



North American Road Light Kit

Groundsmaster® 3200 or 3300 Series Traction Unit

Model No. 31991

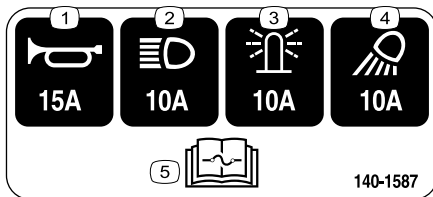
Installation Instructions

Safety

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.



decal140-1587

140-1587

- | | |
|--------------------|--|
| 1. Horn—15 A | 4. Work lights—10 A |
| 2. Headlights—10 A | 5. Read the <i>Operator's Manual</i> for fuse information. |
| 3. Beacon—10 A | |

Installation

1

Preparing the Machine

No Parts Required

Procedure

1. Park the machine on a level surface.
2. Engage the parking brake.
3. Lower the cutting unit.
4. Shut off the engine and remove the key.
5. Disconnect the battery; refer to the electrical system maintenance section of your *Operator's Manual*.



2

Installing the Clips, Speed Nuts, and Fuse Block

Parts needed for this procedure:

1	Switch mount
6	Clip (1/4 inch)
2	Speed nut
1	Fuse mount plate
4	U-type speed nut
1	Fuse block
2	Screw (#10 x 3/4 inch)

Procedure

1. Install the 6 clips and 2 speed nuts to the switch mount (Figure 1).

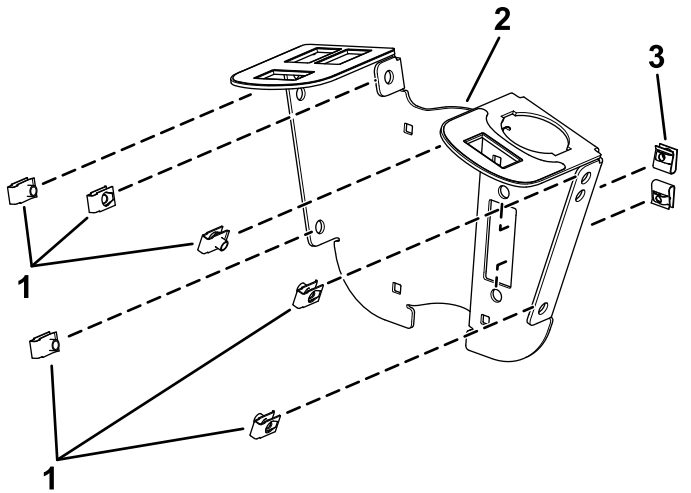
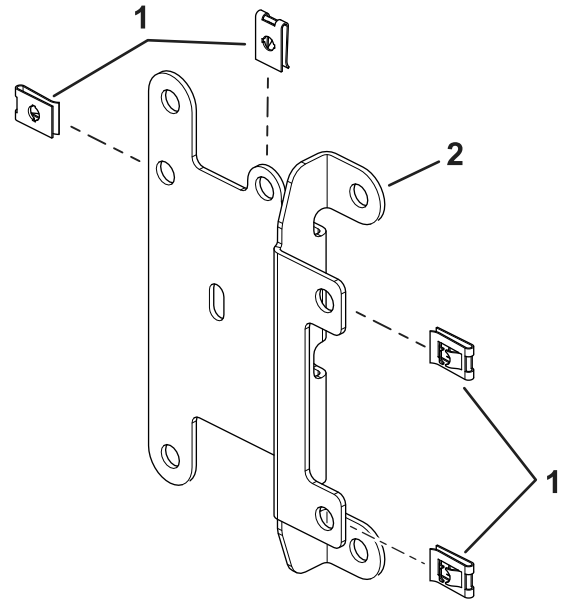


Figure 1

g319851

1. Clip
2. Switch mount
3. Speed nut

2. Install the U-type speed nuts to the fuse-mount plate (Figure 2).

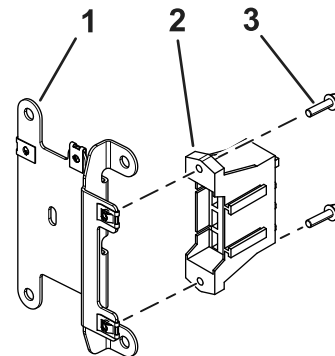


g304335

Figure 2

1. U-type speed nuts
2. Fuse-mount plate

3. Install the fuse block on the wire harness to the fuse-mount plate using 2 screws (#10 x 3/4 inch) as shown in Figure 3.



g304300

Figure 3

1. Fuse-mount plate
2. Fuse block
3. Screw (#10 x 3/4 inch)

3

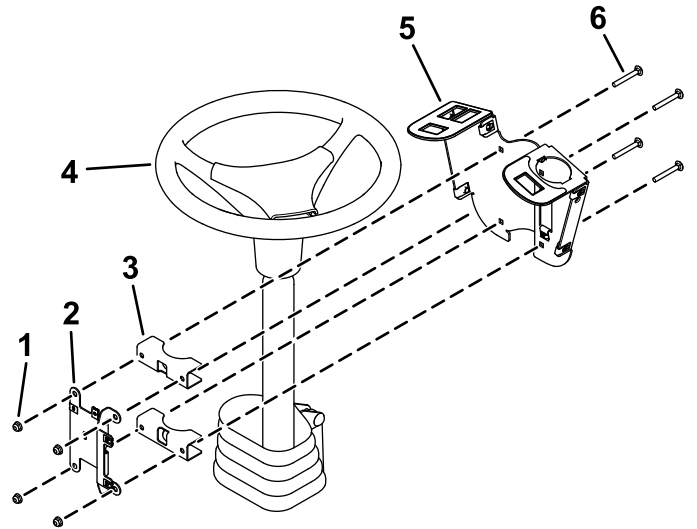
Installing the Switch Mount

Parts needed for this procedure:

2	Mount bracket
4	Carriage bolt (1/4 x 2 inches)
2	Locknut (1/4 inch)
2	Hex-head screw (1/4 x 3/4 inch)
2	Flange nut (1/4 inch)
1	Flasher
1	Relay
1	Wire harness
2	Cable tie
1	Fuse cover
2	Thumb screw
2	Push nut
1	Decal
2	Screw (#10 x 3/8 inch)
1	Multi-function switch
3	Hole plug
1	Rocker switch
1	Control cover
6	Hex-head screw (1/4 x 3/4 inch)
2	Switch clip
2	Push rivet

Procedure

1. Loosely install the switch mount around the steering column using 4 carriage bolts (1/4 x 2 inches), 2 mounting brackets, fuse-mount plate, and 4 locknuts (1/4 inch) as shown in [Figure 4](#).



g319856

Figure 4

- | | |
|------------------------|-----------------------------------|
| 1. Locknuts (1/4 inch) | 4. Steering column |
| 2. Fuse-mount plate | 5. Switch mount |
| 3. Mounting brackets | 6. Carriage bolt (1/4 x 2 inches) |

2. Install the multi-function switch to the switch mount and secure it using the switch clips under the hole for the switch ([Figure 5](#)).

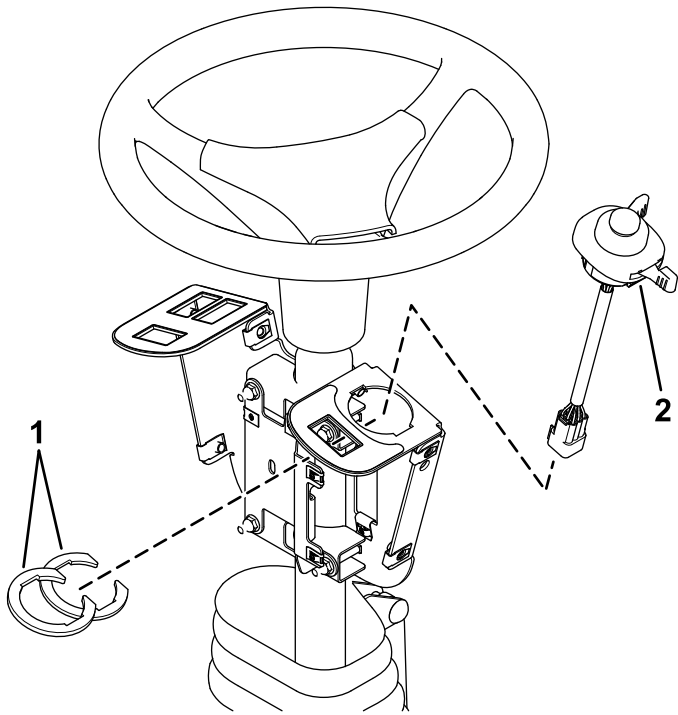


Figure 5

1. Switch clips
2. Multi-function switch

3. Install the rocker switch and hole plugs into the switch mount ([Figure 6](#)).

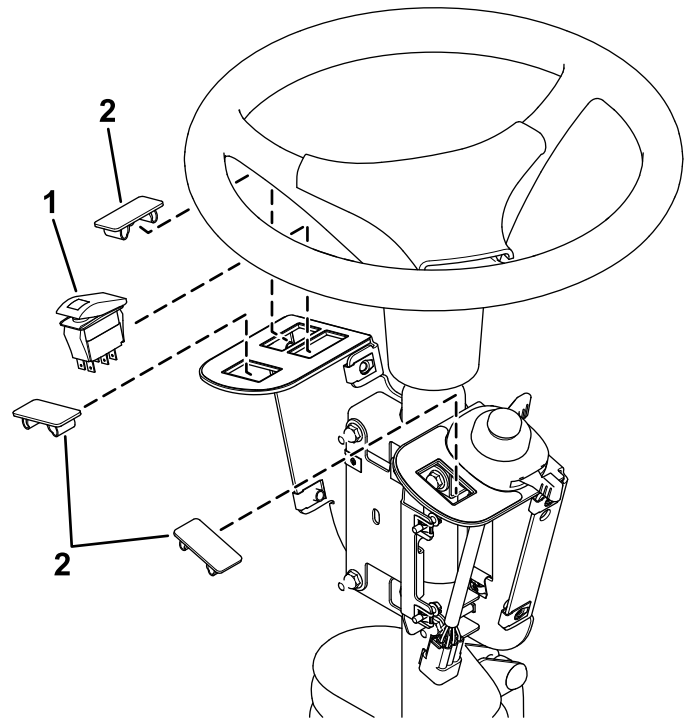


Figure 6

1. Rocker switch
2. Hole plug

4. Install the flasher and relay to the fuse-mount plate using 2 screws (#10 x 3/8 inch) as shown in [Figure 7](#).

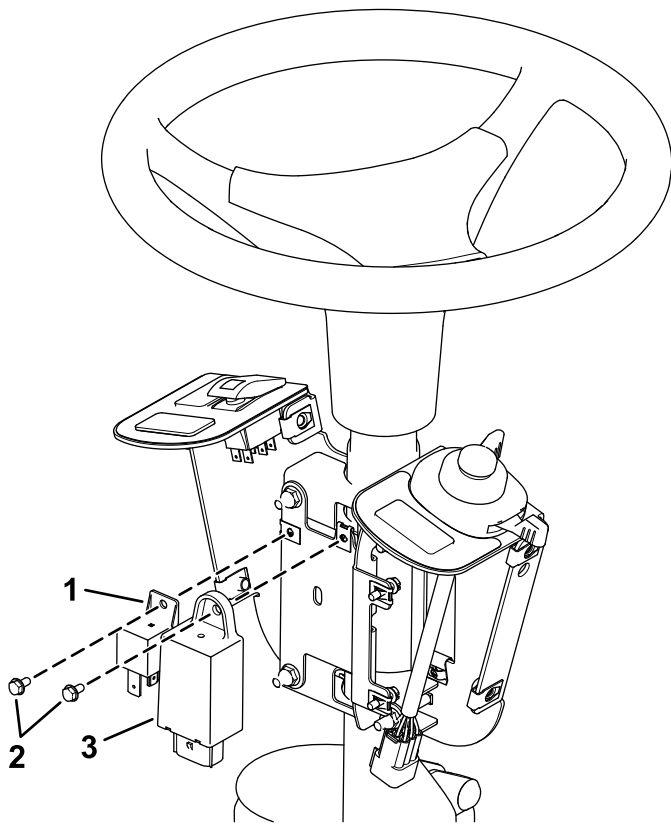


Figure 7

- | | |
|---------------------------|------------|
| 1. Relay | 3. Flasher |
| 2. Screw (#10 x 3/8 inch) | |

g319853

5. Secure the flasher using a cable tie ([Figure 8](#)).
6. Plug the harness into the rocker switch and multi-function switch ([Figure 8](#)).

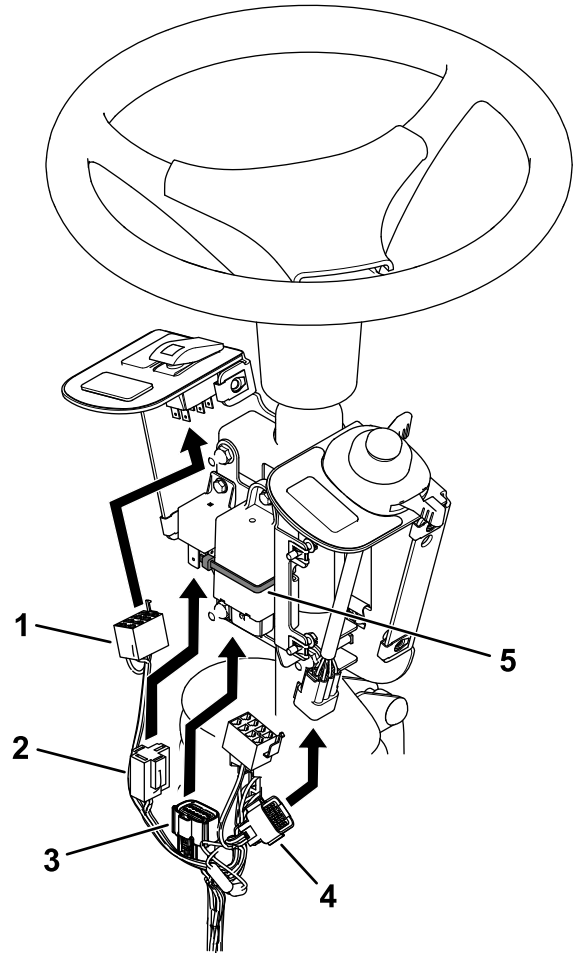


Figure 8

- | | |
|----------------------------|---------------------|
| 1. Rocker switch connector | 4. Switch connector |
| 2. Relay connector | 5. Cable tie |
| 3. Flasher connector | |

g319850

7. Plug the wire harness into the relay and flasher ([Figure 8](#)).
8. Loosen the bolts around the steering-column base ([Figure 9](#)).

9. Raise the base up and drill a 22 mm (7/8 inch) hole as shown in [Figure 9](#).

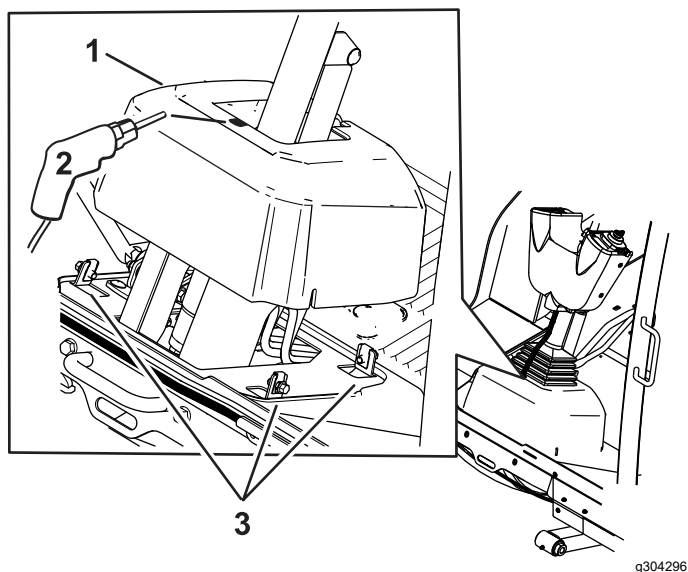


Figure 9

1. Steering-column base

10. Route the harness through the hole you drilled in the base.

11. Connect the bullet connectors as shown in [Figure 10](#).

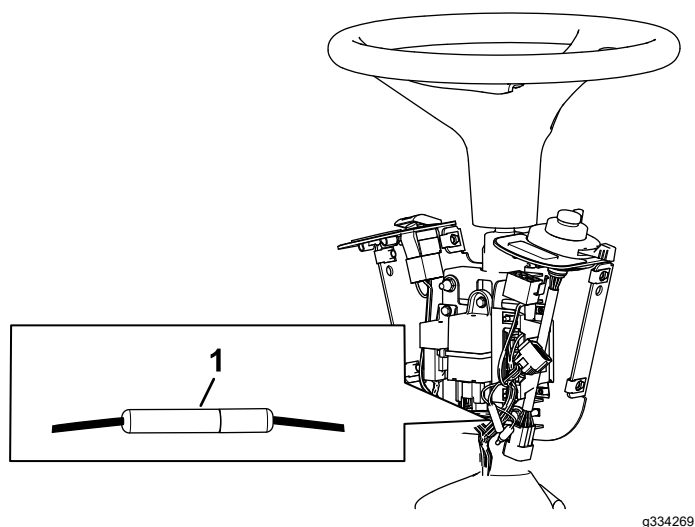


Figure 10

1. Connected bullet connectors

12. Apply the decal to the fuse cover as shown in [Figure 11](#).

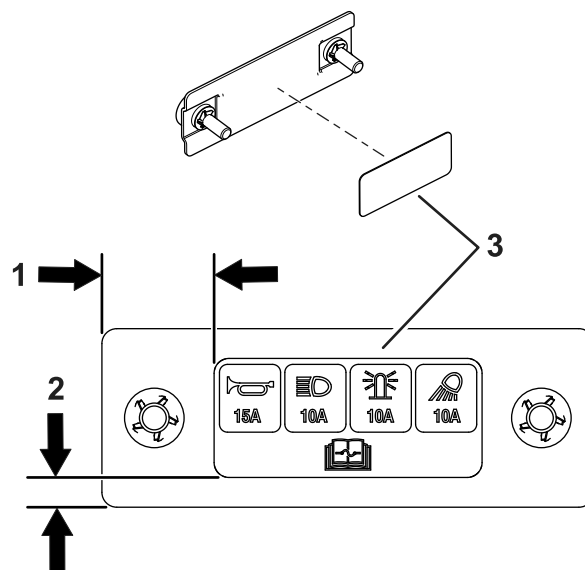


Figure 11

1. 25 mm (1 inch)
2. 6 mm (1/4 inch)
3. Decal—inside of fuse cover

13. Install the fuse cover to the switch mount using 2 thumb screws and 2 push nuts ([Figure 12](#)).

Note: Ensure that the push nuts are installed on the inside of the fuse cover ([Figure 12](#)).

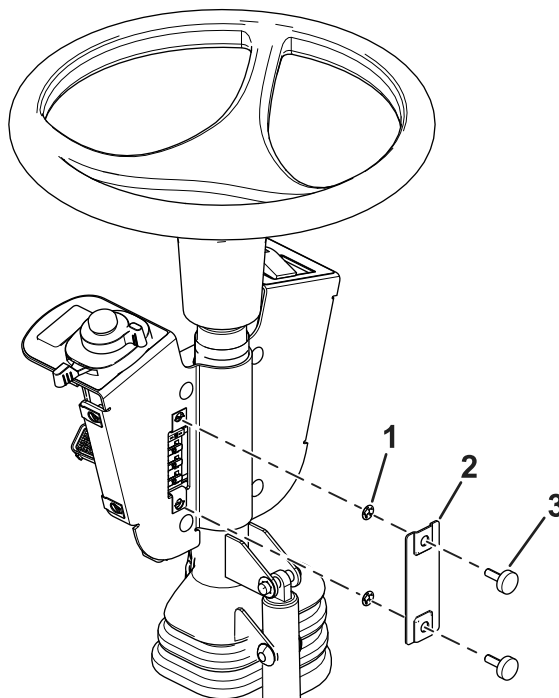


Figure 12

1. Push nut
2. Fuse cover
3. Thumb screw

14. Adjust the control assembly so that the switches are accessible.
15. Tighten all the fasteners.
16. Install the control cover to the switch mount using 2 push rivets and 6 hex-head screws (1/4 x 3/4 inch) as shown in [Figure 13](#).

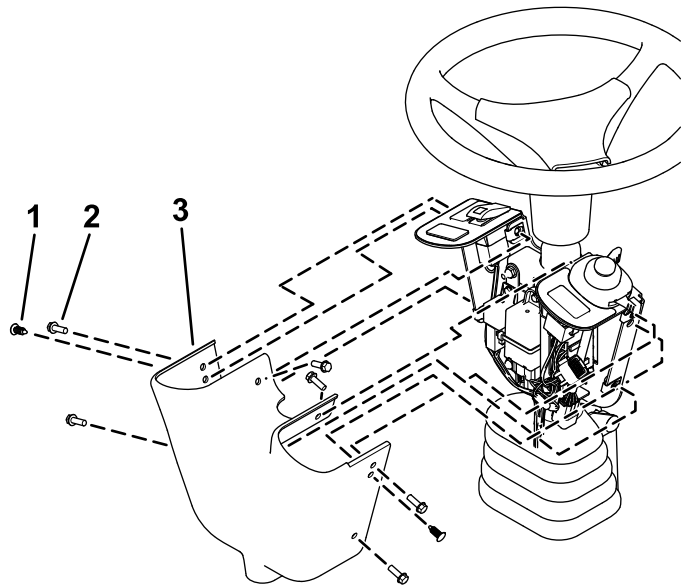


Figure 13

1. Push rivet
2. Hex-head screw
3. Control cover

4

Installing the Front Components

Parts needed for this procedure:

1	Left light base (for machines with a cab)
1	Right light base (for machines with a cab)
1	Left light mount (for machines with a cab)
1	Right light mount (for machines with a cab)
1	Left light assembly (for machines with a cab)
1	Right light assembly (for machines with a cab)
6	Button-head bolt (1/4 x 5/8 inch)—for machines with a cab
4	Carriage bolt (3/8 x 3/4 inch)—for machines with a cab
4	Locknut (3/8 inch)—for machines with a cab
1	Light cross mount (for machines without a cab)
2	Yellow reflective tape

For Machines with a Cab

1. Secure the left light base and right light base to the cab frame using 2 carriage bolts (3/8 x 3/4 inch) and 2 locknuts (3/8 inch) on each side.

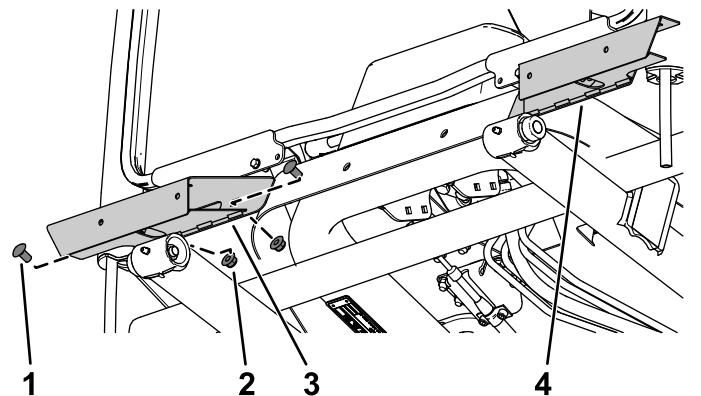


Figure 14

1. Carriage bolt (3/8 x 3/4 inch)
2. Locknut (3/8 inch)
3. Right light base
4. Left light base

- Secure the left light mount and right light mount to the light bases using 3 button-head bolts (1/4 x 5/8 inch) through the speed nuts on each side.

Note: Ensure that you install the left light mount and right light in the most narrow mounting position.

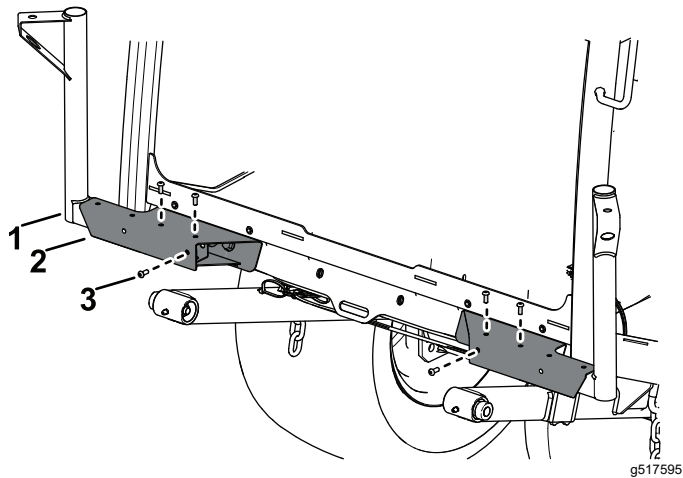


Figure 15

- | | |
|----------------|--------------------------------------|
| 1. Light base | 3. Button-head bolt (1/4 x 5/8 inch) |
| 2. Light mount | |

- Secure the left light assembly and right light assembly to the left light mount and right light mount using the hex nut on the light assemblies.

Note: Install the lights with the low beam toward the outer edge of the machine.

Look at the bottom of the lights for high beam and low beam orientation.

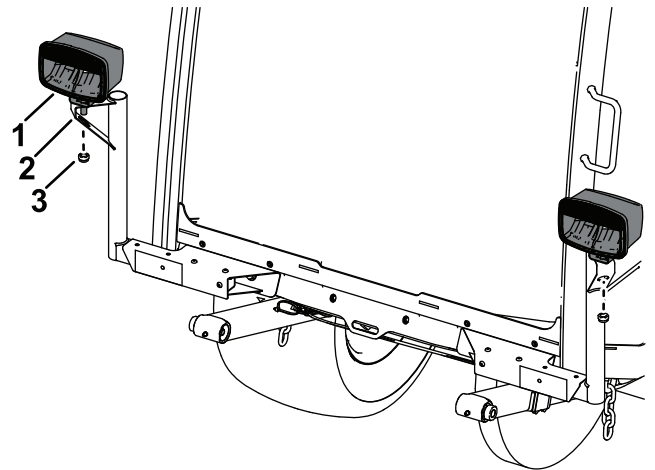


Figure 16

- | | |
|-------------------|------------|
| 1. Light assembly | 3. Hex nut |
| 2. Light mount | |

- Apply the yellow reflective tape to the left light base and right light base using the dimensions shown in below.

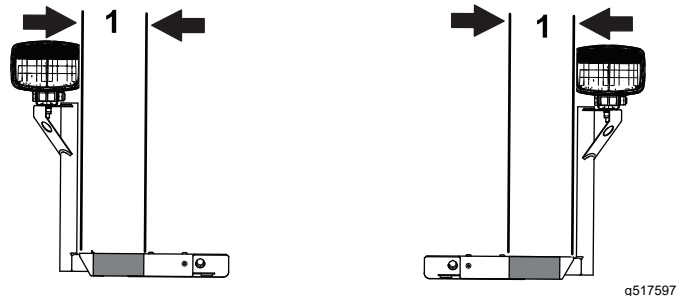


Figure 17

- 14.25 to 14.86 cm (5-5/8 to 5-7/8 inches)

For Machines without a Cab

1. Remove the tie-down bracket from the platform.
Retain the parts.

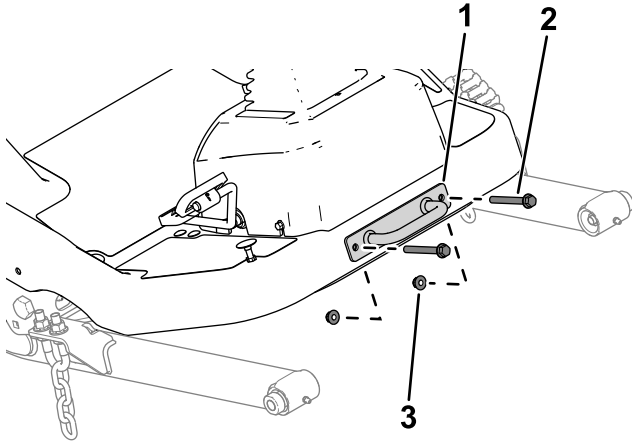


Figure 18

g299562

1. Tie-down bracket
2. Bolt
3. Nut

2. Apply the yellow reflective tape to the light cross mount using the dimensions shown below.



Figure 19

g303699

1. 9.5 to 10.1 cm (3-3/4 to 4 inches)

3. Secure the light cross mount to the platform using the previously removed bolts, nuts, and tie-down bracket.

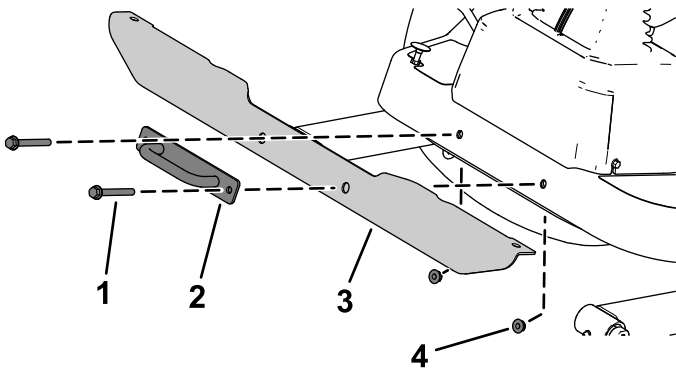


Figure 20

g303700

1. Bolt
2. Tie-down bracket
3. Light cross mount
4. Nut

4. Secure the left light assembly and right light assembly to the light cross mount using the lock washer and hex nut on the light assemblies.

Note: Install the lights with the low beam toward the outer edge of the machine.

Look at the bottom of the lights for high beam and low beam orientation.

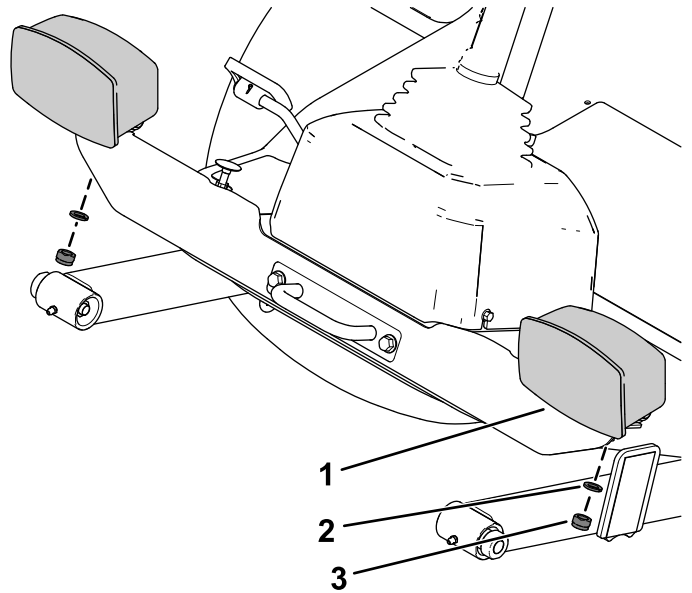


Figure 21

g303701

1. Light assembly
2. Lock washer
3. Hex nut

5

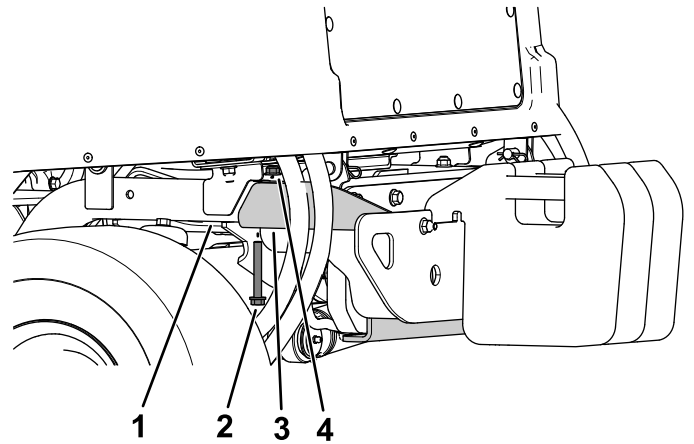
Installing the Rear Components

Parts needed for this procedure:

1	Left mount
1	Right mount
1	Left short mount
1	Right short mount
4	Carriage bolt (5/16 x 3/4 inch)
4	Flange nut (5/16 inch)
4	Carriage bolt (1/4 x 5/8 inch)
11	Locknut (1/4 inch)
4	Hex-head bolt (3/8 x 3 inches)
4	Locknut (3/8 inch)
4	Red reflective tape
1	Marker mount
2	Back mount
1	Slow-moving vehicle sign
3	Flat washer
7	Flange-head bolt (1/4 x 3/4 inch)
1	Left light housing
1	Right light housing

Procedure

1. Remove the flange-head bolt (3/8 x 2-3/4 inches) and flange nut (3/8 inch) securing the bumper to the rear tube frame on each side of the bumper.

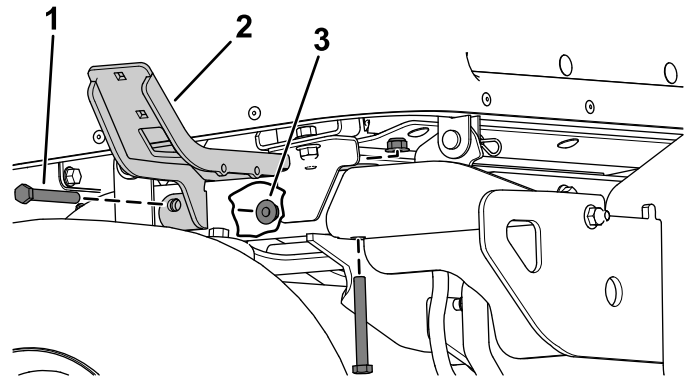


g303770

Figure 22

1. Rear tube frame
2. Flange-head bolt (3/8 x 2-3/4 inches)
3. Bumper
4. Flange nut (3/8 inch)

2. Secure the left mount and right mount to rear frame tubes using 2 hex-head bolts (3/8 x 3 inches) and 2 locknuts (3/8 inch) on each side.



g304042

Figure 23

1. Hex-head bolt (3/8 x 3 inches)
2. Left mount
3. Locknut (3/8 inch)

- Secure the left short mount and right short mount to the left mount and right mount using 4 carriage bolts (5/16 x 3/4 inch) and 4 flange nuts (5/16 inch).

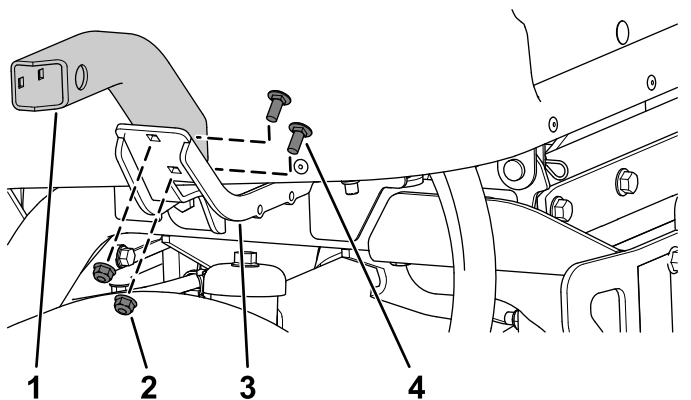


Figure 24

- | | |
|---------------------------|------------------------------------|
| 1. Left short mount | 3. Left mount |
| 2. Flange nut (5/16 inch) | 4. Carriage bolt (5/16 x 3/4 inch) |

- Secure the left light housing and right light housing to the left short mount and right short mount using 4 carriage bolts (1/4 x 5/8 inch) and 4 locknuts (1/4 inch).

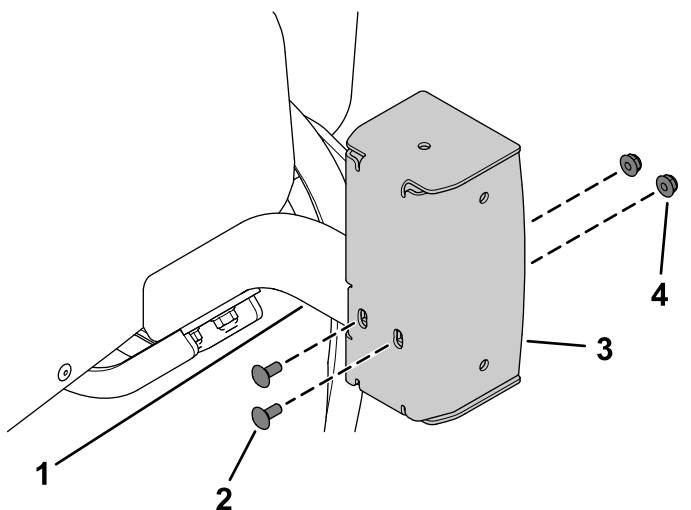


Figure 25

- | | |
|-----------------------------------|-----------------------|
| 1. Left short mount | 3. Left light housing |
| 2. Carriage bolt (1/4 x 5/8 inch) | 4. Locknut (1/4 inch) |

⚠ WARNING

Using a drill without proper eye protection may allow debris to enter the eye, causing injury.

When drilling, always wear eye protection.

- Using the marker mount as the template, drill 3 holes (5/16 inch) into the slow-moving vehicle sign.

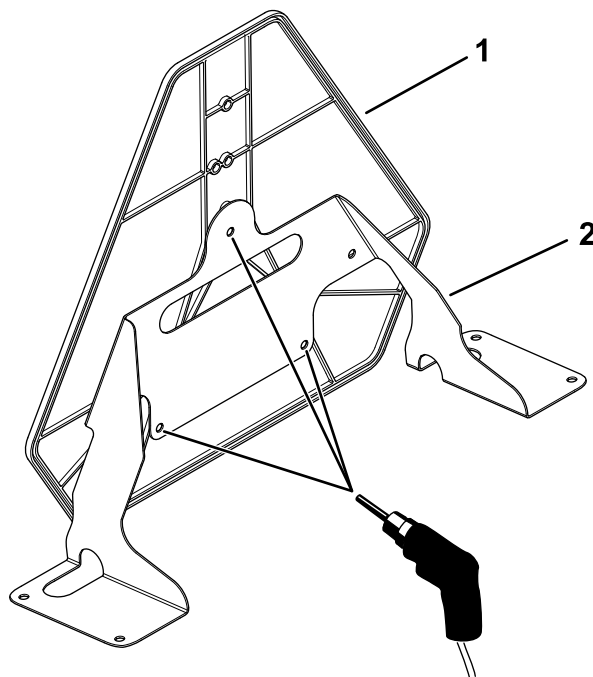


Figure 26

- | | |
|-----------------------------|-----------------|
| 1. Slow-moving vehicle sign | 2. Marker mount |
|-----------------------------|-----------------|

- Secure the slow-moving vehicle sign to the marker mount using 3 flange-head bolts (1/4 x 3/4 inch), 3 flat washers, and 3 locknuts (1/4 inch).

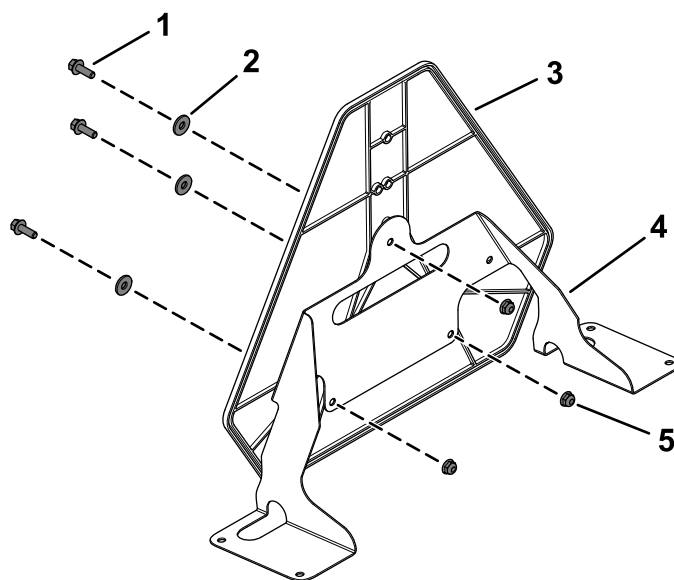


Figure 27

- | | |
|--------------------------------------|-----------------------|
| 1. Flange-head bolt (1/4 x 3/4 inch) | 4. Marker mount |
| 2. Flat washer | 5. Locknut (1/4 inch) |
| 3. Slow-moving vehicle sign | |

- Remove the 4 plastic plugs from the hood.

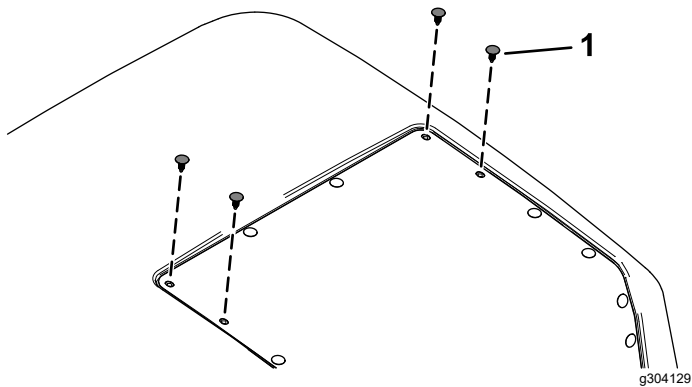


Figure 28

- Plastic plug

- Raise the hood.

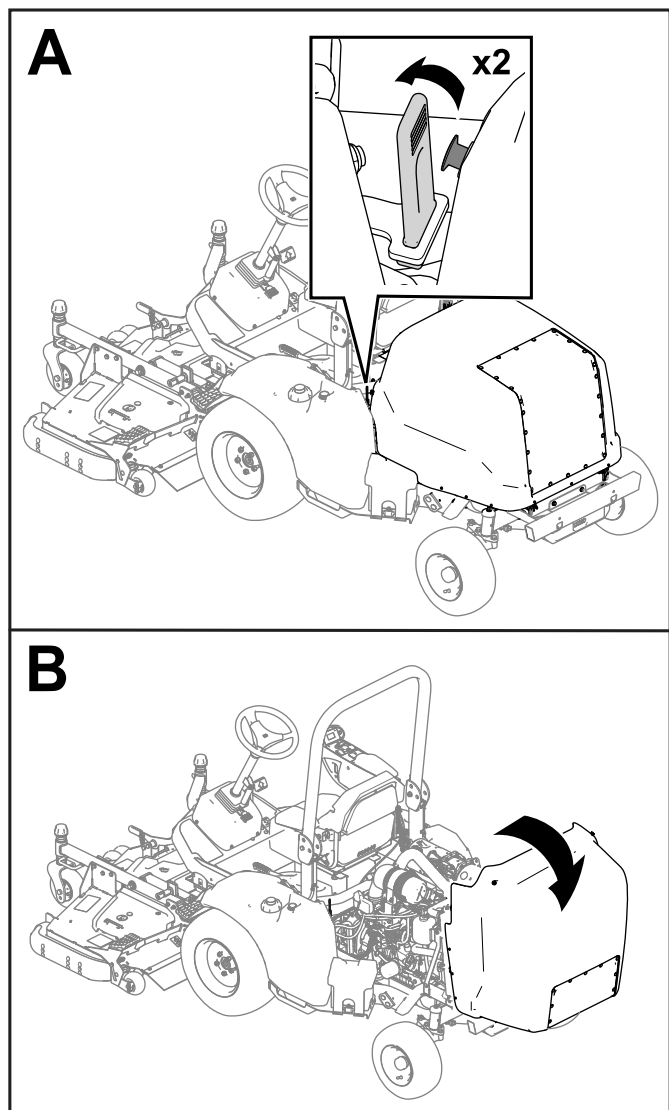


Figure 29

- Secure the assembled slow-moving vehicle sign to the hood using 4 flange-head bolts (1/4 x 3/4 inch), 2 back mounts, and 4 locknuts (1/4 inch).

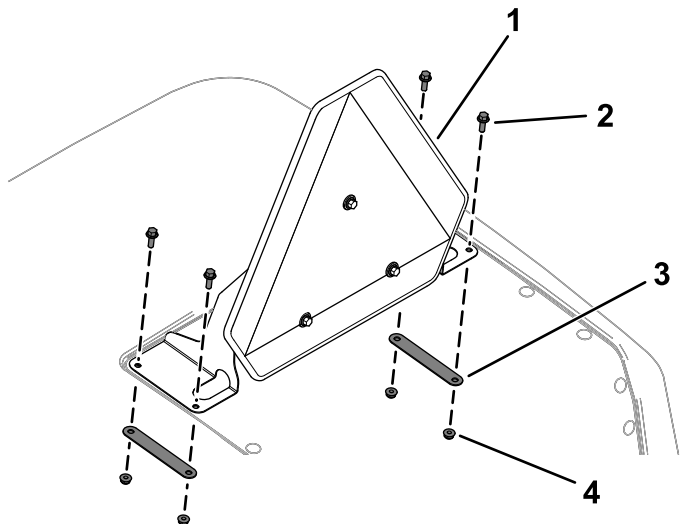


Figure 30

- Assembled slow-moving vehicle sign
- Flange-head bolt (1/4 x 3/4 inch)
- Back mount
- Locknut (1/4 inch)

- Apply 2 red reflective tape to the rear bumper and 1 reflective tape to each light housing using the dimensions in the figures below.

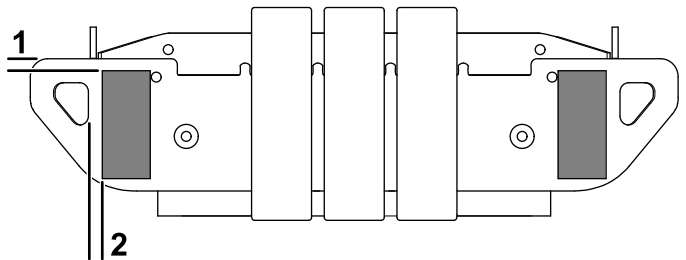
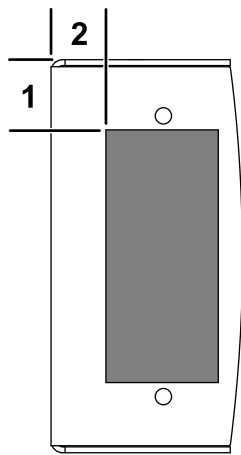


Figure 31

- 9.7 to 15.7 mm (3/8 to 5/8 inch)
- 11.7 to 17.8 mm (7/16 to 11/16 inch)



g304125

Figure 32

1. 28.7 to 34.8 mm (1-1/8 to 1-3/8 inches)
2. 22.4 to 28.4 mm (7/8 to 1-1/8 inches)

6

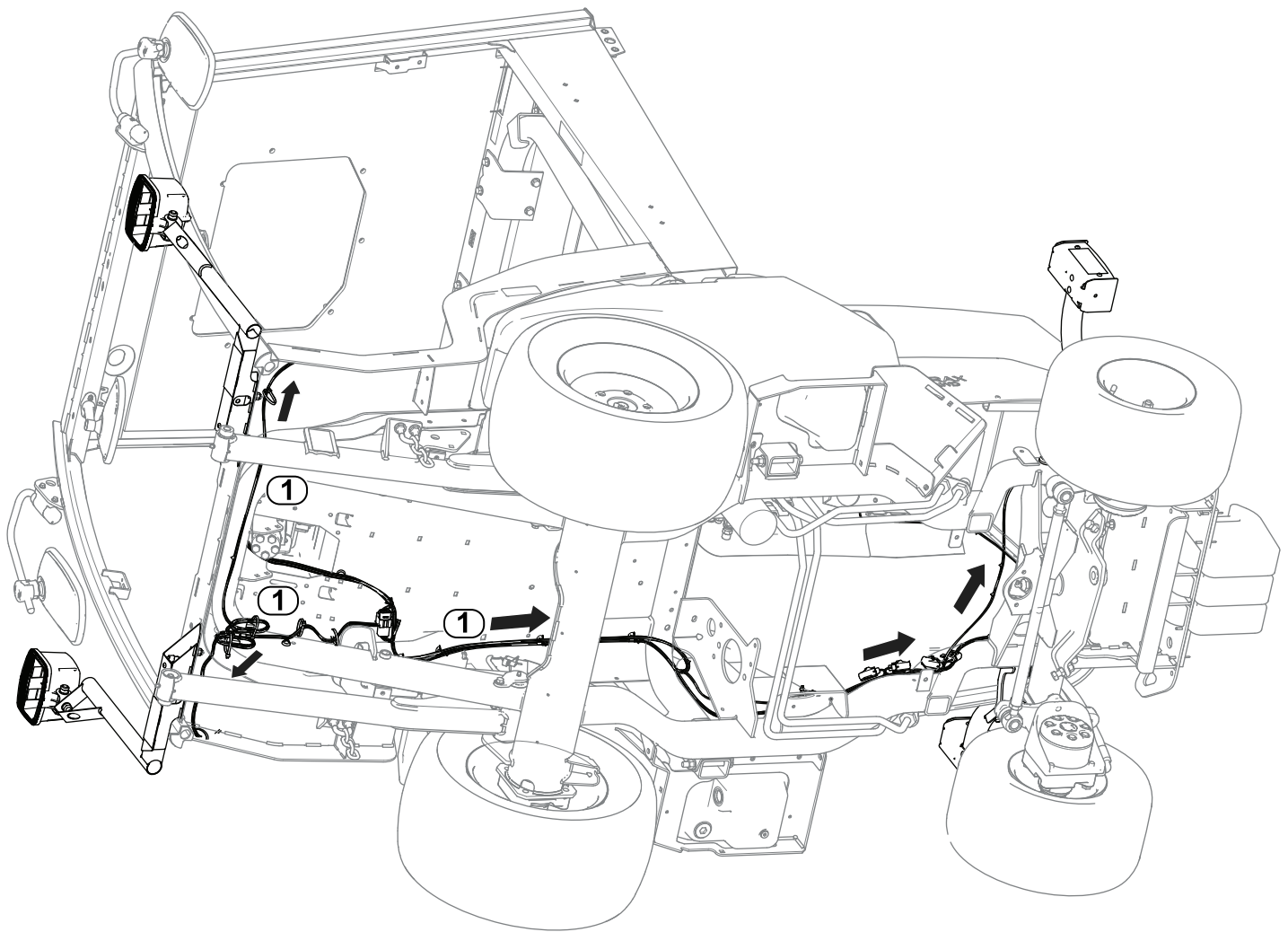
Routing the Light Wire Harness

Parts needed for this procedure:

1	Light wire harness
2	Cable tie
2	Inner mount assembly
2	Taillight
4	Pan-head screw (#10 x 1-1/4 inches)
4	Flange nut (#10)
8	Button-head bolt (1/4 x 3/4 inch)

Procedure

Refer to the following figures and instructions for routing the light wire harness.



g517608

Figure 33

1. Wire-harness routing

1. Route the wire-harness connector labeled FRONT LIGHT LH (P04) to the left side of unit. Connect harness to light.
2. Route the wire-harness connector labeled FRONT LIGHT RH (P05) to the right side of unit. Connect harness to light.
3. Route the wire-harness connector labeled REAR LIGHT LH (P01) to the rear left side of unit.
4. Route the wire-harness connector labeled REAR LIGHT RH (P02) to the rear right side of unit.

5. Secure the taillights to the inner mount assemblies using 4 pan-head screws (#10 x 1-1/4 inches) and 4 flange nuts (#10).

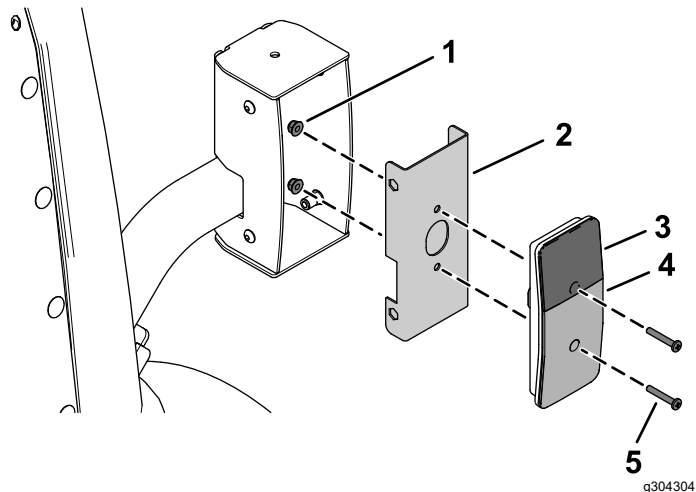


Figure 34

- | | |
|-------------------------|--|
| 1. Flange nut (#10) | 4. Red lens |
| 2. Inner mount assembly | 5. Pan-head screw (#10 x 1-1/4 inches) |
| 3. Amber lens | |

6. Connect the wire-harness connector labeled REAR LIGHT LH (P01) to rear light.
7. Connect the wire-harness connector labeled REAR LIGHT RH (P02) to rear light.

8. Secure the assembled taillights to the taillight housings using 8 button-head bolts (1/4 x 3/4 inch).

Ensure that you install the taillights with the yellow lens on top.

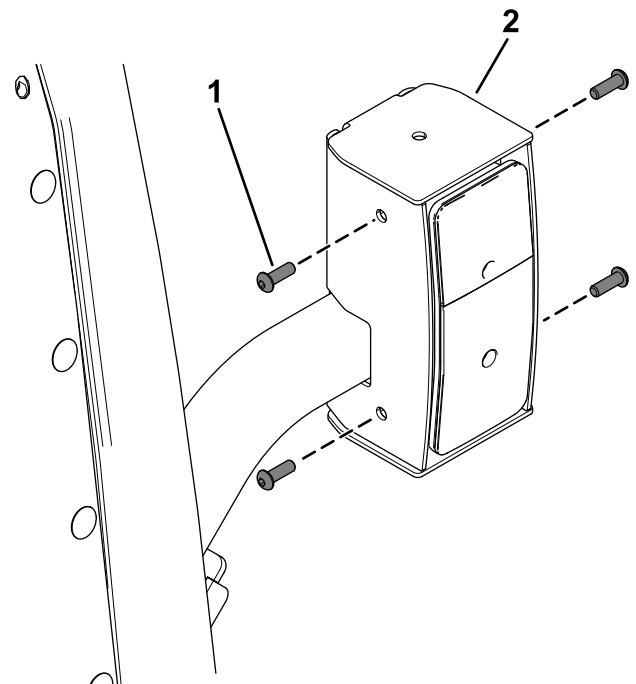


Figure 35

- | | |
|--------------------------------------|-----------------------|
| 1. Button-head bolt (1/4 x 3/4 inch) | 2. Taillight assembly |
|--------------------------------------|-----------------------|

9. Use a cable tie coil the remaining connectors (J01 and J02) together.

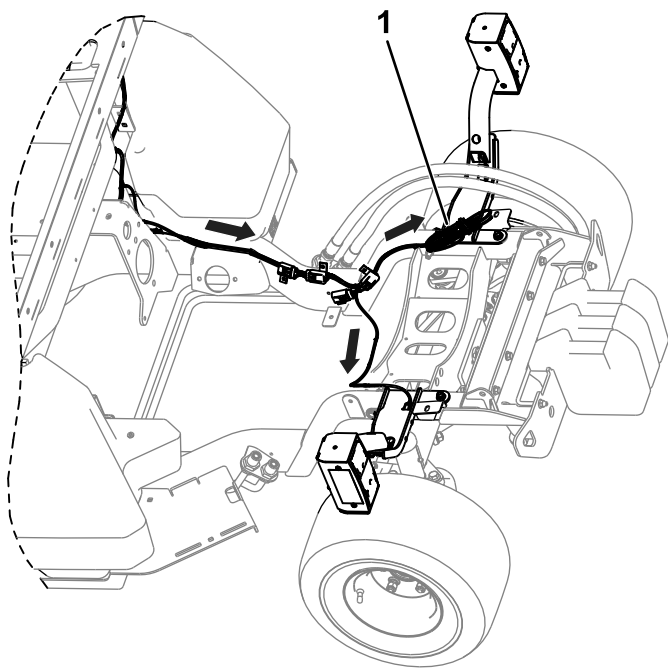


Figure 36

g304233

1. Coil the remaining connectors here.

7

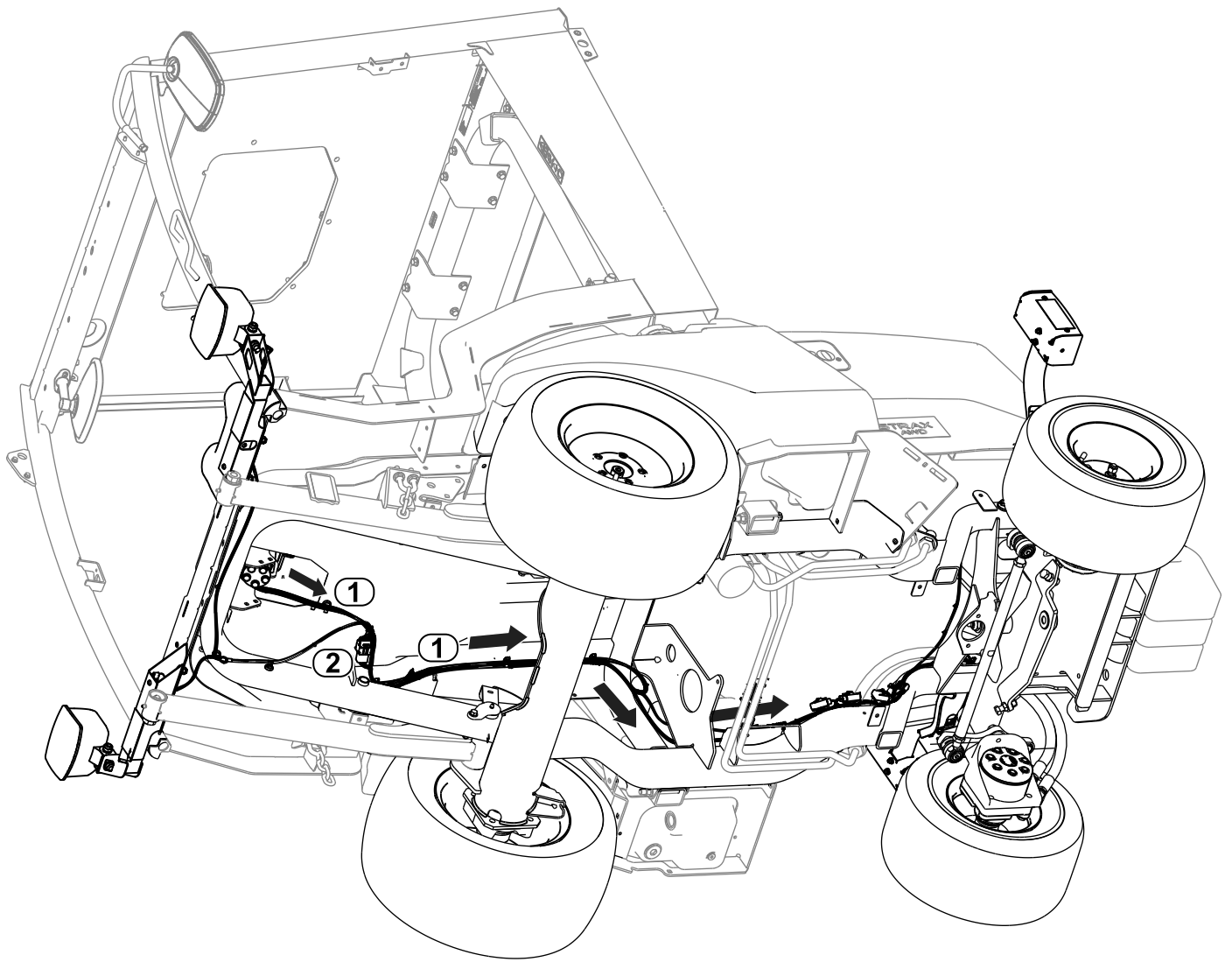
Routing the Control Wire Harness

Parts needed for this procedure:

1	Control wire harness
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Procedure

Refer to the following figures and instructions for routing the control wire harness.



g304234

Figure 37

1. Wire-harness routing

2. Control wire harness and light wire harness connection

1. Connect the control wire-harness connector labeled TO ROAD LTS HARNESS (P06) to light wire-harness connector labeled TO MAIN HARNESS (P03).
2. Connect the control wire-harness connector labeled TO POWER HARNESS (P05) to power wire-harness connector labeled POD CONTROL HARNESS (P04).

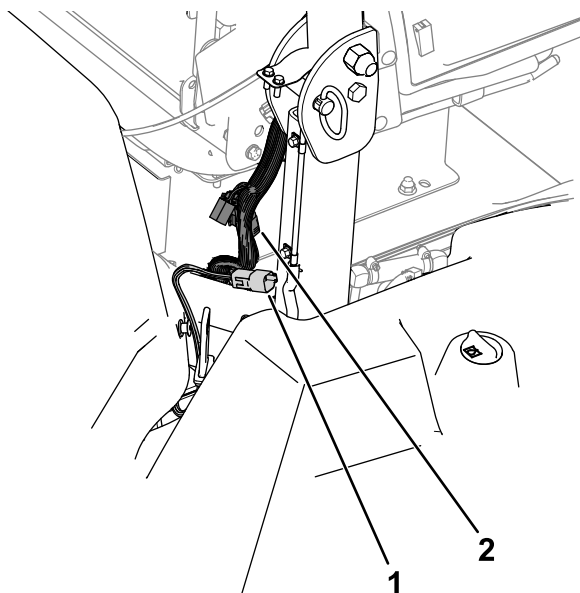


Figure 38

g304373

1. P05 (Control-wire-harness connector)
2. P04 (Machine-wire-harness connector)

3. Use a cable tie to coil the remaining connectors (J01 and J02) together.

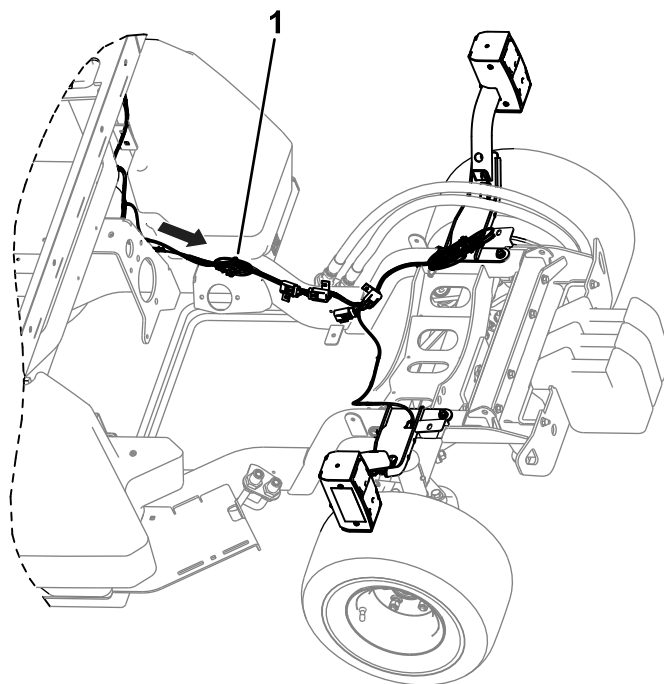


Figure 39

g304232

1. Coil the remaining connectors here.

8

Connecting the Battery

No Parts Required

Procedure

Connect the battery; refer to the electrical system maintenance section of your *Operator's Manual*.

Notes:



Count on it.