

NO.13 KNOCKING/PINGING-ACCELERATION/CRUISE [ZJ, Z6]

B3E010318881W46

13	KNOCKING/PINGING - ACCELERATION/CRUISE
DESCRIPTION	Sound is produced when air/fuel mixture is ignited by something other than spark plug (e.g. hot spot in combustion chamber).
POSSIBLE CAUSE	<ul style="list-style-type: none"> • Engine overheating due to cooling system malfunction • ECT sensor malfunction • IAT sensor malfunction • MAF sensor malfunction • Knock sensor malfunction • Erratic signal from CMP sensor • Inadequate engine compression • Inadequate fuel pressure <p>Warning</p> <p>The following troubleshooting flow chart contains the fuel system diagnosis and repair procedures. Read the following warnings before performing the fuel system services:</p> <ul style="list-style-type: none"> • 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 the "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].) <p>Caution</p> <ul style="list-style-type: none"> • If there is foreign material on the connecting area of the quick release connector, it might damage the connector or fuel pipe. To prevent this, disconnect the connector and clean the connecting area before connecting.

Diagnostic procedure

STEP	INSPECTION	RESULTS	ACTION
1	Connect the WDS or equivalent to the DLC-2. Access ECT PID. Verify ECT PID is less than 116°C {241°F} during driving. Is ECT PID less than specification?	Yes	Go to the next step.
		No	Inspect cooling system for cause of overheating. (See NO.17 COOLING SYSTEM CONCERNS-OVERHEATING [ZJ, Z6] .)
	Connect the WDS or equivalent to the	Yes	Go to the next step.
			IAT PID: Inspect the IAT sensor. (See INTAKE AIR TEMPERATURE (IAT) SENSOR INSPECTION [ZJ, Z6] .) MAF PID:

2	<p>DLC-2. Access IAT, MAF and SPARKADV PIDs. Monitor each PID. (See PCM INSPECTION [ZJ, Z6].) Are PIDs normal?</p>	No	<p>Inspect the MAF sensor. (See MASS AIR FLOW (MAF) SENSOR INSPECTION [ZJ, Z6].)</p> <p>SPARKADV PID:</p> <p>Inspect the CMP sensor and the knock sensor. (See CAMSHAFT POSITION (CMP) SENSOR INSPECTION [ZJ, Z6].) (See KNOCK SENSOR (KS) INSPECTION [ZJ, Z6].)</p>
3	<p>Connect the WDS or equivalent to the DLC-2. Retrieve any continuous memory, KOEO and KOER DTCs using WDS or equivalent. Are there any DTCs displayed?</p>	Yes	<p>DTC is displayed:</p> <p>Go to the appropriate DTC inspection. (See DTC TABLE [ZJ, Z6].)</p>
		No	<p>No DTC is displayed:</p> <p>Go to the next step.</p>
4	<p>Is engine compression correct? (See COMPRESSION INSPECTION [ZJ, Z6].)</p>	Yes	Go to the next step.
		No	Inspect for cause.
5	<p>Install fuel pressure gauge between the fuel pipe and the fuel distributor. Start engine and idle it. Measure fuel line pressure during idle. Is fuel line pressure correct during idle? (See FUEL LINE PRESSURE INSPECTION [ZJ, Z6, LF].)</p>	Yes	Inspect ignition timing.
		No	<p>Low:</p> <p>Inspect the fuel line for clogging. • If normal, replace fuel pump unit. (See FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF].)</p> <p>High:</p> <p>Replace the fuel pump unit. (See FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF].)</p>
6	<p>Verify test results.</p> <ul style="list-style-type: none"> • If normal, return to diagnostic index to service any additional symptoms. (See ENGINE SYMPTOM TROUBLESHOOTING [ZJ, Z6].) • If malfunction remains, inspect related Service information perform repair or diagnosis. <p>- If vehicle repaired, troubleshooting completed. - If vehicle not repaired or additional diagnostic information not available, replace the PCM. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [ZJ, Z6].)</p>		