

DTC	P2111/41*	Throttle Actuator Control System –Stuck Open
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DTC	P2112/41*	Throttle Actuator Control System –Stuck Closed
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*: ETCS trouble code No. is 31.

CIRCUIT DESCRIPTION

The throttle motor is operated by the engine control ECU 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 engine control ECU to control the throttle motor and set the throttle valve angle in response to driver input.

HINT:

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

DTC No.	DTC Detection Condition	Trouble Area
P2111/41	Throttle motor locked during engine control ECU order to close. (1 trip detection logic)	• Throttle control motor and sensor circuit • Throttle control motor and sensor • Throttle body • Throttle valve
P2112/41	Throttle motor locked during engine control ECU order to open. (1 trip detection logic)	

MONITOR DESCRIPTION

The engine control ECU concludes that there is a malfunction of the ETCS (Electronic Throttle Control System) when the throttle valve remains at a fixed angle despite high drive current from the engine control ECU. The engine control ECU will turn on the MIL and a DTC is set.

This monitor runs after the engine is started, and then the accelerator pedal is fully depressed and fully released quickly.

FAIL SAFE

If the ETCS (Electronic Throttle Control System) has a malfunction, the engine control ECU 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 engine control ECU 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 minimum 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 condition.

WIRING DIAGRAM

Refer to DTC P0120 on [page DI-63](#).

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, as well as other data from the time when a malfunction occurred.

1	Check other DTC output
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Display (DTC output)	Proceed to
P2111 or P2112	A
P2111 or P2112 and other DTCs	B

B

Go to relevant DTC chart
(See page DI-19)

A

2	Check throttle body assy (Visually check throttle valve)
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Check for contamination between the throttle valve and the housing. If necessary, clean the throttle body. Also, check that the throttle valve moves smoothly.

NG

Replace throttle body assy
(See Pub. No. RM630E, page FI-42)

OK

3 Check DTC output

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

Display (DTC output)	Proceed to
No DTC	A
P2111 or P2112	B

B**Replace engine control ECU (See Pub. No. RM630E, page FI-74)****OK****Check for intermittent problem ([See page DI-3](#))**