

DTC	P0340	CAMSHAFT POSITION SENSOR CIRCUIT MALFUNCTION
------------	--------------	---

CIRCUIT DESCRIPTION

Camshaft position sensor (G signal) consists of a magnet, iron core and pickup coil. The G signal rotor has 3 teeth on the outside and is mounted on the intake camshaft. When the camshafts rotate, the protrusion on the signal plate and the air gap on the pickup coil changes, causing fluctuations in the magnetic field and generating an electromotive force in the pickup coil. The NE signal plate (crank angle sensor plate) has 34 teeth and is installed in the crankshaft. The NE signal sensor generates 34 signals at every engine revolution. The ECM detects the standard crankshaft angle based on the G signals, the actual crankshaft angle and the engine speed by the NE signals.

DTC No.	DTC Detecting Condition	Trouble Area
P0340	No camshaft position sensor signal to ECM during cranking (2 trip detection logic)	<ul style="list-style-type: none"> • Open or short in camshaft position sensor circuit • Camshaft position sensor
	No camshaft position sensor signal to ECM with engine speed 600 rpm or more	<ul style="list-style-type: none"> • Intake camshaft • ECM

WIRING DIAGRAM

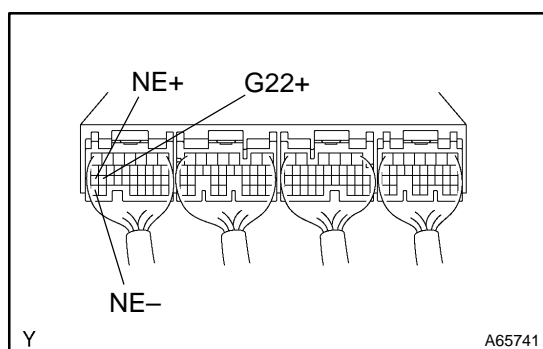
Refer to DTC P0335 on page 05-76.

INSPECTION PROCEDURE

HINT:

Read freed frame data using hand-held tester or OBD II scan tool. 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 warmed up or not, the air-fuel ratio lean or rich, etc. at the time of the malfunction.

1 INSPECT CRANK POSITION SENSOR NO.1(CHECK RESISTANCE)



(a) Check the camshaft position sensor for resistance.

(See page 18-2)

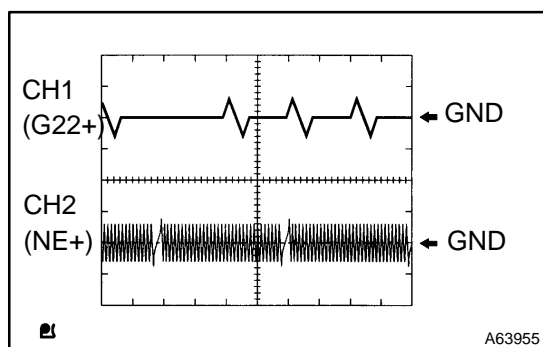
Resistance:

1630 – 2740 Ω (Cold)

2065 – 3225 Ω (Hot)

HINT:

"Cold" and "Hot" above express the temperature of the part itself. "Cold" is from -10°C (14°F) to 50°C (122°F) and "Hot" is from 50°C (122°F) to 100°C (212°F).



(b) Reference:

Inspection using the oscilloscope.

- (1) During cranking or idling, check the waveform between terminals G22+ and NE-, and NE+ and NE- of the ECM connector.

HINT:

The correct waveforms are as shown in the left.

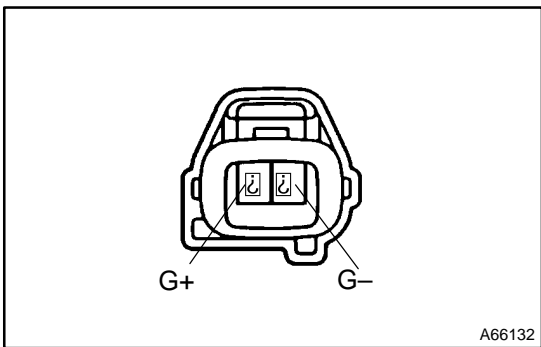
NG

REPLACE CRANK POSITION SENSOR NO.1

OK

2003 COROLLA MATRIX (RM940U)

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

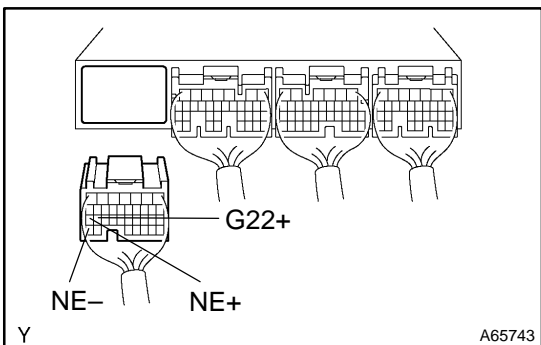


- (a) Disconnect the cam position sensor connector.
- (b) Disconnect the ECM E3 connector.
- (c) Check continuity between the terminals G+ of the camshaft position sensor connector and G22+ of the the ECM connector.

Resistance: 1 Ω or less

- (d) Check for short between the terminals G+ of the camshaft position sensor connector and E2 of the the ECM connector.

Resistance: 1 MΩ or more



- (e) Check continuity between the terminals G- of the camshaft position sensor connector and the NE- of the the ECM connector.

Resistance: 1 Ω or less

- (f) Check for short between the terminals NE- and E2 of the the ECM connector.

Resistance: 1 MΩ or more

NG REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

3 INSPECT SENSOR INSTALLATION

- (a) Inspect the camshaft position sensor installation.

NG TIGHTEN SENSOR

OK

4 INSPECT CAMSHAFT

- (a) Remove the camshafts.
- (b) Check the camshaft lobes.

NG REPAIR OR REPLACE CAMSHAFT

OK

CHECK AND REPLACE ECM