Form No. 3368-218 Rev A

Light Kit

Groundsmaster 7200 Series Mowers

Model No. 02841—Serial No. 311000001 and Up

Installation Instructions

Loose Parts

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

Procedure	Description	Qty.	Use
1	No parts required	–	Prepare to install the kit.
2	Hazard warning switch	1	Install the hazard warning and light switches.
	Master lights switch	1	
3	Front light board	2	Install the front light brackets, headlights, and horn.
	Horn	1	
	Hex-head bolt (M8-20)	1	
	Self-tapping bolt (M6-16)	2	
	Washer (M8)	6	
	Locknut (M8)	3	
4	Nylon spacer	2	Install the rear lighting bracket assembly.
	Rear indicator lamp	2	
	License plate illumination lamp	1	
	Side light bulb	2	
	Indicator bulb	2	
	Red reflex reflector	2	
	Bolt (M8-40)	2	
	Washer (M8)	18	
	Locknut (M8)	8	
	Locknut (M5)	6	
	Washer (M5)	10	
	Hex-head bolt (M5)	6	
	Main light bracket	1	
	License plate bracket	1	
	Right light bracket	1	
	Left light bracket	1	
	Light bracket brace	1	
	Rear speed decal bracket	1	
	Hex-head bolt (M8-25)	16	
5	Combination assembly switch	1	Install the combination switch assembly.
	Adapter switch mount	1	
6	Wiring harness	1	Install the wire harness.
	Hex-head bolt (M8)	1	
	Locknut (M5)	1	
	Washer (M5)	2	
	Hex-head bolt (M5)	1	
	Washer (M4)	2	
	Locknut (M4)	1	
	Hex-head bolt (M4-12)	1	
	Short cable tie	10	
	Long cable tie	10	
	20-amp fuse	1	

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Procedure	Description	Qty.	Use
	Left-hand indicator headlamp Right-hand indicator headlamp	1 1	
7	No parts required	–	Install the lights, horn, and combination switch.
8	No parts required	–	Finish the installation.
9	No parts required	–	Set the headlights.

1

Preparing to Install the Kit

No Parts Required

Procedure

Important: You will need to install the Auxiliary Power Unit (model 30382) on your machine to complete this kit.

1. Move the machine to level ground and set the parking brake.
2. Lower the cutting unit to the ground.
3. Stop the engine, wait for all moving parts to stop, and remove the key from the ignition.
4. Unlatch and raise the engine cover, and secure it in the raised position with the prop rod.
5. Disconnect the negative (-) battery cable from the battery.

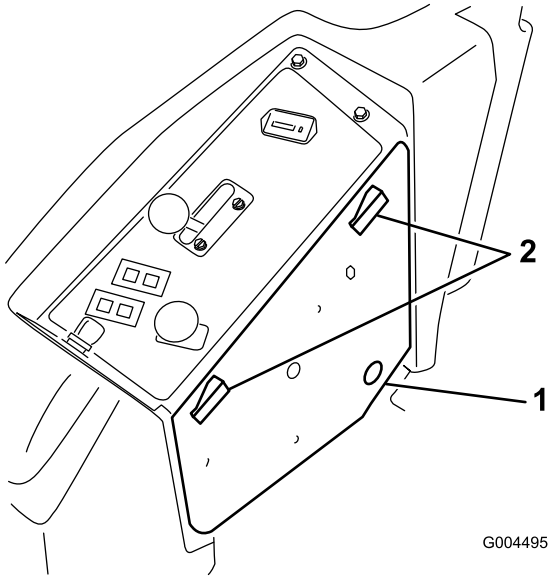


Figure 1

1. Control panel side cover 2. Latches

2

Installing the Hazard Warning and Light Switches

Parts needed for this procedure:

1	Hazard warning switch
1	Master lights switch

Procedure

1. Unlatch the side cover of the control panel (Figure 1) and set it aside.
2. Locate and remove the 2 knockout plugs located closest to the front of the machine under the decal (Figure 2).

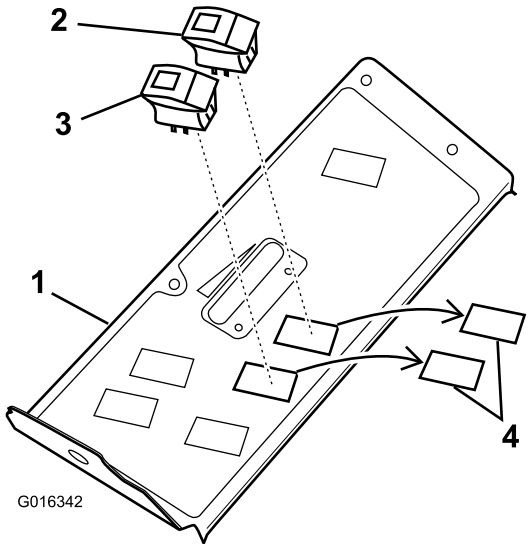


Figure 2

1. Control panel top
2. Master lights switch
3. Hazard warning switch
4. Knockout plugs

3. Insert the master lights switch and the hazard warning switch as shown in Figure 2.

   Note: Position the lens on the switches away from the operator.

3

Installing the Front Light Boards, Headlights, and Horn

Parts needed for this procedure:

2	Front light board
1	Horn
1	Hex-head bolt (M8-20)
2	Self-tapping bolt (M6-16)
6	Washer (M8)
3	Locknut (M8)

Procedure

1. Remove and retain the 2 UNC bolts (Figure 3).

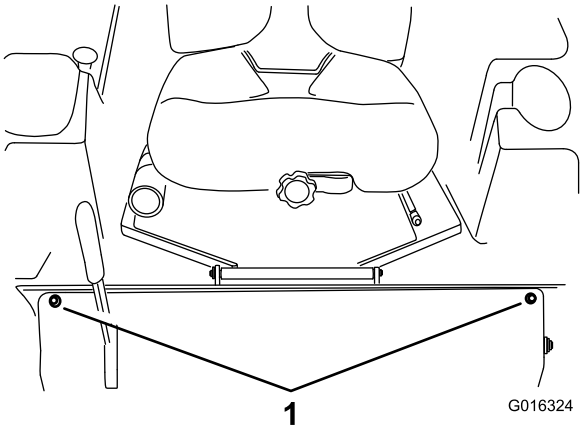


Figure 3

1. UNC bolts

   Note: Save the bolts for future use.

2. Loosen the 2 retaining bolts on the diesel tank (Figure 4 and Figure 5) just enough to slide the front light brackets between the platform and the tank (Figure 6 and Figure 7).

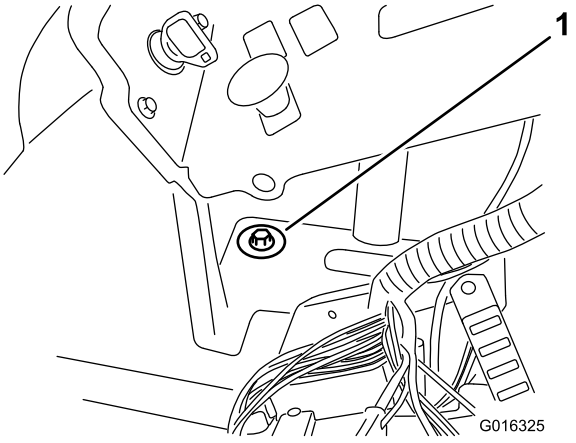


Figure 4

1. Retaining bolt

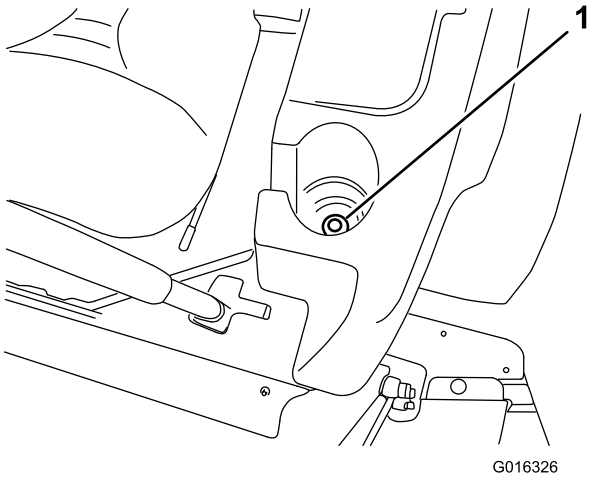


Figure 5

1. Retaining bolt

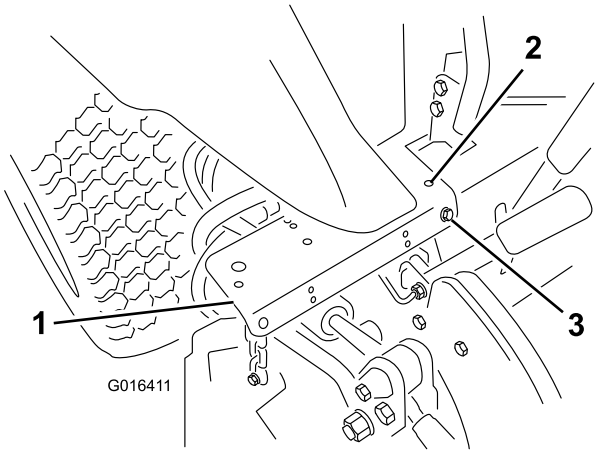


Figure 6
Right-Hand Side

1. Slide the board into position
2. Drill 5 mm hole here
3. UNC bolt

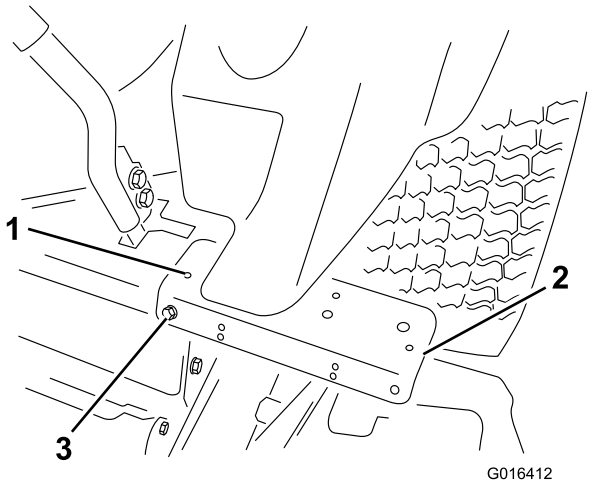


Figure 7
Left-Hand Side

1. Drill 5 mm hole here
2. Slide the board into position
3. UNC bolt

3. Secure the brackets in place with the 2 UNC bolts previously removed.
4. Drill a 5 mm hole in each of the boards in the position shown in Figure 6 and Figure 7.
5. Secure the front light brackets in place with 2 self-tapping bolts (M6) provided in the kit.

   Note: Apply a dab of grease to the bolt thread to make assembly easier.
6. Gently tighten the retaining bolts on the tank.
7. Secure the horn and the left-hand headlamp to the left-hand light bracket with a hex-head bolt, 2 washers (M8-20), and a locknut (M8) (Figure 8).

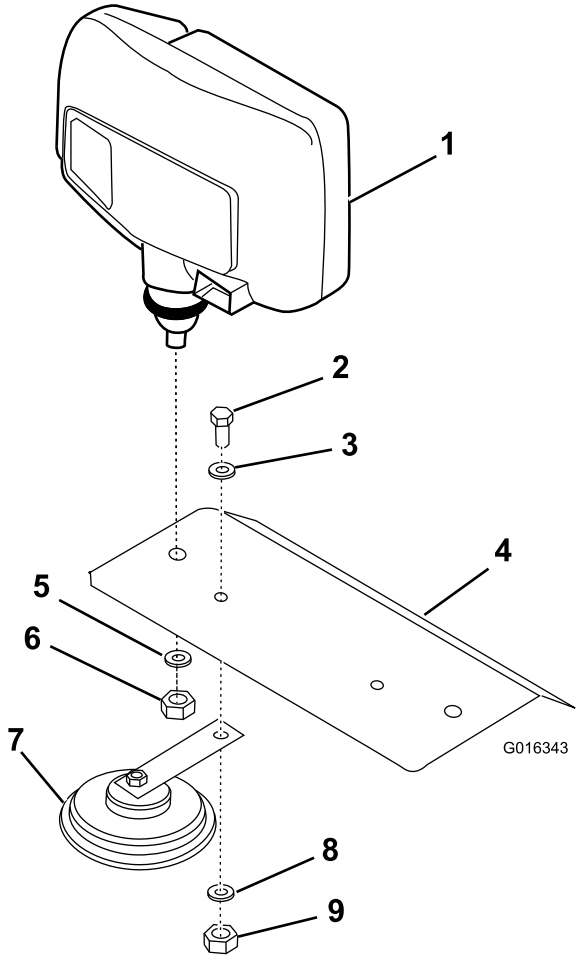


Figure 8

1. Headlamp
2. Hex-head bolt (M8-20)
3. Washer (M8)
4. Front light board
5. Washer (part of headlamp)
6. Nut (part of headlamp)
7. Horn
8. Washer (M8)
9. Locknut (M8)

8. Secure the right-hand headlamp to the right-hand light bracket.

4

Assembling and Installing the Tail Board

Parts needed for this procedure:

2	Nylon spacer
2	Rear indicator lamp
1	License plate illumination lamp
2	Side light bulb
2	Indicator bulb
2	Red reflex reflector
2	Bolt (M8-40)
18	Washer (M8)
8	Locknut (M8)
6	Locknut (M5)
10	Washer (M5)
6	Hex-head bolt (M5)
1	Main light bracket
1	License plate bracket
1	Right light bracket
1	Left light bracket
1	Light bracket brace
1	Rear speed decal bracket
16	Hex-head bolt (M8-25)

Procedure

1. Assemble the tail board assembly as shown in Figure 9.

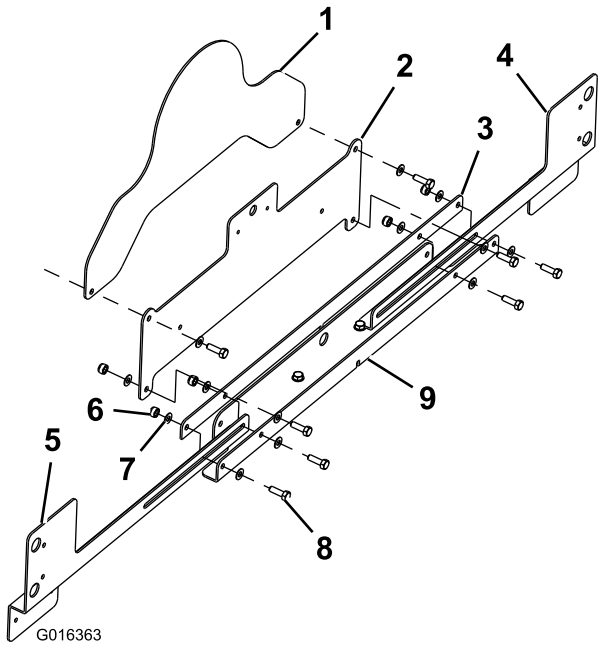


Figure 9

1. Rear speed decal bracket
2. License plate bracket
3. Light bracket brace
4. Right light bracket
5. Left light bracket
6. Locknut (M8)
7. Washer (M8)
8. Hex-head bolt (M8-25)
9. Main light bracket

2. Secure the license plate bracket.
3. Secure the speed decal bracket, if required.

   Note: Check local road regulations for requirements.

4. Assemble the 2 indicator bulbs, 2 side light bulbs, 2 rear indicator lights, 2 reflectors, and the license plate lamp to the tail board with 6 hex-head bolts (M5), 10 washers (M5), and 6 locknuts (M5) as shown in (Figure 10).

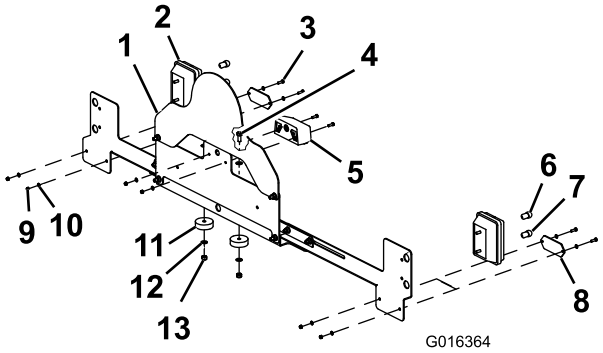


Figure 10

1. Tail board assembly
2. Rear indicator light (2)
3. Hex-head bolt (M5) (6)
4. Bolt (M8-40) (2)
5. License plate lamp
6. Side light bulb (2)
7. Indicator bulb (2)
8. Red reflex reflector (2)
9. Locknut (M5) (6)
10. Washer (M5) (10)
11. Nylon spacer (2)
12. Washer (M8)
13. Locknut (M8)

5. Use a drill to enlarge 2 existing holes in the rear cross member (located behind the seat) to 8.5 mm diameter (Figure 11).

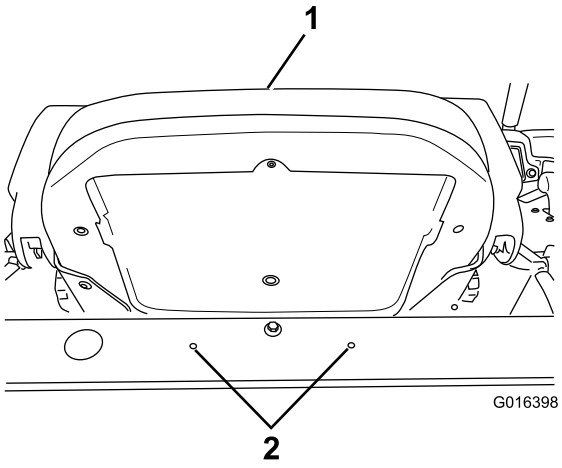


Figure 11

1. Seat
2. Enlarge these 2 holes to 8.5 mm diameter

6. Secure the lighting board to the rear cross member with 2 bolts (M8), 4 washers (M8), 2 nylon spacers, and 2 locknuts (M8) (Figure 10).

5

Installing the Combination Switch Assembly

Parts needed for this procedure:

1	Combination assembly switch
1	Adapter switch mount

Procedure

1. To install the adaptor switch mount, cut 40 mm off the right-hand motion control lever (Figure 12).

   Note: Use a 2-part epoxy resin to glue the adaptor into the lever tube.

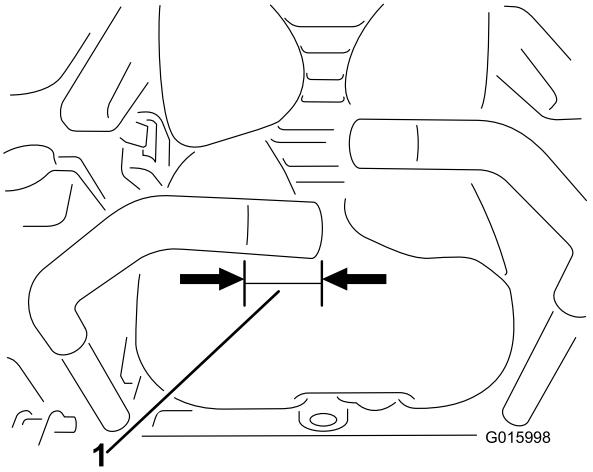


Figure 12

1. Cut 40 mm off here

2. Fit the combination switch assembly to the adapter, and tighten the combination switch assembly in place using the 2 bolts provided in the kit (Figure 13).

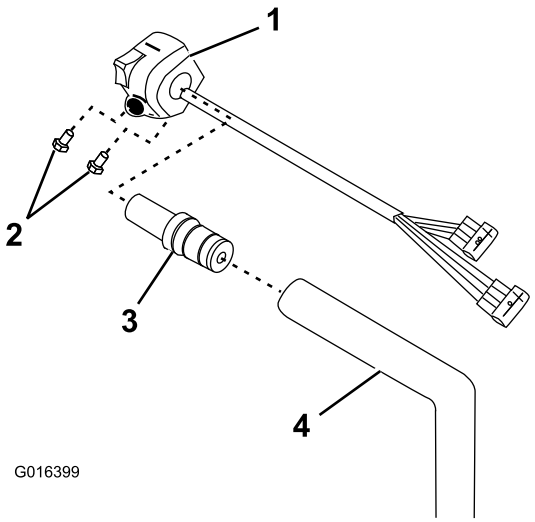


Figure 13

1. Combination switch assembly
2. bolts (2)
3. Adapter switch mount
4. Right-hand motion control lever

6

Installing the Wiring Harness

Parts needed for this procedure:

1	Wiring harness
1	Hex-head bolt (M8)
1	Locknut (M5)
2	Washer (M5)
1	Hex-head bolt (M5)
2	Washer (M4)
1	Locknut (M4)
1	Hex-head bolt (M4-12)
10	Short cable tie
10	Long cable tie
1	20-amp fuse
1	Left-hand indicator headlamp
1	Right-hand indicator headlamp

Procedure

Connecting to the Control Panel

1. Thread the wiring harness branch with the following connections up into the side cover, where the main harness enters the panel (refer to (Figure 14):
   - Connection to ground
   - Connection to the flasher relay
   - Connection to the fuse
   - Connection to the red wire
   - Connection to the pink wire
   - Connection to the master lights switch
   - Connection to the hazard warning switch

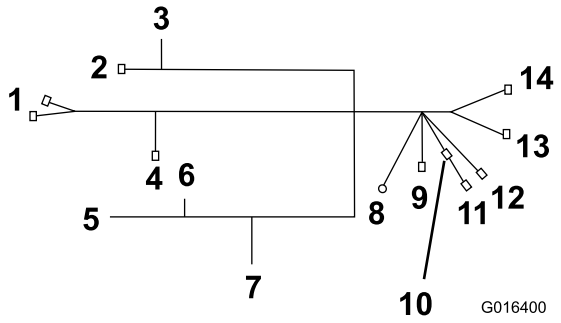


Figure 14

1. Combination assembly switch
2. Left-hand indicator headlamp
3. Horn
4. Right-hand indicator headlamp
5. Left-hand rear lamp
6. License plate lamp
7. Right-hand rear lamp
8. Ground (negative) (Black)
9. Flasher relay
10. 10-amp fuse
11. Live (positive) (Red)
12. Live switched (positive) (Pink)
13. Light switch
14. Hazard switch

2. Connect the negative (-) ring terminals on the 2 black wires (the lighting harness to the main harness) with a hex-head bolt (M4 x 12), a locknut (M4), and 2 washers (M4).

   Note: Secure the ring terminals in the position shown on the lower part of the panel (Figure 15).

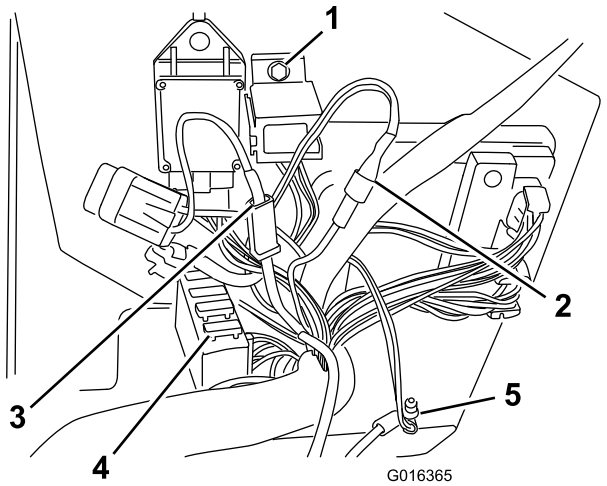


Figure 15

1. Secure the flasher relay base here
2. Twin pink wire-pink wire of main harness connection
3. Red wire-red wire of main harness connection
4. 20-amp fuse
5. Ring terminals

3. Unplug the flasher relay.
4. Secure the flasher relay base to the position shown on the side panel with a hex-head bolt (M5 x 16), a locknut (M5), and 2 washers (M5) (Figure 15).

5. Insert the flasher relay.
6. Plug the twin pink wire (male-blade terminal) into the pink wire of the main wire harness (female receptacle) (switched positive) as shown in Figure 15.
7. Plug the red wire (male-blade terminal) into the red wire of the main wire harness (female receptacle) (switched positive); refer to Figure 15.
8. Replace the 10-amp fuse with the 20-amp fuse from the kit (Figure 15).
9. Plug the red 10-way connector into the underside of the hazard switch and the 8-way connector into the light switch.
10. Close the side cover of the control panel.

Connecting to the Rear Lights

1. Take the branch of the wire harness with the connectors to the left-hand rear lamp, the license plate lamp, and the right-hand rear lamp (Figure 14).
2. Route the wire harness on the machine: Upward between the side of the tank, the bulkhead, and along the tail board (Figure 16).

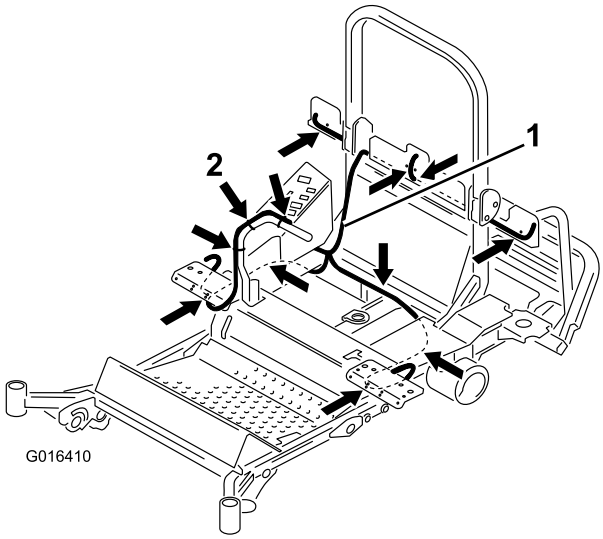


Figure 16

1. Wire harness
2. Arrows indicate where to secure with cable ties

3. Pass the connectors through the light grommets individually and press each grommet into place (Figure 17).

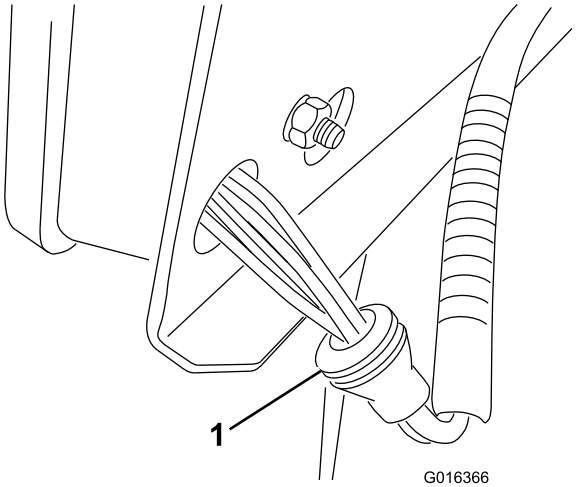


Figure 17

1. Grommet

Connecting to the Right-hand Rear Tail Light

1. Connect the green/white wire to the indicator bulb (Figure 18).

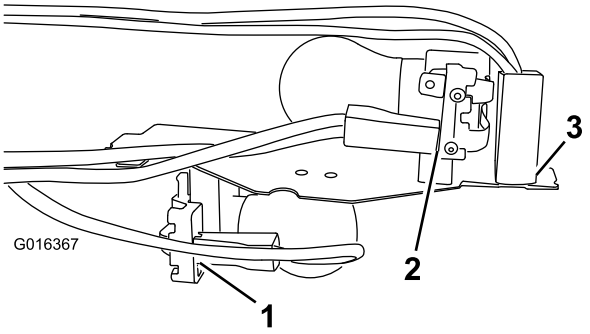


Figure 18

1. Connect green/white wire here
2. Connect black wire to ground here
3. Connect red/white wire here

2. Connect the black wire to ground, and bend the tab through 90 degrees as shown in Figure 18.
3. Connect the red/white wire to the 5W side of the side tail light bulb (Figure 18).
4. Place the lamp assembly inside the rubber housing (ensure that the indicator bulb is on the outside), and press the lens into place.

Connecting to the Left-hand Rear Tail Light

1. Connect the green/white wire to the indicator bulb (Figure 18).
2. Connect the black wire to ground, and bend the tab through 90 degrees as shown in Figure 18.

3. Connect the red/white wire to the 5W side of the side tail light bulb (Figure 18).
4. Place the lamp assembly inside the rubber housing (ensure that the indicator bulb is on the outside), and press the lens into place.

Connecting to the License Plate Lamp

Connect the license plate lamp as shown in Figure 19.

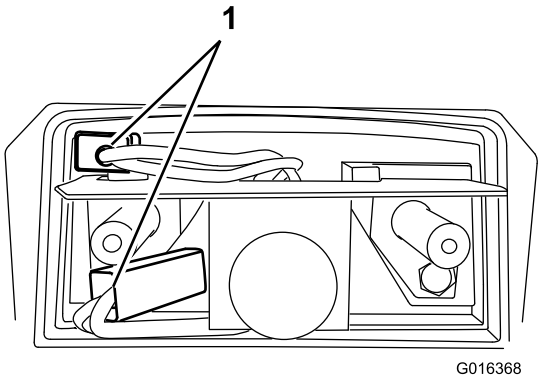


Figure 19

1. Make connections here

7

Installing the Lights, Horn and Combination Switch

No Parts Required

Procedure

Connecting to the Left-hand Headlight and Horn

1. Take the branch of the wire harness with connectors to the left-hand lamp and indicator and the horn (Figure 14).
2. Route the wire harness branch along and under the rear cross member and through the chassis at the rear wheel (Figure 16).

Connecting to the Light and Horn

1. Secure the wire harness under the light bracket with cable ties.
2. Pull the remaining slack of the wire harness backward through the chassis and toward the control panel, and secure the wire harness into position.

   Note: Ensure that the harness is out of the way of any moving parts.

Connecting to the Right-hand Headlight

1. Route the last branch of the wire harness with connectors to the combination switch assembly and the right-hand lamp and indicator (Figure 12) through the right-hand chassis at the rear wheel toward the headlight (Figure 16).
2. Connect to the light.
3. Secure the wire harness to the under side of the light board with a cable tie, and run the remaining slack backward through the chassis toward the control panel.
4. Secure the wire harness in position as shown in Figure 16.

   Note: Ensure that the harness is out of the way of any moving parts.

Connecting to the Combination Switch

1. Connect the 3- and 4-way connector to the combination switch.
2. Secure the wire harness to the motion lever with a cable tie, and ensure that there is enough play in the cable to allow the lever to move forward and backward (Figure 16).
3. Secure the harness in place with cable ties as shown by the arrows in Figure 16.

8

Finishing the Installation

No Parts Required

Procedure

1. Attach the negative battery cable to the battery.
2. Latch the engine cover.
3. Test all the functions of the kit.

9

Setting the Headlights

No Parts Required

Procedure

To comply with the road vehicle lighting regulations, adjust the front dipped beam headlights so that the horizontal part of the cutoff of the beam is inclined downward 1.3% (0.75 degree).

To set the front dipped beam headlights, loosen the nut located under the headlamp, adjust as required, and tighten the nut.

Operation

Operating the Switches

- The **hazard warning switch** operates the hazard warning lights and will work whether the ignition is switched to ON or OFF (Figure 20).

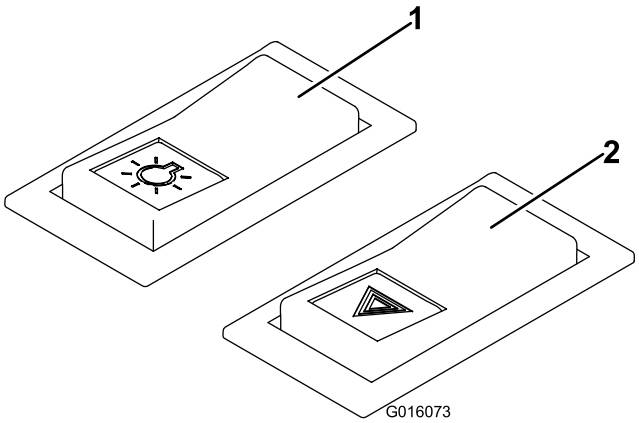


Figure 20

1. Master light switch
2. Hazard warning switch

  - Press the side of the rocker switch with the hazard warning symbol to turn on the hazard warning lights.
  - Press the other side of the rocker switch to turn off the hazard warning lights.
- The **master light switch** operates the front, rear, and headlamps. It works only if the ignition is switched to ON (Figure 20).
  - Press the side of the rocker switch with the master light symbol to turn on the lights.
  - Press the other side of the rocker switch to turn off the lights.
- The **direction indicator switch** operates the right-hand and left-hand direction indicator lights. It work only if the ignition is switched to ON (Figure 21).

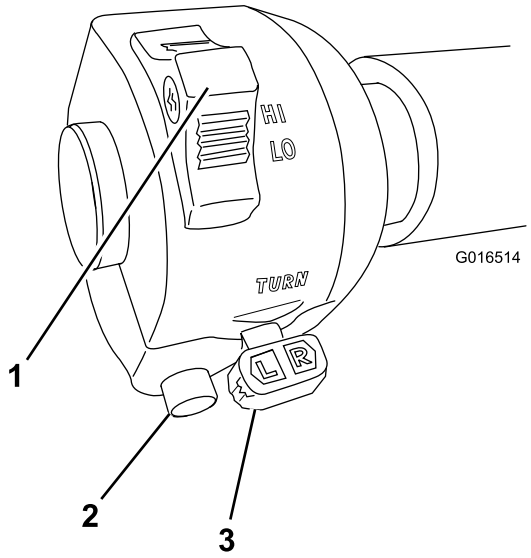


Figure 21

1. Headlamp and dipped beam switch
2. Horn button
3. Direction indicator switch

  - Press the left-hand side of the switch toggle to turn on the left-hand direction indicator lights.
  - Press the right-hand side of the switch toggle to the central (OFF) position to turn off the left-hand direction indicator lights.
  - Press the right-hand side of the switch toggle to turn on the right-hand direction indicator lights.
  - Press the left-hand side of the switch toggle to the central (OFF) position to turn off the right-hand direction indicator lights.
- The headlamp and dipped beam headlamp switch operates the headlamps only when the ignition is switched to ON (Figure 21).
  - Push the slider forward to turn on the headlamp.
  - Push the slider backward to turn on the dipped beam headlamp.
- The horn switch operates the horn only when the ignition is switched on.
  - Push the button to sound the horn.
  - Release the button to stop the horn.

Maintenance

- Keep the lenses clean by wiping them with a damp cloth. **Do not use solvent-based cleaners.**
- Replace all light bulbs as needed. Use replacement bulbs that have the proper voltage and wattage rating; refer to the old bulb for details.