

<b>DTC</b>	<b>P1121/91*</b>	<b>Accelerator Pedal Position Sensor Circuit Malfunction</b>
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\*: ETCS trouble code No.

**CIRCUIT DESCRIPTION**

An accelerator pedal position sensor is mounted on the throttle body and it has 2 sensors, main and sub, to detect the opening angle of the accelerator pedal.

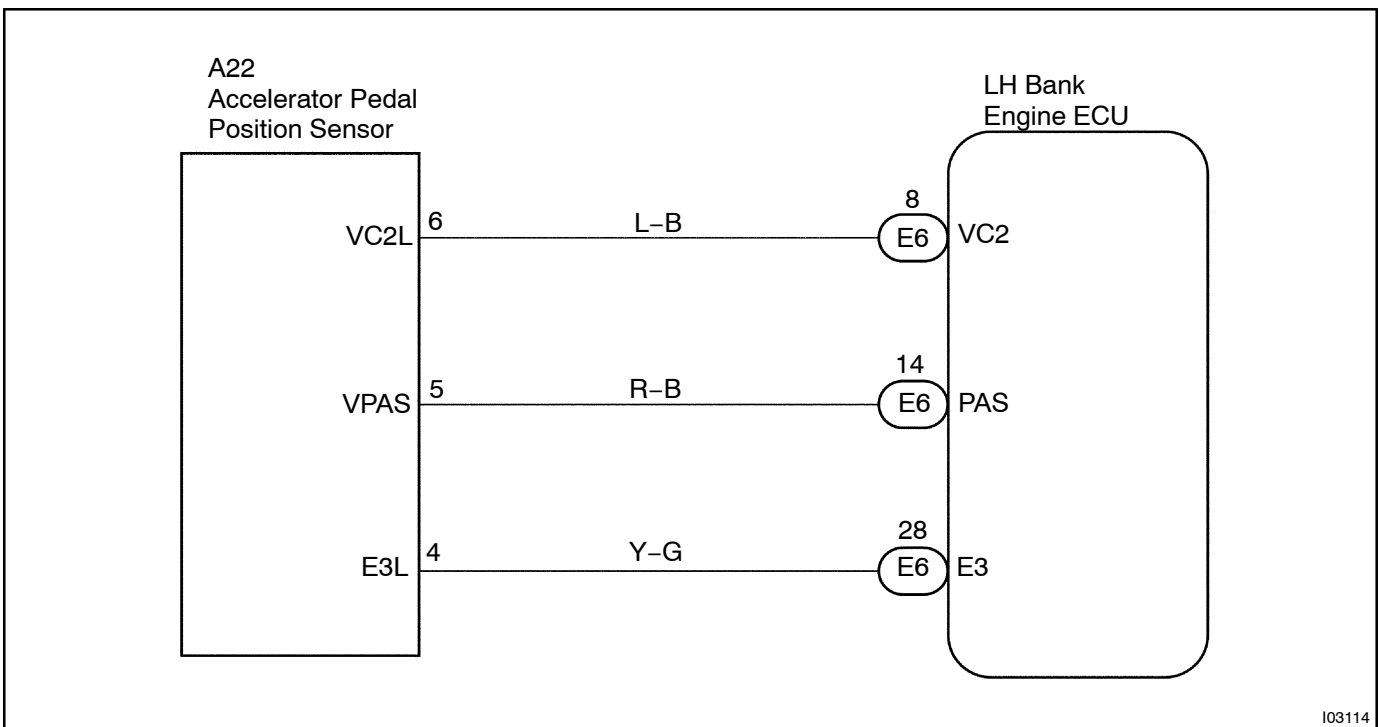
The voltage of the accelerator pedal position sensor is applied to terminals VPAS and VPAM of the RH engine ECU; the voltage changes between 0 V and 5 V in proportion to the opening angle of the accelerator pedal.

The engine ECU judges the opening angle of the accelerator pedal from the signals input from terminals VPAS and VPAM, and the engine ECU controls the throttle motor based on these signals.

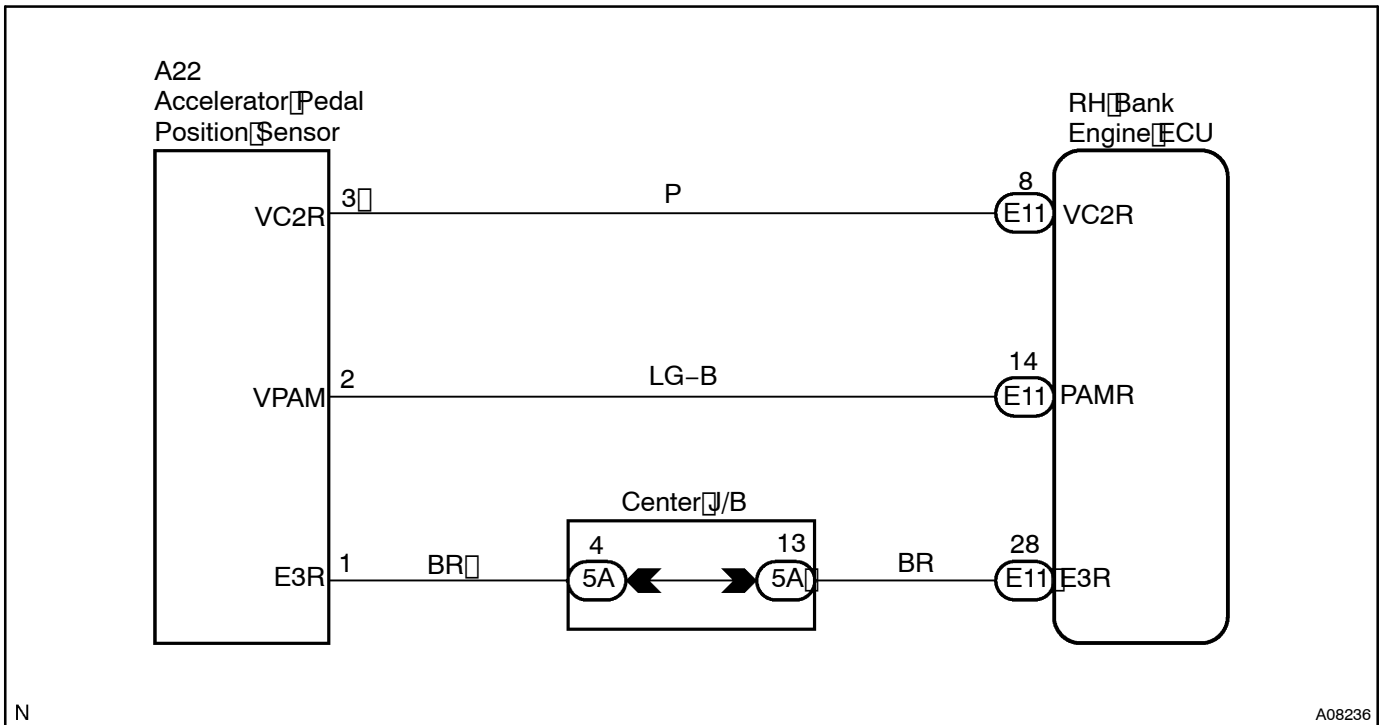
The engine ECU detects the fully closed position of the accelerator pedal with the accelerator pedal position switch and also detects any accelerator pedal position sensor malfunction.

DTC No.	DTC Detecting Condition	Trouble Area
P1121/91*	Condition (a) and (b) continues for 0.5 sec.: (a) +B1 and +B2, +B1R and +B2R voltage is 9.5 V to 17.2 V. (b) Condition (1), (2), (3) or (4) (1) 4.5 V < PAMR < 0.6 V or 4.5 V < PAS < 0.6 V (2) Accelerator pedal switch ON and PAMR > 1.78 V or PAS > 1.9 V (3) Accelerator pedal switch OFF and PAMR < 1.22 V or PAS < 0.6 V (4) When the potential difference PAMR and PAS is 0.4 V or more.	<ul style="list-style-type: none"> <li>• Accelerator position sensor</li> <li>• Wire harness and connector</li> <li>• Engine ECU</li> </ul>

**WIRING DIAGRAM**



I03114



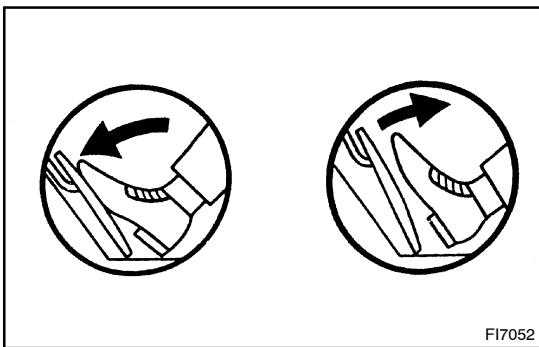
## INSPECTION PROCEDURE

### HINT:

LH and RH bank engine ECU detect this DTC code respectively. The inspection procedures are same for both LH and RH bank engine ECU and described in this manual. Even though terminal name and part name on the side of RH bank are described in parenthesis, perform the inspection for only ECU that has detected DTC.

### When using hand-held tester

- 1 Connect hand-held tester, read voltage for accelerator pedal position sensor data.



### PREPARATION:

- (a) Connect the hand-held tester to DLC3.
- (b) Turn the ignition switch to ON and switch the hand-held tester main switch to ON.

### CHECK:

Read the voltage for the accelerator pedal position sensor data.

### OK:

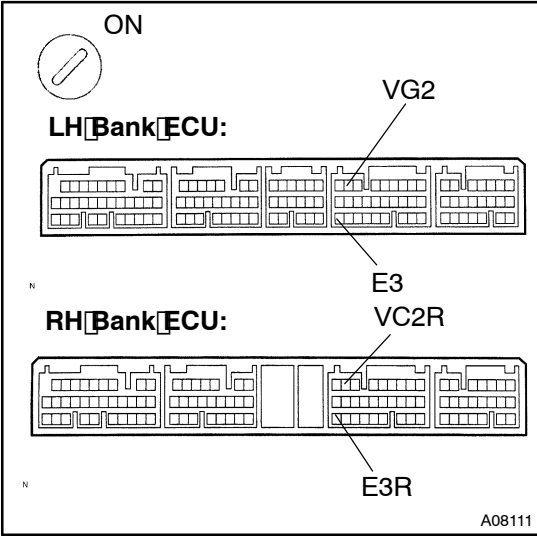
Accelerator pedal	PAS (PAMR)
Released	0.3 - 0.9 V
Depressed	3.2 - 4.8 V

OK

Check and replace engine ECU (See page IN-20).

NG

**2 Check voltage between terminals VC2 (VC2R) and E3 (E3R) of engine ECU connector.**



**PREPARATION:**

- (a) Remove the engine ECU with connectors still connected.
- (b) Turn the ignition switch to ON.

**CHECK:**

Measure voltage between terminals VC2 (VC2R) and E3 (E3R) of the engine ECU connector.

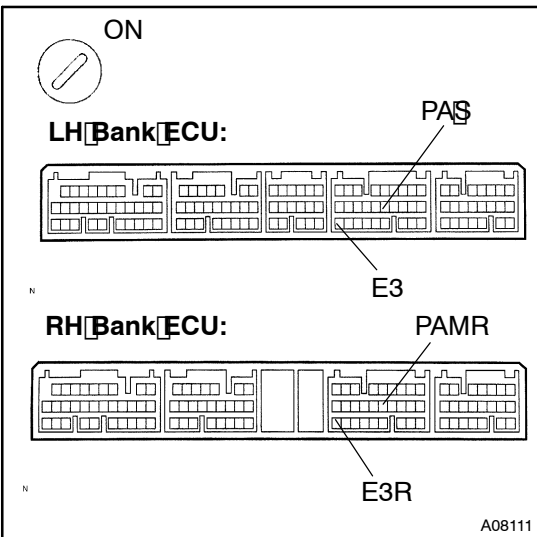
**OK:**

**Voltage: 4.5 - 5.5 V**

**NG** Check and replace engine ECU (See page IN-20).

**OK**

**3 Check voltage between terminals PAS (PAMR), E3 (E3R) and E2 of engine ECU connector.**



**PREPARATION:**

- (a) Remove the engine ECU with connectors still connected.
- (b) Turn the ignition switch to ON.

**CHECK:**

Measure voltage between terminals PAS (PAMR) and E3 (E3R) of the engine ECU connector.

**OK:**

Accelerator pedal	PAS (PAMR)
Released	0.3 - 0.9 V
Depressed	3.2 - 4.8 V

**OK** Check and replace engine ECU (See page IN-20).

**NG**

4 Check accelerator pedal position sensor (See Pub. No. RM677E, page FI-30).

NG

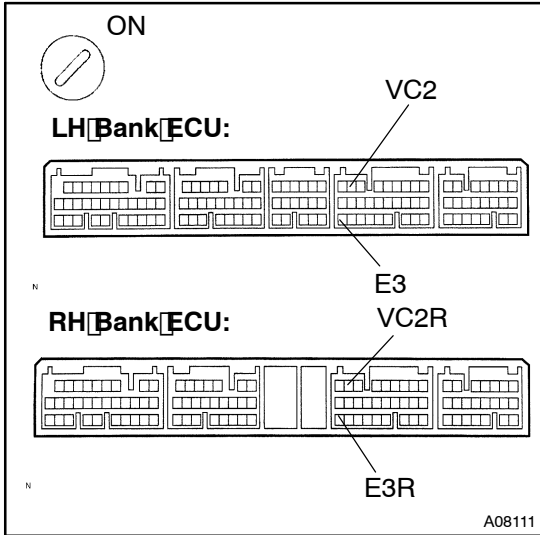
Replace throttle body assembly.

OK

Check for open and short in harness and connector between engine ECU and accelerator pedal position sensor (See page IN-20).

## When not using hand-held tester

**1 Check voltage between terminals VC2 (VC2R) and E3 (E3R) of engine ECU connector.**



**PREPARATION:**

- (a) Remove the engine ECU with connectors still connected.
- (b) Turn the ignition switch to ON.

**CHECK:**

Measure voltage between terminals VC2 (VC2R) and E3 (E3R) of the engine ECU connector.

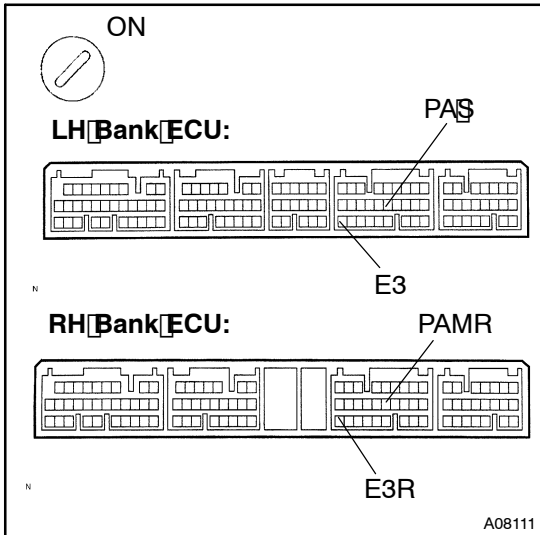
**OK:**

**Voltage: 4.5 - 5.5 V**

**NG** Check and replace engine ECU (See page N-20).

**OK**

**2 Check voltage between terminals PAS (PAMR) and E3 (E3R) of engine ECU connector.**



**PREPARATION:**

- (a) Remove the engine ECU with connectors still connected.
- (b) Turn the ignition switch to ON.

**CHECK:**

Measure voltage between terminals VC2 (VCR2) and E3 (E3R) of the engine ECU connector.

**OK:**

Accelerator pedal	PAS (PAMR)
Released	0.3 - 0.9 V
Depressed	3.2 - 4.8 V

**OK** Check and replace engine ECU (See page N-20).

**NG**

3 Check accelerator pedal position sensor (See Pub. No. RM677E, page FI-30).

NG

Replace throttle body assembly.

OK

Check for open and short in harness and connector between engine ECU and accelerator pedal position sensor (See page IN-20).