

<b>DTC</b>	<b>P2121/19</b>	<b>THROTTLE/PEDAL POSITION SENSOR/SWITCH "D" CIRCUIT RANGE/PERFORMANCE</b>
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**HINT:**

This DTC is related to the accelerator pedal position sensor.

**CIRCUIT DESCRIPTION**

Refer to DTC P2120/19 on [page 05-176](#).

DTC No.	DTC Detection Condition	Trouble Area
P2121/19	Conditions (a) and (b) continue for 0.5 second: (a) Difference between VPA1 and VPA2 exceeds the threshold (b) DLS OFF	<ul style="list-style-type: none"> <li>• Accelerator pedal position sensor circuit</li> <li>• Accelerator pedal position sensor</li> <li>• ECM</li> </ul>

**WIRING DIAGRAM**

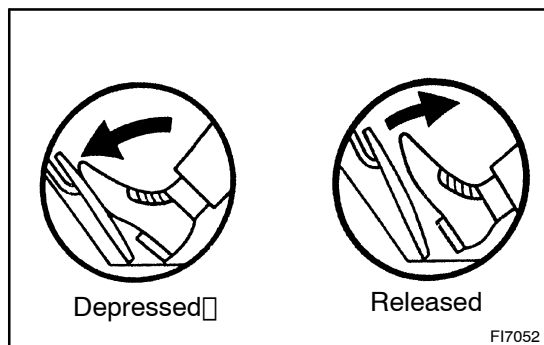
Refer to DTC P2120/19 on [page 05-176](#).

**INSPECTION PROCEDURE****HINT:**

Read freeze frame data using the intelligent tester II. Freeze frame data record the engine condition when malfunctions are detected. When troubleshooting, freeze frame data can help determine if the vehicle was moving or stationary, 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.

**When using intelligent tester II:**

<b>1</b>	<b>READ VALUE OF INTELLIGENT TESTER II (ACCEL POS #1 AND ACCEL POS #2)</b>
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- Connect the intelligent tester II to the DLC3.
- Turn the ignition switch to ON and turn the intelligent tester II ON.
- Select the following menu items: Powertrain / Engine and ECT / Data List / Accelerator POS No. 1 and Accelerator POS No. 2.
- Read the values.

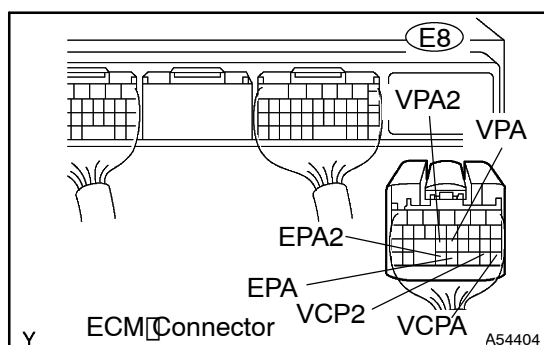
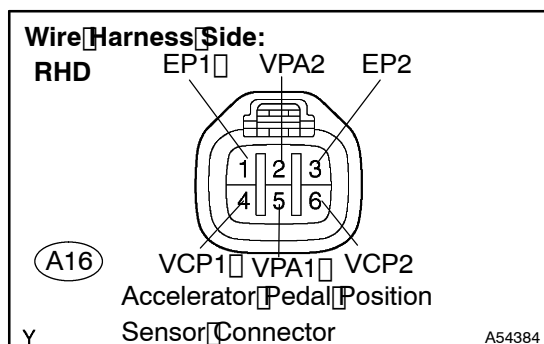
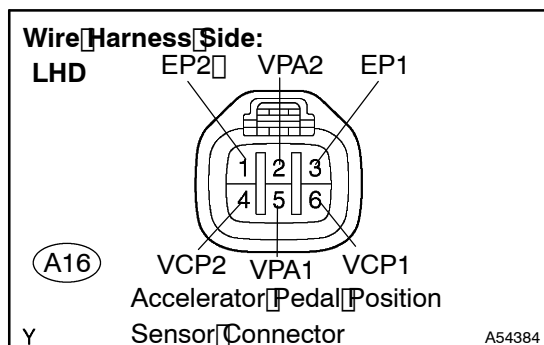
**Standard:**

Accelerator Pedal	Accelerator POS No. 1	Accelerator POS No. 2
Released	0.5 to 1.1 V	1.2 to 2.0 V
Depressed	2.6 to 4.5 V	3.4 to 5.3 V

<b>OK</b>	<b>REPLACE ECM (See page 10-30)</b>
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## 2 CHECK HARNESS AND CONNECTOR (ACCELERATOR PEDAL POSITION SENSOR - ECM)



- Disconnect the A16 accelerator pedal position sensor connector.
- Disconnect the E8 ECM connector.
- Check the resistance.

### Standard (LHD) (Check for open):

Tester Connection	Specified Condition
VPA1 (A16-5) - VPA (E8-22)	Below 1 $\Omega$
EP1 (A16-3) - EPA (E8-28)	Below 1 $\Omega$
VCP1 (A16-6) - VCPA (E8-26)	Below 1 $\Omega$
VPA2 (A16-2) - VPA2 (E8-23)	Below 1 $\Omega$
EP2 (A16-1) - EPA2 (E8-29)	Below 1 $\Omega$
VCP2 (A16-4) - VCP2 (E8-27)	Below 1 $\Omega$

### Standard (LHD) (Check for short):

Tester Connection	Specified Condition
VPA1 (A16-5) or VPA (E8-22) - Body Ground	10 k $\Omega$ or higher
EP1 (A16-3) or EPA (E8-28) - Body Ground	10 k $\Omega$ or higher
VCP1 (A16-6) or VCPA (E8-26) - Body Ground	10 k $\Omega$ or higher
VPA2 (A16-2) or VPA2 (E8-23) - Body Ground	10 k $\Omega$ or higher
EP2 (A16-1) or EPA2 (E8-29) - Body Ground	10 k $\Omega$ or higher
VCP2 (A16-4) or VCP2 (E8-27) - Body Ground	10 k $\Omega$ or higher

### Standard (RHD) (Check for open):

Tester Connection	Specified Condition
VPA1 (A16-5) - VPA (E8-22)	Below 1 $\Omega$
EP1 (A16-1) - EPA (E8-28)	Below 1 $\Omega$
VCP1 (A16-4) - VCPA (E8-26)	Below 1 $\Omega$
VPA2 (A16-2) - VPA2 (E8-23)	Below 1 $\Omega$
EP2 (A16-3) - EPA2 (E8-29)	Below 1 $\Omega$
VCP2 (A16-6) - VCP2 (E8-27)	Below 1 $\Omega$

### Standard (RHD) (Check for short):

Tester Connection	Specified Condition
VPA1 (A16-5) or VPA (E8-22) - Body Ground	10 k $\Omega$ or higher
EP1 (A16-1) or EPA (E8-28) - Body Ground	10 k $\Omega$ or higher
VCP1 (A16-4) or VCPA (E8-26) - Body Ground	10 k $\Omega$ or higher
VPA2 (A16-2) or VPA2 (E8-23) - Body Ground	10 k $\Omega$ or higher
EP2 (A16-3) or EPA2 (E8-29) - Body Ground	10 k $\Omega$ or higher
VCP2 (A16-6) or VCP2 (E8-27) - Body Ground	10 k $\Omega$ or higher

- Reconnect the accelerator pedal position sensor connector.
- Reconnect the ECM connector.

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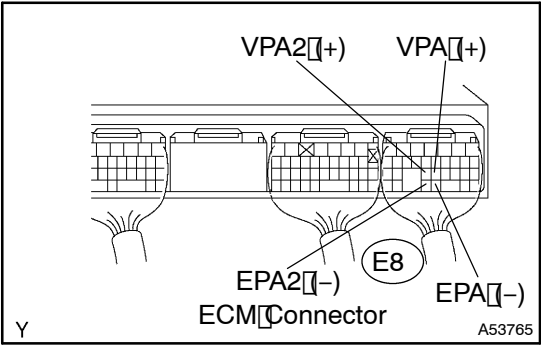
**REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

**REPLACE ACCELERATOR PEDAL ROD ASSY (See page 10-29)**

When not using intelligent tester:

1 INSPECT ECM (VPA AND VPA2 VOLTAGE)



- (a) Turn the Ignition switch to ON.
- (b) Measure the voltage between the specified terminals of the E8 ECM connector.

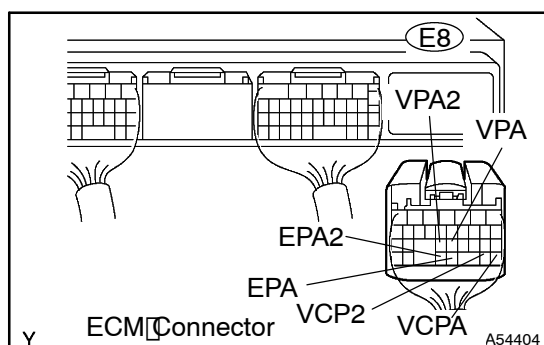
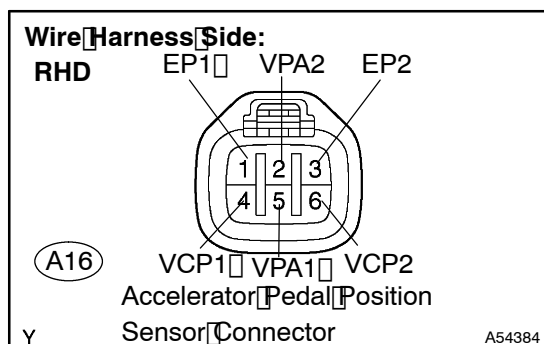
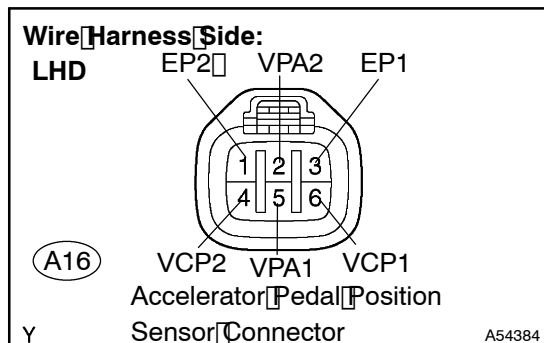
Standard:

Accelerator Pedal	Tester Connection	Specified Condition
Released	VPA(E8-22) -EPA(E8-28)	0.5 to 1.1 V
Depressed	VPA(E8-22) -EPA(E8-28)	2.5 to 4.6 V
Released	VPA2(E8-23) -EPA2(E8-29)	1.5 to 2.9 V
Depressed	VPA2(E8-23) -EPA2(E8-29)	3.5 to 5.5 V

OK REPLACE ECM (See page 10-30)

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## 2 CHECK HARNESS AND CONNECTOR (ACCELERATOR PEDAL POSITION SENSOR - ECM)



- Disconnect the A16 accelerator pedal position sensor connector.
- Disconnect the E8 ECM connector.
- Check the resistance.

### Standard (LHD) (Check for open):

Tester Connection	Specified Condition
VPA1 (A16-5) - VPA (E8-22)	Below 1 $\Omega$
EP1 (A16-3) - EPA (E8-28)	Below 1 $\Omega$
VCP1 (A16-6) - VCPA (E8-26)	Below 1 $\Omega$
VPA2 (A16-2) - VPA2 (E8-23)	Below 1 $\Omega$
EP2 (A16-1) - EPA2 (E8-29)	Below 1 $\Omega$
VCP2 (A16-4) - VCP2 (E8-27)	Below 1 $\Omega$

### Standard (LHD) (Check for short):

Tester Connection	Specified Condition
VPA1 (A16-5) or VPA (E8-22) - Body Ground	10 k $\Omega$ or higher
EP1 (A16-3) or EPA (E8-28) - Body Ground	10 k $\Omega$ or higher
VCP1 (A16-6) or VCPA (E8-26) - Body Ground	10 k $\Omega$ or higher
VPA2 (A16-2) or VPA2 (E8-23) - Body Ground	10 k $\Omega$ or higher
EP2 (A16-1) or EPA2 (E8-29) - Body Ground	10 k $\Omega$ or higher
VCP2 (A16-4) or VCP2 (E8-27) - Body Ground	10 k $\Omega$ or higher

### Standard (RHD) (Check for open):

Tester Connection	Specified Condition
VPA1 (A16-5) - VPA (E8-22)	Below 1 $\Omega$
EP1 (A16-1) - EPA (E8-28)	Below 1 $\Omega$
VCP1 (A16-4) - VCPA (E8-26)	Below 1 $\Omega$
VPA2 (A16-2) - VPA2 (E8-23)	Below 1 $\Omega$
EP2 (A16-3) - EPA2 (E8-29)	Below 1 $\Omega$
VCP2 (A16-6) - VCP2 (E8-27)	Below 1 $\Omega$

### Standard (RHD) (Check for short):

Tester Connection	Specified Condition
VPA1 (A16-5) or VPA (E8-22) - Body Ground	10 k $\Omega$ or higher
EP1 (A16-1) or EPA (E8-28) - Body Ground	10 k $\Omega$ or higher
VCP1 (A16-4) or VCPA (E8-26) - Body Ground	10 k $\Omega$ or higher
VPA2 (A16-2) or VPA2 (E8-23) - Body Ground	10 k $\Omega$ or higher
EP2 (A16-3) or EPA2 (E8-29) - Body Ground	10 k $\Omega$ or higher
VCP2 (A16-6) or VCP2 (E8-27) - Body Ground	10 k $\Omega$ or higher

- Reconnect the accelerator pedal position sensor connector.
- Reconnect the ECM connector.

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**REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

**REPLACE ACCELERATOR PEDAL ROD ASSY (See page 10-29)**