

## Front Radar, Failure CHU, CXU, GU

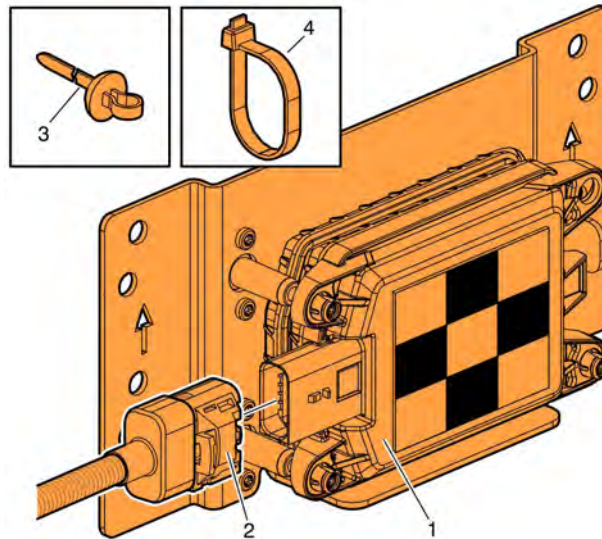
### PI0859, Front Radar, Failure

(August 2015)

Certain MACK CHU, CXU, and GU trucks built between 11/11/2013 and 01/14/2015, equipped with front radar may experience loss of front object detection or erratic operation of cruise control functions. The terminal seals of the harness is allowing moisture and corrosion to build up in the front radar harness and/or radar antenna module. To ensure proper operation of the front radar, the harness is inspected for the proper seal and/or corrosion, and the module is inspected for signs of corrosion. If the harness, seal or module fail inspection, replacement of the harness and/or radar antenna is required. Follow the inspection and repair procedures outlined in this document.

If the truck is eligible for this repair, call 1-877-986-5862 and provide the following information: 17 digit Vehicle Identification Number (VIN), Product Improvement Number (PI0859), Dealer Code, and the Purchase Order (PO) Information.

**Note:** This bulletin does not apply to MACK Trucks Australia.



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### Required Parts

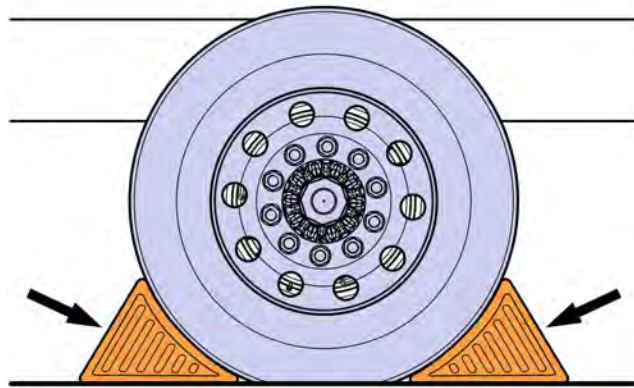
Front Radar Replacement Parts			
Item	Description	Part Number	Qty
1	Sensor, Front Radar	85142824	1
2	Harness, Front Antenna	22638506	1
3	Clamp, Universal	20428158	3
4	Cable Tie	980464	2

## Decommissioning the Truck for Repair

You must read and understand the precautions and guidelines in Service Information, group 30, "General Safety Practices, Electrical" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.

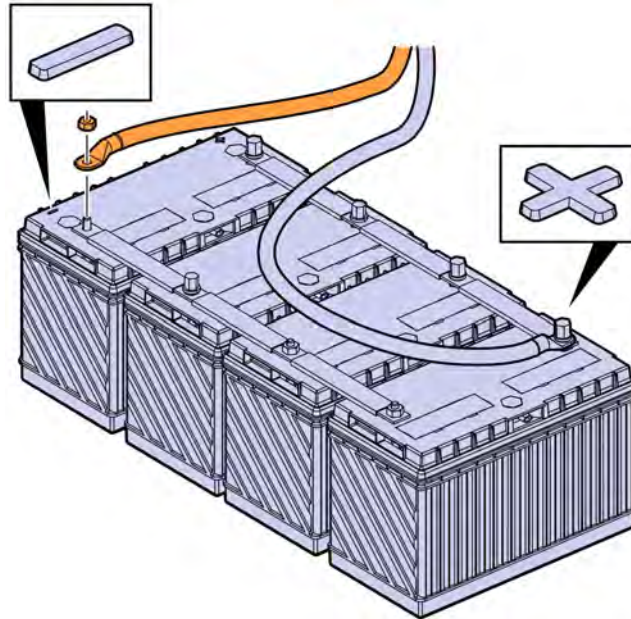
**NOTE:** Information is subject to change without notice. Illustrations are used for reference only and can differ slightly from the actual vehicle being serviced. However, key components addressed in this information are represented as accurately as possible.

- 1 Park the vehicle on a flat and level surface.
- 2 Apply the parking brake.
- 3 Place the transmission in neutral or park.
- 4 Install the wheel chocks.



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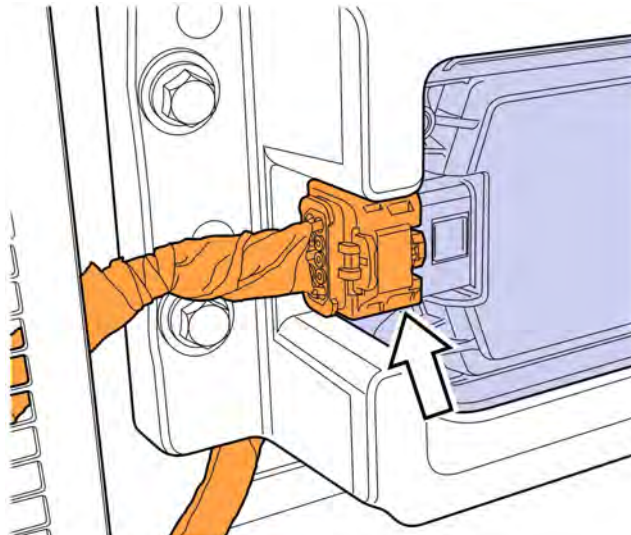
- 5 Disconnect all of the cables from the battery's negative terminals.



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## Front Radar Inspection

- 1 Disconnect the radar connector.



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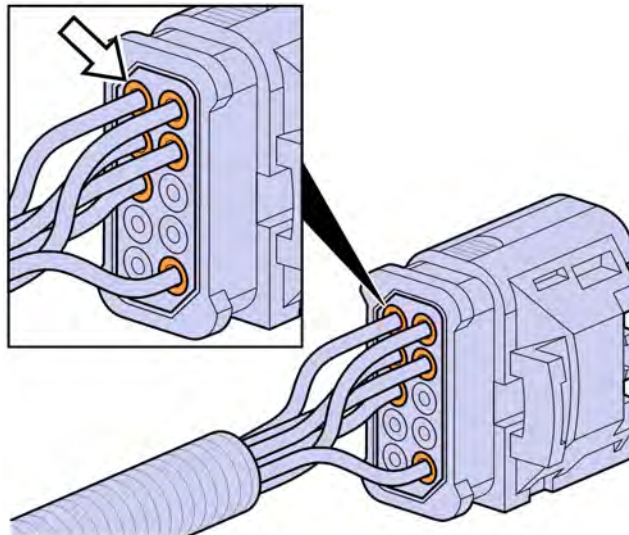
- 2 Inspect the radar connector for water intrusion and corrosion on the terminal pins.

**Note:** If there are signs of water intrusion, corrosion of the harness and front radar module, continue to page 9 (**Front Radar and Harness Replacement**) section and follow the repair procedure.

- 3 Inspect the connector to determine if the proper seal was installed in the connector housing.

**Note:** If the color of the terminal seals are(**BLACK**) and no corrosion is present, connect the radar connector, and no further action is required. Continue to page 18, (**Commission the truck for Operation**), and follow steps 1 – 2.

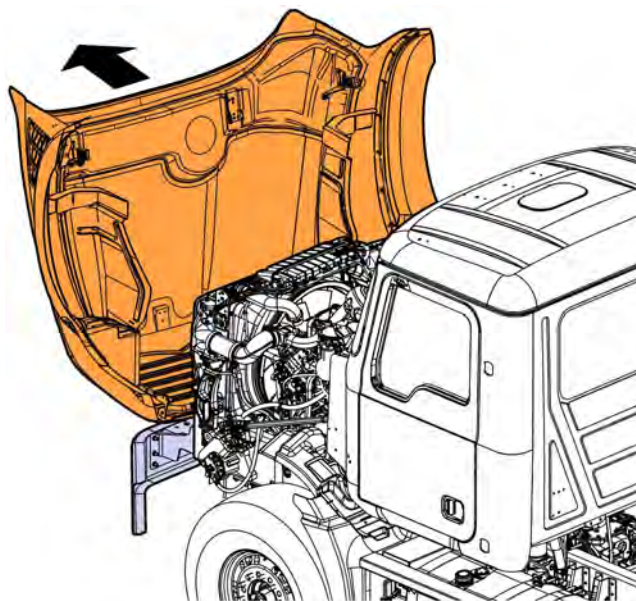
**Note:** If the color of the terminal seals are(**YELLOW**), and no corrosion is present, continue to page 5, (**Front Radar Harness Replacement**) and replace the harness only.



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## Front Radar Harness Replacement

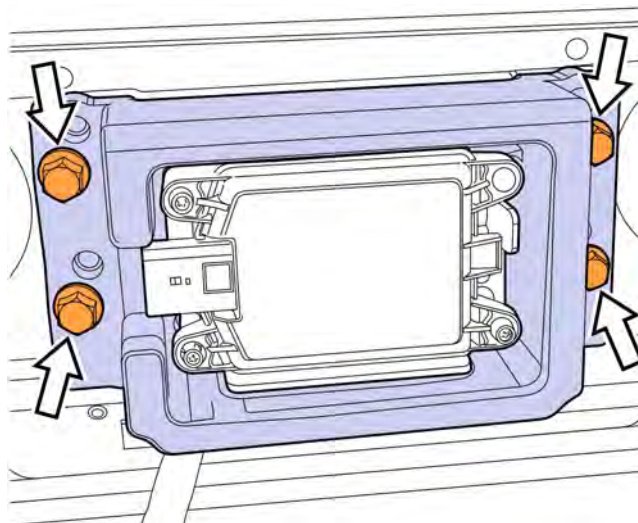
- 1 Open the hood.



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- 2 Remove the fasteners and flat washers securing the front radar sensor and shroud.

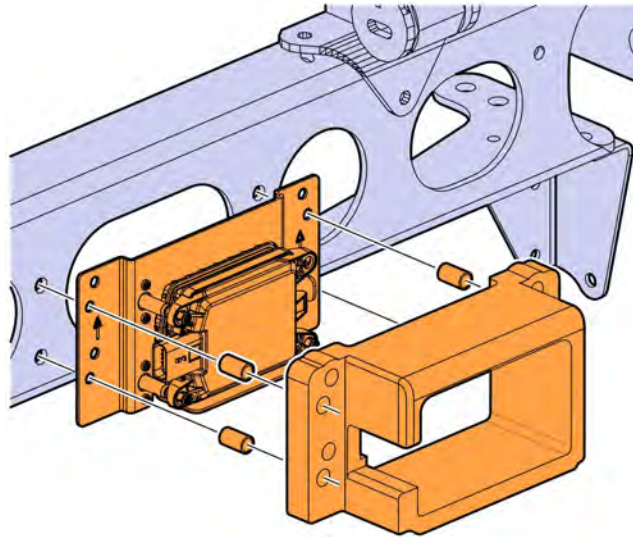
**Note:** Store the flat washers, and fasteners in a clean and secure location for installation.



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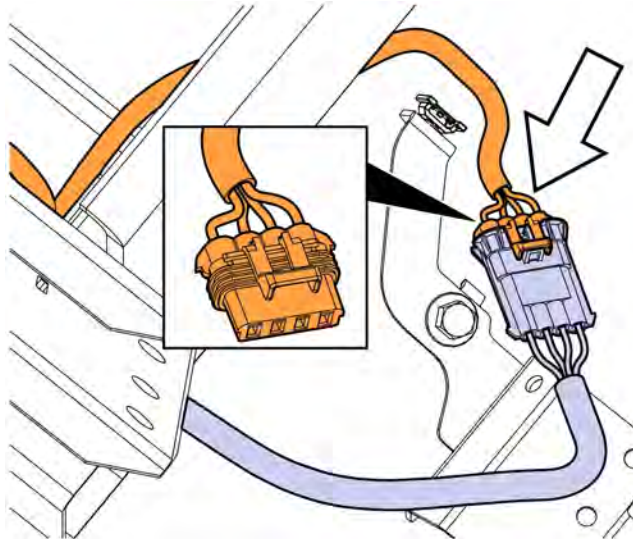
- 3 Remove the front radar sensor, spacers, and shroud.

**Note:** Store the front radar sensor, spacers, and shroud in a clean and secure location for installation.



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- 4 Remove the cable ties securing the front radar harness.
- 5 Disconnect the front radar harness from the main cab harness.

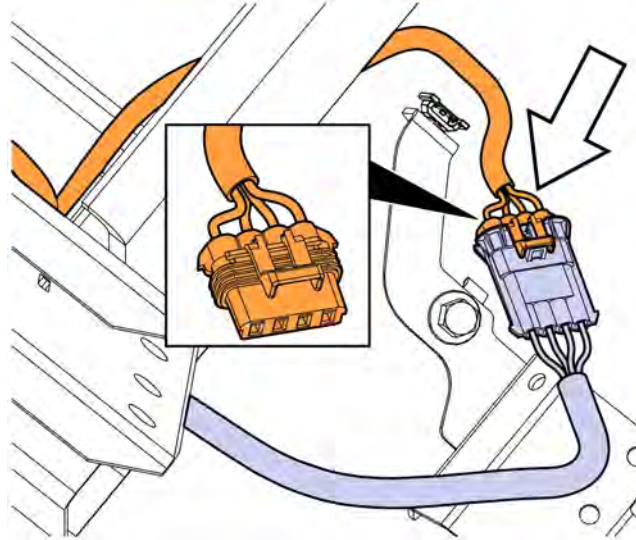


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- 6 Remove the existing front radar harness.

**Note:** Note the routing of the existing harness for installation of the replacement harness.

- 7 Route the replacement front radar harness into position as noted.
- 8 Connect the replacement front radar harness to the main cab harness.

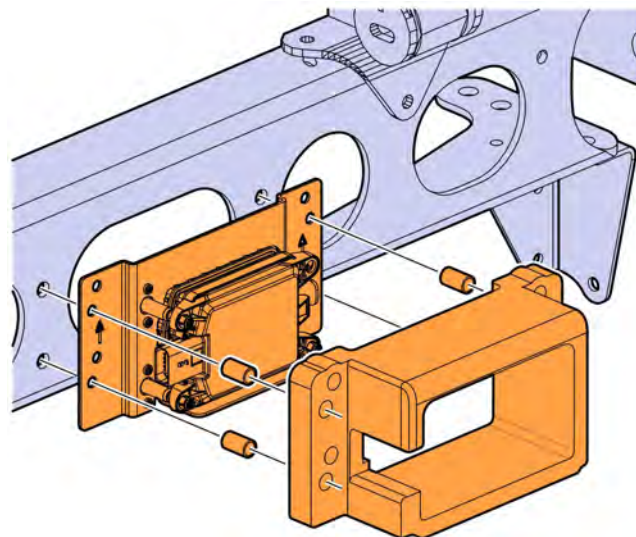


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- 9 Use the cable ties listed on page 1 to secure the front radar harness.

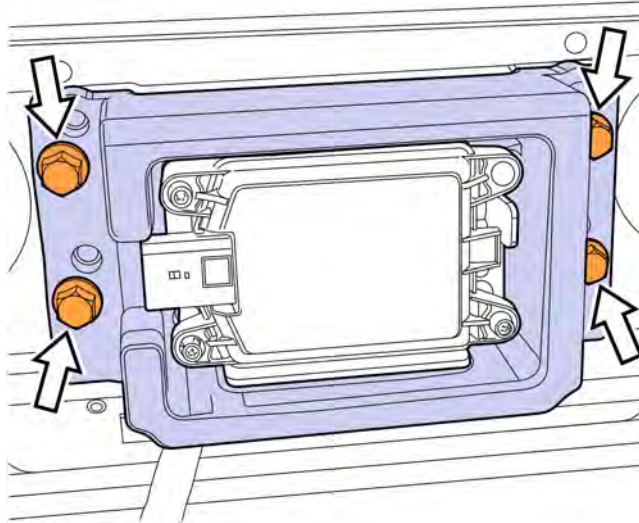
**Note:** Ensure there is enough harness at the other end to connect to front radar sensor.

- 10 Position the front radar sensor, spacers, and shroud.



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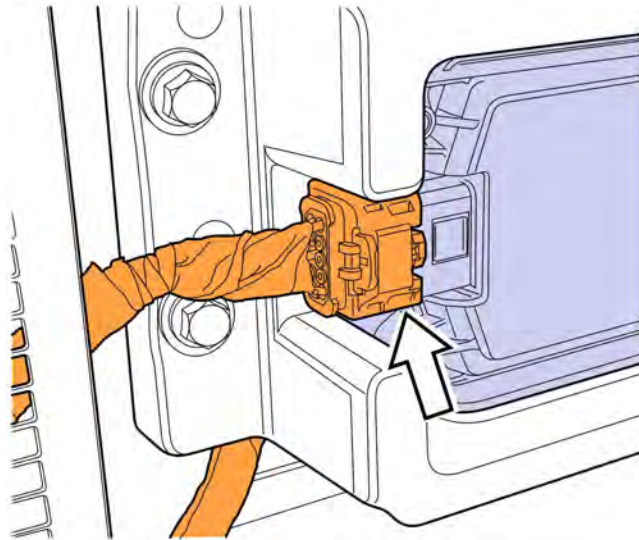
11 Install the fasteners and flat washers securing the front radar sensor and shroud.



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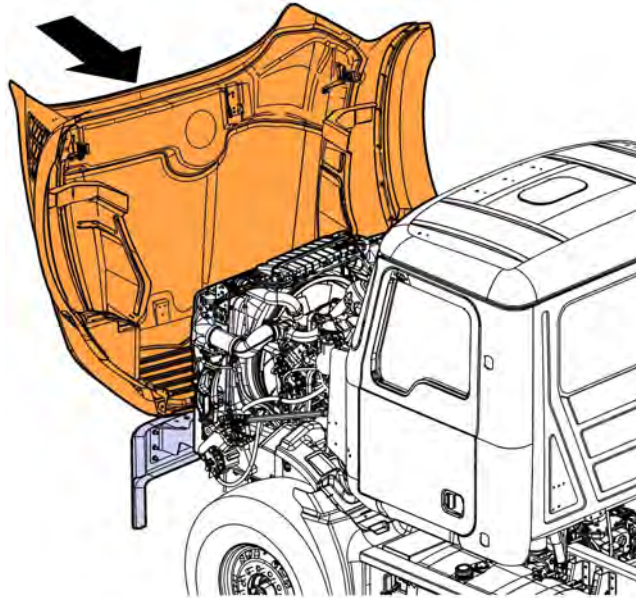
12 Tighten the fasteners securing the front radar sensor and shroud to  $27 \pm 4$  Nm ( $20 \pm 3$  ft-lb).

13 Connect the front radar harness to the radar module.



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14 Close the hood.

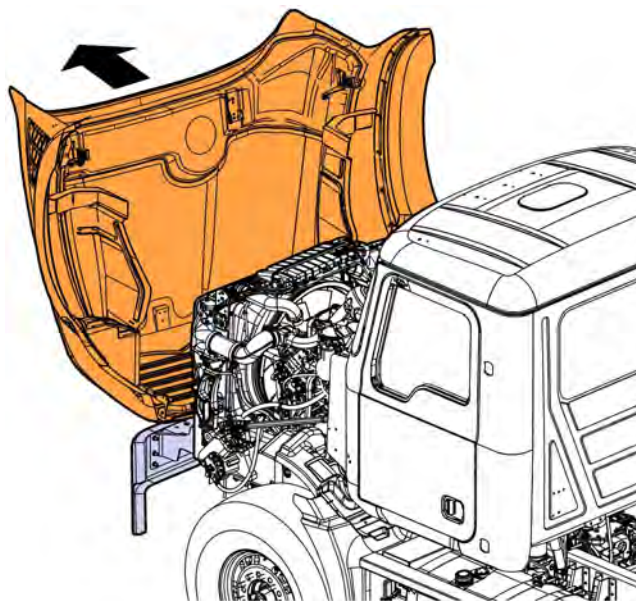


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15 Continue to page 18, and **(Commission the truck for Operation)**.

## **Front Radar and Harness Replacement**

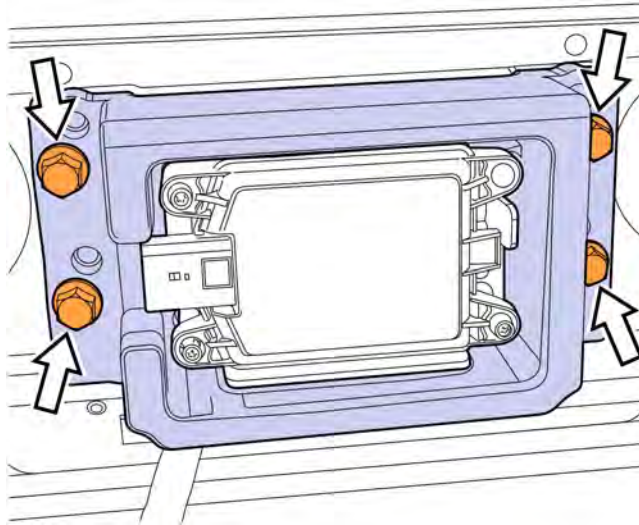
1 Open the hood.



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- 2 Remove the fasteners and flat washers securing the front radar sensor and shroud.

**Note:** Store the flat washers, and fasteners in a clean and secure location for installation.

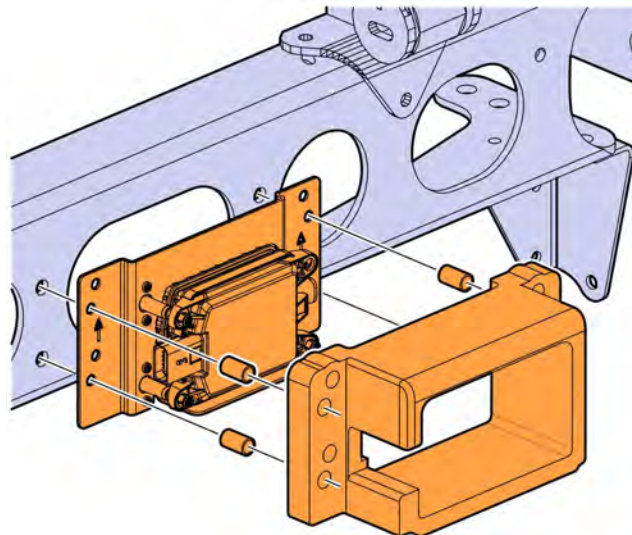


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- 3 Remove the front radar sensor, spacers, and shroud.

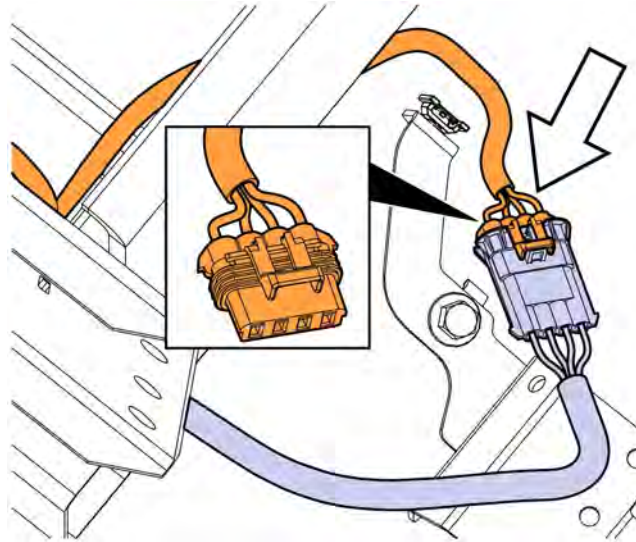
**Note:** Discard the radar sensor.

**Note:** Store spacers and shroud in a clean and secure location for installation.



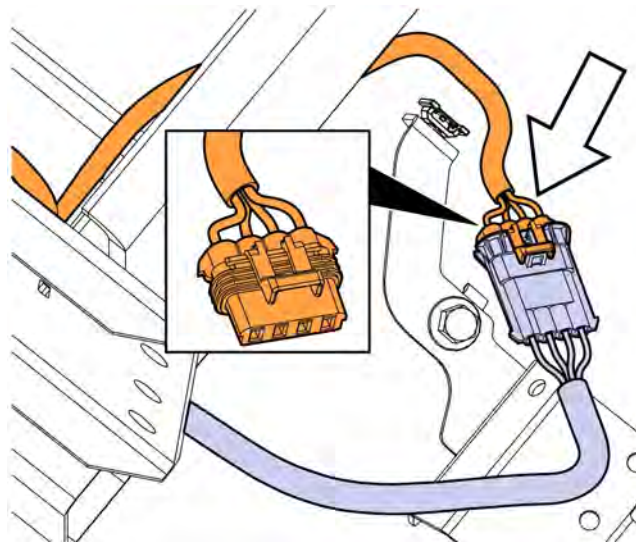
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- 4 Remove the cable ties securing the front radar harness.
- 5 Disconnect the front radar harness from the main cab harness.



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- 6 Remove the existing front radar harness.  
**Note:** Note the routing of the existing harness for installation of the replacement harness.
- 7 Route the replacement front radar harness into position as noted.
- 8 Connect the replacement front radar harness to the main cab harness.

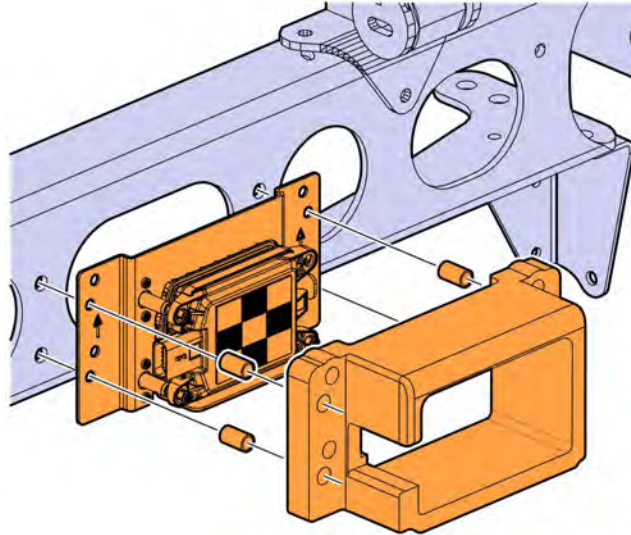


W3103450

9 Use the cable ties listed on page 1 to secure the front radar harness.

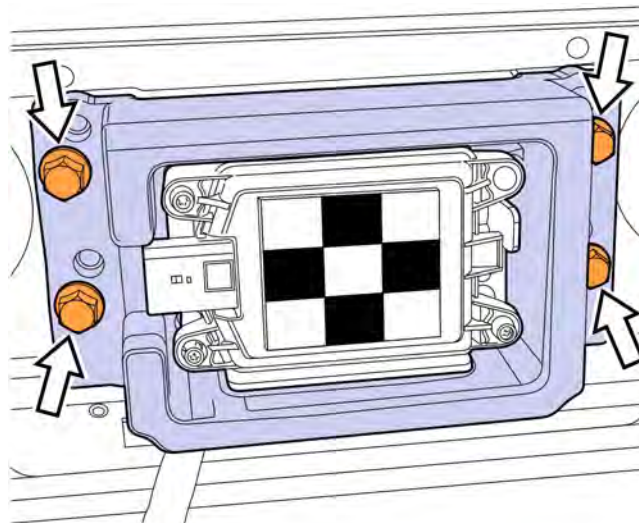
**Note:** Ensure there is enough harness at the other end to connect to the front radar sensor.

10 Position the replacement front radar sensor, spacers, and shroud.



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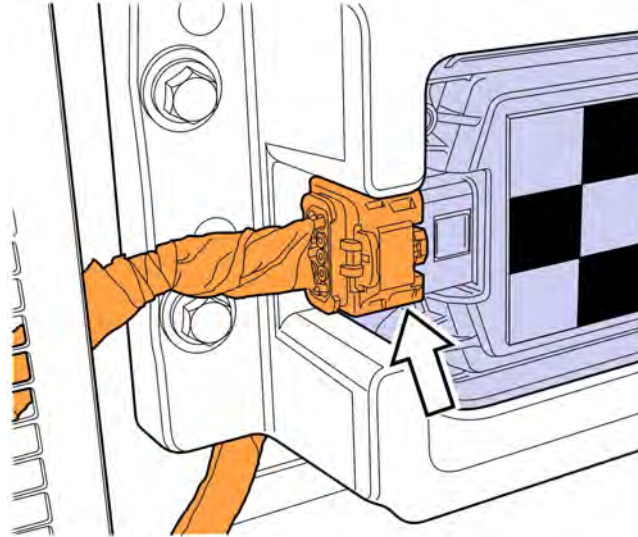
11 Install the fasteners and flat washers securing the front radar sensor and shroud.



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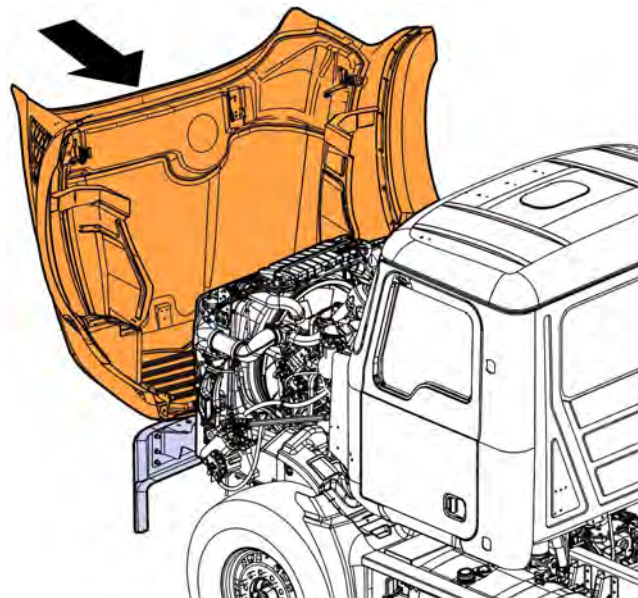
12 Tighten the fasteners securing the front radar sensor and shroud to  $27 \pm 4$  Nm ( $20 \pm 3$  ft-lb).

13 Connect the front radar harness to the radar module.



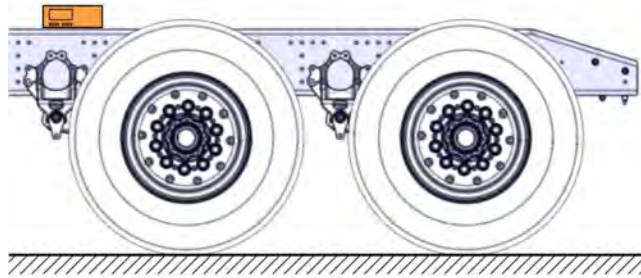
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14 Close the hood.



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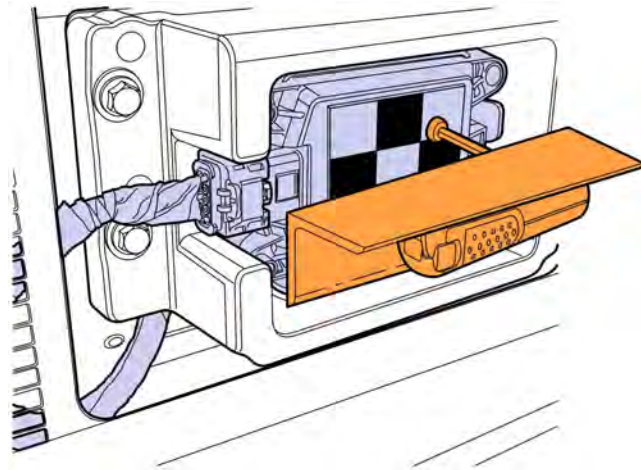
- 15 Perform the Sensor, VOLVO Enhanced Cruise (VEC), Alignment Check and Adjustment procedure as shown in steps 17 – 26.
- 16 Place a digital angle gauge on top of the vehicle frame rail as shown. Reset the digital gauge to 0 degree.



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- 17 Attach Bendix Alignment tool (part number K065284) to the front of the radar sensor cover.

**Note:** A cover (2) is included with the replacement radar sensor. If the cover is missing, use assistance to hold the alignment tool (1) on the radar sensor.

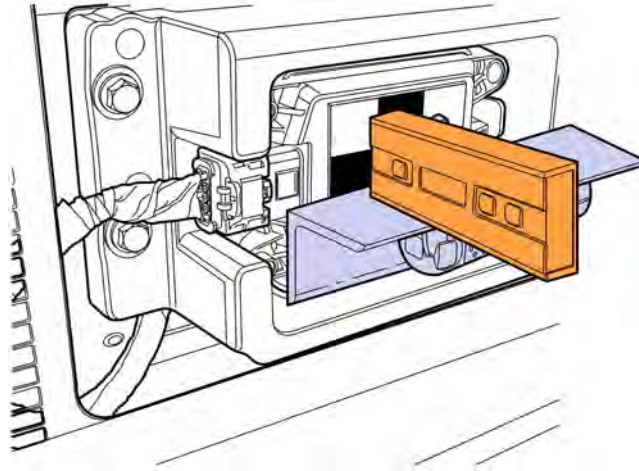


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18 Attach the digital angle gauge to the alignment tool.

19 Check the vertical alignment tool and ensure the digital angle gauge is reading 0 degrees.

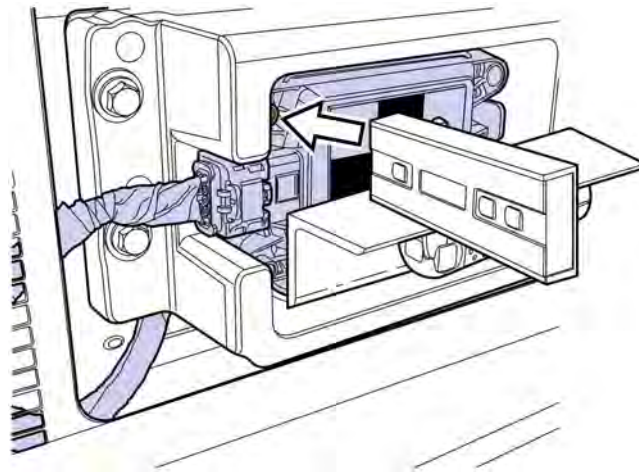
**Note:** If the vertical alignment tool with the angle gauge is not reading 0 degrees, adjustment of the radar sensor's vertical angle is required.



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20 If applicable, adjust the vertical alignment of the radar sensor to 0 degrees.

**Note:** Periodically recheck the alignment tool and angle gauge during the vertical alignment procedure.



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21 Using the alignment tool. turn the laser on and check the sensor's lateral alignment.



**CAUTION**

Do not stare into the laser beam (2).

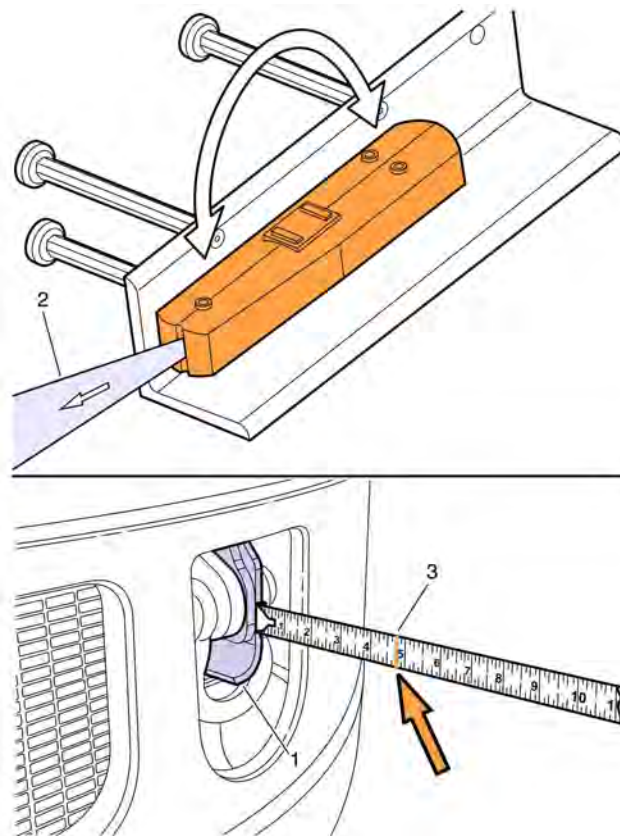
**Note:** Use the tow hook receptacles (1) or frame rail ends as a measuring point if possible.

22 After the first lateral measurement (3), turn the laser off.

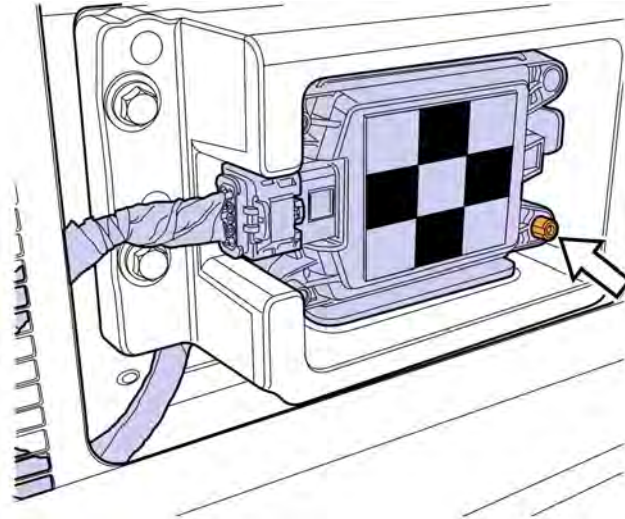
23 Flip the laser and orient it towards the opposite side of the truck.

24 Turn the laser on, and record the second lateral measurement (3) from the tow hook receptacle (1).

**Note:** If the lateral measurements vary by more than 3 mm (0.125 in) of each other, adjust the lateral alignment of the radar sensor.



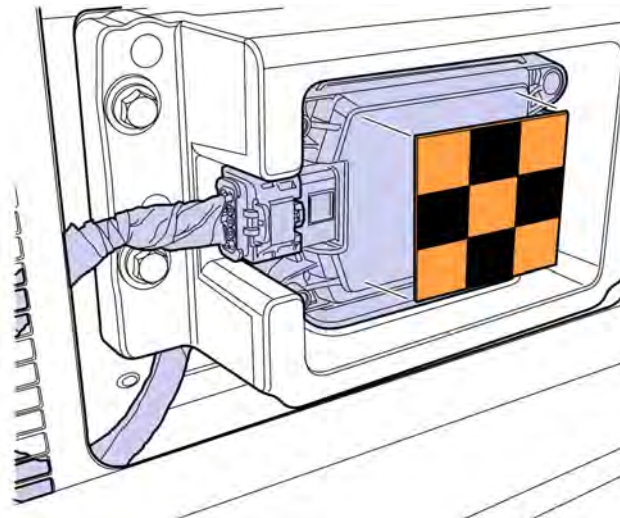
25 If applicable, adjust the lateral alignment of the radar sensor until the two measurements are (Less than 3 mm (.125 in) of each other.



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26 If applicable, remove the cover from the front of the radar sensor.

**Note:** Failure to remove the cover will cause a Diagnostic Fault Code (DTC).

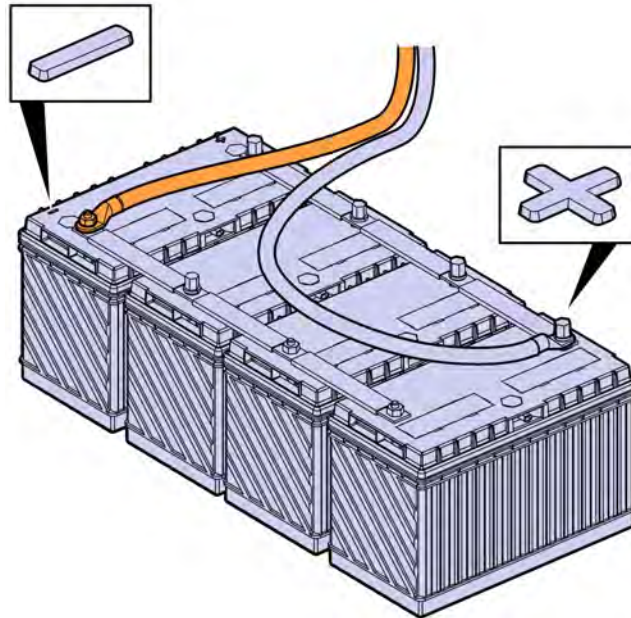


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27 Continue to page 18, and (**Commission the truck for Operation**).

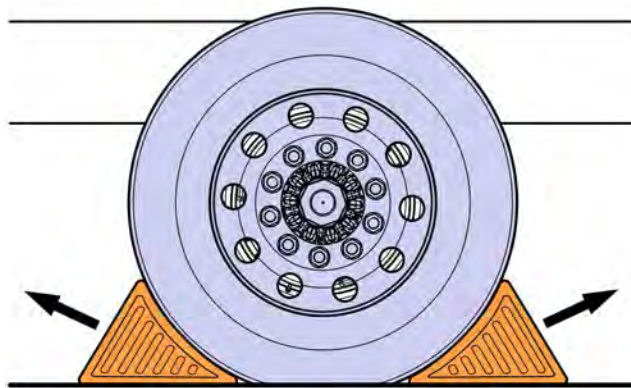
## Commissioning the Truck for Operation

- 1 Connect all of the cables to the battery's negative terminals.



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- 2 Remove the wheel chocks.



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- 3 Check the operation of the **(Adaptive Cruise Control)**.

**Note:** If a diagnostic trouble code (DTC) is logged after the repairs are complete, connected the truck to a PC with BENDIX A-Com software to clear the DTC.

- 4 Test drive the truck and check the operation of the adaptive cruise control.

**Note:** This is a separate operation.

**Reimbursement**

<b>This repair is covered by an authorized Service Program. Reimbursement is obtained via the normal claim handling process.</b>	<b>UHP Reimbursement</b>	<b>eWarranty Reimbursement</b>
<b>Claim Type (used only when uploading from the Dealer Bus. Sys.)</b>	B	B
<b>Recall Status</b>		
Vehicle inspected, repair not required		1- Inspected OK
Vehicle repaired per instruction		2- Modified per instruction
<b>Labor Code</b>		
Primary Labor Code (Front Radar Harness Inspection)	3000-06-09-01 0.3 hrs	2733M-01-96 0.3 hrs
Labor Code (Front Radar Harness Replacement)	3665-03-09-02 1.2 hrs	2733N-01-96 1.1 hrs
Labor Code (Front Radar and Harness Replacement)	3665-03-09-03 1.4 hrs	2733P-01-96 1.4 hrs
Take to take charge and determine campaign status	1700-16-01-01 0.3 hrs	101AA-0A-00 0.3 hrs
<b>Causal Part</b>	22134349	221234349
<b>SCC Code</b>	S6931	NA
<b>Authorization Number</b>	NA	PI0859
<b>Expiration Date</b>	30-AUG-2016	30-AUG-2016

**Note:** Take Charge Time is not included in the Labor Code for this operation. Take charge may be eligible but can only be used once per repair visit. If vehicle is having other warranty repairs performed, take charge should be charged to the warranty repair, otherwise take charge can be charged to this service program.