

DTC	P0705	Transmission Range Sensor Circuit Malfunction (PRNDL Input)
DTC	P0850	Park / Neutral Switch Input Circuit

DESCRIPTION

The park/neutral position switch detects the shift lever position and sends signals to the ECM.

HINT:

If the vehicle is equipped with a TVIP system, confirm that there is no problem in the TVIP system before troubleshooting.

DTC No.	DTC Detection Condition	Trouble Area
P0705	2 or more switches are ON simultaneously for P, R, N, D, 2 and L positions (2-trip detection logic)	- Short in park/neutral position switch circuit - Park/neutral position switch - ECM
P0850	Park/neutral position switch remains ON (P, N position) during driving under conditions (a) and (b) for 30 sec. (2-trip detection logic) (a) Vehicle speed: 70 km/h (44 mph) or more (b) Engine speed: 1,500 to 3,500 rpm	- Open or short in park/neutral position switch circuit - Park/neutral position switch - ECM

MONITOR DESCRIPTION

The park/neutral position switch detects the gearshift position and sends a signal to the ECM.

For security, the park/neutral position switch detects the gearshift position so that engine can be started only when the vehicle is in P or N shift position.

When the park/neutral position switch sends more than one signal at a time from switch positions P, R, N, 2 or L, the ECM interprets this as a fault in the switch. The ECM will turn on the MIL.

MONITOR STRATEGY**P0705:**

Related DTCs	P0705: Park/neutral position switch/Verify switch input
Required sensors/Components	Park/neutral position switch
Frequency of operation	Continuous
Duration	2 sec.
MIL operation	2 driving cycles
Sequence of operation	None

P0850:

Related DTCs	P0850: Park/neutral position switch/Verify switch input
Required sensors/Components	Park/neutral position switch
Frequency of operation	Continuous
Duration	30 sec.
MIL operation	2 driving cycles
Sequence of operation	None

TYPICAL ENABLING CONDITIONS**P0705:**

The monitor will run whenever this DTC is not present.	None
Ignition switch	ON
Battery voltage	10.5 V or more

P0850:

The monitor will run whenever the following DTCs are not present.	None
Vehicle speed	70 km/h (43.47 mph) or more
Engine speed	1,500 rpm or more and 3,500 rpm or less
Intake air amount per revolution	0.45 g/rev or more

TYPICAL MALFUNCTION THRESHOLDS**P0705:**

Number of the following signal input at the same time	2 or more
NSW switch	ON
R switch	ON
2 switch	ON
L switch	ON

P0850:

NSW switch	ON
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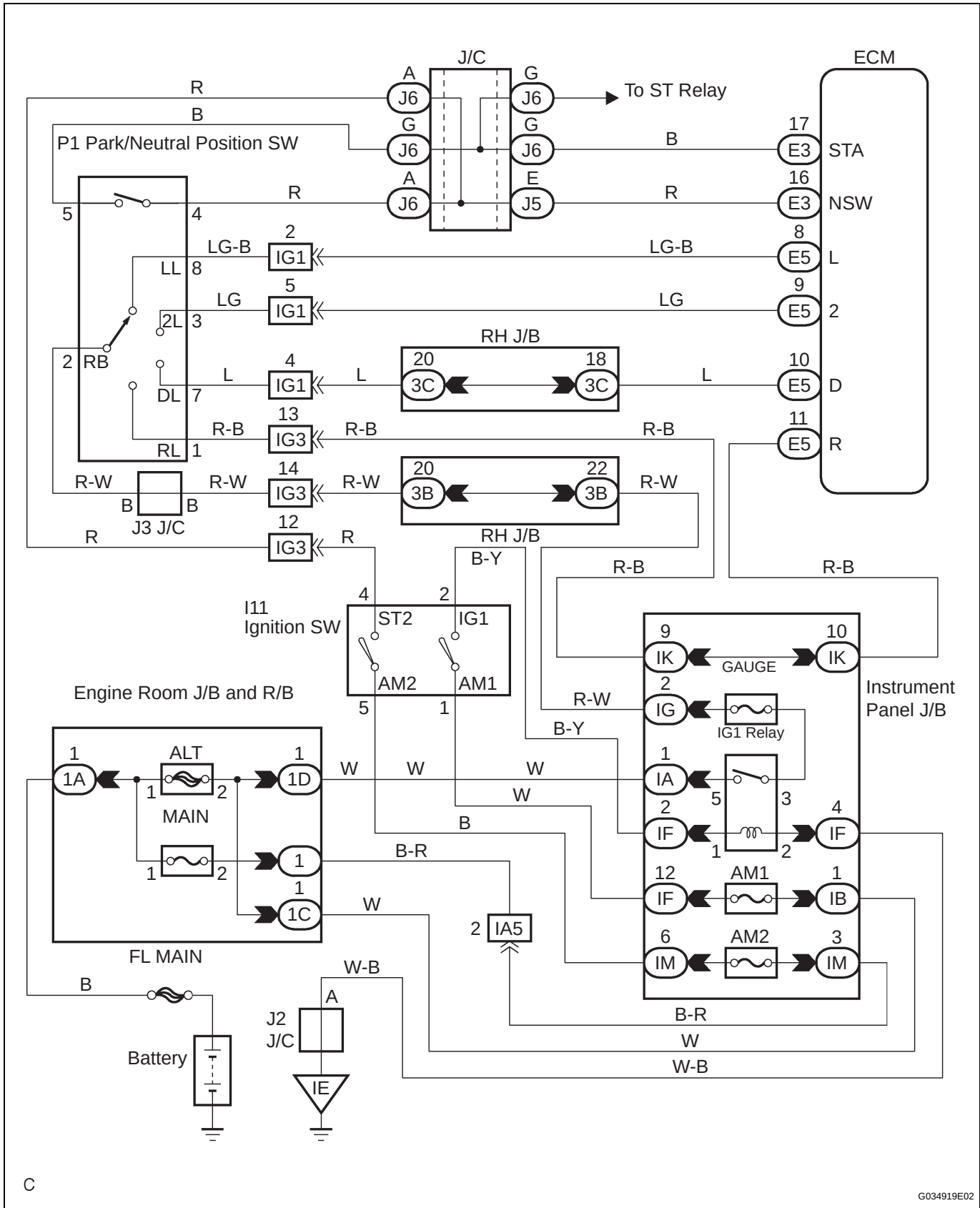
COMPONENT OPERATING RANGE**P0705:**

Park/neutral position switch	The park/neutral position switch sends only one signal to the ECM.
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P0850:

Park/neutral position switch	The park/neutral position switch is OFF when vehicle speed is 70 km/h (43.47 mph) or more and engine speed is between 1,500 rpm or more and 3,500 rpm or less.
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WIRING DIAGRAM

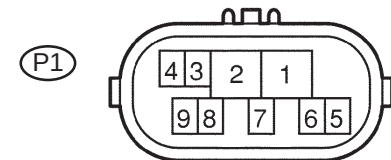


INSPECTION PROCEDURE

1 INSPECT PARK/NEUTRAL POSITION SWITCH ASSEMBLY

Switch Side:

(Connector Front View):



C110340E20

- (a) Disconnect the park/neutral position switch connector.
 (b) Measure resistance according to the value(s) in the table below when the shift lever is moved to each position.

Standard resistance

Shift Position	Tester Connection	Specified Condition
P	2 - 6 and 4 - 5	Below 1 Ω
Except P		10 k Ω or higher
R	2 - 1	Below 1 Ω
Except R		10 k Ω or higher
N	2 - 9 and 4 - 5	Below 1 Ω
Except N		10 k Ω or higher
D	2 - 7	Below 1 Ω
Except D		10 k Ω or higher
2	2 - 3	Below 1 Ω
Except 2		10 k Ω or higher
L	2 - 8	Below 1 Ω
Except L		10 k Ω or higher

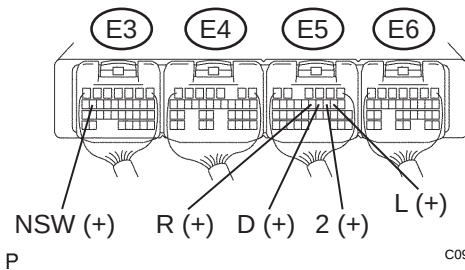
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REPLACE PARK/NEUTRAL POSITION SWITCH ASSEMBLY

OK

2 CHECK HARNESS AND CONNECTOR (PARK/NEUTRAL POSITION SWITCH - ECM)

ECM:



C096070E12

- (a) Connect the park/neutral position switch connector.
 (b) Turn the ignition switch to the ON position, and measure the voltage according to the value(s) in the table below when the shift lever is moved to each position.

Standard voltage

Shift Position	Tester Connection	Specified Condition
P and N	E3-16 (NSW) - Body ground	Below 1 V
Except P and N	↑	10 to 14 V
R	E5- 11 (R) - Body ground	10 to 14 V*
Except R	↑	Below 1 V
D	E5-10 (D) - Body ground	10 to 14 V
Except D	↑	Below 1 V
2	E5-9 (2) - Body ground	10 to 14 V
Except 2	↑	Below 1 V
L	E5-8 (L) - Body ground	10 to 14 V
Except L	↑	Below 1 V

HINT:

*: The voltage will drop slightly due to lighting up of the back up light.

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REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE ECM