DI9RX–01

CIRCUIT INSPECTION

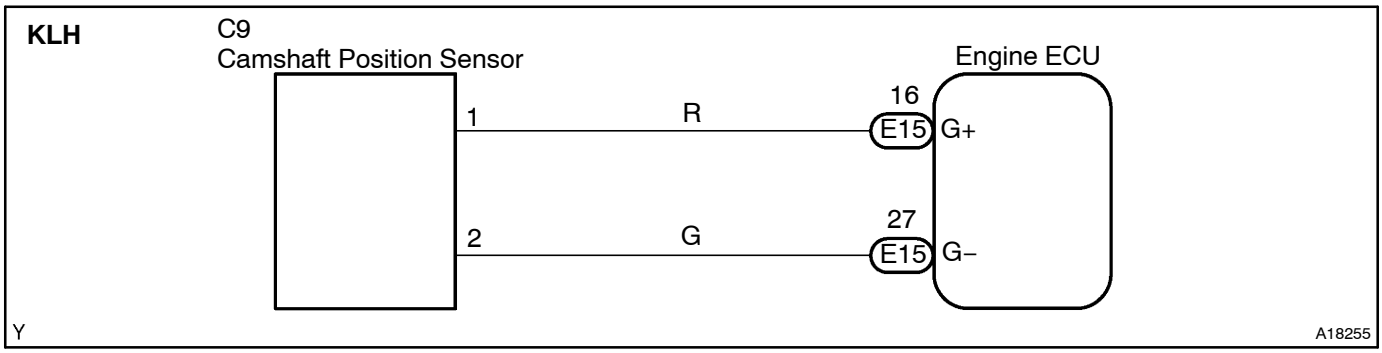
DTC	12	Engine Speed Sensor Circuit Malfunction 1 (TDC or G1 Circuit)

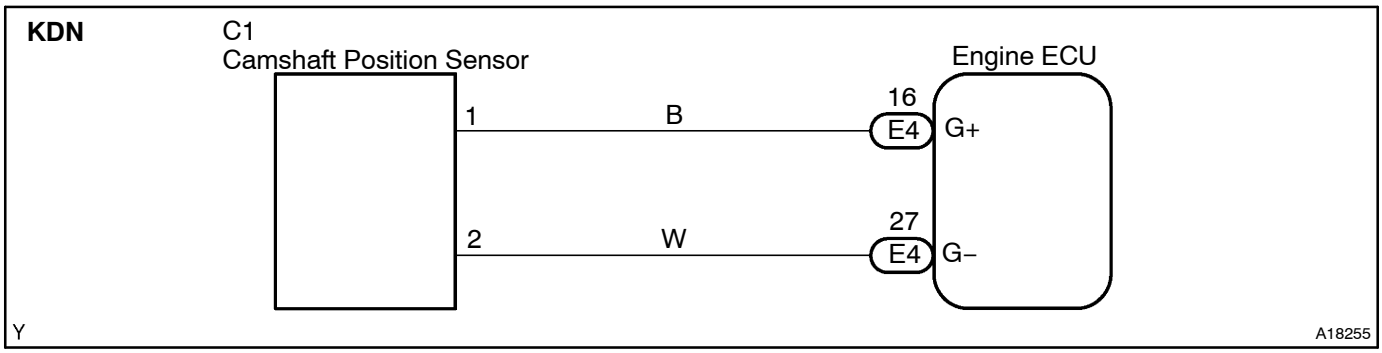
CIRCUIT DESCRIPTION

The camshaft position sensor (G1 signal) consists of a magnet, iron core and pickup coil. The G1 signal plate has 5 teeth on its outer circumference and is installed to the pump drive shaft pulley. When the pump drive shaft pulley rotates, the protrusion on the signal plate and the air gap on the pickup coil change, causing fluctuations in the magnetic field and generating an electromotive force in the pickup coil.

DTC No.	DTC Detecting Condition	Trouble Area
12	No NE signal during cranking	• Open or short in camshaft position sensor circuit • Camshaft position sensor • Camshaft timing pulley • Engine ECU

WIRING DIAGRAM



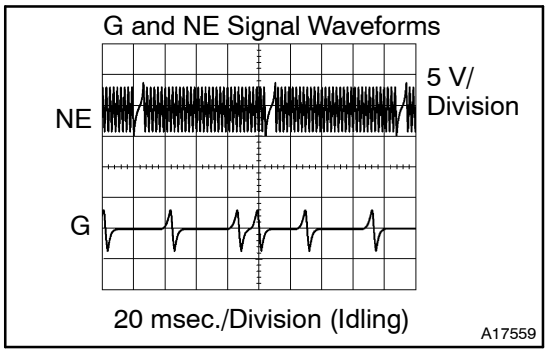


INSPECTION PROCEDURE

HINT:

Read freeze frame data on the hand–held tester. Because freeze frame data 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, etc. at the time of the malfunction.

1	**Check camshaft position sensor (See page ED–18).**



Reference: INSPECTION USING OSCILLOSCOPE
During cranking or idling, check the waveforms between terminals G and G–, and NE and NE– of the ECU connector.
The correct waveforms are shown in the illustration.

NG → **Replace camshaft position sensor.**

OK

2	**Check for open and short in harness and connector between ECU and camshaft position sensor (See page IN–20).**

NG → **Repair or replace harness or connector.**

OK

3	**Inspect sensor installation and signal plate tooth of pump drive shaft pulley.**

NG → **Reinstall sensor securely.**
Replace pump drive shaft pulley.

OK

Check and replace ECU (See page IN–20).