

# NO.11 ENGINE STALLS/QUITS, ENGINE RUNS ROUGH, MISSES, BUCK/JERK, HESITATION/STUMBLE, SURGES [LF]

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11	<p><b>ENGINE STALLS/QUITS - ACCELERATION/CRUISE</b></p> <p><b>ENGINE RUNS ROUGH - ACCELERATION/CRUISE</b></p> <p><b>MISSES - ACCELERATION/CRUISE</b></p> <p><b>BUCK/JERK - ACCELERATION/CRUISE/DECELERATION</b></p> <p><b>HESITATION/STUMBLE - ACCELERATION</b></p> <p><b>SURGES - ACCELERATION/CRUISE</b></p>
<b>DESCRIPTION</b>	<ul style="list-style-type: none"> <li>• Engine stops unexpectedly at the beginning of acceleration or during acceleration.</li> <li>• Engine stops unexpectedly while cruising.</li> <li>• Engine speed fluctuates during acceleration or cruising.</li> <li>• Engine misses during acceleration or cruising.</li> <li>• Vehicle bucks/jerks during acceleration, cruising, or deceleration.</li> <li>• Momentary pause at beginning of acceleration or during acceleration</li> <li>• Momentary minor irregularity in engine output</li> </ul>
<b>POSSIBLE CAUSE</b>	<ul style="list-style-type: none"> <li>• Improper A/C system operation</li> <li>• Erratic signal or no signal from CMP sensor</li> <li>• Air leakage from intake-air system parts</li> <li>• Purge valve malfunction</li> <li>• IAC valve improper operation</li> <li>• EGR valve malfunction</li> <li>• Erratic signal from CKP sensor</li> <li>• Low engine compression</li> <li>• Vacuum leakage</li> <li>• Poor fuel quality</li> <li>• Main relay intermittent malfunction</li> <li>• Throttle body malfunction</li> <li>• Engine overheating</li> <li>• Erratic signal to ignition coil</li> <li>• Improper air/fuel mixture ratio control operation</li> <li>• Improper variable tumble control operation</li> <li>• Erratic signal to ignition coil</li> <li>• Air cleaner restriction</li> <li>• PCV valve malfunction</li> <li>• Fuel flow into evaporative purge hose</li> <li>• Improper valve timing due to jumping out timing belt</li> <li>• Restriction in exhaust system</li> <li>• Intermittent open or short circuit in fuel body pump circuit</li> <li>• Inadequate fuel pressure</li> <li>• Fuel pump mechanical malfunction</li> <li>• Check valve (two-way) malfunction (integrated with fuel tank)</li> <li>• Fuel leakage from fuel injector</li> <li>• Fuel injector clogging</li> <li>• Fuel line restriction or clogging</li> <li>• Pressure regulator malfunction (built-in fuel pump unit)</li> <li>• TP sensor misadjustment</li> <li>• Intermittent open or short circuit of MAF sensor, TP sensor and VSS</li> <li>• Clutch slippage (MTX)</li> </ul>

- ATX malfunction (ATX)
- Loose attaching bolts or worn engine mounts

### Warning

The following troubleshooting flow chart contains the fuel system diagnosis and repair procedures. Read the following warnings before performing the fuel system services:

- Fuel vapor is hazardous. It can easily ignite, causing serious injury and damage. Always keep sparks and flames away from fuel.
- Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Fuel can also irritate skin and eyes. To prevent this, always complete "BEFORE SERVICE PRECAUTION" and "AFTER SERVICE PRECAUTION" described in this manual.

(See [BEFORE SERVICE PRECAUTION \[ZJ, Z6, LF\]](#).)

(See [AFTER SERVICE PRECAUTION \[ZJ, Z6, LF\]](#).)

### Caution

- Disconnecting/connecting quick release connector without cleaning it may possibly cause damage to fuel pipe and quick release connector. Always clean quick release connector joint area before disconnecting/connecting, and make sure that it is free of foreign material.

#### Diagnostic procedure

STEP	INSPECTION	RESULTS	ACTION
1	Verify for the following: • Vacuum connection • Air cleaner element • No air leakage from intake-air system • No restriction of intake-air system • Proper sealing of intake manifold and components attached to intake manifold: such as EGR valve, IAC valve • Ignition wiring • Fuel quality (e.g. proper octane, contamination, winter/summer blend) • Electrical connections • Smooth operation of throttle valve Are all items normal?	Yes	Go to the next step.
		No	Service if necessary. Repeat Step 1.
2	Connect the WDS or equivalent to the DLC-2. Retrieve any continuous memory, KOEO and KOER DTCs using WDS or equivalent. If stall, condition exists retrieve continuous memory and KOEO DTCs. Are there any DTCs displayed?	Yes	<b>DTC is displayed:</b> Go to the appropriate DTC inspection. (See <a href="#">DTC TABLE [LF]</a> .)
		No	<b>No DTC is displayed:</b> Go to the next step.
3	Is the engine overheating?	Yes	Go to symptom troubleshooting "No.17 Cooling system concerns - Overheating".
		No	Go to the next step.
		Yes	Go to the next step.
			<b>RPM PID:</b>  Inspect the CKP sensor and related wiring harness for such as vibration, intermittent open/short circuit.

4	Connect the WDS or equivalent to the DLC-2. Access RPM, VPWR, MAF, TP and VSS PIDs. Drive the vehicle with monitoring PIDs. Are PIDs within specifications? (See <a href="#">PCM INSPECTION [LF]</a> .)	No	<b>VPWR PID:</b>  Inspect for open circuit intermittently.  <b>MAF PID:</b>  Inspect for open circuit of the MAF sensor and related wire harness intermittently.  <b>TP PID:</b>  Inspect if output signal from the TP sensor changes smoothly.  <b>VSS PID:</b>  Inspect for open circuit of the VSS and related wire harness intermittently.
5	Visually inspect the CKP sensor and teeth of crankshaft pulley. Are the CKP sensor and teeth of crankshaft pulley normal?	Yes	Go to the next step.
		No	Replace the malfunctioning part.
6	Measure the gap between the CKP sensor and teeth of crankshaft pulley.  <b>Specification</b>  <b>0.5-1.9 mm {0.020-0.75 in}</b>  Is the gap within specification?	Yes	Go to the next step.
		No	Adjust the CKP sensor.
7	Inspect spark plug conditions. Is the spark plug wet, covered with carbon or grayish white?	Yes	<b>Spark plug is wet or covered with carbon:</b>  Inspect for fuel leakage from the fuel injector.  <b>Spark plug is grayish white:</b>  Inspect the fuel injector for clogging.
		No	Install the spark plugs on original cylinders. Go to the next step.
8	Remove and shake the PCV valve. Does the PCV valve rattle?	Yes	Go to the next step.
		No	Replace the PCV valve.
9	Verify that throttle lever is resting on throttle valve stop screw and/or throttle valve orifice plug. Is the lever in correct position?	Yes	Go to the next step.
		No	Adjust if necessary.
10	Visually inspect deformed exhaust system part. Is there any deformed exhaust system part?	Yes	Replace the suspected part.
		No	Go to the next step.
	Install fuel pressure gauge between the fuel pipe and fuel distributor. Connect the WDS or equivalent to the DLC-2.	Yes	Go to the next step.
			<b>Zero or low:</b>  Inspect the fuel pump and the fuel pump relay related circuit. Inspect the fuel line for clogging. • If there is no malfunction, replace the fuel pump

11	Turn the fuel pump on using FP PID in output state control of datalogger function. Is fuel line pressure correct? (See <a href="#">FUEL LINE PRESSURE INSPECTION [ZJ, Z6, LF].</a> )	No	unit. (See <a href="#">FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF].</a> )  <b>High:</b>  Replace the fuel pump unit. (See <a href="#">FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF].</a> )
12	Visually inspect for fuel leakage at fuel injector O-ring and fuel line. Service if necessary. Is fuel line pressure held after the ignition switch is turned off? (See <a href="#">FUEL LINE PRESSURE INSPECTION [ZJ, Z6, LF].</a> )	Yes	Go to the next step.
		No	Inspect the fuel injector. • If the fuel injector is normal, replace the fuel pump unit. (See <a href="#">FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF].</a> )
13	<b>Note</b>  • Following test is for engine stall with the A/C on. If other symptom exists, go to the next step.  Connect a pressure gauge to the A/C low and high pressure side lines. Turn the A/C on and measure low side and high side pressure. Are pressure within specifications? (See <a href="#">REFRIGERANT PRESSURE CHECK.</a> )	Yes	Go to the next step.
		No	If the A/C is always on, go to symptom troubleshooting "No.24 A/C is always on or A/C compressor runs continuously". (See <a href="#">NO.24 A/C IS ALWAYS ON OR A/C COMPRESSOR RUNS CONTINUOUSLY [LF].</a> ) For other symptoms, inspect following: • Refrigerant charging amount • Condenser fan operation
14	Connect the WDS or equivalent to the DLC-2. Warm up the engine and idle it. Access O2S11 PID. Is O2S11 PID normal?  • <b>More than 0.45 V</b> when the accelerator pedal is suddenly depressed: rich condition.  • <b>Less than 0.45 V</b> during fuel cut: lean condition.	Yes	Go to the next step.
		No	Inspect and repair or replace the front HO2S, wiring harness, connector or terminal, then go to the next step. (See <a href="#">FRONT HEATED OXYGEN SENSOR (HO2S) INSPECTION [LF].</a> )
15	Inspect the evaporative purge hose between the fuel tank and the purge valve. Dose fuel flow into evaporative purge hose?	Yes	Inspect the check valve (two-way). (See <a href="#">FUEL TANK INSPECTION [ZJ, Z6, LF].</a> )
		No	Go to the next step.
16	Disconnect the vacuum hose between the purge valve and the intake manifold from the purge valve side. Plug the opening end of vacuum hose. Drive the vehicle. Does the engine condition improve?	Yes	Go to the next step. Inspect if the purge valve is stuck open mechanically. Inspect the evaporative emission control system.
		No	Go to the next step.
17	Visually inspect the CMP sensor and projections of the camshaft pulley. Are the CMP sensor and projections of camshaft pulley normal?	Yes	Go to the next step.
		No	Replace the malfunctioning part.
	Inspect the variable tumble control operation.	Yes	Go to the next step.

18	(See <a href="#">Variable Tumble Control Operation Inspection.</a> ) Is the variable tumble control normal?	No	Replace or replace the malfunctioning part.
19	Inspect the EGR system. (See <a href="#">EGR Control System Inspection.</a> ) Is EGR system normal?	Yes	Go to the next step.
		No	Replace the malfunctioning part.
20	Is engine compression correct?	Yes	Inspect the following: • Valve timing • Clutch (MTX) • Internal ATX components (ATX) • EGR valve (mechanical stuck) • Engine mounts • Check valve (two-way)
		No	Inspect for cause.
21	Verify test results. • If normal, return to diagnostic index to service any additional symptoms. (See <a href="#">ENGINE SYMPTOM TROUBLESHOOTING [LF]</a> .) • If malfunction remains, inspect related Service information perform repair or diagnosis.  - If vehicle repaired, troubleshooting completed. - If vehicle not repaired or additional diagnostic information not available, replace the PCM. (See <a href="#">PCM REMOVAL/INSTALLATION [LF]</a> .)		