

## NO.6 CRANKS NORMALLY BUT WILL NOT START [ZJ, Z6]

B3E010318881W39

6	CRANKS NORMALLY BUT WILL NOT START
<b>DESCRIPTION</b>	<ul style="list-style-type: none"> <li>• The starter cranks the 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 the engine stall.</li> <li>• Fuel is in the tank.</li> <li>• The 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 solenoid valve malfunction</li> <li>• Spark plug malfunction</li> <li>• Ignition coil malfunction</li> <li>• Improper variable valve timing control system operation</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 the "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>

- 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	<b>Note</b>  • Following test should be performed for vehicles with immobilizer system. Go to Step 8 for vehicles without immobilizer system.  Connect the WDS or equivalent to the DLC-2. Do any of following conditions appear? • The engine is not completely started. • DTC P1260 is displayed.	Yes	<b>Both conditions appear:</b>  Go to Step 3.
		No	<b>Either or other condition appears:</b>  Go to the next step.
2	Does the engine stall after <b>approx. 2 s</b> since the engine is started?	Yes	Go to the next step.
		No	The 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. (See <a href="#">INSTRUMENT CLUSTER INSPECTION.</a> )
5	Connect the WDS equivalent to the DLC-2 and retrieve DTC. Are any of following DTCs displayed? <b>DTC</b>  <b>B1213, B1600, B1601, B1602, B1681, B2103, B2139, B2141, B2431, U2510</b>	Yes	Go to the appropriate DTC inspection. (See <a href="#">DTC TABLE [ZJ, Z6].</a> )
		No	Go to the next step.
6	Inspect for the following wiring harnesses and connectors: • Between coil terminal A and instrument cluster terminal 2Q • Between coil terminal B and instrument cluster terminal 2S Is there any malfunction?	Yes	Repair or replace the suspected wiring harness and connector.
		No	Go to the next step.
7	Inspect for the following wiring harnesses and connectors: • Between PCM terminal 1W and instrument cluster terminal 1I • Between PCM terminal 1S and instrument cluster terminal 1K Is there any malfunction?	Yes	Repair or replace the suspected wiring harness and connector.
		No	Go to the next step.
	Verify the following: • Vacuum connection • External fuel shut off or accessory (such as kill switch, alarm etc.) • Fuel quality: proper octane, contamination, winter/summer blend • No air leakage from intake-air system	Yes	Go to the next step.

8	<ul style="list-style-type: none"> <li>• Intake-air system restriction (such as air cleaner element, fresh air dust)</li> <li>• Proper sealing of the intake manifold and components attached to intake manifold: IAC valve, EGR valve</li> <li>• Ignition wiring</li> <li>• Electrical connections</li> <li>• Fuses</li> <li>• Smooth operation of throttle valve</li> </ul> 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 [ZJ, Z6].</a> )  <b>Communication error message is displayed:</b>  Inspect for following: <ul style="list-style-type: none"> <li>• Open circuit in wiring harness between main relay and PCM terminal 1BF or 1BG (ATX)</li> <li>• Open circuit in wiring harness between main relay terminal B and PCM terminal 1AW.</li> <li>• Main relay is stuck open.</li> <li>• Open or poor GND circuit (PCM terminal 2BH, 2AZ or 2BD)</li> <li>• Poor connection of vehicle body GND</li> </ul>
		No	<b>No DTC is displayed:</b>  Go to the next step.
10	Does engine start with the throttle valve closed?	Yes	Go to Step 27.
		No	Go to the next step.
11	Does the engine start and run smoothly at part throttle?	Yes	Inspect the IAC valve and wiring harness. (See <a href="#">IDLE AIR CONTROL (IAC) VALVE INSPECTION [ZJ, Z6].</a> )
		No	Go to the next step.
12	Connect WDS or equivalent to DLC-2. Access RPM PID. Is RPM PID indicating the engine speed when cranking engine?	Yes	Go to the next step.
		No	Inspect for the following: <ul style="list-style-type: none"> <li>• Open or short circuit in CKP sensor</li> <li>• Open or short circuit between CKP sensor terminal A and PCM terminal 2T</li> <li>• Open or short circuit between CKP sensor terminal B and PCM terminal 2P</li> <li>• Open or short circuit between CKP sensor terminal C and PCM terminal 2BF</li> <li>• Open or short circuit in CKP sensor wiring harnesses</li> </ul> If the CKP sensor and wiring harness are normal, go to the next step.
13	Visually inspect the CKP sensor and teeth of the crankshaft pulley. Are the CKP sensor and teeth of the crankshaft pulley normal?	Yes	Go to the next step.
		No	Replace the malfunctioning crankshaft pulley.
	Measure the gap between the CKP sensor and teeth of the crankshaft pulley.	Yes	Go to the next step.
	<b>Specification</b>		

14	<b>0.5-1.5 mm {0.02-0.05 in}</b> Is the gap within specification?	No	Replace the crankshaft pulley.
15	Inspect the ignition coil related wiring harness condition (intermittent open or short circuit) for all cylinders. Are wiring harness conditions normal?	Yes	Go to the next step.
		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 the 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 for clogged the fuel injector.
		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 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 relay and the fuel pump related circuit. (See <a href="#">FUEL PUMP UNIT INSPECTION [ZJ, Z6, LF].</a> ) Inspect the main fuel line for clogging. • If there is no malfunction, replace 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 for fuel leakage at the fuel injector O-ring and fuel line. Service if necessary. Turn OFF from ON using FP PID in output state control of datalogger function. Is fuel line pressure held after FP PID is turned OFF? (See <a href="#">FUEL LINE PRESSURE INSPECTION [ZJ, Z6, LF].</a> )	Yes	Go to the next step.
		No	Inspect the pressure regulator diaphragm condition. • If condition is normal, inspect the fuel injector. (See <a href="#">FUEL INJECTOR INSPECTION [ZJ, Z6, LF].</a> ) • If condition is not normal, replace the fuel pump unit. (See <a href="#">FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF].</a> )
	Disconnect the vacuum hose between the purge solenoid valve and the intake manifold		Inspect if the purge solenoid valve is stuck

22	from the purge solenoid valve side. Plug the opening end of vacuum hose. Attempt to start engine. Is starting condition improved?	Yes	open mechanically. Inspect the evaporative emission control system.
		No	Go to the next step.
23	Is air leakage felt or heard at intake-air system components while the racing the engine to higher speed?	Yes	Repair or replace the malfunctioning part.
		No	Go to the next step.
24	Inspect engine condition while tapping the EGR valve housing. Does engine condition improve?	Yes	Replace the EGR valve.
		No	Go to the next step.
25	Inspect variable valve timing control system operation. (See <a href="#">Variable Valve Timing Control System Operation Inspection.</a> ) Does variable valve timing control work properly?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part.
26	Is engine compression correct? (See <a href="#">COMPRESSION INSPECTION [ZJ, Z6].</a> )	Yes	Remove the EGR valve and visually inspect for mechanically stuck EGR valve. • If normal, inspect valve timing. (See <a href="#">Timing Chain Installation Note.</a> )
		No	Inspect for cause.
27	Verify test results. • If normal, return to diagnostic index to service any additional symptoms. (See <a href="#">ENGINE SYMPTOM TROUBLESHOOTING [ZJ, Z6].</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="#">INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [ZJ, Z6].</a> )		