

**** SOLUTION ****

Title Assembled Camshaft - Injector Lobe Rotation Inspection For Possible Spun Camshaft Lobe; Diagnostic Trouble Codes (DTC) P0257-00, P2A17-00, Or P2A1F-00, Possible Lack Of Power – **US17+OBD16 and Newer Emissions**

Mack Models

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

Volvo Models

Volvo Model VN , VNL , VNR , VNX , VAH , VHD

Emission Standard

Emission Standard US17+OBD16 , US17+OBD18 , US17+OBD19

Engine family

Engine family 11L Engine , 13L Engine , MP7 , MP8

**** SOLUTION ****

Cause Vehicles equipped with an assembled camshaft may present with DTCs P0257-00, P2A17-00, P2A1F-00 logging, and a possible report of instances of low power.

It is possible that these conditions are created by a cam lobe that has rotated on the camshaft itself.

Solution

This procedure should be performed if the following conditions are present:

- Fault codes listed below are present on a DTC Readout:

P0257	Injection Pump Fuel Metering Control "B" Range/Performance (Cam/Rotor/Injector)
P2A17	Injection Pump Fuel Metering Control "D" Range/Performance (Cam/Rotor/Injector)
P2A1F	Injection Pump Fuel Metering Control "F" Range/Performance (Cam/Rotor/Injector)

Inspection Steps

1. Rotate the engine with the turning tool in the normal direction of rotation until the timing marks are aligned for the Injector Pump(s). While the engine is being rotated, confirm each

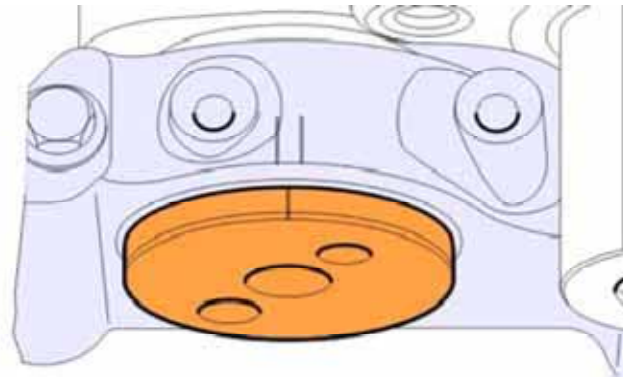
injector lobe is rotating with the camshaft and does not slip.

11L

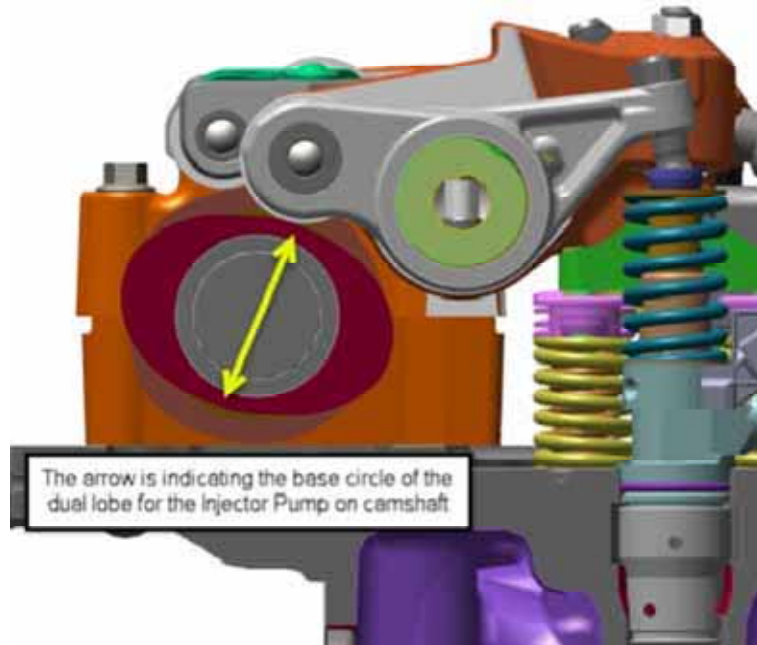
CAM POSITION	INLET	INJECTOR / PUMP	EXHAUST
TDC(V)	-	-	Cylinder 3
(P) 4	Cylinder 4	Pump 4	-
V5	-	-	Cylinder 5
(P) 2	Cylinder 2	Pump 2	-
V1	-	-	Cylinder 1
(P) 6	Cylinder 6	Pump 6	-
V4	-	-	Cylinder 4
3	Cylinder 3	-	-
V2	-	-	Cylinder 2
5	Cylinder 5	-	-
V6	-	-	Cylinder 6
1	Cylinder 1	-	-

13L

CAM POSITION	INLET	INJECTOR / PUMP	EXHAUST
5/PE6	Cylinder 5	Pump 6	Cylinder 6
3/PE2	Cylinder 3	Pump 2	Cylinder 2
6/PE4	Cylinder 6	Pump 4	Cylinder 4
2/E1	Cylinder 2	-	Cylinder 1
4/E5	Cylinder 4	-	Cylinder 5
1/E3	Cylinder 1	-	Cylinder 3



2. Once the timing marks are aligned for a specific Injector Pump, verify the injector rocker roller is on the base circle of the injector lobe. Refer to the illustration below.



Note: If an injector lobe rotates on the camshaft, the rotation is normally by 60 degrees. It takes approximately 15 degrees of rotation before potentially causing the faults codes listed previously or a fault for a pumping injector during the Common Rail Fuel System Test.

Solution visibility	Dealer distribution
Function(s)/component(s) affected	
Function affected	Engine , injectors
Function Group	
Function Group	214 valve mechanism , 215 engine transmission; camshaft , 237 injector and delivery pipe
Customer effect	
Main customer effect	power , fault code/display
Fault Codes And Error Codes	
OBDII Diagnostic Trouble Codes (P, U, B Format)	P0257-00 , P2A17-00 , P2A1F-00
Conditions	
Frequency of occurrence of problem	random
Administration	
Author	UT0455H

Dealer ID	UT0455H
Last modified by	A241298
Creation date	06-02-2019 22:02
Date of last update	04-12-2019 21:12
Status	Published
Average score	1.5
Number of scores	2
NA_Author_Group	GTT

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