DTC	P0340/12	CAMSHAFT POSITION SENSOR CIRCUIT MALFUNCTION

CIRCUIT DESCRIPTION

The camshaft position sensor (G signal) consists of a magnet, iron core and pickup coil, and is mounted onto the intake side of the cylinder head. The timing rotor is integrated with the left bank exhaust camshaft. Each time when the camshaft rotates, the air gap between the camshaft position sensor and the protrusion integrated onto the camshaft is varied. This causes the magnetic flux passing through the pickup coil to increase and decrease, generating an electromotive force. Since the voltage is generated when the camshaft protrusion approaches the pickup coil and when it departs, and alternating electrical current is produced. The NE signal plate has 34 teeth and is mounted on the crankshaft. The NE signal sensor generates 34 signals at every engine revolution. The ECM detects the crankshaft angle based on the G signal and the actual crankshaft angel and the engine speed by the NE signal.

DTC No.	DTC Detecting Condition	Trouble Area
P0340/12	No camshaft position sensor signal to ECM during cranking (2 trip detection logic)	• Open or short in camshaft position sensor circuit • Camshaft position sensor • Camshaft timing gear • ECM
	No camshaft position sensor signal to ECM with engine speed 600 rpm or more	

WIRING DIAGRAM

Refer to DTC P0335 on page 05–362.

INSPECTION PROCEDURE

HINT:

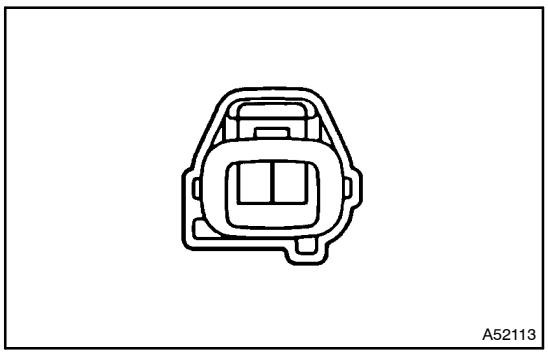
Read freeze frame data using hand–held tester. Because freeze frame records the engine conditions when the malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air–fuel ratio was lean or rich, etc. at the time of the malfunction.

1	INSPECT CAMSHAFT POSITION SENSOR (See page 18–6)

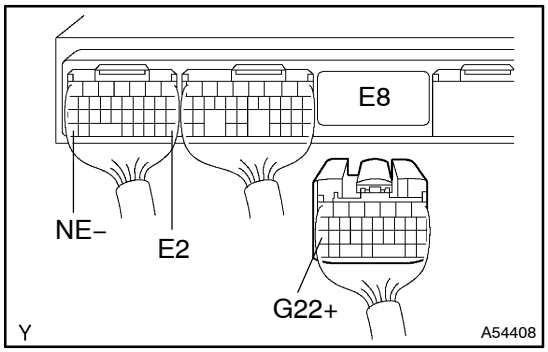
NG → REPLACE CAMSHAFT POSITION SENSOR

OK

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



(a) Disconnect the ECM E8 connector.
(b) Disconnect the camshaft position sensor connector.
(c) Check for open between the terminals G22+ of the ECM connector and 1 of the camshaft position sensor connector.
Resistance: 1 Ω or less
(d) Check for short between the terminals G22+ of the ECM connector and E2 of the ECM connector.
Resistance: 1 MΩ or more
(e) Check for open between the terminals NE– of the ECM connector and 2 of the camshaft position sensor connector.
Resistance: 1 Ω or less



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

OK

3	CHECK SENSOR INSTALLATION(CAMSHAFT POSITION SENSOR)

NG → **TIGHTEN SENSOR. REPLACE CAMSHAFT TIMING GEAR**

OK

4	CHECK CAMSHAFT TIMING PULLEY

NG → **REPLACE CAMSHAFT TIMING PULLEY**

OK

CHECK AND REPLACE ECM