

Fuel Level Sending Unit Interference VN, VHD, VAH

FSB 386-005, Fuel Level Sending Unit Interference

(December 2013)

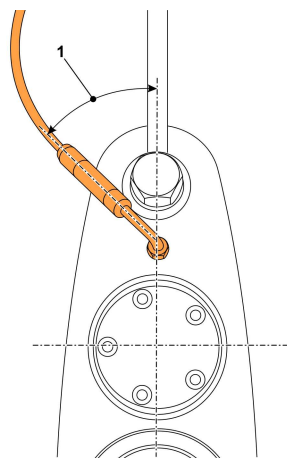
Some Volvo trucks built prior to Feb. 17th, 2014 with round 26" fuel tanks, a straight shaft fuel level sending unit and factory equipped fuel tank anti-siphons and/or cab parking heater fuel pickup tube may experience fuel level sending unit float interference.

To address this float interference trucks built on or after February 17th 2014 with a 26" fuel tank will be manufactured with fuel level sending unit 21451772 which incorporates a angled shaft and a positive float stop.

If a truck equipped with a factory anti-siphon and/or a factory cab heater with tank mounted pickup tube is experiencing erratic fuel levels, sticking fuel levels or complaints of inaccurate/inconsistent fuel level readings; perform one of the following procedures to stop float level interference issues.

Note: Trucks equipped with a fuel tank anti-siphon should always have the fuel tank filler cap retaining chain oriented away from or opposite the fuel level sending unit before tightening the fuel tank filler cap. To achieve this rotate the anti-siphon in the filler neck as needed.

- A. Check and Adjust Parking Heater Tube, Replace Sending Unit
- B. Check and Replace Parking Heater Tube, Replace Sending Unit (Tank on Vehicle)
- C. Check and Replace Parking Heater Tube, Replace Sending Unit (Tank off Vehicle)



W3086127

1. 35° – 45°

Repair Procedure

Note: Information is subject to change without notice.
Illustrations are used for reference only, and may differ slightly from the actual engine version. However, key components addressed in this information are represented as accurately as possible.

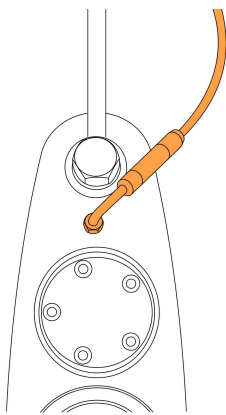
You must read and understand the precautions and guidelines in Service Information, group 30, "General Safety Practices, Electrical and Electronics" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.

Repair A

Check and Adjust Parking Heater Tube

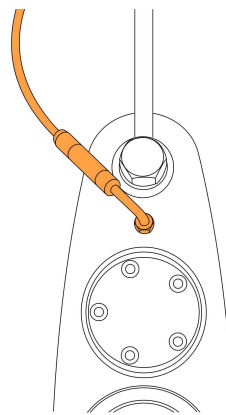
- 1 Secure the vehicle for service by parking it on a flat level surface, applying the parking brake, chocking the rear wheel, and placing the transmission in neutral.
- 2 Disconnect all cables from the negative battery terminals to prevent personal injury from electrical shock and prevent damage to electrical components.
- 3 Check parking heater tube for proper clocking.

Note: Some models will require the side fairing or other components to be removed for accessibility.



W3086131

Incorrect



W3086132

Correct

- 4 Loosen the flare nut and clock the fuel pick-up tube to the correct position.

Note: You may need to remove and adjust cable tie to relieve stress on the fuel hose in order to position correctly.

- 5 Secure parking heater tube. Tighten to 12 ± 1 Nm (110 ± 10 in lb).
If the parking heater fuel pickup tube will not torque properly or is stripped, perform repair **B** or **C** if tank removal is necessary to replace the parking heater pickup tube.

Fuel Sending Unit, Replace

Note: In most cases, the sending unit can be removed from the current position on truck without removing the fuel tank.

- 1 Remove the harness connector.
- 2 Cut cable tie(s) as needed.
- 3 Mark the harness position with a marker on the fuel tank before removing sender.
- 4 Remove screws securing sending unit to tank.
- 5 Remove sending unit according to the following steps:
 - a. Pull sending unit up and out of tank until the float can be touched
 - b. Grab float with one finger and hold.
 - c. Slide sending unit back into tank a short distance.
 - d. Maneuver fingers and pull float out of tank.
 - e. Lift the sending unit out of the tank at an extreme angle to clear the cab floor.
- 6 Install new sending unit (21451772) and gasket in reverse order of removal.
- 7 Orientate sending unit to prior mark made on tank.
- 8 Secure sending unit with screws. Tighten to 6 ± 1 Nm (53 ± 9 in lb).
9. Connect battery cables.

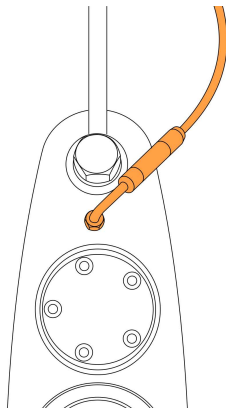
Repair B (Tank on Vehicle)

Only perform this repair if Fuel Pick-up Tube flair nut is stripped.

Parking Heater, Fuel Pickup Tube, Check

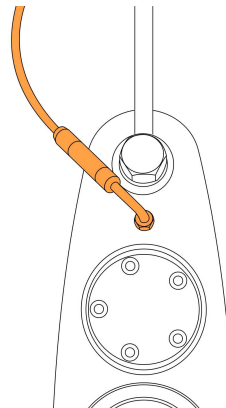
- 1 Secure the vehicle for service by parking it on a flat level surface, applying the parking brake, chocking the rear wheel, and placing the transmission in neutral.
- 2 Disconnect all cables from the negative battery terminals to prevent personal injury from electrical shock and prevent damage to electrical components.
- 3 Check the parking heater tube for proper clocking and the flare nut for over torquing or stripped threads.

Note: Some models will require the side fairing or other components to be removed for accessibility.



W3086131

Incorrect



W3086132

Correct

Fuel Sending Unit and Fuel Pickup Tube Replace

Note: In most cases, the sending unit can be removed from the current position on truck without removing the fuel tank.

1. Remove the harness connector.
2. Cut cable tie(s) as needed.
3. Mark the harness position with a marker on the fuel tank before removing sender.
4. Remove screws securing sending unit to tank.
5. Remove sending unit according to the following steps:
 - a. Pull sending unit up and out of tank until the float can be touched
 - b. Grab float with one finger and hold.
 - c. Slide sending unit back into tank a short distance.
 - d. Maneuver fingers and pull float out of tank.
 - e. Lift the sending unit out of the tank at an extreme angle to clear the cab floor.
6. Install new sending unit (21451772) and gasket in reverse order of removal.
7. Orientate sending unit to prior mark made on tank.
8. Secure sending unit with screws. Tighten to 6 ± 1 Nm (53 ± 9 in lb).
9. Remove the clamp from the parking heater pickup tube.
10. Remove the hose from the pickup tube.
11. Loosen and remove the pickup tube and flare nut fitting.
12. Install new flare nut fitting and pickup tube. Clock the pickup tube to the correct position and secure. Tighten to 12 ± 1 Nm (110 ± 10 in lb).
13. Install the hose and secure with clamp.
14. Connect battery cables.

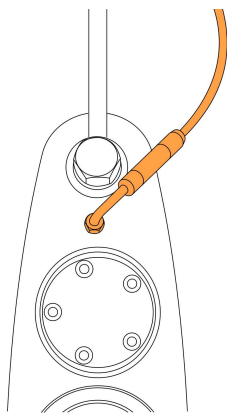
Repair C (Tank off Vehicle)

Only perform this repair if tank removal is necessary to perform Parking heater Tube Replacement.

Parking heater, fuel pickup tube, Check

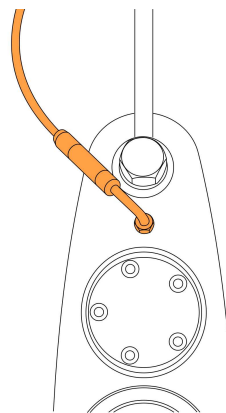
- 1 Secure the vehicle for service by parking it on a flat level surface, applying the parking brake, chocking the rear wheel, and placing the transmission in neutral.
- 2 Disconnect all cables from the negative battery terminals to prevent personal injury from electrical shock and prevent damage to electrical components.
- 3 Check the parking heater tube for proper clocking and the flare nut for over torquing or stripped threads.

Note: Some models will require the side fairing or other components to be removed for accessibility.



W3086131

Incorrect



W3086132

Correct

Fuel Sending Unit and Fuel Pickup Tube Replace

- 1 Remove left side fairings.
Note: VNL only
- 2 Remove fasteners on rear support for fairing and remove.
Note: VNL only
- 3 Remove fasteners on top step, over fuel tank and remove step.
- 4 Drain fuel from tank.
- 5 Disconnect fuel lines and harness.
- 6 Position jack to support weight.
- 7 Remove fasteners on tensioning bands and remove.
- 8 Remove fuel tank.
- 9 Loosen and remove the pickup tube and flare nut fitting.
- 10 Install new flare nut fitting and pickup tube. Clock the pickup tube to the correct position and secure. Tighten to 12 ± 1 Nm (110 ± 10 in lb).
- 11 Mark the harness position with a marker on the fuel tank before removing sender.
- 12 Remove screws securing sending unit to tank.
- 13 Remove sending unit.
- 14 Install new sending unit (21451772) and gasket.
Note: Orientate sending unit to prior mark made on tank.
- 15 Secure sending unit with screws. Tighten to 6 ± 1 Nm (53 ± 9 in lb).
- 16 Install fuel tank in place with floor jack.
- 17 Install tensioning bands, while ensuring that all insulators are in position upon tank installation. Tighten to 75 ± 7 Nm (55 ± 5 in lb).
- 18 Remove jack support.
- 19 Reconnect fuel lines, and harness.
- 20 Pump fuel into tank.
- 21 Reinstall rear fairing support and secure with fasteners.
Tighten to 24 ± 4 Nm (18 ± 3 ft lb).
- 22 Reinstall left side fairings.
Note: VNL Only
- 23 Install top step over fuel tank and secure with fasteners.
Tighten to 24 ± 4 Nm (18 ± 3 ft lb).
- 24 Connect all previous removed cables from batteries.
- 25 Check for any fuel leaks.

Reimbursement

This repair may be eligible for reimbursement if a product failure was experienced within time and mileage limits of the applicable Warranty coverage. Reimbursement is obtained via the normal claim handling process.	
Claim Type (used only when uploading from the Dealer Bus. Sys.)	W
Labor Code	
Repair A Primary Labor Code includes Checking Time	38201-0-01 0.3 hrs.
Repair B Primary Labor Code includes Checking Time	38201-0-02 0.4 hrs.
Repair C Primary Labor Code includes Checking Time	38201-0-03 1.5 hrs.
Causal Part	21451760

Volvo Trucks North America engages in a comprehensive program of testing and evaluating to provide the best possible product. Volvo Trucks North America however, is not committed to, or liable for updating existing vehicles.