Form No. 3416-601 Rev B

Security Cage Kit

Groundsmaster® 4500, 4700, or Reelmaster® 7000 Series Traction Unit with 2 Post ROPS Extension

Model No. 136-2030

Installation Instructions

This kit fits 2 Post ROPS Extension Kit Model 31351 only.

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

Note: Have an assistant help you to install this kit.

1

Preparing the Machine

No Parts Required

Procedure

1. Park the machine on a level surface.
2. Lower the cutting units.
3. Engage the parking brake.
4. Shut off the engine and remove the key.
5. If there are lights on the roll bar, remove the lights and mounting hardware from the roll bar.

   Retain the lights and the mounting hardware
6. If a 2 post ROPS extension was installed on the unit, remove the side panels that are used to mount the ROPS post lights (Figure 2).

   Note: Retain the ROPS clamps and corresponding hardware.
7. Position the control console to the furthest inward position.

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3416-601 B

2

Assembling the Cage

Parts needed for this procedure:

1	Left door-cage assembly
1	Right door-cage assembly
1	Left door support
1	Right door support
1	Left lower-panel assembly
1	Right lower-panel assembly
1	Left door mount
1	Right door mount
1	Rear screen
1	Rear panel
2	Upper mount bracket
2	Lower mount bracket
4	Spacer
2	Spring mount
2	Spring
4	Ball stud
40	Bolt (5/16 x 3/4 inch)
44	Nut (5/16 inch)
10	Carriage bolt (1/4-20 x 3/4 inch)
10	Flange nut (1/4 inch)

Procedure

Refer to Figure 2 as you perform the following steps.

Note: Ensure that all parts are assembled loose. Complete the assembly of the kit; then, tighten all fasteners.

1. Use bolts (5/16 x 3/4 inch) and flange nuts (5/16 inch) to secure the left and right door supports to the top rails of the 2 Post ROPS Extension.
2. Use bolts (5/16 x 3/4 inch) and flange nuts (5/16 inch) to secure the upper and lower mount brackets and the left and right door supports to the roll bar.
3. Use bolts (5/16 x 3/4 inch) and flange nuts (5/16 inch) to secure the rear panel to the left and right door supports.
4. Use bolts (5/16 x 3/4 inch) and flange nuts (5/16 inch) to secure the rear screen to the rear panel and the rear roof mount of the 2 Post ROPS Extension.

   Note: Ensure that the holes in the rear screen are aligned with the holes in the rear panel and the rear roof mount.
5. Use bolts (5/16 x 3/4 inch) and flange nuts (5/16 inch) to secure the rear screen to the left and right door supports.
6. Use bolts (5/16 x 3/4 inch) and flange nuts (5/16 inch) to secure the left and right door mounts to the left and right door supports, respectively.
7. Use bolts (5/16 x 3/4 inch) and flange nuts (5/16 inch) to secure the spring mounts to the top rails of the 2 Post ROPS Extension.
8. Use 10 carriage bolts (1/4-20 x 3/4 inch) and 10 flange nuts (1/4 inch) to secure the left and right lower-panel assemblies to the foot platform and the lower side brackets of the 2 Post ROPS Extension.

   You must drill holes into the foot platform.

   A. Mark the areas where the lower panel assemblies meet the foot platform (Figure 1).

   B. Drill 4 holes (0.71 cm or 1/4 inch) into the foot platform.

   C. Attach the carriage bolts and the flange nuts.

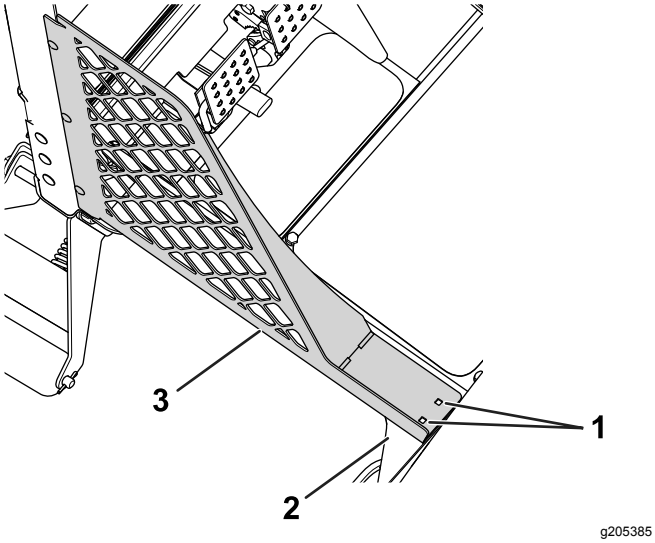


Figure 1
Left side shown

1. Drill holes—0.281 inch
2. Foot platform
3. Left lower-panel assembly

9. Secure the left and right door cage assemblies to the corresponding side of the machine.

   Place the hinge assembly connected to each door onto the previously installed door-mount assemblies with 4 spacers.

10. Use 4 ball studs and 4 flange nuts (5/16 inch) to secure the springs to the door cage assemblies and the spring mounts.

    Note: Install the springs with the cylinder end on the door cage assembly and the piston end on the spring mount.

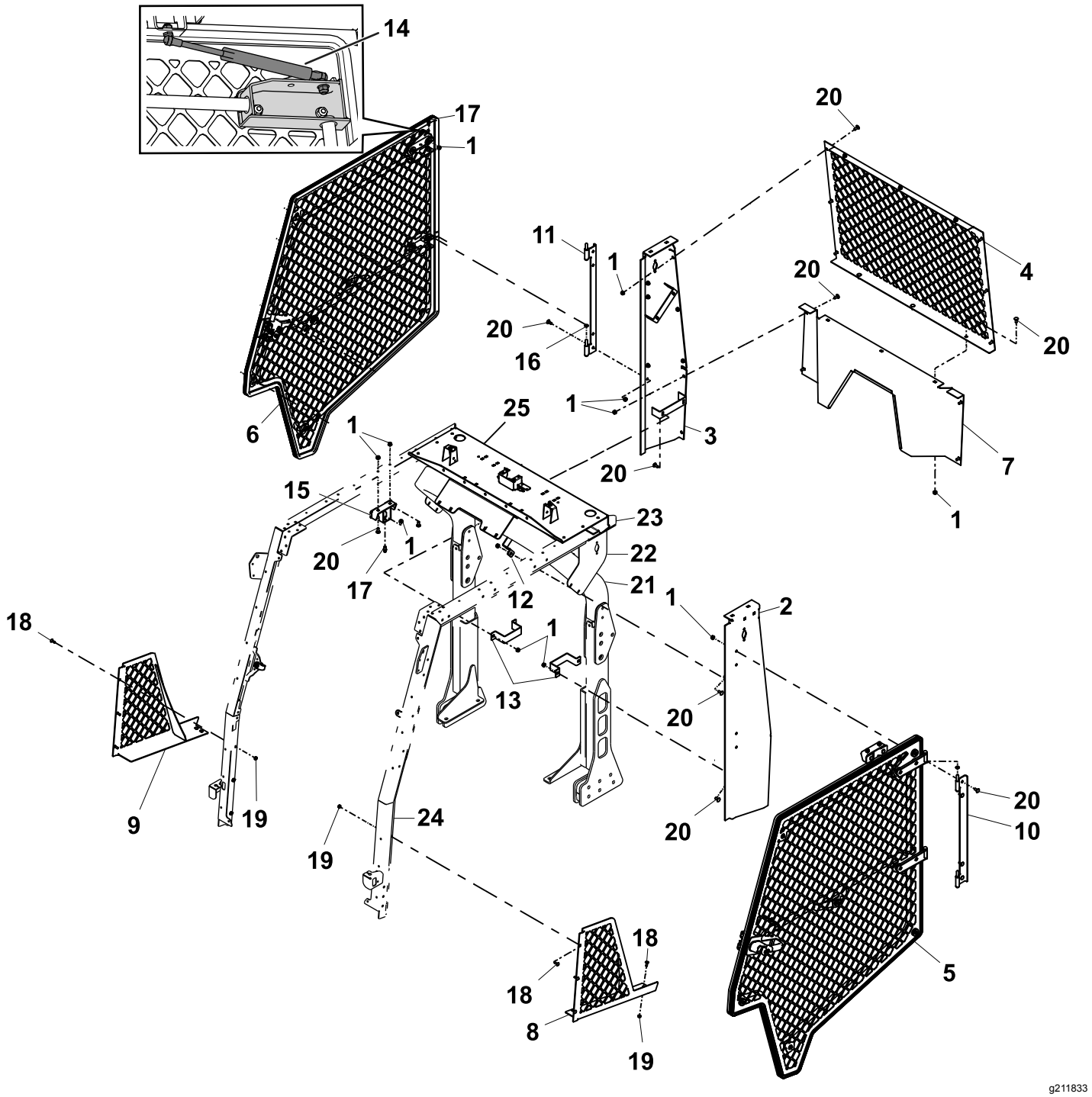


Figure 2

1. Flange nut (5/16 inch)
2. Left door support
3. Right door support
4. Rear screen
5. Left-door-cage assembly
6. Right-door-cage assembly
7. Rear panel
8. Left-lower-panel assembly
9. Right-lower-panel assembly
10. Left door mount
11. Right door mount
12. Upper mount bracket
13. Lower mount bracket
14. Gas spring
15. Spring mount
16. Spacer
17. Ball stud
18. Carriage bolt (1/4-20 x 3/4 inch)
19. Flange nut (1/4 inch)
20. Bolt (5/16 x 3/4 inch)
21. Roll bar
22. Side panels—2 post ROPS extension
23. Top rails—2 post ROPS extension
24. Lower side bracket—2 post ROPS extension
25. Rear roof mount—2 post ROPS extension

3

Assembling the Door Latch

Parts needed for this procedure:

2	Jam nut
2	Pin guard
2	Latch-pin cam
4	Thrust washer
4	Lock washer
2	Latch pin

Procedure

1. Ensure that you adjusted the control console to the furthest inward position.
2. Align the latch-pin cam with the opening at the striker plate in the position shown in Figure 3.

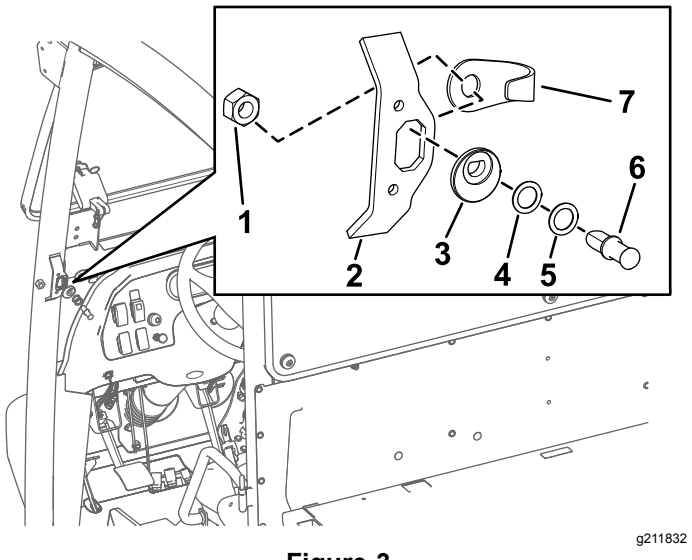


Figure 3

1. Jam nut
2. Striker plate
3. Latch-pin cam
4. Thrust washer
5. Lock washer
6. Latch pin
7. Pin guard

3. Insert the latch pin (without the washers at first) into the latch-pin cam (Figure 3).
4. Add additional washers as needed to center the latch pin in the door latch.

   Note: A combination of thrust washer and lock washer may be needed to adjust the latch pin so that it engages into the door latch.
5. Align the latch pin and the jam nut onto the back side of the opening at the striker plate (Figure 3).
6. Tighten the jam nut onto the latch pin by hand (Figure 3).

4

Adjusting the Door-Latch Pins

No Parts Required

Procedure

1. Center the latch pin in the latch-pin-mount bracket on the rail (Figure 4).

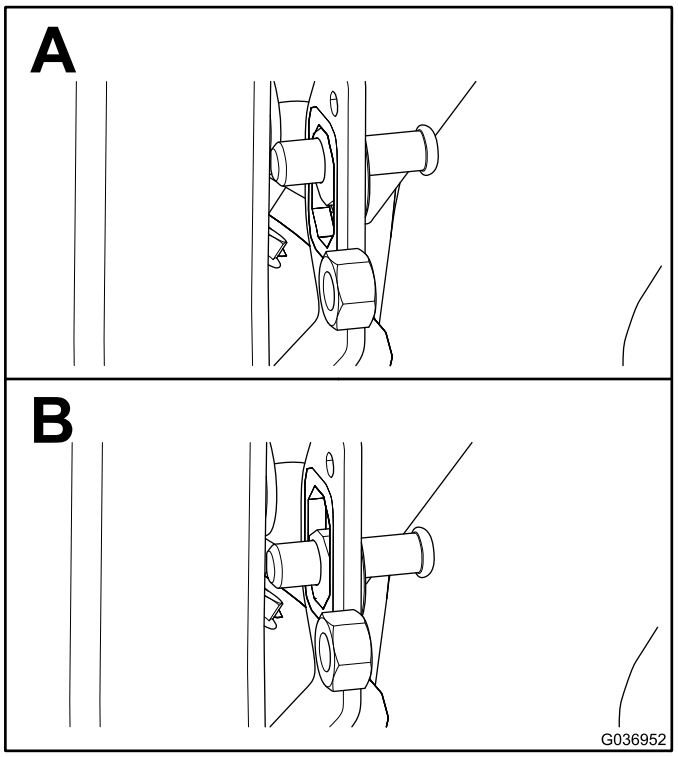


Figure 4

2. Close the door completely and view where the latch pin comes into contact with the door latch.

   Note: If the latch pin does not completely engage with the door latch, add washers between the latch-pin cam and the latch pin.
3. Close the door completely and measure the height of the bubble seal to the sealing surface of the cab rail, and ensure that the measurement is 1.9 to 2.2 cm (3/4 to 7/8 inch) as shown in Figure 5.

Note: If the height measured is more than the zone specification, rotate the latch-pin cam 45° toward the inside of the cab to achieve the specified measurement. If the height measured is less than the zone specification, perform the opposite of the above procedure.

Note: The latch pin self centers.

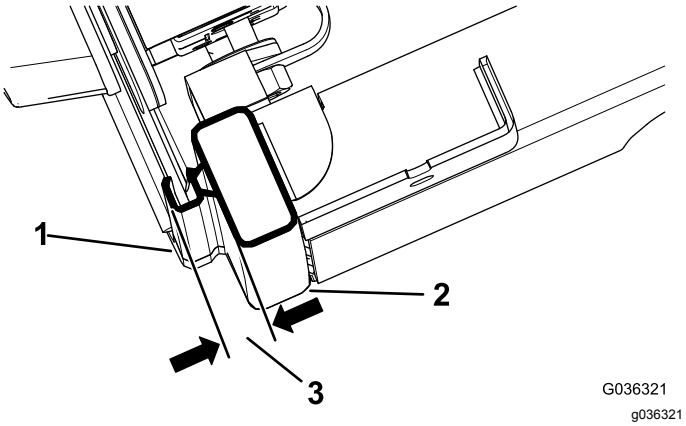


Figure 5

1. Bubble seal
2. Cab rail
3. 1.9 to 2.2 cm (3/4 to 7/8 inch)

4. Tighten the jam nut once the latch pin reaches 1.9 to 2.2 cm (3/4 to 7/8 inch) as shown in Figure 4.

5

Adjusting the Doors

No Parts Required

Procedure

1. Loosen the door-latch pin.
2. Shut the door and use a ratchet strap to hold the door (Figure 6).

   Note: Position an end of the ratchet strap on the top frame rail and the other end on the door handle.

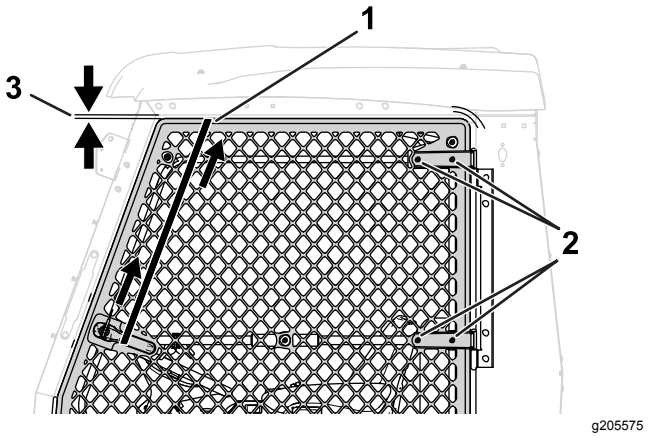


Figure 6

1. Ratchet strap
2. Bolt and nut—door hinge
3. 1.3 cm (1/2 inch)

3. Loosen the 4 bolts and the 4 nuts on the door hinge (Figure 6).
4. Tighten the ratchet strap to pull the door up (Figure 6).

   Ensure that the gap measurement between the door and the frame is 1.3 cm (1/2 inch).
5. Tighten the bolts and nuts on the door hinge and the door-latch pin.
6. Remove the ratchet strap.
7. Repeat the procedure for the other door.

6

Installing the Windshield

Parts needed for this procedure:

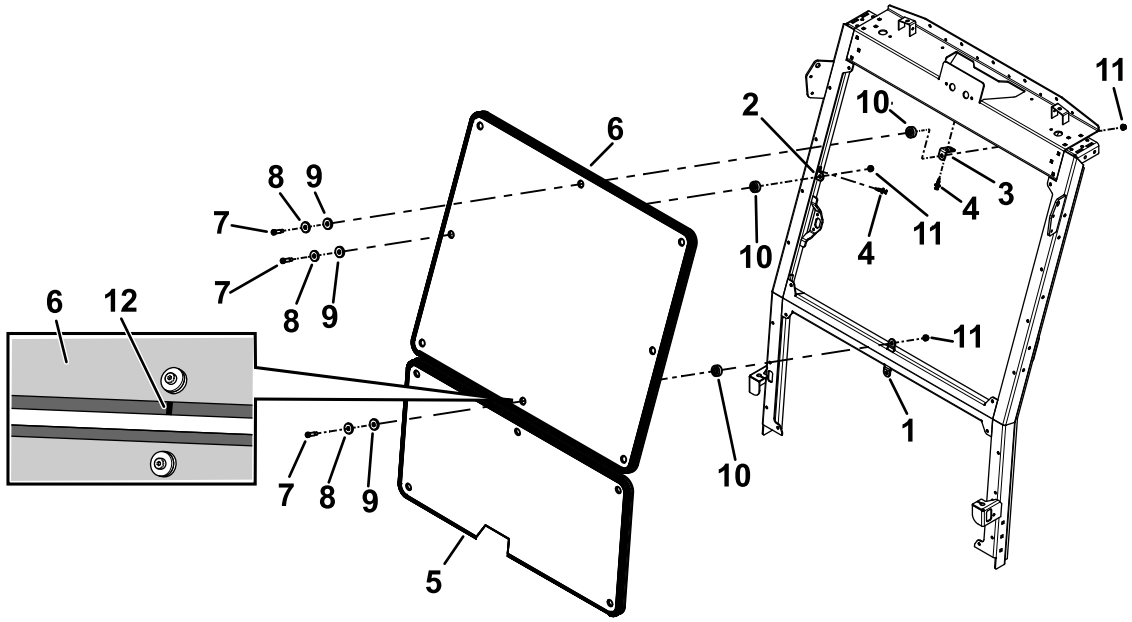
1	Dual-tab mount
2	Side-tab mount
1	Top-tab mount
6	Rivet
1	Lower-windshield assembly
1	Upper-windshield assembly
13	Bolt (5/16 x 1-1/2 inches)
13	Backup washer
13	Rubber bushing (0.31 inch long)
13	Rubber bushing (0.56 inch long)
13	Nut (5/16 inch)

Procedure

Refer to Figure 7 as you perform the following steps.

Note: Ensure that the upper windshield is installed so that the seam is positioned on the bottom of the frame.

1. Install the dual-tab mount between the upper and lower windshield frame on the ROPS.
2. Use 2 rivets to secure the 2 side-tab mounts into the holes provided in the 2-post ROPS extension pillar cover.
3. Use a rivet to secure the top-tab mount into the hole provided in the 2-post ROPS extension front panel.
4. Install the lower and upper windshield assemblies with 13 bolts (5/16 x 1-1/2 inches), 13 backup washers, 13 rubber bushings (0.31 inch long), 13 rubber bushings (0.56 inch long), and 13 nuts (5/16 inch).



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Figure 7

1. Dual-tab mount
2. Side-tab mount
3. Top-tab mount
4. Rivet
5. Lower windshield assembly
6. Upper windshield assembly
7. Bolt (5/16 x 1-1/2 inches)
8. Backup washer
9. Rubber bushing (0.31 inch long)
10. Rubber bushing (0.56 inch long)
11. Nut (5/16 inch)
12. Seam

7

Completing the Installation

No Parts Required

Procedure

1. Ensure that all fasteners are tightened.
2. Install any attachments that you previously removed, such as lights, onto the left and right panels.