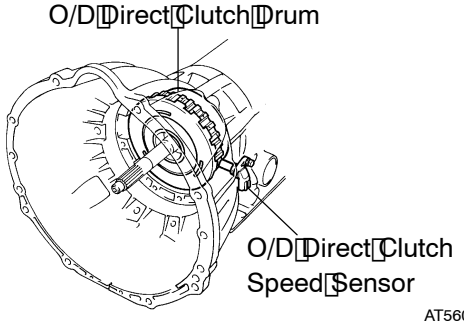
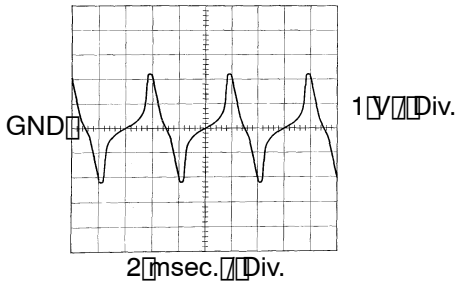
DTC	P0715/67	Input/Turbine Speed Sensor Circuit Malfunction (O/D Direct Clutch Speed Sensor)

CIRCUIT DESCRIPTION



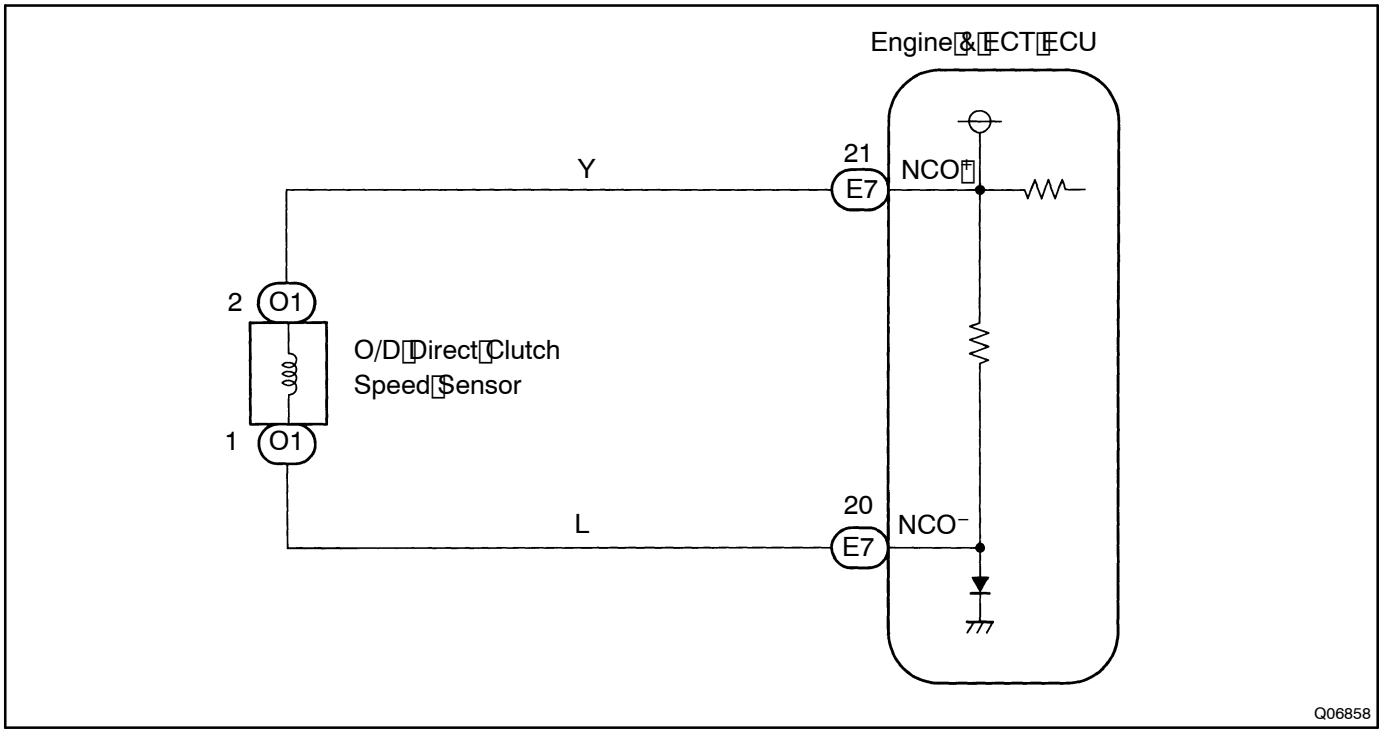
This sensor detects the rotation speed of the O/D input shaft from the rotation of the O/D direct clutch drum.
Its construction is the same as that of the vehicle speed sensor (See page DI–196).
By comparing the O/D direct clutch speed signal and vehicle speed sensor signal, the Engine & ECT ECU detects the shift timing of the gears and appropriately controls the engine torque and hydraulic pressure in response to various conditions, thus doing smooth gear shift.

DTC No.	DTC Detection Condition	Trouble Area
P0715/67	All conditions below are detected for 5 secs. or more (2–trip detection logic). 1. Gear change not being performed 2. Gear position: 1st, 2nd 3rd or 4th 3. T/M input shaft rpm: 300 rpm or less 4. T/M output shaft rpm: 1,000 rpm or more 5. Neutral start switch: OFF 6. No. 1, No. 2, No. 3, No. 4, SLU solenoid valves and vehicle speed sensor are in normal operation	• Open or short in O/D direct clutch speed sensor circuit • O/D direct clutch speed sensor • Engine & ECT ECU • Automatic transmission assembly



Reference:
Refer to the chart for the wave form between terminals NCO^{+} and NCO^{-} during engine idling.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:
In case of using the hand–held tester, start the inspection from step 1 and in case of not using the hand–held tester, start from step 2.

1	**Using hand–held tester, check O/D direct clutch speed signal.**

PREPARATION:
(a) Remove the DLC3 cover.
(b) Connect a hand–held tester to the DLC3.
(c) Start the engine (Shift range: P).
(d) Turn the hand–held tester main switch ON.

CHECK:
Read O/D direct clutch speed at engine idling.

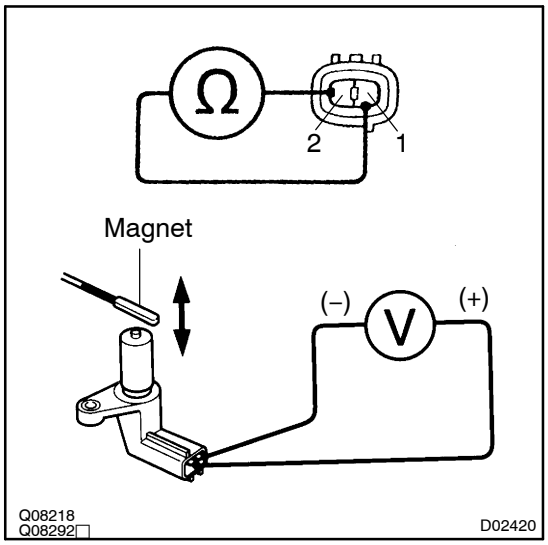
OK:
750 ± 50 rpm at engine idling

NG	**Go to step 2.**

OK

Proceed to next circuit inspection shown in problem symptoms table (See page DI–191). However, when DTC P0715/67 is displayed, check and replace Engine & ECT ECU (See page IN–35).

2	Check O/D direct clutch speed sensor.



PREPARATION:

Remove the O/D direct clutch speed sensor from the transmission.

CHECK:

(a) Measure resistance between terminals 1 and 2 of O/D direct clutch speed sensor.

(b) Check voltage between terminals 1 and 2 of the speed sensor when a magnet is put close to the front end of the speed sensor then kept away quickly.

OK:

(a): Voltage is generated intermittently

(b): Resistance: 560 – 680 Ω at 20°C (68°F)

HINT:

The generated voltage is extremely low.

NG	Replace the O/D direct clutch speed sensor.

OK

Check and repair harness and connector between Engine & ECT ECU and O/D direct clutch speed sensor (See page IN–35).