

NO.5 ENGINE STALLS-AFTER START/AT IDLE [ZJ, Z6]

B3E010318881W38

5	ENGINE STALLS-AFTER START/AT IDLE
DESCRIPTION	<ul style="list-style-type: none"> • The engine stops unexpectedly.
POSSIBLE CAUSE	<ul style="list-style-type: none"> • Improper A/C system operation • Air leakage from intake-air system parts • Purge solenoid valve malfunction • Improper IAC valve operation • EGR valve malfunction • No signal from the CKP sensor due to sensor, related wire or wrong installation • Vacuum leakage • Engine overheating • Low engine compression • Erratic signal to ignition coil • Poor fuel quality • PCV valve malfunction • Air cleaner restriction • Restriction in exhaust system • Electrical connector disconnection • Open or short circuit in fuel pump body and related wiring harness • No battery power supply to PCM or poor GND • Inadequate fuel pressure • Fuel pump body mechanical malfunction • Fuel leakage from fuel injector • Fuel injector clogging • Ignition coil malfunction • Improper air/fuel mixture ratio control • Improper valve timing • Improper operation variable valve timing control system • Immobilizer system and/or circuit malfunction (if equipped) • Immobilizer system operating properly. (Ignition key is not registered.) • Pressure regulator malfunction <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	<p>Note</p> <ul style="list-style-type: none"> The following test should be performed for vehicles with immobilizer system. Go to Step 8 for vehicles without immobilizer system. <p>Connect the WDS or equivalent to the DLC-2. Do the following conditions appear?</p> <ul style="list-style-type: none"> The engine is not completely started. DTC P1260 is displayed. 	Yes	<p>Both conditions appear:</p> <p>Go to Step 3.</p>
		No	<p>Either or other condition appears:</p> <p>Go to the next step.</p>
2	Does the engine stall after approx. 2 s since the engine is started?	Yes	Go to the next step.
		No	The immobilizer system is normal. Go to Step 8.
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 or equivalent to the DLC-2 and retrieve the DTC. Are any of following DTCs displayed? DTC</p> <p>B1213, B1600, B1601, B1602, B1681, B2103, B2139, B2141, B2431, U2510</p>	Yes	Go to the appropriate DTC inspection. (See DTC TABLE [ZJ, Z6].)
		No	Go to the next step.
6	<p>Inspect for the following wiring harnesses and connectors:</p> <ul style="list-style-type: none"> Between coil terminal A and instrument cluster terminal 2Q Between coil terminal B and instrument cluster terminal 2S <p>Is there any malfunction?</p>	Yes	Repair or replace the wiring harness and connector.
		No	Go to the next step.
7	<p>Inspect for the following wiring harnesses and connectors:</p> <ul style="list-style-type: none"> Between PCM terminal 1W and instrument cluster terminal 1I Between PCM terminal 1S and instrument cluster terminal 1K <p>Is there any malfunction?</p>	Yes	Repair or replace the wiring harness and connector.
		No	Go to the next step.
8	<p>Verify the following:</p> <ul style="list-style-type: none"> 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: IAC valve, EGR valve Ignition wiring Fuel quality: proper octane, contamination, winter/summer blend Electrical connections Smooth operation of throttle valve <p>Are all items normal?</p>	Yes	Go to the next step.
		No	Service if necessary. Repeat Step 8.

9	Connect the WDS or equivalent to the DLC-2. Retrieve any continuous memory, KOEO and KOER DTCs using WDS or equivalent. If the engine stalls, retrieve continuous memory and KOEO DTCs. Are there any DTCs displayed?	Yes	DTC is displayed: Go to the appropriate DTC inspection. (See DTC TABLE [ZJ, Z6].) Communication error message is displayed: Inspect for the following: <ul style="list-style-type: none"> • Open circuit in wiring harness between main relay and PCM terminal 1BF, or 1BG (ATX) • Open circuit in wiring harness between main relay terminal B and PCM terminal 1AW. • The main relay is stuck open. • Open or poor GND circuit (PCM terminal 2BH, 2AZ or 2BD) • Poor connection of vehicle body GND
		No	No DTC is displayed: Go to the next step.
10	Attempt to start the engine at part throttle. Does the engine run smoothly at part throttle?	Yes	Inspect the IAC valve and wiring harness. (See IDLE AIR CONTROL (IAC) VALVE INSPECTION [ZJ, Z6].)
		No	Go to the next step.
11	Connect the WDS or equivalent to the DLC-2. Access RPM PID. Is RPM PID indicating the engine speed while the engine is cranking?	Yes	Go to the next step.
		No	Inspect for the following: <ul style="list-style-type: none"> • Open or short circuit in CKP sensor • Open or short circuit between CKP sensor terminal A and PCM terminal 2T • Open or short circuit between CKP sensor terminal B and PCM terminal 2P • Open or short circuit between CKP sensor terminal C and PCM terminal 2BF • Open or short circuit in CKP sensor wiring harnesses If the CKP sensor and wiring harness are normal, go to the next step.
12	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 part.
13	Measure gap between the CKP sensor and teeth of crankshaft pulley. Specification 0.5-1.5 mm {0.02-0.05 in} Is the gap within specification?	Yes	Go to the next step.
		No	Replace the crankshaft pulley.
14	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.
15	Perform the spark test. (See Spark Test.) Is strong blue spark visible at each cylinder?	Yes	Go to the next step. If symptom occurs with the A/C on, go to Step 21.
		No	Repair or replace the malfunctioning part according to spark test result.

16	Inspect the spark plug condition. Is the spark plug wet, covered with carbon or grayish white?	Yes	Spark plug is wet or covered with carbon: Inspect for fuel leakage from the fuel injector. Spark plug is grayish white: Inspect for clogged the fuel injector.
		No	Install the spark plugs on original cylinders. Go to the next step.
17	Remove and shake the PCV valve. Does the PCV valve rattle?	Yes	Go to the next step.
		No	Replace the PCV valve.
18	Visually inspect the exhaust system part. Is there any deformed exhaust system part?	Yes	Replace the suspected part.
		No	Go to the next step.
19	Install fuel pressure gauge between the fuel pipe and the fuel distributor. Connect the WDS or equivalent to the DLC-2. Turn the fuel pump on using FP PID in output state control of datalogger function. Is fuel line pressure correct? (See FUEL LINE PRESSURE INSPECTION [ZJ, Z6, LF].)	Yes	Go to the next step.
		No	Zero or low: Inspect the fuel pump relay and the fuel pump related circuit. Inspect the fuel line for clogging. • If there is no malfunction, replace fuel pump unit. (See FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF].) High: Replace fuel pump unit. (See FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF].)
20	Visually inspect for fuel leakage at the fuel injector O-ring and fuel line. Service if necessary. Is the fuel line pressure held after FP PID is turned off? (See FUEL LINE PRESSURE INSPECTION [ZJ, Z6, LF].)	Yes	Go to the next step.
		No	Inspect the fuel the injector. (See FUEL INJECTOR INSPECTION [ZJ, Z6, LF].) • If the fuel injector is normal, replace the fuel pump unit. (See FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF].)
21	Note • Following test is for stall concerns with the A/C on. If other symptoms exist, go to the next step. Connect pressure gauges to the A/C low and high pressure side lines. Turn the A/C on and measure low side and high side pressures. Are pressures within specifications? (See REFRIGERANT PRESSURE CHECK.)	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 NO.24 A/C IS ALWAYS ON OR A/C COMPRESSOR RUNS CONTINUOUSLY [ZJ, Z6].) For other symptoms, inspect the following: • Refrigerant charging amount • Condenser fan operation
22	Disconnect the vacuum hose between the purge solenoid valve and the intake manifold from the purge solenoid side. Plug the opening end of vacuum hose. Start the engine. Is the engine stall now eliminated?	Yes	Inspect if the purge solenoid valve is stuck open mechanically. Inspect EVAP control system. (See Purge Control System Inspection.)
		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 malfunctioning part.
		No	Go to the next step.
24	Inspect engine condition while tapping the EGR valve housing. Does the engine condition improve?	Yes	Replace EGR valve.
		No	Go to the next step.
25	Inspect variable valve timing control system operation. (See Variable Valve Timing Control System Operation Inspection.) Does the variable valve timing control work properly?	Yes	Go to the next step.
		No	Repair or replace malfunctioning part.
26	Is the engine compression correct? (See COMPRESSION INSPECTION [ZJ, Z6].)	Yes	Remove EGR valve and visually inspect for mechanically stuck EGR valve. • If there is no malfunction, inspect valve timing. (See Timing Chain Installation Note.)
		No	Inspect for cause.
27	Verify test results. • 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. - 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].)		