Solution K00585105
Tuesday, August 7, 2018 5:25:18 PM CEST

Mack Models

Mack Model	TE-TerraPro , LR , MRU , GR-Granite , PI-Pinnacle , AN-Anthem , CHU , CXU , GU

Engine family

Engine family	MP7 , MP8

Emission Standard

Emission Standard	2018 , OBD2017 , US17 GHG

** SOLUTION **

Title	Mack Chassis - Diagnostic Trouble Code (DTC) P0087-00 Illuminating The Malfunction Indicator Lamp (MIL) Or Stop Engine Light; Possible Engine Power /Torque Derate - US17+OBD16 And US17+OBD18 Emissions, Common Model Years 2018 And 2019
Cause	For vehicles equipped with a common rail fuel system, if the fuel rail pressure drops below approximately 260 bar (3370 psi) for more than 4 seconds while the engine is running, DTC P0087 (Fuel Rail System Pressure - Too Low Bank 1) will trigger, causing a torque derate and either a yellow Malfunction Indicator Lamp (MIL) or red Stop Engine light A low fuel pressure system issue can generate P0087 with or without the P008A (Low Pressure Fuel System Pressure - Too Low).
Solution	**I. Product Improvement PI0883, Special Information** Product Improvement PI0883 has been released as of July 2018. This software campaign addressed multiple codes and was intended to reduce unnecessary occurrences for most of them. **P0087 is an exception**. The Product Improvement, when performed, **w ill not reduce occurrences of P0087**. It has been determined that the protection conditions enabled by an active P0087 were more severe than required. Vehicles that have not yet had the Product Improvement performed will set a Stop Engine light and reduce engine torque as a protection measure. After the Product Improvement has been performed, P0087 will turn on the yellow MIL, and the torque derate penalty has been **reduced** but not eliminated, enabling the vehicle to reach a service location. If the Product Improvement has not been performed on a chassis, the PI should appear under the Campaigns section of the Product screen of Premium Tech Tool (PTT) when first connecting to the vehicle. - The documentation for PI0883 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 a chassis presents with P0087 logged, it must be diagnosed regardless of whether the campaign has been performed.

II. Diagnostic Information

P0087 (Fuel Rail System Pressure - Too Low Bank 1) is most likely caused by restricted fuel filters creating insufficient fuel supply to the high pressure fuel system. This fault can be intermittent and only set during high fueling demands.

A. If DTC P008A (Low Pressure Fuel System Pressure - Too Low) is logged with P0087:

1. The Main Software (MSW) Part Number of the Engine Control Module (EMS) should be checked.

a. If the MSW part number is lower than 23033425.P01, software with changes to the parameter evaluation have been changed and the EMS software should be updated.

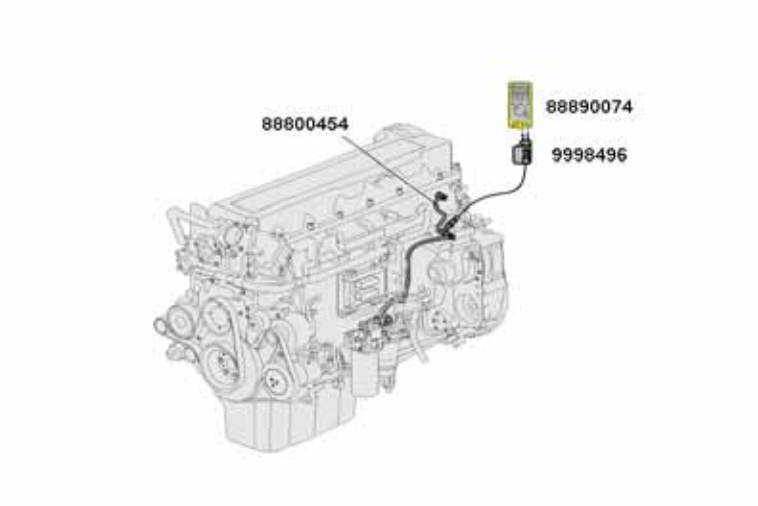
2. If EMS software does not require an update, Guided Diagnostics (GD) for P008A should be followed **first**, as the issue causing P008A to trigger can be the cause of P0087.

B. If there are no logged occurrences P008A:

1. Connect the special tooling shown below to measure the fuel supply pressure before troubleshooting per Guided Diagnostics for P0087.

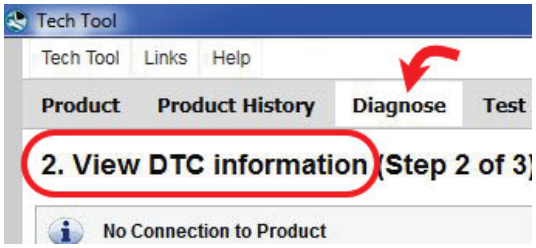
a. The fuel supply pressure can be measured stationary, but the vehicle may need to be road tested to monitor the low fuel supply system under load with higher fueling demands to identify a problem in the low pressure system, depending on severity of restriction in fuel filters.

b. If no fault is identified within the low pressure fuel system, follow the troubleshooting from Guided Diagnostics for DTC P008A (Fuel Rail System Pressure - Too Low Bank 1) as outlined in Step 2 below.

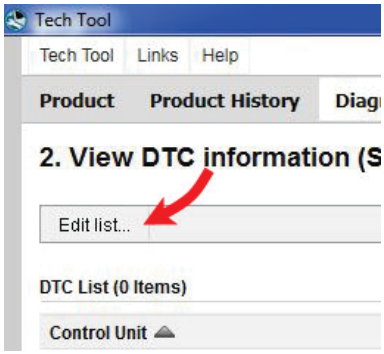


2. Add P008A to the Fault Code list in Step 2 of Guided Diagnostics.

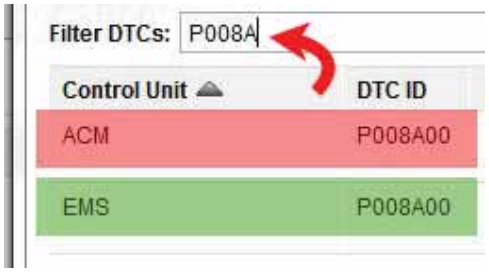
   a. In Premium Tech Tool (PTT), click on the Diagnose tab and navigate to Step 2. View DTC information.



   b. Click on the Edit list... button in the upper left-hand corner of the window.

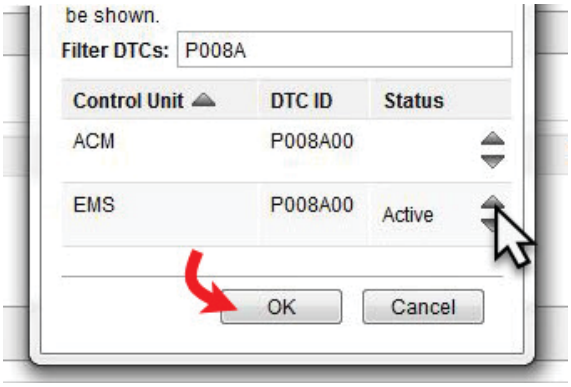


   c. The Edit DTC list window will appear. Click into the Filter DTCs text box and type in "P008A".

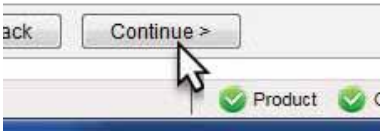


- There will be a P008A listing for both the ACM and EMS. **Do not use the ACM version of the code.**

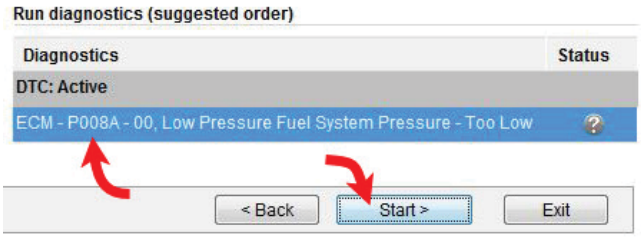
d. Using the Up and Down arrows, select Active status for the code. Click OK at the bottom of the window.



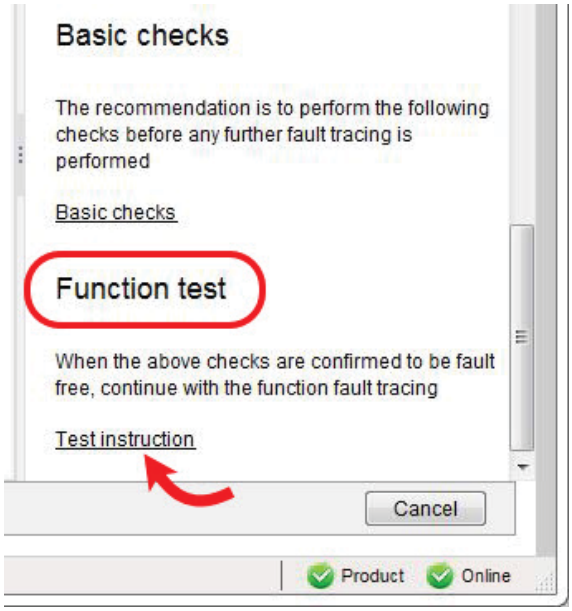
e. Click Continue in the bottom right-hand corner of the screen.



f. Make sure P008A is selected and click the Start button.



g. Click on the link for the Function Test. This will provide a series of low pressure fuel system checks.



h. Proceed with diagnostic steps as normal.

NOTE: There is a possibility of inadequate fuel supply pressure without a P008A due to the low supply pressure only being evaluated during certain conditions since removal of the dedicated low pressure fuel sensor from fuel filter housing. The Aftertreatment Hydrocarbon Injector (AHI) fuel pressure sensor is now used on US17 GHG engines to monitor the low fuel supply system but only during certain defined conditions.

III. Fuel Pressure, expected pressures (for general reference ONLY, values below should not be treated as exact)

A. Engine Speed, Normal idle

- The normal operating fuel pressure in a fault free system with unrestricted filters should be approximately 350 - 450 kPa (50 - 65 psi)

B. Engine Speed above 1200 RPM, Stationary

- The normal operating fuel pressure in a fault free system with unrestricted filters should be approximately 450 - 575 kPa (65 - 83 psi)

C. Engine Speed above 1200 RPM, Driving, 100% engine load

- The normal operating fuel pressure in a fault free system with unrestricted filters should be approximately 400 - 550 kPa (58 - 80 psi)

NA_Sister solutions	K70800169
Campaign code	PI0883
Solution visibility	Dealer distribution

Function(s)/component(s) affected

Function affected	fuel supply , low-pressure circuit , 1 1 0 EMS

Function Group

Function Group	23 fuel system, excluding gas propulsion , 2841 Electronic Control Unit

Customer effect

Main customer effect	diagnostics/methodology , power , fault code/display
Fluid implicated	fuel
Fluid pressure	low pressure
Lights/Messages on information display	 Engine equipment fault warning pictogram , STOPImmediate "STOP" danger warning light

Fault code(s)

OBD 2013 Diagnostic Trouble Codes	P008A

Conditions

Vehicle operating mode	when driving , when stationary
Frequency of occurrence of problem	always

Administration

Author	RU4469V
Dealer ID	RU4469V
Last modified by	RU4469V
Creation date	17-07-2018 16:07
Date of last update	17-07-2018 17:07
Review date	01-09-2017 00:09
Status	Published
NA_Author_Group	GTT