



**Count on it.**

Form No. 3418-761 Rev A

# Operator's Manual

## Base 62in Mower

### Groundsmaster® 3320/3280-D Traction Unit

Model No. 30403—Serial No. 401420001 and Up

Model No. 30404—Serial No. 401420001 and Up



## ⚠ WARNING

### CALIFORNIA Proposition 65 Warning

This product contains a chemical or chemicals known to the State of California to cause cancer, birth defects, or reproductive harm.

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

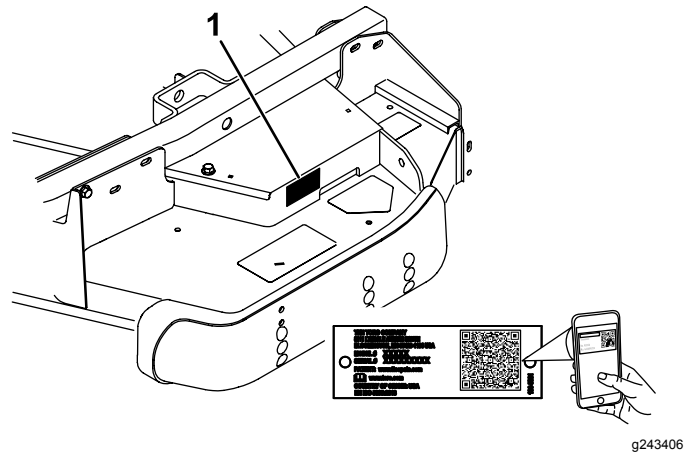


Figure 1

## Introduction

This product complies with all relevant European directives, for details please see the separate product specific Declaration of Incorporation (DOI) at the back of this publication.

This rotary-blade lawn cutting deck is mounted to a ride-on machine and is intended to be used by professional, hired operators in commercial applications. It is primarily designed for cutting grass on well-maintained lawns in parks, sports fields, and on commercial grounds. It is not designed for cutting brush.

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

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

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

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

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

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



Figure 2

Safety-alert symbol

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 machine has been designed in accordance with EN ISO 5395-3:2013 and ANSI B71.4-2017.

## General Safety

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

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

- Read and understand the contents of this *Operator's Manual* before starting the engine.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Do not put your hands or feet near moving components of the machine.
- Do not operate the machine without all guards and other safety protective devices in place and working on the machine.
- Keep clear of any discharge opening. Keep bystanders and pets a safe distance away from the machine.
- Keep children out of the operating area. Never allow children to operate the machine.
- Park the machine on a level surface, lower the cutting units, disengage the drives, engage the parking brake (if provided), shut off the engine, and remove the key before leaving the operator's position for any reason.

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

You can find additional safety information where needed throughout this *Operator's Manual*.

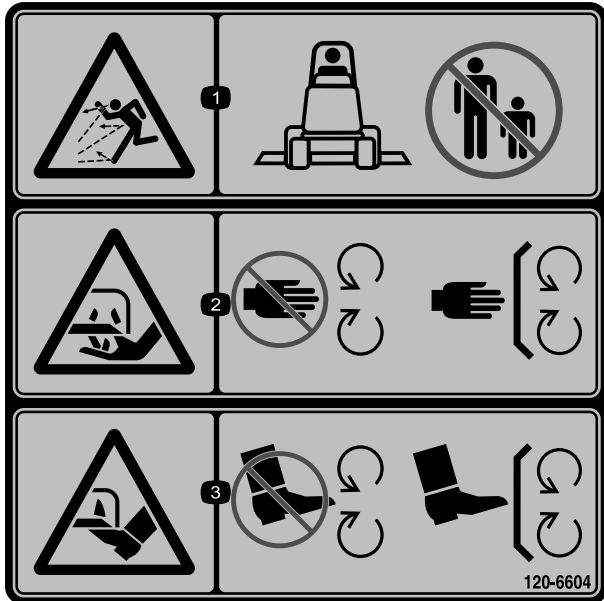
# Safe Operating Practices

- Read the *Operator's Manual* for the traction unit and other training material carefully. Be familiar with the controls, safety signs, and the proper use of the equipment. If the operator or mechanic cannot read the language of this manual, it is the owner's responsibility to explain this material to them.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- The owner/operator can prevent and is responsible for accidents that may cause personal injury or property damage.
- Wear appropriate clothing, including eye protection; substantial, slip-resistant footwear; long pants, and hearing protection. Tie back long hair and do not wear loose jewelry.
- Inspect the area where the equipment is to be used and remove all objects, such as rocks, toys, and wire, that the machine can throw.
- Check that operator's presence controls, safety switches, and shields are attached and functioning properly. Do not operate the machine unless they are functioning properly.
- Stop the machine, remove the key, and wait for all moving parts to stop before inspecting the attachment after striking an object or if there is an abnormal vibration in the machine. Make all necessary repairs before resuming operation.
- Keep your hands and feet away from the cutting units.
- Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.
- A worn or damaged blade can break, and a piece of the blade could be thrown toward you or bystanders, resulting in serious personal injury or death.
- Inspect the blade periodically for wear or damage.
- Use care when checking the blades. Wrap the blades or wear gloves, and use caution when servicing the blades. Only replace or sharpen the blades; never straighten or weld them.
- On multi-bladed machines, take care as rotating 1 blade can cause other blades to rotate.
- Check the blade mounting bolts frequently to be sure that they are tightened to specification.

# Safety and Instructional Decals



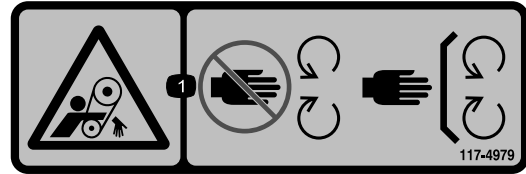
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



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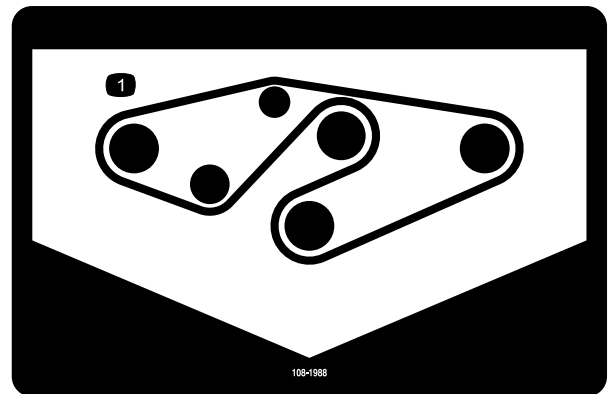
1. Thrown object hazard—keep bystanders away from the machine.
2. Cutting/dismemberment hazard of hand, mower blade—stay away from moving parts, keep all guards and shields in place.
3. Cutting/dismemberment hazard of foot, mower blade—stay away from moving parts, keep all guards and shields in place.



decal117-4979

117-4979

1. Entanglement hazard, belt—stay away from moving parts, keep all guards and shields in place.



decal108-1988

108-1988

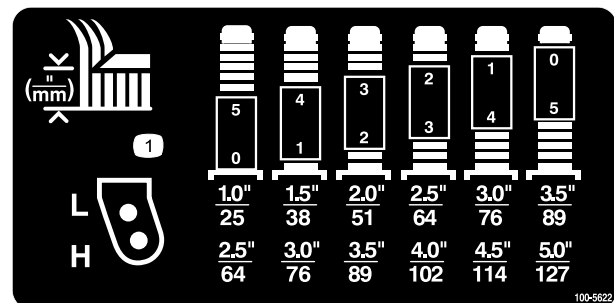
1. Belt routing



decal93-6697

93-6697

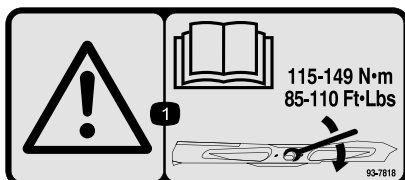
1. Read the *Operator's Manual*.
2. Add SAE 80W-90 (API GL-5) oil every 50 hours.



decal100-5622

100-5622

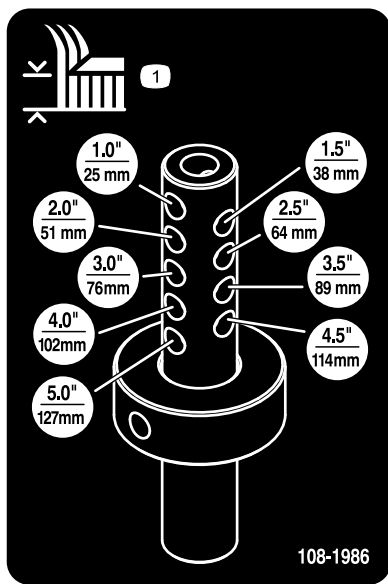
1. Height-of-cut adjustment



decal93-7818

93-7818

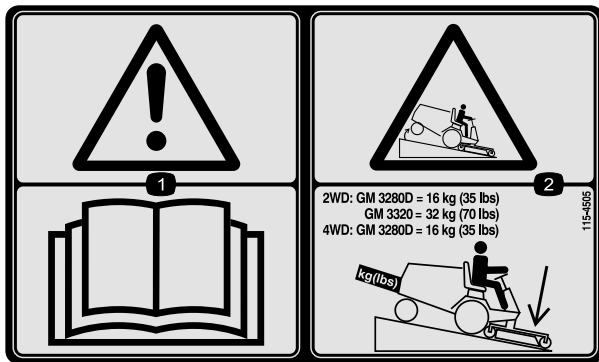
1. Warning—read the *Operator's Manual* for instructions on torquing the blade bolt/nut to 115 to 149 N·m (85 to 110 ft-lb).



**108-1986**

decal108-1986

1. Height of cut



**115-4505**

decal115-4505

1. Warning—read the *Operator's Manual*.
2. Tipping hazard—lower the cutting unit when driving down slopes. For 2 wheel drive units, add a 16 kg (35 lb) rear weight to GM 3280D units and a 32 kg (70 lb) rear weight to GM 3320 units. For 4 wheel drive 3280 D units, add a 16 kg (35 lb) rear weight.

# Setup

## Loose Parts

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

| Procedure | Description  | Qty.                                 | Use  |
|-----------|--|--------------------------------------|--|
| <b>1</b>  | No parts required  | –                                    | Prepare the machine.                               |
| <b>2</b>  | Completion kit (sold separately)   | 1                                    | Install a completion kit.                          |
| <b>3</b>  | Castor wheel assembly  | 2                                    | Install the castor wheel assemblies.               |
| <b>4</b>  | Right lift arm<br>Left lift arm<br>Pivot pin<br>Cotter pin   | 1<br>1<br>2<br>2                     | Install the lift arms.                             |
| <b>5</b>  | Thrust washer<br>Clevis pin<br>Hairpin cotter<br>Height-of-cut collar<br>Clevis pin<br>Hairpin cotter<br>Bolt (1/2 x 3/4 inch)<br>Washer | 4<br>4<br>2<br>2<br>2<br>2<br>2<br>2 | Install the cutting units                          |
| <b>6</b>  | No parts required  | –                                    | Connect the PTO shaft to the cutting unit gearbox. |
| <b>7</b>  | No parts required  | –                                    | Grease the machine.                                |

## Media and Additional Parts

| Description       | Qty. | Use                            |
|-------------------|------|--------------------------------|
| Parts Catalog     | 1    | Read material before operation |
| Operator's Manual | 1    |                                |

### **⚠ DANGER**

If the engine is started and the PTO shaft is allowed to rotate, serious injury could result.

Do not start the engine and engage the PTO lever when the PTO shaft is not connected to the gearbox on the cutting unit.

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

# 1

## Preparing the Machine

No Parts Required

### Procedure

1. Park the machine on a level surface.
2. Engage the parking brake.
3. Shut off the engine and remove the key.

# 2

## Installing a Completion Kit

Parts needed for this procedure:

|   |                                  |
|---|----------------------------------|
| 1 | Completion kit (sold separately) |
|---|----------------------------------|

### Procedure

Install 1 of the following 62-inch or 72-inch completion kits to the base deck using the instruction provided in the kit:

- Model 30303, 72-inch Rear Discharge
- Model 30304, 72-inch Guardian
- Model 30305, 62-inch Rear Discharge
- Model 30306, 62-inch Guardian

# 3

## Installing the Castor Wheel Assemblies

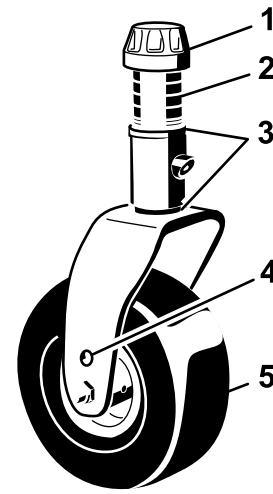
Parts needed for this procedure:

|   |                       |
|---|-----------------------|
| 2 | Castor wheel assembly |
|---|-----------------------|

### Procedure

The thrust washers, spacers, and tensioning caps have been installed on the castor wheel spindles for shipping.

1. Remove the tensioning caps from the spindle shafts and slide off the spacers and thrust washers (Figure 3).



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Figure 3

1. Tensioning cap
2. Spacers
3. Thrust washers
4. Axle mounting holes
5. Castor wheel

2. Slide the spacers onto the castor spindle to get the desired height-of-cut; refer to Figure 8 and Figure 9 to determine the combinations of spacers for the setting. Slide a thrust washer onto the spindle, push the castor through the castor arm. Install another thrust washer and the remaining spacers onto the spindle and install the tensioning cap to secure the assembly (Figure 3).

**Important:** The thrust washers, not the spacers, must contact the top and bottom of the castor arm.

# 4

## Installing the Lift Arms

Parts needed for this procedure:

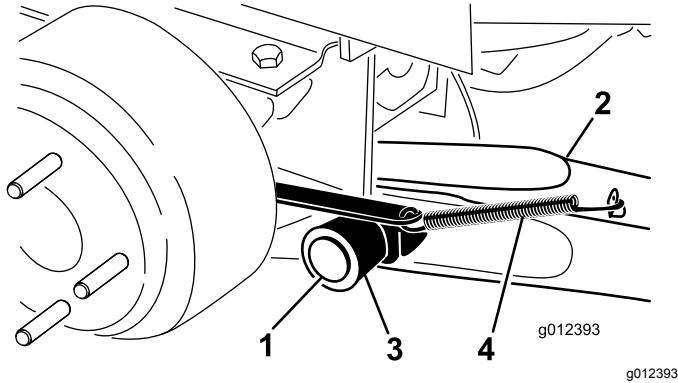
|   |                |
|---|----------------|
| 1 | Right lift arm |
| 1 | Left lift arm  |
| 2 | Pivot pin      |
| 2 | Cotter pin     |

### Procedure

1. On 1 side of the traction unit, loosen (do not remove) the wheel nuts securing the wheel and tire assembly to the front wheel studs.
2. Jack up the machine until the front wheel is off of the floor. Use jack stands or block the machine to prevent it from accidentally falling.



3. Remove the wheel nuts and slide the wheel and tire assembly off of the studs.
4. Mount a lift arm to the pivot bracket with a pivot pin and a cotter pin (Figure 4). Mount the lift arm with the bend positioned outward.



**Figure 4**

- |              |                        |
|--------------|------------------------|
| 1. Pivot pin | 3. Pivot bracket       |
| 2. Lift arm  | 4. Brake return spring |

5. Hook the brake return spring to the tab on the lift arm (Figure 4).
6. Install the wheel and tire assembly. Torque the wheel nuts to 102 to 108 N·m (75 to 80 ft-lb).
7. Repeat the procedure on the opposite side of the machine.

# 5

## Installing the Cutting Units on the Lift Arms

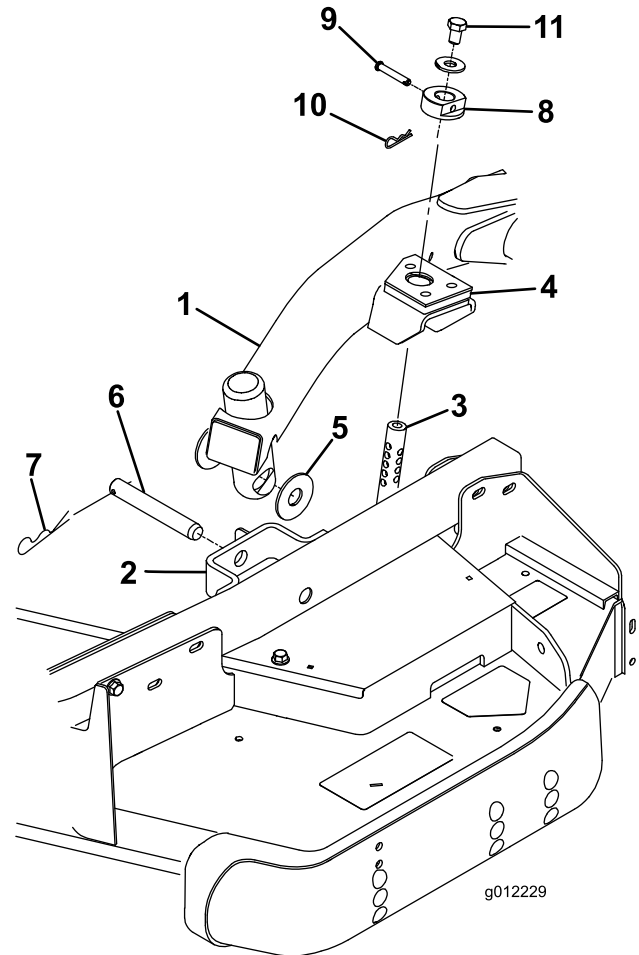
**Parts needed for this procedure:**

|   |                       |
|---|-----------------------|
| 4 | Thrust washer         |
| 4 | Clevis pin            |
| 2 | Hairpin cotter        |
| 2 | Height-of-cut collar  |
| 2 | Clevis pin            |
| 2 | Hairpin cotter        |
| 2 | Bolt (1/2 x 3/4 inch) |
| 2 | Washer                |

## Procedure

1. Move the cutting unit into position in front of the traction unit.

2. Move the lift lever to the FLOAT position. Push a lift arm down until the holes in the lift arm line up with the holes in the castor arm bracket and the height of cut rod can be inserted into the lift arm pads (Figure 5).
3. Secure the lift arm to the castor arm with 2 thrust washers, a clevis pin and a hairpin cotter. Position the thrust washers between the lift arm and the castor arm bracket (Figure 5). Insert end of cotter pin into the slot in the castor arm tab to retain cotter pin.



**Figure 5**

- |                       |                         |
|-----------------------|-------------------------|
| 1. Lift arm           | 7. Hairpin cotter       |
| 2. Castor arm bracket | 8. Height-of-cut collar |
| 3. Height-of-cut rod  | 9. Clevis pin           |
| 4. Lift arm pads      | 10. Hairpin cotter      |
| 5. Thrust washers     | 11. Bolt                |
| 6. Clevis pin         |                         |

4. Repeat the procedure on the opposite lift arm.
5. Start the traction unit and raise the cutting unit.
6. Push down on the rear of the cutting unit and insert the height of cut rods through the lift arm pads.

7. Install the height of cut collars onto the height of cut rods and secure with the clevis pins and hairpin cotters ([Figure 5](#)). Position the head of the clevis pin toward the front of the deck, if possible.
8. Install a bolt (1/2 x 3/4 inch) and a washer to top of each height of cut rod ([Figure 5](#)).

# 7

## Greasing the Machine

No Parts Required

### Procedure

Before operating the machine, it must be greased to ensure proper lubricating characteristics; refer to [7 Greasing the Machine \(page 10\)](#). Failure to properly grease the machine will result in premature failure of critical parts.

# 6

## Connecting the PTO Shaft to the Cutting Unit Gearbox

No Parts Required

### Procedure

1. Slide the male PTO shaft into the female PTO shaft ([Figure 6](#)). Align the mounting holes in the gear case input shaft with the holes in the PTO shaft and slide them together.

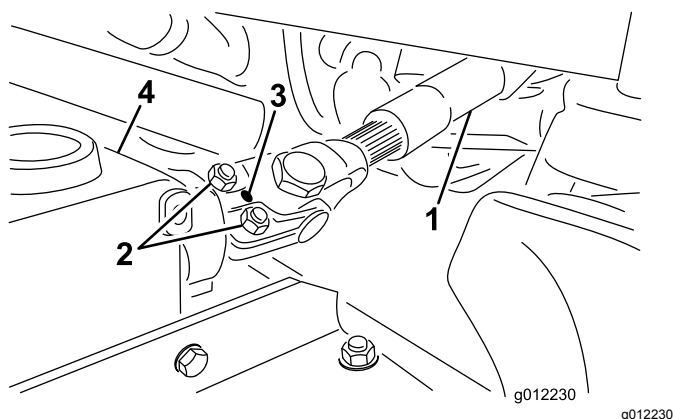


Figure 6

- |                       |              |
|-----------------------|--------------|
| 1. PTO shaft          | 3. Gear case |
| 2. Bolts and locknuts | 4. Roll pin  |

2. Secure them with a roll pin ([Figure 6](#)).
3. Tighten the bolts and nuts ([Figure 6](#)).

# Product Overview

## Specifications

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

|               |   |
|---------------|---|
| Width of Cut  | 1.575 m (62 inches) or 1.829 m (72 inches)                                  |
| Height of Cut | Adjustable from 25 to 127 mm (1 to 5 inches) in 13 mm (1/2 inch) increments |
| Net Weight    | Model 30403—190 kg (420 lbs.)<br>Model 30404—231 kg (510 lbs. )             |

## 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.

## ⚠ CAUTION

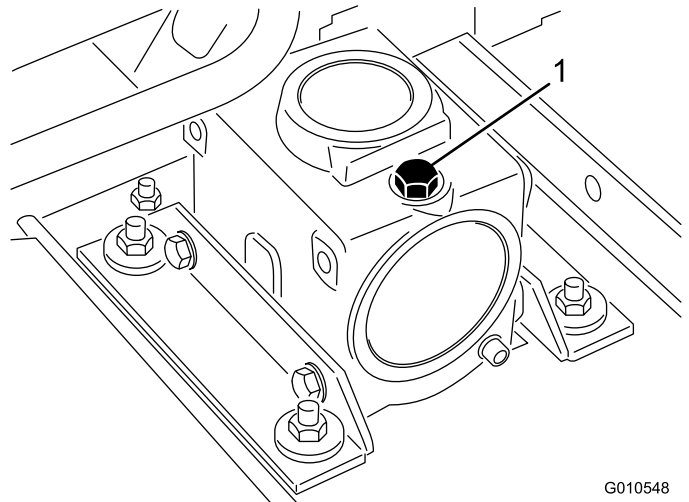
**If you leave the key in the ignition switch, someone could accidentally start the engine and seriously injure you or other bystanders.**

**Remove the key from the ignition before you do any maintenance.**

## Checking the Lubricant in the Gearbox

The gearbox is designed to operate on SAE 80–90 weight gear lube. Although the gearbox is shipped with lubricant from the factory, check the level before operating the cutting unit.

1. Position the machine and cutting unit on a level surface.
2. Remove the dipstick/fill plug from the top of the gearbox ([Figure 7](#)) and make sure that the lubricant is between the marks on the dipstick. If the lubricant level is low, add enough lubricant until the level is between the marks.



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**Figure 7**

1. Dipstick/fill plug

# Adjusting the Height-of-Cut

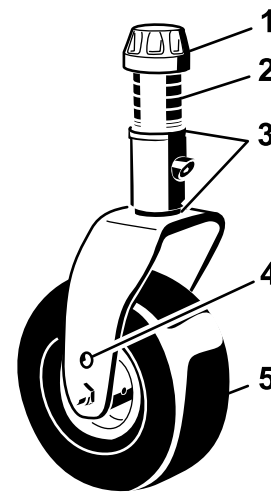
The height-of-cut is adjustable from 25 to 127 mm (1 to 5 inches) in 13 mm (1/2 inch) increments. To adjust the height-of-cut, position the castor wheel axles in the upper or lower holes of the castor forks, add or remove an equal number of spacers from the castor forks and secure the height of cut collar to the desired holes in the height of cut rod.

1. Start the engine and raise the cutting unit off the floor so that you can change the height-of-cut. Shut off the engine and remove the key after you raise the cutting unit.
2. Position the castor wheel axles in the same holes in both castor forks. Refer to [Figure 8](#) and [Figure 9](#) to determine the correct holes for the setting.

**Note:** When operating in 64 mm (2-1/2 inches) height of cut or higher, install the axle bolt in the lower castor fork hole to prevent grass buildup between the wheel and the fork. When operating in height of cuts lower than 64 mm (2-1/2 inches) and there is grass buildup, reverse the machines direction to pull any clippings away from the wheel/fork area.

3. Remove the tensioning cap from the spindle shaft ([Figure 8](#)) and slide the spindle out of the castor arm. Put the 2 shims (1/8 inch) onto the spindle shaft as they were originally installed. These shims are required to achieve a level across the entire width of the cutting units. Slide the appropriate number of 1/2 inch spacers onto the spindle shaft to get the desired height-of-cut; then slide the washer onto the shaft.

Refer to [Figure 8](#) and [Figure 9](#) to determine the combinations of spacers for the setting.

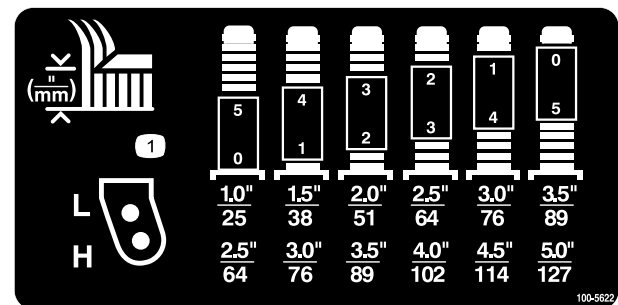


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**Figure 8**

- |                   |                        |
|-------------------|------------------------|
| 1. Tensioning cap | 4. Axle mounting holes |
| 2. Spacers        | 5. Castor wheel        |
| 3. Shims          |                        |

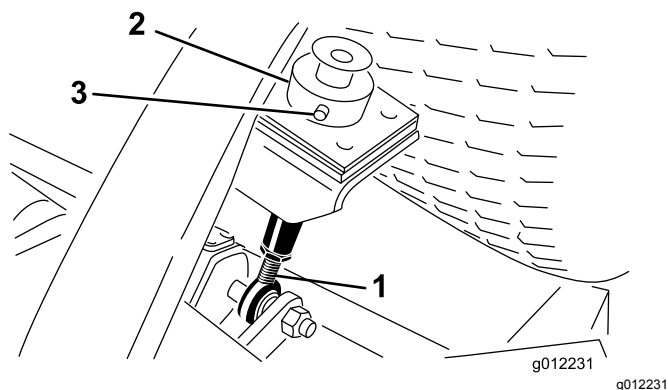


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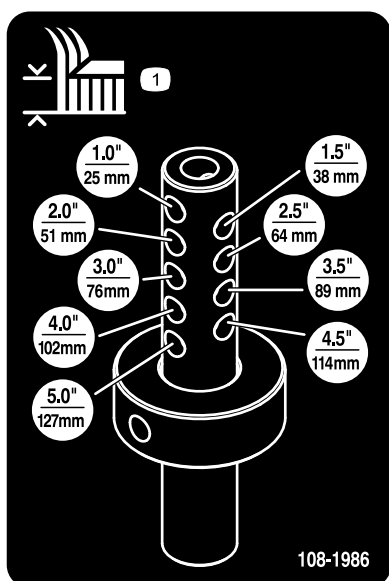
**Figure 9**

4. Push the castor spindle through the castor arm. Install the shims (as they were originally installed) and the remaining spacers onto the spindle shaft. Install the tensioning cap to secure the assembly.
5. Remove the hairpin and clevis pin securing the height of cut collar to the height of cut rod on the rear of the cutting unit ([Figure 10](#)).



**Figure 10**

1. Height-of-cut rod
  2. Height-of-cut collar
  3. Clevis pin and hairpin cotter
- 
6. Align the height-of-cut collar to the desired height-of-cut holes on the height-of-cut rod (Figure 11).



**Figure 11**

7. Secure the adjustment with the clevis pin and hairpin.

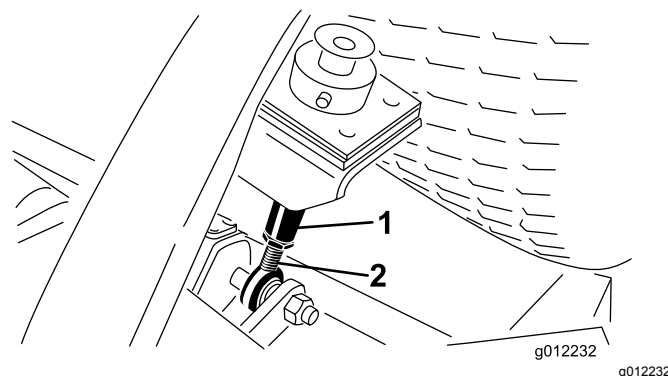
**Note:** Position the head of the clevis pin toward the front of the deck, if possible.

**Note:** When using 25 mm (1 inch), 38 mm (1-1/2 inch), or occasionally 51 mm (2 inch) height-of-cut, move the skids and roller to the highest holes.

## Adjusting the Cutting Unit Pitch

Cutting unit pitch is the difference in height-of-cut from the front of the blade plane to the back of the blade plane. Use a blade pitch of 6 mm (1/4 inch). That is the back of the blade plane is 6 mm (1/4 inch) higher than the front.

1. Park the machine on a level surface.
2. Engage the parking brake.
3. Shut off the engine and remove the key.
4. Set the cutting unit to the desired height-of-cut.
5. Rotate 1 blade so that it points straight forward.
6. Using a short ruler, measure from the floor to the front tip of the blade. Rotate the blade tip to the rear and measure from the floor to the tip of the blade.
7. Subtract the front dimension from the rear dimension to calculate the blade pitch.
8. Loosen the jam nuts on the bottom of the height-of-cut rods (Figure 12).



**Figure 12**

1. Height-of-cut
  2. Jam nut
- 

9. Rotate the height-of-cut rods to raise or lower the rear of the cutting unit and attain the correct cutting unit pitch.
10. Tighten the jam nuts.

## Adjusting the Skids

The skids should be mounted in the lower position when operating in height of cuts greater than 64 mm (2-1/2 inches) and in the higher position when operating in height of cuts lower than 64 mm (2-1/2 inches).

Adjust the skids by removing the flange bolt and nuts, positioning them as desired, and installing the fasteners ([Figure 13](#)).

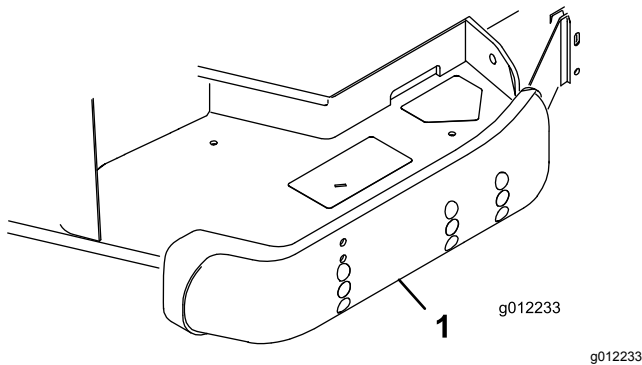


Figure 13

1. Skid

## Adjusting the Rollers

**Note:** If the cutting unit is to be used in the 25 or 38 mm (1 or 1-1/2 inch) height-of-cut setting, position the cutting unit rollers in the top bracket holes.

1. Remove the screw and nut securing the roller shaft to the deck bracket ([Figure 14](#)).

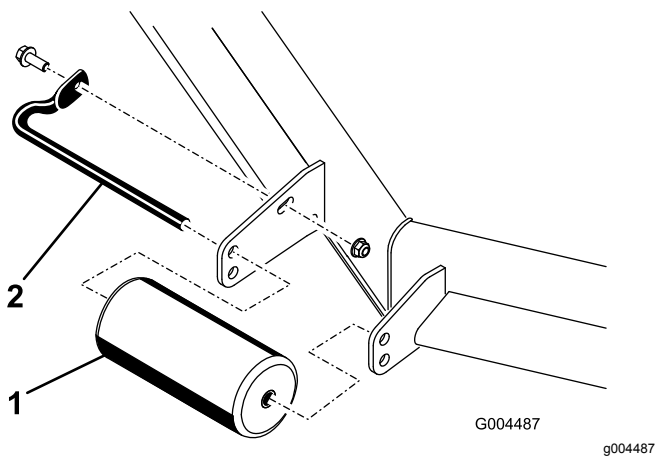


Figure 14

1. Roller
2. Roller shaft

2. Slide the shaft out of the lower bracket holes, align the roller with the top holes, and install the shaft.
3. Install the screw and nut to secure the assemblies.

## Correcting Cutting Unit Mismatch

Due to differences in grass conditions and the counterbalance setting of the traction unit, it is advised that grass be cut and appearance checked before formal cutting is started.

1. Set the cutting unit to the desired height of cut; refer to [Adjusting the Height-of-Cut \(page 12\)](#).
2. Check and adjust front and rear tractor tire pressure to 172 to 207 kPa (25 to 30 psi).
3. Check and adjust all castor tire pressures to 345 kPa (50 psi).
4. Check for bent blades; refer to [Checking for a Bent Blade \(page 20\)](#).
5. Cut grass in a test area to determine if all cutting units are cutting at the same height.
6. If cutting unit adjustments are still needed, find a flat surface using a 2 m (6 ft) or longer straight edge.
7. To ease measuring blade plane, raise the height of cut to the highest position; refer to [Adjusting the Height-of-Cut \(page 12\)](#).
8. Lower cutting unit onto the flat surface. Remove the covers from the top of the cutting units.
9. Rotate the blade on each spindle until the ends face forward and backward.
10. Measure from the floor to the front tip of the cutting edge.
11. Adjust 1/8 inch shims on castor fork(s) to match height of cut to decal ([Figure 15](#)); refer to [Adjusting the Cutting Unit Pitch \(page 13\)](#).

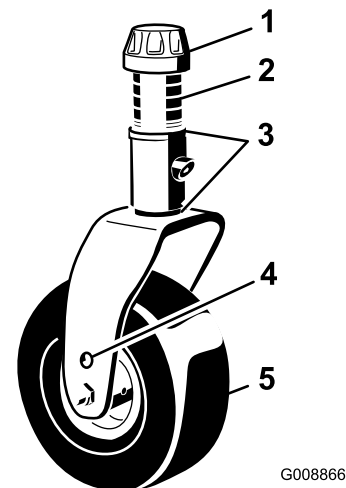


Figure 15

1. Tensioning cap
2. Spacers
3. Shims
4. Axle mounting holes
5. Castor wheel

# Operating Tips

## Mow When Grass Is Dry

Mow either in the late morning to avoid the dew, which causes grass clumping, or in late afternoon to avoid the damage that can be caused by direct sunlight on the sensitive, freshly mowed grass.

## Select the Proper Height-of-Cut Setting to Suit Conditions

Remove approximately 25 mm (1 inch) or no more than 1/3 of the grass blade when cutting. In exceptionally lush and dense grass, you may have to raise the height-of-cut to the next setting.

## Mow at Proper Intervals

Under most normal conditions you will need to mow approximately every 4 or 5 days. But remember, grass grows at different rates at different times. This means that in order to maintain the same height-of-cut, which is a good practice, you will need to cut more frequently in early spring; as the grass growth rate slows in mid summer, cut only every 8 to 10 days. If you are unable to mow for an extended period of time due to weather conditions or other reasons, mow first with the height-of-cut at a high level; then mow again 2 or 3 days later with a lower height setting.

## Always Mow with Sharp Blades

A sharp blade cuts cleanly and without tearing or shredding the grass blades like a dull blade. Tearing and shredding causes the grass to turn brown at the edges which impairs growth and increases susceptibility to diseases.

## After Operating

To ensure optimum performance, clean the underside of the mower housing after each use. If residue is allowed to build up in the mower housing, cutting performance will decrease.

## Cutting Unit Pitch

Use a blade pitch of 6 mm (1/4 inch). A pitch larger than 6 mm (1/4 inch) will result in less power required, larger clippings, and a poorer quality of cut. A pitch less than 6 mm (1/4 inch) will result in more power required, smaller clippings and a better quality of cut.

# Maintenance

## Recommended Maintenance Schedule(s)

| Maintenance Service Interval | Maintenance Procedure  |
|------------------------------|--|
| After the first 2 hours      | <ul style="list-style-type: none"><li>• Tighten the castor wheel nuts.</li></ul>   |
| After the first 10 hours     | <ul style="list-style-type: none"><li>• Tighten the castor wheel nuts.</li><li>• Torque the blade bolts.</li></ul>   |
| Before each use or daily     | <ul style="list-style-type: none"><li>• Check the blades.</li></ul>  |
| Every 50 hours               | <ul style="list-style-type: none"><li>• Lubricate all bearings and bushings.</li><li>• Lubricate the grease fittings.<sup>1</sup></li><li>• Check the gearbox oil level.</li><li>• Tighten the castor wheel nuts.</li><li>• Torque the blade bolts.</li><li>• Check the blade drive belt adjustment.</li><li>• Clean under the cutting unit belt covers.</li></ul> |
| Every 400 hours              | <ul style="list-style-type: none"><li>• Change the gearbox oil.</li></ul>  |

<sup>1</sup> Immediately after every washing, regardless of the interval listed.

### ⚠ CAUTION

If you leave the key in the ignition switch, someone could accidentally start the engine and seriously injure you or other bystanders.

Remove the key from the ignition switch before you do any maintenance.

**Important:** The fasteners on the covers of this machine are designed to remain on the cover after removal. Loosen all the fasteners on each cover a few turns so that the cover is loose but still attached, then go back and loosen them until the cover comes free. This prevents you from accidentally stripping the bolts free of the retainers.

## Lubrication

**Service Interval:** Every 50 hours

The machine has grease fittings that must be lubricated regularly with No. 2 lithium grease. Lubricate immediately after every washing

1. Lubricate the following areas:
  - Castor fork shaft bushings (2) (Figure 16)

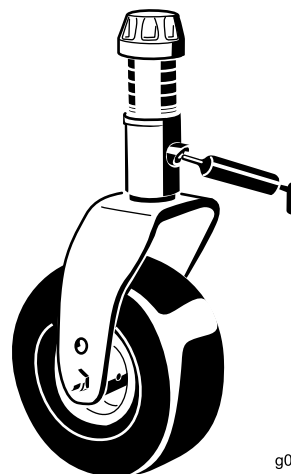
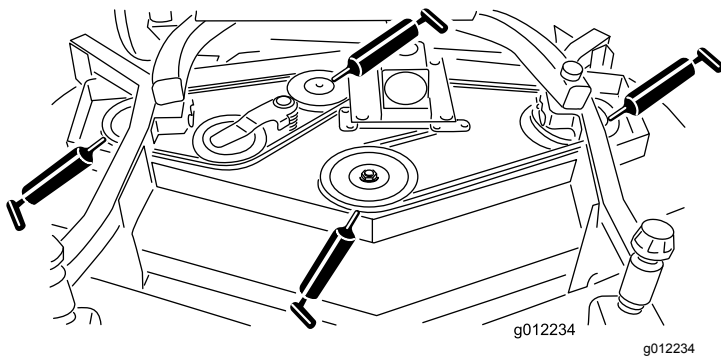


Figure 16

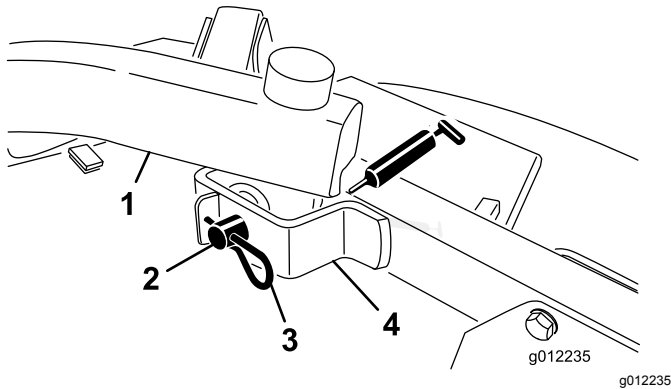
- Spindle shaft bearings (3) (located under the pulley) (Figure 17)





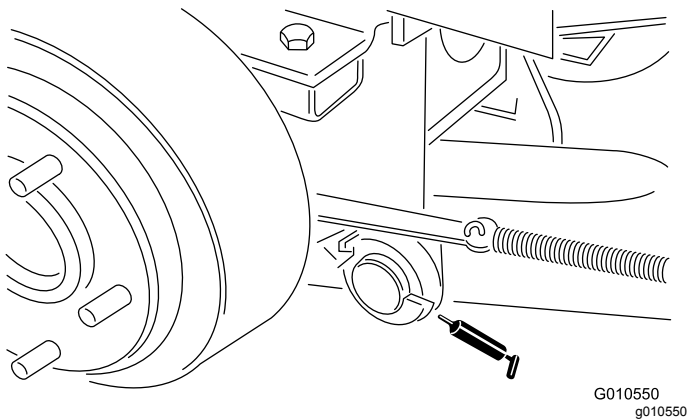
**Figure 17**

- Idler arm shaft bearings (Figure 17)
- Lift arm pivots, front (2) (Figure 18)



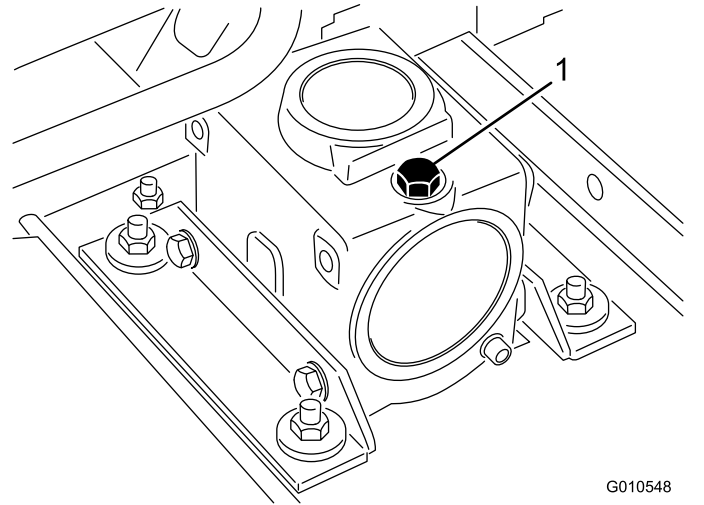
**Figure 18**

- Lift arm pivots, rear (2) (Figure 19)



**Figure 19**

2. Position the machine and cutting unit on a level surface and lower the cutting unit. Remove the dipstick/fill plug from the top of the gearbox (Figure 20) and make sure that the lubricant is between the marks on the dipstick. If the lubricant level is low, add SAE 80-90 weight gear lube until the level is between the marks.

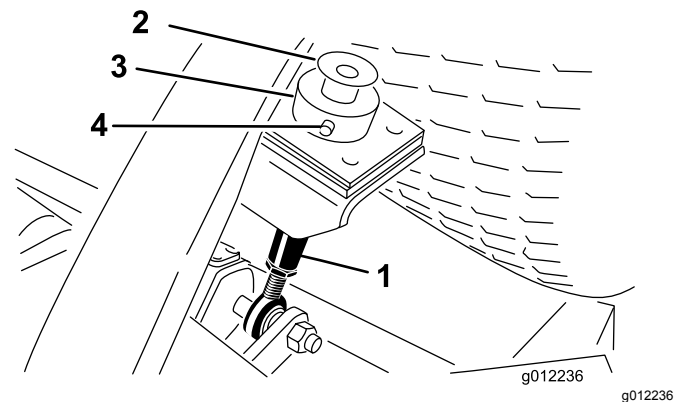


**Figure 20**

1. Dipstick/fill plug

## Separating the Cutting Unit from the Traction Unit

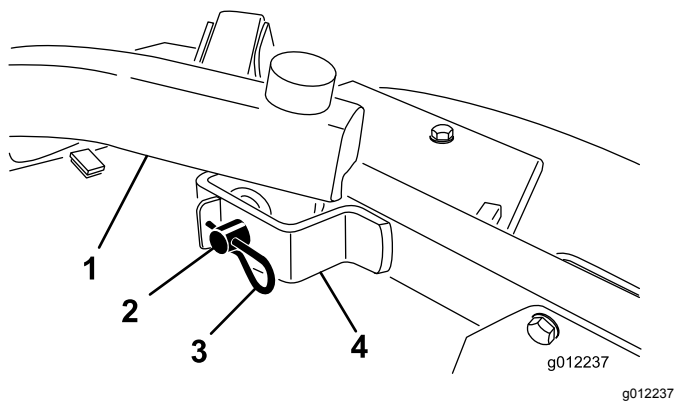
1. Position the machine on level surface, lower the cutting unit to the floor, move the lift lever to the Float position, shut the engine off, and engage the parking brake.
2. Remove the bolt and washer mounted to the top of each height of cut rod (Figure 21).



**Figure 21**

1. Height-of-cut rod
2. Bolt and washer
3. Height-of-cut collar
4. Hairpin cotter and clevis pin

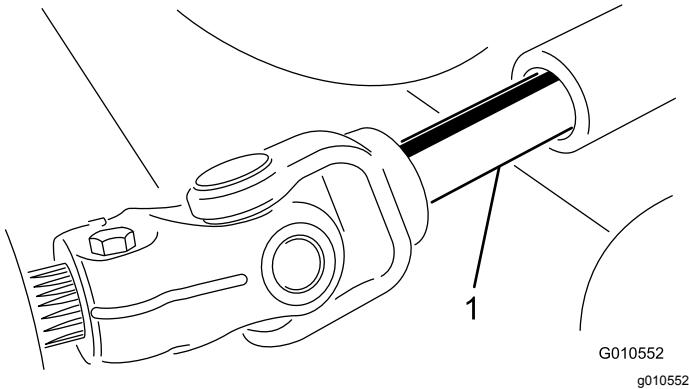
3. Remove the hairpin and clevis pin securing the height of cut collar to the height of cut rod on the rear of the cutting unit (Figure 21). Remove the height of cut collar.
4. Remove the hairpin cotters and clevis pins securing the lift arms to the castor arm brackets (Figure 22).



**Figure 22**

- |               |                       |
|---------------|-----------------------|
| 1. Lift arm   | 3. Hairpin cotter     |
| 2. Clevis pin | 4. Castor arm bracket |

- Roll the cutting unit away from the traction unit, separating the male and female sections of the PTO shaft (Figure 23).



**Figure 23**

- PTO shaft

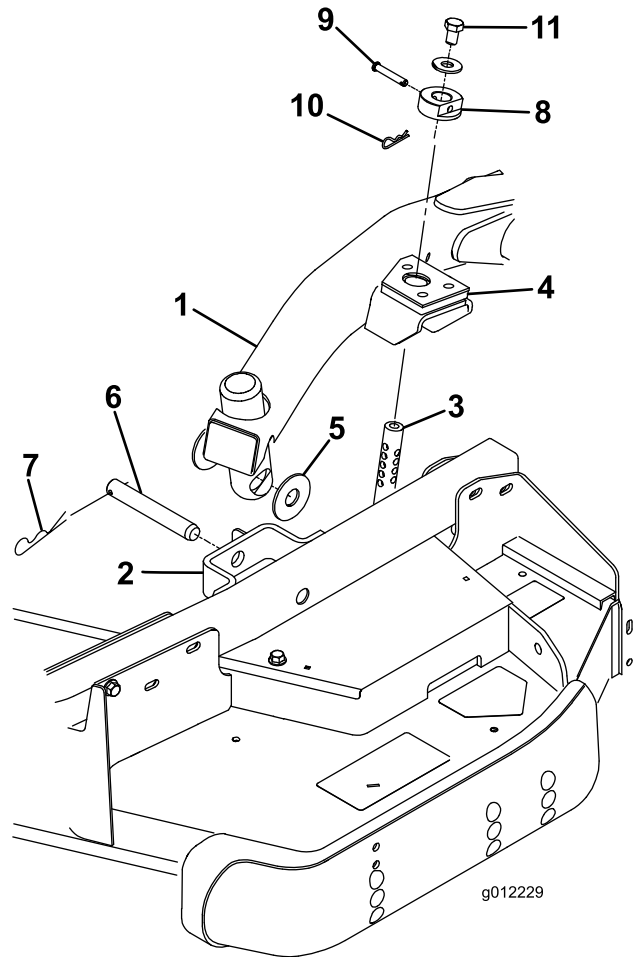
### **⚠ DANGER**

If the engine is started and the PTO shaft is allowed to rotate, serious injury could result.

Do not start the engine and engage the PTO lever when the PTO shaft is not connected to the gearbox on the cutting unit.

## Mounting the Cutting Unit to the Traction Unit

- Position the machine on a level surface and shut the engine off.
- Move the cutting unit into position in front of the traction unit.
- Slide the male PTO shaft into the female PTO shaft (Figure 23).
- Move the lift lever to the FLOAT position. Push a lift arm down until the holes in the lift arm line up with the holes in the castor arm bracket and you can insert the height-of-cut rod into the lift arm pads (Figure 24).



**Figure 24**

- |                       |                         |
|-----------------------|-------------------------|
| 1. Lift arm           | 7. Hairpin cotter       |
| 2. Castor arm bracket | 8. Height-of-cut collar |
| 3. Height-of-cut rod  | 9. Clevis pin           |
| 4. Lift arm pads      | 10. Hairpin cotter      |
| 5. Thrust washers     | 11. Bolt                |
| 6. Clevis pin         |                         |

- Secure the lift arm to the castor arm with 2 thrust washers, a clevis pin and a hairpin cotter. Position the thrust washers between the lift arm

and the castor arm bracket (Figure 24). Insert end of cotter pin into the slot in the castor arm tab to retain cotter pin.

6. Repeat the procedure on the opposite lift arm.
7. Start the traction unit and raise the cutting unit.
8. Push down on the rear of the cutting unit and insert the height of cut rods through the lift arm pads.
9. Install the height-of-cut collars onto the height-of-cut rods and secure with the clevis pins and hairpin cotters (Figure 24).

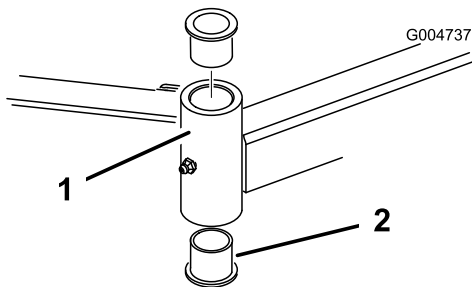
Position the head of the clevis pin toward the front of the deck.

10. Install a bolt (1/2 x 3/4 inch) and a washer to the top of each height-of-cut rod (Figure 24).

## Servicing the Bushings in the Castor Arms

The castor arms have bushings pressed into the top and bottom of the tube, and after many hours of operation, the bushings will wear. To check the bushings, move the castor fork back and forth and from side to side. If the castor spindle is loose inside the bushings, the bushings are worn and must be replaced.

1. Raise the cutting unit so that the wheels are off of the floor. Block the cutting unit so that it cannot accidentally fall.
2. Remove the tensioning cap, spacer(s), and thrust washer from the top of the castor spindle.
3. Pull the castor spindle out of the mounting tube. Allow the thrust washer and spacer(s) to remain on the bottom of the spindle.
4. Insert a pin punch into the top or bottom of the mounting tube and drive the bushing out of the tube (Figure 25). Also, drive the other bushing out of the tube. Clean the inside of the tubes to remove dirt.



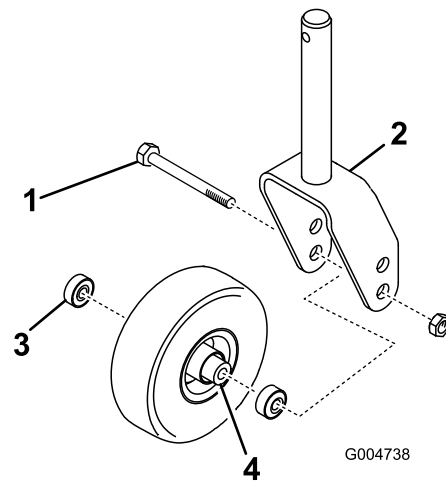
**Figure 25**

1. Castor arm tube
2. Bushings

5. Apply grease to the inside and outside of the new bushings. Using a hammer and flat plate, drive the bushings into the mounting tube.
6. Inspect the castor spindle for wear and replace it if damaged.
7. Push the castor spindle through the bushings and mounting tube, slide the thrust washer and spacer(s) onto the spindle, and install the tensioning cap on the castor spindle.

## Servicing the Castor Wheels and Bearings

1. Remove the locknut from the bolt holding the castor wheel assembly between the castor fork (Figure 26). Grasp the castor wheel and slide the bolt out of the fork or pivot arm.



**Figure 26**

1. Castor wheel
2. Castor fork
3. Bearing (2)
4. Bearing spacer

2. Remove the bearing from the wheel hub and allow the bearing spacer to fall out (Figure 26). Remove the bearing from the opposite side of the wheel hub.
3. Check the bearings, spacer, and inside of the wheel hub for wear. Replace any damaged parts.
4. To assemble the castor wheel, push the bearing into the wheel hub. When installing the bearings, press on the outer race of the bearing.
5. Slide the bearing spacer into the wheel hub. Push the other bearing into the open end of the wheel hub to captivate the bearing spacer inside the wheel hub.
6. Install the castor wheel assembly between the castor fork and secure it in place with the bolt and locknut.

## Checking for a Bent Blade

1. Position the machine on a level surface. Raise the cutting unit, engage the parking brake, put the traction pedal in neutral, put the PTO lever in the Off position, shut off the engine, and remove the ignition key. Block the cutting unit to prevent it from accidentally falling.
2. Rotate the blade until the ends face forward and backward. Measure from the inside of the cutting unit to the cutting edge at the front of the blade (Figure 27), and remember this dimension.

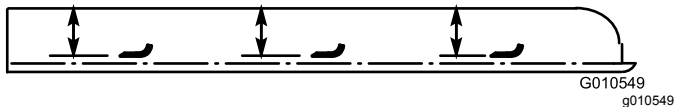


Figure 27

3. Rotate the opposite end of the blade forward. Measure between the cutting unit and cutting edge of the blade at the same position as in step 2. The difference between the dimensions obtained in steps 2 and 3 must not exceed 3 mm (1/8 inch). If the dimension exceeds 3 mm (1/8 inch), replace the blade because it is bent; refer to [Removing and Installing the Blade\(s\)](#) (page 20).

## Removing and Installing the Blade(s)

The blade must be replaced if a solid object is hit, the blade is out-of-balance, worn, or bent. Always use genuine Toro replacement blades to ensure safety and optimum performance. Do not use blades made by other manufacturers because they could be dangerous.

1. Raise the cutting unit to the highest position, engage the parking brake, shut off the engine, and remove the ignition key. Block the cutting unit to prevent it from accidentally falling.
2. Grasp the end of the blade using a rag or thickly padded glove. Remove the blade bolt, anti-scalp cup, and blade from the spindle shaft (Figure 28).

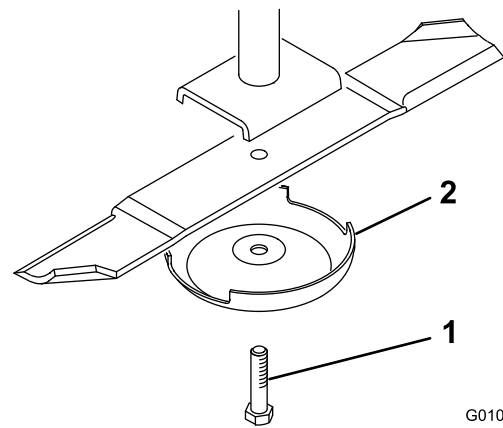


Figure 28

1. Blade bolt
2. Anti-scalp cup

3. Install the blade-sail facing toward the cutting unit-with the anti-scalp cup and blade bolt. Tighten the blade bolt to 115 to 149 N·m (85 to 110 ft-lb).

**Important:** The curved part of the blade must be pointing toward the inside of the cutting unit to ensure proper cutting.

## Inspecting and Sharpening the Blade(s)

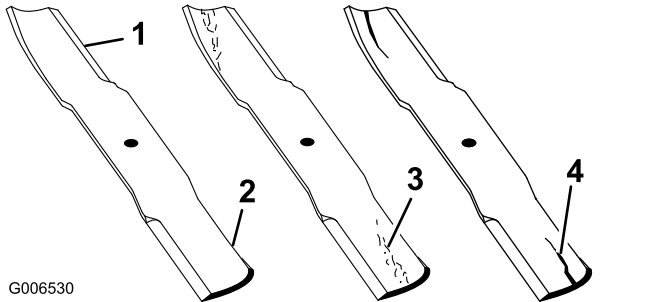
### ⚠ DANGER

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

- Inspect the blade periodically for wear or damage.
- Do not try to straighten a blade that is bent.
- Do not weld a broken or cracked blade.
- Replace a worn or damaged blade with a new Toro blade to ensure continued safety certification of the product.

Both the cutting edges and the sail, which is the turned up portion opposite the cutting edge, contribute to a good quality-of-cut. The sail is important because it pulls grass up straight, thereby producing an even cut. However, the sail will gradually wear down during operation, and this condition is normal. As the sail wears down, the quality-of-cut will degrade, although the cutting edges are sharp. The cutting edge of the blade must be sharp so that the grass is cut rather than torn. A dull cutting edge is evident when the tips of the grass appear brown and shredded. Sharpen the cutting edges to correct this condition.

1. Position the machine on a level surface. Raise the cutting unit, engage the parking brake, put the traction pedal in neutral, put the PTO lever in the OFF position, shut off the engine, and remove the ignition key.
2. Examine the cutting ends of the blade carefully, especially where the flat and curved parts of the blade meet ([Figure 29](#)). Since 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 machine. If you notice wear ([Figure 29](#)), replace the blade; refer to [Removing and Installing the Blade\(s\)](#) ([page 20](#)).



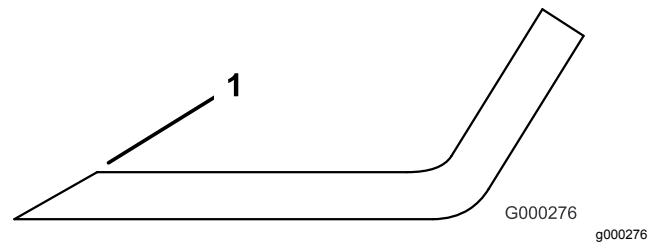
**Figure 29**

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

### **⚠ WARNING**

If the blade is allowed to wear, a slot will form between the sail and flat part of the blade ([Figure 29](#)). Eventually, a piece of the blade may break off and be thrown from under the housing, possibly resulting in serious injury to you or bystanders.

- Inspect the blade periodically for wear or damage.
  - Replace a worn or damaged blade with a new Toro blade to ensure continued safety certification of the product.
3. Examine the cutting edges of all blades. Sharpen the cutting edges if they are dull or nicked. Sharpen only the top side of the cutting edge and maintain the original cutting angle to ensure sharpness ([Figure 30](#)). The blade will remain balanced if the same amount of metal is removed from both cutting edges.



**Figure 30**

1. Sharpen at original angle

**Note:** Remove the blades and sharpen them on a grinder; refer to [Removing and Installing the Blade\(s\)](#) ([page 20](#)). After sharpening the cutting edges, install the blade with the anti-scalp cup and blade bolt. The blade sails must be on top of the blade. Tighten the blade bolt to 115 to 149 N·m (85 to 110 ft-lb).

## Checking and Correcting Mismatch of Blades

If there is mismatch between the blades, the grass will appear streaked when it is cut. This problem can be corrected by making sure that the blades are straight and all of the blades are cutting on the same plane.

1. Using a 1 m (3 ft) long carpenter's level, find a level surface on the shop floor.
2. Raise the height-of-cut to the highest position; refer to [Adjusting the Height-of-Cut](#) ([page 12](#)).
3. Lower the cutting unit onto the flat surface. Remove the covers from the top of the cutting unit.
4. Rotate the blades until the ends face forward and backward. Measure from the floor to the front tip of the cutting edge. Remember this dimension. Then rotate the same blade so that the opposite end is forward, and measure again. The difference between the dimensions must not exceed 1m (3 ft). If the dimension exceeds 1m (3 ft), replace the blade because it is bent. Measure all of the blades.
5. Compare the measurements of the outer blades with the center blade. The center blade must not be more than 1m (3 ft) lower than the outer blades. If the center blade is more than 1m (3 ft) lower than the outer blades, proceed to step 6 and add shims between the spindle housing and the bottom of the cutting unit.
6. Remove the bolts, flat washers, lock washers, and nuts from the outer spindle in the area where the shims must be added. To raise or lower the blade, add a shim, Part No. 3256-24, between the spindle housing and the bottom of the cutting unit. Continue to check the alignment

of the blades and add shims until the tips of the blades are within the required dimension.

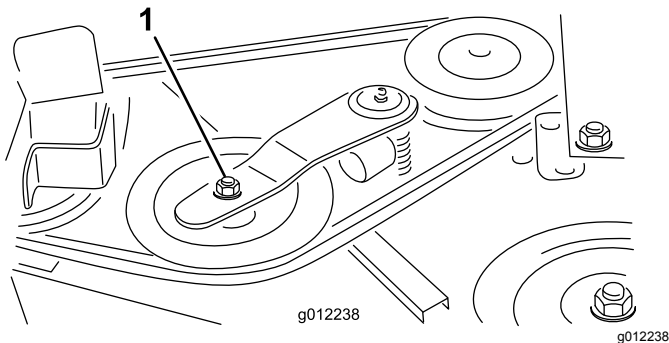
**Important:** Do not use more than 3 shims at any 1 hole location. Use decreasing numbers of shims in adjacent holes if more than 1 shim is added to any 1 hole location.

7. Install the belt covers.

## Replacing the Drive Belt

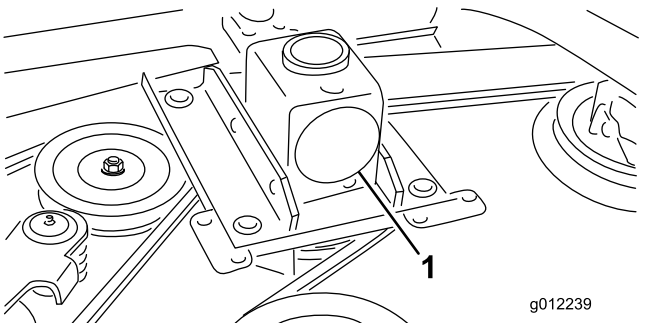
The blade drive belt, tensioned by the spring loaded idler pulley, is very durable. However, after many hours of use, the belt will show signs of wear. Signs of a worn belt are: squealing when belt is rotating, blades slipping when cutting grass, frayed edges, burn marks and cracks. Replace the belt if any of these conditions are evident.

1. Lower the cutting unit to the shop floor. Remove the belt covers from the top of the cutting unit and set the covers aside.
2. Using a torque wrench or similar tool, move the idler pulley ([Figure 31](#)) away from the drive belt to release the belt tension and allow the belt to be slipped off the gearbox pulley ([Figure 32](#)).



**Figure 31**

1. Idler pulley

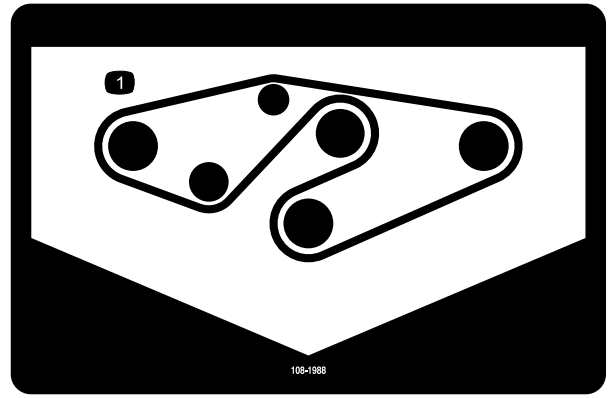


**Figure 32**

1. Gearbox

3. Remove the old belt from around the spindle pulleys and idler pulley.

4. Route the new belt around the spindle pulleys and idler pulley assembly as shown in [Figure 33](#).



**Figure 33**

1. Belt routing

5. Install the belt covers.



**Notes:**

# Declaration of Incorporation

The Toro Company, 8111 Lyndale Ave. South, Bloomington, MN, USA declares that the following unit(s) conform(s) to the directives listed, when installed in accordance with the accompanying instructions onto certain Toro models as indicated on the relevant Declarations of Conformity.

| Model No. | Serial No.       | Product Description | Invoice Description  | General Description | Directive                 |
|-----------|------------------|---------------------|----------------------|---------------------|---------------------------|
| 30403     | 315000001 and Up | Base 62in Mower     | 62" BASE DECK-GM3280 | Base 62in Mower     | 2006/42/EC,<br>2000/14/EC |
| 30404     | 315000001 and Up | Base 72in Mower     | 72" BASE DECK-GM3280 | Base 72in Mower     | 2006/42/EC,<br>2000/14/EC |

Relevant technical documentation has been compiled as required per Part B of Annex VII of 2006/42/EC.

We will undertake to transmit, in response to requests by national authorities, relevant information on this partly completed machinery. The method of transmission shall be electronic transmittal.

This machinery shall not be put into service until incorporated into approved Toro models as indicated on the associated Declaration of Conformity and in accordance with all instructions, whereby it can be declared in conformity with all relevant Directives.

Certified:



John Heckel  
Sr. Engineering Manager  
8111 Lyndale Ave. South  
Bloomington, MN 55420, USA  
January 19, 2018

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