DTC	P0505	Idle Control System Malfunction

DESCRIPTION

The idling speed is controlled by the ETCS (Electronic Throttle Control System). The ETCS is comprised of: 1) the one valve type throttle body; 2) the throttle actuator, which operates the throttle valve; 3) the Throttle Position (TP) sensor, which detects the opening angle of the throttle valve; 4) the Accelerator Pedal Position (APP) sensor, which detects the accelerator pedal position; and 5) the ECM, which controls the ETCS.

Based on the target idling speed, the ECM controls the throttle actuator to provide the proper throttle valve opening angle.

DTC No.	DTC Detection Condition	Trouble Area
P0505	Idling speed continues to vary greatly from target idling speed (2 trip detection logic)	• ETCS • Intake system • PCV hose connection • ECM

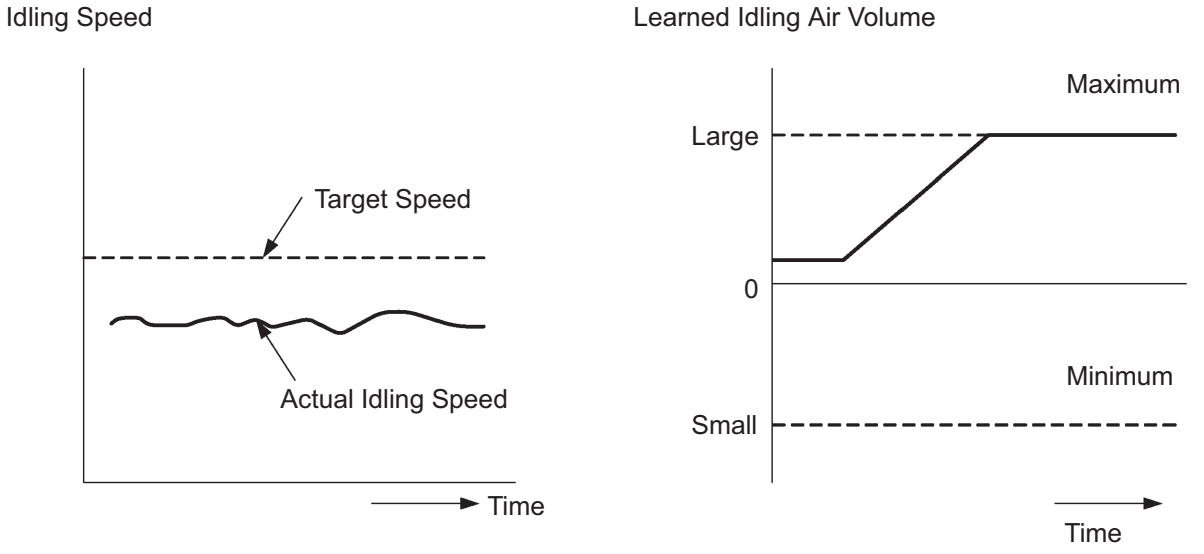
MONITOR DESCRIPTION

The ECM monitors the idling speed and idling air flow volume to conduct Idle Speed Control (ISC). The ECM determines that the ISC system is malfunctioning if the following conditions are met:

- The learned idling air flow volume remains at the maximum or minimum volume 5 times or more in a drive cycle.
- While driving at 6 mph (10 km/h) or more, the actual engine idling speed varies from the target idling speed by between 100 rpm and 200 rpm, 5 times or more in a drive cycle.

Example:
If the actual idling speed varies from the target idling speed by more than 200 rpm* 5 times in a drive cycle, the ECM illuminates the MIL and sets the DTC.
*: Threshold idling speed varies according to the engine load.

Example:



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MONITOR STRATEGY

Related DTCs	P0505: ISC Function
Required Sensors / Components (Main)	ETCS
Required Sensors / Components (Related)	Crankshaft position sensor, Engine coolant temperature sensor, and Vehicle speed sensor
Frequency of Operation	Continuous
Duration	10 minutes
MIL Operation	2 driving cycles
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever these DTCs are not present	None
Engine	Running

TYPICAL MALFUNCTION THRESHOLDS

Either of following conditions is met	Condition 1 or 2
1. Frequency that both of the following conditions (a) and (b) met	5 times or more

(a) Engine RPM - target engine RPM	Below -100 rpm, or 150 rpm or more
(b) Vehicle condition	Stop after vehicle was driven by 6.25 mph (10.06 km/h) or more
2. Frequency that both of the following conditions (a) and (b) are met	Once
(a) Engine RPM - target engine RPM	Below -100 rpm, or 150 rpm or more
(b) IAC flow rate learning valve	1.3 L/sec. or less, or 8.5 L/sec. or more

INSPECTION PROCEDURE

HINT:

- The following conditions may also cause DTC P0505 to be set:
  (a) The floor carpet overlapping slightly onto the accelerator pedal, causing the accelerator pedal to be slightly depressed and therefore the throttle valve position to be slightly open.
  (b) The accelerator pedal being not fully released.
- Read freeze frame data using the intelligent tester. The ECM records vehicle and driving condition information as freeze frame data the moment a DTC is stored. When troubleshooting, freeze frame data can be helpful in determining whether the vehicle was running or stopped, whether the engine was warmed up or not, whether the air-fuel ratio was lean or rich, as well as other data recorded at the time of a malfunction.

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

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position.
(c) Turn the tester on.
(d) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / DTC INFO / CURRENT CODES.
(e) Read the 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 (See page ES-56)**

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 INTAKE SYSTEM

(a) Check the intake system for vacuum leakage.

OK:
No leakage from intake system.

NG → **REPAIR OR REPLACE INTAKE 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 (See page ES-493)**

OK ↓

REPLACE ECM (See page ES-498)