



# LED Work Light Kit

Serial Number 409000000 and After Groundsmaster® or Reelmaster® Traction Unit with Cab or Two Post ROPS Extension Kit

Model No. 31590

## Installation Instructions

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

# Installation

## Loose Parts

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

Procedure	Description	Qty.	Use
<b>1</b>	No parts required	—	Prepare the machine before installation.
<b>2</b>	Light assembly Left mount (Two post ROPS extension) Right mount (Two post ROPS extension) Rear mount (Two post ROPS extension) Carriage bolt (5/16 x 3/4 inch) Flange nut (5/16) Bolt (1/4 x 7/8 inch) Flange nut (1/4 inch) Bolt (6 mm x 20 mm) Wire harness with grommet (cab) Switch Switch decal (Two post ROPS extension) Star grommet	4 1 1 2 4 4 4 4 4 4 1 1 4	Install the lights.



# 1

## Preparing to Install the Kit

No Parts Required

### Preparing the Machine

1. Move the machine to a maintenance workspace, shut off the machine, engage the parking brake, and remove the key.
2. Disconnect the negative (-) battery cable from the battery; Refer to the machine *Operator's Manual*.

# 2

## Installing the Lights

Parts needed for this procedure:

4	Light assembly
1	Left mount (Two post ROPS extension)
1	Right mount (Two post ROPS extension)
2	Rear mount (Two post ROPS extension)
4	Carriage bolt (5/16 x 3/4 inch)
4	Flange nut (5/16)
4	Bolt (1/4 x 7/8 inch)
4	Flange nut (1/4 inch)
4	Bolt (6 mm x 20 mm)
4	Wire harness with grommet (cab)
1	Switch
1	Switch decal (Two post ROPS extension)
4	Star grommet

## Installing the Light kit to the Cab

### ⚠ WARNING

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

When drilling, always wear eye protection.

1. Remove the bolts and nuts that secure the top of the headliner and set them aside (Figure 1).

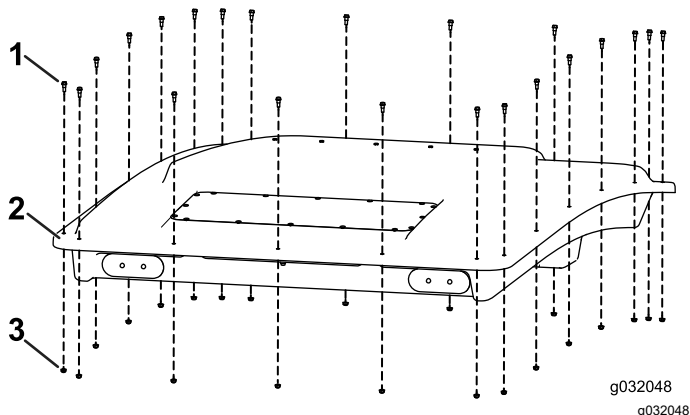


Figure 1

1. Bolt
2. Headliner
3. Nut

2. Drill a 30 mm (1-1/8 inches) hole at the location shown near the existing mount hardware (Figure 2 and Figure 3).

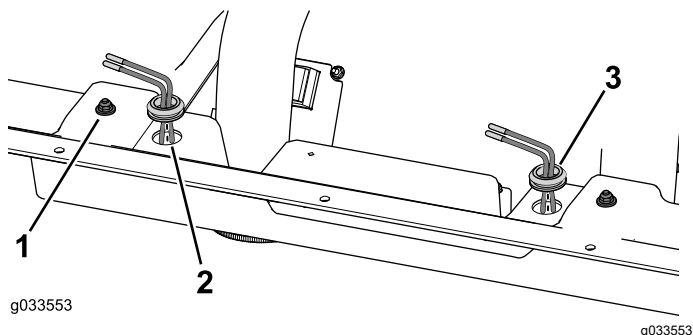
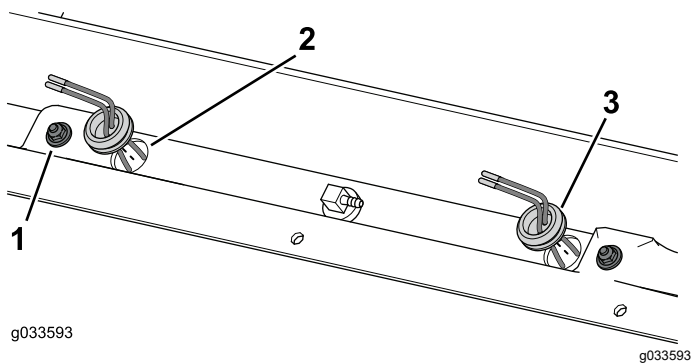


Figure 2  
Front of the Cab

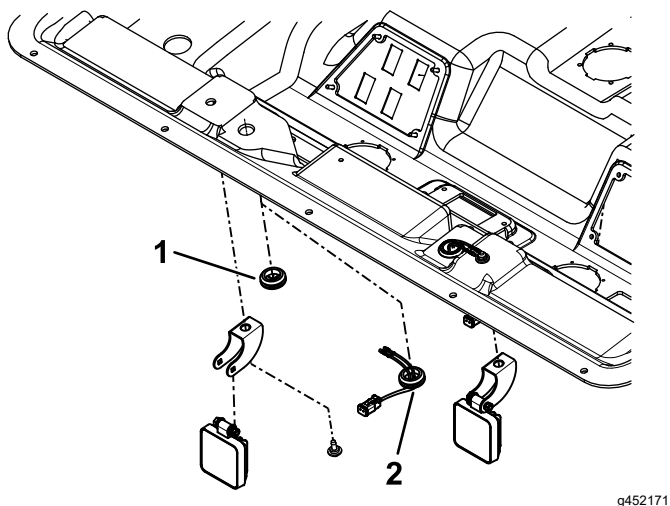
1. Mount hardware
2. Hole
3. Wire harness



**Figure 3**  
Rear of the Cab

- |                   |                 |
|-------------------|-----------------|
| 1. Mount hardware | 3. Wire harness |
| 2. Hole           |                 |

3. Insert the grommets on the wire harness into the holes that you drilled.
  - A. For machines 2020 and older, use the wire harness with grommet and discard the star grommet. Refer to [Figure 4](#).
  - B. For machines 2021 and newer, use the star grommet and discard the harness adapter with grommet. Refer to [Figure 4](#).

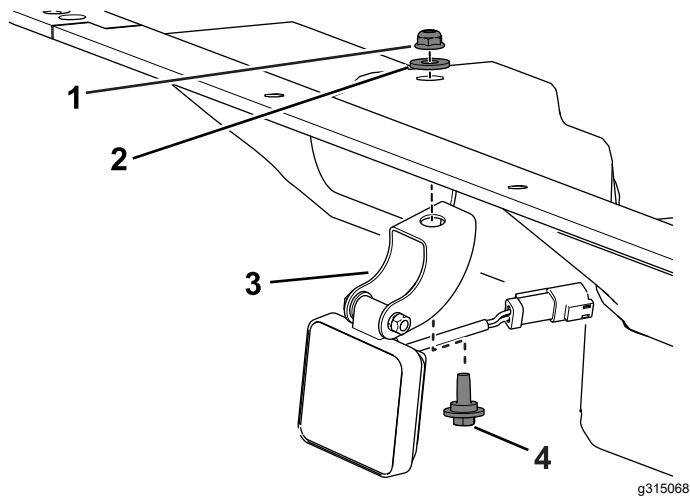


**Figure 4**

- |                 |                                 |
|-----------------|---------------------------------|
| 1. Star grommet | 2. Harness adapter with grommet |
|-----------------|---------------------------------|

4. Use the existing hardware on the headliner to secure the light bracket to the headliner ([Figure 5](#)).

**Note:** Do not use the nylon washer when you secure the bracket to the headliner.

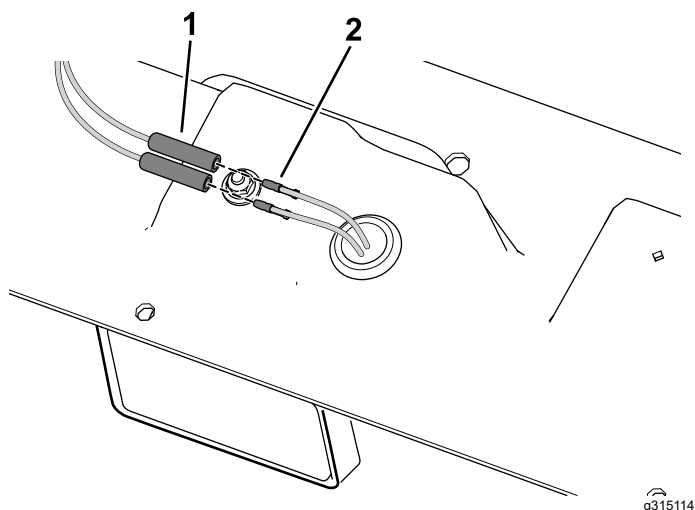


**Figure 5**

- |                |                  |
|----------------|------------------|
| 1. Flange nut  | 3. Bracket       |
| 2. Flat washer | 4. Shoulder bolt |

5. Connect the wire harnesses together ([Figure 6](#)).

**Note:** For machines 2021 and newer, install the cab wire harness connector through the star grommet ([Figure 4](#)).

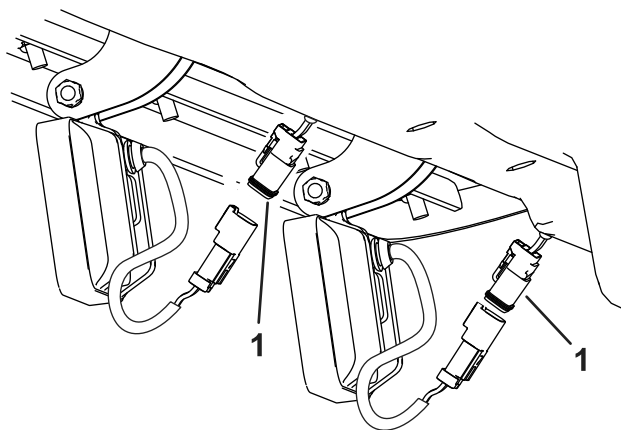


**Figure 6**

Machines 2020 and older

- |                           |                  |
|---------------------------|------------------|
| 1. Wire-harness connector | 2. Grommet wires |
|---------------------------|------------------|

6. Connect the wire harness to the light assembly ([Figure 7](#)).

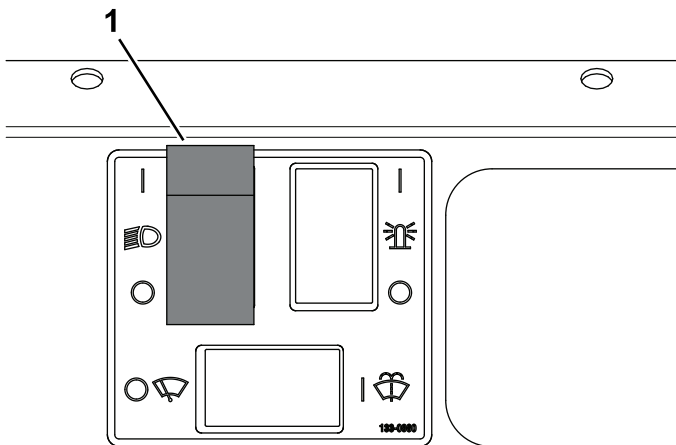


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**Figure 7**  
For all machines

1. Wire-harness connector

7. Remove the plug-cover and insert the switch assembly into the panel opening until it is secure (Figure 8).



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**Figure 8**

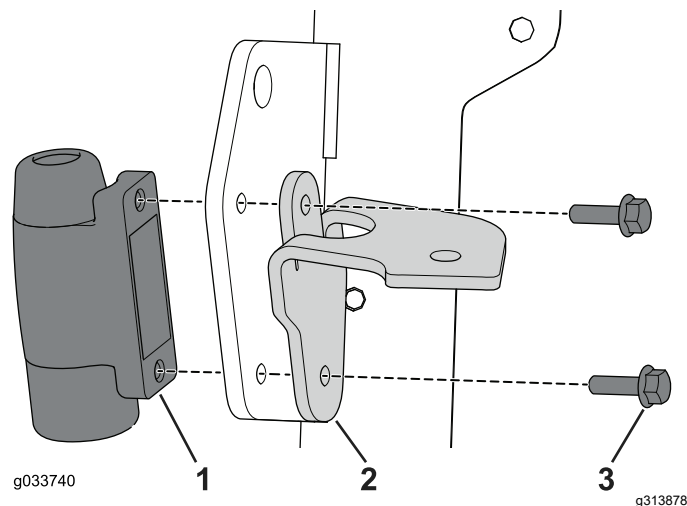
1. Switch assembly

8. Connect the wire harness to the switch assembly.
9. Connect the negative (-) battery cable.
10. Turn the lights on. Refer to [Operating the Light](#) (page 6).
11. Aim the lights according to your local regulations.
12. Use the bolts and nuts that you set aside earlier to secure the headliner to the cab (Figure 1).
13. Install the roof onto the cab with the 22 screws previously removed (Figure 1).
14. Torque the screws to 10.1 to 12.4 N·m (90 to 110 in-lb).

## Installing the Light to a Two Post ROPS Extension

**Note:** Ensure that your machine is equipped with the optional accessory-wire harness installed. Contact your authorized Toro distributor if your machine requires the accessory-wire harness.

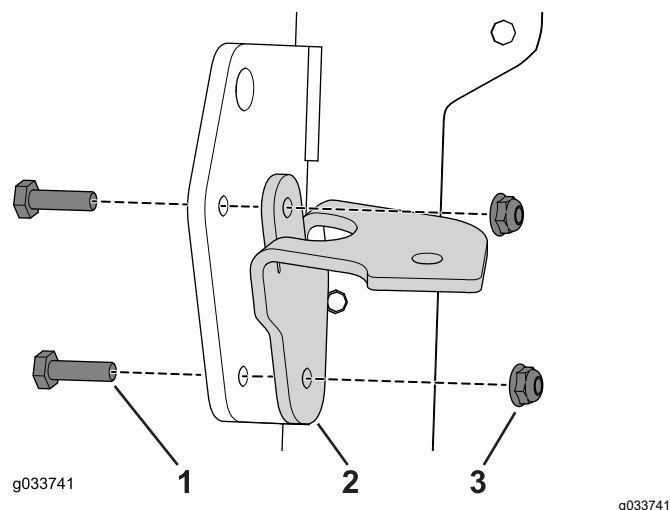
1. Install the light mount to the bracket.
  - For a machine with mirrors: Use the 4 bolts (6 mm x 20 mm) to secure the light assembly through the bracket and to the mirror mount (Figure 9).



**Figure 9**

1. Mirror mount
2. Bracket
3. Bolt (6 mm x 20 mm)

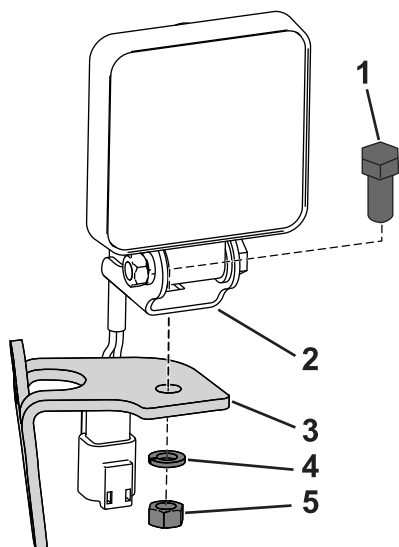
- For a machine without mirrors, use the 4 bolts (1/4 x 7/8 inch) and flange nuts to secure the light assembly to the bracket (Figure 10).



**Figure 10**

1. Bolt (1/4 x 7/8 inch)
2. Bracket
3. Flange nut (1/4 inch)

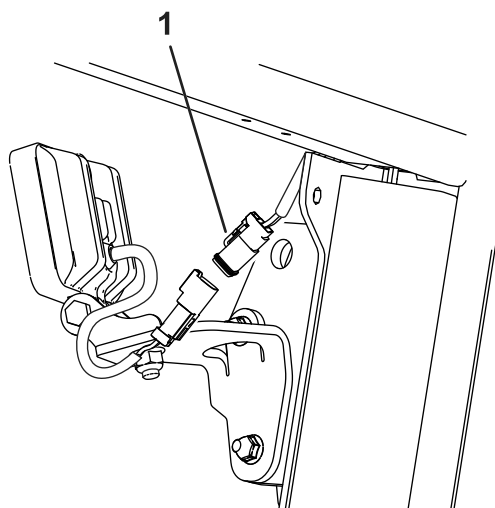
2. Remove the bolt, washer and nut from the light assembly and use them to secure the light to the bracket (**Figure 11**).



**Figure 11**

- |                   |           |
|-------------------|-----------|
| 1. Carriage bolt  | 4. Washer |
| 2. Light assembly | 5. Nut    |
| 3. Bracket        |           |

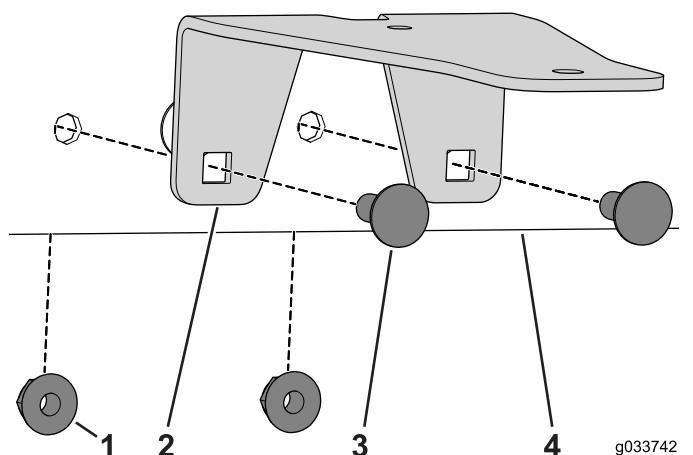
3. Connect the wire harness to the to the light assembly (**Figure 12**).



**Figure 12**

- |                 |
|-----------------|
| 1. Wire harness |
|-----------------|

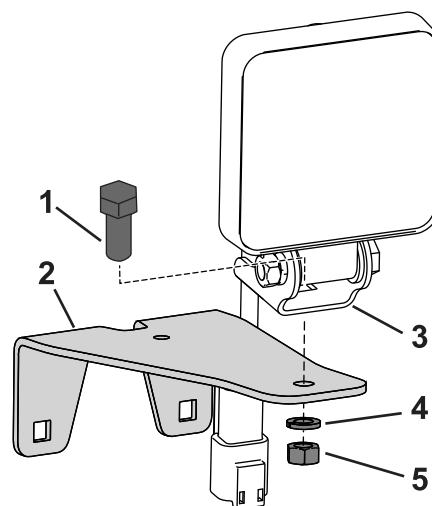
4. On the back of the machine, use the 2 carriage bolts (5/16 x 3/4 inch) and 2 flange nuts to secure the light assembly to the frame (**Figure 13** and **Figure 15**).



**Figure 13**

- |               |                                    |
|---------------|------------------------------------|
| 1. Nut (5/16) | 3. Carriage bolt (5/16 x 3/4 inch) |
| 2. Bracket    | 4. Frame                           |

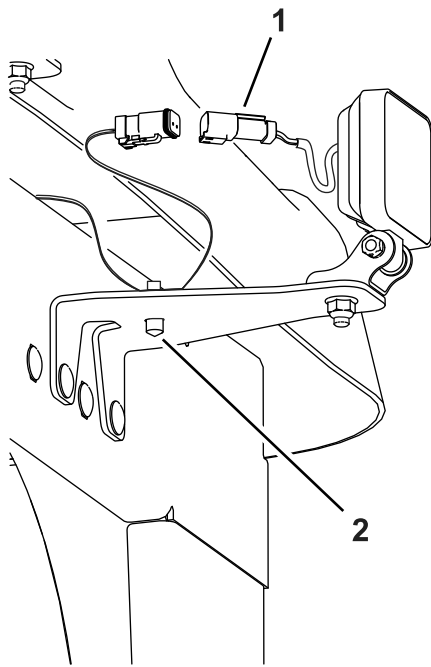
5. Remove the bolt, washer and nut from the light assembly and use them to secure the light to the bracket (**Figure 14**).



**Figure 14**

- |                   |           |
|-------------------|-----------|
| 1. Bolt           | 4. Washer |
| 2. Bracket        | 5. Nut    |
| 3. Light assembly |           |

6. Connect the wire harness to the to the light assembly and secure it with the wire anchors (**Figure 15**).

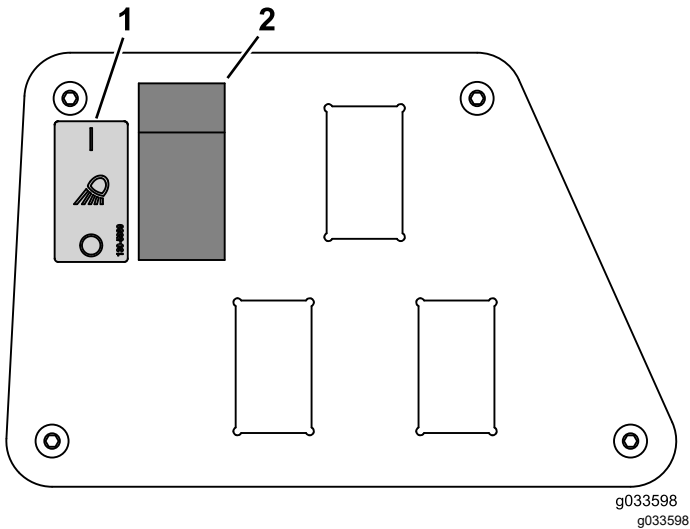


**Figure 15**

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1. Wire harness                      2. Wire anchor

7. Remove the plug-cover and insert the switch assembly into the panel opening until it is secure ([Figure 16](#)).



**Figure 16**

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1. Decal                                      2. Switch assembly

8. Apply the decal to the panel as shown in [Figure 16](#).
9. Connect the accessory-wire harness to the switch assembly.
10. Connect the negative (-) battery cable.
11. Turn the lights on. Refer to [Operating the Light \(page 6\)](#).
12. Aim the lights according to your local regulations.

13. Install the roof onto the cab with the 22 screws previously removed ([Figure 1](#)).

14. Torque the screws to 10.1 to 12.4 N·m (90 to 110 in-lb).

## Operation

### Operating the Light

- Push the ON portion of the switch to turn the lights on.
- Push the OFF portion of the switch to turn the lights off.

**Notes:**



**Count on it.**