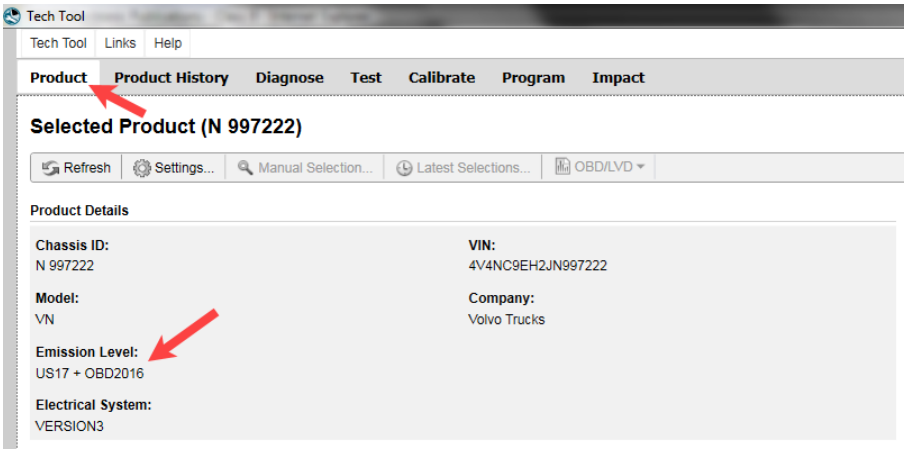
Volvo Chassis - Vehicle with Diagnostic Trouble Code (DTC) P2002-00, Diagnostic Instructions - US10+OBD13 Emssions ONLY, Model Years 2013 (Rare), 2014

Internal Content

Conditions

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



• 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.

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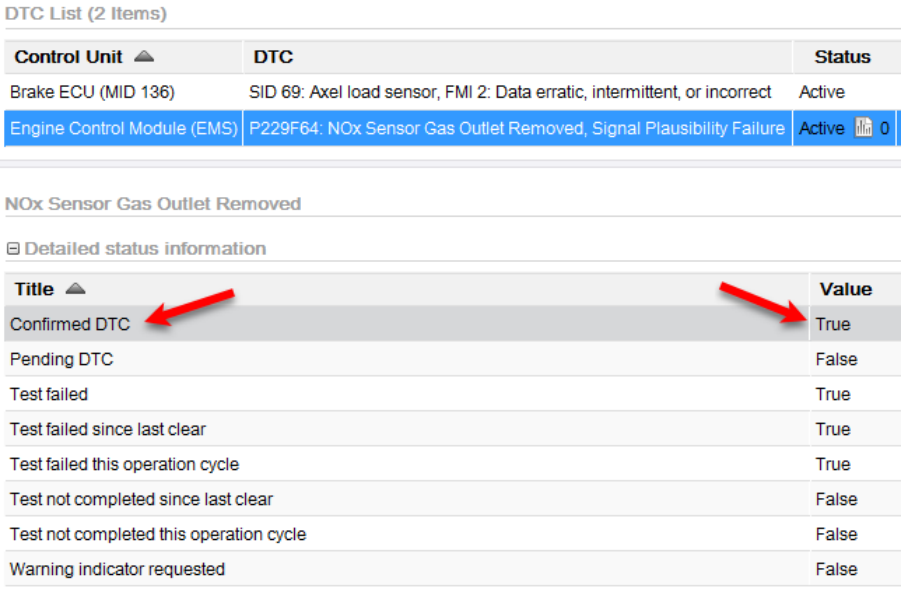

DTC List (2 Items)

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 [illegible]nd the sensor itself are not clogged, crimped, or otherwise blocked.

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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. Please refer to CBR-864 for road test instructions.

- 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.

ses submitted with incomplete information may be fused.

Tags k70734554 p2002-00 p200200

Related links and attachments

KC-864

Feedback

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Road Test Instructions - Required Criteria For Sensor And Parameter Value Monitor / Recordings; Request For Data From eService - US10+OBD13 To US14+OBD16 (OBDII, Sixteen Pin Diagnostic Connector), Year Models 2014 To 2017; Non-Common Rail Fuel Syst

Internal Content

Road test data should only be recorded at request from eService or for dealer use in the diagnostic process. eService cases submitted with data will not be reviewed unless all possible diagnostic procedures have been exhausted with no fault found, and a detailed description of all steps taken with accurate results and values is included in the case.

I. All Road Tests will need to be recorded with the OBDII Template loaded from the test screen in Premium Tech Tool (PTT)

• The template file can be found here: 

○ Right click the file icon and select "Save Link As..." (Chrome, FireFox) or "Save Target As..." (Internet Explorer), then choose the Desktop or a folder where the file can be easily located. The file cannot be opened outside of Premium Tech Tool (PTT).

• Instructions for loading the template once it is saved to the hard drive can be found in Solution CBR-270 .

II. For Emissions Evaluation:

• Data from loaded operation is preferred when possible unless the chassis is only coding when bobtail or empty

• Both NOx sensors must be online prior to starting the road test

- System warmup can be accelerated by running a regen and canceling when both NOx sensors are verified to be reading

• Smooth accelerator inputs should be used for all parts of the test except for acceleration from a stop

- Stabbing the accelerator or suddenly letting off will cause invalid sor readings

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• **Record:**

- Two to Three instances of sustained high engine load

○ This can be done from a stop or while in motion

♦ If done while in motion RPM range should move from approximately 1200 RPMs up through at least 1800 RPMs in lower gear

○ Wide Open Throttle (100%) should be maintained
○ Engine load should remain at 100% during this period

- 25 to 30 miles of steady highway-speed driving

○ **DO NOT** use cruise control. Accelerator input values are required for evaluation
○ Keep speed below the chassis's governed road speed

♦ Accelerator readings will not be valid if chassis is held at its maximum speed

- Minimum of one instance of downhill deceleration lasting 20-30 seconds

○ There should be no accelerator input at this time

- Two to Five minutes of idle time before the recording is stopped.

III. For Low Oil Pressure Or Low Power Evaluation:

• Data and eService cases submitted for low power complaints will not be reviewed unless the chassis has been confirmed to not reach rated horsepower or torque range via dynamometer report or dealer review of data prior to submitting to Dealer Technical Support

• Low power issues must be verified during loaded operation. Bobtail or empty operation will not provide relevant readings

• Both NOx sensors must be online prior to starting the road test **unless the problem is occurring with cold engine**

System warmup can be accelerated by running a regen and coasting when both NOx sensors are verified to be reading

• Smooth accelerator inputs should be used for all parts of the test except for acceleration from a stop

- Stabbing the accelerator or suddenly letting off will cause invalid sensor readings

• Record:

- At Least Three instances of sustained high engine load

○ This can be done from a stop or while in motion

♦ If done while in motion RPM range should move from approximately 1200 RPMs up through at least 1800 RPMs in lower gear

○ Wide Open Throttle (100%) should be maintained
○ Engine load should remain at or as close as possible to 100% during this period
○ **Long uphill climbs are preferred for this where possible. If a long uphill pull can be recorded it is understood that engine load may not remain at 100% for the duration**

- 15-20 miles of steady highway-speed driving

○ **DO NOT** use cruise control. Accelerator input values are required for evaluation
○ Keep speed below the chassis's governed road speed

♦ Accelerator readings will not be valid if chassis is held at its maximum speed

- Minimum of one instance of downhill deceleration lasting 20-30 seconds

○ There should be no accelerator input at this time

- One to Two minutes of idle time before the recording is stopped.

IV. Uneven Operation, Engine Stumble, Vibration Evaluation:

tion issues must be recorded in the same operating conditions as they are reported to be occurring

- If vibration is occurring only during loaded operation, for example, data recorded during a bobtail road test would not be acceptable

- Engine temperature, weather, terrain, and driver habits, especially if equipped with a manual transmission, should be considered

• Smooth accelerator inputs should be used for all parts of the test except for acceleration from a stop

- Stabbing the accelerator or suddenly letting off will cause invalid sensor readings

• Record:

-**Note:** Depending on the severity of symptoms, it may not be possible to cover all items listed below. At minimum, the recording needs to capture the problem occurring

- The complaint should be duplicated several times when possible

○ Engine parameters should be held steady while the problem is occurring for as long as able
○ Push the spacebar once when the problem begins each time to create a flag in the data.

- If it is possible, at least one hard acceleration with engine load sustained at 100% for several seconds should be captured

- 10-15 miles of steady highway-speed driving

○ **DO NOT** use cruise control. Accelerator input values are required for evaluation
○ Keep speed below the chassis's governed road speed

♦ Accelerator readings will not be valid if chassis is held at its maximum speed

- Minimum of one instance of downhill deceleration lasting 20-30 seconds

○ If the issue is reported as occurring during deceleration or engine braking this should be captured several times
○ There should be no accelerator input during this time

- 3-5 minutes of idle time before stopping the recording

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V. Allow The PC To Complete Processing The Data

• When a laptop is running on battery power, the processor speed is reduced to increase battery life.

- Plug the laptop in to a wall outlet so it is able to run at full power

• Depending on the length of the test drive and computer specs, it may take 15-20 minutes for the computer to complete processing the data before the operation can be exited

VI. Attach The Road Test Data To The eService Case

• Further instructions for locating a data file can be found in CBR solution CBR-270 or by searching for " CSV File Extraction "

Tags road test k25801413

Related links and attachments

No links or attachments available

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Feedback

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