

## DTC P2006 [LF]

B3E010202000W01

DTC P2006	Variable tumble shutter valve stuck closed
<b>DETECTION CONDITION</b>	<ul style="list-style-type: none"> <li>The PCM monitors mass air amount. If the actual air flow amount is below estimated air flow amount when the following monitoring conditions are met. The PCM determines that the variable tumble shutter valve has been stuck closed.</li> </ul> <p><b>MONITORING CONDITIONS</b></p> <ul style="list-style-type: none"> <li>Engine coolant temperature is <b>above 70 °C {158 °F}</b>.</li> <li>Engine speed is <b>3,500 rpm or more</b>.</li> <li>Throttle valve opening angle is <b>above 75 %</b>.</li> </ul> <p><b>Diagnostic support note</b></p> <ul style="list-style-type: none"> <li>This is a continuous monitor (CCM).</li> <li>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.</li> <li>PENDING CODE is available if the PCM detects the above malfunction condition 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>ECT sensor malfunction</li> <li>TP sensor malfunction</li> <li>CKP sensor malfunction</li> <li>Variable tumble solenoid valve malfunction</li> <li>Variable tumble shutter valve malfunction (stuck closed)</li> <li>Variable tumble shutter valve actuator malfunction (stuck closed)</li> <li>Short to ground in wiring harness between variable tumble solenoid valve terminal B and PCM terminal 2AI</li> <li>PCM malfunction</li> </ul>

### Diagnostic procedure

STEP	INSPECTION	ACTION
1	<b>VERIFY FREEZE FRAME DATA HAS BEEN RECORDED</b>	Yes Go to the next step.

	• Has FREEZE FRAME DATA been recorded?	No	Record the FREEZE FRAME DATA on repair order, then go to the next step.
2	<b>VERIFY RELATED 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 vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	<b>CLASSIFY INTERMITTENT CONCERN OR CONTINUOUS CONCERN</b> • Clear the DTC from the PCM memory using the WDS or equivalent. • Drive vehicle under following conditions:  - Engine coolant temperature is <b>above 70 °C {158 °F}</b> . - Engine speed: <b>3,500 rpm or more</b> - Throttle opening angle is below as following • Engine speed <b>below 1,500 rpm: above 35 %</b> • Engine speed <b>between 1,500-2,500 rpm: between 25-35%</b> • Engine speed <b>above 2,500: below 25 %</b>  • Is the PENDING CODE for this DTC present?	Yes	Go to the next step.
		No	Intermittent concern exists. Go to INTERMITTENT CONCERN TROUBLESHOOTING procedure. (See <a href="#">INTERMITTENT CONCERN TROUBLESHOOTING [LF]</a> .)
4	<b>VERIFY STORED OTHER DTCS</b> • Verify the stored DTCs using the WDS or equivalent. • Is other DTC present except P0117, P0118, P0121, P0122, P0123 and/or P0335?	Yes	Go to the appropriate DTC troubleshooting procedures.
		No	Go to the next step.
5	<b>INSPECT VARIABLE TUMBLE SHUTTER VALVE ACTUATOR</b> • Perform "VTCS operation inspection". (See <a href="#">Variable Tumble Control Operation Inspection</a> .) • Is the variable tumble shutter valve actuator normal?	Yes	Go to the next step.
		No	Replace the variable tumble shutter valve actuator, then go to Step 8.
6	<b>INSPECT VTCS SOLENOID VALVE</b> • Perform "VTCS solenoid valve airflow inspection". (See <a href="#">VARIABLE TUMBLE SOLENOID VALVE INSPECTION [LF]</a> .) • Is variable tumble solenoid valve normal?	Yes	Go to the next step.
		No	Replace the variable tumble solenoid valve, then go to Step 8.
7	<b>INSPECT PCM FOR POOR CONNECTION</b> • Inspect for poor connection at PCM terminal 2A1 (such as damaged/pulled-out pins, corrosion). • Is there malfunction?	Yes	Repair the terminal, then go to the next step.
		No	Go to the next step.
	<b>VERIFY TROUBLESHOOTING OF DTC P2006 COMPLETED</b> • Make sure to reconnect all disconnected connectors. • Start engine. • Clear the DTC from the PCM memory using the WDS or equivalent. • Start the engine. • Drive the vehicle under following conditions:  - Engine coolant temperature is <b>above</b>	Yes	Replace the PCM, then go to the next step. (See <a href="#">PCM REMOVAL/INSTALLATION [LF]</a> .)

8	<p><b>70 °C {158 °F}.</b></p> <ul style="list-style-type: none"> <li>- Engine speed: <b>3,500 rpm or more</b></li> <li>- Throttle opening angle is below as following               <ul style="list-style-type: none"> <li>• Engine speed <b>below 1,500 rpm: above 35 %</b></li> <li>• Engine speed <b>between 1,500-2,500 rpm: between 25-35%</b></li> <li>• Engine speed <b>above 2,500: below 25 %</b></li> </ul> </li> </ul> <p>• Is the PENDING CODE for this DTC present?</p>	No	Go to the next step.
9	<p><b>VERIFY AFTER REPAIR PROCEDURE</b></p> <ul style="list-style-type: none"> <li>• Perform the "After Repair Procedure". (See <a href="#">AFTER REPAIR PROCEDURE [LF]</a>.)</li> <li>• Are any DTC present?</li> </ul>	Yes	Go to the applicable DTC troubleshooting. (See <a href="#">DTC TABLE [LF]</a> .)
		No	Troubleshooting completed.