DTC P0505/33 IDLE CONTROL SYSTEM MALFUNCTION

CIRCUIT DESCRIPTION

The idle speed is controlled by the ETCS (Electric Throttle Control System). ETCS is composed of the throttle motor to operate the throttle valve, the magnetic clutch to connect the throttle motor with the throttle valve, the throttle position sensor to detect the opening angle of the throttle valve, the accelerator pedal position sensor to detect the accelerator pedal position, the ECM to control the ETCS and the one valve type throttle body. The ECM controls the throttle motor to make the throttle valve opening angle properly for the target idle speed.

DTC No.	DTC Detection Condition	Trouble Area
P0505/33	Idle speed continues to vary greatly from target speed (2 trip detection logic)	• Electric throttle control system • Air induction system • PCV hose connection • ECM

INSPECTION PROCEDURE

HINT:

Read freeze frame data using hand–held tester. Because freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air–fuel was ratio lean or rich, etc. at the time of the malfunction.

When using Hand–held Tester:

1 READ OUTPUT DTC

Display	Type
P0505	A
P0505 and any other codes	B

B → **GO TO RELEVANT DTC CHART**

A

2 CHECK AIR INDUCTION SYSTEM (See Page 10–7)

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

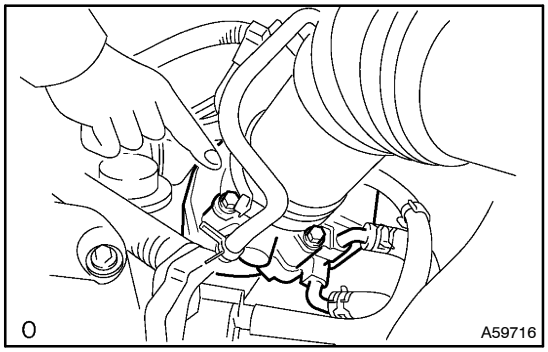
OK

3 CHECK CONNECTION OF PCV HOSE

NG → **REPAIR OR REPLACE CONNECTION OF PCV HOSE**

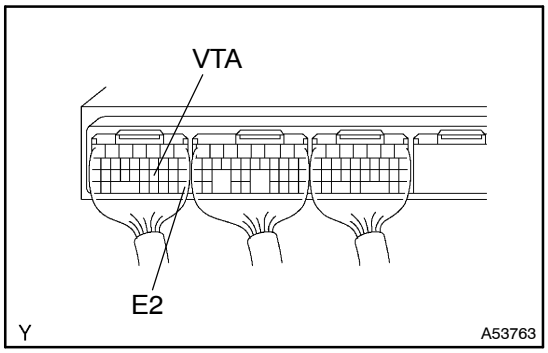
OK

4 INSPECT THROTTLE BODY CIRCUIT



(a) Inspect the throttle control motor operation.
  (1) Start the engine.
  (2) When depressing the accelerator pedal, check the operating sound of the motor.

(b) Using a hand–held tester, check that the throttle valve opening percentage (THROTTLE POS) of the CURRENT DATA when depressing the accelerator pedal full.
Standard: 60 % or more



(c) Turn the IG switch ON.

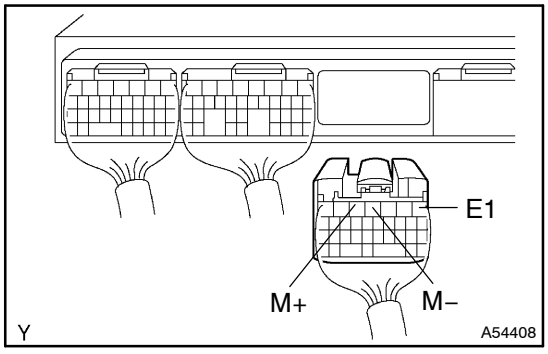
(d) Measure the voltage between E10 ECM terminals VTA and E2.
Standard: 9 – 14 V

(e) Check the idle speed (See page 14–66).

NG → **REPAIR OR REPLACE THROTTLE BODY ASSY (See Page10–12)**

OK

5 CHECK WIRE HARNESS(ECM – THROTTLE BODY ASSY)

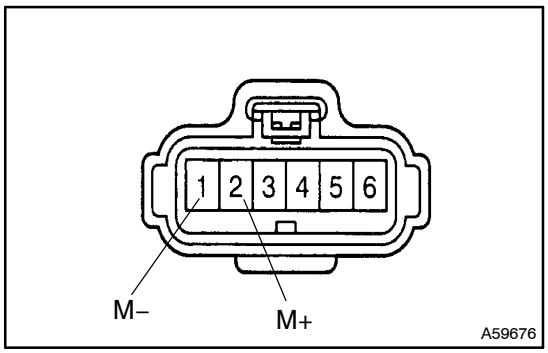


(a) Disconnect the throttle body connector.

(b) Disconnect the E8 ECM connector.

(c) Check the continuity between terminals.
Standard:

Throttle body terminal	E8 ECM terminal	Continuity
M+ (2)	M+ (E8–5)	Continuity
M– (1)	M– (E8–4)	Continuity
M+ (2)	E1 (E8–1)	No continuity
M– (1)		No continuity



NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

6 INSPECT THROTTLE BODY ASSY (THROTTLE POSITION SENSOR) (See Page 05–168)

NG → REPLACE THROTTLE BODY ASSY

OK

7 CHECK WIRE HARNESS (ECM – THROTTLE POSITION SENSOR) (See Page 05–168)

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE ECM

When not using Hand–held Tester:

1 CHECK AIR INDUCTION SYSTEM (See Page 10–7)

NG → REPAIR OR REPLACE AIR INDUCTION SYSTEM

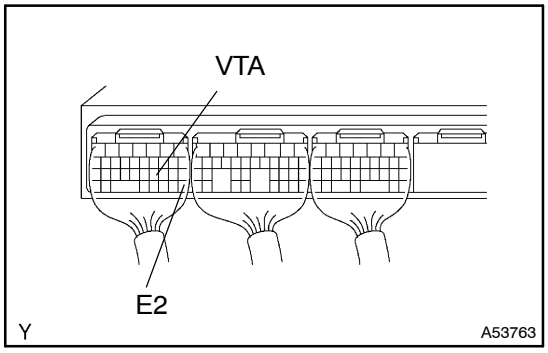
OK

2 CHECK CONNECTION OF PCV HOSE

NG → REPAIR OR REPLACE CONNECTION OF PCV HOSE

OK

3 CHECK ECM (CHECK VOLTAGE)



(a) Turn the ignition switch ON.
(b) Measure the voltage between E10 ECM terminals VTA and E2.
Standard: 9 – 14 V

NG → REPAIR OR REPLACE THROTTLE BODY ASSY

OK

4	CHECK WIRE HARNESS(ECM – THROTTLE BODY ASSY)

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

5	INSPECT THROTTLE BODY ASSY (See Page 05–158)

NG → REPAIR OR REPLACE THROTTLE BODY ASSY

OK

6	CHECK WIRE HARNESS(ECM – THROTTLR POSITION SENSOR) (See Page 05–158)

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE ECM