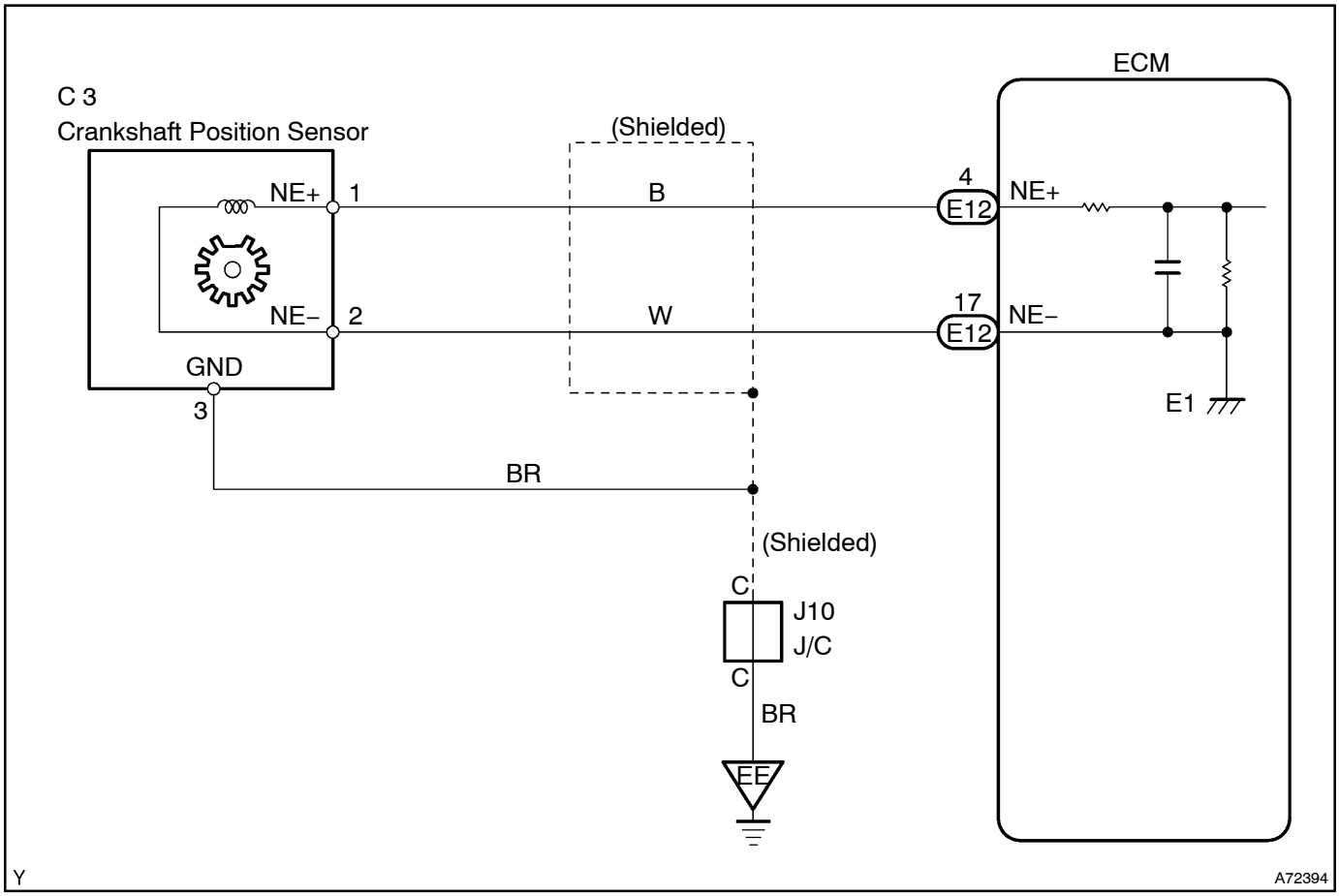
DTC 12 NE SIGNAL CIRCUIT

CIRCUIT DESCRIPTION

The crankshaft position sensor (NE signal) consists of a magnet, iron core and pickup coil.
The NE signal plate has 34 teeth and is installed in the crankshaft timing sprocket. The NE signal sensor generates 34 signals at every engine revolution. The ECM detects the engine speed by the NE signal.

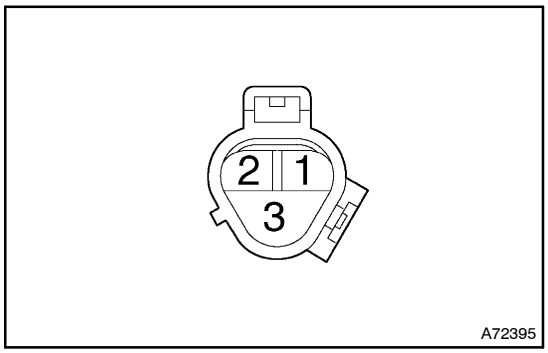
DTC No.	DTC Detecting Condition	Trouble Area
12	No crankshaft position sensor signals to ECM during cranking	• Open or short in crankshaft position sensor circuit • Crankshaft position sensor • Crankshaft timing sprocket No. 2 • ECM

WIRING DIAGRAM



INSPECTION PROCEDURE

1	INSPECT CRANKSHAFT POSITION SENSOR



(a) Resistance inspection.

(1) Measure the resistance between the terminals.

Resistance:

Symbols (Terminal No.)	Condition	Specified condition
1 ⇔ 2	Cold	1,630 – 2,740 Ω
	Hot	2,065,–,3,225,Ω

HINT:

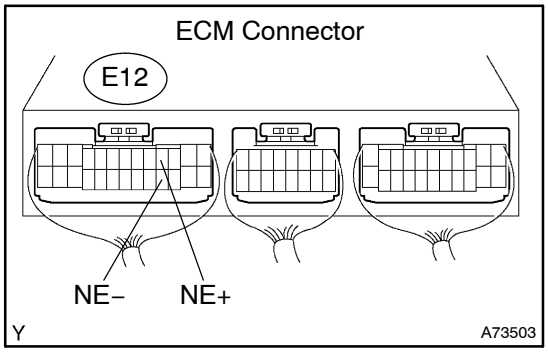
"Cold" and "Hot" on the table express the temperature of the coils themselves. "Cold" is from –10°C (14°F) to 50°C (122°F) and "Hot"is from 50°C (122°F) to 100°C (212°F)

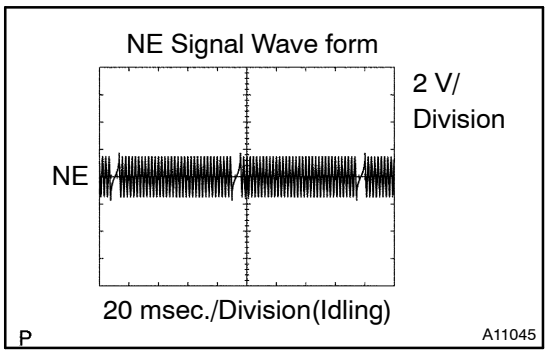
(b) Reference (using an osilloscope).

(1) During cranking or idling, check the waveform between the terminals of the E12 ECM connector.

Standard:

Symbols (Terminal No.)	Specified condition
NE+ (E12–4) ⇔ NE– (E12–17)	Correct waveform is as shown

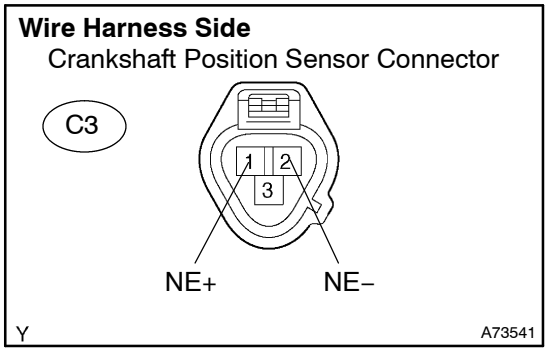


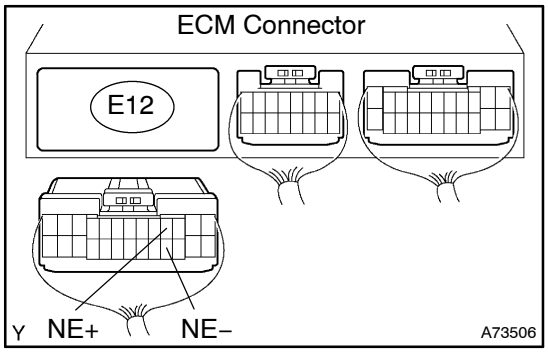


NG → **REPLACE CRANKSHAFT POSITION SENSOR** (See page 18–6)

OK

2 CHECK HARNESS AND CONNECTOR (CRANKSHAFT POSITION SENSOR ⇔ ECM)





(a) Disconnect the C3 crankshaft position sensor connector.
(b) Disconnect the E12 ECM connector.
(c) Check the continuity between the wire harness side connector.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
NE+ (C3–1) ⇔ NE+ (E12–4)	Continuity
NE– (C3–2) ⇔ NE– (E12–17)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
NE+ (C3–1) or NE+ (E12–4) ⇔ Other terminals and body ground	No continuity
NE– (C3–2) or NE– (E12–17) ⇔ Other terminals and body ground	

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

OK

3 CHECK SENSOR INSTALLATION (CRANKSHAFT POSITION SENSOR)

(a) Check the crankshaft position sensor installation.
Torque: 8.5 N·m (85 kgf·cm, 74 in.·lbf)

NG → **TIGHTEN SENSOR**

OK

4 CHECK CRANKSHAFT TIMING SPROCKET NO.2

(a) Check the teeth of the crankshaft timing sprocket.

NG → **REPLACE CRANKSHAFT TIMING SPROCKET NO.2**

OK

CHECK AND REPLACE ECM (See page 01–36)