

|            |              |                                |
|------------|--------------|--------------------------------|
| <b>DTC</b> | <b>P0505</b> | <b>IDLE AIR CONTROL SYSTEM</b> |
|------------|--------------|--------------------------------|

## 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.

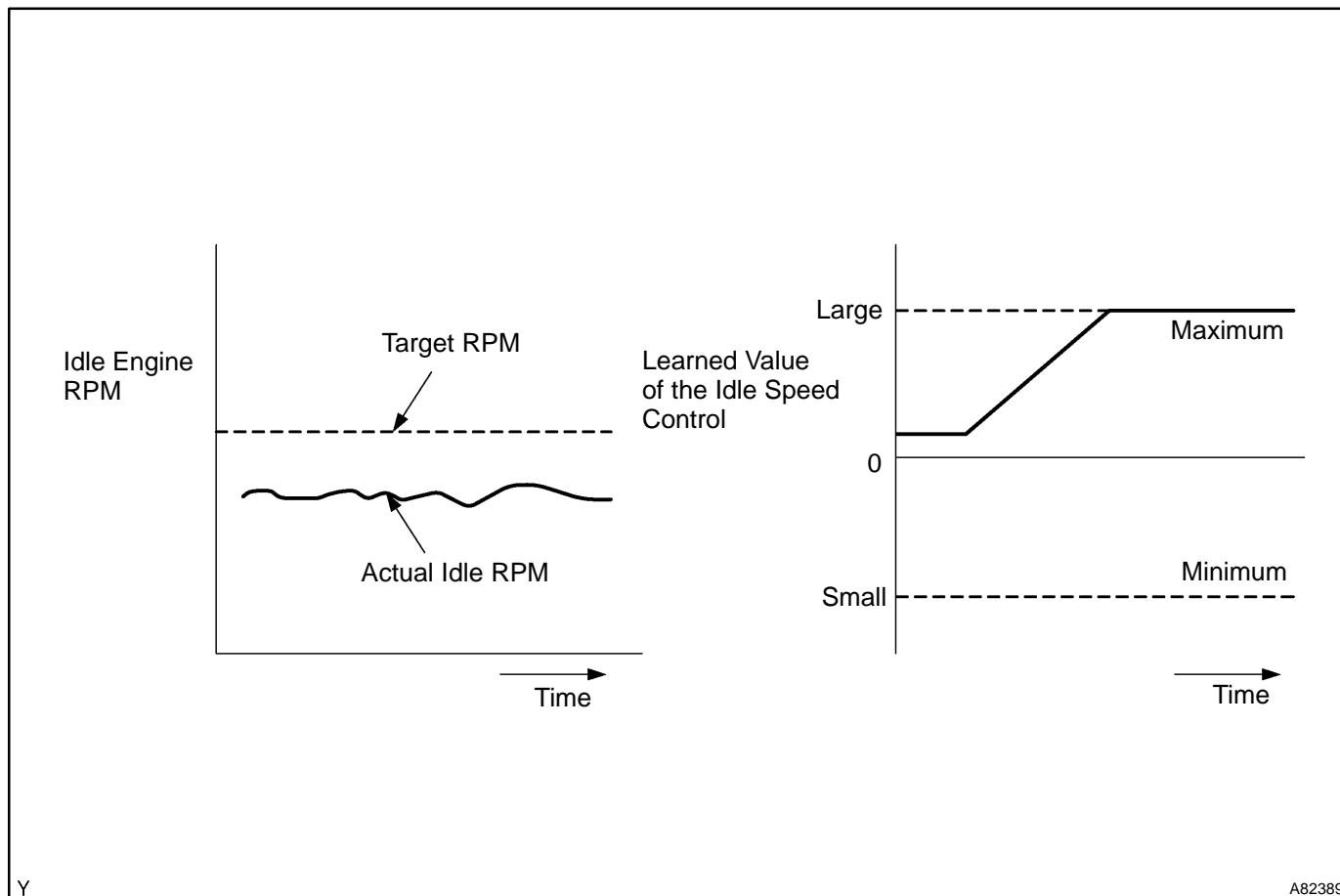
The ECM controls the throttle motor to provide the proper throttle valve opening angle to obtain the target idle speed.

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 five times or more during a drive cycle, or 2) a learned value of the idle speed control remains at the maximum or minimum five 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 five times during a drive cycle, the ECM will turn on the MIL and a DTC is set.

\*1: RPM threshold varies with engine load.



Y

A82389

| DTC No. | DTC Detection Condition  | Trouble Area  |
|---------|--|---|
| P0505   | Idle speed continues to vary greatly from target speed<br>(1 trip detection logic) | <ul style="list-style-type: none"> <li>• Electronic throttle control system</li> <li>• Air induction system</li> <li>• PCV hose connection</li> </ul> |

## MONITOR STRATEGY

|  |  |
|--|--|
| Related DTCs                           | P0505: ISC Function  |
| 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 | See page <a href="#">05-16</a> |
| Engine  | Running                        |

## 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) 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 by 6.25 mph (10 km/h) or more   |
| 2. Frequency that both of the following conditions (c) and (d) met | Once  |
| (c) Engine RPM – target engine RPM                                 | Less than –100 rpm, or more than 150 rpm  |
| (d) ISC flow rate learning value                                   | 1.3 L/sec or less, or 4.5 L/sec or more (Except PZEV)<br>1.3 L/sec or less, or 6.5 L/sec or more (PZEV) |

## INSPECTION PROCEDURE

### HINT:

- When the throttle position is slightly opened (the accelerator pedal is slightly depressed) because a floor carpet is overlapped on the accelerator pedal, or if not fully releasing the accelerator pedal, etc., DTC P505 will possibly be detected.
- Read freeze frame data using the hand–held tester or the OBD II scan tool. Freeze frame data records the engine conditions when a malfunction is detected. 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 OTHER DTC OUTPUT (IN ADDITION TO DTC P0505)

- (a) Read the DTC using the hand–held tester or the OBD II scan tool.

#### Result:

| Display (DTC Output)            | Proceed to |
|---------------------------------|------------|
| Only P0505 is output            | A          |
| P0505 and other DTCs are output | B          |

### HINT:

If any other codes besides P0505 are output, perform the troubleshooting for those codes first.

**B**

**GO TO RELEVANT DTC CHART**  
(See page [05-51](#))

**A**

**2 CHECK CONNECTION OF PCV HOSE**

OK: PCV hose is connected correctly and PCV hose has no damage.

**NG****REPAIR OR REPLACE PCV HOSE****OK****3 CHECK AIR INDUCTION SYSTEM**

(a) Check for vacuum leaks in air induction system.

OK: No leak in air induction system.

**NG****REPAIR OR REPLACE AIR INDUCTION SYSTEM****OK****CHECK ELECTRONIC THROTTLE CONTROL SYSTEM (See page 10-2)**