

DTC P0506 [ZJ, Z6]

B3E010200500W03

DTC P0506	IAC system RPM lower than expected
DETECTION CONDITION	<ul style="list-style-type: none"> The PCM compares the actual idle speed with the target idle speed when the engine is running. If the actual idle speed is lower than the targeted by 100 rpm for 14 s, the PCM determines that the IAC system RPM is lower than expected. <p>Diagnostic support note</p> <ul style="list-style-type: none"> This is a continuous monitor (CCM). The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. PENDING CODE is available if the PCM detects the above malfunction condition during the first drive cycle. FREEZE FRAME DATA is available. The DTC is stored in the PCM memory.
POSSIBLE CAUSE	<ul style="list-style-type: none"> IAC valve malfunction A/C cut-off control malfunction Generator control system malfunction Intake-air line clogged <ul style="list-style-type: none"> Clogged air cleaner Clogged throttle body Purge solenoid valve malfunction IAT sensor malfunction ECT sensor malfunction CKP sensor malfunction Insufficient compression <ul style="list-style-type: none"> Engine oil malfunction Oil pressure decrease Oil pump malfunction Oil pump control malfunction Engine malfunction Fuel line pressure malfunction PCM malfunction

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED • Has FREEZE FRAME DATA been recorded?	Yes Go to the next step.
	No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	VERIFY RELATED REPAIR INFORMATION AVAILABILITY • Verify related Service Information availability. • Is any related repair Information available?	Yes Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
	No	Go to the next step.
3	VERIFY RELATED PENDING CODE OR STORED DTC • Turn the ignition switch off, then to the ON position (Engine off).	Yes Go to the applicable DTC inspection. (See DTC TABLE [ZJ, Z6] .)

	<ul style="list-style-type: none"> • Verify the related PENDING CODE or stored DTCs. • Are other DTCs present? 	No	Go to the next step.
4	INSPECT IAC VALVE <ul style="list-style-type: none"> • Inspect the IAC valve. (See IDLE AIR CONTROL (IAC) VALVE INSPECTION [ZJ, Z6].) • Is there any malfunction? 	Yes	Repair IAC valve, then go to Step 19. (See IDLE AIR CONTROL (IAC) VALVE REMOVAL/INSTALLATION [ZJ, Z6].)
		No	Go to the next step.
5	INSPECT A/C MAGNETIC CLUTCH OPERATION Note <ul style="list-style-type: none"> • The following test should be performed for A/C. Go to the next step for vehicles without A/C. <ul style="list-style-type: none"> • Turn the A/C switch off. • Is magnetic clutch still on? 	Yes	Go to the "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].)
		No	Go to the next step.
6	INSPECT GENERATOR CONTROL SYSTEM OPERATION <ul style="list-style-type: none"> • Apply the electrical load during idle. • Is the engine speed increased? 	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible short to power supply, then go to Step 19.
7	INSPECT AIR CLEANER ELEMENT <ul style="list-style-type: none"> • Remove the air cleaner element with the engine running. • Is the engine speed increased? 	Yes	Clean or replace the air cleaner element, then go to Step 18. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [ZJ, Z6].)
		No	Go to the next step.
8	INSPECT THROTTLE BODY PASSAGE <ul style="list-style-type: none"> • Remove the throttle body. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [ZJ, Z6].) • Is throttle body clogged? 	Yes	Clean the throttle body passage or replace the throttle body, then go to Step 19. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [ZJ, Z6].)
		No	Go to the next step.
9	INSPECT PURGE SOLENOID VALVE <ul style="list-style-type: none"> • Inspect the purge solenoid valve. (See PURGE SOLENOID VALVE INSPECTION [ZJ, Z6, LF].) • Is there any malfunction? 	Yes	Replace the purge solenoid valve, then go to Step 19. (See PURGE SOLENOID VALVE REMOVAL/INSTALLATION [ZJ, Z6].)
		No	Go to the next step.
10	INSPECT IAT SENSOR <ul style="list-style-type: none"> • Inspect the IAT sensor. (See INTAKE AIR TEMPERATURE (IAT) SENSOR INSPECTION [ZJ, Z6].) • Is there any malfunction? 	Yes	Replace the MAF/IAT sensor, then go to Step 19. (See MASS AIR FLOW (MAF)/INTAKE AIR TEMPERATURE (IAT) SENSOR REMOVAL/INSTALLATION [ZJ, Z6].)
		No	Go to the next step.
11	INSPECT ECT SENSOR <ul style="list-style-type: none"> • Inspect the ECT sensor. (See ENGINE COOLANT TEMPERATURE (ECT) SENSOR INSPECTION [ZJ, Z6].) • Is there any malfunction? 	Yes	Replace the ECT sensor, then go to Step 19. (See ENGINE COOLANT TEMPERATURE (ECT) SENSOR REMOVAL/INSTALLATION [ZJ, Z6].)
		No	Go to the next step.
12	INSPECT CKP SENSOR <ul style="list-style-type: none"> • Inspect the CKP sensor. (See CRANKSHAFT POSITION (CKP) SENSOR INSPECTION [ZJ, Z6].) • Is there any malfunction? 	Yes	Replace the CKP sensor, then go to Step 19. (See CRANKSHAFT POSITION (CKP) SENSOR REMOVAL/INSTALLATION [ZJ, Z6].)
		No	Go to the next step.
13	INSPECT ENGINE COMPRESSION <ul style="list-style-type: none"> • Inspect the engine compression. (See COMPRESSION INSPECTION [ZJ, Z6].) 	Yes	Go to the next step.

	• Is there any malfunction?	No	Go to Step 16.
14	INSPECT OIL PUMP • Inspect the oil pump. (See OIL PUMP INSPECTION [ZJ, Z6].) • Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results. Overhaul or replace the engine. Then go to Step 19.
		No	Go to the next step.
15	INSPECT ENGINE OIL CONDITION • Inspect the engine oil condition. • Is the engine oil condition normal?	Yes	Go to the next step.
		No	Replace the engine oil. Inspect the ECT sensor and related wiring harnesses. (See ENGINE COOLANT TEMPERATURE (ECT) SENSOR INSPECTION [ZJ, Z6].) Overhaul or replace the engine. Then go to Step 19.
16	INSPECT OIL PRESSURE • Inspect the oil pressure. (See OIL PRESSURE INSPECTION [ZJ, Z6].) • Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results. Overhaul or replace the engine. Then go to Step 19.
		No	Go to the next step.
17	INSPECT OIL PASSAGE • Inspect the oil passage. • Is there any malfunction?	Yes	Inspect for leakage and/or clogging in oil passage of engine and repair if necessary. Overhaul or replace the engine. Then go to Step 19.
		No	Overhaul or replace the engine. Then go to the next step.
18	INSPECT FUEL LINE PRESSURE • Perform the "FUEL LINE PRESSURE INSPECTION". (See FUEL LINE PRESSURE INSPECTION [ZJ, Z6, LF].) • Is there any malfunction?	Yes	Replace the fuel pump unit, then go to the next step. (See FUEL PUMP UNIT REMOVAL/INSTALLATION [ZJ, Z6, LF].)
		No	Go to the next step.
19	VERIFY TROUBLESHOOTING OF DTC P0506 COMPLETED • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the WDS or equivalent. • Start the engine. • Is the PENDING CODE for this DTC present?	Yes	Replace the PCM, then go to the next step. (See PCM REMOVAL/INSTALLATION [ZJ, Z6].)
		No	Go to the next step.
20	VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [ZJ, Z6].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [ZJ, Z6].)
		No	DTC troubleshooting completed.