DTC	P0335/12	CRANKSHAFT POSITION SENSOR CIRCUIT MALFANCTION

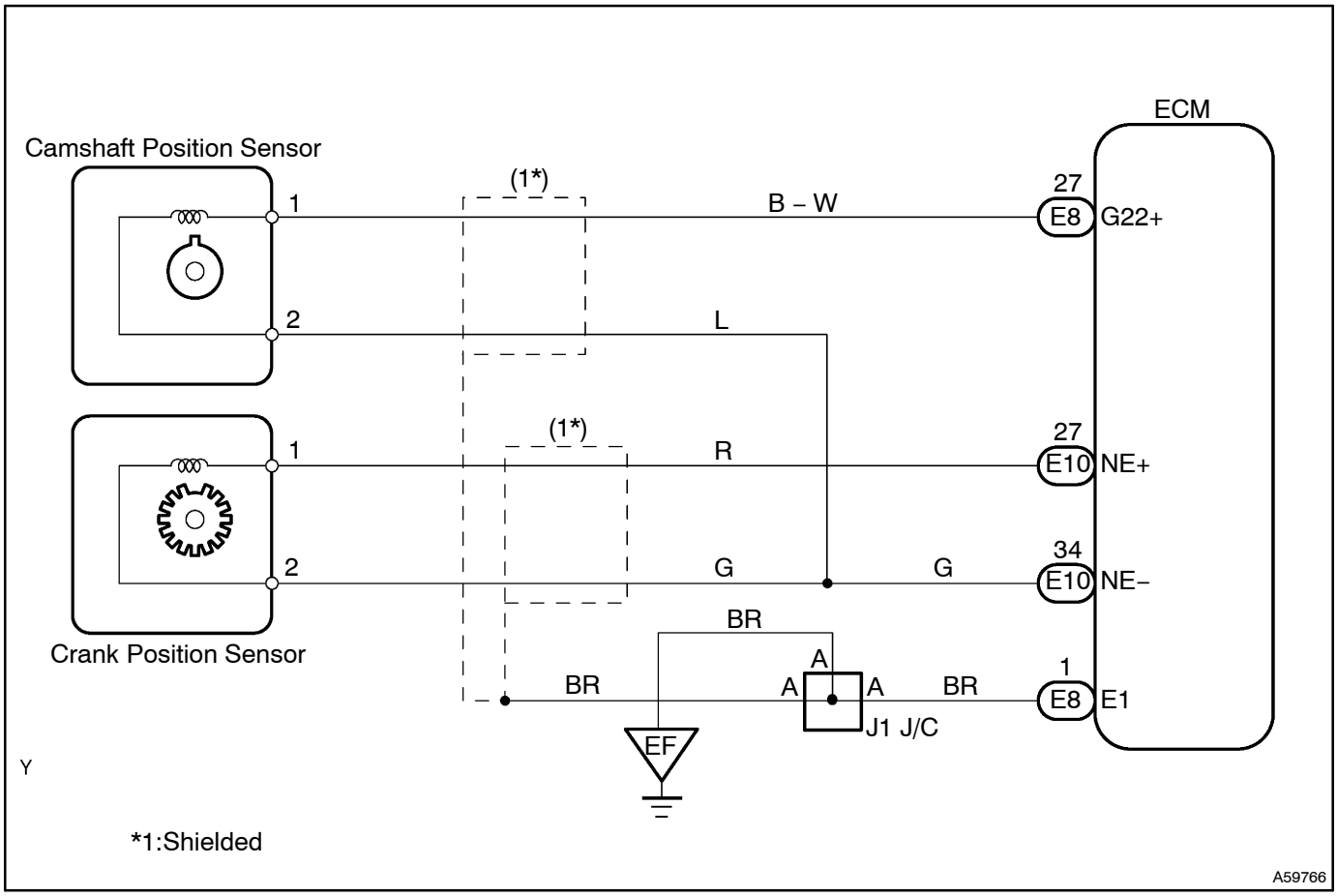
DTC	P0335/13	CRANKSHAFT POSITION SENSOR CIRCUIT MALFANCTION

CIRCUIT DESCRIPTION

The crank position sensor (NE signal) consists of a magnet, iron core and pickup coil.
The NE signal plate has 34 teeth and is installed the crankshaft timing pulley. The NE signal sensor generates 34 signals at every engine revolution. The engine ECM detects the crankshaft angle and the engine speed based on the NE signals, and the cylinder detection based on the combination of the G2 and NE signals.

DTC No.	DTC Detecting Condition	Trouble Area
P0335/12 P0335/13	No crank position sensor signal to ECM during cranking (2 trip detection logic)	• Open or short in crank position sensor circuit • Crank position sensor • Crankshaft timing pulley • ECM
	No crank position sensor signal to ECM with engine speed 600 rpm or more (2 trip detection logic)	

WIRING DIAGRAM

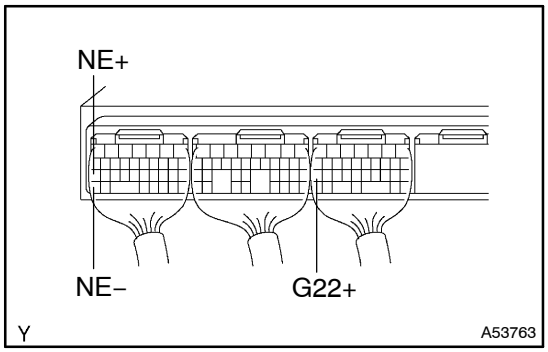


INSPECTION PROCEDURE

HINT:

- Perform troubleshooting of DTC P0335 first. If no trouble is found, troubleshoot the following mechanical systems.
- 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 CRANK POSITION SENSOR (See page 18–6)

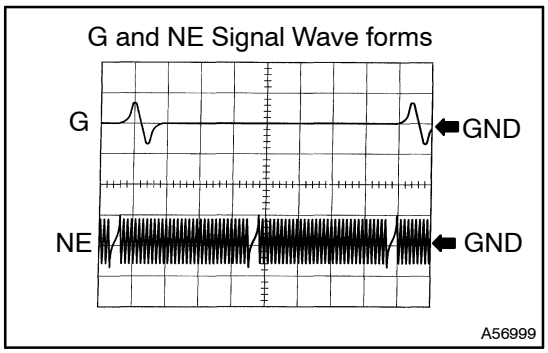


(a) Check the output waveform.

Item	Contents
Terminal	CH1: G22+⇔NE– CH2: NE+⇔NE–
Equipment Set	5V/DIV, 20ms/DIV
Condition	During Cranking or idling

HINT:

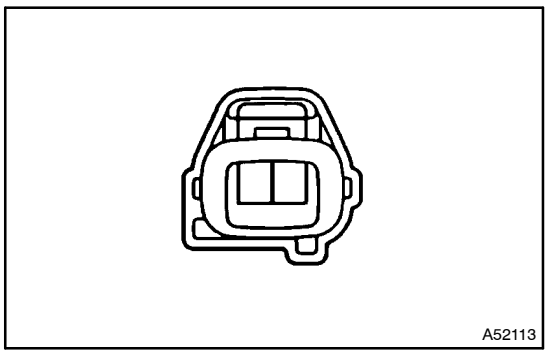
The correct waveforms are as shown.

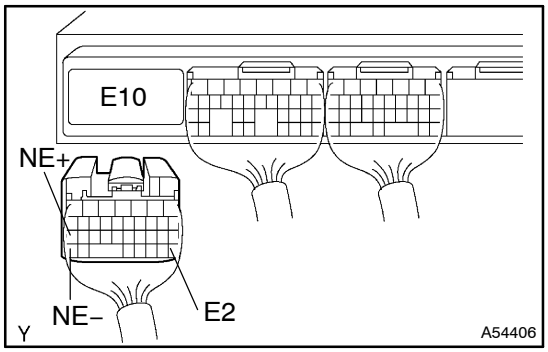


NG → REPLACE CRANK POSITION SENSOR

OK

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





(a) Disconnect the ECM E10 connector.
(b) Disconnect the crank position sensor connector.
(c) Check for open between the terminals NE+ of the ECM connector and 1 of the crank position sensor connector.
Resistance: 1 Ω or less
(d) Check for short between the terminals NE+ 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 crank position sensor connector.
Resistance: 1 Ω or less
(f) Check for short between the terminals NE– and E2 of the ECM connector.
Resistance: 1 MΩ or more

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

OK

3	CHECK SENSOR INSTLLATION(CRANK POSITION SENSOR)

NG → **TIGHTEN SENSOR**

OK

4	CHECK CRANKSHAFT TIMING PULLEY

NG → **REPLACE CRANKSHAFT TIMING PULLEY**

OK

CHECK AND REPLACE ECM