



**Count on It.**

Form No. 3459-696 Rev A

**Operator's Manual**

**TimeCutter® ZS 4200T Riding  
Mower**

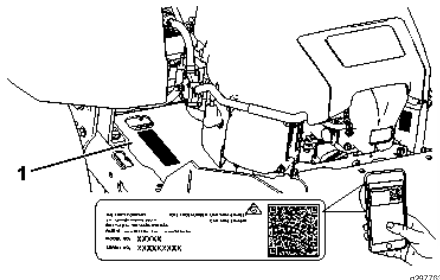
Model No. 74677—Serial No. 400000000 and Up

Model No. 74679—Serial No. 400000000 and Up



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

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



**Figure 1**  
Under the seat

g297703

## Introduction

This rotary-blade, riding lawn mower is intended to be used by homeowners in residential applications. It is designed primarily for cutting grass on well-maintained lawns. Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

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

Visit [www.Toro.com](http://www.Toro.com) for product safety and operation training materials, accessory information, help finding a dealer, or to register your product.

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

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

### 1. Model and serial number location

Write the product model and serial numbers in the space below:

|                  |
|------------------|
| Model No. _____  |
| Serial No. _____ |

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

The safety-alert symbol (**Figure 2**) appears both in this manual and on the machine to identify important safety messages that you must follow to avoid accidents. This symbol will appear with the word **Danger**, **Warning**, or **Caution**.

- **Danger** indicates an imminently hazardous situation which, if not avoided, **will** result in death or serious injury.
- **Warning** indicates a potentially hazardous situation which, if not avoided, **could** result in death or serious injury.
- **Caution** indicates a potentially hazardous situation which, if not avoided, **may** result in minor or moderate injury.



**Figure 2**

sa-black

### 1. Safety-alert symbol

# Safety

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

## 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 or death.

- Read and understand the contents of this *Operator's Manual* before starting the engine.
- Keep bystanders and children away.
- Do not allow children or untrained people to operate or service the machine. Allow only people who are responsible, trained, familiar with the instructions, and physically capable to operate or service the machine.
- Do not operate the machine near drop-offs, ditches, embankments, water, or other hazards, or on slopes greater than 15°.
- Do not put your hands or feet near moving components of the machine.
- Do not operate the machine without all guards, safety switches, and other safety protective devices in place and functioning properly.
- Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operator's position. Allow the machine to cool before servicing, adjusting, fueling, cleaning, or storing it.

## Slope Indicator

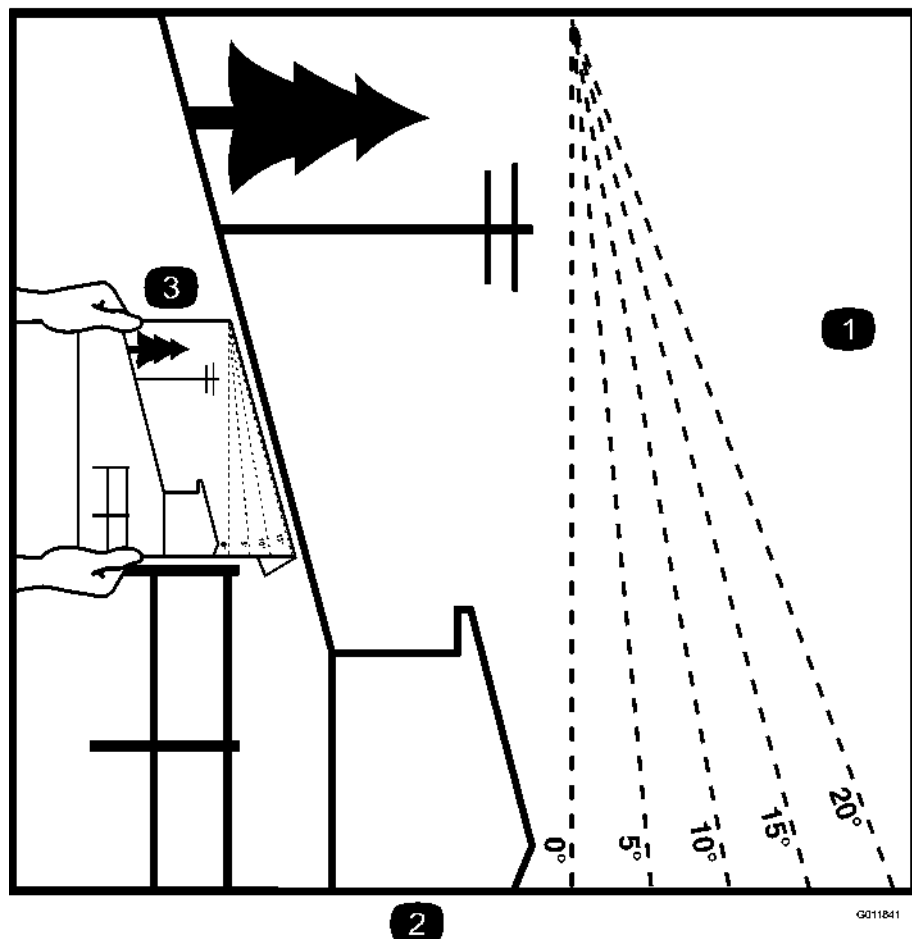


Figure 3

You may copy this page for personal use.

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

# Safety and Instructional Decals



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



## Battery Symbols

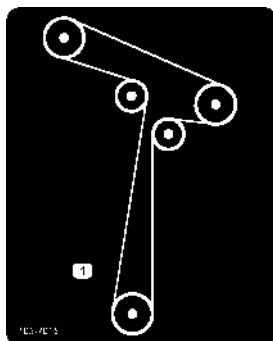
Some or all of these symbols are on your battery.

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



## Manufacturer's Mark

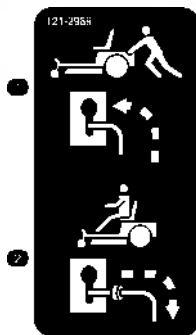
- This mark indicates that the blade is identified as a part from the original machine manufacturer.



105-7015

decab105-7015

- Belt routing



121-2989

decab121-2989b

- Bypass lever position for pushing the machine
- Bypass lever position for operating the machine



130-0731

decab130-0731

- Warning—thrown object hazard; keep the deflector shield in place.
- Cutting hazard of hand or foot, mower blade—keep away from moving parts.

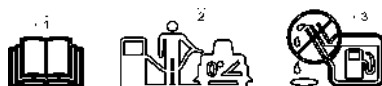


132-0872

decals 132-0872

1. Thrown object hazard—keep bystanders away from the machine.
2. Thrown object hazard, raised deflector—do not operate the machine with an open deck; use a bagger or a deflector.
3. Severing hazard of hand or foot—keep away from moving parts.
4. Entanglement hazard—keep away from moving parts; keep all guards and shields in place.

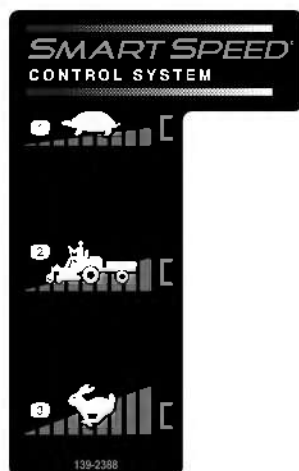
Decal 138-6074 is molded into the fuel tank.



138-6074

decals 138-6074

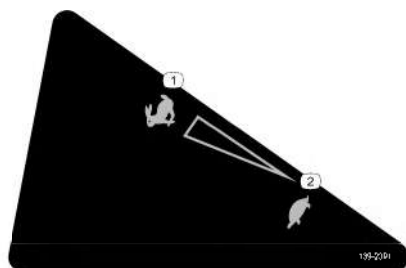
1. Read the *Operator's Manual*.
2. Park the machine on a level surface when filling the fuel tank.
3. Do not overfill the fuel tank.



139-2388

decals 139-2388

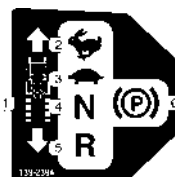
1. Slow
2. Hauling
3. Fast



139-2391

decals 139-2391

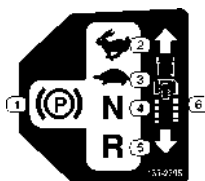
1. Fast
2. Slow



139-2394

decals 139-2394

1. Traction controls
2. Fast
3. Slow
4. Neutral
5. Reverse
6. Parking brake



139-2395

decet139-2395

- |                  |                      |
|------------------|----------------------|
| 1. Parking brake | 4. Neutral           |
| 2. Fast          | 5. Reverse           |
| 3. Slow          | 6. Traction controls |



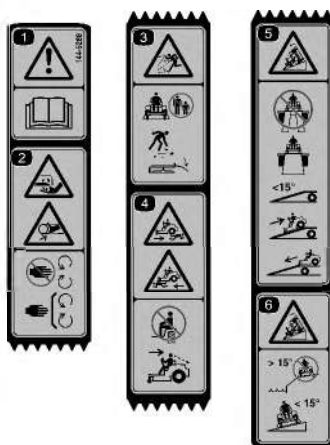
140-2748

decet140-2748



142-5864

decet142-5864



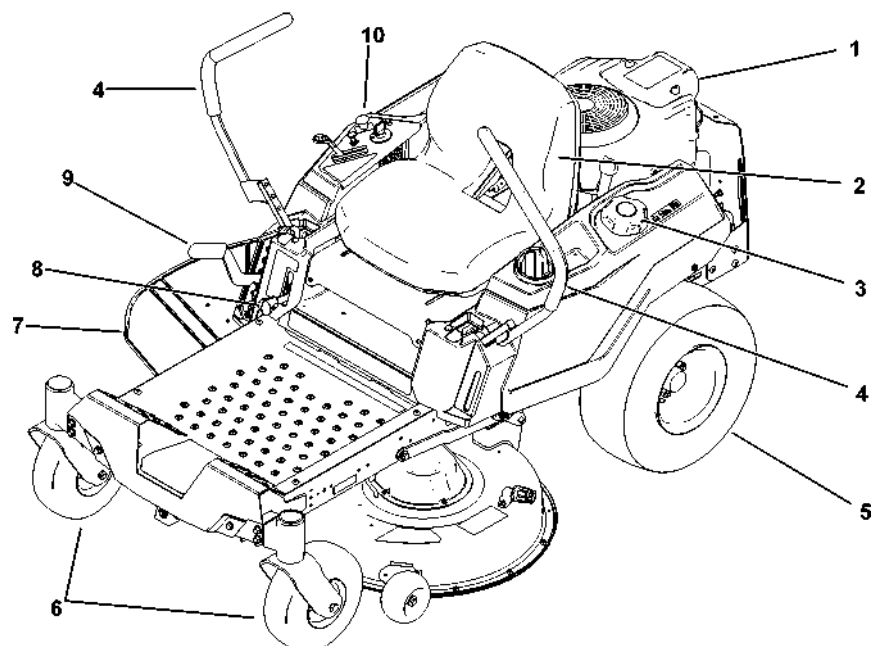
144-5288

decet144-5288

**Note:** This machine complies with the industry standard stability test in the static lateral and longitudinal tests with the maximum recommended slope indicated on the decal. Review the instructions for operating the machine on slopes in the *Operator's Manual* as well as the conditions in which you would operate the machine to determine whether you can operate the machine in the conditions on that day and at that site. Changes in the terrain can result in a change in slope operation for the machine.

- |  |  |
|--|--|
| 1. <b>Warning</b> —read the <i>Operator's Manual</i> .   | 4. <b>Runover hazard</b> —do not carry passengers; look behind you when moving in reverse.   |
| 2. <b>Cutting/dismemberment hazard</b> of the fingers or hand—keep hands away from moving parts; keep all guards and shields in place. | 5. <b>Tipping hazard</b> —when loading onto a trailer, do not use dual ramps; only use a singular ramp wide enough for the machine; do not use a ramp with a slope greater than 15°; back up the ramp (in reverse) and drive forward off the ramp. |
| 3. <b>Thrown object hazard</b> —keep bystanders away; pick up any debris; keep the deflector in place.                                 | 6. <b>Tipping hazard</b> —do not use the machine near drop-offs or on slopes greater than 15°; only operate above slopes less than 15°.  |

# Product Overview



g995047

**Figure 4**

- |                  |                         |                        |                   |
|------------------|-------------------------|------------------------|-------------------|
| 1. Engine        | 4. Motion-control lever | 7. Deflector           | 10. Control panel |
| 2. Operator seat | 5. Rear drive wheel     | 8. Smart Speed™ lever  |                   |
| 3. Fuel-tank cap | 6. Front caster wheel   | 9. Height-of-cut lever |                   |



# Controls

Become familiar with all the controls before you start the engine and operate the machine.

## Control Panel

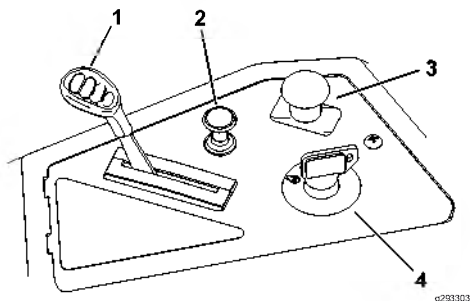


Figure 5

- |                     |  |
|---------------------|--|
| 1. Throttle control | 3. Blade-control switch<br>(power takeoff) |
| 2. Choke control    | 4. Key switch                              |

## Key Switch

The key switch, used to start and shut off the engine, has 3 positions: OFF, RUN, and START (Figure 5).

## Throttle Control

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

## Choke Control

Use the choke control to start a cold engine (Figure 5).

## Blade-Control Switch (Power Takeoff)

The blade-control switch, represented by a power-takeoff (PTO) symbol, engages and disengages power to the mower blades (Figure 5).

## Motion-Control Levers

Use the motion-control levers to drive the machine forward, reverse, and turn either direction (Figure 4).

## Park Position

Move the motion-control levers outward from the center to the PARK position when exiting the machine to engage the electric brake (Figure 24). Always position the motion-control levers into the PARK position when you stop the machine or leave it unattended.

## Smart Speed™ Control System Lever

The Smart Speed™ Control-System lever, located below the operating position, gives you a choice to drive the machine at 3 speed ranges— trim, tow, and mow (Figure 27).

## Fuel-Presence Window

You can use the fuel window, located on the left side of the machine, to verify the presence of fuel in the tank (Figure 6).

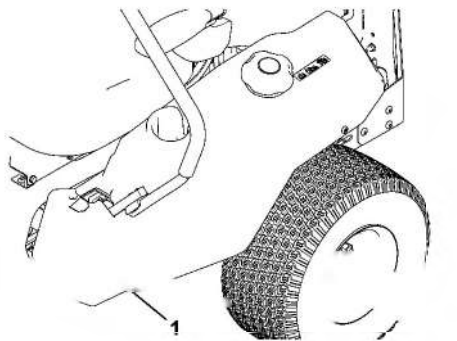


Figure 6

1. Fuel-presence window

## Height-of-Cut Lever

Use the height-of-cut lever to lower and raise the deck from the seated position. Moving the lever up (toward you) raises the deck from the ground and moving the lever down (away from you) lowers the deck toward the ground. Adjust the height-of-cut only while the machine is not moving (Figure 28).

## Specifications

Specifications and design are subject to change without notice.

|                             |                      |
|-----------------------------|----------------------|
| Cutting width               | 107 cm (42 inches)   |
| Width with deflector down   | 135 cm (53 inches)   |
| Width with deflector raised | 123 cm (48.5 inches) |
| Length                      | 185 cm (73 inches)   |
| Height                      | 112 cm (44 inches)   |
| Weight (74679)              | 308 kg (680 lb)      |
| Weight (74677)              | 336 kg (740 lb)      |

## Attachments/Accessories

A selection of Toro approved attachments and accessories is available for use with the machine to enhance and expand its capabilities. Contact your Authorized Service Dealer or authorized Toro distributor or go to [www.Toro.com](http://www.Toro.com) for a list of all approved attachments and accessories.

To ensure optimum performance and continued safety certification of the machine, use only genuine Toro replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous, and such use could void the product warranty.

# Operation

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

## Before Operation

## Before Operation Safety

### General Safety

- Do not allow children or untrained people to operate or service the machine. Local regulations may restrict the age of the operator. The owner is responsible for training all operators and mechanics.
- Inspect the area where you will use the machine, and remove all objects that could interfere with the operation of the machine or that the machine could throw.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- Check that operator-presence controls, safety switches, and guards are attached and working properly. Do not operate the machine unless they are functioning properly.
- Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operator's position. Allow the machine to cool before servicing, adjusting, fueling, cleaning, or storing it.
- Before mowing, inspect the machine to ensure that the cutting assemblies are working properly.
- Evaluate the terrain to determine the appropriate equipment and any attachments or accessories required to operate the machine properly and safely.
- Wear appropriate clothing, including eye protection; long pants; substantial, slip-resistant footwear; and hearing protection. Tie back long hair and do not wear loose clothing or loose jewelry.
- Do not carry passengers on the machine.
- Keep bystanders and pets away from the machine during operation. Shut off the machine and attachment(s) if anyone enters the area.
- Do not operate the machine unless all guards and safety devices, such as the deflectors and the entire grass catcher, are in place and functioning properly. Replace worn or deteriorated parts when necessary.

## Fuel Safety

- Fuel is extremely flammable and highly explosive. A fire or explosion from fuel can burn you and others and can damage property.
  - To prevent a static charge from igniting the fuel, remove the machine from the truck or trailer and refuel it on the ground, away from all vehicles. If this is not possible, place a portable fuel container on the ground, away from all vehicles, and fill it; then refuel the machine from the fuel container rather than from a fuel-dispenser nozzle.
  - Fill the fuel tank outdoors on level ground, in an open area, and when the engine is cold. Wipe up any fuel that spills.
  - Do not handle fuel when smoking or around an open flame or sparks.
  - Do not remove the fuel cap or add fuel to the tank while the engine is running or hot.
  - If you spill fuel, do not attempt to start the engine. Avoid creating a source of ignition until the fuel vapors have dissipated.
  - Store fuel in an approved container and keep it out of the reach of children.
- Fuel is harmful or fatal if swallowed. Long-term exposure to vapors can cause serious injury and illness.
  - Avoid prolonged breathing of vapors.
  - Keep your hands and face away from the nozzle and the fuel-tank opening.
  - Keep fuel away from your eyes and skin.
- Do not store the machine or fuel container where there is an open flame, spark, or pilot light, such as on a water heater or on other appliances.
- Do not operate the machine without the entire exhaust system in place and in proper working condition.
- Keep the fuel-dispenser nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
- If you spill fuel on your clothing, change your clothing immediately.
- Do not overfill the fuel tank. Replace the fuel cap and tighten it securely.
- Clean grass and debris from the cutting unit, muffler, drives, grass catcher, and engine compartment to help prevent fires. Clean up oil or fuel spills.

## Adding Fuel

### Recommended Fuel

| Type                               | Unleaded gasoline                               |
|------------------------------------|---|
| Minimum octane rating              | 87 (US) or 91 (research octane; outside the US) |
| Ethanol                            | No more than 10% by volume                      |
| Methanol                           | None  |
| MTBE (methyl tertiary butyl ether) | Less than 15% by volume                         |
| Oil                                | Do not add to the fuel                          |

Use only clean, fresh (no more than 30 days old), fuel from a reputable source.

### Using Stabilizer/Conditioner

Use fuel stabilizer/conditioner in the machine to keep the fuel fresh longer when used as directed by the fuel-stabilizer manufacturer.

**Important:** Do not use fuel additives containing methanol or ethanol.

Add the amount of fuel stabilizer/conditioner to fresh fuel as directed by the fuel-stabilizer manufacturer.

### Filling the Fuel Tank

- Park the machine on a level surface.
- Move the motion-control levers outward to the PARK position.
- Shut off the engine and remove the key.
- Clean around the fuel-tank cap.
- Fill the fuel tank to the bottom of the filler neck (Figure 7). Do not fill the fuel tank completely full.

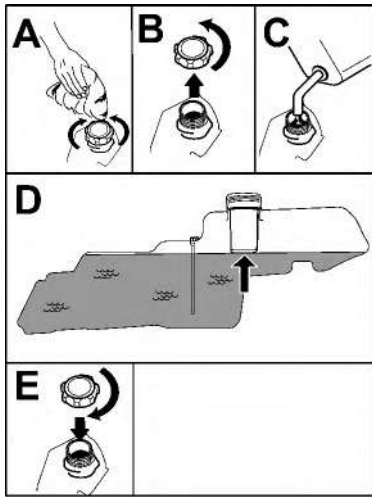


Figure 7

g293790

## Understanding the Safety-Interlock System

The safety-interlock system is designed to prevent the engine from starting unless:

- The blade-control switch (PTO) is disengaged.
- The motion-control levers are in the PARK position.

The safety-interlock system also is designed to shut off the engine whenever the control levers are out of the PARK position and you rise from the seat.

## Testing the Safety-Interlock System

Test the safety-interlock system before you use the machine each time. If the safety system does not operate as described below, have an Authorized Service Dealer repair the safety system immediately.

1. Sit on the seat, move the motion-control levers in the PARK position, and move the blade-control switch to the ON position. Try starting the engine; the engine should not crank.
2. Sit on the seat and move the blade-control switch to the OFF position. Move either motion-control lever to the center, unlocked position. Try starting the engine; the engine should not crank. Repeat with the other motion-control lever.
3. Sit on the seat, move the blade-control switch to the OFF position, and lock the motion-control levers in the PARK position. Start the engine. While the engine is running, engage the blade-control switch, and rise slightly from the seat; the engine should shut off.
4. Sit on the seat, move the blade-control switch to the OFF position, and lock the motion-control levers in the PARK position. Start the engine. While the engine is running, move the motion-control levers to the center, unlocked position and rise slightly from the seat; the engine should shut off.

## Performing Daily Maintenance

Before starting the machine each day, perform the Each Use/Daily procedures listed in [Maintenance](#) (page 27).

## Breaking in a New Machine

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

## Using the Safety-Interlock System

### ⚠ WARNING

If the safety-interlock switches are disconnected or damaged, the machine could operate unexpectedly, causing personal injury.

- Do not tamper with the interlock switches.
- Check the operation of the interlock switches daily and replace any damaged switches before operating the machine.

## Positioning the Seat

The seat can move forward and backward. Position the seat where you have the best control of the machine and are most comfortable (Figure 8).

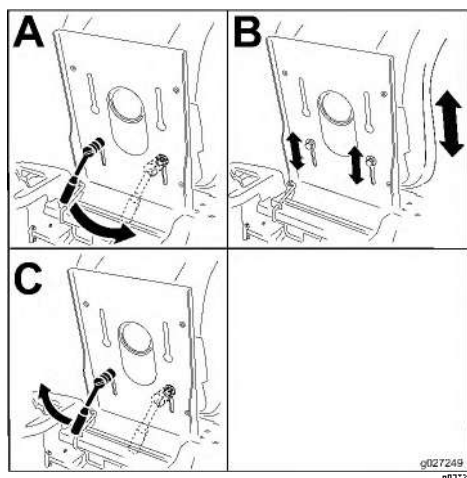


Figure 8

## Adjusting the Motion-Control Levers

### Adjusting the Height

You can adjust the motion-control levers higher or lower for maximum comfort (Figure 9).

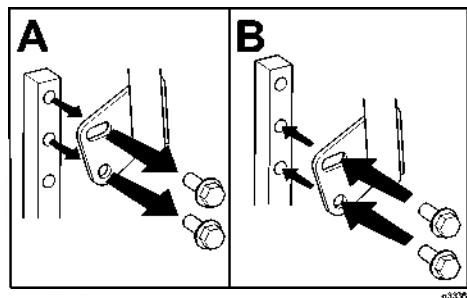


Figure 9

## Adjusting the Tilt

You can adjust the motion-control levers forward or rearward for your comfort.

1. Loosen the upper bolt holding the control lever to the control-arm shaft.
2. Loosen the lower bolt just enough to pivot the control lever forward or rearward.

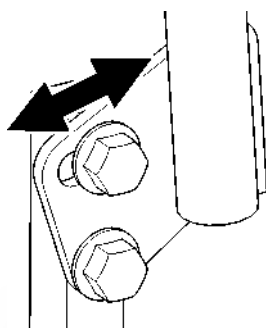
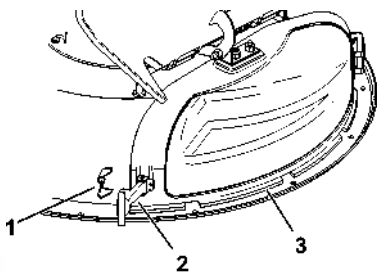


Figure 10

3. Tighten both bolts to secure the control lever in the new position.
4. Repeat the adjustment for the other control lever.

## Removing the Discharge Cover for Side-Discharging

1. Park the machine on a level surface, disengage the blade-control switch (PTO), and move the motion-control levers outward to the PARK position.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Release the flexible latch from the latch retainer on the discharge cover and pivot the discharge cover to the right (Figure 11).

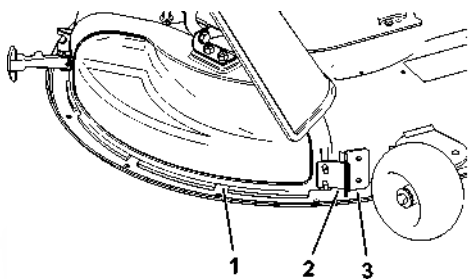


**Figure 11**

g209897

1. Latch retainer
2. Latch
3. Discharge cover

4. Release the hook-shaped latch on top of the discharge cover from the pivot rod (Figure 15).
5. Angle the metal tab on the discharge cover out of the slot in the bracket welded to the mower deck (Figure 12).



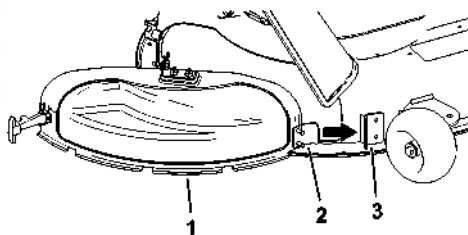
**Figure 12**

g230259

1. Discharge cover
2. Metal tab
3. Bracket on the mower deck

## Installing the Discharge Cover for Mulching

1. Park the machine on a level surface, disengage the blade-control switch (PTO), and move the motion-control levers outward to the PARK position.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Angle the metal tab on the discharge cover into the slot in the bracket welded to the mower deck (Figure 13).

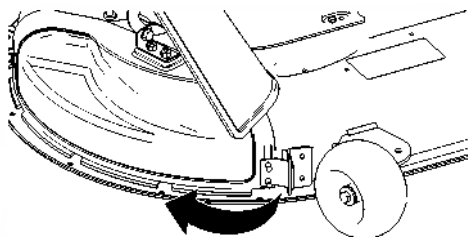


**Figure 13**

g230248

1. Discharge cover
2. Metal tab
3. Bracket on the mower deck

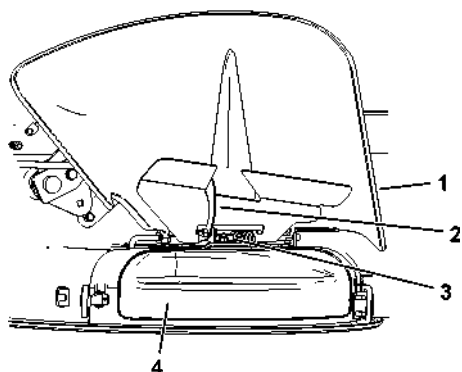
4. Pivot the discharge cover back and toward the deck so that the discharge cover aligns with the mower deck (Figure 14).



**Figure 14**

g230249

5. On the top of the discharge cover, engage the hook-shaped latch around the pivot rod of the deflector assembly (Figure 15).



**Figure 15**

g207780

- |              |                    |
|--------------|--------------------|
| 1. Deflector | 3. Pivot rod       |
| 2. Latch     | 4. Discharge cover |

6. Secure the discharge cover to the deck by hooking the flexible latch on the discharge cover into the retainer on the deck ([Figure 11](#)).

## ***During Operation***

### **During Operation Safety**

#### **General Safety**

- The owner/operator can prevent and is responsible for accidents that may cause personal injury or property damage.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Do not operate the machine while ill, tired, or under the influence of alcohol or drugs.
- Contacting the blade can result in serious personal injury. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position. When you turn the key to the OFF position, the engine should shut off and the blade should stop. 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 lightning.
- Keep your hands and feet away from the cutting units. Keep clear of the discharge opening.
- Do not mow with the discharge deflector raised, removed, or altered unless there is a grass-collection system or mulch kit in place and working properly.
- Do not mow in reverse unless it is absolutely necessary. Always look down and behind you before moving the machine in reverse.
- Use extreme care when approaching blind corners, shrubs, trees, or other objects that may block your view.
- Stop the blades whenever you are not mowing.
- If the machine strikes an object or starts to vibrate, immediately shut off the engine, remove the key (if equipped), and wait for all moving parts to stop before examining the machine for damage. Make all necessary repairs before resuming operation.
- Slow down and use caution when making turns and crossing roads and sidewalks with the machine. Always yield the right-of-way.
- Before you leave the operating position, do the following:
  - Park the machine on a level surface.
  - Disengage the power takeoff and lower the attachments.
  - Engage the parking brake.

- Shut off the engine and remove the key.
- Wait for all moving parts to stop.
- Operate the engine only in well-ventilated areas. Exhaust gases contain carbon monoxide, which is lethal if inhaled.
- Never leave a running machine unattended.
- Attach towed equipment to the machine only at the hitch point.
- Do not operate the machine unless all guards and safety devices, such as the deflectors and the entire grass catcher, are in place and functioning properly. Replace worn or deteriorated parts when necessary.
- Use only accessories and attachments approved by Toro.
- This machine produces sound levels in excess of 85 dBA at the operator's ear and can cause hearing loss through extended periods of exposure.



**Figure 16**

g229846

1. Wear hearing protection.

- Clean grass and debris from the cutting unit, drives, muffler, and engine to help prevent fires.
- Start the engine with your feet well away from the blades.
- Be aware of the mower discharge path and direct the discharge away from others. Avoid discharging material against a wall or obstruction because the material may ricochet back toward you.
- Stop the blades, slow down the machine, and use caution when crossing surfaces other than grass or when transporting the machine to and from the operating area.
- Do not change the engine governor speed or overspeed the engine.
- Children are often attracted to the machine and the mowing activity. Never assume that children will remain where you last saw them.
- Keep children out of the operating area and under the watchful care of a responsible adult other than the operator.
- Be alert and shut off the machine if children enter the operating area.

- Before backing up or turning the machine, look down and all around for small children.
- Do not carry children on the machine, even when the blades are not moving. Children could fall off and be seriously injured or prevent you from safely operating the machine. Children who have been given rides in the past could appear in the operating area without warning and be run over or backed over by the machine.

## Slope Safety

- Slopes are a major factor related to loss of control and rollover accidents, which can result in severe injury or death. The operator is responsible for safe slope operation. Operating the machine on any slope requires extra caution. Before using the machine on a slope, do the following:
  - Review and understand the slope instructions in the manual and on the machine.
  - Use an angle indicator to determine the approximate slope angle of the area.
  - Never operate on slopes greater than 15°.
  - Evaluate the site conditions of the day to determine if the slope is safe for machine operation. Use common sense and good judgment when performing this evaluation. Changes in the terrain, such as moisture, can quickly affect the operation of the machine on a slope.
- Identify hazards at the base of the slope. Do not operate the machine near drop-offs, ditches, embankments, water, or other hazards. The machine could suddenly roll over if a wheel goes over the edge or the edge collapses. Keep a safe distance (twice the width of the machine) between the machine and any hazard. Use a walk-behind machine or a hand trimmer to mow the grass in these areas.
- Avoid starting, stopping, or turning the machine on slopes. Avoid making sudden changes in speed or direction; turn slowly and gradually.
- Do not operate a machine under any conditions where traction, steering, or stability is in question. Be aware that operating the machine on wet grass, across slopes, or downhill may cause the machine to lose traction. Loss of traction to the drive wheels may result in sliding and a loss of braking and steering. The machine can slide even if the drive wheels are stopped.
- Remove or mark obstacles such as ditches, holes, ruts, bumps, rocks, or other hidden hazards. Tall grass can hide obstacles. Uneven terrain could overturn the machine.



- Use extra care while operating with accessories or attachments, such as grass-collection systems. These can change the stability of the machine and cause a loss of control. Follow directions for counterweights.
- If possible, keep the deck lowered to the ground while operating on slopes. Raising the deck while operating on slopes can cause the machine to become unstable.

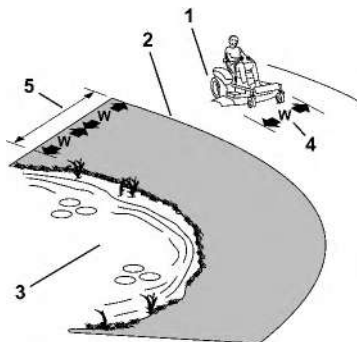


Figure 17

1. Safe Zone—use the machine here on slopes less than 15° or flat areas.
2. Danger Zone—use a walk-behind mower and/or a hand trimmer on slopes greater than 15° and near drop-offs or water.
3. Water
4. W = Width of the machine
5. Keep a safe distance (twice the width of the machine) between the machine and any hazard.

## Towing Safety

- Do not attach towed equipment except at the hitch point.
- Do not use the machine as a towing vehicle unless it has a hitch installed.
- Do not exceed the weight limits for towed equipment and towing on slopes. The towed weight must not exceed the weight of the machine and operator.
- Never allow children or others near the towed equipment.
- On slopes, the weight of the towed equipment may cause loss of traction, increased risk of rollover, and loss of control. Reduce the towed weight and slow down.
- The stopping distance may increase with the weight of a towed load. Travel slowly and allow extra distance to stop.
- Make wide turns to keep the attachment clear of the machine.

## Operating the Mower Blade-Control Switch (PTO)

The blade-control switch (PTO) starts and stops the mower blades and any powered attachments.

### Engaging the Blade-Control Switch (PTO)



Figure 18

**Note:** Always engage the blades with the throttle in the FAST position (Figure 19).

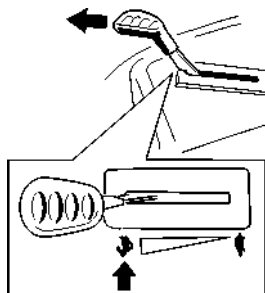


Figure 19

### Disengaging the Blade-Control Switch (PTO)

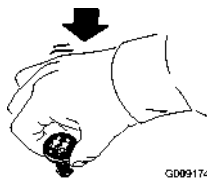


Figure 20

## Operating the Throttle

You can move the throttle control between the FAST and SLOW positions (Figure 21).

Always use the FAST position when engaging the PTO.

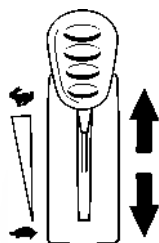


Figure 21

g296539

## Operating the Choke

Use the choke to start a cold engine.

1. Pull up the choke knob to engage the choke before using the key switch (Figure 22).

**Note:** Ensure that you fully engage the choke. You may need to hold the knob up when you use the key switch.

2. Push down the choke to disengage the choke after the engine has started (Figure 22).

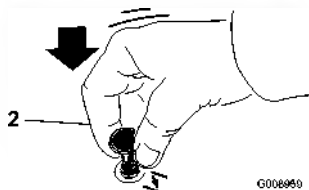
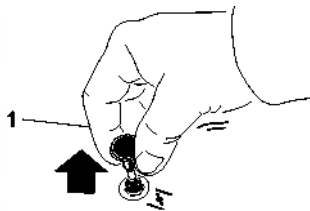


Figure 22

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1. ON position

2. OFF position

## Starting the Engine

**Note:** A warm or hot engine may not require choking.

**Important:** Do not engage the starter for more than 5 seconds at a time. Engaging the starter motor for more than 5 seconds can damage the starter motor. If the engine fails to start, wait 10 seconds before operating the engine starter again.

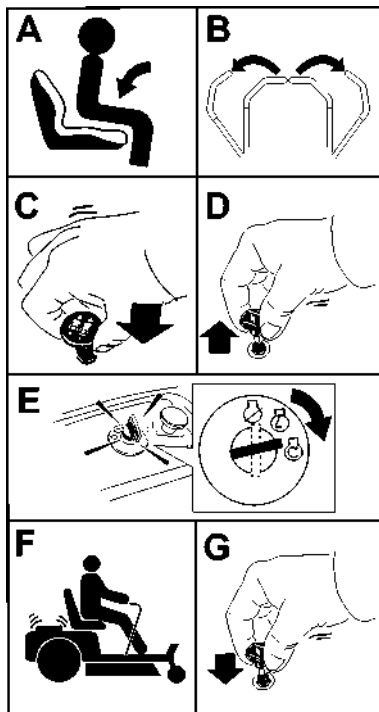


Figure 23

g296541

## Shutting Off the Engine

1. Disengage the blades by moving the blade-control switch to the OFF position.
2. Move the motion-control levers outward to the PARK position.
3. Move the throttle lever to the SLOW position and let the engine idle for 1 minute.
4. Turn the key to the OFF position and remove the key.

### ⚠ CAUTION

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

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

## Using the Motion-Control Levers

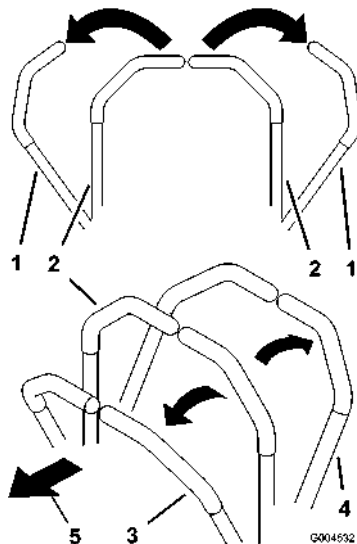


Figure 24

- |                                       |                     |
|---------------------------------------|---------------------|
| 1. Motion-control lever—PARK position | 4. Backward         |
| 2. Center, unlocked position          | 5. Front of machine |
| 3. Forward                            |                     |

## Driving the Machine

The drive wheels turn independently, powered by hydraulic motors on each axle. You can turn 1 side in reverse while you turn the other forward, causing the machine to spin rather than turn. This greatly improves the machine maneuverability but may require some time for you to adapt to how it moves.

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

### ⚠ WARNING

The machine can spin very rapidly. You may lose control of the machine and cause personal injury or damage to the machine.

- Use caution when making turns.
- Slow the machine down before making sharp turns.

## Driving Forward

**Note:** Always use caution when turning.

1. Move the levers to the center, unlocked position.
2. To go forward, slowly push the motion-control levers forward (Figure 25).

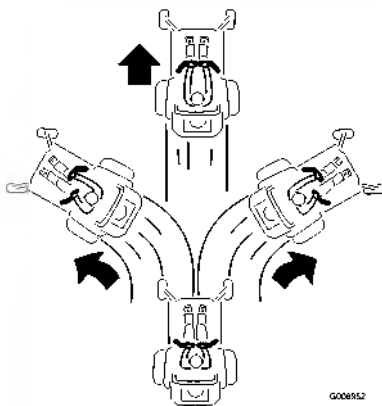


Figure 25

# Driving Backward

**Note:** Always use caution when backing up and turning.

- 1. Move the levers to the center, unlocked position.
- 2. To go backward, slowly pull the motion-control levers rearward (Figure 26).

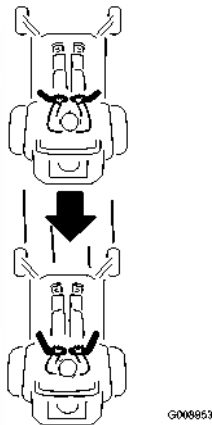


Figure 26

# Using the Smart Speed™ Control System

The Smart Speed™ Control-System lever, located below the operating position (Figure 27), gives the operator a choice to drive the machine at 3 ground speed ranges—trim, tow, and mow.

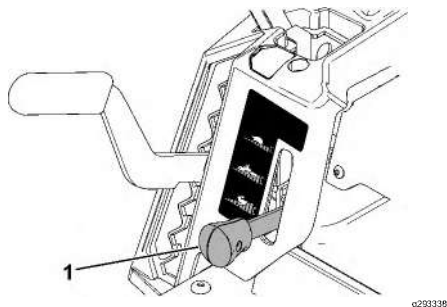


Figure 27

- 1. Smart-speed lever

To change speeds, do the following:

- 1. Move the motion-control levers to neutral and outward to the PARK position.
- 2. Disengage the blade-control switch.
- 3. Adjust the lever to the desired position.

The following are only recommendations for use. Adjustments vary by grass type, moisture content, and the height of the grass.

| Suggested uses:    | Trim | Tow | Mow |
|--------------------|------|-----|-----|
| Parking            | X    |     |     |
| Heavy, wet grass   | X    |     |     |
| Training           | X    |     |     |
| Trimming grass     | X    |     |     |
| Bagging            |      | X   |     |
| Mulching           |      | X   |     |
| Towing attachments |      | X   |     |
| Normal mowing      |      |     | X   |
| Moving the machine |      |     | X   |

## Trim

This is the lowest speed. The suggested uses for this speed are as follows:

- Parking
- Heavy, wet grass mowing conditions
- Training
- Trimming grass

## Tow

This is the medium speed. The suggested uses for this speed are as follows:

- Bagging
- Mulching
- Towing attachments

## Mow

This is the fastest speed. The suggested uses for this speed are as follows:

- Normal mowing
- Moving the machine

## Using the Side Discharge

The mower has a hinged grass deflector that disperses clippings to the side and down toward the turf.

### **▲ DANGER**

**Without a grass deflector, discharge cover, or a complete grass-catcher assembly mounted in place, you and others are exposed to blade contact and thrown debris. Contact with rotating mower blade(s) and thrown debris will cause injury or death.**

- Never remove the grass deflector from the mower deck because the grass deflector routes material down toward the turf. If the grass deflector is ever damaged, replace it immediately.
- Never put your hands or feet under the mower deck.
- Never try to clear the discharge area or mower blades unless you move the blade-control switch (PTO) to the OFF position, rotate the key switch to the OFF position, and remove the key from the key switch.
- Make sure that the grass deflector is in the down position.

## Adjusting the Height of Cut

**Note:** The transport position is the highest height-of-cut position or cutting height at 114 mm (4-1/2 inches) as shown in [Figure 28](#).

You can adjust the height of cut from 38 to 114 mm (1-1/2 to 4-1/2 inches) in 13 mm (1/2 inch) increments. The height of cut is controlled by the lever located to the right of the operating position ([Figure 28](#)).

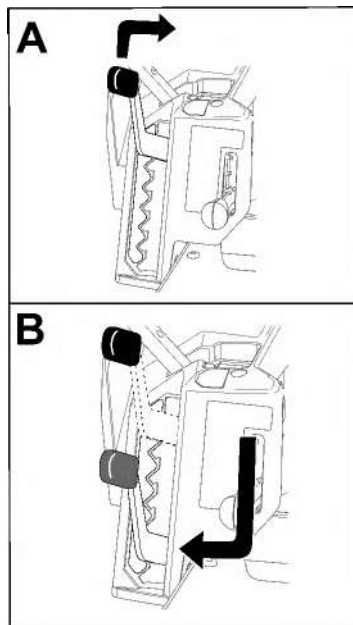


Figure 28

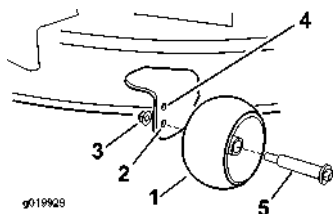
g290580

# Adjusting the Anti-Scalp Rollers

Whenever you change the height of cut, adjust the height of the anti-scalp rollers.

**Note:** Adjust the anti-scalp rollers so that the rollers do not touch the ground in normal, flat mowing areas.

1. Park the machine on a level surface, disengage the blade-control switch, and move the motion-control levers outward to the PARK position.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Adjust the anti-scalp rollers to 1 of the following positions:
  - Upper hole—use this position with the mower deck in the 63 mm (2-1/2 inches) and below the height-of-cut positions (Figure 29).
  - Lower hole—use this position with the mower deck in the 76 mm (3 inches) and above the height-of-cut positions (Figure 29).



**Figure 29**

- |  |  |
|--|--|
| 1. Anti-scalp roller   | 4. Upper hole—the mower deck in the 63 mm (2-1/2 inches) and below the height-of-cut positions |
| 2. Lower hole—the mower deck in the 76 mm (3 inches) and above the height-of-cut positions | 5. Bolt  |
| 3. Flange nut  |  |

## Operating Tips

### Maximizing Air Circulation

For best mowing and maximum air circulation, operate the engine at the FAST position. Air is required to thoroughly cut grass clippings, so do not set the height-of-cut so low as to totally surround the mower deck in uncut grass. Always try to have 1 side of the mower deck free from uncut grass, which allows air to be drawn into the mower deck.

### Cutting a Lawn for the First Time

Cut grass slightly longer than normal to ensure that the cutting height of the mower deck does not scalp any uneven ground. However, the cutting height used in the past is generally the best one to use. When cutting grass longer than 15 cm (6 inches) tall, you may want to cut the lawn twice to ensure an acceptable quality of cut.

### Cutting a Third of the Grass Blade

It is best to cut only about a third of the grass blade. Cutting more than that is not recommended unless grass is sparse, or it is late fall when grass grows more slowly.

### Alternating the Mowing Direction

Alternate the mowing direction to keep the grass standing straight. This also helps disperse clippings, which enhances decomposition and fertilization.

### Mowing at Correct Intervals

Grass grows at different rates at different times of the year. To maintain the same cutting height, mow more often in early spring. As the grass growth rate slows in mid summer, mow less frequently. If you cannot mow for an extended period, first mow at a high cutting height, then mow again 2 days later at a lower height setting.

### Mowing at Slower Speeds

In certain conditions, mowing at a slower ground speed can improve cut quality.

### Avoiding Cutting Too Low

When mowing uneven turf, raise the cutting height to avoid scalping the turf.

## Stopping the Machine

If you must stop the forward motion of the machine while mowing, a clump of grass clippings may drop onto your lawn. To avoid this, move onto a previously cut area with the blades engaged or you can disengage the mower deck while moving forward.

## Keeping the Underside of the Mower Deck Clean

Clean clippings and dirt from the underside of the mower deck after each use. If grass and dirt build up inside the mower deck, cutting quality will eventually become unsatisfactory.

## Maintaining the Blade(s)

Maintain a sharp blade throughout the cutting season because a sharp blade cuts 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. Check the mower blades after each use for sharpness, and for any wear or damage. File down any nicks and sharpen the blades as necessary. If a blade is damaged or worn, replace it immediately with a genuine Toro replacement blade. Refer to [Servicing the Cutting Blades \(page 41\)](#).

## After Operation

### After Operation Safety

#### General Safety

- Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operator's position. Allow the machine to cool before servicing, adjusting, fueling, cleaning, or storing it.
- Clean grass and debris from the cutting unit, muffler, drives, grass catcher, and engine compartment to help prevent fires. Clean up oil or fuel spills.
- Remove the key before storing or transporting the machine.

### Cleaning the Machine

**Service Interval:** After each use

**Important:** You can wash the machine with a mild detergent and water. Do not pressure wash the machine. Avoid excessive use of water, especially near the control panel, under the seat, around the engine, hydraulic pumps, and motors.

1. Park the machine on a level surface, disengage the blade-control switch, and move the motion-control levers outward to the PARK position.
2. Shut off the engine and wait for all moving parts to stop before leaving the operating position.
3. Clean grass and debris from cutting unit, muffler, drives, grass catcher, and engine.

**Note:** Refer to [Washing the Underside of the Mower Deck \(page 48\)](#) for information on using the deck-washout fitting.

## Pushing the Machine by Hand

This machine has an electric-brake mechanism, and to push the machine, the key must be in the RUN position. The battery needs to be charged and functioning to disengage the electric brake.

1. Park the machine on a level surface, disengage the blade-control switch, and move the motion-control levers outward to the PARK position.
2. Shut off the engine and wait for all moving parts to stop before leaving the operating position.
3. Locate the bypass levers on the frame on both sides of the engine.

4. Move both bypass levers forward through the slotted hole and down to lock them in place (Figure 30).

### ⚠ WARNING

**Contact with hot surfaces may cause personal injury.**

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

### ⚠ WARNING

**The machine could unintentionally move while the bypass levers are locked forward in the slot and injure you or bystanders.**

**Lock the bypass levers rearward after moving the machine.**

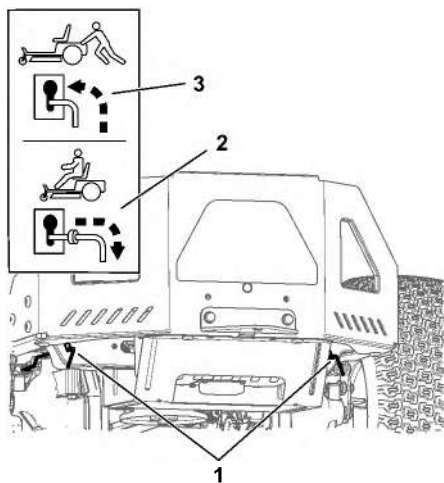


Figure 30

1. Bypass-lever locations
  2. Lever position for operating the machine
  3. Lever position for pushing the machine
5. Turn the ignition key to the RUN position and disengage the parking brake by moving 1 motion-control lever out of the PARK position.
- Note:** Do not start the machine.
6. Move the machine as required.

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

7. Move the motion-control levers outward to the PARK position.
8. Turn the key to the OFF position and remove it to avoid draining the battery charge.
9. Move both bypass levers rearward and down through the slotted hole to lock them in place.

## Transporting the Machine

Use a heavy-duty trailer or truck to transport the machine. Use a full-width ramp. Ensure that the trailer or truck has all the necessary brakes, lighting, and marking as required by law. Please carefully read all the safety instructions. Knowing this information could help you or bystanders avoid injury. Refer to your local ordinances for trailer and tie-down requirements.

### ⚠ WARNING

**Driving on the street or roadway without turn signals, lights, reflective markings, or a slow-moving-vehicle emblem is dangerous and can lead to accidents, causing personal injury.**

**Do not drive the machine on a public street or roadway.**

## Selecting a Trailer

### ⚠ WARNING

**Loading a machine onto a trailer or truck increases the possibility of tip-over and could cause serious injury or death (Figure 31).**

- Use only a full-width ramp; do not use individual ramps for each side of the machine.
- Do not exceed a 15-degree angle between the ramp and the ground or between the ramp and the trailer or truck.
- Ensure that the length of the ramp is at least 4 times as long as the height of the trailer or truck bed to the ground. This ensures that the ramp angle does not exceed 15 degrees on flat ground.



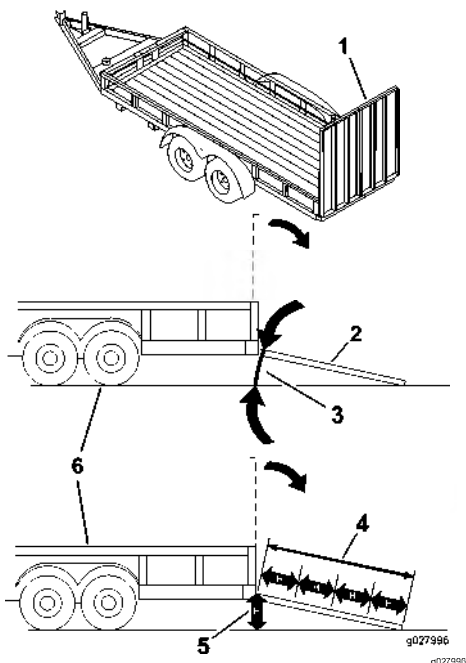


Figure 31

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

## Loading the Machine

### ⚠ WARNING

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

- Use extreme caution when operating a machine on a ramp.
- Back the machine up the ramp and drive it forward down the ramp.
- Avoid sudden acceleration or deceleration while driving the machine on a ramp as this could cause a loss of control or a tip-over situation.

1. If you are using a trailer, connect it to the towing vehicle and connect the safety chains.
2. If applicable, connect the trailer brakes and lights.
3. Lower the ramp, ensuring that the angle between the ramp and the ground does not exceed 15 degrees (Figure 31).
4. Back the machine up the ramp (Figure 32).

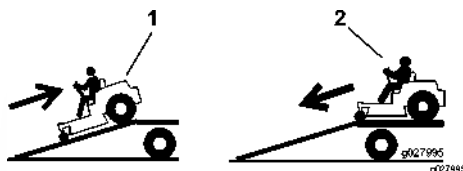


Figure 32

1. Back the machine up the ramp.
2. Drive the machine forward down the ramp.
5. Shut off the engine, remove the key, and move the motion-control levers outward to the PARK position.
6. Tie down the machine near the front caster wheels and the rear frame with straps, chains, cable, or ropes (Figure 33). Refer to local regulations for tie-down requirements.

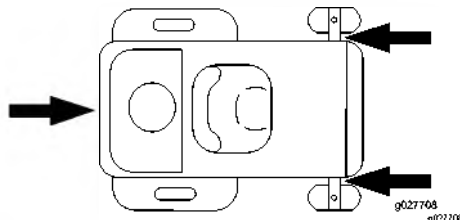


Figure 33

1. Tie-down points

## Unloading the Machine

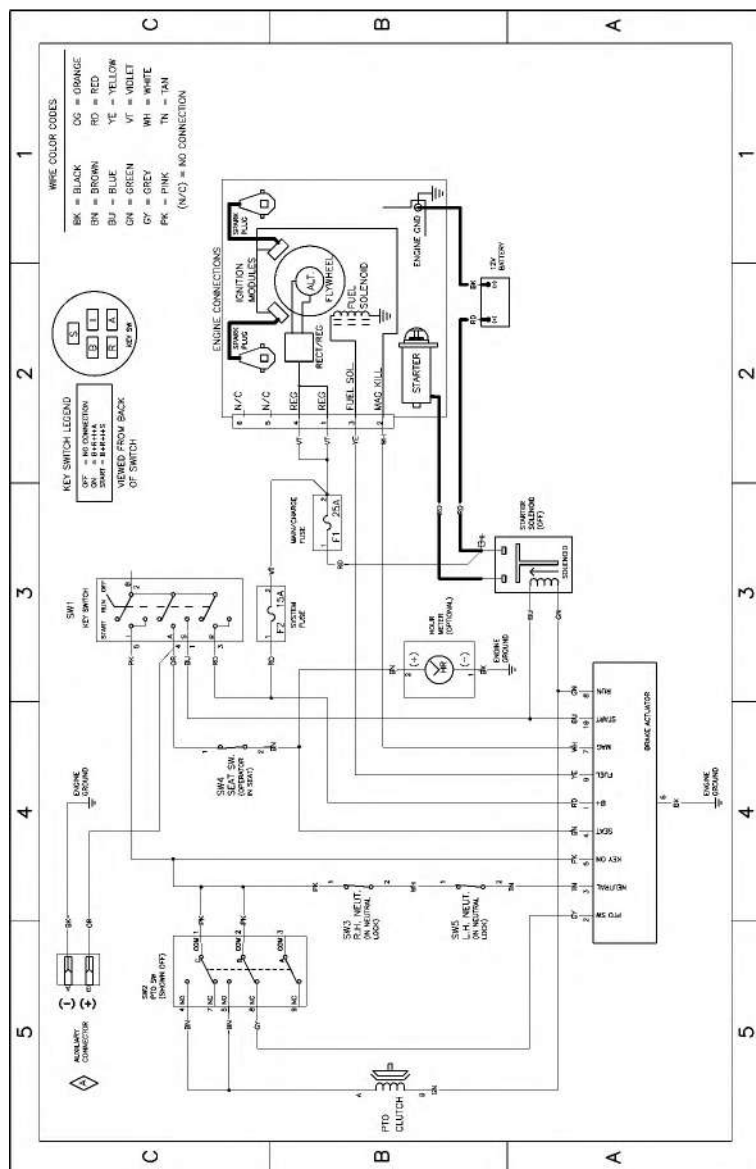
1. Lower the ramp, ensuring that the angle between the ramp and the ground does not exceed 15 degrees (Figure 31).
2. Drive the machine forward down the ramp (Figure 32).

# Troubleshooting

| Problem   | Possible Cause  | Corrective Action  |
|---|---|--|
| The fuel tank is showing signs of collapsing or the machine is frequently showing signs of running out of fuel. | 1. The air-cleaner paper element clogged.   | 1. Clean the paper element.  |
| The engine overheats.   | <ol style="list-style-type: none"> <li>1. The engine load is excessive.</li> <li>2. The oil level in the crankcase is low.</li> <li>3. The cooling fins and air passages under the engine-blower housing are plugged.</li> <li>4. The air cleaner is dirty.</li> <li>5. Dirt, water, or stale fuel is in the fuel system.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Reduce the ground speed.</li> <li>2. Add oil to the crankcase.</li> <li>3. Remove the obstruction from the cooling fins and air passages.</li> <li>4. Clean or replace the air-cleaner element.</li> <li>5. Contact an Authorized Service Dealer</li> </ol>  |
| The starter does not crank.   | <ol style="list-style-type: none"> <li>1. The blade-control switch is engaged.</li> <li>2. The motion-control levers are not in the PARK position.</li> <li>3. The battery is dead.</li> <li>4. The electrical connections are corroded or loose.</li> <li>5. A fuse is blown.</li> <li>6. A relay or switch is damaged.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Disengage the blade-control switch.</li> <li>2. Move the motion-control levers outward to the PARK position.</li> <li>3. Charge the battery.</li> <li>4. Check the electrical connections for good contact.</li> <li>5. Replace the fuse.</li> <li>6. Contact an Authorized Service Dealer.</li> </ol>   |
| The engine does not start, starts hard, or fails to keep running.   | <ol style="list-style-type: none"> <li>1. The fuel tank is empty.</li> <li>2. The choke (if applicable) is not on.</li> <li>3. The air cleaner is dirty.</li> <li>4. The spark-plug wire(s) is loose or disconnected.</li> <li>5. The spark plug(s) is pitted, fouled, or the gap is incorrect.</li> <li>6. There is dirt in fuel filter.</li> <li>7. Dirt, water, or stale fuel is in fuel system.</li> <li>8. There is incorrect fuel in the fuel tank.</li> <li>9. The oil level in the crankcase is low.</li> </ol>                                       | <ol style="list-style-type: none"> <li>1. Fill the fuel tank.</li> <li>2. Move the choke lever to the ON position.</li> <li>3. Clean or replace the air-cleaner element.</li> <li>4. Install the wire(s) on the spark plug.</li> <li>5. Install a new, correctly gapped spark plug(s).</li> <li>6. Replace the fuel filter.</li> <li>7. Contact an Authorized Service Dealer.</li> <li>8. Drain the tank and replace the fuel with the proper type.</li> <li>9. Add oil to the crankcase.</li> </ol> |
| The engine loses power.   | <ol style="list-style-type: none"> <li>1. The engine load is excessive.</li> <li>2. The air cleaner is dirty.</li> <li>3. The oil level in the crankcase is low.</li> <li>4. The cooling fins and air passages under the engine blower housing are plugged.</li> <li>5. The spark plug(s) is pitted, fouled, or the gap is incorrect.</li> <li>6. The fuel-tank vent is blocked.</li> <li>7. There is dirt in the fuel filter.</li> <li>8. Dirt, water, or stale fuel is in the fuel system.</li> <li>9. There is incorrect fuel in the fuel tank.</li> </ol> | <ol style="list-style-type: none"> <li>1. Reduce the ground speed.</li> <li>2. Clean the air-cleaner element.</li> <li>3. Add oil to the crankcase.</li> <li>4. Remove the obstruction from the cooling fins and air passages.</li> <li>5. Install a new, correctly gapped spark plug(s).</li> <li>6. Contact an Authorized Service Dealer.</li> <li>7. Replace the fuel filter.</li> <li>8. Contact an Authorized Service Dealer.</li> <li>9. Contact an Authorized Service Dealer.</li> </ol>      |

| <b>Problem</b>                   | <b>Possible Cause</b>   | <b>Corrective Action</b>   |
|----------------------------------|---|--|
| The machine does not drive.      | <ol style="list-style-type: none"> <li>1. The bypass valves are open.</li> <li>2. The traction belts are worn, loose, or broken.</li> <li>3. The traction belts are off the pulleys.</li> <li>4. The transmission has failed.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Close the tow valves.</li> <li>2. Contact an Authorized Service Dealer.</li> <li>3. Contact an Authorized Service Dealer.</li> <li>4. Contact an Authorized Service Dealer.</li> </ol>   |
| The machine vibrates abnormally. | <ol style="list-style-type: none"> <li>1. The cutting blade(s) is/are bent or unbalanced.</li> <li>2. The blade mounting bolt is loose.</li> <li>3. The engine mounting bolts are loose.</li> <li>4. The engine pulley, idler pulley, or blade pulley is loose.</li> <li>5. The engine pulley is damaged.</li> <li>6. The blade spindle is bent.</li> <li>7. The motor mount is loose or worn.</li> </ol> | <ol style="list-style-type: none"> <li>1. Install new cutting blade(s).</li> <li>2. Tighten the blade mounting bolt.</li> <li>3. Tighten the engine mounting bolts.</li> <li>4. Tighten the appropriate pulley.</li> <li>5. Contact an Authorized Service Dealer.</li> <li>6. Contact an Authorized Service Dealer.</li> <li>7. Contact an Authorized Service Dealer.</li> </ol>   |
| The cutting height is uneven.    | <ol style="list-style-type: none"> <li>1. The blade(s) is not sharp.</li> <li>2. A cutting blade(s) is/are bent.</li> <li>3. The mower is not level.</li> <li>4. An anti-scalp roller (if applicable) is not set correctly.</li> <li>5. The underside of the mower deck is dirty.</li> <li>6. The tire pressure is incorrect.</li> <li>7. A blade spindle is bent.</li> </ol>                             | <ol style="list-style-type: none"> <li>1. Sharpen the blade(s).</li> <li>2. Install a new cutting blade(s).</li> <li>3. Level the mower from side-to-side and front-to-rear.</li> <li>4. Adjust the anti-scalp wheel height.</li> <li>5. Clean the underside of the mower deck.</li> <li>6. Adjust the tire pressure.</li> <li>7. Contact an Authorized Service Dealer.</li> </ol> |
| The blades do not rotate.        | <ol style="list-style-type: none"> <li>1. The drive belt is worn, loose or broken.</li> <li>2. The drive belt is off of the pulley.</li> <li>3. The power-takeoff (PTO) switch or PTO clutch is faulty.</li> <li>4. The mower belt is worn, loose, or broken.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Install a new drive belt.</li> <li>2. Install the drive belt and check the adjusting shafts and belt guides for the correct position.</li> <li>3. Contact an Authorized Service Dealer.</li> <li>4. Install a new mower belt.</li> </ol>   |

# Schematics



Electrical Diagram—139-2356 (Rev. A)

9307974

**Notes:**

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