| DTC | P2111 | THROTTLE ACTUATOR CONTROL SYSTEM – STUCK OPEN |
|---|---|---|

| DTC | P2112 | THROTTLE ACTUATOR CONTROL SYSTEM – STUCK CLOSED |
|---|---|---|

## CIRCUIT DESCRIPTION

The throttle motor is operated by the ECM and it opens and closes the throttle valve using gears. The opening angle of the throttle valve is detected by the throttle position sensor, which is mounted on the throttle body. The throttle position sensor provides feedback to the ECM to control the throttle motor and set the throttle valve angle in response to driver input.

HINT:

This Electronic Throttle Control System (ETCS) does not use a throttle cable.

| DTC No. | DTC Detection Condition | Trouble Area |
|---|---|---|
| P2111 | Throttle motor locked during ECM order to close | • Throttle control motor circuit<br>• Throttle control motor<br>• Throttle body<br>• Throttle valve |
| P2112 | Throttle motor locked during ECM order to open | • Throttle control motor circuit<br>• Throttle control motor<br>• Throttle body<br>• Throttle valve |

## FAIL SAFE

If the ETCS has a malfunction, the ECM cuts off current to the throttle control motor. The throttle control valve returns to a predetermined opening angle (approximately 16°) by the force of the return spring. The ECM then adjusts the engine output by controlling the fuel injection (intermittent fuel–cut) and ignition timing in accordance with the accelerator pedal opening angle to enable the vehicle to continue at a minimal speed. If the accelerator pedal is depressed firmly and slowly, the vehicle can be driven slowly.

If a ”pass” condition is detected and then the ignition switch is turned OFF, the fail–safe operation will stop and the system will return to normal.

## WIRING DIAGRAM

Refer to DTC P2102 on page 05–122.

## INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand–held tester. 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 |
|---|---|

| Display (DTC output) | Proceed to |
|---|---|
| P2111 or P2112 | A |
| P2111 or P2112 and other DTCs | B |

B → GO TO RELEVANT DTC CHART (See page 05–27)

A

| 2 | CHECK THROTTLE BODY ASSY (VISUALLY CHECK THROTTLE VALVE) |
|---|---|

Check for contamination between the throttle valve and the housing. If necessary, clean the throttle body. And check that the throttle valve moves smoothly.

**OK: The throttle valve is not contaminated by foreign objects and can move smoothly.**

NG → REPLACE THROTTLE BODY ASSY (See page 10–7)

OK

| 3 | CHECK DTC OUTPUT |
|---|---|

(a) Clear the DTC.
(b) Start the engine, and depress and release the accelerator pedal quickly (fully open and fully close).
(c) Read DTC.

**Result:**

| Display (DTC output) | Proceed to |
|---|---|
| No DTC | A |
| P2111 and/or P2112 | B |

B → REPLACE ECM (See page 10–13)

A

CHECK FOR INTERMITTENT PROBLEMS (See page 05–8)