DTC	P2121/19	THROTTLE/PEDAL POSITION SENSOR/SWITCH "D" CIRCUIT RANGE/PERFORMANCE

CIRCUIT DESCRIPTION

HINT:
This is repair procedure of the "accelerator pedal position sensor".
Refer to DTC P2120/19 on page 05–171.

DTC No.	DTC Detection Condition	Trouble Area
P2121/19	Conditions (a) and (b) continue for 0.5 seconds: (a) Difference between VPA1 and VPA2 exceeds the threshold (b) IDL is OFF	• Accelerator pedal position sensor circuit • Accelerator pedal position sensor • ECM

WIRING DIAGRAM

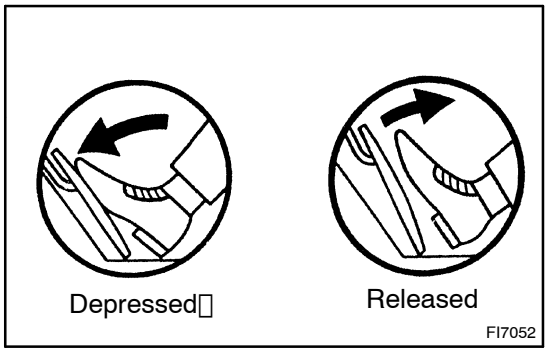
Refer to DTC P2120/19 on page 05–171.

INSPECTION PROCEDURE

HINT:
Read freeze frame data using the hand–held tester, as 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 ratio was lean or rich, etc. at the time of the malfunction.

When using hand–held tester:

1 READ VALUE OF HAND–HELD TESTER (ACCEL POS #1 AND ACCEL POS #2)



(a) Turn the ignition switch ON.
(b) Select the item "DIAGNOSIS / OBD/MOBD / DATA LIST / ETCS / ACCEL POS #1 and ACCEL POS #2" and read its value displayed on the hand–held tester.

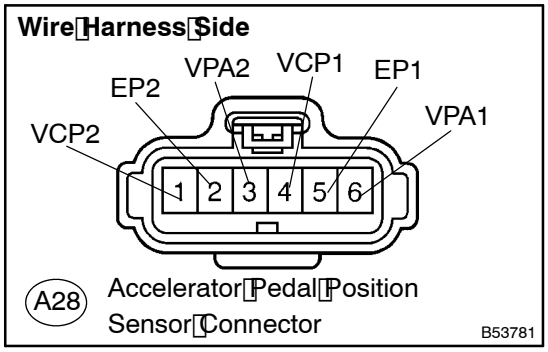
Standard:

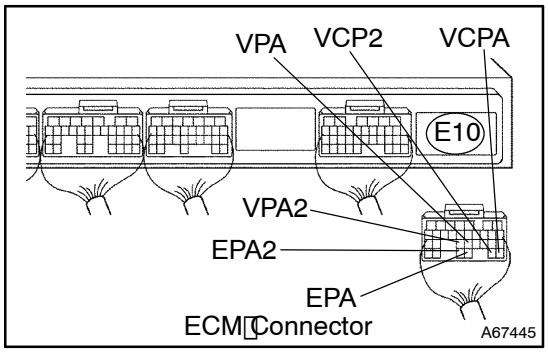
Accelerator pedal	ACCEL POS #1	ACCEL POS #2
Released	0.5 to 1.1 V	1.2 to 2.0 V
Depressed	2.6 to 4.5 V	3.4 to 5.3 V

OK → **CHECK AND REPLACE ECM (See page 01–35)**

NG

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





(a) Disconnect the accelerator pedal position sensor connector.

(b) Disconnect the E10 ECM connector.

(c) Check for continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
VPA1 (A28–6) – VPA (E10–22)	Continuity
EP1 (A28–5) – EPA (E10–28)	
VCP1 (A28–4) – VCPA (E10–26)	
VPA2 (A28–3) – VPA2 (E10–23)	
EP2 (A28–2) – EPA2 (E10–29)	
VCP2 (A28–1) – VCP2 (E10–27)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
VPA1 (A28–6) or VPA (E10–22) – Body ground	No continuity
EP1 (A28–5) or EPA (E10–28) – Body ground	
VCP1 (A28–4) or VCPA (E10–26) – Body ground	
VPA2 (A28–3) or VPA2 (E10–23) – Body ground	
EP2 (A28–2) or EPA2 (E10–29) – Body ground	
VCP2 (A28–1) or VCP2 (E10–27) – Body ground	

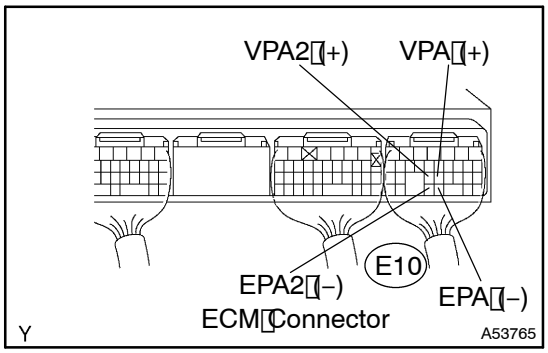
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE ACCELERATOR PEDAL ROD ASSY (See page 10–12)

When not using hand-held tester:

1	INSPECT ECM (VPA AND VPA2 VOLTAGE)



(a) Turn the ignition switch ON.
(b) Measure the voltage between the terminals of the E10 ECM connector.

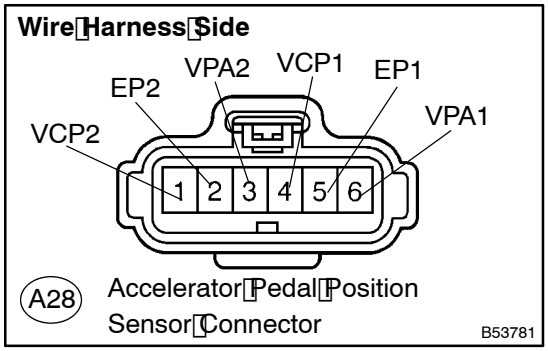
Standard:

Accelerator pedal position	Symbols (Terminal No.)	Symbols (Terminal No.)
	VPA (E10–22) – EPA (E10–28)	VPA2 (E10–23) – EPA2 (E10–29)
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

OK	CHECK AND REPLACE ECM (See page 01–35)

NG

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



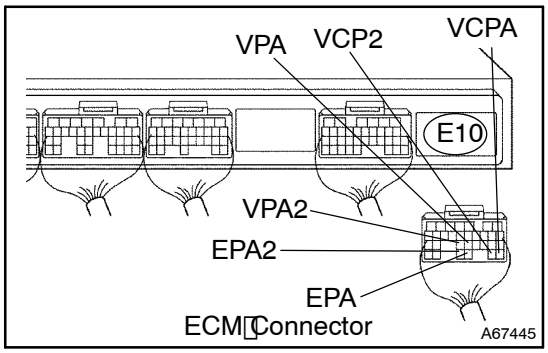
(a) Disconnect the accelerator pedal position sensor connector.
(b) Disconnect the E10 ECM connector.
(c) Check for continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
VPA1 (A28–6) – VPA (E10–22)	Continuity
EP1 (A28–5) – EPA (E10–28)	
VCP1 (A28–4) – VCPA (E10–26)	
VPA2 (A28–3) – VPA2 (E10–23)	
EP2 (A28–2) – EPA2 (E10–29)	
VCP2 (A28–1) – VCP2 (E10–27)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
VPA1 (A28–6) or VPA (E10–22) – Body ground	No continuity
EP1 (A28–5) or EPA (E10–28) – Body ground	
VCP1 (A28–4) or VCPA (E10–26) – Body ground	
VPA2 (A28–3) or VPA2 (E10–23) – Body ground	
EP2 (A28–2) or EPA2 (E10–29) – Body ground	
VCP2 (A28–1) or VCP2 (E10–27) – Body ground	



NG	REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE ACCELERATOR PEDAL ROD ASSY (See page 10–12)