



## Mack Models

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**Mack Model** LEU , MRU , CHU , CXU , GU , TD

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## Engine family

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Engine family MP7 , MP8 , MP10

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## Emission Standard

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Emission Standard US14 GHG

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## \*\* SOLUTION \*\*

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**Title** Mack Chassis - Fuel Injector Offset Learning Diagnostic Trouble Codes ( DTC ) / Fault Codes Logged In Engine Control Module ( EMS ); Possible Rough / Uneven Idle - **US14 +OBD13 Emissions, Commonly Model Year 2015**

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**Cause** US14+OBD13 chassis may set codes for injector offset learning minimum and maximum values. The codes may be accompanied by rough idle, with no other performance complaints or symptoms of injector failure.

**Cylinder balancing is only active at idle speeds**, between 500 and 750 RPM. The balancing monitor does not run outside of this speed range, which means the codes do not set under high idle or driving conditions. Offset codes generated with no other injector-related codes and no symptoms aside from a possible rough idle may not indicate a physical injector problem, and diagnosing the codes will in many cases lead to no fault found. It has been determined that software may contribute to the problem. Software improvements have been implemented to better control cylinder balancing logic.

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## Solution

### Relevant DTCs

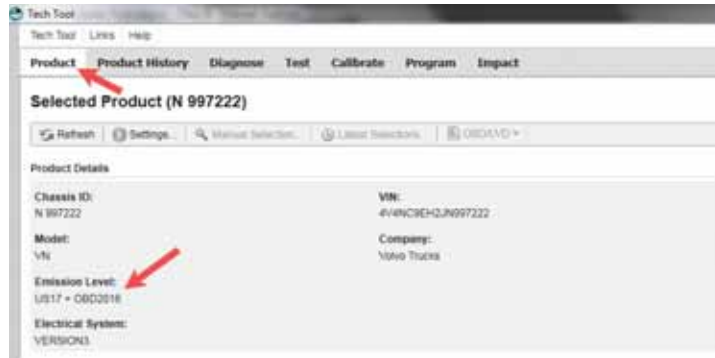
The list of all applicable DTCs for this issue is included in the Fault Codes section below.

### Repair

- **Verify the chassis emissions level and ensure that the vehicle is within the applicable range for this solution.**

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

below:



**If any of the fault codes in the section below are logged in a US14+OBD15 chassis:**

**A. Check the EMS Main Software (MSW) part number.**

- **If the EMS MSW part number is lower than 23167867.P01:**

1. Update the EMS software
2. Reset Cylinder Balance from Premium Tech Tool (PTT) Operation [2387-08-03-01 Cylinder Balancing](#), located in the Test tab.
3. Run a Cylinder Balance test from the same screen following the reset. Start the test at minimum temperature (140 °F, 60 °C) and monitor balancing until coolant temperature reaches approximately 177 °F (81 °C). This will allow observation of performance during multiple engine modes that are entered during warm-up.
4. If the Cylinder Balance test still shows an issue and/or there are one or more Learning Offset codes that return following the update, follow Guided Diagnostics for the applicable code or codes.

- **If the EMS MSW is part number 23167867.P01 or newer**, proceed with Guided Diagnostics for the applicable code or codes.

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| NA_Sister solutions                      | K25847618  |
| Solution visibility                      | <b>Dealer distribution</b>                                       |
| <b>Function(s)/component(s) affected</b> |  |
| Function affected                        | injectors , 1 1 0 EMS , Diagnostic tool                          |
| <b>Function Group</b>                    |  |
| Function Group                           | 237 injector and delivery pipe , 284 control system, fuel supply |
| <b>Customer effect</b>                   |  |
| Main customer effect                     | stumble , fault code/display                                     |
| Fluid implicated                         | fuel   |
| Engine speed                             | unstable idle speed  |
| Road behaviour                           | unstable behaviour   |



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## Fault code(s)

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|                                    |   |
|------------------------------------|---|
| OB2013 Diagnostic<br>Trouble Codes | P02CC00 , P02CD00 , P02CE00 , P02CF00 , P02D000 , P02D100 , P02D200 , P02D300 , P02D400 , P02D500 , P02D600 , P02D700 , P101100 , P101200 , P101300 , P101400 , P101D00 , P102300 , P102400 , P1025 , P102500 , P102600 , P102700 , P102800 , P102900 |
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## Conditions

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|                        |                 |
|------------------------|-----------------|
| Vehicle operating mode | when stationary |
|------------------------|-----------------|

|                                       |        |
|---------------------------------------|--------|
| Frequency of occurrence of<br>problem | random |
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|              |                |
|--------------|----------------|
| Engine speed | 500 - 1000 rpm |
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## Administration

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| Author | RU4469V |
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|           |         |
|-----------|---------|
| Dealer ID | RU4469V |
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| Last modified by | RU4469V |
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|               |                  |
|---------------|------------------|
| Creation date | 15-05-2018 15:05 |
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|                     |                  |
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| Date of last update | 15-05-2018 15:05 |
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| Review date | 30-04-2019 00:04 |
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| Status | Published |
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| NA_Author_Group | GTT |
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