Form No. 3399-582 Rev B

30in TurfMaster Walk-Behind Lawn Mower

Model No. 22210—Serial No. 316000001 and Up

Operator's Manual

Introduction

This rotary-blade, walk-behind lawn mower is intended to be used by residential homeowners or professional, hired operators. It is designed primarily for cutting grass on well-maintained lawns on residential or commercial 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 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.

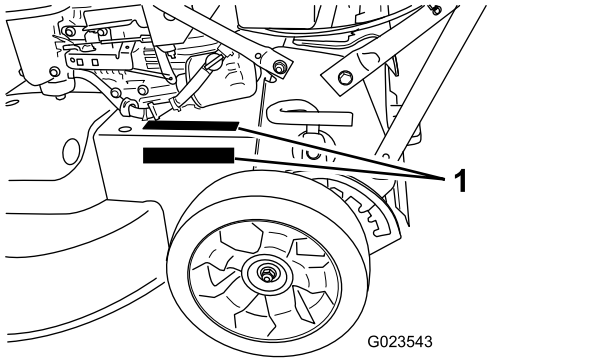

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Figure 1

1. The model and serial number plate is in one of these 2 locations.

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

1. Safety alert symbol

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

It is a violation of California Public Resource Code Section 4442 or 4443 to use or operate the engine on any forest-covered, brush-covered, or grass-covered land unless the engine is equipped with a spark arrester, as defined in Section 4442, maintained in effective working order or the engine is constructed, equipped, and maintained for the prevention of fire.

This spark ignition system complies with Canadian ICES-002.

The enclosed Engine Owner's Manual is supplied for information regarding the US Environmental Protection Agency (EPA) and the California Emission Control Regulation of emission systems, maintenance, and warranty. Replacements may be ordered through the engine manufacturer.

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. As configured to meet safety, emission, and operating requirements, the actual engine torque on this class of mower will be significantly lower. Go to www.Toro.com to view specifications on your mower model.

8111 Lyndale Avenue South
Bloomington, MN 55420

Register at www.Toro.com.

Original Instructions (EN)
Printed in the USA

3399-582

⚠ WARNING

CALIFORNIA
Proposition 65 Warning

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

Contents

Safety

This machine has been designed in accordance with ANSI B71.1-2012.

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.

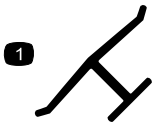
- Read and understand the contents of this *Operator's Manual* before you start the engine. Ensure that everyone using this product knows how to use it and understands the warnings.
- Do not put your hands or feet near moving components of the machine.
- Do not operate the machine without all guards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

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

You can find additional items of safety information in their respective sections 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 lost.



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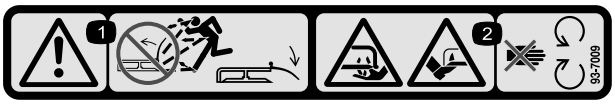
Manufacturer's Mark

1. Indicates that the blade is identified as a part from the original machine manufacturer.



decal93-7009

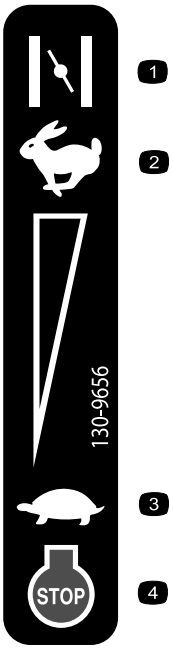
93-7009

1. Warning—don't operate the mower with the deflector up or removed; keep the deflector in place.
2. Cutting/dismemberment hazard of hand or foot, mower blade—stay away from moving parts.

decal94-8072

94-8072

1. Warning—cutting/dismemberment hazard of hand or foot, cutting mechanism.

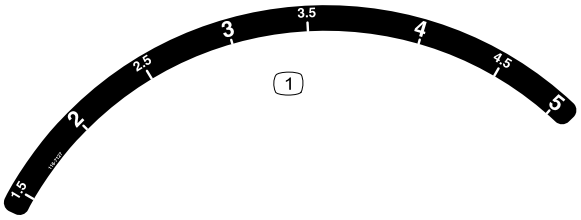


decal130-9656

130-9656

BBC Units

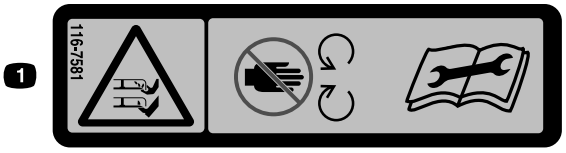
1. Choke
2. Fast
3. Slow
4. Engine—stop



decal116-7127

116-7127

1. Height of cut



decal116-7581

116-7581

1. Cutting/dismemberment hazard of hand or foot, mower blade-stay away from moving parts. Read the *Operator's Manual* before adjusting servicing, or cleaning.

decal116-7583

116-7583

1. Warning—read the *Operator's Manual*; do not operate this machine unless you are trained.
2. Thrown object hazard—keep bystanders away.
3. Thrown object hazard—do not operate the mower without the rear discharge plug or bag in place.
4. Cutting/dismemberment hazard of hand or foot, mower blade—stay away from moving parts; keep all guards in place.
5. Warning—wear hearing protection.
6. Cutting/dismemberment hazard of hand or foot, mower blade—do not operate up and down slopes; operate side to side on slopes; shut off the engine before leaving the machine; pick up any debris before mowing; look behind you when moving in reverse.

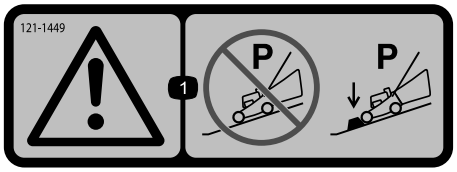
decal117-2718

117–2718

decal120-9570

120-9570

1. Warning—stay away from moving parts; keep all guards and shields in place.



decal121-1449

121-1449

1. Warning—do not park on slopes unless wheels are chocked or blocked.

Setup

1

Installing the Handle

No Parts Required

Procedure

⚠ 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 2 bolts from the machine frame in the location shown in Figure 3.

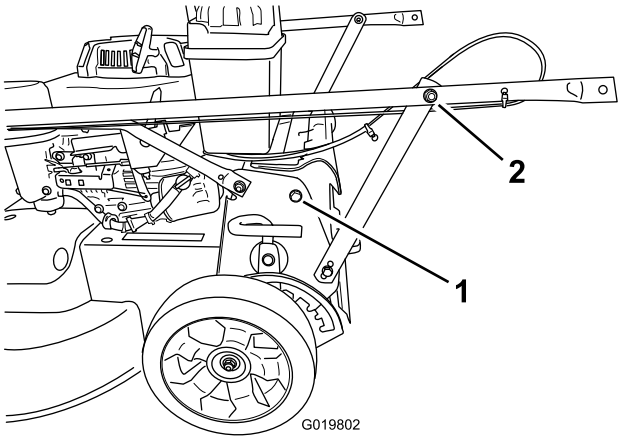


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Figure 3

1. Bolt (2)
2. Nut on handle support bracket (2)

2. Rotate the handle rearward to the operating position.
3. Secure the handle to the machine with the bolts that you removed in step 1
4. Tighten the fasteners that support the handle on both sides of the machine as shown in Figure 4.

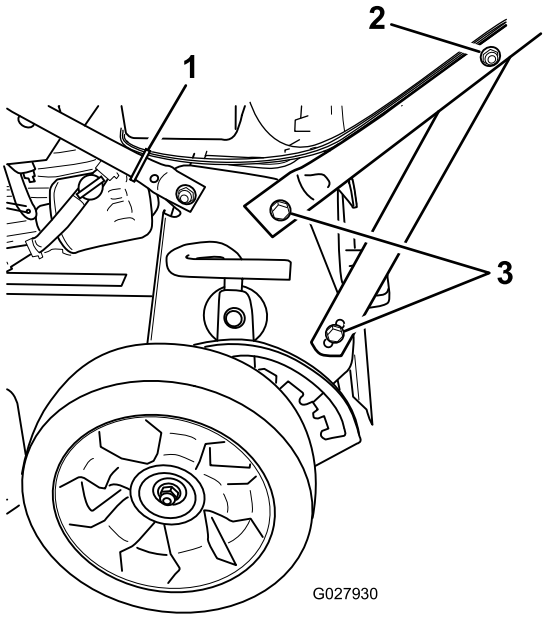

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Figure 4

1. Cable tie
2. Nut on handle support bracket (2)
3. Bolt (4)

5. Use a cable tie to secure the cables to the lower handle in the location shown in Figure 4.
6. Secure the cable tie on the handle and trim off the excess material from the tie.

2

Adjusting the Handle Height

No Parts Required

Procedure

1. Stand in the operating position to determine the most comfortable handle height.
2. Remove the handle bolt and insert it in 1 of the 3 holes located at the bottom of the handle bracket (Figure 5).

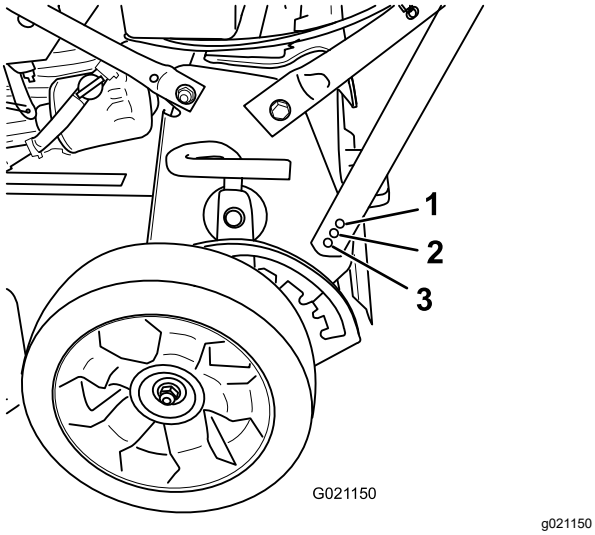

Figure 5

1. Lowest handle height setting
2. Middle handle height setting
3. Highest handle height setting

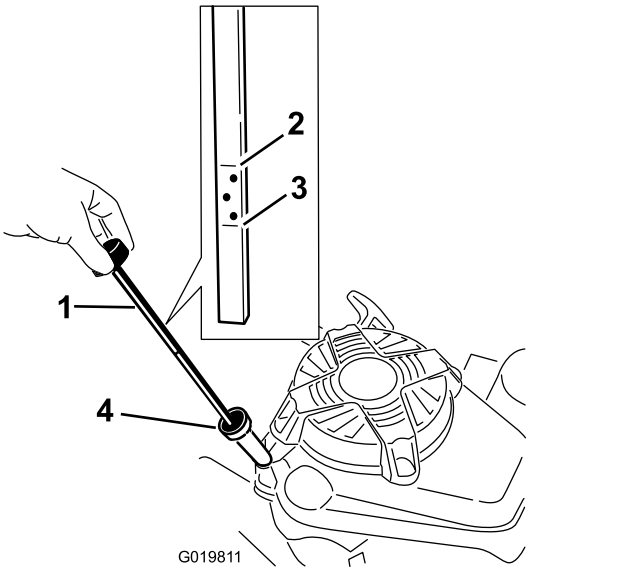

Figure 6

1. Dipstick
2. Full mark
3. Add mark
4. Oil-fill tube

3. Tighten the handle bolt until it is snug.
4. Repeat the steps above for the other side of the machine.

3

Filling the Crankcase with Oil

No Parts Required

Procedure

Important: **This machine does not come with oil in the engine. Before starting the engine, fill the engine with oil.**

1. Move the machine to a level surface.
2. Remove the dipstick by rotating the cap counterclockwise and pulling it out.
3. If the crankcase is empty, add about 3/4 of the crankcase capacity of oil into the oil-fill tube (Figure 6).

   Note: Max. fill: 0.85 L (29 oz) with oil filter; 0.65 L (22 oz) without oil filter; type: SAE 30 or SAE 10W30 weight detergent oil with an API service classification of SF, SG, SH, SJ, SL, or higher.
4. Wipe the dipstick clean with a clean cloth.
5. Insert the dipstick into the filler neck, then remove it.

   Note: To ensure an accurate oil level reading, install the dipstick fully.
6. Read the oil level on the dipstick (Figure 6).
   - If the oil level is below the **Add** mark, add a small amount of oil **slowly** to the oil-fill tube, then repeat steps 4 through 6 until the oil level is at the **Full** mark on the dipstick.
   - If the oil level above the **Full** mark, drain the excess oil until the oil level is at the **Full** mark on the dipstick; refer to Changing the Engine Oil (page 18).

     Important: **If the oil level in the crankcase is too low or too high and you run the engine, you may damage the engine.**
7. Insert the dipstick into the filler neck and rotate the cap clockwise until it is tight.

4

Assembling the Grass Bag

No Parts Required

Procedure

1. Slip the grass bag over the frame as shown in Figure 7.

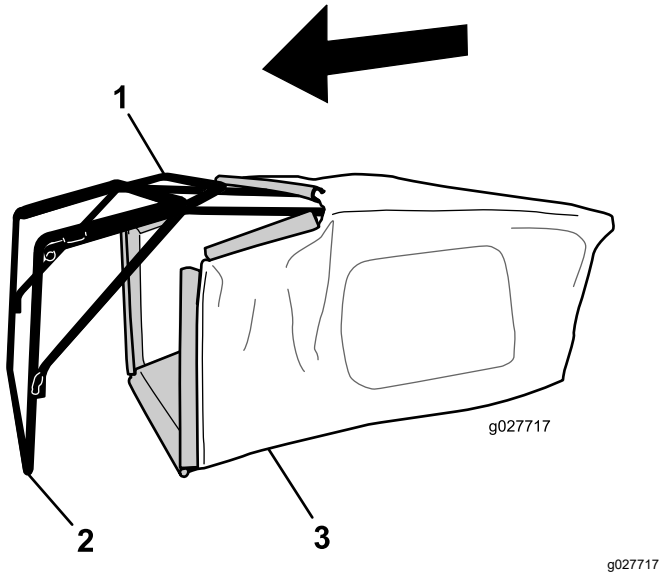

Figure 7

1. Handle
2. Frame
3. Grass bag

Note: Do not slip the bag over the handle (Figure 7).

2. Hook the bottom channel of the bag onto the bottom of the frame (Figure 8).

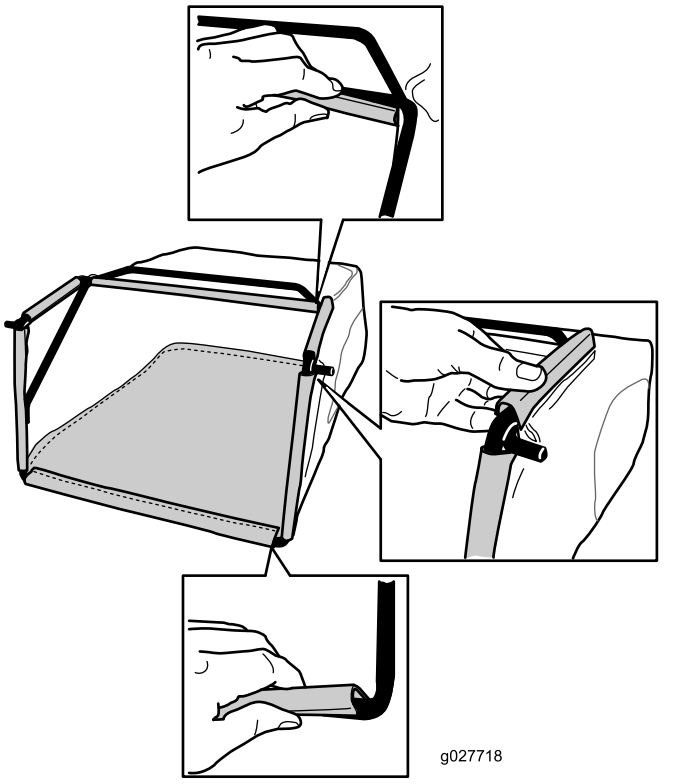

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Figure 8

3. Hook the top and side channels of the bag onto the top and sides of the frame, respectively (Figure 8).

Product Overview

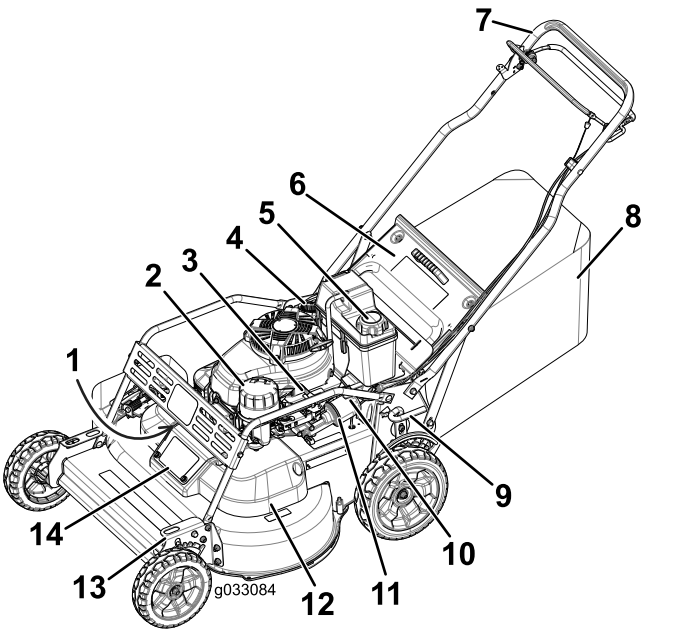

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Figure 9

1. Spark plug (under brush guard)
2. Air filter
3. Throttle lever
4. Oil fill/dipstick
5. Fuel-tank cap
6. Rear deflector
7. Handle
8. Grass bag
9. Rear cutting-height lever
10. Fuel shut-off valve
11. Oil filter
12. Belt cover
13. Front cutting-height lever
14. Belt-cover-access panel

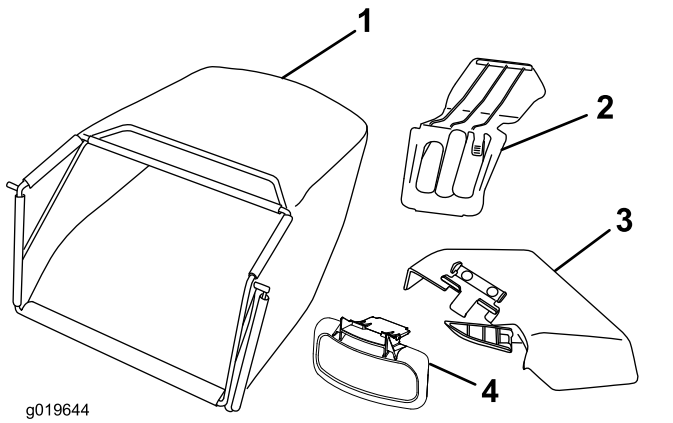

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Figure 10

1. Grass bag
2. Rear-discharge plug
3. Side-discharge chute
4. Side-discharge deflector

Controls

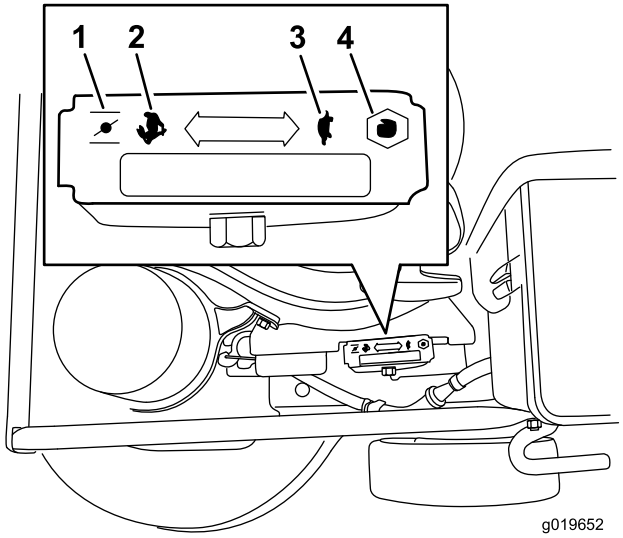

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Figure 11

Throttle (Throttle lever not shown for the sake of clarity)

1. Choke
2. Fast
3. Slow
4. Stop

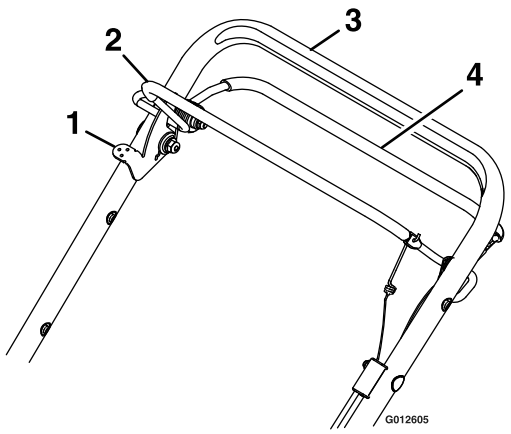

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Figure 12

Control bar

1. Blade-control lock-lever
2. Blade-control bail
3. Handle
4. Drive bail

Operation

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 the machine could throw.
- Adjusting the cutting height may bring you into contact with the moving blade, causing serious injury.
  - Shut off the engine and wait for all moving parts to stop.
  - Do not put your fingers under the housing when adjusting the cutting height.

Fuel Safety

⚠ DANGER

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.**
- **Store fuel in an approved container and keep it out of the reach of children.**

⚠ WARNING

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

- **Avoid prolonged breathing of vapors.**
- **Keep your hands and face away from the nozzle and the fuel-tank opening.**
- **Keep fuel away from your eyes and skin.**

Checking the Engine-Oil Level

Service Interval: Before each use or daily

Before each use, ensure that the oil level is between the **Add** and **Full** marks on the dipstick (Figure 13).

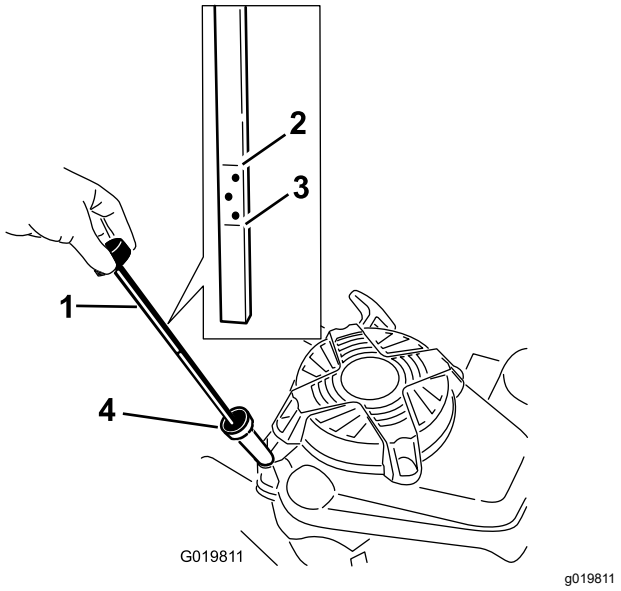

Figure 13

1. Dipstick
2. Full mark
3. Add mark
4. Oil-fill tube

1. Move the machine to a level surface.
2. Clean around the dipstick (Figure 13).
3. Remove the dipstick by rotating the cap counterclockwise and pulling it out.
4. Wipe the dipstick clean with a clean cloth.
5. Insert the dipstick into the filler neck, then remove it.

   Note: To ensure an accurate oil level reading, install the dipstick fully.
6. Read the oil level on the dipstick (Figure 13).
   - If the oil level is below the **Add** mark, add a small amount of oil **slowly** to the oil-fill tube,

then repeat steps 4 through 6 until the oil level is at the **Full** mark on the dipstick.

- If the oil level above the **Full** mark, drain the excess oil until the oil level is at the **Full** mark on the dipstick; refer to Changing the Engine Oil (page 18).

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

7. Insert the dipstick into the filler neck and rotate the cap clockwise until it is tight.

Filling the Fuel Tank

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

Fill the fuel tank with fresh unleaded regular gasoline from a major name-brand service station (Figure 14).

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

Note: The capacity of the fuel tank is 3.76 L (0.99 US gallon).

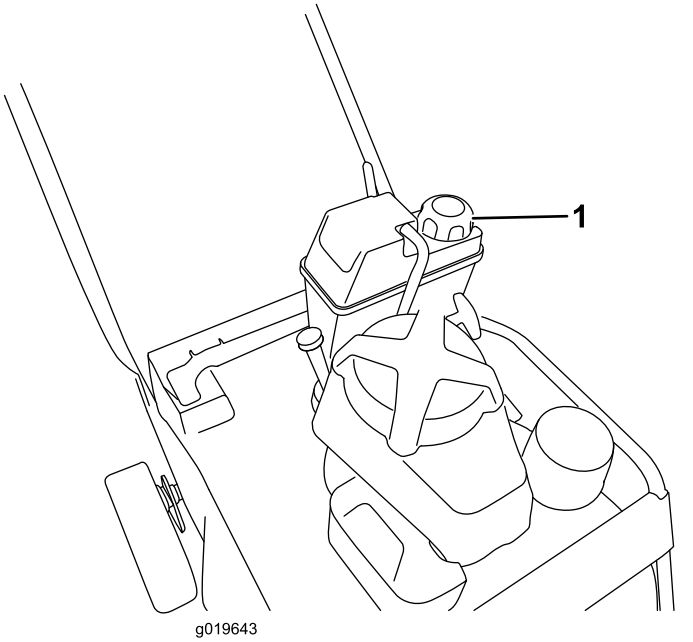

Figure 14

1. Fuel-tank cap

Adjusting the Cutting Height

The cutting heights range from 38 mm (1-1/2 inches) to 127 mm (5 inches) in 13 mm (1/2 inch) increments.

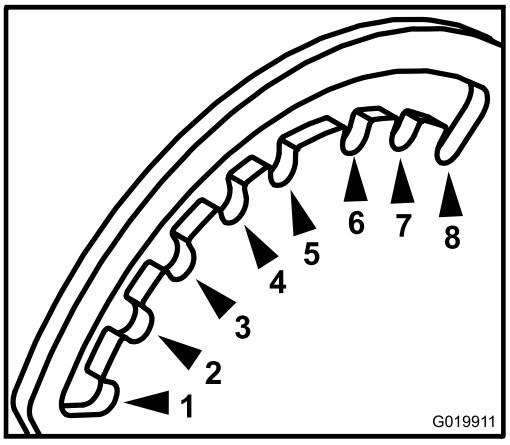

Figure 15

View from front left-hand side of the machine

1. 38 mm (1-1/2 inches)
2. 51 mm (2 inches)
3. 64 mm (2-1/2 inches)
4. 76 mm (3 inches)
5. 89 mm (3-1/2 inches)
6. 102 mm (4 inches)
7. 114 mm (4-1/2 inches)
8. 127 mm (5 inches)

The cutting height is controlled with a front lever and a rear lever, both on the left side of the machine (Figure 16 and Figure 17). To raise or lower the machine,

engage the lever, raise or lower the machine, and then disengage the lever.

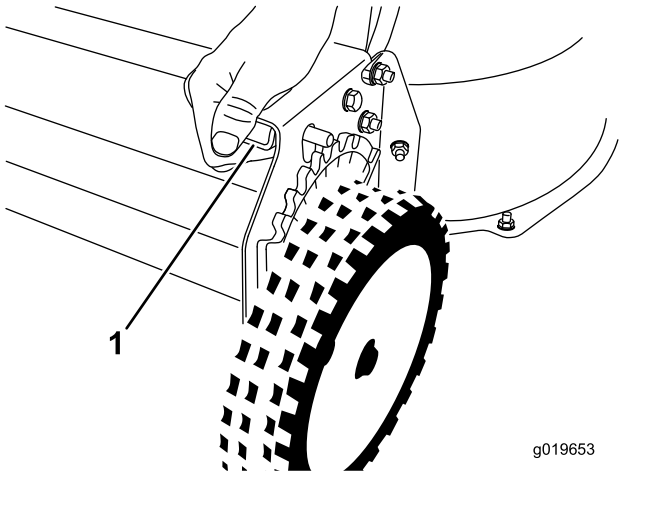

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Figure 16

Front cutting height lever

1. Squeeze the lever to disengage it.

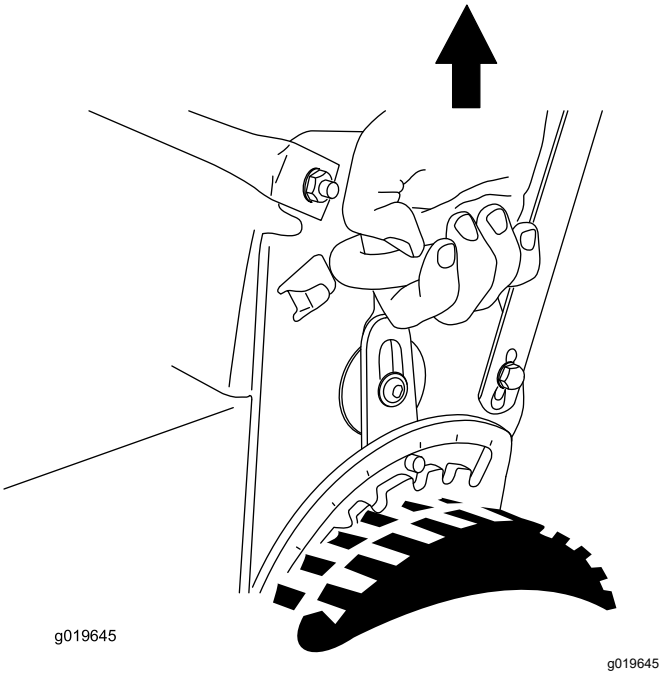

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Figure 17

Rear cutting height lever

Checking the Blade-Stop System Operation

Before each use, check that the blades stop within 3 seconds of releasing the control bar.

Using the Grass Bag

Service Interval: Before each use or daily—Check the blade-stop system operation. The blades should stop within 3 seconds of releasing the control bar; if they do not, contact an Authorized Service Dealer.

You can use the grass bag to check the blade-stop system.

1. Remove the rear-discharge plug.
2. Install the empty grass bag on the machine.
3. Start the engine.
4. Engage the blades.

   Note: The bag should begin to inflate, indicating that the blades are rotating.
5. While watching the bag, release the control bar.

   Note: If the bag does not deflate within 3 seconds of releasing the control bar, the blade-stop system may be deteriorating and, if ignored, could result in an unsafe operating condition. Have the machine inspected and serviced by an Authorized Service Dealer.
6. Stop the engine and wait for all moving parts to stop.

Not Using the Grass Bag

1. Move the machine onto a paved surface in a non-windy area.
2. Set all 4 wheels to the 3-1/2 inch (89 mm) cutting height setting.
3. Take a half sheet of newspaper and crumple it into a ball small enough to go under the machine (about 3 inches or 75 mm in diameter).
4. Place the newspaper ball about 5 inches (13 cm) in front of the machine.
5. Start the engine.
6. Engage the blades.
7. Release the control bar and begin counting out 3 seconds.
8. On the count of 3, push the machine quickly forward over the newspaper.
9. Stop the engine and wait for all moving parts to stop.
10. Go to the front of the machine and check the newspaper ball.

    Note: If the newspaper ball did not go under the machine, repeat steps 4 through 10.

    Important: **If the newspaper is unravelled or shredded, the blades did not stop properly,**

which could result in an unsafe operating condition. Contact an Authorized Service Dealer.

During Operation

During Operating Safety

General Safety

- Wear appropriate clothing, including eye protection; slip-resistant, substantial footwear; and hearing protection. Tie back long hair, secure loose clothing, and do not wear 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 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 immediately and contact an Authorized Service Dealer.
- Operate the machine only in good visibility and appropriate weather conditions. Do not operate the machine when there is the risk of lighting.
- Wet grass or leaves can cause serious injury if you slip and contact the blade. Mow only in dry 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 a slip-and-fall accident.
- Stop the machine and inspect the blades after striking an object or if there is an abnormal vibration in the machine. Make all necessary repairs before resuming operation.
- Before leaving the operating position, shut off the engine, remove the key, 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 guard frequently and replace them with the manufacturer's recommended parts when necessary.
- Use accessories and attachments approved by the 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.
- Do not mow near drop-offs, ditches, or embankments. You could lose your footing or balance.

Starting the Engine

1. Connect the wire to the spark plug (Figure 9).
2. Open the fuel shut-off valve (Figure 18).

   Note: When the fuel shut-off valve is open, the lever is parallel with the fuel line.

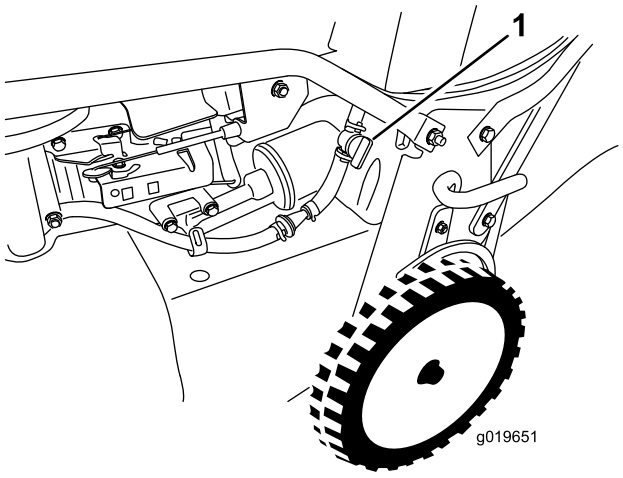

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Figure 18

1. Fuel shut-off valve

3. Move the throttle control to the **Choke** position (Figure 11).
4. Pull the starter handle lightly until you feel resistance, then pull it sharply.
5. Move the throttle control lever to the **Fast** position when the engine starts (Figure 10).

   Note: If the engine fails to start after 3 pulls, repeat steps 3 through 5.

Stopping the Engine

1. Move the throttle control to the **Off** position and wait for all moving parts to stop.
2. Close the fuel shut-off valve and disconnect the wire from the spark plug if you do not use the machine or leave it unattended.

Operating the Self-Propel Drive and Engaging the Cutting Blades

To operate the self-propel drive, hold the drive bail against the handle (Figure 19).

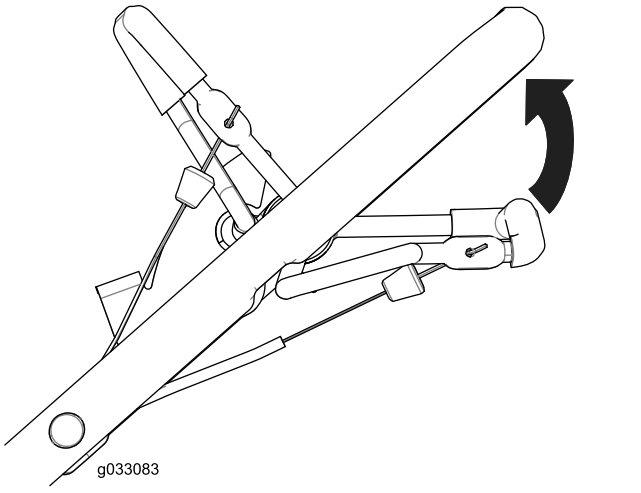

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Figure 19

To engage the cutting blades, do the following:

1. Push and hold the blade control lock lever forward to release the blade control bail (Figure 20).

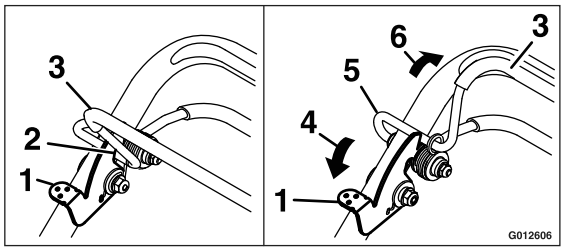

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Figure 20

1. Blade-control lock lever
2. Locked position
3. Blade-control bail
4. Push
5. Unlocked position
6. Squeeze against handle

2. Squeeze the blade control bail against the handle and release the blade control lock lever; the blade should engage.
3. Release the blade control bail to disengage the blade. The blade control lock lever will reset to lock the blade control bail.

Recycling the Clippings

This machine comes from the factory ready to recycle grass and leaf clippings back into the lawn. To prepare the machine to recycle:

- If the side-discharge chute is on the machine, remove it and install the side-discharge deflector; refer to Removing the Side-Discharge Chute (page 14).
- If the grass bag is on the machine, remove it; refer to Removing the Grass Bag (page 14).
- If the rear-discharge plug is not installed, grip it by the handle, raise the rear deflector, and insert it into the rear-discharge chute until the latch locks into place; refer to Figure 21.

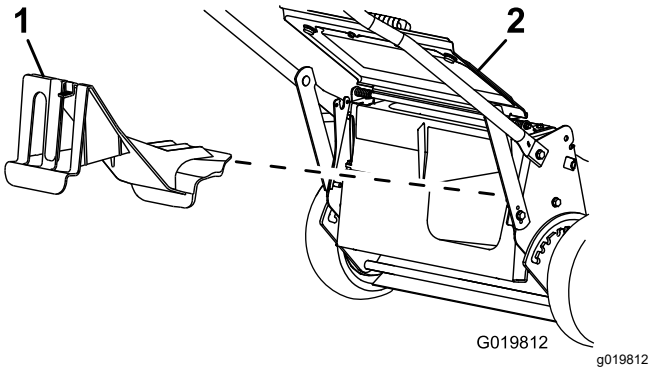

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Figure 21

1. Rear-discharge plug
2. Rear deflector

Bagging the Clippings

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

If the side-discharge chute is on the machine, remove it and install the side-discharge deflector before bagging the clippings; refer to Installing the Side-Discharge Chute (page 14).

Installing the Grass Bag

1. Raise and hold up the rear deflector (Figure 22).

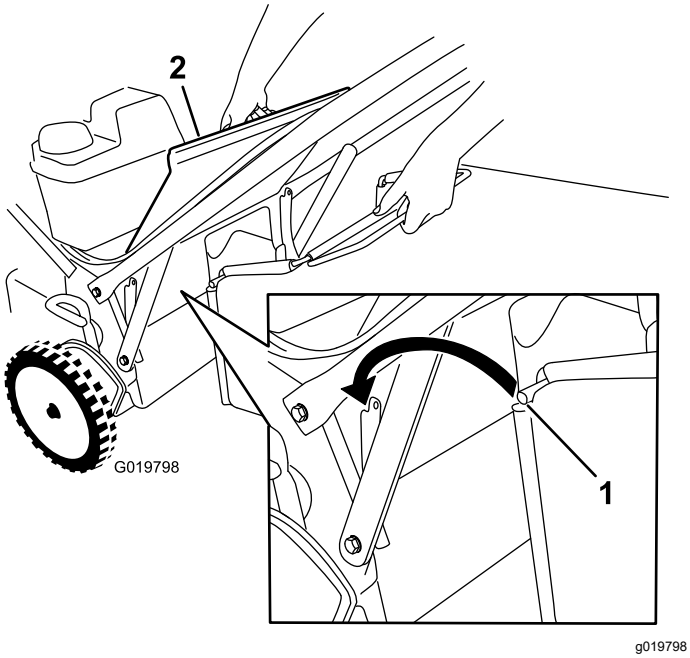

Figure 22

1. Bag rod
2. Rear deflector

2. Remove the rear-discharge plug by pulling down on the latch with your thumb and pulling the plug out from the machine (Figure 21).
3. Install the bag rod into the notches at the base of the handle, and rock the bag back and forth to ensure that the rod is seated at the bottom of both notches; refer to Figure 22.
4. Lower the rear deflector until it rests on the grass bag.

Removing the Grass Bag

To remove the bag, reverse the steps in Installing the Grass Bag above.

Side-Discharging the Clippings

Use the side discharge for cutting very tall grass.

Installing the Side-Discharge Chute

Important: **Ensure that the rear-discharge plug is in place before you recycle the clippings.**

1. Stop the engine and wait for all moving parts to stop.
2. Remove the grass bag if it is installed on the machine; refer to Removing the Grass Bag (page 14).
3. Insert the rear-discharge plug; refer to Bagging the Clippings (page 13).
4. Remove the side-discharge deflector by pulling up on the spring that holds the deflector in place and removing the deflector (Figure 23).

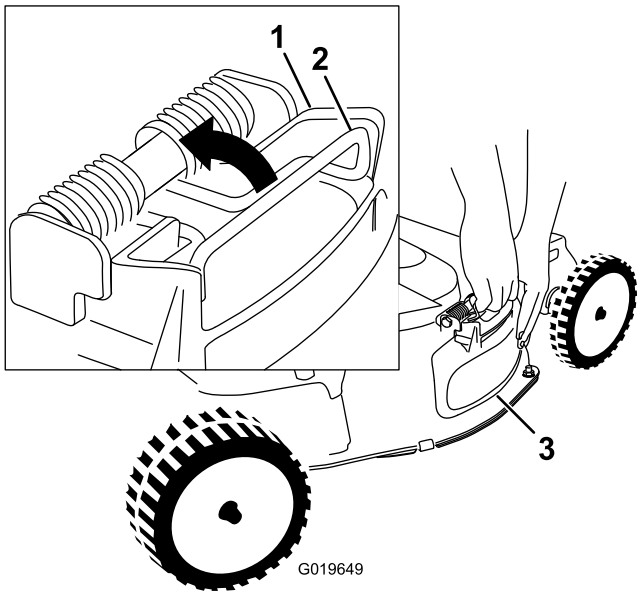

Figure 23

1. Top of the side-discharge deflector
2. Spring
3. Side-discharge deflector

5. Install the side-discharge chute (Figure 24) by pulling up on the spring, placing the chute over the opening, and lowering the spring over the tabs on top of the discharge chute.

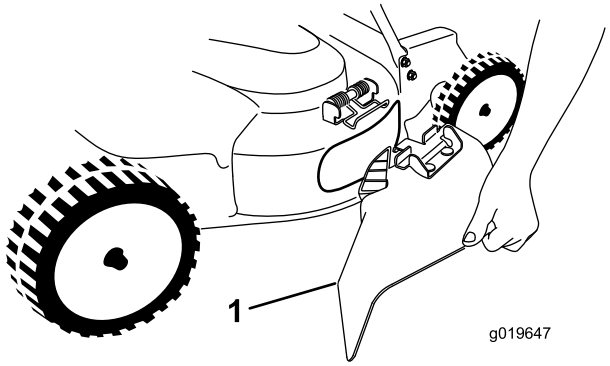

Figure 24

1. Side-discharge chute

Removing the Side-Discharge Chute

To remove the side-discharge chute, reverse the steps in Installing the Side-discharge Chute.

Operating Tips

General Tips

- Review the safety instructions and read this manual carefully before operating the machine.
- Clear the area of sticks, stones, wire, branches, and other debris that the blades could hit and throw.
- Keep everyone, especially children and pets, away from the area of operation.
- Avoid striking trees, walls, curbs, or other solid objects. Never deliberately mow over any object.
- If the machine strikes an object or starts to vibrate, immediately stop the engine, disconnect the wire from the spark plug, and examine the machine for damage.
- Maintain sharp blades throughout the cutting season. Periodically file down nicks on the blades.
- Replace the blades when necessary with original Toro replacement blades.
- Mow only dry grass or leaves. Wet grass and leaves tend to clump on the yard and can cause the machine to plug or the engine to stall.
- Clean the under the machine after each mowing. Refer to Cleaning under the Machine (page 16).
- Keep the engine in good running condition.
- Set the engine speed to the fastest position for the best cutting results.
- Clean the air filter frequently. Mulching stirs up more clippings and dust which clogs the air filter and reduces engine performance.

Cutting Grass

- Grass grows at different rates at different times of the year. In the summer heat, it is best to cut grass at the 51 mm (2 inch), 64 mm (2-1/2 inch), or 83 mm (3 inch) cutting-height settings. Cut only about a third of the grass blade at a time. Do not cut below the 51 mm (2 inch) setting 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, first 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 and the leaves clump on top of the lawn, the machine may plug and cause the engine to stall.
- 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:

- Sharpen the blades.
- 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.
- Set the cutting height on the front wheels a notch lower than the rear wheels. For example, set the front wheels at 51 mm (2 inches) and the rear wheels at 64 mm (2-1/2 inches).

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.
- For light leaf coverage, set all the wheels at the same cutting height setting.
- If there are more than 12.7 cm (5 inches) of leaves on the lawn, set the front cutting height 1 or 2 notches higher than the rear cutting height. This makes it easier to feed the leaves under the machine deck.
- Slow down your mowing speed if the machine does not cut the leaves finely enough.

After Operation

After Operating 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

- Use care when loading or unloading the machine into a trailer or truck.
- Use full-width ramps for loading the machine into a trailer or truck. Do not exceed a 15° angle between the ramp and the trailer or truck.
- Tie the machine down securely using straps, chains, cable, or ropes. Both front and rear straps should be directed down and outward from the machine.

Cleaning under the Machine

For optimal cutting performance, keep the underside of the machine clean. You may either wash or scrape the clippings away from under the machine.

Washing under the Machine

Service Interval: Before each use or daily—Clean under the machine housing.

1. Position the machine on a flat concrete or asphalt surface near a garden hose.
2. Start the engine.
3. Hold the running garden hose at handle level and direct the water to flow on the ground just in front of the right rear tire (Figure 25).

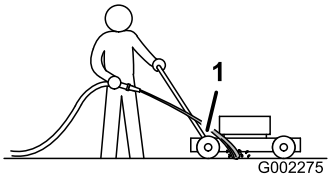

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Figure 25

1. Right rear wheel

Note: The blades will draw in water and wash out clippings. Let the water run until you no longer see clippings being washed out from under the housing.

4. Stop the engine and wait for all moving parts to stop.
5. Turn off the water.
6. Start the machine and let it run for a few minutes to dry out the moisture on the machine and its components.

Scraping under the Machine

If washing does not remove all debris from under the machine, scrape it clean.

1. Disconnect the wire from the spark plug.
2. Drain the fuel from the fuel tank; refer to Emptying the Fuel Tank and Cleaning the Filter (page 20).
3. Tip the machine onto its side, with the air filter up in the air, until the upper handle rests on the ground.
4. Remove the dirt and grass clippings with a hardwood scraper; avoid burrs and sharp edges.
5. Turn the machine upright.
6. Fill the fuel tank.
7. Connect the wire to the spark plug.

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 5 hours	• Change the engine oil without the oil filter. • Service the blade-drive system.
Before each use or daily	• Check the engine-oil level. • Check the blade-stop system operation. The blades should stop within 3 seconds of releasing the control bar; if they do not, contact an Authorized Service Dealer. • Clean under the machine housing. • Inspect the air filter. • Check the cutting blades and service them, if necessary. • Inspect the blades.
Every 25 hours	• Clean the foam pre-cleaner (more frequently in dusty conditions).
Every 50 hours	• Change the engine oil (more often in dusty conditions). • Check the condition of the belts. • Check the fuel hose and replace it if necessary. • Remove debris from under the belt cover. • Service the blade-drive system.

Maintenance Service Interval	Maintenance Procedure
Every 100 hours	• Change the oil filter. • Check the spark plug. • Clean the fuel tank filter. • Change the fuel filter.
Every 250 hours	• Change the blade-brake-clutch belt.
Every 300 hours	• Replace the paper air filter (more frequently in dusty conditions).
Yearly or before storage	• Empty the fuel tank before repairs as director or before storage.

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

Maintenance Safety

- Disconnect the spark-plug wire from the spark plug 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.
- 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.

Servicing the Air Filter

Service Interval: Before each use or daily

Every 25 hours—Clean the foam pre-cleaner (more frequently in dusty conditions).

Every 300 hours—Replace the paper air filter (more frequently in dusty conditions).

Important: **Do not operate the engine without the air filter assembly; extreme engine damage will occur.**

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug.
3. Remove the cover and clean it thoroughly (Figure 26).

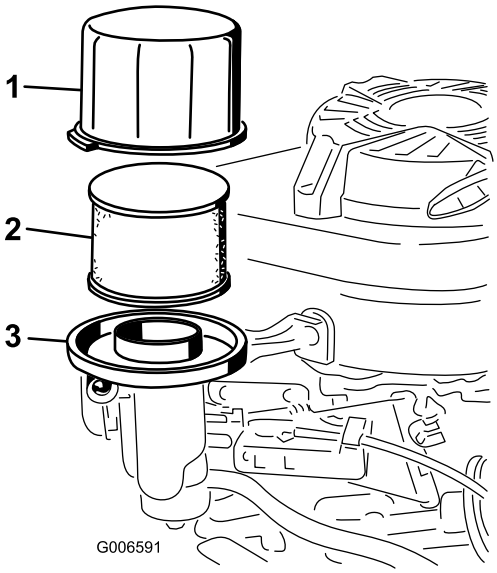

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Figure 26

1. Cover
2. Foam pre-filter and paper filter
3. Air-filter base

4. Remove the foam pre-filter and paper filter (Figure 26).
5. Remove the foam pre-filter from the paper filter (Figure 26), and replace the paper filter if it is excessively dirty.

   Important: **Do not try to clean a paper filter.**
6. Wash the foam pre-cleaner with a mild detergent and water, then blot it dry.

Note: Do not add oil to the foam pre-cleaner.

7. Install the foam pre-cleaner onto the paper filter.
8. Install the air-filter assembly.
9. Install the cover.

Changing the Engine Oil

Service Interval: After the first 5 hours—Change the engine oil without the oil filter.

Every 50 hours—Change the engine oil (more often in dusty conditions).

1. Run the engine to warm the engine oil.

   Note: Warm oil flows better and carries more contaminants.

   ⚠ WARNING

   Oil may be hot after engine has been run, and contact with hot oil can cause severe personal injury.

   Avoid contacting the hot engine oil when you drain it.

2. Stop the engine and wait for all moving parts to stop.
3. Disconnect the wire from the spark plug.
4. Place a suitable drain pan under the right side of the machine.
5. Remove the dipstick by rotating the cap counterclockwise and pulling it out.
6. Tip the machine, with the air filter up, to drain the oil into the drain pan (Figure 26).

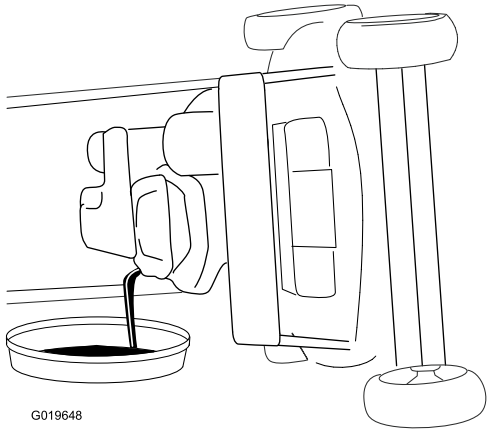

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Figure 27

Note: You can also remove the oil from the crankcase using an oil extractor.

7. Return the machine to the operating position.
8. Insert the dipstick into the filler neck and rotate the cap clockwise until it is tight.
9. Recycle the used oil according to local codes.
10. Fill the crankcase to the Full line on the dipstick with fresh oil. Refer to 3 Filling the Crankcase with Oil (page 6).

11. Wipe up any spilled oil.

Changing the Oil Filter

Service Interval: Every 100 hours

1. Run the engine to warm the oil.
2. Stop the engine and wait for all moving parts to stop.
3. Disconnect the wire from the spark plug.
4. Drain the engine oil; refer to Changing the Engine Oil (page 18).
5. Place a rag under the oil filter to catch any oil that may leak out as you remove the filter.
6. Remove the oil filter (Figure 28).

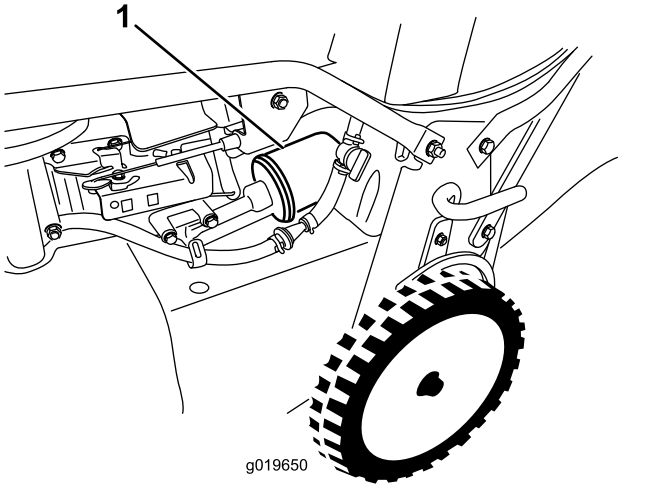

Figure 28

1. Oil filter

7. Use your finger to coat the gasket on the new filter with oil (Figure 29).

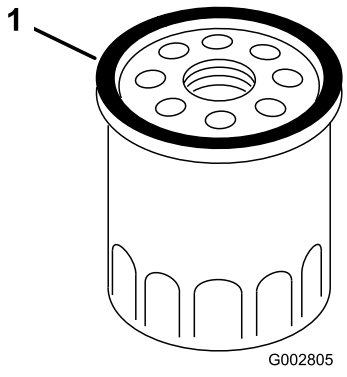

Figure 29

1. Gasket

8. Install the new filter until the gasket contacts the filter base, then hand tighten the filter an additional 2/3 turn.
9. Fill the crankcase to the Full line on the dipstick with fresh oil; refer to 3 Filling the Crankcase with Oil (page 6).
10. Connect the wire to the spark plug.
11. Run the engine for about 3 minutes.
12. Stop the engine, wait for all moving parts to stop, and check for oil leakage around the filter.
13. Add oil to compensate for the oil in the oil filter; refer to Checking the Engine-Oil Level (page 9)
14. Recycle the used oil filter according to local codes.

Servicing the Spark Plug

Service Interval: Every 100 hours

Use an **NGK BPR5ES** spark plug or equivalent.

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug.
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); refer to Figure 30.

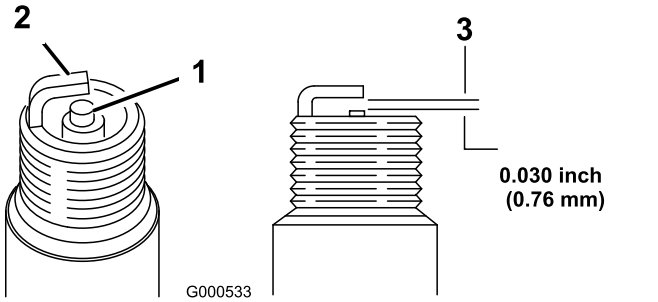

Figure 30

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

6. Install the spark plug and the gasket seal.
7. Torque the plug to 17 ft-lb (23 N-m).
8. Connect the wire to the spark plug.

Checking the Condition of the Belts

Service Interval: Every 50 hours

1. Stop the engine and wait for all moving parts to stop.
2. Remove the belt cover (Figure 9) by removing the 4 bolts that hold it to the machine housing.
3. Check the belts for any cracks, frayed edges, burn marks, or any other damage.
4. Replace all damaged belts.
5. If you replace the blade-drive belt, you must adjust it. Refer to Servicing the Blade-Drive System (page 20).
6. Install the belt cover with the 4 bolts that you removed in step 2.

Emptying the Fuel Tank and Cleaning the Filter

Service Interval: Every 50 hours—Check the fuel hose and replace it if necessary.

Every 100 hours—Clean the fuel tank filter.

Yearly or before storage—Empty the fuel tank before repairs as director or before storage.

Note: The fuel tank filter (screen) element is located inside the fuel tank at the outlet. This filter is a part of the fuel tank and cannot be removed.

1. Stop the engine and wait for it to cool down.

   Important: **Drain gasoline from a cold engine only.**
2. Disconnect the wire from the spark plug.
3. Close the fuel shut-off valve.
4. Disconnect the fuel line by loosening the tube clamp at the carburetor.
5. Open the fuel shut-off valve and drain the gasoline completely from the tank and fuel line into an approved fuel container.
6. Remove the fuel tank from the machine.
7. Pour a small amount of fuel in the fuel tank, move the fuel around in the tank, and pour it out into an approved fuel container.
8. Install the fuel tank and the fuel line.

Changing the Fuel Filter

Service Interval: Every 100 hours

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug.
3. Close the fuel shut-off valve (Figure 31).

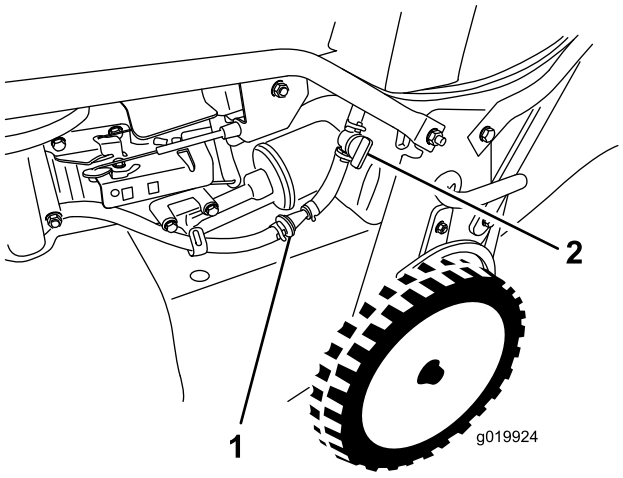

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Figure 31

1. Fuel filter
2. Fuel shut-off valve

4. Remove the fuel filter (Figure 31) from the fuel line by loosening the tube clamps surrounding the fuel filter.
5. Install a new fuel filter in the fuel line using the tube clamps that you removed in step 4.

Servicing the Blade-Drive System

Service Interval: After the first 5 hours

Every 50 hours—Remove debris from under the belt cover.

Every 50 hours—Service the blade-drive system.

1. Loosen the 2 screws on the belt-cover-access panel and remove the panel (Figure 32).

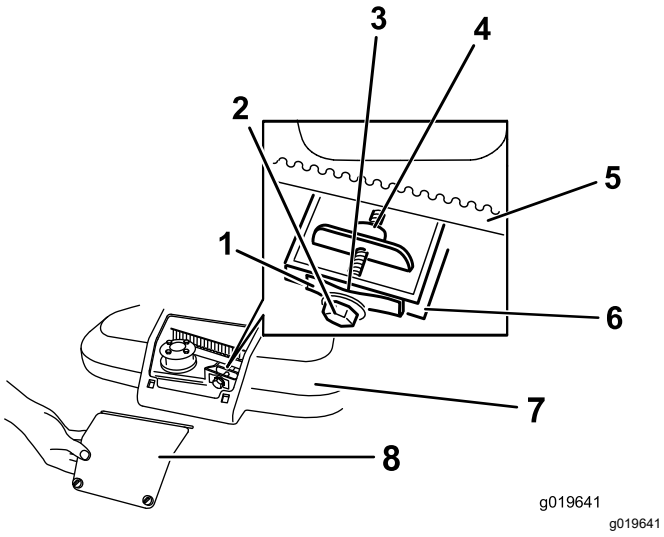

Figure 32

1. Belt-tension spring
2. Adjusting bolt
3. Gap
4. Adjusting nut
5. Blade-drive belt
6. Wall
7. Belt cover
8. Belt-cover-access panel

2. Brush or blow out debris from the inside of the belt cover and around all the parts.
3. Hold a feeler gauge set between 0.005 and 0.03 inches (0.13 and 0.76 mm) against the wall and slide it down behind the belt tension spring; refer to Figure 33.

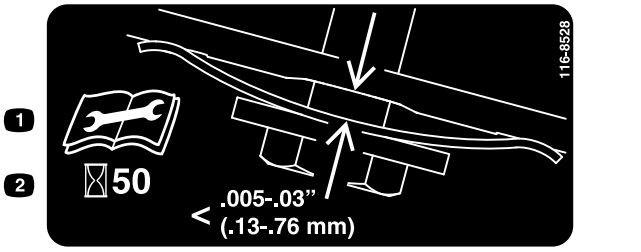

Figure 33

Note: If there is a visible gap between the gauge and the spring, tighten the adjusting bolt and the nut until the feeler gauge barely slides freely in and out of the gap (Figure 32).

Important: **Do not overtighten the adjusting bolt. This could damage the blade-drive belt.**

4. Install the belt-cover-access panel.

Servicing the Cutting Blades

Service Interval: Before each use or daily

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

Examine the blades for sharpness and any wear or damage whenever you run out of gasoline; refer to Inspecting the Blades (page 21). If the blade edge is dull or nicked, have it sharpened or replace it. If the blades are worn, bent, damaged or cracked, replace them immediately with a genuine Toro replacement blades.

⚠ DANGER

A worn or damaged blade can break, and a piece of the blade could be thrown toward the operator or a bystander, resulting in serious personal injury or death.

- **Inspect the blades periodically for wear or damage.**
- **Replace worn or damaged blades.**

Note: Maintain sharp blades throughout the cutting season, because sharp blades cut cleanly without tearing or shredding the grass blades. Tearing and shredding turns grass brown at the edges, which slows growth and increases the chance of disease.

Preparing to Service the Cutting Blades

Tip the machine onto its side, with the air filter up in the air, until the upper handle rests on the ground.

⚠ WARNING

The blades are sharp; contacting a blade could result in serious personal injury.

- **Disconnect the wire from the spark plug.**
- **Wear gloves when servicing the blades.**

Inspecting the Blades

Service Interval: Before each use or daily

1. Inspect the cutting edges (Figure 34). If the edges are not sharp or have nicks, remove the blades and have them sharpened or replace them.

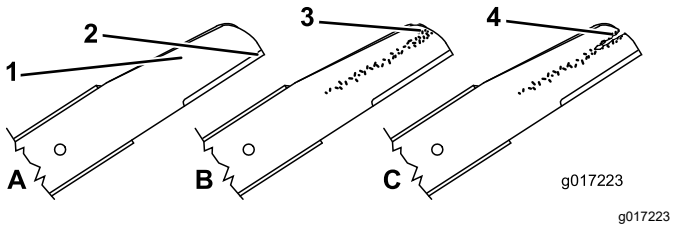

Figure 34

1. Curved area
2. Cutting edge
3. Wear/slot forming
4. Crack

2. Inspect the blades themselves, especially the curved area (Figure 42). If you notice any damage, wear, or a slot forming in this area (Figure 34), immediately replace them with new blades.

⚠ DANGER

If you allow a blade to wear, a slot will form between the sail and flat part of the blade. Eventually a piece of the blade may break off and be thrown from under the housing, possibly resulting in serious injury to you or bystanders.

- **Inspect the blades periodically for wear or damage.**
- **Never try to straighten a blade that is bent or weld a broken or cracked blade.**
- **Check for bent blades; refer to Checking for Bent Blades (page 22).**

Checking for Bent Blades

1. Rotate the blades until they are positioned as shown in Figure 35.

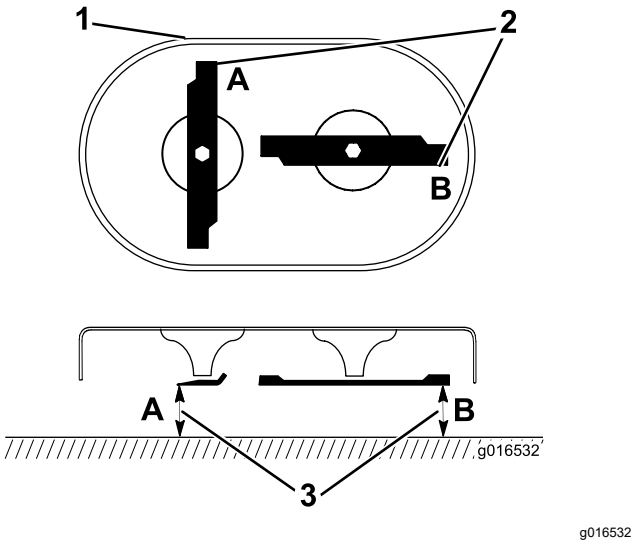

Figure 35

1. Front of cutting deck
2. Measure at locations A and B
3. Measure form the cutting edge to a smooth, level suface

2. Measure from a level surface to the cutting edges at locations **A** and **B**, (Figure 35), and record both dimensions.
3. Rotate the blades so that their opposite ends are at locations **A** and **B**.
4. Repeat the measurements in step 2 and record them.

   Note: If the difference between the dimensions **A** and **B** obtained in steps 2 and 4 exceeds 1/8 inch, replace the blades; refer to Removing the Blades (page 22) and Installing the Blades (page 23).

⚠ WARNING

A blade that is bent or damaged could break apart and could seriously injure or kill you or bystanders.

- **Always replace a bent or damaged blade with a new blade.**
- **Never file or create sharp notches in the edges or surfaces of a blade.**

Removing the Blades

Replace the blades when they strike a solid object, are out of balance, bent, or worn. Use only genuine Toro replacement blades.

1. Use a block of wood to hold each blade steady and turn the blade bolt counterclockwise as shown in Figure 36.

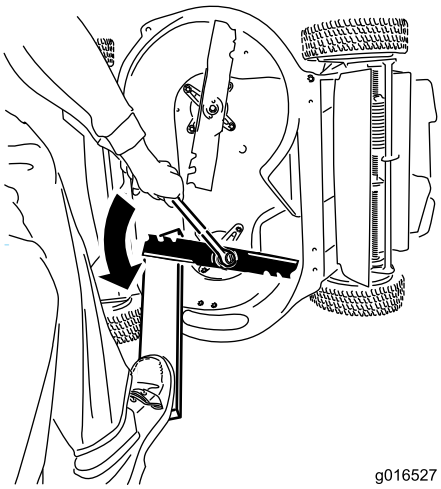

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Figure 36

2. Remove each blade as shown in Figure 37.

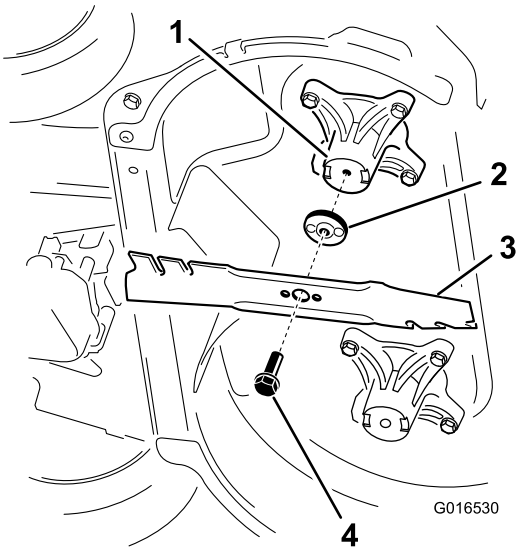

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Figure 37

1. Spindle (2)
2. Blade driver (2)
3. Blade (2)
4. Blade bolt (2)

3. Inspect the pins on the blade drivers for wear and damage.

Installing the Blades

1. Install the first blade so that it is horizontal, along with all mounting hardware as shown in Figure 37.

   Note: Tighten the bolt with your fingers.

   Important: **Position the curved ends of the blades to point toward the machine housing. Be sure to nest the raised areas on each blade driver with the recesses in the head of its corresponding spindle, and the pins on the other side of each blade driver with the holes in its corresponding blade.**

2. Steady each blade with a board and turn the blade bolt clockwise with a torque wrench as shown in Figure 38; torque each blade bolt to 82 N-m (60 ft-lb).

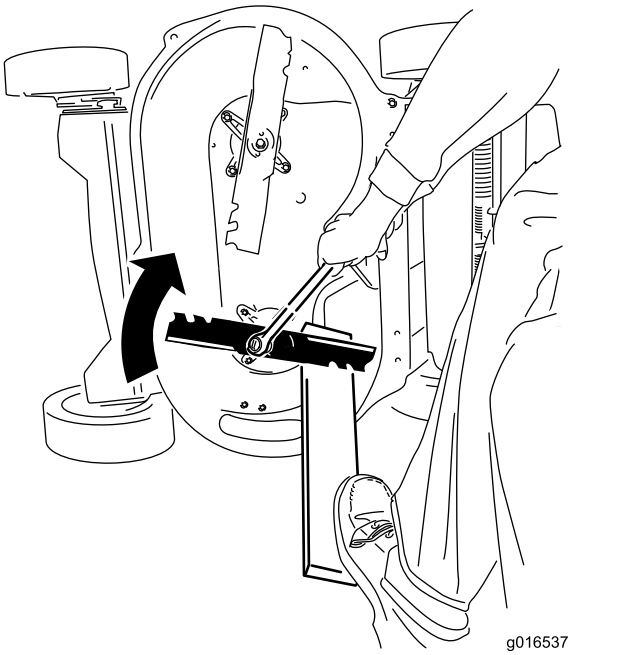

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Figure 38

   Important: **A bolt torqued to 82 N-m (60 ft-lb) is very tight. Put your weight behind the wrench and tighten the bolt securely. This bolt is very difficult to overtighten.**

3. Rotate the installed blade 1/4 turn until it is vertical, and install the other blade in the same manner as the first (refer to step 1).

   Note: The blades should be perpendicular, forming an inverted “T” as shown in Figure 39.

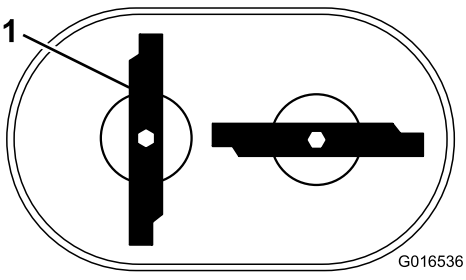

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Figure 39

1. Blade (2)

4. Tighten the second blade; refer to step 2.

5. Rotate the blades by hand a full 360° turn to ensure that they do not touch.

   Note: If the blades touch each other, they are not mounted correctly. Repeat steps 1 through 3 until the blades no longer touch each other.

⚠ WARNING

Incorrectly installing the blades could damage the machine or cause an injury to the operator or to bystanders.

Changing the Blade-Brake-Clutch (BBC) Belt

Service Interval: Every 250 hours

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug.
3. Remove the 4 bolts that hold the belt cover to the machine housing.

   Note: Save the bolts for installing the belt cover to the machine housing.
4. Remove the belt cover.
5. Remove any debris from under the belt cover.
6. Remove the BBC belt guard (Figure 40).

   Note: Save the mounting hardware for installing the BBC belt guard later.

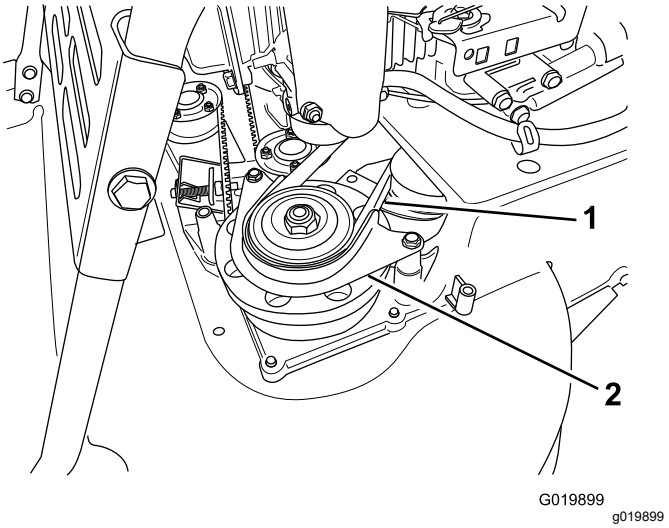

Figure 40

1. BBC belt
2. BBC belt guard

7. Remove the BBC belt from the brake-drum pulley.
8. Move the tab forward (Figure 41).

   Note: The tab prevents the transmission from tipping to the point where the transmission belt comes off.

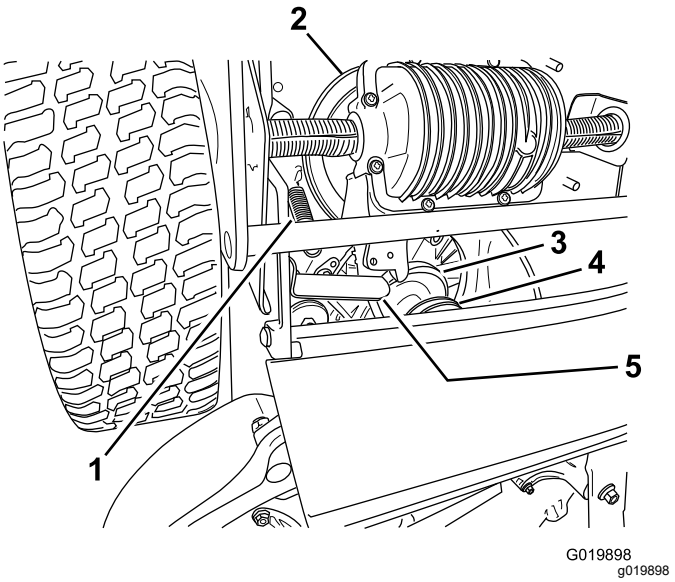

Figure 41

1. Transmission tension spring
2. Transmission
3. BBC belt
4. Transmission belt
5. Tab

9. Remove the transmission tension spring.
10. Remove the transmission belt from the transmission pulley.
11. Remove the BBC belt.

    Note: Hold one of the blades using a glove or a rag and turn the blade spindle to help remove the BBC belt.
12. To install a new BBC belt, reverse the steps above.
13. Adjust the BBC cable; refer to Adjusting the Blade-Brake Cable (page 25).

Adjusting the Self-Propel Cable

If the machine does not self-propel or tends to creep forward when you release the control bar, adjust the drive cable.

1. Stop the engine and wait for all moving parts to stop.
2. Loosen the cable support nut (Figure 42).

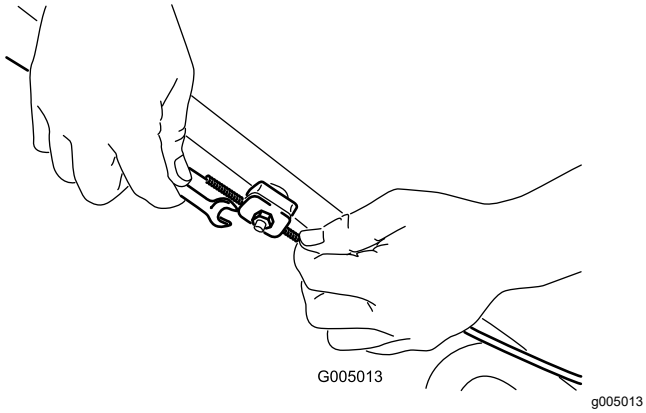

Figure 42

3. Pull down the cable jacket (toward the mower) until there is no slack in the cable (Figure 43).

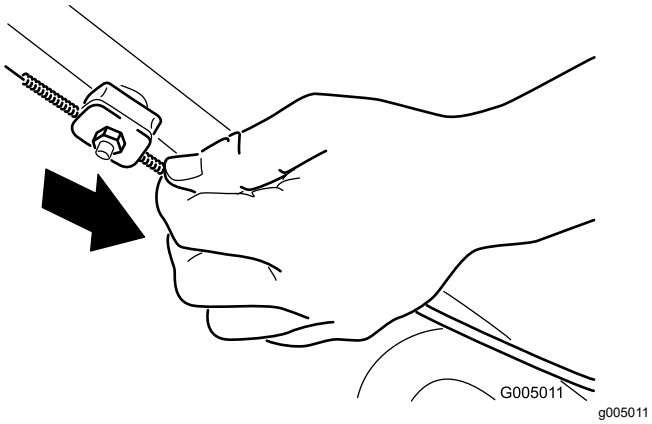

Figure 43

4. Tighten the nut on the cable support.
5. Check the operation for desired drive control.

Note: If the unit creeps forward without the bail engaged or if the wheels spin when you lift the rear wheels off the ground, the cable is too tight; repeat steps1 and 2.

Note: Adjustment to obtain desired ground speed at full bail travel may be made in order to accommodate slower speeds.

Adjusting the Blade-Brake Cable

Adjust the blade-brake cable whenever you install a new cable or replace the BBC belt.

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug.
3. Remove the belt cover (Figure 9) by removing the 4 bolts that hold it to the machine housing.

   Note: Save the bolts for installing the belt cover to the machine housing.
4. Remove any debris from under the belt cover.
5. Loosen the cable-clamp screw (Figure 44).

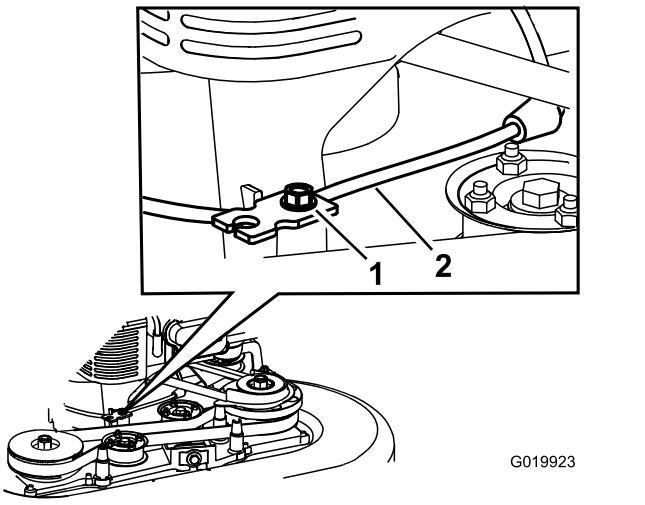

Figure 44

1. Cable-clamp screw
2. Blade-brake cable

6. Pull the cable jacket until there is approximately 1/8 inch (3 mm) of slack.

   Note: Do not put tension on the spring.
7. Tighten the cable-clamp screw to lock the adjustment in place.
8. Install the belt cover with the 4 bolts that you removed in step 3.
9. Connect the wire to the spark plug.
10. Check the operation of the blade-brake clutch; refer to Checking the Blade-Stop System Operation (page 11).

Changing the Blade-Drive Belt

Change the blade-drive belt as needed.

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug.
3. Remove the belt cover (Figure 9) by removing the 4 bolts that hold it to the machine housing.

   Note: Save the bolts for installing the belt cover to the machine housing.
4. Remove any debris from under the belt cover.
5. Remove the BBC belt guard and the mounting hardware.

Note: Save the BBC belt guard and hardware for installation later.

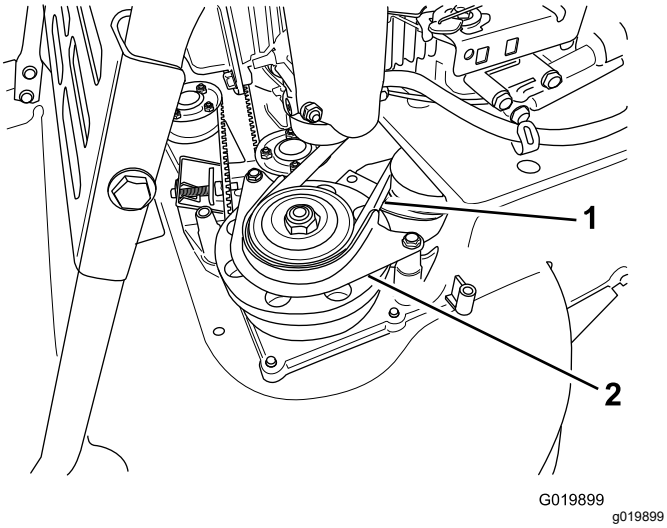

Figure 45

1. BBC belt
2. BBC belt guard

6. Remove the BBC belt from the front left-hand pulley.
7. Loosen the adjusting bolt (Figure 32).
8. Remove the fixed idler pulley and the hardware (Figure 46).

   Note: Save the idler pulley and hardware for installation later.

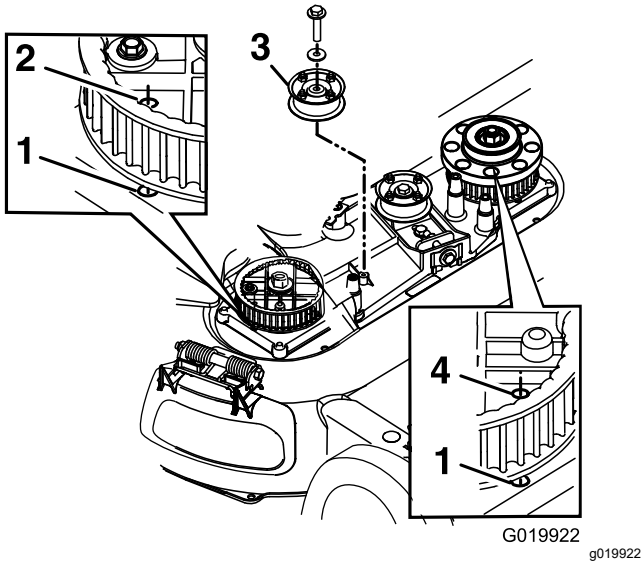

Figure 46

The BBC idler pulley is removed for clarity

1. Hole in the housing
2. Right-hand sprocket hole
3. Fixed-idler pulley
4. Left-hand sprocket hole

9. Remove the blade-drive belt.
10. Align the holes in the right-hand and left-hand sprockets with the holes in the housing as shown in Figure 46.

    Note: Hold the sprockets in place with a rod or a screwdriver.
11. When you have locked the sprockets in place, install the blade-drive belt and the fixed idler pulley.

    Note: Ensure that the teeth are engaged in the sprockets.
12. Tighten the belt tension to the recommended settings; refer to Servicing the Blade-Drive System (page 20).
13. Remove the rod or screwdriver from the sprockets.
14. Ensure that the blades under the housing are properly aligned; refer to Servicing the Cutting Blades (page 21).
15. Install the BBC belt and the BBC belt guard and hardware.
16. Install the belt cover using the 4 bolts that you removed in step 3.
17. Connect the wire to the spark plug.
18. Check the operation of the control bar and the blade-brake clutch.

Storage

Store the machine in a cool, clean, dry place. Cover the machine to keep it clean and protected.

General Information

Store the machine in a cool, clean, dry place. Cover the machine to keep it clean and protected.

1. Perform the recommended annual maintenance procedures; refer to Maintenance (page 16).
2. Clean under the machine; refer to Cleaning under the Machine (page 16).
3. Remove chaff, dirt, and grime from the external parts of the engine, the shrouding, and the top of the machine.
4. Check the condition of the blades; refer to Inspecting the Blades (page 21).
5. Service the air filter; refer to Servicing the Air Filter (page 16).
6. Tighten all nuts, bolts, and screws.
7. Touch up all rusted or chipped paint surfaces with paint available from an Authorized Service Dealer.

Preparing the Fuel System

⚠ WARNING

Gasoline can vaporize if you store it over long periods of time and explode if it comes into contact with an open flame.

- **Do not store gasoline over long periods of time.**
- **Do not store the machine with gasoline in the fuel tank or the carburetor in an enclosure with an open flame. (For example, a furnace or a water heater pilot light.)**
- **Allow the engine to cool before storing it in any enclosure.**

On the last refueling of the year, add fuel stabilizer to the fuel as directed by the engine manufacturer. Empty the fuel tank when mowing the last time before storing the machine.

1. Run the machine until the engine stops from running out of fuel.
2. Start the engine again.
3. Allow the engine to run until it stops. When you can no longer start the engine, it is sufficiently dry.

Preparing the Engine

1. While the engine is still warm, change the engine oil and the oil filter; refer to Changing the Engine Oil (page 18) and Changing the Oil Filter (page 19).
2. Remove the spark plug.
3. Using an oil can, add about 30 ml (1 oz), of motor oil to the engine through the spark-plug hole.
4. Slowly pull the starter rope several times to distribute oil throughout the cylinder.
5. Install the spark plug but do not connect the wire to the spark plug. Secure the wire so that it does not come into contact with the spark plug.

Removing the Machine from Storage

1. Check and tighten all fasteners.
2. Remove the spark plug and spin the engine rapidly using the starter to blow excess oil from the cylinder.
3. Inspect the spark plug and replace it if it is dirty, worn, or cracked; refer to the engine owner's manual.
4. Install the spark plug and tighten it to the recommended torque of 20 N-m (180 in-lb).
5. Perform any needed maintenance procedures; refer to Maintenance (page 16).
6. Check the engine-oil level; refer to Checking the Engine-Oil Level (page 9).
7. Fill the fuel tank with fresh gasoline; refer to Filling the Fuel Tank (page 10).
8. Connect the wire to the spark plug.

Troubleshooting

Problem	Possible Cause	Corrective Action
The engine does not start.	1. The fuel tank is empty or the fuel system contains stale fuel.	1. Drain and/or fill the fuel tank with fresh gasoline. If the problem persists, contact an Authorized Service Dealer.
	2. The fuel shut-off valve is closed.	2. Open the fuel shut-off valve.
	3. The throttle lever is not in the correct position.	3. Move the throttle lever to the Choke position.
	4. There is dirt, water, or stale fuel in the fuel system.	4. Contact an Authorized Service Dealer.
	5. The wire is not connected to the spark plug.	5. Connect the wire to the spark plug.
	6. The spark plug is pitted, fouled, or the gap is incorrect.	6. Check the spark plug and adjust the gap if necessary. Replace the spark plug if it is pitted, fouled, or cracked.
	7. There is dirt in the fuel filter.	7. Replace the fuel filter and clean the in-tank filter screen.
The engine starts hard or loses power.	1. The air filter element is dirty and is restricting the air flow.	1. Clean the air filter pre-cleaner and/or replace the paper filter.
	2. The engine oil level is low or the oil is dirty.	2. Check the engine oil. Change the oil if it is dirty or add oil if it is low.
	3. The fuel tank vent hose is plugged.	3. Clean or replace the fuel tank vent hose.
	4. There is dirt in the fuel filter.	4. Replace the fuel filter and clean the in-tank filter screen.
	5. There is dirt, water, or stale fuel in the fuel system.	5. Contact an Authorized Service Dealer.
	6. The underside of the machine housing contains clippings and debris.	6. Clean the underside of the machine housing.
	7. The spark plug is pitted, fouled, or the gap is incorrect.	7. Check the spark plug and adjust the gap if necessary. Replace the spark plug if it is pitted, fouled, or cracked.
The engine runs rough.	1. The wire is not securely connected to the spark plug.	1. Connect the wire securely to the spark plug.
	2. The spark plug is pitted, fouled, or the gap is incorrect.	2. Check the spark plug and adjust the gap if necessary. Replace the spark plug if it is pitted, fouled, or cracked.
	3. The throttle lever is not in the Fast position.	3. Move the throttle lever to the Fast position.
	4. The air filter element is dirty and is restricting the air flow.	4. Clean the air filter pre-cleaner and/or replace the paper filter.
	5. There is dirt in the fuel filter.	5. Replace the fuel filter and clean the in-tank filter screen.
The machine or engine vibrates excessively.	1. A blade is bent or is out of balance.	1. Balance the blade(s). If a blade is bent, replace it.
	2. A blade-mounting bolt is loose.	2. Tighten the blade-mounting bolts.
	3. The underside of the machine housing contains clippings and debris.	3. Clean the underside of the machine housing.
	4. The engine mounting bolts are loose.	4. Tighten the engine mounting bolts.
	5. The engine pulley, idler pulley, or blade pulley are loose.	5. Tighten the loose pulley.
	6. The engine pulley is damaged.	6. Contact an Authorized Service Dealer.
	7. The blade spindle is bent.	7. Contact an Authorized Service Dealer.
	8. The belt is damaged.	8. Replace the belt.

Problem	Possible Cause	Corrective Action
There is an uneven cutting pattern.	1. All 4 wheels are not at the same height. 2. The blades are dull. 3. You are mowing in the same pattern repeatedly. 4. The underside of the machine housing contains clippings and debris. 5. The blade spindle is bent.	1. Place all 4 wheels at the same height. 2. Sharpen and balance the blades. 3. Change the mowing pattern. 4. Clean the underside of the machine housing. 5. Contact an Authorized Service Dealer.
The discharge chute gets plugged up.	1. The throttle lever is not in the Fast position. 2. The cutting height is too low. 3. You are mowing too fast. 4. The grass is wet. 5. The underside of the machine housing contains clippings and debris.	1. Move the throttle lever to the Fast position. 2. Raise the cutting height; if necessary, mow a second time at a lower cutting height. 3. Slow down. 4. Allow the grass to dry before mowing. 5. Clean the underside of the machine housing.
The machine does not self-propel.	1. The self-propel drive cable is out of adjustment or is damaged. 2. There is debris in the belt area. 3. The belt is damaged.	1. Adjust the self-propel drive cable; replace the cable if necessary. 2. Clean the debris from the belt area. 3. Replace the belt.
The blades do not rotate or they slip.	1. The BBC belt or the timing belt is worn, loose, or broken. 2. The BBC belt is off the pulley. 3. The BBC cable is worn, loose, or broken.	1. Adjust the BBC cable; adjust the timing belt tension; replace them if necessary. 2. Check the belt for damage, and replace it if necessary. 3. Adjust the BBC cable; replace it if necessary.
The blades contact each other.	1. The blades are installed or aligned incorrectly. 2. The blade adapters are worn, loosen, or broken. 3. The timing belt or worn, loose, or broken. 4. The timing sprockets or idler pulley is worn, loose, or broken.	1. Install the blades properly. 2. Replace the blade adapters. 3. Re-time the blades and adjust the timing belt tension, replace it if necessary. 4. Replace the sprockets or the idler pulley if necessary.

Notes:

Notes:

The Toro Total Coverage Warranty

A Limited Warranty (see warranty periods below)

Landscape Contractor Equipment (LCE)

Conditions and Products Covered

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

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

Products	Warranty Period
21 in. Mowers	2 years Residential Use[1] 1 year Commercial Use
• Engines[4]	Honda – 2 years Kawasaki – 3 years
30 in. Mowers	2 years Residential Use[1] 1 year Commercial Use
• Engines[4]	Kawasaki – 3 years
Mid-Size Walk-Behind Mowers	2 years
• Engines[4]	Kawasaki – 3 years
Grand Stand® Mowers	5 years or 1,200 hours[2]
• Engines[4]	3 years
• Frame	Lifetime (original owner only)[3]
Z Master® 2000 Series Mowers	4 years or 500 hours[2]
• Engines[4]	3 years
• Frame	Lifetime (original owner only)[3]
Z Master® 3000 Series Mowers	5 years or 1,200 hours[2]
• Engines[4]	3 years
• Frame	Lifetime (original owner only)[3]
Z Master® 5000 Series Mowers	5 years or 1,200 hours[2]
• Engines[4]	Kohler Command – 2 years Kohler EFI – 3 years
• Frame	Lifetime (original owner only)[3]
Z Master® 6000 Series Mowers	5 years or 1,200 hours[2]
• Engines[4]	Kawasaki – 3 years
• Frame	Lifetime (original owner only)[3]
Z Master®7000 Series Mowers	5 years or 1,200 hours[2]
• Engines[4]	2 years
• Frame	Lifetime (original owner only)[3]
Z Master®8000 Series Mowers	2 years or 1,200 hours[2]
• Engines[4]	2 years
• Frame	Lifetime (original owner only)[3]
All Mowers	
• Battery	90 days Parts and Labor 1 year Parts only
• Belts and Tires	90 days
• Attachments	1 year

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

[2]Whichever occurs first.

[3]Lifetime Frame Warranty - If the main frame, consisting of the parts welded together to form the tractor structure that other components such as the engine are secured to, cracks or breaks in normal use, it will be repaired or replaced, at Toro's option, under warranty at no cost for parts and labor. Frame failure due to misuse or abuse and failure or repair required due to rust or corrosion are not covered.

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

Instructions for Obtaining Warranty Service

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

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

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

Owner Responsibilities

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

Items and Conditions Not Covered

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

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

General Conditions

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

Neither The Toro Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty.

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

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Countries Other than the United States or Canada

Customers who have purchased Toro products outside the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the Toro importer. If all other remedies fail, you may contact us at Toro Warranty Company.

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