

# NO.6 CRANKS NORMALLY BUT WILL NOT START [LF]

B3E010318881W08

6	CRANKS NORMALLY BUT WILL NOT START
<b>DESCRIPTION</b>	<ul style="list-style-type: none"> <li>• The starter cranks engine at normal speed but the engine will not run.</li> <li>• Refer to symptom troubleshooting "No.5 Engine stalls" if this symptom appears after engine stall.</li> <li>• Fuel is in tank.</li> <li>• Battery is in normal condition.</li> </ul>
<b>POSSIBLE CAUSE</b>	<ul style="list-style-type: none"> <li>• No battery power supply to PCM</li> <li>• Air leakage from intake-air system</li> <li>• Open PCM GND or vehicle body GND</li> <li>• Improper operation of IAC valve</li> <li>• EGR valve malfunction</li> <li>• No signal from CKP sensor due to sensor, related wire or incorrect installation</li> <li>• No signal from CMP sensor due to sensor, related wire or incorrect installation</li> <li>• Low engine compression</li> <li>• Engine overheating</li> <li>• Vacuum leakage</li> <li>• Erratic signal to ignition coil</li> <li>• Improper air/fuel mixture ratio control</li> <li>• Poor fuel quality</li> <li>• PCV valve malfunction</li> <li>• Restriction in intake-air system</li> <li>• Restriction in exhaust system</li> <li>• Disconnected electrical connector</li> <li>• Open or short circuit in fuel pump body and related wiring harness</li> <li>• Inadequate fuel pressure</li> <li>• Fuel pump mechanical malfunction</li> <li>• Fuel leakage from injector</li> <li>• Fuel injector is clogged.</li> <li>• Purge valve malfunction</li> <li>• Spark plug malfunction</li> <li>• Ignition coil malfunction</li> <li>• Improper valve timing</li> <li>• Immobilizer system and/or circuit malfunction (if equipped)</li> <li>• Immobilizer system operating properly. (Ignition key is not registered)</li> <li>• Pressure regulator malfunction</li> </ul> <p><b>Warning</b></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"> <li>• Fuel vapor is hazardous. It can easily ignite, causing serious injury and damage. Always keep sparks and flames away from fuel.</li> <li>• 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.</li> </ul> <p>(See <a href="#">BEFORE SERVICE PRECAUTION [ZJ, Z6, LF]</a>.) (See <a href="#">AFTER SERVICE PRECAUTION [ZJ, Z6, LF]</a>.)</p> <p><b>Caution</b></p> <ul style="list-style-type: none"> <li>• Disconnecting/connecting quick release connector without cleaning it may possibly cause damage to fuel pipe and quick release connector. Always clean quick release</li> </ul>

connector joint area before disconnecting/connecting, and make sure that it is free of foreign material.

### Diagnostic procedure

STEP	INSPECTION	RESULTS	ACTION
1	<p><b>Note</b></p> <ul style="list-style-type: none"> <li>Following test should be performed for vehicles with immobilizer system. Go to Step 8 for vehicles without immobilizer system.</li> </ul> <p>Connect the WDS or equivalent to the DLC-2. Do any of the following conditions appear?</p> <ul style="list-style-type: none"> <li>The engine is not completely started.</li> <li>DTC P1260 is displayed.</li> </ul>	Yes	<p><b>Both conditions appear:</b></p> <p>Go to Step 3.</p>
		No	<p><b>Either or other condition appears:</b></p> <p>Go to the next step.</p>
2	Does the engine stall after <b>approx. 2 s</b> since the engine is started?	Yes	Go to the next step.
		No	Immobilizer system is normal. Go to Step 10.
3	Is the coil connector securely connected to the coil?	Yes	Go to the next step.
		No	Connect the coil connector securely. Return to Step 2.
4	Does the security light illuminate?	Yes	Go to the next step.
		No	Inspect the instrument cluster and wiring harness.
5	<p>Connect the WDS equivalent to the DLC-2 and retrieve DTC. Are any of the following DTCs displayed?</p> <p><b>DTC</b></p> <p><b>B1213, B1600, B1601, B1602, B1681, B2103, B2139, B2141, B2431, U2510</b></p>	Yes	Go to appropriate DTC inspection. (See <a href="#">DTC TABLE [LF]</a> .)
		No	Go to the next step.
6	<p>Inspect the following wiring harnesses and connectors:</p> <ul style="list-style-type: none"> <li>Between coil terminal A and instrument cluster terminal 2Q</li> <li>Between coil terminal B and instrument cluster terminal 2S</li> </ul> <p>Is there any malfunction?</p>	Yes	Repair or replace the suspected wiring harness and connector.
		No	Go to the next step.
7	<p>Inspect the following wiring harnesses and connectors:</p> <ul style="list-style-type: none"> <li>Between PCM terminal 1AI and instrument cluster terminal 1I</li> <li>Between PCM terminal 1AM and instrument cluster terminal 1K</li> </ul> <p>Is there any malfunction?</p>	Yes	Repair or replace the suspected wiring harness and connector.
		No	Go to the next step.
8	<p>Verify following:</p> <ul style="list-style-type: none"> <li>Vacuum connection</li> <li>External fuel shut off or accessory (such as kill switch, alarm)</li> <li>Fuel quality: proper octane, contamination, winter/summer blend</li> <li>No air leakage from intake-air system</li> <li>Intake-air system restriction (such as air cleaner element, fresh air duct)</li> <li>Proper sealing of intake manifold and</li> </ul>	Yes	Go to the next step.

	components attached to intake manifold: EGR valve, IAC valve • Ignition wiring • Electrical connections • Fuses • Smooth operation of throttle valve Are all items normal?	No	Service if necessary. Repeat Step 8.
9	Connect the WDS or equivalent to the DLC-2. Retrieve any continuous memory and KOEO DTCs using WDS or equivalent. Are there any DTCs displayed?	Yes	<b>DTC is displayed:</b>  Go to the appropriate DTC inspection. (See <a href="#">DTC TABLE [LF]</a> .)  <b>Communication error message is displayed:</b>  Inspect for the following: • Open circuit in wiring harness between main relay and PCM terminal 1BE • Open circuit in wiring harness between main relay terminal B and PCM terminal 1AT • Main relay is stuck open. • Open or poor GND circuit (PCM terminal 1BH, 1AZ, 1BD, 1BC or 1BG) • Poor connection of vehicle body GND
		No	<b>No DTC is displayed:</b>  Go to the next step.
10	Does the engine start with the throttle valve closed?	Yes	Go to Step 29.
		No	Go to the next step.
11	Will the engine start and run smoothly at part throttle?	Yes	Inspect the IAC valve and wiring harness.
		No	Go to the next step.
12	Connect the WDS or equivalent to the DLC-2. Access RPM PID. Is RPM PID indicating the engine speed when cranking the engine?	Yes	Go to the next step.
		No	Inspect for the following: • Open or short circuit in CKP sensor • Open or short circuit between CKP sensor terminal A and PCM terminal 2Y • Open or short circuit between CKP sensor terminal B and PCM terminal 2Z • Open or short circuit in CKP sensor wiring harnesses If CKP sensor and wiring harness are normal, go to the next step.
13	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.
14	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 the specification?	Yes	Go to the next step.
		No	Adjust the CKP sensor. (See <a href="#">CRANKSHAFT POSITION (CKP) SENSOR REMOVAL/INSTALLATION [LF]</a> .)
15	Inspect the ignition coil related wiring harness condition (intermittent open or short circuit) for	Yes	Go to the next step.

	all cylinders. Are wiring harness conditions normal?	No	Repair the wiring harnesses.
16	Perform the spark test. (See <a href="#">Spark Test</a> .) Is strong blue spark visible at each cylinder?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to spark test result.
17	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 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.
18	Remove and shake the PCV valve. Does the PCV valve rattle?	Yes	Go to the next step.
		No	Replace the PCV valve.
19	Visually inspect the exhaust system part. Is there any deformed exhaust system part?	Yes	Replace the suspected part.
		No	Go to the next step.
20	Install fuel pressure gauge between the fuel pipe and the fuel distributor. Connect the WDS or equivalent to the DLC-2. Turn ON and/or OFF using FP PID in output state control of datalogger function. Is fuel line pressure correct when FP PID is turned On/Off <b>five times</b> ? (See <a href="#">FUEL LINE PRESSURE INSPECTION [ZJ, Z6, LF]</a> .)	Yes	Go to the next step.
		No	<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 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> .)
21	Visually inspect the fuel injector O-ring and fuel line for fuel leakage. Service as 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. (See <a href="#">FUEL INJECTOR INSPECTION [ZJ, Z6, LF]</a> .) • If fuel injector is normal, replace fuel pump unit. (See <a href="#">FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF]</a> .)
22	Disconnect the vacuum hose between the purge valve and the intake manifold from the purge valve side. Plug the opening end of vacuum hose. Start the engine. Is starting condition improved?	Yes	Inspect if the purge valve is stuck open mechanically. Inspect evaporative emission control system.
		No	Go to the next step.
23	Is air leakage felt or heard at the intake-air system components while racing the engine to higher speed?	Yes	Repair or replace the malfunctioning part.
		No	Go to the next step.
	Inspect engine condition while tapping the EGR	Yes	Replace the EGR valve.

24	valve housing. Is engine condition improved?	No	Go to the next step.
25	Is engine compression correct?	Yes	Inspect the valve timing.
		No	Inspect for causes.
26	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> .)		