



## ROPS Kit

Model No. 145-0592

Model No. 145-0594

Form No. 3447-556 Rev A

### Installation Instructions

# Safety

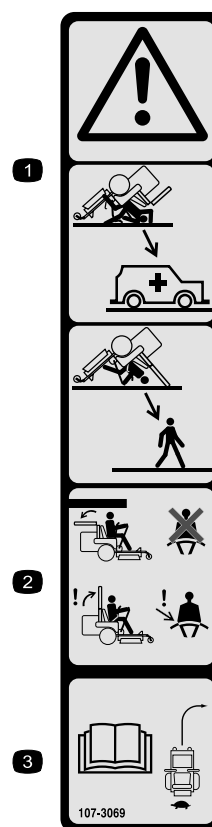
## Rollover Protection System (ROPS) Safety

- The ROPS is an integral safety device. Do not remove any of the ROPS components from the machine.
- Ensure that the seat belt is attached and that you can release it quickly in an emergency.
- Keep the roll bar in the fully raised and locked position and always wear your seat belt whenever the roll bar is up.
- Check carefully for overhead objects before you drive under them, and do not contact them.
- Replace damaged ROPS components. Do not repair or alter them.
- There is no rollover protection when the roll bar is down.
- Wheels dropping over edges, over steep banks, or into water can cause a rollover, which may result in serious injury or death.
- Do not wear the seat belt when the roll bar is down.
- Lower the roll bar only when absolutely necessary; raise it as soon as clearance permits.
- In the event of a rollover, take the machine to an Authorized Service Dealer to inspect the ROPS.
- Use only Toro approved accessories and attachments for the ROPS.

## Safety and Instructional Decals



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



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1. Warning—there is no rollover protection when the roll bar is down.
2. To avoid injury or death from a rollover accident, keep the roll bar in the raised and locked position and wear the seat belt. Lower the roll bar only when absolutely necessary; do not wear the seat belt when the roll bar is down.
3. Read the *Operator's Manual*; drive slowly and carefully.



# Installation

## Loose Parts

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

Procedure	Description	Qty.	Use
<b>1</b>	No parts required	–	Prepare the machine.
<b>2</b>	No parts required	–	Remove the existing rollover protection system (ROPS).
<b>3</b>	Upper roll bar assembly Left lower roll bar assembly Right lower roll bar assembly Fold-pin assembly Shoulder bolt Locknut (1/2 inch) Bumper Flange-head bolt (5/8 x 3-1/2 inches) Locknut (5/8 inch) Wave washer	1 1 1 2 2 2 2 4 4 2	Install the rollover protection system (ROPS).

# 1

## Preparing the Machine

### No Parts Required

### Procedure

1. Park the machine on a level surface.
2. Disengage the blade-control switch.
3. Move the motion-control levers outward to the NEUTRAL-LOCK position.
4. Engage the parking brake.
5. Shut off the engine and remove the key.

# 2

## Removing the Existing Rollover Protection System (ROPS)

**No Parts Required**

### Procedure

1. Disconnect the negative battery cable.
2. Remove and discard the upper roll-bar tube and its hardware from the lower tubes.
3. On the left side of the machine, remove and retain the fuel cap and hardware attaching the fender to the frame.
4. Remove the fender from the machine.  
Retain the fender.
5. Install the fuel cap to prevent debris from getting in the tank.
6. On the right side of the machine, remove and retain the hardware attaching the fender to the frame.
7. With the control panel still attached to the fender, remove the fender and set it on the tire.
8. Remove and retain the rear styling side brackets (if equipped).
9. Remove and discard the hardware attaching the lower roll-bar tubes to the frame.
10. Carefully remove and discard the ROPS from the machine.

# 3

## Installing the Rollover Protection System (ROPS)

### Parts needed for this procedure:

1	Upper roll bar assembly
1	Left lower roll bar assembly
1	Right lower roll bar assembly
2	Fold-pin assembly
2	Shoulder bolt
2	Locknut (1/2 inch)
2	Bumper
4	Flange-head bolt (5/8 x 3-1/2 inches)
4	Locknut (5/8 inch)
2	Wave washer

### Procedure

1. Loosely secure the lower roll bar assemblies onto the mower using 2 flange-head bolts (5/8 x 3-1/2 inches) and 2 locknuts (5/8 inch) on each side (Figure 1).

**Note:** Ensure that the plate that is welded onto the lower section of lower roll bar assemblies faces away from the frame assembly.

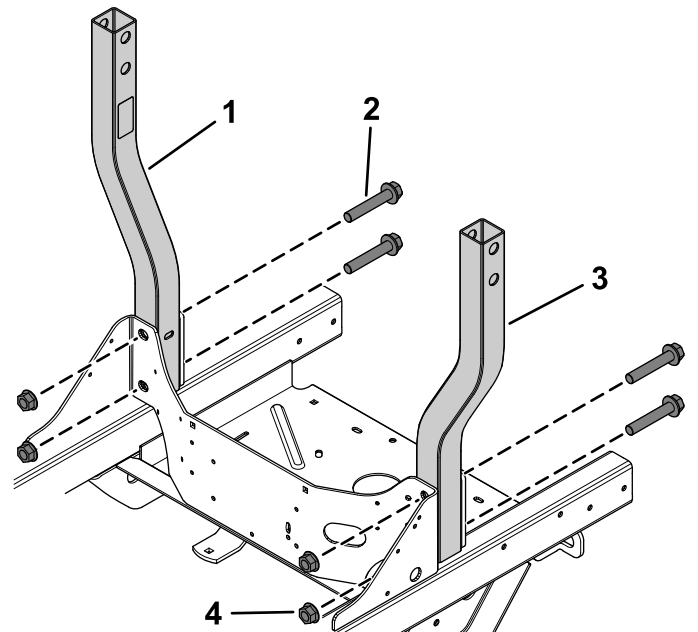


Figure 1

1. Right lower roll bar assembly
2. Flange-head bolt (5/8 x 3-1/2 inches)
3. Left lower roll bar assembly
4. Locknut (5/8 inch)

2. Secure the 2 bumpers to the upper roll bar assembly (Figure 2).

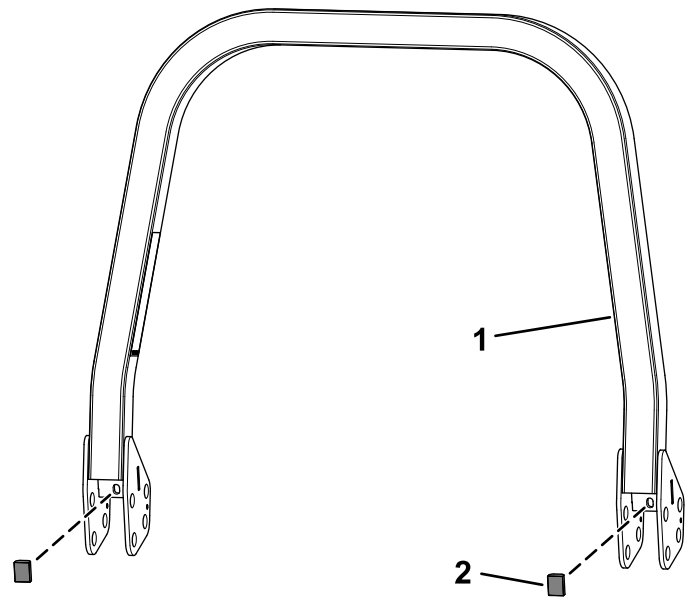
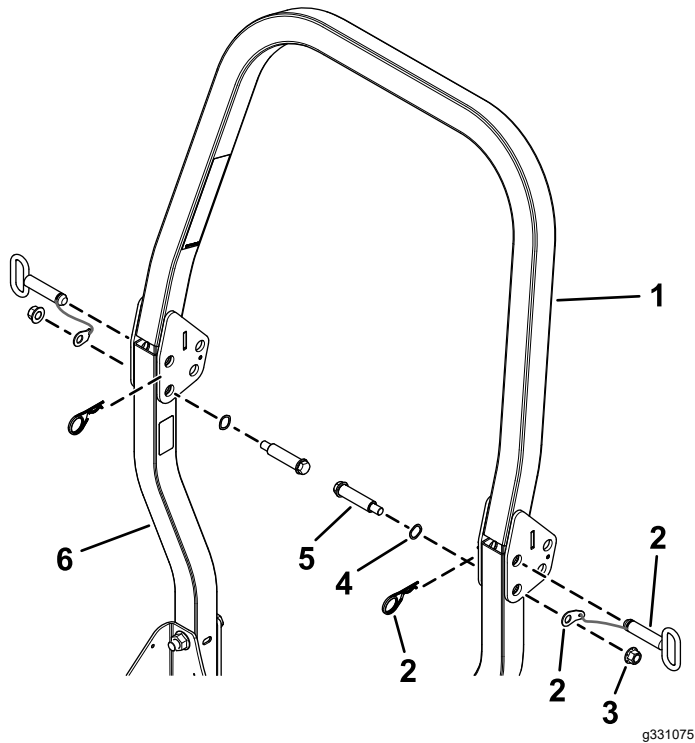


Figure 2

1. Upper roll bar assembly
2. Bumper

3. Secure the lower roll bar assemblies to the upper roll bar assembly using the 2 shoulder bolts, 2 wave washers, 2 locknuts (1/2 inch), and fold-pin assembly (Figure 3).



**Figure 3**

- |                                                                     |                            |
|---------------------------------------------------------------------|----------------------------|
| 1. Upper roll bar assembly                                          | 4. Wave washer             |
| 2. Fold-pin assembly (fold pin, lanyard washer, and hairpin cotter) | 5. Shoulder bolt           |
| 3. Locknut (1/2 inch)                                               | 6. Lower roll bar assembly |

- 
4. Torque the 2 shoulder bolts and 4 flange-head bolts (5/8 x 3-1/2 inches) on the lower roll bar assemblies to 122 to 136 N·m (90 to 100 ft-lb).
  5. Install the previously removed fenders and fasteners.
  6. Install the previously removed rear styling side brackets (if removed).
  7. Connect the negative battery cable.

# Operation

## Using the Rollover-Protection System (ROPS)

### ⚠ WARNING

To avoid injury or death from rollover, keep the roll bar in the fully raised, locked position and use the seat belt.

Ensure that the seat is secured to the machine.

### ⚠ WARNING

There is no rollover protection when the roll bar is in the down position.

- Lower the roll bar only when absolutely necessary.
- Do not wear the seat belt when the roll bar is in the down position.
- Drive slowly and carefully.
- Raise the roll bar as soon as clearance permits.
- Check carefully for overhead clearances (i.e., branches, doorways, electrical wires) before driving under any objects and do not contact them.

## Lowering the Roll Bar

**Important:** Lower the roll bar only when absolutely necessary.

1. Remove the hairpin cotters and remove the 2 pins (Figure 5).
2. Lower the roll bar to the down position (Figure 4).

**Note:** There are 2 down positions; refer to Figure 4.

3. Install the 2 pins and secure them with the hairpin cotters (Figure 5).

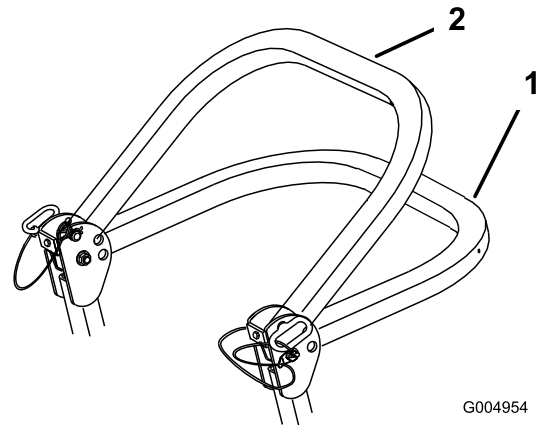


Figure 4

1. Full-down position
2. Down position with the bagger installed

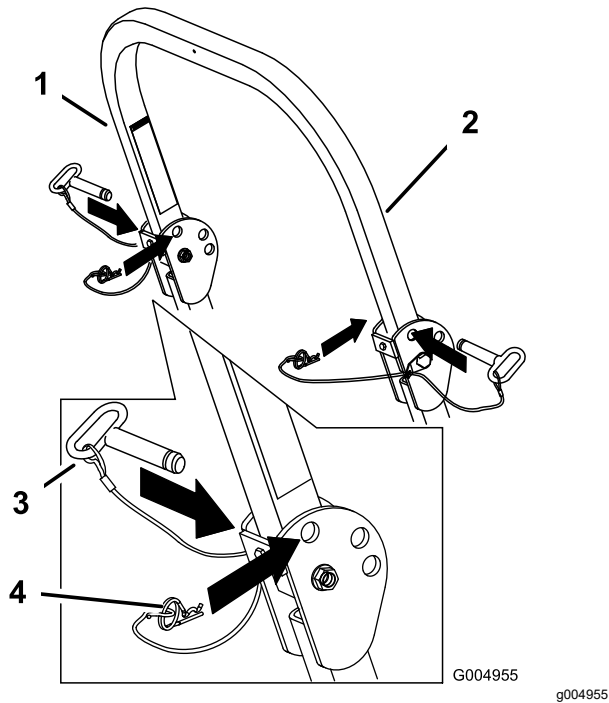
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**Important:** Ensure that you secure the rear part of the seat with the seat latch (if applicable).

## Raising the Roll Bar

**Important:** Always use the seat belt with the roll bar in the raised position.

1. Remove the hairpin cotters and remove the 2 pins (Figure 5).
2. Raise the roll bar to the upright position, install the 2 pins, and secure them with the hairpin cotters (Figure 5).



**Figure 5**

- |                    |                   |
|--------------------|-------------------|
| 1. Roll bar        | 3. Pin            |
| 2. Raised position | 4. Hairpin cotter |

## Maintenance

### Checking the Seat Belt

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

Inspect the seat belt for wear, cuts, and proper operation of the retractor and buckle. Replace the seat belt if it is damaged.



**Count on it.**