DTC P0506:00 [SKYACTIV-G 2.0]

id0102h1705000

DTC P0506:00	IAC system RPM lower than expected
DETECTION CONDITION	• The actual idle speed is lower than expected by **100 rpm** for **14 s**, when the brake pedal is depressed (brake switch is on). **Note** • If the atmospheric pressure is **less than 72.3 kPa {0.737 kgf/cm^2, 10.5 psi}** or the intake air temperature is **below −10 °C {14 °F}**, the PCM cancels the diagnosis of DTC P0506:00. **Diagnostic support note** • This is a continuous monitor (CCM). • The check engine light 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 first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot data is available. • The DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	—
POSSIBLE CAUSE	• A/C magnetic clutch malfunction • Drive-by-wire control system related sensor malfunction — TP sensor malfunction • Air mass measurement system malfunction • Purge solenoid valve malfunction • Air cleaner element restricted • Throttle body passage blockage • Engine malfunction — Insufficient engine compression (over capacity of blow-by gas) — Poor quality fuel • Generator malfunction • PCM malfunction
SYSTEM WIRING DIAGRAM	—

Diagnostic Procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA (Mode 2)/ snapshot data been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data on the repair order, then go to the next step.
2	**VERIFY RELATED SERVICE INFORMATION AVAILABILITY** • Verify related Service Information availability. • Is any related Service Information available?	Yes	Perform repair or diagnosis according to the available Service Information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**VERIFY RELATED PENDING CODE AND/OR DTC** • Switch the ignition to off, then to ON (engine off). • Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0].) • Are any other PENDING CODEs and/or DTCs present?	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC TABLE [SKYACTIV-G 2.0].)
		No	Go to the next step.
4	**INSPECT A/C MAGNETIC CLUTCH OPERATION** • Turn the fan switch off. • Is the magnetic clutch still on?	Yes	Perform the 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 [SKYACTIV-G 2.0].)
		No	Go to the next step.

STEP	INSPECTION		ACTION
5	**INSPECT DRIVE-BY-WIRE CONTROL SYSTEM MALFUNCTION** • Inspect the TP sensor. (See THROTTLE POSITION (TP) SENSOR INSPECTION [SKYACTIV-G 2.0].) • Is there any malfunction?	Yes	Replace the throttle body, then go to Step 11. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-G 2.0].)
		No	Go to the next step.
6	**INSPECT PURGE SOLENOID VALVE** • Inspect the purge solenoid valve. (See PURGE SOLENOID VALVE INSPECTION [SKYACTIV-G 2.0].) • Is there any malfunction?	Yes	Replace the purge solenoid valve, then go to Step 11. (See PURGE SOLENOID VALVE REMOVAL/ INSTALLATION [SKYACTIV-G 2.0].)
		No	Go to the next step.
7	**INSPECT AIR CLEANER ELEMENT** • Remove the air cleaner element with the engine is running. • Does the engine speed increase?	Yes	Clean or replace the air cleaner element, then go to Step 11.
		No	Go to the next step.
8	**INSPECT THROTTLE BODY PASSAGE** • Visually inspect the throttle body passage. • Is the throttle body passage dirty and/or restricted?	Yes	Clean or replace the throttle body passage, then go to Step 11. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-G 2.0].)
		No	Go to the next step.
9	**INSPECT ENGINE COMPRESSION** • Inspect the engine compression. (See COMPRESSION INSPECTION [SKYACTIV-G 2.0].) • Are compression pressures within specification? **Specification:** • Compression [European (L.H.D. U.K.) specs.] — Standard: **978 kPa {9.97 kgf/cm^2, 142 psi} (300 rpm)** — Minimum: **783 kPa {7.98 kgf/cm^2, 114 psi} (300 rpm)** — Maximum difference between cylinders: **166 kPa {1.69 kgf/cm^2, 24.1 psi}** • Compression [Except European (L.H.D. U.K.) specs.] — Standard: **885 kPa {9.02 kgf/cm^2, 128 psi} (300 rpm)** — Minimum: **708 kPa {7.22 kgf/cm^2, 103 psi} (300 rpm)** — Maximum difference between cylinders: **150 kPa {1.53 kgf/cm^2, 21.8 psi}** **Note** • Because the SKYACTIV-G 2.0 retards the intake valve closing timing, compression pressure is low.	Yes	Go to the next step.
		No	Overhaul the engine for repairs, then go to Step 11.
10	**INSPECT GENERATOR** • Inspect the generator. (See GENERATOR INSPECTION [SKYACTIV-G 2.0].) • Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to the next step. (See GENERATOR DISASSEMBLY/ASSEMBLY [SKYACTIV-G 2.0].) (See GENERATOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0].)
		No	Go to the next step.

STEP	INSPECTION		ACTION
11	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0].) • Depress the brake pedal for **14 s or more**. • Perform the Pending Trouble Code Access Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0].) • Is the PENDING CODE for this DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0].) Go to the next step.
		No	Go to the next step.
12	**VERIFY AFTER REPAIR PROCEDURE** • Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-G 2.0].)
		No	DTC troubleshooting completed.