



Universal Sunshade

Groundsmaster® or Reelmaster® Traction Units or Multi Pro® 1750 Turf Sprayer

Model No. 30669

Model No. 30671

Installation Instructions

Important: If you install the Universal Sunshade on a Reelmaster 3100 traction unit or a Groundsmaster 3500/3505 traction unit, install the Wheel Weight Kit. Contact your authorized Toro distributor for the correct Wheel Weight Kit.

Safety

General

Before Operating

1. Review and understand the contents of the *Installation Instructions* before installing the sunshade.
2. Keep all shields, safety devices and decals in place. If a shield, safety device or decal is defective, illegible, or damaged, repair or replace it before operating the machine.
3. Do not weld, cut, drill, modify, or remove the roll bar in any manner.
4. Tighten any loose nuts, bolts, or screws to ensure that the machine is in safe operating condition.

While Operating

1. Use extreme care when working close to fences, ditches, or on hillsides.
2. Check carefully for overhead clearances (i.e., branches, doorways, electrical wires) before driving under any objects and do not contact them.
3. Tie down the sunshade frame when transporting the machine.
4. Wear hearing protection when operating any machine with a sunshade.

Maintenance and Service

1. Before servicing or making adjustments, lower the implement, shut off the engine, engage the parking brake, and remove the key.
2. Make sure that the machine is in safe operating condition by keeping all nuts, bolts, and screws tight.
3. When working on the sunshade installation, wear eye protection.
4. Replace a damaged sunshade. Do not repair or revise.
5. When installing the sunshade or performing service, use correct supports, hoists, and jacks. If the sunshade is not properly supported, it may move or fall, which may result in personal injury.
6. To ensure optimum performance and safety, always purchase genuine Toro replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous. Such use could void the product warranty of The Toro Company.



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.

Safety and instruction decals are affixed to your sunshade. If any decal becomes illegible or damaged, install a new decal.



98-4387

decal98-4387

1. Warning—wear hearing protection.

Installation

Loose Parts

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

Description	Qty.	Use
No parts required	—	Prepare the machine.
No parts required	—	Identify the U-bolt.
Bolt (3/4 x 4 inches)	2	Install the sunshade on the machine.
Nut (3/4 inch)	2	
Washer (13/16 x 1-1/2 inches)	4	
Frame assembly	1	
ROPS-mount bracket	1	
Brace	2	
Brace bracket	2	
Extension link	2	
Bolt (1/2 x 1-1/2 inches)	4	
Bolt (1/2 x 2-1/2 inches)	4	
Bolt (1/2 x 2-3/4 inches)	4	
Large washer	10	
Flange nut (1/2 inch)	10	
U-bolt (4-1/2 x 2-3/4 inches)	2	
U-bolt (3-1/8 x 4 inches)	2	
U-bolt (3-1/2 x 5 inches)	4	
U-bolt (3-1/2 x 2-3/4 inches)	2	
U-bolt (4-1/2 x 4 inches)	2	
Flange nut (3/8 inch)	8	
Sunshade	1	
Flange-head bolt (5/16 x 1 inch)	4	
Small washer	4	
Grommet	4	
Clip nut	4	

Preparing the Machine

1. Park the machine on a level surface.
2. Lower the cutting units and engage the parking brake.
3. Shut off the engine and remove the key.

Note: Not every machine uses the same parts to install the kit.

Identifying and Installing the U-Bolts

There are 5 different U-bolts included with this kit. U-bolts are listed by dimension (span x length) in the parts list. Refer to [Figure 1](#) to determine the dimensions of the U-bolts.

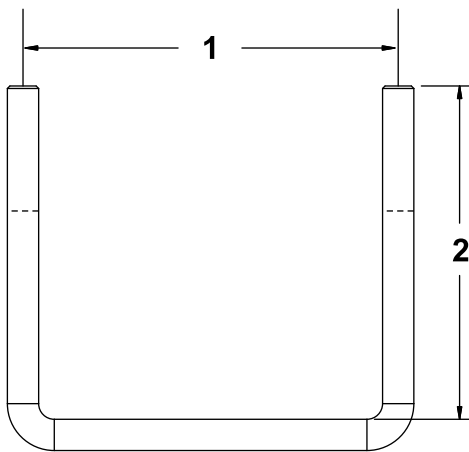


Figure 1

g246183

1. Span

2. Length

Perform the following steps when you install the U-bolts to the ROPS mount bracket:

- Use only hand tools to tighten the nuts that secure the U-bolts to the mount bracket.
- To ensure even distribution, tighten the nuts in an alternating pattern as shown in [Figure 2](#).

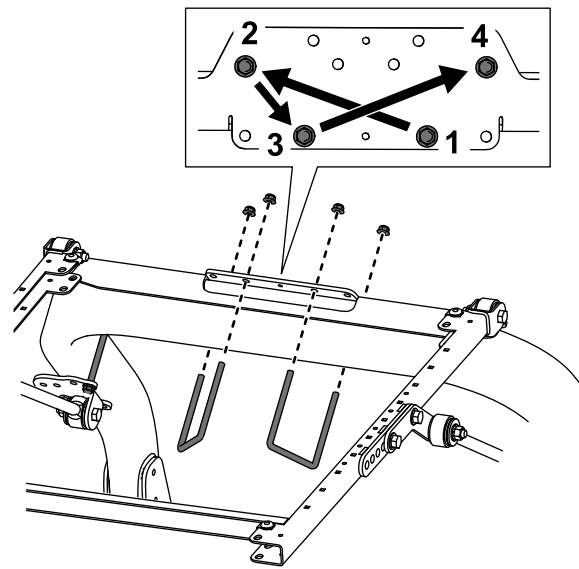


Figure 2

g482777

Installing the Sunshade

Groundsmaster 5900 Machine

1. Position the ROPS-mount bracket onto the top of the traction unit roll bar ([Figure 3](#)).

Note: Make sure that the roll bar is centered in the mount bracket.

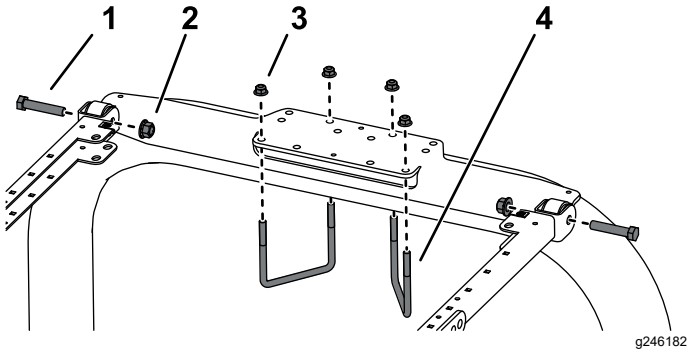


Figure 3

- | | |
|----------------------------|------------------------------|
| 1. Bolt (1/2 x 2-1/2 inch) | 3. Flange nut (3/8 inch) |
| 2. Flange nut (1/2 inch) | 4. U-bolt (4-1/2 x 4 inches) |

2. Install the frame assembly to the ROPS-mount bracket ([Figure 3](#)).
3. Using the mounting holes shown in [Figure 3](#), mount the ROPS-mount bracket to the top of

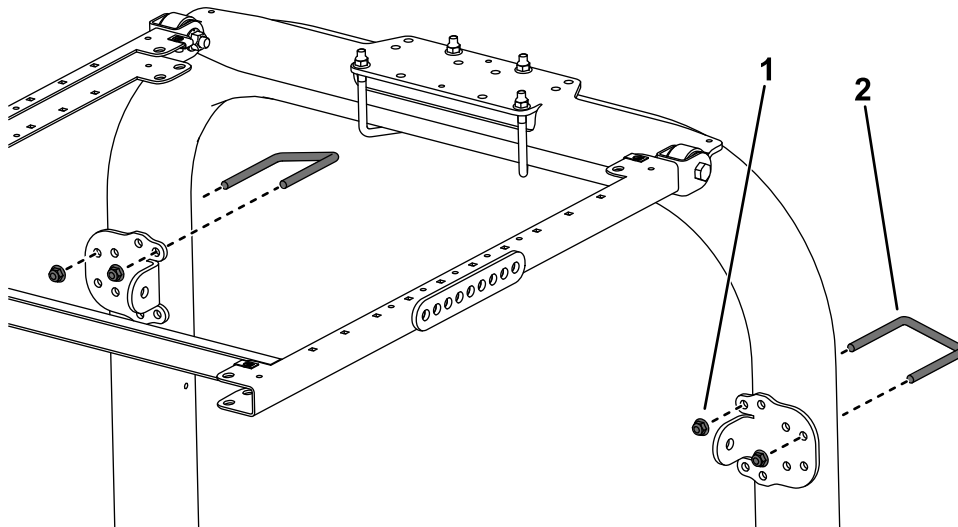


Figure 4

- | | |
|--------------------------|------------------------------|
| 1. Flange nut (3/8 inch) | 2. U-bolt (3-1/8 x 4 inches) |
|--------------------------|------------------------------|

5. On each side of the sunshade frame, loosely mount a brace to the second hole of the brace mount with a bolt (1/2 x 2-3/4 inches), washer (1/2 inch), and flange nut (1/2 inch) as shown in [Figure 5](#).

the roll bar with 2 U-bolts (4-1/2 x 4 inches) and 4 flange nuts.

4. Using the mounting holes shown in [Figure 4](#), loosely secure each of the brace brackets to the roll bar posts with a U-bolt (3-1/8 x 4 inches) and 2 flange nuts.

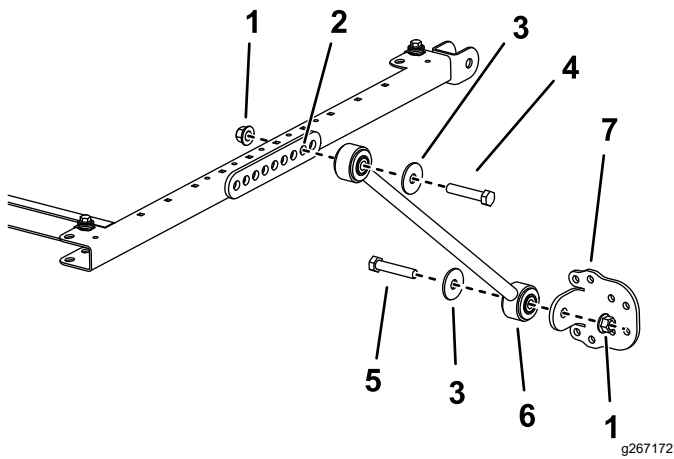


Figure 5
Left side shown

- | | |
|------------------------------|------------------------------|
| 1. Flange nut (1/2 inch) | 5. Bolt (1/2 x 2-1/2 inches) |
| 2. Mount hole | 6. Brace bracket |
| 3. Washer (1/2 inch) | 7. Brace |
| 4. Bolt (1/2 x 2-3/4 inches) | |

6. Loosely install a brace bracket to each brace with a bolt (1/2 x 2-1/2 inches), washer (1/2 inch), and flange nut (1/2 inch) as shown in [Figure 5](#).
7. Move the brace brackets up or down, on the vertical roll bar posts, until the sunshade frame is level to the floor.

Note: Use a level to make sure that the frame is level to the ground.

Note: Use the front or rear mounting holes in the brace bracket, if you need more adjustability.

8. Tighten the U-bolt flange nuts, securing the mounting brackets to the posts.

9. Tighten all the remaining flange nuts as follows:
 - Torque the flange nuts (3/8 inch) 41 to 55 N·m (30 to 41 ft-lb).
 - Torque the flange nuts (1/2 inch) 113 to 141 N·m (84 to 104 ft-lb).
10. While aligning the mounting holes, position the sunshade onto the frame as shown in [Figure 6](#).

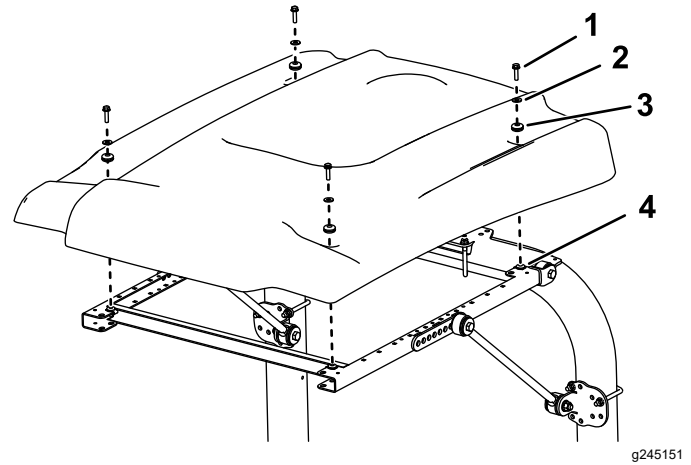


Figure 6

- | | |
|-------------------------------------|-------------|
| 1. Flange-head bolt (5/16 x 1 inch) | 3. Grommet |
| 2. Small washer | 4. Clip nut |

11. Loosely mount each corner of the sunshade to the frame with a flange-head bolt (5/16 x 1 inch), a small washer, and a grommet ([Figure 6](#)).
12. Tighten the sunshade-mounting bolts 5 to 6 N·m (45 to 55 in-lb).

Important: Do not overtighten the mounting bolts as the sunshade may crack.

Installing the Sunshade

Groundsmaster 3200 or 3300 Machine

1. With the roll bar in the lowered position, remove the anti-rattle leaf spring (Figure 7) from each side of the roll bar.

Retain the leaf springs and the bolts for use when the canopy is not installed.

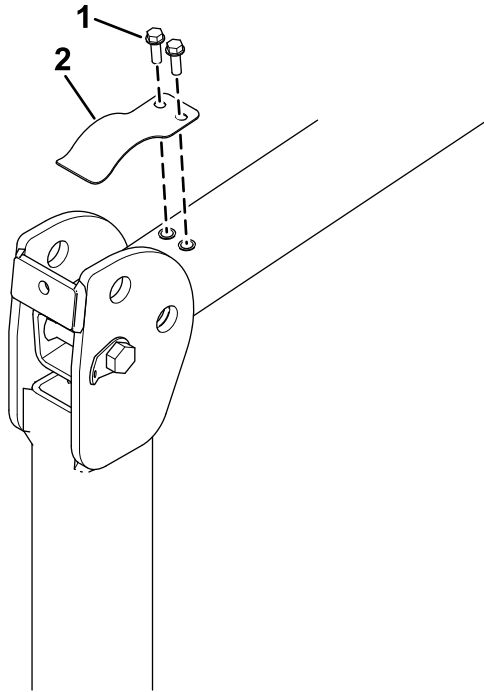
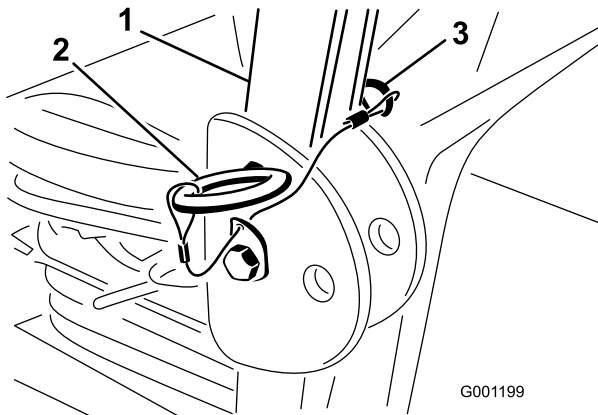


Figure 7

g558139

1. Bolt
2. Leaf spring

2. With the roll bar in the raised position, remove the hairpin cotters and the 2 pins (Figure 8).



G001199

Figure 8

g001199

1. Roll bar
2. Pin
3. Hairpin cotter

3. Insert a washer (13/16 x 1-1/2 inches) onto each bolt (3/4 x 4 inches) as shown in Figure 9.

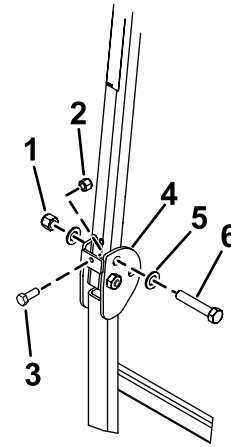


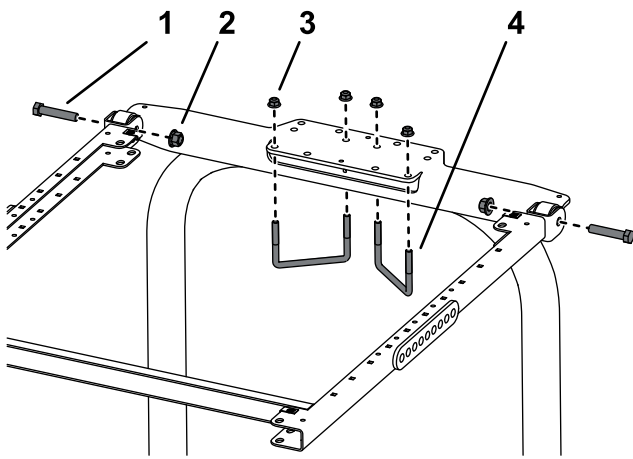
Figure 9

g558140

- | | |
|---|----------------------------------|
| 1. Nut (3/4 inch) | 4. Roll bar |
| 2. Bolt (3/8-16 x 1 inch or 1-1/4 inches) | 5. Washer (13/16 x 1-1/2 inches) |
| 3. Jam nut (3/8 inch) | 6. Bolt (3/4 x 4 inches) |

4. In the holes where the pins were removed, install the bolts and washers (Figure 9).
5. Install another washer onto each bolt and secure with nuts (3/4 inch) as shown in Figure 9. Torque the nuts 323 to 396 N·m (238 to 292 ft-lb).
6. Install a bolt (3/8-16 x 1 inch or 1-1/4 inches) with a jam nut (bolts and jam nuts are not provided) in the threaded plate on each side of the lower portion of the roll bar in the hinge area (Figure 9). Tighten the bolt until it is tight against the upper roll-bar tube and tighten the jam nut.
7. Torque the ROPS pivot bolt (Figure 9) to 91 to 113 N·m (67 to 83 ft-lb) to avoid any bouncing of the roll bar and sunshade.
8. Position the ROPS-mount bracket onto the top of the turf sprayer roll bar (Figure 10).

Note: Make sure that the roll bar is centered in the ROPS-mount bracket.

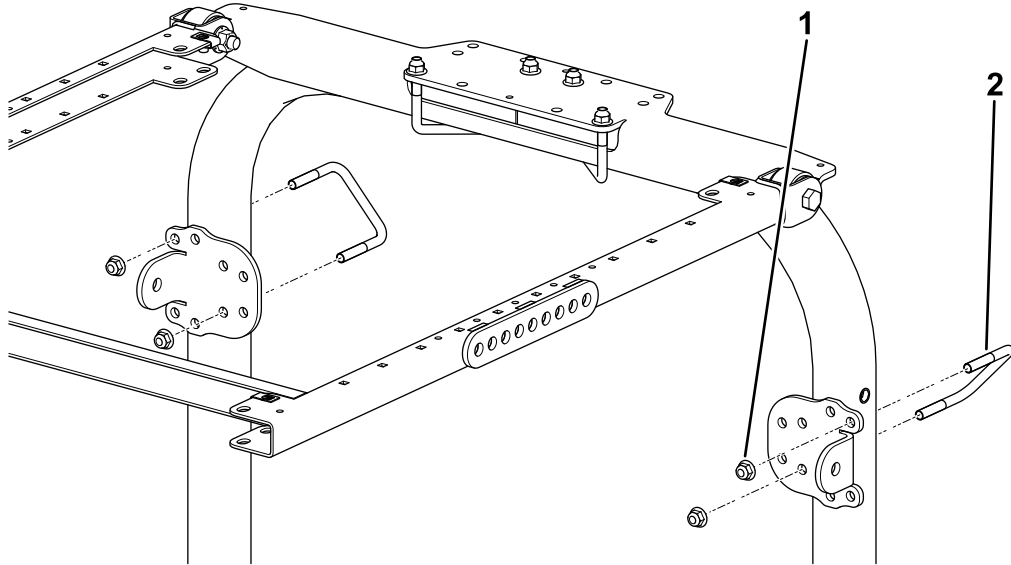


g246185

Figure 10

- | | |
|------------------------------|----------------------------------|
| 1. Bolt (1/2 x 2-1/2 inches) | 3. Flange nut (3/8 inch) |
| 2. Flange nut (1/2 inch) | 4. U-bolt (4-1/2 x 2-3/4 inches) |

9. Install the frame assembly to the ROPS-mount bracket ([Figure 10](#)).
10. Using the mounting holes shown in [Figure 11](#), mount the ROPS-mount bracket to the top of the roll bar with 2 U-bolts (4-1/2 x 2-3/4 inches) and 4 flange nuts.
11. Using the mounting holes shown in [Figure 11](#), loosely secure each of the brace brackets to the roll bar posts with a U-bolt (3-1/2 x 2-3/4 inches) and 2 flange nuts.



g482769

Figure 11

- | | |
|--------------------------|----------------------------------|
| 1. Flange nut (3/8 inch) | 2. U-bolt (4-1/2 x 2-3/4 inches) |
|--------------------------|----------------------------------|

12. On each side of the sunshade frame, loosely mount an extension link to the fourth hole of the brace mount with 2 bolts (1/2 x 2-3/4 inches), 2 large washers, and 2 flange nuts (1/2 inch) as shown in [Figure 12](#).

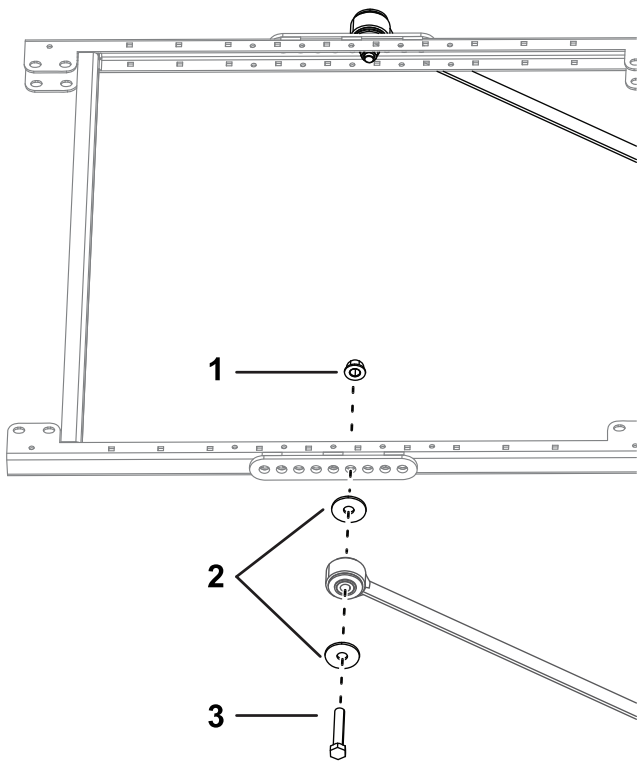


Figure 12

- | | |
|--------------------------|------------------------------|
| 1. Flange nut (1/2 inch) | 3. Bolt (1/2 x 2-3/4 inches) |
| 2. Large washer | |

13. On each side of the machine, loosely install a brace bracket to each brace with a bolt (1/2 x 2-3/4 inches), 3 large washers, and flange nut (1/2 inch) as shown in [Figure 13](#).

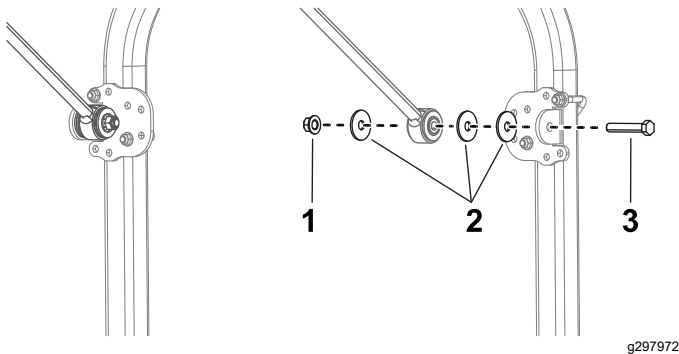


Figure 13

- | | |
|--------------------------|------------------------------|
| 1. Flange nut (1/2 inch) | 3. Bolt (1/2 x 2-3/4 inches) |
| 2. Large washer | |

14. Move the brace brackets up or down on the vertical roll bar posts until the sunshade frame is level to the ground, then tighten the U-bolt flange nuts, securing the mounting brackets to the posts.

Note: Use a level to make sure that the frame is level to the ground.

15. Tighten all the remaining flange nuts as follows:
- Torque the flange nuts (3/8 inch) 41 to 55 N·m (30 to 41 ft-lb).
 - Torque the flange nuts (1/2 inch) 113 to 141 N·m (84 to 104 ft-lb).
16. While aligning the mounting holes, position the sunshade onto the frame as shown in [Figure 14](#).

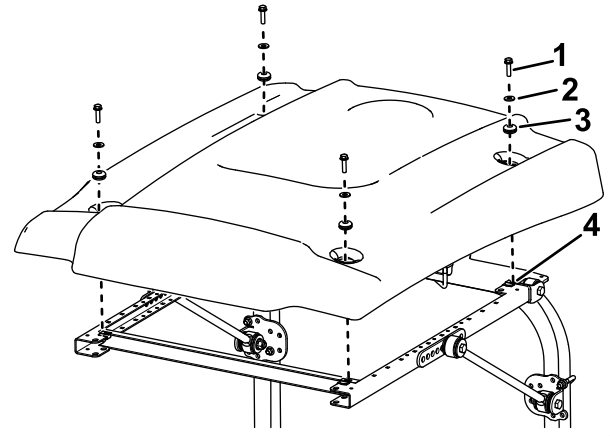


Figure 14

- | | |
|-------------------------------------|-------------|
| 1. Flange-head bolt (5/16 x 1 inch) | 3. Grommet |
| 2. Small washer | 4. Clip nut |

17. Loosely mount each corner of the sunshade to the frame with a flange-head bolt (5/16 x 1 inch), a small washer, and a grommet ([Figure 14](#)).
18. Tighten the sunshade-mounting bolts 5 to 6 N·m (45 to 55 in-lb).

Important: Do not overtighten the mounting bolts as the sunshade may crack.

Installing the Sunshade

Groundsmaster 3280 Machine

1. With the roll bar in the lowered position, remove the anti-rattle leaf spring ([Figure 15](#)) from each side of the roll bar.

Retain the leaf springs and the bolts for use when the canopy is not installed.

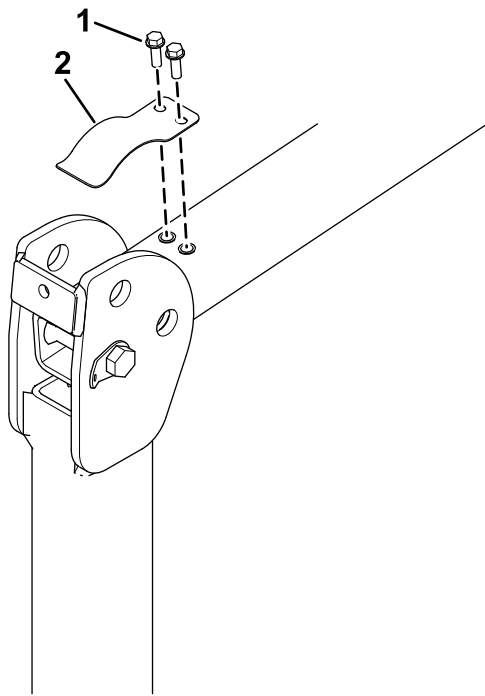


Figure 15

1. Bolt
2. Leaf spring

2. With the roll bar in the raised position, remove the hairpin cotters and the 2 pins (Figure 16).

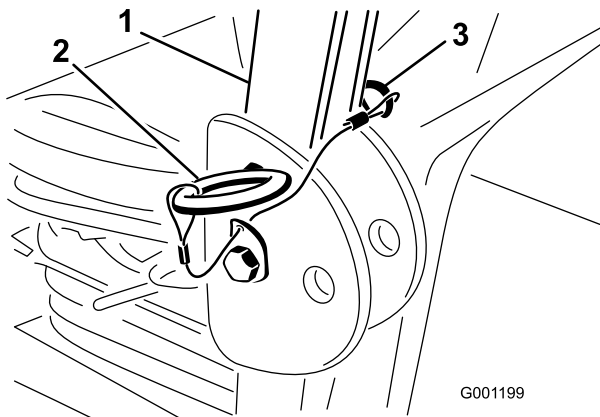


Figure 16

1. Roll bar
2. Pin
3. Hairpin cotter

3. Insert a washer (13/16 x 1-1/2 inches) onto each bolt (3/4 x 4 inches) as shown in Figure 17.

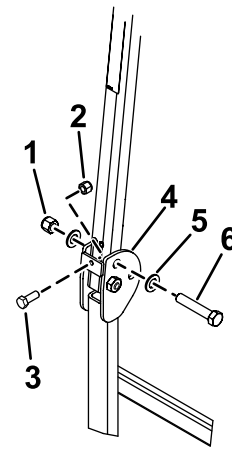


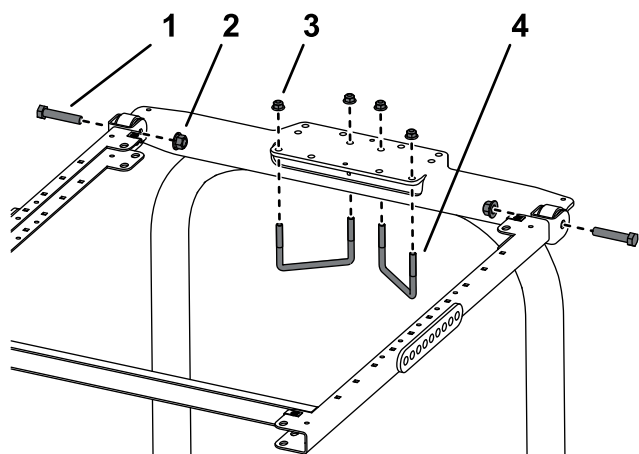
Figure 17

1. Nut (3/4 inch)
2. Bolt (3/8-16 x 1 inch or 1-1/4 inches)
3. Jam nut (3/8 inch)
4. Roll bar
5. Washer (13/16 x 1-1/2 inches)
6. Bolt (3/4 x 4 inches)

4. In the holes where the pins were removed, install the bolts and washers (Figure 17).
5. Install another washer onto each bolt and secure with nuts (3/4 inch) as shown in Figure 17. Torque the nuts 323 to 396 N·m (238 to 292 ft-lb).
6. Install a bolt (3/8-16 x 1 inch or 1-1/4 inches) with a jam nut (bolts and jam nuts are not provided) in the threaded plate on each side of the lower portion of the roll bar in the hinge area (Figure 17). Tighten the bolt until it is tight against the upper roll-bar tube and tighten the jam nut.
7. Torque the ROPS pivot bolt (Figure 17) to 91 to 113 N·m (67 to 83 ft-lb) to avoid any bouncing of the roll bar and sunshade.

8. Position the ROPS-mount bracket onto the top of the traction unit roll bar (Figure 18).

Note: Make sure that the roll bar is centered in the ROPS-mount bracket.

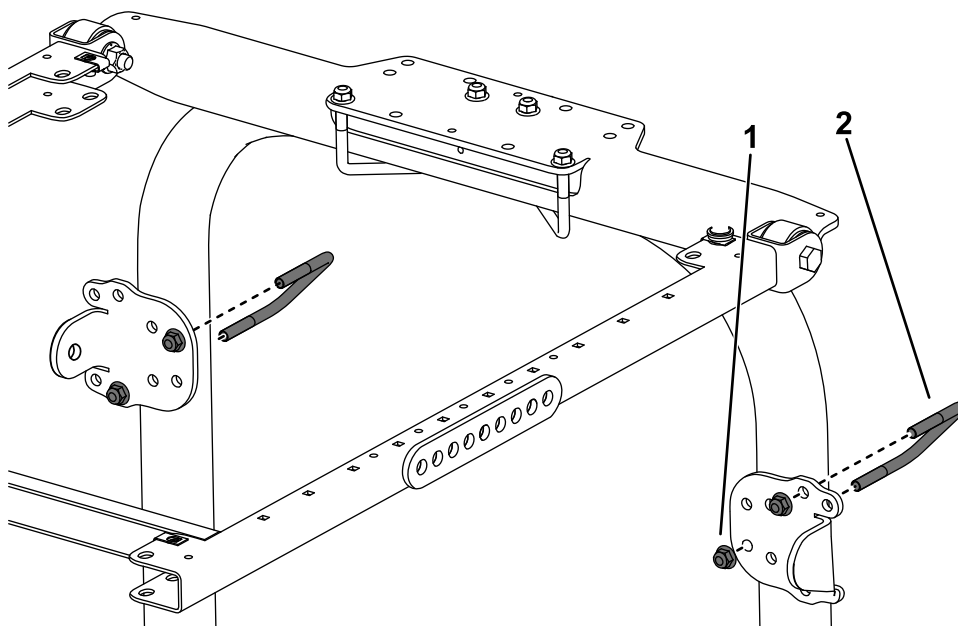


g246185

Figure 18

- | | |
|------------------------------|----------------------------------|
| 1. Bolt (1/2 x 2-1/2 inches) | 3. Flange nut (3/8 inch) |
| 2. Flange nut (1/2 inch) | 4. U-bolt (4-1/2 x 2-3/4 inches) |

9. Install the frame assembly to the ROPS-mount bracket (Figure 18).
10. Using the mounting holes shown in Figure 18, mount the ROPS-mount bracket to the top of the roll bar with 2 U-bolts (4-1/2 x 2-3/4 inches) and 4 flange nuts.
11. Using the mounting holes shown in Figure 19, loosely secure each of the brace brackets to the roll bar posts with a U-bolt (3-1/2 x 2-3/4 inches) and 2 flange nuts.



g482770

Figure 19

- | | |
|--------------------------|----------------------------------|
| 1. Flange nut (3/8 inch) | 2. U-bolt (3-1/2 x 2-3/4 inches) |
|--------------------------|----------------------------------|

12. On each side of the sunshade frame, loosely mount an extension link to the fourth hole of the brace mount with 2 bolts (1/2 x 2-3/4 inches), and 2 flange nuts (1/2 inch) as shown in Figure 20.

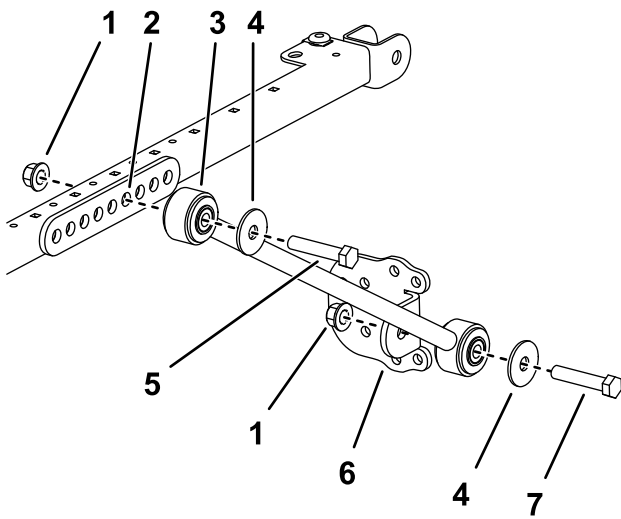


Figure 20

Left side shown

- | | |
|--------------------------|------------------------------|
| 1. Flange nut (1/2 inch) | 5. Bolt (1/2 x 2-3/4 inches) |
| 2. Mount hole | 6. Brace bracket |
| 3. Brace | 7. Bolt (1/2 x 2-1/2 inches) |
| 4. Washer (1/2 inch) | |

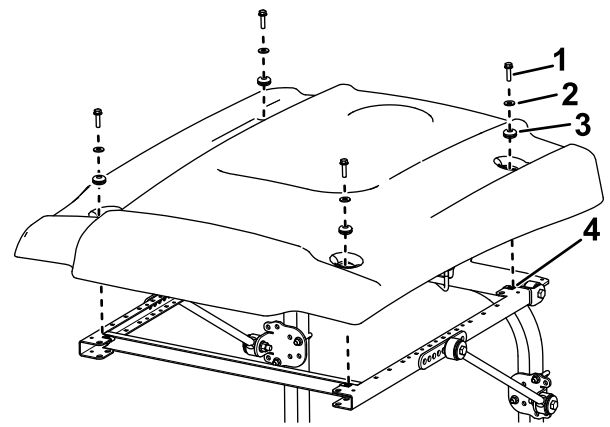


Figure 21

- | | |
|-------------------------------------|-------------|
| 1. Flange-head bolt (5/16 x 1 inch) | 3. Grommet |
| 2. Small washer | 4. Clip nut |

13. Loosely install a brace bracket to each brace with a bolt (1/2 x 2-1/2 inches), washer (1/2 inch), and flange nut (1/2 inch) as shown in [Figure 20](#).
14. Move the brace brackets up or down on the vertical roll bar posts until the sunshade frame is level to the ground, then tighten the U-bolt flange nuts, securing the mounting brackets to the posts.

Note: Use a level to make sure that the frame is level to the ground.
15. Tighten all the remaining flange nuts as follows:
 - Torque the flange nuts (3/8 inch) 41 to 55 N·m (30 to 41 ft-lb).
 - Torque the flange nuts (1/2 inch) 113 to 141 N·m (84 to 104 ft-lb).
16. While aligning the mounting holes, position the sunshade onto the frame as shown in [Figure 21](#).

17. Loosely mount each corner of the sunshade to the frame with a flange-head bolt (5/16 x 1 inch), a small washer, and a grommet ([Figure 21](#)).
18. Tighten the sunshade-mounting bolts 5 to 6 N·m (45 to 55 in-lb).

Important: Do not overtighten the mounting bolts as the sunshade may crack.

Installing the Sunshade

Groundsmaster 360 or 7200 Machines

1. With the roll bar in the lowered position, remove the anti-rattle leaf spring (Figure 22) from each side of the roll bar.

Retain the leaf springs and the bolts for use when the canopy is not installed.

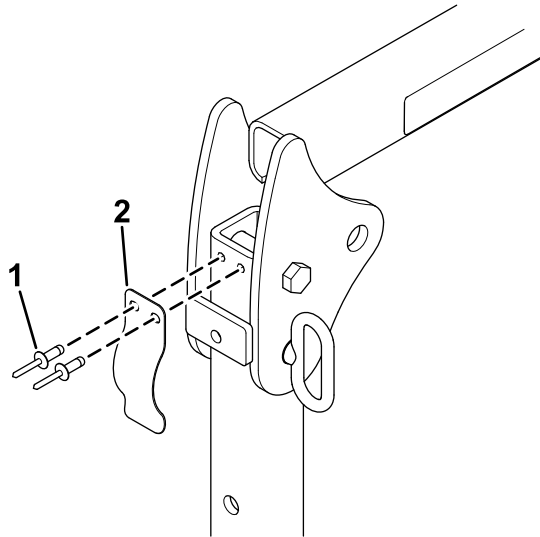


Figure 22

g560315

1. Rivet
2. Leaf spring

2. With the roll bar in the raised position, remove the hairpin cotters and the 2 pins (Figure 23).

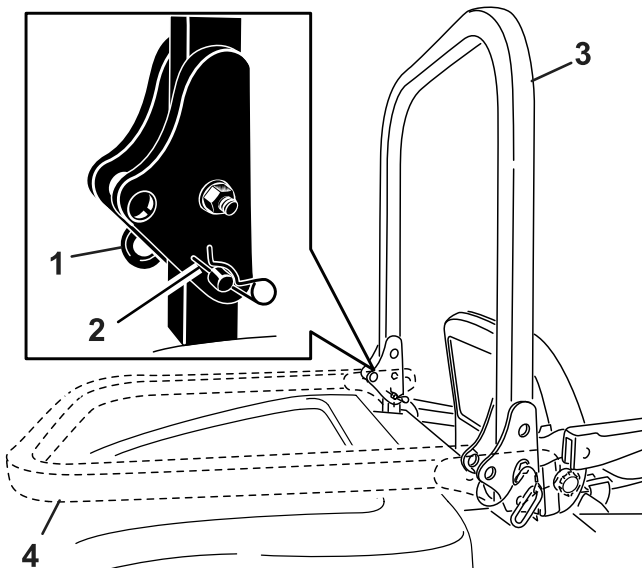


Figure 23

g187726

1. Pin
2. Hairpin cotter
3. Roll bar (raised position)
4. Roll bar (lowered position)

3. Insert a washer (13/16 x 1-1/2 inches) onto each bolt (3/4 x 4 inches) as shown in Figure 24.

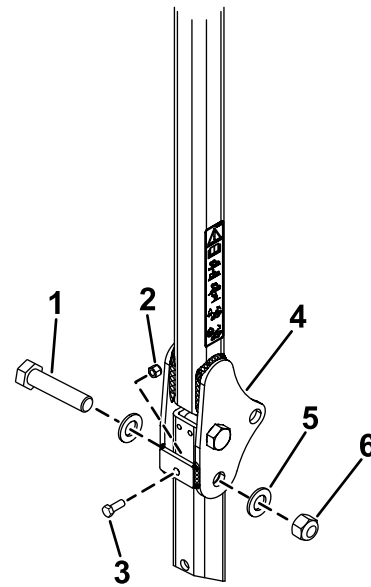


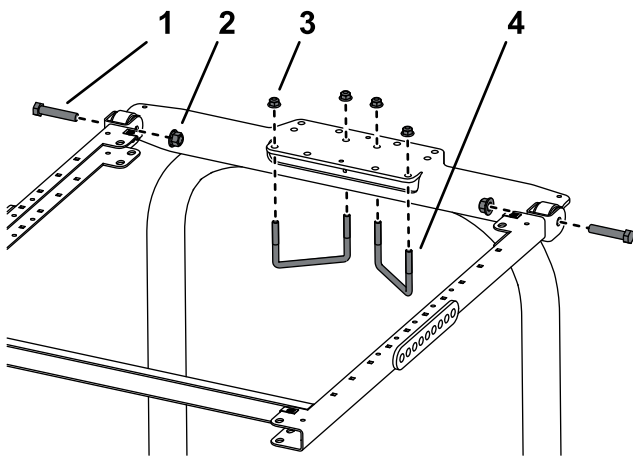
Figure 24

g560317

1. Bolt (3/4 x 4 inches)
2. Bolt (3/8-16 x 1 inch or 1-1/4 inches)
3. Jam nut (3/8 inch)
4. Roll bar
5. Washer (13/16 x 1-1/2 inches)
6. Nut (3/4 inch)

4. In the holes where the pins were removed, install the bolts and washers (Figure 24).
5. Install another washer onto each bolt and secure with nuts (3/4 inch) as shown in Figure 24. Torque the nuts 323 to 396 N·m (238 to 292 ft-lb).
6. Install a bolt (3/8-16 x 1 inch or 1-1/4 inches) with a jam nut (bolts and jam nuts are not provided) in the threaded plate on each side of the lower portion of the roll bar in the hinge area (Figure 24). Tighten the bolt until it is tight against the upper roll-bar tube and tighten the jam nut.
7. Torque the ROPS pivot bolt (Figure 24) to 91 to 113 N·m (67 to 83 ft-lb) to avoid any bouncing of the roll bar and sunshade.
8. Position the ROPS-mount bracket onto the top of the traction unit roll bar (Figure 25).

Note: Make sure that the roll bar is centered in the ROPS-mount bracket.

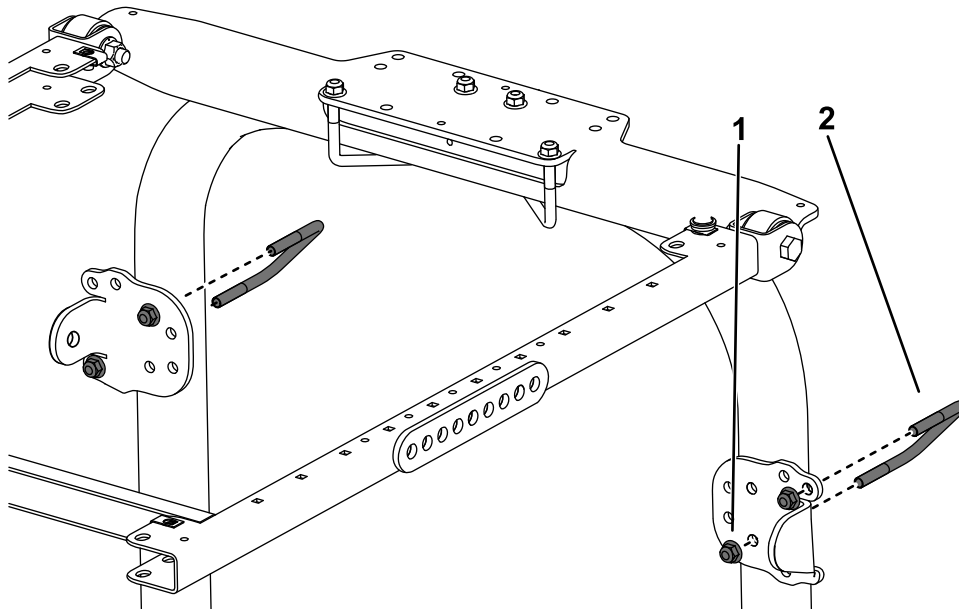


g246185

Figure 25

- | | |
|----------------------------|--------------------------------|
| 1. Bolt (1/2 x 2-1/2 inch) | 3. Flange nut (3/8 inch) |
| 2. Flange nut (1/2 inch) | 4. U-bolt (4-1/2 x 2-3/4 inch) |

9. Using the mounting holes shown in [Figure 25](#), mount the bracket to the top of the roll bar with 2 U-bolts (4-1/2 x 2-3/4 inch) and 4 flange nuts.
10. Using the mounting holes shown in [Figure 26](#), loosely secure each of the brace brackets to the roll bar posts with a U-bolt (3-1/2 x 2-3/4 inches) and 2 flange nuts.



g482771

Figure 26

- | | |
|--------------------------|---------------------------|
| 1. Flange nut (3/8 inch) | 2. U-bolt (3-1/2 x 2-3/4) |
|--------------------------|---------------------------|

11. On each side of the sunshade frame, loosely mount a brace to the sixth hole of the bracket mount with a bolt (1/2 x 2-3/4 inches), washer (1/2 inch), and flange nut (1/2 inch) as shown in [Figure 27](#).

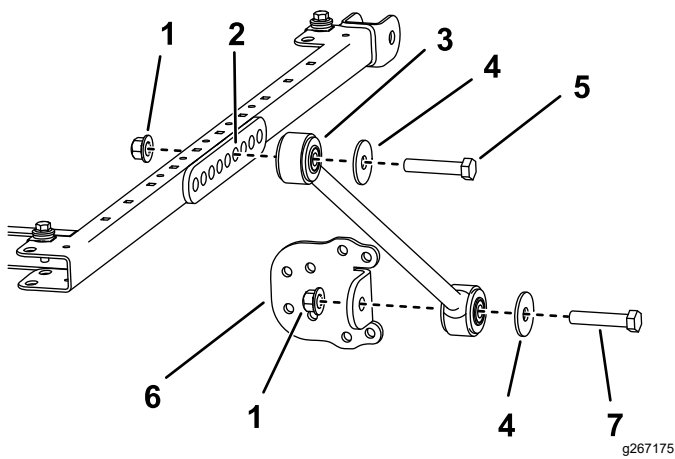


Figure 27
Left side shown

- | | |
|--------------------------|------------------------------|
| 1. Flange nut (1/2 inch) | 5. Bolt (1/2 x 2-3/4 inches) |
| 2. Mounting hole | 6. Brace bracket |
| 3. Brace | 7. Bolt (1/2 x 2-1/2 inches) |
| 4. Washer (1/2 inch) | |

12. Loosely install a brace bracket to each brace with a bolt (1/2 x 2-1/2 inches), washer (1/2 inch), and flange nut (1/2 inch) as shown in [Figure 27](#).

Note: The U-bolts are not installed symmetrically.

13. Move the brace brackets up or down on the vertical roll bar posts until the sunshade frame is level to the floor. Use a level to make sure that the frame is level to the ground. Then, tighten the U-bolt flange nuts, securing the brace brackets to the posts.

Note: Use the front or rear mounting holes, in the brace bracket, if more adjustability is required.

14. Tighten all the remaining flange nuts as follows:
- Torque the flange nuts (3/8 inch) 41 to 55 N·m (30 to 41 ft-lb).
 - Torque the flange nuts (1/2 inch) 113 to 141 N·m (84 to 104 ft-lb).
15. While aligning the mounting holes, position the sunshade onto the frame as shown in [Figure 28](#).

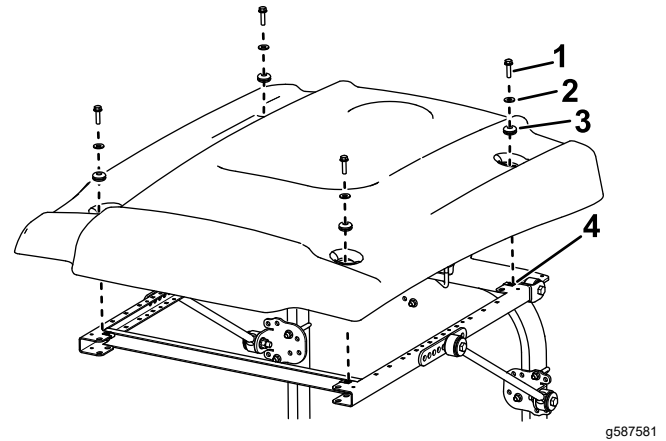


Figure 28

- | | |
|-------------------------------------|-------------|
| 1. Flange-head bolt (5/16 x 1 inch) | 3. Grommet |
| 2. Small washer | 4. Clip nut |

16. Loosely mount each corner of the sunshade to the frame with a flange-head bolt (5/16 x 1 inch), a small washer, and a grommet ([Figure 28](#)).
17. Tighten the sunshade-mounting bolts 5 to 6 N·m (45 to 55 in-lb).

Important: Do not overtighten the mounting bolts as the sunshade may crack.

Installing the Sunshade

Groundsmaster 3500, 3505, 4000, and 4100 Machines or Reelmaster 3100, 3555, and 3575 Machines

1. When you install the Universal Sunshade on a **Reelmaster 3100 traction unit** or a **Groundsmaster 3500/3505 traction unit**, install the Wheel Weight Kit.
2. **For Reelmaster 3555 and 3575 traction units**, skip to step 10. For all other models, with the roll bar in the raised position, remove the hairpin cotters and the 2 pins ([Figure 29](#)).

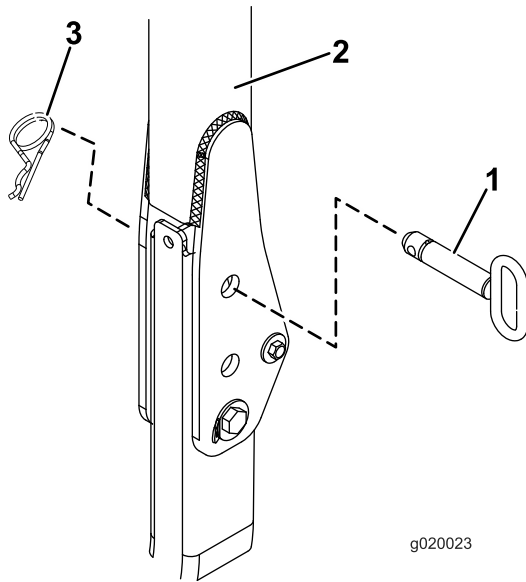


Figure 29

1. Pin
2. Roll bar
3. Hairpin cotter

3. Insert a washer (13/16 x 1-1/2 inches) onto each bolt (3/4 x 4 inches) as shown in [Figure 30](#).

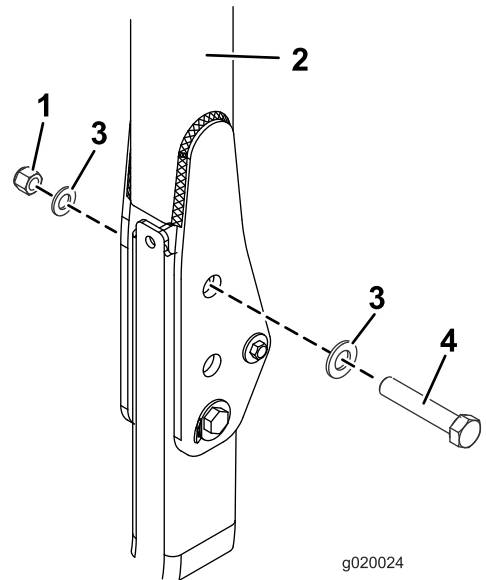


Figure 30

1. Nut (3/4 inch)
2. Roll bar
3. Washer (13/16 x 1-1/2 inches)
4. Bolt (3/4 x 4 inches)

4. In the holes where the pins were removed, install the bolts and washers ([Figure 30](#)).
5. Install another washer onto each bolt and secure with nut (3/4 inch) as shown in ([Figure 30](#)). Torque the nuts 323 to 396 N·m (238 to 292 ft-lb).
6. Torque the ROPS pivot bolt ([Figure 30](#)) 91 to 113 N·m (67 to 83 ft-lb) to avoid any bouncing of the roll bar and sunshade.

7. Position the ROPS-mount bracket onto the top of the traction unit roll bar ([Figure 31](#)). Make sure that the roll bar is centered in the ROPS-mount bracket.

roll bar posts with a U-bolt (3-1/8 x 4 inches) and 2 flange nuts.

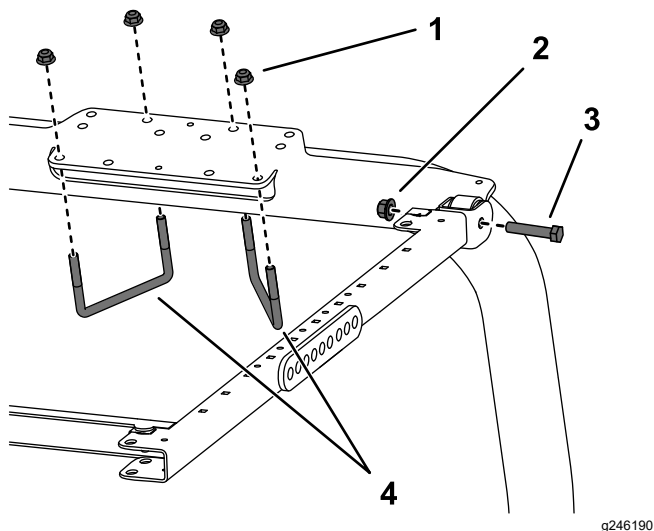


Figure 31

- | | |
|--------------------------|----------------------------------|
| 1. Flange nut (3/8 inch) | 3. Bolt (1/2 x 2-1/2 inch) |
| 2. Flange nut (1/2 inch) | 4. U-bolt (4-1/2 x 2-3/4 inches) |

8. Using the mounting holes shown in [Figure 31](#), secure the ROPS-mount bracket to the top of the roll bar with 2 U-bolts (4-1/2 x 2-3/4 inches) and 4 flange nuts.
9. Using the mounting holes shown in [Figure 32](#), loosely secure each of the brace brackets to the

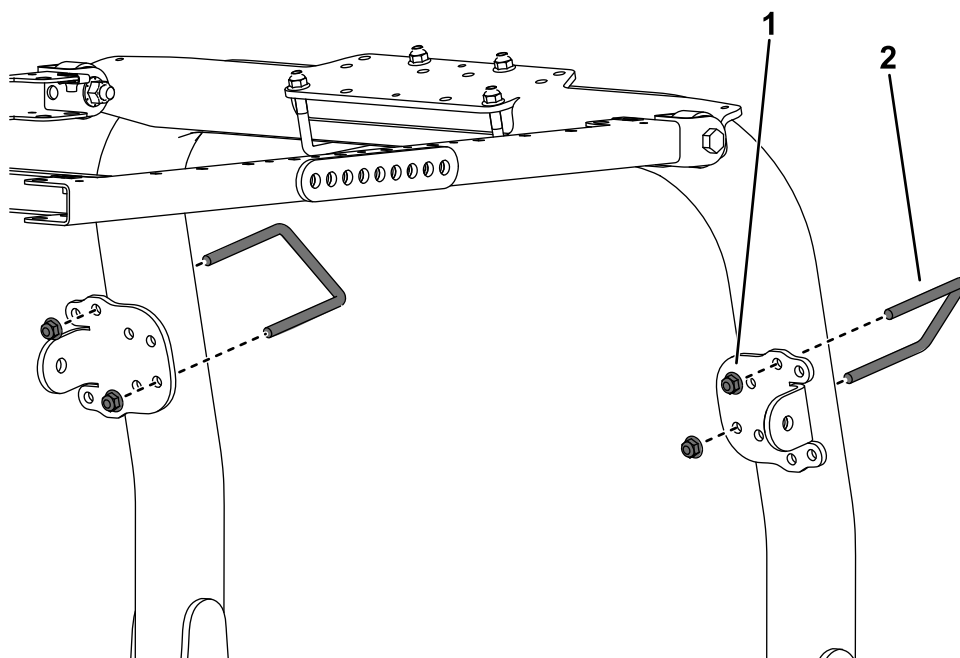


Figure 32

- | | |
|--------------------------|------------------------------|
| 1. Flange nut (3/8 inch) | 2. U-bolt (3-1/8 x 4 inches) |
|--------------------------|------------------------------|

10. On each side of the sunshade frame, loosely mount a brace to the brace bracket as follows:

- For Models 03820, 03821, 30604, 30605, 30608, and 30609 on each side of the sunshade frame, loosely mount a brace to the **rear** hole of the brace bracket with a bolt (1/2 x 2-1/2 inches), washer (1/2 inch) and flange nut (1/2 inch) as shown in [Figure 33](#).
- For Models 30446, 30446N, 30447, and 30447N, on each side of the sunshade frame, loosely mount a brace to the **second** hole of the brace bracket with a bolt (1/2 x 2-1/2 inches), washer (1/2 inch), and flange nut (1/2 inch) as shown in [Figure 34](#).

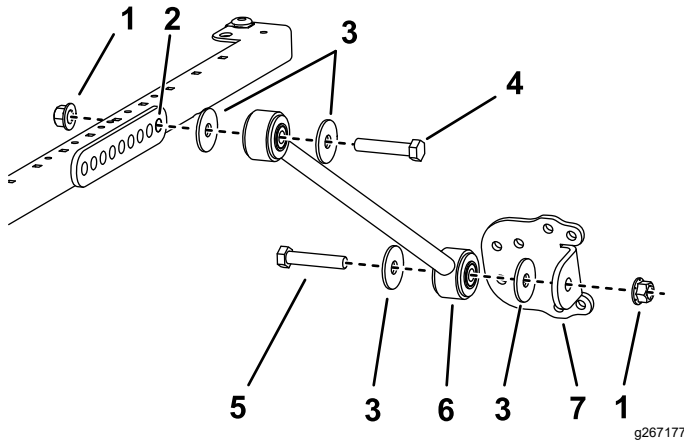


Figure 33

Models 03820, 03821, 30604, 30605, 30608, and 30609

- | | |
|------------------------------|------------------------------|
| 1. Flange nut (1/2 inch) | 5. Bolt (1/2 x 2-1/2 inches) |
| 2. Mount hole | 6. Brace |
| 3. Washer (1/2 inch) | 7. Brace bracket |
| 4. Bolt (1/2 x 2-3/4 inches) | |

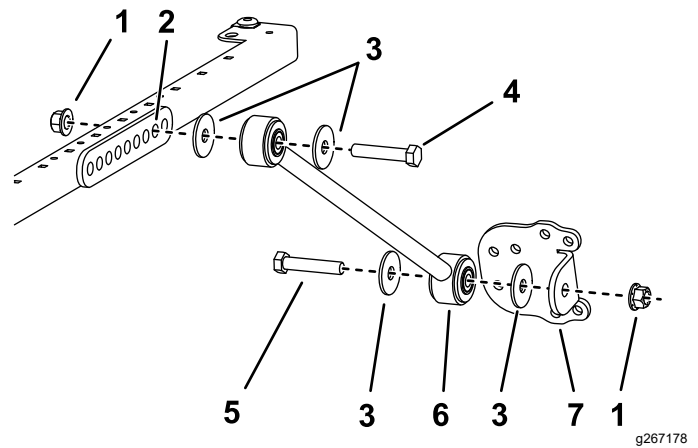


Figure 34

Models 30446, 30446N, 30447, and 30447N

- | | |
|------------------------------|------------------------------|
| 1. Flange nut (1/2 inch) | 5. Bolt (1/2 x 2-1/2 inches) |
| 2. Mount hole | 6. Brace |
| 3. Washer (1/2 inch) | 7. Brace bracket |
| 4. Bolt (1/2 x 2-3/4 inches) | |

- Loosely install a brace bracket to each brace with a bolt (1/2 x 2-1/2 inches), washer (1/2 inch), and flange nut (1/2 inch) as shown in [Figure 33](#).
- Move the brace bracket up or down, on the vertical roll bar posts, until the sunshade frame is level to the floor.

Note: Use a level to make sure that the frame is level to the ground.

- Tighten the U-bolt flange nuts, securing the mounting brackets to the posts.
- Tighten all the remaining flange nuts as follows:
 - Torque the flange nuts (3/8 inch) 41 to 55 N·m (30 to 41 ft-lb).
 - Torque the flange nuts (1/2 inch) 113 to 141 N·m (84 to 104 ft-lb).
- While aligning the mounting holes, position the sunshade onto the frame as shown in [Figure 35](#).

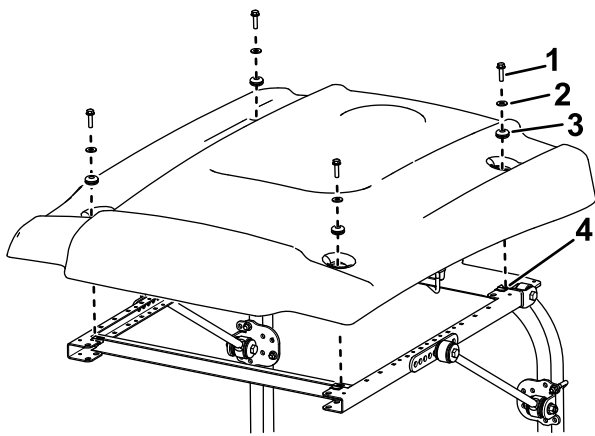


Figure 35

g587582

1. Flange-head bolt (5/16 x 1 inch)
2. Small washer
3. Grommet
4. Clip nut

16. Loosely mount each corner of the sunshade to the frame with a flange-head bolt (5/16 x 1 inch), a small washer, and a grommet (Figure 35).
17. Tighten the sunshade-mounting bolts to 5 to 6 N·m (45 to 55 in-lb).

Important: Do not overtighten the mounting bolts as the sunshade may crack.

Installing the Sunshade

Groundsmaster 4500 and 4700 Machines or Reelmaster 6700 and 7000 Machines

1. With the roll bar in the raised position, remove the hairpin cotter and pin.

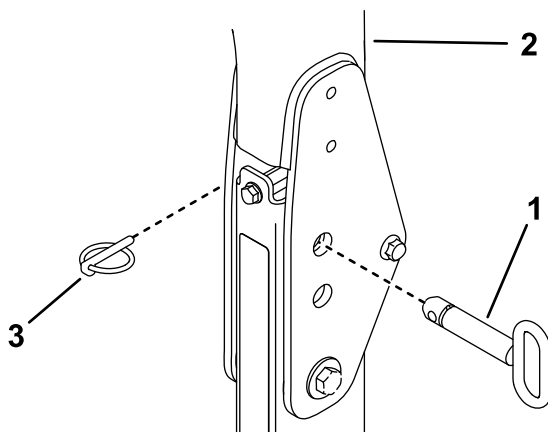


Figure 36

g215450

1. Pin
2. Roll bar
3. Hairpin cotter

2. Insert a washer (13/16 x 1-1/2 inches) onto each bolt (3/4 x 4 inches) as shown in Figure 37.
3. In the holes where the pins were removed, install the bolts and washers (Figure 37).
4. Install another washer onto each bolt and secure with nut (3/4 inch) as shown in Figure 37.
5. Torque the ROPS pivot bolt to 91 to 113 N·m (67 to 83 ft-lb) to avoid any bouncing of the roll bar and sunshade.

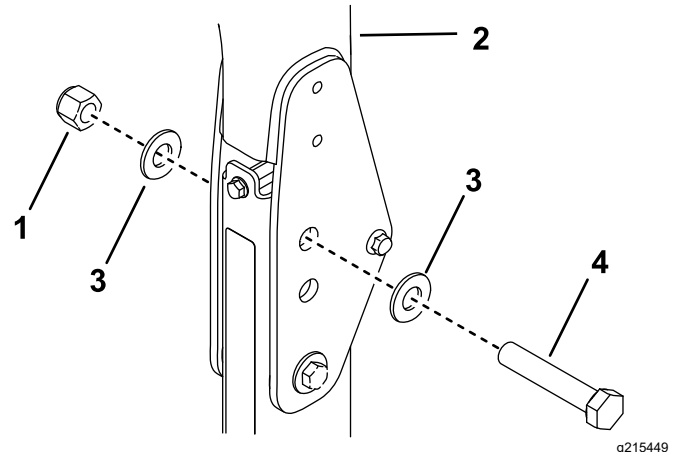


Figure 37

g215449

1. Nut (3/4 inch)
2. Roll bar
3. Washer (13/16 x 1-1/2 inches)
4. Bolt (3/4 x 4 inches)

6. Position the ROPS-mount bracket onto the top of the traction unit roll bar (Figure 38). Ensure that the roll bar is centered in the ROPS-mount bracket.

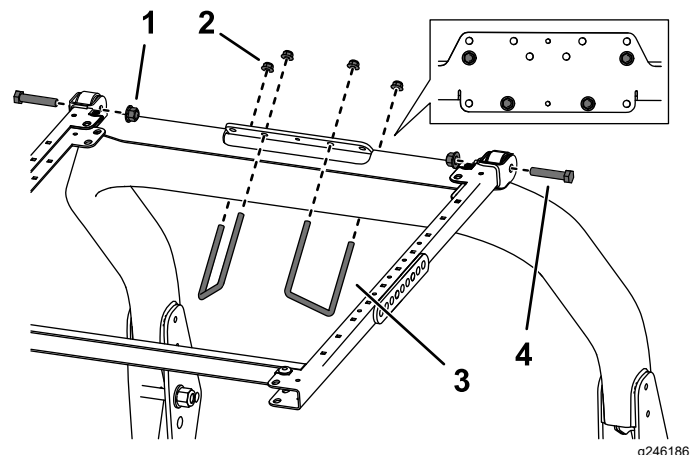


Figure 38

g246186

1. Flange nut (1/2 inch)
2. Flange nut (3/8 inch)
3. U-bolt (3-1/2 x 5 inches)
4. Bolt (1/2 x 2-1/2 inch)

7. Using the mounting holes shown in Figure 38, mount the ROPS-mount bracket to the top of the roll bar with 2 U-bolts (3-1/2 x 5 inches) and 4 flange nuts.

8. Using the mounting holes shown in [Figure 39](#), loosely secure each of the brace brackets to the roll bar posts with a U-bolt (3-1/2 x 5 inches) and 2 flange nuts.

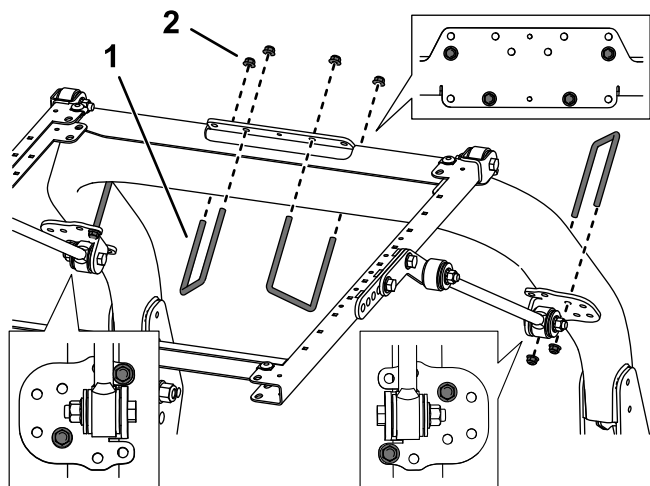


Figure 39

1. U-bolt (3-1/2 x 5 inches)
2. Flange nut (3/8 inch)

9. On each side of the sunshade frame, loosely mount an extension link to the rear and center holes of the mount bracket with 2 bolts (1/2 x 1-1/2 inches), and 2 flange nuts (1/2 inch) as shown in [Figure 40](#).
10. Attach a brace to the outside of each extension link with a bolt (1/2 x 2-1/2 inches), washer (1/2 inch), and flange nut (1/2 inch) as shown in [Figure 40](#).

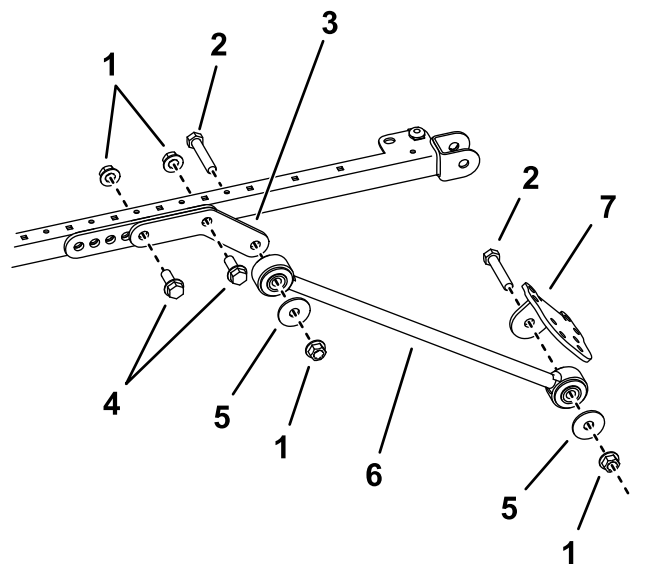


Figure 40
Left side shown

1. Flange nut (1/2 inch)
2. Bolt (1/2 x 2-1/2 inches)
3. Extension link
4. Bolt (1/2 x 1-1/2 inch)
5. Washer (1/2 inch)
6. Brace
7. Brace bracket

11. Loosely install a brace bracket to each brace with a bolt (1/2 x 2-1/2 inches), washer (1/2 inch), and flange nut (1/2 inch) as shown in [Figure 40](#).
12. Move the brace brackets up or down, on the vertical roll bar posts, until the sunshade frame is level to the floor.
Note: Use a level to make sure that the frame is level to the ground.
13. Tighten the U-bolt flange nuts, securing the mount brackets to the posts.
14. Tighten all the remaining flange nuts as follows:
 - Torque the flange nuts (3/8 inch) 41 to 55 N·m (30 to 41 ft-lb).
 - Torque the flange nuts (1/2 inch) 113 to 141 N·m (84 to 104 ft-lb).
15. While aligning the mounting holes, position the sunshade onto the frame as shown in [Figure 41](#).

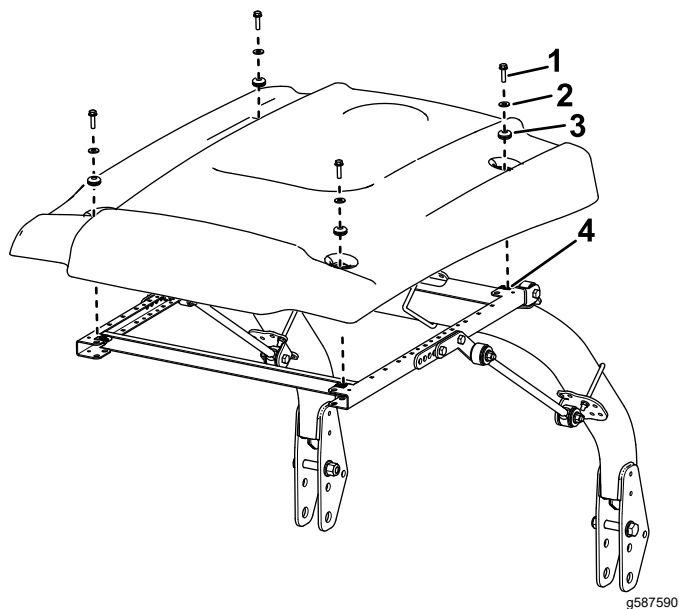


Figure 41

- | | |
|-------------------------------------|-------------|
| 1. Flange-head bolt (5/16 x 1 inch) | 3. Grommet |
| 2. Small washer | 4. Clip nut |

16. Loosely mount each corner of the sunshade to the frame with a flange-head bolt (5/16 x 1 inch), a small washer, and a grommet (Figure 41).
17. Tighten the sunshade-mounting bolts to 5 to 6 N·m (45 to 55 in-lb).

Important: Do not overtighten the mounting bolts as the sunshade may crack.

Installing the Sunshade

Reelmaster 5010 Machine or Groundsmaster 4300 Machine

1. Position the ROPS-mount brackets onto the top of the traction unit roll bar (Figure 42). Make sure that the roll bar is centered in the ROPS-mount bracket.

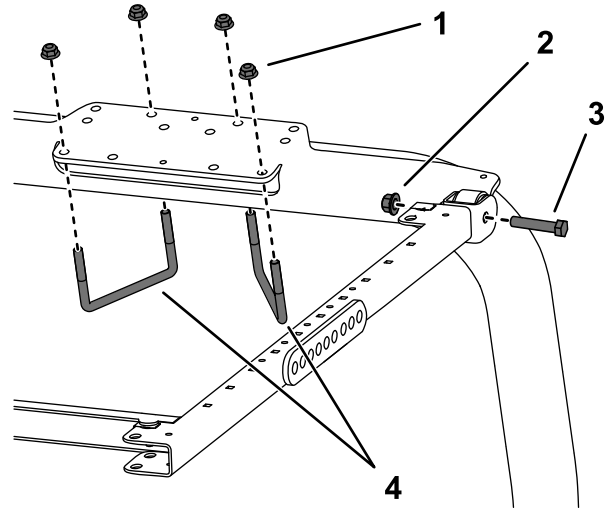
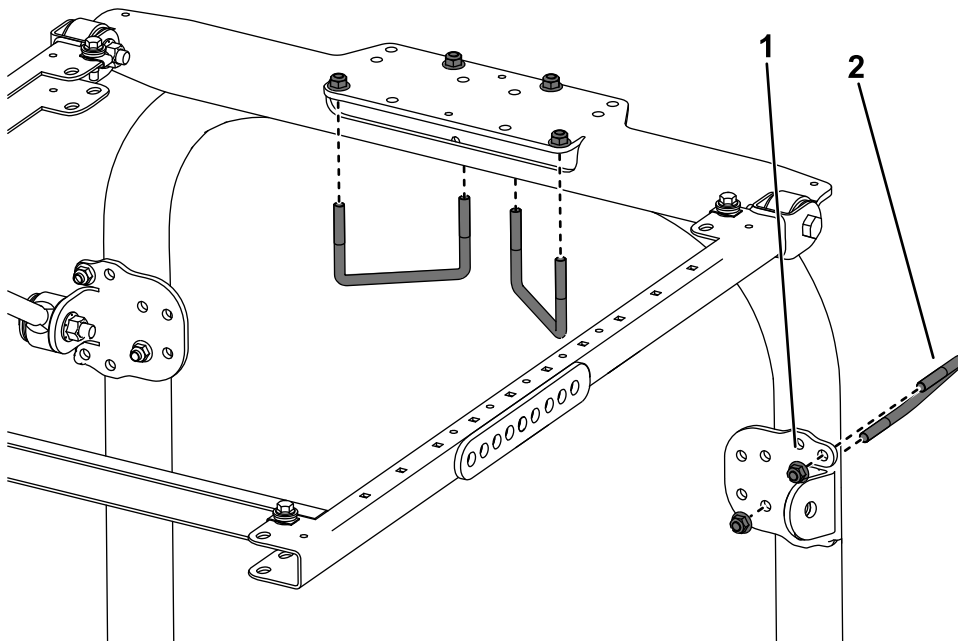


Figure 42

- | | |
|--------------------------|----------------------------------|
| 1. Flange nut (3/8 inch) | 3. Bolt (1/2 x 2-1/2 inch) |
| 2. Flange nut (1/2 inch) | 4. U-bolt (4-1/2 x 2-3/4 inches) |

2. Using the mounting holes shown in Figure 42, mount the ROPS-mount bracket to the top of the roll bar with 2 U-bolts (4-1/2 x 2-3/4 inches) and 4 flange nuts.
3. Using the mounting holes shown in Figure 43, loosely secure each of the brace brackets to the roll bar posts with a U-bolt (3-1/8 x 4 inches) and 2 flange nuts.



g482773

Figure 43

1. Flange nut (3/8 inch)
2. U-bolt (3-1/8 x 4 inches)

4. On each side of the sunshade frame, loosely mount a brace to the rear hole of the brace mount with a bolt (1/2 x 2-3/4 inches), 2 washers (1/2 inch), and a flange nut (1/2 inch) as shown in [Figure 44](#).

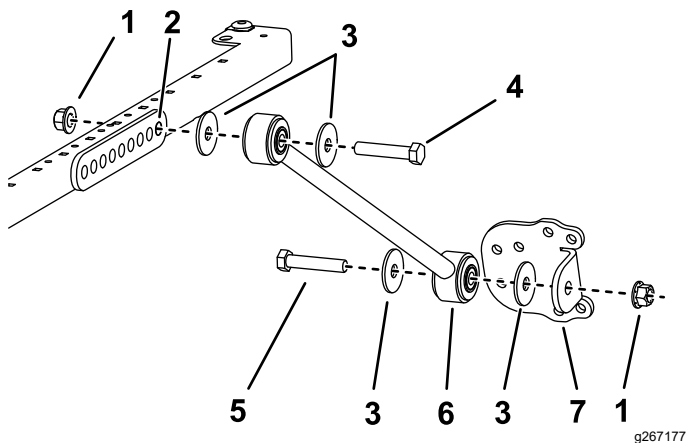


Figure 44

Left side shown

1. Flange nut (1/2 inch)
2. Mount hole
3. Washer (1/2 inch)
4. Bolt (1/2 x 2-3/4 inches)
5. Bolt (1/2 x 2-1/2 inches)
6. Brace
7. Brace bracket

5. Loosely install a brace bracket to each brace with a bolt (1/2 x 2-1/2 inches), 2 washers (1/2 inch), and a flange nut (1/2 inch) as shown in [Figure 44](#).

6. Move the brace brackets up or down on the vertical roll bar posts until the sunshade frame is level to the floor.

Note: Use a level to ensure that the frame is level to the ground.

7. Tighten the U-bolt flange nuts, securing the mounting brackets to the posts.
8. Tighten all the remaining flange nuts as follows:
 - Torque the flange nuts (3/8 inch) 41 to 55 N·m (30 to 41 ft-lb).
 - Torque the flange nuts (1/2 inch) 113 to 141 N·m (84-104 ft-lb).
9. While aligning the mounting holes, position the sunshade onto the frame as shown in [Figure 45](#).

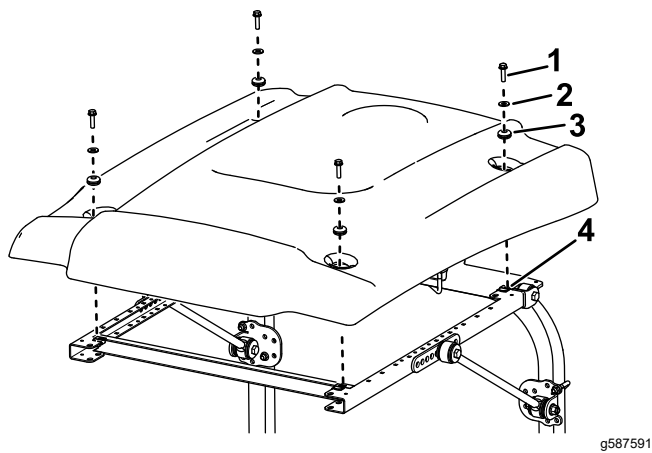


Figure 45

- | | |
|-------------------------------------|-------------|
| 1. Flange-head bolt (5/16 x 1 inch) | 3. Grommet |
| 2. Small washer | 4. Clip nut |

10. Loosely mount each corner of the sunshade to the frame with a flange-head bolt (5/16 x 1 inch), a small washer, and a grommet (Figure 45).
11. Tighten the sunshade-mounting bolts to 5 to 6 N·m (45 to 55 in-lb).

Important: Do not overtighten the mounting bolts as the sunshade may crack.

Installing the Sunshade

Multi Pro 1750 Machine

1. Position the ROPS-mount bracket onto the top of the turf sprayer roll bar (Figure 46).

Note: Make sure that the roll bar is centered in the ROPS-mount bracket.

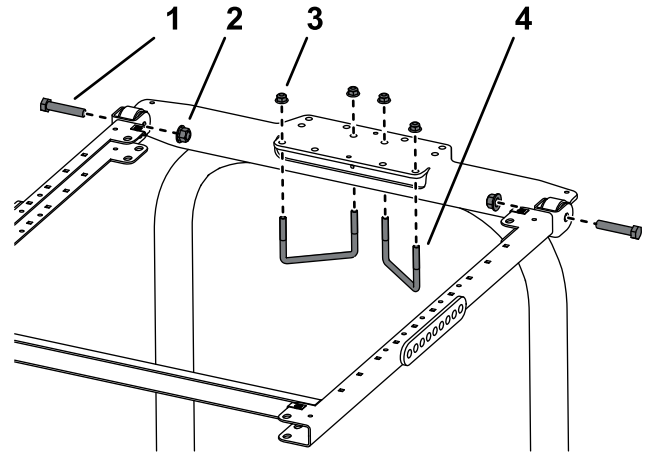
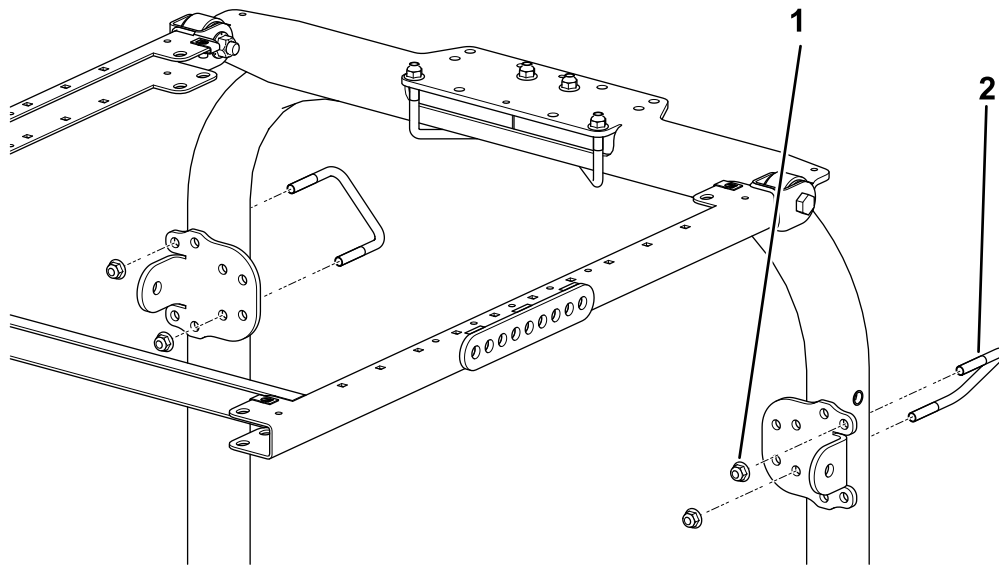


Figure 46

- | | |
|------------------------------|----------------------------------|
| 1. Bolt (1/2 x 2-1/2 inches) | 3. Flange nut (3/8 inch) |
| 2. Flange nut (1/2 inch) | 4. U-bolt (4-1/2 x 2-3/4 inches) |

2. Install the frame assembly to the ROPS-mount bracket (Figure 46).
3. Using the mounting holes shown in Figure 46, mount the ROPS-mount bracket to the top of the roll bar with 2 U-bolts (4-1/2 x 2-3/4 inches) and 4 flange nuts.
4. Using the mounting holes shown in Figure 47, loosely secure each of the brace brackets to the roll bar posts with a U-bolt (3-1/2 x 2-3/4 inches) and 2 flange nuts.

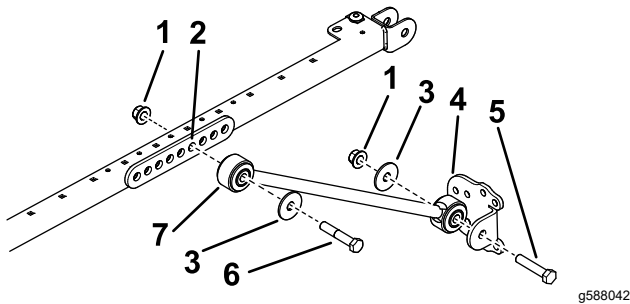


g482774

Figure 47

1. Flange nut (3/8 inch)
2. U-bolt (3-1/2 x 2-3/4 inches)

5. On each side of the sunshade frame, loosely mount an extension link to the fourth hole of the brace mount with 2 bolts (1/2 x 2-3/4 inches), and 2 flange nuts (1/2 inch) as shown in [Figure 48](#).



g588042

Figure 48

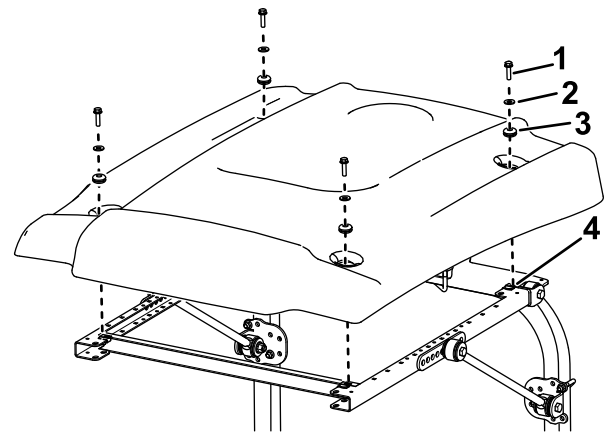
Left side shown

1. Flange nut (1/2 inch)
2. Mount hole
3. Washer (1/2 inch)
4. Brace bracket
5. Bolt (1/2 x 2-1/2 inches)
6. Bolt (1/2 x 2-3/4 inches)
7. Brace

6. Loosely install a brace bracket to each brace with a bolt (1/2 x 2-1/2 inches), washer (1/2 inch), and flange nut (1/2 inch) as shown in [Figure 48](#).
7. Move the brace brackets up or down on the vertical roll bar posts until the sunshade frame is level to the ground, then tighten the U-bolt flange nuts, securing the mounting brackets to the posts.

Note: Use a level to make sure that the frame is level to the ground.

8. Tighten all the remaining flange nuts as follows:
 - Torque the flange nuts (3/8 inch) 41 to 55 N·m (30 to 41 ft·lb).
 - Torque the flange nuts (1/2 inch) 113 to 141 N·m (84 to 104 ft·lb).
9. While aligning the mounting holes, position the sunshade onto the frame as shown in [Figure 49](#).



g587579

Figure 49

1. Flange-head bolt (5/16 x 1 inch)
2. Small washer
3. Grommet
4. Clip nut

10. Loosely mount each corner of the sunshade to the frame with a flange-head bolt (5/16 x 1 inch), a small washer, and a grommet ([Figure 49](#)).
11. Tighten the sunshade-mounting bolts 5 to 6 N·m (45 to 55 in·lb).

Important: Do not overtighten the mounting bolts as the sunshade may crack.

Operation

Transporting the Machine

When transporting the machine, use the 2 holes in the front of the sunshade frame (under the sunshade) to tie down the sunshade to a secure location on the machine and prevent it from raising up in the wind (Figure 50).

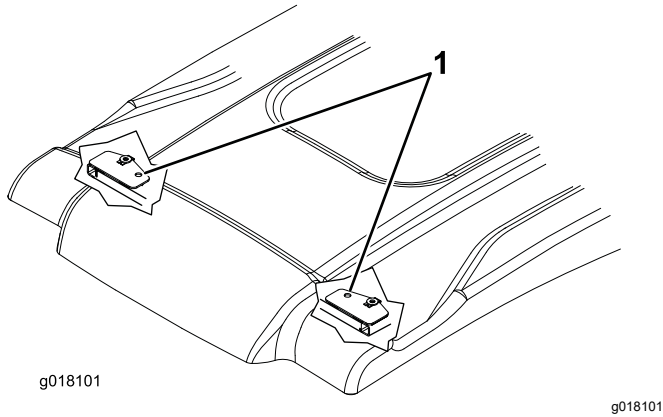


Figure 50

1. Tie down holes
-

Maintenance

Checking and Tightening the Hardware

Check and tighten the mounting hardware after 8 hours of operation. Periodically inspect and tighten the hardware.

Cleaning the Sunshade

Wash with a mild soap or detergent using your bare hands, soft cloth, or sponge to free or dislodge any caked-on dirt or other foreign particles.

Note: Using some cleaners or cloths may scratch or degrade the surface of the sunshade. Test the cleaner or cloth in an inconspicuous area.