

**\*\* SOLUTION \*\***

Title Volvo Chassis - Vehicle with Diagnostic Trouble Code (DTC) P2002-00, Diagnostic Instructions - US10+OBD13 Emissions ONLY, Model Years 2013 (Rare), 2014

**Volvo Models**

Volvo Model VN , VNL , VNM , VHD

**Emission Standard**

Emission Standard US10+OBD13

**Engine family**

Engine family 13L Engine

**\*\* SOLUTION \*\***

Cause DTC P2002 - Diesel particulate filter efficiency below threshold (Bank 1) may log on US10+OBD2013 emissions chassis. This diagnostic routine is meant to detect potential damage to the Diesel Particulate Filter (DPF) or indicate an incorrect Diesel Oxidation Catalyst (DOC) or DPF installed on the vehicle.

**Solution****Conditions**

- Vehicle emissions level should be verified to be US10+OBD13. Emissions level can be found in Premium Tech Tool (PTT) as shown below:

Tech Tool

Tech Tool Links Help

Product Product History Diagnose Test Calibrate Program Impact

Selected Product (N 997222)


Refresh Settings... Manual Selection... Latest Selections... OBD/LVD

Product Details

Chassis ID: N 997222	VIN: 4V4NC9EH2JN997222
Model: VN	Company: Volvo Trucks
Emission Level: US17 + OBD2016	
Electrical System: VERSION3	



- Vehicles affected will have the following Engine Control Module (EMS) Main Software Part Numbers **23036505**.
- P2002 must be either:
  - Active with Confirmed status True.
  - Inactive with greater than 3 counts and Confirmed status True.

#### DTC List (2 Items)

Control Unit ▲	DTC	Status
Brake ECU (MID 136)	SID 69: Axel load sensor, FMI 2: Data erratic, intermittent, or incorrect	Active
Engine Control Module (EMS)	P229F64: NOx Sensor Gas Outlet Removed, Signal Plausibility Failure	Active  0

#### NOx Sensor Gas Outlet Removed

##### ⊟ Detailed status information

Title ▲	Value
Confirmed DTC 	True 
Pending DTC	False
Test failed	True
Test failed since last clear	True
Test failed this operation cycle	True
Test not completed since last clear	False
Test not completed this operation cycle	False
Warning indicator requested	False

Confirmed status True

## Important Notes

- **If P2002 is Confirmed status False** it is not the source of the issue that resulted in the shop visit. DO NOT troubleshoot the code. Review the DTC Readout for codes that may be related.
- **If P2002 is Inactive** the latest evaluation passed and may indicate an issue that resolved itself. The number of counts should then be considered as an indication of an intermittent problem.

## For an Active and Confirmed Code:

### Inspect the following items:

1. Ensure the correct DPF and DOC are installed.
  - Both parts should be OEM. Third-party aftermarket parts do not always meet factory specifications and can be the source of the code.
  - **Take pictures** of the DPF faces and the part numbers of both the DOC and DPF for documentation.
2. Verify that there is no evidence of soot passing through the DPF.
3. Check the connections and pipes for the DPF Differential Pressure Sensor. Make certain that there are no leaks or damage, and the tubes and the sensor itself are not clogged, crimped, or otherwise blocked.
4. Make sure the DPF Differential Pressure Sensor is reading correctly and free of any electrical faults.
5. Check for documentation that the DPF was cleaned per service recommendations.

Any issues found in the items above should be corrected prior to proceeding further with diagnosis.

If all the items above are determined to be correct:



## IMPORTANT

If this is the vehicle's first visit for P2002 and the code is confirmed and active, clear the DTC and release the vehicle after confirming and documenting the five items in the section above. Do not proceed with the below steps.

1. Record a Sensor and Parameter Values Monitor.

- The road test should last approximately one hour.
- The test should follow both city and highway duty cycles.
  - This includes stop-and-go driving as well as steady highway speeds.

2. Verify the DTC status following the road test:

- Did the code recur during the road test?
- How many counts logged during the road test?

3. Start an eService case.

- The eService case **MUST INCLUDE**:
  - A thorough description of the problem.
  - A current DTC Readout from the time the vehicle arrived.
  - All of the information gathered during the inspection steps above.
    - This includes the DPF and DOC pictures.
  - The road test data.
  - DTC status information as seen following the road test.

Cases submitted with incomplete information may be refused.

---

Internal comments (BO)

### FOR DEALER TECHNICAL SUPPORT:

If vehicle has come in as repeat P2002 Active and Confirmed, we would recommend replacing both DOC and DPF on the vehicle and send it back to power-train engineering for analysis. Inspection steps 1-5 with good documentation is essential before we recommend DOC/DPF replacement. If we start seeing more than 10 DOC/DPF changes are required per month, please let product specialist know to plan visit and data collection.

---

NA\_Sister solutions

[K05234659](#)

---

Solution visibility

Dealer distribution

---

### Function(s)/component(s) affected

---

Function affected

DOC , DPF

---

### Function Group

---

Function Group 254 catalytic converter; exhaust emission control equipment , 258 emissions after-treatment , 2841 Electronic Control Unit , 2846 Sensor

---

## Customer effect

---

Main customer effect soot , regeneration , fault code/display

---

## Fault Codes And Error Codes

---

OBDII Diagnostic Trouble Codes (P, U, B Format) P2002-00

---

## Conditions

---

Vehicle operating mode when driving , when stationary

Frequency of occurrence of problem random

Other conditions after a workshop procedure on the vehicle

---

## Administration

---

Author UT0031H

Dealer ID UT0031H

Last modified by A241298

Creation date 25-06-2019 16:06

Date of last update 14-08-2019 14:08

Review date 01-06-2020 00:06

Status Published

NA\_Reviewer ut0031h

NA\_Author\_Group GTT

---