



Form No. 3419-919 Rev B

**Count on it.**

# Operator's Manual

## 100in Rear Discharge Deck Groundsmaster® 360 or 7210 Series Traction Unit

Model No. 31101—Serial No. 400000000 and Up



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



g000502

Figure 1

1. Safety-alert symbol

**WARNING**

**CALIFORNIA**

**Proposition 65 Warning**

**Use of this product may cause exposure to chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.**

# Introduction

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.

**Important:** To maximize the safety, performance, and proper operation of this machine, carefully read and fully understand the contents of this *Operator's Manual*. Failing to follow these operating instructions or to receive proper training may result in injury. For more information on safe operating practices, including safety tips and training materials, go to [www.Toro.com](http://www.Toro.com).

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. The model and serial numbers are stamped into a plate that is mounted on the mower housing. Write the numbers in the space provided.

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

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

This manual identifies potential hazards and has safety messages identified by the safety-alert symbol (Figure 1), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.

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 5395:2013 and ANSI B71.4-2012.

## General Safety

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

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

- Read and understand the contents of this *Operator's Manual* before starting the engine.
- 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

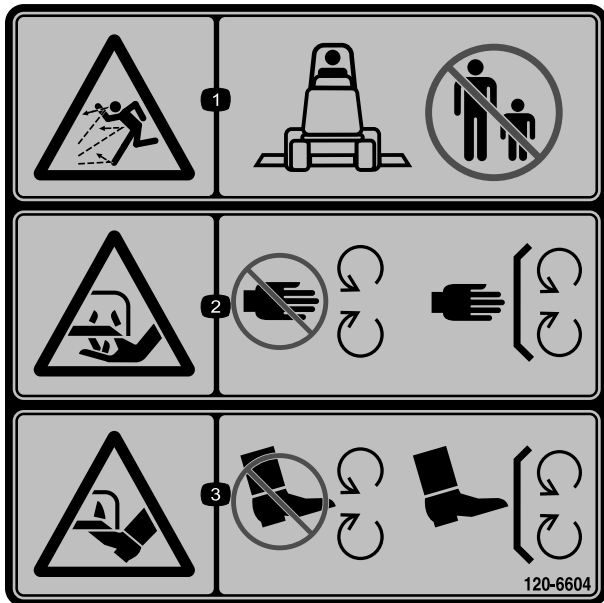
- Read the *Operator's Manual* for the traction unit and other training material carefully. Be familiar with the controls, safety signs, and the proper use of the equipment. If the operator or mechanic cannot read the language of this manual, it is the owner's responsibility to explain this material 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.



120-6604

decal120-6604

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.



93-6696

decal93-6696

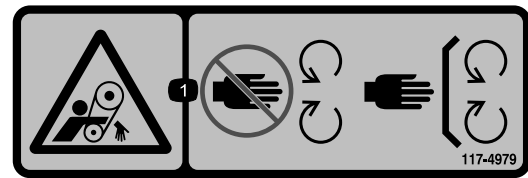
1. Stored energy hazard—read the *Operator's Manual*.



119-6807

decal119-6807

1. Warning—no step



117-4979

decal117-4979

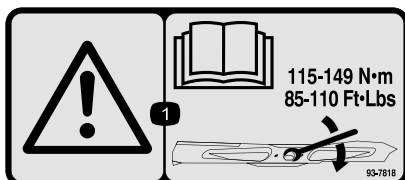
1. Rotating belt—Keep guard in place



93-6697

decal93-6697

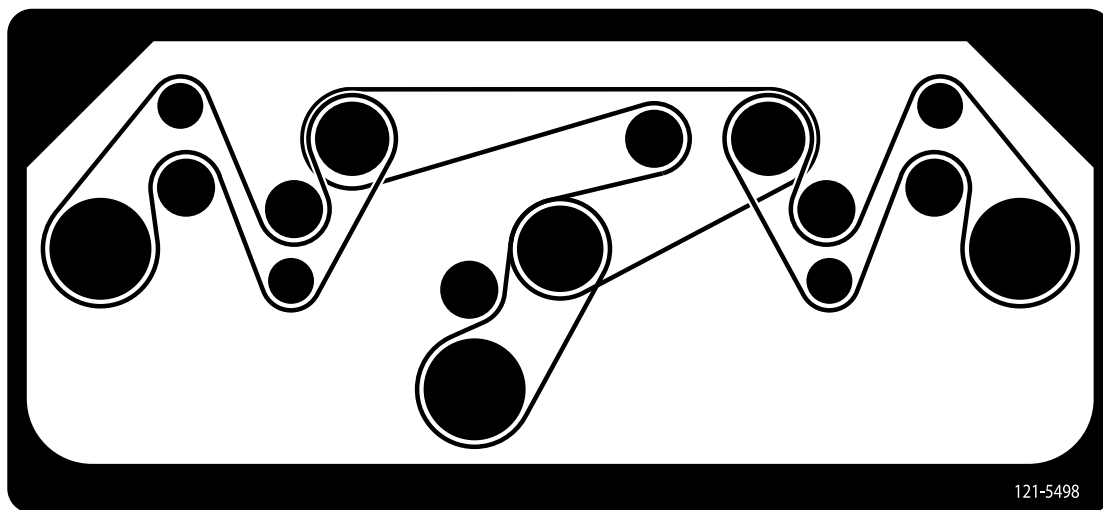
1. Read the *Operator's Manual*.
2. Add SAE 80w-90 (API GL-5) oil every 50 hours.



93-7818

decal93-7818

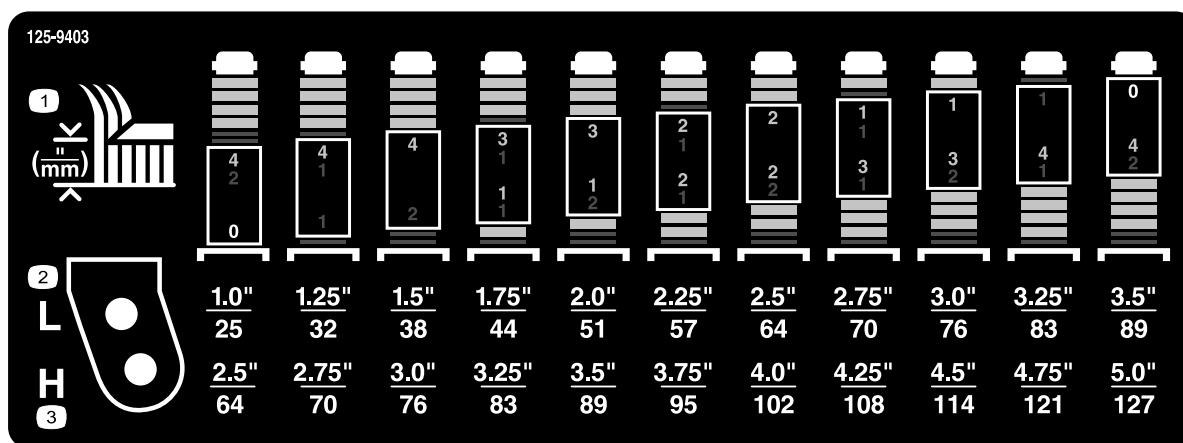
1. Warning—read the *Operator's Manual* for instructions on torquing the blade bolt/nut to 115 to 149 N·m (85 to 110 ft·lb).



121-5498

121-5498

decal121-5498



125-9403

decal125-9403

1. Height-of-cut
2. Low

3. High

# Setup

## Media and Additional Parts

Description	Qty.	Use
Operator's Manual	1	Review the material and save it in an appropriate place.
Parts Catalog	1	Use this catalog to reference part numbers.

### ⚠ WARNING

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 perform any maintenance.

### ⚠ 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 switch 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.

**Note:** Install the appropriate adapter kit before installing the deck. You must use the 100-inch rear-discharge deck with 1 of the following adapter kits:

**Adapter Kit, Model 31102** is used for all Groundsmaster® 360 Series 2WD Traction Units, 2013 and before Groundsmaster® 360 Series 4WD Traction Units, and 2014 Groundsmaster® 360 Series Traction units in the following serial ranges:

Model	Serial range
31223	314000101 to 314000104
30536	314000101 to 314000105
30539	314000101 to 314000116

**Adapter Kit, Model 31103** is for Groundsmaster® 360 Series 4WD traction units in the following serial ranges:

Model	Serial range
31223	314000105 and up
30539	314000117 and up
All other 4WD models	314000001 and up

**Note:** You must install Revision J or later of the Toro Diagnostic software in the vehicle controller system to operate the deck as designed.

**Adapter Kit, Model 31104** is for Groundsmaster® 7210 traction units in the following serial ranges:

Model	Serial range
All 2013 and up models	313000001 and up

# Product Overview

## Specifications

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

Width of cut	2.54 m (100 inches)
Height of cut	Adjustable from 25 to 127 mm (1 to 5 inches) in 6 mm (1/4 inch) increments
Net weight	358 kg (790 lb)

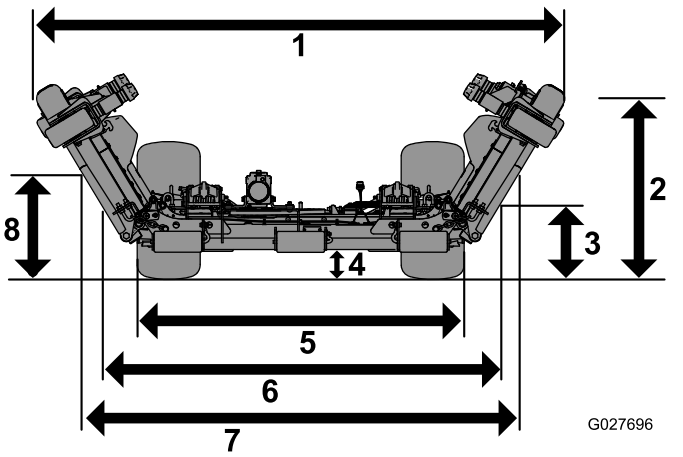


Figure 3

- |                         |                             |
|-------------------------|-----------------------------|
| 1. 223.5 cm (88 inches) | 5. 138.4 cm (54-1/2 inches) |
| 2. 76.2 cm (30 inches)  | 6. 167.3 cm (65-7/8 inches) |
| 3. 30.5 cm (12 inches)  | 7. 185.7 cm (73-1/8 inches) |
| 4. 12.8 cm (5 inches)   | 8. 45 cm (18 inches)        |

## Trailer Dimensions

Ensure that your trailer or transport vehicle (Figure 2) has enough room to carry the deck in addition to the traction unit. Refer to Figure 3 for the dimensions of the deck when the wing decks are in the raised position.

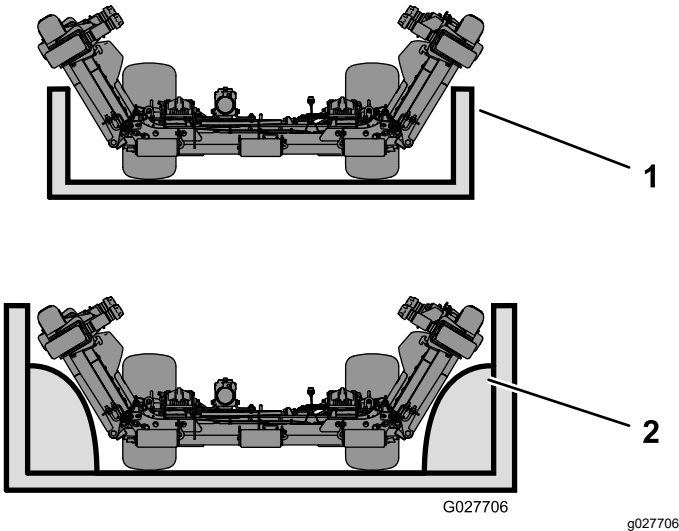


Figure 2

- |                    |                          |
|--------------------|--------------------------|
| 1. Side of trailer | 2. Wheel well of trailer |
|--------------------|--------------------------|

## 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 Distributor.

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 perform any maintenance.

## Adjusting the Height of Cut

The height of cut can be adjusted from 25 to 127 mm (1 to 5 inches) in 6 mm (1/4 inch) increments.

### Center Deck

You can change the height of cut on the center deck by moving the stop pin into different hole locations.

1. With the engine running, push back on the mower lift switch until the mower is fully raised and **release the switch immediately**.
2. Rotate the stop pin until the nub on it lines up with the slots in the holes in the height-of-cut bracket and remove it (Figure 4).

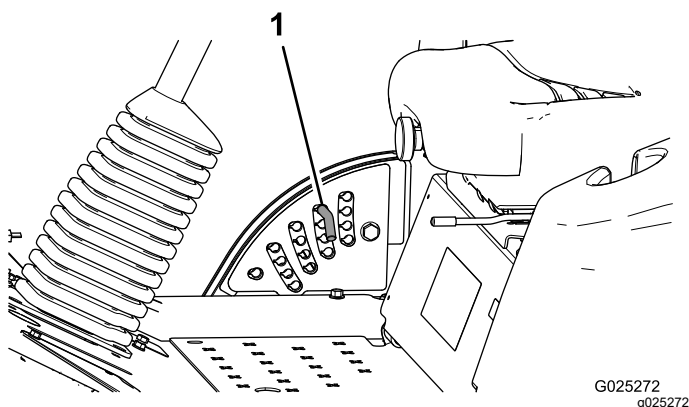


Figure 4

1. Stop pin

3. Select a hole in the height-of-cut bracket corresponding to the height of cut desired, insert the pin, and rotate it down to lock it in place (Figure 4).

**Note:** There are 4 rows of hole positions (Figure 4). The top row gives you the height of cut listed above the pin. The second row down gives you the height listed plus 6 mm (1/4 inch). The third row down gives you the height listed plus 12 mm (1/2 inch). The bottom row gives you the height listed plus 18 mm (3/4 inch). For

the 127 mm (5 inch) position there is only 1 hole, located in the second row. This does not add 6 mm (1/4 inch) to the 127 mm (5 inch) position.

4. Adjust the anti-scalp rollers and skids as required.

## Wing Decks

Adjust the height of cut on the wing decks by positioning the caster wheel axles in the upper or lower holes of the caster forks, adding or removing an equal number of spacers from the caster forks, and securing 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 adjust the height of cut. Shut off the engine and remove the key after you raise the cutting unit.
2. Position the caster wheel axles in the same holes in both caster forks. Refer to Figure 5 to determine the correct holes for the setting.

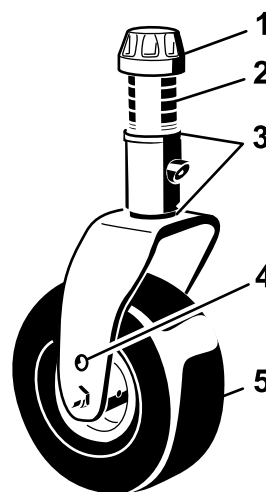


Figure 5

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

**Note:** When operating in a 64 mm (2-1/2 inch) cutting height or higher, install the axle bolt in the lower caster fork hole to prevent grass buildup between the wheel and the fork. When operating in a cutting height lower than 64 mm (2-1/2 inch) and there is grass buildup, reverse the machine's direction to pull any clippings away from the wheel/fork area.

3. Remove the tensioning cap from the spindle shaft (Figure 5) and slide the spindle out of the caster arm. Put the 2 shims (3 mm or 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 13 mm (1/2 inch) spacers onto the spindle shaft to get the desired height of cut; then slide the washer onto the shaft.

**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.

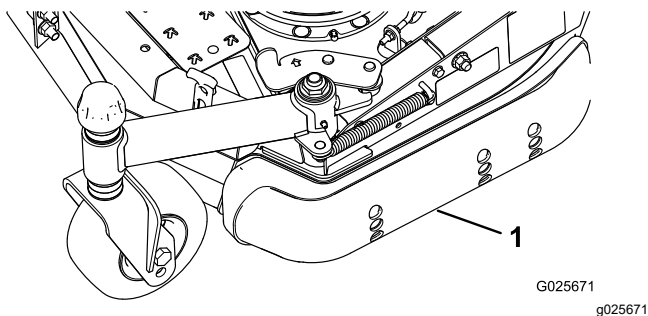
4. Secure the adjustment with the tensioning cap.

## Adjusting the Side Skids

Mount the skids in the lower position when operating in a 64 mm (2-1/2 inch) or higher cutting height and in the higher position when operating in a cutting height lower than 64 mm (2-1/2 inches).

**Note:** When the skids become worn, you can switch the skids to the opposite sides of the mower, flipping them over. This allows you to use the skids longer before replacing them.

1. Disengage the PTO and engage the parking brake.
2. Move the throttle lever to the SLOW position, shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Loosen the screw at the front of each skid (Figure 6).



**Figure 6**

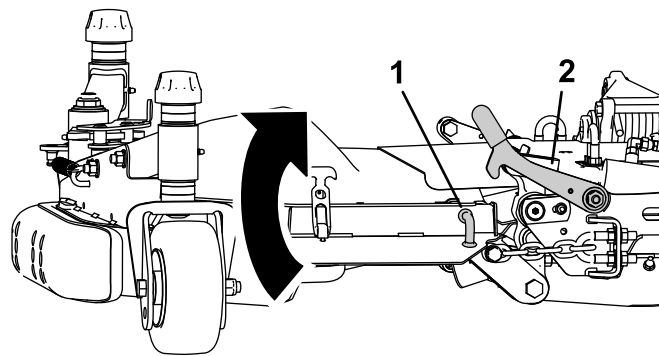
1. Side skid

4. Remove the flange-head bolts and nuts from each skid.
5. Move each skid to the desired position and secure them with the flange-head bolts and nuts.

**Note:** Use only the top or center sets of holes to adjust the skids. Use the bottom holes when switching sides, at which time they become the top holes on the other side of the mower.

## Replacing the Skid Plates

1. Raise the deck wing and secure the latch pin to the latch handle (Figure 7).

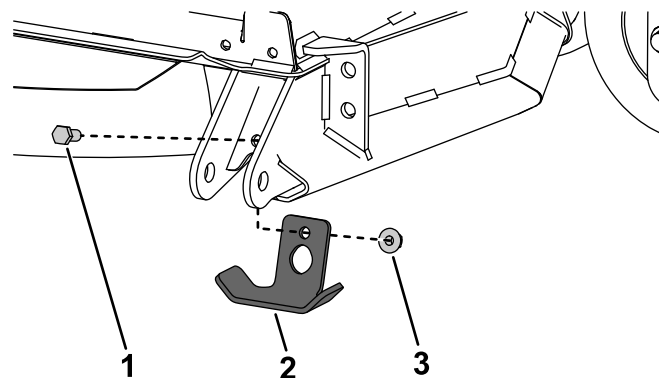


**Figure 7**

1. Latch pin
2. Latch handle

2. Remove the fasteners that secure the existing skid plate to the cutting unit (Figure 8).

**Note:** Discard the existing skid plate and fasteners.



**Figure 8**

Center deck not shown for clarity

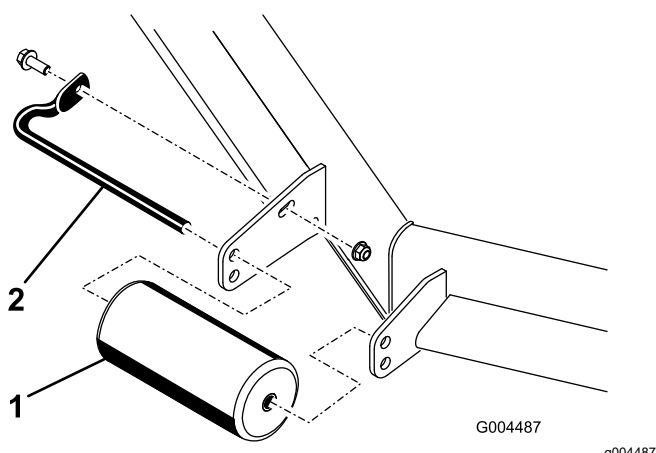
1. Bolt
2. Skid plate
3. Nut

3. Install the new skid plate; refer to the deck skid kit *Installation Instructions*.

# Adjusting the Rollers

Mount the rollers in the lower position when operating in height of cuts higher 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).

1. Disengage the PTO and engage the parking brake.
2. Move the throttle lever to the SLOW position, shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Raise the front of the machine and support it on jack stands.
4. Remove the fasteners securing each roller on your mower and move the rollers up or down as desired (Figure 9).



**Figure 9**

1. Roller
2. Roller shaft

5. Install the fasteners as illustrated.

## Leveling the Mower

**Note:** Leveling tools specific to this cutting unit are available from your authorized Toro distributor.

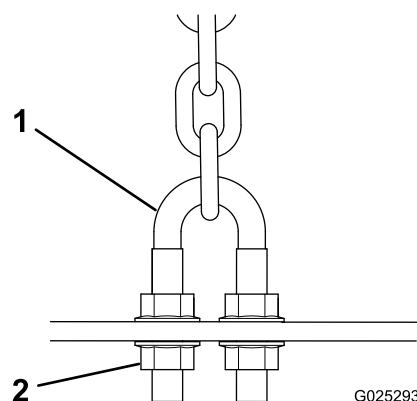
### Leveling Front to Back

Cutting unit pitch is the difference in height of cut from the front of the blade plane to the back of the blade plane. Toro recommends a blade pitch of approximately 8 to 11 mm (5/16 to 7/16 inch). This means that the back of the blade plane is 8 to 11 mm (5/16 to 7/16 inch) higher than the front.

1. Park the machine on a level surface on the shop floor.
2. Set the mower to the desired height of cut, move the throttle lever to the SLOW position, shut

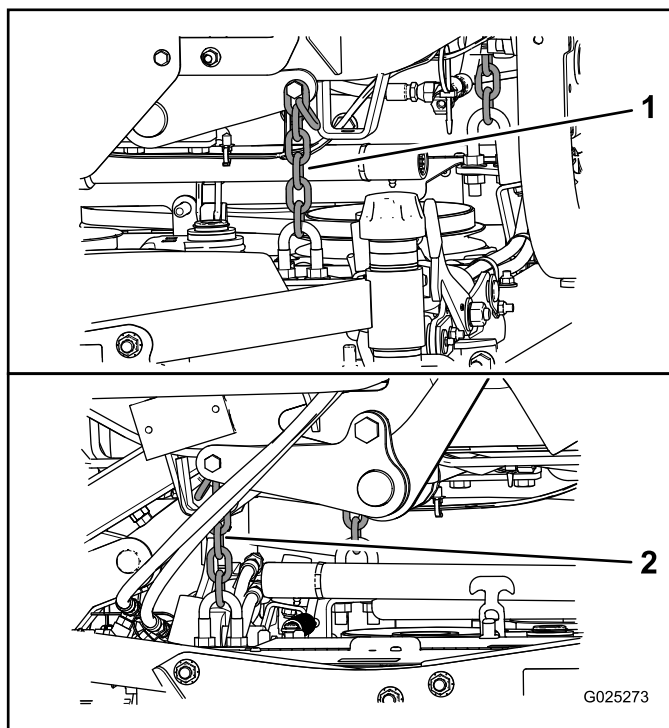
off the engine, engage the parking brake, and remove the key.

3. Rotate the center blade so that it points straight forward.
4. Using a short ruler, measure from the floor to the front tip of the blade.
5. Rotate the same blade tip to the rear and measure from the floor to the tip of the blade at the rear of the mower.
6. Subtract the front dimension from the rear dimension to calculate the blade pitch.
7. Adjust the U-bolt jam nuts (Figure 10) securing the rear deck chains (Figure 11) to the mower deck to raise the rear of the mower so that the blade pitch is set to 8 to 11 mm (5/16 to 7/16 inch).



**Figure 10**

1. U-bolt
2. Jam nut



**Figure 11**

1. Left rear-lift chain
2. Right rear-lift chain

## Leveling Side to Side

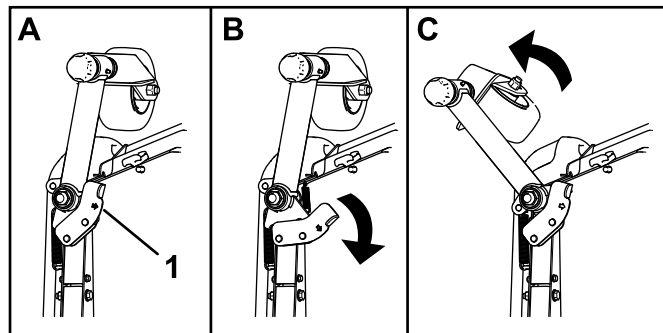
If the cut is uneven across the mower swath, correct it as follows:

1. Park the machine on a level surface on the shop floor.
2. Set the cutting unit to the desired height of cut, move the throttle lever to the SLOW position, shut off the engine, engage the parking brake, and remove the key.
3. Check and adjust front and rear tractor tire pressure; refer to the traction unit *Operator's Manual*.
4. Check for bent blades.
5. Remove the covers from the top of the cutting units.
6. Rotate the blade on each spindle until the ends face forward and backward.
7. Measure from the floor to the front tip of the cutting edge.
8. Adjust the jam nuts securing the deck chains to the mower deck until the mower deck is level (Figure 11).

## Operating Tips

### Folding the Caster Arm

To gain access to or from the operator area when the wing decks are folded up, release the caster arm latch (Figure 12) and rotate the caster arm away from the traction unit.



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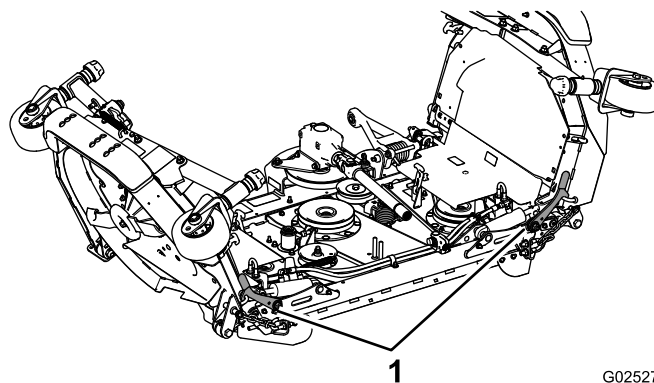
**Figure 12**

1. Caster-arm latch

**Important:** Rotate the caster arm back to the machine before mowing.

### Using the Transport Latches

Before transporting the machine, raise the wing decks and secure the wing deck transport latches (Figure 13).



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g025275

**Figure 13**

1. Wing deck transport latches

## Using the Fast Throttle Setting and Adjusting the Ground Speed

To maintain enough power for the machine and deck while mowing, operate the engine at the fast throttle position and adjust your ground speed for conditions. Decrease the ground speed as the load on the cutting blades increases, and increase the ground speed as the load on the blades decreases.

## Alternating Mowing Direction

Alternate the mowing direction to avoid making ruts in the turf over time. This also helps disperse clippings, which enhances decomposition and fertilization.

## Selecting the Cutting Speed

To improve cut quality, use a slower ground speed.

## Selecting 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 slow down the forward speed and/or raise the height of cut to the next higher setting.

## Cutting Long Grass

If the grass is ever allowed to grow slightly longer than normal, or if it contains a high degree of moisture, raise the cutting height higher than usual and cut the grass at this setting. Then cut the grass again using the lower, normal setting.

## Keeping the Mower Clean

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

To reduce the risk of fire hazard, keep the engine, muffler, battery compartment, parking brake, cutting units, and fuel storage compartment free of grass, leaves, or excessive grease. Clean up any spilled oil or fuel.

Use compressed air or a leaf blower to clean the belt drive area. Install any removed guards or covers after cleaning.

## Maintaining the Blade

Maintain a sharp blade throughout the cutting season because a sharp blade cuts cleanly without tearing or shredding the grass blades. Tearing and shredding, which turns grass brown at the edges, slows growth and increases the chance of disease. Check the blades daily for sharpness, and for any wear or damage. 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 Blades \(page 17\)](#).

# Maintenance

## Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 2 hours	<ul style="list-style-type: none"><li>• Tighten the caster wheel nuts.</li></ul>
After the first 10 hours	<ul style="list-style-type: none"><li>• Tighten the caster wheel nuts.</li></ul>
Before each use or daily	<ul style="list-style-type: none"><li>• Lubricate the caster arm bushings.</li><li>• Lubricate the caster wheel bearings.</li><li>• Check the mower blades.</li></ul>
Every 50 hours	<ul style="list-style-type: none"><li>• Lubricate the grease fittings.</li><li>• Tighten the caster wheel nuts.</li></ul>

### **⚠ 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 perform any maintenance.

### **⚠ WARNING**

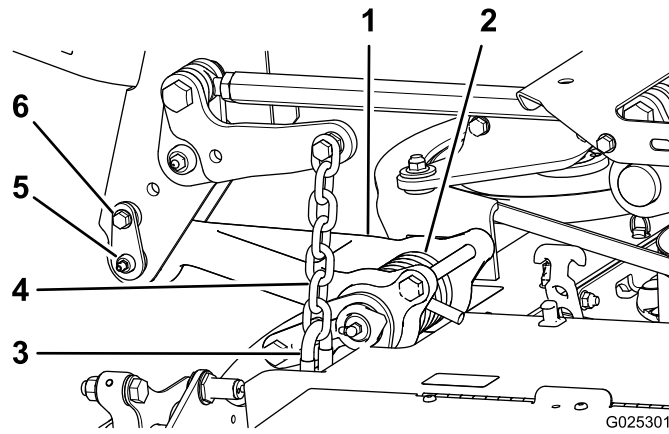
If you raise the machine using only a jack to support it while you work under the mower deck, the jack could tip, causing the mower deck to fall, crushing you or bystanders.

Always secure the machine with at least 2 jack stands when you have the mower deck raised.

### **⚠ CAUTION**

On the top of the mower deck are 2 links that connect them to the frame. Connected to these links are torsion springs that are under tension ([Figure 14](#)). If you disconnect the link, the stored energy in the torsion spring will be released and could cause the links to move, damaging your hands or fingers.

Be careful when removing the mower deck from the frame and secure the links before disconnecting them from the frame.



**Figure 14**

- |                   |                    |
|-------------------|--------------------|
| 1. Pull link      | 4. Deck-lift chain |
| 2. Torsion spring | 5. Retainer pin    |
| 3. U-bolts        | 6. Shoulder screw  |

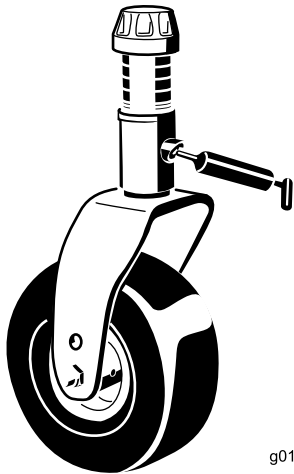
## Lubrication

**Service Interval:** Every 50 hours

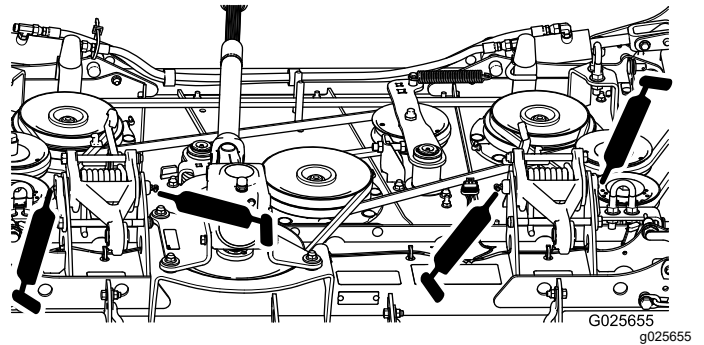
The machine has grease fittings that must be lubricated regularly with No. 2 lithium grease. If the machine is operated under normal conditions, lubricate all bearings and bushings after every 50 hours of operation or immediately after every washing.

Lubricate the following areas:

- Caster fork shaft bushings (4) ([Figure 15](#))

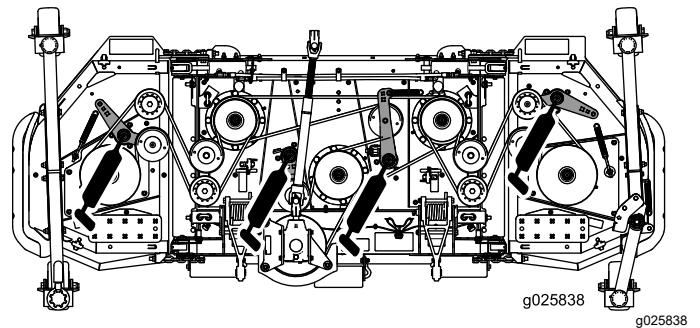


**Figure 15**



**Figure 16**

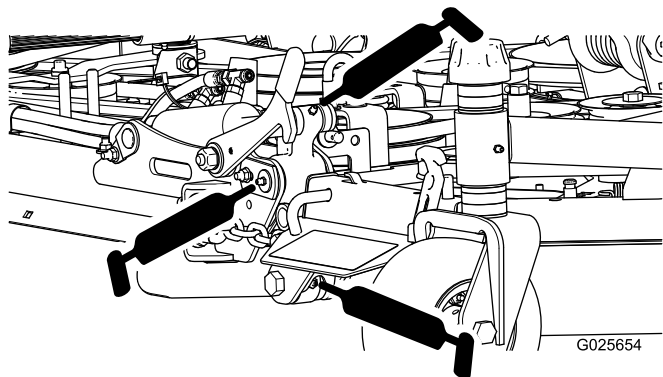
- Idler arm pivots (4) ([Figure 17](#))



**Figure 17**

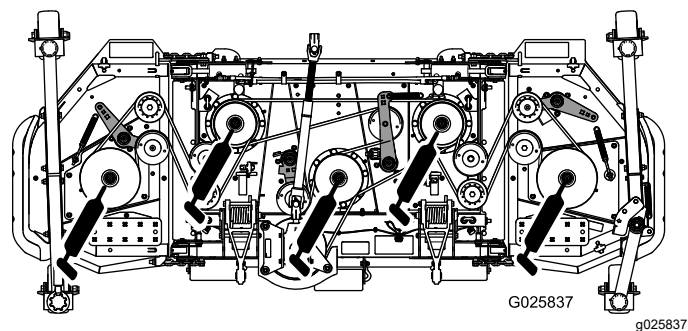
- Deck links (5) ([Figure 16](#))

- Wing deck hinges (10) (Figure 18)



**Figure 18**

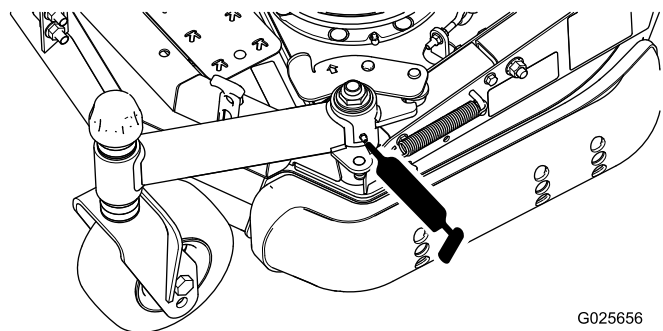
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**Figure 21**

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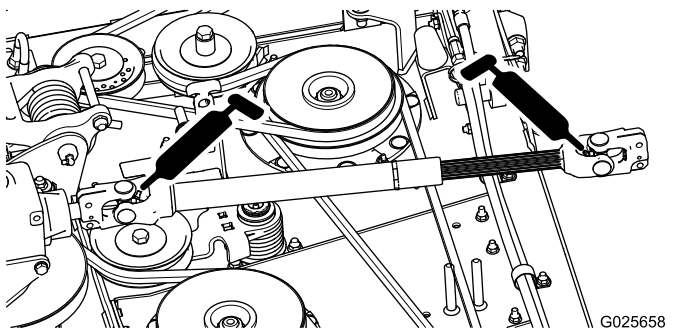
- Folding caster arm pivot (1) (Figure 19)



**Figure 19**

g025656

- PTO drive shaft (2) (Figure 20)



**Figure 20**

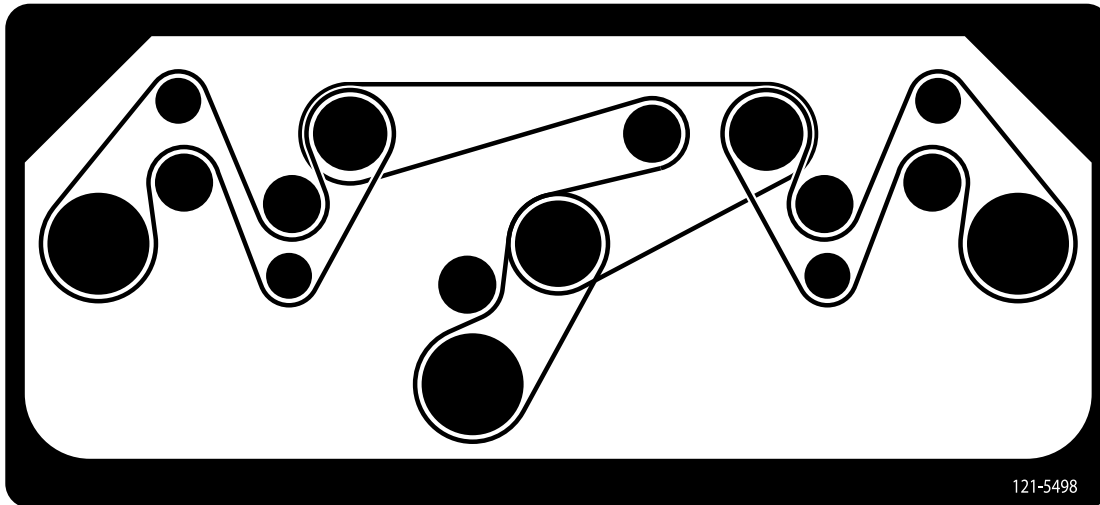
g025658

- Spindle shaft bearings (5) (Figure 21)



# Servicing the Drive Belts

Refer to [Figure 22](#) for routing the drive belts appropriately.

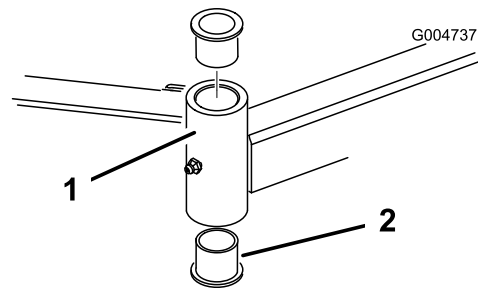


**Figure 22**  
Belt routing

decal121-5498

## Servicing the Bushings in the Caster Arms

The caster arms have bushings pressed into the top and bottom of the tube and after many hours of operation, the bushings wear. To check the bushings, move the caster fork back and forth and from side to side. If the caster spindle is loose inside the bushings, the bushings are worn; replace them.



**Figure 23**

g004737

1. Raise the cutting unit so that the wheels are off 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 caster spindle.
3. Pull the caster 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 23](#)).
5. Drive the other bushing out of the tube.
6. Clean the inside of the tubes to remove any dirt.
7. Apply grease to the inside and outside of the new bushings.
8. Using a hammer and a flat plate, drive the bushings into the mounting tube.
9. Inspect the caster spindle for wear and replace it if it is damaged.
10. Push the caster spindle through the bushings and the mounting tube.
11. Slide the thrust washer and the spacer(s) onto the spindle.
12. Install the tensioning cap on the caster spindle to retain all parts in place.



# Servicing the Caster Wheels and Bearings

1. Remove the locknut from the bolt holding the caster wheel assembly between the caster fork (Figure 24).

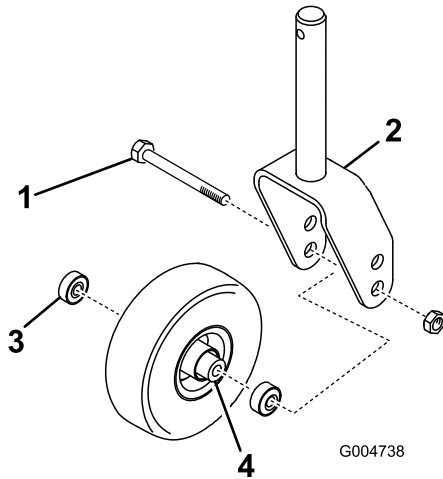


Figure 24

- |                 |                   |
|-----------------|-------------------|
| 1. Caster wheel | 3. Bearing (2)    |
| 2. Caster fork  | 4. Bearing spacer |

2. Grasp the caster wheel and slide the bolt out of the fork or pivot arm.
3. Remove the bearing from the wheel hub and allow the bearing spacer to fall out (Figure 24).
4. Remove the bearing from the opposite side of the wheel hub.
5. Check the bearings, spacer, and inside of the wheel hub for wear. Replace any damaged parts.
6. To assemble the caster wheel, push the bearing into the wheel hub.

**Note:** When installing the bearings, press on the outer race of the bearing.

7. 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.
8. Install the caster wheel assembly between the caster fork and secure it in place with the bolt and locknut.

## Servicing the Blades

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

Check the blades daily for sharpness, and for any wear or damage. Sharpen the blades as necessary. If a blade is damaged or worn, replace it immediately with a genuine Toro replacement blade.

### ⚠ DANGER

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

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

Inspect and check the blades every 8 hours.

## Before Inspecting or Servicing the Blades

1. Disengage the PTO, release the traction pedal, and engage the parking brake.
2. Move the throttle lever to the SLOW position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.

## Inspecting the Blades

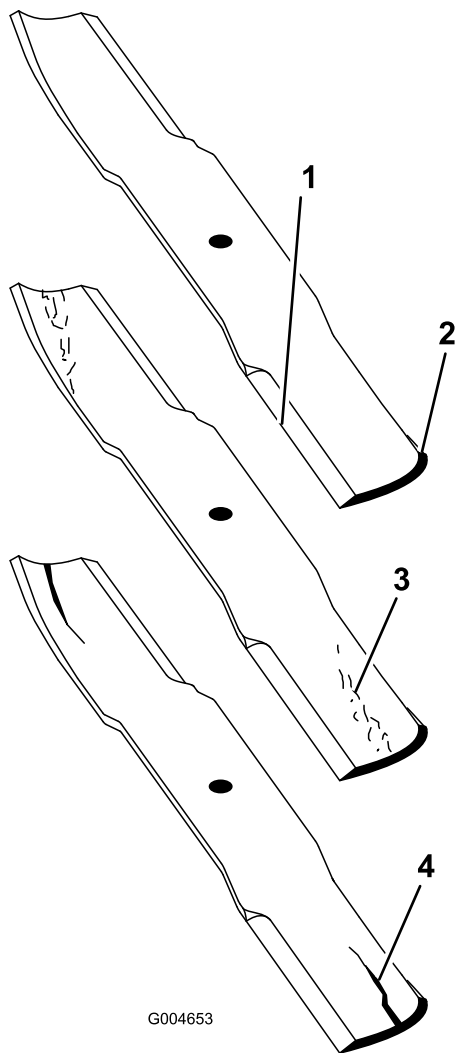
**Service Interval:** Before each use or daily

1. Inspect the cutting edges (Figure 25). If the edges are not sharp or have nicks, remove and sharpen the blades. Refer to [Sharpening the Blades](#) (page 19).
2. Inspect the blades, especially the sail area (Figure 25). If you notice any damage, wear, or a slot forming in this area (Figure 25), immediately install a new blade.

### ⚠ DANGER

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

- Inspect the blade periodically for wear or damage.
- Never try to straighten a blade that is bent or weld a broken or cracked blade.
- Replace a worn or damaged blade.

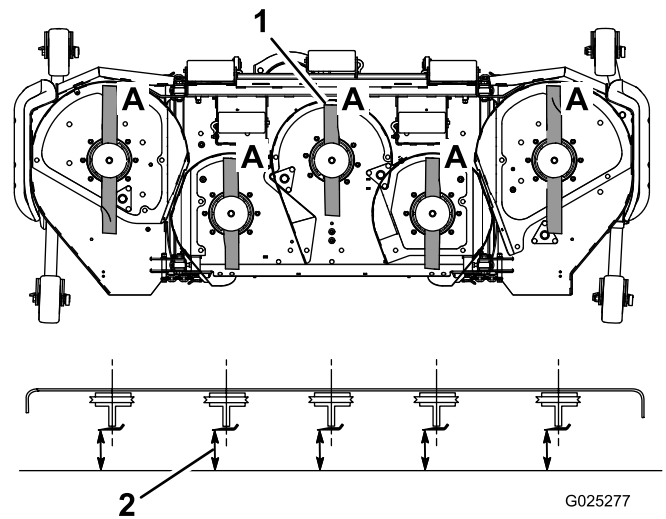


**Figure 25**

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

## Checking for Bent Blades

1. Disengage the PTO, release the traction pedal and engage the parking brake.
2. Move the throttle lever to the SLOW position, shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Rotate the blades until the ends face forward and backward ([Figure 26](#)).



**Figure 26**

- |               |  |
|---------------|--|
| 1. Position A | 2. Measure here from blade to hard surface |
|---------------|--|

4. Measure from a level surface to the cutting edge, position A, of the blades ([Figure 26](#)). Note this dimension.
5. Rotate the opposite ends of the blades forward.
6. Measure from a level surface to the cutting edge of the blades at the same position as in step 3 above. The difference between the dimensions obtained in steps 3 and 4 must not exceed 3 mm (1/8 inch). If this dimension exceeds 3 mm (1/8 inch), the blade is bent and must be replaced; refer to [Removing the Blades](#) (page 18) and [Installing the Blades](#) (page 19).

## **⚠ WARNING**

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

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

## Removing the Blades

A blade must be replaced if it is out of balance, bent, or if it is hit by a solid object. To ensure optimum performance and continued safety conformance of the machine, use genuine Toro replacement blades. Replacement blades made by other manufacturers may result in non-conformance with safety standards.

## ⚠ WARNING

Contact with a sharp blade can cause serious injury.

Wear gloves or wrap sharp edges of the blade with a rag.

1. Hold the blade end using a rag or a thickly-padded glove.
2. Remove the blade bolt, the anti-scalp plate, and the blade from the spindle shaft (Figure 29).

## Sharpening the Blades

### ⚠ WARNING

When sharpening blade, pieces of blade could be thrown and cause serious injury.

Wear proper eye protection when sharpening blades.

1. Sharpen the cutting edge at both ends of the blade (Figure 27).

**Note:** Maintain the original angle. The blade retains its balance if the same amount of material is removed from both cutting edges.

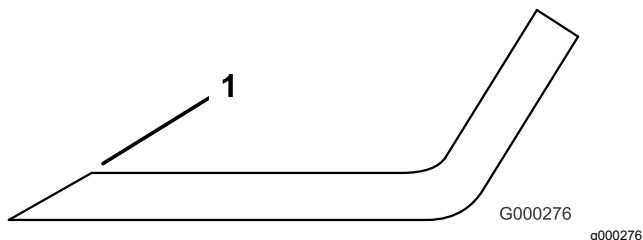


Figure 27

1. Sharpen at original angle

2. Check the balance of the blade by putting it on a blade balancer (Figure 28).

**Note:** If the blade stays in a horizontal position, the blade is balanced and can be used. If the blade is not balanced, file some metal off the end of the sail area only (Figure 29). Repeat this procedure until the blade is balanced.

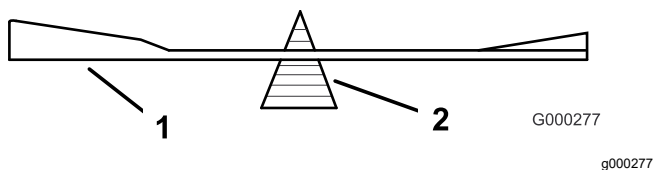


Figure 28

1. Blade
2. Balancer

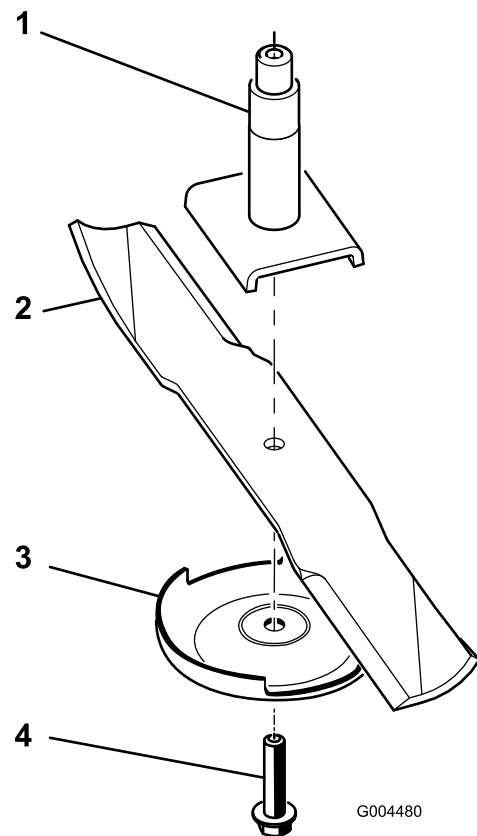


Figure 29

- |                       |                     |
|-----------------------|---------------------|
| 1. Spindle            | 3. Anti-scalp plate |
| 2. Sail area of blade | 4. Blade bolt       |

## Installing the Blades

**Note:** The 2 wing-deck blades are not the same as the 3 center blades.

1. Install the blade onto the spindle shaft (Figure 29).

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

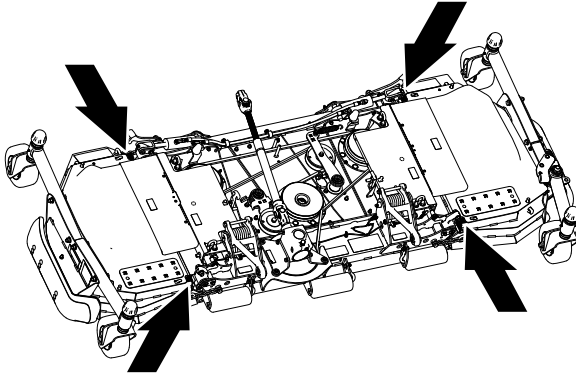
2. Install the anti-scalp plate and blade bolt (Figure 29).
3. Torque the blade bolt to 115 to 150 N·m (85 to 110 ft·lb).

# Adjusting the Deck-Limit Chains

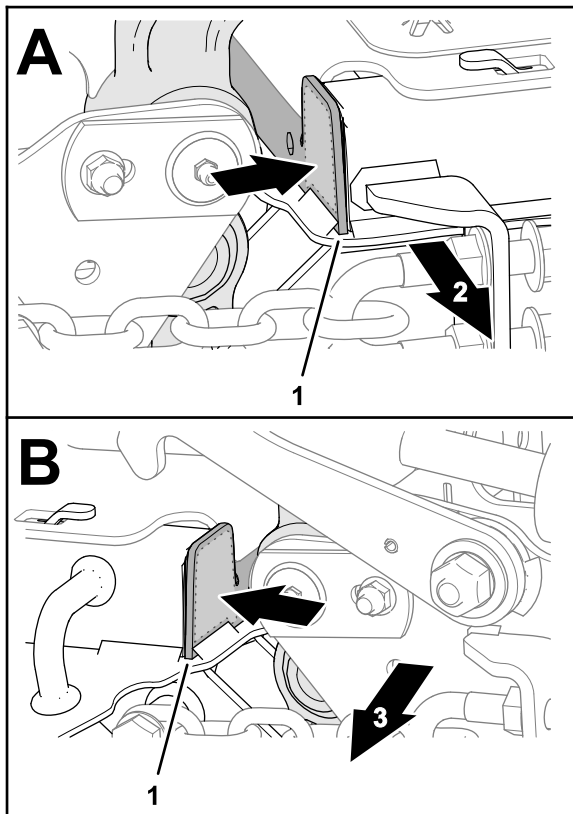
Use 2 deck shims Toro Part No. 138-8243 or 2 feeler gauges—0.15 mm (0.060 inch)

## Preparing the Deck

1. Start the engine, lower the left and right decks, shut off the engine, remove the key, and wait for all moving parts to stop.
2. At the outer decks, wipe clean the tab of the inner channel (Figure 30).



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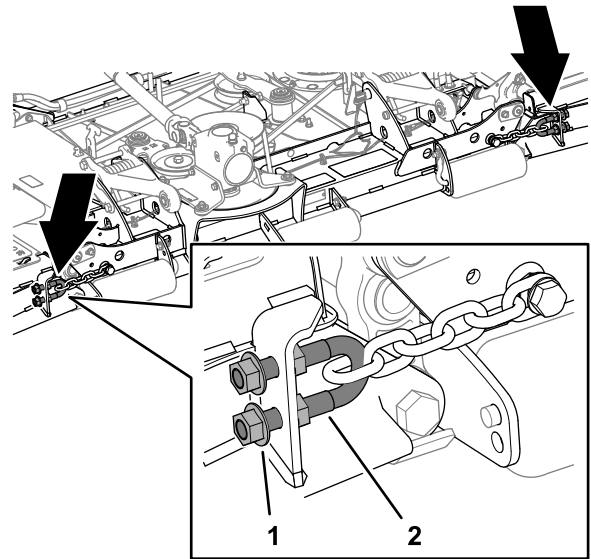


g321236

**Figure 30**

1. Tab (inner channel—outer deck)
2. Front of the machine
3. Back of the machine deck

3. At the front of the deck, fully loosen the outboard serrated-flange nuts securing the 4 U-bolts (Figure 31).

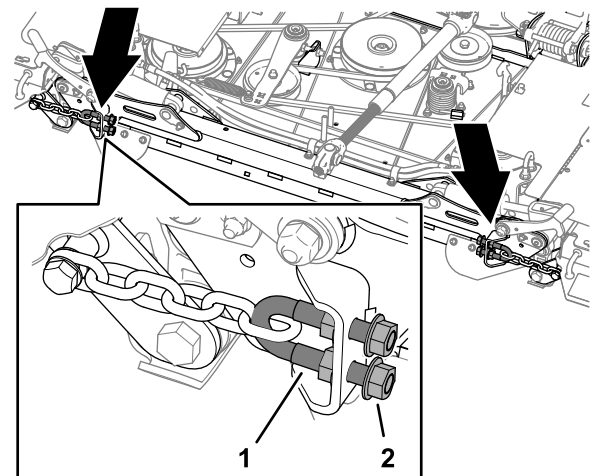


g321237

**Figure 31**

1. Serrated-flange nut (inboard)
2. U-bolt

4. At the back of the deck, fully loosen the inboard serrated-flange nuts securing the 4 U-bolts (Figure 32).



g321238

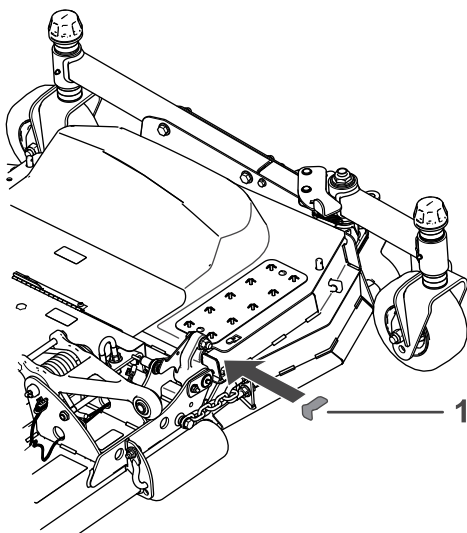
**Figure 32**

1. U-bolt
2. Serrated-flange nut (outboard)

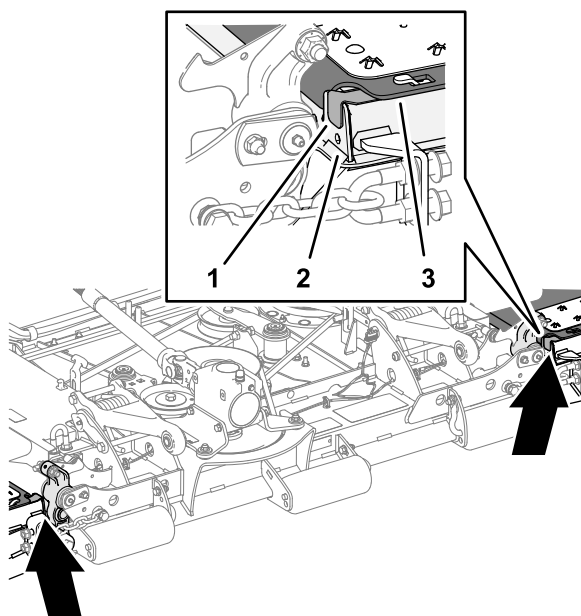
## Assembling the Shim to the Deck

1. Install the deck shims at the front of the deck as shown in Figure 33.

**Note:** Insert the part of the long tab of the shim under the belt cover.



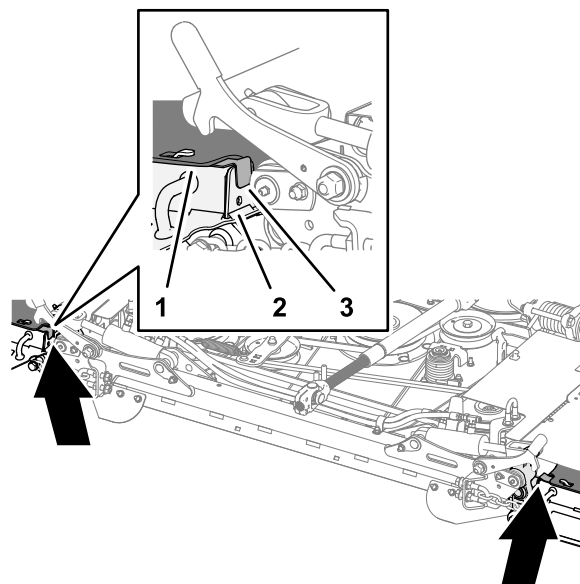
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**Figure 33**

1. Deck shim
2. Inner-channel tab (outer deck)
3. Belt cover

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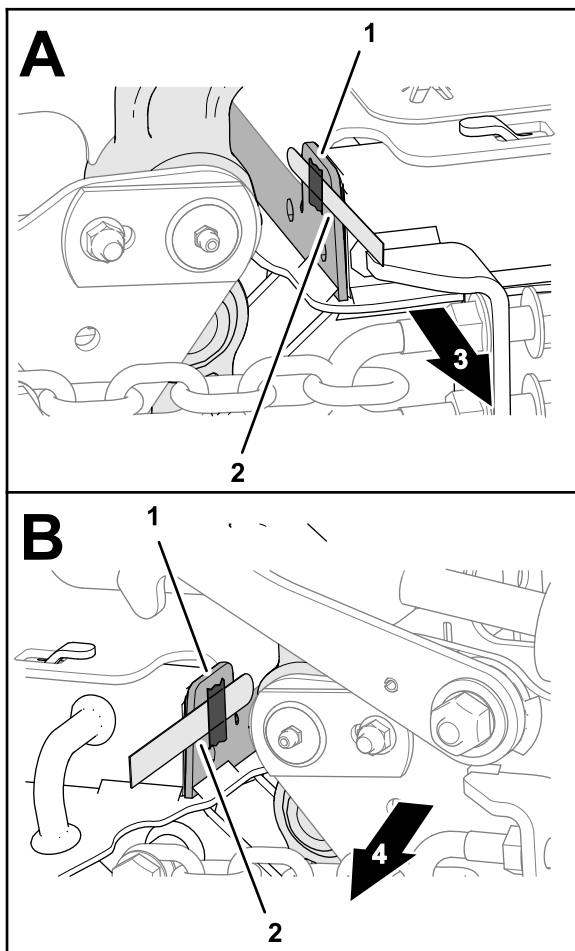
g321239

**Figure 34**

1. Belt cover
2. Inner-channel tab (outer deck)
3. Deck shim

**Note:** If you are using feeler gauges, use a piece of tape to adhere a feeler gauge—0.15 mm (0.060 inch) to the tab of the inner channel ([Figure 35](#)).

2. Install the deck shims at the front of the deck as shown in [Figure 34](#).



**Figure 35**

g321243

- |                      |                         |
|----------------------|-------------------------|
| 1. Inner-channel tab | 3. Front of the machine |
| 2. Feeler gauge      | 4. Back of the machine  |

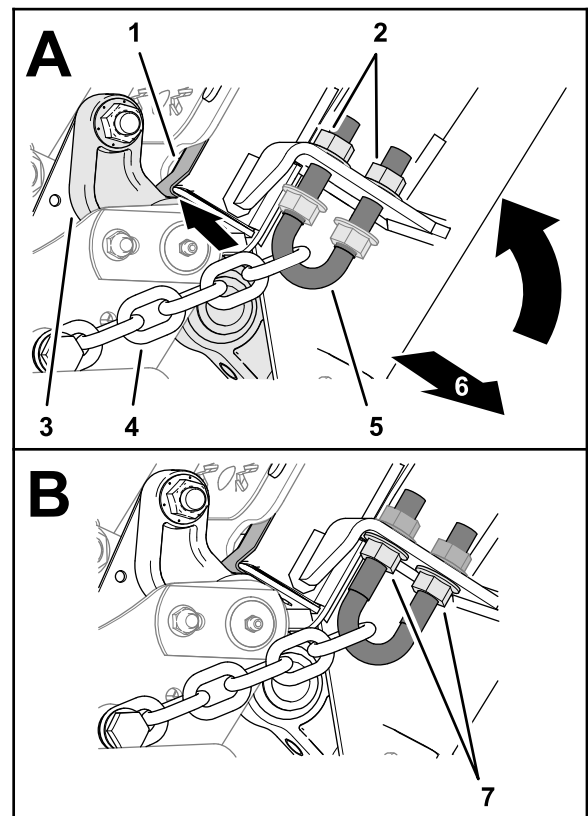
3. Start the engine, fully raise the left and right decks, shut off the engine, remove the key, and wait for all moving parts to stop.

## Tensioning the Chains

1. At the front of the deck, tighten the outboard serrated-flange nuts until the chains are tensioned ([Figure 36](#)).

**Note:** Ensure that the deck shim (or feeler gauge) contacts then pivot link.

**Important:** Ensure that the upper and lower serrated-flange nut pairs are adjusted evenly.



g321234

**Figure 36**

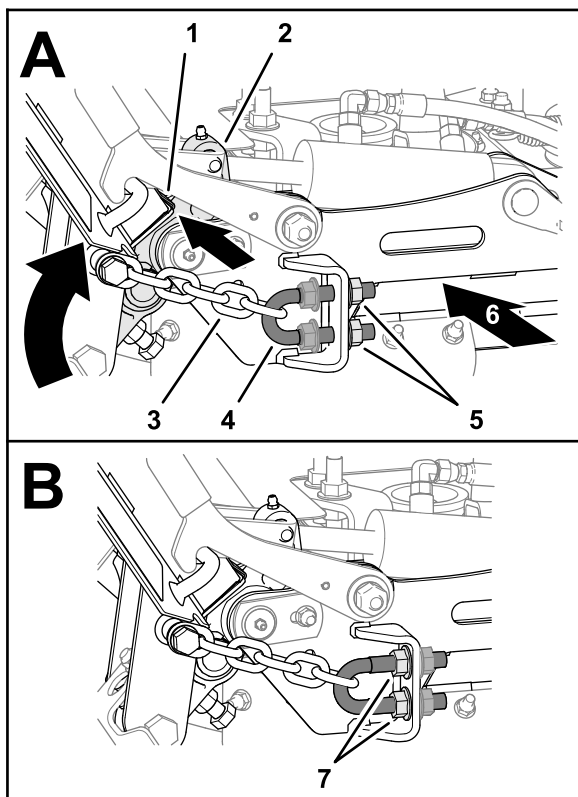
- |                                   |                                  |
|-----------------------------------|----------------------------------|
| 1. Deck shim (or feeler gauge)    | 5. U-bolt                        |
| 2. Serrated-flange nut (outboard) | 6. Front of the machine          |
| 3. Pivot link                     | 7. Serrated-flange nut (inboard) |
| 4. Chain (limit)                  |                                  |

2. Thread the inboard serrated-flange nuts ([Figure 36](#)) and torque them to 103 to 127 N·m (76 to 94 ft-lb).
3. At the back of the deck, tighten the inboard serrated-flange nuts until the chains are tensioned ([Figure 37](#)).

**Note:** Ensure that the deck shim (or feeler gauge) contacts then pivot link.

**Important:** Ensure that the upper and lower serrated-flange nut pairs are adjusted evenly.



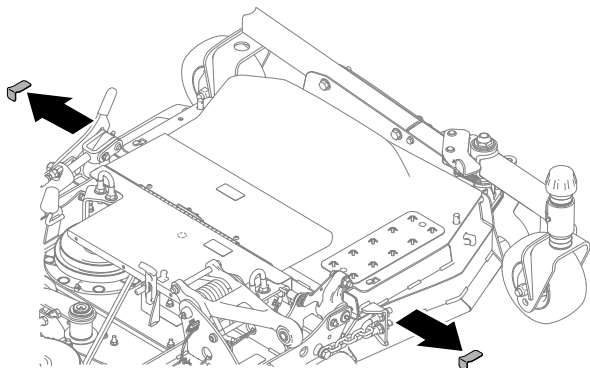


**Figure 37**

g321235

- |                                |                                   |
|--------------------------------|-----------------------------------|
| 1. Deck shim (or feeler gauge) | 5. Serrated-flange nut (inboard)  |
| 2. Pivot link                  | 6. Front of the machine           |
| 3. Chain (limit)               | 7. Serrated-flange nut (outboard) |
| 4. U-bolt                      |                                   |

4. Thread the outboard serrated-flange nuts ([Figure 37](#)) and torque them to 103 to 127 N·m (76 to 94 ft-lb).
5. Start the engine, lower adjusted deck, raise the other deck, shut off the engine, remove the key, and wait for all moving parts to stop.
6. Remove the shims or feeler gauges ([Figure 38](#)).



**Figure 38**

g321240

7. Repeat steps in [Assembling the Shim to the Deck \(page 20\)](#) and [Tensioning the Chains \(page 22\)](#) for the other mower deck.

**Notes:**



**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
31101	400000000 and Up	100in Rear Discharge Mower	CUTTING UNIT-100 IN, GM360	100in Rear Discharge Mower	2006/42/EC, 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  
Engineering Director  
8111 Lyndale Ave. South  
Bloomington, MN 55420, USA  
January 3, 2018

Authorized Representative:

Marcel Dutrieux  
Manager European Product Integrity  
Toro Europe NV  
Nijverheidsstraat 5  
2260 Oevel  
Belgium



## The Toro Warranty

### A Two-Year Limited Warranty

#### Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your Toro Commercial product ("Product") to be free from defects in materials or workmanship for two years or 1500 operational hours\*, whichever occurs first. This warranty is applicable to all products with the exception of Aerators (refer to separate warranty statements for these products). Where a warrantable condition exists, we will repair the Product at no cost to you including diagnostics, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

\* Product equipped with an hour meter.

#### Instructions for Obtaining Warranty Service

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists. If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Toro Commercial Products Service Department  
Toro Warranty Company  
8111 Lyndale Avenue South  
Bloomington, MN 55420-1196  
  
952-888-8801 or 800-952-2740  
E-mail: commercial.warranty@toro.com

#### Owner Responsibilities

As the Product owner, you are responsible for required maintenance and adjustments stated in your *Operator's Manual*. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

#### Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, or modified non-Toro branded accessories and products. A separate warranty may be provided by the manufacturer of these items.
- Product failures which result from failure to perform recommended maintenance and/or adjustments. Failure to properly maintain your Toro product per the Recommended Maintenance listed in the *Operator's Manual* can result in claims for warranty being denied.
- Product failures which result from operating the Product in an abusive, negligent, or reckless manner.
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, brake pads and linings, clutch linings, blades, reels, rollers and bearings (sealed or greasable), bed knives, spark plugs, castor wheels and bearings, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves, etc.
- Failures caused by outside influence. Conditions considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved fuels, coolants, lubricants, additives, fertilizers, water, or chemicals, etc.
- Failure or performance issues due to the use of fuels (e.g. gasoline, diesel, or biodiesel) that do not conform to their respective industry standards.

- Normal noise, vibration, wear and tear, and deterioration.
- Normal "wear and tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.

#### Parts

Parts scheduled for replacement as required maintenance are warranted for the period of time up to the scheduled replacement time for that part. Parts replaced under this warranty are covered for the duration of the original product warranty and become the property of Toro. Toro will make the final decision whether to repair any existing part or assembly or replace it. Toro may use remanufactured parts for warranty repairs.

#### Deep Cycle and Lithium-Ion Battery Warranty:

Deep cycle and Lithium-Ion batteries have a specified total number of kilowatt-hours they can deliver during their lifetime. Operating, recharging, and maintenance techniques can extend or reduce total battery life. As the batteries in this product are consumed, the amount of useful work between charging intervals will slowly decrease until the battery is completely worn out. Replacement of worn out batteries, due to normal consumption, is the responsibility of the product owner. Battery replacement may be required during the normal product warranty period at owner's expense. Note: (Lithium-Ion battery only): A Lithium-Ion battery has a part only prorated warranty beginning year 3 through year 5 based on the time in service and kilowatt hours used. Refer to the *Operator's Manual* for additional information.

#### Maintenance is at Owner's Expense

Engine tune-up, lubrication, cleaning and polishing, replacement of filters, coolant, and completing recommended maintenance are some of the normal services Toro products require that are at the owner's expense.

#### General Conditions

Repair by an Authorized Toro Distributor or Dealer is your sole remedy under this warranty.

**Neither The Toro Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty.**

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

#### Note regarding engine warranty:

The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA) and/or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the Engine Emission Control Warranty Statement supplied with your product or contained in the engine manufacturer's documentation for details.

#### Countries Other than the United States or Canada

Customers who have purchased Toro products exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the Toro importer.



**Count on it.**