



## Solution

**Title (customer effect)** Diagnostic Trouble Codes ( DTC ) P208E And P103B Logging With Possible Derate ( SCR Inducement ) - OBD15, US14+OBD16 Emissions And Newer

**Cause** P208E and or P103B may be generated due to the intermittent, temporary clogging of the Diesel Exhaust Fluid (DEF) dosing valve, normally at startup.

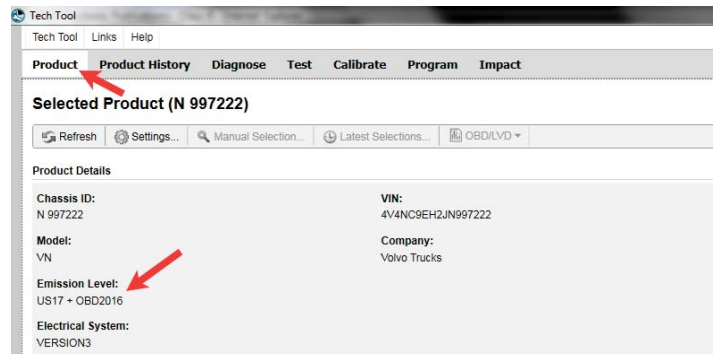
**Solution** - **DO NOT RUN A SERVICE REGENERATION OR CRYSTAL SUBLIMATION TO EXIT INDUCEMENT FOR THESE CODES.**

- **IF THE CHASSIS CAME IN WITH DERATE WARNINGS ACTIVE**, Proceed to section two **Prior To Programming.**

### I. Software Levels

- **Verify the chassis emissions level**

- Details can be found in the Product Details box on the Product tab in PTT as seen below:



- **Check Engine Control Module (EMS) software levels:**

- Updated software for OBD15 chassis will have a Main Software (MSW) 23167877 or newer
- Updated software for US14+OBD16 chassis will have a Main Software (MSW) 23169815 or newer
- Updated software for US17+OBD16 and newer chassis will have a Main Software (MSW) 23242993 or newer

- **For chassis that have older MSW part numbers than listed above:**

- Reprogram the following modules in the order listed.
  1. Engine Control Module ( EMS )
  2. Aftertreatment Control Module ( ACM )

## II. System Tests

Premium Tech Tool (PTT) Operation number [2589-08-03-05 Aftertreatment selective catalytic reduction \(SCR\) system](#), found under Function Group 2 in the Test tab should be utilized to diagnose the problem and exit inducement in the order listed below:

### 1. Test A: System Pressure Build Up

- This test confirms that the DEF pump builds pressure as expected (this test can be skipped if other tests will also be performed).
- **IF PRESSURE IS NOT BUILT, DO NOT REPLACE DEF PUMP.** Follow the instructions below:
  1. Start the truck and allow it to run for 10 minutes.
  2. Shut off the truck.
  3. Rerun the test.

### 2. Test B: Dosing Test

- A graduated cylinder or other appropriate container with measurement accurate within 2 milliliters (cubic centimeters) should be used to measure dosing test results.
  1. Sub-Test 2, Small dosing test - 120 seconds at 25% dosing
  2. Sub-Test 3, Large dosing test - 120 seconds at 100% dosing
  3. Sub-Test 4, Dosing Test, Exit inducement mode - This will clear any inducement (derate) condition caused by P208E or P103B.

### 3. Test C: Exit Inducement Mode

- Test B, sub-test 4 mentioned in the previous section runs the diagnostic monitor on the dosing valve and verifies it is operating correctly. Test C will reset any inducement (derate) timers present.
- This test should be run as the last step before releasing vehicle back to the customer so that if the problem is not completely fixed, the driver will still have 4 hours to reach a service location before the vehicle begins going into severe derate.

**2589-08-03-05 Aftertreatment selective catalytic reduction (SCR) system**

Simulation

Information ↔ Conditions ↔ Execution

**Purpose**  
Check that a newly installed, repaired, overhauled or replaced SCR system works correctly.

**Description**  
It will be necessary to remove the dosing valve from the inlet pipe in one of the tests.

**Selections**  
Select the illustration corresponding to the method or test to be performed.

**A - System pressure build up**  
Check function/leakage of pump and hoses

**B - Dosing test**  
• Check function/leakage of dosing valve  
• Perform the Dosing test after the dosing valve has been replaced in order to exit inducement and clear **DTC P208E or P103B**

**C - Exit inducement mode**  
• This should only be performed to exit inducement mode in order to find the root cause of **DTC P207F or P160C**  
• Reset SCR system inducement timers

**D - SCR efficiency test values**  
The following diagnostic trouble codes (DTCs) are concerned **P207F or P208E**.

Continue >>> Cancel

Internal comments (BO)

Do not recommend EECU /ACM replacements for this issue.

Recommend GD along with this CBR.

If the truck has been in multiple times for this issue, recommend thorough inspection for any clog/electrical issues.

**NOTE: OBD2015 (23167877 or newer) and OBD2016 (23169815 or newer) has new EECU SW released which has significant improvements. GHG2017+ (23242993 or newer) products has improvements.**

**NOTE: Once SW is at or newer than mentioned above, only P103B causes derate. P208E only need to be diagnosed if fault is "CONFIRMED".**

NOTE: US13 and US14 chassis will need to have complete diagnosis performed to find the root cause.

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Solution visibility

Dealer distribution

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

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Function affected

exhaust , SCR , CV electronic control unit , 1 1 0 EMS , 2 1 0 ACM , Diagnostic tool

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### Function Group

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Function Group

254 catalytic converter; exhaust emission control equipment , 2584 Dosage Valve; Injector

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### Customer effect

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Main customer effect

regeneration , calibration/programming/pairing/missing operation , diagnostics /methodology , efficiency/abnormal behavior , fault code/display

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### Fault code(s)

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OBD 2013 Diagnostic Trouble Codes

P103B , P208E

NA\_MIDs

MID 128 EMS

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### Conditions

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Vehicle operating mode

when driving , when stationary

Frequency of occurrence of problem

always

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### Administration

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Author

ut0031h

Last modified by

RU4469V

Creation date

15-12-2016 17:12

Date of last update

22-02-2018 17:02

Review date

30-04-2017 00:04

Status

Published

Average score

2

Number of scores

2

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NA\_Author\_Group GTT

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## NA\_MACK\_Vehicle\_Range

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**NA\_MACK\_Vehicle\_Range** Cabover , LR , LEU , MRU , Conventional  
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## NA\_VOLVO\_Vehicle\_Range

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**NA\_VOLVO\_Vehicle\_Range** Conventional , VNX , VNL , VNM , VHD , VAH  
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## Engine family

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Engine family Volvo , 11L Engine , 13L Engine , 16L Engine , Mack , MP7 , MP8 , MP10

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## Emission Standard

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Emission Standard US17 GHG , US16 , US15 , US13 OBD , US14 GHG

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