



4WD Sensor Kit

Workman® HDX 4-Wheel Drive Utility Vehicle

Model No. 137-2795

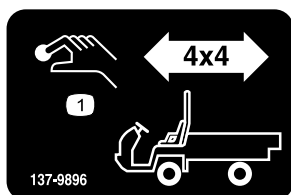
Installation Instructions

Safety

Safety and Instructional Decals



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



decal137-9896

137-9896

1. 4x4 engage button



decal137-9895

137-9895

1. 4x4 auto enable—off



Installation

Loose Parts

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

Description	Qty.	Use
No parts required	–	
No parts required	–	Prepare the machine.
4WD sensor	1	Install the 4WD sensor.
Yoke and shaft assembly	1	
Sensor ring	1	
Sensor bracket	1	
Button-head screw	1	
No parts required	–	Disconnect the battery.
4WD button	1	Install the wire harness, switch, and button.
4WD wire harness	1	
Relay	3	
Nut	1	
Cable tie	20	
Rocker switch	1	
4WD engage decal (137-6720)	1	
4WD auto enable decal (137-6721)	1	
Noise reducer harness	1	Install the noise reducer harness.

Testing the Front Differential

To ensure that the front differential is ready for this kit, complete the following:

1. Turn on the machine, disengage the parking brake, and move to an open area.
2. Block the front wheels with an object that will engage the 4WD to climb (e.g., wood planks or a curb).
3. Slowly attempt to climb the blocking object so that the rear wheels slip, activating the front differential.
4. If the machine cannot climb the obstacle, or if you hear clunking or chattering noises from the differential, contact your Authorized Service Dealer before starting this installation.

Preparing the Machine

Some kits installed on the machine may interfere with the installation and operation of this kit.

If your machine has any of the following kits installed, complete the instruction(s) that correspond(s) with the installed kit(s) listed below:

- Front Differential Interrupter Kit (Model 121-6337)—Remove the kit wire harness.
- 4WD Manual Control Kit (Model 119-0817)—Remove the kit wire harness, the 4WD control switch, and the 4WD control decal (119-0818) from the dash.
- Wire Harness Kit (Model 132-6774)—Remove the wire harness differential delay and the clutch extension harness.
- Wire Harness Kit (Model 136-1166)—Remove the kit wire harness.

Note: For more detail about part locations, refer to the installation instructions for the kits listed above. When this installation is complete, there will be only one 4WD control switch on the dash and one 4WD button on the center console.

1. Park the machine on a level surface.
2. Engage the parking brake.
3. Shut off the engine and remove the key.
4. Allow the machine to cool.

Note: You can use a hoist for better access under the machine. Or if your machine is equipped with a hydraulic lift cargo bed, you can raise the cargo bed to make installation easier; refer to your machine *Operator's Manual*.

Installing the 4WD Sensor

Note: Before removing the existing yoke and shaft assembly, inspect it for the threaded sensor-ring hole; if it has the hole, you do not need to remove the assembly from the driveshaft.

1. Detach the existing yoke and shaft assembly from the driveshaft by removing the clamp screws at both ends of the driveshaft (Figure 1). Retain the clamp screws for installation.

Note: You do not need to completely remove the driveshaft from the machine to remove the yoke and shaft assembly; you can angle it out once you have disconnected the ends.

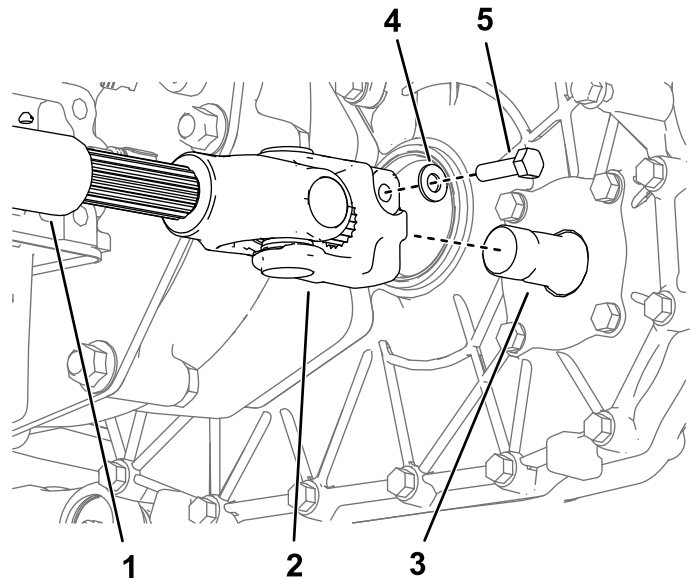


Figure 1

- | | |
|-------------------------------------|----------------|
| 1. Driveshaft | 4. Washer |
| 2. Existing yoke and shaft assembly | 5. Clamp screw |
| 3. Reverse idler shaft | |

2. Attach the kit yoke and shaft assembly to the end of the driveshaft (Figure 2).

3. Apply medium-strength thread-locking compound (such as Blue 242 Loctite®) to the threads of the button-head screw, and install the sensor ring to the yoke and shaft assembly with the button-head screw.

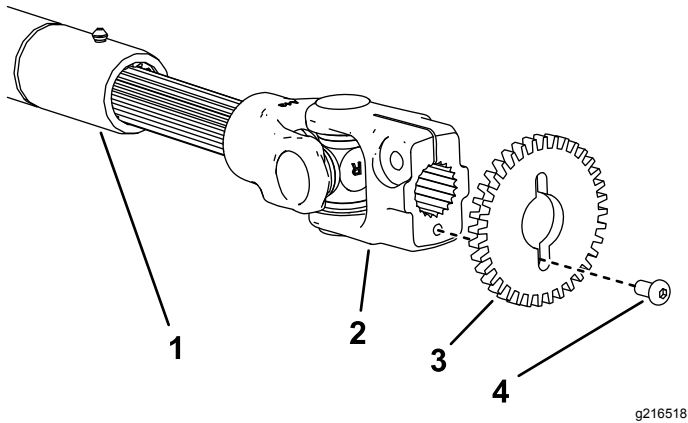


Figure 2

- | | |
|----------------------------|---|
| 1. Driveshaft | 3. Sensor ring |
| 2. Yoke and shaft assembly | 4. Button-head screw with thread locking compound |

4. Connect the assembly to the reverse idler shaft (Figure 2).
5. Install the ends of the driveshaft to the differential and the reverse idler shaft, and secure them using the clamp screws removed in Step 1.
6. Install the sensor bracket to the outer edge of the sensor ring, using the existing bolts on the transaxle (Figure 3).

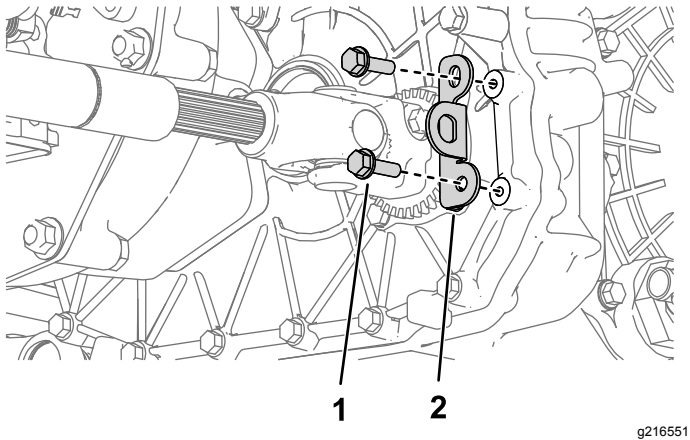


Figure 3

- | | |
|-------------------|-------------------|
| 1. Existing bolts | 2. Sensor bracket |
|-------------------|-------------------|

7. Install the sensor to the sensor bracket (Figure 4).

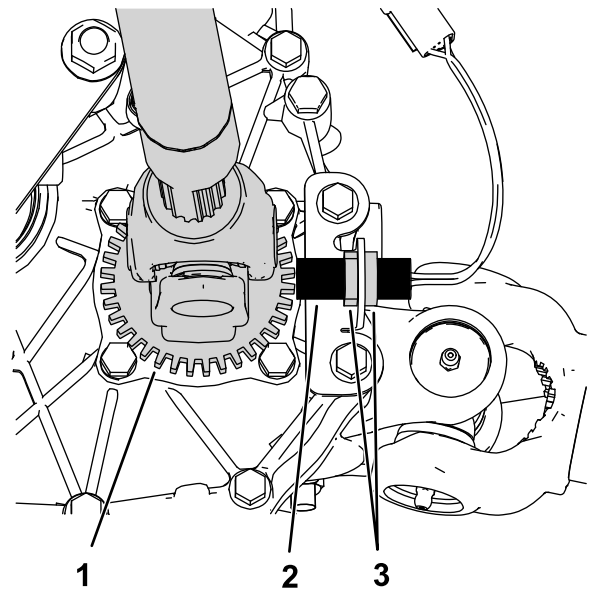


Figure 4

- | | |
|----------------------------|---------------------------|
| 1. Yoke and shaft assembly | 3. Sensor-adjustment nuts |
| 2. 4WD sensor | |

8. Adjust the clearance between the sensor ring and the sensor to 1 mm (.04 inch) using the adjustment nuts (Figure 4).

Disconnecting 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.
1. Remove the tabs of the battery cover from the slots on the battery tray and remove the cover (Figure 5).

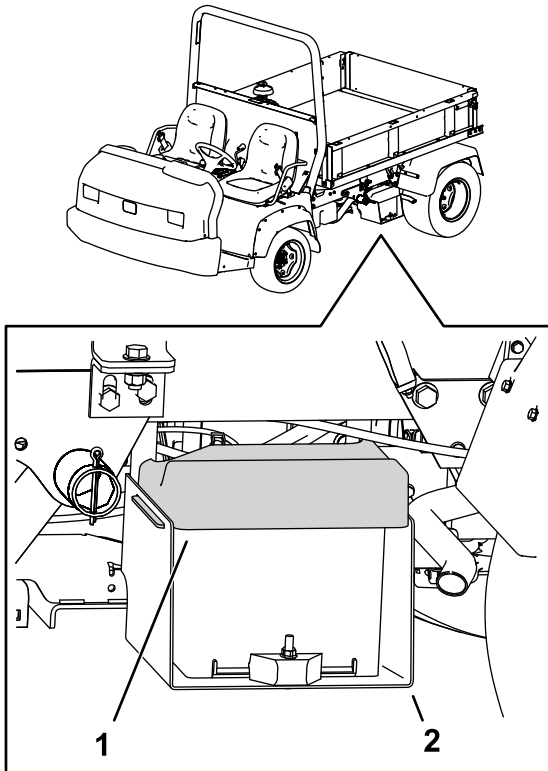


Figure 5

1. Battery cover
2. Battery tray

3. Loosen the nuts on the clamps to remove the negative cable (black) from the negative (-) terminal and the positive cable (red) from the positive (+) terminal of the battery (Figure 6).

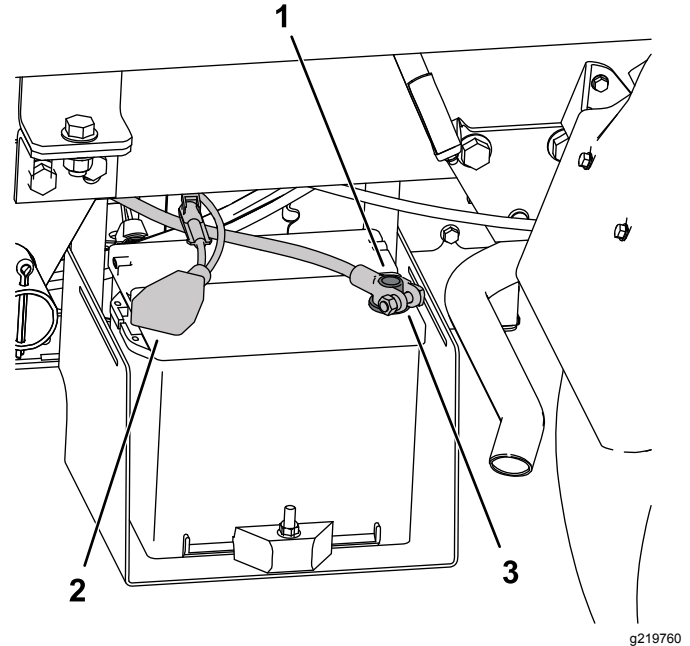


Figure 6

1. Negative (-) terminal
2. Positive (red) cable
3. Negative (black) cable

2. Remove the rubber boots from the battery terminals.

Installing the Wire Harness, Switch, and Button

Note: Route the wire harness away from all hot and moving parts, and secure it with cable ties as needed.

1. Connect the empty 4WD sensor socket to the 3-pronged plug of the kit wire harness (Figure 7).

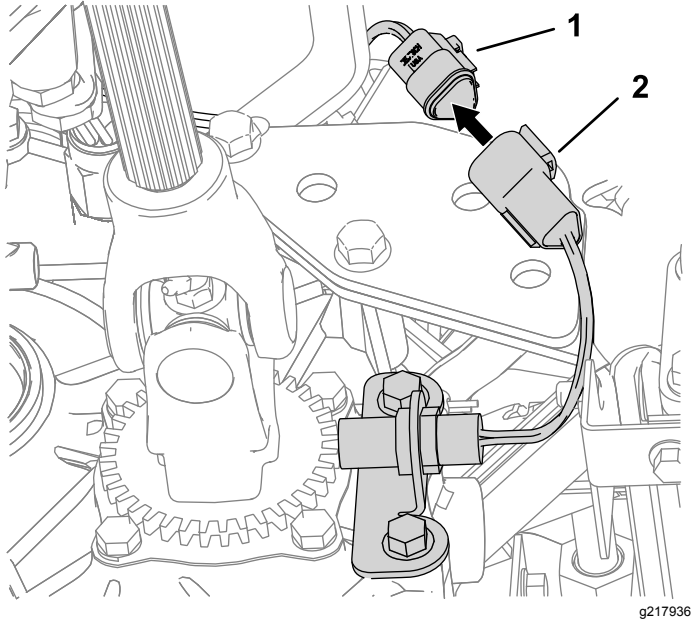


Figure 7

Bottom of machine shown

1. 4WD sensor socket
2. 3-Pronged plug

2. Route the socket and plug end of the kit wire harness toward the rear of the machine, over the top of the transaxle, and along the front of the upper tube-frame as shown in Figure 8.

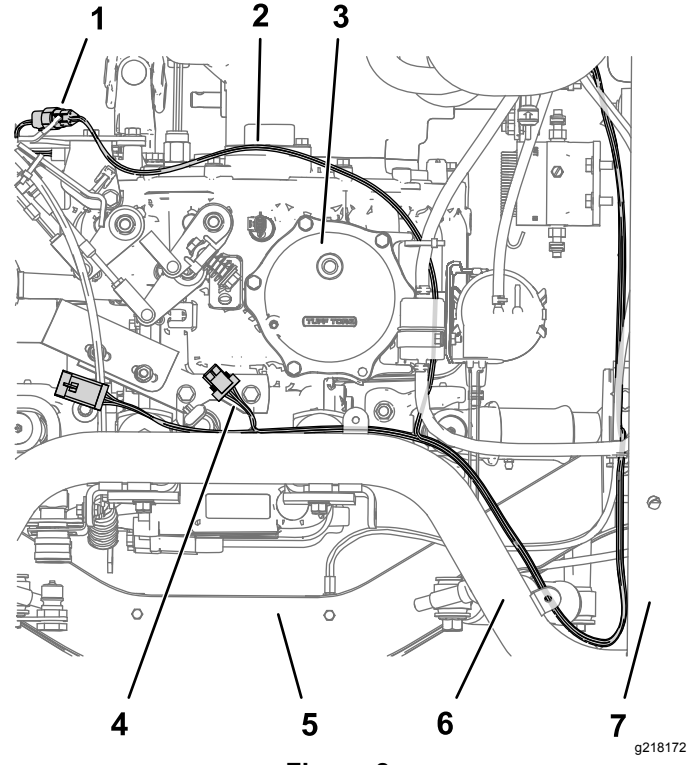
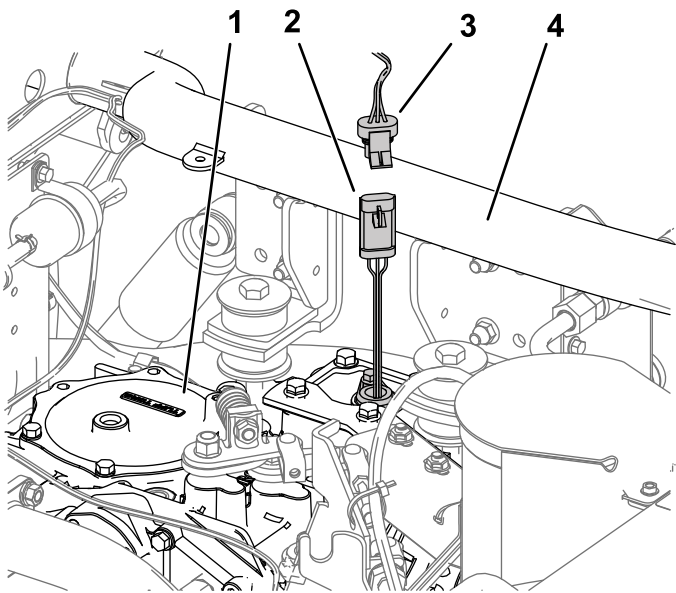


Figure 8

Top view, some parts not shown for clarity

1. 4WD sensor connection
2. Kit wire harness routing
3. Transaxle
4. Speed sensor connections
5. Lower tube frame
6. Upper tube frame
7. Right side frame

3. Disconnect the speed sensor plug and socket from the top of the transaxle (Figure 9).

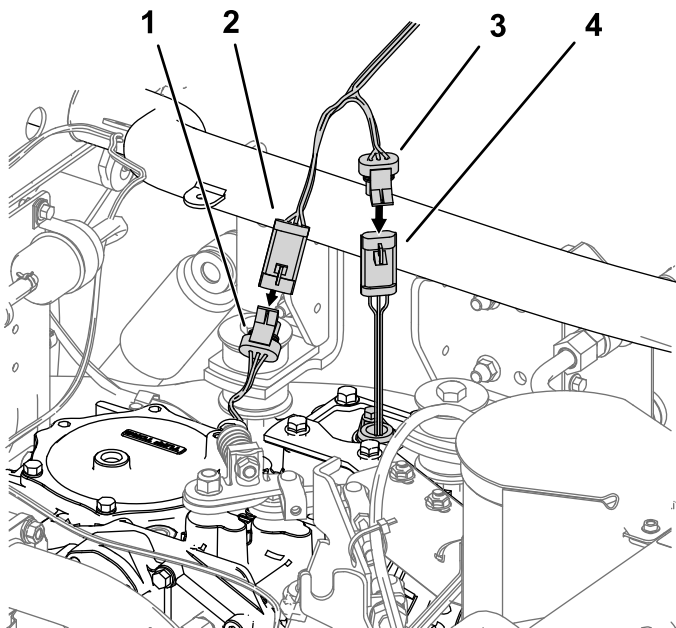


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Figure 9

- | | |
|----------------------|------------------------|
| 1. Top of transaxle | 3. Speed sensor socket |
| 2. Speed sensor plug | 4. Rear tube frame |

4. Connect the adjacent plug and socket on the kit wire harness to the empty speed sensor plug and socket (Figure 10).

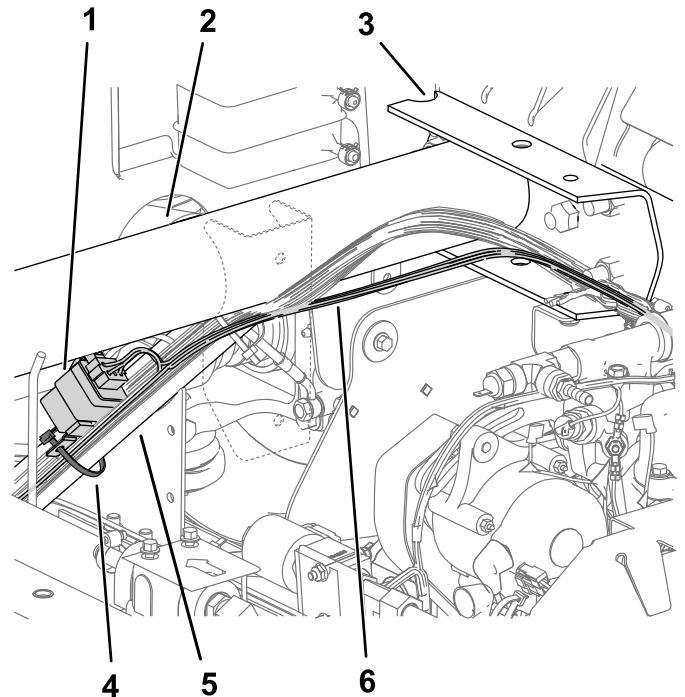


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Figure 10

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|----------------------------|--------------------------|
| 1. Speed sensor plug | 3. Kit wire harness plug |
| 2. Kit wire harness socket | 4. Speed sensor socket |

5. Route the remaining wire harness end under the relays, continuing along the right side frame with the existing wire harness (Figure 8) until it exits out of the side frame near the front cross-tube frame.
6. Route the kit wire harness down the right lower tube frame (Figure 11) and attach the relay to the existing wire harness with a cable tie.



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Figure 11

Some parts not shown for clarity

- | | |
|---------------------------|---------------------------|
| 1. Relay | 4. Cable tie placement |
| 2. Front cross tube frame | 5. Right lower tube frame |
| 3. Right side frame | 6. Kit wire harness |

- Remove the socket from the connector on the front differential assembly (Figure 12).

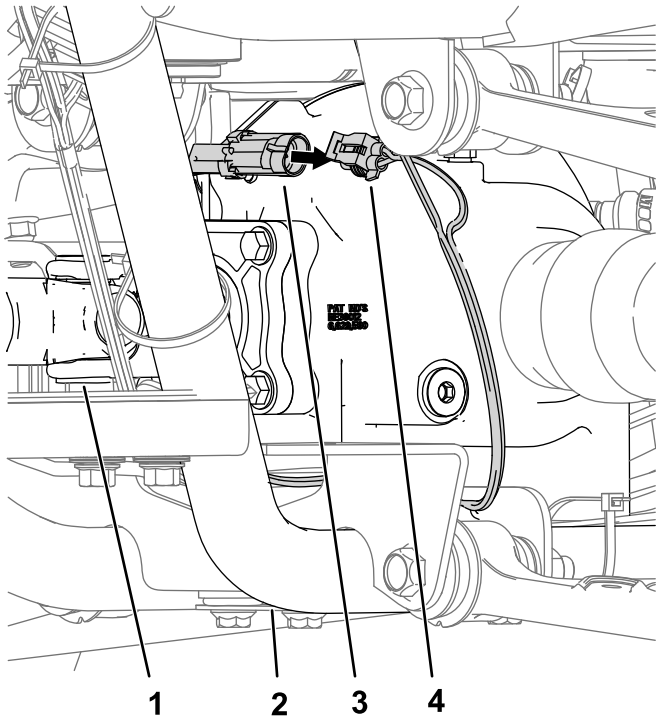


Figure 12

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- | | |
|--------------------------------|---------------------------|
| 1. Front driveshaft connection | 3. Differential connector |
| 2. Right lower tube frame | 4. Existing wire harness |

- Install the remaining socket on the kit wire harness to the connector on the front differential assembly (Figure 13).

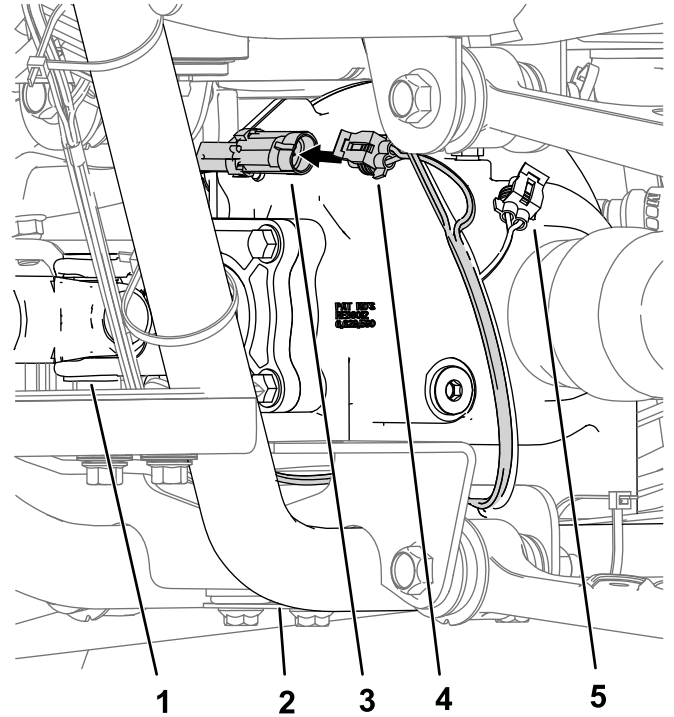


Figure 13

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- | | |
|--------------------------------|--------------------------|
| 1. Front driveshaft connection | 4. Kit wire harness |
| 2. Right lower tube frame | 5. Existing wire harness |
| 3. Differential connector | |

Note: The existing wire harness connector that was previously attached to the differential is left disconnected.

- Route the remaining receptacle ends of the kit wire harness along the existing wire harness until they reach the control panel.

Note: Detaching the control panel may make routing the kit wire harness easier.

- Drill a hole near the control panel according to the dimensions shown in (Figure 14).

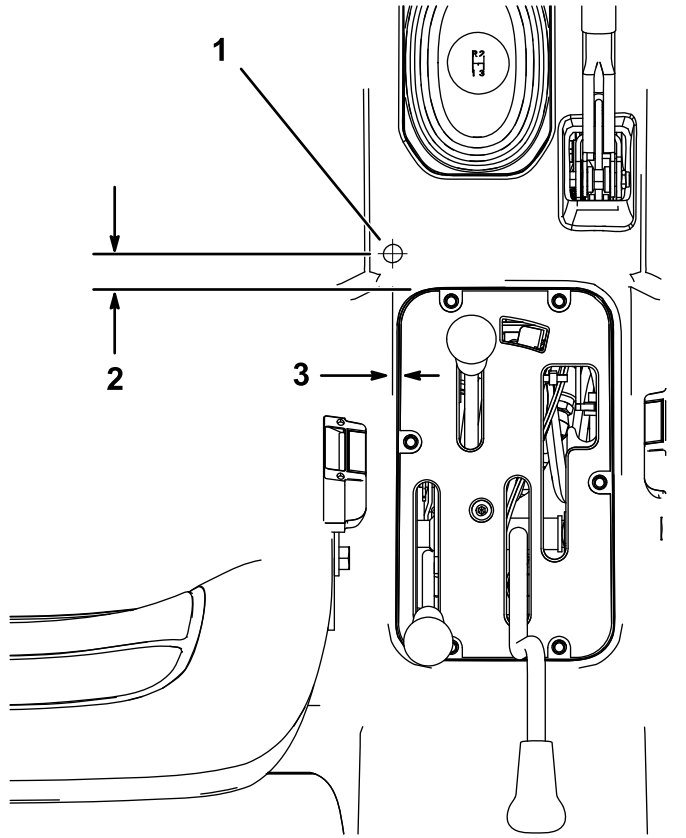


Figure 14

- Hole centered 6.4 mm (1/4 inch) from the left edge of the control panel
- Hole centered 25.4 mm (1 inch) from the forward edge of the control panel
- Drill a 15.8 mm (5/8 inch) hole

- Connect both the open receptacles of the kit wire harness to the blades at the bottom of the button.
- Push the button up through the bottom of the hole drilled in step 10 and screw on the top cap and nut (Figure 15). Place the decal (137-6720) adjacent to the button below the control panel.

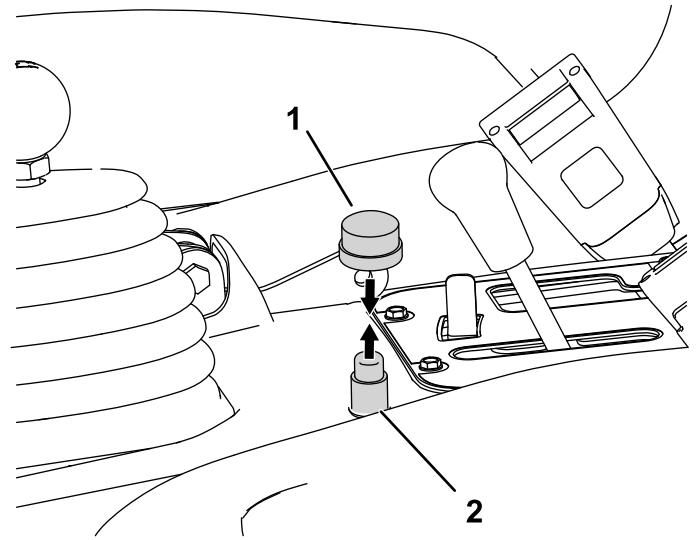


Figure 15

- Top cap and nut
- Button

- Continue to route the remaining end of the kit wire harness along the existing wire harness into the dash and along the support tube (Figure 16). Attach the wire harness and relays to the support tube as necessary using cable ties.

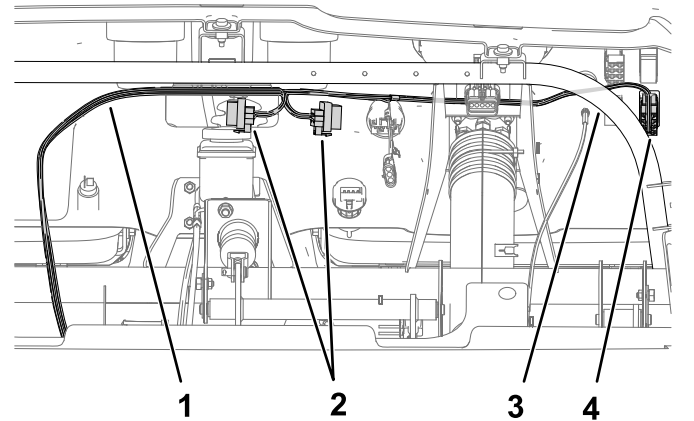


Figure 16

- Kit wire harness
- Relays
- Dash support tube
- 8-socket connector

Note: Removing the hood makes routing the wire harness easier. To remove the hood, refer to your machine *Operator's Manual*.

14. Remove a hole plug from the dash and install the rocker switch onto the 8-socket connector (Figure 17). Place the decal (137-6721) on the dash parallel to the rocker switch.

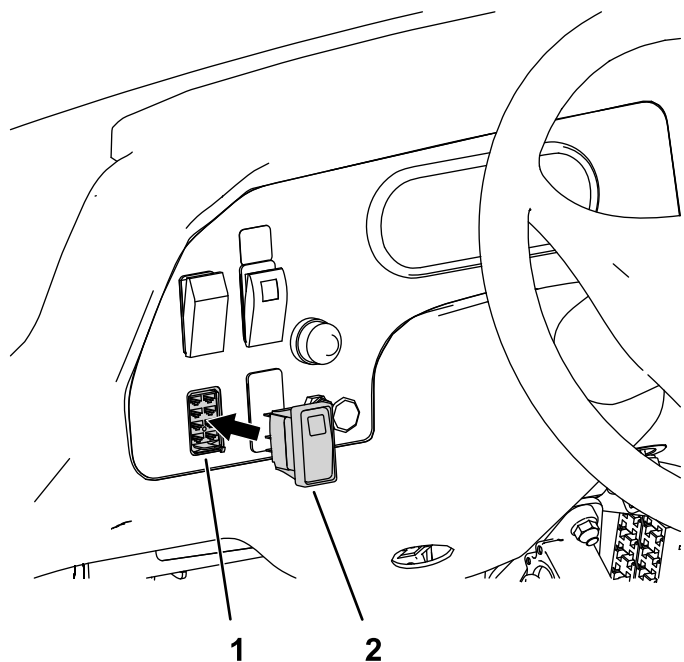


Figure 17

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1. 8-socket connector
2. Rocker switch

Installing the Noise Reducer Harness

Diesel Machines Only

1. Remove the existing wire harness connection from the fuel pump (Figure 18).

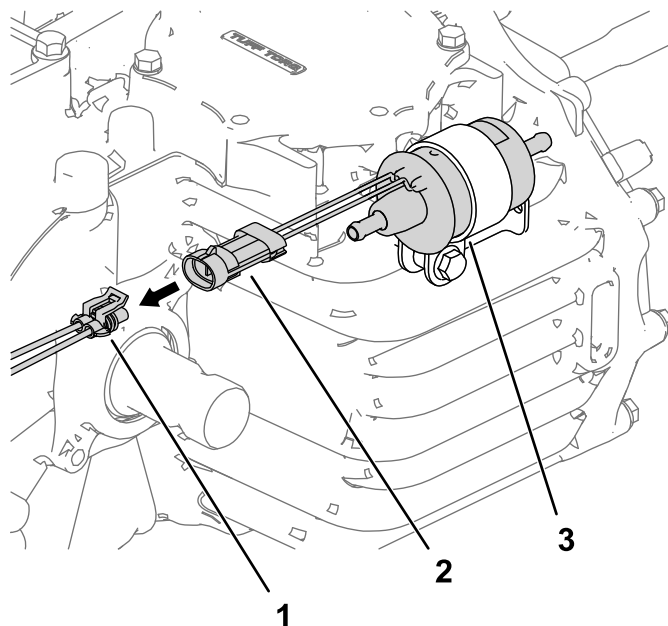


Figure 18

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1. Main wire harness
2. Fuel pump socket connector
3. Fuel pump

2. Install the noise reducer harness to the fuel pump and the wire harness disconnected previously (Figure 19).

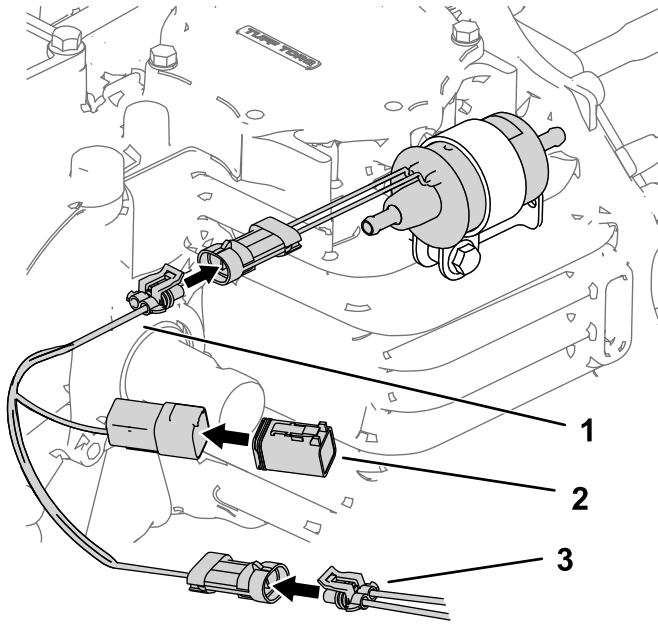


Figure 19

1. Noise reducer wire
2. Capacitor
3. Existing wire harness plug

3. Install the capacitor to the remaining socket on the noise reduction harness.

Operation

Engaging the 4-Wheel Drive

To enable automatic 4-Wheel Drive, press the top of the rocker switch into the 4x4 AUTO position (Figure 20).

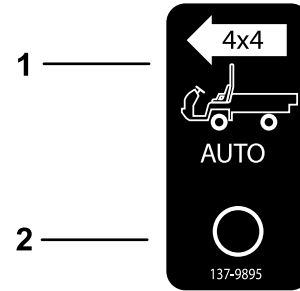


Figure 20

1. 4x4 auto enable—on
2. 4x4 auto enable—off

When the 4WD switch is on, the machine automatically engages the 4-wheel drive if the sensor detects the back wheels spinning freely. When the 4-wheel drive is engaged, the 4WD switch light turns on.

Important: When in reverse, the machine does not automatically engage the 4-wheel drive.

In reverse, you must manually engage the 4-wheel drive using the 4WD button.

To engage the 4-wheel drive manually, press and hold the 4WD button on the center console while the vehicle is in motion and the 4-wheel drive engages.

Note: The 4-wheel drive remains engaged only as long as you hold the button; the 4WD switch does not need to be in the AUTO position to manually engage the 4-wheel drive.



Count on it.