

DTC P0420 [ZJ, Z6]

B3E010200400W02

DTC P0420	Catalyst system efficiency below threshold
DETECTION CONDITION	<ul style="list-style-type: none"> The PCM compares the number of the front HO2S and rear HO2S inversions for a predetermined time. The PCM monitors the number of inversions the rear side performs while the front side inverts for a specified number of times when the following monitoring conditions are met. The PCM detects the inversion ratio. If inversion ratio is below the threshold, the PCM determines that the catalyst system has deteriorated. <p>MONITORING CONDITION</p> <ul style="list-style-type: none"> HO2S, HO2S heater and TWC repair verification drive mode Engine speed is 1,500- 3,000 rpm. Calculated TWC temperature in PCM is more than 600 °C {1112 °F} (MTX), more than 620 °C {1148 °F} (ATX). Calculated load is 17- 48 %.^{*1} <p>^{*1}: Maximum calculated load value varies depending on engine speed.</p> <p>Diagnostic support note</p> <ul style="list-style-type: none"> This is a intermittent monitor (Catalyst). The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. DIAGNOSTIC MONITORING TEST RESULTS and PENDING CODE are available if the PCM detects the above malfunction condition during the first drive cycle. FREEZE FRAME DATA is available. The DTC is stored in the PCM memory.
POSSIBLE CAUSE	<ul style="list-style-type: none"> TWC deterioration or malfunction Exhaust gas leakage Loose front HO2S Loose rear HO2S Front HO2S malfunction

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED • Has FREEZE FRAME DATA been recorded?	Yes Go to the next step.
		No Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	VERIFY RELATED REPAIR INFORMATION AVAILABILITY • Verify related service repair information availability. • Is any related repair information available?	Yes Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No Go to the next step.
3	VERIFY RELATED PENDING CODE OR STORED DTC • Turn the ignition switch off, then to the ON position (Engine off). • Verify the related PENDING CODE or stored DTCs. • Are other DTCs present?	Yes Go to the appropriate DTC inspection. (See DTC TABLE [ZJ, Z6] .)
		No Go to the next step.
4	INSPECT GAS LEAKAGE OF EXHAUST SYSTEM • Visually inspect exhaust gas leakage in	Yes Repair or replace the malfunctioning exhaust parts, then go to Step 7.

	exhaust system. • Is there gas leakage?	No	Go to the next step.
5	INSPECT INSTALLATION OF FRONT HO2S AND REAR HO2S • Inspect the front HO2S and rear HO2S for looseness. • Is it normal?	Yes	Go to the next step.
		No	Retighten the sensor, then go to Step 7. (See FRONT HEATED OXYGEN SENSOR (HO2S) REMOVAL/INSTALLATION [ZJ, Z6].) (See REAR HEATED OXYGEN SENSOR (HO2S) REMOVAL/INSTALLATION [ZJ, Z6].)
6	INSPECT TWC • Clear the DTC from the PCM memory using the WDS or equivalent. • Turn the ignition switch off then to the ON position. • Inspect the TWC. • Is it normal?	Yes	Replace the HO2S, then go to the next step. (See FRONT HEATED OXYGEN SENSOR (HO2S) REMOVAL/INSTALLATION [ZJ, Z6].) (See REAR HEATED OXYGEN SENSOR (HO2S) REMOVAL/INSTALLATION [ZJ, Z6].)
		No	Replace the TWC, then go to the next step. (See EXHAUST SYSTEM REMOVAL/INSTALLATION [ZJ, Z6].)
7	VERIFY TROUBLESHOOTING OF DTC P0420 COMPLETED • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the WDS or equivalent. • Perform the "HO2S heater, HO2S, and TWC Repair Verification Drive Mode". (See OBD DRIVE MODE [ZJ, Z6].) • Is the PENDING CODE for this DTC present?	Yes	Replace the PCM, then go to the next step. (See PCM REMOVAL/INSTALLATION [ZJ, Z6].)
		No	Go to the next step.
8	VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [ZJ, Z6].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [ZJ, Z6].)
		No	DTC troubleshooting completed.