

DTC P2096 [ZJ, Z6]

B3E010202000W10

DTC P2096	Target A/F feedback system too lean
DETECTION CONDITION	<ul style="list-style-type: none"> The PCM monitors the target A/F fuel trim when under the target A/F feedback control. If the fuel trim is more than the specification, the PCM determines that the target A/F feedback system is too lean. Diagnostic support note This is a continuous monitor (Fuel system). 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. PENDING CODE is 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"> Leakage exhaust gas Rear HO2S malfunction IAT sensor malfunction ECT sensor malfunction Air suction in intake-air system Front HO2S malfunction MAF sensor malfunction Insufficient fuel line pressure Fuel pump unit malfunction Leakage fuel Improper operation ignition system Insufficient engine compression Fuel injector malfunction PCM 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 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 ON position (Engine off). • Verify the related PENDING CODE or stored DTCs. • Is the DTC P2177 or P2187 also present?	Yes	Go to the applicable DTC troubleshooting. (See DTC TABLE [ZJ, Z6].)
		No	Go to the next step.
4	IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA • Is DTC P2096 on FREEZE FRAME DATA?	Yes	Go to the next step.
		No	Go to the FREEZE FRAME DATA DTC inspection. (See DTC TABLE [ZJ, Z6].)
	VERIFY CURRENT INPUT SIGNAL		

5	STATUS OF REAR HO2S • Connect the WDS or equivalent to the DLC-2. • Start the engine and warm it up completely. • Access the O2S12 PID. • Read the O2S12 PID under following accelerator pedal condition (in PARK or NEUTRAL). - More than 0.45 V when suddenly depressing accelerator pedal (rich condition) - Less than 0.45 V just after releasing accelerator pedal (lean condition) • Is the PID normal?	Yes	Go to the next step.
		No	Visually inspect for gas leakage between the TWC and rear HO2S. • If there is no leakage, replace the rear HO2S. (See REAR HEATED OXYGEN SENSOR (HO2S) REMOVAL/INSTALLATION [ZJ, Z6].) Then go to Step 17.
6	VERIFY CURRENT INPUT SIGNAL STATUS • Connect the WDS or equivalent to the DLC-2. • Verify the following PIDs. (See PCM INSPECTION [ZJ, Z6].) - ECT - MAF - TP - VSS • Are the PIDs normal?	Yes	Go to the next step.
		No	Inspect the malfunctioning part according to the inspection results. Then go to Step 17.
7	VERIFY CURRENT INPUT SIGNAL STATUS UNDER FREEZE FRAME DATA CONDITION • Connect the WDS or equivalent to the DLC-2. • Verify the following PIDs under the FREEZE FRAME DATA condition. (See PCM INSPECTION [ZJ, Z6].) - ECT - MAF - TP - VSS • Are the PIDs normal?	Yes	Go to the next step.
		No	Inspect the malfunctioning part according to the inspection results. Then go to Step 17.
8	VERIFY CURRENT INPUT SIGNAL STATUS OF FRONT HO2S • Connect the WDS or equivalent to the DLC-2. • Start the engine and warm it up completely. • Access O2S11 PID. • Read O2S11 PID under following accelerator pedal condition (in PARK or NEUTRAL). - More than 0.45 V when suddenly depressing accelerator pedal (rich condition) - Less than 0.45 V just after	Yes	Go to the next step.
		No	Visually inspect for exhaust gas leakage between exhaust manifold and front HO2S. • If there is no leakage, replace front HO2S. (See FRONT HEATED OXYGEN SENSOR (HO2S) REMOVAL/INSTALLATION [ZJ, Z6].) Then go to Step 17.

	releasing accelerator pedal (lean condition)		
	• Is the PID normal?		
9	VERIFY CURRENT INPUT SIGNAL STATUS OF MAF SENSOR • Connect the WDS or equivalent to the DLC-2. • Start the engine. • Access the MAF PID. • Verify that the MAF PID changes quickly according to engine speed. • Is the PID normal?	Yes	Go to the next step.
		No	Replace MAF/IAT sensor, then go to Step 17. (See MASS AIR FLOW (MAF)/INTAKE AIR TEMPERATURE (IAT) SENSOR REMOVAL/INSTALLATION [ZJ, Z6].)
10	INSPECT INTAKE-AIR SYSTEM FOR EXCESSIVE AIR SUCTION • Visually inspect hoses in intake-air system for looseness, cracks or damages. • Is there any malfunction?	Yes	Repair or replace the malfunctioning part, then go to Step 17.
		No	Go to the next step.
11	INSPECT FUEL LINE PRESSURE • Perform the "FUEL LINE PRESSURE INSPECTION". (See FUEL LINE PRESSURE INSPECTION [ZJ, Z6, LF].) • Is there any malfunction?	Yes	Go to the next step.
		No	Go to Step 13.
12	INSPECT FUEL SYSTEM FOR FUEL LEAKAGE • Visually inspect fuel leakage in the fuel system. • Is there fuel leakage?	Yes	Repair or replace the malfunctioning part, then go to Step 17.
		No	Replace the fuel pump unit, then go to Step 17. (See FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF].)
13	INSPECT IGNITION COIL HARNESS • Inspect the ignition coil related harness condition (intermittent open or short circuit) for all cylinders. • Are harness conditions normal?	Yes	Go to the next step.
		No	Repair suspected wiring harnesses, then go to Step 17.
14	INSPECT IGNITION SYSTEM OPERATION • Perform the spark test. (See Spark Test.) • Is strong blue spark visible at each cylinder?	Yes	Go to the next step.
		No	Repair or replace malfunctioning part according to spark test result. Then go to Step 17.
15	INSPECT ENGINE COMPRESSION • Inspect the engine compression. (See COMPRESSION INSPECTION [ZJ, Z6].) • Is there any malfunction?	Yes	Go to the next step.
		No	Overhaul engine, then go to Step 17.
16	INSPECT FUEL INJECTOR • Inspect the fuel injector. (See FUEL INJECTOR INSPECTION [ZJ, Z6, LF].) • Is there any malfunction?	Yes	Replace suspected fuel injector, then go to the next step. (See FUEL INJECTOR REMOVAL/INSTALLATION [ZJ, Z6].)
		No	Go to the next step.
17	VERIFY TROUBLESHOOTING OF DTC P2096 COMPLETED • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the WDS or equivalent. • Perform the "PCM Adaptive Memory Produce Drive Mode". (See OBD DRIVE MODE [ZJ, Z6].)	Yes	Replace the PCM, then go to the next step. (See PCM REMOVAL/INSTALLATION [ZJ, Z6].)

	• Is the PENDING CODE for this DTC present?	No	Go to the next step.
18	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.