

## DTC P2097 [LF]

B3E010202000W05

DTC P2097	Target A/F feedback system too rich
<b>DETECTION CONDITION</b>	<ul style="list-style-type: none"> <li>The PCM monitors the target A/F fuel trim when under the target A/F feedback control. If the fuel trim is less than specification, the PCM determines that the target A/F feedback system is too rich.</li> </ul> <p><b>Diagnostic support note</b></p> <ul style="list-style-type: none"> <li>This is a continuous monitor. (FUEL SYSTEM)</li> <li>The MIL illuminates if the PCM detects the above malfunctioning condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM.</li> <li>PENDING CODE is available if the PCM detects the above malfunction conditions during first drive cycle.</li> <li>FREEZE FRAME DATA is available.</li> <li>The DTC is stored in the PCM memory.</li> </ul>
<b>POSSIBLE CAUSE</b>	<ul style="list-style-type: none"> <li>Leakage exhaust gas</li> <li>Rear HO2S malfunction</li> <li>IAT sensor malfunction</li> <li>ECT sensor malfunction</li> <li>Front HO2S malfunction</li> <li>Excessive fuel line pressure</li> <li>Fuel pump unit malfunction</li> <li>Purge valve malfunction</li> <li>Insufficient engine compression</li> <li>PCM malfunction</li> </ul>

### Diagnostic procedure

STEP	INSPECTION	ACTION
1	<b>VERIFY FREEZE FRAME DATA HAS BEEN RECORDED</b> • 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	<b>VERIFY REPAIR INFORMATION AVAILABILITY</b> • 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	<b>VERIFY RELATED PENDING CODE OR STORED DTC</b> • Turn the ignition switch off, then ON position (Engine off). • Verify the related PENDING CODE or stored DTCs. • Is the DTC P2178 or P2188 also present?	Yes Go to the applicable DTC troubleshooting. (See <a href="#">DTC TABLE [LF]</a> .)
		No Go to the next step.
4	<b>IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA</b> • Is DTC P2097 on FREEZE FRAME DATA?	Yes Go to the next step.
		No Go to FREEZE FRAME DATA DTC inspection. (See <a href="#">DTC TABLE [LF]</a> .)
	<b>VERIFY CURRENT INPUT SIGNAL STATUS OF REAR HO2S</b> • Connect the WDS or equivalent to the DLC-2. • Start the engine and warm it up completely. • Access O2S12 PID. • Read O2S12 PID under following accelerator	Yes Go to the next step.

5	<p>pedal condition (in PARK or NEUTRAL).</p> <ul style="list-style-type: none"> <li>- <b>More than 0.45 V</b> when accelerator pedal is suddenly depressed (rich condition).</li> <li>- <b>Less than 0.45 V</b> just after release of accelerator pedal (lean condition)</li> </ul> <p>• Is the PID normal?</p>	No	<p>Visually inspect for the exhaust gas leakage between TWC and rear HO2S.</p> <ul style="list-style-type: none"> <li>• If there is no leakage, replace rear HO2S. (See <a href="#">HEATED OXYGEN SENSOR (HO2S) REMOVAL/INSTALLATION [LF].</a>)</li> </ul> <p>Then go to Step 11.</p>
6	<p><b>VERIFY CURRENT INPUT SIGNAL STATUS</b></p> <ul style="list-style-type: none"> <li>• Connect the WDS or equivalent to the DLC-2.</li> <li>• Verify the following PIDs. (See <a href="#">PCM INSPECTION [LF].</a>)</li> </ul> <ul style="list-style-type: none"> <li>- ECT</li> <li>- MAF</li> <li>- TP</li> <li>- VSS</li> </ul> <p>• Are the PIDs normal?</p>	Yes	Go to the next step.
		No	Inspect the malfunctioning part according to the inspection results. Then go to Step 11.
7	<p><b>VERIFY CURRENT INPUT SIGNAL STATUS UNDER FREEZE FRAME DATA CONDITION</b></p> <ul style="list-style-type: none"> <li>• Connect the WDS or equivalent to the DLC-2.</li> <li>• Verify the following PIDs under FREEZE FRAME DATA condition. (See <a href="#">PCM INSPECTION [LF].</a>)</li> </ul> <ul style="list-style-type: none"> <li>- ECT</li> <li>- MAF</li> <li>- TP</li> <li>- VSS</li> </ul> <p>• Are the PIDs normal?</p>	Yes	Go to the next step.
		No	Inspect the malfunctioning part according to the inspection results. Then go to Step 11.
8	<p><b>VERIFY CURRENT INPUT SIGNAL STATUS OF FRONT HO2S</b></p> <ul style="list-style-type: none"> <li>• Connect the WDS or equivalent to the DLC-2.</li> <li>• Start the engine and warm it up completely.</li> <li>• Access O2S11 PID.</li> <li>• Read O2S11 PID under following accelerator pedal condition (in PARK or NEUTRAL).</li> </ul> <ul style="list-style-type: none"> <li>- <b>More than 0.45 V</b> when accelerator pedal is suddenly depressed (rich condition).</li> <li>- <b>Less than 0.45 V</b> just after release of accelerator pedal (lean condition)</li> </ul> <p>• Is the PID normal?</p>	Yes	Go to the next step.
		No	<p>Visually inspect for exhaust gas leakage between the exhaust manifold and front HO2S.</p> <ul style="list-style-type: none"> <li>• If there is no leakage, replace front HO2S. (See <a href="#">HEATED OXYGEN SENSOR (HO2S) REMOVAL/INSTALLATION [LF].</a>)</li> </ul> <p>Then go to Step 11.</p>
9	<p><b>INSPECT FUEL LINE PRESSURE</b></p> <ul style="list-style-type: none"> <li>• Perform the "FUEL LINE PRESSURE INSPECTION". (See <a href="#">FUEL LINE PRESSURE INSPECTION [ZJ, Z6, LF].</a>)</li> <li>• Is there any malfunction?</li> </ul>	Yes	Replace the fuel pump unit, then go to Step 11. (See <a href="#">FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF].</a> )
		No	Go to the next step.
	<p><b>INSPECT LONG TERM FUEL TRIM</b></p> <ul style="list-style-type: none"> <li>• Connect the WDS or equivalent to the DLC-</li> </ul>		Inspect the purge valve. (See <a href="#">PURGE SOLENOID VALVE INSPECTION [ZJ, Z6, LF].</a> )

10	2. • Access LONGFT1 PID. • Compare the LONGFT1 PID with recorded FREEZE FRAME DATA at Step 1. • Is the LONGFT1 PID above FREEZE FRAME DATA?	Yes	• If there is any malfunction, replace the purge valve. (See <a href="#">INTAKE-AIR SYSTEM HOSE ROUTING DIAGRAM [LF]</a> .) Then go to Step 11.
		No	Go to the next step.
11	<b>VERIFY TROUBLESHOOTING OF DTC P2097 COMPLETED</b> • 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 <a href="#">OBD DRIVE MODE [LF]</a> .) • Is the PENDING CODE for this DTC present?	Yes	Replace the PCM, then go to the next step. (See <a href="#">PCM REMOVAL/INSTALLATION [LF]</a> .)
		No	Go to the next step.
12	<b>VERIFY AFTER REPAIR PROCEDURE</b> • Perform the "After repair procedure". (See <a href="#">AFTER REPAIR PROCEDURE [LF]</a> .) • Are any DTC present?	Yes	Go to the applicable DTC inspection. (See <a href="#">DTC TABLE [LF]</a> .)
		No	Troubleshooting completed.