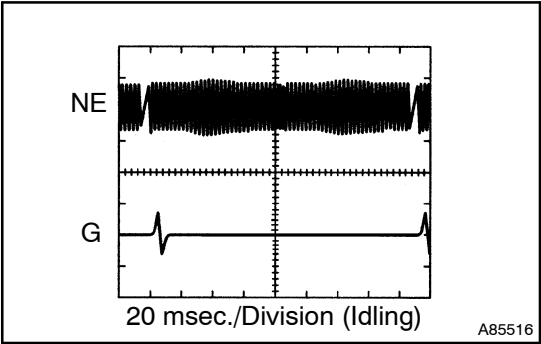


DTC	P0335	CRANKSHAFT POSITION SENSOR "A" CIRCUIT
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CIRCUIT DESCRIPTION

The crankshaft position sensor system consists of a crankshaft position sensor plate and a pickup coil. The sensor plate has 34 teeth and is installed on the crankshaft. The pickup coil is made of an iron core and magnet. The sensor plate rotates and as each tooth passes through the pickup coil, a pulse signal is created. The pickup coil generates 34 signals per engine revolution. Based on these signals, the ECM calculates the crankshaft position and engine RPM. Using these calculations, the common rail system is controlled.

DTC No.	DTC Detection Condition	Trouble Area
P0335	No crankshaft position sensor signal to ECM during cranking (2 trip detection logic)	<ul style="list-style-type: none"><li>• Open or short in crankshaft position sensor circuit</li><li>• Crankshaft position sensor</li><li>• Sensor plate (crankshaft timing pulley)</li><li>• ECM</li></ul>
	No crankshaft position sensor signal to ECM at engine speed of 650 rpm or more (2 trip detection logic)	

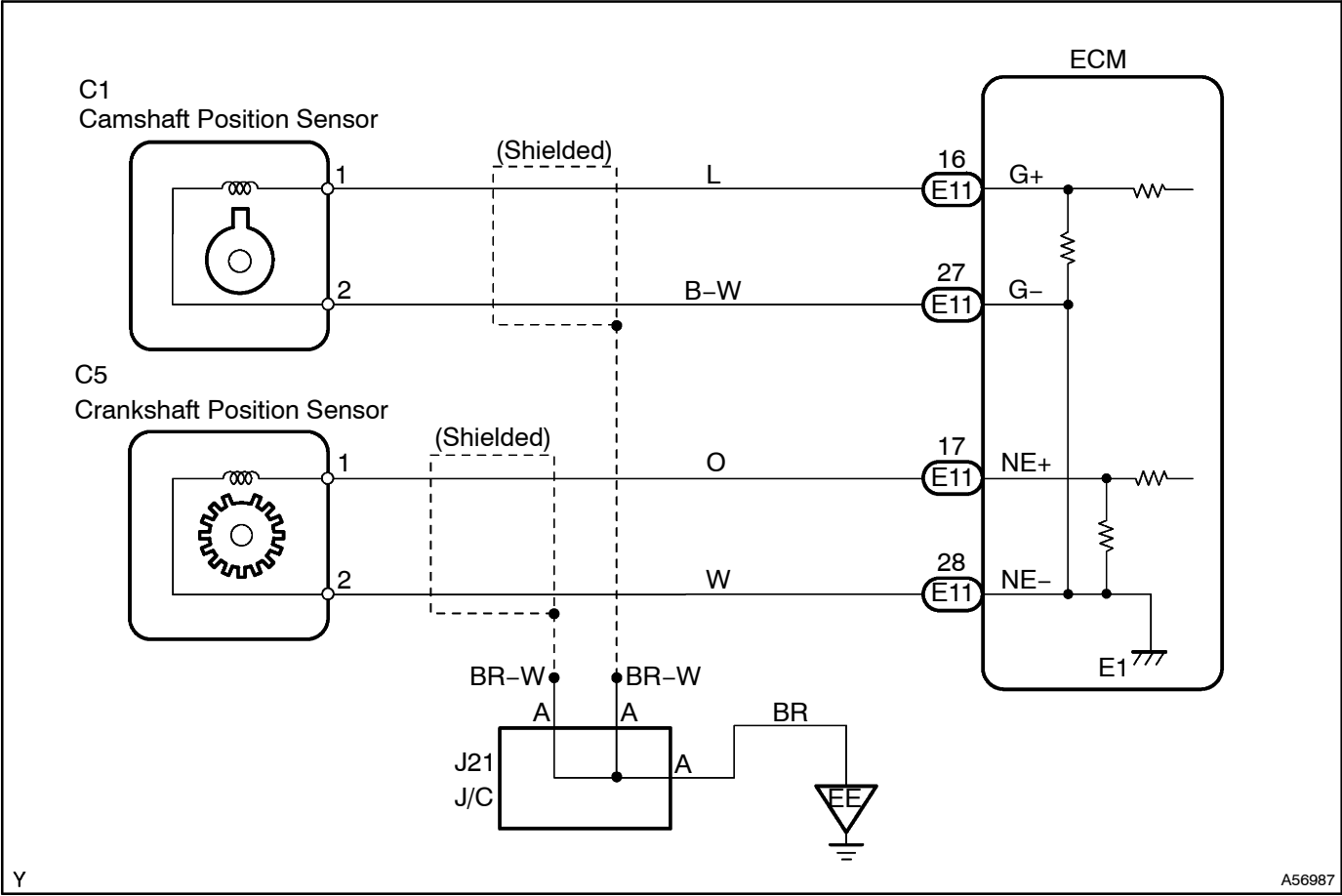


Reference: Inspection using the oscilloscope.  
During idling, the correct waveform is as shown in the diagram on the left.  
HINT:

- 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	NE+ – NE–
Equipment Setting	5V/Division, 20ms/Division
Condition	During cranking or idling

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

- If no trouble is found in the diagnostic troubleshooting procedure of DTC P0335, troubleshoot the engine mechanical system.
- 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 CRANKSHAFT POSITION SENSOR(RESISTANCE)

**Component Side:**

Crankshaft Position Sensor

A78431

- (a) Disconnect the C5 crankshaft position sensor connector.
- (b) Measure the resistance between the terminals of the crankshaft position sensor.

Standard:

Tester Connection	Specified Condition
1 - 2	1,630 to 2,740 Ω at cold
	2,065 to 3,225 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).

- (c) Reconnect the crankshaft position sensor connector.

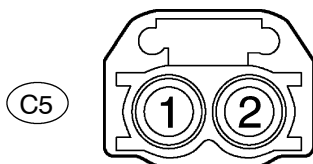
NG

**REPLACE CRANKSHAFT POSITION SENSOR**

OK

**2 CHECK HARNESS AND CONNECTOR(CRANKSHAFT POSITION SENSOR - ECM)****Wire Harness Side:**

Crankshaft Position Sensor Connector



Front View

A76790

- (a) Disconnect the C5 crankshaft position sensor connector.
- (b) Disconnect the E11 ECM connector.
- (c) Check the resistance.

**Standard (Check for open):**

Tester Connection	Specified Condition
Crankshaft position sensor (C5-1) - NE+ (E11-17)	Below 1 $\Omega$
Crankshaft position sensor (C5-2) - NE- (E11-28)	

**Standard (Check for short):**

Tester Connection	Specified Condition
Crankshaft position sensor (C5-1) or NE+ (E11-17) - Body ground	10 k $\Omega$ or higher
Crankshaft position sensor (C5-2) or NE- (E11-28) - Body ground	

- (d) Reconnect the crankshaft position sensor connector.
- (e) Reconnect the ECM connector.

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**REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

**3 CHECK SENSOR INSTALLATION(CRANKSHAFT POSITION SENSOR)**

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**TIGHTEN SENSOR**

OK

**4 CHECK CRANKSHAFT POSITION SENSOR PLATE(TEETH OF SENSOR PLATE(CRANKSHAFT TIMING PULLEY))**

- (a) Check the teeth of the sensor plate.

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**REPLACE CRANKSHAFT POSITION SENSOR PLATE (CRANKSHAFT TIMING PULLEY)**

OK

**REPLACE ECM (See page 10-30)**