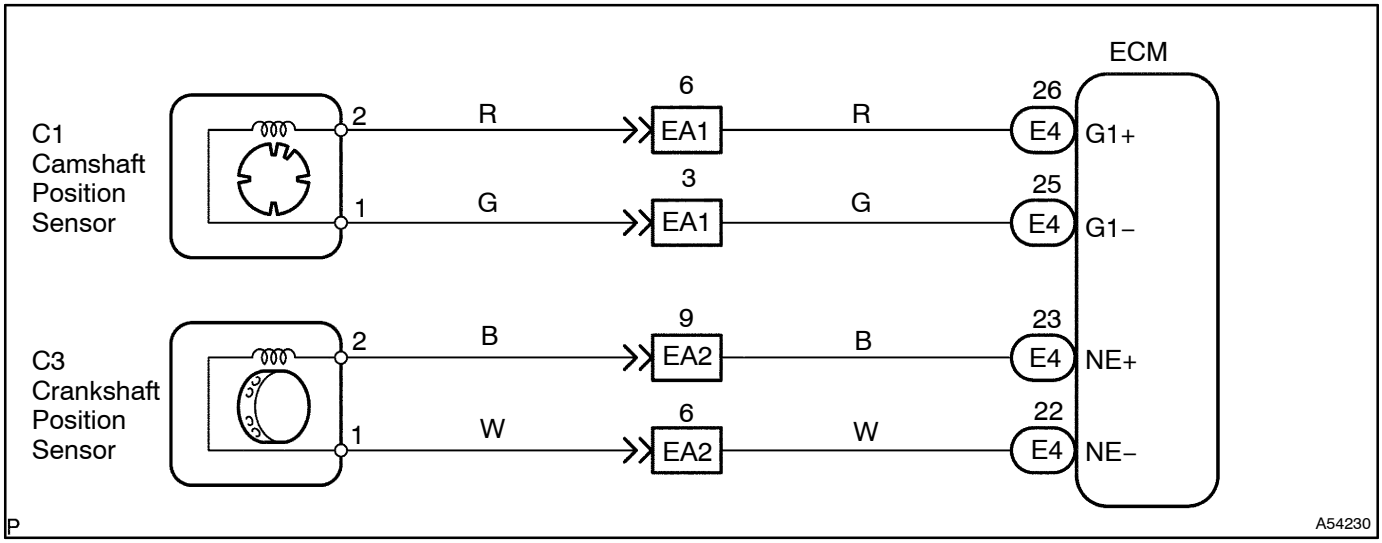
DTC	13	ENGINE SPEED SENSOR CIRCUIT MALFUNCTION2 (NE CIRCUIT)

CIRCUIT DESCRIPTION

This sensor consists of a magnet, pickup coil and iron core, and is installed in the flywheel housing.
As the engine rotates, the teeth on the outer circumference of the flywheel create magnetic field. And the magnetic field generates alternative voltage in the coil.
The flywheel has teeth in an interval of 7.5 degrees on the outer circumference all the way except the 2 parts. This means the flywheel has 45 teeth on its circumference, and therefore 90 pulses are output for every 2 revolutions of the engine (1 revolution of supply pump camshaft). Based on these pulses, this sensor detects the number of engine revolution and crankshaft angle for every 7.5 degrees.

DTC No.	DTC Detection Condition	Trouble Area
13	NE signal has not been input when G1 signal detects 525 revolutions	• Open or short in crankshaft position sensor circuit • Crankshaft position sensor • Crankshaft angle sensor plate • ECM

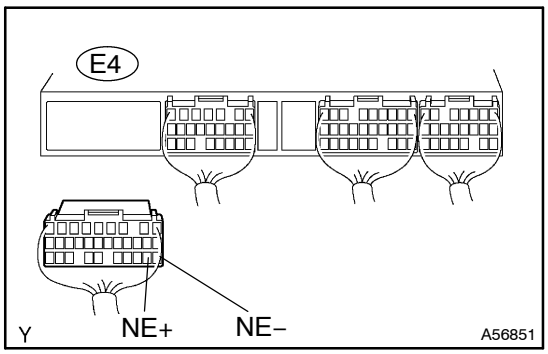
WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:
Read freeze frame data using the hand–held tester as freeze frame data records the engine conditions when a malfunction is 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	CHECK ECM (WIRE HARNESS SIDE)



(a) Turn the ignition switch to LOCK.
(b) Disconnect the E4 ECM connector.
(c) Measure the resistance between terminals NE+ and NE– of the E4 ECM connector.
Resistance: 105 – 145 Ω at 20°C (68°F)

NG → **Go to step 3**

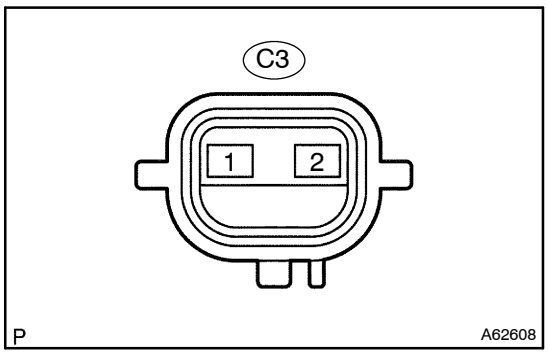
OK

2	CHECK ECM (See page 05–121)

OK → **Go to step 5**

NG

3	CHECK CRANKSHAFT POSITION SENSOR



(a) Disconnect the C3 crankshaft position sensor connector.
(b) Check the resistance between terminals 1 and 2 of the C3 crankshaft position sensor.
Resistance: 105 – 145 Ω at 20°C (68°F)

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).

NG → **REPLACE CRANKSHAFT POSITION SENSOR**

OK

4	CHECK WIRE HARNESS

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

OK

5	CHECK SENSOR ATTACHMENT PART

NG → REPLACE SUPPLY PUMP

OK

CHECK AND REPLACE ECM