



## Mack Models

**Mack Model** PI-Pinnacle , AN-Anthem , CHU , CXU

## Engine family

Engine family MP8

## Emission Standard

Emission Standard 2018 , OBD2017 , US17 GHG


\*\* SOLUTION \*\*

**Title** Mack Chassis - Diagnostic Trouble Code ( DTC ) P0471 Illuminating The Malfunction Indicator Lamp (MIL) - **US17+OBD16, US17+OBD18 (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.**

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

**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.** Software improvements have been made that address this DTC. There are two documents that should be reviewed:

1. Product Improvement [PI0883 Engine Control Module \(ECM\) and Aftertreatment Control Module \(ACM\), Software Updates](#) was released July 2018. This product improvement should appear under the Campaigns section of the Product screen of Premium Tech Tool (PTT) when first connecting to the vehicle. **Applicability to this campaign should be checked first.**

- The Service Program document can be found on the dealer [Mack Trucks eMedia](#).
  - **Note:** There will be a prompt to sign in to the Trucks Dealer Portal site if necessary.
  - Searching for PI0883 will return a link to the bulletin.
- **If the PI applies to the product it is not necessary to proceed to the Field Service Bulletin below.**

2. Field Service Bulletin FSB 284-067 [Engine Control Module \(ECM\) and Aftertreatment Control Module \(ACM\), Reprogramming](#) has been released and should be reviewed if the Product Improvement does not apply to the vehicle.

- The FSB document can be found on [Mack Trucks eMedia](#) or under the Service tab in [Impact](#).
  - Searching for 284-067 will return a link to the document in either application.

3. If either of the above documents applied and there are no other issues present, the vehicle should be released when software updates have been completed.

**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.

NA_Sister solutions	<a href="#">K53623240</a>
Solution visibility	Dealer distribution
<b>Function(s)/component(s) affected</b>	
Function affected	exhaust , 1 1 0 EMS , Diagnostic tool
<b>Function Group</b>	
Function Group	254 catalytic converter; exhaust emission control equipment , 258 emissions after-treatment , 284 control system, fuel supply
<b>Customer effect</b>	
Main customer effect	diagnostics/methodology , fault code/display
Lights/Messages on information display	 Engine equipment fault warning pictogram
<b>Fault code(s)</b>	
OBD 2013 Diagnostic Trouble Codes	P0471
<b>Conditions</b>	
Vehicle operating mode	when driving , when stationary
Frequency of occurrence of problem	random
<b>Administration</b>	
Author	RU4469V
Dealer ID	RU4469V
Last modified by	RU4469V
Creation date	12-07-2018 16:07
Date of last update	12-07-2018 17:07
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