POSITION SENSOR CIRCUIT

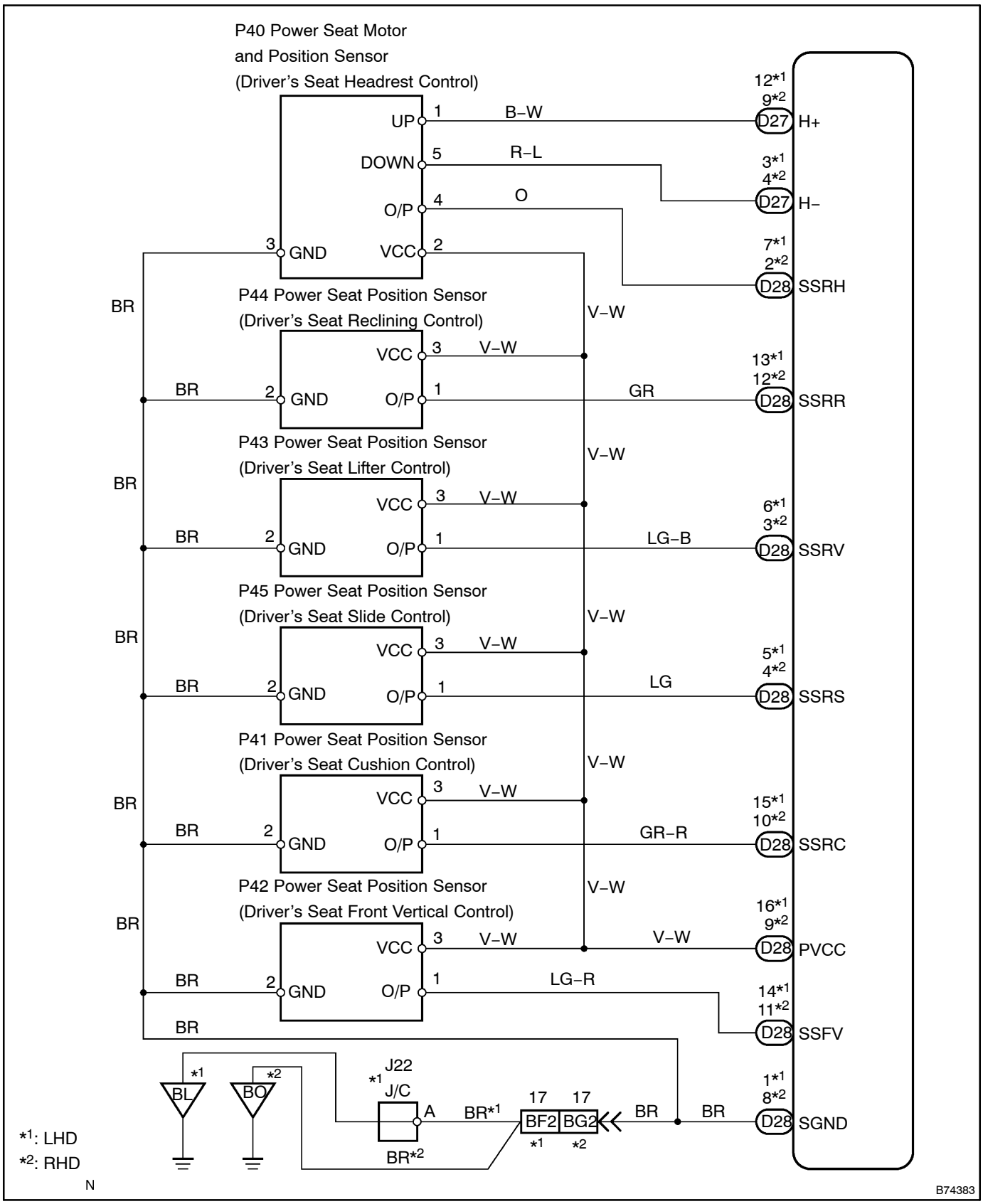
CIRCUIT DESCRIPTION

The position sensor detects seat movement and sends pulse signals to the driver seat ECU for use with the memory function.

The ECU records the number of pulses relative to a previously recorded seat position and uses this data to return the seat to that position.

If a malfunction occurs in a position sensor and seat movement does not result in pulse signals being input into the ECU, the memory function is deactivated.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	READ VALUE OF INTELLIGENT TETSER II

(a) Connect the intelligent tester II to the DLC3.
(b) Turn the ignition switch ON and press the intelligent tetser II main switch ON.
(c) Select the items below in the DATA LIST, and read the intelligent tester II's screen.
(d) Watch the intelligent tester II screen while adjusting the seat with the power seat control switches. Check that the position sensor value changes.
(e) Watch the intelligent tester II screen while adjusting the seat with the power seat control switches. Check that the motor status changes from STANDBY to MOVING.

HINT:
When the seat is at an extreme position (for example, seatback position fully forward or sliding position fully rearward) and the power seat control switch is held down, the motor status should read LOCK. When the switch is released, the motor status should change to STANDBY.

Driver seat ECU:

Item	Measurement Item/ Display (Range)	Normal Condition
Slide Pos	Seat sliding position/ MIN: –4096, MAX: 4096	Within range from –4096 to 4096
Reclin Pos	Seatback position/ MIN: –4096, MAX: 4096	Within range from –4096 to 4096
F Vtcl Pos	Seat front vertical position/ MIN: –4096 MAX: 4096	Within range from –4096 to 4096
Lifter Pos	Seat lifter position/ MIN: –4096 MAX: 4096	Within range from –4096 to 4096
Headrest Pos	Headrest position/ MIN: –4096 MAX: 4096	Within range from –4096 to 4096
Cushion Pos	Cushion position/ MIN: –4096 MAX: 4096	Within range from –4096 to 4096
Sld Most Pos	Slide front most position/ MIN: –4096 MAX: 4096	Within range from –4096 to 4096
Hdrst Down Most	Headrest down most position/ MIN: –4096 MAX: 4096	Within range from –4096 to 4096
Motor Status	Motor status signal/ STANDBY or MOVING or LOCK	STANDBY: motor is idle MOVING: motor is moving LOCK: motor is locked

OK:

Position sensor values should vary within the minimum and maximum values shown in the chart above.

For the tester's motor status item, the display should changes between STANDBY, MOVING and LOCK according to the chart above.

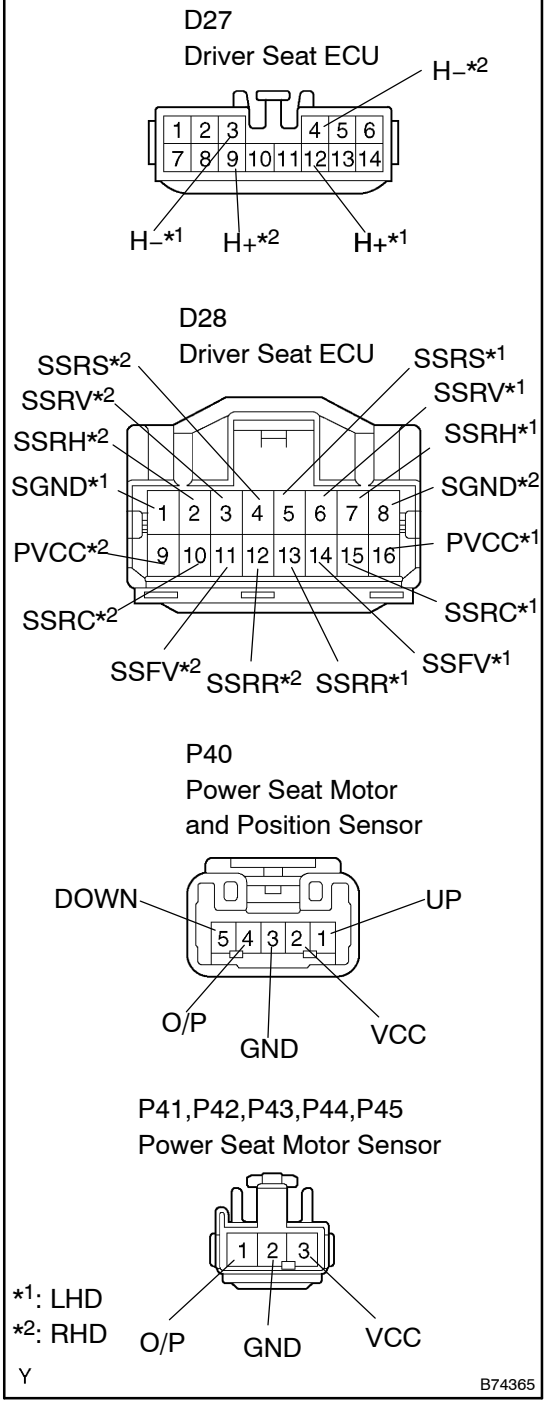
NG → **Go to step 2**

OK →

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE
(See page 05–2281)

2 CHECK WIRE HARNESS (DRIVER SEAT ECU – POWER SEAT SENSOR AND BODY GROUND)

Wire Harness Side



(a) Disconnect the D27 and D28 ECU connectors.
(b) Disconnect the P40, P41, P42, P43, P44 and P45 sensor connectors.
(c) Measure the resistance of the wire harness side connectors.

Standard:

LHD models

Tester Connection	Specified Condition
D27–12 (H+) – P40–1 (UP)	Below 1 Ω
D27–3 (H–) – P40–5 (DOWN)	Below 1 Ω
D28–7(SSRH) – P40–4(O/P)	Below 1 Ω
D28–16 (PVCC) – P40–2 (VCC)	Below 1 Ω
D28–16 (PVCC) – P44–3 (VCC)	Below 1 Ω
D28–13 (SSRR) – P44–1 (O/P)	Below 1 Ω
D28–16 (PVCC) – P43–3 (VCC)	Below 1 Ω
D28–6 (SSRV) – P43–1 (O/P)	Below 1 Ω
D28–16 (PVCC) – P45–3 (VCC)	Below 1 Ω
D28–5 (SSRS) –P45–1 (O/P)	Below 1 Ω
D28–16 (PVCC) – P41–3 (VCC)	Below 1 Ω
D28–15 (SSRC) – P41–1 (O/P)	Below 1 Ω
D28–16 (PVCC) – P42–3 (VCC)	Below 1 Ω
D28–14 (SSFV) – P42–1 (O/P)	Below 1 Ω
D28–1 (SGND) – Body ground	Below 1 Ω
P40–2 (GND) – Body ground	Below 1 Ω
P44–2 (GND) – Body ground	Below 1 Ω
P43–2 (GND) – Body ground	Below 1 Ω
P45–2 (GND) – Body ground	Below 1 Ω
P41–2 (GND) – Body ground	Below 1 Ω
P42–2 (GND) – Body ground	Below 1 Ω

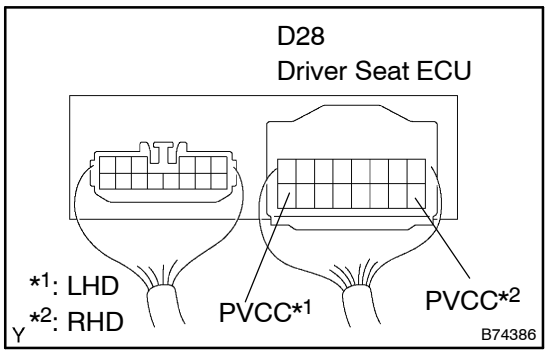
RHD models

Tester Connection	Specified Condition
D27–9 (H+) – P40–1 (UP)	Below 1 Ω
D27–4 (H–) – P40–5 (DOWN)	Below 1 Ω
D28–2(SSRH) – P40–4(O/P)	Below 1 Ω
D28–9 (PVCC) – P40–2 (VCC)	Below 1 Ω
D28–9 (PVCC) – P44–3 (VCC)	Below 1 Ω
D28–12 (SSRR) – P44–1 (O/P)	Below 1 Ω
D28–9 (PVCC) – P43–3 (VCC)	Below 1 Ω
D28–3 (SSRV) – P43–1 (O/P)	Below 1 Ω
D28–9 (PVCC) – P45–3 (VCC)	Below 1 Ω
D28–4 (SSRS) –P45–1 (O/P)	Below 1 Ω
D28–9 (PVCC) – P41–3 (VCC)	Below 1 Ω
D28–10 (SSRC) – P41–1 (O/P)	Below 1 Ω
D28–9 (PVCC) – P42–3 (VCC)	Below 1 Ω
D28–11 (SSFV) – P42–1 (O/P)	Below 1 Ω
D28–8 (SGND) – Body ground	Below 1 Ω
P40–2 (GND) – Body ground	Below 1 Ω
P44–2 (GND) – Body ground	Below 1 Ω
P43–2 (GND) – Body ground	Below 1 Ω
P45–2 (GND) – Body ground	Below 1 Ω
P41–2 (GND) – Body ground	Below 1 Ω
P42–2 (GND) – Body ground	Below 1 Ω

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

OK

3 CHECK DRIVER SEAT ECU (SENSOR POWER SOURCE VOLTAGE)



(a) Turn the ignition switch ON.
(b) Measure the voltage of the ECU connector.

Standard:

LHD models

Tester Connection	Specified Condition
D28–16 (PVCC) – Body ground	8 V

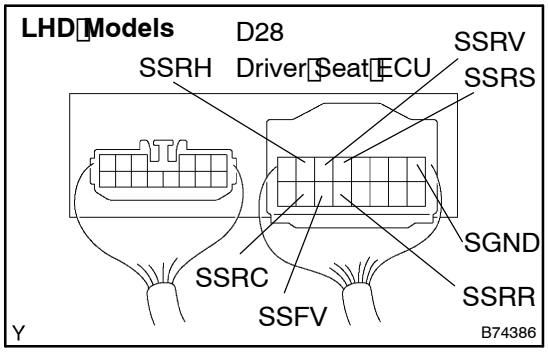
RHD models

Tester Connection	Specified Condition
D28–9 (PVCC) – Body ground	8 V

NG → **REPLACE DRIVER SEAT ECU**

OK

4 CHECK POWER SEAT POSITION SENSOR



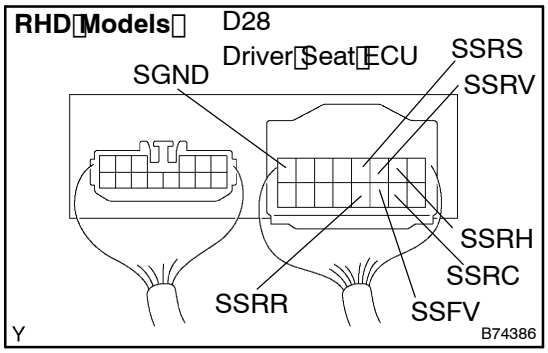
(a) Turn the ignition switch ON.

(b) Measure the voltage of the ECU connector.

Standard:

LHD models

Tester Connection	Specified Condition	When NG, proceed to*
D28–7 (SSRH) – D28–1 (SGND)	Varies between 0 V to approx. 8 V	A
D28–13 (SSRR) – D28–1 (SGND)	Varies between 0 V to approx. 8 V	B
D28–6 (SSRV) – D28–1 (SGND)	Varies between 0 V to approx. 8 V	B
D28–5 (SSRS) – D28–1 (SGND)	Varies between 0 V to approx. 8 V	B
D28–15 (SSRC) – D28–1 (SGND)	Varies between 0 V to approx. 8 V	B
D28–14 (SSFV) – D28–1 (SGND)	Varies between 0 V to approx. 8 V	B



RHD models

Tester Connection	Specified Condition	When NG, proceed to*
D28–2 (SSRH) – D28–8 (SGND)	Varies between 0 V to approx. 8 V	A
D28–12 (SSRR) – D28–8 (SGND)	Varies between 0 V to approx. 8 V	B
D28–3 (SSRV) – D28–8 (SGND)	Varies between 0 V to approx. 8 V	B
D28–4 (SSRS) – D28–8 (SGND)	Varies between 0 V to approx. 8 V	B
D28–10 (SSRC) – D28–8 (SGND)	Varies between 0 V to approx. 8 V	B
D28–11 (SSFV) – D28–8 (SGND)	Varies between 0 V to approx. 8 V	B

HINT:

Check the power seat position sensors that are malfunctioning. Run the motors and check that the voltage readings vary within the "specified condition" shown in the chart above.

*: If the result is not as specified, proceed to steps indicated in this column.

A	REPLACE FRONT SEAT HEADREST ADJUSTER
B	REPLACE POWER SEAT ADJUSTER

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE
(See page 05–2281)