

**Mack Models**

**Mack Model** Anthem , CXU

**Volvo Models**

**Volvo Model** VNL , VNM

**Engine family**

Engine family 13L Engine , MP8

**Emission Standard**

Emission Standard 2018 , OBD2017 , US17 GHG

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

**Title** Diagnostic Trouble Code ( DTC ) P0471 Illuminating The Malfunction Indicator Lamp (MIL) - **US17 (GHG17, Common Rail Fuel System) Chassis With Turbo Compound ONLY**

**Cause** US17 chassis may generate code P0471, with Guided Diagnostics (GD) determining there is No Fault Found (NFF)

**Solution** **Review the Detailed Status Information for the P0471 DTC Readout. Verify that the Confirmed DTC value is "True" prior to proceeding further.**

Control Unit	DTC	Status
Brake ECU (MD 130)	SID 69: Axel load sensor, FM 2 Data erratic, intermittent, or incorrect	Active
Engine Control Module (EMS)	P0299M1: NOx sensor Gas Outlet Remount, Signal Plausibility Failure	Active

  

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

**If P0471 is logged and there are no other symptoms present to indicate a problem:**

**A.** Check with the customer to see if the truck has been driven through or has been operating at high altitudes, approximately 4000 ft (1220 m) and above.

- It has been determined that turbo compound chassis will set P0471 at higher altitudes. This can occur if the vehicle is operated at high altitudes consistently, or only passes through a section of high altitude during travel.

**B. DO NOT CHANGE ANY PARTS OR PROCEED WITH DIAGNOSIS BEYOND VERIFYING THAT NO OTHER ISSUES OR SYMPTOMS EXIST**

- Engineering has determined that P0471 generated with the conditions above is caused by an issue with software.
- This issue will be addressed with the release of an upcoming software update.
- This CBR Solution will be updated with new information at the time of the software release.

**If P0471 is logged and there are other symptoms present (Regeneration, Engine Performance):**

**A.** An eService case must be started (Cases are still required for repairs performed to GHG17 chassis at this time).

- The case must include:
  - This solution number.
  - A complete DTC readout from the time of the vehicle's arrival.
    - A [screen shot](#) of the readout is strongly preferred (click the link for instructions on taking a screen shot).
  - The symptoms described by the customer.
  - The symptoms the technician has observed from test drive or regeneration.
  - Any diagnostic checks or procedures performed.

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Internal comments (FO)

If there are any other symptoms of issues such as regeneration failures, warm hold functionality not working or weak engine brake along with this code:

**Have the technician use the following steps to record a Sensor Parameter Monitor with the turbo compound template loaded:**

1. Wait for the engine to cool down below
2. While logging data, Key ON, Start and idle the vehicle for approximately 6 minutes.
3. Shut the truck down.

**Check the following items:**

- During Key ON, exhaust pressure should be approximately 0 psi
- During idle early phase exhaust pressure should be small, less than 5 psi.
- Once the Exhaust Pressure Governor (EPG) actuator is turned ON (P1FQZ 30-50%) exhaust pressure should be approximately 30 psi.

This confirms that the Exhaust Pressure Governor and the Closed Loop Butterfly Valves are working correctly at idle.

Please avoid any hardware changes specific to turbo-compound vehicle (turbocharger, closed loop butterfly valves, exhaust pressure sensor etc) if above results are good. Contact Nataraj Bhat or John Whelan if you see anything abnormal in this test.

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Solution visibility

Dealer distribution

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

Function affected exhaust , 1 1 0 EMS , Diagnostic tool

## Function Group

Function Group 254 catalytic converter; exhaust emission control equipment , 258 emissions after-treatment , 284 control system, fuel supply

## Customer effect

Main customer effect diagnostics/methodology , fault code/display

Lights/Messages on information display  Engine equipment fault warning pictogram

## Fault code(s)

OBD 2013 Diagnostic Trouble Codes P0471

## Conditions

Vehicle operating mode when driving , when stationary

Frequency of occurrence of problem random

## Administration

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Last modified by RU4469V

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