

# P0300 Pie Engine Misfire Detected

## Description

The engine control module (ECM) uses information from the crankshaft position (CKP) sensor and the camshaft position (CMP) sensors in order to determine when an engine misfire is occurring. By monitoring variations in the crankshaft rotation speed for each cylinder, the ECM is able to detect individual misfire events. A misfire rate that is high enough can cause 3-way catalytic converter damage. The malfunction indicator lamp (MIL) will flash ON and OFF when the conditions for catalytic converter damage are present. DTCs P0301 through P0306 correspond to cylinders 1 through 6. If the ECM is able to determine that a specific cylinder is misfiring, the DTC for that cylinder will set. If the misfire rate is sufficient to cause emission levels to exceed a predetermined value, this DTC sets.

## DTC Descriptor

This diagnostic procedure supports the following DTC: DTC Pie Engine Misfire Detected

## Conditions for Running the DTC

- DTCs P0121, P0122, P0123, P0221, P0222, P0223, P0335, P0336, or P0338 are not set.
- The engine speed is between 400–7,000 RPM and steady.
- The delivered torque signal is more than 10 percent at idle.
- The delivered torque signal is between 9–30 percent with the transmission in drive.
- The intake air temperature (IAT) is more than 30°C (22°F).
- The fuel level is more than 10 percent.
- The torque management is not active.
- The antilock brake system/traction control system (ABS/TCS) is not active.
- The ECM is not receiving a rough road signal.
- The fuel cut-off is not active, including the traction control, the deceleration, the high vehicle speed, and the high engine speed.

## Conditions for Setting the DTC

The ECM detects a crankshaft rotation speed variation indicating a misfire rate sufficient to cause emissions levels to exceed mandated standards.

## Action Taken When the DTC Sets

- The control module illuminates the MIL on the second ignition cycle that the diagnostic runs and fails.
- The control module records the operating conditions at the time the diagnostic fails. The first time the diagnostic fails, the control module stores this information in the Failure Records. If the diagnostic reports a failure on thesecond consecutive ignition cycle, the control module records the operating conditions at the time of the failure. The control module writes the operating conditions to the Freeze Frame and updates the Failure Records.

## Conditions for Clearing the MIL/DTC

- The control module turns OFF the malfunction indicator lamp (MIL) after 4 consecutive ignition cycles that the diagnostic runs and does not fail.
- A current DTC, Last Test Failed, clears when the diagnostic runs and passes.
- A history DTC clears after 40 consecutive warm-upcycles, if no failures are reported by this or any other emission related diagnostic.
- Clear the MIL and the DTC with a scan tool.

## Diagnostic Aids

- 1). A misfire DTC could be caused by an excessive vibration from sources other than the engine. Inspect for the following possible sources:
  - A tire or wheel that is out of round or out of balance
  - Variable thickness brake rotors
  - An unbalanced drive shaft
  - Certain rough road conditions
  - A damaged accessory drive component or belt
- 2). A misfire DTC could be caused by a camshaft actuator stuck in the full advance or retard position.
- 3). For an intermittent condition, refer to Intermittent Conditions.

## Test Description

The numbers below refer to the step numbers on the diagnostic table.

2. This step determines if there is a current condition.

4. If the Misfire Current Counters are incrementing, but the engine is NOT misfiring, this indicates a mechanical condition. For example, an accessory drive belt could cause this condition.

## DTC P0300

Step	Action	Values	Yes	No
1	Did you perform the Diagnostic System Check-Engine Controls?	—	Go to Step 2	Go to Diagnostic System Check-Engine Controls
2	<p><b>Important:</b> The engine may only misfire when the engine is under a load. An engine load may be necessary to verify the condition.</p> <ol style="list-style-type: none"> <li>1. Start the engine.</li> <li>2. Allow the engine to reach operating temperature.</li> <li>3. Increase the engine speed to the specified value?</li> <li>4. Monitor the Misfire Current Cyl. 1-6 Counter parameters with a scan tool. Are any of the Misfire Current Counters incrementing?</li> </ol>	1,500 RPM	Go to Step 4	Go to Step 3

Step	Action	Values	Yes	No
3	<p>1. Observe the Freeze Frame/Failure Records for this DTC.</p> <p>2. Turn OFF the ignition for 30 seconds.</p> <p>3. Start the engine.</p> <p>4. Operate the vehicle within the Conditions for Running the DTC. You may also operate the vehicle within the conditions that you observed from the Freeze Frame/Failure Records. Did the DTC fail this ignition?</p>	—	Go to Step 4	Go to Diagnostic Aids
4	Is the engine misfiring?	—	Go to Step 5	Go to Symptoms -Engine Mechanical in Engine Mechanical-3.6L (LY7)
5	<p>Observe the DTC Info with a scan tool.</p> <p>Is DTC P0011, P0014, P0021, P0024, P0201-P0206, P0261, P0262, P0264, P0265, P0267, P0268, P0270, P0271, P0273, P0274, P0276, P0277, P0335, P0336, P0338, P0351-P0356, P2088, P2090, P2092, P2094, P2300, P2301, P2303, P2304, P2306, P2307, P2309, P2310, P2312, P2313, P2315, or P2316 also set?</p>	—	Go to Diagnostic Trouble Code (DTC) List on page 6-1246	Go to Step 6
6	Is there an engine mechanical noise?	—	Go to Symptoms -Engine Mechanical in Engine Mechanical-3.6L (LY7)	Go to Step 7

Step	Action	Values	Yes	No
7	Is there more than one misfire DTC set?	—	Go to Step 8	Go to DTC P0301-P0306
8	Is there any HO2S DTCs set?	—	Go to Diagnostic Trouble Code (DTC) List	System OK

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