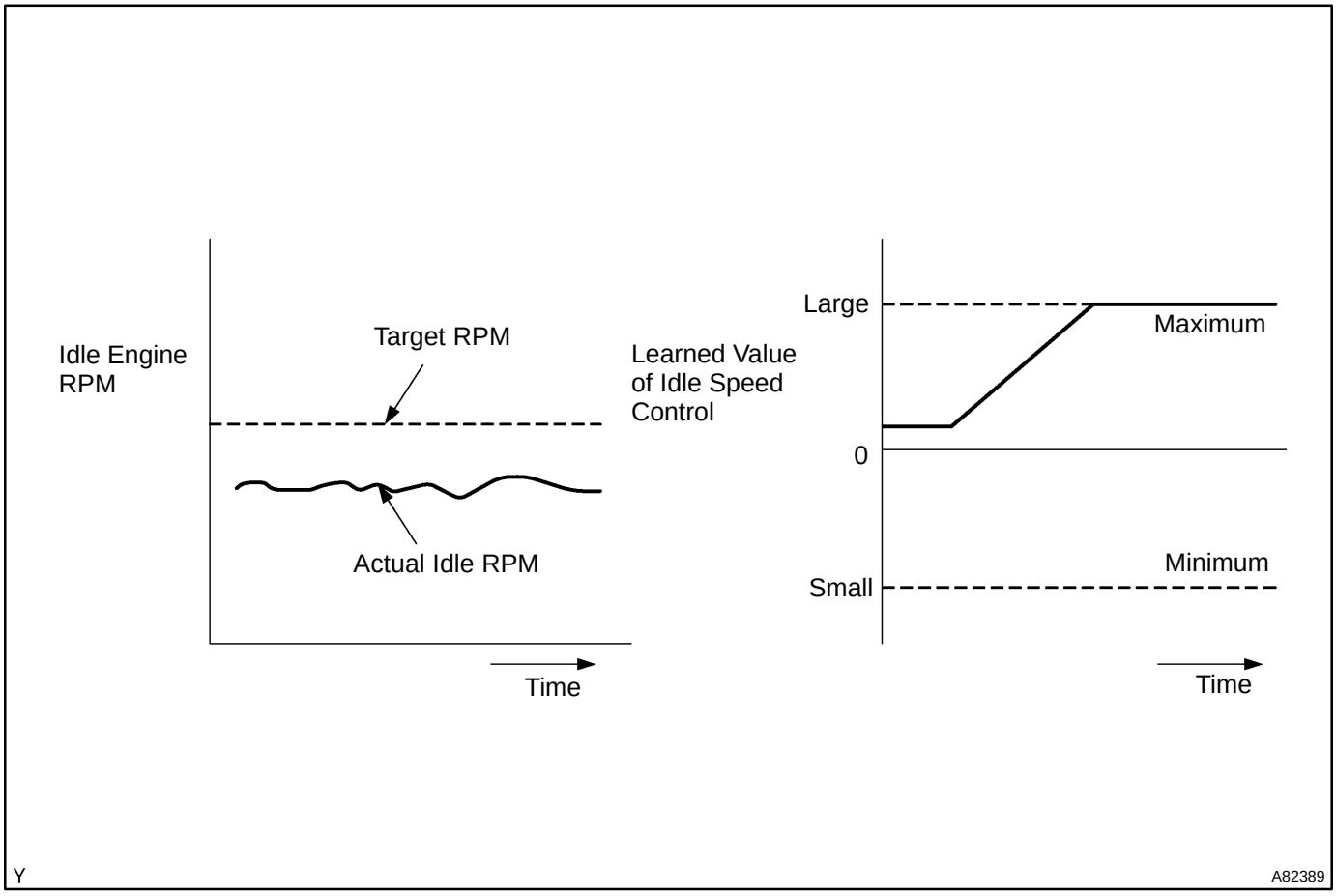
DTC P0505 IDLE AIR CONTROL SYSTEM

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. If the actual idle RPM varies more than a specified amount or a learned value of the idle speed control remains at the maximum or minimum five times or more during a trip, the ECM concludes that there is a problem in the idle speed control ECM function. The ECM will turn on the MIL and a DTC is set.
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.
HINT:
*1: RPM threshold varies depending on engine loads.



DTC No.	DTC Detection Condition	Trouble Area
P0505	Idle speed continues to vary greatly from target speed (1 trip detection logic)	• Electric throttle control system • Air induction system • PCV hose connection • ECM

MONITOR STRATEGY

Related DTCs	P0505: Idle air control malfunction (Functional check)
Required sensors/components	Main: Crankshaft position sensor Related: Vehicle speed sensor, engine coolant temperature sensor
Frequency of operation	Once per driving cycle
Duration	10 minutes
MIL operation	2 driving cycles
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not present	See page 05–20
Engine	Running

TYPICAL MALFUNCTION THRESHOLDS

Following conditions are met: (during idling after driving for more than 6.2 mph (10 km/h) per cycle)	A & B & C
A. Either of following conditions is met:	1 or 2
1. Deviation of engine speed (when shift position N or A/C ON)	Less than –100 rpm, or more than 200 rpm
2. Deviation of engine speed (when shift position D or A/C OFF)	Less than –100 rpm, or more than 150 rpm
B. IAC flow rate (learned value)	0.6 L/sec or less or 4.5 L/sec or more
C. Number of detection	5 times/trip

INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand−held tester or the OBD II scan tool. Freeze frame data records the engine condition when 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) Connect the hand–held tester or the OBD II scan tool to the DLC3.
(b) Turn the power switch ON (IG).
(c) Turn the hand–held tester or the OBD II scan tool ON.
(d) On the hand–held tester, select the item: DIAGNOSIS / ENHANCED OBD II / ENGINE AND ECT / DTC INFO / CURRENT CODES.
(e) Read DTCs using the hand–held tester or the OBD II scan tool.
Result:

Display (DTC Output)	Proceed to
P0505	A
P0505 and other DTCs	B

HINT:
If any other codes besides P0505 are output, perform troubleshooting for those DTCs first.

B → **GO TO RELEVANT DTC CHART (See page 05–55)**

A

2	CHECK CONNECTION OF PCV HOSE

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

NG → **REPAIR OR REPLACE PCV HOSE**

OK

3	CHECK AIR INDUCTION SYSTEM

(a) Check for vacuum leaks in the air induction system.
OK: No leakage in the air induction system.

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

OK

CHECK ELECTRIC THROTTLE CONTROL SYSTEM (See page 10–3)