put your weight behind the ratchet or wrench and tighten the bolt securely. This bolt is very difficult to overtighten.

4. Remove the blade, saving all mounting hardware ([Figure 32](#)).
5. Install the new blade and all mounting hardware ([Figure 33](#)).

# Storage

Store the machine in a cool, clean, dry place.

## Preparing the Machine for Storage

1. On the last refueling of the year, add fuel stabilizer (such as Toro Premium Fuel Treatment) to the fuel as directed on the label.
2. Dispose of any unused fuel properly. Recycle it according to local codes or use it in your automobile.

**Important:** Old fuel in the fuel tank is the leading cause of hard starting. Do not store the fuel without fuel stabilizer more than 30 days, and do not store stabilized fuel beyond the duration recommended by the fuel-stabilizer manufacturer.

3. Run the machine until the engine shuts off from running out of fuel.
4. Start the engine again and allow it to run until it shuts off. When you can no longer start the engine, it is sufficiently dry.
5. Disconnect the wire from the spark plug and connect the wire to the retaining post (if equipped) and remove the electric-start button (if equipped).
6. Remove the spark plug, add 30 ml (1 fl oz) of engine oil through the spark-plug hole, and pull the recoil-starter rope slowly several times to distribute oil throughout the cylinder to prevent cylinder corrosion during the off-season.
7. Loosely install the spark plug.
8. Tighten all nuts, bolts, and screws.
9. **Electric-start models only:** Charge the battery for 24 hours, then unplug the battery charger and store the machine in an unheated area. If you must store the machine in a heated area, you must charge the battery every 90 days. Refer to [Charging the Battery \(page 18\)](#).

## Removing the Machine from Storage

1. **Electric-start models only:** Charge the battery for 24 hours; refer to [Charging the Battery \(page 18\)](#).
2. Check and tighten all fasteners.
3. Remove the spark plug and spin the engine rapidly by pulling the recoil-start handle to blow the excess oil from the cylinder.
4. Install the spark plug and tighten it with a torque wrench to 20 N·m (15 ft-lb).
5. Perform any maintenance procedures; refer to [Maintenance \(page 16\)](#).
6. Check the engine-oil level; refer to [Checking the Engine-Oil Level \(page 8\)](#).
7. Fill the fuel tank with fresh fuel; refer to [Filling the Fuel Tank \(page 8\)](#).
8. Connect the wire to the spark plug.

**Notes:**

**Notes:**

## **European Privacy Notice**

### **The Information Toro Collects**

Toro Warranty Company (Toro) respects your privacy. In order to process your warranty claim and contact you in the event of a product recall, we ask you to share certain personal information with us, either directly or through your local Toro company or dealer.

The Toro warranty system is hosted on servers located within the United States where privacy law may not provide the same protection as applies in your country.

**BY SHARING YOUR PERSONAL INFORMATION WITH US, YOU ARE CONSENTING TO THE PROCESSING OF YOUR PERSONAL INFORMATION AS DESCRIBED IN THIS PRIVACY NOTICE.**

### **The Way Toro Uses Information**

Toro may use your personal information to process warranty claims, to contact you in the event of a product recall and for any other purpose which we tell you about. Toro may share your information with Toro's affiliates, dealers or other business partners in connection with any of these activities. We will not sell your personal information to any other company. We reserve the right to disclose personal information in order to comply with applicable laws and with requests by the appropriate authorities, to operate our systems properly or for our own protection or that of other users.

### **Retention of your Personal Information**

We will keep your personal information as long as we need it for the purposes for which it was originally collected or for other legitimate purposes (such as regulatory compliance), or as required by applicable law.

### **Toro's Commitment to Security of Your Personal Information**

We take reasonable precautions in order to protect the security of your personal information. We also take steps to maintain the accuracy and current status of personal information.

### **Access and Correction of your Personal Information**

If you would like to review or correct your personal information, please contact us by email at [legal@toro.com](mailto:legal@toro.com).

## **Australian Consumer Law**

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