

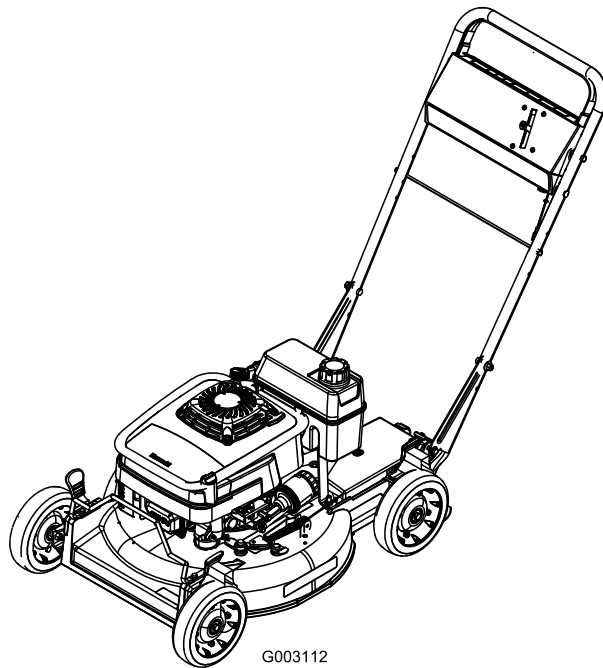


Count on it.

Operator's Manual

**21in Heavy-Duty
Recycler[®] /Rear Bagger Lawn
Mower**

Model No. 22177—Serial No. 260000001 and Up



G003112

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.

Important: This engine is not equipped with a spark arrester muffler. It is a violation of California Public Resource Code Section 4442 to use or operate the engine on any forest-covered, brush-covered, or grass-covered land. Other states or federal areas may have similar laws.

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.

Introduction

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

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

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

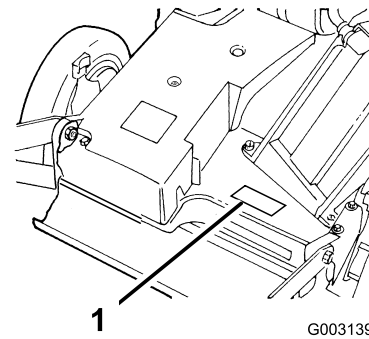


Figure 1

1. Model and serial number 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

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.

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Safety

This lawn mower meets or exceeds the CPSC blade safety requirements for walk-behind rotary lawn mowers and the B71.4 specifications of the American National Standards Institute in effect at the time of production.

Improperly using or maintaining this lawn mower can result in injury. To reduce the potential for injury, comply with these safety instructions.

Toro designed and tested this lawn mower for to offer reasonably safe service; however, **failure to comply with the following instructions may result in personal injury.**



Engine exhaust contains carbon monoxide, an odorless, deadly poison that can kill you.

Do not run the engine indoors or in an enclosed area.

To ensure maximum safety, best performance, and to gain knowledge of the product, it is essential that you and any other operator of the lawn mower read and understand the contents of this manual before the engine is ever started. Pay particular attention to the safety alert symbol (Figure 2) which means **Caution, Warning, or Danger**—“personal safety instruction.” Read and understand the instruction because it has to do with safety. Failure to comply with the instruction may result in personal injury.

General Lawn Mower Safety

This lawn mower is capable of amputating hands and feet and of throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

Training

- Read this *Operator's Manual* carefully. Be thoroughly familiar with the controls and the proper use of the lawn mower before starting it.

- Never allow children to operate the lawn mower. Local regulations may restrict the age of the operator.
- Never allow adults unfamiliar with these instructions to operate the lawn mower.
- Never mow while people (especially children) or pets are nearby. Stop the lawn mower if anyone enters the area.
- Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the lawn mower and the mowing activity. Never assume that children will remain where you last saw them.
- Keep children out of the mowing area and under the watchful care of a responsible adult.
- Be alert and turn the lawn mower off if children enter the area.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.
- See the manufacturer's instructions for proper operation and installation of accessories. Use only the accessories that are approved by the manufacturer.

Preparation

- Thoroughly inspect the area where you will use the lawn mower, and remove all stones, sticks, wires, bones, and other foreign objects.
- While mowing, always wear substantial footwear and long trousers.
- Do not operate the lawn mower when barefoot or wearing open sandals.
- Always wear safety goggles or safety glasses with side shields when operating the lawn mower.
- Warning: Gasoline is highly flammable. Take the following precautions:
 - Store fuel in containers specifically designed for this purpose.
 - Refuel outdoors only and do not smoke while refuelling.
 - Add fuel before starting the engine. Never remove the cap of the fuel tank or add

- gasoline while the engine is running or when the engine is hot.
- If gasoline is spilled, do not attempt to start the engine. Move the lawn mower away from the area of spillage to avoid creating any source of ignition until the gasoline vapors have dissipated.
- Replace all fuel tank and container caps securely.
- If you must drain the fuel from the fuel tank, do it outdoors.
- Replace faulty mufflers.
- Before using, always visually inspect the blades, blade bolts, and cutter assembly for wear or damage. Replace worn or damaged blades and bolts in sets to preserve balance.
- On multibladed lawn mowers, use care as rotating one blade can cause the other blades to rotate.

Operation

- Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.
- Mow only in daylight or in good artificial light.
- Always be sure of your footing on slopes.
- Walk; never run.
- Keep a firm hold on the handle.
- For wheeled rotary lawn mowers, mow across the face of slopes, never up and down.
- Exercise extreme caution when changing the direction on slopes.
- Do not mow excessively steep slopes.
- Use extreme caution when reversing or pulling the lawn mower toward you.
- Before and while moving backward, look behind and down for small children.
- Stop the blade(s) if you must tilt the lawn mower for transportation when crossing surfaces other than grass and when transporting the lawn mower to and from the area to be mowed.
- Never operate the lawn mower with damaged or missing guards or shields, or without safety devices (such as deflectors and grass catchers) in place.
- Do not change the speed settings on the engine.
- Disengage all blade and drive clutches before starting the engine.
- Start the engine carefully according to instructions and with feet well away from the blade(s).
- Do not tilt the lawn mower when starting the engine, unless you must tilt the lawn mower to start it. In this case, do not tilt it more than absolutely necessary and lift only the part which is away from the operator.
- Do not start the engine when standing in front of the discharge chute.
- Do not put your hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.
- Never pick up or carry a lawn mower while the engine is running.
- Stop the engine and disconnect the spark-plug wire:
 - before clearing blockages or unclogging the chute;
 - before checking, cleaning, or working on the lawn mower;
 - after striking a foreign object. Inspect the lawn mower for damage and make repairs before starting and operating the lawn mower; and
 - if the lawn mower starts to vibrate abnormally (check it immediately).
- Stop the engine:
 - whenever you leave the lawn mower; and
 - before refuelling.
- Reduce the throttle setting during engine run-out and, if the engine has a shutoff valve, turn the fuel off after mowing.
- Stop the blade(s) when crossing gravel drives, walks, or roads.
- Shut the engine off and wait until the blade comes to a complete stop before removing the grass catcher.
- Do not operate the lawn mower while under the influence of alcohol or drugs.
- If the lawn mower should start to vibrate abnormally, stop the engine and check

immediately for the cause. Vibration is generally a warning of trouble.

Slopes are a major factor related to slip and fall accidents which can result in a severe injury. If you feel uneasy on a slope, do not mow it.

- Watch for holes, ruts, or bumps. Tall grass can hide obstacles.
- Do not mow near drop-offs, ditches, or embankments. You could lose your footing or balance.
- Do not mow on wet grass. Reduced footing could cause slipping.

Maintenance and Storage

- Keep all nuts, bolts (especially blade attachment bolts), and screws tight to ensure that the lawn mower is in safe working condition.
- Never store the lawn mower with gasoline in the tank inside a building where fumes may reach an open flame or spark.
- Allow the engine to cool before storing the lawn mower in any enclosure.
- To reduce the fire hazard, keep the engine, muffler, battery compartment, and gasoline storage area free of grass, leaves, or excessive grease.
- Check the grass catcher frequently for wear or deterioration.
- Replace worn or damaged parts.
- Use extra care when handling gasoline; gasoline vapors are explosive.
- Never tamper with safety devices. Check their proper operation regularly.
- Keep the lawn mower free of grass, leaves, or other debris buildup. Clean up any oil or fuel that spills.
- Stop and inspect the lawn mower if you strike an object. Repair the lawn mower, if necessary, before starting the engine.
- Never attempt to make wheel height adjustments while the engine is running.
- Grass catcher components are subject to wear, damage, and deterioration, which could expose moving parts or allow objects to be thrown. Frequently check the components and replace

them with the manufacturer's recommended parts when necessary.

- Lawn mower blades are sharp and can cut. Wrap the blade(s) or wear gloves, and use extra caution when servicing them.
- Do not change the speed settings on the engine.
- If you must drain the fuel from the fuel tank, do it outdoors.
- To ensure the best performance and safety, purchase only genuine Toro replacement parts and accessories.
- Maintain or replace safety and instruction decals when necessary.

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.



43-8480



63-9060



68-7410



94-9418



74-1970

- 1. Transmission speeds
- 2. Neutral



98-4387

- 1. Warning—wear hearing protection.



92-1779

Setup

Loose Parts

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

Step	Description	Qty.	Use
1	Handle	1	Install the handle.
	Bolt (5/16 x 1-1/4 inches)	2	
	Washer	4	
	Thin locknut (5/16 inch)	2	
	Bolt (5/16 x 1-1/2 inches)	2	
	Locknut (5/16 inch)	2	
	Bag support rod	1	
	Cap locknut	2	
	Cable tie	1	
2	Self-tapping screw	2	Install the fuel tank and fuel line.
	Fuel tank	1	
3	Discharge tunnel plug	1	Install the discharge tunnel plug.
4	No parts required	–	Fill the crankcase with oil.

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

Step

1

Installing the Handle

Parts needed for this step:

1	Handle
2	Bolt (5/16 x 1-1/4 inches)
4	Washer
2	Thin locknut (5/16 inch)
2	Bolt (5/16 x 1-1/2 inches)
2	Locknut (5/16 inch)
1	Bag support rod
2	Cap locknut
1	Cable tie

Procedure

1. Mount the handle to the outside of the lawn mower housing (using the bottom hole) with 2 bolts (5/16 x 1-1/4 inches), washers, and thin locknuts (5/16 inch) (Figure 3).

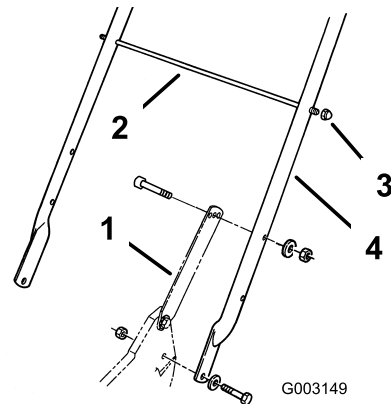


Figure 3

- | | |
|--------------------|--------------------|
| 1. Handle latch | 3. Cap locknut (2) |
| 2. Bag support rod | 4. Handle |

2. Secure the handle latches to the handle with 2 bolts (5/16 x 1-1/2 inches), washers, and locknuts (5/16 inch) (Figure 3).

Note: You can adjust the handle height for comfortable operation. Stand behind the handle to determine the height. To adjust the handle height, position the cap screws and the locknuts that secure the handle latches to the handle into the other mounting holes in the latches.

- Slide the bag support rod through the second from the top mounting holes in the handle and secure each end with a cap locknut (Figure 3).
- Use a cable tie to secure the control cables to the left handle below the bag support rod.

Step **2**

Installing the Fuel Tank and the Fuel Line

Parts needed for this step:

2	Self-tapping screw
1	Fuel tank

Procedure

- Start the 2 self-tapping screws into the bottom of the fuel tank and then remove the screws (Figure 4).

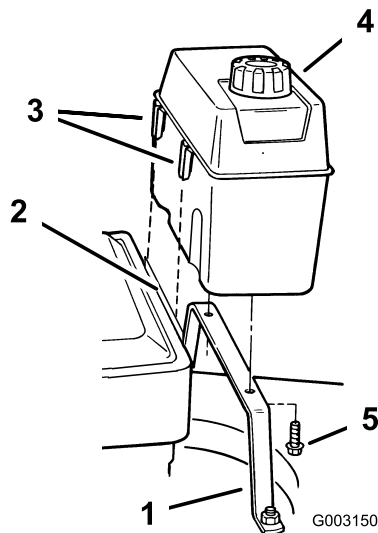


Figure 4

- Tank base
- Fuel tank bracket
- Plastic clips
- Fuel tank
- Self-tapping screw (2)

- Hook the plastic clips on the front of the fuel tank onto the fuel tank bracket (Figure 4).
- Secure the fuel tank to the tank base with the 2 self-tapping screws (Figure 4). **Do not overtighten the screws.**

- Remove the red cap from the end of the fuel line and from the end of the elbow fitting on the fuel tank (Figure 5).

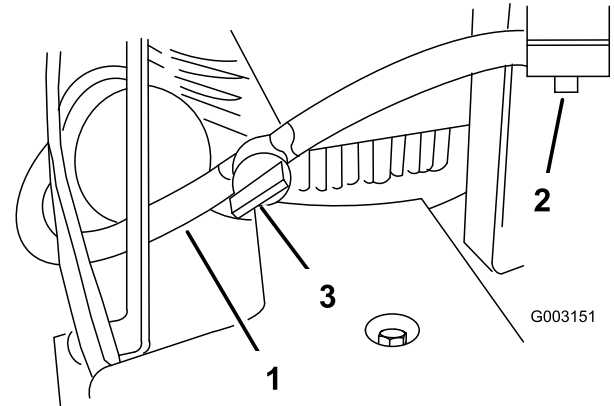


Figure 5

- Fuel line
- Elbow fitting
- Fuel valve

- Slide the end of the fuel line onto the elbow fitting (Figure 5).
- Secure the fuel line in place with the fuel line clamp (Figure 5).

Step **3**

Installing the Discharge Tunnel Plug

Parts needed for this step:

1	Discharge tunnel plug
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Procedure

- Open the discharge door by pulling forward on the handle and moving it rearward (Figure 6). Hold the discharge door handle to prevent the spring-loaded door from closing while you insert the plug.

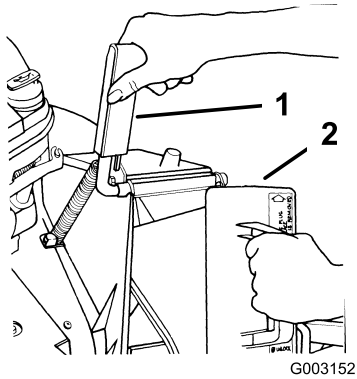


Figure 6

1. Discharge door handle
2. Plug, rotated clockwise

-
2. Since the plug is slightly wider than the discharge tunnel opening, rotate the plug clockwise slightly while inserting it (Figure 6).

Note: Ensure that the arrow on the plug decal points upward.

3. Push the plug all the way in until the spring clip on the bottom of the plug clicks into place, locking the plug securely into the discharge tunnel (Figure 7).

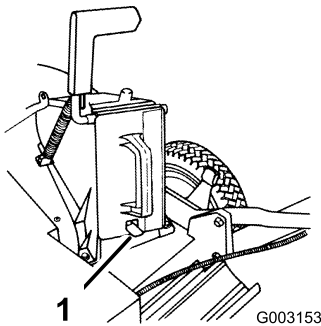


Figure 7

1. Spring clip

-
4. Release the discharge door handle to lock the top of the plug.

Step

4

Filling the Crankcase with Oil

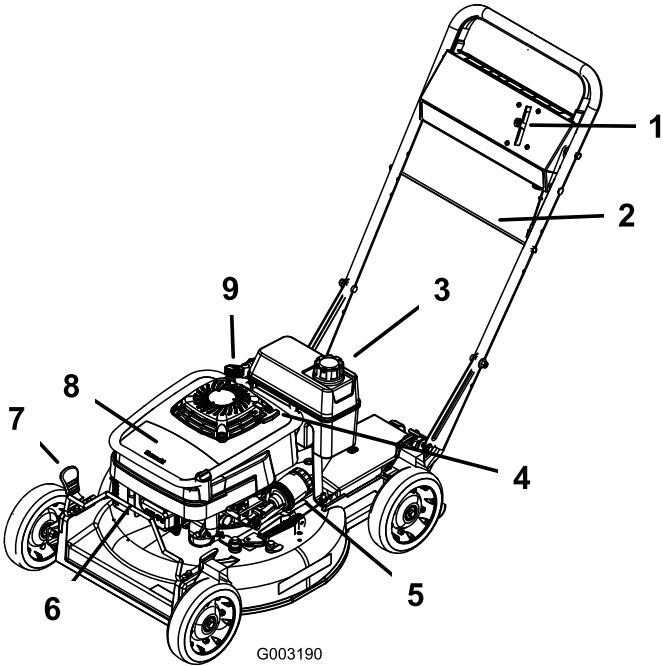
No Parts Required

Procedure

The engine crankcase is shipped without oil.

You must fill it with approximately 30 ounces (0.88 l) of oil before starting the engine. Refer to Checking the Engine Oil Level in Operation, page 12 for oil specifications and instructions.

Product Overview

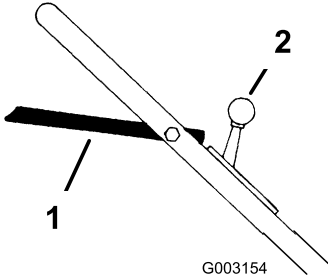


G003190

Figure 8

- 1. Throttle control lever
- 2. Bag aligning rod
- 3. Fuel tank
- 4. Recoil start handle
- 5. Oil filter
- 6. Spark plug
- 7. Cutting height lever
- 8. Air filter
- 9. Oil fill/dipstick

Controls



G003154


Figure 9

- 1. Blade control bar
- 2. Throttle control

Operation

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

Each time before you mow, make sure that the self-propel drive and the blade control bar operate properly. When you release the blade control bar, the blade and self-propel drive should stop. If they do not, contact an Authorized Service Dealer.



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

Wear hearing protection when operating this machine.



Figure 10

1. Warning—wear hearing protection.

Checking the Engine Oil Level

Initially, fill the crankcase with 30 ounces (0.88 liters) of oil. Use only high-quality SAE 30 or SAE 10W30 weight detergent oil that has the American Petroleum Institute (API) service classification SF, SG, SH, or SJ.

Oil Capacity	
With oil filter	30 ounces (0.88 L)
Without oil filter	24 ounces (0.70 L)

Before each use, ensure that the oil level is between the Add and Full marks on the dipstick (Figure 11).

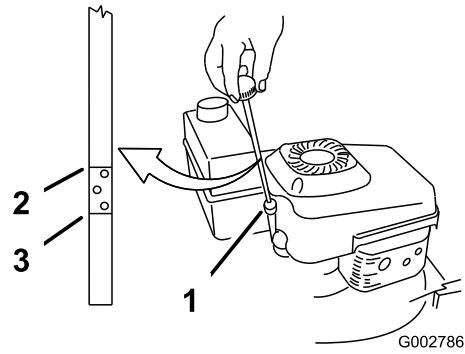


Figure 11

1. Dipstick
2. Full
3. Add

Note: When the crankcase is empty, pour about 3/4 of the crankcase capacity of oil in the crankcase, then follow the procedure in this section.

1. Move the lawn mower to a level surface.
2. Clean around the dipstick (Figure 11).
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, you must fully install the dipstick.

6. Read the oil level on the dipstick (Figure 11).
7. If the oil level reading is below the Add mark on the dipstick, slowly pour only enough oil into the filler hole to raise the oil level to the Full mark on the dipstick.

Important: Do not overfill the crankcase with oil and run the engine; engine damage will result. Drain the excess oil until the oil level on the dipstick reads Full.

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

Filling the Fuel Tank with Gasoline

For best results, use clean, fresh, lead-free gasoline with an octane rating of 87 or higher. To ensure freshness, purchase only the quantity of gasoline that you expect to use in 30 days. Using unleaded gasoline results in fewer combustion deposits and longer engine life. You may use leaded gasoline if unleaded gasoline is not available.

Important: Do not add oil to the gasoline.

Important: Do not use methanol, gasoline containing methanol, gasohol containing more than 10% ethanol, premium gasoline, or white gas. Using these fuels can damage the engine's fuel system.

Important: Do not use gasoline that has been stored since the last mowing season or longer.



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

- Fill the fuel tank outdoors, in an open area, and when the engine is cold. Wipe up any gasoline that spills.
- Do not fill the fuel tank completely full. Add gasoline to the fuel tank until the level is 1/4 to 1/2 in. (6 to 13 mm) below the bottom of the filler neck. This empty space in the tank allows the gasoline to expand.
- Never smoke when handling gasoline, and stay away from an open flame or where a spark may ignite the gasoline fumes.
- Store gasoline in an approved fuel container and keep it out of the reach of children.
- Never buy more than a 30-day supply of gasoline.



When fueling, under certain circumstances, a static charge can develop, igniting the gasoline. A fire or explosion from gasoline can burn you and others and damage property.

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

Use a fuel stabilizer/conditioner regularly during operation and storage. A stabilizer/conditioner cleans the engine during operation and prevents gum-like varnish deposits from forming in the engine during periods of storage.

Important: Do not use fuel additives other than a fuel stabilizer/conditioner. Do not use fuel stabilizers with an alcohol base such as ethanol, methanol, or isopropanol.

1. Clean around the fuel tank cap (Figure 12).

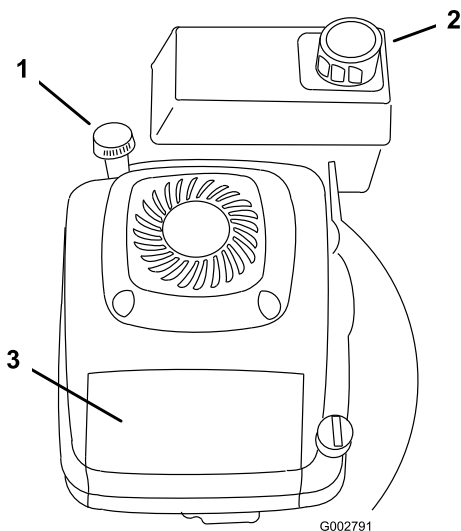


Figure 12

1. Oil fill/dipstick
2. Fuel tank cap
3. Air cleaner

2. Remove the cap from the tank.
3. Fill the fuel tank with unleaded gasoline to within 1/4 to 1/2 inch (6 to 13 mm) from the top of the tank. **Do not fill into the filler neck.**

Important: Do not fill the tank more than 1/4 inch (6 mm) from the top of the tank because the gasoline must have room to expand.

4. Install the fuel tank cap and wipe up any spilled gasoline.

Starting the Engine

1. Connect the wire to the spark plug (Figure 13).

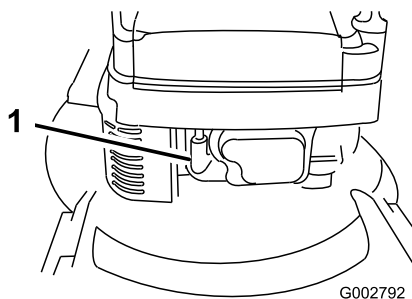


Figure 13

1. Spark-plug wire

2. Open the fuel valve (Figure 5)
3. Move the throttle control to the Choke position.

4. Move the ground speed control to the Neutral (N) position (Figure 14).

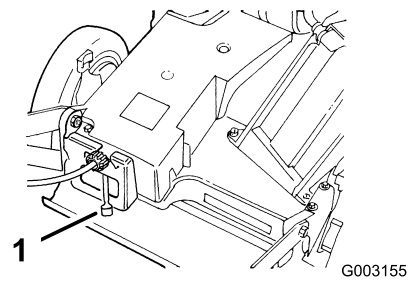


Figure 14

1. Ground speed control

5. Pull the starter handle lightly until you feel resistance, then pull it sharply.
6. Regulate the throttle and the ground speed control as desired when the engine starts.

Note: If the engine fails to start after 3 pulls, repeat steps 3 through 6.

Stopping the Engine

1. Release the blade control bar and move the throttle control to the Off position.
2. Disconnect the wire from the spark plug if you do not use the lawn mower or if you leave it unattended.

Operating the Blade and the Self-Propel Drive

1. Have the blade control bar in the A position (Figure 15).

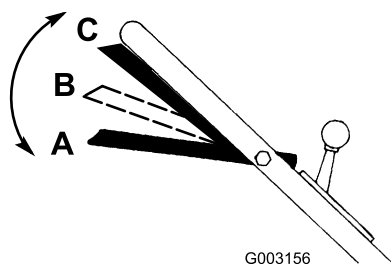


Figure 15

2. Slide the blade control bar to the right and raise it to the B position to engage the blade (Figure 15).
3. Squeeze the blade control bar against the handle to the C position to drive (Figure 15).

Note: To disengage the traction drive but keep the blade engaged, gradually release the blade control bar to the B position. To self-propel with the blade disengaged, squeeze the blade control bar against handle to the C position without sliding the blade control bar to the right.

The lawn mower has 3 ground speeds. 1 is slow, 2 is medium, and 3 is fast. The ground speed control is located at the rear of the belt cover (Figure 14).

Note: You can vary the ground speed by increasing or decreasing the distance between the control bar and the handle. Lower the control bar to slow the lawn mower when making a turn or if the lawn mower is moving too fast for you. If you lower the control bar too far, the lawn mower stops self-propelling. Squeeze the control bar closer to the handle to increase the ground speed. When you hold the control bar tight against the handle, the lawn mower self-propels at the maximum ground speed. Move the ground speed control to the Neutral position when you use the lawn mower for trimming and whenever you leave the lawn mower.

Using the Discharge Tunnel Plug

1. Stop the engine and wait for all moving parts to stop.
2. Insert the plug; refer to Installing the Discharge Tunnel Plug.
3. To remove the plug, move the discharge door handle rearward and lift up the spring clip on the bottom of the plug. When the plug is unlocked, pull it out of the discharge tunnel.

Note: When grass is thick and lush, clippings may collect on and around the discharge tunnel plug. This may make removing the plug difficult. Clean the plug thoroughly after each use.

Checking the Blade Brake Clutch

Check the blade control bar before each use to ensure that the blade brake clutch system is operating properly.

Normal Test

1. Stop the engine and wait for all moving parts to stop.
2. Move the lawn mower onto a paved surface in a non-windy area.
3. Set all 4 wheels in to the 2-1/2 inches (64 mm) cutting height setting (Figure 21).
4. Set the ground speed selector to the Neutral (N) position.
5. Take a half sheet of newspaper and crumple it into a ball small enough to go under the deck (about 3 inches or 76 mm in diameter) as shown in Figure 16.

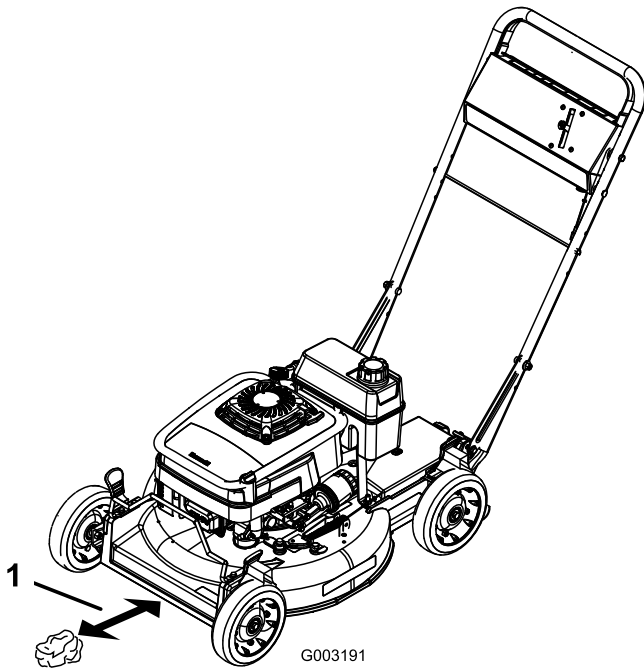


Figure 16

1. 5 inches (12.7 cm)

6. Place the ball of newspaper 5 inches (12.7 cm) in front of the lawn mower (Figure 16).
7. Start the engine.
8. Move the blade control bar down to its lowest position (Figure 17).

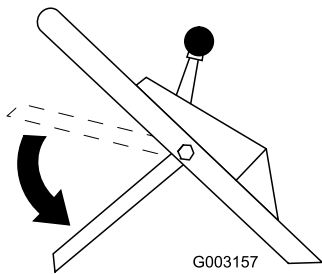


Figure 17

9. Lift the blade control bar up to about one inch (2.5 cm) below the handle; refer to position A in Figure 18.

Note: The fan-like noise indicates that the lawn mower blade is turning.

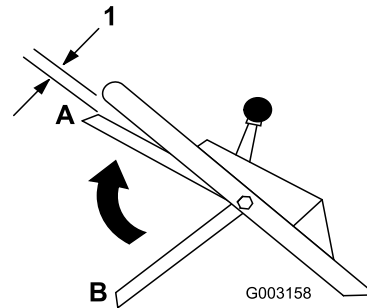


Figure 18

1. 1 inch (2.5 cm)

10. Release the blade control bar; refer to position B in Figure 19. You should hear a “bang.” The blade should stop in 3 seconds.

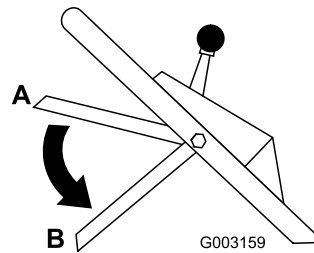


Figure 19

11. Immediately push the lawn mower over the newspaper ball.
12. Stop the engine and wait for all moving parts to stop.
13. Walk around the lawn mower to check for the newspaper ball. If the ball did not go under the deck, repeat steps 6 through 12.
14. Pull the lawn mower away from the newspaper. If the newspaper ball unravels or is shredded, the blade has not properly stopped, resulting in an unsafe operating condition. Contact an Authorized Service Dealer.

To check for a problem with the blade brake clutch system before it affects its normal operation, you can perform the Special Test that follows.

Special Test

1. Follow steps 1 through 7 from the Normal Test.
2. Move the blade control bar down to its lowest position (Position B in Figure 19).
3. Bring the blade control bar up into the middle position about 5 inches (12.7 cm) below the handle cross bar (Position C in Figure 20).

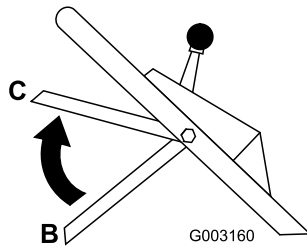


Figure 20

Note: This intermediate position (C) is not the normal operating position of the blade control bar. However, it helps to detect a sticking blade brake clutch system early enough to prevent an unsafe condition later.

4. Release the blade control bar (Position B in Figure 20).

Note: If you hear a loud “bang,” you have raised the blade control bar too high. Repeat steps 2 through 4 above, but do not raise the blade control bar as high as in step 3.

5. Immediately push the lawn mower over the newspaper ball.
6. Stop the engine and wait for all moving parts to stop.
7. Walk around the lawn mower to check for the newspaper ball. If the ball did not go under the deck:
 - A. Place the ball of newspaper 5 inches (12.7 cm) in front of the lawn mower (Figure 16).
 - B. Start the engine.
 - C. Follow steps 2 through 6 above.
8. Pull the lawn mower away from the newspaper. If the newspaper ball unravels or is shredded, the blade brake clutch system could be deteriorating to the point where it could result in an unsafe operating condition. Contact an Authorized Service Dealer for an inspection and repair of your lawn mower.



If the blade brake clutch system is inoperative, the blade will continue to rotate when you release the blade control bar. Contact with blade could occur, causing serious injury.

- Check the blade brake clutch system operation before each use.
- Never use a lawn mower equipped with a blade brake clutch that has an inoperative safety system.
- Take your lawn mower to an Authorized Service Dealer for repair if the safety system fails to operate properly.

Test Using the Grass Bag

You can use the grass bag to perform an additional test to check the blade brake clutch mechanism:

1. Install the empty grass bag on the discharge tunnel.
2. Start the engine.
3. Push the blade control bar down to its lowest position.
4. Lift the blade control bar to the normal blade engaged position about one inch (2.5 cm) below the handle. The bag should begin to inflate, indicating that the blade is engaged and rotating.
5. Release the blade control bar. If the bag does not immediately deflate, it indicates that the blade is still rotating. The blade brake clutch may be deteriorating, and, if ignored, could result in an unsafe operating condition. Have the lawn mower inspected and serviced by an Authorized Service Dealer.

Adjusting the Cutting Height

Each wheel is adjusted individually with a wheel height adjustment lever. Cutting heights are 1 inch (25 mm), 1-1/2 inches (38 mm), 2 inches (51 mm), 2-1/2 inches (64 mm), 3 inches (76 mm), and 3-1/2 inches (89 mm).



Adjusting the cutting height levers could bring your hands into contact with a moving blade and result in serious injury.

- Stop the engine and wait for all movement to stop before adjusting the cutting height.
- Do not put your fingers under the housing when adjusting the cutting height.

1. Pull the wheel height adjustment lever toward the wheel (Figure 21) and move it to the desired setting.

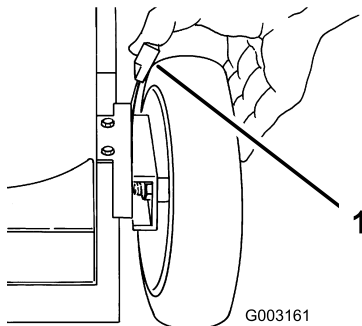


Figure 21

1. Wheel height adjustment lever

2. Release the wheel height adjustment lever and seat it securely in the notch.
3. Adjust all the wheels to the same cutting height setting.

Using the Grass Bag

Occasionally, you may wish to use the grass bag for bagging extra long grass, lush grass, or leaves.

Installing the Grass Bag

1. Stop the engine and wait for all moving parts to stop.

2. Ensure that the discharge door handle is fully forward and that the pin is engaged in the catch (Figure 22).

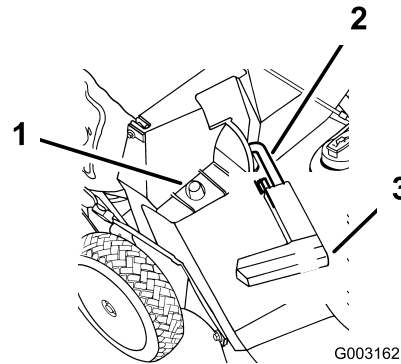


Figure 22

1. Bag frame on retaining post
2. Pin engaged in catch
3. Handle fully forward; discharge door closed

3. Slide the hole in the bag frame onto the retaining post on the discharge tunnel (Figure 22).
4. Set the rear of the bag frame onto the bag support rod.
5. Pull the discharge door handle forward until the pin clears the catch, and move the handle rearward until the pin locks in the bag notch (Figure 23).

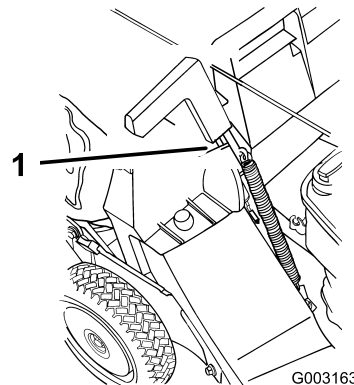


Figure 23

1. Pin locked in bag notch

Note: The discharge door in the lawn mower housing is now open.

Mowing with the Grass Bag



A worn grass bag could allow small stones and other similar debris to be thrown in the operator's or bystander's direction and result in serious personal injury or death to the operator or bystanders.

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

Removing the Grass Bag

1. Stop the engine and wait for all moving parts to stop.
2. Raise the discharge door handle and move it forward to engage the pin with the catch (Figure 22).
3. Grasp the handles at the front and the rear of the bag and lift the bag off the lawn mower.
4. Gradually tip the bag forward to empty the clippings.
5. To install the bag, refer to Installing the Grass Bag.



If the discharge door does not close completely, the lawn mower could throw objects, causing serious personal injury or death.

If you cannot close the door because the grass clippings clog the discharge area, stop the engine and gently move the discharge door handle back and forth until you can close the door completely. If you still cannot close the door, remove the obstruction with a stick, not your hand.



The lawn mower can throw grass clippings and other objects through an open discharge tunnel. Objects thrown with enough force could cause serious personal injury or death to the operator or bystander.

Never open the door on the discharge tunnel when the engine is running.

Operating Tips

General Tips

- Review the safety instructions and read this manual carefully before operating the lawn mower.
- Clear the area of sticks, stones, wire, branches, and other debris that the blade 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 lawn mower strikes an object or starts to vibrate, immediately stop the engine, disconnect the wire from the spark plug, and examine the lawn mower for damage.
- Maintain a sharp blade throughout the cutting season. Periodically file down nicks on the blade.
- Replace the blade when necessary with an original Toro replacement blade.
- Mow only dry grass or leaves. Wet grass and leaves tend to clump on the yard and can cause the lawn mower to plug or the engine to stall.



Wet grass or leaves can cause serious injury if you slip and contact the blade.

Mow only in dry conditions.

- Clean the underside of the lawn mower deck after each mowing. See Cleaning the Underside of the Lawn Mower Housing.
- Keep the engine in good running condition.
- Set the engine speed to the fastest position for the best cutting results.



Operating a lawn mower with its engine running at a speed greater than the factory setting can cause the lawn mower to throw a part of the blade or engine into the operator's or bystander's area and result in serious personal injury or death.

- **Do not change the engine speed setting.**
- **If you suspect the engine speed is faster than normal, contact an Authorized Service Dealer.**

- 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 2 inch (51 mm), 2-1/2 inch (64 mm), or 3 inch (76 mm) cutting height settings. Cut only about a third of the grass blade at a time. Do not cut below the 2 inch (51 mm) setting unless the grass is sparse or it is late fall when grass growth begins to slow down.
- When cutting grass over 6 inches (15 cm) 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 lawn mower 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 one or more of the following:

- Sharpen the blade.
- Walk at a slower pace while mowing.
- Raise the cutting height on your lawn mower.
- 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 one notch lower than the rear wheels. For example,

set the front wheels at 2 inches (51 mm) and the rear wheels at 2-1/2 inches (64 mm).

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 one pass over the leaves.
- For light leaf coverage, set all the wheels at the same cutting height setting.
- If there are more than 5 inches (12.7 cm) 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 lawn mower deck.
- Slow down your mowing speed if the lawn mower does not cut the leaves finely enough.
- If you mow over oak leaves, you can add lime to the grass in the spring to reduce the acidity of the oak leaves.

Maintenance

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

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 8 operating hours	<ul style="list-style-type: none"> • Change the engine oil without the oil filter.
Before each use or daily	<ul style="list-style-type: none"> • Check the engine oil level. • Check the operation of the blade brake clutch. • Inspect the mower blades for wear or damage. • Clean under the lawn mower housing. • Clean the discharge tunnel and plug.
Every 25 hours	<ul style="list-style-type: none"> • Clean the foam pre-cleaner (more frequently in dusty conditions).
Every 50 hours	<ul style="list-style-type: none"> • Lubricate the pivot arms. • Change the engine oil (more often in dusty conditions). • Check the fuel hose and replace it if necessary. • Clean the blade brake clutch shield.
Every 100 hours	<ul style="list-style-type: none"> • Lubricate the gear case. • Clean the air cooling fins. • Change the engine oil and oil filter. • Check the spark plug. • Clean the fuel filter. • Adjust the self-propel drive. • Service the wheels. • Adjust the blade brake cable. • Clean under the belt cover.
Every 300 hours	<ul style="list-style-type: none"> • Replace the paper air filter (more frequently in dusty conditions).
Yearly or before storage	<ul style="list-style-type: none"> • Empty the fuel tank.

Important: Refer to your Engine Operator’s Manual for additional maintenance procedures.



If you leave the wire on the spark plug, someone could accidentally start the engine and seriously injure you or other bystanders.

Disconnect the wire from the spark plug before you do any maintenance. Set the wire aside so that it does not accidentally contact the spark plug.

Lubrication

2. Wipe the grease fittings with a clean rag (Figure 24).

Lubricating the Pivot Arms

After every 50 operating hours or when the season ends, lubricate the pivot arms.

1. Move the rear wheel cutting height levers to the center setting.

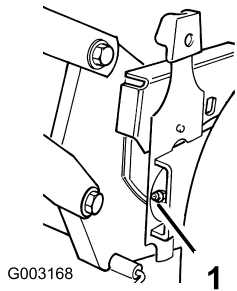


Figure 24

1. Grease fitting

3. Install a grease gun onto the fitting and gently apply 2 or 3 pumps of #2 multi-purpose lithium-base grease.

Important: Excessive grease pressure may damage the seals.

Lubricating the Gear Case

After every 100 operating hours, grease the gear case.

1. Remove the grass bag.
2. Install a grease gun onto the fitting through the belt cover opening (Figure 25).

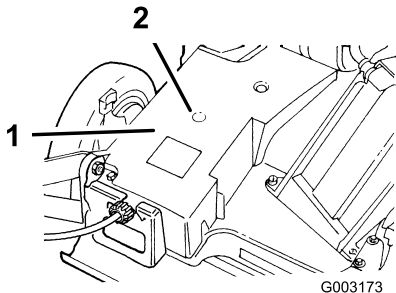


Figure 25

1. Belt cover
2. Grease fitting

3. Gently apply one to 2 pumps of #2 multi-purpose lithium-base grease.
4. Install the grass bag.

Engine Maintenance

Servicing the Air Filter

Clean the foam pre-cleaner every 25 operating hours. Replace the paper air filter once every season or every 300 operating hours; replace it 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 (Figure 13).
3. Remove the screw that secures the air cleaner cover (Figure 26).

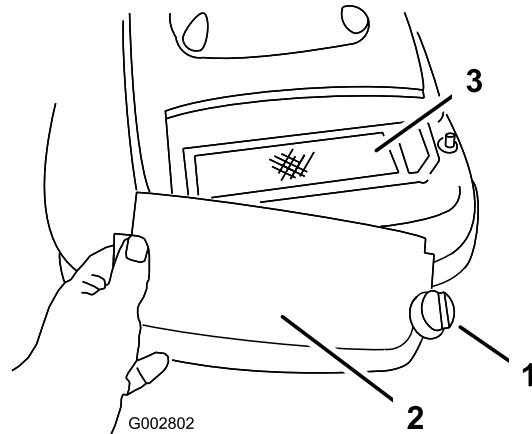


Figure 26

1. Screw
2. Cover
3. Paper air filter

4. Remove the cover and clean it thoroughly (Figure 26).
5. Remove and inspect the paper air filter (Figure 27), and discard it if it is excessively dirty.

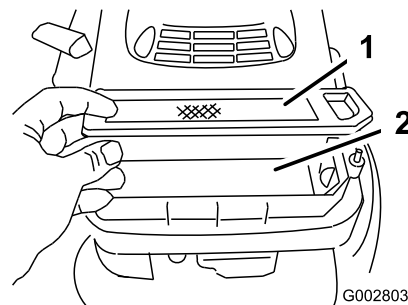


Figure 27

1. Paper air filter
2. Foam pre-cleaner

Important: Do not try to clean a paper filter.

6. Remove the foam pre-cleaner and wash it with a mild detergent and water, then blot it dry (Figure 27).

7. Saturate the pre-cleaner with oil, then squeeze it (do not twist) to remove the excess oil.
8. Install the foam pre-cleaner.
9. Install the paper air filter.

Note: Install a new paper air filter if you discarded the old one.

10. Install the cover and secure it with the screw.

Changing the Oil Filter

Replace the oil filter (Figure 28) after every 100 operating hours or yearly, whichever comes first.

Changing the Engine Oil

Change the oil after the first 8 operating hours and then after every 50 operating hours or every season (more frequently in dusty or dirty conditions).

1. Run the engine to warm the engine oil.

Note: Warm oil flows better and carries more contaminants.



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 (Figure 13).
4. Place a suitable drain pan under the right side of the lawn mower.
5. Remove the dipstick by rotating the cap counterclockwise and pulling it out.
6. Raise the **left** side of the lawn mower to drain the oil into the drain pan.

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

7. Lower the left side of the lawn mower.
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 the Filling the Crankcase with Oil.
11. Wipe up any spilled oil.

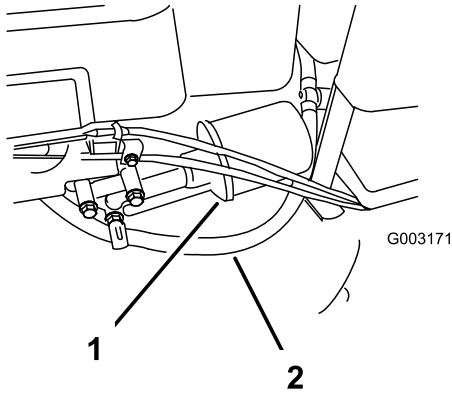


Figure 28

1. Oil filter
2. Fuel line

1. Run the engine to warm the oil.

Oil may be hot after the 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 (Figure 13).
4. Drain the engine oil; refer to Changing the Engine Oil.
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.
7. Use your finger to coat the gasket on the new filter with oil (Figure 29).

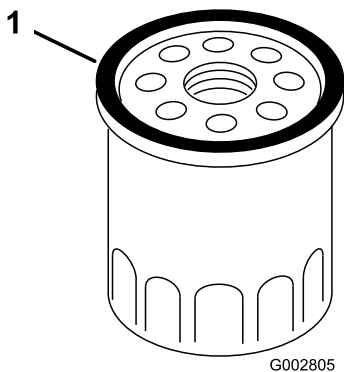


Figure 29

1. Gasket

8. Install the new filter and hand tighten it 2/3 turn only.
9. Fill the crankcase to the Full line on the dipstick with fresh oil Refer to Filling the Crankcase with Oil.
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.
14. Recycle the used oil filter according to local codes.

Servicing the Spark Plug

Check the spark plug after every 100 operating 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 (Figure 13).
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 0.030 in. (0.76 mm) (Figure 30).

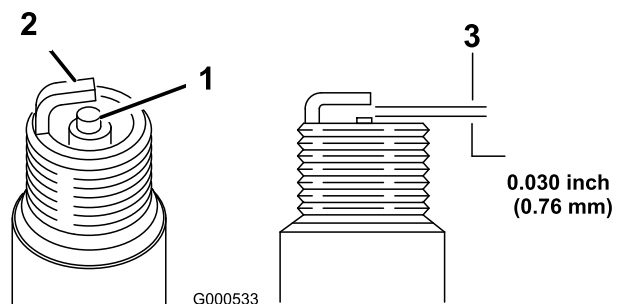


Figure 30

1. 0.030 inches (0.76 mm)

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.

Fuel System Maintenance

Emptying the Fuel Tank and Cleaning the Fuel Filter

The fuel filter (screen) element is located inside the fuel tank. Clean the fuel filter element every 100 operating hours.

1. Stop the engine and wait for it to cool down.
Note: Drain gasoline from a cold engine only.
2. Disconnect the wire from the spark plug (Figure 13).
3. Disconnect the fuel line (Figure 28) by loosening the tube clamp at the carburetor.
4. Open the fuel valve by turning the lever to the open position.
5. Drain the gasoline completely from the tank and fuel line into an approved fuel container.
6. Remove the fuel tank from the mower.
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 fuel line; refer to Installing the Fuel Tank and the Fuel Line.

Drive System Maintenance

Adjusting the Self-propel Drive

If the lawn mower does not self-propel or has a tendency to creep forward when the control bar is more than 1-1/2 inches (3.8 cm) from the handle, adjust the wheel drive control knob on the rear of the gear box.

1. Close the door in the lawn mower housing and remove the grass bag.
2. Rotate the control knob clockwise a half turn if the lawn mower does not self-propel. If the lawn mower creeps forward, rotate the knob a half turn counterclockwise to loosen the belt (Figure 31).

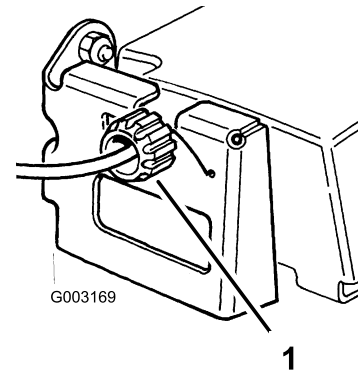


Figure 31

1. Control knob

3. Slowly pull the lawn mower backward while you gradually move the control bar toward the handle.

Note: The adjustment is correct when the rear wheels stop turning and the control bar is about one inch (2.5 cm) from the handle (Figure 32).

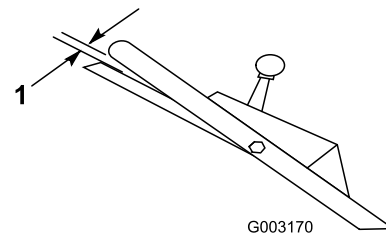


Figure 32

1. 1 inch (2.5 cm)

Servicing the Wheels

Removing the Wheels

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug (Figure 13).
3. Remove the bolt, the wheel spacer, and the locknut mounting the wheel to the pivot arm (Figure 33).

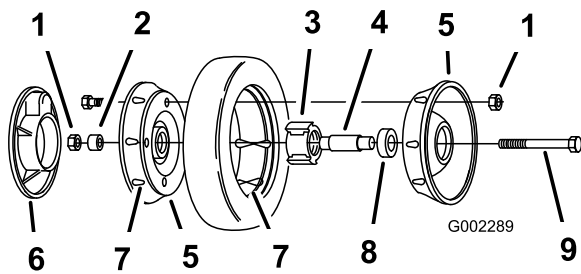


Figure 33

- | | |
|-------------------------|-------------------------------------|
| 1. Locknuts | 6. Plastic cover (rear wheels only) |
| 2. Wheel spacer | 7. Lug |
| 3. Bearing/hub assembly | 8. Bearing (2) |
| 4. Bearing spacer | 9. Bolt |
| 5. Wheel half | |

- Separate the wheel halves from the tire by removing 4 bolts and 4 locknuts (Figure 33).

Note: If you remove the bearings from the bearing/hub assembly, remove them by pressing on the bearing spacer (Figure 33).

Assembling the Wheels

- Position the tire onto one wheel half, aligning the lugs on each (Figure 33).
- Place the bearing/hub assembly into the center hole of the wheel half. Ensure that the legs of the hub are positioned over the flange of the hole (Figure 33).
- Place the other wheel half onto the bearing/hub assembly, aligning the wheel and the tire lugs and the mounting holes (Figure 33).
- Using 2 fully threaded screws or bolts (1/4-20 x 1.50 inch) and non-locking nuts, loosely secure the wheel halves together. Mount the screws or bolts in the opposing holes (Figure 33).
- Check the alignment of all parts and tighten the bolts, alternating from side to side for a uniform fit, until the wheel halves are drawn together (Figure 33).
- Install the 2 bolts and 2 locknuts previously removed in the remaining holes in the wheel halves and tighten. Remove the 2 long screws or bolts and replace them with 2 bolts and 2 locknuts (Figure 33).
- Install the wheel to the pivot arm with the bolts, a spacer, and a locknut. Ensure that the spacer is positioned between the wheel hub and the pivot arm (Figure 33).

Controls System Maintenance

Adjusting the Blade Brake Cable

Whenever you install a new blade brake cable assembly or replace the belt, adjust the blade brake cable.

- Stop the engine and wait for all moving parts to stop.
- Disconnect the wire from the spark plug (Figure 13).
- Loosen the cable clamp screw until the brake cable conduit slides (Figure 34).

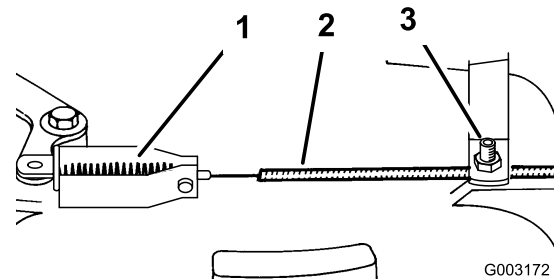


Figure 34

- | | |
|------------------|----------------------|
| 1. Spring | 3. Cable clamp screw |
| 2. Cable conduit | |

- Pull the cable to the remove slack, but do not put tension on the spring. Tighten the cable clamp screw to lock the adjustment in place.



Do not overtighten the blade brake cable. Overtightening the blade brake cable could cause the blade brake to come off of the brake drum. If the brake does not contact the drum, the blade will not stop rotating when you release the control bar. A rotating blade could cause serious personal injury.

- Each time you adjust the brake cable, ensure that the brake stops the blade in 3 seconds or less.
- If the blade does not stop rotating in 3 seconds or less, bring the lawn mower to an Authorized Service Dealer for inspection and repair.

Blade Maintenance

Maintaining the Cutting Blade

Always mow with a sharp blade. A sharp blade cuts cleanly and without tearing or shredding the grass blades.

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug (Figure 13).
3. Drain the gasoline from the fuel tank; refer to Emptying the Fuel Tank and Cleaning the Fuel Filter.
4. Tip the lawn mower onto its **right** side (Figure 35).

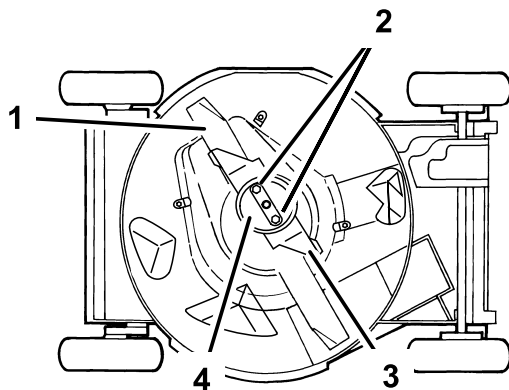


Figure 35

- | | |
|---------------|-------------------|
| 1. Blade | 3. Accelerator |
| 2. Blade nuts | 4. Anti-scalp cup |

Inspecting the Blade

Carefully examine the blade for sharpness and wear, especially where the flat and the curved parts meet (Figure 36A). Because sand and abrasive material can wear away the metal that connects the flat and curved parts of the blade, check the blade before using the lawn mower. If you notice a slot or wear (Figure 36B and Figure 36C), replace the blade; refer to Removing the Blade.

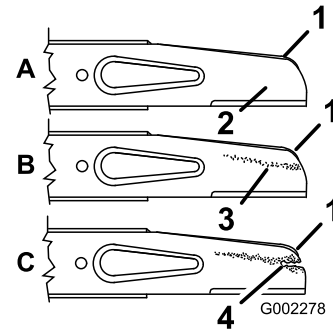


Figure 36

- | | |
|---------------------------|----------------|
| 1. Sail | 3. Wear |
| 2. Flat part of the blade | 4. Slot formed |

Note: For the best performance, install a new blade before the cutting season begins. During the year, file down any small nicks to maintain the cutting edge.



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

- Inspect the blade periodically for wear or damage.
- Replace a worn or damaged blade.

Removing the Blade

Grasp the end of the blade using a rag or a thickly padded glove. Remove the blade nuts, the anti-scalp cup, the accelerator, and the blade (Figure 35).

Sharpening the Blade

File the top side of the blade to maintain its original cutting angle (Figure 37A) and inner cutting edge radius (Figure 37B). The blade will remain balanced if you remove the same amount of material from both cutting edges.

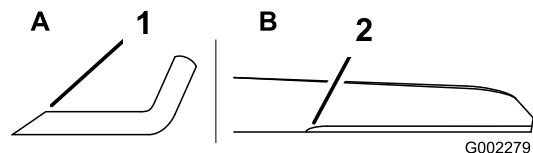


Figure 37

1. Sharpen at this angle only.
2. Maintain the original radius here.

Balancing the Blade

1. Check the balance of the blade by placing the center hole of the blade over a nail or screwdriver shank clamped horizontally in a vise (Figure 38).

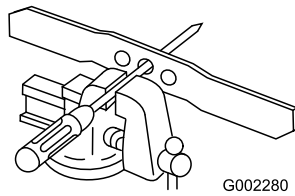


Figure 38

Note: You can also check the balance using a commercially manufactured blade balancer.

2. If either end of the blade rotates downward, file that end (not the cutting edge or the end near the cutting edge). The blade is properly balanced when neither end drops.

Installing the Blade

1. Install a sharp, balanced Toro blade, the accelerator, the anti-scalp cup, and the blade nuts. The sail of the blade must point toward the top of the lawn mower housing for proper installation. Torque the blade nuts to 15 to 27 ft-lb (20 to 37 Nm).



Operating the lawn mower without the accelerator in place can cause the blade to flex, bend, or break, resulting in serious injury or death to the operator or bystanders.

Do not operate the lawn mower without the accelerator.

2. Return the lawn mower to its upright position.
3. Connect the wire to the spark plug.

Cleaning

Cleaning under the Lawn Mower Housing

To ensure the best performance, keep the underside of the lawn mower housing clean. Be

especially careful to keep the kickers free of debris (Figure 39).

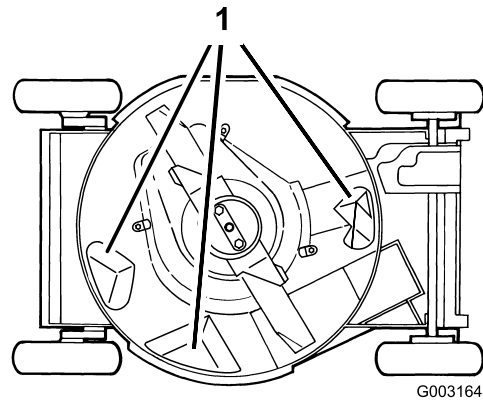


Figure 39

1. Kickers

Washing Method

1. Position the lawn mower 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 40).

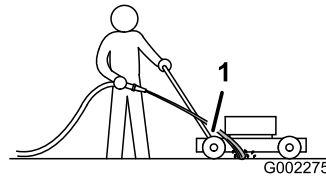


Figure 40

1. Right rear wheel


Note: The blade 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 lawn mower and let it run for a few minutes to dry out the moisture on the lawn mower and its components.

Scraping Method

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

1. Disconnect the wire from the spark plug (Figure 13).
2. Drain the fuel from the fuel tank. Refer to Emptying the Fuel Tank and Cleaning the Fuel Filter.



Tipping the lawn mower may cause the fuel to leak from the carburetor or the fuel tank. Gasoline is extremely flammable, highly explosive, and, under certain conditions, can cause personal injury or property damage.


Avoid fuel spills by running the engine dry or by removing the gasoline with a hand pump; never siphon.

3. Tip the lawn mower onto its right side .
4. Remove the dirt and grass clippings with a hardwood scraper. Avoid burrs and sharp edges.
5. Turn the lawn mower upright.
6. Fill the fuel tank.
7. Connect the wire to the spark plug.

Cleaning the Discharge Tunnel and Plug

Remove the plug from the discharge tunnel and clean it after each use.

Always be sure that the discharge tunnel door closes securely when you release the handle. If the debris prevents the discharge door from closing securely, clean the inside of the discharge tunnel and the door thoroughly.



Grass clippings and other objects can be thrown from an open discharge tunnel and cause serious injury or kill the operator or bystanders.


Never start or operate the lawn mower unless one of the following is true:

- The discharge tunnel plug is locked securely in the discharge tunnel.
- The grass bag is locked in place.
- The optional side discharge chute is locked in place.
- The discharge tunnel door is locked in place.

Cleaning the Blade Brake Clutch Shield

Clean the blade brake clutch shield at the end of each mowing season to ensure the best performance and to prevent parts from degrading. Clean the blade brake clutch shield when you sharpen the blade because you need to remove the blade in order to remove the blade brake clutch shield.

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug (Figure 13).
3. Drain the gasoline from the fuel tank; refer to Emptying the Fuel Tank and Cleaning the Fuel Filter.
4. Tip the lawn mower on its **right** side.



Tipping the lawn mower may cause the fuel to leak from the carburetor or the fuel tank. Gasoline is extremely flammable, highly explosive, and, under certain conditions, can cause personal injury or property damage.

Avoid fuel spills by emptying the fuel tank as directed; never siphon.

5. Remove 2 blade nuts, the anti-scalp cup, the accelerator, and the blade (Figure 35).

- Loosen the tabs that secure the blade brake clutch shield to the deck by loosening the nuts or the bolts on the tabs (Figure 41). Rotate the tabs 180° to move them out of the way.

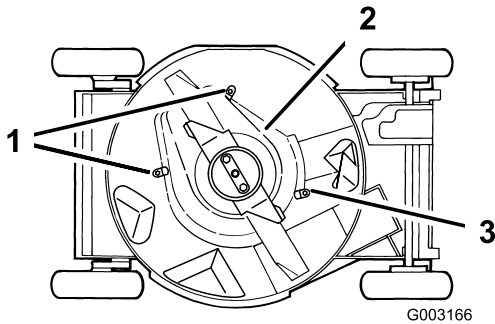


Figure 41

1. Tabs and nuts
2. Blade brake clutch shield
3. Tab and bolt

- Remove the blade brake clutch shield and brush or blow all the debris from under the shield and around the blade brake clutch system.
- Install the blade brake clutch shield. Rotate the tabs 180° back into position. Tighten the nuts or the bolts on tabs to secure the blade brake clutch shield to the deck.
- Install the blade, the accelerator, the anti-scalp cup, and the 2 blade nuts.
- Turn the lawn mower upright.
- Connect the wire to the spark plug.

Cleaning under the Belt Cover

Keep the area under the belt cover free of debris.

- Stop the engine and wait for all moving parts to stop.
- Remove the bolts that secure the belt cover (Figure 42) to the lawn mower housing.

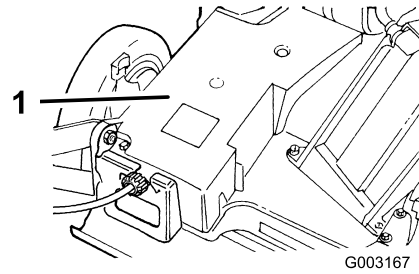


Figure 42

1. Belt cover
3. Lift off the cover and brush out all the debris around the belt area.
4. Install the belt cover.

Storage

To prepare the lawn mower for off-season storage, perform the recommended maintenance procedures. Refer to Maintenance.

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

Preparing the Fuel System



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 lawn mower 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.

Empty the fuel tank when mowing the last time before storing the lawn mower.

1. Run the lawn mower until the engine stops from running out of fuel.
2. Prime the engine and start it 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 oil from the crankcase. Refer to Changing the Engine Oil.
2. Remove the spark plug (Figure 13).
3. Using an oil can, add about one tablespoon of oil to the crankcase through the spark plug hole.
4. Slowly rotate the engine several times, using the starter rope, to distribute the oil.
5. Install the spark plug but do not connect the wire to the spark plug.

General Information

1. Clean the lawn mower housing. Refer to Clean under the Lawn Mower Housing.
2. Clean any dirt and chaff from the cylinder, cylinder head fins, and blower housing.
3. Remove grass clippings, dirt, and grime from the external parts of the engine, the shrouding, and the top of the lawn mower housing.
4. Check the condition of the blade. Refer to Maintaining the Cutting Blade.
5. Clean the blade brake clutch shield; refer to Cleaning the Blade Brake Clutch Shield.
6. Service the air filter; refer to Servicing the Air Filter.
7. Lubricate the pivot arms; refer to Lubricating the Pivot Arms.
8. Tighten all nuts, bolts, and screws.
9. Touch up all rusted or chipped paint surfaces with paint available from an Authorized Service Dealer.

Removing the Lawn Mower 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. Clean the spark plug or replace it if it is cracked, broken, or if the electrodes are worn.
4. Install the spark plug and torque it to 17 ft-lb (23 N·m).
5. Perform any needed maintenance procedures; refer to Maintenance.
6. Fill the fuel in the fuel tank with fresh gasoline.
7. Check the engine oil level.
8. Connect the wire to the spark plug.

Troubleshooting

Problem	Possible Cause	Corrective Action
Engine does not start	<ol style="list-style-type: none"> 1. The fuel tank is empty or the fuel system contains stale fuel. 2. The throttle lever is not in the Choke position. 3. The wire is not connected to the spark plug. 4. The spark plug is pitted, fouled, or the gap is incorrect. 	<ol style="list-style-type: none"> 1. Drain and/or fill the fuel tank with fresh gasoline. If the problem persists, contact an Authorized Service Dealer. 2. Move the throttle lever to the Choke position. 3. Connect the wire to the spark plug. 4. Check the spark plug and adjust the gap if necessary. Replace the spark plug if it is pitted, fouled, or cracked.
Engine starts hard or loses power	<ol style="list-style-type: none"> 1. The fuel tank contains stale fuel. 2. The fuel cap vent hole is plugged. 3. The air filter element is dirty and is restricting the air flow. 4. The underside of the lawn mower deck contains clippings and debris. 5. The spark plug is pitted, fouled, or the gap is incorrect. 6. The engine oil level is low or the oil is dirty. 	<ol style="list-style-type: none"> 1. Drain and fill the fuel tank with fresh gasoline. 2. Clean the fuel cap vent hole or replace the fuel cap. 3. Clean the air filter pre-cleaner and/or replace the paper air filter. 4. Clean the underside of the lawn mower deck. 5. Check the spark plug and adjust the gap if necessary. Replace the spark plug if it is pitted, fouled, or cracked. 6. Check the engine oil. Change the oil if it is dirty or add oil if it is low.

Problem	Possible Cause	Corrective Action
Engine runs rough	<ol style="list-style-type: none"> 1. The wire is not connected to the spark plug. 2. The spark plug is pitted, fouled, or the gap is incorrect. 3. The throttle lever is not in the Fast position. 4. The air filter element is dirty and is restricting the air flow. 	<ol style="list-style-type: none"> 1. Connect the wire to the spark plug. 2. Check the spark plug and adjust the gap if necessary. Replace the spark plug if it is pitted, fouled, or cracked. 3. Move the throttle lever to the Fast position. 4. Clean the air filter pre-cleaner and/or replace the paper air filter.
Lawn mower or engine vibrates excessively	<ol style="list-style-type: none"> 1. The blade is bent or is out of balance. 2. The blade mounting nuts are loose. 3. The underside of the lawn mower deck contains clippings and debris. 4. The engine mounting bolts are loose. 	<ol style="list-style-type: none"> 1. Balance the blade. If the blade is bent, replace it. 2. Tighten the blade mounting nuts. 3. Clean the underside of the lawn mower deck. 4. Tighten the engine mounting bolts.
Uneven cutting pattern	<ol style="list-style-type: none"> 1. All 4 wheels are not at the same height. 2. The blade is dull. 3. You are mowing in the same pattern repeatedly. 4. The underside of the lawn mower deck contains clippings and debris. 	<ol style="list-style-type: none"> 1. Place all 4 wheels at the same height. 2. Sharpen and balance the blade. 3. Change the mowing pattern. 4. Clean the underside of the lawn mower deck.
Discharge chute plugs	<ol style="list-style-type: none"> 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 lawn mower deck contains clippings and debris. 	<ol style="list-style-type: none"> 1. Move the throttle lever to the Fast position. 2. Raise the cutting height. 3. Slow down. 4. Allow the grass to dry before mowing. 5. Clean the underside of the lawn mower deck.

Problem	Possible Cause	Corrective Action
Lawn mower does not self-propel	<ol style="list-style-type: none">1. The self-propel drive cable is out of adjustment or is damaged.2. There is debris under the belt cover.	<ol style="list-style-type: none">1. Adjust the self-propel drive cable. Replace the cable if necessary.2. Clean the debris from under the belt cover.



Evaporative Emission Control Warranty Statement

California Evaporative Emission Control Warranty Statement
Your Warranty Rights and Obligations

Introduction

The California Air Resources Board and The Toro® Company are pleased to explain the evaporative emission control system's warranty on your 2006 model year equipment. In California, new equipment that use small off-road engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. The Toro® Company must warrant the evaporative emission control system on your equipment for two years provided there has been no abuse, neglect or improper maintenance of your equipment. Your evaporative emission control system may include parts such as: fuel lines, fuel line fittings, and clamps.

Manufacturer's Warranty Coverage:

This evaporative emission control system is warranted for two years. If any evaporative emission-related part on your equipment is defective, the part will be repaired or replaced by The Toro® Company.

Owner's Warranty Responsibilities:

- As the equipment owner, you are responsible for performance of the required maintenance listed in your Operator's Manual. The Toro® Company recommends that you retain all receipts covering maintenance on your equipment, but The Toro® Company cannot deny warranty solely for the lack of receipts.
- As the equipment owner, you should however be aware that The Toro® Company may deny you warranty coverage if your emission warranty parts have failed due to abuse, neglect, or improper maintenance or unapproved modifications.
- You are responsible for presenting your equipment to an Authorized Service Dealer as soon as the problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days. If you have a question regarding your warranty coverage, you should contact The Toro® Company at 1-952-948-4027 or call us toll free at the number listed in your Toro Warranty statement.

Defects Warranty Requirements:

1. The warranty period begins on the date the engine or equipment is delivered to an ultimate purchaser.
2. General Evaporative Emissions Warranty Coverage. The emission warranty parts must be warranted to the ultimate purchaser and any subsequent owner that the evaporative emission control system when installed was:
 - A. Designed, built, and equipped so as to conform with all applicable regulations; and
 - B. Free from defects in materials and workmanship that causes the failure of a warranted part for a period of two years.
3. The warranty on evaporative emissions-related parts will be interpreted as follows:
 - A. Any warranted part that is not scheduled for replacement as required maintenance in the written instructions must be warranted for the warranty period of two years. If any such part fails during the period of warranty coverage, it must be repaired or replaced by The Toro® Company. Any such part repaired or replaced under the warranty must be warranted for a time not less than the remaining warranty period.
 - B. Any warranted part that is scheduled only for regular inspection in the written instructions must be warranted for the warranty period of two years. A statement in such written instructions to the effect of "repair or replace as necessary" will not reduce the period of warranty coverage. Any such part repaired or replaced under warranty must be warranted for a time not less than the remaining warranty period.
 - C. Any warranted part that is scheduled for replacement as required maintenance in the written instructions must be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part must be repaired or replaced by The Toro® Company. Any such part repaired or replaced under warranty must be warranted for a time not less than the remainder of the period prior to the first scheduled replacement point for the part.
 - D. Repair or replacement of any warranted part under the warranty provisions of this article must be performed at no charge to the owner at an Authorized Service Dealer.
 - E. Notwithstanding the provisions of subsection (D) above, warranty services or repairs must be provided at an Authorized Service Dealer.
 - F. The owner must not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at an Authorized Service Dealer.
 - G. Throughout the evaporative emission control system's two year warranty period, The Toro® Company must maintain a supply of warranted parts sufficient to meet the expected demand for such parts.
 - H. Manufacturer approved replacement parts must be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner. Such use will not reduce the warranty obligations of The Toro® Company.
 - I. The use of any add-on or modified parts will be grounds for disallowing a warranty claim made in accordance with this article. The Toro® Company will not be liable under this Article to warrant failures of warranted parts caused by the use of an add-on or modified part.
 - J. The Toro® Company shall provide any documents that describe the warranty procedures or policies within five working days of request by the Air Resources Board.

Emission Warranty Parts List:

The following lists includes the parts covered under this warranty:

- Fuel Lines
- Fuel Line Fittings
- Clamps



Toro 21"
Commercial
Walk Power
Mower

The Toro Total Coverage Guarantee

A Two-Year Full Warranty (Limited Warranty for Commercial Use)

Conditions and Products Covered

The Toro® Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly promise to repair any Toro Product, when used for residential purposes*, if defective in materials or workmanship or if it stops functioning due to the failure of a component. The following time periods apply from the date of original purchase:

Products	Warranty Period
All Products and attachments	2-year full warranty

This warranty covers the cost of parts and labor, but you must pay transportation costs. This warranty applies to all Toro Commercial Duty Walk Power Mowers and their attachments.

Limited Warranty for Commercial Use

Toro Products used for commercial, institutional, or rental use are warranted against defects in materials or workmanship for the following time periods from the original date of purchase:

Products	Warranty Period
Engine	2-year limited warranty
All Products and attachments	1-year limited warranty

Components failing due to normal wear are not covered by this warranty.

Items and Conditions Not Covered

There is no other express warranty except for special emission system 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, air filter, blade sharpening/worn blade on mowers, paddles/scrapers/skids on snowthrowers, cable/linkage adjustments, or brake and clutch adjustments
- Any product or part which has been altered or misused and requires replacement or repair due to accidents or lack of proper maintenance
- Repairs necessary due to improper battery care, electrical supply irregularities, or failure to use fresh fuel (less than one month old), or failure to properly prepare the unit prior to any period of non-use over one month
- Operational misuse, neglect, or accidents
- Repairs or attempted repairs by anyone other than an Authorized Toro Service Dealer.
- Pickup and delivery charges

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

Owner Responsibilities

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

Instructions for Obtaining Warranty Service

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

1. Contact any Toro Authorized 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 "Snow Removal") or access our website at www.Toro.com. U.S. Customers may also call the number listed in item #3 to use our 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 to be covered under warranty.

If for any reason you are dissatisfied with the Service Dealer's analysis or with the assistance provided, contact us at:

Customer Care Department – Consumer, Toro Warranty Company, 8111 Lyndale Avenue South, Bloomington, MN 55420-1196; or call us toll free at 1-888-865-5676 (U.S. Customers) or 1-888-865-5691 (Canada customers).

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 these warranties, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under these warranties.

Some states do not allow exclusions of incidental or consequential damages, 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 exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the Toro importer. If all other remedies fail, you may contact us at Toro Warranty Company.

* Residential purposes 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 use warranty would apply.