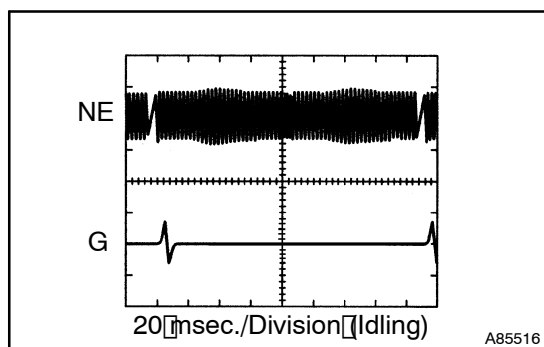


DTC	P0340	CAMSHAFT POSITION SENSOR "A" CIRCUIT (BANK 1 OR SINGLE SENSOR)
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CIRCUIT DESCRIPTION

The camshaft position (CMP) sensor consists of a magnet and an iron core which is wrapped with copper wire, and is installed on the cylinder head. The sensor plate has one tooth on its circumference, and is installed on the camshaft timing pulley. When the camshaft rotates, the tooth on the camshaft timing pulley passes through the CMP sensor. This activates the internal magnet in the sensor, generating a voltage in the copper wire. The generated voltage in the sensor acts as a signal. The ECM locates each cylinder position based on the combination of the signal and another signal from the crankshaft position sensor.

DTC No.	DTC Detection 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 • Camshaft timing pulley • ECM
	No camshaft position sensor signal to ECM at engine speed of 650 rpm or more (1-trip detection logic)	



Reference: Inspection using the oscilloscope.

During idling, the correct waveform is as shown in the diagram on the left.

HINT:

- The correct waveform is as shown on the left.
- G stands for the camshaft position sensor signal, and NE stands for the crankshaft position sensor signal.

Item	Contents
Terminal	G+ – G–
Equipment Setting	5V/Division, 20ms/Division
Condition	During cranking or idling

WIRING DIAGRAM

Refer to DTC P0335 on [page 05-512](#).

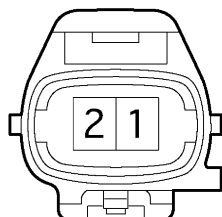
INSPECTION PROCEDURE

HINT:

Read freeze frame data using the intelligent tester II. Freeze frame data record the engine condition when malfunctions are detected. When troubleshooting, freeze frame data can help determine if the vehicle was moving or stationary, if the engine was warmed up or not, and other data from the time the malfunction occurred.

1 INSPECT CAMSHAFT POSITION SENSOR

Component Side:



Camshaft Position Sensor

A64984

- Disconnect the C1 camshaft position sensor connector.
- Measure the resistance between the terminals of the camshaft position sensor.

Standard:

Tester Connection	Specified Condition
1 - 2	835 to 1,400 Ω at cold
	1,060 to 1,645 Ω at hot

NOTICE:

Terms "cold" and "hot" refer to the temperature of the coils. "Cold" means approximately -10° to 50°C (14° to 122°F). "Hot" means approximately 50° to 100°C (122° to 212°F).

- Reconnect the camshaft position sensor.

NG

REPLACE CAMSHAFT POSITION SENSOR

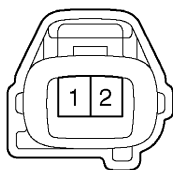
OK

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

Wire Harness Side:

Camshaft Position Sensor Connector

C1



Front View

A54385

- Disconnect the C1 camshaft position sensor connector.
- Disconnect the E11 ECM connector.
- Check the resistance.

Standard (Check for open):

Tester Connection	Specified Condition
Camshaft position sensor (C1-1) - G+ (E11-16)	Below 1 Ω
Camshaft position sensor (C1-2) - G- (E11-27)	

Standard (Check for short):

Tester Connection	Specified Condition
Camshaft position sensor (C1-1) or G+ (E11-16) - Body ground	10 k Ω or higher
Camshaft position sensor (C1-2) or G- (E11-27) - Body ground	

- Reconnect the camshaft position sensor connector.
- Reconnect the ECM connector.

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3 CHECK SENSOR INSTALLATION(CAMSHAFT POSITION SENSOR)

NG

TIGHTEN SENSOR

OK

4

CHECK CAMSHAFT TIMING PULLEY (TOOTH OF SENSOR PLATE)

(a) Check the tooth of the sensor plate.

NG

REPLACE CAMSHAFT TIMING PULLEY

OK

REPLACE ECM (See page 10-30)