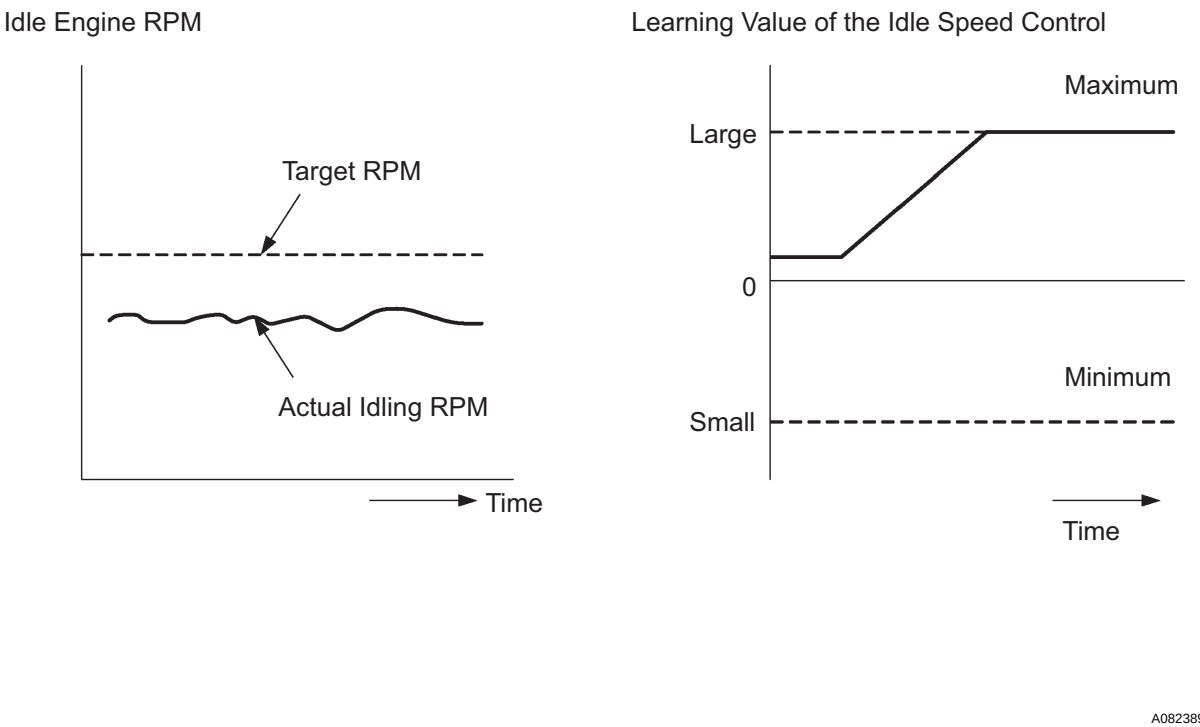
| DTC | P0505 | Idle Control System Malfunction |
|---|---|---|

## MONITOR DESCRIPTION

The idle speed is controlled by the Electronic Throttle Control System (ETCS).
The ETCS is composed of the throttle motor, which operates the throttle valve, and the throttle position sensor, which detects the opening angle of the throttle valve.
The ECM controls the throttle motor to provide the proper throttle valve opening angle to obtain the target idle speed.
The ECM regulates the idle speed by opening and closing the throttle valve using the ETCS. The ECM concludes that the idle speed control ECM function is malfunctioning if: 1) the actual idle RPM varies more than the specified amount 5 times or more during a drive cycle, or 2) a learning value of the idle speed control remains at the maximum or minimum 5 times or more during a drive cycle. The ECM will turn on the MIL and set a DTC.
Example:
If the actual idle RPM varies from the target idle RPM by more than 200 (*1) rpm 5 times during a drive cycle, the ECM will turn on the MIL and a DTC will be set.
*1: RPM threshold varies with engine load.



Example




| DTC No. | DTC Detection Condition | Trouble Area |
|---|---|---|
| P0505 | Idle speed continues to vary greatly from target speed (1 trip detection logic) | • Electronic throttle control system<br>• Air induction system<br>• PCV hose connection |

## MONITOR STRATEGY

| | |
|---|---|
| Related DTCs | P0505: IAC Functional Check<br>P0505: IAC Range Check |

| | |
|---|---|
| Required sensors / components (Main) | ETCS |
| Required sensors / components (Related) | Crankshaft position sensor, ECT sensor, Vehicle speed sensor |
| Frequency of operation | Continuous |
| Duration | 10 minutes |
| MIL operation | 2 driving cycles |
| Sequence operation | None |

## TYPICAL ENABLING CONDITIONS

| | |
|---|---|
| The monitor will run whenever this DTC is not present | None |
| Engine | Running |

ES

## TYPICAL MALFUNCTION THRESHOLDS

| | |
|---|---|
| Either of the following conditions is met: | Condition 1 or 2 |
| 1. Frequency that both of the following conditions (a) and (b) are met: | 5 times or more |
| (a) Engine RPM - Target engine RPM | Less than -100 rpm, or more than 150 rpm |
| (b) Vehicle condition | Stop after vehicle was driven at 6.25 mph (10 km/h) or more |
| 2. Frequency that both of the following conditions (a) and (b) are met: | Once |
| (a) Engine RPM - Target engine RPM | Less than -100 rpm, or more than 150 rpm |
| (b) IAC flow rate learning value | 1.3 L/sec. or less, or 9.03 L/sec. or more |

HINT:
Read freeze frame data using the intelligent tester or the OBD II scan tool. The ECM records vehicle condition information as freeze frame data the moment a DTC is stored. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, if the air-fuel ratio was lean or rich, and other data from the time the malfunction occurred.

| 1 | CHECK ANY OTHER DTCS OUTPUT (IN ADDITION TO DTC P0505) |
|---|---|

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch ON.
(c) Turn the tester ON.
(d) Enter the following the menus: DIAGNOSIS / ENHANCED OBD II / DTC INFO / CURRENT CODES.
(e) Read DTCs.

**Result**

| Display (DTC output) | Proceed to |
|---|---|
| P0505 | A |
| P0505 and other DTCs | B |

HINT:
If any DTCs other than P0505 are output, troubleshoot those DTCs first.

B → GO TO DTC CHART

A

| 2 | CHECK PCV HOSE CONNECTIONS |
|---|---|

**OK:**
**PCV hose is connected correctly and is not damaged.**

NG → **REPAIR OR REPLACE PCV HOSE**

OK ↓

| 3 | CHECK AIR INDUCTION SYSTEM |
|---|---|

(a) Check the air induction system for vacuum leakage.
**OK:**
**No leakage from air induction system.**

NG → **REPAIR OR REPLACE AIR INDUCTION SYSTEM**

OK ↓

| 4 | CHECK THROTTLE VALVE |
|---|---|

(a) Check the throttle valve condition.
**OK:**
**No foreign objects between the throttle valve and housing.**

NG → **REPLACE THROTTLE BODY ASSEMBLY**

OK ↓

**REPLACE ECM**