



Form No. 3468-284 Rev B  
**GeoLink® Precision Spray System Finishing Kit**  
 Serial Number 415400000 and After Multi Pro® 1750 Turf Sprayer  
 Model No. 41707—Serial No. 400000000 and Up

**Installation Instructions**

**Note:** Install this kit with Model 41712 or Model 41713.

# Introduction

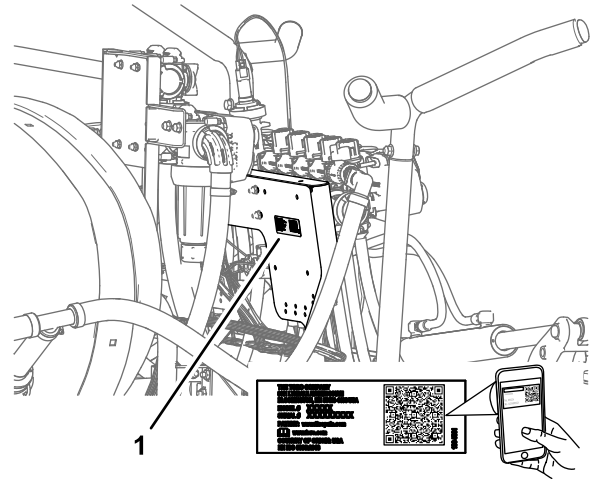
The GeoLink spray system kit is an attachment for a Toro Multi Pro turf spray application vehicle and is intended to be used by professional, hired operators in commercial applications. It is designed primarily for spraying on well-maintained lawns in parks, golf courses, sports fields, and on commercial grounds. Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

Visit [www.Toro.com](http://www.Toro.com) for product safety and operation training materials, accessory information, help finding a dealer, or to register your product.

Whenever you need service, genuine Toro parts, or additional information, contact an Authorized Service Dealer or Toro Customer Service and have the model and serial numbers of your product ready. [Figure 1](#) identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.

**Important:** With your mobile device, you can scan the QR code (if equipped) on the serial number plate to access warranty, parts, and other product information.



g491839

**Figure 1**

1. Model and serial number location

Model No. _____
Serial No. _____

## Safety-Alert Symbol

The safety-alert symbol ([Figure 2](#)) shown in this manual and on the machine identifies important safety messages that you must follow to prevent accidents.



g000502

**Figure 2**

Safety-alert symbol

The safety-alert symbol appears above information that alerts you to unsafe actions or situations and is followed by the word **DANGER**, **WARNING**, or **CAUTION**.

**DANGER** indicates an imminently hazardous situation which, if not avoided, **will** result in death or serious injury.



**WARNING** indicates a potentially hazardous situation which, if not avoided, **could** result in death or serious injury.

**CAUTION** indicates a potentially hazardous situation which, if not avoided, **may** result in minor or moderate injury.

This manual uses two other words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

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# Safety

## ⚠ WARNING

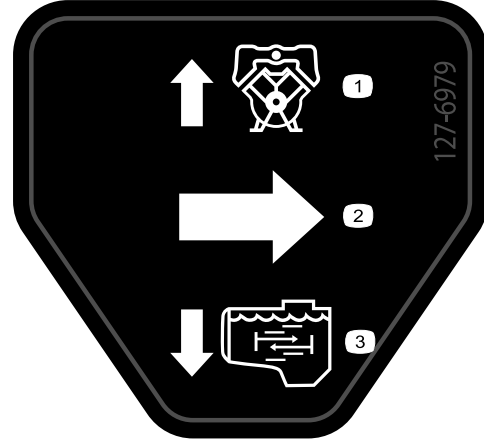
Chemical substances used in the spray system may be hazardous and toxic to you, bystanders, animals, plants, soil, or other property.

- Carefully read and follow the chemical warning labels and safety data sheet (SDS) for all chemicals used and protect yourself according to the chemical manufacturer's recommendations. For example, use appropriate personal protective equipment (PPE), including face and eye protection, gloves, or other equipment to guard against personal contact with a chemical.
- There may be more than 1 chemical used and information on each chemical; assess each chemical.
- Refuse to operate or work on the sprayer if this information is not available.
- Before working on a spray system, ensure that the system has been triple rinsed and neutralized according to the recommendations of the chemical manufacturer(s) and that all the valves are cycled 3 times.
- Verify that there is an adequate supply of clean water and soap nearby, and immediately wash off any chemicals that contact you.

# Safety and Instructional Decals



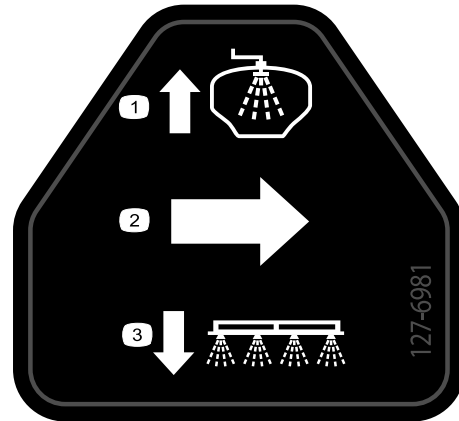
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



127-6979

decal127-6979

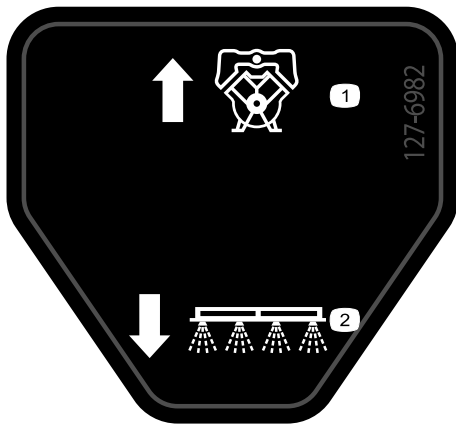
1. Bypass-return flow
2. Flow
3. Agitation flow



127-6981

decal127-6981

1. Bypass-return flow
2. Flow
3. Boom spray



decal127-6982

**127-6982**

1. Bypass-return flow      2. Boom spray
- 



decal127-6976

**127-6976**

1. Decrease      2. Increase
-

# 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.
<b>2</b>	No parts required	–	Remove the seat and the engine access panel.
<b>3</b>	No parts required	–	Remove the front fenders and the hood.
<b>4</b>	No parts required	–	Disconnect the pressure-sense tube for the dash gauge.
<b>5</b>	No parts required	–	Disconnect the boom valve connectors.
<b>6</b>	No parts required	–	Remove the boom sections.
<b>7</b>	Flange-head bolt (3/8 x 1 inch) Flange locknuts (3/8 inch) Center-boom extension Cylinder mount (wide) Tie plate (wide) Carriage bolt (1/2 x 1-1/4 inches) Flange locknut (1/2 inch)	2 2 1 1 1 4 4	Install the center-boom extension.
<b>8</b>	Turret Hose assembly (valve 5 or 6) Flange locknut (5/16 inch)	2 2 2	Install the mount brackets and turrets to the center-boom section.
<b>9</b>	Cap (quick coupler) Retainer	3 3	Remove the boom-section valves.
<b>10</b>	Rear harness	1	Assemble the rear harness to the machine.
<b>11</b>	Straight-hose barb (1 x 2 inches) Hose clamp (3/4 to 1-1/2 inches) Hose (1 x 8-1/2 inches) Manifold Hose (1 x 16 inches)	1 3 1 1 1	Assemble the flow meter manifold.
<b>12</b>	Bypass hose assembly Shutoff valve	1 1	Install the bypass hoses to the tank.
<b>13</b>	No parts required	–	Install the modified center-boom section.
<b>14</b>	No parts required	–	Assembling the lift cylinder manifold to the cylinder mount.

Procedure	Description	Qty.	Use
<b>15</b>	Valve mount and valve assembly	1	Install the valve mount, controller, and section valves.
	Rate/section controller	1	
	Magnet	4	
	Bolt (#8)	4	
	Washer (1/4 inch)	2	
	Flat washer	4	
	Locknut (#8)	4	
	Cap (quick-disconnect fitting)	2	
	Flange-head bolts (5/16 x 3/4 inch)	8	
	Flange locknuts (5/16 inch)	8	
	Hose clamp	1	
	Push-in fastener (cable tie)	1	
	Push-in fastener (connector anchor)	3	
<b>16</b>	No parts required	–	Connect the rear harness at the back of the machine.
<b>17</b>	Hydraulic hose (1/4 x 24-3/4 inches)	4	Assemble the boom-lift cylinders.
<b>18</b>	Nylon-flange bushing	4	Install the outer-boom sections.
	Supply-hose assembly 188 cm (74 inches)	1	
	Supply-hose assembly 234 cm (92 inches)	1	
	Supply-hose assembly 279 cm (110 inches)	1	
<b>19</b>	Supply hose 279 cm (110 inches)	2	Install the hoses.
	Supply hose 234 cm (92 inches)	2	
	Supply hose 188 cm (74 inches)	4	
	Supply hose 81 cm (32 inches)	2	
<b>20</b>	No parts required	–	Connect the pressure-sense tube for the dash gauge.
<b>21</b>	Navigation-receiver plate	1	Install the navigation receiver.
	Receiver mount	1	
	Bolt (3/8 x 3-1/4 inches)	1	
	Lock washer (3/8 inch)	1	
	Washer (3/8 x 13/16 inch)	1	
	Spacer (3/8 x 1 inch)	1	
	Flange locknut (3/8 inch)	1	
	Flange-head bolt (5/16 x 3/4 inch)	1	
	Flange locknut (5/16 inch)	1	
	Flange-head bolt (3/8 x 1-1/2 inches)	2	
	Spacer (3/8 x 7/16 inch)	2	
	Navigation receiver	1	
	Modem antenna bracket	1	
	Hex-head bolt (5 x 16 mm)	3	
Washer (5 mm)	3		
<b>22</b>	Antenna mount	1	Install the modem antennas to the machine.
	Rivet	2	
	Magnet	2	
	Modem antenna	1	
	High gain antenna (sold separately)	1	

Procedure	Description	Qty.	Use
<b>23</b>	Harness adapter	1	Install the wire harnesses for the navigation components.
	Data and electrical harness	1	
	Cable tie	8	
<b>24</b>	Display mount	1	Install the display.
	Flange-head bolt (6 x 12 mm)	3	
	U-bolt (5/16 inch)	2	
	Flange-head bolt (5/16 x 3/4 inch)	4	
	Flange locknut (5/16 inch)	8	
	Ball mount	1	
	Display Arm	1	
<b>25</b>	No parts required	–	Connect the wire harnesses to the display.
<b>26</b>	Modem data harness—300 cm (118 inches)	1	Assembling the modem data harness to the machine
<b>27</b>	Modem power harness	1	Assembling the modem power harness to the machine.
<b>28</b>	CL-55 modem	1	Install the CL-55 modem
	Modem bracket	1	
	Bolt (#10-24 x 1-3/8 inches)	2	
	Locknut (#10-24 inch)	2	
	Magnet	2	
	Rivet	2	
<b>29</b>	No parts required	–	Remove the passive resistor from the machine wire harness.
<b>30</b>	ISO-CAN bus harness—302 cm (119 inches)	1	Route the ISO-CAN bus harness.
<b>31</b>	Adapter harness—13 cm (5 inches)	1	Install the adapter harness and terminating resistor.
<b>32</b>	No parts required	–	Wire the spray pump clutch.
<b>33</b>	Battery bracket	1	Install the electrical system.
	Bumper	1	
	Flange-locknut (1/4 inch)	2	
	Strap	1	
	Battery (650 A)	1	
	Alternator bracket	1	
	Drive pulley 279 mm (11 inch)	1	
	Bolt (1/4 x 2-1/4 inches)	4	
	Alternator (60 A)	1	
	Flange-head bolt (8 x 25 mm)	1	
	Flange-head bolt (3/8 x 1-1/2 inches)	1	
V-belt	1		
<b>34</b>	Alternator cable (red—6 gauge)	1	Connect the harness at the seat base.
	Relay	1	
	Push-in fastener	1	
	Fuse (15 A)	1	
<b>35</b>	Quick-connect clamp (red handle)	1	Install the wire harnesses for the navigation components.
	Quick-connect clamp (black handle)	1	

<b>Procedure</b>	<b>Description</b>	<b>Qty.</b>	<b>Use</b>
<b>36</b>	Switch plug	1	Remove the rate-control switch.
<b>37</b>	Push-in fastener	13	Install the hood and the left and right front fenders.
<b>38</b>	No parts required	–	Install the engine-access panel and the seat.
<b>39</b>	No parts required	–	Program the machine settings.
<b>40</b>	No parts required	–	Power the GeoLink components.
<b>41</b>	No parts required	–	Complete the software setup.

# 1

## Preparing the Machine

No Parts Required

### Procedure

Refer to the *Operator's Manual* for your machine.

1. Park the machine on a level surface and engage the parking brake.
2. Extend the left and right boom sections to the horizontal position.
3. Shut off the engine, remove the key, and disconnect the battery.
4. Clean the sprayer.

**Important:** You must completely empty the spray tank before installing the GeoLink Spray System Finishing Kit.

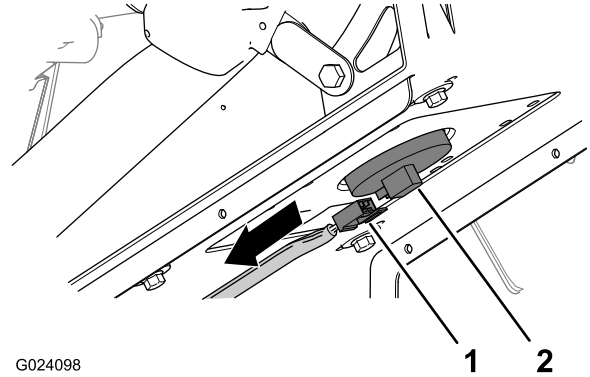
# 2

## Removing the Seat and the Engine-Access Panel

No Parts Required

### Removing the Seat

1. Remove the 2-socket connector of the machine wire harness that connects to the seat-switch connector.



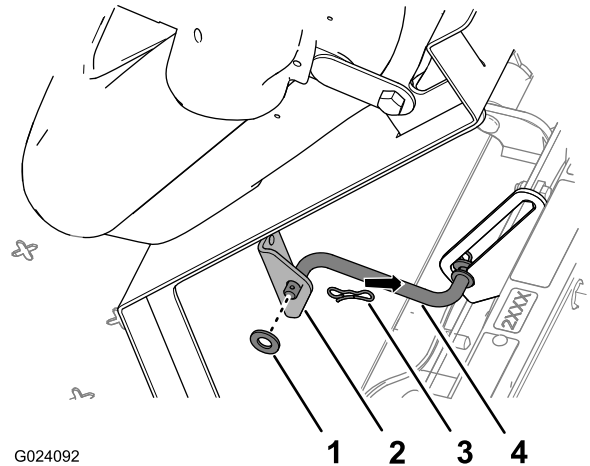
G024098

g024098

Figure 3

1. 2-socket connector
2. Seat-switch connector (machine wire harness)

2. Remove the hairpin that secures the prop rod to the bracket at the bottom of the seat plate.



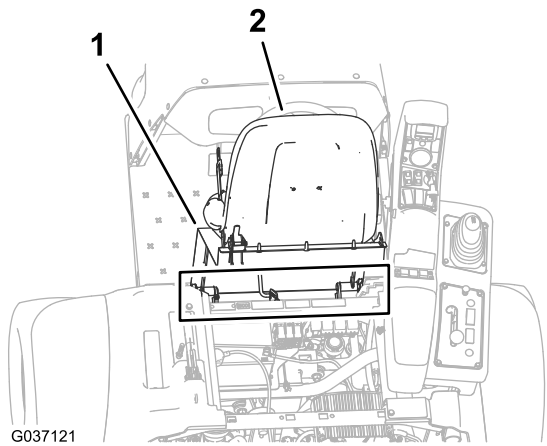
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Figure 4

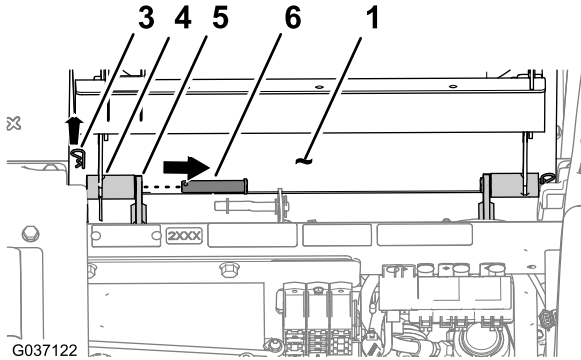
1. Washer
2. Bracket (seat)
3. Hairpin
4. Prop rod

3. Remove the 2 hairpins that secure the pivot fitting of the seat plate to the chassis brackets.



G037121

g037121



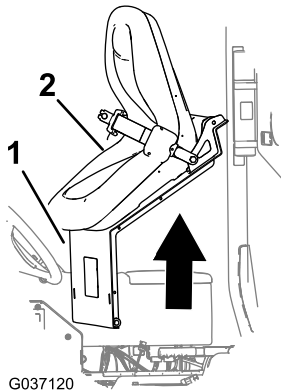
G037122

g037122

**Figure 5**

- |               |                             |
|---------------|-----------------------------|
| 1. Seat plate | 4. Pivot fitting (seat pan) |
| 2. Seat       | 5. Chassis bracket          |
| 3. Hairpin    | 6. Pivot pin                |

- Remove the 2 pivot pins that secure the seat and seat plate to the chassis.
- Lift the seat and seat plate up and out of the machine.



G037120

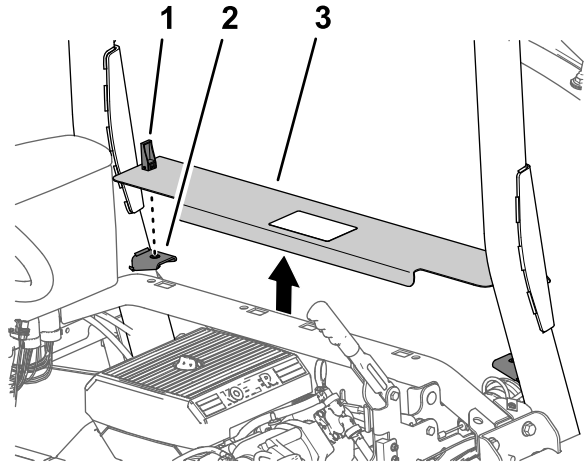
g037120

**Figure 6**

- |               |         |
|---------------|---------|
| 1. Seat plate | 2. Seat |
|---------------|---------|

## Removing the Engine-Access Panel

- Rotate up the handles for the latches of the engine-access panel.



g202440

**Figure 7**

- |                          |                        |
|--------------------------|------------------------|
| 1. Latch                 | 3. Engine access panel |
| 2. Panel-support bracket |                        |

- Lift the engine-access panel and remove it from the machine.

# 3

## Removing the Front Fenders and the Hood

No Parts Required

### Removing the Left Front Fender

1. Remove and discard the 2 push-in fasteners that secure the left, front fender to the lower ROPS channel.

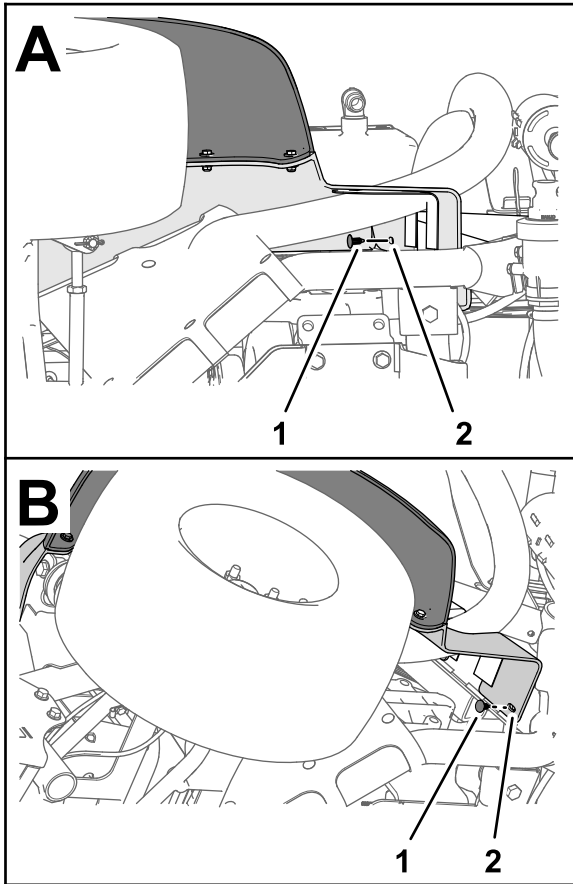
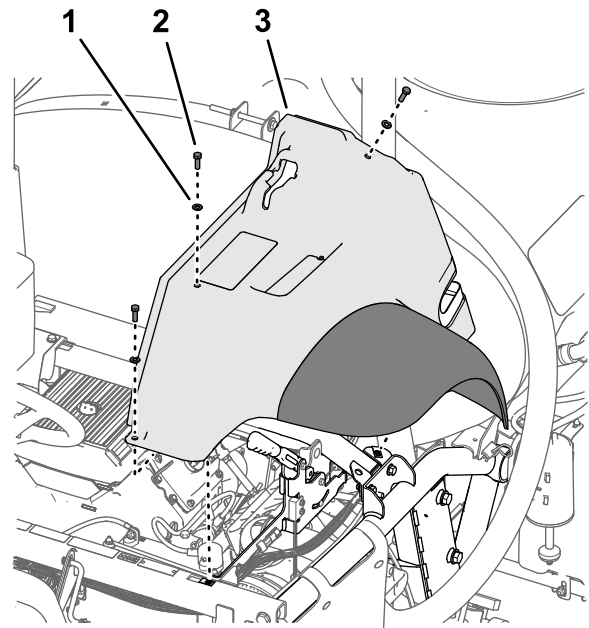


Figure 8

g264614

1. Push-in fastener
2. Left, front fender

2. Remove the 3 bolts (5/16 x 1 inch) and 3 washers (5/16 inch) that secure the fender to the frame of the machine.

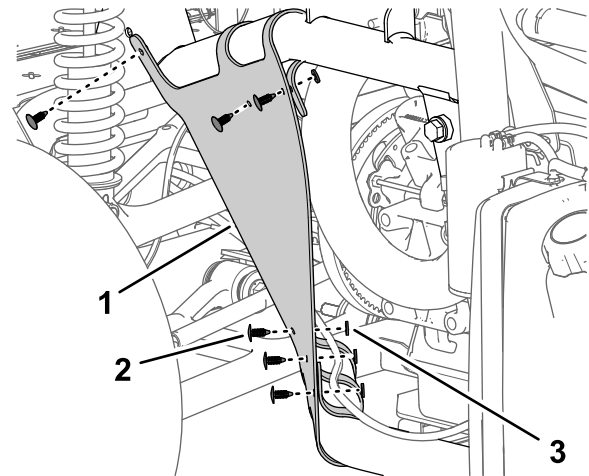


g197152

Figure 9

1. Washer (5/16 inch)
2. Bolt (5/16 x 1 inch)
3. Left, front fender

3. Remove the fender from the machine.
4. Remove the 6 push-in fasteners and 5 washers (9/16 x 1/2 inch) that secure the inner-fender shroud to the frame of the machine.

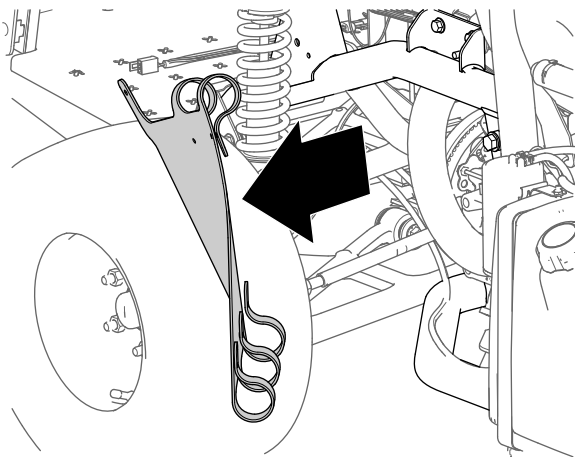


g197150

Figure 10

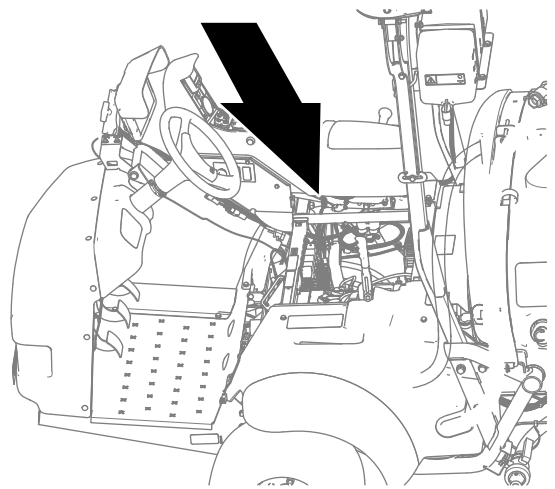
1. Inner-fender shroud
2. Push-in fastener
3. Washer (9/16 x 1/2 inch)

5. Remove the inner-fender shroud from the machine.



**Figure 11**

g197149



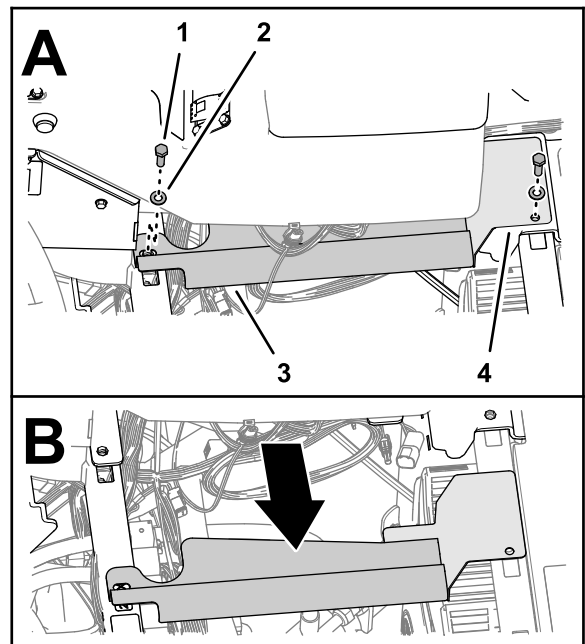
g323170

- Repeat steps 1 through 5 for the fender and inner-fender shroud at the other side of the machine.

## Removing the Right Front Fender

**Note:** If you damage the push-in fasteners removing them, replace the fasteners with Toro Part No. 117-2382.

- Remove the 2 capscrews (5/16 x 1 inch) and 2 washers (5/16 inch) that secure the bottom console cover and end console cover to the machine, and remove the covers.

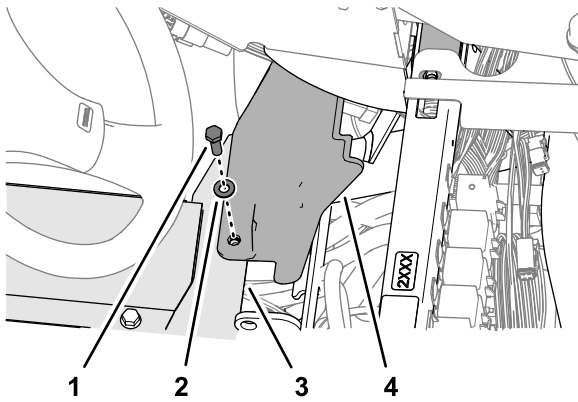


g323167

**Figure 12**

- |                             |                           |
|-----------------------------|---------------------------|
| 1. Capscrew (5/16 x 1 inch) | 3. Console cover (bottom) |
| 2. Washer (5/16 inch)       | 4. Console cover (end)    |

- Remove the capscrew (5/16 x 1 inch) and washer (5/16 inch) that secures the right, front fender to the platform floor.

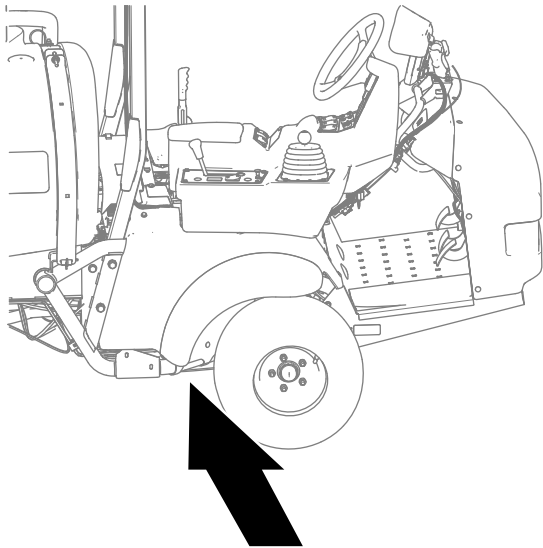


**Figure 13**

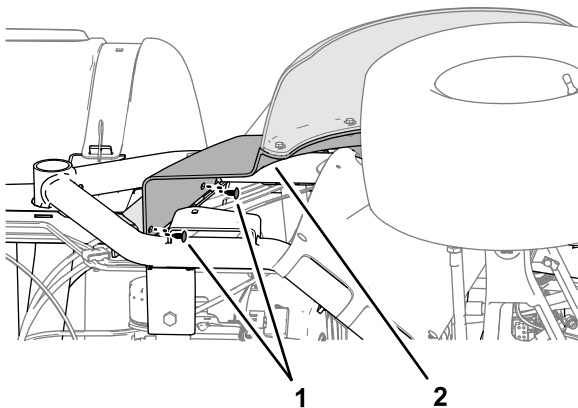
g323165

1. Capscrew (5/16 x 1 inch)
2. Washer (5/16 inch)
3. Platform floor
4. Right, front fender

3. Carefully remove the 2 push-in fasteners that secure the right, front fender to the roll bar mounting channel.



g323169

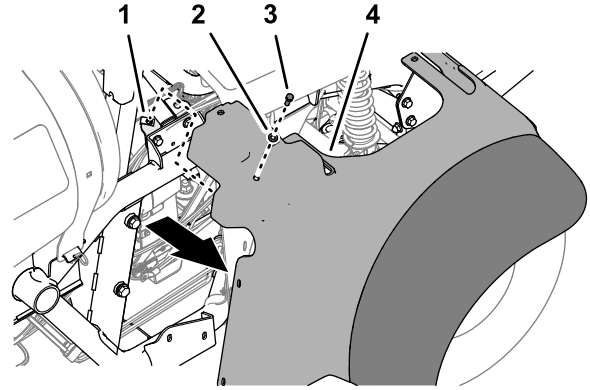


**Figure 14**

g323166

1. Push-in fastener
2. Right, front fender

4. Remove the capscrew (5/16 x 1 inch) and washer (5/16 inch) that secures the right, front fender to the cross-member support.

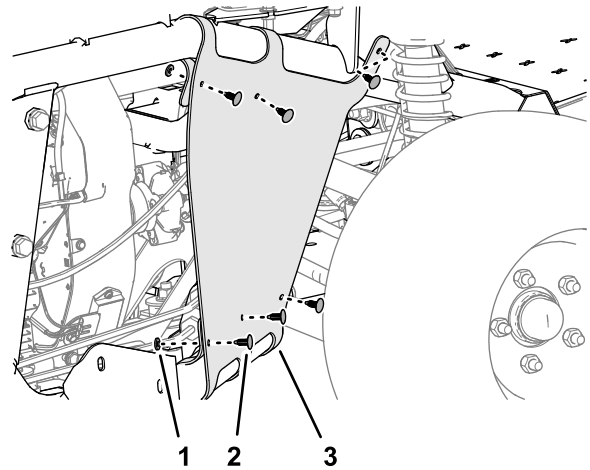


**Figure 15**

g323168

1. Clip nut (cross-member support)
2. Washer (5/16 inch)
3. Capscrew (5/16 x 1 inch)
4. Right, front fender

5. Remove the right, front fender from the machine.
6. Remove the 6 push-in fasteners and 5 washers (9/16 x 1/2 inch) that secure the inner-fender shroud to the right, upper and right, lower-frame tubes.



**Figure 16**

g323162

1. Washer (9/16 x 1/2 inch)
2. Push-in fastener
3. Inner-fender shroud

7. Remove the inner-fender shroud from the machine.

**Note:** Retain the right, front fender, inner-fender shroud, capscrews, washers, and undamaged push-in fasteners.

Replace damaged push-in fasteners with Toro Part No. 117-2382.

## Removing the Hood

1. Disconnect the 2 electrical connectors (2-socket) of the machine wire harness from the 2-pin connectors of the left and right headlights.

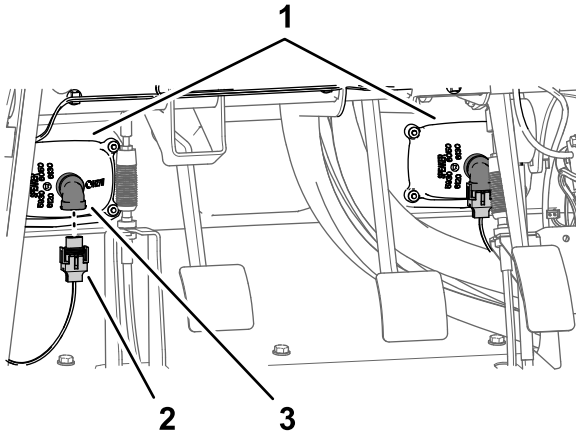


Figure 17

g197153

1. Headlights
2. 2-socket connector (machine wire harness)
3. 2-pin connector (headlight)

2. Remove and retain the 9 push-in fasteners that secure the hood to the dash and frame of the machine.

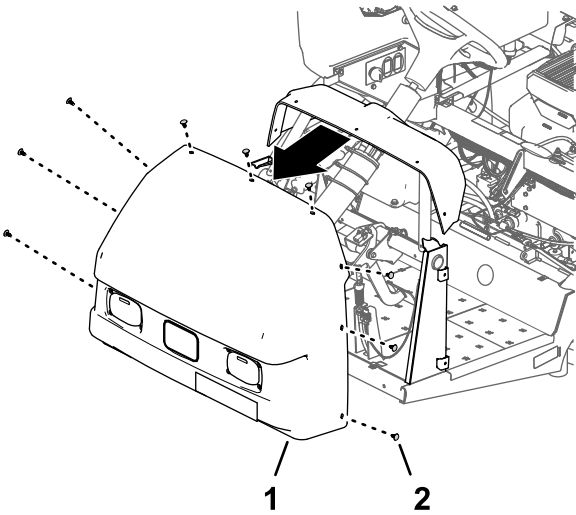


Figure 18

g197148

1. Hood
2. Push-in fastener

3. Remove and discard the hood from the machine.

## 4

## Disconnecting the Pressure-Sense Tube for the Dash Gauge

No Parts Required

### Procedure

Pull the pressure-sense tube for the dash gauge out of the tube coupler.

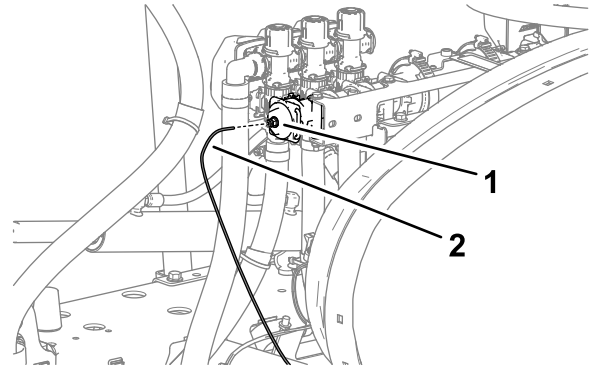


Figure 19

g491756

1. Tube coupler (end cap of the right-boom section valve)
2. Pressure-sense tube

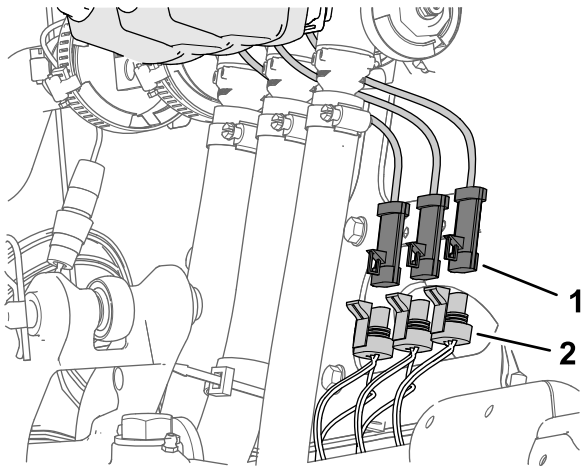
## 5

## Disconnecting the Boom Valve Connectors

No Parts Required

### Procedure

1. Disconnect the 3-socket connector labeled LEFT SPRAY VALVE, CENTER SPRAY VALVE, and RIGHT SPRAY VALVE of the machine wire harness from the 3-pin connectors of the 3 spray-valve actuators.

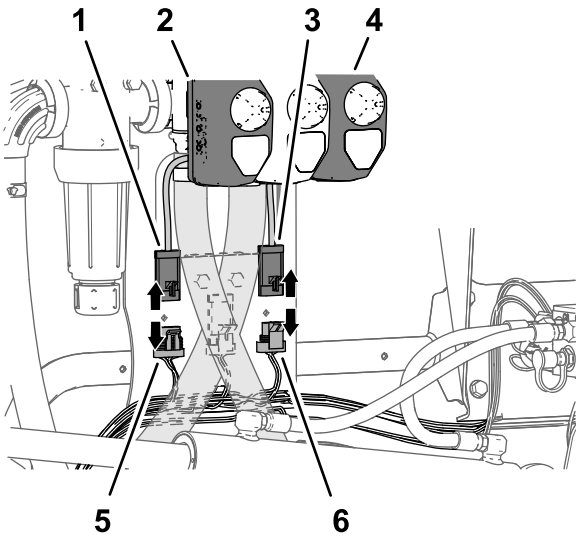


**Figure 20**

g491643

1. 3-pin connector (spray-valve actuator)
2. 3-socket connector—machine wire harness (LEFT SPRAY VALVE, CENTER SPRAY VALVE, and RIGHT SPRAY VALVE)

2. Disconnect the 4-socket connector of the machine wire harness labeled RATE VALVE from the 4-pin connector of the rate-valve actuator.



**Figure 21**

g491632

1. 4-pin connector (rate-valve actuator)
2. Actuator (rate valve)
3. 3-pin connector (master spray-valve actuator)
4. Actuator (master-spray valve)
5. 4-socket connector—machine wire harness (RATE VALVE)
6. 3-socket connector—machine wire harness (MASTER SPRAY VALVE)

3. Disconnect the 3-socket connector of the machine wire harness labeled MASTER SPRAY

VALVE from the 3-pin connector of the master spray-valve actuator.

# 6

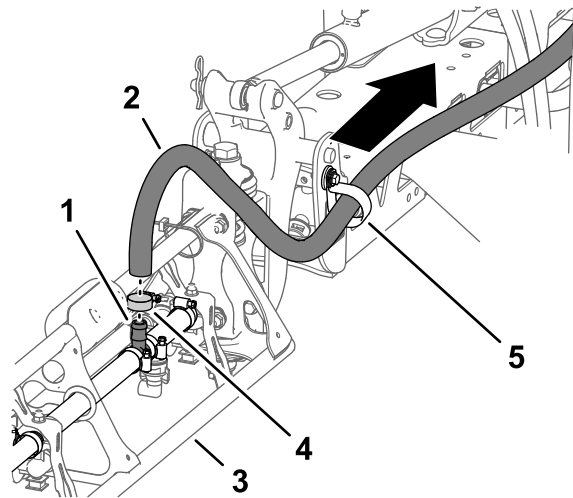
## Removing the Boom Sections

No Parts Required

### Removing the Boom Section Hoses

**Note:** Retain all removed parts unless otherwise noted.

1. At the outer-boom section, remove the hose clamp that secures the hose to the barbed T-fitting.



**Figure 22**

g491757

1. Barbed T-fitting
2. Hose (outer-boom section)
3. Outer-boom section
4. Hose clamp
5. R-clamp

2. Remove the hose from the T-fitting.
3. Remove the free end of the hose from the R-clamp.
4. Repeat steps 1 through 3 for the supply hose at the other outer spray section.
5. Under the center-boom section, remove the hose clamp that secures the supply hose for the center-spray section to the barbed T-fitting.

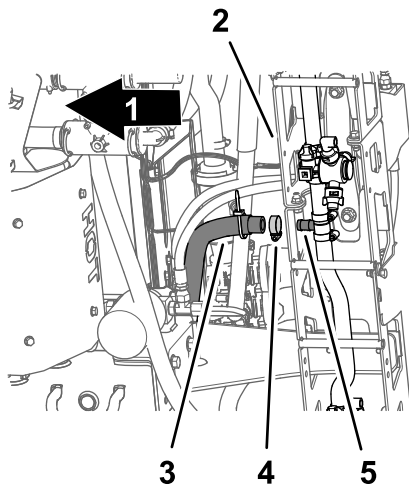


Figure 23

- |                                       |                     |
|---------------------------------------|---------------------|
| 1. Front of the machine               | 4. Hose clamp       |
| 2. Center-spray section               | 5. Barbed T-fitting |
| 3. Supply hose (center spray section) |                     |

g492858

## Removing the Extend and Retract Hoses for the Lift Cylinder

1. Remove the hoses from the extend ports of the left and right lift cylinders.

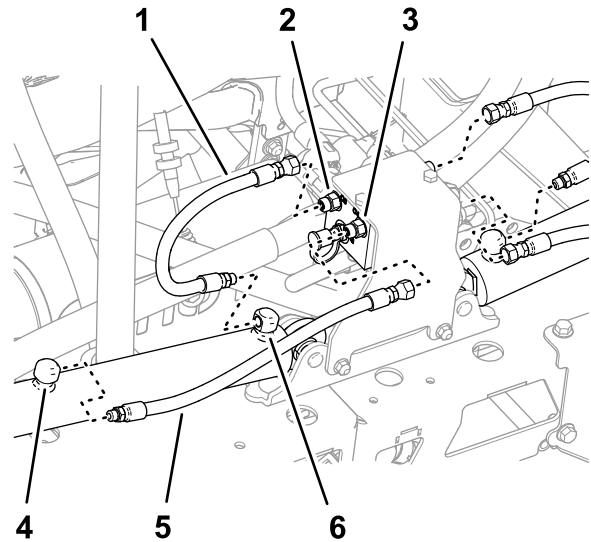


Figure 25

- |                                     |                                 |
|-------------------------------------|---------------------------------|
| 1. Hose (extend position)           | 4. Retract port (lift cylinder) |
| 2. Port C3 (lift-cylinder manifold) | 5. Hose (retract position)      |
| 3. Port C4 (lift-cylinder manifold) | 6. Extend port (lift cylinder)  |

g492859

6. Remove the retainers that secure the left, center, and right supply hoses to the quick couplers of the section valves (Figure 24).

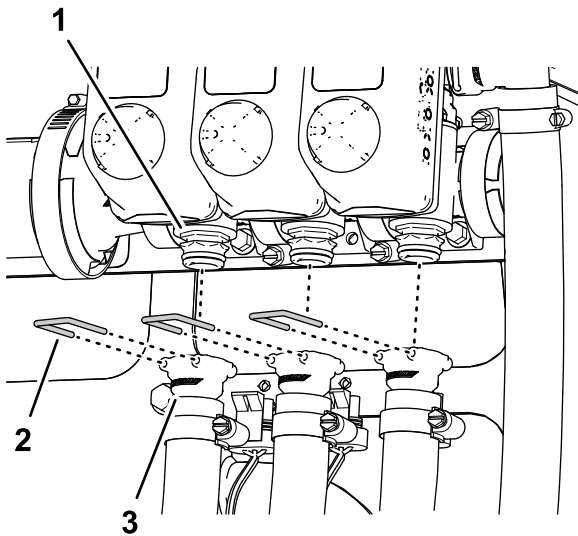


Figure 24

- |                                  |                                       |
|----------------------------------|---------------------------------------|
| 1. Quick coupler (section valve) | 3. Quick coupler (socket—supply hose) |
| 2. Retainer                      |                                       |

g198474

2. Remove and discard the hoses from the following items:
  - Ports C1, C2, C3, and C4 of the lift-cylinder manifold
  - Retract and extend ports of the left and right lift cylinder.

## Removing the Lift Cylinders

**Note:** Retain all removed parts unless otherwise noted.

7. Remove and discard the left, center, and right section supply hoses from the quick couplers of the section valves, and remove the hoses from the machine.

1. Use lifting equipment of the specified capacity to support the outer-spray section.
2. Remove the hairpin and clevis pin that secure the rod end of the lift cylinder to the pivot bracket.

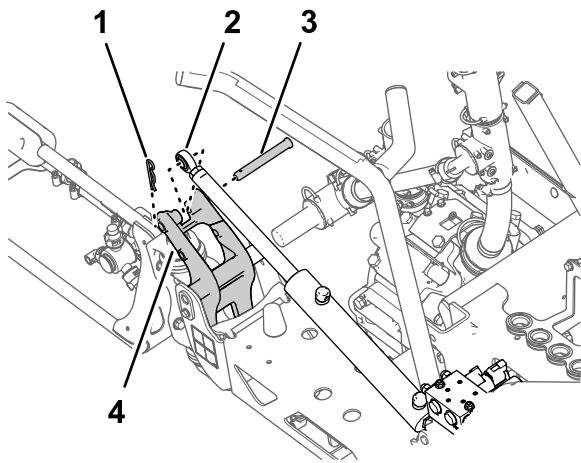


Figure 26

g492860

1. Hairpin
2. Rod fitting (lift cylinder)
3. Clevis pin
4. Pivot bracket

3. Remove the flange locknut (5/16 inch) and flange-head bolt (5/16 x 3/4 inch) that secures the pivot pin to the cylinder mount.

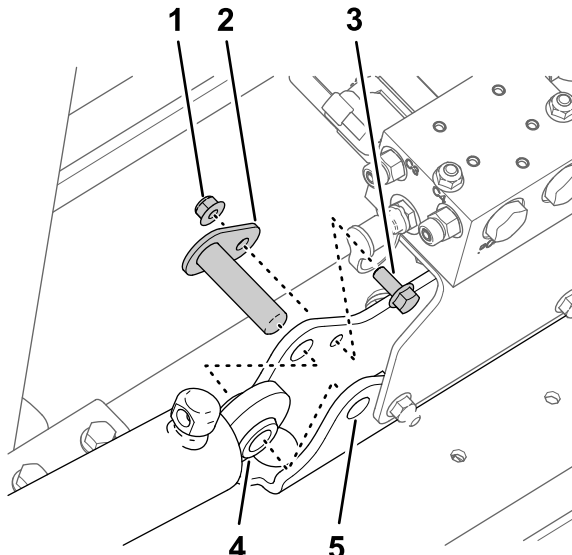


Figure 27

g492861

1. Flange locknut (5/16 inch)
2. Pivot pin
3. Flange-head bolt (5/16 x 3/4 inch)
4. Lift cylinder
5. Cylinder mount

4. Remove the pivot pin and the lift cylinder from the machine.

## Removing the Outer-Boom Sections

Lift equipment capacity: 46 kg (100 lb)

### ⚠ WARNING

Lifting heavy machines and attachments improperly could result in serious injury or even death.

When lifting heavy machines and attachments, use lifting equipment, such as chains and straps, that is rated for the weight of the equipment.

**Note:** Except where noted, retain all hardware that you remove; you will use the hardware to install the center-boom extension.

1. Remove the flange bolt (5/16 x 1 inch) and flange locknut (5/16 inch) securing the pivot pin to the pivot bracket.

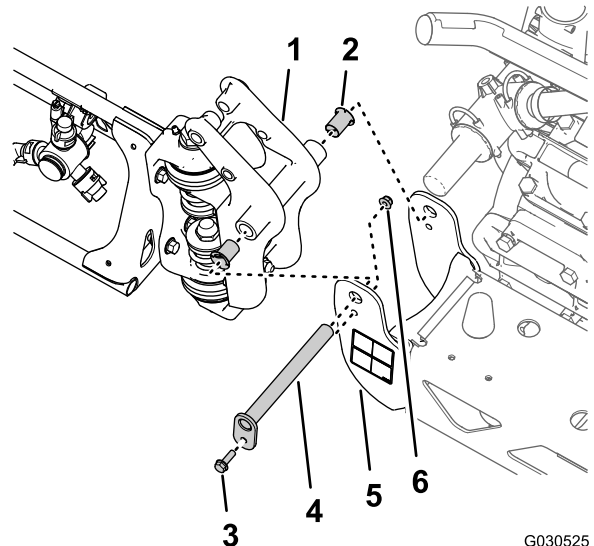


Figure 28

G030525

g030525

1. Pivot fitting (outer-boom section)
2. Nylon-flange bushing
3. Flange bolt (5/16 x 1 inch)
4. Pivot pin
5. Pivot bracket (center-boom section)
6. Flange locknut (5/16 inch)

2. Remove the pivot pin from the pivot bracket for the center-boom section and the pivot fitting for the outer-boom section.
3. Separate the outer-boom section from the center-spray section and remove outer section from the machine.
4. Remove and discard the 2 nylon-flange bushings from the pivot fitting of the outer-spray section.

5. Repeat steps 1 through 3 in Removing the Lift Cylinders for the outer-boom section at the other side of the machine.
6. Repeat steps 1 through 4 of this section for the outer-boom section at the other side of the machine.

## Removing the Section-Lift Manifold from the Center-Boom Section

1. Remove the 2 flange locknuts (5/16 inch) and 2 flange-head bolts (5/16 x 1 inch) that secure the support bracket for the section-lift manifold to the cylinder mount, and separate the manifold and bracket from the cylinder mount.

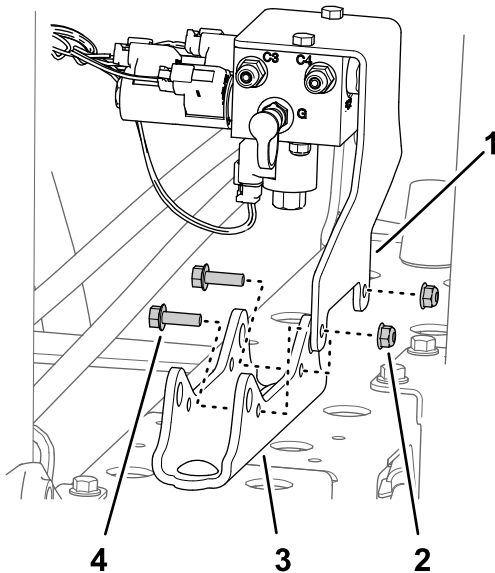


Figure 29

g492862

- |  |                                     |
|--|-------------------------------------|
| 1. Support bracket (section-lift manifold) | 3. Cylinder mount                   |
| 2. Flange locknut (5/16 inch)              | 4. Flange-head bolt (5/16 x 1 inch) |

2. Support the section-lift manifold by tying it to the valve mount bracket with a piece of rope.

## Removing the Center-Boom Section

Lifting-equipment capacity: 41 kg (90 lb)

1. Support the center-boom section with lifting equipment with the specified capacity.

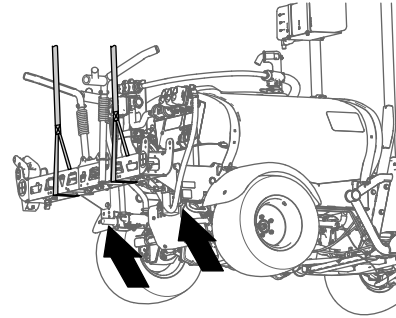


Figure 30

g198634

2. Remove and retain the 4 flange-head bolts (3/8 x 1-1/4 inches) and 4 flange locknuts (3/8 inch) that secure the center-boom section to the support brackets.

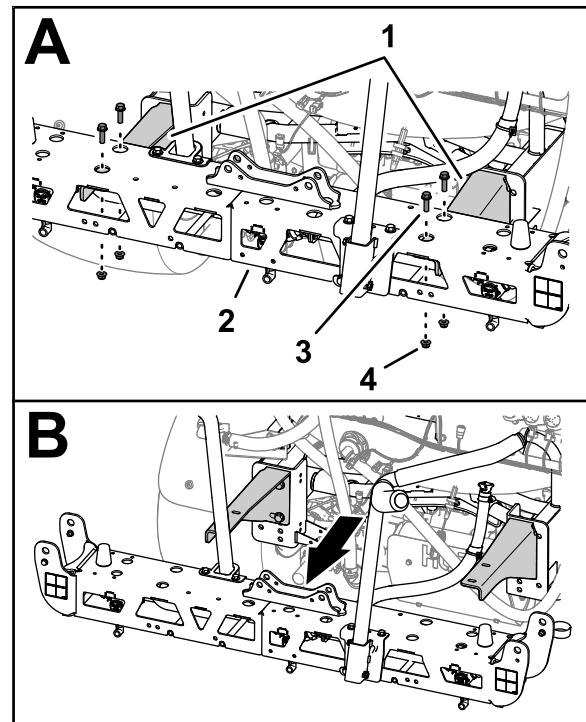


Figure 31

g492863

- |                        |  |
|------------------------|--|
| 1. Support brackets    | 3. Flange-head bolt (3/8 x 1-1/4 inches) |
| 2. Center-boom section | 4. Flange locknut (3/8 inch)             |

3. Lift the center-boom section and remove it from the machine.

# 7

## Installing the Center-Boom Extension

Parts needed for this procedure:

2	Flange-head bolt (3/8 x 1 inch)
2	Flange locknuts (3/8 inch)
1	Center-boom extension
1	Cylinder mount (wide)
1	Tie plate (wide)
4	Carriage bolt (1/2 x 1-1/4 inches)
4	Flange locknut (1/2 inch)

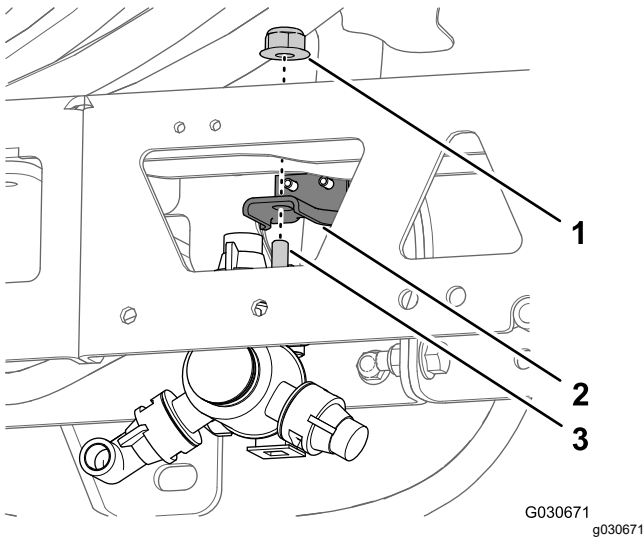


Figure 33

1. Flange locknut (5/16 inch)
2. Mount
3. Hex-head bolt (5/16 x 3/4 inch)

## Removing the Turrets and Hoses

1. At the center-boom section, remove and retain the flange locknut that secures the turret to the mount.

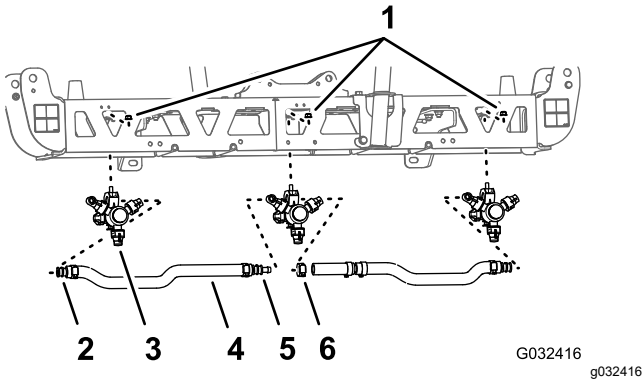
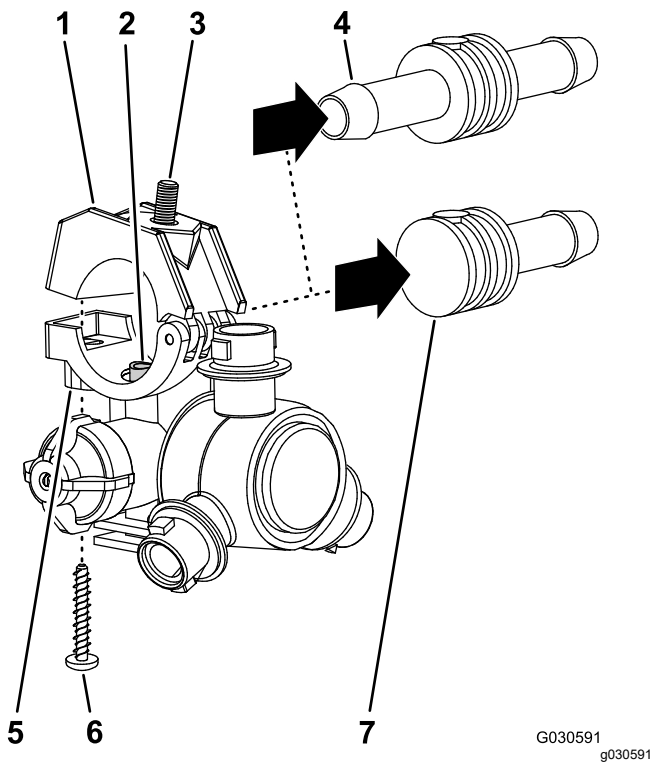


Figure 32

1. Flange locknut (5/16 inch)
2. Single barbed-hose shank (3/4 inch)
3. Sprayer nozzle on turret
4. Hose (3/4 inch inside diameter)
5. Double barbed-hose shank (3/4 inch)
6. Hose clamp

2. Remove the stainless steel screw (#12 x 1-1/4 inches) that secures the upper clamp half and double or single barbed-hose shank (3/4 inch) to the turret body, and separate the barbed-hose shank and hose from the nozzle.

**Note:** The hex-head bolt (5/16 x 3/4 inch—stainless steel) will separate from the upper clamp half when you open the clamp, retain the bolt for installation.



**Figure 34**

G030591  
g030591

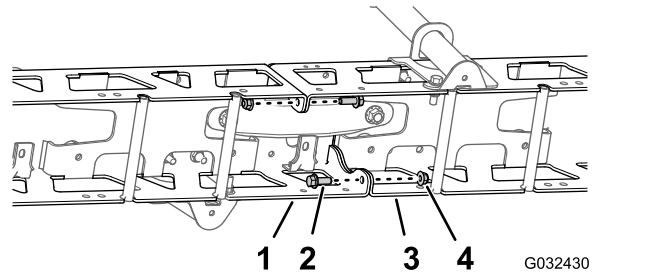
- |  |   |
|--|---|
| 1. Upper clamp half                                | 5. Saddle on the turret                       |
| 2. Transfer tube                                   | 6. Stainless steel screw (#12 x 1-1/4 inches) |
| 3. Hex-head bolt (5/16 x 3/4 inch—stainless steel) | 7. Single barbed-hose shank (3/4 inch)        |
| 4. Double barbed-hose shank (3/4 inch)             |   |

- Remove the turret from the center-boom section.
- Repeat steps 1 and 2 for the other 2 turrets.
- Remove the hoses (3/4 inch inside diameter), barbed-hose shanks, clamps and barbed T-fitting from the center-boom section.

**Note:** You no longer need the hose, hose shanks, clamps, and T-fitting; retain all other parts.

## Separating the Center-Boom Section Trusses

- Remove the 2 flange-head bolts (3/8 x 1 inch) and 2 locknuts (3/8 inch) that secure the vertical flanges of the left and right truss frames.

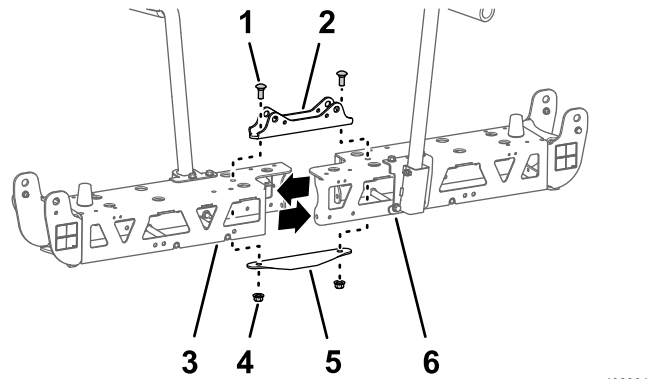


**Figure 35**

G032430  
g032430

- |                                    |                        |
|------------------------------------|------------------------|
| 1. Left truss frame                | 3. Right truss frame   |
| 2. Flange-head bolt (3/8 x 1 inch) | 4. Locknuts (3/8 inch) |

- Remove the 2 carriage bolts (1/2 x 1-1/4 inches) and 2 locknuts (1/2 inch) that secure the narrow cylinder mount, left and right truss frames, and narrow tie plate.



**Figure 36**

g492864

- |                                       |                        |
|---------------------------------------|------------------------|
| 1. Carriage bolt (1/2 x 1-1/4 inches) | 4. Locknuts (1/2 inch) |
| 2. Cylinder mount (narrow)            | 5. Tie plate (narrow)  |
| 3. Left truss frame                   | 6. Right truss frame   |

**Note:** Retain the flange-head bolts, carriage bolts, and locknuts. You no longer need the narrow cylinder mount and narrow tie plate.

- Separate the left and right truss frames.

## Installing the Center-Boom Extension

1. Loosely assemble the center-boom extension to the truss frame with the previously removed 2 flange-head bolts (3/8 x 1 inch) and 2 flange locknuts (3/8 inch).

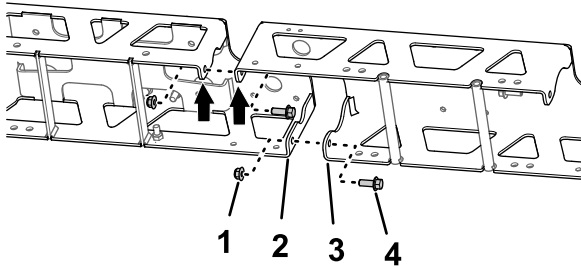


Figure 37

g492865

1. Flange locknut (3/8 inch)
2. Vertical flange (truss frame)
3. Vertical flange (center-boom extension)
4. Flange-head bolt (3/8 x 1 inch)

2. Loosely assemble the center-boom extension to the other truss frame with the 2 flange-head bolts (3/8 x 1 inch) and 2 flange locknuts (3/8 inch).
3. Insert the tie plate into the truss frame and center-boom extension and align the hole in the tie plate with the holes at the centerline of the trusses and boom extension.

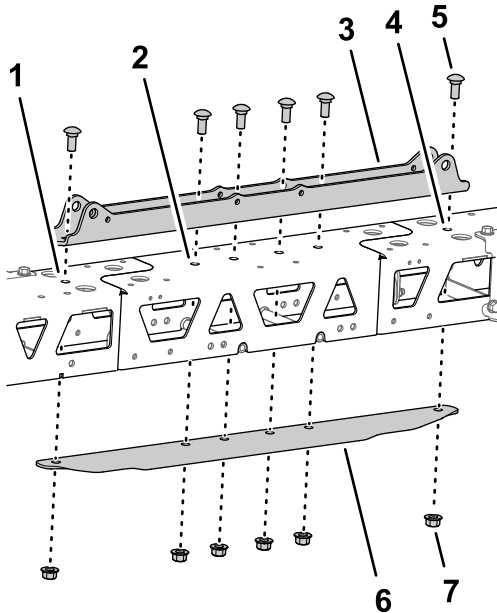


Figure 38

g492866

1. Left truss frame
2. Center-boom extension
3. Cylinder mount (wide)
4. Right truss frame
5. Carriage bolt (1/2 x 1-1/4 inches)
6. Tie plate (wide)
7. Flange locknut (1/2 inch)

4. Assemble the cylinder mount, trusses, center-boom extension, and tie plate using 6 carriage bolts (1/2 x 1-1/4 inches) and 6 flange locknuts (1/2 inch).

**Note:** 2 of the carriage bolts and locknuts are from previously removed parts.

5. Torque the flange-head bolts (3/8 inch) and flange locknuts to 37 to 45 N·m (27 to 33 ft-lb).
6. Torque the flange locknuts (1/2 inch) to 91 to 113 N·m (67 to 83 ft-lb).

## 8

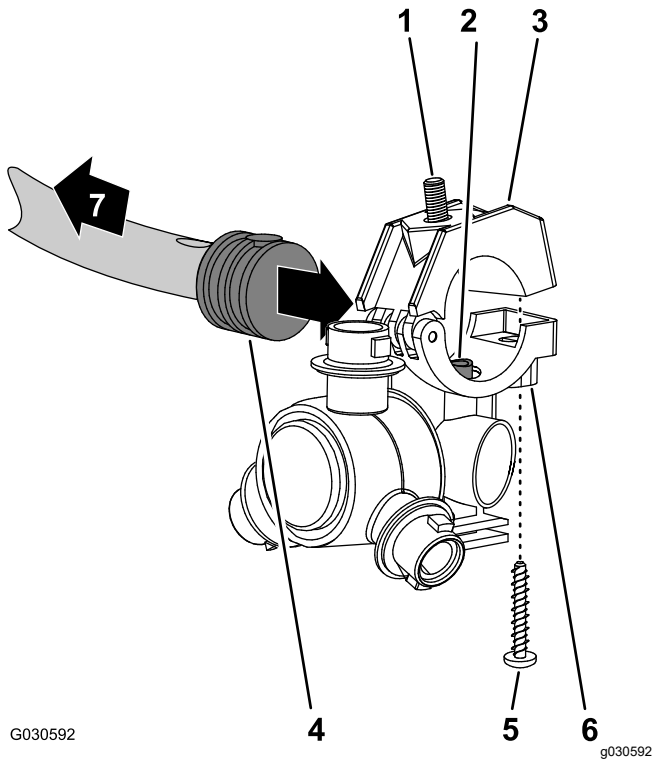
## Installing the Turrets to the Center-Boom Section

Parts needed for this procedure:

2	Turret
2	Hose assembly (valve 5 or 6)
2	Flange locknut (5/16 inch)

## Assembling the Turrets and Hoses for the Center-Boom Section

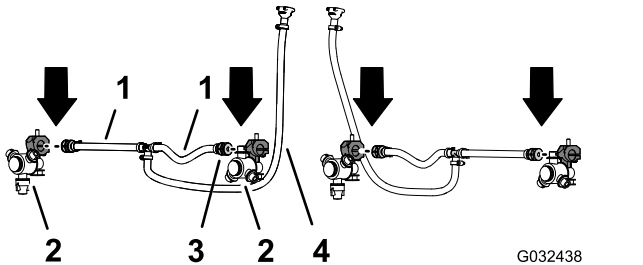
1. Using lifting equipment, raise the new center-boom section to a comfortable working height.
2. Remove the stainless steel screw that secures the upper clamp half to the saddle.



**Figure 39**

- |  |   |
|--|---|
| 1. Hex-head bolt (5/16 x 3/4 inch—stainless steel) | 5. Stainless steel screw (#12 x 1-1/4 inches) |
| 2. Transfer tube                                   | 6. Turret                                     |
| 3. Upper clamp half                                | 7. Toward the spray section                   |
| 4. Single barbed-hose shank (1/2 inch)             |   |

3. Locate the hole in the side of single barbed-hose shank at the end of the hose 25 cm (10 inches) of the hose assembly (valve 5 or 6) for the center-boom section.



**Figure 40**

- |  |   |
|--|---|
| 1. Hose 13 x 250 mm (1/2 x 10 inches—valve 5 or 6) | 3. Single barbed-hose shank 13 mm (1/2 inch)                          |
| 2. Turret  | 4. Hose and barbed coupler 13 x 810 mm (1/2 x 32 inches—valve 5 or 6) |

4. Align the transfer tube in the saddle of a turret with the hole in the side of the single barbed-hose shank (1/2 inch).
5. Close the upper clamp half around the barbed-hose shank and secure the clamp half

and spray-nozzle body with the stainless steel screw (#12 x 1-1/4 inches); torque the stainless steel screw to 14 to 18 N·m (20 to 25 in-lb).

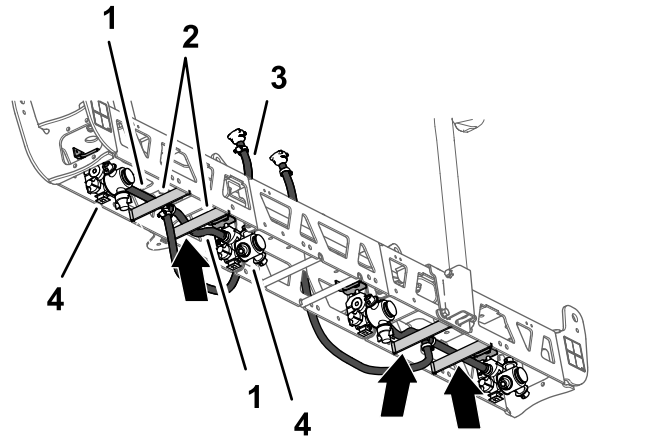
**Important:** Do not over tighten the stainless steel screw.

**Note:** Ensure that the hex-head bolt (5/16 x 3/4 inch) is seated in the recess in the upper clamp half when closing the clamp.

6. Repeat steps 3 through 5 to the single barbed-hose shanks of the other hose assemblies (spray valve 5 or 6) for the center-boom section.

## Installing the Turrets and Hoses to the Center-Boom Section

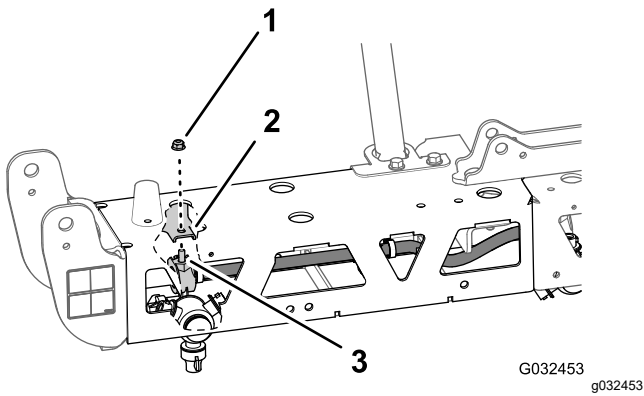
1. Route the hose 13 x 250 mm (10 inches) and turret assembly between the truss braces of the outer truss.



**Figure 41**

- |                                       |  |
|---------------------------------------|--|
| 1. Hose 13 x 250 mm (1/2 x 10 inches) | 3. Hose and barbed coupler 13 x 810 mm (1/2 x 32 inches) |
| 2. Truss braces (left truss)          | 4. Sprayer nozzle  |

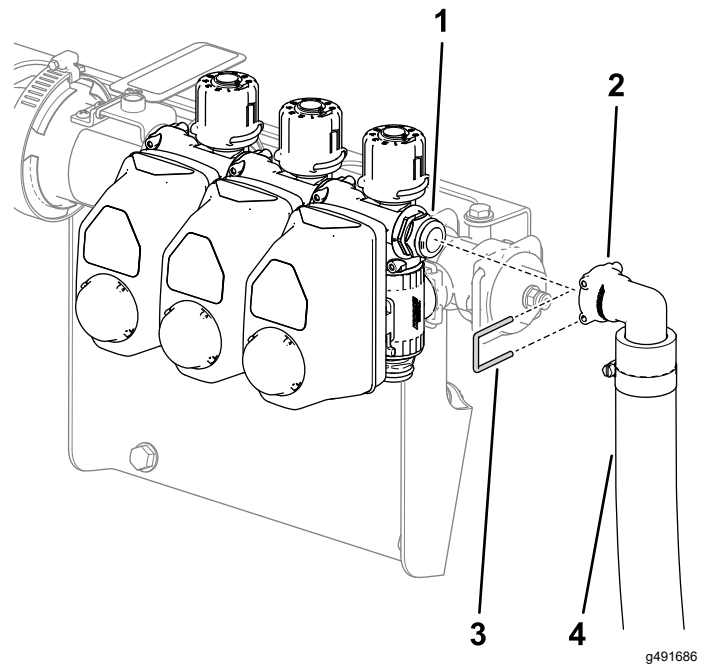
2. Route the hose and turret above the truss brace and outward to the outboard nozzle mount.
3. Loosely secure the turret to the mount with the hex-head bolt (5/16 x 3/4 inch) and a flange locknut (5/16 inch).



**Figure 42**

1. Flange locknut (5/16 inch)
2. Mount (outboard)
3. Hex-head bolt (5/16 x 3/4 inch—stainless steel)

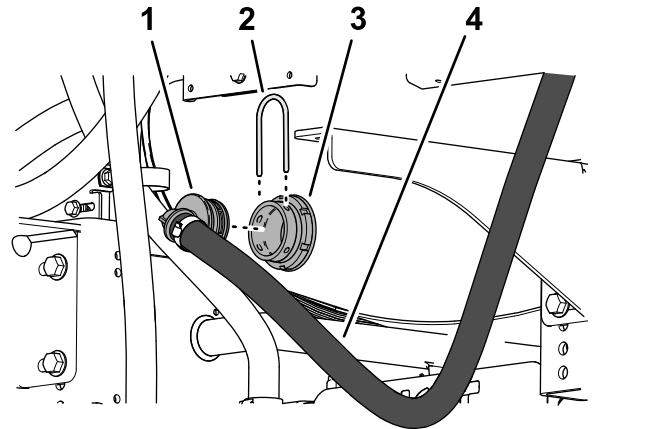
4. Route the other hose 13 mm (10 inches) and turret assembly between the truss braces of the outer truss.
5. Route the hose and turret above the truss brace and inward to the inboard turret mount.
6. Loosely secure the turret to the mount with a the hex-head bolt (5/16 x 3/4 inch) and flange locknut (5/16 inch).
7. Torque the flange locknut to 1978 to 2542 N·cm (175 to 225 in-lb).
8. Route the hose and barbed coupler 13 x 810 mm (1/2 x 32 inches) to the side of the center-spray section with the left and right support brackets.
9. Repeat steps 1 through 8 for the other hose and turret at the other outer truss.



**Figure 43**

1. Retainer (small)
2. Quick-disconnect fitting (90° socket—bypass hose)
3. Retainer (small)
4. Bypass hose

2. Remove and retain the large retainer that secures the 90° barbed fitting at the lower end of the bypass hose to the bulkhead fitting of the spray tank.



**Figure 44**

1. 90° barbed fitting
2. Retainer (large)
3. Bulkhead fitting
4. Bypass hose

3. Remove and discard the bypass hose from the machine.

# 9

## Removing the Boom-Section Valves

Parts needed for this procedure:

3	Cap (quick coupler)
3	Retainer

## Removing the Section Bypass Hose

1. Remove the small retainer that secures the quick-disconnect fitting of the bypass hose to the quick-disconnect fitting of the right-section bypass valve.

## Positioning the Bypass Valves

1. Remove the 3 retainers that secure the 3 valve actuators to the left, center, and right section valves.

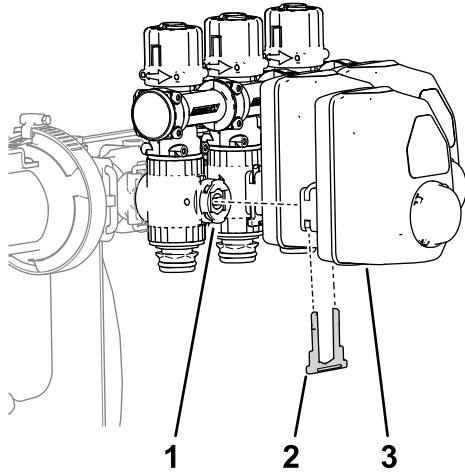


Figure 45

g491695

- |                  |                   |
|------------------|-------------------|
| 1. Section valve | 3. Valve actuator |
| 2. Retainer      |                   |

2. Remove the valve actuators from the left, center, and right section valves.
3. Remove the retainer that secures the cap to the quick-disconnect fitting of the bypass valve; remove and discard the cap.

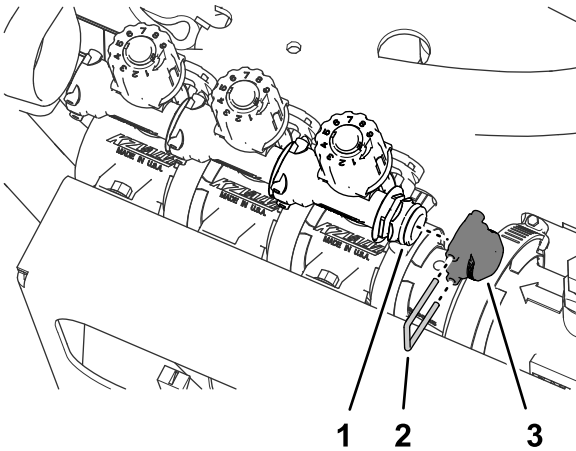


Figure 46

g200483

- |  |        |
|--|--------|
| 1. Quick disconnect fitting (bypass valve) | 3. Cap |
| 2. Retainer                                |        |

## Removing the Section Valves from the Manifold Mount

1. Remove and retain the 2 hex-head bolts (1/4 x 3 inches), 2 locknuts (1/4 inch), and 4 washers (1/4 inch) that secure the section valves to the manifold mount.

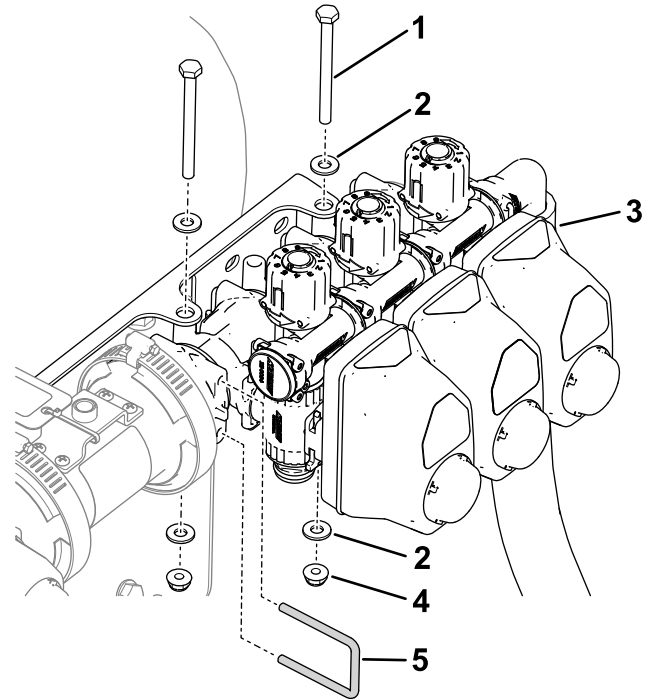


Figure 47

g491739

- |                                   |                       |
|-----------------------------------|-----------------------|
| 1. Hex-head bolt (1/4 x 3 inches) | 4. Locknut (1/4 inch) |
| 2. Washer (1/4 inch)              | 5. Retainer           |
| 3. Section valves                 |                       |

2. Remove the retainer and remove the section valves from the manifold mount.

# 10

## Assembling the Rear Harness to the Machine

Parts needed for this procedure:

1	Rear harness
---	--------------

### Routing the Rear Harness

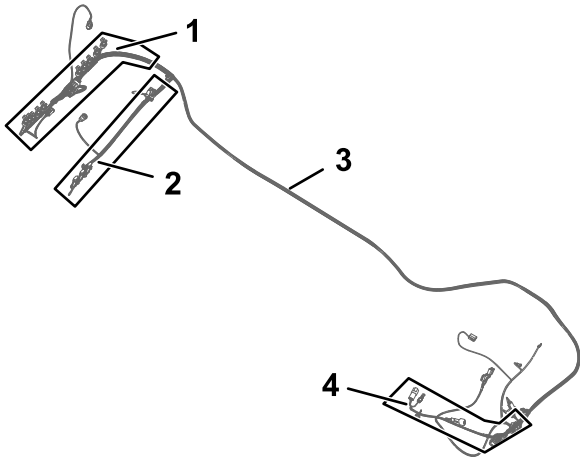


Figure 48

g198815

1. 102 cm (40 inches) wire-harness branch—ASC10 and NOZZLE-VALVES 1 through 10
2. 89 cm (35 inches) wire-harness branch—RATE VALVE, MASTER VALVE, FLOW METER, LEFT SPRAY, CENTER SPRAY, and RIGHT SPRAY
3. Kit wire harness 457 cm (180 inch)
4. 84 cm (33 inches) wire-harness branch—PUMP CLUTCH

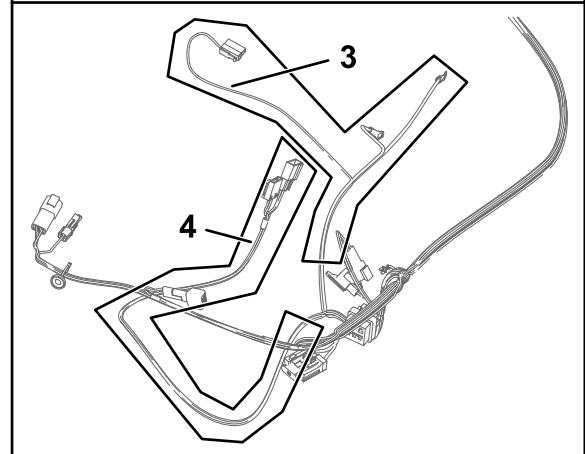
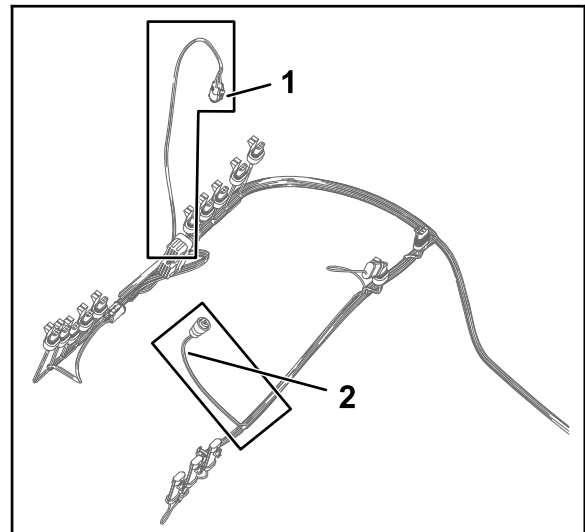
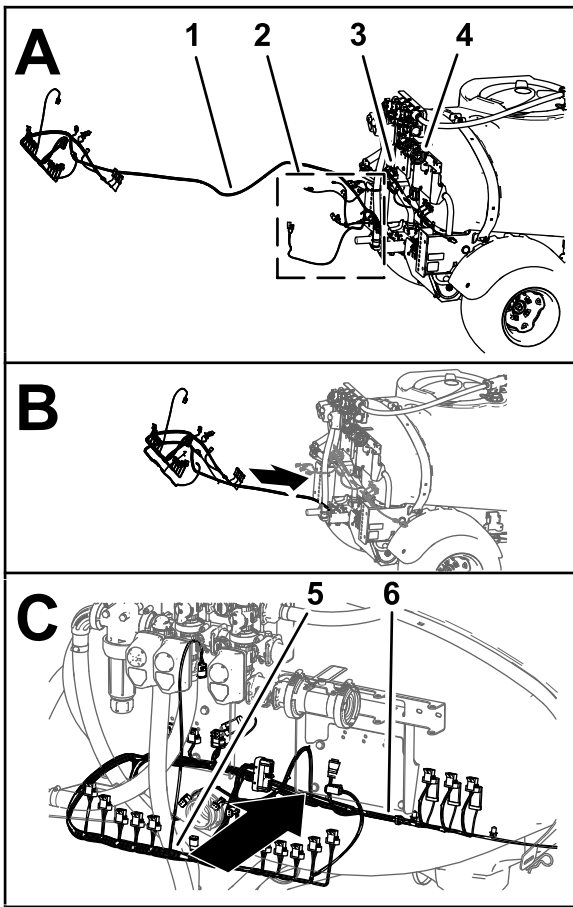


Figure 49

g198814

1. 61 cm (24 inches) wire-harness branch—PRESSURE TRANSDUCER GREEN WEDGE
2. 23 cm (9 inches) wire-harness branch—FLOW METER
3. 60 cm (23-1/2 inches) wire-harness branch—TO BATTERY POSITIVE, battery negative, and alternator
4. 66 cm (26 inches) wire-harness branch—ASC 10 ENABLE RELAY, 50 A FUSE, DIODE, SW'D PWR FOR GEN 2 TOPCON, and ASC 10 power and CAN from X25

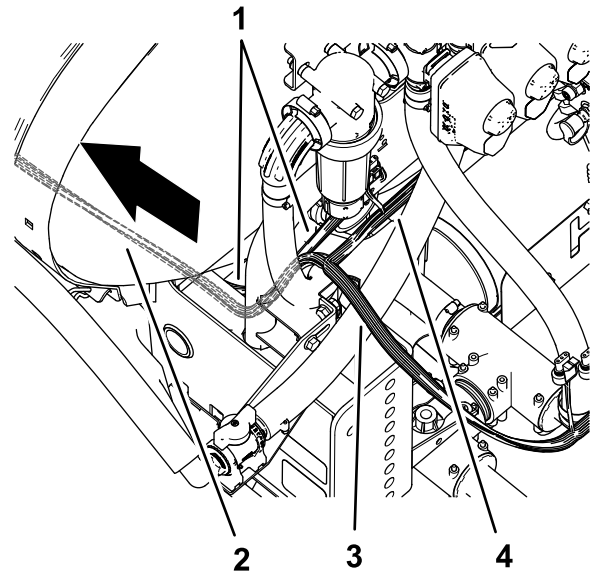
1. Route the 84 cm (33 inches), 60 cm (23-1/2 inches), and 66 cm (26 inches) wire-harness branches of the rear harness to the left side of the machine along the machine wire harness.



**Figure 50**

g491741

- |  |   |
|--|---|
| 1. Rear wire harness 457 cm (180 inch)   | 4. Manifold mount                         |
| 2. 84 cm (33 inches) wire-harness branch, 60 cm (23-1/2 inches) wire-harness branch, and 66 cm (26 inches) wire-harness branch | 5. 102 cm (40 inches) wire-harness branch |
| 3. Machine wire harness  | 6. 89 cm (35 inches) wire-harness branch  |

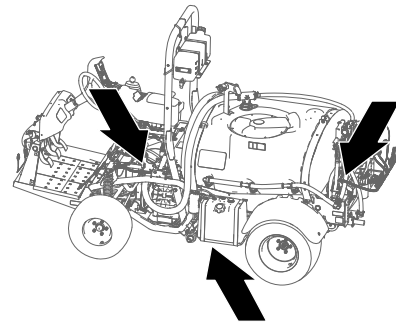


g199037

**Figure 51**

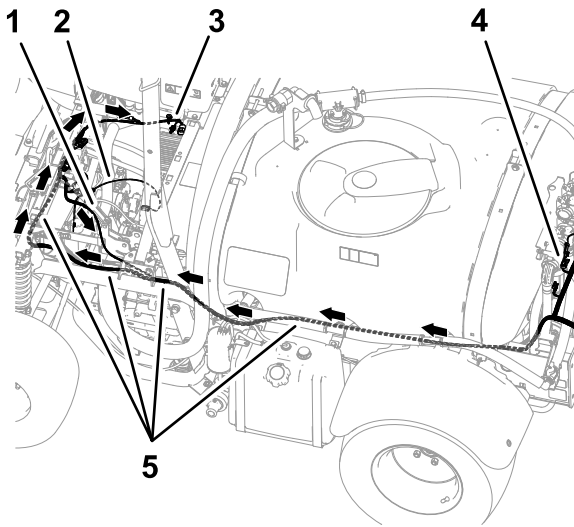
- |                                     |  |
|-------------------------------------|--|
| 1. Machine wire harness             | 3. 102 cm (40 inches) wire-harness branch—ASC10 and NOZZLE-VALVES 1 through 10   |
| 2. Rear harness 457 cm (180 inches) | 4. 89 cm (35 inches) wire-harness branch—RATE VALVE, MASTER VALVE, FLOW METER, LEFT SPRAY, CENTER SPRAY, and RIGHT SPRAY |

- Route the 84 cm (33 inches), 60 cm (23-1/2 inches), and 66 cm (26 inches) wire-harness branches of the rear harness forward along the left frame channel.



g199043

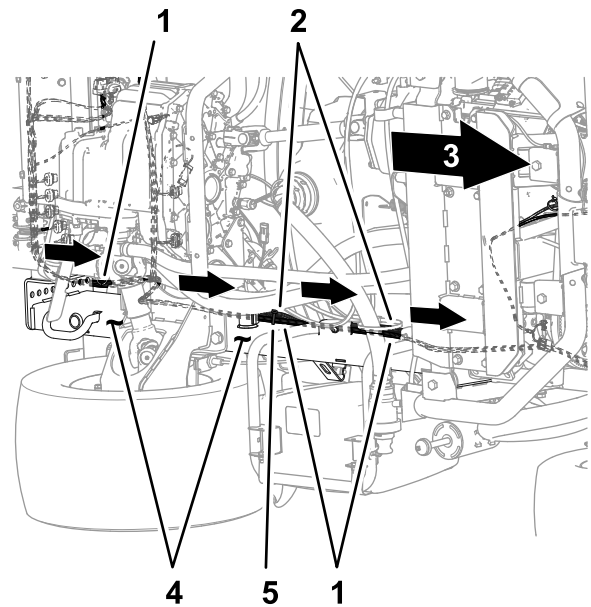
**Figure 52**



g199038

**Figure 53**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. 84 cm (33 inches) wire-harness branch—pump clutch</li> <li>2. 60 cm (23-1/2 inches) wire-harness branch—TO BATTERY POSITIVE, battery negative, and alternator</li> <li>3. 66 cm (26 inches) wire-harness branch—ASC 10 ENABLE RELAY, 50 A FUSE, DIODE, SW'D PWR FOR GEN 2 TOPCON, and ASC 10 power and CAN from X25</li> </ol> | <ol style="list-style-type: none"> <li>4. 102 cm (40 inches) wire-harness branch—ASC10 and NOZZLE-VALVES 1 through 10</li> <li>5. Rear harness 457 cm (180 inches)</li> </ol> |
|--|---|



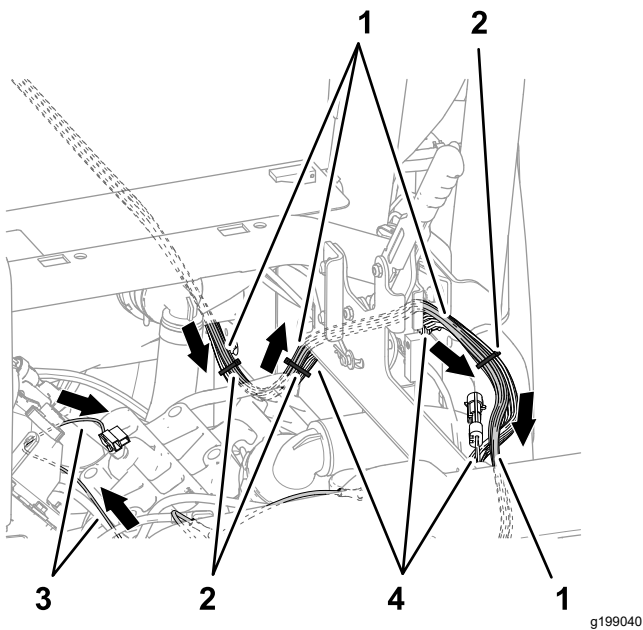
g199039

**Figure 54**

Bottom of the machine

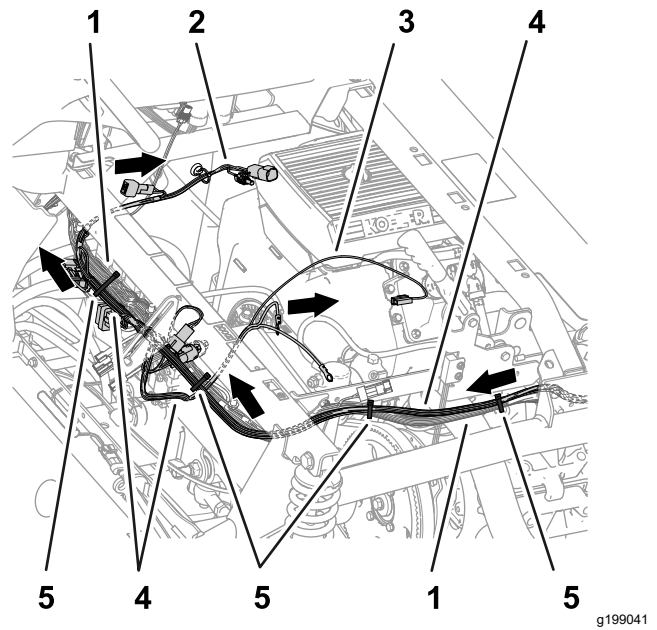
- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. Rear harness 457 cm (180 inches)</li> <li>2. Machine wire harness</li> <li>3. Front of the machine</li> </ol> | <ol style="list-style-type: none"> <li>4. Left frame channel</li> <li>5. Cable tie</li> </ol> |
|---|---|

- 
3. Route the 84 cm (33 inches), 60 cm (23-1/2 inches), and 66 cm (26 inches) wire-harness branches of the rear harness along the machine wire harness, outboard of the parking-brake assembly.



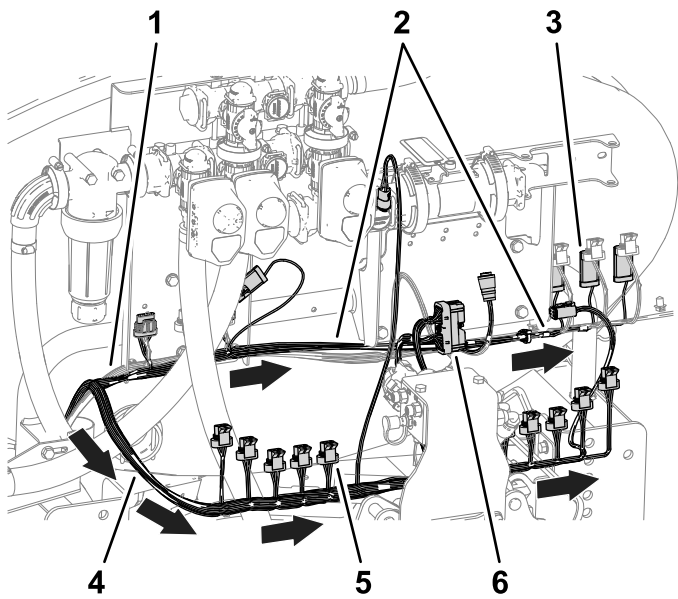
**Figure 55**

- |                                     |  |
|-------------------------------------|--|
| 1. Rear harness 457 cm (180 inches) | 3. 60 cm (23-1/2 inches) wire-harness branch—TO BATTERY POSITIVE, battery negative, and alternator |
| 2. Cable ties                       | 4. Machine wire harness  |
- 
4. Route the 84 cm (33 inches), 60 cm (23-1/2 inches), and 66 cm (26 inches) wire-harness branches of the rear harness across the shock-support tube.



**Figure 56**

- |  |                                     |
|--|-------------------------------------|
| 1. Machine wire harness  | 4. Rear harness 457 cm (180 inches) |
| 2. 66 cm (26 inches) wire-harness branch—ASC 10 ENABLE RELAY, 50 A FUSE, DIODE, SW'D PWR FOR GEN 2 TOPCON, and ASC 10 power and CAN from X25 | 5. Cable ties                       |
| 3. 60 cm (23-1/2 inches) wire-harness branch—TO BATTERY POSITIVE, battery negative, and alternator   |                                     |
- 
5. Secure the rear harness to the machine wire harness.
6. At the back of the machine, route the 89 cm (35 inches) wire-harness branch forward of the lift manifold, and to the right of the flow meter.



**Figure 57**

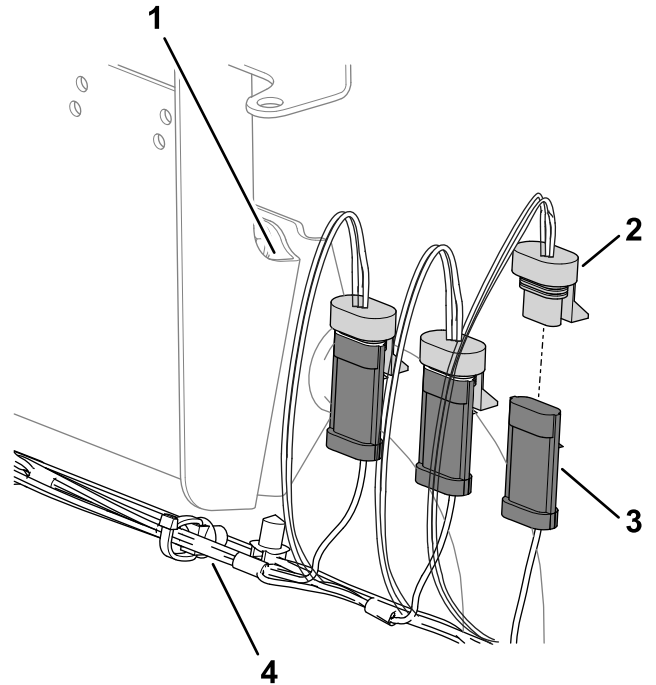
g491759

- |  |  |
|--|--|
| 1. Machine wire harness  | 4. 3-socket connector (NOZZLE VALVE 5)   |
| 2. 89 cm (35 inches) wire-harness branch—RATE VALVE, MASTER VALVE, FLOW METER, LEFT SPRAY, CENTER SPRAY, and RIGHT SPRAY | 5. 102 cm (40 inches) wire-harness branch—ASC10 and NOZZLE-VALVES 1 through 10 |
| 3. 3-pin connector (CENTER SPRAY)  | 6. 40-socket connector (ASC 10)  |

7. Route the 102 cm (40 inches) wire-harness branch rearward of the lift manifold and to the right.

## Connecting the Left, Center, and Right Spray-Valve Connectors

1. Connect the 3-pin connector of the 89 cm (35 inches) rear harness branch labeled LEFT SPRAY to the 3-socket connector of the machine wire harness labeled LEFT SPRAY VALVE.



**Figure 58**

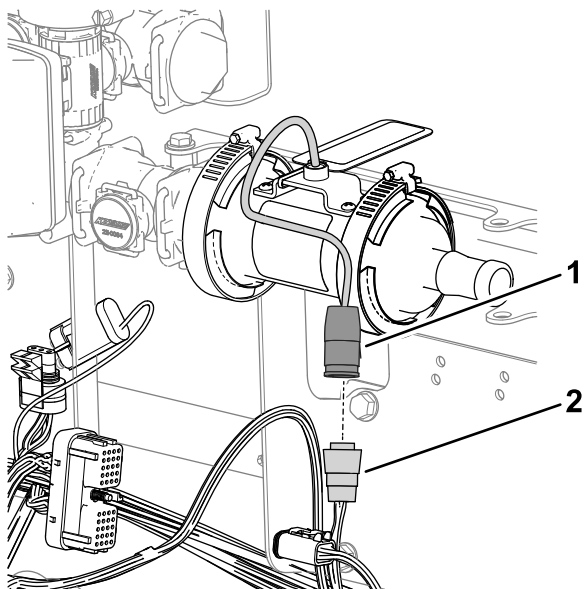
g491761

- |   |   |
|---|---|
| 1. Valve-mount bracket  | 3. 3-pin connector (machine wire harness—RIGHT SPRAY VALVE) |
| 2. 3-socket connector—89 cm (35 inches) rear harness branch (RIGHT SPRAY) | 4. Push-in fastener   |

2. Connect the 3-pin connector rear harness labeled CENTER SPRAY to the 3-socket connector of the machine wire harness labeled CENTER SPRAY VALVE.
3. Connect the 3-pin connector of the rear harness labeled RIGHT SPRAY to the 3-socket connector of the machine wire harness labeled RIGHT SPRAY VALVE.
4. Insert the push-in fastener of the rear harness into the hole in the flange of the valve-mount bracket.

# Connecting the Flow Meter, Master Section Valve, and Rate Valves Electrical Connectors

1. Connect the 3-socket electrical connector of the 89 cm (35 inches) rear harness branch labeled FLOW METER into the 3-pin connector of the flow meter.

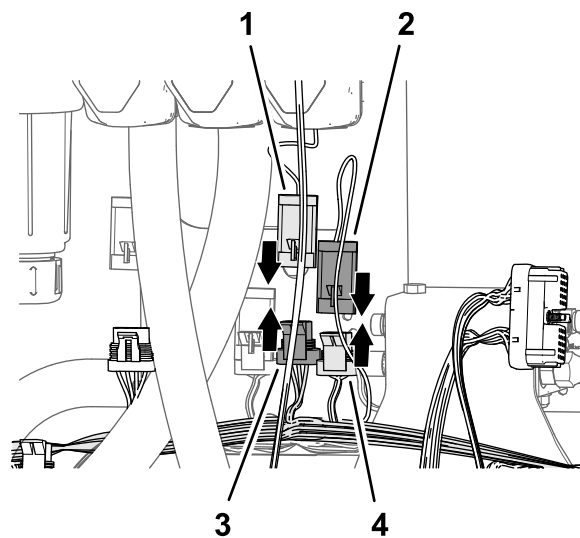


**Figure 59**

g491762

1. 3-pin connector (flow meter)
2. 3-socket electrical connector (89 cm (35 inches) rear harness branch—FLOW METER)

2. Connect the 3-pin connector of the 89 cm (35 inches) rear harness branch labeled MASTER VALVE into the 3-socket connector of the machine wire harness labeled MASTER SPRAY VALVE.

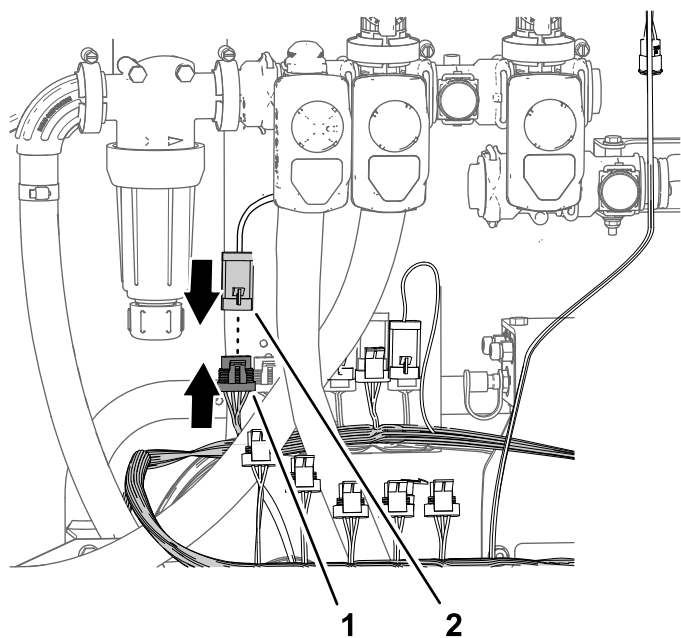


**Figure 60**

g491752

1. 3-pin connector (actuator—MASTER-SPRAY VALVE)
2. 3-pin connector (89 cm (35 inches) rear sprayer-harness branch—MASTER VALVE)
3. 3-pin connector (89 cm (35 inches) rear sprayer-harness branch—MASTER VALVE)
4. 3-socket connector (machine wire harness—MASTER SPRAY VALVE)

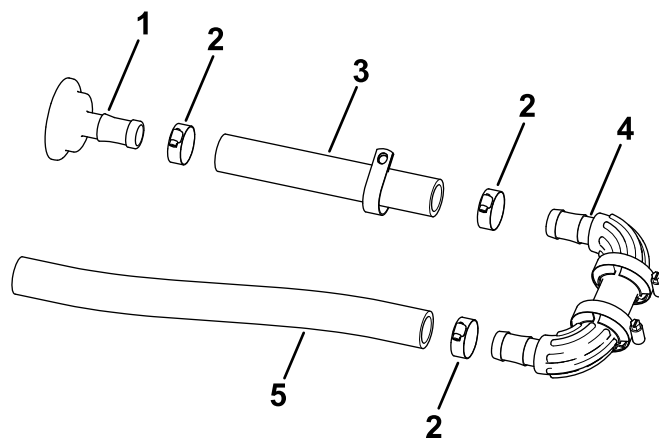
3. Connect 3-pin connector of the actuator for the master-spray valve into the 3-socket connector of the 89 cm (35 inches) rear harness branch labeled MASTER VALVE.
4. Connect the 4-pin connector of the actuator for the rate valve into the 4-socket connector of the 89 cm (35 inches) rear harness branch labeled RATE VALVE.



**Figure 61**

g491806

1. 4-socket connector—89 cm (35 inches) rear harness branch—RATE VALVE)
2. 4-pin connector (actuator—RATE VALVE)



g491807

**Figure 62**

1. Straight-hose barb (1 x 2 inches)
2. Hose clamp (3/4 to 1-1/2 inches)
3. Hose (1 x 8-1/2 inches)
4. Manifold
5. Hose (1 x 16 inches)

2. Assemble the other end of the hose (1 x 8-1/2 inches) onto the barbed fitting of the manifold with a hose clamp and tighten the hose clamp by hand.
3. Assemble the hose (1 x 16 inches) onto the other barbed fitting of the manifold with a hose clamp, and tighten the clamp by hand.

# 11

## Assembling the Flow-Meter Manifold

Parts needed for this procedure:

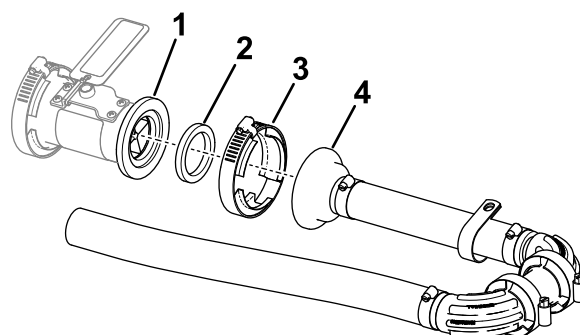
1	Straight-hose barb (1 x 2 inches)
3	Hose clamp (3/4 to 1-1/2 inches)
1	Hose (1 x 8-1/2 inches)
1	Manifold
1	Hose (1 x 16 inches)

### Assembling the Manifold

1. Assemble hose (1 x 8-1/2 inches) on to the straight-hose barb (1 x 2 inches) with a hose clamp (3/4 to 1-1/2 inches), and tighten the clamp by hand.

### Assembling the Manifold to the Flow Meter

1. Assemble the straight-hose barb (1 x 2 inches) to the flange of the flow meter with the gasket 38 mm (1-1/2 inches) and flange clamp 51 mm (2 inches).



g491809

**Figure 63**

1. Flange (flow meter)
2. Gasket 38 mm (1-1/2 inches)
3. Flange clamp 51 mm (2 inches)
4. Straight-hose barb (1 x 2 inches)

2. Tighten the flange clamp by hand.

# 12

## Installing the Bypass Hoses to the Tank

Parts needed for this procedure:

1	Bypass hose assembly
1	Shutoff valve

### Assembling the Bypass Hoses to the Tank

1. Align the bypass hose assembly to the tank.

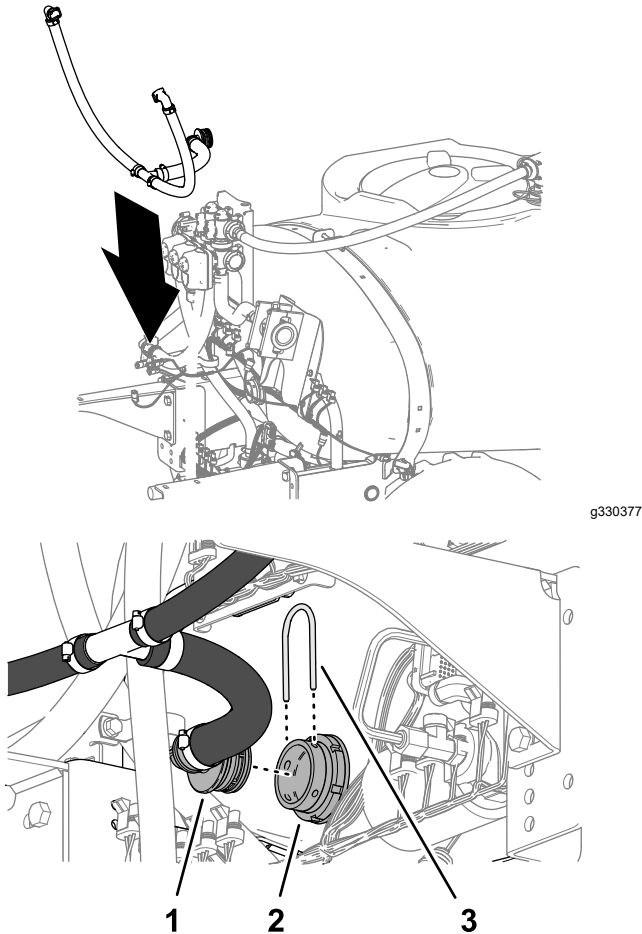


Figure 64

1. 90° barbed fitting (bypass hose assembly)
  2. Bulkhead fitting (spray tank)
  3. Retainer
2. Secure the 90° barbed fitting to the bulkhead fitting of the tank with a retainer.

# 13

## Installing the Modified Center-Boom Section

No Parts Required

### Procedure

Lifting-equipment capacity: 55 kg (120 lb)

1. Using lifting equipment with the specified lift capacity, raise the center-boom section and align the boom section with the holes in the support brackets.

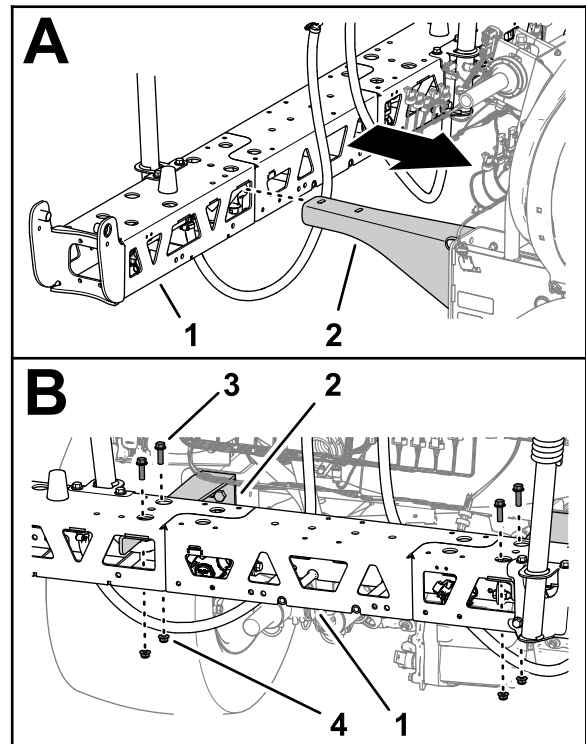


Figure 65

1. Center-boom section
  2. Support bracket
  3. Flange-head bolt (3/8 x 1-1/4 inches)
  4. Flange locknut (3/8 inch)
2. Assemble the center-boom section to the support brackets with the 4 flange-head bolts (3/8 x 1-1/4 inches) and 4 flange locknuts (3/8 inch).
  3. Torque the nuts and bolts to 37 to 45 N·m (27 to 33 ft-lb).

# 14

## Assembling the Lift Cylinder Manifold to the Cylinder Mount

No Parts Required

### Procedure

1. Untie the lift manifold from the valve-mount bracket.
2. Align the holes in the support bracket for the section-lift manifold with the holes in the cylinder mount.

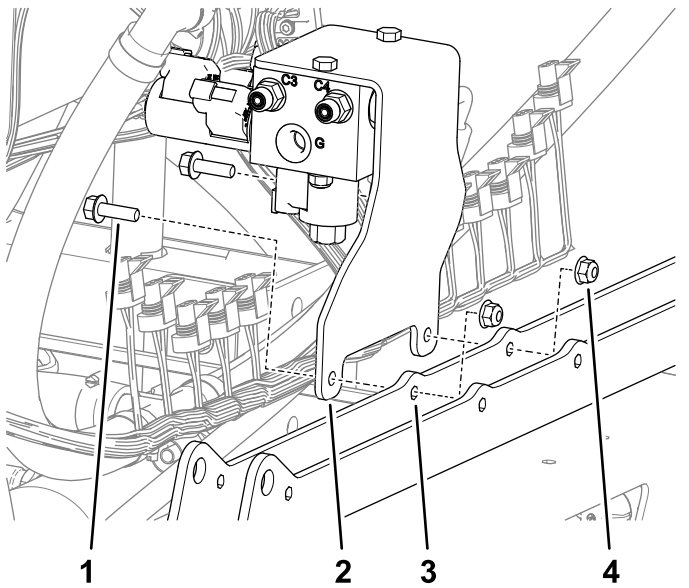


Figure 66

1. Flange-head bolt (5/16 x 1 inch)
2. Support bracket (section-lift manifold)
3. Cylinder mount
4. Flange locknut (5/16 inch)

3. Assemble the support bracket to the cylinder mount with the 2 flange-head bolts (5/16 x 1 inch) and flange locknuts (5/16 inch).
4. Torque the bolts and nuts to 1978 to 2542 N·cm (175 to 225 in·lb).

# 15

## Installing the Valve Mount, Rate/Section Controller, and Section Valves

Parts needed for this procedure:

1	Valve mount and valve assembly
1	Rate/section controller
4	Magnet
4	Bolt (#8)
2	Washer (1/4 inch)
4	Flat washer
4	Locknut (#8)
2	Cap (quick-disconnect fitting)
8	Flange-head bolts (5/16 x 3/4 inch)
8	Flange locknuts (5/16 inch)
1	Hose clamp
1	Push-in fastener (cable tie)
3	Push-in fastener (connector anchor)

### Installing the Controller to the Valve Mount

1. Secure the magnets to the controller using 4 bolts (#8), 2 washers (1/4 inch), 4 flat washers, and 4 locknuts (#8).

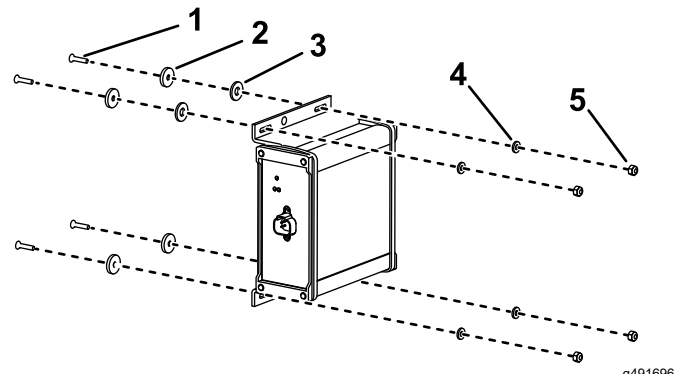


Figure 67

1. Bolt (#8)
2. Magnet
3. Washer (1/4 inch)
4. Flat washer
5. Locknut (#8)

2. Place the controller assembly onto the valve mount.

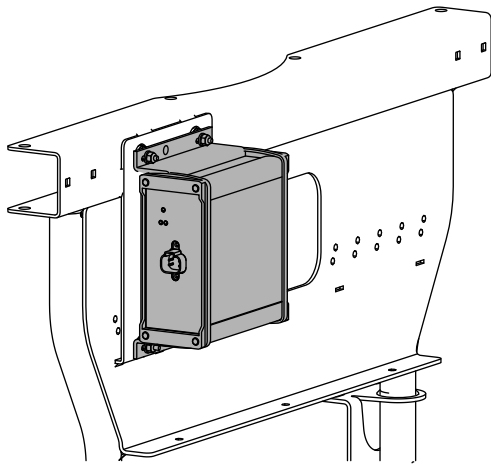


Figure 68

g491697

valve of section valve 7 with the previously removed retainer.

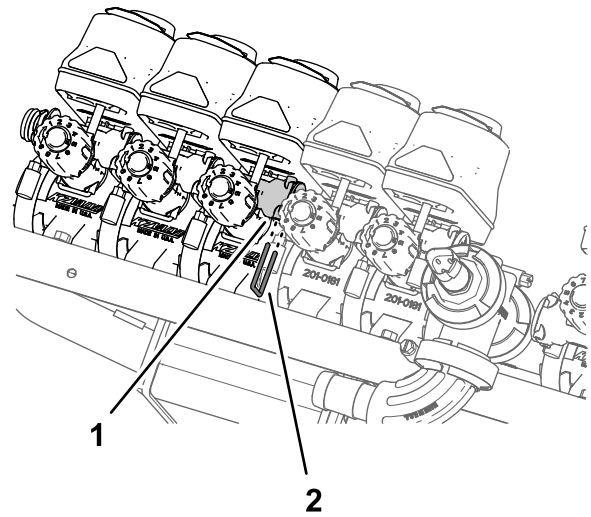


Figure 70

g199386

1. Quick-disconnect coupling
2. Retainer (socket—bypass valve)

## Assembling the 3 Section Valves to the Valve Mount

1. Align the 3 section valves onto the flange of valve 7 of the spray valve assembly.

**Important:** The left, center, and right section valves are identified in the GeoLink sprayer system as follows: left section valve—nozzle 8, center section valve—nozzle 9, and right section valve—nozzle 10.

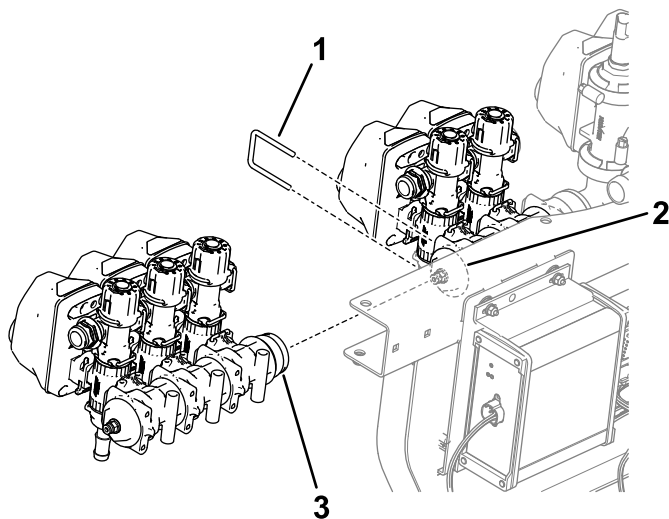


Figure 69

g491811

1. Retainer
2. Flange—section valve 7 (GeoLink spray valve assembly)
3. Flange—section valve (left spray section—nozzle valve 8)

3. Assemble the section valves to the valve mount with the previously removed 2 hex-head bolts (1/4 x 3 inches), 4 washers (1/4 inch), and 2 locknuts (1/4 inch).

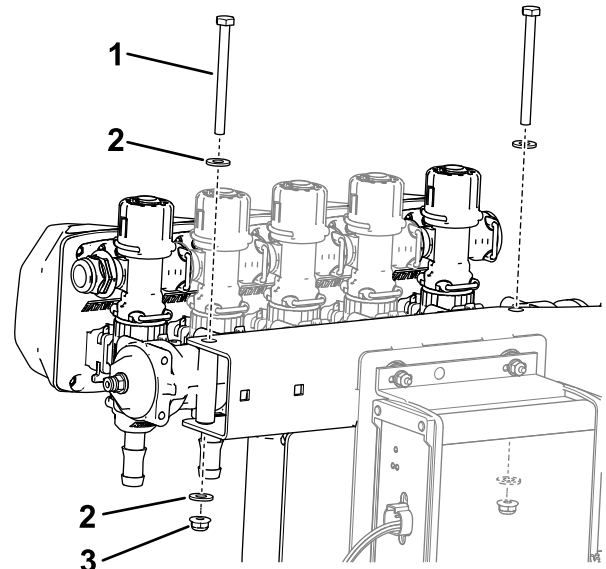


Figure 71

g491812

1. Flange-head bolt (1/4 x 3 inches)
2. Washer (1/4 inch)
3. Locknut (1/4 inch)

2. Secure the socket of the quick-disconnect coupling for the bypass valve of section valve 8 to the quick-disconnect coupling for the bypass

4. Torque the flange-head bolts and locknuts to 1017 to 1243 N·m (90 to 120 in-lb).

# Assembling the Valve Mount and Section Valve Assembly to the Machine

Lifting-equipment capacity: 23 kg (50 lb)

- Using lifting equipment with the specified capacity, lift the valve mount and section valve assembly and align it over the center-boom section.

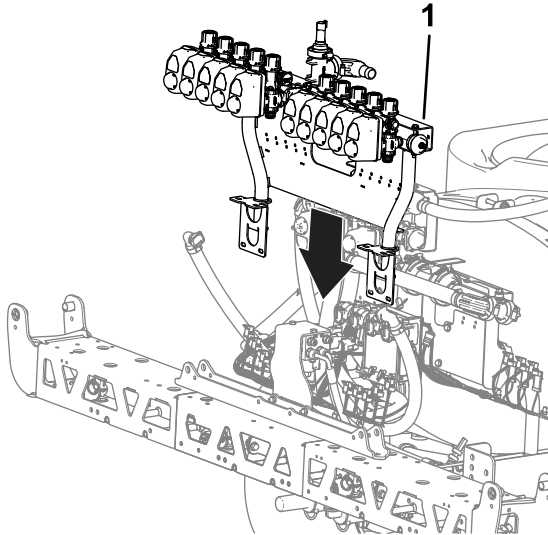


Figure 72

g491824

- Valve mount and sprayer-valve assembly
- Align the holes on the mount bracket of the valve mount to the holes on the truss frame of the center-boom section.

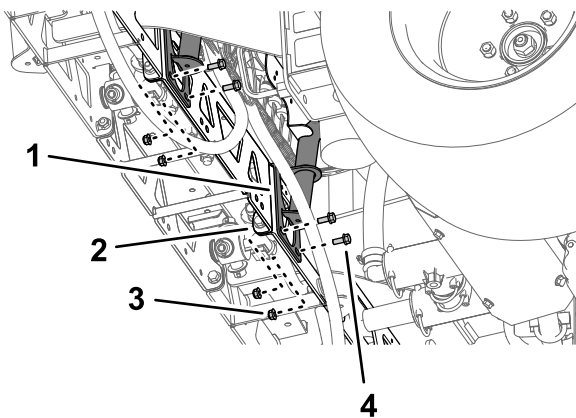


Figure 73

g199540

- Bracket (valve mount)
- Truss frame (center-boom section)
- Flange locknut (5/16 inch)
- Flange-head bolt (5/16 x 3/4 inch)

- Assemble the valve mount to the truss frame with 4 bolts (5/16 x 3/4 inch) and 4 flange locknuts (5/16 inch).

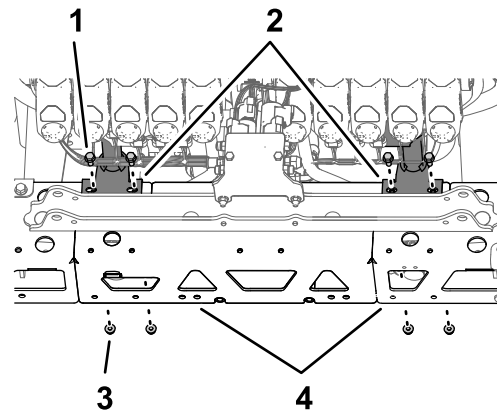


Figure 74

g492871

- Flange-head bolt (5/16 x 3/4 inch)
- Bracket (valve mount)
- Flange locknut (5/16 inch)
- Truss frame (center spray section)

- Repeat steps 2 through 3 for the other mount bracket of the valve mount at the other truss frame.
- Torque the flange-head bolts and flange locknuts to 1978 to 2542 N·cm (175 to 225 in-lb).

## Assembling the Hose to the Valve Manifold

- Assemble the hose (1 x 16 inches) over the 90° flange fitting (1 inch).

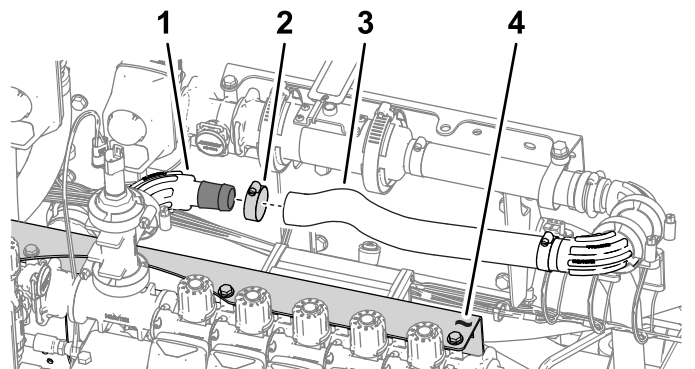


Figure 75

g491825

- 90° flange fitting (1 inch)
- Hose clamp
- Hose (1 x 16 inches)
- Valve mount

- Secure the hose to the flange fitting with a hose clamp.

## Installing the Section Bypass Hoses

1. Remove the retainers from the sockets of the quick-connect fittings.
2. Assemble the quick-connect fitting of the bypass hose to the quick disconnect fitting at the bypass valve at section valve 10.

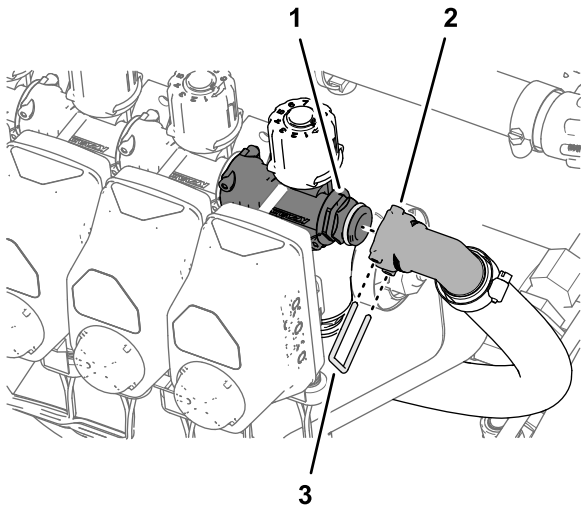


Figure 76

g491754

- |  |             |
|--|-------------|
| 1. Quick disconnect fitting (bypass valve) | 3. Retainer |
| 2. Socket—quick-connect fitting            |             |

3. Secure the quick-disconnect fittings for the bypass hose and the bypass valve with the retainer.
4. Repeat steps 1 through 3 for the quick disconnect fittings at section valve 1.

# 16

## Connecting the Rear Harness at the Back of the Machine

No Parts Required

### Connecting the Section Valve Electrical Connectors

1. Assemble the push-in fasteners of the valve actuator electrical-connectors into the holes in the valve mount.

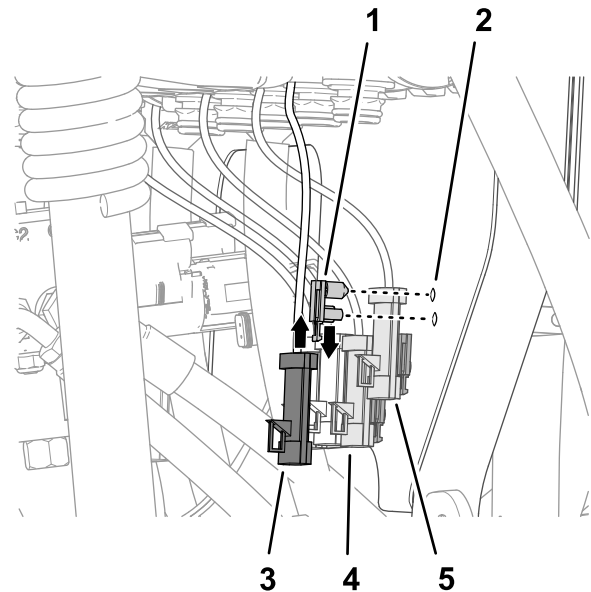


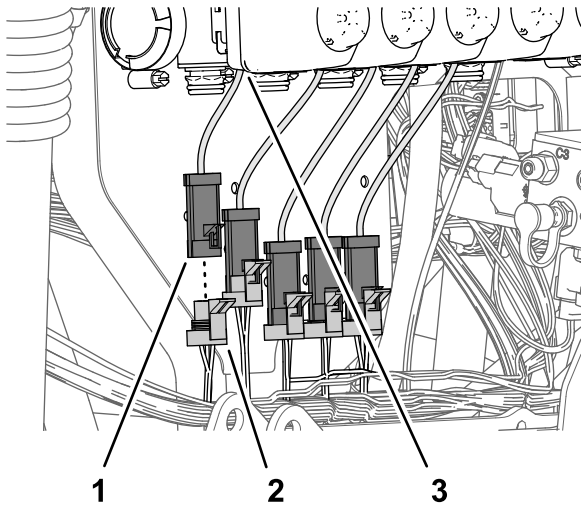
Figure 77

g199981

- |   |  |
|---|--|
| 1. Push-in fastener (valve actuator electrical-connector) | 4. 3-pin connector (valve actuator—position 8) |
| 2. Valve mount  | 5. 3-pin connector (valve actuator—position 9) |
| 3. 3-pin connector (valve actuator—position 10)           |  |

2. Connect 3-socket connector of the 89 cm (35 inches) rear harness branch labeled NOZZLE VALVE 1) into the 3-pin connector of the left most valve actuator (position 1).

**Note:** The valve actuator positions 1 through 10 are arranged from left to right when standing behind the machine.



**Figure 78**

g199980

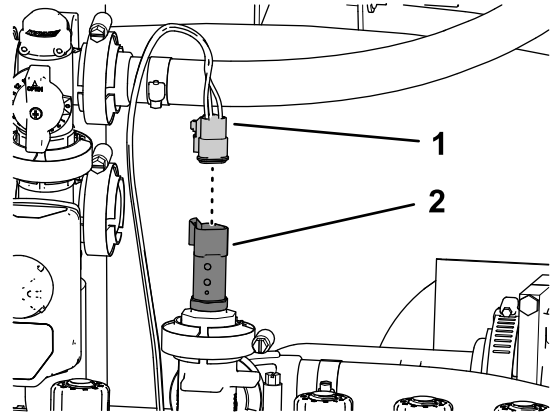
1. 3-pin connector (valve actuator—position 1)
2. 3-socket connector—89 cm (35 inch) rear harness branch (NOZZLE VALVE 1)
3. Valve actuator (position 1)

3. Connect 3-socket connector of the 89 cm (35 inches) rear harness branch NOZZLE VALVE 2) into the 3-pin connector of the valve actuator (position 2).
4. Connect the remaining 3-socket connectors of the 89 cm (35 inches) rear harness branch into the 3-pin connector of the valve actuators.

**Note:** Ensure that the 3-socket connector are connected to the related valve actuator position.

## Connecting the Rear Harness to the Pressure Transducer

Insert the 3-socket connector 61 cm (24 inches) branch of the rear harness labeled PRESSURE TRANSDUCER GREEN WEDGE into the 3-pin connector of the pressure transducer.



**Figure 79**

g200254

1. 3-socket connector—61 cm (24 inches) rear harness branch (PRESSURE TRANSDUCER GREEN WEDGE)
2. 3-pin connector (pressure transducer)

## Connecting the Rear Harness to the ASC 10

1. Insert the 40-socket connector of the 102 cm (40 inches) branch of the rear harness into the 40-pin connector of the ASC 10 spray controller.

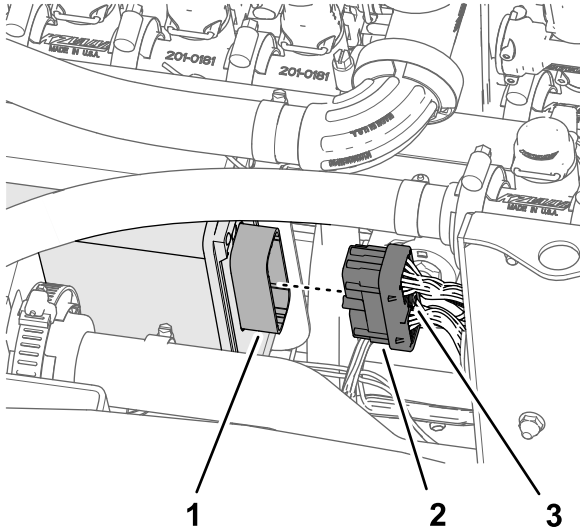


Figure 80

g281673

1. 40-pin connector (ASC 10 spray controller)
  2. 40-socket connector (102 cm (40 inches) wire-harness branch)
  3. Thumbscrew
2. Thread the thumb screw of the 40-socket connector into the ASC 10 connector by hand.
  3. Insert the 4-socket connector of the rear harness labeled TO ASC 10 into the 4-pin connector of the ASC 10 spray controller.

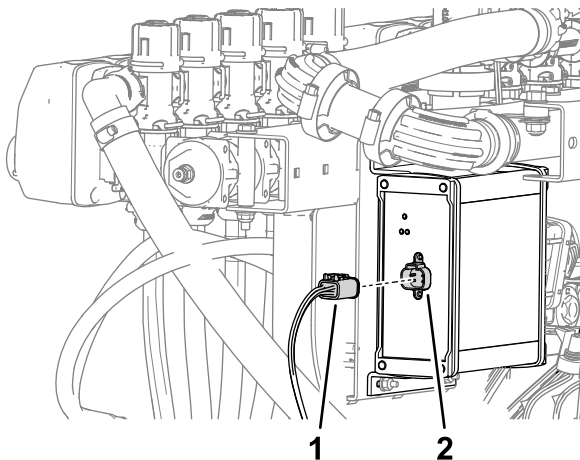


Figure 81

g491826

1. 4-socket connector (TO ASC 10)
2. 4-pin connector (ASC 10 spray controller)

# 17

## Assembling the Boom-Lift Cylinders

Parts needed for this procedure:

- |   |                                      |
|---|--------------------------------------|
| 4 | Hydraulic hose (1/4 x 24-3/4 inches) |
|---|--------------------------------------|

### Assembling the Lift Cylinders

1. Align the fixed end of the lift cylinder to the 16 mm (5/8 inch) hole in the cylinder mount.

**Note:** Ensure that the extend and retract ports of the cylinder align up.

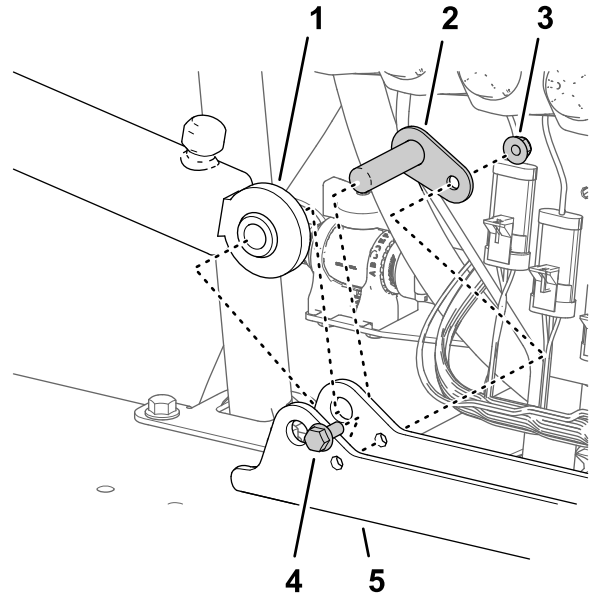


Figure 82

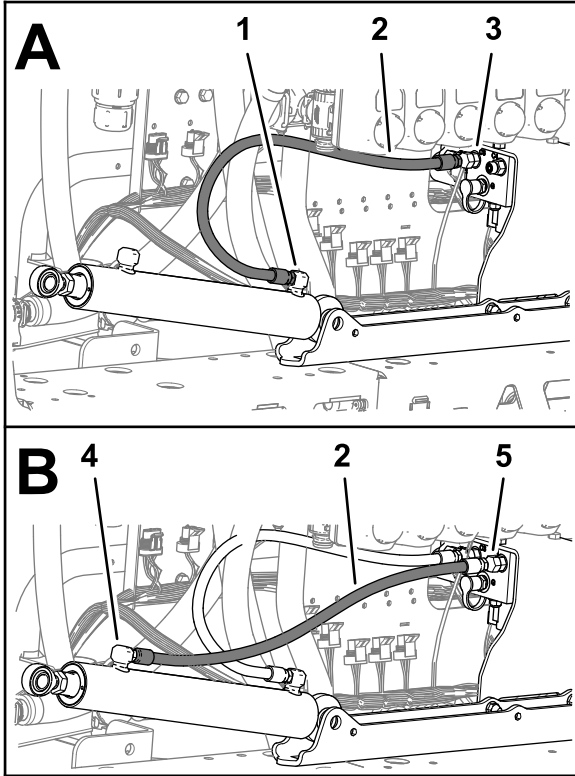
g200002

1. Lift cylinder (fixed end)
2. Pivot pin
3. Flange locknut (5/16 inch)
4. Flange-head bolt (5/16 x 3/4 inch)
5. Cylinder mount

2. Assemble the cylinder to the cylinder mount with the pivot pin, flange-head bolt, and flange nut.
3. Torque the bolt and nut to 1978 to 2542 N·cm (175 to 225 in-lb).
4. Repeat steps 1 through 3 for the other lift cylinder at the other side of the cylinder mount.

# Installing the Lift-Cylinder Hoses

1. Loosely assemble a new hydraulic hose (1/4 x 24-3/4 inches) between the extend port of the left-boom lift cylinder and port C3 of the boom lift manifold.

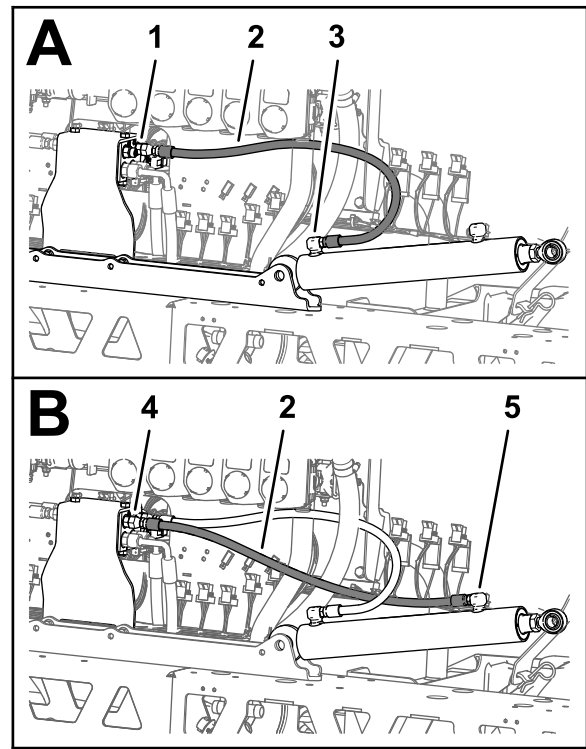


**Figure 83**

g491837

- |  |   |
|--|---|
| 1. Extend port (left-boom lift cylinder) | 4. Retract port (left-boom lift cylinder) |
| 2. Hydraulic hose (1/4 x 24-3/4 inches)  | 5. Port C4 (boom lift manifold)           |
| 3. Port C3 (boom lift manifold)          |   |

2. Loosely assemble a new hydraulic hose (1/4 x 24-3/4 inches) between the retract port of the left-boom lift cylinder and port C4 of the boom lift manifold.
3. Loosely assemble a new hydraulic hose (1/4 x 24-3/4 inches) between the extend port of the right-boom lift cylinder and port C1 of the boom lift manifold.



g491838

**Figure 84**

- |   |  |
|---|--|
| 1. Port C1 (boom lift manifold)           | 4. Port C2 (boom lift manifold)            |
| 2. Hydraulic hose (1/4 x 24-3/4 inches)   | 5. Retract port (right-boom lift cylinder) |
| 3. Extend port (right-boom lift cylinder) |  |

4. Loosely assemble a new hydraulic hose (1/4 x 24-3/4 inches) between the retract port of the right-boom lift cylinder and port C2 of the boom lift manifold.
5. Torque the hose fittings at the extend and retract ports of the lift cylinders to 21 to 26 N·m (15 to 19 ft-lb).
6. Torque the swivel nuts of the hoses at the boom lift manifold to 24 to 30 N·m (17 to 22 ft-lb).

# 18

## Installing the Outer-Boom Sections

Parts needed for this procedure:

4	Nylon-flange bushing
1	Supply-hose assembly 188 cm (74 inches)
1	Supply-hose assembly 234 cm (92 inches)
1	Supply-hose assembly 279 cm (110 inches)

## Removing the Turrets from the Outer-Boom Sections

1. Cut the hose between 2 turrets.

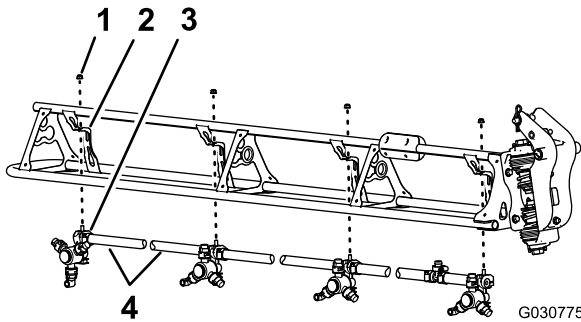


Figure 85

- |                               |                                    |
|-------------------------------|------------------------------------|
| 1. Flange locknut (5/16 inch) | 3. Turret                          |
| 2. Turret mount               | 4. Hose (3/4 inch inside diameter) |

2. Remove the flange locknut (5/16 inch) that secures the turret to the turret mount.
3. Repeat the steps for the other 3 turrets.  
**Note:** Retain the flange locknut and turrets.  
**Note:** Discard the hoses, clamps, and T-fitting.
4. Repeat the steps for the other outer-boom section.
5. Remove the stainless steel screws (#12 x 1-1/4 inches) that secures the upper clamp halves and the double or single barbed-hose shanks (3/4 inch) to the body of each of the sprayer nozzle, and remove the barbed-hose shanks.

**Note:** The hex-head bolt (5/16 x 3/4 inch—stainless steel) will separate from the

upper clamp half when you open the clamp, retain the bolt for installation.

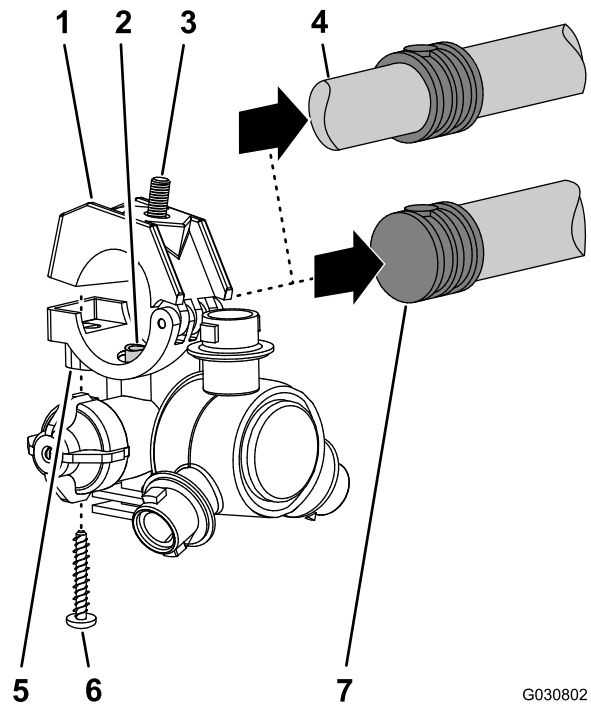


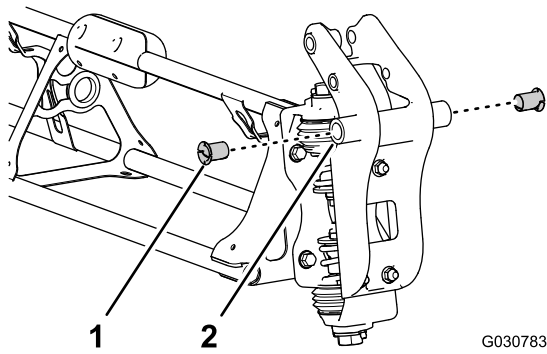
Figure 86

- |  |   |
|--|---|
| 1. Upper clamp half                                | 5. Turret                                     |
| 2. Transfer tube                                   | 6. Stainless steel screw (#12 x 1-1/4 inches) |
| 3. Hex-head bolt (5/16 x 3/4 inch—stainless steel) | 7. Single barbed-hose shank (3/4 inch hose)   |
| 4. Double barbed-hose shank (3/4 inch hose)        |   |

## Assembling the Outer-Boom Sections to the Machine

Lift equipment capacity: 46 kg (100 lb)

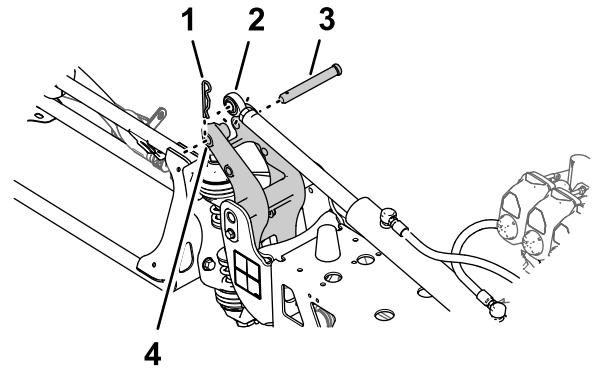
1. Using lift equipment with the specified capacity, raise the outer boom.
2. Insert a nylon-flange bushing into the 31.8 mm (1-1/4 inches) hole at each side of the pivot fitting.



G030783 g030783

**Figure 87**

1. Nylon-flange bushing
2. Pivot fitting (outer-spray section)

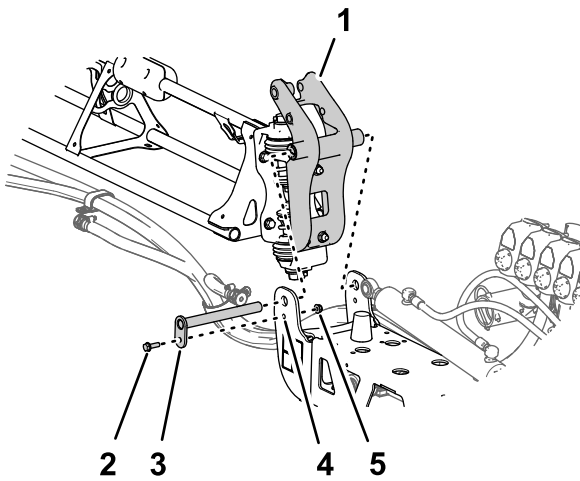


g492870

**Figure 89**

1. Hairpin
2. Rod end (lift cylinder)
3. Clevis pin
4. 25 mm (1 inch) hole—horn of the pivot-fitting

3. Align the bushings in the pivot fitting with the holes in the flanges of the pivot bracket at the end of the center-boom section.



g492869

**Figure 88**

1. Pivot fitting (outer-spray section)
2. Flange bolt (5/16 x 1 inch)
3. Pivot pin
4. Pivot bracket (center-spray section)
5. Flange locknut (5/16 inch)

4. Assemble the pivot fitting to the pivot bracket with the pivot pin, flange bolt (5/16 x 1 inch), and flange locknut (5/16 inch).
5. Torque the bolt and nut to 1978 to 2542 N·cm (175 to 225 in·lb).
6. Align the rod end of the lift cylinder with the hole 25 mm (1 inch) in the horn of the pivot fitting.

7. Secure the lift cylinder to the pivot fitting with the clevis pin and hairpin.
8. Repeat steps 1 through 7 at the outer-boom section at the other side of the machine.

# 19

## Installing the Hoses

### Parts needed for this procedure:

2	Supply hose 279 cm (110 inches)
2	Supply hose 234 cm (92 inches)
4	Supply hose 188 cm (74 inches)
2	Supply hose 81 cm (32 inches)

### Assembling the Hoses to Section Valves

**Note:** Ensure that the barbed fitting is fully seated onto the coupler.

Secure the barbed fittings to the couplers with a retainer.

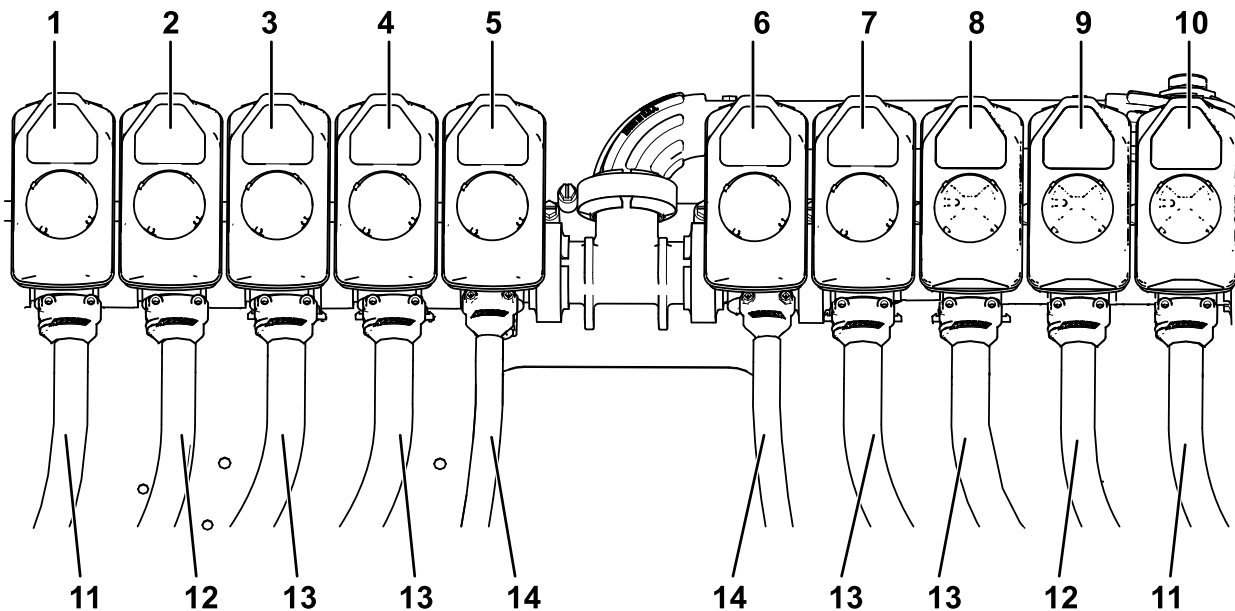


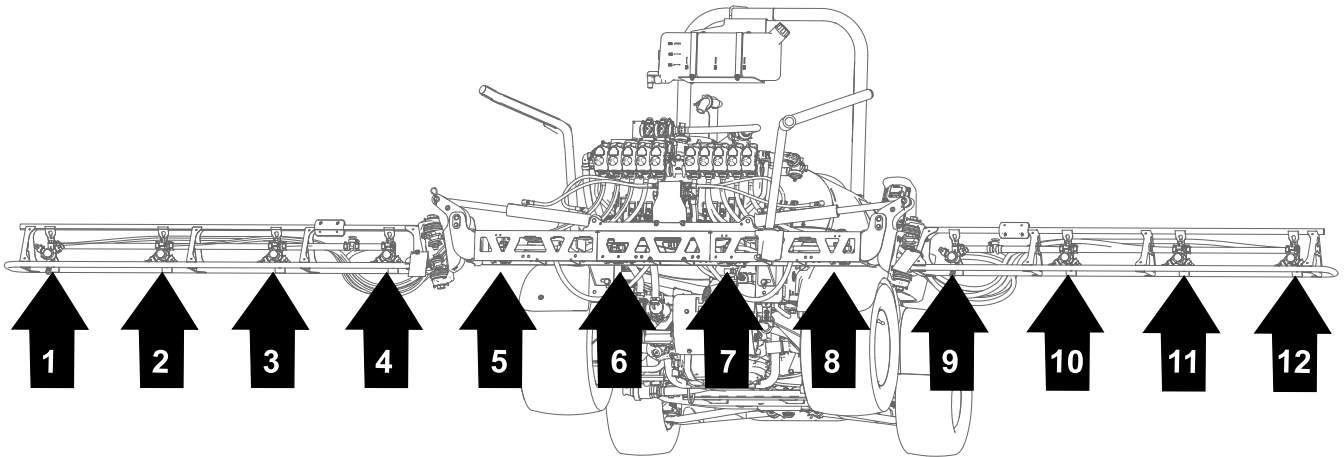
Figure 90

g491701

- |                    |                      |                                     |
|--------------------|----------------------|-------------------------------------|
| 1. Section valve 1 | 6. Section valve 6   | 11. Supply hose 279 cm (110 inches) |
| 2. Section valve 2 | 7. Section valve 7   | 12. Supply hose 234 cm (92 inches)  |
| 3. Section valve 3 | 8. Section valve 8   | 13. Supply hose 188 cm (74 inches)  |
| 4. Section valve 4 | 9. Section valve 9   | 14. Supply hose 81 cm (32 inches)   |
| 5. Section valve 5 | 10. Section valve 10 |                                     |

**Note:** The supply hose assembly 81 cm (32 inches) has a T-fitting with 2 branch hoses and 2 single barbed-hose shanks.

Boom Section	Section valve	Nozzle	Supply Hose
Left	1	1	279 cm (110 inches)
	2	2	234 cm (92 inches)
	3	3	188 cm (74 inches)
	4	4	188 cm (74 inches)
Center	5	5 and 6	81 cm (32 inches)
	6	7 and 8	81 cm (32 inches)
Right	7	9	188 cm (74 inches)
	8	10	188 cm (74 inches)
	9	11	234 cm (92 inches)
	10	12	279 cm (110 inches)

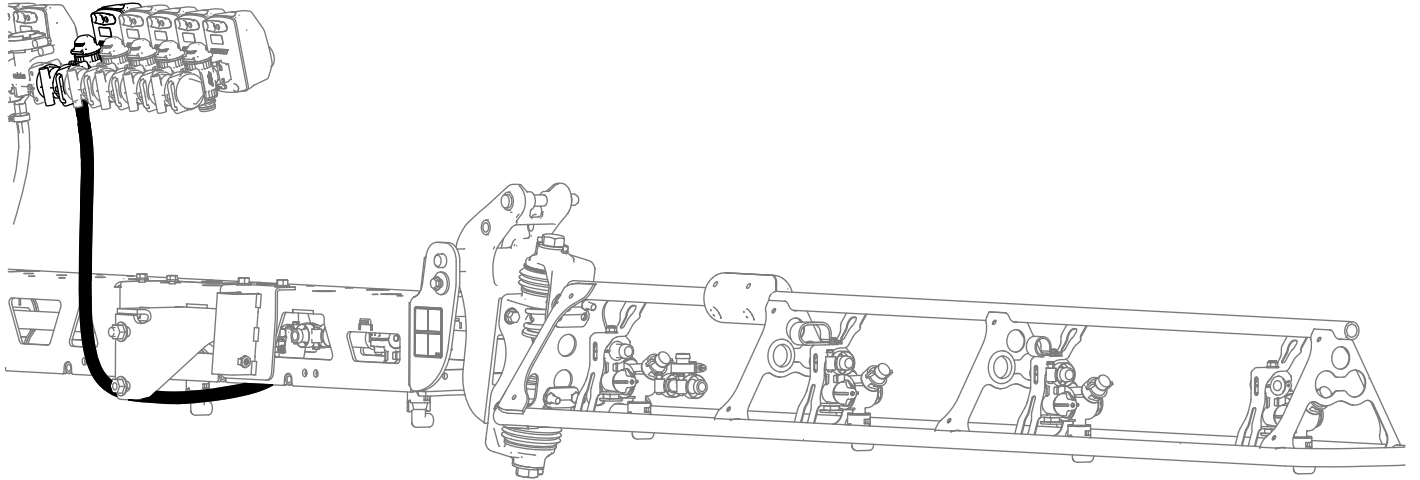


**Figure 91**  
Nozzle Locations

g491702

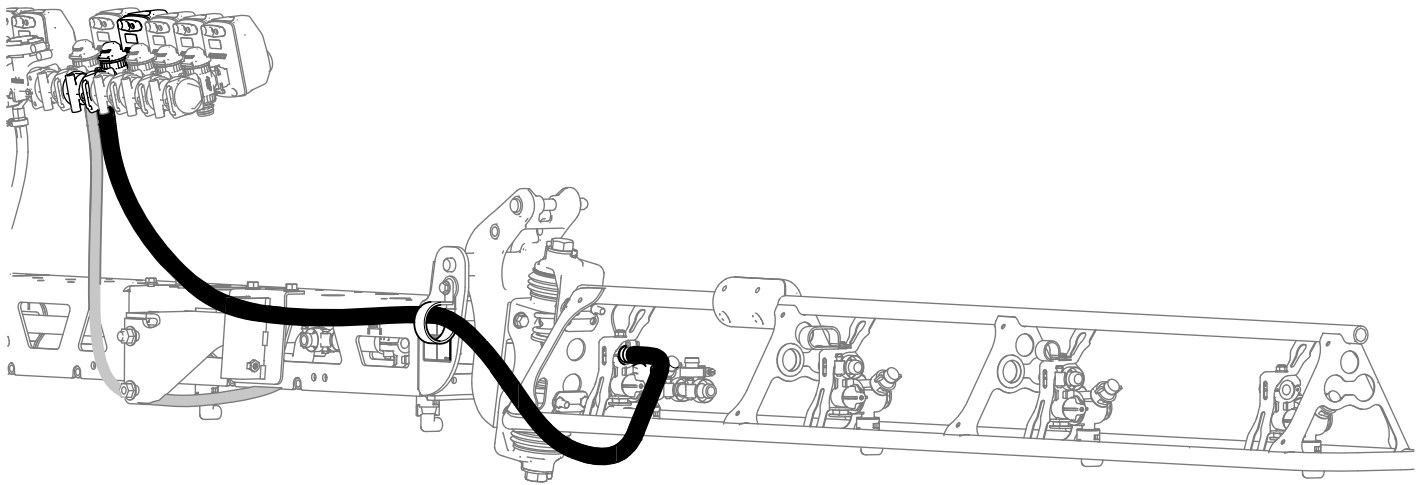
## Routing the Hoses

Use [Figure 92](#) through [Figure 96](#) to route the hoses. Only one side is shown. The routing is the same for both sides.



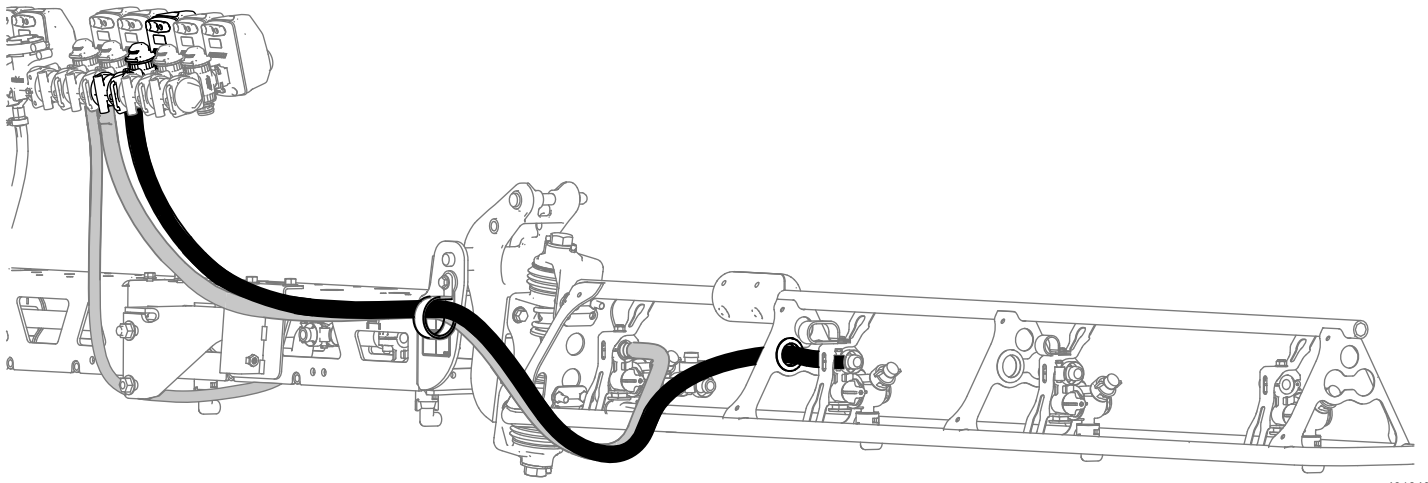
g491703

**Figure 92**  
81 cm (32 inches) hose



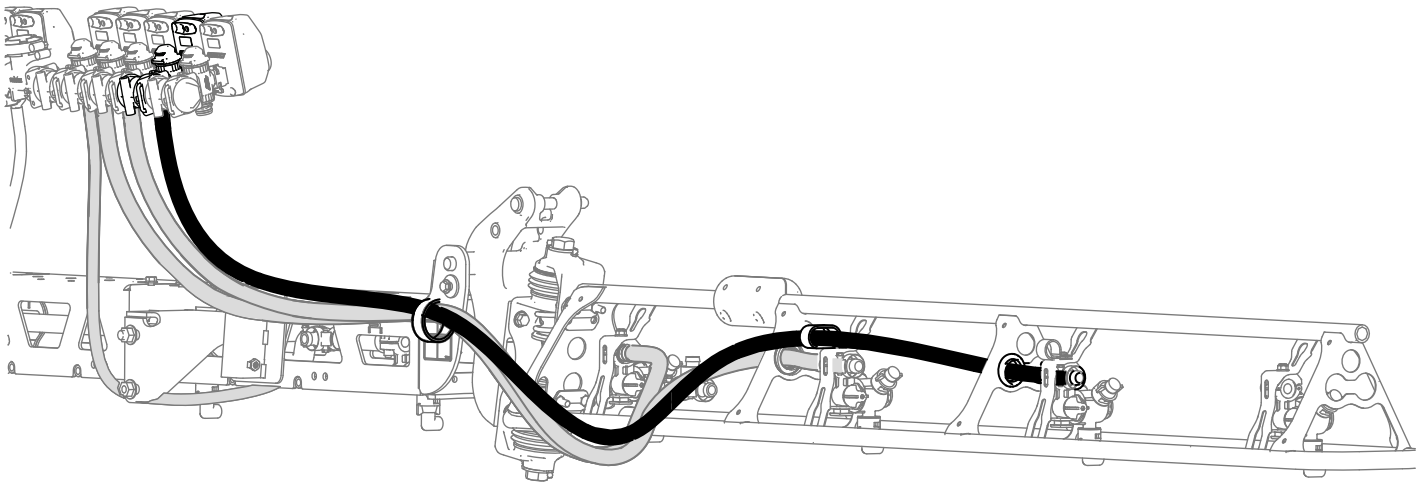
g491704

**Figure 93**  
188 cm (74 inches) hose



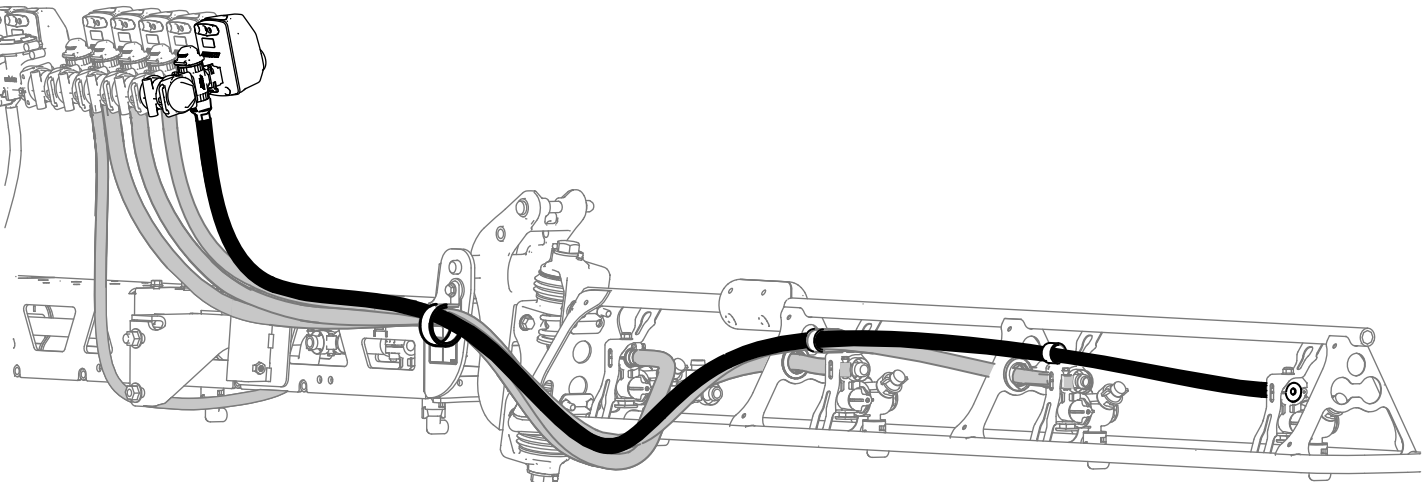
g491840

**Figure 94**  
188 cm (74 inches) hose



g491841

**Figure 95**  
234 cm (92 inches) hose

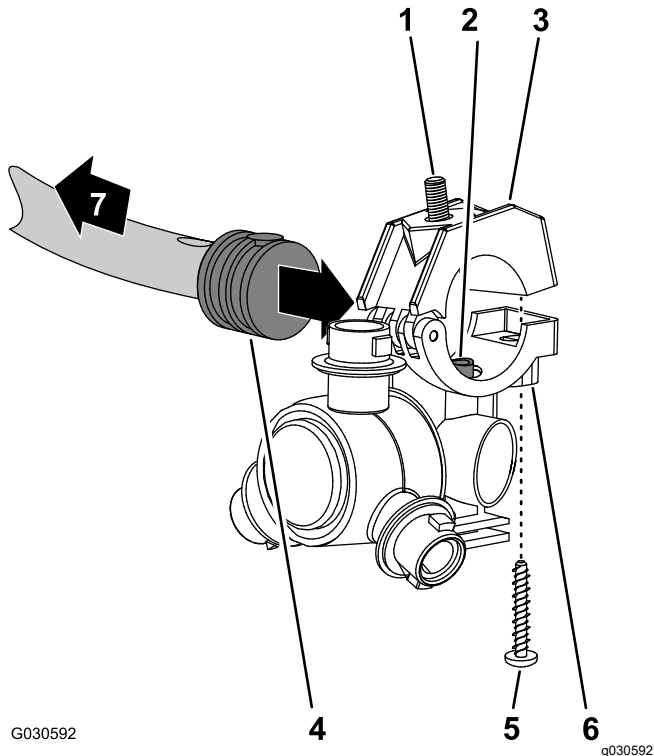


g491842

**Figure 96**  
279 cm (110 inches) hose

## Installing the Turrets at the Outer-Boom Sections

1. Align the transfer tube in the saddle of a turret with the hole in the side of the single barbed-hose shank (1/2 inch).



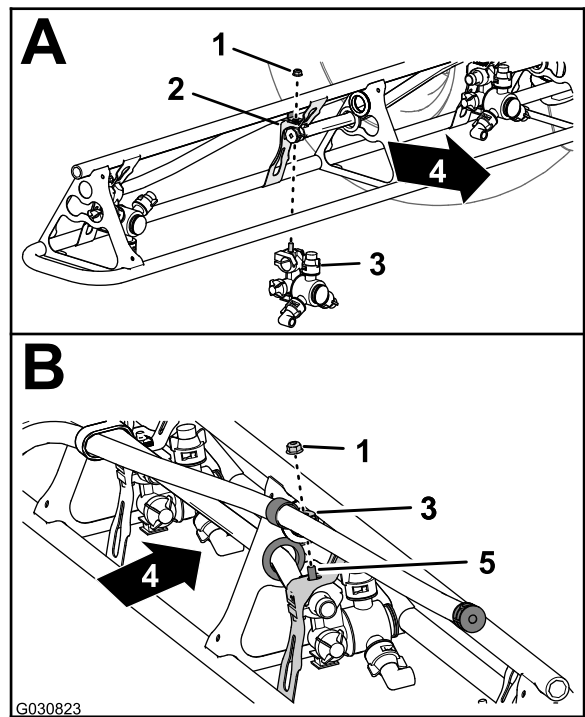
**Figure 97**

- |  |   |
|--|---|
| 1. Hex-head bolt (5/16 x 3/4 inch—stainless steel) | 5. Stainless steel screw (#12 x 1-1/4 inches) |
| 2. Transfer tube                                   | 6. Turret                                     |
| 3. Upper clamp half                                | 7. Toward the spray section                   |
| 4. Single barbed-hose shank (1/2 inch)             |   |

2. Close the upper clamp half around the barbed-hose shank and secure the clamp half and turret body with the stainless steel screw (#12 x 1-1/4 inches); torque the stainless steel screw to 14 to 18 N·m (20 to 25 in-lb).

**Note:** Ensure that the hex-head bolt (5/16 x 3/4 inch) is seated in the recess in the upper clamp half when closing the clamp.

3. Secure the turrets to the mounts using the previously removed flange locknuts (5/16 inch).



**Figure 98**

- |                               |  |
|-------------------------------|--|
| 1. Flange locknut (5/16 inch) | 4. Back of the machine                             |
| 2. Turret mount               | 5. Hex-head bolt (stainless steel—5/16 x 3/4 inch) |
| 3. Turret                     |  |

4. Torque the flange locknut to 1978 to 2542 N·cm (175 to 225 in-lb).

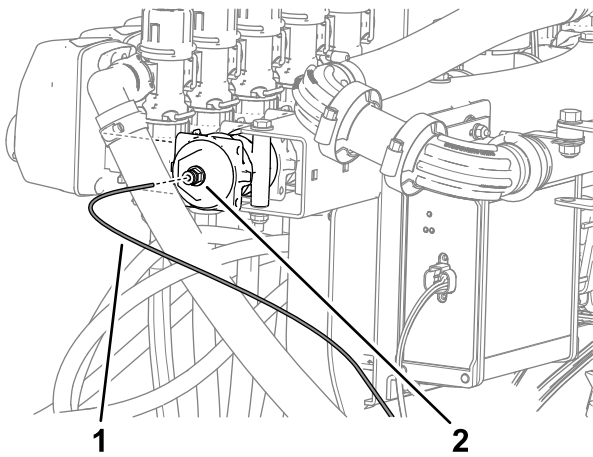
# 20

## Connecting the Pressure-Sense Tube for the Dash Gauge

No Parts Required

### Connecting the Pressure-Sense Tube for the Dash Gauge

Insert the pressure-sense tube into the tube coupler until it is fully seated.

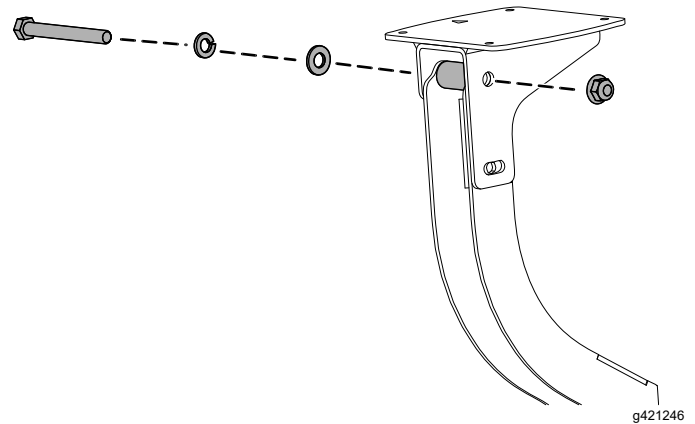


**Figure 99**

g491755

1. Pressure-sense tube
2. Tube coupler (end cap of the right-boom section valve)

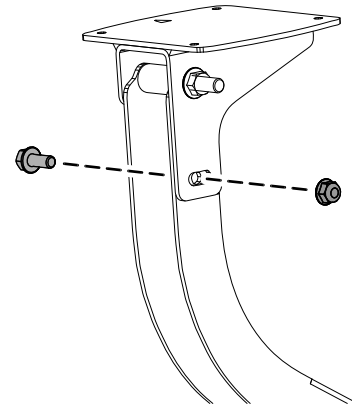
1 washer, 1 spacer (3/8 x 1 inch), and 1 locknut (3/8 inch).



**Figure 100**

g421246

2. Assemble the flange-head bolt (5/16 x 3/4 inch) and flange locknut (5/16 inch) through the smaller hole in the receiver mount and the slot in the receiver plate.



**Figure 101**

g421247

3. Tighten the bolts and nuts so that you can rotate the receiver plate with slight resistance.

## Installing the Navigation Receiver Mount to the Machine

1. Assemble the receiver mount and spacer (3/8 x 7/16 inch) to the roll bar with the flange-head bolt (3/8 x 1-1/2 inches).

# 21

## Installing the Navigation Receiver

Parts needed for this procedure:

1	Navigation-receiver plate
1	Receiver mount
1	Bolt (3/8 x 3-1/4 inches)
1	Lock washer (3/8 inch)
1	Washer (3/8 x 13/16 inch)
1	Spacer (3/8 x 1 inch)
1	Flange locknut (3/8 inch)
1	Flange-head bolt (5/16 x 3/4 inch)
1	Flange locknut (5/16 inch)
2	Flange-head bolt (3/8 x 1-1/2 inches)
2	Spacer (3/8 x 7/16 inch)
1	Navigation receiver
1	Modem antenna bracket
3	Hex-head bolt (5 x 16 mm)
3	Washer (5 mm)

## Assembling the Navigation Receiver Mount

1. Secure the receiver plate to the receiver mount using 1 bolt (3/8 x 3-1/4 inches), 1 lock washer,

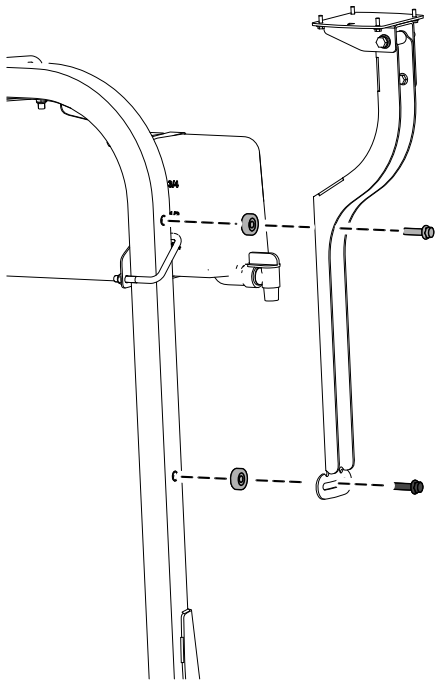


Figure 102

g421248

## Assembling the Navigation Receiver to the Machine

1. Install the receiver onto the mount using 4 bolts (5 x 16 mm) and 4 washers.

**Note:** Ensure that both arrows are pointing toward the front of the machine.

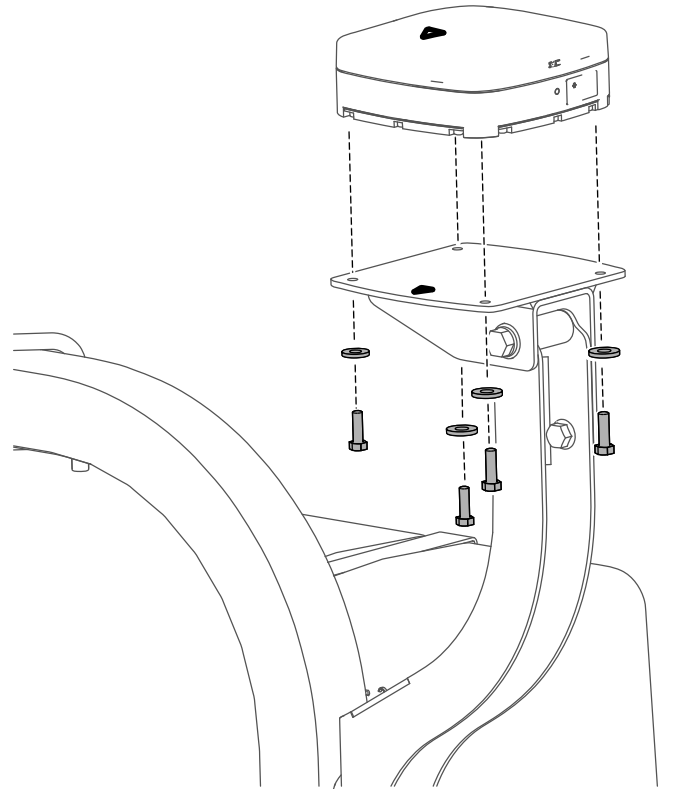


Figure 104

g421249

2. Tighten the bolts so that you can rotate the receiver plate with slight resistance.
3. Level the receiver plate left to right.

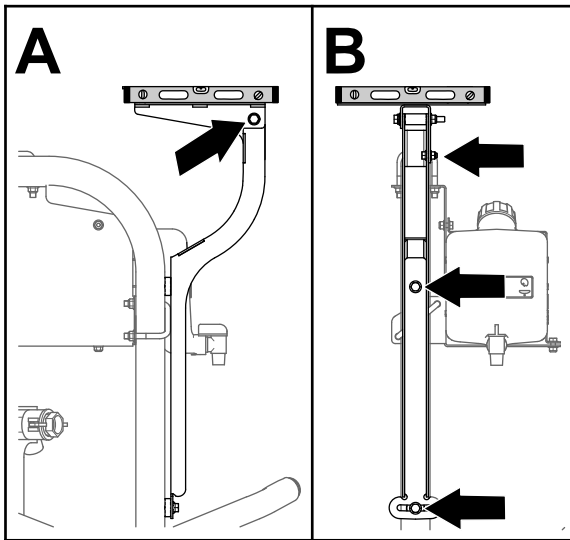


Figure 103

g200675

2. Torque the 3 bolts to 576 to 712 N·cm (51 to 63 in-lb).

4. Torque the flange-head bolt (5/16 x 3/4 inch) and flange locknut (5/16 inch) to 1978 to 2542 N·cm (175 to 225 in-lb).
5. Level the receiver plate front to back.
6. Torque the bolt (3/8 x 3-1/4 inches) and flange locknut (3/8 inch) to 37 to 45 N·m (27 to 33 ft-lb).

# 22

## Installing the Modem Antennas to the Machine

Parts needed for this procedure:

1	Antenna mount
2	Rivet
2	Magnet
1	Modem antenna
1	High gain antenna (sold separately)

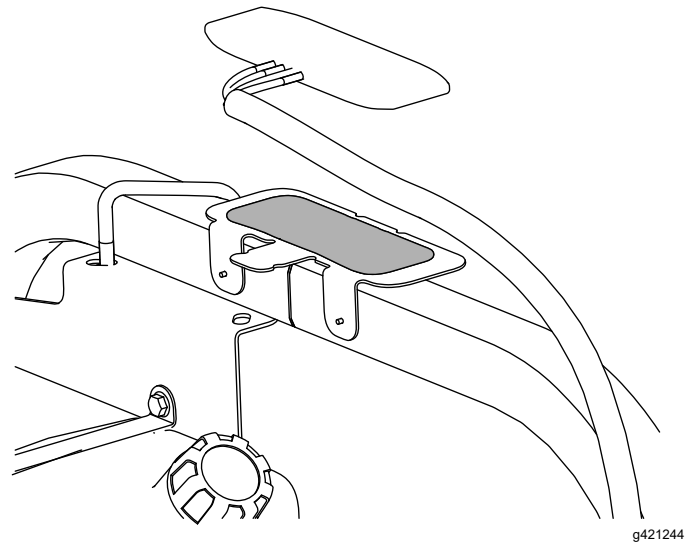


Figure 106

### Installing the Modem Antennas

1. Install the modem antenna bracket to the roll bar.

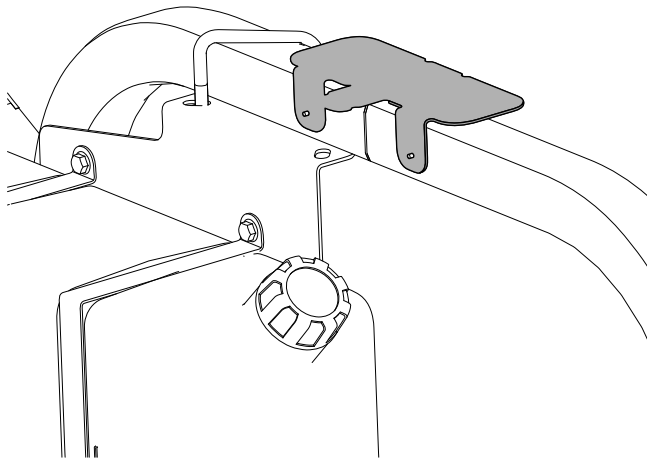


Figure 105

g421243

2. Clean any grease or oil from the antenna mount surface.
3. Remove the backing from the double sided adhesive liner and adhere the antenna to the mount.

4. Secure the antenna and wire harness to the mount with 3 cable ties.

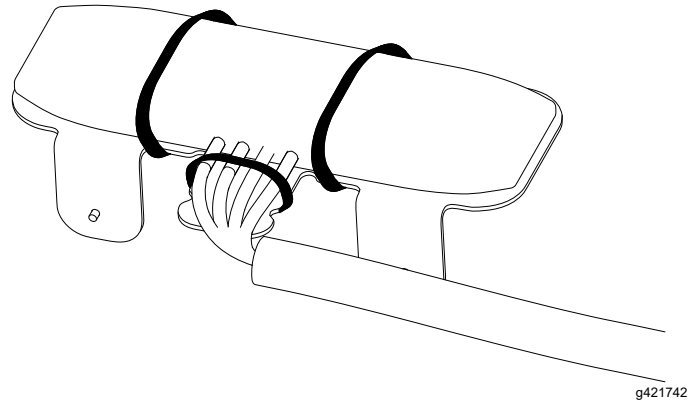
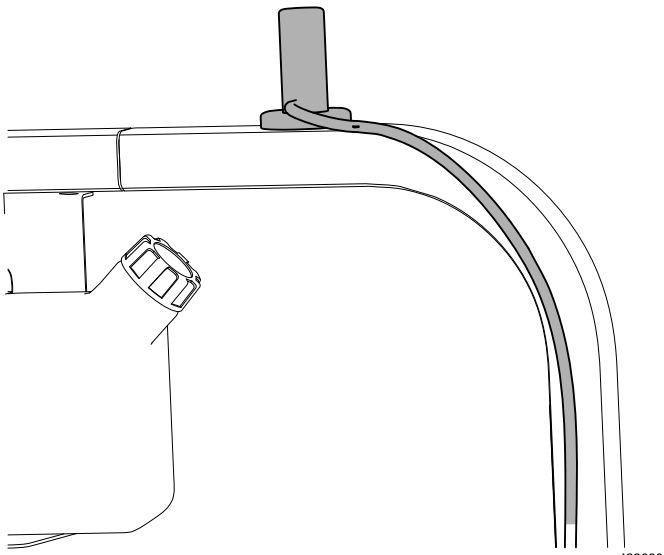


Figure 107

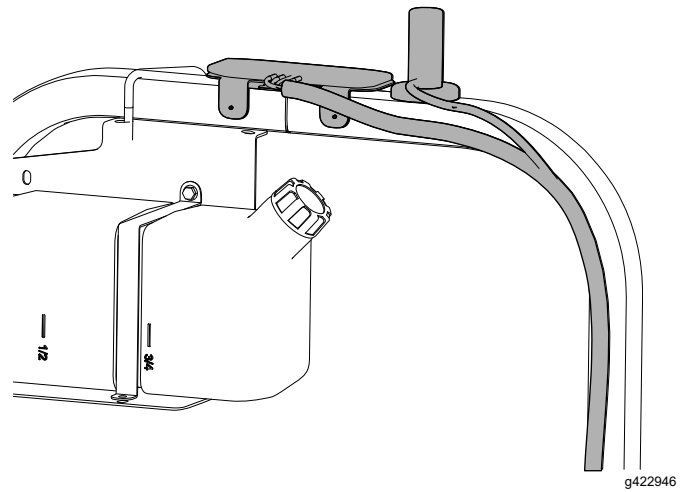
g421742

5. Install the high gain antenna (sold separately):
  - Machines without a canopy—place the antenna on top of the roll bar.
  - Machines with a canopy—secure the antenna on top of the canopy using the tape pads included.



**Figure 108**

g422630



**Figure 110**

g422946

## Routing the Modem-Antenna Harnesses

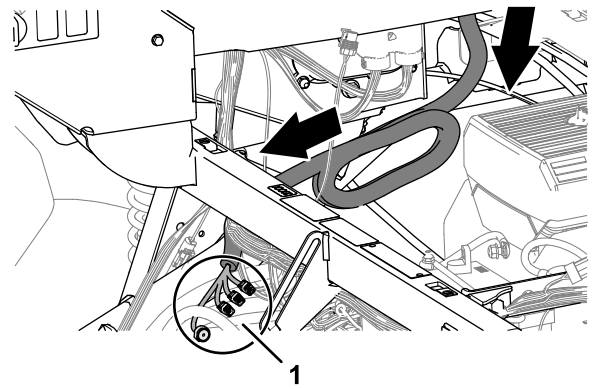
1. Route the modem-antenna harnesses to the right, along the roll bar.



**Figure 109**

g422945

2. Route the harness down and forward.



**Figure 111**

g314602

1. Connectors (modem-antenna harness)

# 23

## Installing the Wire Harnesses for the Navigation Components

### Parts needed for this procedure:

1	Harness adapter
1	Data and electrical harness
8	Cable tie

### Identifying the Navigation-Data and Electrical Harness

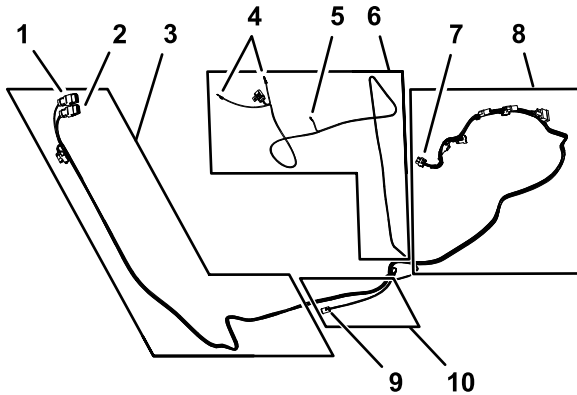


Figure 112

g310848

- |  |  |
|--|--|
| 1. 12-socket connector—navigation receiver <b>AGI4 A</b> CONNECTOR (GREY)  | 6. 270.5 cm (106-1/2 inches) power-harness branch                      |
| 2. 12-socket connector—navigation receiver <b>AGI4 B</b> CONNECTOR (BLACK) | 7. 26-socket connector—(control console)                               |
| 3. 302 cm (119 inches) data-harness branch (navigation receiver)           | 8. 226 cm (89 inches) data-harness branch (control console)            |
| 4. Ring terminals (to battery positive and battery negative)               | 9. 4-pin connector (rear harness interface—CAN 2 ASC 10 BUS)           |
| 5. Socket connector (switched power)                                       | 10. 34 cm (13-1/2 inches) data-harness branch (rear harness interface) |

## Connecting the Navigation-Data and Electrical Harness to the Navigation Receiver

1. Route the 302 cm (119 inches) branch of the navigation-data and electrical harness along the right ROPS tube with the 12-socket connector (**gray**) and 12-socket connector (**black**) up toward the navigation receiver.
2. Connect the 2 connectors at the long face of the 12-socket connector of the data harness labeled **AGI4 A KEY (GREY)** with the 2 connector slots into the adapter harness.

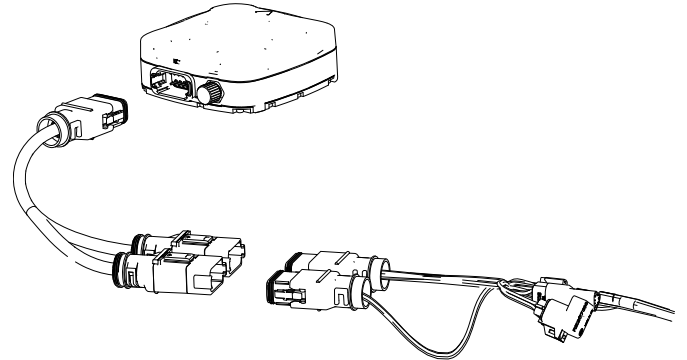


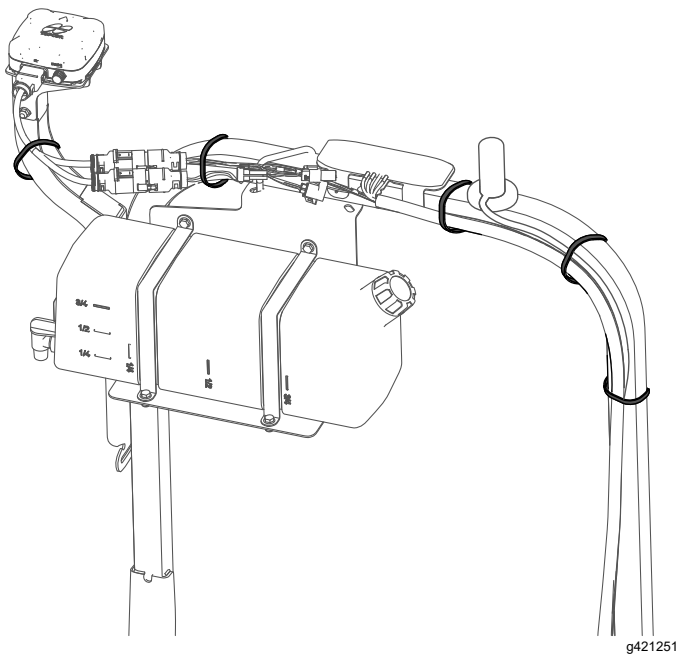
Figure 113

g420537

3. Plug the adapter harness into the receiver.

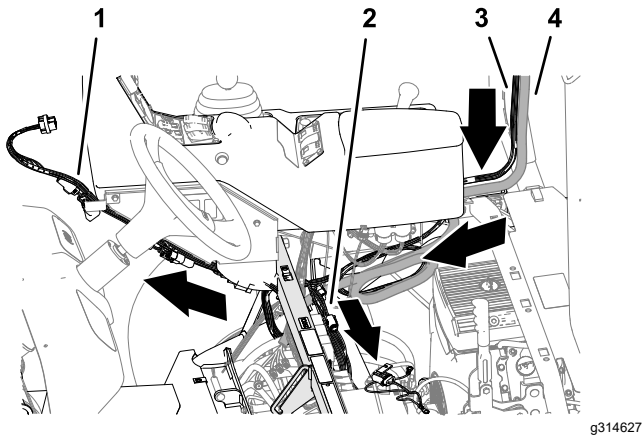
## Routing the Navigation-Data and Electrical Harness to the Right Side of the Machine

1. Route the navigation-data and electrical harness along the right roll bar tube and the modem-antenna harness to the cross member for the seat support.



**Figure 114**

2. Secure the harnesses to the roll bar with cable ties.
- Note:** Ensure that the harness is slack between the 12-socket connectors and the cable tie.
3. Route the 227 cm (89-1/2 inches) branch of the navigation-data and electrical harness along the bottom of the control console of the machine.



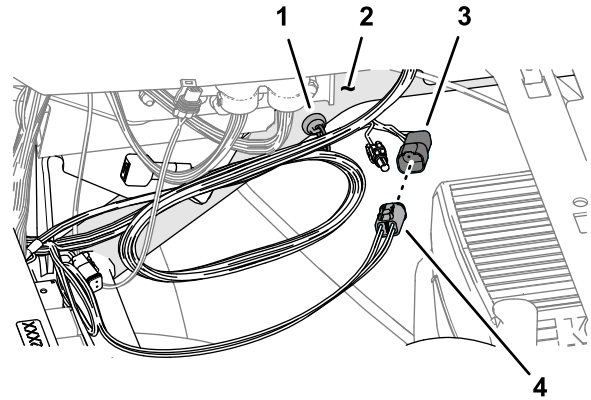
**Figure 115**

1. 227 cm (89-1/2 inches) harness branch (navigation-data and electrical harness)
2. 258 cm (101-1/2 inches) power-harness branch (navigation-data and electrical harness)
3. Navigation-data and electrical harness
4. Modem-antenna harness

4. Route the 258 cm (101-1/2 inches) branch of the navigation-data and electrical harness across the shock-support tube and toward the battery.

## Connecting the CAN 2/ASC 10 Power Connector

1. Adhere the magnetic mount of the rear harness to the right, upper tube frame of the machine.



**Figure 116**

1. Magnetic mount (rear harness)
2. Right, upper tube frame
3. 4-socket connector (labeled ASC10 PWR & CAN FROM X30—rear harness)
4. 4-pin connector (labeled CAN 2 ASC 10 BUS—data harness)

2. Plug the 4-pin connector labeled CAN 2 ASC 10 BUS of the data harness into the 4-socket connector labeled ASC10 PWR & CAN FROM X30 of the rear harness.

# 24

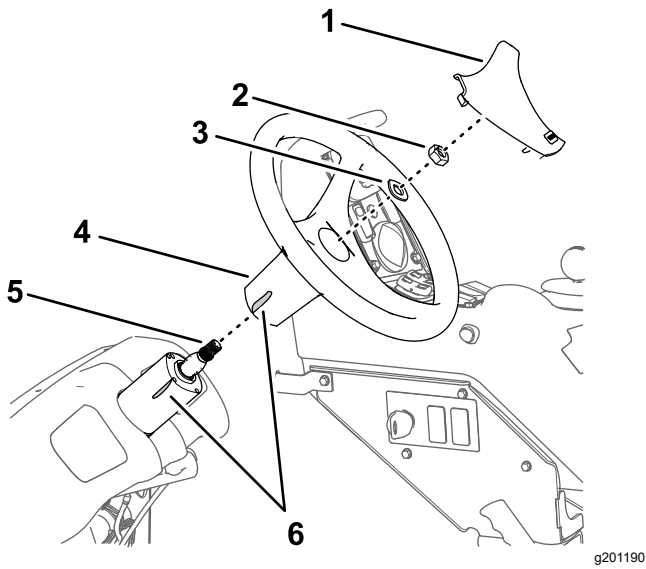
## Installing the Display

Parts needed for this procedure:

1	Display mount
3	Flange-head bolt (6 x 12 mm)
2	U-bolt (5/16 inch)
4	Flange-head bolt (5/16 x 3/4 inch)
8	Flange locknut (5/16 inch)
1	Ball mount
1	Display Arm

## Removing the Steering Wheel

1. Mark the position of the steering wheel to the steering valve with a piece of tape.



**Figure 117**

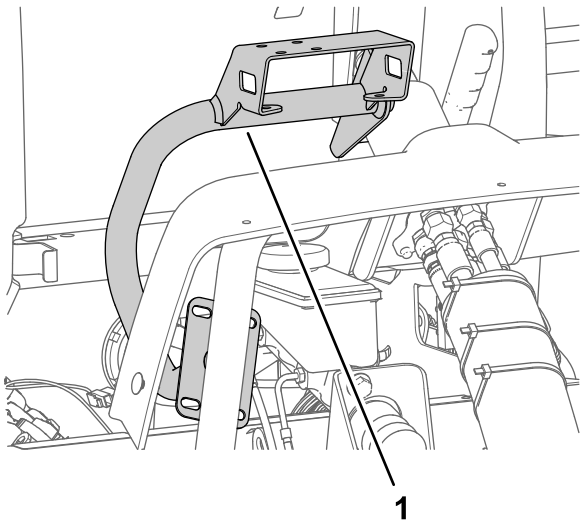
g201190

- |                         |                           |
|-------------------------|---------------------------|
| 1. Steering-wheel cover | 4. Steering wheel         |
| 2. Nut (5/8 inch)       | 5. Shaft (steering valve) |
| 3. Washer (5/8 inch)    | 6. Tape                   |

- Remove the cover from the steering wheel.
- Remove the nut (5/8 inch) and washer (5/8 inch) that secure the steering wheel to the steering valve, and remove the steering wheel.

## Installing the Display Mount

- Align the display mount to the machine as shown.

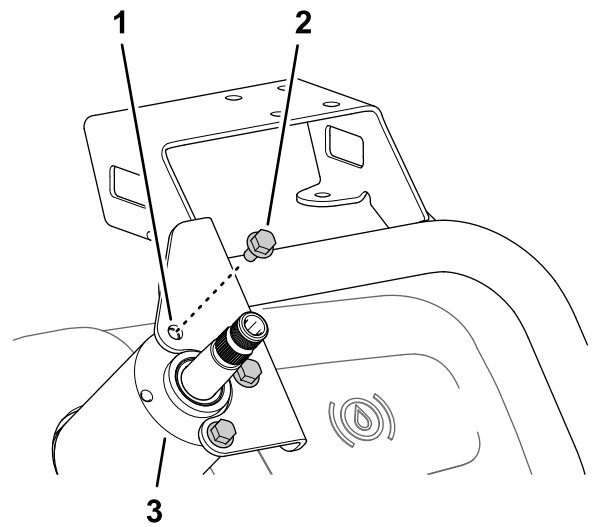


**Figure 118**

g201211

- Monitor mount

- Assemble the display mount to the housing of the steering valve with the 3 flange-head bolts (6 x 12 mm).

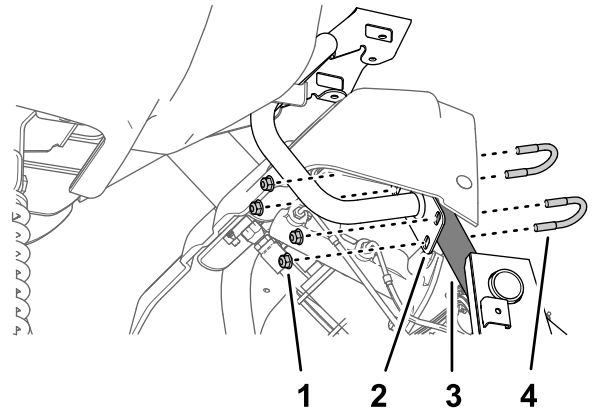


**Figure 119**

g201179

- |                                 |                             |
|---------------------------------|-----------------------------|
| 1. Monitor mount                | 3. Housing (steering valve) |
| 2. Flange-head bolt (6 x 12 mm) |                             |

- Assemble the plate of the display mount to the support tube of the machine chassis with the 2 U-bolts and 4 flange locknuts (5/16 inch).



**Figure 120**

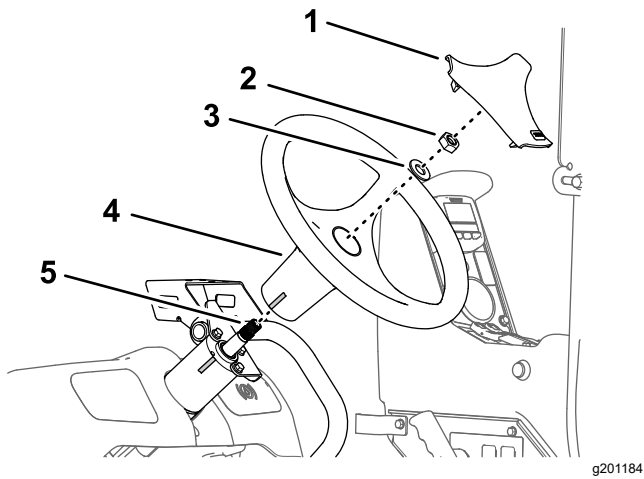
g201180

- |                               |                                   |
|-------------------------------|-----------------------------------|
| 1. Flange locknut (5/16 inch) | 3. Support tube (machine chassis) |
| 2. Plate (display mount)      | 4. U-bolt (5/16 inch)             |

- Torque the 3 flange-head bolts (6 x 12 mm) at the steering valve to 972 to 1198 N·cm (86 to 106 in·lb); At the support tube, torque the flange locknuts to 1978 to 2542 N·cm (175 to 225 in·lb).

## Installing the Steering Wheel

- Align the tape mark on the steering wheel to the tale mark on the housing of the steering valve.



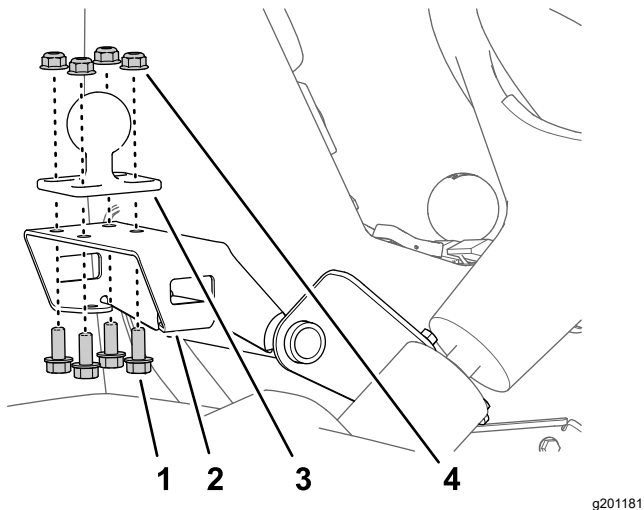
**Figure 121**

- |                         |                           |
|-------------------------|---------------------------|
| 1. Steering-wheel cover | 4. Steering wheel         |
| 2. Nut (5/8 inch)       | 5. Shaft (steering valve) |
| 3. Washer (5/8 inch)    |                           |

- Assemble the steering wheel onto the shaft of the steering valve with the previously removed washer (5/8 inch) and nut (5/8 inch).
- Torque the nut to 206 to 254 N·m (152 to 188 ft-lb).
- Install the cover.

## Installing the Display to the Mount

- Assemble the ball mount to the bracket for the display mount with the 4 flange-head bolts (5/16 x 3/4 inch) and 4 flange locknuts (5/16 inch).

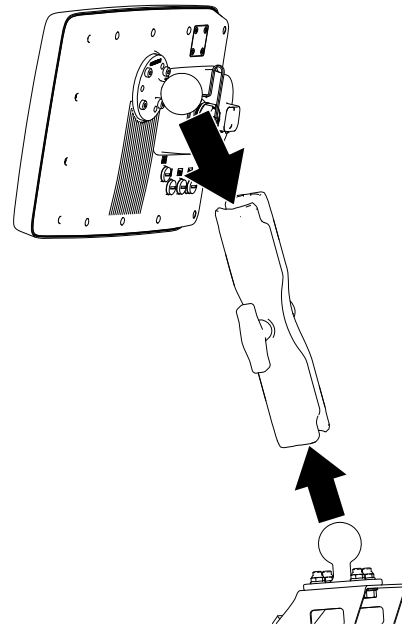


**Figure 122**

- |                                       |                               |
|---------------------------------------|-------------------------------|
| 1. Bracket (display mount)            | 3. Ball mount                 |
| 2. Flange-head bolt (5/16 x 3/4 inch) | 4. Flange locknut (5/16 inch) |

- Torque the bolts and nuts to 1978 to 2542 N·cm (175 to 225 in-lb).

- Assemble the ball fitting of the display and the ball mount on the machine to the long display arm.



**Figure 123**

- Adjust the display so that it is viewable from the machine operator's position and tighten the display arm knob by hand.

# 25

## Connecting the Data Cable to the Display

No Parts Required

### Routing and Connecting the Navigation-Data and Electrical Harness to the Display

- Route the 227 cm (89-1/2 inches) branch of the navigation-data and electrical harness (the branch with the 26-socket connector) up and along the support tube for the display.
- Plug the navigation data harness into the monitor.

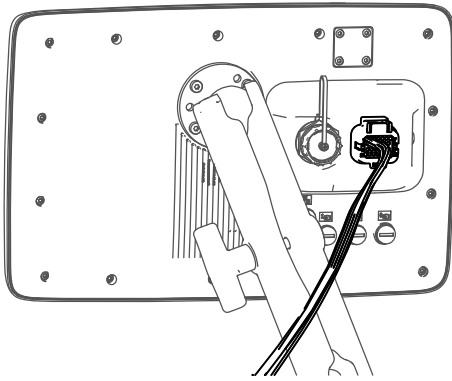


Figure 124

g422947

# 26

## Assembling the Modem Data Harness to the Machine

Parts needed for this procedure:

1	Modem data harness—300 cm (118 inches)
---	--

### Removing the Terminating Resistor

Remove the terminating resistor from the 6-socket connector labeled CAN 2 TERMINATOR of the data cable as shown.

**Note:** You no longer need the terminating resistor.

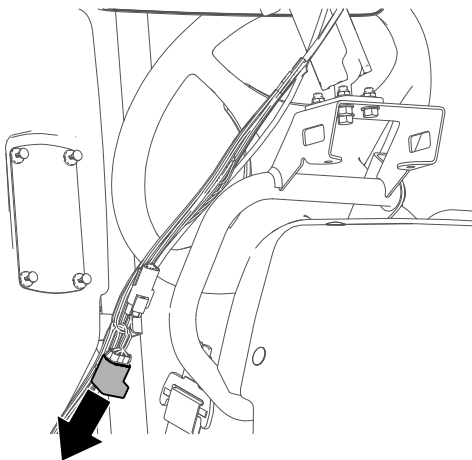


Figure 125

g422948

### Connecting the Modem Data Harness to the Display

Screw the modem harness connector into the display.

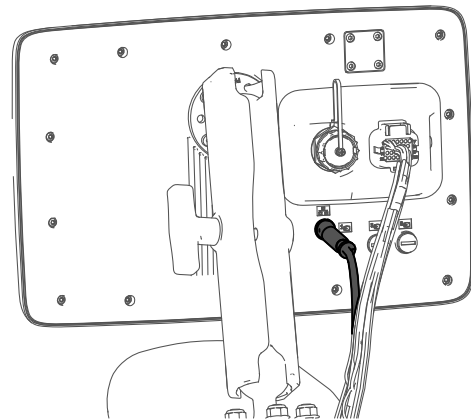
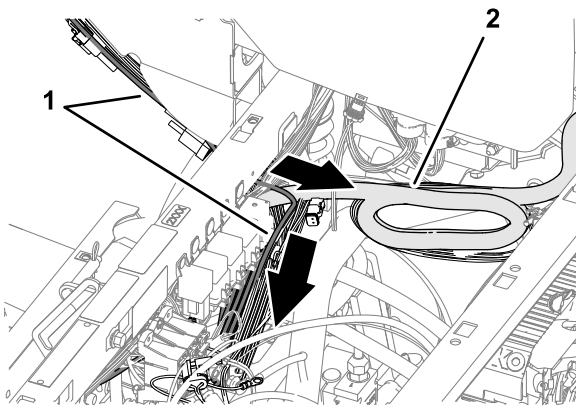


Figure 126

g420566

### Routing the Modem Data Harness

1. Route the modem data harness along the data harness for the display.
2. Route the modem data harness under the shock-support tube of the machine
3. Route the modem data harness across the back of the relays and down.

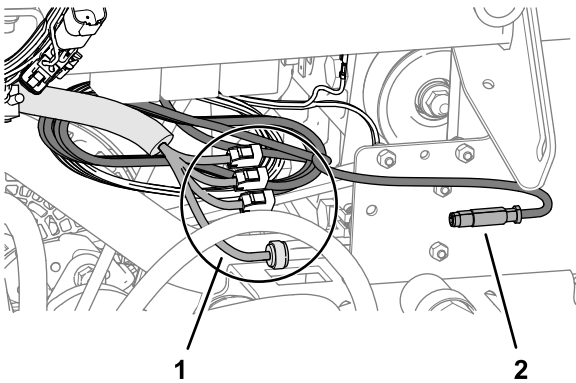


g315307

**Figure 127**

1. Data harness (control console)
2. Modem data harness

4. Align the 4-pin connector labeled ETHERNET CL-55 of the modem data harness near the 4 connectors for the modem-antenna harness as shown.



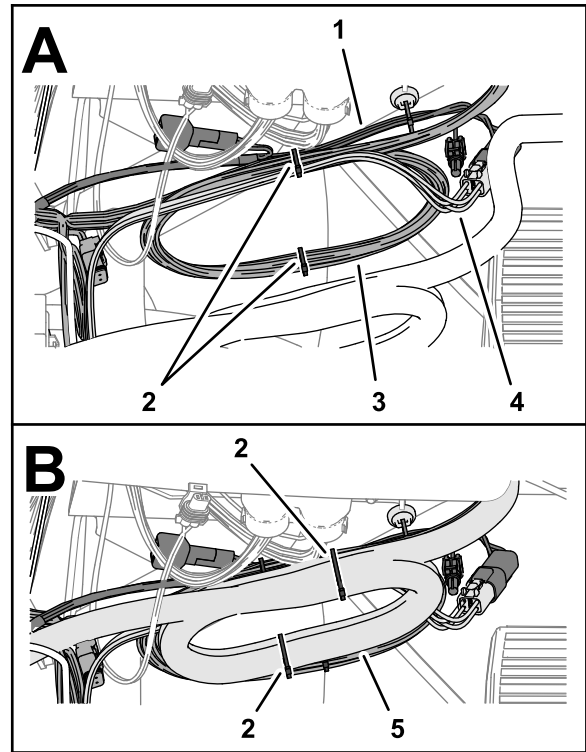
g315308

**Figure 128**

1. Connectors (modem-antenna harness)
2. 4-pin connector (labeled ETHERNET CL-55—modem data harness)

## Securing the Navigation-Data and Electrical Harness, Modem-Antenna Harness, and Modem Data Harness

1. At the right, upper tube frame, bundle the navigation-data and electrical harness, and the CAN 2 ASC 10 BUS wire harness branch to the kit sprayer harness with 2 cable ties.
2. Bundle the modem-antenna harness and secure it to the kit sprayer harness bundle with 2 cable ties.

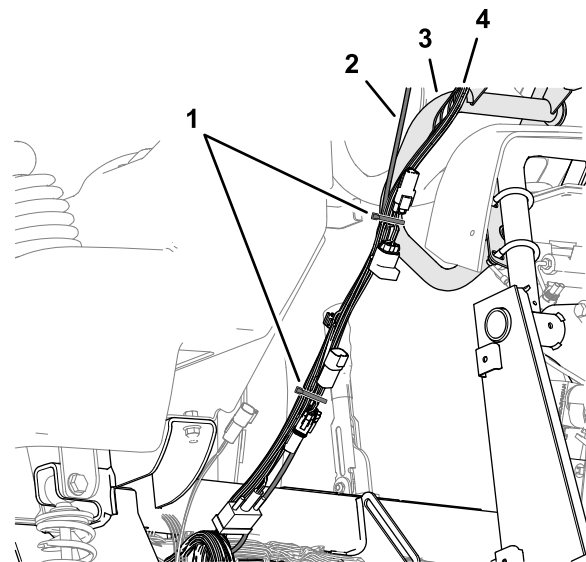


g315764

**Figure 129**

1. Kit sprayer harness
2. Cable ties
3. Navigation-data and electrical harness
4. CAN 2 ASC 10 BUS wire harness branch
5. Modem-antenna harness

3. Secure the modem-data harness and the navigation-data and electrical harness to the monitor tube with a cable tie.



g315768

**Figure 130**

1. Cable tie
2. Modem-data harness
3. Monitor tube
4. Navigation-data and electrical harness

- Secure the modem-data harness to the navigation-data and electrical harness with a cable tie.

# 27

## Assembling the Modem Power Harness to the Machine

### Parts needed for this procedure:

1	Modem power harness
---	---------------------

### Procedure

- Align the modem power harness to the machine.

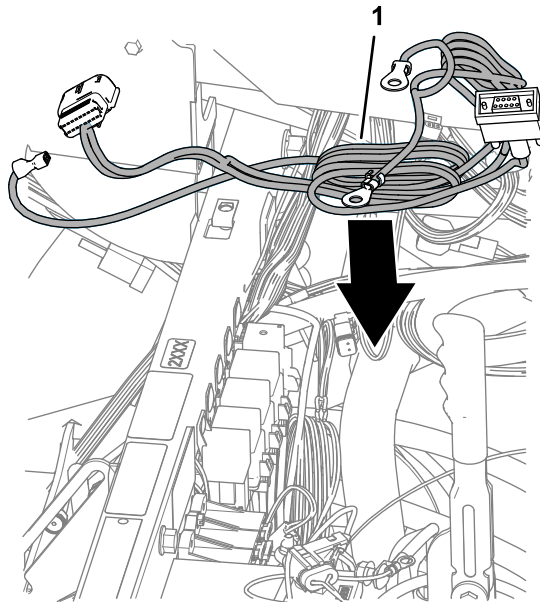


Figure 131

g315593

- Modem power harness
- Route the ring terminals of the modem power harness labeled BATTERY and GROUND toward the battery.

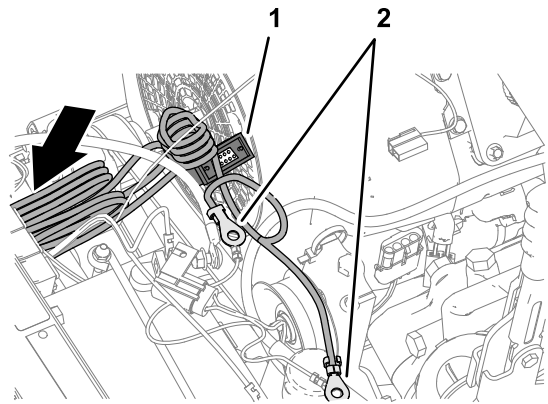


Figure 132

g315594

- 9-pin connector (labeled RS232—modem power harness )
- Ring terminals (labeled BATTERY and GROUND—modem power harness )

- Route the 4-pin connector labeled ETHERNET CL-55 and the 18-socket connector labeled CL55 of the modem power harness under the fuse block of the machine.
- At the front of the machine, route the 4-pin connector labeled ETHERNET CL-55 and the 18-socket connector labeled CL55 of the modem power harness to the machine as shown.

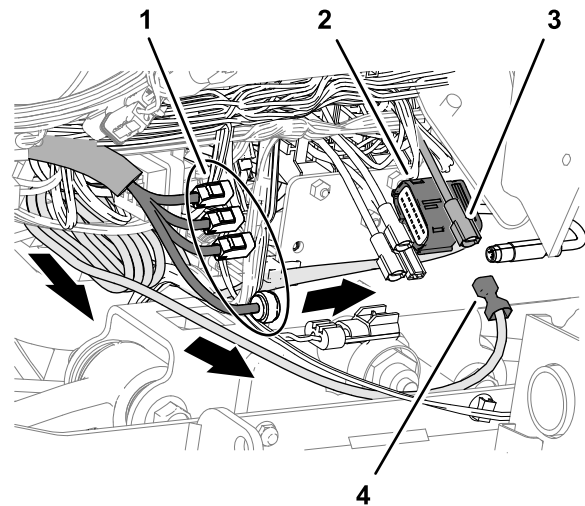


Figure 133

g315595

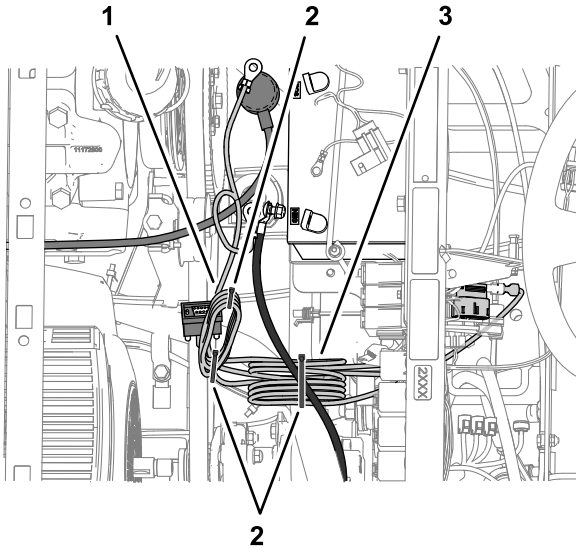
- 4-pin connector (labeled ETHERNET CL-55—modem data harness)
- 18-socket connector (labeled CL55—modem power harness)
- Socket connector (options power—fuse block)
- Terminal (labeled SWITCHED—modem power harness)

- Plug the terminal of the modem power harness labeled SWITCHED into the socket connector for options power of the fuse block (.

**Note:** If fuse block of your machine does not have an available options-power circuit, install

an additional options-fuse block; refer to your authorized Toro distributor.

- Near the fuse block bundle the modem power-harness at the 9-pin connector labeled RS232 and secure the harness with 2 cable ties as shown.

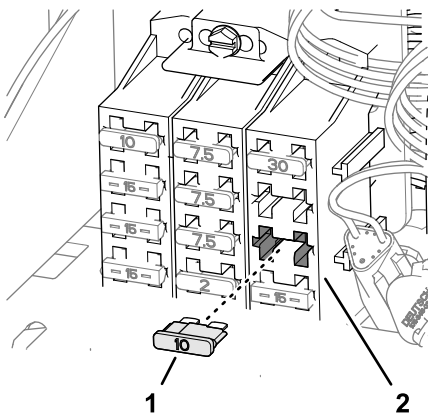


**Figure 134**

g315843

- Modem power-harness bundle (at 9-pin connector labeled RS232—not used)
- Cable ties
- Modem power-harness bundle (at negative battery cable)

- Bundle the modem power-harness at the negative battery cable, and secure the bundle to the battery cable with a cable tie.
- Insert the fuse (10 A) into the fuse-block socket (Figure 135) for the options power circuit that you used in step 5.



**Figure 135**

g323085

- Fuse (10 A)
- Fuse block

# 28

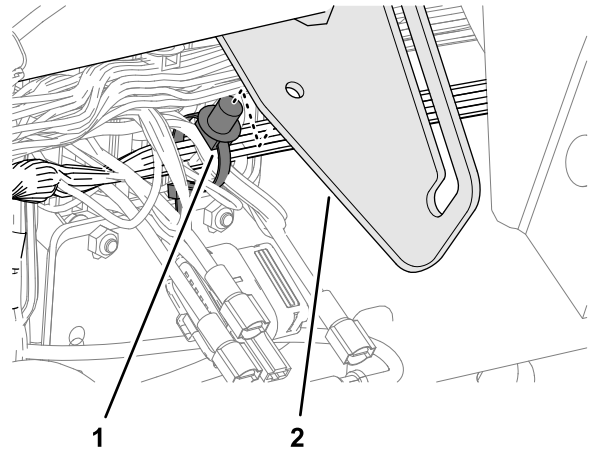
## Installing the CL-55 Modem

Parts needed for this procedure:

1	CL-55 modem
1	Modem bracket
2	Bolt (#10-24 x 1-3/8 inches)
2	Locknut (#10-24 inch)
2	Magnet
2	Rivet

### Installing the Modem to the Machine

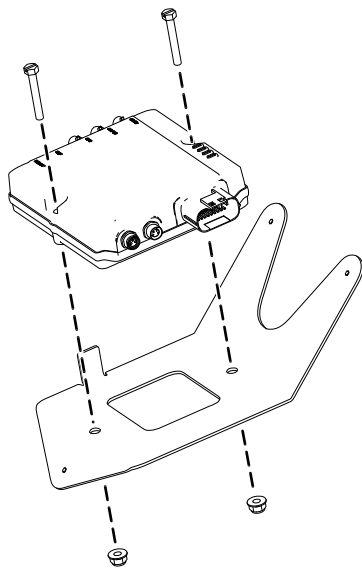
- Remove the push-in fastener that secures the wire harness of the machine to the prop-rod bracket.



**Figure 136**

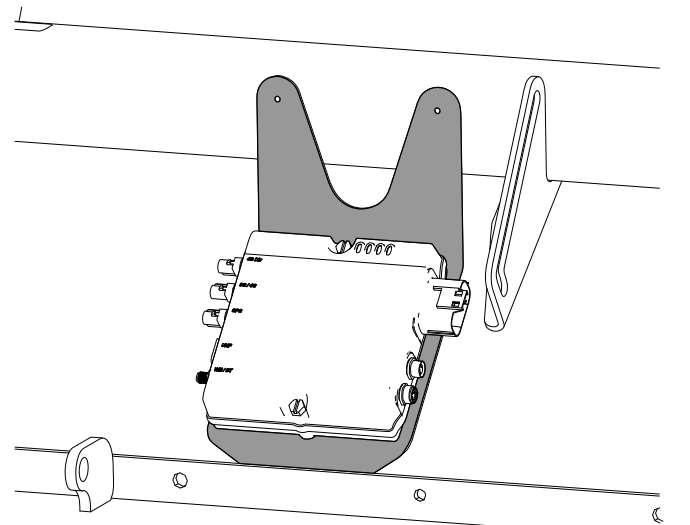
g315555

- Push-in fastener (machine wire harness)
- Prop-rod bracket wire harness)
- Secure the modem to the bracket using 2 bolts (#10-24 x 1-3/8 inches) and 2 nuts (#10-24).



**Figure 137**

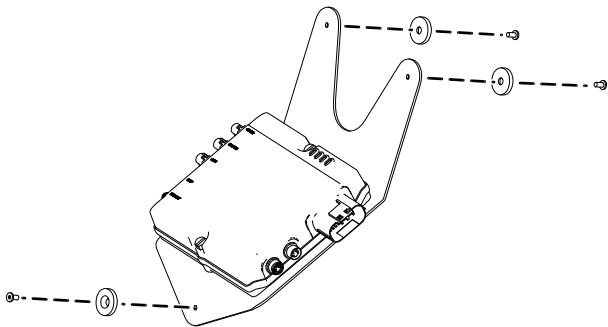
g422629



**Figure 139**

g422628

- Secure the magnets to the modem bracket using the rivets.

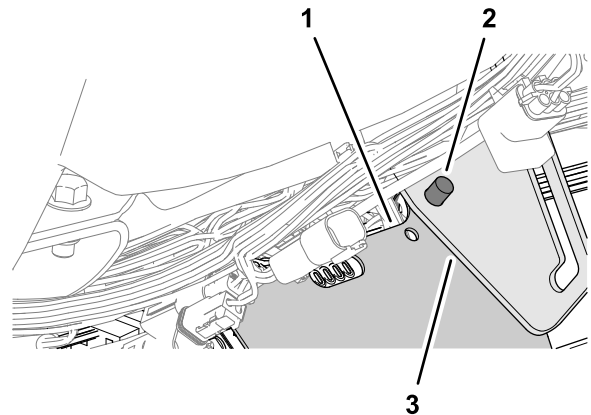


**Figure 138**

g422627

- Place the modem bracket under the prop-rod bracket and behind the flange of the machine frame.

- Insert the upper push-in fastener of the wire harness into the holes in the prop-rod bracket.



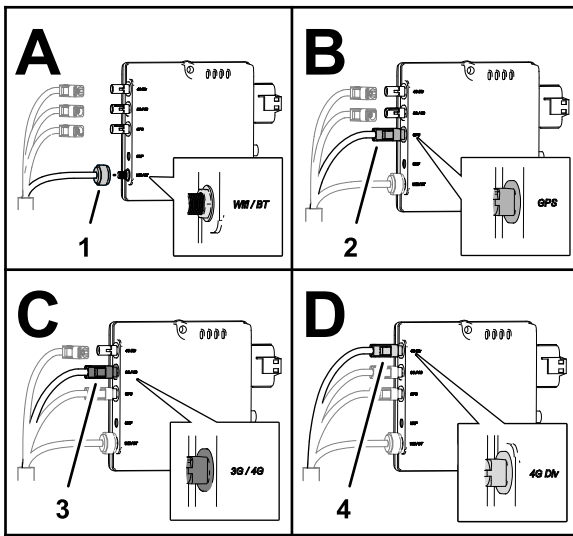
**Figure 140**

g315554

- |  |                     |
|--|---------------------|
| 1. Modem bracket                           | 3. Prop-rod bracket |
| 2. Push-in fastener (machine wire harness) |                     |

## Connecting the Antenna Harness to the Modem

- Plug the coaxial connector of the modem-antenna harness labeled WiFi into the coaxial port of the CL-55 modem marked WiFi/BT, and tighten the coaxial connector.

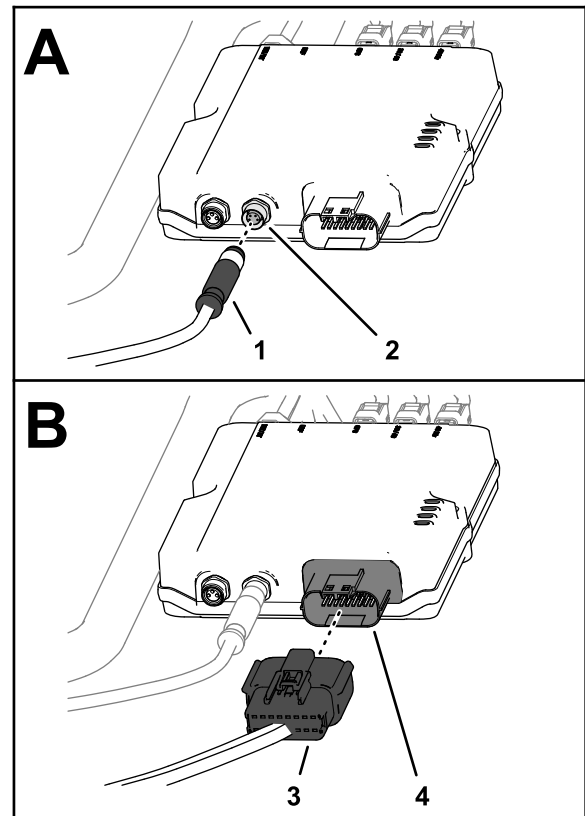


g310538

**Figure 141**

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. Coaxial connector (labeled WiFi—modem-antenna harness)</li> <li>2. Blue coaxial push-in connector (labeled GNSS—modem-antenna harness)</li> </ol> | <ol style="list-style-type: none"> <li>3. Violet coaxial push-in connector (labeled LTE-1—modem-antenna harness)</li> <li>4. Red coaxial push-in connector (labeled LTE-2—modem-antenna harness)</li> </ol> |
|---|---|

2. Plug the blue coaxial push-in connector of the modem-antenna harness labeled GNSS into the connector of the CL-55 modem marked GPS, until the connectors latch securely.
3. Plug the violet coaxial push-in connector of the modem-antenna harness labeled LTE-1 into the connector of the CL-55 modem marked 3G / 4G, until the connectors latch securely.
4. Plug the red coaxial push-in connector of the modem-antenna harness labeled LTE-2 into the connector of the CL-55 modem marked 4G Div, until the connectors latch securely.



g310539

**Figure 142**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. 4-pin connector (labeled ETHERNET CL55—modem data harness)</li> <li>2. 4-socket connector (unmarked—CL-55 modem)</li> </ol> | <ol style="list-style-type: none"> <li>3. 18-socket connector (labeled CL55—modem power harness)</li> <li>4. 18-pin connector (CL-55 modem)</li> </ol> |
|---|--|
2. Plug the 18-socket connector of the modem power harness labeled CL55 into the 18-pin connector of the CL-55 modem.

## Connecting the Modem Data and Power Harnesses to the Modem

1. Plug the 4-pin connector of the modem data harness labeled ETHERNET CL55 into the 4-socket connector (unmarked) of the CL-55 modem, and tighten the knurled nut of the 4-pin connector.

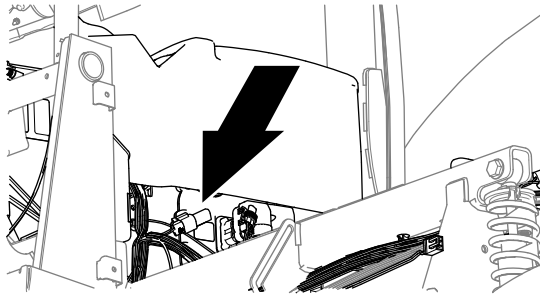
# 29

## Removing the Passive Resistor from the Machine Wire Harness

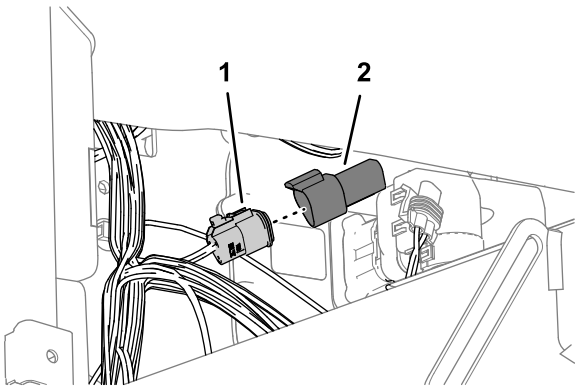
No Parts Required

### Procedure

At the inboard side of the control console of the machine, remove and retain the passive terminating resistor from the unlabeled 3-pin connector of the machine wire harness.



g315682



g315684

Figure 143

1. 3-pin connector (not labeled—machine wire harness)
2. Terminating resistor (passive)

# 30

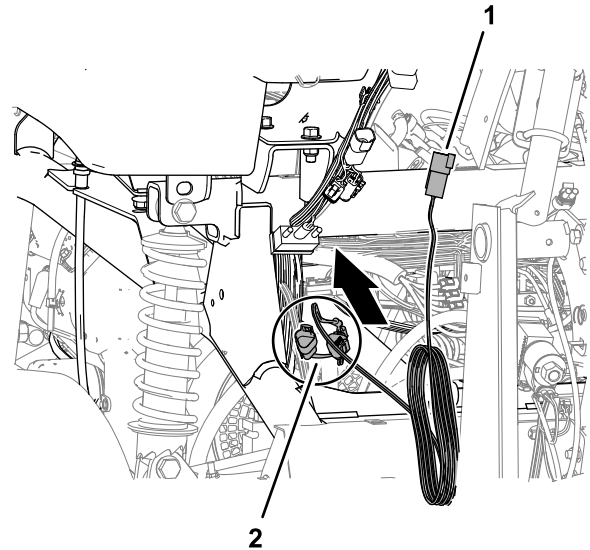
## Installing the ISO-CAN Bus Harness

Parts needed for this procedure:

1	ISO-CAN bus harness—302 cm (119 inches)
---	---

### Connecting the ISO Bus Harness to the Navigation-Data and Electrical Harness

1. At the front of the control console of the machine, route the connector labeled TO ISOBUS of the ISO-CAN bus harness into the bottom of the display.

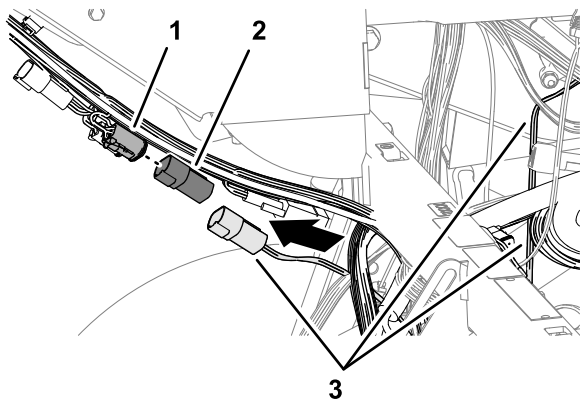


g315685

Figure 144

1. Connector (labeled TO ISOBUS—ISO-CAN bus harness)
2. Connectors (labeled CAN PORT A AND TO TORO CAN Bus—ISO-CAN BUS HARNESS)

2. Remove the cap from the 4-socket connector labeled CAN 1 ISOBUS of the navigation-data and electrical harness.

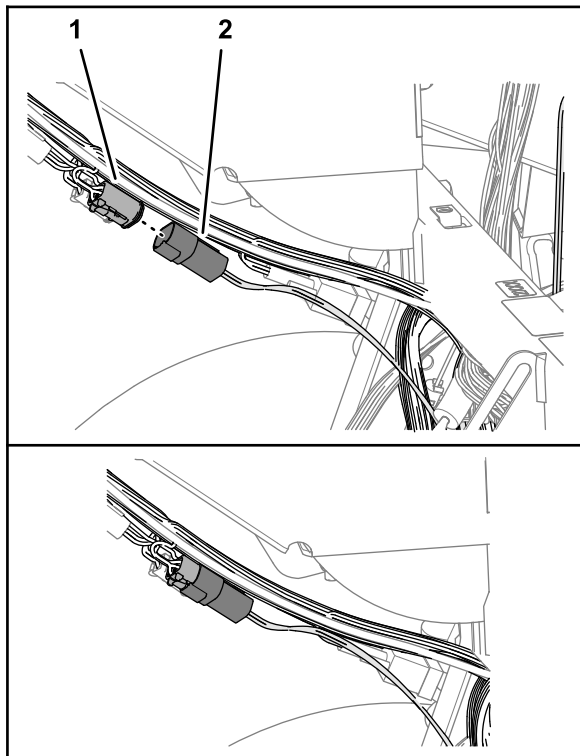


**Figure 145**

g315683

1. 4-socket connector (labeled CAN 1 ISOBUS—navigation-data and electrical harness)
2. Cap
3. ISO-CAN bus harness

3. Plug the 4-pin connector labeled TO ISOBUS of the ISO-CAN bus harness into the 4-socket connector labeled CAN 1 ISOBUS of the navigation-data and electrical harness.

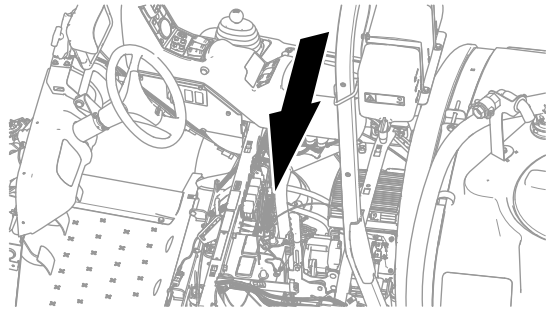


**Figure 146**

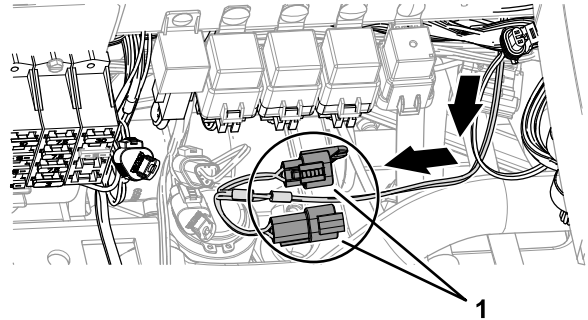
g315681

1. 4-socket connector (labeled CAN 1 ISOBUS—navigation-data and electrical harness)
2. 4-pin connector (labeled TO ISOBUS—ISO-CAN bus harness)

4. Route the connectors labeled TO TORO CANBUS and CAN PORT A of the ISO-CAN bus harness toward the fuse block.



g324925



g324880

**Figure 147**

1. Connectors (labeled TO TORO CANBUS and CAN PORT A—ISO-CAN bus harness)

## Connecting the ISO Bus Harness to the Machine Wire Harness

- At the fuse block, remove the cap from the 3-socket connector labeled CAN BUS DIAGNOSTICS of the machine wire harness.

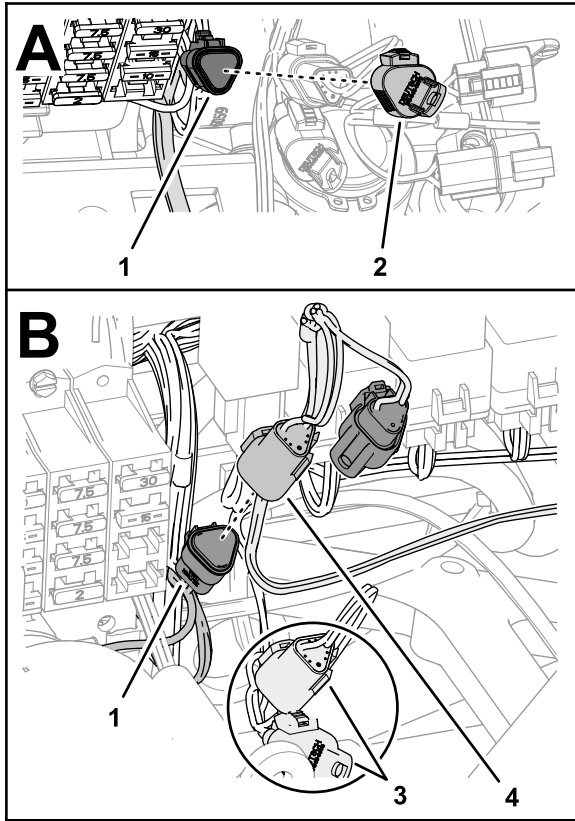


Figure 148

g324923

- 3-socket connector (labeled CAN BUS DIAGNOSTICS—machine wire harness)
- Cap
- Connectors—kit sprayer harness (labeled DIAG. CONN. and CAN DIAGNOSTICS INTERCONNECT—do not connect)
- 3-pin connector (labeled TO TORO CANBUS—ISO-CAN bus harness)

- Plug the 3-pin connector labeled TO TORO CANBUS of the ISO-CAN bus harness into the 3-socket connector labeled CAN BUS DIAGNOSTICS of the machine wire harness.

**Important:** Do not connect the harness connectors labeled DIAG. CONN. and CAN DIAGNOSTICS INTERCONNECT of the rear harness.

## Securing the ISO Bus Harness

- Bundle the ISO-CAN bus harness and secure it to the navigation-data and electrical harness with a cable tie.

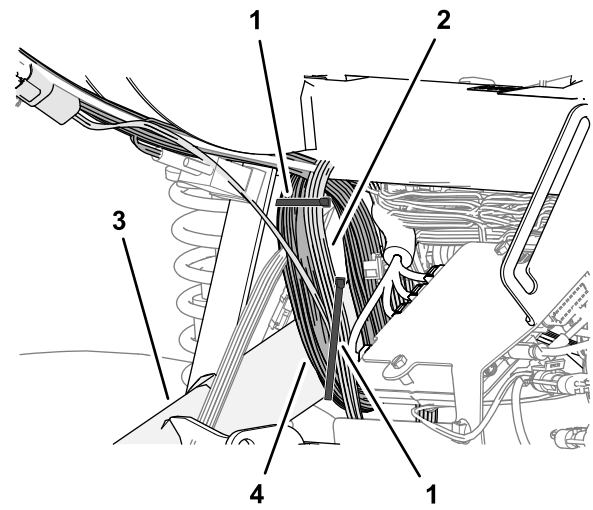


Figure 149

g315869

- Cable tie
- ISO-CAN bus harness
- Right frame tube
- Navigation-data and electrical harness

- Secure the ISO-CAN bus harness and navigation-data and electrical harness to the right frame tube with a cable tie as shown.

# 31

## Installing the Adapter Harness and Terminating Resistor

Parts needed for this procedure:

- |   |                                  |
|---|----------------------------------|
| 1 | Adapter harness—13 cm (5 inches) |
|---|----------------------------------|

## Procedure

- At the satellite receiver, remove and discard the ISO bus terminator for the 6-socket connector of the GeoLink harness.

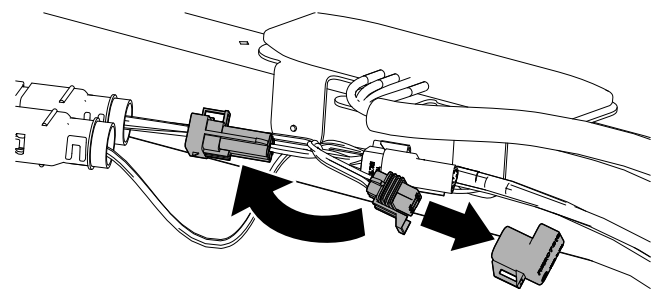
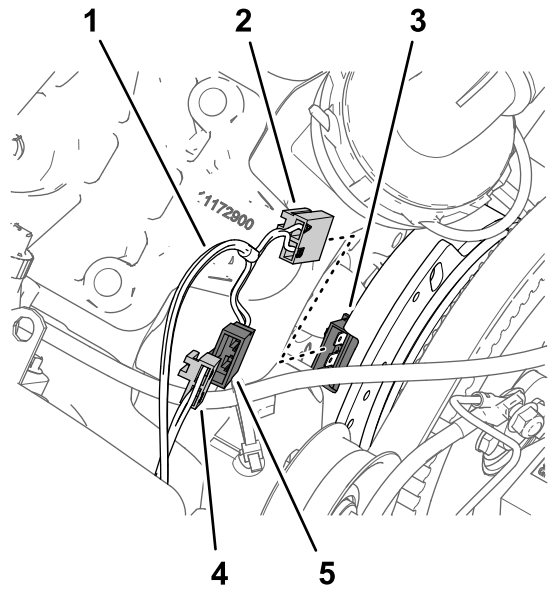


Figure 150

g420711

2. Plug the 6-pin connector of the adapter harness—13 cm (5 inches) into the 6-socket connector of the GeoLink harness.
3. Plug the resistor into the 3-socket connector of the adapter harness.
4. Secure the adapter harness to the GeoLink harness with a cable tie.



**Figure 152**

g198144

- |   |  |
|---|--|
| 1. Kit sprayer harness branch—84 cm (33 inches)         | 4. 2-socket connector—machine wire harness (SPRAY PUMP COIL) |
| 2. 2-socket connector (not labeled—kit sprayer harness) | 5. 2-pin connector (not labeled—kit sprayer harness)         |
| 3. 2-pin connector (pump clutch)                        |  |

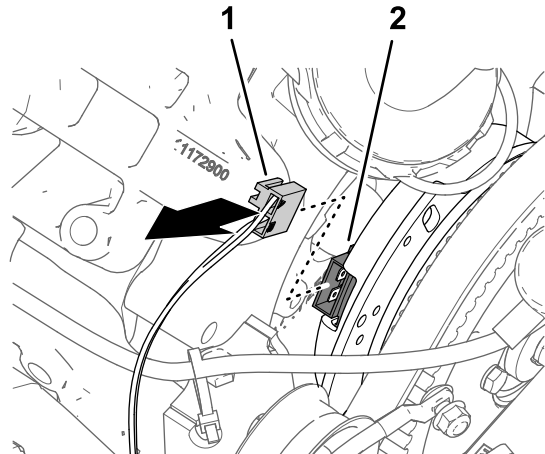
# 32

## Wiring the Spray Pump Clutch

### No Parts Required

### Procedure

1. Disconnect the 2-socket connector of the machine wire harness labeled SPRAY PUMP COIL from the 2-pin connector of the pump clutch.

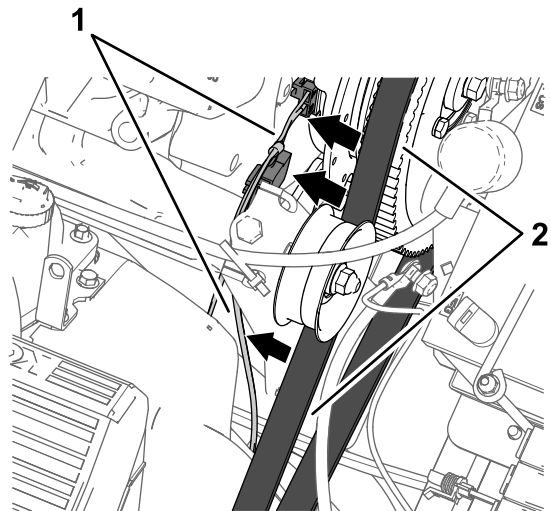


**Figure 151**

g198155

- |  |                                  |
|--|----------------------------------|
| 1. 2-socket connector—machine wire harness (SPRAY PUMP COIL) | 2. 2-pin connector (pump clutch) |
|--|----------------------------------|
- 
2. Connect the 2-pin connector of the kit sprayer harness branch—84 cm (33 inches) into the 2-socket connector of the machine wire harness labeled SPRAY PUMP COIL.

3. Connect the 2-socket connector of the kit sprayer harness into the 2-pin connector of the pump clutch.
4. Route the wire-harness branch—84 cm (33 inches) against the engine and spray pump so that the harness clears the alternator belt.



**Figure 153**

g198156

- |   |                    |
|---|--------------------|
| 1. Kit sprayer harness branch—84 cm (33 inches) | 2. Alternator belt |
|---|--------------------|

# 33

## Installing Components for the Electrical System

Parts needed for this procedure:

1	Battery bracket
1	Bumper
2	Flange-locknut (1/4 inch)
1	Strap
1	Battery (650 A)
1	Alternator bracket
1	Drive pulley 279 mm (11 inch)
4	Bolt (1/4 x 2-1/4 inches)
1	Alternator (60 A)
1	Flange-head bolt (8 x 25 mm)
1	Flange-head bolt (3/8 x 1-1/2 inches)
1	V-belt

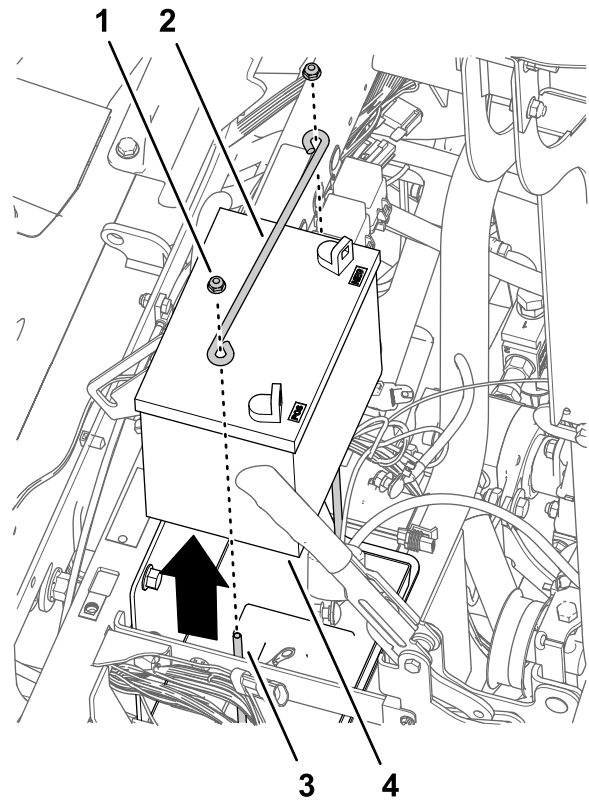


Figure 154

g201188

1. Flange locknut (1/4 inch)
2. Hold-down rod
3. J-bolt
4. Battery (300 A)

## Removing the Battery (300 A) and Battery Bracket

1. Remove the 2 flange locknuts and hold-down rod from the 2 J-bolts that secure the battery to the battery bracket of the machine.

2. Remove and discard the 2 J-bolts and battery tray from the battery bracket.

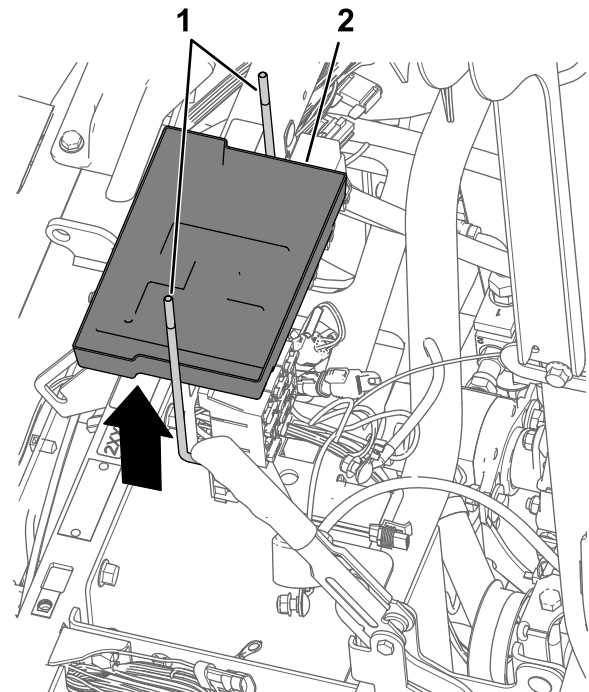


Figure 155

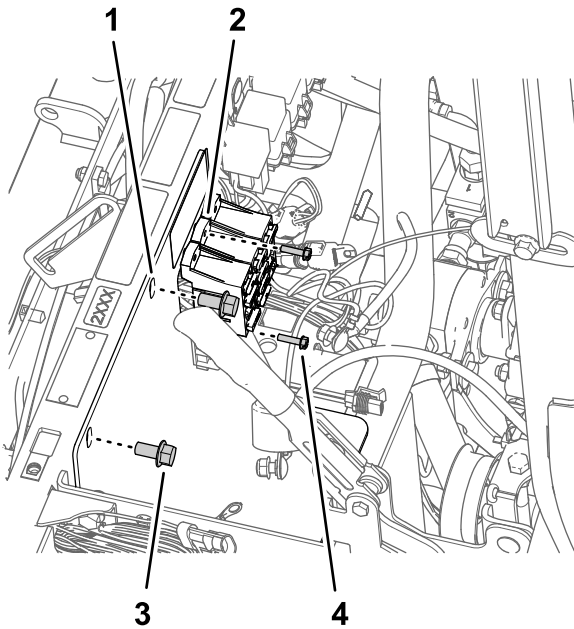
g201187

1. J-bolt
2. Battery tray

- Remove the battery from the machine.

**Note:** You no longer need the flange nuts, hold-down rod, and battery (300 A).

- Remove and retain the 3 bolts (10-24 x 3/4 inch) and 3 nuts (10-24) that secure the fuse blocks to the battery bracket.



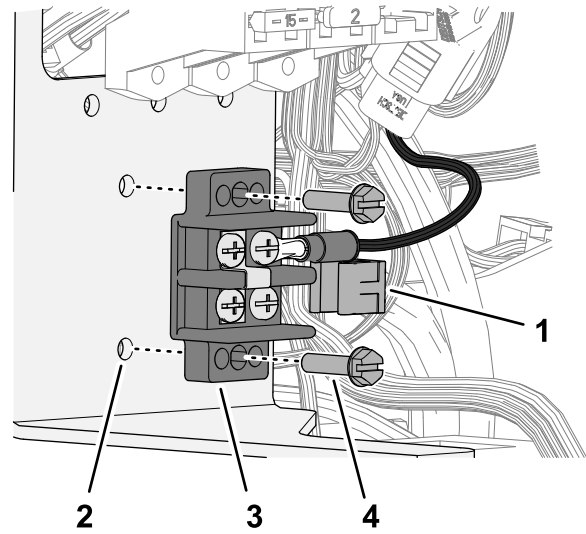
**Figure 156**

g201185

- |                  |                                      |
|------------------|--------------------------------------|
| 1. Bold-down rod | 3. Flange-head bolt (3/8 x 3/4 inch) |
| 2. Fuse block    | 4. Bolt (10-24 x 3/4 inch)           |

- Remove and retain the 2 flange-head bolts (3/8 x 3/4 inch) that secure battery bracket to the shock-support tube of the machine.
- Remove and retain the 2 bolts (10-24 x 3/4 inch), 2 locknuts (10-24), and wire-support clip that secure the ground block and wire to the battery bracket.

**Note:** Discard the wire support clip.

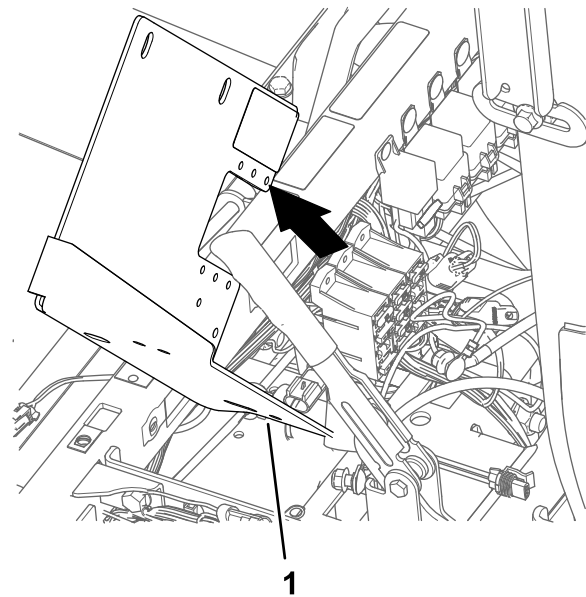


**Figure 157**

g365226

- |                      |                            |
|----------------------|----------------------------|
| 1. Wire-support clip | 3. Ground block            |
| 2. Battery bracket   | 4. Bolt (10-24 x 3/4 inch) |

- Remove and discard the battery bracket from the machine.



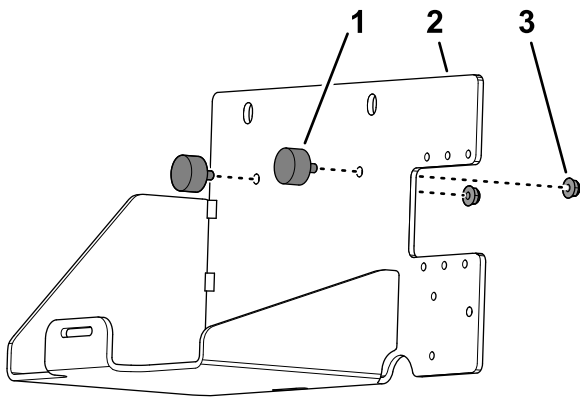
**Figure 158**

g201186

- Battery bracket

## Assembling the Battery Bracket

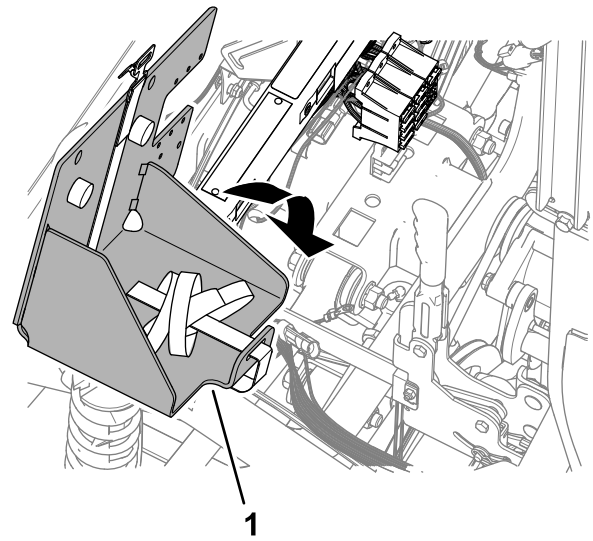
- Assemble the 2 bumpers to the battery bracket with 2 flange locknuts (1/4 inch).



**Figure 159**

g365210

1. Bumper
2. Battery bracket
3. Flange locknut (1/4 inch)

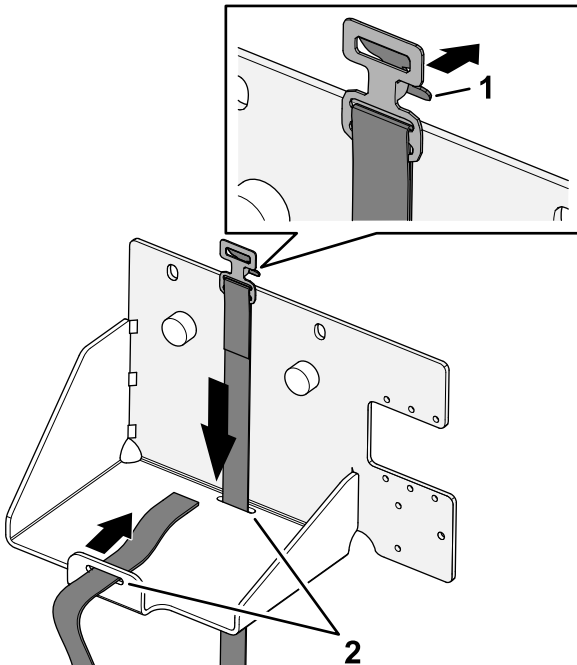


**Figure 161**

g365247

1. Battery bracket

2. Assemble the strap through the 2 slots in the battery bracket.

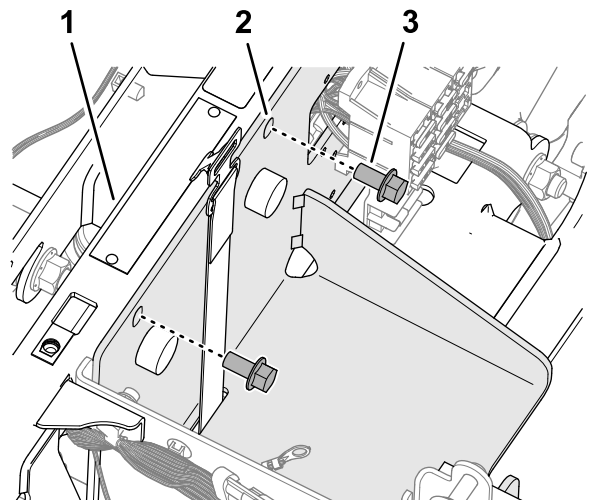


**Figure 160**

g365211

1. Latch (strap buckle)
2. Slot (battery bracket)

2. Assemble the battery bracket to the shock-support tube with the previously removed 2 flange-head bolt (3/8 x 3/4 inch).



**Figure 162**

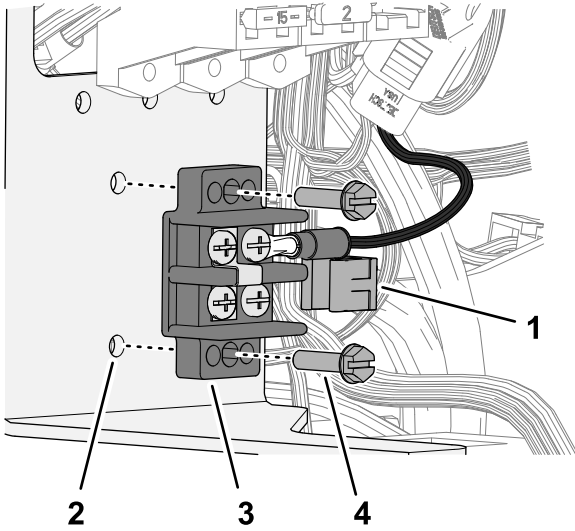
g365259

1. Shock-support tube
2. Battery bracket
3. Flange-head bolt (3/8 x 3/4 inch)

## Installing the Battery Bracket and Battery (650 A)

1. Align the new battery bracket to the shock-support tube of the machine and the fuse blocks.

3. Torque the flange-head bolts to 37 to 45 N·m (27 to 33 ft·lb).
4. Secure the ground block and to the battery bracket with the previously removed 2 bolts (10-24 x 3/4 inch), 2 locknuts (10-24) and secure the wire-support clip to the edge of the bracket.

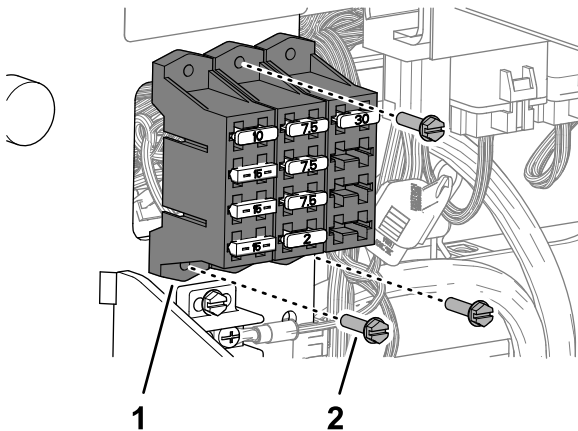


**Figure 163**

g365226

- |                      |                            |
|----------------------|----------------------------|
| 1. Wire-support clip | 3. Ground block            |
| 2. Battery bracket   | 4. Bolt (10-24 x 3/4 inch) |

5. Secure the fuse blocks to the battery bracket with the 3 previously removed bolts (10-24 x 3/4 inch) and 3 nuts (10-24).

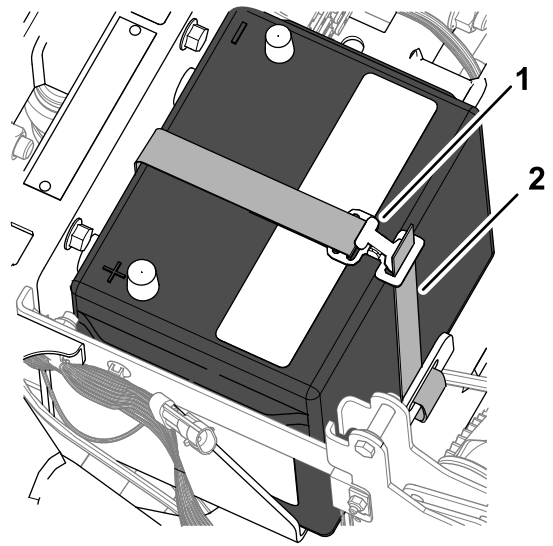


**Figure 164**

g365260

- |               |                            |
|---------------|----------------------------|
| 1. Fuse block | 2. Bolt (10-24 x 3/4 inch) |
|---------------|----------------------------|

6. Assemble the battery (650 A) into the battery bracket.



**Figure 165**

g365262

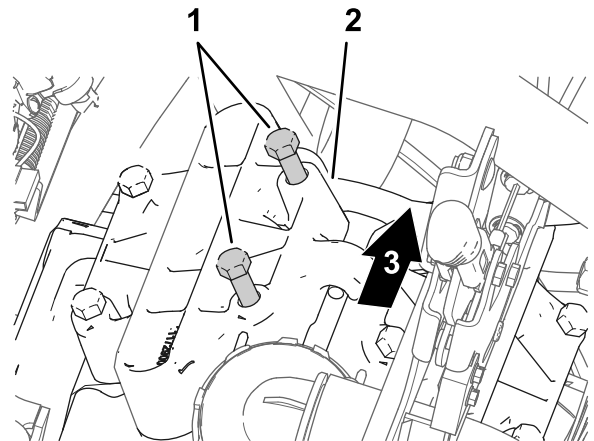
- |                         |                            |
|-------------------------|----------------------------|
| 1. Battery-strap buckle | 2. Webbing (battery strap) |
|-------------------------|----------------------------|

7. Feed the webbing of the battery strap through the buckle, and tighten the strap until the battery is secure.

## Installing the Alternator Bracket

1. At the pump head, loosen the 2 bolts to provide a 7 to 10 mm (1/4 to 3/8 inch) gap between the head of the bolts and the pump.

**Note:** You do not need to remove the bolts from the spray pump.

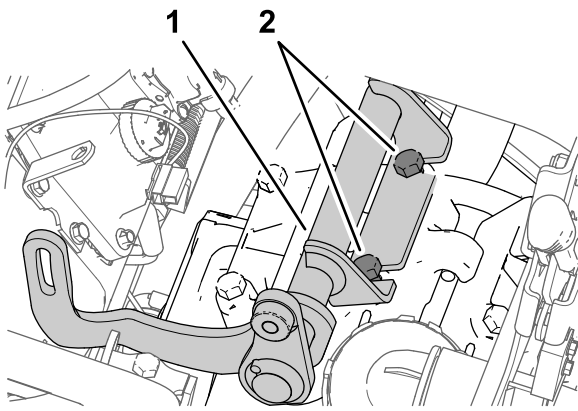


**Figure 166**

g201308

- |                                    |                        |
|------------------------------------|------------------------|
| 1. Bolts (pump head)               | 3. Back of the machine |
| 2. Pump head (11 o'clock position) |                        |

2. Align the alternator bracket between the bolts and the pump head.

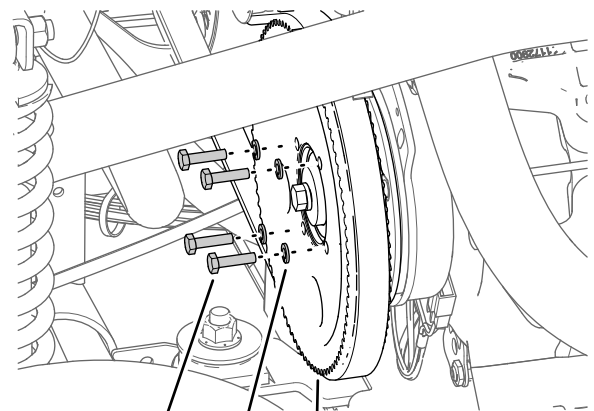


g201303

**Figure 167**

1. Alternator bracket
2. Bolts (pump head)

3. Torque the bolts to 61 to 75 N (45 to 55 ft-lb).



g201306

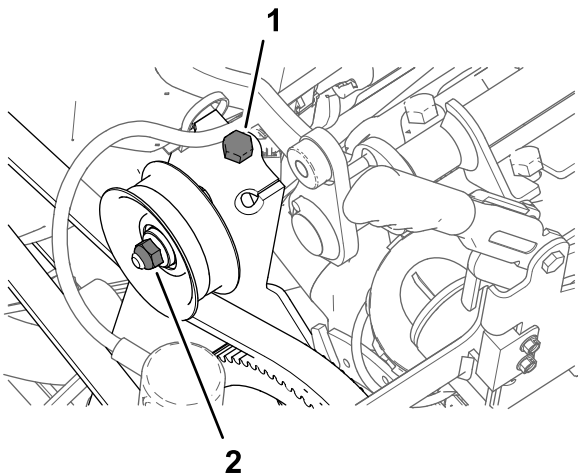
**Figure 169**

1. Bolt (1/4 x 1 inch)
2. Lock washer (1/4 inch)
3. Pulley (sprayer pump)

## Installing the Drive Pulley

1. Loosen the nut for the idler-pulley shaft.

**Note:** Ensure that there is no belt tension.



g201304

**Figure 168**

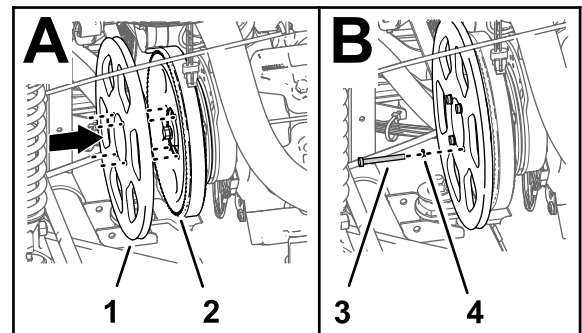
1. Belt-tension bolt (machine)
2. Nut (idler-pulley shaft)

2. Rotate the belt-tension bolt to remove all tension from the sprayer-pump belt.
3. Remove the 4 bolts (1/4 x 1 inch) and 4 lock washers (1/4 inch) that secure the pulley to the sprayer pump.

**Important:** Do not remove the pulley.

**Note:** Retain the lock washer; you no longer need the bolts.

4. Align the holes in the pulley for the alternator (kit) with the holes in the pulley for the sprayer pump.

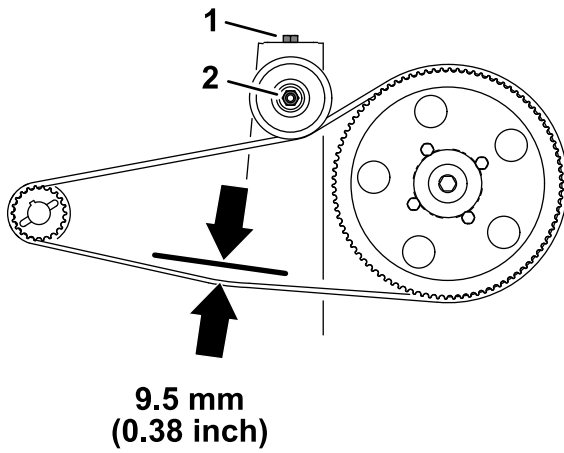


g201305

**Figure 170**

1. Drive pulley 279 mm (11 inches)
2. Pulley (sprayer pump)
3. Bolt (1/4 x 2-1/4 inches)
4. Lock washer (1/4 inch)

5. Assemble the alternator pulley to the sprayer-pump pulley and sprayer pump with the 4 bolt (1/4 x 2-1/4 inches) and 4 lock washers (1/4 inch).
6. Torque the bolts to 1017 to 1243 N·m (90 to 110 in-lb).
7. Rotate the belt-tension bolt to increase the tension of the belt until you measure belt 9.5 mm (3/8 inch) of belt deflection when you apply 4.5 kg (10 lb) halfway between the engine and spray pump sprockets.



9.5 mm  
(0.38 inch)

Figure 171

g201360

1. Belt-tension bolt (machine) 2. Nut (idler-pulley shaft)

8. Tighten the nut for the idler-pulley shaft to 37 to 44 N·m (27 to 33 ft-lb).

## Installing the Alternator

1. Assemble the alternator (60 A) to the threaded boss of the alternator-bracket with the flange-head bolt (3/8 x 1-1/2 inches).

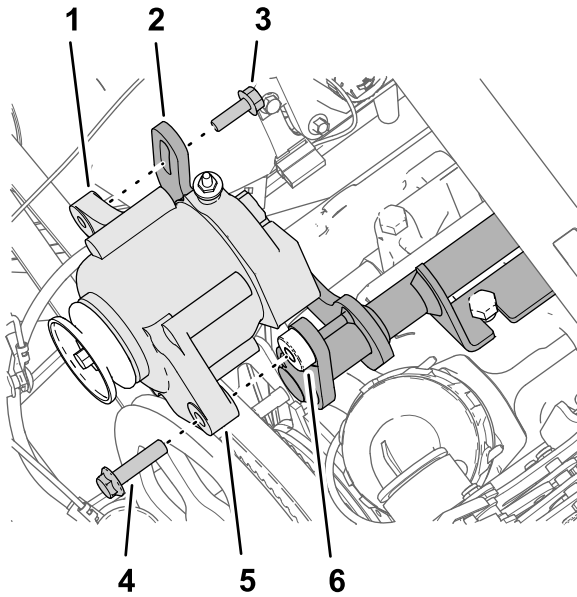


Figure 172

g201413

- |   |   |
|---|---|
| 1. Threaded flange (8 mm)—alternator (60 A) | 4. Flange-head bolt (3/8 x 1-1/2 inches)            |
| 2. Slotted flange (alternator bracket)      | 5. Flange (10 mm (3/8 inch) hole)—alternator (60 A) |
| 3. Flange-head bolt (8 x 25 mm)             | 6. Threaded boss (3/8-16)—alternator-bracket        |

2. Assemble the threaded flange of the alternator to the slotted flange of the alternator bracket with the flange-head bolt (8 x 25 mm).

3. Assemble the V-belt over the drive pulley 279 mm (11 inches) and the pulley of the alternator.

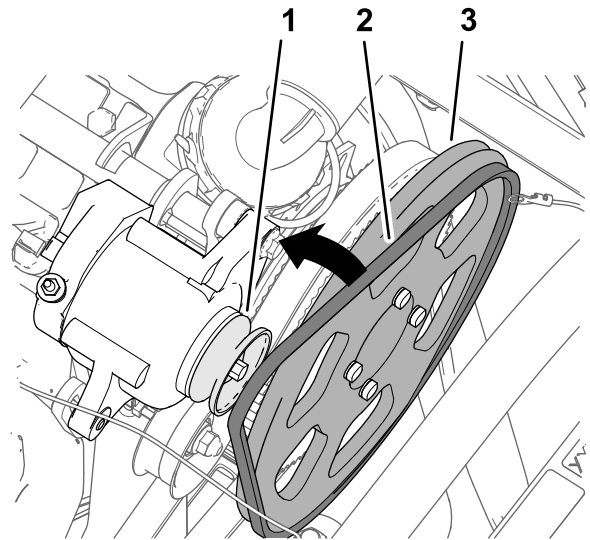


Figure 173

g201412

- |                             |                                    |
|-----------------------------|------------------------------------|
| 1. Pulley (Alternator—60 A) | 3. Drive pulley 279 mm (11 inches) |
| 2. V-belt                   |                                    |

4. Rotate the alternator up to increase tension on the belt until you measure belt 9.5 mm (3/8 inch) of belt deflection when you apply 4.5 kg (10 lb) halfway between the alternator pulley and drive pulley 279 mm (11 inches).

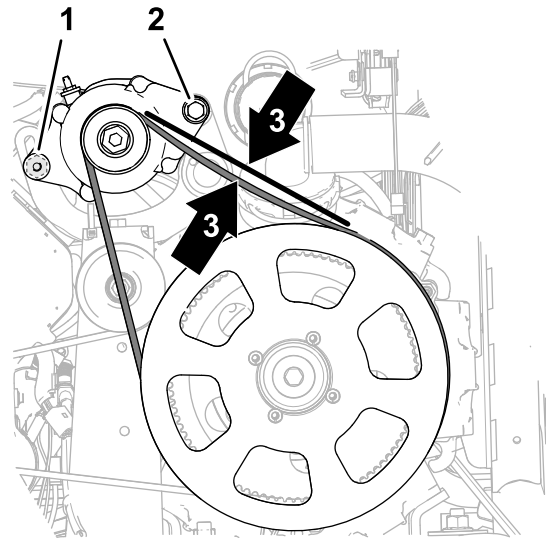


Figure 174

g201701

- |  |                                      |
|--|--------------------------------------|
| 1. Flange-head bolt (8 x 25 mm)          | 3. Belt deflection 9.5 mm (3/8 inch) |
| 2. Flange-head bolt (3/8 x 1-1/2 inches) |                                      |

5. Torque the flange-head bolt (8 x 25 mm) to 23 to 29 N·m (17 to 21 ft-lb).

- Torque the flange-head bolt (3/8 x 1-1/2 inches) to 37 to 45 N·m (27 to 33 ft-lb).

# 34

## Connecting the Harness at the Seat Base

Parts needed for this procedure:

1	Alternator cable (red—6 gauge)
1	Relay
1	Push-in fastener
1	Fuse (15 A)

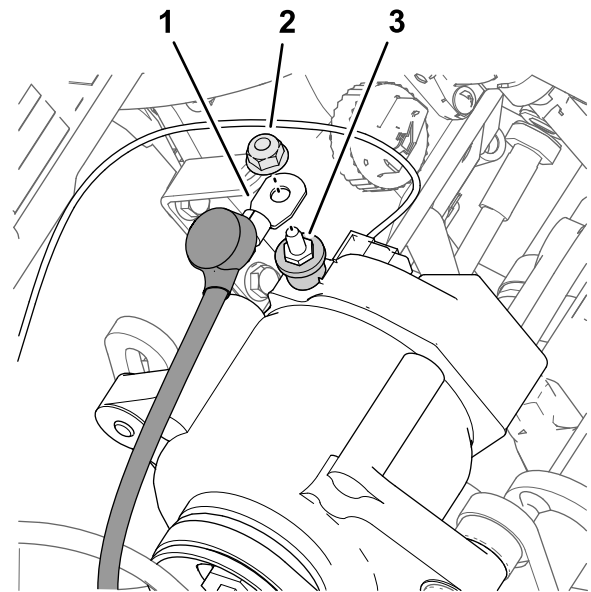


Figure 176

g202181

## Connecting the Alternator (50 A)

- Connect the 2-socket at the end of the pink wire 57 cm (23-1/2 inches) of the harness onto the 2-pin connector of the alternator (50 A).

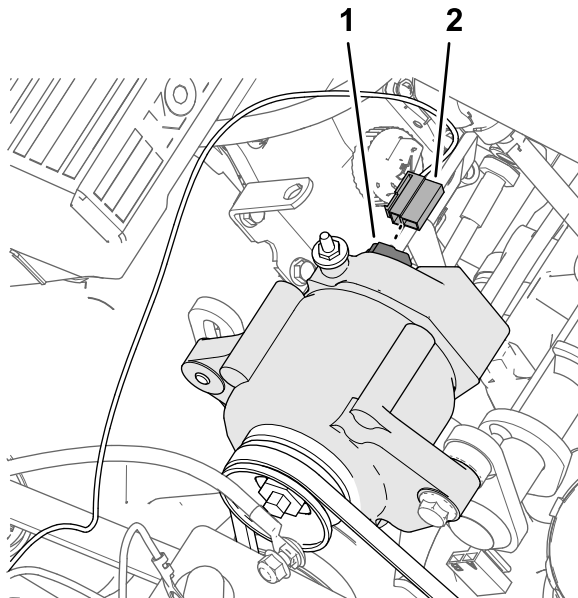


Figure 175

g202176

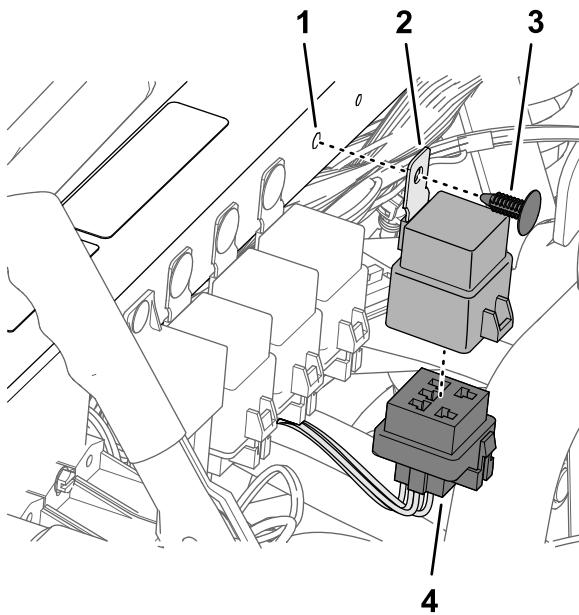
- 2-pin connector—alternator (50 A)
- 2-socket connector—sense wire, pink 57 cm (23-1/2 inches)

- Route the pink sense wire away from the alternator belts and secure the wire with a cable tie.
- Remove the nut from the terminal post of the alternator (50 A).

- Alternator cable (red—6 gauge)
- Nut
- Terminal post—alternator (50 A)
- Assemble the end of the red, 6 gauge alternator cable with the insulator cover onto the terminal post of the alternator (50 A) with the nut.
- Route the other end of the alternator cable toward the battery posts, away from the pulley and alternator belt.
- Torque the nut to 47 to 57 N·m (34 to 42 ft-lb).
- Slip the insulator cover over the terminal post of the alternator.

## Connecting the ASC 10 Enable Relay

- Connect the 5-pin connector of the relay into the 5-socket connector of the harness labeled ASC 10 ENABLE RELAY.



**Figure 177**

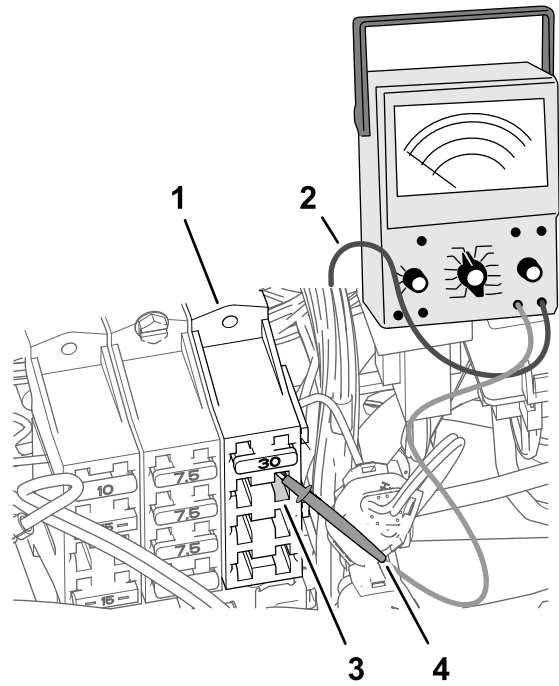
g202182

- |                              |   |
|------------------------------|---|
| 1. Hole (shock-support tube) | 3. Push-in fastener                         |
| 2. Relay                     | 4. 5-socket connector (ASC 10 ENABLE RELAY) |

- Align the hole in the mounting tab of the relay with the hole in the shock-support tube, and secure the relay to the tube with a push-in fastener.

## Connecting the Fuse Blocks

- Prepare a multi-meter for performing a continuity test.
- At fuse block 3 of the machine, insert the multi-meter probe into contact 4 (the right column) of fuse-socket 2.

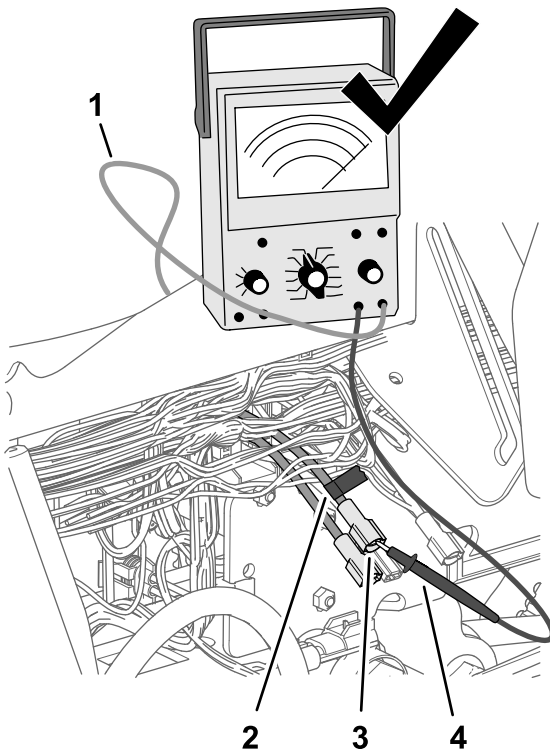


**Figure 178**

g202178

- |                           |   |
|---------------------------|---|
| 1. Fuse block 3 (machine) | 3. Fuse-socket 2—contact 4 (right column) |
| 2. Multi-meter lead       | 4. Multi-meter probe                      |

- At the front side of the fuse blocks, use the other multi-meter probe to identify the blade connector at the end of the red 10-gauge wire that connects to fuse-socket 2—contact 4.

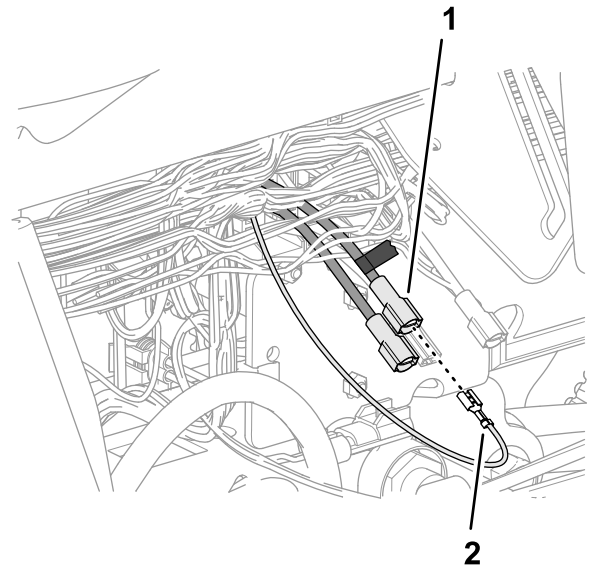


**Figure 179**

g202179

- |                     |  |
|---------------------|--|
| 1. Multi-meter lead | 3. Blade connector (red 10-gauge wire) |
| 2. Tape             | 4. Multi-meter probe                   |

4. Use a piece of tape to mark the connector and wire that you identified in the previous step.
5. Connect the blade connector that you marked in the previous step into the socket connector at the end of the pink wire 51 mm (2 inches) of the harness.

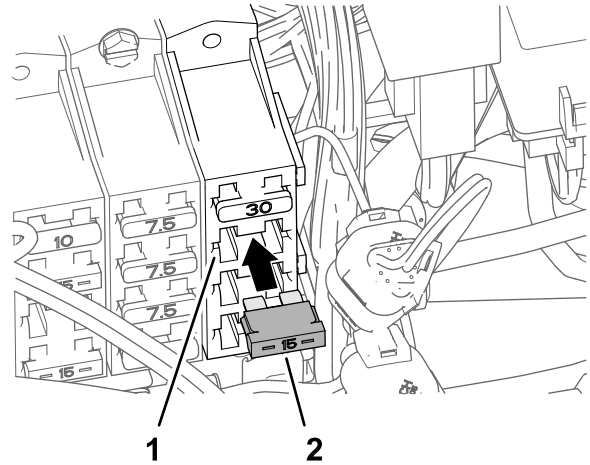


**Figure 180**

g202177

- |   |  |
|---|--|
| 1. Marked blade connector (red 10-gauge wire) | 2. Socket connector—pink wire 51 mm (2 inches) |
|---|--|

6. Insert the fuse (15 A) into fuse-socket 2 of fuse block 3 until the fuse is fully seated.



**Figure 181**

g202180

- |                                 |                |
|---------------------------------|----------------|
| 1. Fuse-socket 2 (fuse block 3) | 2. Fuse (15 A) |
|---------------------------------|----------------|

# 35

## Installing the Navigation-Data and Electrical Harness

Parts needed for this procedure:

1	Quick-connect clamp (red handle)
1	Quick-connect clamp (black handle)

### Assembling the Quick-Disconnect Clamps to the Battery

1. Remove the hex nuts and washers from the handle quick-connect clamps.
2. Open the latch handle of the quick-connect clamp with the black handle.

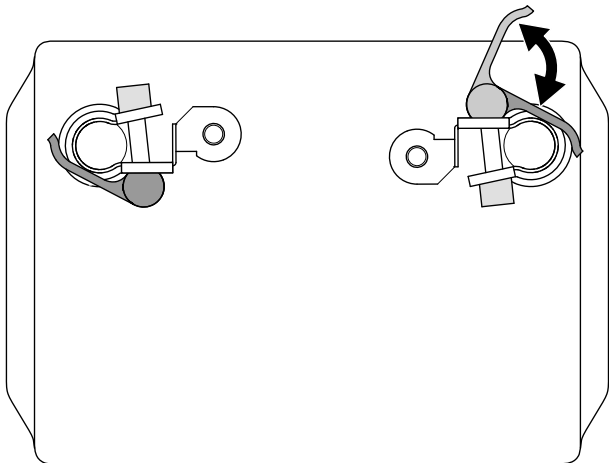


Figure 182

g424702

3. Assemble the quick-connect clamp onto the negative battery post, with the threaded post of the clamp aligned toward the center of the battery.
  4. Close the latch handle of the quick-connect clamp.
- Note:** If you need to adjust the clamping force of the quick-connect clamp, open the handle, rotate the knurled nut to increase or decrease the clamping force, and close the handle for the clamp.
5. Repeat the steps for the red handle clamp on the positive battery post.

## Connecting the Battery

### ⚠ WARNING

Incorrect battery cable routing could damage the machine and cables causing sparks. Sparks can cause the battery gasses to explode, resulting in personal injury.

- Always *disconnect* the negative (black) battery cable before disconnecting the positive (red) cable.
- Always *connect* the positive (red) battery cable before connecting the negative (black) cable.

### ⚠ WARNING

Battery terminals or metal tools could short against metal components causing sparks. Sparks can cause the battery gasses to explode, resulting in personal injury.

- When removing or installing the battery, do not allow the battery terminals to touch any metal parts of the machine.
- Do not allow metal tools to short between the battery terminals and metal parts of the machine.

1. Slit the insulator cover of the positive battery cable to the starter.

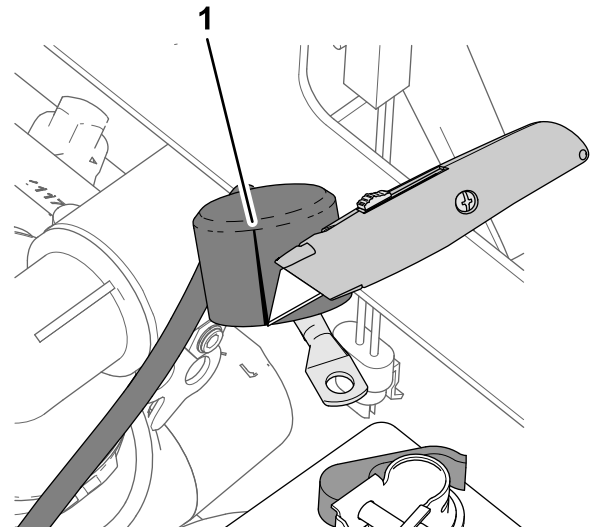


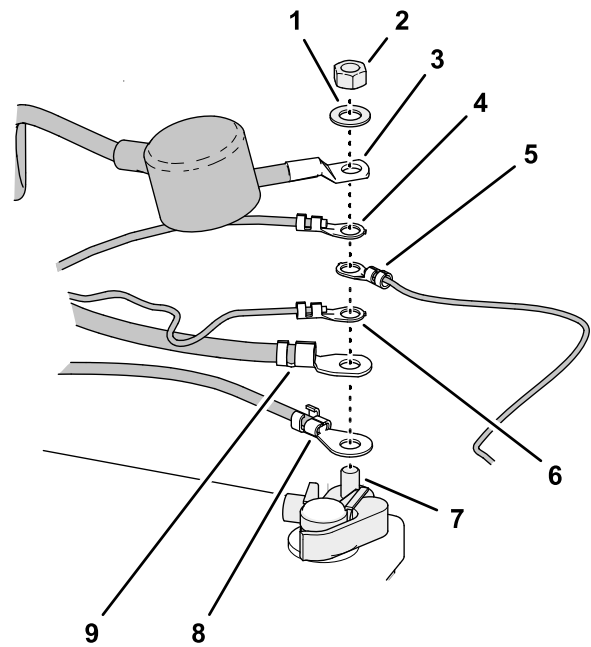
Figure 183

g202746

1. Slit (insulator cover—positive battery cable to the starter)
2. Assemble the following wire and cable terminals onto the threaded post of the positive battery terminal in the following order:

**Important:** Ensure that the battery-cable terminal (positive) to the engine starter is positioned at the top of the stack of terminals on the threaded post.

- A. Ring terminal—165 cm (65 inches) modern power harness branch (labeled BATTERY)
- B. Battery-cable terminal (positive)—to the alternator (50 A)
- C. Ring terminal—258 cm (101-1/2 inches) navigation-data and electrical harness branch (labeled BATTERY (+))
- D. Ring terminal—21.6 cm (8-1/2 inches) machine harness branch (labeled TO BATTERY POSITIVE)
- E. Ring terminal—24 cm (9-1/2 inches) kit sprayer-harness branch (unlabeled)
- F. Battery-cable terminal (positive)—to the engine starter



**Figure 184**

g424703

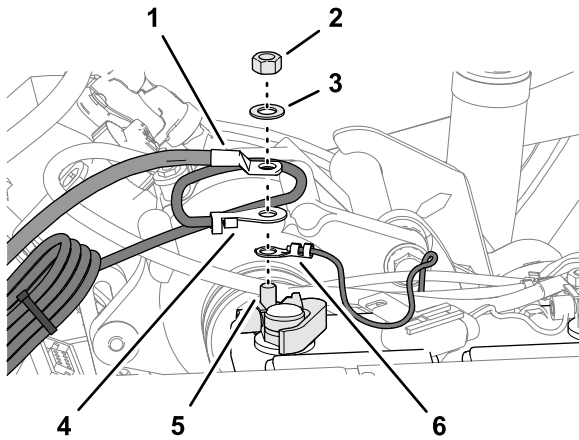
- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>1. Washer 1/4 inch (quick-connect clamp)</li> <li>2. Hex nut 1/4 inch (quick-connect clamp)</li> <li>3. Battery-cable terminal (positive)—to the engine starter</li> <li>4. Ring terminal—24 cm (9-1/2 inches) kit sprayer-harness branch (unlabeled)</li> <li>5. Ring terminal—21.6 cm (8-1/2 inches) machine harness branch (labeled TO BATTERY POSITIVE)</li> </ul> | <ul style="list-style-type: none"> <li>6. Ring terminal—258 cm (101-1/2 inches) navigation-data and electrical harness branch (not labeled—red wire insulation)</li> <li>7. Threaded post—quick-connect clamp (positive battery post)</li> <li>8. Battery-cable terminal (positive)—to the alternator (50 A)</li> <li>9. Ring terminal—165 cm (65 inches) modern power harness branch (labeled BATTERY)</li> </ul> |
|---|--|

- 3. Assemble the hex nut (1/4 inch) and washer (1/4 inch) onto the threaded post, and torque the nut to 1017 to 1234 N·cm (90 to 110 in-lb).
- 4. Align the insulator cover of the positive battery cable to the starter over the threaded post.
- 5. Assemble the following wire and cable terminals onto the threaded post of the negative battery terminal in the following order:

**Important:** Ensure that the battery-cable terminal (negative) to the engine and chassis ground is positioned at the top of the stack of terminals on the threaded post.

- A. Ring terminal—258 cm (101-1/2 inches) navigation-data and electrical harness branch (not labeled—black wire insulation)

- B. Ring terminal—165 cm (65 inches) modem power harness branch (labeled GROUND)
- C. Battery-cable terminal (negative)—to the engine and chassis ground



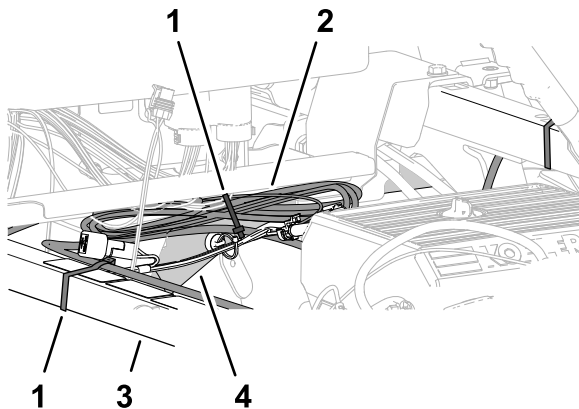
**Figure 185**

g315992

- 1. Battery-cable terminal (negative)—to the engine and chassis ground
- 2. Hex nut (1/4 inch—quick-connect clamp)
- 3. Washer (1/4 inch—quick-connect clamp)
- 4. Ring terminal—165 cm (65 inches) modem power harness branch (labeled GROUND)
- 5. Threaded post—quick-connect clamp (negative battery post)
- 6. Ring terminal—258 cm (101-1/2 inches) navigation-data and electrical harness branch (not labeled—black wire insulation)

## Securing the Harness

- 1. Gather the excess length of the data harness against the right, upper-frame tube.



**Figure 186**

g202768

- 1. Cable tie
- 2. Data-harness bundle
- 3. Shock-support tube
- 4. Right, upper-frame tube

- 2. Align the data harness to the shock-support tube, and secure the harness to the tube with a cable tie.
- 3. Align the data-harness bundle to the right, upper-frame tube, and secure the harness bundle to the frame tube with a cable tie.
- 4. Ensure that there is clearance between the pulleys and belts and the data harness, battery harness, kit wire harness, and battery cables.

Secure the wire harness and cables with cable ties as needed to provide clearance away from the belts and pulleys.

# 36

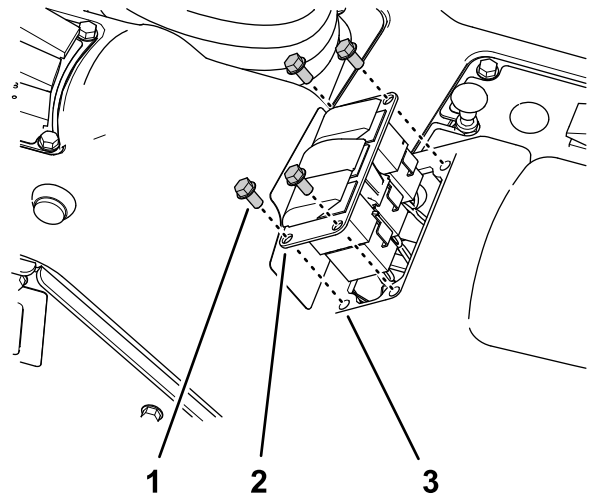
## Removing the Rate-Control Switch

### Parts needed for this procedure:

1	Switch plug
---	-------------

### Procedure

- 1. Remove the 4 flange-head screws (1/4 x 1/2 inch) that secure the 3-switch panel to the control console.



**Figure 187**

g198659

- 1. Flange-head screw (1/4 x 1/2 inch)
- 2. 3-switch panel
- 3. Opening (control console)

- 2. Squeeze the lock tabs of the rate-control switch together and push up the switch out of the 3-switch panel.

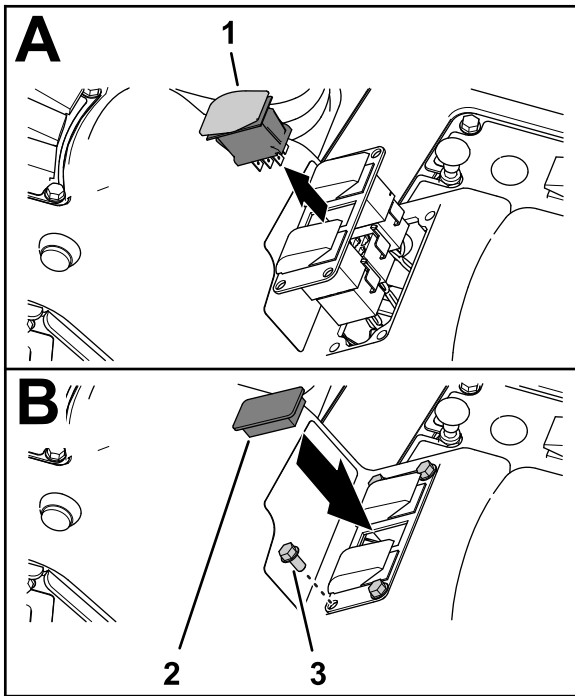


Figure 188

g198658

1. Rate-control switch
2. Switch plug
3. Flange-head screw (1/4 x 1/2 inch)

3. Disconnect the 8-socket connector of the machine wire harness (labeled **Rate Switch**) from the 8-pin connector of the switch.

**Note:** You no longer need the rate switch that you removed from the machine.

4. Route the branch of the front harness for the rate switch through the opening in the 3-switch panel and secure the wiring branch against an adjacent wire branch with a cable tie.
5. Assemble the 3-switch panel to the control console with the 4 flange-head screws (1/4 x 1/2 inch) that you removed in step 1.
6. Align the switch plug to the opening in the 3-switch panel where you removed the rate switch.
7. Insert the switch plug into the 3-switch panel until the plug snaps into the panel securely.

# 37

## Installing the Hood and the Front Fenders

Parts needed for this procedure:

13	Push-in fastener
----	------------------

### Installing the Hood

1. Align the hood holes in the hood with the holes in the dash panel and frame of the machine.

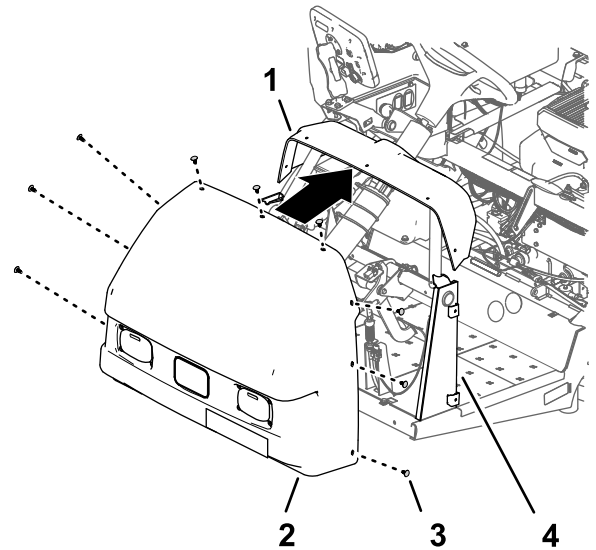
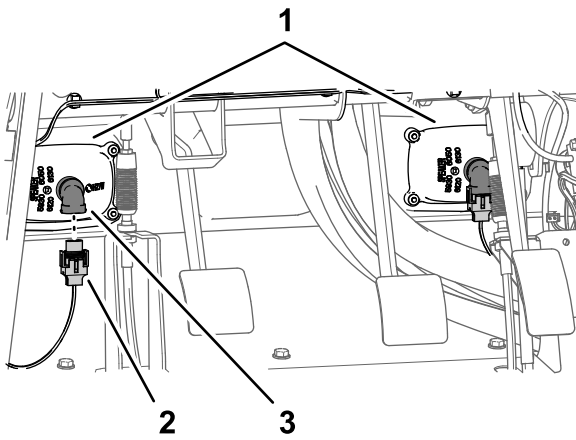


Figure 189

g202004

1. Dash panel
2. Hood
3. Push-in fastener
4. Dash support

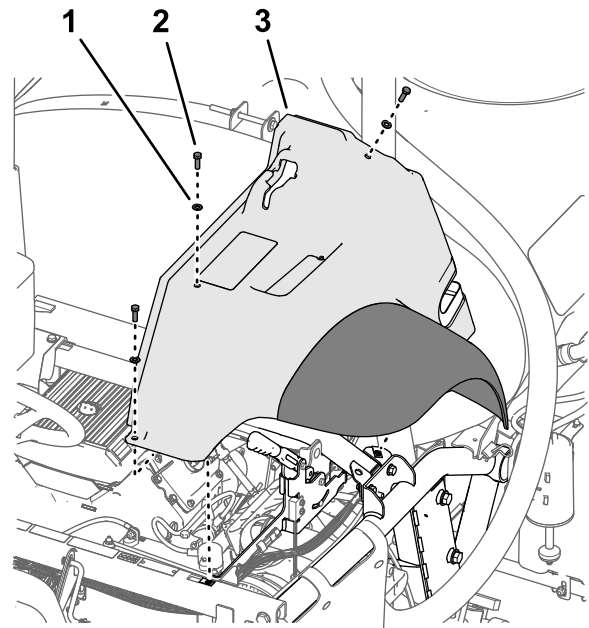
2. Secure the hood to the dash and frame with 9 push-in fastener.
3. Connect the 2 electrical connectors (2-socket) of the machine wire harness from the 2-pin connectors of the left and right headlights.



**Figure 190**

g197153

1. Headlights
2. 2-socket connector (machine wire harness)
3. 2-pin connector (headlight)



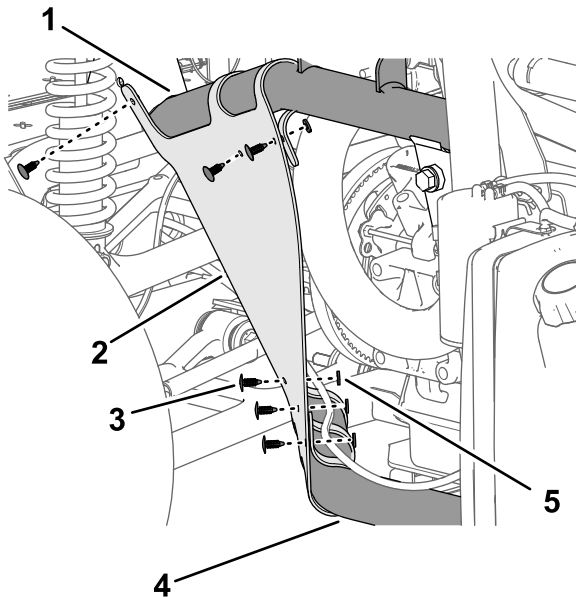
**Figure 192**

g197152

1. Washer (5/16 inch)
2. Bolt (5/16 x 1 inch)
3. Left, front fender

## Installing the Left Front Fender

1. Align the inner-fender shroud to the left, upper- and left, lower-frame tubes.



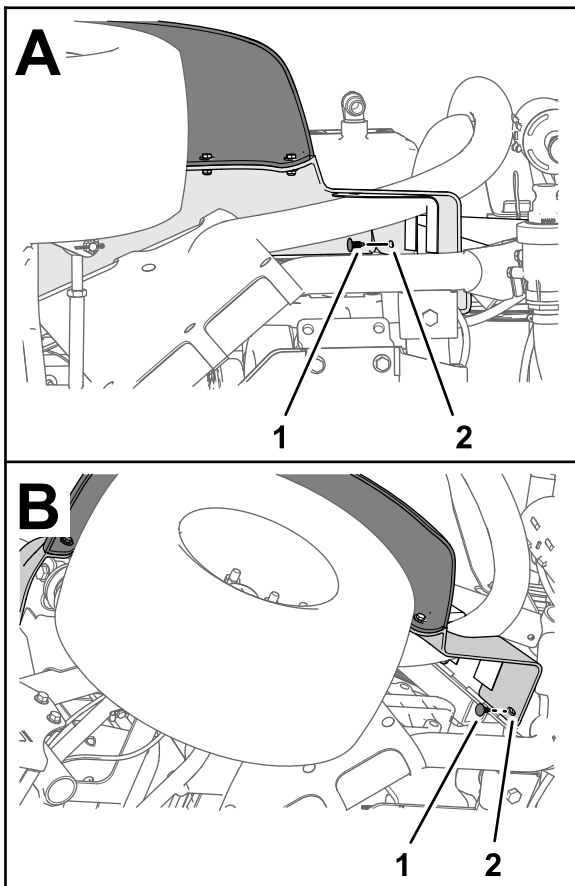
**Figure 191**

g202023

1. Left, upper-frame tube
2. Inner-fender shroud
3. Push-in fastener
4. Left, lower-frame tube
5. Washer (9/16 x 1/2 inch)

2. Secure the inner-fender shroud to the frame tubes with the 6 push-in fasteners.
3. Align the holes in the fender with the holes in the frame of the machine.

4. Loosely assemble the fender to the frame with the previously removed 3 bolts (5/16 x 1 inch) and 3 washers (5/16 inch).
5. Secure the fender to the frame channel with the 2 push-in fasteners.



**Figure 193**

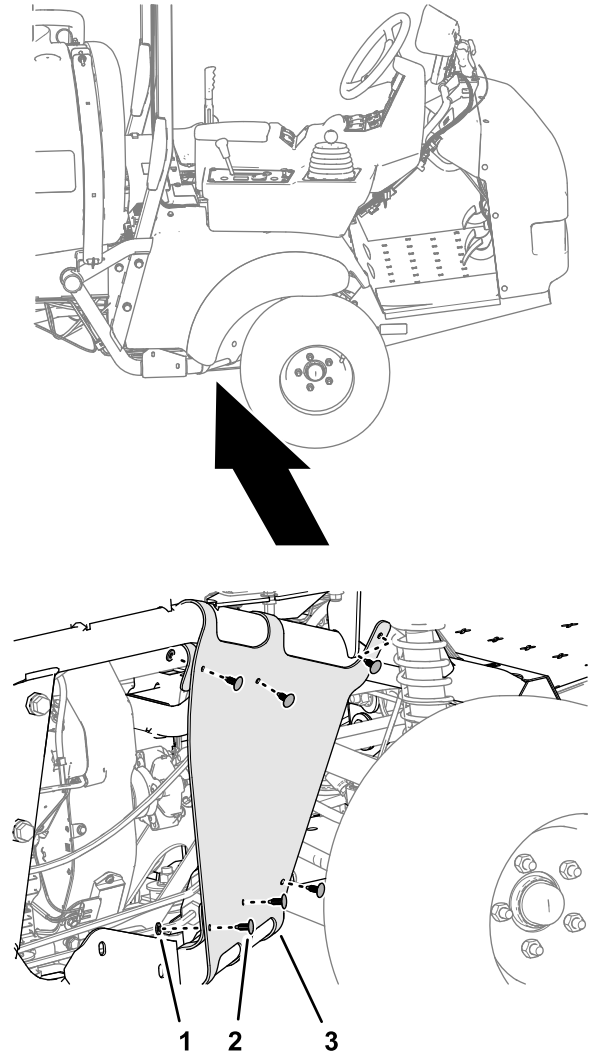
g264614

1. Push-in fastener                      2. Left, front fender

6. Torque the bolt (5/16 x 1 inch) to 1978 to 2542 N·cm (175 to 225 in-lb).
7. Repeat steps 1 through 6 for the inner-fender shroud and fender at the other side of the machine.

## Installing the Right Front Fender

1. Align the inner-fender shroud to the right, upper and right, lower-frame tubes.



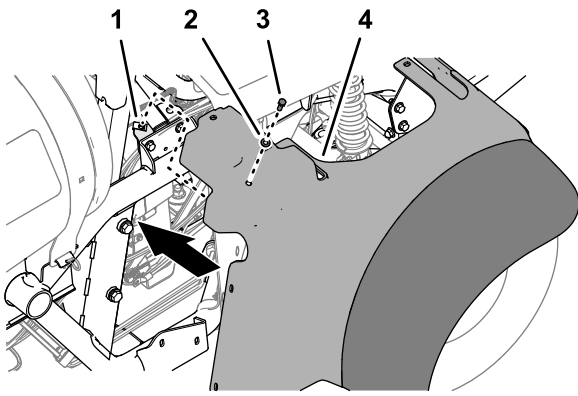
g323169

g323162

**Figure 194**

1. Washer (9/16 x 1/2 inch)      3. Inner-fender shroud  
2. Push-in fastener

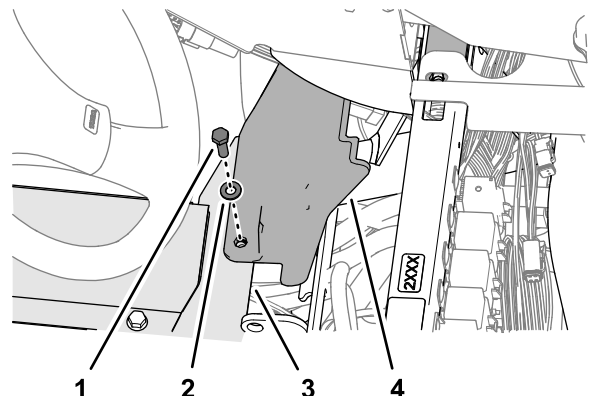
2. Secure the inner-fender shroud to the frame tubes with the 6 push-in fasteners and 5 washers (9/16 x 1/2 inch).
3. Align the right, front fender to the machine and align the holes in the fender with the holes in the frame.



g323164

**Figure 195**

- |                                    |                             |
|------------------------------------|-----------------------------|
| 1. Clip nut (cross-member support) | 3. Capscrew (5/16 x 1 inch) |
| 2. Washer (5/16 inch)              | 4. Right, front fender      |

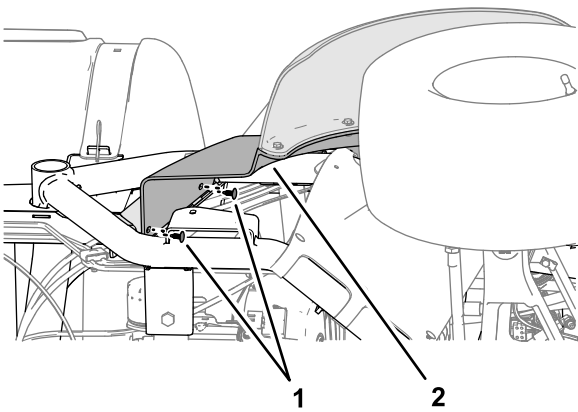


g323165

**Figure 197**

- |                             |                        |
|-----------------------------|------------------------|
| 1. Capscrew (5/16 x 1 inch) | 3. Platform floor      |
| 2. Washer (5/16 inch)       | 4. Right, front fender |

- Secure right, front fender to the clip nut of the cross-member support with the capscrew (5/16 x 1 inch) and washer (5/16 inch).
- Secure the right, front fender to the roll bar mounting channel with 2 push-in fasteners.



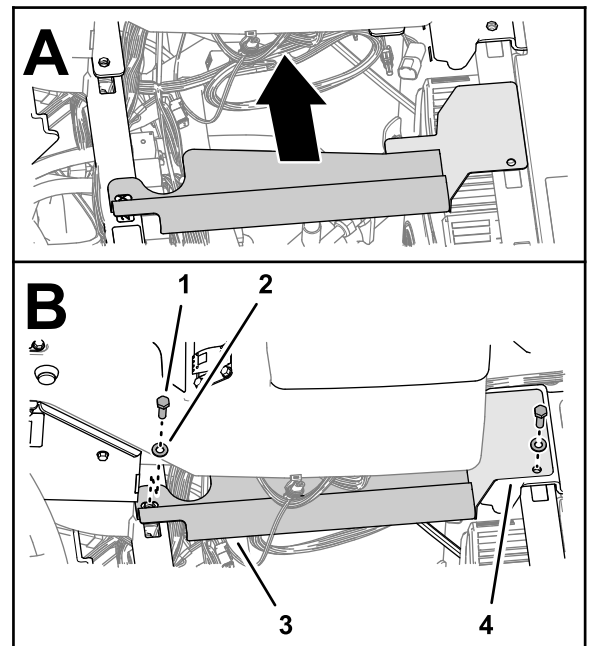
g323166

**Figure 196**

- |                     |                        |
|---------------------|------------------------|
| 1. Push-in fastener | 2. Right, front fender |
|---------------------|------------------------|

- Align the hole in the right, front fender with the hole in the platform floor and secure the fender to the floor with a capscrew (5/16 x 1 inch) and washer (5/16 inch).

- Align the hole in the bottom console cover to the hole in the shock-support tube and the hole in the end console cover to the hole in the cross-member tube.



g323163

**Figure 198**

- |                             |                           |
|-----------------------------|---------------------------|
| 1. Capscrew (5/16 x 1 inch) | 3. Console cover (bottom) |
| 2. Washer (5/16 inch)       | 4. Console cover (end)    |

- Secure the covers to the tubes with 2 capscrews (5/16 x 1 inch) and 2 washers (5/16 inch).

# 38

## Installing the Engine-Access Panel and the Seat

No Parts Required

### Installing the Engine-Access Panel Machines without the Tank Rinse Kit

1. Align the latches of the engine access panel with the bushings in the panel-support brackets on the roll bar.

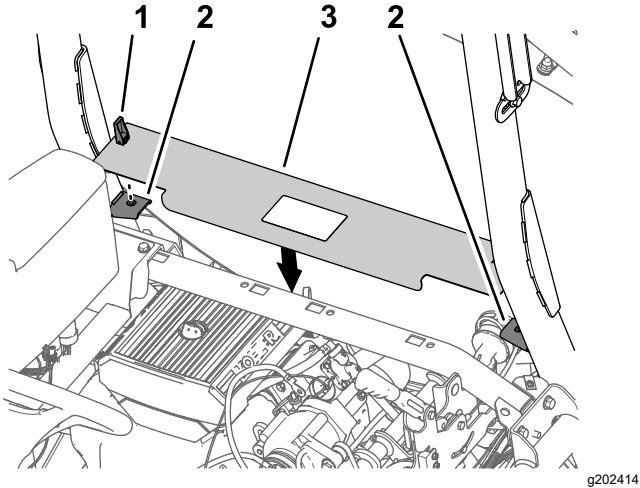


Figure 199

1. Latch
2. Panel-support bracket
3. Engine access panel

2. Assemble the panel onto the brackets.
3. Rotate the handles latches down to secure the panel to the brackets.

### Installing the Seat

1. Align the seat and seat plate to the chassis of the machine.

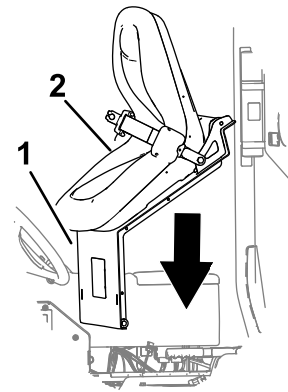
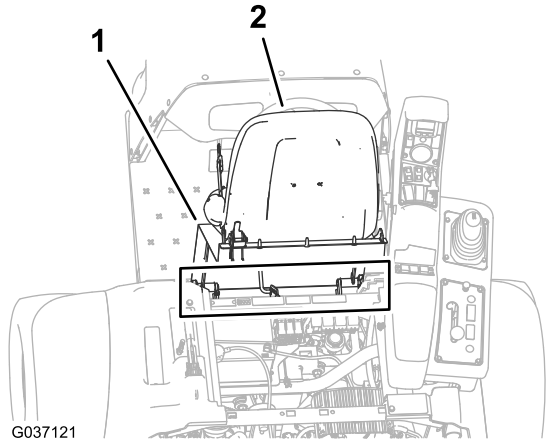


Figure 200

g202000

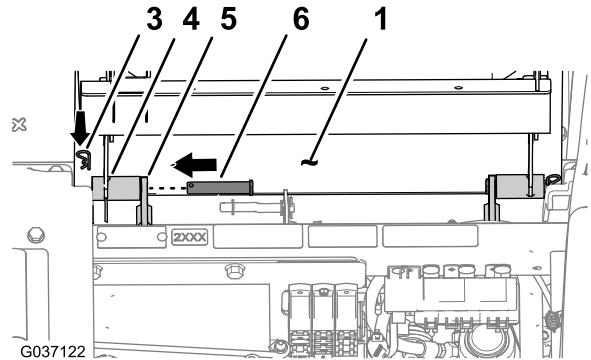
1. Seat plate
2. Seat

2. Align the holes in the pivot fittings of the seat pan with the holes in the chassis bracket.



G037121

g037121



G037122

g202002

Figure 201

1. Seat plate
2. Seat
3. Hairpin
4. Pivot fitting (seat pan)
5. Chassis bracket
6. Pivot pin

3. Assemble the seat pan to the chassis brackets with the 2 pivot pins.
4. Secure the pivot pins to the machine with the 2 hairpins.
5. Assemble the prop rod to the bracket of the seat with the washer and hairpin.

# 39

## Programming the Machine Settings

No Parts Required

### Procedure

1. Insert the key into the key switch and rotate it to the ON position.

The splash screen appears in the InfoCenter display and the indicator light illuminates briefly.

**Note:** Do not start the engine.

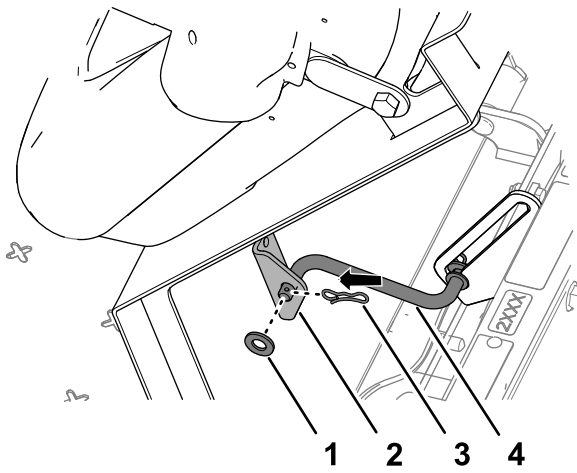


Figure 202

g202001

1. Washer
2. Bracket (seat)
3. Hairpin
4. Prop rod

6. Plug the 2-socket connector of the machine wire harness into the connector for the seat switch until the connectors latch securely.

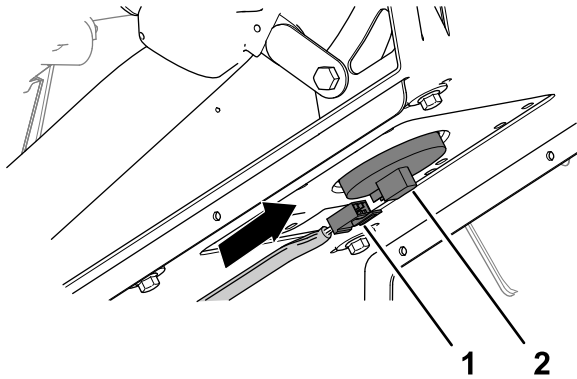


Figure 203

g202003

1. 2-socket connector (machine wire harness)
2. Seat-switch connector

7. Rotate the seat forward slightly, remove the prop rod from the detent, rotate the seat down until the seat latches securely.

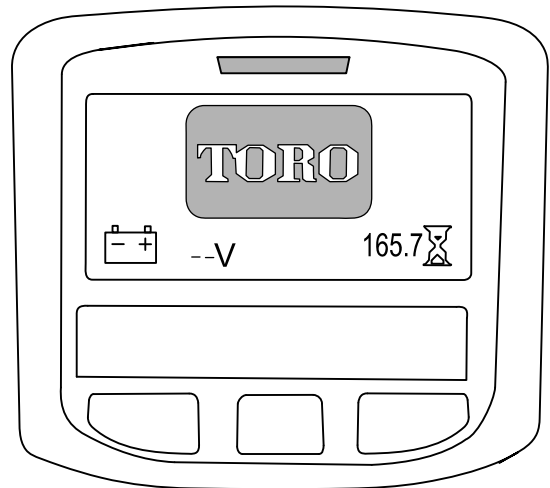


Figure 204

g202877

2. At the Home screen, press the center button on the InfoCenter to access the navigation screen.

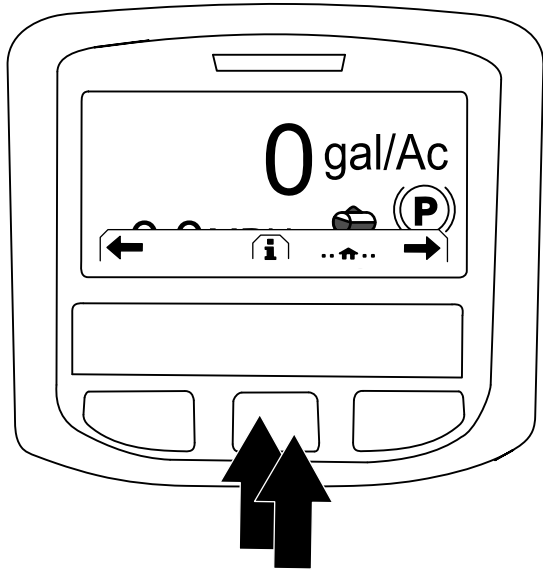


Figure 205

g202868

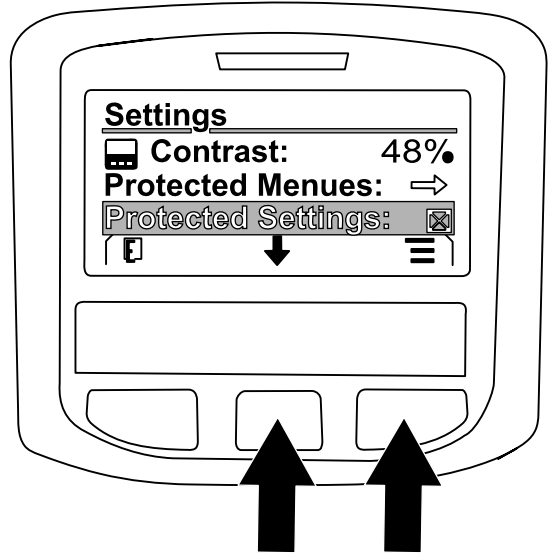


Figure 207

g202869

3. Press the center button on the InfoCenter to access the Main Menu.
4. At the MAIN MENU screen, press the center button to navigate to the SETTING option, and press the right button to select the option.

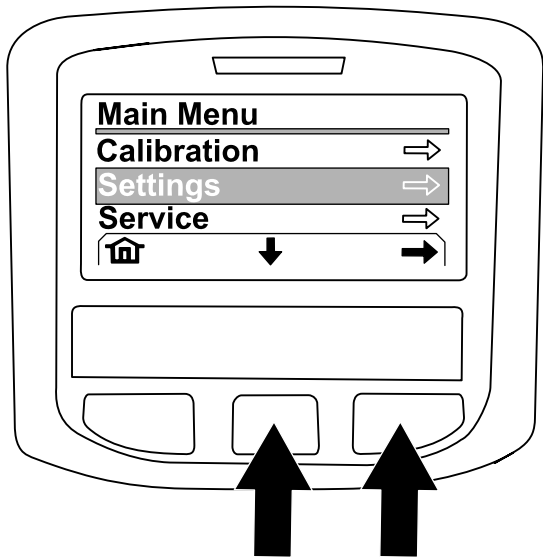


Figure 206

g202874

6. Enter the PIN code as follows:
  - A. Press the center button as needed to enter the PIN code number for the left position.

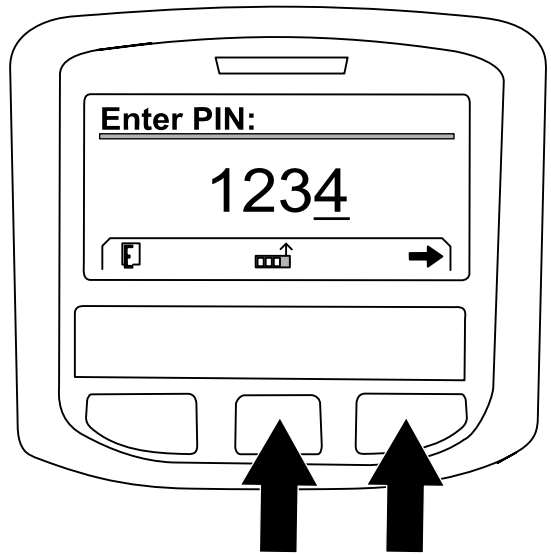


Figure 208

g202870

5. At the SETTING screen, press the center button to navigate to the PROTECTED SETTINGS option, and press the right button to select the option.

- B. Press the right button to navigate to the next PIN code number position.
- C. Repeat steps A and B for the 3 other PIN code number positions.
- D. When all the PIN code numbers are entered press the right button and then press the center button to enter the PIN code. The indicator light illuminates briefly.

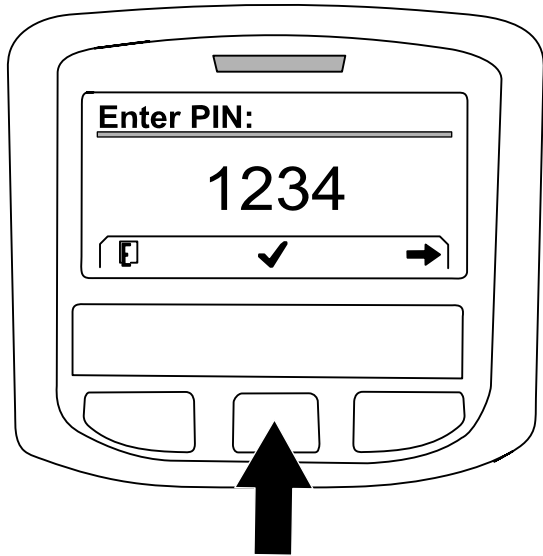


Figure 209

g202871

7. Press the center button to navigate to the GEOLINK option, and press the right button to set the option.

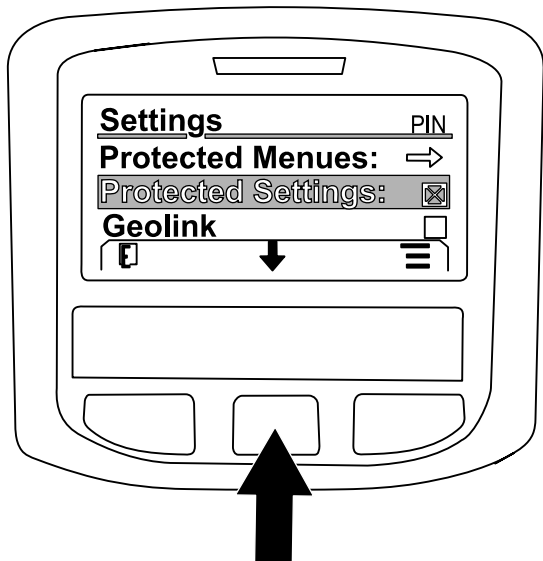


Figure 210

g202875



Figure 211

g202872

8. Rotate the ignition switch to the OFF position and then to the ON position.
9. The GEOLINK splash screen initially appears when you rotate the key switch to the ON position.

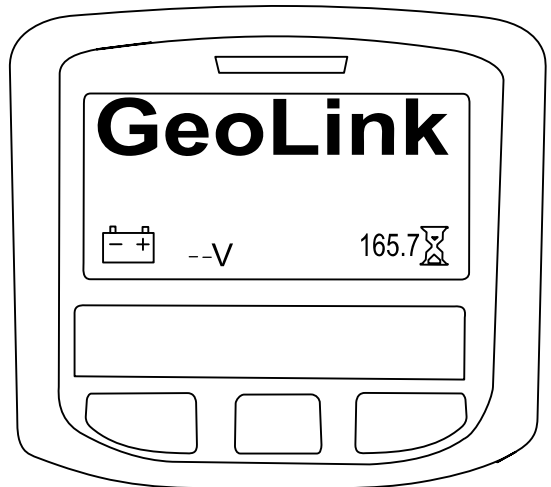


Figure 212

g202878

The GeoLink confirmation screen displays in the InfoCenter.

# 40

## Powering the GeoLink Components

No Parts Required

### Procedure

1. Turn the ignition key to the RUN (gasoline) or PREHEAT/RUN (diesel) position.
2. Verify that the following components indicate that each receives power:
  - Control console—displays graphics and text



Figure 213

g423361

- Satellite receiver—the PWR indicator illuminates

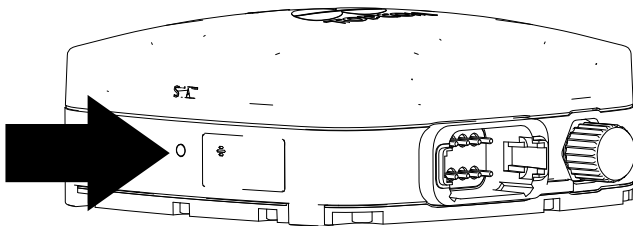


Figure 214

g423320

- Modem—the LED indicators illuminate.

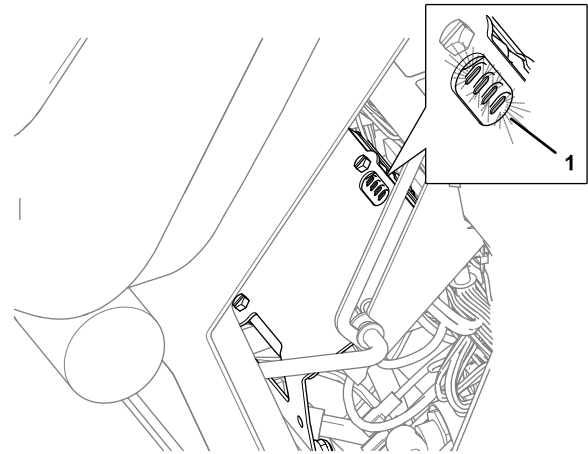


Figure 215

g316148

1. LED Indicators (passenger seat base)

- Automatic section controller—the STATUS indicator illuminates

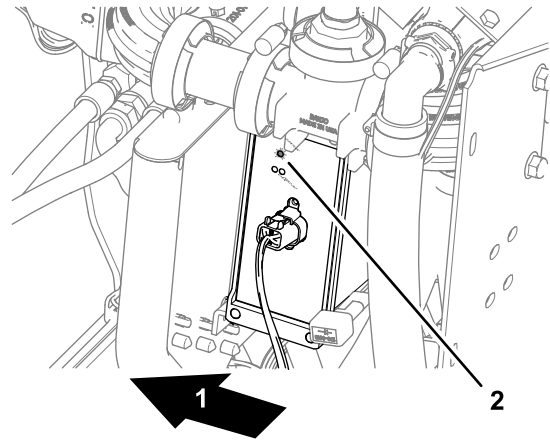


Figure 216

g302923

1. Back of the machine
2. STATUS indicator (automatic section controller)

3. Turn the ignition key to the OFF position.
4. Verify that power is shut off at the following components:

- Control console
- Satellite receiver
- Automatic section controller

# 41

## Completing the Software Setup

No Parts Required

### Procedure

Refer to the *Software Guide* for your GeoLink system.

Complete the following procedures:

1. Verify the software version.
2. Select the units of measure.
3. Create a field.
4. Create a new product and application rate.
5. Create a spray task.
6. Balance the section valves.
7. Checking the spray system.
8. Balance the agitation bypass valve.
9. Calibrate the flow meter.
10. Verify the cellular status.
11. Calibrate the compass at the distributor location.
12. Clear the NVRAM at the customer location.
13. Calibrate the compass at the customer location.



# The Toro Warranty

Two-Year or 1,500 Hours Limited Warranty

## Conditions and Products Covered

The Toro Company warrants your Toro Commercial product ("Product") to be free from defects in materials or workmanship for 2 years or 1,500 operational hours\*, whichever occurs first. This warranty is applicable to all products with the exception of Aerators (refer to separate warranty statements for these products). Where a warrantable condition exists, we will repair the Product at no cost to you including diagnostics, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

\* Product equipped with an hour meter.

## Instructions for Obtaining Warranty Service

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists. If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Toro Commercial Products Service Department  
8111 Lyndale Avenue South  
Bloomington, MN 55420-1196

952-888-8801 or 800-952-2740  
E-mail: [commercial.warranty@toro.com](mailto:commercial.warranty@toro.com)

## Owner Responsibilities

As the product owner, you are responsible for required maintenance and adjustments stated in your *Operator's Manual*. Repairs for product issues caused by failure to perform required maintenance and adjustments are not covered under this warranty.

## Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, or modified non-Toro branded accessories and products.
- Product failures which result from failure to perform recommended maintenance and/or adjustments.
- Product failures which result from operating the Product in an abusive, negligent, or reckless manner.
- Parts consumed through use that are not defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, brake pads and linings, clutch linings, blades, reels, rollers and bearings (sealed or greasable), bed knives, spark plugs, castor wheels and bearings, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, flow meters, and check valves.
- Failures caused by outside influence, including, but not limited to, weather, storage practices, contamination, use of unapproved fuels, coolants, lubricants, additives, fertilizers, water, or chemicals.
- Failure or performance issues due to the use of fuels (e.g. gasoline, diesel, or biodiesel) that do not conform to their respective industry standards.
- Normal noise, vibration, wear and tear, and deterioration. Normal "wear and tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows.

## Countries Other than the United States or Canada

Customers who have purchased Toro products exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact your Authorized Toro Service Center.

## Parts

Parts scheduled for replacement as required maintenance are warranted for the period of time up to the scheduled replacement time for that part. Parts replaced under this warranty are covered for the duration of the original product warranty and become the property of Toro. Toro will make the final decision whether to repair any existing part or assembly or replace it. Toro may use remanufactured parts for warranty repairs.

## Deep Cycle and Lithium-Ion Battery Warranty

Deep cycle and Lithium-Ion batteries have a specified total number of kilowatt-hours they can deliver during their lifetime. Operating, recharging, and maintenance techniques can extend or reduce total battery life. As the batteries in this product are consumed, the amount of useful work between charging intervals will slowly decrease until the battery is completely worn out. Replacement of worn out batteries, due to normal consumption, is the responsibility of the product owner. Note: (Lithium-Ion battery only): Refer to the battery warranty for additional information.

## Lifetime Crankshaft Warranty (ProStripe 02657 Model Only)

The ProStripe which is fitted with a genuine Toro Friction Disc and Crank-Safe Blade Brake Clutch (integrated Blade Brake Clutch (BBC) + Friction Disc assembly) as original equipment and used by the original purchaser in accordance with recommended operating and maintenance procedures, are covered by a Lifetime Warranty against engine crankshaft bending. Machines fitted with friction washers, Blade Brake Clutch (BBC) units and other such devices are not covered by the Lifetime Crankshaft Warranty.

## Maintenance is at Owner's Expense

Engine tune-up, lubrication, cleaning and polishing, replacement of filters, coolant, and completing recommended maintenance are some of the normal services Toro products require that are at the owner's expense.

## General Conditions

Repair by an Authorized Toro Distributor or Dealer is your sole remedy under this warranty.

**The Toro Company is not liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty.**

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

## Note Regarding Emissions Warranty

The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA) and/or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the Engine Emission Control Warranty Statement supplied with your product or contained in the engine manufacturer's documentation.



**Count on it.**