



NA Light Kit
Groundsmaster® 4000 Series Rotary Mower
 Model No. 31693

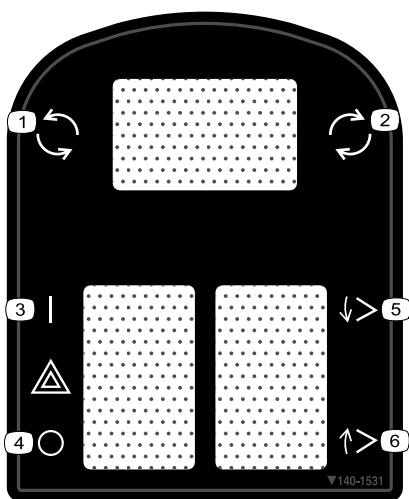
Installation Instructions

Safety

Safety and Instructional Decals



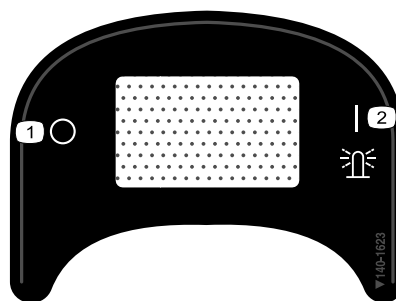
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



140-1531

decal140-1531

- | | |
|---------------------|---------------------|
| 1. Snow chute—left | 4. Hazard light—off |
| 2. Snow chute—right | 5. Attachment—down |
| 3. Hazard light—on | 6. Attachment—up |



140-1623

decal140-1623

- | | |
|---------------|--------------|
| 1. Beacon—off | 2. Beacon—on |
|---------------|--------------|



Installation

Loose Parts

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

Procedure	Description	Qty.	Use
1	No parts required	–	Prepare the machine.
2	No parts required	–	Disconnect the battery.
3	Reflector decal (front—yellow) Reflector decal (back—red)	2 2	Install the front reflector decals.
4	Right headlight—Part No. 140-6772 (light, mount, washer, and nut) Left headlight—Part No. 140-6773 (light, mount, washer, and nut) Light mount (machines with a roll bar) Left light mount (machines with a cab) Right light mount (machines with a cab) Flange-head capscrew (1/2 x 1 inch) Flange Locknut (1/2 inch) Cable tie	1 1 2 1 1 2 2 2	Assemble the headlights to the brackets.
5	Console harness Cap plug Fuse mount plate Clip nut (#10) Flasher Flange head screw (#10 x 3/8 inch) Cable tie Bracket mount Clip nut (1/4 inch) Switch mount Multi-function switch Switch clip (thick) Switch clip (thin) Switch plug Rocker switch Knob Fuse cover Bolt retainer Carriage bolt (1/4 x 2 inches) Flange locknuts Cable ties Push-in fastener Flange-heads screw (1/4 x 3/4 inch)	1 1 1 1 1 1 1 2 8 1 1 1 3 1 2 1 2 4 4 2 2 4	Install the control console.
6	No parts required	–	Connect the console harness.
7	Fuse (10 A) Fuse (15 A)	1 1	Install the fuses.

Procedure	Description	Qty.	Use
8	Left light housing	1	Install the taillights.
	Left light-housing mount	1	
	Right light housing	1	
	Right light-housing mount	1	
	Carriage bolt (1/4 x 5/8 inch)	4	
	Flange locknut (1/4 inch)	4	
	Left taillight and license plate harness	1	
	Right taillight harness	1	
	Clip nut (1/4 inch)	4	
	Inner mount	2	
	Socket-head screw (1/4 x 3/4 inch)	8	
	Taillight	2	
	Phillips-head screw (#10 x 1-1/4 inches)	4	
	Pivot bracket	2	
	Capscrew (1/4 x 3/4 inch)	6	
	Locknut (1/4 inch)	6	
	Left mount cover	1	
	Right mount cover	1	
	Push-in fasteners	8	
Swivel-adapter mount	2		
Carriage bolt (1/4 x 1-1/4 inches)	4		
Flange locknut (3/8 inch)	4		
9	Slow moving vehicle emblem	1	Install the slow-moving vehicle sign.
	Slow moving vehicle mount	1	
	Capscrew (1/4 x 3/4 inch)	3	
	Washer (1/4 x 3/4 inch)	3	
	Locknut (1/4 inch)	3	
10	No parts required	–	Connect the taillight harnesses.
11	No parts required	–	Connect the battery cables.

1

Preparing the Machine

No Parts Required

Procedure

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

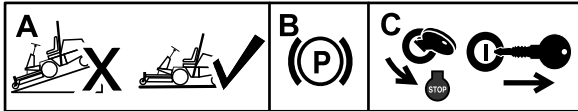


Figure 1

g351500

2

Disconnecting the Battery

No Parts Required

Procedure

1. Open the battery cover on the side of the shroud (Figure 2).

Note: Press down on the flat surface above the battery cover to ease the removal of the cover.

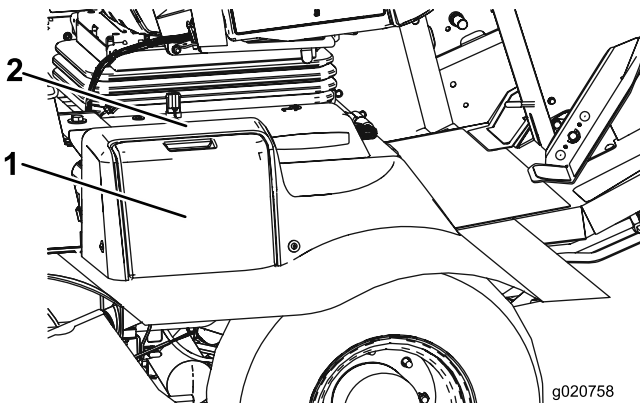


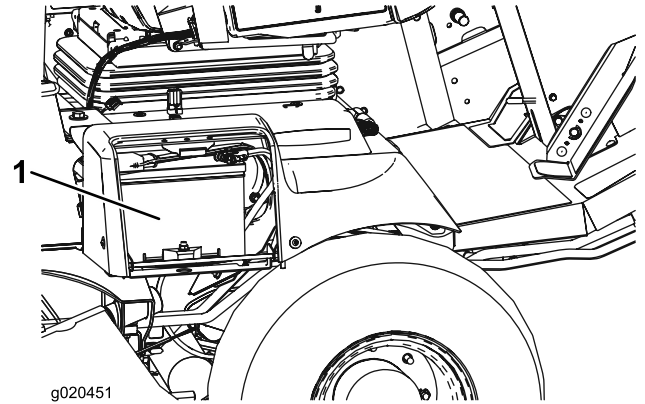
Figure 2

g020758

g020758

1. Battery cover
2. Press down here.

2. Disconnect the negative (black) battery cable.



g020451

g020451

Figure 3

1. Battery
3. Slip the rubber boot off the positive terminal, and disconnect the cable.

3

Installing the Reflector Decals

Parts needed for this procedure:

2	Reflector decal (front—yellow)
2	Reflector decal (back—red)

Installing the Front Reflector

Machines with a Roll Bar

1. Clean the front edge of the platform with alcohol, and allow it to dry (Figure 4).

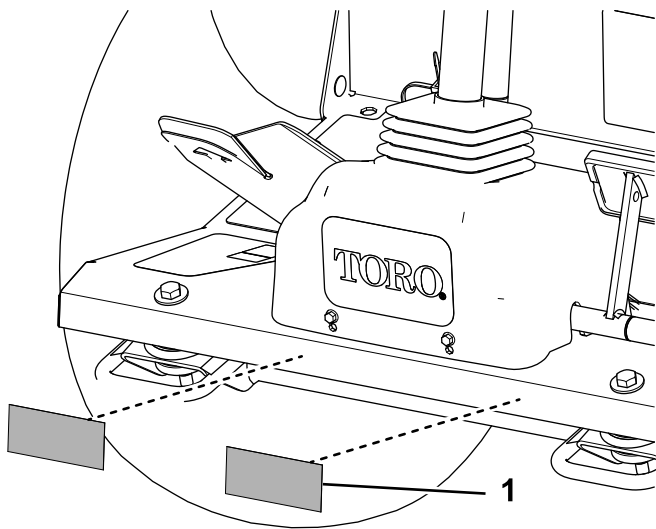


Figure 4

g351079

1. Reflector decal (yellow)

2. Remove the backing film from the yellow reflector decal.
3. Align the reflector to the bottom edge of the platform as shown in [Figure 4](#), and adhere it to the platform.
4. Wrap the edge of the reflector over the top of the platform.
5. Repeat steps 1 through 4 for the other yellow reflector decal.

Installing the Front Reflector

Machines with a Cab

1. Clean the front cab pillar above the headlight bracket with alcohol, and allow it to dry ([Figure 5](#)).

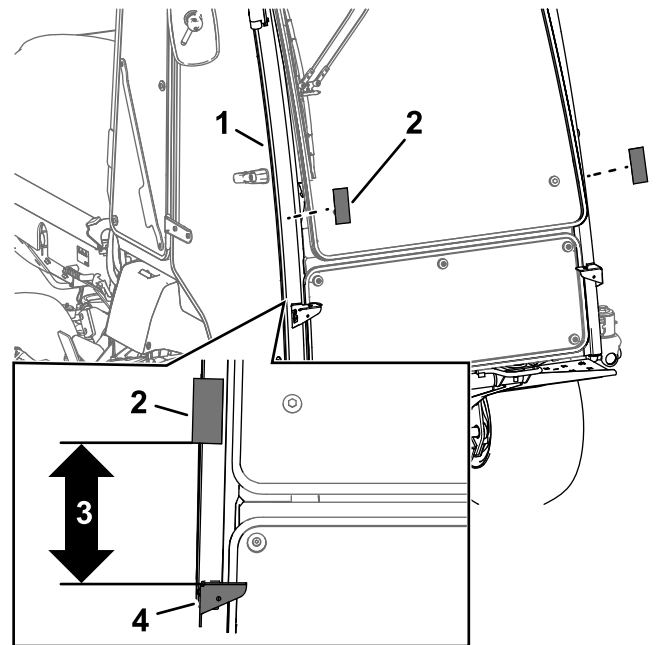


Figure 5

g351129

1. Front cab pillar
2. Reflector decal (yellow)
3. 23.8 cm (9-3/8 inches)
4. Headlight bracket

2. Remove the backing film yellow reflector decal.
3. Align the decal 23.8 cm (9-3/8 inches) above the headlight bracket, and adhere the decal to the cab pillar ([Figure 5](#)).

Installing the Rear Reflector

1. Clean the face of the bumper with alcohol, and allow it to dry ([Figure 6](#)).

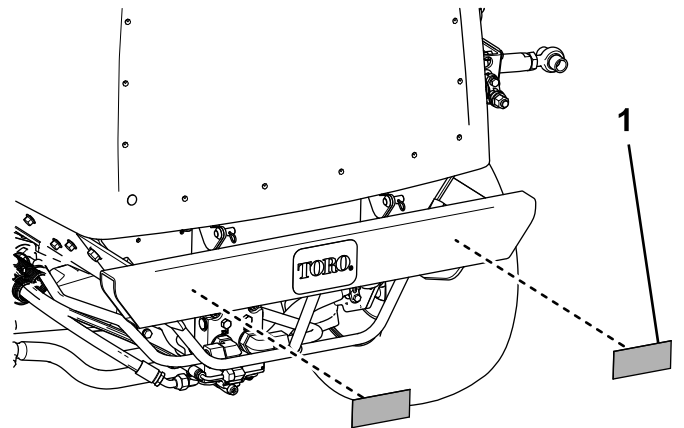


Figure 6

g351117

2. Remove the backing film from the red reflector decal.
3. Align the reflector to the bumper as shown in [Figure 6](#), and adhere it to the bumper.

- Repeat steps 1 through 3 for the other red reflector decal.

4

Assembling the Headlights to the Brackets

Parts needed for this procedure:

1	Right headlight—Part No. 140-6772 (light, mount, washer, and nut)
1	Left headlight—Part No. 140-6773 (light, mount, washer, and nut)
2	Light mount (machines with a roll bar)
1	Left light mount (machines with a cab)
1	Right light mount (machines with a cab)
2	Flange-head capscrew (1/2 x 1 inch)
2	Flange Locknut (1/2 inch)
2	Cable tie

Identifying the Headlights

At the bracket side of the headlight, look at the information printed on the housing (Figure 7). Note the part number and the “RH” or “LH” information.

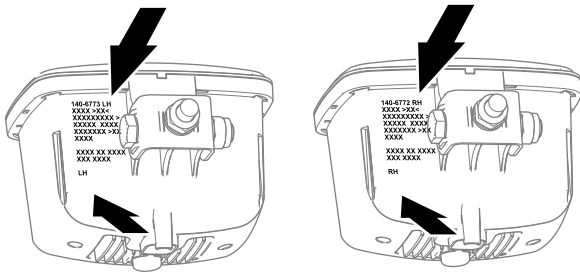


Figure 7

g350385

Identifying the Headlight Mounts

Use Figure 8 and Figure 9 to identify the headlight mounts for your machine.

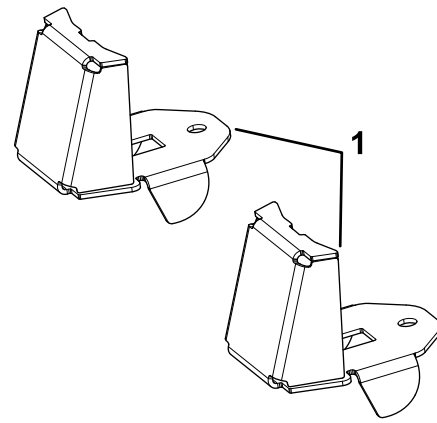


Figure 8

Machines with a Roll Bar

g350863

- Light mounts

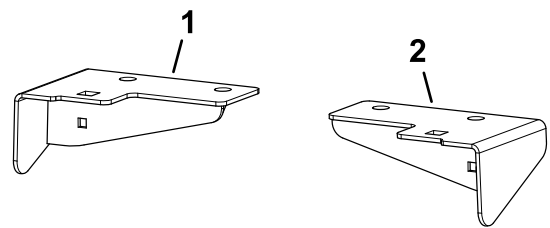


Figure 9

Machines with a Cab

g350864

- Left light mount
- Right light mount

Removing the Floor Panel Hardware

Machines with a Roll Bar

Remove the 2 capscrews and 2 thin washers, 2 thick washers, and 2 flange locknuts that secure the front of the floor panel to the frame of the machine (Figure 10).

Note: Retain the hardware.

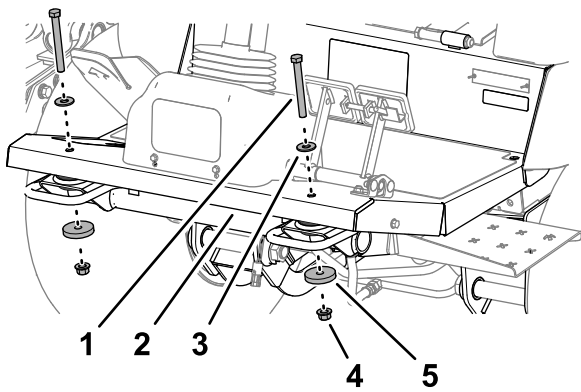


Figure 10

g350418

- | | |
|-----------------------------------|--|
| 1. Capscrew (1/2 x 4-1/2 inches) | 4. Flange locknut (1/2 inch) |
| 2. Floor panel | 5. Thick washer (1/2 x 2-1/4 x 3/8 inch) |
| 3. Thin washer (1/2 x 1-3/8 inch) | |

Installing the Light Mounts to the Machine

Machines with a Roll Bar

- Assemble the light mount to the floor panel and frame of the machine with the capscrew (1/2 x 4-1/2 inches), thin washer (1/2 x 1-3/8 inch), thick washer (1/2 x 2-1/4 x 3/8 inch), and flange locknut (1/2 inch) that you removed in [Removing the Floor Panel Hardware \(page 6\)](#).

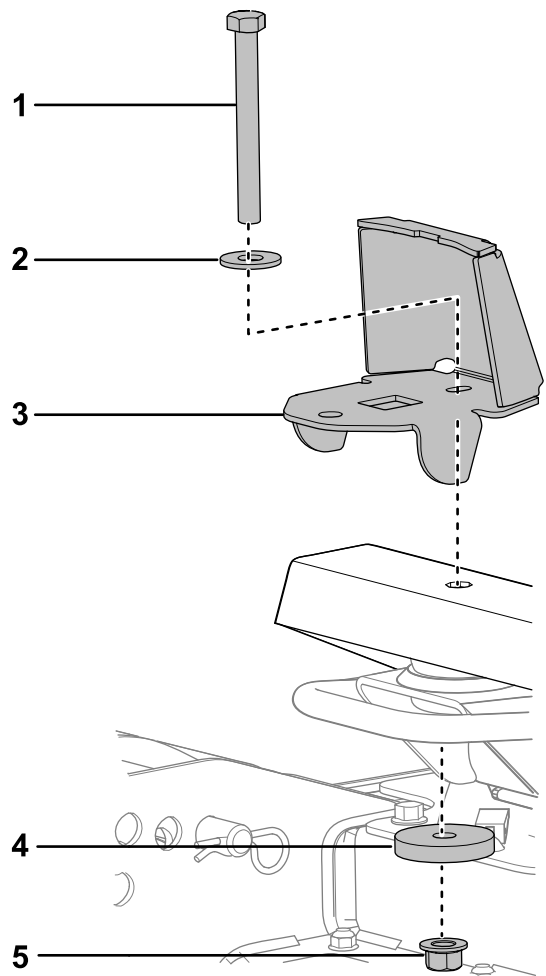


Figure 11

g350530

- | | |
|--------------------------------------|--|
| 1. Capscrew (1/2 x 4-1/2 inches) | 4. Thick washer (1/2 x 2-1/4 x 3/8 inch) |
| 2. Thin washer (1/2 x 1-3/8 inch) | 5. Flange locknut (1/2 inch) |
| 3. Light mount (machines with a cab) | |

- Torque locknut and capscrew and locknut to 91 to 113 N·m (67 to 83 ft-lb).
- Repeat steps 1 and 2 for the light mount at the other side of the machine.

Assembling the Headlights

Machines with a Cab

Important: Ensure that you assemble the headlight marked left and the left light mount, and the headlight marked right and the right light mount.

- If assembled, remove the locknut (12 mm) and lock washer (12 mm) from the capscrew in the headlight bracket.
- Align the light to the light mount as follows:

- Groundsmaster 4010 Machines: Use the outside light-mount hole.
- Groundsmaster 4110 Machines: Use the inside light-mount hole.

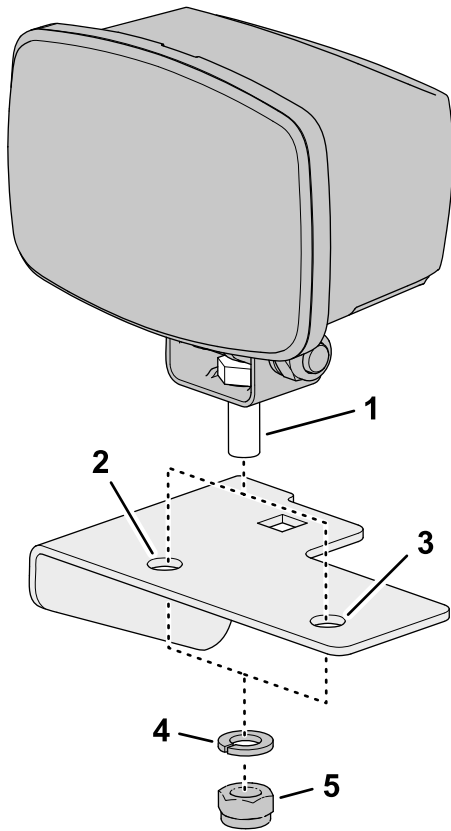


Figure 12

Right headlight shown.

- | | |
|---|----------------|
| 1. Capscrew (headlight) | 4. Lock washer |
| 2. Outside light-mount hole (Groundsmaster GM4010 machines) | 5. Locknut |
| 3. Inside light mount hole (Groundsmaster GM4110 machines) | |

3. Assemble the capscrew (12 mm) to the light mount (Figure 12) with the locknut (12 mm) and lock washer (12 mm).
4. Tighten the locknut and capscrew.
5. Repeat steps 1 through 4 for the headlight and light mount for the other side of the machine.

Installing the Headlights

Machines with a Roll Bar

Important: Ensure that you assemble the headlight marked left at the left side of the machine, and the headlight marked right at the right side of the machine.

1. Remove the cable tie securing the 6-socket connector labeled HEADLIGHT LH and the 6-socket connector labeled HEADLIGHT RH of the machine wire harness to the chassis of the machine (Figure 13).

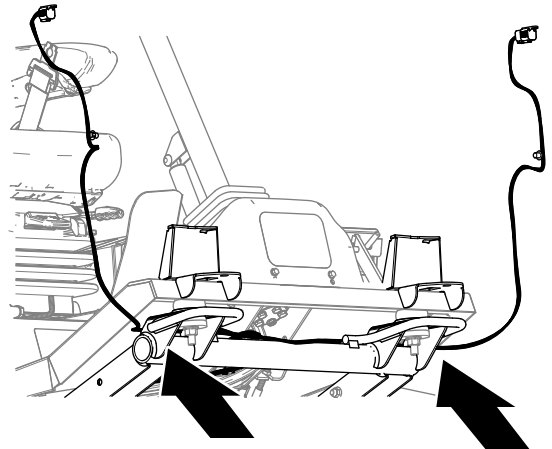


Figure 13

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g350532

2. Remove the cap from the 6-socket connector labeled HEADLIGHT LH or the 6-socket connector labeled HEADLIGHT RH of the machine wire harness, and plug the connector into the headlight (Figure 14).

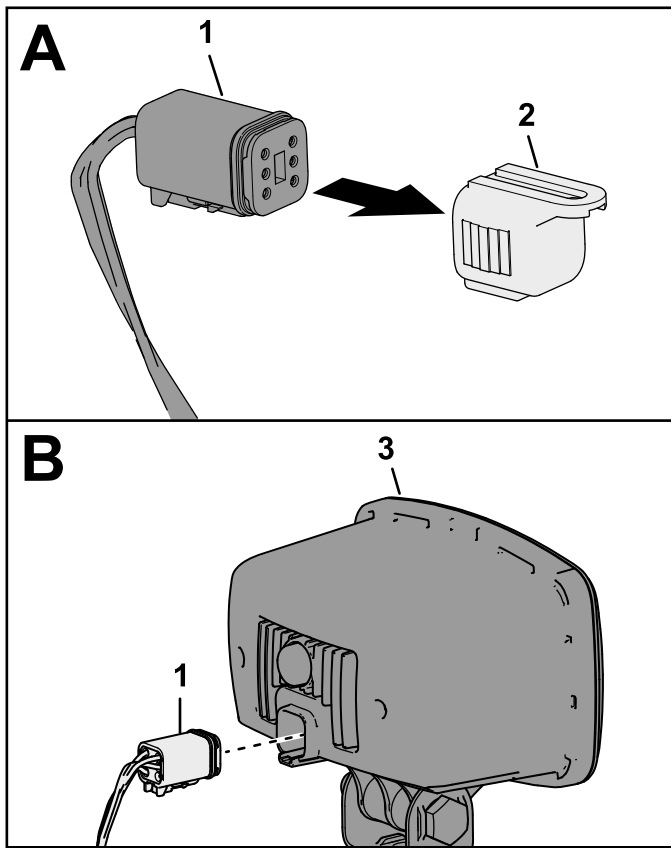


Figure 14

- | | |
|--|--------------|
| 1. 6-socket connector
(labeled HEADLIGHT LH or
HEADLIGHT RH—machine
wire harness) | 3. Headlight |
| 2. Cap | |

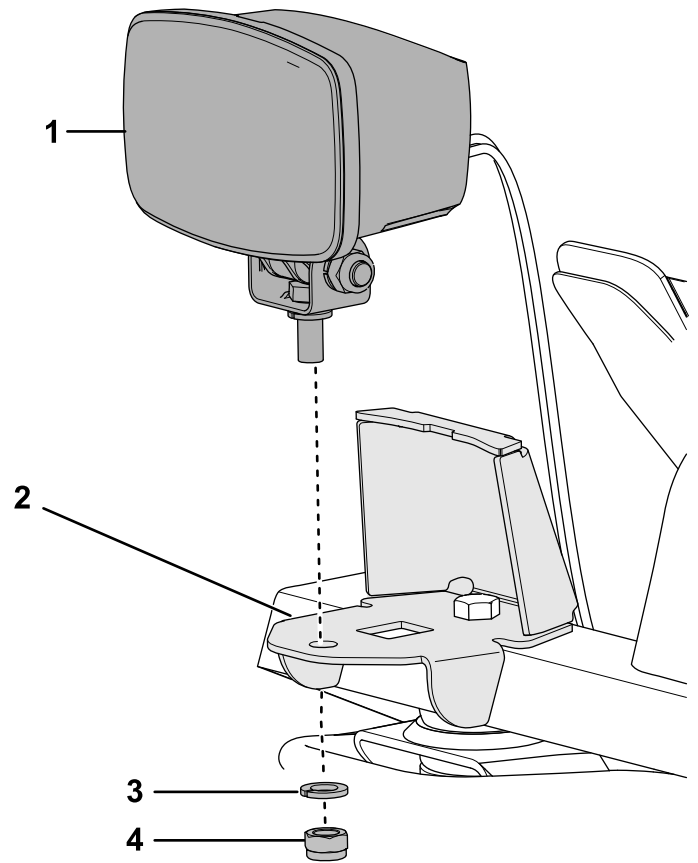


Figure 15

Right headlight shown.

- | | |
|--|----------------|
| 1. Headlight | 3. Lock washer |
| 2. Light mount (machines
with a roll bar) | 4. Locknut |

3. If assembled, remove the locknut (12 mm) and lock washer (12 mm) from the capscrew in the headlight bracket.
4. Assemble the capscrew (12 mm) to the light mount (Figure 15) with the locknut (12 mm) and lock washer (12 mm).

5. Tighten the locknut and capscrew.
6. Bundle the excess wire harness and secure it to the chassis with a cable tie.
7. Repeat steps 2 through 5 for the other headlight at the other side of the machine.

Installing the Headlights and Light Mounts

Machines with a Cab

1. Assemble the headlight and light mount to the headlight bracket (Figure 16) with a flange-head capscrew (1/2 x 1 inch) and flange locknut (1/2 inch).

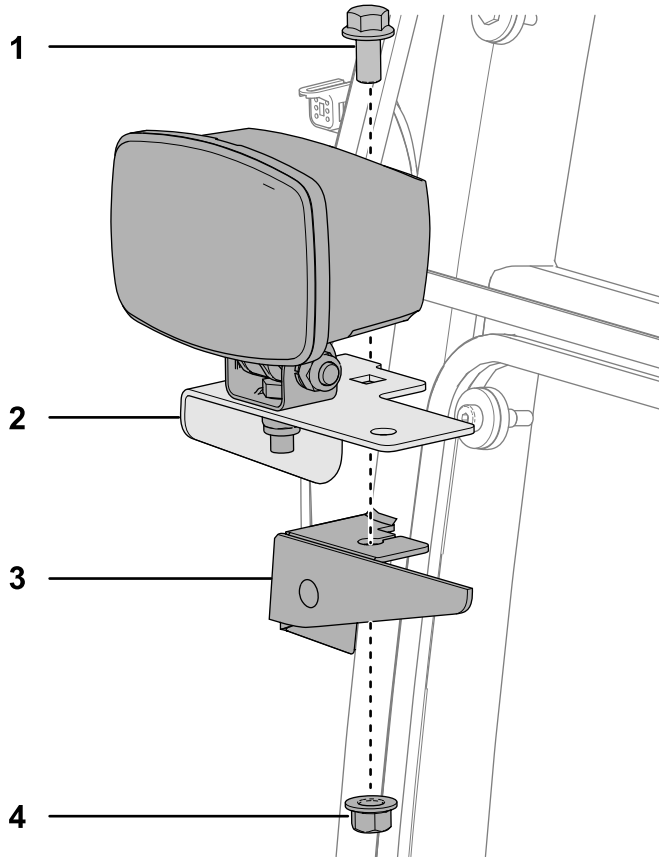
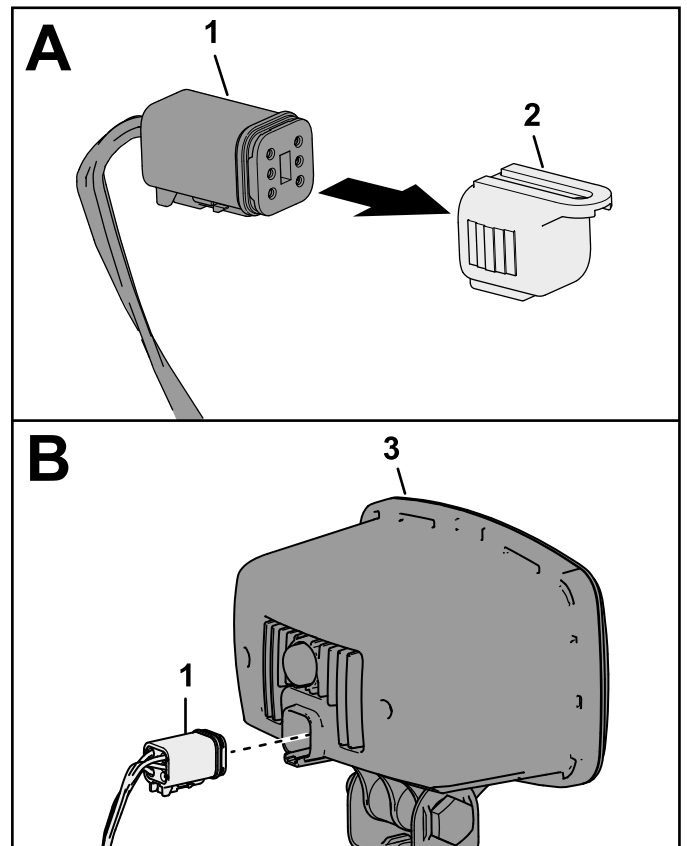


Figure 16

g350533

- | | |
|--|------------------------------|
| 1. Flange-head capscrew (1/2 x 1 inch) | 3. Headlight bracket |
| 2. Light mount | 4. Flange Locknut (1/2 inch) |

2. Torque locknut and capscrew and locknut to 91 to 113 N·m (67 to 83 ft·lb).
3. Repeat steps 1 and 2 for the other headlight and light mount at the other side of the machine.
4. Remove the cap from the 6-socket connector labeled HEADLIGHT LH or the 6-socket connector labeled HEADLIGHT RH of the machine wire harness, and plug the connector into the headlight (Figure 17).



g350820

Figure 17

- | | |
|---|--------------|
| 1. 6-socket connector (labeled HEADLIGHT LH or HEADLIGHT RH—machine wire harness) | 3. Headlight |
| 2. Cap | |
5. Repeat step 4 for the other headlight at the other side of the machine.

5

Installing the Control Console

Parts needed for this procedure:

1	Console harness
1	Cap plug
1	Fuse mount plate
1	Clip nut (#10)
1	Flasher
1	Flange head screw (#10 x 3/8 inch)
1	Cable tie
2	Bracket mount
8	Clip nut (1/4 inch)
1	Switch mount
1	Multi-function switch
1	Switch clip (thick)
1	Switch clip (thin)
3	Switch plug
1	Rocker switch
2	Knob
1	Fuse cover
2	Bolt retainer
4	Carriage bolt (1/4 x 2 inches)
4	Flange locknuts
2	Cable ties
2	Push-in fastener
4	Flange-heads screw (1/4 x 3/4 inch)

Installing the Console Harness Connector Plug

1. Disconnect the single-pin connector from the single-socket connector labeled NA/EU MODE SELECTOR (Figure 18).

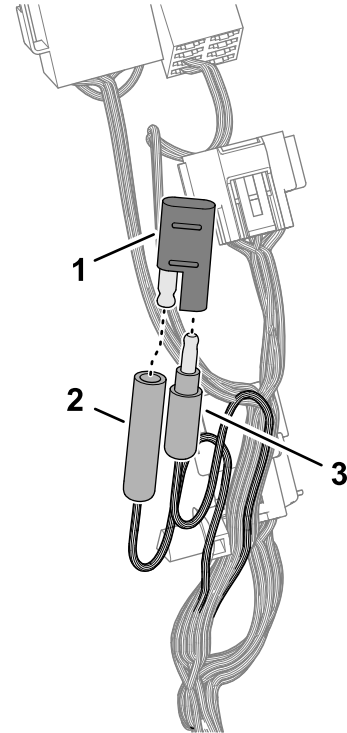


Figure 18

g950773

1. Cap plug
 2. Single-socket connector (labeled NA/EU MODE SELECTOR)
 3. Single-pin connector
-
2. Plug the single-pin connector and the single-socket connector into the cap plug (Figure 18).

Preparing the Steering Cover and Routing the Control Harness

1. Remove the boot from the steering cover, and slide the boot up (Figure 19).

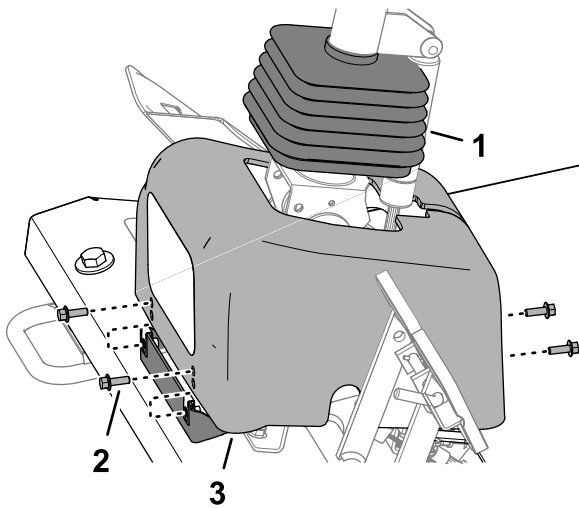


Figure 19

g350969

1. Boot
2. Flange-head screws
3. Steering cover

2. Remove the 4 flange-head screws that secure the steering cover to the cover mounts, and lift the cover (Figure 19).
3. Grind a notch in the steering cover as show in Figure 20.

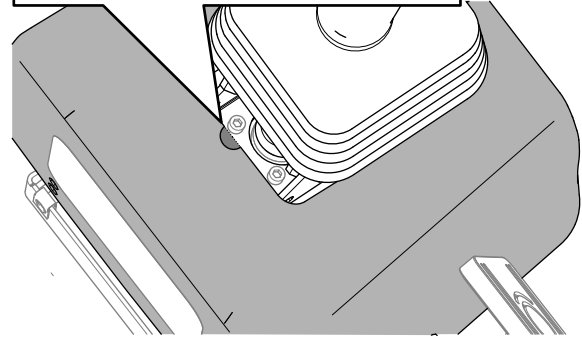
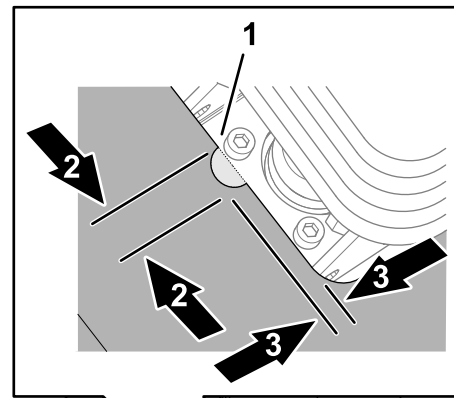


Figure 20

g350968

1. Notch (steering cover)
2. 6 mm (1/4 inch)
3. 11 mm (7/16 inch)

4. Align the 12-pin connector end of the control harness through notch in the steering cover (Figure 21).

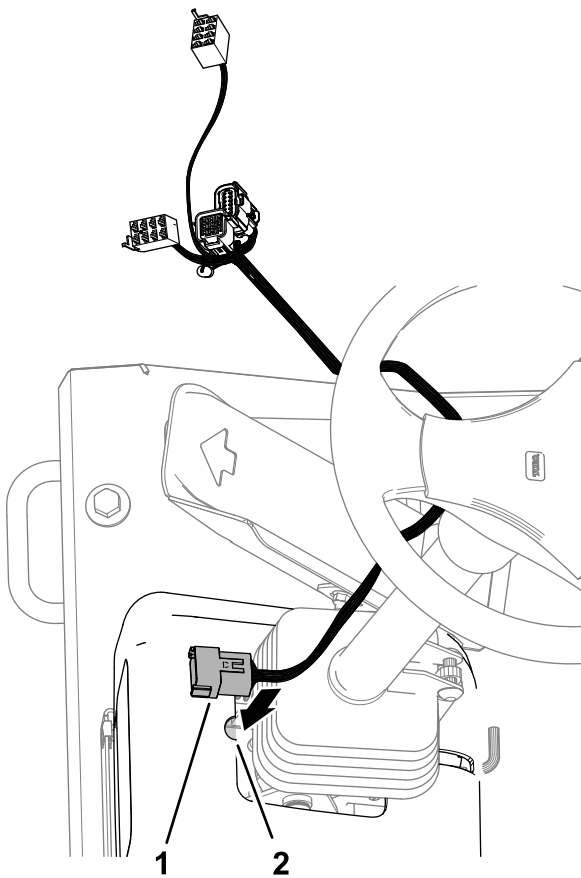


Figure 21

g350970

1. 12-pin connector (control harness)
2. Notch (steering cover)

5. Assemble the steering cover to the cover mounts with the 4 flange-head screws.
6. Pull the boot down and assemble the bottom of it into the steering cover ([Figure 22](#)).

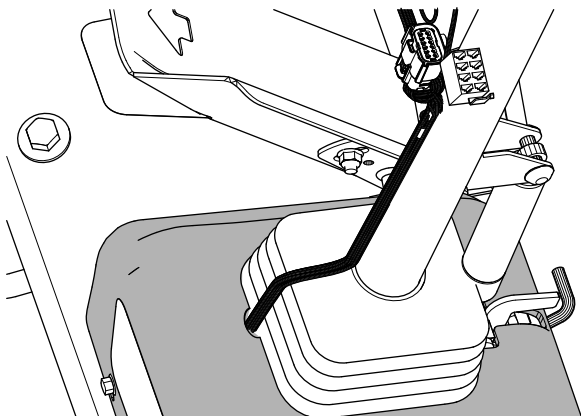


Figure 22

g350967

Assembling the Fuse Mount Plate

1. Assemble the clip nut (#10) onto the fuse mount plate ([Figure 23](#)).

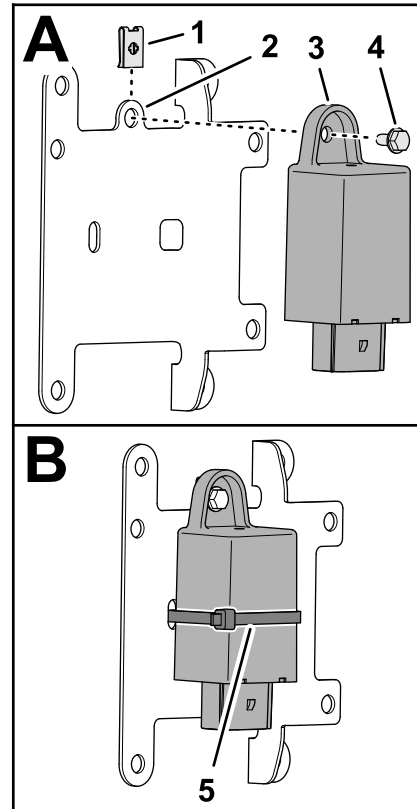


Figure 23

g350763

1. Clip nut (#10)
2. Fuse mount plate
3. Flasher
4. Flange head screw (#10 x 3/8 inch)
5. Cable tie

2. Assemble the flasher to the mount plate ([Figure 23](#)) with a flange head screw (#10 x 3/8 inch).
3. Secure the flasher to the mount plate with a cable tie ([Figure 23](#)).
4. Plug the 12-socket connector of the console harness into the 12-pin connector of the flasher ([Figure 24](#)).

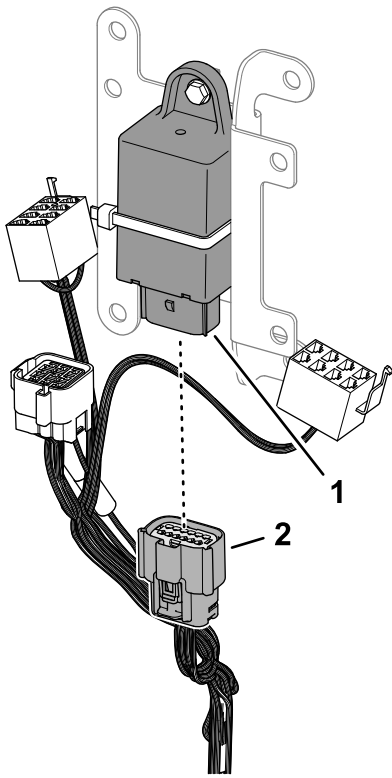


Figure 24

g350765

1. 12-pin connector (flasher) 2. 12-pin socket connector (console harness)

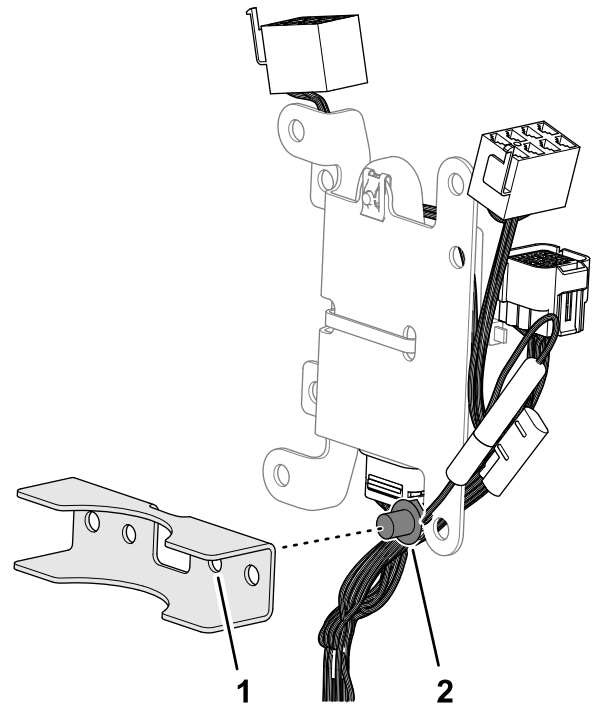


Figure 25

g350766

1. Bracket mount 2. Push-in anchor (console harness)

-
5. Insert push-in anchor of the console harness into the 6.4 mm (1/4 inch) hole in the bracket mount (Figure 25).

Assembling the Switch Mount

1. Assemble the 8 clip nuts (1/4 inch) to the switch mount as shown in [Figure 26](#).

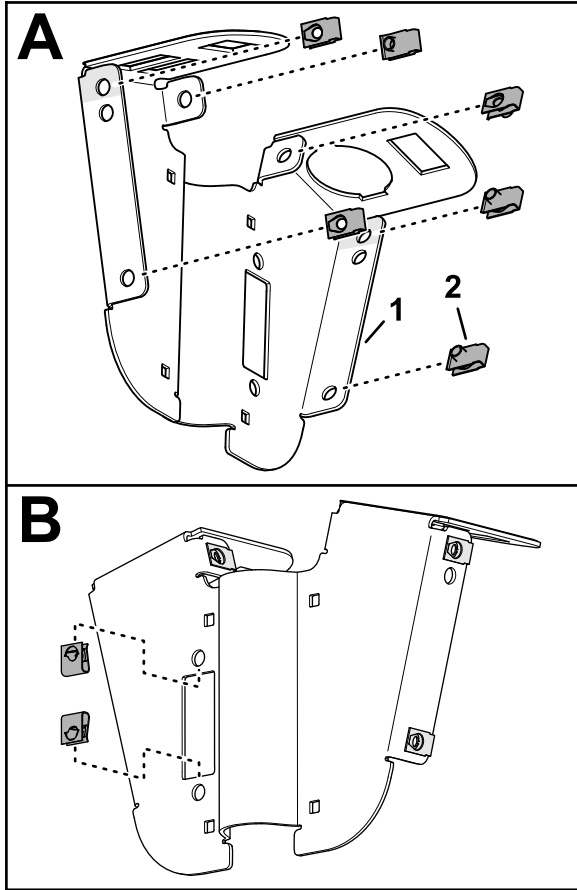


Figure 26

g350767

1. Switch mount
2. Clip nut (1/4 inch)

2. Insert the multi-function switch into the 100 mm (2 inch) hole in the switch mount as shown in [Figure 27](#).

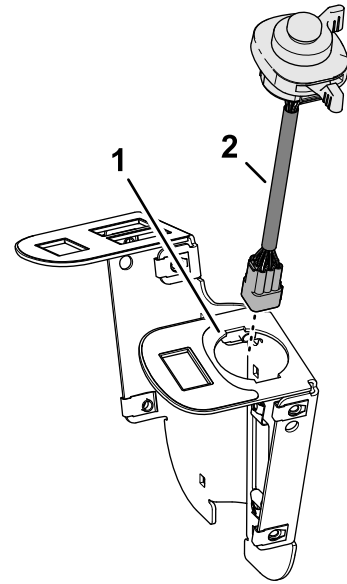


Figure 27

g350769

1. Switch mount
2. Multi-function switch

3. Secure the multi-function switch to the switch mount with the thick and thin switch clips ([Figure 28](#)).

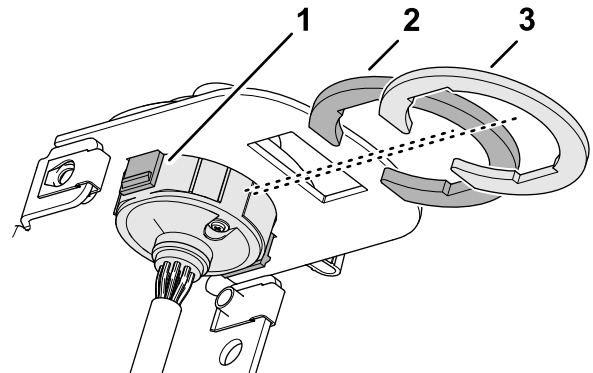


Figure 28

g350778

1. Tab (multi-function switch)
3. Switch clip (thin)
2. Switch clip (thick)

4. Insert the 3 switch plugs into the switch mount as shown in [Figure 29](#).

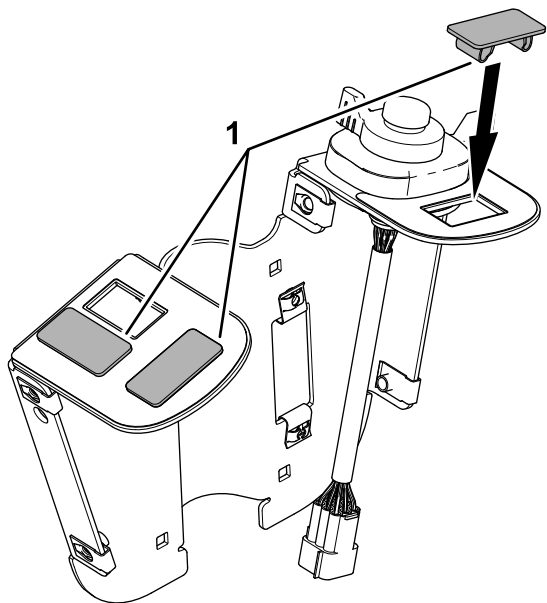


Figure 29

g350770

1. Switch plug

5. Align the rocker switch to the switch mount with the lens of the light to the front of the switch plate (Figure 30).

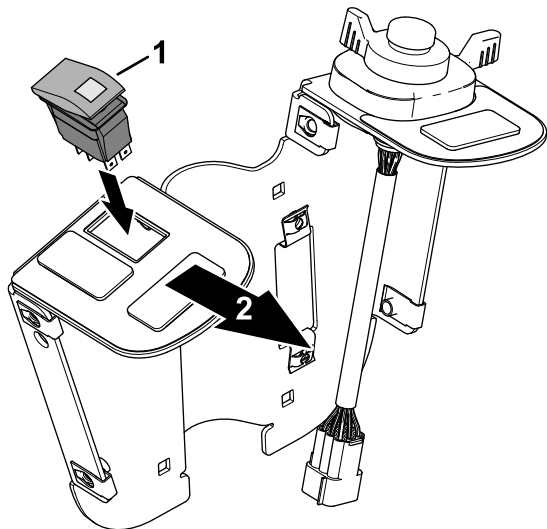


Figure 30

g350768

1. Rocker switch
2. Front of the switch plate

6. Assemble the 2 knobs into the fuse cover, and secure the knobs with 2 bolt retainers (Figure 31).

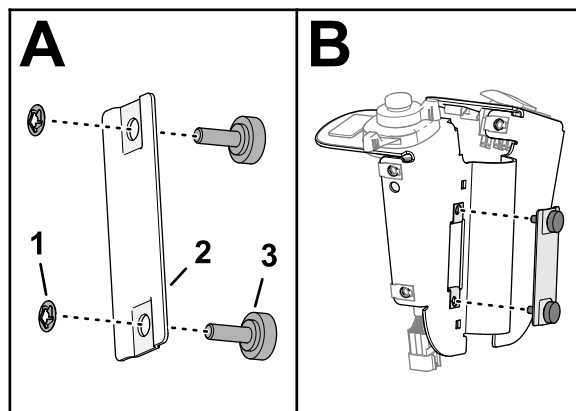


Figure 31

g350764

1. Bolt retainer
2. Fuse cover
3. Knob

7. Assemble the fuse cover to the switch plate, and tighten the knobs (Figure 31).

Installing the Switch Plate to the Steering Column

1. Align the switch plate to the rearward side or the steering column (Figure 33).

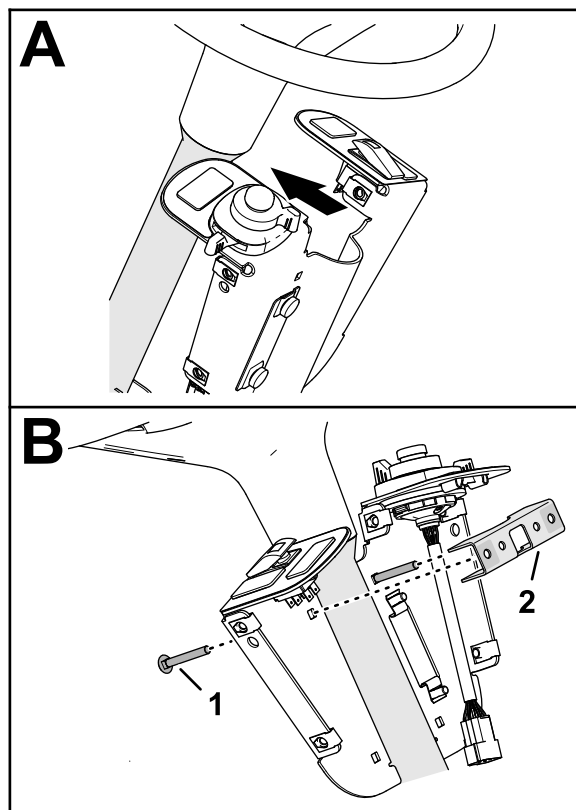


Figure 32

g350762

1. Carriage bolt (1/4 x 2 inches)
2. Bracket mount

- At the upper 6.4 mm (1/4 inch) holes, assemble 2 carriage bolts (1/4 x 2 inches) through the switch plate and the other bracket mount (Figure 32).
- Assemble the fuse mount plate to the upper bracket mount and carriage bolts (Figure 33) with 2 flange locknuts (1/4 inch).

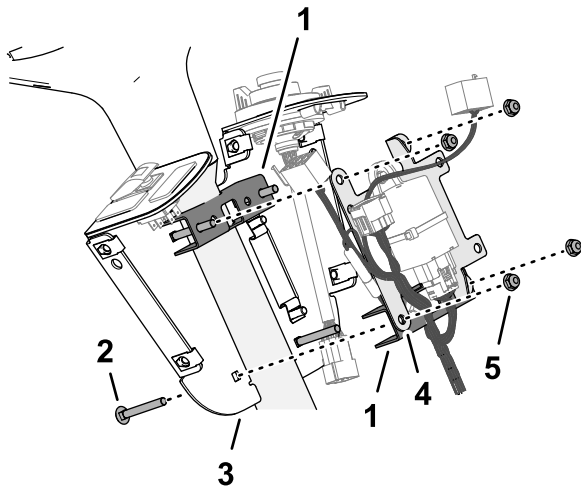


Figure 33

g350772

- | | |
|-----------------------------------|------------------------------|
| 1. Bracket mount | 4. Fuse mount plate |
| 2. Carriage bolt (1/4 x 2 inches) | 5. Flange locknut (1/4 inch) |
| 3. Switch mount | |

- At the lower 6.4 mm (1/4 inch) holes, assemble 2 carriage bolts (1/4 x 2 inches) through the switch plate, bracket mount, and fuse mount plate (Figure 33) with 2 carriage bolts (1/4 x 2 inches) and 2 flange locknuts (1/4 inch).
- Align the switch plate to the operator's seat, and tighten the 4 flange locknuts.

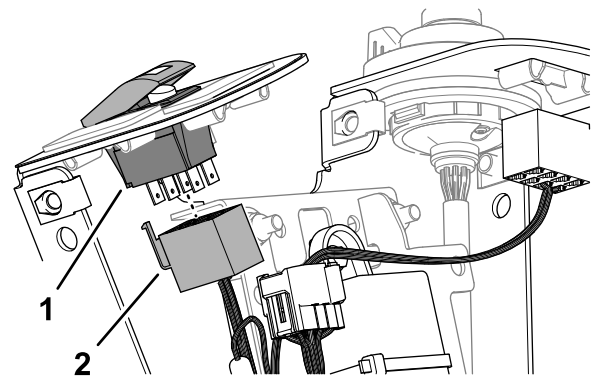


Figure 34

g350776

- | | |
|------------------------------------|---|
| 1. 8-pin connector (rocker switch) | 2. 8-socket connector (labeled HAZARD SWITCH—console harness) |
|------------------------------------|---|

- Plug the 9-pin connector of the multi-function switch harness into the 9-socket connector of the console harness (Figure 35).

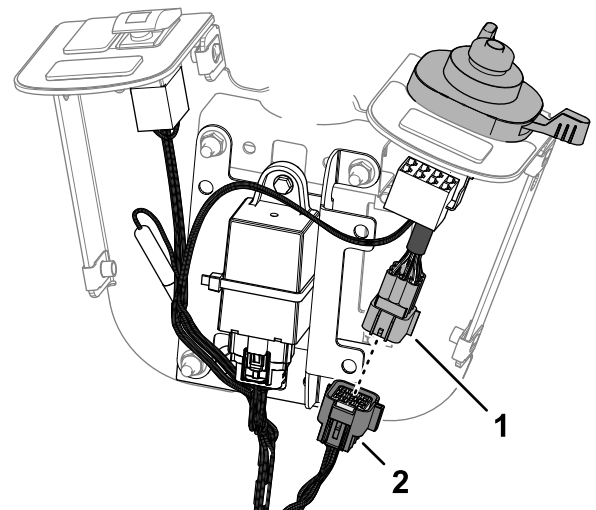


Figure 35

g350777

- | | |
|--|---|
| 1. 9-pin connector (multi-function switch harness) | 2. 9-socket connector (console harness) |
|--|---|

- Secure the console harness to the steering column with 2 cable ties.

Connecting the Console Harness to the Switches

- Plug the 8-socket connector of the control harness labeled HAZARD SWITCH into the 8-pin connector of the rocker switch (Figure 34).

Installing the Control Cover

- Align the holes in the control cover to the holes in the switch mount (Figure 36).

6

Connecting the Console Harness

No Parts Required

Procedure

1. Remove the cap from the 12-socket connector of the machine wire harness ([Figure 38](#) and [Figure 39](#)).

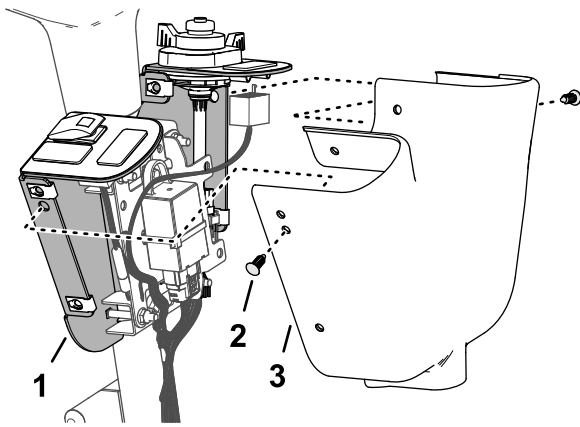


Figure 36

g350789

1. Switch mount
2. Push-in fastener
3. Control cover

2. Using the middle holes, secure the cover to the mount with 2 push-in fasteners as shown in [Figure 36](#).
3. Secure the cover to the mount with 4 flange-heads screws ($1/4 \times 3/4$) as shown in [Figure 37](#).

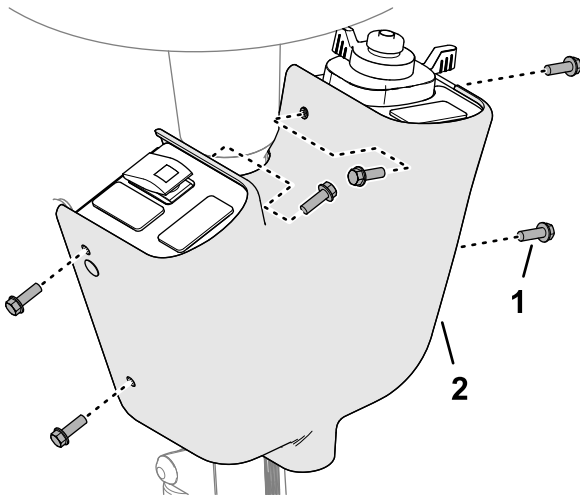


Figure 37

g350771

1. Flange-heads screw ($1/4 \times 3/4$ inch)
2. Control cover

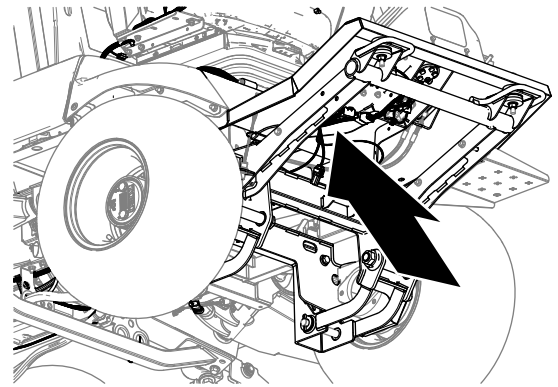


Figure 38

g351028

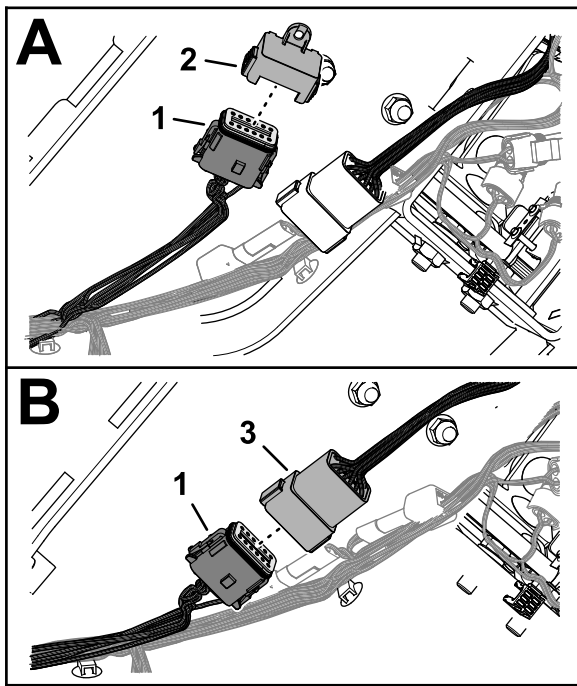


Figure 39

g351027

1. 12-socket connector (machine wire harness)
2. Cap
3. 12-pin connector (console harness)

2. Plug the 12-pin connector of the console harness into the 12-socket connector of the machine wire harness (Figure 39).

7

Installing the Fuses

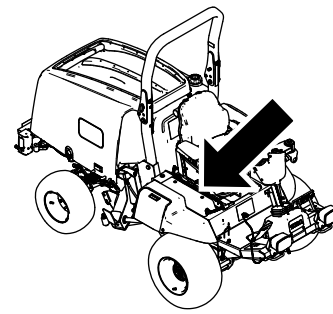
Parts needed for this procedure:

1	Fuse (10 A)
1	Fuse (15 A)

Removing the Electrical Cover

Machines with a Roll Bar

At the floor along right side of the operator's seat, remove the 2 socket-head screws and 2 washers that secure the controller cover to the electrical-component mount, and remove the cover (Figure 40).



g351012

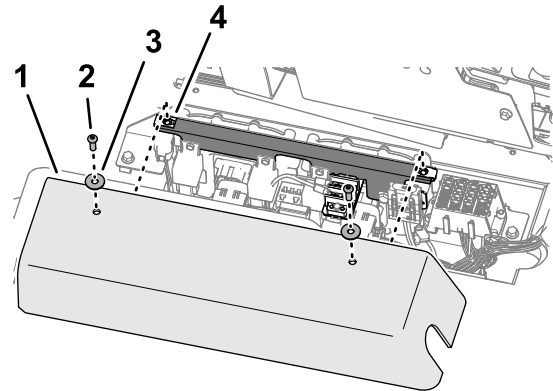


Figure 40

g351093

1. Electrical cover
2. Socket-head screw
3. Washer
4. Clip nut (electrical-component mount)

Removing the Electrical Cover

Machines with a Cab

At the floor along right side of the operator's seat, remove the 2 socket-head screws that secure the controller cover to the electrical-component mount, and remove the cover (Figure 41).

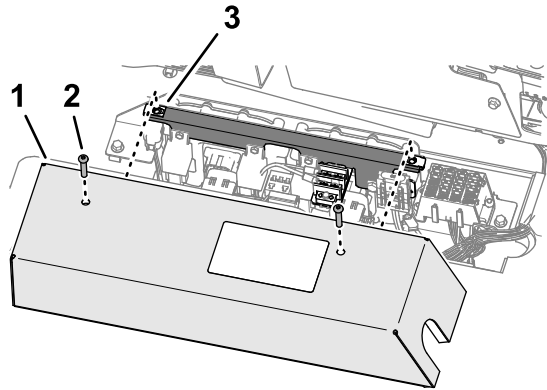
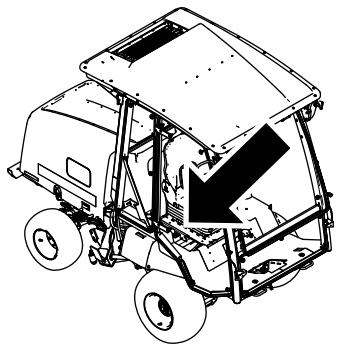


Figure 41

1. Electrical cover
2. Socket-head screw
3. Clip nut (electrical-component mount)

Installing the Electrical Cover

Machines with a Roll Bar

1. Align holes in the controller cover with clip nuts on the electrical-component mount ([Figure 43](#)).

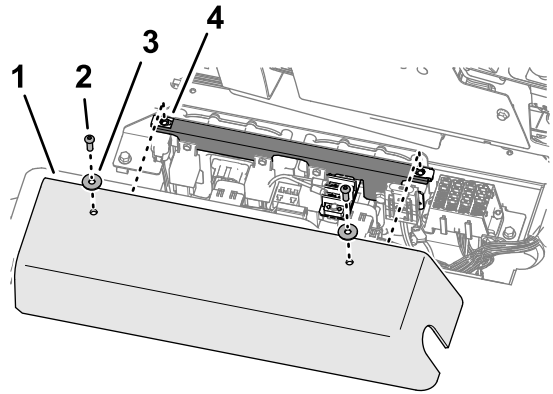


Figure 43

1. Electrical cover
2. Socket-head screw
3. Washer
4. Clip nut (electrical-component mount)

2. Install the controller cover to the electrical-component mount ([Figure 43](#)) with the 2 socket-head screws and 2 washers that you removed in [Removing the Electrical Cover](#) (page 19).

Inserting the Fuses

Insert the fuses ([Figure 42](#)) into the following fuse-block slots:

Fuse	Fuse-block slot
10 A	A3
15 A	A4

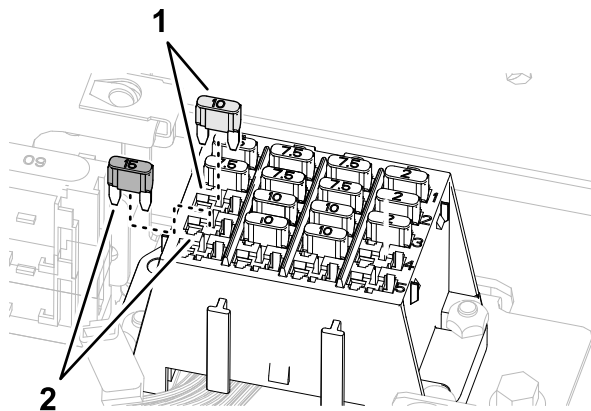


Figure 42

1. Fuse (10 A) and fuse-block slot A3
2. Fuse (15 A) and fuse-block slot A4

Installing the Electrical Cover

Machines with a Cab

1. Align holes in the controller cover with clip nuts on the electrical-component mount ([Figure 44](#)).

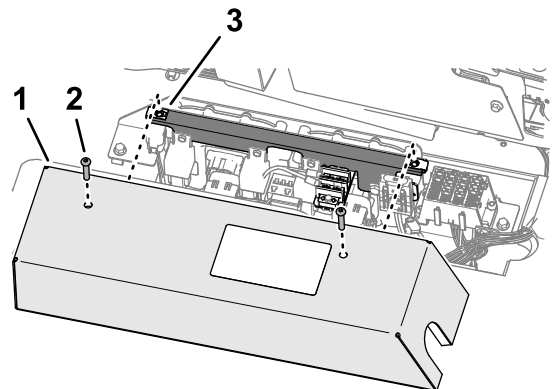


Figure 44

1. Electrical cover
2. Socket-head screw
3. Clip nut (electrical-component mount)

2. Install the controller cover to the electrical-component mount ([Figure 44](#))

with the 2 socket-head screws that you removed in [Removing the Electrical Cover](#) (page 19).

8

Installing the Taillights

Parts needed for this procedure:

1	Left light housing
1	Left light-housing mount
1	Right light housing
1	Right light-housing mount
4	Carriage bolt (1/4 x 5/8 inch)
4	Flange locknut (1/4 inch)
1	Left taillight and license plate harness
1	Right taillight harness
4	Clip nut (1/4 inch)
2	Inner mount
8	Socket-head screw (1/4 x 3/4 inch)
2	Taillight
4	Phillips-head screw (#10 x 1-1/4 inches)
2	Pivot bracket
6	Capscrew (1/4 x 3/4 inch)
6	Locknut (1/4 inch)
1	Left mount cover
1	Right mount cover
8	Push-in fasteners
2	Swivel-adaptor mount
4	Carriage bolt (1/4 x 1-1/4 inches)
4	Flange locknut (3/8 inch)

Assembling the Light Housings

1. Align the left light-housing mount into the left light housing as shown in [Figure 45](#).

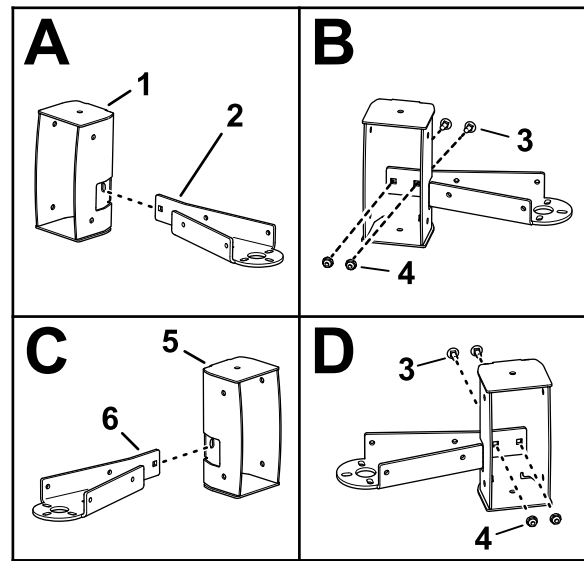


Figure 45

g350513

- | | |
|-----------------------------------|------------------------------|
| 1. Left light housing | 4. Flange locknut (1/4 inch) |
| 2. Left light-housing mount | 5. Right light housing |
| 3. Carriage bolt (1/4 x 5/8 inch) | 6. Right light-housing mount |

2. Secure the mount to the housing ([Figure 45](#)) with 2 carriage bolt (1/4 x 5/8 inch) and flange locknut (1/4 inch).
3. Align the right mount into the right light-housing mount as shown in [Figure 45](#).
4. Secure the mount to the housing ([Figure 45](#)) with 2 carriage bolt (1/4 x 5/8 inch) and flange locknut (1/4 inch).

Assembling the Harnesses and Inner Mounts

1. Assemble the 4-socket connector of the left taillight and license plate harness into the left light housing ([Figure 46](#)).

Note: The left taillight and license plate harness has a 2-socket connector for the license-plate light.

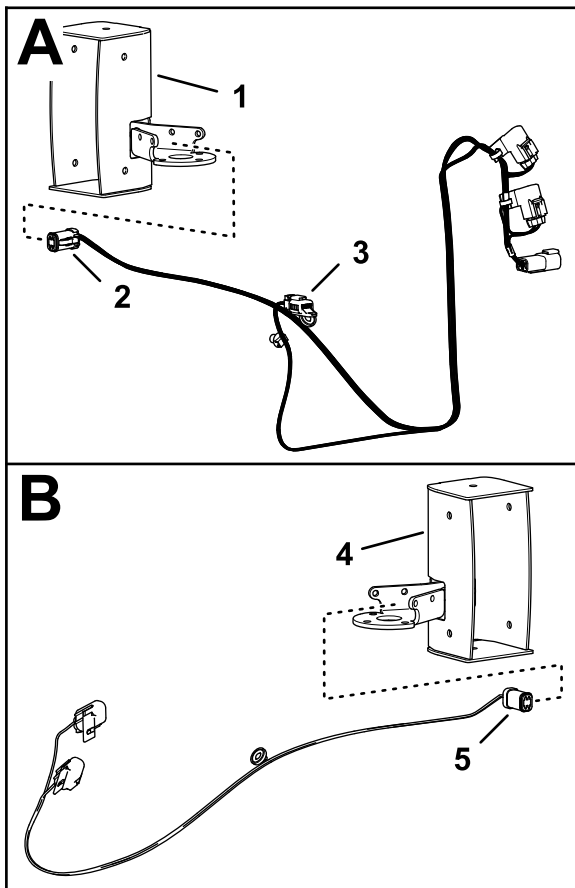


Figure 46

g351322

1. Left light housing
2. 4-socket connector (left taillight and license plate harness)
3. 2-socket connector (left taillight and license plate harness)
4. Right light housing
5. 4-socket connector (right taillight harness)

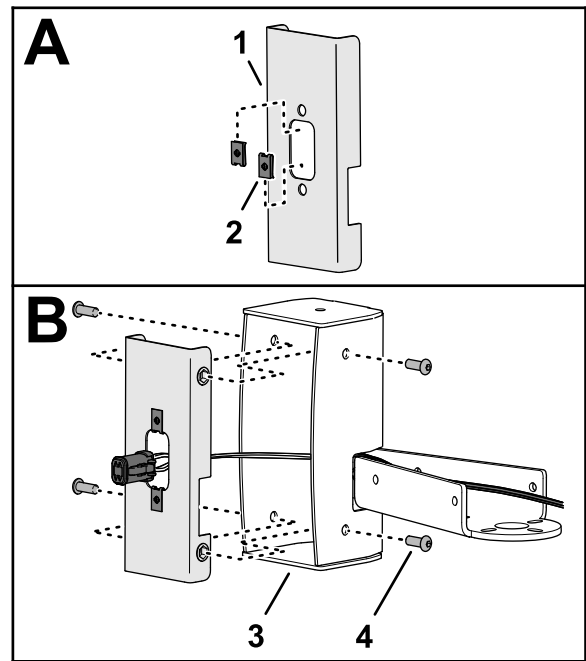


Figure 47

g350574

1. Inner mount
 2. Clip nut (1/4 inch)
 3. Light housing
 4. Socket-head screw (1/4 x 3/4 inch)
4. Align the 4-socket connector of the harness through the inner mount (Figure 47).
 5. Assemble the inner mount into the light housing, and secure the mount to the housing (Figure 47) with 4 socket-head screws (1/4 x 3/4 inch).
 6. Repeat steps 3 through 5 for the other inner mount and light housing.

2. Assemble the 4-socket connector of the right taillight and license plate harness into the right light housing (Figure 46).
3. Assemble 2 clip nuts onto the inner mount as shown in Figure 47.

Assembling the Taillights

1. Align the taillight to the light housing with the yellow lens positioned as shown in [Figure 48](#).

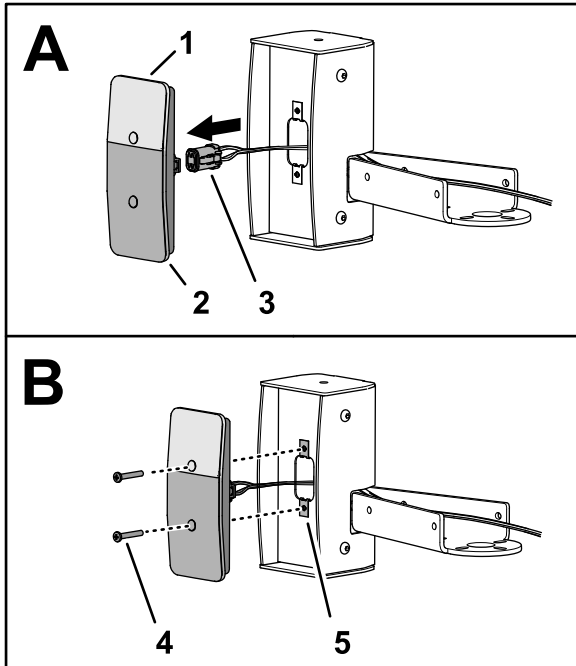


Figure 48

g350575

- | | |
|---|---|
| 1. Yellow lens (taillight) | 4. Phillips-head screw (#10 x 1-1/4 inches) |
| 2. Red lens (taillight) | 5. Clip nut (#10) |
| 3. 4-socket connector (taillight harness) | |

2. Plug the 4-socket connector of the harness into the 4-pin connector of the taillight ([Figure 48](#)).
3. Assemble the taillight into the light housing, and secure the light to the housing ([Figure 48](#)) with 2 Phillips-head screws (#10 x 1-1/4 inches).
4. Repeat steps 1 through 3 for the other taillight and light housing.
5. Install a pivot bracket to the light-housing mount ([Figure 49](#)) with 3 capscrews (1/4 x 3/4 inch) and locknuts (1/4 inch).

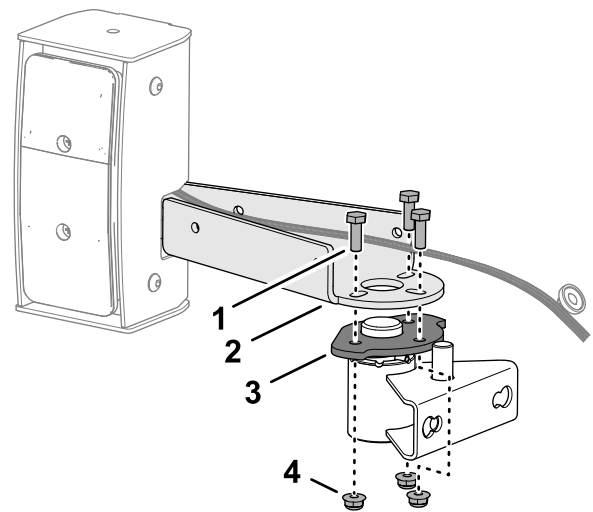


Figure 49

g351422

- | | |
|------------------------------|-----------------------|
| 1. Capscrew (1/4 x 3/4 inch) | 3. Pivot bracket |
| 2. Light-housing mount | 4. Locknut (1/4 inch) |

6. Install the mount cover to the light-housing mount with 4 push-in fasteners ([Figure 50](#)).

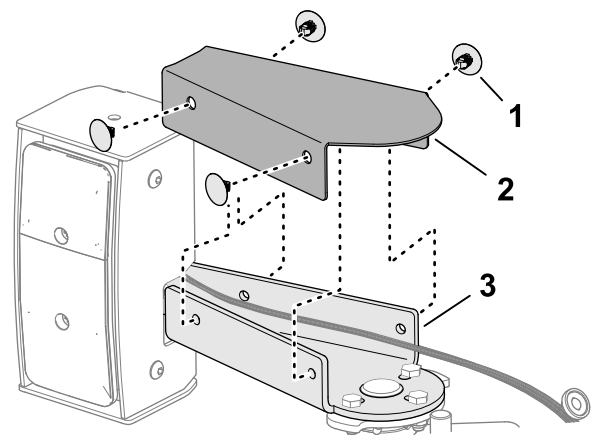


Figure 50

g350666

- | | |
|----------------------|------------------------|
| 1. Push-in fasteners | 3. Light-housing mount |
| 2. Mount cover | |

7. Repeat steps 5 and 6 for the other mount cover and light assembly.

Installing the Pivot Mount

1. At the left side of the bumper, remove the 2 capscrews (1/2 x 1-1/4 inches), 2 washers (1/2 inch), and 2 flange locknuts (1/2 inch) securing the bumper to the left frame rail ([Figure 48](#)).

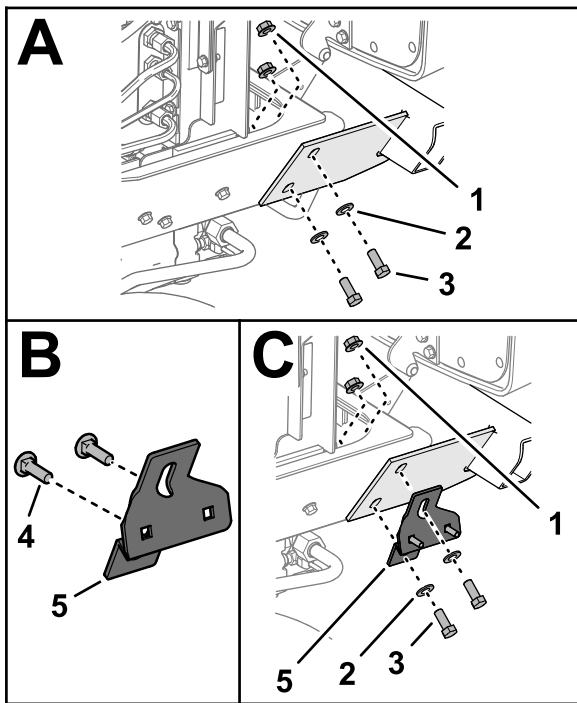


Figure 51

g350534

1. Flange locknut (1/2 inch)
2. Washer (1/2 inch)
3. Capscrew (1/2 x 1-1/4 inches)
4. Carriage bolt (1/4 x 1-1/4 inches)
5. Swivel-adapter mount

2. Insert 2 carriage bolts (1/4 x 1-1/4 inches) into the slots in the swivel-adapter mount (Figure 48).
3. Assemble the swivel-adapter mount and bumper to the left frame rail with the 2 capscrews (1/2 x 1-1/4 inches), 2 washers (1/2 inch), and 2 flange locknuts (1/2 inch) that you removed in step 1.
4. Torque the capscrews and locknuts to 91 to 113 N·m (67 to 83 ft-lb).
5. Install the pivot bracket to the carriage bolts in the swivel-adapter mount (Figure 52) with 2 flange locknuts (3/8 inch).

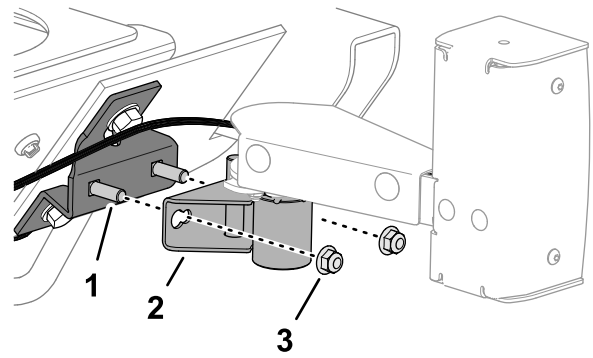


Figure 52

g350605

1. Carriage bolt (3/8 x 1-1/4 inches)
2. Pivot bracket
3. Flange locknut (3/8 inch)

6. Repeat steps 1 through 4 for the swivel-adapter mount at the other side of the bumper.

9

Installing the Slow-Moving Vehicle Sign

Parts needed for this procedure:

1	Slow moving vehicle emblem
1	Slow moving vehicle mount
3	Capscrew (1/4 x 3/4 inch)
3	Washer (1/4 x 3/4 inch)
3	Locknut (1/4 inch)

Procedure

1. Assemble the slow moving vehicle emblem to the slow moving vehicle mount (Figure 53) with 3 capscrews (1/4 x 3/4 inch), 3 washers (1/4 x 3/4 inch), and 3 locknuts (1/4 inch).

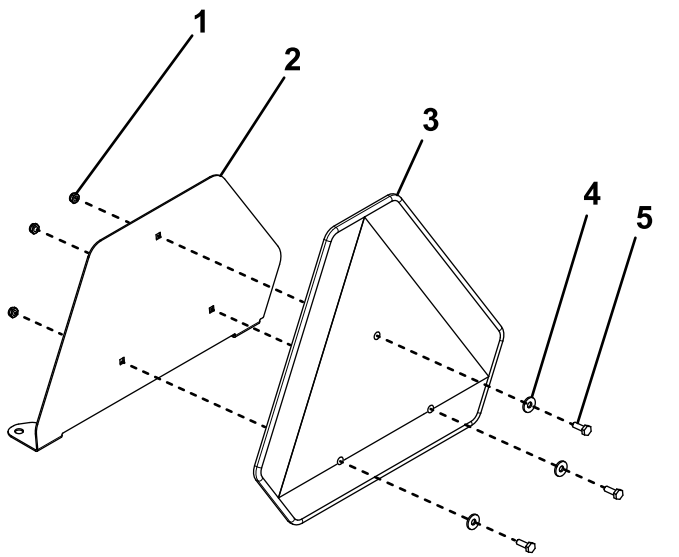
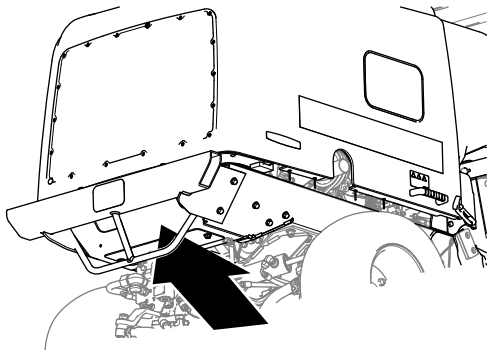


Figure 53

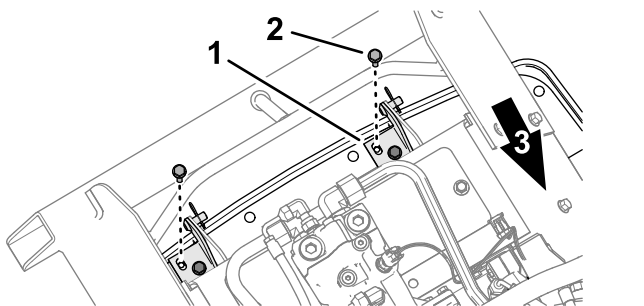
g351150

- | | |
|-------------------------------|------------------------------|
| 1. Locknut (1/4 inch) | 4. Washer (1/4 x 3/4 inch) |
| 2. Slow moving vehicle mount | 5. Capscrew (1/4 x 3/4 inch) |
| 3. Slow moving vehicle emblem | |

- At each hood pivot bracket (Figure 54), remove the rearmost flange-head capscrew (3/8 x 1-1/4 inches).



g351162



g351163

Figure 54

- | | |
|-----------------------|--|
| 1. Hood pivot bracket | 2. Flange-head capscrew (3/8 x 1-1/4 inches) |
|-----------------------|--|

- Align the holes on the slow moving vehicle mount with the slots in the hood pivot bracket (Figure 55).

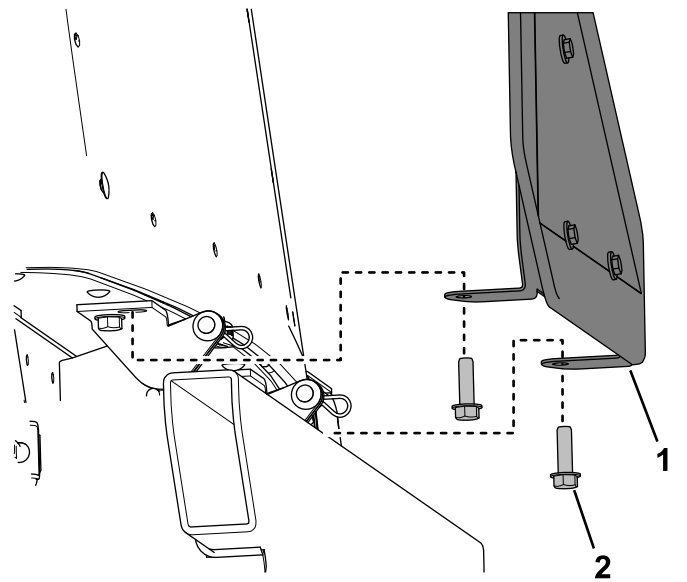


Figure 55

g351151

- | | |
|------------------------------|--|
| 1. Slow moving vehicle mount | 2. Flange-head capscrew (3/8 x 1-1/4 inches) |
|------------------------------|--|

- Assemble the slow moving vehicle mount to the hood pivot bracket (Figure 55) with the 2 flange-head capscrews (3/8 x 1-1/4 inches).
- Torque the capscrews to 37 to 45 N·m (27 to 33 ft-lb).

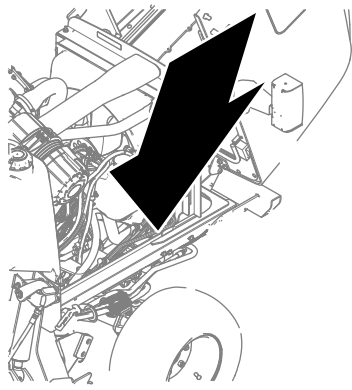
10

Connecting the Taillight Harnesses

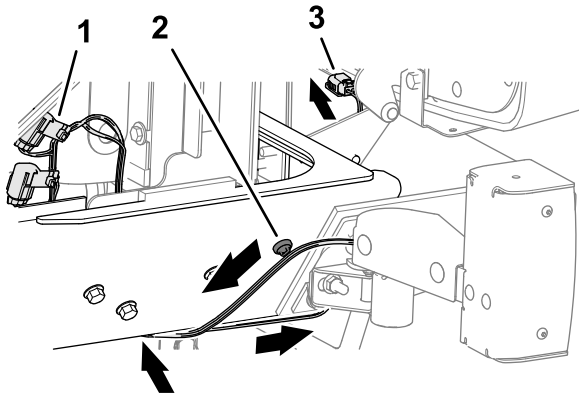
No Parts Required

Routing and Connecting the Left Taillight

- Unlatch and open the hood.
- Route the 4-socket connector labeled LH REAR LIGHT of the machine wire harness under the left frame rail and forward (Figure 56).



g351426

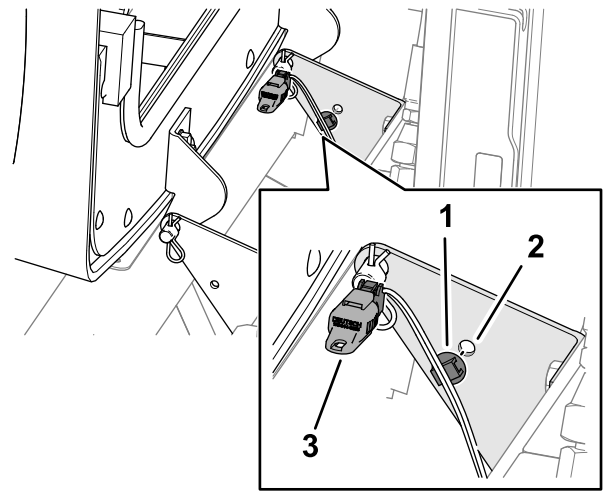


g351444

Figure 56

- | | |
|--|---|
| 1. 4-pin connector (labeled LH Rear Lights—left taillight harness) | 3. 2-socket connector (license-plate light branch—left taillight harness) |
| 2. Magnetic harness anchor | |

- Adhere the magnetic harness anchor to the frame rail (Figure 56).
- Route the 2-socket connector (license-plate light branch) of the left taillight harness under the hood and inboard (Figure 56).
- Insert the push-in anchor of the license-plate light branch into the hole in the left hood-hinge mount (Figure 57).

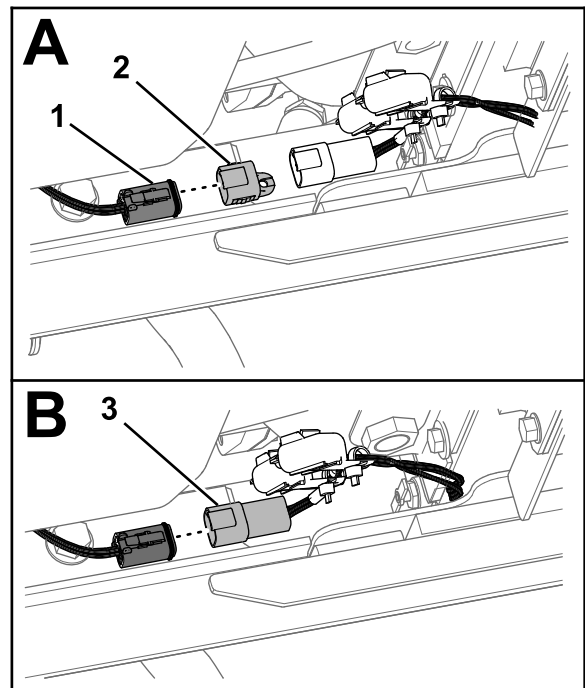


g351457

Figure 57

- | | |
|---------------------------------|---|
| 1. Push-in anchor | 3. 2-socket connector and cap (license-plate light branch—left taillight harness) |
| 2. Hole (hood-hinge mount—left) | |

- At the inboard side of the frame rail, remove the cap from the 4-socket connector labeled LH REAR LIGHT of the machine wire harness (Figure 58).



g350866

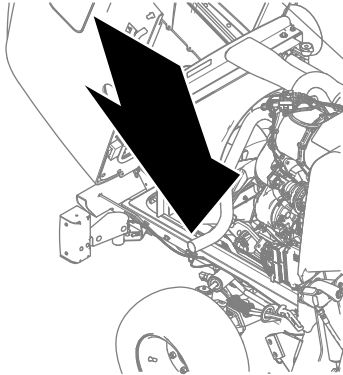
Figure 58

- | | |
|--|--|
| 1. 4-socket connector (labeled LH REAR LIGHT—machine wire harness) | 3. 4-pin connector (labeled LH Rear Lights—left taillight harness) |
| 2. Cap | |

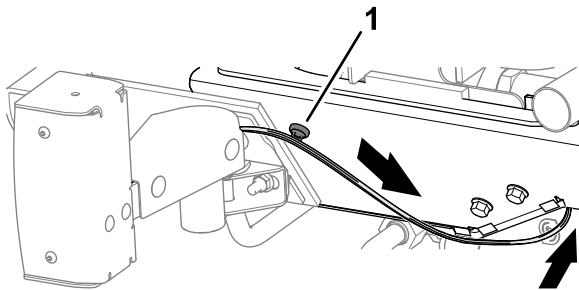
7. Plug the 4-pin connector labeled LH Rear Lights of the left taillight harness into the 4-socket connector labeled LH REAR LIGHT of the machine wire harness (Figure 58).

Routing and Connecting the Right Taillight

1. Route the 4-socket connector labeled RH REAR LIGHT of the machine wire harness under the left frame rail and forward (Figure 59).



g351427

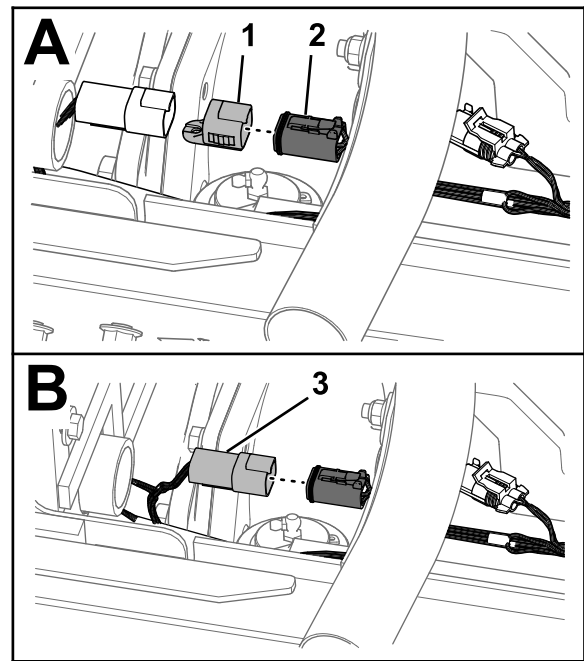


g351445

Figure 59

1. Magnetic harness anchor

2. At the inboard side of the frame rail, remove the cap from the 4-socket connector labeled RH REAR LIGHT of the machine wire harness (Figure 60).



g350907

Figure 60

1. Cap
2. 4-socket connector (labeled RH REAR LIGHT—machine wire harness)
3. 4-pin connector (labeled RH Rear Lights—right taillight harness)

3. Plug the 4-pin connector labeled RH Rear Lights of right taillight harness into the 4-socket connector labeled RH REAR LIGHT of the machine wire harness (Figure 60).

Important: Ensure that the harnesses are routed away from the exhaust pipe.

4. Close and latch the hood.

11

Connecting the Battery

No Parts Required

Procedure

1. Connect the positive battery cable to the positive battery post (Figure 61), and slip the rubber boot over the terminal.

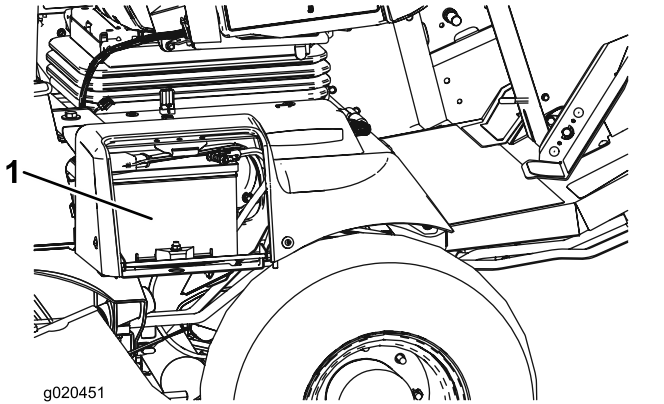


Figure 61

1. Battery

2. Connect the negative (black) battery cable.
3. Close the battery compartment cover (Figure 62) until it securely snaps shut.

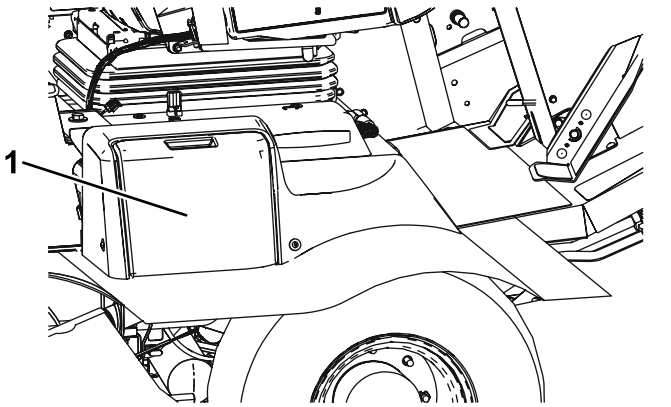


Figure 62

1. Battery cover

Operation

Controls

Note: Check the operation of the lights. Make sure that the correct lights are flashing when operating the turn signal switch.

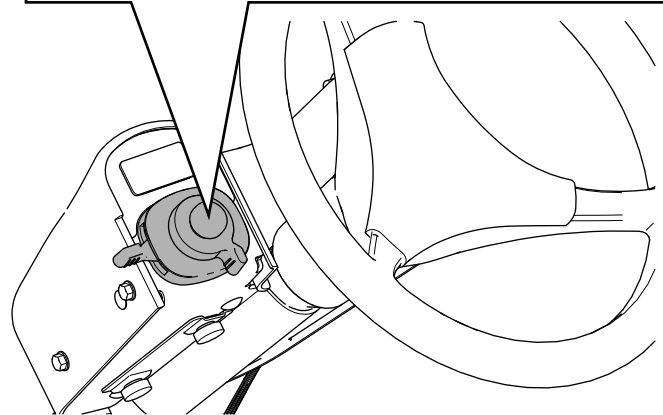
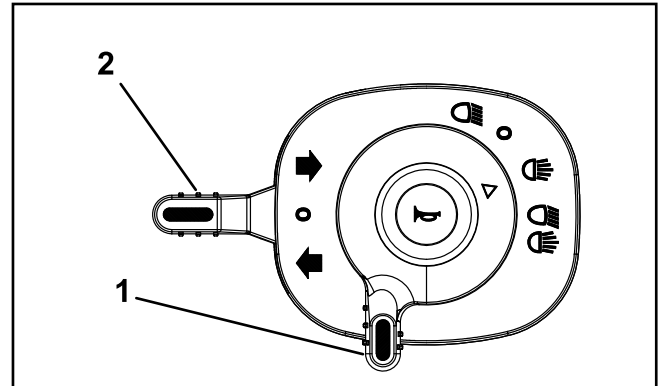


Figure 63

1. Light switch
2. Turn signal switch

Using the Lights

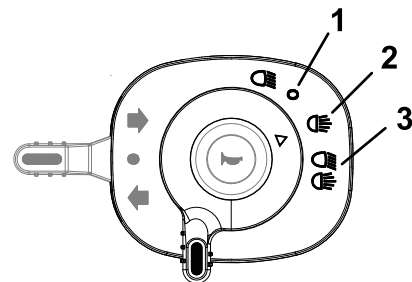


Figure 64

1. OFF
2. Road lights ON
3. Road lights and optional work light ON

1. Turn the key switch on and press the light switch to the ON position.

2. Rotate the light switch (Figure 63 and Figure 64) to the following positions:
 - OFF
 - Road lights ON
 - Road lights and optional work light ON

Using the Turn Signal

- Move the turn signal switch (Figure 63) up to signal a right turn.
- Move the switch down to signal a left turn.
- Move the switch to the middle position to shut off the turn signals.

Using the Hazard Lights

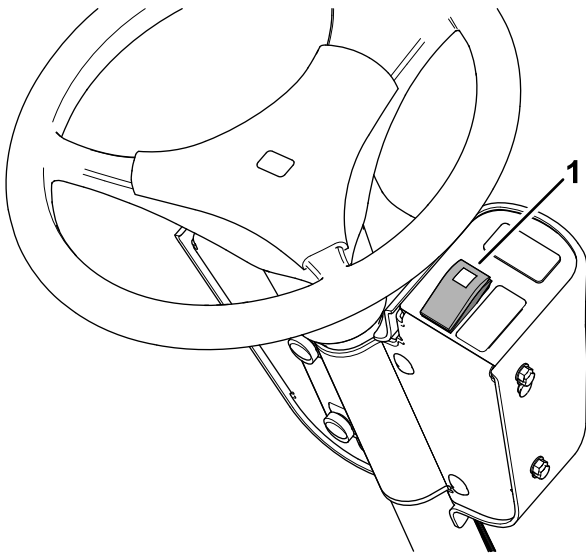


Figure 65

g351460

1. Hazard switch

- Press the top of the switch (Figure 65) to run the hazard lights..

Note: The hazard switch illuminates when running the hazard lights.

- Press the bottom of the switch to shut off the hazard lights.

Adjusting the Headlights

1. Loosen the mounting locknuts and capscrews to adjust the lights (Figure 62).

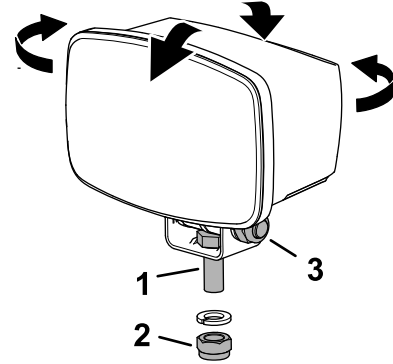


Figure 66

g351458

1. Capscrew (horizontal light adjustment)
2. Locknut (horizontal light adjustment)
3. Locknut and capscrew (vertical light adjustment)

2. Adjust the lights per local standards.
3. Tighten the locknuts and capscrews (Figure 62).

Maintenance

Servicing the Fuses

Replacing a Fuse Block Fuse

1. Park the machine on a level surface, engage the parking brake, lower the cutting units, shut off the engine, and remove the key.
2. Remove the electrical cover, refer to [Removing the Electrical Cover \(page 19\)](#) or [Removing the Electrical Cover \(page 19\)](#).
3. Replace the open fuse.

Fuse-block slot	Protected Circuits	Fuse Rating
A3	EU light kit power	10 A
A4	Road light kit	15 A

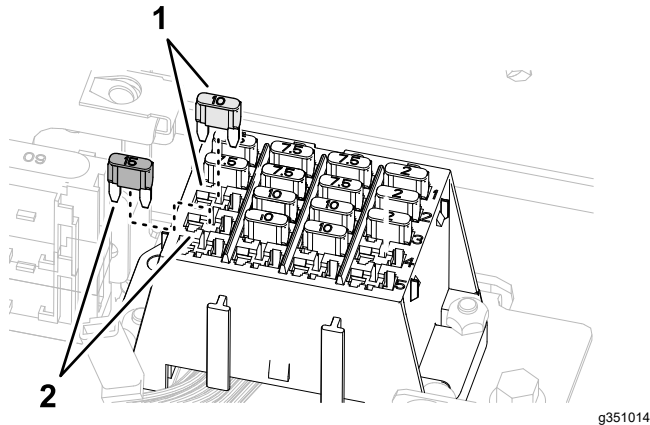


Figure 67

1. Fuse (10 A) and fuse-block slot A3
2. Fuse (15 A) and fuse-block slot A4

4. Install the electrical cover; refer to [Installing the Electrical Cover \(page 20\)](#) or [Installing the Electrical Cover \(page 20\)](#).

Replacing a Taillight Fuse

1. Park the machine on a level surface, engage the parking brake, lower the cutting units, shut off the engine, and remove the key.
2. Unlatch and open the hood.
3. Remove the cap from the in-line fuse holder ([Figure 68](#)).

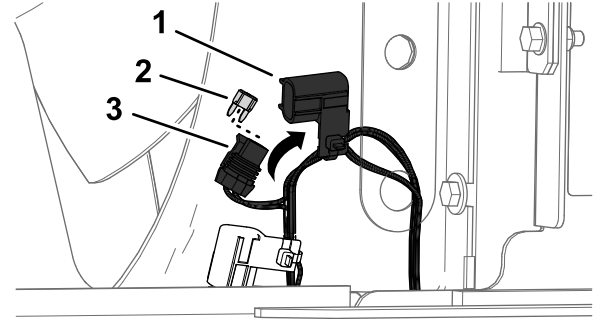
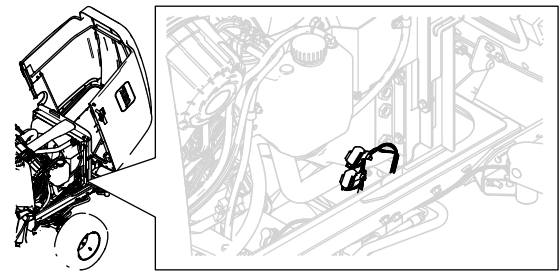


Figure 68

g350865

1. Cap
2. Fuse
3. In-line fuse holder

4. Replace the fuse; refer to the Fuse Table.

Fuse Table

Left taillight harness	Protected Circuits	Fuse Rating
Labeled LH REAR LIGHTS (left taillight harness)	Taillights	5 A
Labeled BRAKE LIGHT FUSE	Brake lights	5 A

Left taillight harness	Protected Circuits	Fuse Rating
Labeled RH REAR LIGHTS (right taillight harness)	Taillights	5 A
Labeled BRAKE LIGHT FUSE	Brake lights	5 A

5. Install the cap onto the fuse holder ([Figure 68](#)).
6. Close and latch the hood.

Notes:



Count on it.