

DTC P2196 [ZJ, Z6]

B3E010202100W12

DTC P2196	Front HO2S signal stuck rich
DETECTION CONDITION	<ul style="list-style-type: none"> The PCM monitors the front HO2S output voltage when the following conditions are met. If output voltage is more than 0.45 V for 46 s, the PCM determines that the front HO2S signal remains rich. <p>MONITORING CONDITION</p> <ul style="list-style-type: none"> Fuel injection control system status: feedback zone ECT: more than 70 °C {158 °F} Engine speed: more than 1,500 rpm <p>Diagnostic support note</p> <ul style="list-style-type: none"> This is a continuous monitor. (HO2S) 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. PENDING CODE is available if PCM detects the above malfunction conditions during first drive cycle. FREEZE FRAME DATA is available. The DTC is stored in the PCM memory.
POSSIBLE CAUSE	<ul style="list-style-type: none"> Front HO2S malfunction Fuel injector malfunction Excessive fuel pressure Restriction in intake-air system MAF sensor malfunction ECT sensor 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 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. • Is the DTC P2177 or P2187 also present?	Yes Go to the appropriate DTC inspection. (See DTC TABLE [ZJ, Z6] .)
		No Go to the next step.
4	IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA • Is DTC P2196 on FREEZE FRAME DATA?	Yes Go to the next step.
		No Go to the FREEZE FRAME DATA DTC inspection. (See DTC TABLE [ZJ, Z6] .)

5	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 11.
6	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 11.
7	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 the MAF/IAT sensor, then go to Step 11. (See MASS AIR FLOW (MAF)/INTAKE AIR TEMPERATURE (IAT) SENSOR REMOVAL/INSTALLATION [ZJ, Z6] .)
8	INSPECT FRONT HO2S • Inspect the front HO2S. (See FRONT HEATED OXYGEN SENSOR (HO2S) INSPECTION [ZJ, Z6] .) • Is there any malfunction?	Yes	Replace the front HO2S, then go to Step 11. (See FRONT HEATED OXYGEN SENSOR (HO2S) REMOVAL/INSTALLATION [ZJ, Z6] .)
		No	Go to the next step.
9	INSPECT FUEL INJECTOR • Inspect the fuel injector. (See FUEL INJECTOR INSPECTION [ZJ, Z6, LF] .) • Is there any malfunction?	Yes	Replace the fuel injector, then go to Step 11. (See FUEL INJECTOR REMOVAL/INSTALLATION [ZJ, Z6] .)
		No	Go to the next step.
10	INSPECT FUEL LINE PRESSURE • Perform the "FUEL LINE PRESSURE INSPECTION". (See FUEL LINE PRESSURE INSPECTION [ZJ, Z6, LF] .) • Is there any malfunction?	Yes	Replace the fuel pump unit, then go to the next step. (See FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF] .)
		No	Go to the next step.
11	VERIFY TROUBLESHOOTING OF DTC P2196 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	Yes	Replace the PCM, then go to the next step. (See PCM REMOVAL/INSTALLATION [ZJ, Z6] .)

	TWC Repair Verification Drive Mode". (See OBD DRIVE MODE [ZJ, Z6] .) • Is the PENDING CODE for this DTC present?	No	Go to the next step.
12	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.