

NO.13 KNOCKING/PINGING-ACCELERATION/CRUISE [LF]

B3E010318881W15

13	KNOCKING/PINGING - ACCELERATION/CRUISE
DESCRIPTION	Sound is heard 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 "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"> • 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	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 the cooling system for cause of overheating.
2	Connect the WDS or equivalent to the DLC-2. Access IAT, MAF and SPARKADV PIDs. Monitor each PID. (See PCM INSPECTION [LF] .) Are PIDs normal?	Yes	Go to the next step.
		No	IAT PID: Inspect IAT sensor. MAF PID: Inspect MAF sensor. SPARKADV PID: Inspect CMP sensor and knock sensor.

3	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?	Yes	DTC is displayed: Go to the appropriate DTC inspection. (See DTC TABLE [LF] .)
		No	No DTC is displayed: Go to the next step.
4	Is engine compression correct?	Yes	Go to the next step.
		No	Inspect for cause.
5	Install fuel pressure gauge between the fuel pipe and fuel distributor. Start the 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] .)	Yes	Inspect ignition timing.
		No	Low: Inspect the fuel line for clogging. • If there is no malfunction, replace the fuel pump unit. (See FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF] .) High: Replace the fuel pump unit. (See FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF] .)
6	Verify test results. • If normal, return to diagnostic index to service any additional symptoms. (See ENGINE SYMPTOM TROUBLESHOOTING [LF] .) • 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 PCM REMOVAL/INSTALLATION [LF] .)		