DTC	P2121/19	Throttle/Pedal Position Sensor/Switch ”D” Circuit Range/Performance

HINT:
This is repair procedure for the ”accelerator pedal position sensor”.

CIRCUIT DESCRIPTION

Refer to DTC P2120 on page DI–218.

DTC No.	DTC Detecting Condition	Trouble Area
P2121/19	Conditions (a) and (b) continue for 0.5 seconds: (1 trip detection logic) (a) Difference between VPA and VPA2 exceeds the threshold (b) IDL is OFF	• Accelerator pedal position sensor circuit • Accelerator pedal position sensor • Engine control ECU

MONITOR DESCRIPTION

When the difference between voltage outputs of the VPA1 or VPA2 deviate from the standard range, the engine control ECU concludes that there is a defect in the APP sensor. The engine control ECU turns on the MIL and sets a DTC.
This monitor runs for 1 second (the first second of engine idle) after the engine is started.

FAIL SAFE

The APP sensor has two (main and sub) sensor circuits. If a malfunction occurs in either of the sensor circuits, the engine control ECU detects the abnormal signal voltage difference between the two sensor circuits and changes to limp mode. In limp mode, the remaining circuit is used to calculate the accelerator pedal opening angle to allow the vehicle to continue driving.
If both circuits malfunction, the engine control ECU regards the opening angle of the accelerator pedal to be fully closed. In this case, the throttle valve will remain closed as if the engine is idling.
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 P2120 on page DI–218.

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 DTC.**

RESULT:

Display (DTC Output)	Proceed to
”P2121” are output again	A
Other DTC output	B

B → **Go to prlevent DTD chart (See page DI–19).**

A

2	**Replace accelerator position sensor.**

GO

3	**Check DTC.**

PREPARATION:

(a) Clear the DTC (See page DI–3).
(b) Allow the engine to idle for a minute.
(c) Race the engine several time.

CHECK:

Read the DTC (See page DI–3).

RESULT:

Display (DTC Output)	Proceed to
”P2121” are output again	A
No DTC output	B

B → **System OK**

A

Replace engine control ECU (See Pub. No. RM630E, page FI–74).