DTC	13	ENGINE SPEED SENSOR CIRCUIT MALFUNCTION2 (NE CIRCUIT)

CIRCUIT DESCRIPTION

Crankshaft position sensor (NE signal) consists of a magnet, iron core and pickup coil. The NE signal plate has 34 teeth and is installed the crank angle sensor plate. The NE signal sensor generates 34 signals of every engine revolution. The ECM detects the standard crankshaft angle based on the G signal, and the actual crankshaft angle and the engine speed by the NE signal.

DTC No.	DTC Detection Condition	Trouble Area
13	No crankshaft position sensor No.2 signal to ECM for 0.5 sec. or more at 650 rpm or more	• Open or short in crankshaft position sensor circuit • Crankshaft position sensor • Crank angle sensor plate • ECM
	No crankshaft position sensor No.2 signal to ECM for 2.0 sec. or more during cranking	

WIRING DIAGRAM

Refer to DTC12 on page 05–446.

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, etc. at the time of the malfunction.

1	INSPECT CRANKSHAFT POSITION SENSOR

(a) Check the crankshaft position sensor for resistance (See page 10–26).

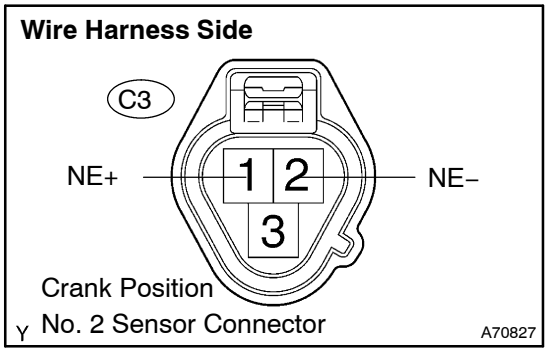
(b) Reference

(1) Refer to DTC12 on page 05–446

NG → REPLACE CRANKSHAFT POSITION SENSOR

OK

2 CHECK HARNESS AND CONNECTOR(ECM – CRANKSHAFT POSITION SENSOR)



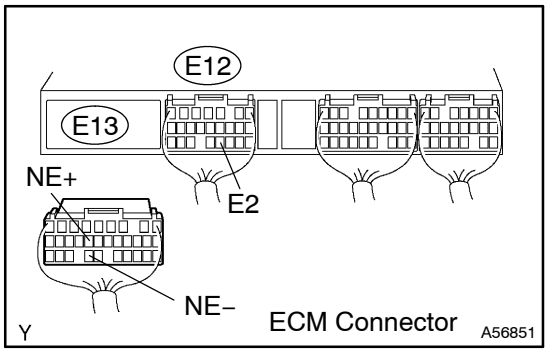
(a) Disconnect the crankshaft position sensor connector.
(b) Disconnect the ECM E13 connector.
(c) Check the continuity between the wire harness side connector.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
NE+ (C3 – 1) ⇔ NE+ (E13 – 17)	Continuity
NE– (C3 – 2) ⇔ NE– (E13 – 28)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
NE+ (E13 – 17) ⇔ NE– (E13 – 28)	No continuity
NE+ (E13 – 17) ⇔ E2 (E12 – 20)	
NE– (E13 – 28) ⇔ E2 (E12 – 20)	



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3 CHECK SENSOR INSTALLATION

(a) Check the crank position No. 2 sensor installation.

NG → TIGHTEN SENSOR

OK

4 CHECK CRANKSHAFT POSITION SENSOR PLATE NO.1(SIGNAL PLATE TEETH)

(a) Remove the timing gear cover (See page 14–214).
(b) Check the teeth of the crankshaft position sensor plate No. 1.

NG → REPLACE CRANKSHAFT POSITION SENSOR PLATE NO.1

OK

CHECK AND REPLACE ECM