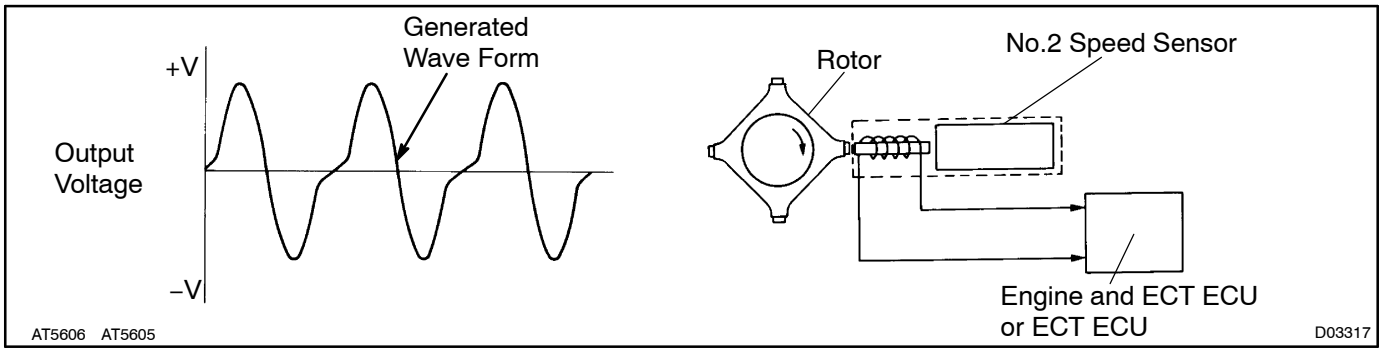
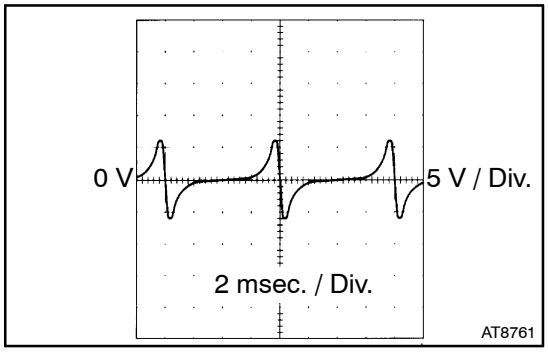
DTC	P1700/61	Speed Sensor No.2 Circuit Malfunction (No.2 Speed Sensor)

CIRCUIT DESCRIPTION

The No.2 speed sensor detects the rotation speed of the transmission output shaft and sends signals to the Engine and ECT ECU (2UZ–FE, 1FZ–FE) or ECT ECU (1HZ, 1HD–T, 1HD–FTE). The Engine and ECT ECU (2UZ–FE, 1FZ–FE) or ECT ECU (1HZ, 1HD–T, 1HD–FTE) determines the vehicle speed based on these signals. An AC voltage is generated in the No.2 speed sensor coil as the rotor mounted on the output shaft rotates, and this voltage is sent to the Engine and ECT ECU (2UZ–FE, 1FZ–FE) or ECT ECU (1HZ, 1HD–T, 1HD–FTE).The gear shift point and lock–up timing are controlled by the Engine and ECT ECU (2UZ–FE, 1FZ–FE) or ECT ECU (1HZ, 1HD–T, 1HD–FTE) based on the signals from this speed sensor and the throttle position sensor signal. If the No.2 speed sensor malfunctions, the Engine and ECT ECU (2UZ–FE, 1FZ–FE) or ECT ECU (1HZ, 1HD–T, 1HD–FTE) uses input signals from the No.1 speed sensor as a back–up signal.



DTC No.	DTC Detecting Condition	Trouble Area
P1700/61	All conditions below are detected 500 times or more continuously. (2 trip detection logic) (a) No signal from No.2 speed sensor is input to Engine and ECT ECU or ECT ECU while 4 pulses of No.1 speed sensor signal are sent. (b) Vehicle speed: 3 km/h (3.1 mph) or more for at least 4 seconds (c) Neutral start switch: OFF (Other than P or N)	• Open or short in No.2 speed sensor circuit • No.2 speed sensor • Engine and ECT ECU (2UZ–FE, 1FZ–FE) • ECT ECU (1HZ, 1HD–T, 1HD–FTE)

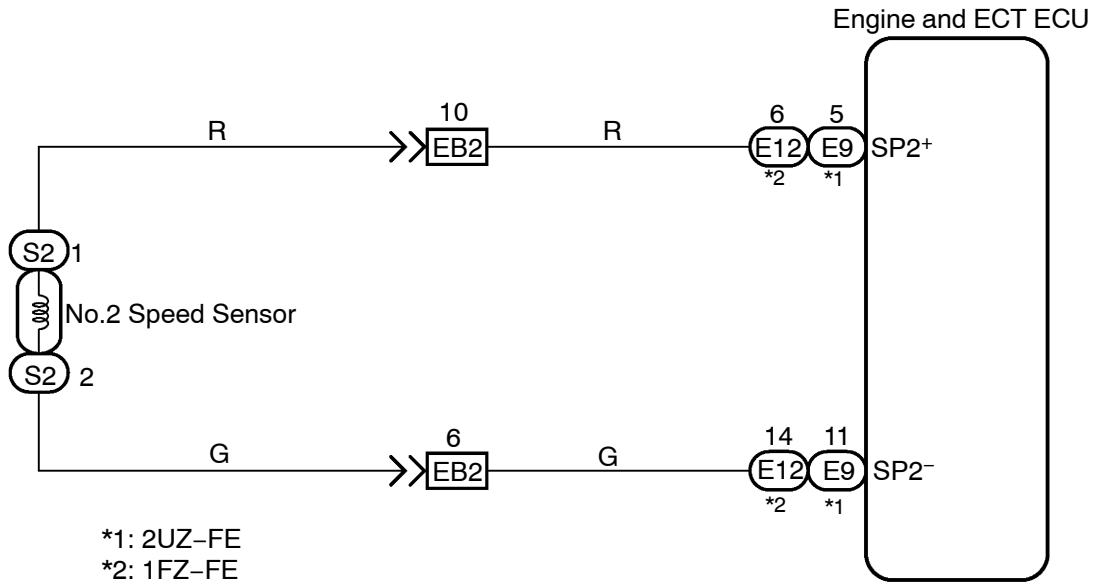


HINT:

Refer to the chart for the wave from between terminals $SP2^+$ and $SP2^-$ when vehicle speed is approx. 60 km/h (37 mph).

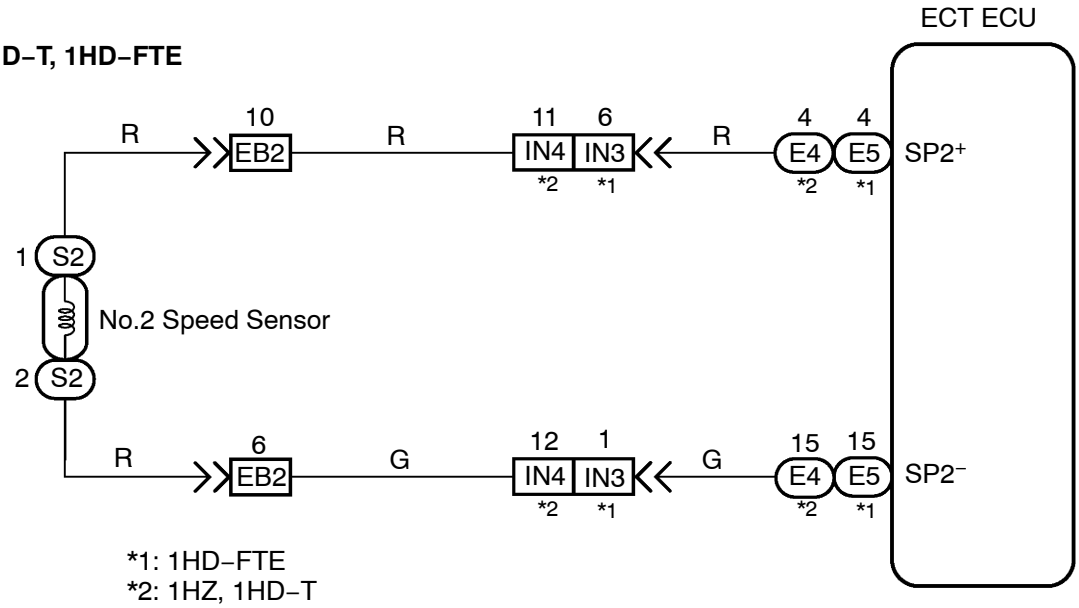
WIRING DIAGRAM

1FZ–FE, 2UZ–FE



*1: 2UZ–FE
*2: 1FZ–FE

1HZ, 1HD–T, 1HD–FTE



*1: 1HD–FTE
*2: 1HZ, 1HD–T

D03969
D03992

D03980

INSPECTION PROCEDURE

1	**Check vehicle speed value or resistance between terminals SP2+ and SP2– of Engine and ECT ECU or ECT ECU.**

When using hand–held tester:

PREPARATION:

(a) Remove the DLC3 cover.

(b) Connect a hand–held tester to the DLC3.

(c) Start the engine and turn the hand–held tester main switch ON.

CHECK:

Drive the vehicle and read vehicle speed value.

OK:

Vehicle speed matches tester's speed value.

When not using hand–held tester:

PREPARATION:

(a) Remove the glove compartment door (See page BO–127).

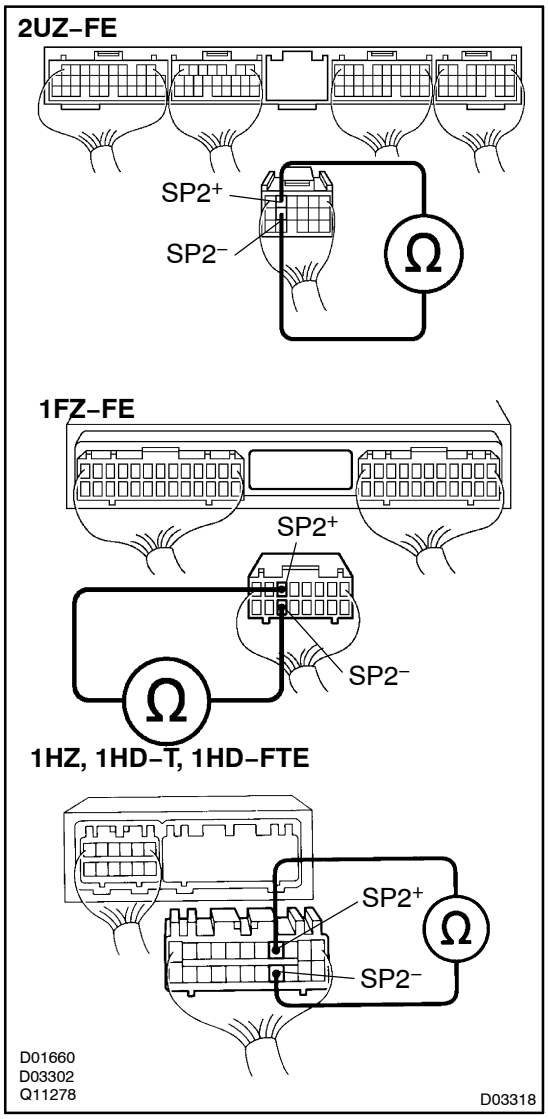
(b) Disconnect the connector from Engine and ECT ECU or ECT ECU.

CHECK:

Check resistance between terminals SP2+ and SP2– of Engine and ECT ECU or ECT ECU.

OK:

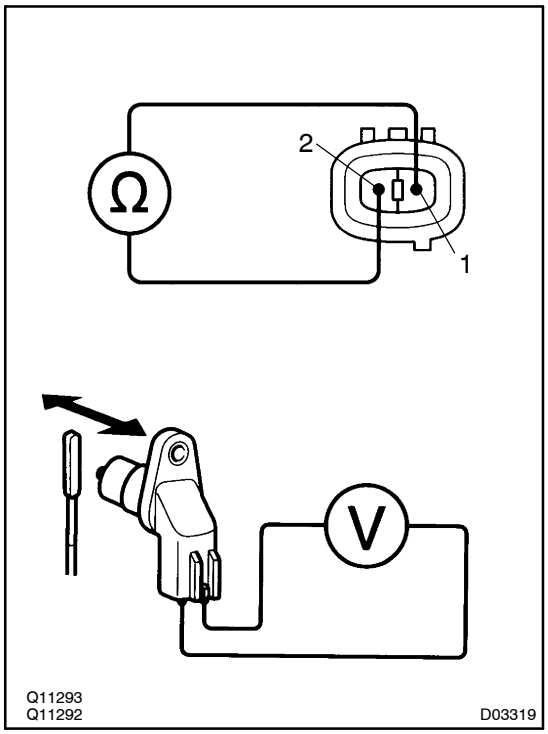
Resistance: 460 – 830 Ω at –20 – 100°C (14 – 212°F)



OK	**Check and replace the Engine and ECT ECU or ECT ECU (See page IN–35).**

NG

2	**Check No.2 speed sensor.**



PREPARATION:

Remove the No.2 speed sensor from the transmission (See page AT–5).

CHECK:

(a) Measure resistance between terminals 1 and 2 of No.2 speed sensor.

(b) Check voltage between terminals 1 and 2 of No.2 speed sensor when a magnet is put close to the front end of the No.2 speed sensor then taken away quickly.

OK:

(a) Resistance:
460 – 830 Ω at –20 – 100°C (14 – 212°F)
(b) Voltage is generated intermittently.

HINT:

The voltage generated is extremely low.

NG → **Replace the No.2 speed sensor.**

OK

Check and repair the harness and connector between Engine and ECT ECU or ECT ECU and No.2 speed sensor (See page IN–35).