



**72 in Guardian Recycler Mower**  
**62 in Guardian Recycler Mower**  
**72 in Rear Discharge Mower**  
**62 in Rear Discharge Mower**  
**Groundsmaster 3320 and 3280–D**

Model No. 30379—Serial No. 270000001 and Up

Model No. 30376—Serial No. 270000001 and Up

Model No. 30369—Serial No. 270000001 and Up

Model No. 30367—Serial No. 270000001 and Up

**Operator's Manual**





## Warning



### CALIFORNIA

#### Proposition 65 Warning

**Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.**

# Contents

	Page
Introduction .....	2
Safety .....	2
Safe Operating Practices .....	3
Toro Mower Safety .....	5
Safety and Instruction Decals .....	6
Specifications .....	8
Specifications .....	8
Setup .....	9
Loose Parts .....	9
Installing the Rear Shields .....	10
Installing the Castor Wheel Assemblies .....	11
Installing the Lift Arms to the Traction Unit .....	11
Connecting the Lift Arms to the Cutting Unit .....	12
Connecting PTO Shaft to Cutting Unit Gear Box .....	12
Greasing the Machine .....	12
Before Operating .....	13
Checking the Lubricant in the Gear Box .....	13
Adjusting the Height-of-Cut .....	13
Adjusting the Cutting Unit Pitch .....	14
Adjusting the Skids .....	15
Adjusting the Rollers .....	15
Correcting Cutting Unit Mismatch .....	15
Operation .....	17
Operating Tips .....	17
Maintenance .....	18
Recommended Maintenance Schedule .....	18
Greasing the Bearings, Bushings and Gear Box .....	19
Separating Cutting Unit from Traction Unit .....	20
Mounting the Cutting Unit to Traction Unit .....	21
Servicing the Castor Arm Bushings .....	21
Servicing the Castor Wheels and Bearings .....	22
Checking for a Bent Blade .....	22
Removing and Installing the Cutter Blade(s) .....	22
Inspecting and Sharpening the Cutter Blade(s) .....	23
Correcting Cutting Unit Mismatch .....	24
Replacing the Drive Belt .....	24
The Toro General Commercial Products Warranty .....	28

# Introduction

Read this manual carefully to learn how to operate and maintain your product properly. The information in this manual can help you and others avoid injury and product damage. Although Toro designs and produces safe products, you are responsible for operating the product properly and safely.

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 numbers can be found on a plate that is mounted on the mower housing.

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

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

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

This manual identifies potential hazards and has special safety messages that help you and others avoid personal injury and even death. ***Danger***, ***Warning***, and ***Caution*** are signal words used to identify the level of hazard. However, regardless of the hazard, be extremely careful.

***Danger*** signals an extreme hazard that *will* cause serious injury or death if you do not follow the recommended precautions.

***Warning*** signals a hazard that *may* cause serious injury or death if you do not follow the recommended precautions.


***Caution*** signals a hazard that may cause minor or moderate injury if you do not follow the recommended precautions.

This manual uses two other words to highlight information.

**Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

# Safety

**This machine meets or exceeds CEN standard EN 836:1997, ISO standard 5395:1990 (when appropriate decals applied), and ANSI B71.4-2004 specifications in effect at the time of production when equipped with rear weight as listed in the traction unit operator's manual.**

**Improper use or maintenance by the operator or owner 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 the instruction may result in personal injury or death.**

## Safe Operating Practices

The following instructions are from the CEN standard EN 836:1997, ISO standard 5395:1990, and ANSI standard B71.4-2004.

### Training

- Read the Operator’s Manual and other training material carefully. Be familiar with the controls, safety signs, and the proper use of the equipment.
- Never allow children or people unfamiliar with these instructions to use the mower. Local regulations may restrict the age of the operator.
- Never mow while people, especially children, or pets are nearby.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to himself or herself, other people, or property.
- Do not carry passengers.
- All drivers and mechanics should seek and obtain professional and practical instruction. The owner is responsible for training the users. Such instruction should emphasize:
  - the need for care and concentration when working with ride-on machines;
  - control of a ride-on machine sliding on a slope will not be regained by the application of the brake. The main reasons for loss of control are:
    - insufficient wheel grip;
    - being driven too fast;
    - inadequate braking;
    - the type of machine is unsuitable for its task;
    - lack of awareness of the effect of ground conditions, especially slopes;
    - incorrect hitching and load distribution.

### Preparation

- While mowing, always wear substantial footwear, long trousers, hard hat, safety glasses, and ear protection. Long hair, loose clothing or jewelry may get tangled in moving parts. Do not operate the equipment when barefoot or wearing open sandals.

- Thoroughly inspect the area where the equipment is to be used and remove all objects which may be thrown by the machine.
- **Warning**—fuel is highly flammable. Take the following precautions:
  - Store fuel in containers specifically designed for this purpose.
  - Refuel outdoors only and do not smoke while refuelling.
  - Add fuel before starting the engine. Never remove the cap of the fuel tank or add fuel while the engine is running or when the engine is hot.
  - If fuel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapors have dissipated.
  - Replace all fuel tank and container caps securely.
- Replace faulty silencers/mufflers.
- Before using, always visually inspect to see that the blades, blade bolts, and cutting assembly are not worn or damaged. Replace worn or damaged blades and bolts in sets to preserve balance.
- On multi-bladed machines, take care as rotating one blade can cause other blades to rotate.
- Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Only use accessories and attachments approved by the manufacturer.
- Check that operator’s presence controls, safety switches, and shields are attached and functioning properly. Do not operate unless they are functioning properly.

### Operation

- Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.
- Mow only in daylight or in good artificial light.
- Before attempting to start the engine, disengage all blade attachment clutches, shift into neutral, and engage the parking brake. Only start the engine from the operator’s position. Use seat belts, if provided.
- Remember there is no such thing as a safe slope. Travel on grass slopes requires particular care. To guard against overturning:
  - Do not stop or start suddenly when going up or downhill.
  - Engage the clutch slowly, always keep the machine in gear, especially when travelling downhill.

- The machine speed should be kept low on slopes and during tight turns.
- Stay alert for humps and hollows and other hidden hazards.
- Never mow across the face of the slope, unless the machine is designed for that purpose.
- Stay alert for holes in the terrain and other hidden hazards.
- Use care when pulling loads or using heavy equipment.
  - Use only approved drawbar hitch points.
  - Limit loads to those you can safely control.
  - Do not turn sharply. Use care when reversing.
  - Use counterweight(s) or wheel weights when suggested in the operator's manual.
- Watch out for traffic when crossing or near roadways.
- Stop the blades from rotating before crossing surfaces other than grass.
- When using any attachments, never direct discharge of material toward bystanders nor allow anyone near the machine while in operation.
- Never operate the machine with damaged guards, shields, or without safety protective devices in place. Be sure all interlocks are attached, adjusted properly, and functioning properly.
- Do not change the engine governor settings or overspeed the engine. Operating the engine at excessive speed may increase the hazard of personal injury.
- Before leaving the operator's position:
  - Stop on level ground.
  - Disengage the power take-off and lower the attachments.
  - Change into neutral and set the parking brake.
  - Stop the engine and remove the key.
- Disengage drive to attachments, stop the engine, and disconnect the spark plug wire(s) or remove the ignition key:
  - before clearing blockages;
  - before checking, cleaning, or working on the machine;
  - after striking a foreign object. Inspect the machine for damage and make repairs before restarting and operating the equipment;
  - if the machine starts to vibrate abnormally (check immediately).
- Disengage drive to attachments when transporting or not in use.
- Stop the engine and disengage drive to attachment:
  - before refuelling;
  - before making height adjustment unless adjustment can be made from the operator's position.
- Reduce the throttle setting before stopping engine and, if the engine is provided with a fuel shut-off valve, turn the fuel off at the conclusion of mowing.
- Never raise deck with the blades running.
- Keep hands and feet away from the cutting units.
- Look behind and down before backing up to be sure of a clear path.
- Slow down and use caution when making turns and crossing roads and sidewalks.
- Do not operate the mower under the influence of alcohol or drugs.
- Use care when loading or unloading the machine into a trailer or truck.
- The operator shall turn on flashing warning lights, if provided, whenever traveling on a public road, except where such use is prohibited by law.

## Maintenance and Storage

- Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
- Never store the equipment with fuel in the tank inside a building where fumes may reach an open flame or spark.
- Allow the engine to cool before storing in any enclosure and do not store near flame.
- To reduce the fire hazard, keep the engine, silencer/muffler, battery compartment, cutting units, drives, and fuel storage area free of grass, leaves, or excessive grease. Clean up oil or fuel spillage.
- Replace worn or damaged parts for safety.
- If the fuel tank has to be drained, do this outdoors.
- On multi-bladed machines, take care as rotating one blade can cause other blades to rotate.
- When machine is to be parked, stored, or left unattended, lower the cutting units unless a positive mechanical lock is provided.
- Disengage drives, lower the cutting units, move traction pedal to Neutral, set parking brake, stop engine and remove key and disconnect spark plug wire. Wait for all movement to stop before adjusting, cleaning or repairing.



- Shut off fuel while storing or transporting. Do not store fuel near flames.
- Park machine on level ground. Never allow untrained personnel to service machine.
- Use jack stands to support components when required.
- Carefully release pressure from components with stored energy.
- Disconnect battery or remove spark plug wire before making any repairs. Disconnect the negative terminal first and the positive last. Reconnect positive first and negative last.
- Use care when checking blades. Wrap the blades or wear gloves, and use caution when servicing them. Only replace blades. Never straighten or weld them.
- Keep hands and feet away from moving parts. If possible, do not make adjustments with the engine running.
- Charge batteries in an open well ventilated area, away from spark and flames. Unplug charger before connecting or disconnecting from battery. Wear protective clothing and use insulated tools.
- Wearing safety shoes and long pants is advisable and required by some local ordinances and insurance regulations.
- Keep hands, feet, and clothing away from moving parts and the mower discharge area and underside of the mower while the engine is running.
- Fill fuel tank until level is 1 in. (25 mm) below the bottom of the filler neck. Do not overfill.
- Check the safety interlock switches daily for proper operation. If a switch should fail, replace the switch before operating the machine. After every two years, replace all interlock switches in the safety system, **regardless** if they are working properly or not.
- Check carefully for overhead clearances (i.e. branches, doorways, electrical wires) before driving under any objects and do not contact them.
- Do not mow in reverse unless absolutely necessary.
- Reduce speed when making sharp turns.
- If a steep slope must be ascended, back up the hill and drive forward down the hill, keeping the machine in gear.
- If you cannot back up a slope or if you feel uneasy on it, do not mow it.
- Avoid starting or stopping on a slope. If tires lose traction, disengage the blades and proceed slowly straight down the slope. Avoid raising the side cutting units on a slope.
- Avoid turning on slopes. If you must turn, turn slowly and gradually downhill, if possible.
- When operating the machine on slopes, banks, or near drop offs, always have the ROPS installed.
- When operating a machine with a ROPS, always use a seat belt.
- Be certain that the seat belt can be released quickly if the machine is driven or rolls into a pond or water.
- Watch for traffic when near or crossing roads. Always yield the right-of-way.
- Do not mow near drop-offs, ditches, or embankments. The machine could suddenly turn over if a wheel goes over the edge of a cliff or ditch, or if an edge caves in.
- Do not mow on wet grass. Reduced traction could cause sliding.
- Do not try to stabilize the machine by putting your foot on the ground.
- Use extra care with other attachments. These can change the stability of the machine.
- Turn off the blades when not mowing.

## Toro Mower Safety

The following list contains safety information specific to Toro products or other safety information that you must know that is not included in the CEN, ISO, or ANSI standards.

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

Use of this product for purposes other than its intended use could prove dangerous to user and bystanders.

 <b>Warning</b> 
<p><b>Engine exhaust contains carbon monoxide, which is an odorless, deadly poison that can kill you.</b></p> <p><b>Do not run engine indoors or in an enclosed area.</b></p>

## Operation

- Before operating a machine with ROPS (roll over protection system), be certain that the seat belts are attached and the seat is latched to prevent the seat from pivoting forward.
- Know how to stop the machine and engine quickly.
- Do not operate the machine while wearing tennis shoes or sneakers.

## Maintenance and Storage

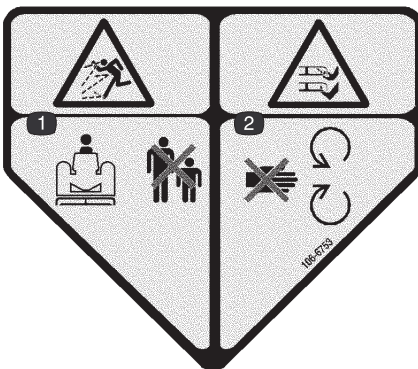
- Do not touch equipment or attachment parts which may be hot from operation. Allow to cool before attempting to maintain, adjust, or service.
- Never store the machine or fuel container inside where there is an open flame, such as near a water heater or furnace.
- Keep nuts and bolts tight, especially the blade attachment bolts. Keep equipment in good condition.
- Make sure all hydraulic line connectors are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- Keep your body and hands away from pin hole leaks or nozzles that eject hydraulic fluid under high pressure. Use paper or cardboard, not your hands, to search for leaks. Hydraulic fluid escaping under pressure can have sufficient force to penetrate the skin and cause serious injury. If fluid is injected into the skin it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

- If the engine must be running to perform a maintenance adjustment, keep hands, feet, clothing, and any parts of the body away from the cutting units, attachments, and any moving parts. Keep everyone away.
- Check brake operation frequently. Adjust and service as required.
- Battery acid is poisonous and can cause burns. Avoid contact with skin, eyes, and clothing. Protect your face, eyes, and clothing when working with a battery.
- Battery gases can explode. Keep cigarettes, sparks, and flames away from the battery.
- The engine must be shut off before checking the oil or adding oil to the crankcase.
- If major repairs are ever needed or if assistance is desired, contact an Authorized Toro Distributor.
- To make sure of 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.

## Safety and Instruction Decals

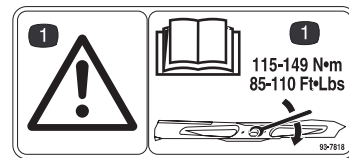


Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.



106-6753

1. Thrown object hazard—keep bystanders a safe distance from the machine.
2. Cutting/dismemberment hazard of hand or foot, mower blade—stay away from moving parts.



93-7818

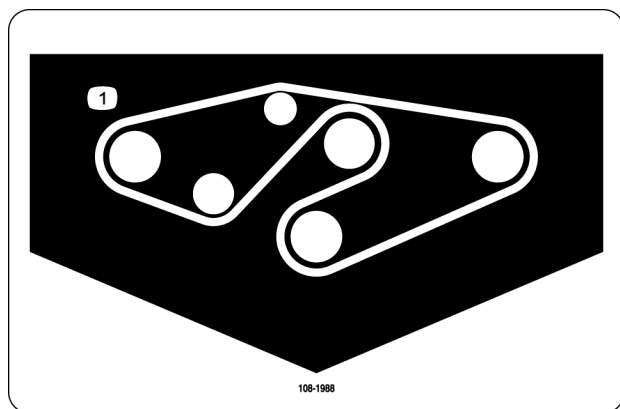
1. Danger—read the operator's manual for blade torque specification.



93-6697

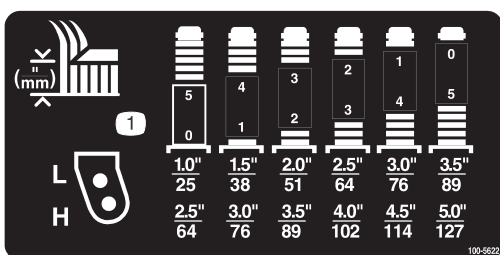
1. Read the *Operator's Manual*.
2. Add SAE 80W-90 (API GL-5) oil every 50 hours.





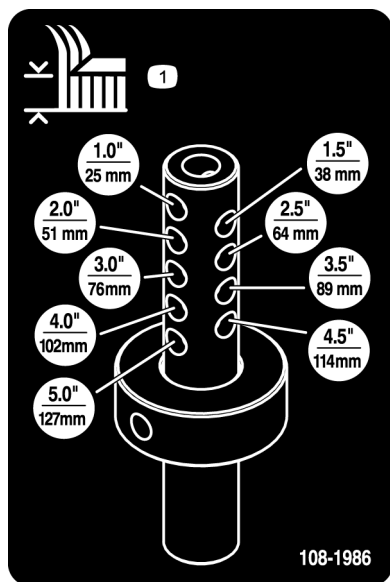
108-1988

1. Belt routing



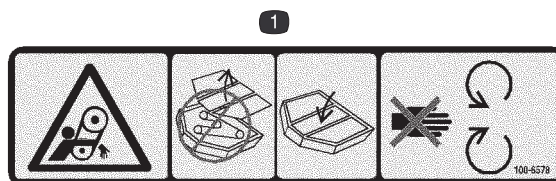
100-5622

1. Height of cut adjustment



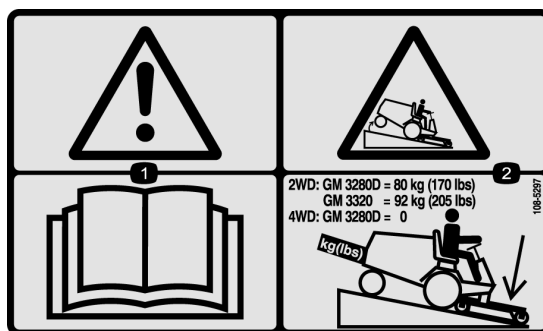
108-1986

1. Height of cut



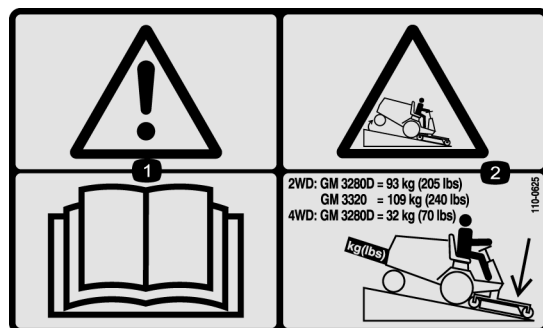
100-6578

1. Entanglement hazard, belt—do not operate the machine with the shields or guards removed; always keep the shields and guards in place. Stay away from moving parts.



108-5297  
(Models 30376 and 30367)

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 80 kg (170 lb) rear weight to GM 3280D units and a 92 kg (205 lb) rear weight to GM 3320 units. For 4 wheel drive 3280 D units, do not add weight.



110-0625  
(Models 30379 and 30369)

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 93 kg (205 lb) rear weight to GM 3280D units and a 109 kg (240 lb) rear weight to GM 3320 units. For 4 wheel drive 3280 D units, add a 32 kg (70 lb) rear weight.

# Specifications

## Specifications

Width of cut	62 in. or 72 in. width of cut, 3 blades.
Height of cut	1–5 in. (25–177 mm) adjustable in 1/2 in. (13 mm) increments. Height of cut adjustment is achieved by changing spacers on castor wheels and length of height of cut rod.
Construction	Housing is made of 7 gauge steel and reinforced with channels and plates.
Cutter drive	Isolation mounted gear box on cutting unit is driven by a PTO shaft. Power is transmitted to the blades by one belt. Spindle shafts are supported by 2 greaseable, tapered roller bearings.
Blades	Three 1/4 in. thick, heat-treated steel
Suspension and castor wheels	Cutting unit has two front castors, consisting of 8 in. x 3.5 in. pneumatic wheel and tire assembly with sealed ball bearings. Rear of cutting unit is suspended from lift arms with adjustment links for cutting unit rake.
Anti-scalp features	Anti-scalp cup located on each blade. Anti-scalp rollers. Adjustable skid on each end of cutting unit.
Cutting unit covers	Steel covers

**Note:** Specifications subject to change without notice.



# Setup

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

## Loose Parts

**Note:** Use this chart as a checklist to ensure that all parts necessary for assembly have been received. Without these parts, total setup cannot be completed. Some parts may have already been assembled at the factory.

Description	Qty.	Use
Rubber deflector	1	Mount to rear of cutting unit (Models 30369 & 30367 only)
Carriage bolt, 5/16 x 1— in.	2	
Flange nut, 5/16	2	
L.H. Foot shield	1	
Carriage bolt, 5/16 x 1 in.	2	
Flange nut, 5/16	2	
Carriage bolt, 1/4 x 3/4 in.	1	
Flange nut, 5/16	1	
Capscrew, 1/4 x 3/4 in.	1	
Flat washer	1	
Lock nut, 1/4	1	
R.H. Foot shield	1	
Carriage bolt, 5/16 x 3/4 in.	3	
Flange nut, 5/16	3	
Rear deflector	1	
Carriage bolt, 5/16 x 1—1/4 in.	3	
Flange nut, 5/16	3	
Castor wheel assembly	2	Mount to front of cutting unit
Pivot pin assembly	2	Mount lift arms to traction unit
Cotter pin	2	
Lift arm R.H.	1	Mount cutting unit to lift arms
Lift arm L.H.	1	
Thrust washer	4	
Clevis pin	4	
Hair pin	2	
Height of cut collar	2	
Clevis pin	2	
Hair pin	2	
Capscrew, 1/2 x 3/4 in.	2	
Washer	2	
EEC certificate	1	
Parts Catalog	1	
Operator's manual	1	Read before operating the machine.



## 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 gear box on the cutting unit.

## Installing the Rear Shields

(Models 30369 and 30367 only)

1. Mount the rubber deflector to the left rear corner of the cutting unit with a hold down, (2) 5/16 x 1 in. lg. carriage bolts and flange nuts. Position the deflector as shown in figure 1.

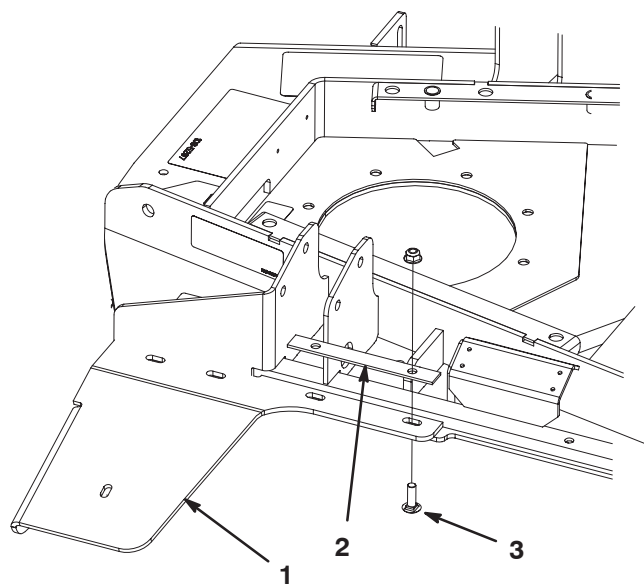


Figure 1

- |                     |                            |
|---------------------|----------------------------|
| 1. Rubber deflector | 3. 5/16 x 1" carriage bolt |
| 2. Hold down        |                            |

2. Loosely mount the L.H. foot shield to the rubber deflector using the fasteners and locations detailed below. Position the fasteners as shown in figure 2.

- Front edge – (2) 5/16 x 1 in. lg. carriage bolts and flange nuts.
- Side – (1) 1/4 x 3/4 in. lg. carriage bolt and flange nut.
- Top – 1/4 x 3/4 in. lg. capscrew, 5/16 x 3/4 flat washer and locknut.
- Tighten the fasteners.

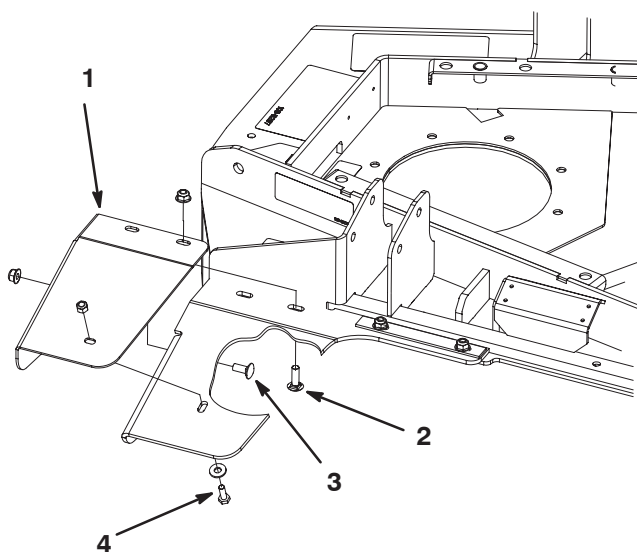


Figure 2

- |                            |                             |
|----------------------------|-----------------------------|
| 1. L.H. foot shield        | 3. 1/4 x 3/4" carriage bolt |
| 2. 5/16 x 1" carriage bolt | 4. 1/4 x 3/4" capscrew      |

3. Loosely mount the side of the R.H. foot shield to the right rear corner of the cutting unit with (2) 5/16 x 3/4 in. lg. carriage bolts and flange nuts. Position the shield and the fasteners as shown in figure 3.
4. Loosely mount the top of the foot shield to the cutting unit with a 5/16 x 3/4 in. lg. carriage bolt and flange nut. Position the fasteners as shown in figure 3.

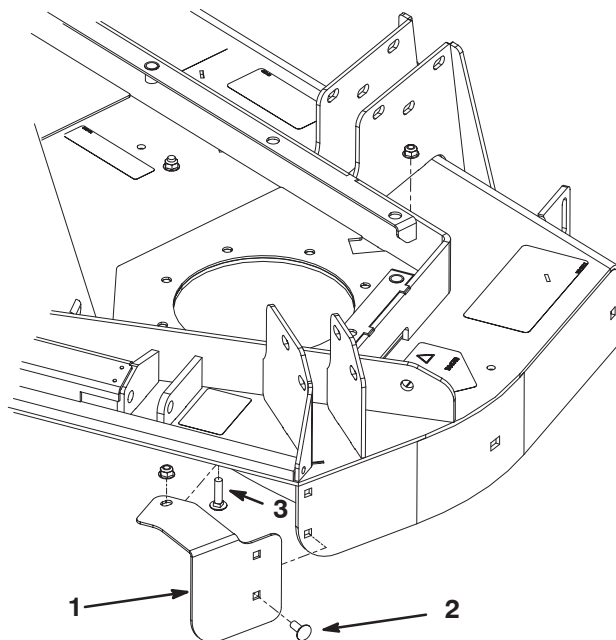
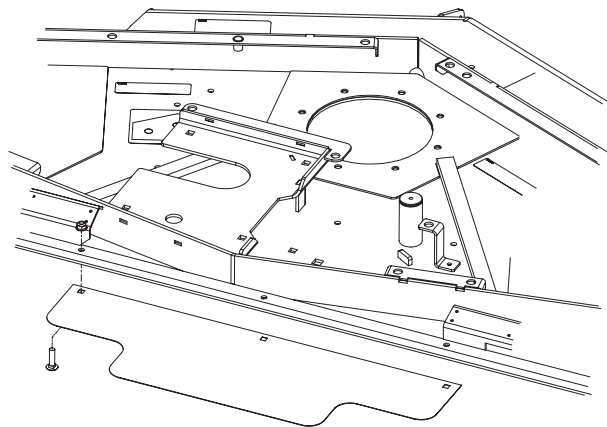


Figure 3

- |                              |                              |
|------------------------------|------------------------------|
| 1. R.H. foot shield          | 3. 5/16 x 3/4" carriage bolt |
| 2. 5/16 x 3/4" carriage bolt |                              |

5. Tighten the fasteners.

6. Mount the rear deflector to the rear of the cutting unit with (3) 5/16 x 1-1/4 in. lg. carriage bolts and flange nuts. Position the deflector as shown in figure 4.



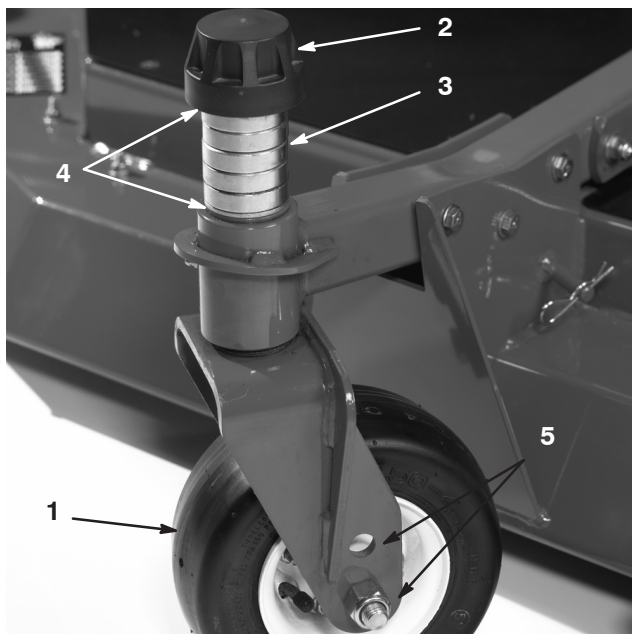
**Figure 4**

1. Rear deflector

## Installing the Castor Wheel Assemblies

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 (Fig. 5).



**Figure 5**

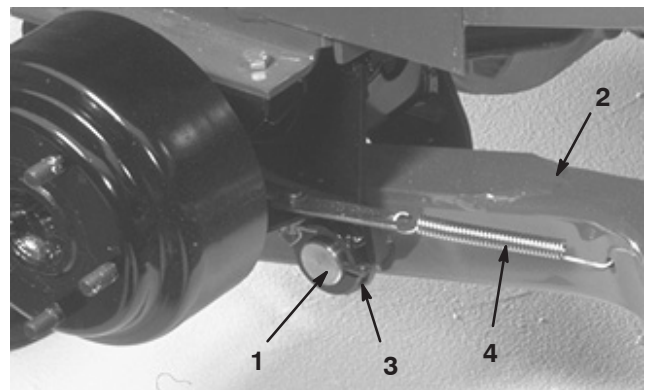
1. Castor wheel
2. Tensioning cap
3. Spacers
4. Shims
5. Axle mounting holes

2. Slide the spacers onto the castor spindle to get the desired height-of-cut; refer to figure 11 to determine the combinations of spacers for the setting. Slide a thrust washer onto the spindle, push the castor spindle through the castor arm. Install another thrust washer and the remaining spacers onto the spindle and install the tensioning cap to secure the assembly (Fig. 5).

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

## Installing the Lift Arms to the Traction Unit

1. On one 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 cotter pin (Fig. 6). The lift arms ends are to be positioned so the ends curve outward.
5. Mount the rear of the lift arm to the lift cylinder with a pivot pin and (2) cotter pins (supplied with the traction unit).
6. Hook the brake return spring to the hole in the lift arm (Fig. 6).



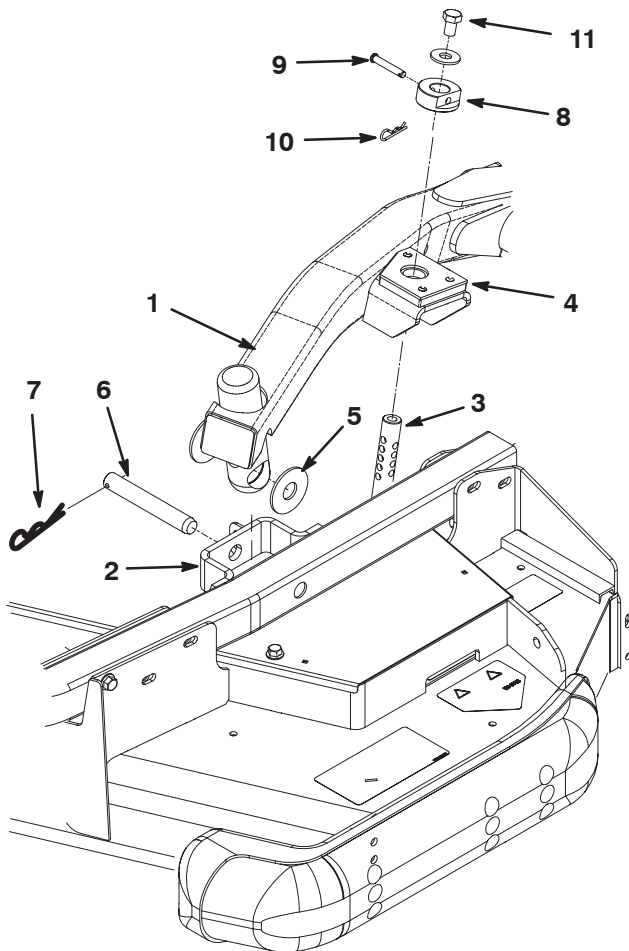
**Figure 6**

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

7. Install the wheel and tire assembly. Torque the wheel nuts to 45–55 ft.-lb. (61–75 N-m).
8. Repeat the procedure on the opposite side of the machine.

## Connecting the Lift Arms to the Cutting Unit

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 (Fig. 7).
3. Secure the lift arm to the castor arm with (2) thrust washers, a clevis pin and a hair pin cotter. Position the thrust washers between the lift arm and the castor arm bracket (Fig. 7). Insert end of cotter pin into the slot in the castor arm tab to retain cotter pin.



**Figure 7**

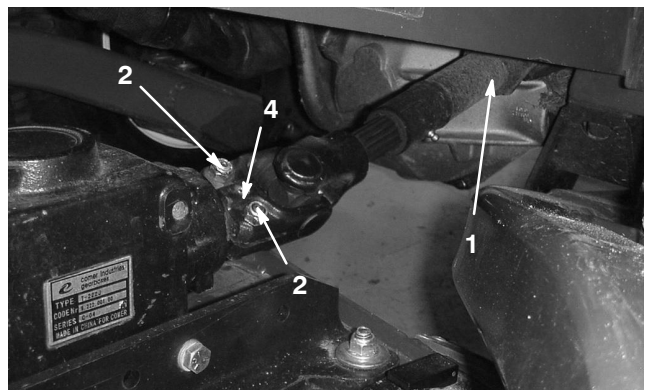
- |                       |                         |
|-----------------------|-------------------------|
| 1. Lift arm           | 7. Hair pin cotter      |
| 2. Castor arm bracket | 8. Height of cut collar |
| 3. Height of cut rod  | 9. Clevis pin           |
| 4. Lift arm pads      | 10. Hair pin cotter     |
| 5. Thrust washers     | 11. Capscrew            |
| 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 hair pin cottes (Fig. 7). Position the head of the clevis pin toward the front of the deck, if possible.
8. Install a 1/2 x 3/4" capscrew and a washer to top of each height of cut rod (Fig. 7).

## Connecting the PTO Shaft to the Cutting Unit Gear Box

1. Slide the male PTO shaft into the female PTO shaft. Align the mounting holes in the gear case input shaft with the holes in the PTO shaft and slide them together.



**Figure 8**

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

2. Secure them with a roll pin.
3. Tighten the capscrews and nuts.

## Greasing the Machine

Before the machine is operated, it must be greased to ensure proper lubricating characteristics; refer to Greasing the Bearings and Bushings. Failure to properly grease the machine will result in premature failure of critical parts.

# Before Operating



## 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 Gear Box

The gear box is designed to operate on SAE 80–90 wt. gear lube. Although the gear box 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 gear box (Fig. 9) 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.

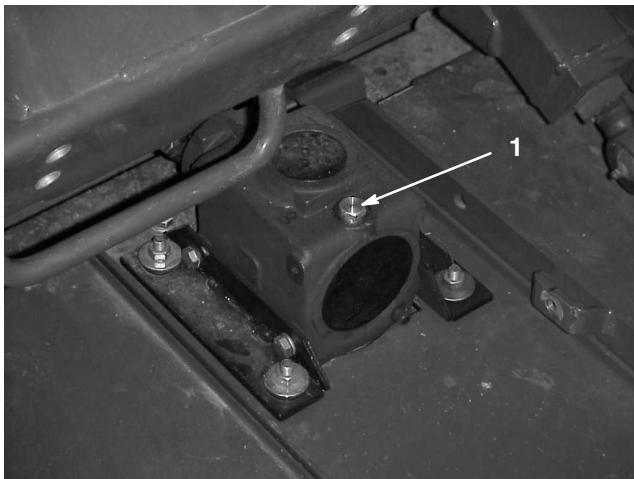


Figure 9

1. Dipstick/fill plug

## Adjusting the Height-of-Cut

The height-of-cut is adjustable from 1 to 5 inches (25 to 127 mm) in 1/2 inch (13 mm) 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 the height-of-cut can be changed. Stop the engine and remove the key after the cutting unit is raised.
2. Position the castor wheel axles in the same holes in both castor forks. Refer to figure 11 to determine the correct holes for the setting.

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

3. Remove the tensioning cap from the spindle shaft (Fig. 10) 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 11 to determine the combinations of spacers for the setting.

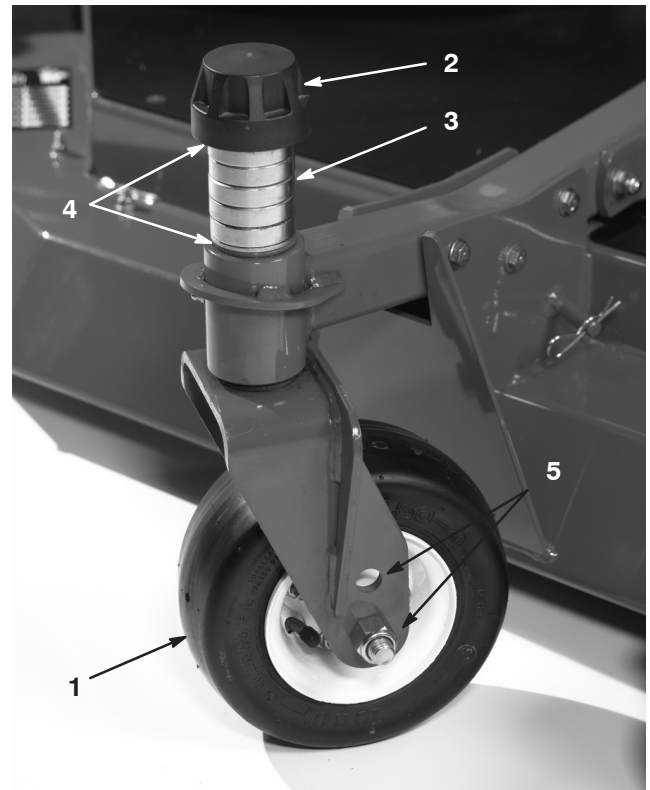


Figure 10

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



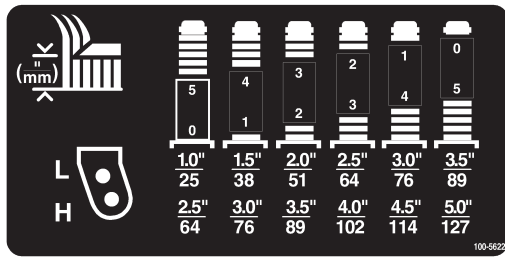


Figure 11

- 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.
- Remove the hair pin and clevis pin securing the height of cut collar to the height of cut rod on the rear of the cutting unit (Fig. 12).



Figure 12

- Height-of-cut rod
  - Height of cut collar
  - Clevis pin & hair pin
- Align the height-of-cut collar to the desired height-of-cut holes on the height of cut rod (Fig. 13).

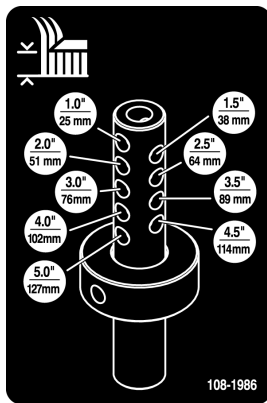


Figure 13

- Secure the adjustment with the clevis pin and hair pin.

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

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

## Adjusting the Cutting Unit Pitch

### Measuring 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. Toro recommends a blade pitch of 1/4 in. (6 mm). That is the back of the blade plane is 1/4 in. (6 mm) higher than the front.

- Position the machine on a level surface on the shop floor.
- Set the cutting unit to the desired height-of-cut.
- Rotate 1 blade so that it points straight forward.
- 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.
- Subtract the front dimension from the rear dimension to calculate the blade pitch.
- Loosen the jam nuts on the bottom of the height-of-cut rods (Fig. 14).

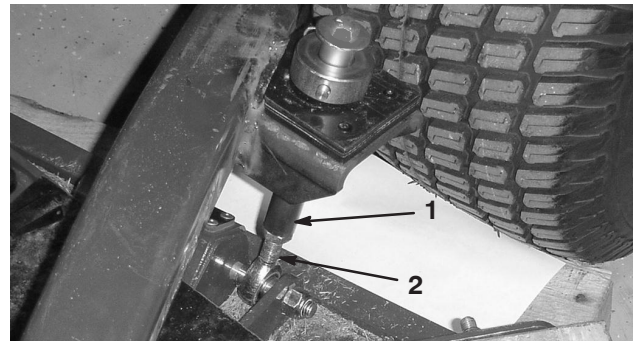


Figure 14

- Height-of-cut rod
  - Jam nut
- Rotate the height-of-cut rods to raise or lower the rear of the cutting unit and attain the correct cutting unit pitch.
  - Tighten the jam nuts.



## Adjusting the Skids

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

Adjust the skids by removing the flange bolt and nuts, positioning them as desired, and installing the fasteners (Fig. 15).

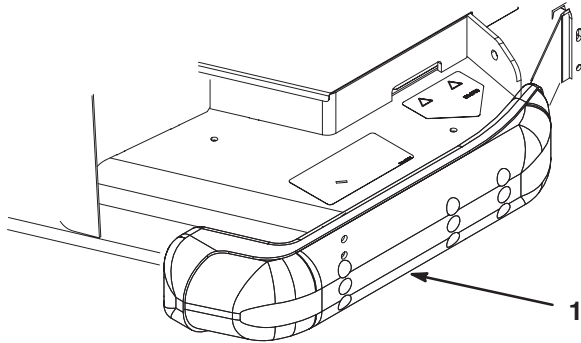


Figure 15

1. Skid

## Adjusting the Rollers

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

### To adjust the front rollers (Fig. 16)

1. Remove the screw and nut securing the roller shaft to the deck bracket (Fig. 16).

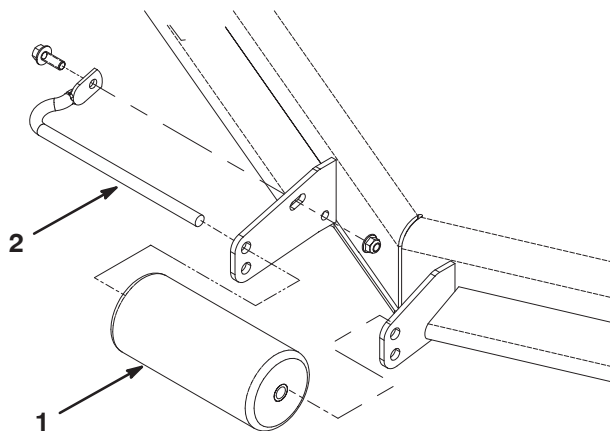


Figure 16

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.

### To adjust the rear (internal) roller (Fig. 17) (Models 30376 & 30379 only)

1. Remove the cotter pins securing the roller shafts to the underside of the deck.

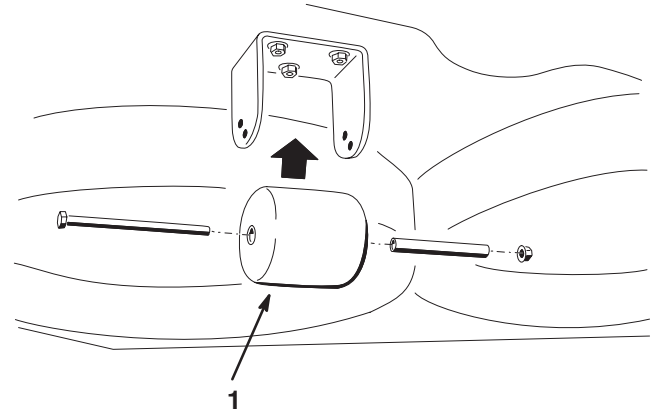


Figure 17

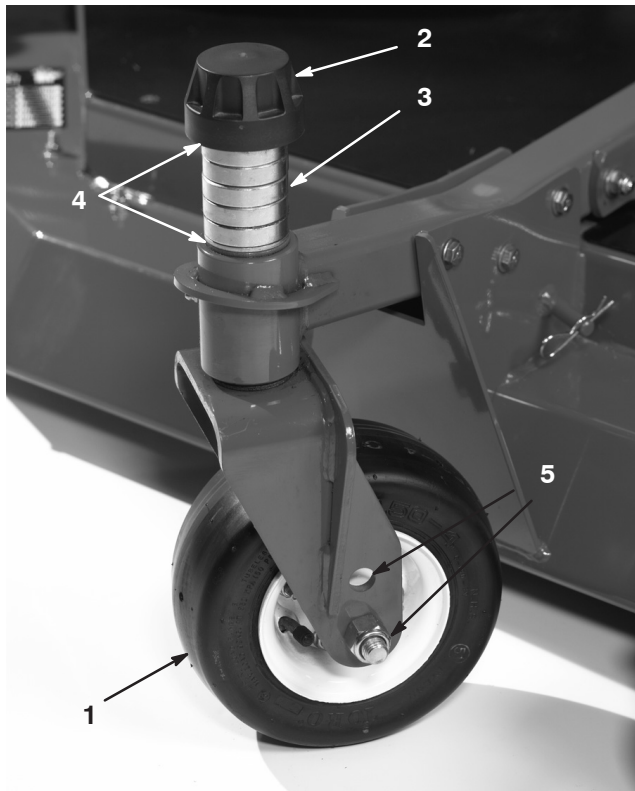
1. Internal roller
2. Slide the shafts out of the lower bracket holes, align the rollers with the top holes and install the shafts.
  3. Install the cotter pins to secure the assemblies.

## 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 13.
2. Check and adjust front and rear tractor tire pressure to 25–30 psi (172–207 kPa).
3. Check and adjust all castor tire pressures to 50 psi (345 kPa).
4. Check for bent blades; refer to Checking for a Bent Blade, page 22.
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 6 foot (2 m) 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.

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 in. shims on castor fork(s) to match height of cut to decal (Fig. 18); refer to Adjusting the Cutting Unit Pitch.



**Figure 18**

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

# Operation

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

## 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 1 in. (25 mm) 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 4–5 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 8–10 days. If you are unable to mow for an extended period due to weather conditions or other reasons, mow first with the height-of-cut at a high level; then mow again 2–3 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

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

# Maintenance

## Recommended Maintenance Schedule

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

## Greasing the Bearings, Bushings and Gear Box

The machine has grease fittings that must be lubricated regularly with No. 2 General Purpose Lithium Base 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.

The grease fitting locations and quantities are:

- Castor fork shaft bushings (2) (Fig. 19)
- Spindle shaft bearings (3) (located under the pulley) (Fig. 20)
- Idler arm shaft bearings (Fig. 20)
- Lift arm pivots–front (2) (Fig. 21)
- Lift arm pivots–rear (2) (Fig. 22)



Figure 19

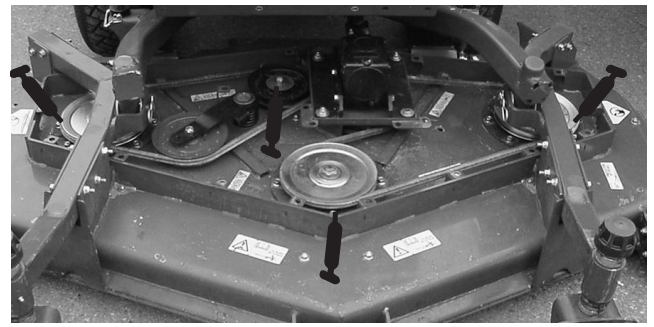


Figure 20

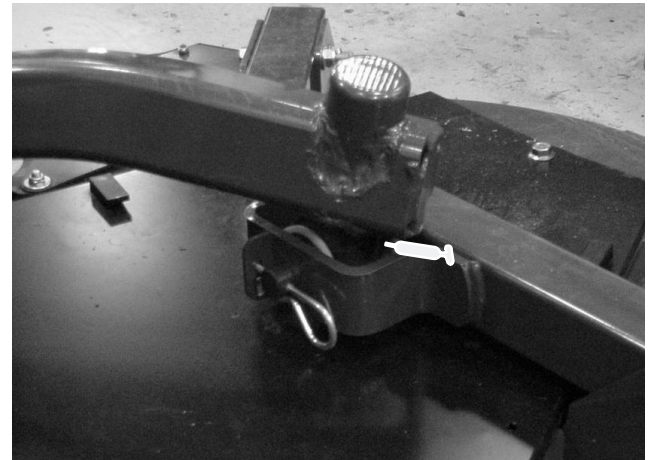


Figure 21

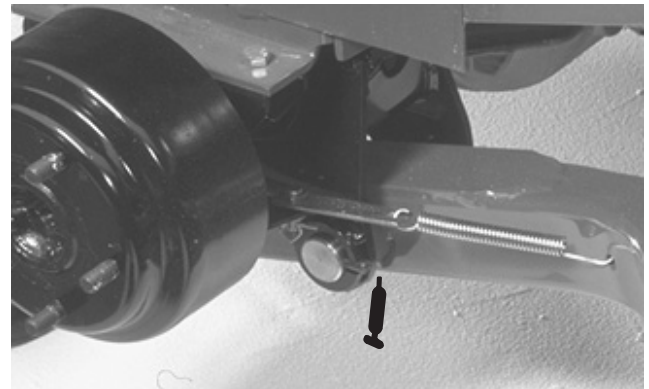
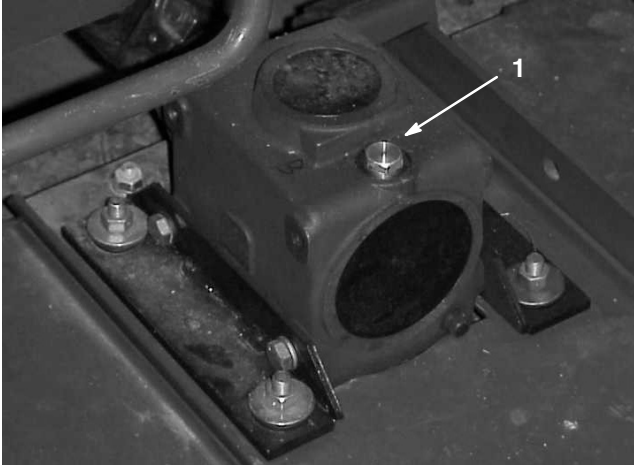


Figure 22



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 gear box (Fig. 23) and make sure that the lubricant is between the marks on the dipstick. If the lubricant level is low, add SAE 80–90 wt. gear lube until the level is between the marks.

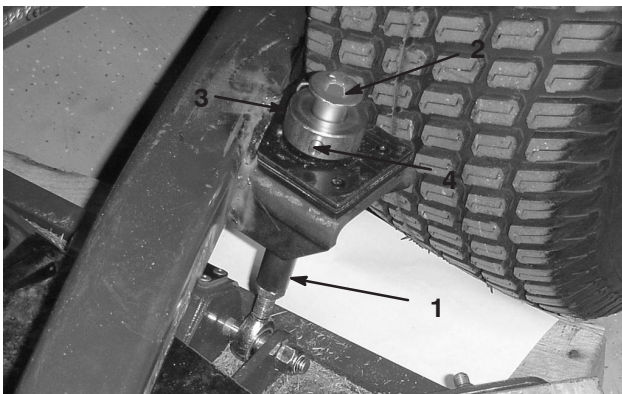


**Figure 23**

1. Fill/check plug

## Separating the Cutting Unit from the Traction Unit

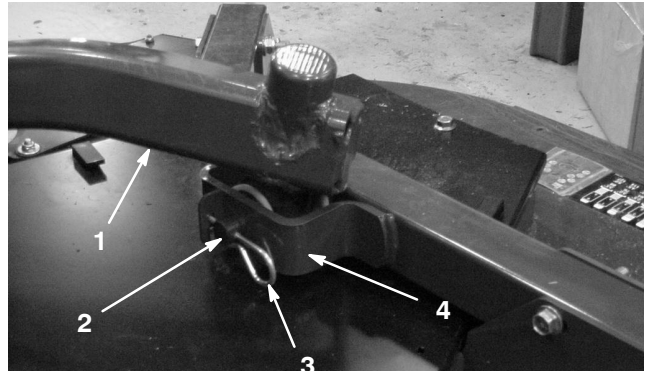
1. Position the machine on level surface, lower the cutting unit to the floor, move the lift lever to the Float position, shut the engine off, and engage the parking brake.
2. Remove the capscrew and washer mounted to the top of each height of cut rod (Fig. 24).



**Figure 24**

1. Height-of-cut rod
2. Capscrew & washer
3. Height of cut collar
4. Hair pin & clevis pin

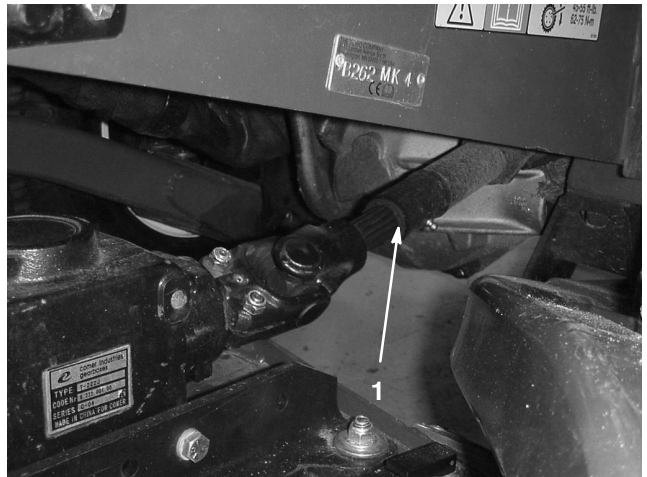
3. Remove the hairpin and clevis pin securing the height of cut collar to the height of cut rod on the rear of the cutting unit (Fig. 24). Remove the height of cut collar.
4. Remove the hair pin cotters and clevis pins securing the lift arms to the castor arm brackets (Fig. 25).



**Figure 25**

1. Lift arm
2. Clevis pin
3. Hair pin cotter
4. Castor arm bracket

5. Roll the cutting unit away from the traction unit, separating the male and female sections of the PTO shaft (Fig. 26).



**Figure 26**

1. PTO shaft



### Danger



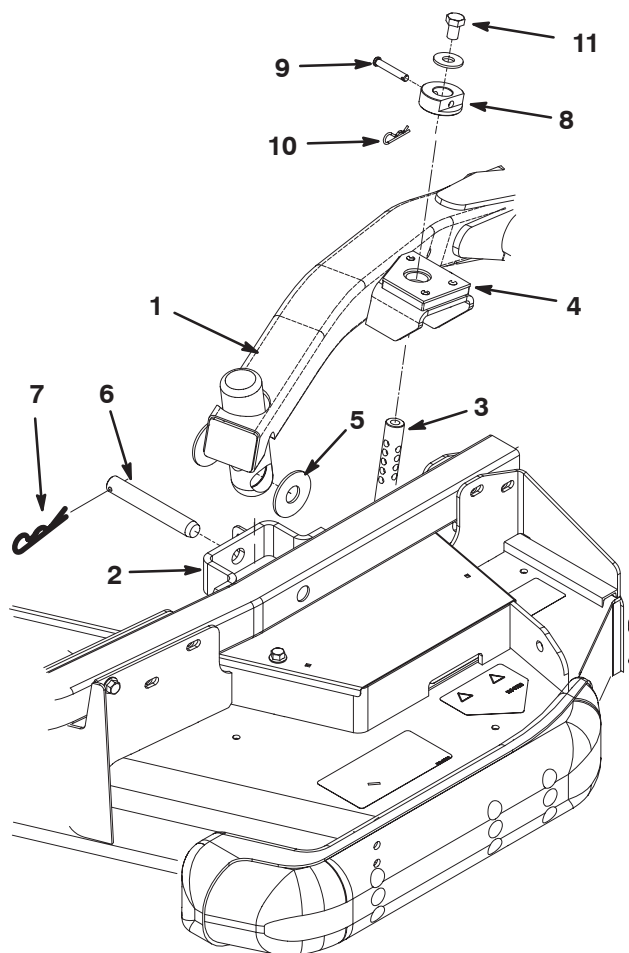
**If the engine is started and the PTO shaft is allowed to rotate, serious injury could result.**

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



## Mounting the Cutting Unit to the Traction Unit

1. Position the machine on a level surface and shut the engine off.
2. Move the cutting unit into position in front of the traction unit.
3. Slide the male PTO shaft into the female PTO shaft (Fig. 26).
4. 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 (Fig. 27).



**Figure 27**

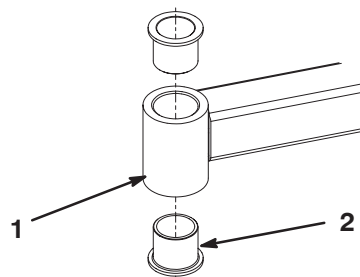
- |                       |                         |
|-----------------------|-------------------------|
| 1. Lift arm           | 7. Hair pin cotter      |
| 2. Castor arm bracket | 8. Height of cut collar |
| 3. Height of cut rod  | 9. Clevis pin           |
| 4. Lift arm pads      | 10. Hair pin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

5. Secure the lift arm to the castor arm with (2) thrust washers, a clevis pin and a hair pin cotter. Position the thrust washers between the lift arm and the castor arm bracket (Fig. 27). 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 hair pin cotters (Fig. 27). Head of clevis pin to be positioned toward the front of the deck.
10. Install a 1/2 x 3/4" capscrew and a washer to top of each height of cut rod (Fig. 27).

## Servicing the Castor Arm Bushings

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 (Fig. 28). Also drive the other bushing out of the tube. Clean the inside of the tubes to remove dirt.



**Figure 28**

- |                    |             |
|--------------------|-------------|
| 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. Install the tensioning cap on the castor spindle to retain all parts in place.

## Servicing the Castor Wheels and Bearings

1. Remove the locknut from the capscrew holding the castor wheel assembly between the castor fork (Fig. 29). Grasp the castor wheel and slide the capscrew out of the fork or pivot arm.

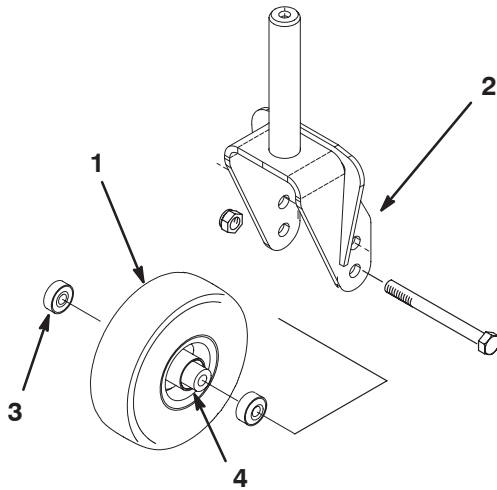


Figure 29

- |                 |                   |
|-----------------|-------------------|
| 1. Castor wheel | 3. Bearing (2)    |
| 2. Castor fork  | 4. Bearing spacer |
- 
2. Remove the bearing from the wheel hub and allow the bearing spacer to fall out (Fig. 29). 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 capscrew 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, stop 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 (Fig. 30). Measure from the inside of the cutting unit to the cutting edge at the front of the blade. Remember this dimension.



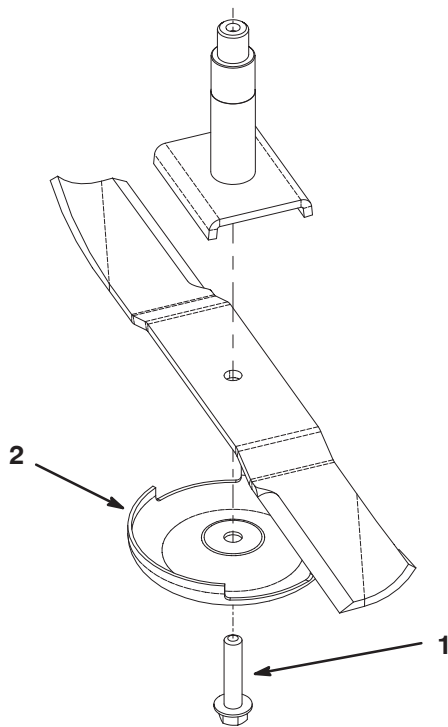
Figure 30

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 1/8 in. (3 mm). If the dimension exceeds 1/8 in. (3 mm), the blade is bent and must be replaced; refer to Removing the Cutter Blade, page 22.

## Removing and Installing the Cutter Blade(s)

The blade must be replaced if a solid object is hit, the blade is out of balance, or if the blade is bent. Always use genuine Toro replacement blades to be sure of safety and optimum performance. Never use replacement blades made by other manufacturers because they could be dangerous.

1. Raise the cutting unit to the highest position, engage the parking brake, stop 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 (Fig. 31).



**Figure 31**

1. Blade bolt                      2. Anti-scalp cup

3. Install the blade, anti-scalp cup, and blade bolt. Tighten the blade bolt to 85–110 ft.-lb. (115–149 N·m).

**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 Cutter Blade(s)



### Danger

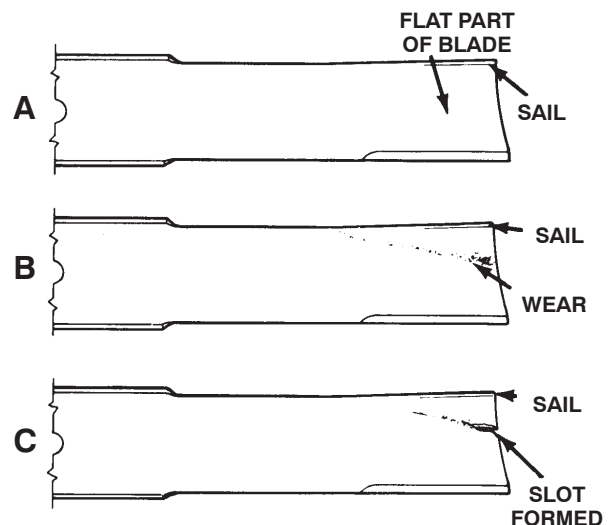


A worn or damaged blade can break, and a piece of the blade could be thrown into the operator's or bystander's area, resulting in serious personal injury or death. Trying to repair a damaged blade may result in discontinued safety certification of the product.

- 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.

Two areas must be considered when checking and servicing the cutter blade—the sail and the cutting edge. Both 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 lifts the 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 somewhat, 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, stop 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 (Fig. 32-A). 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 mower. If wear is noticed (Fig. 32-B), replace the blade.



**Figure 32**

3. Examine the cutting edges of all of the blades. Sharpen the cutting edges if they are dull or nicked. Sharpen only the top of the cutting edge and maintain the original cutting angle to make sure of sharpness (Fig. 33). The blade will remain balanced if the same amount of metal is removed from both cutting edges.

**Note:** Remove the blades and sharpen them on a grinder. After sharpening the cutting edges, install the blade with the anti-scalp cup and blade bolt; refer to Removing and Installing the Cutter Blade(s), page 22.



## Danger



If the blade is allowed to wear, a slot will form between the sail and flat part of the blade (Fig. 32-C). 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.
- Never try to straighten a blade that is bent or weld a broken or cracked blade.
- Replace a worn or damaged blade.

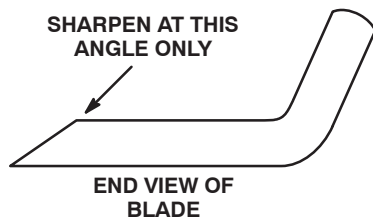


Figure 33

## Correcting Cutting Unit Mismatch

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 3 foot (1 meter) long carpenters 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 13.
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 1/8 in. (3 mm). If the dimension exceeds 1/8 in. (3 mm), replace the blade because it is bent. Make sure to measure all of the blades.
5. Compare the measurements of the outer blades with the the center blade. The center blade must not be more than 3/8 in. (10 mm) lower than the outer blades. If the center blade is more than 3/8 in. (10 mm) 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 capscrews, 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 three shims at any one hole location. Use decreasing numbers of shims in adjacent holes if more than one shim is added to any one hole location.

7. Install the belt covers.

## Replacing the Drive Belt

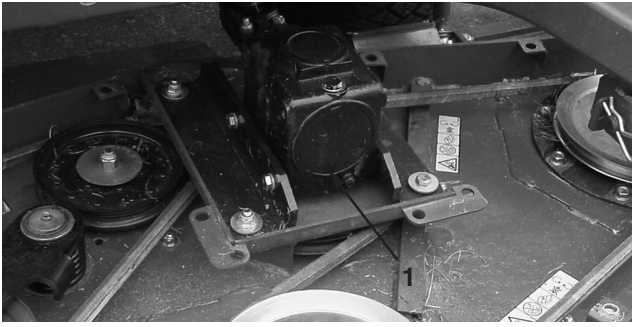
The blade drive belt, tensioned by the spring loaded idler pulley, is very durable. However, after many hours of use, the belt will show signs of wear. Signs of a worn belt are: squealing when belt is rotating, blades slipping when cutting grass, frayed edges, burn marks and cracks. Replace the belt 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 (Fig. 34) away from the drive belt to release the belt tension and allow the belt to be slipped off the gearbox pulley (Fig. 35).



Figure 34

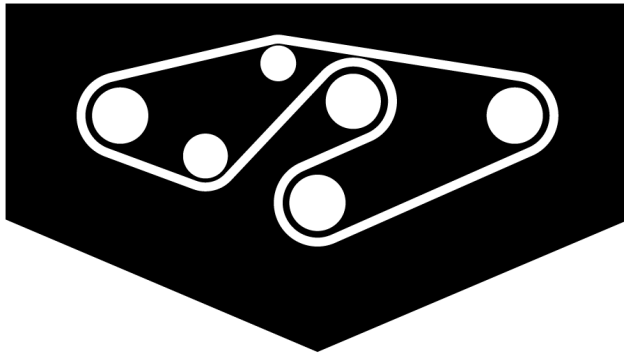
1. Idler pulley



**Figure 35**

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 36.



**Figure 36**

5. Install the belt covers.

**Notes**



# Notes



## The Toro General Commercial Products 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. Where a warrantable condition exists, we will repair the Product at no cost to you including diagnosis, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

\* Product equipped with 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 800-982-2740  
E-mail: commercial.service@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 express 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, modified, or unapproved accessories
- Product failures which result from failure to perform required maintenance and/or adjustments
- 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, blades, reels, bedknives, tines, spark plugs, castor wheels, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves, etc.

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

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

- Failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.
- Normal "wear and tear" items. 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 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 factory remanufactured parts rather than new parts for some warranty repairs.

#### 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 printed in your operator's manual or contained in the engine manufacturer's documentation for details.