

ACCESSORIES & EQUIPMENT

Front Power Seat Control System (Inspection) - Sienna

FRONT POWER SEAT CONTROL SYSTEM (W/O MEMORY)

PARTS LOCATION

ILLUSTRATION

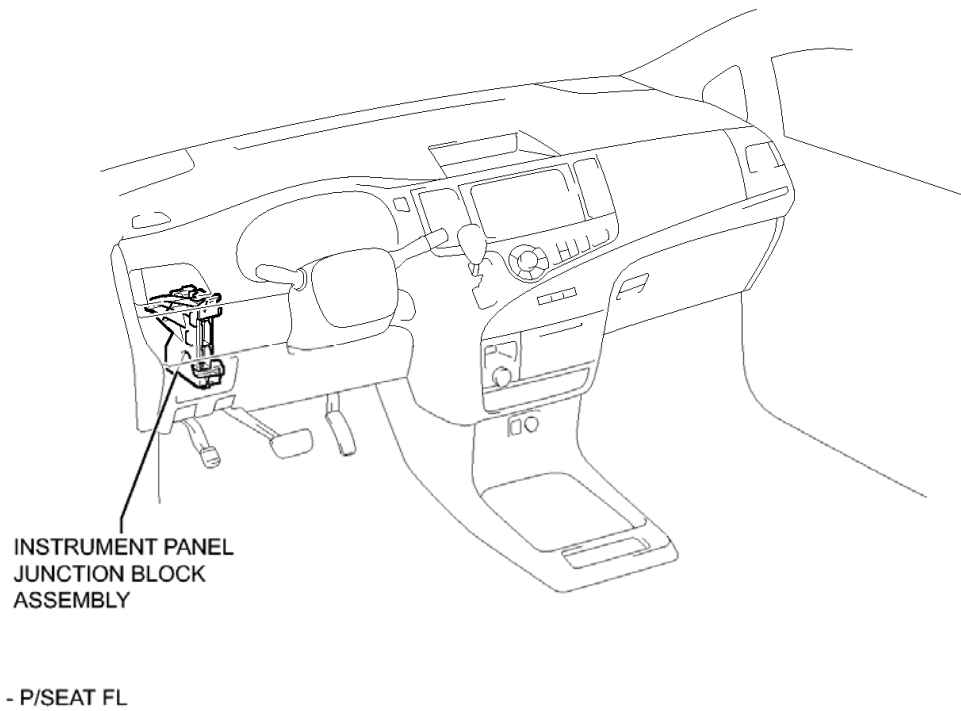
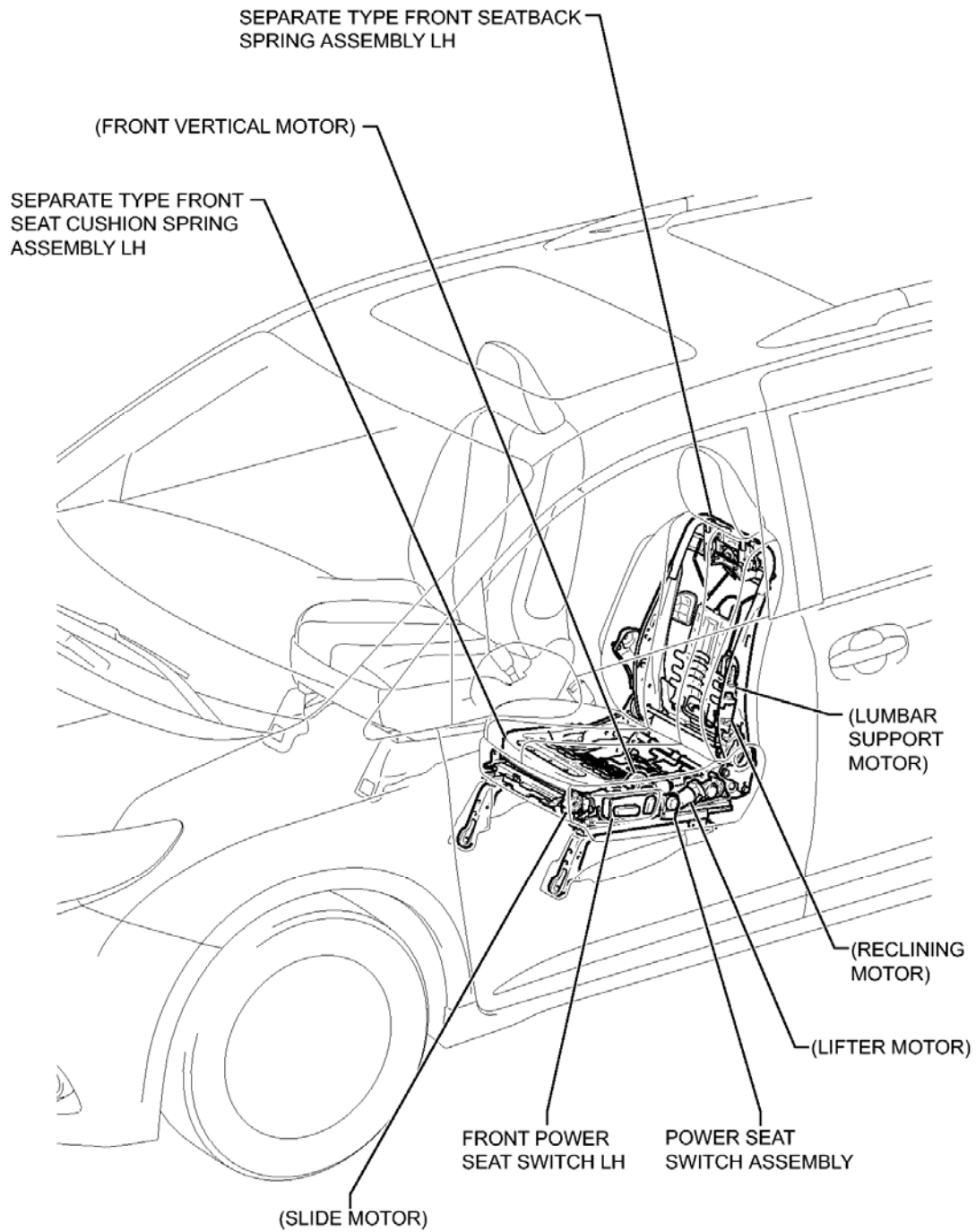


Fig. 1: Front Power Seat Control System Components Location (1 of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

Driver Side:



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Fig. 2: Front Power Seat Control System Components Location (2 of 2)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DIAGRAM

SYSTEM DIAGRAM

Driver Side:

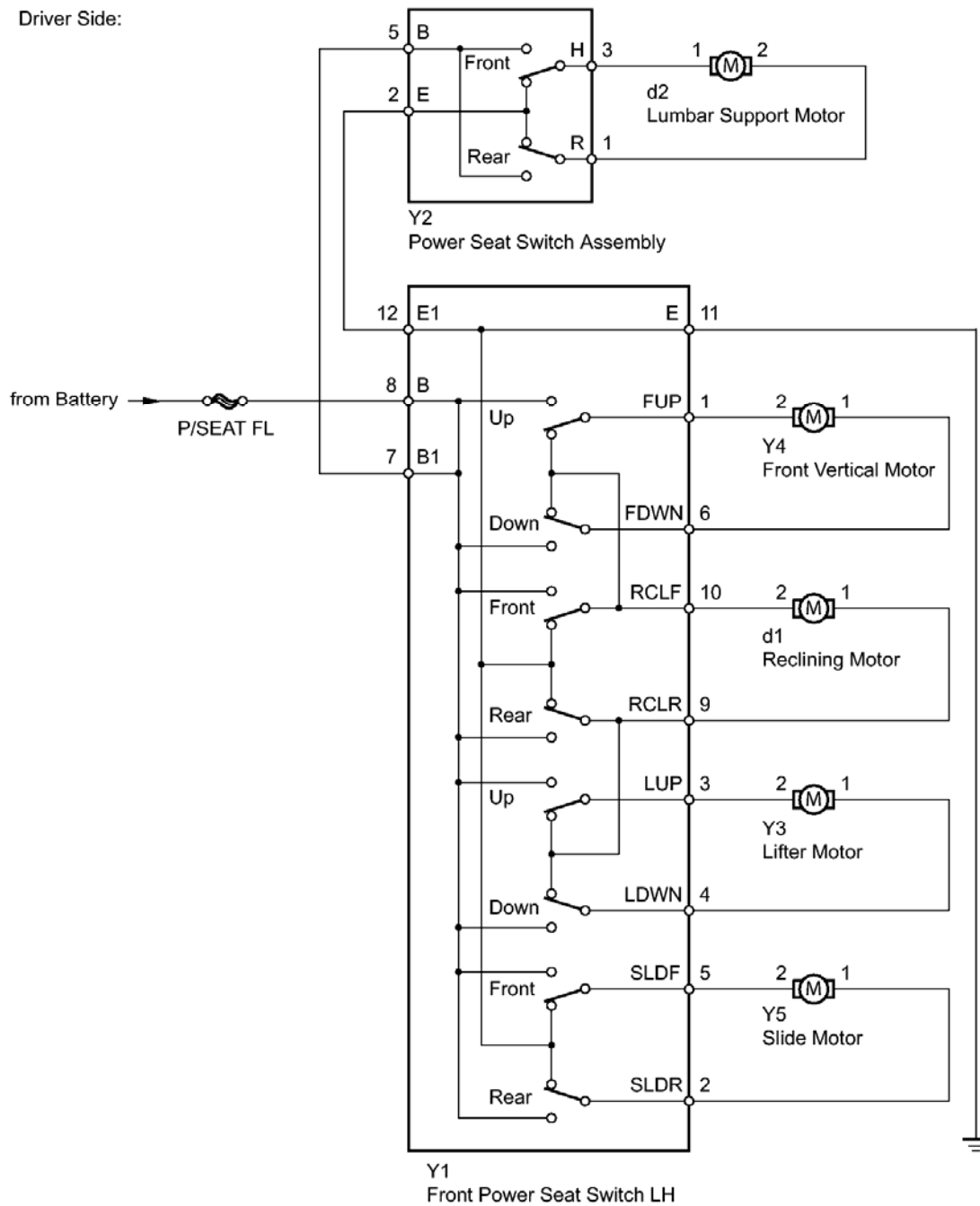


Fig. 3: Front Power Seat Control System Diagram

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DESCRIPTION

SYSTEM DESCRIPTION

1. FRONT POWER SEAT CONTROL SYSTEM DESCRIPTION

- a. The driver seat is equipped with slide, reclining, lifter, front vertical and lumbar support adjustment functions.

2. FUNCTION OF MAIN COMPONENTS

- a. The following functions are available.

Components	Function
Slide motor	Receives a signal from the front power seat switch and slides the seat forward and rearward.
Reclining motor	Receives a signal from the front power seat switch and tilts the seatback forward and rearward.
Front vertical motor	Receives a signal from the front power seat switch and raises and lowers the front of the

	seat cushion.
Lifter motor	Receives a signal from the front power seat switch and raises and lowers the seat cushion.
Lumbar support motor	Receives a signal from the power seat switch assembly and adjusts the lumbar support adjuster.

OPERATION CHECK

OPERATION CHECK

1. CHECK FRONT POWER SEAT FUNCTION

- a. Check the basic functions.



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Fig. 4: Identifying Front Power Seat Function
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Sliding Function
*b	Front Vertical Function
*c	Lifter Function
*d	Reclining Function
*e	Lumbar Support

Function

1. Operate the power seat switches and check to make sure each seat function operates properly:

- Sliding
- Front vertical
- Lifter
- Reclining
- Lumbar support

2. **CHECK POWER SEAT MOTOR ASSEMBLY (SLIDING, FRONT VERTICAL, LIFTER, RECLINING)**

- a. Check the PTC thermistor operation inside the power seat motor.

HINT:

The resistance of the PTC thermistor increases when the front power seat switch is held down even after the power seat has been moved to the farthest possible position in one direction. If the resistance increases beyond a specified level, the current is shut off to prevent a short circuit.

NOTE:

- **Make sure the inspection is performed with the seat installed in the vehicle.**
- **Perform the 4 steps below for each power seat function.**

1. Choose a power seat function. Operate the front power seat switch and move the seat to the farthest possible position in one direction. Keep the seat in that position for approximately 60 seconds.
2. Operate the front power seat switch again and continue to try to move the seat in the same direction as in the previous step. Measure the time until the current is shut off (motor operation sound will stop).

Standard

4 to 90 seconds

3. After the current is shut off, release the front power seat switch and wait for approximately 60 seconds.
4. Operate the same front power seat switch and move the seat in the opposite direction. Check that the motor operates.

3. **CHECK LUMBAR SUPPORT MOTOR**

- a. Check the PTC thermistor operation inside the lumbar support motor.

NOTE:

Make sure the inspection is performed with the seat installed in the vehicle.

1. Operate the power seat switch assembly and move the lumbar support to either the foremost or rearmost position. Keep the lumbar support in that position for approximately 60 seconds.
2. Operate the power seat switch assembly again and continue to try to move the lumbar support in the same direction as in the previous step. Measure the time until current is shut off (motor operation sound will stop).

Standard

4 to 90 seconds

3. After current is shut off, release the power seat switch assembly and wait for approximately 60 seconds.
4. Operate the power seat switch assembly and move the lumbar support in the opposite direction. Check that the motor operates.

PROBLEM SYMPTOMS TABLE

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below

FRONT POWER SEAT CONTROL SYSTEM

Symptom	Suspected Area	See
All functions do not operate	Front power seat switch LH	Refer to <u>INSPECTION</u>
	Harness or connector	-
Only slide operation function does not operate	Front power seat switch LH	Refer to <u>INSPECTION</u>
	Separate type front seat cushion spring assembly LH (slide motor)	Refer to <u>DISASSEMBLY</u>
	Harness or connector	-
Only reclining operation function does not operate	Front power seat switch LH	Refer to <u>INSPECTION</u>
	Separate type front seatback spring assembly LH (reclining motor)	Refer to <u>DISASSEMBLY</u>
	Harness or connector	-
Only front vertical operation function does not operate	Front power seat switch LH	Refer to <u>INSPECTION</u>
	Separate type front seat cushion spring assembly LH (front vertical motor)	Refer to <u>DISASSEMBLY</u>

	Harness or connector	-
Only lifter operation function does not operate	Front power seat switch LH	Refer to <u>INSPECTION</u>
	Separate type front seat cushion spring assembly LH (lifter motor)	Refer to <u>DISASSEMBLY</u>
	Harness or connector	-
Only lumbar support operation function does not operate	Power seat switch assembly	Refer to <u>INSPECTION</u>
	Separate type front seatback spring assembly LH (lumbar support motor)	Refer to <u>DISASSEMBLY</u>
	Harness or connector	-

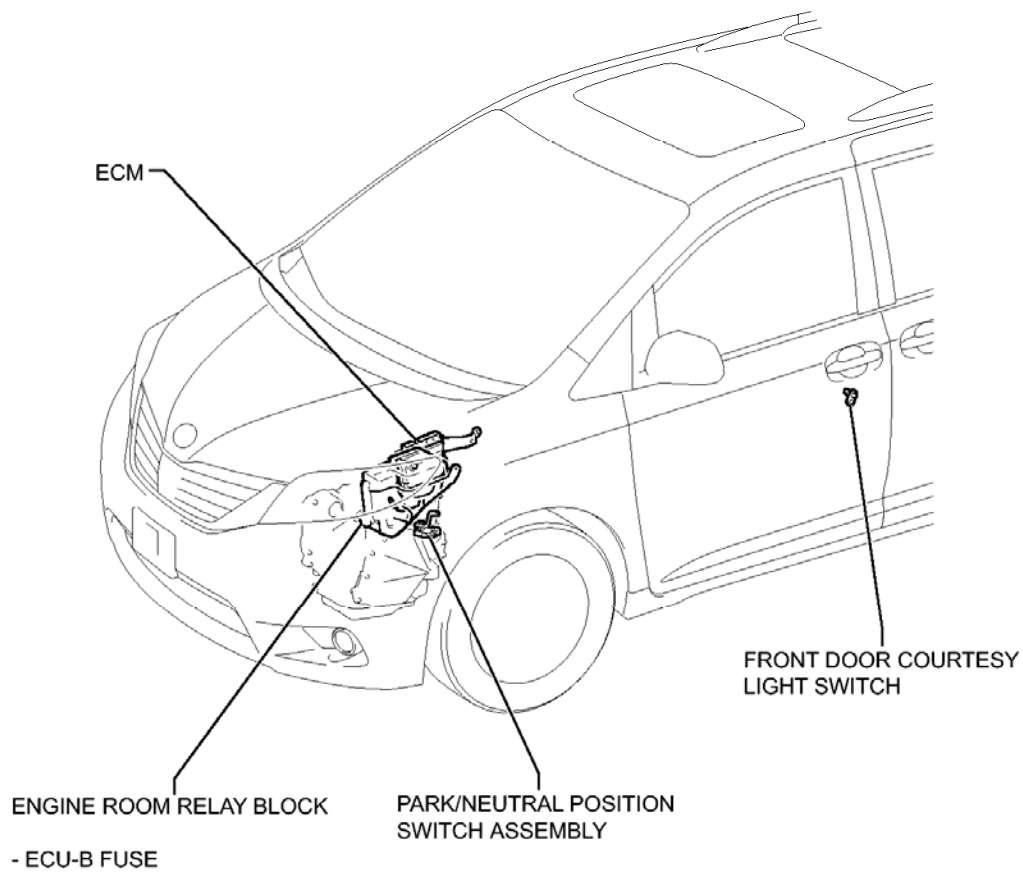
ACCESSORIES & EQUIPMENT

Front Power Seat Control System (w/ Memory) (Diagnostics - Introduction) - Sienna

FRONT POWER SEAT CONTROL SYSTEM (W/ MEMORY)

PARTS LOCATION

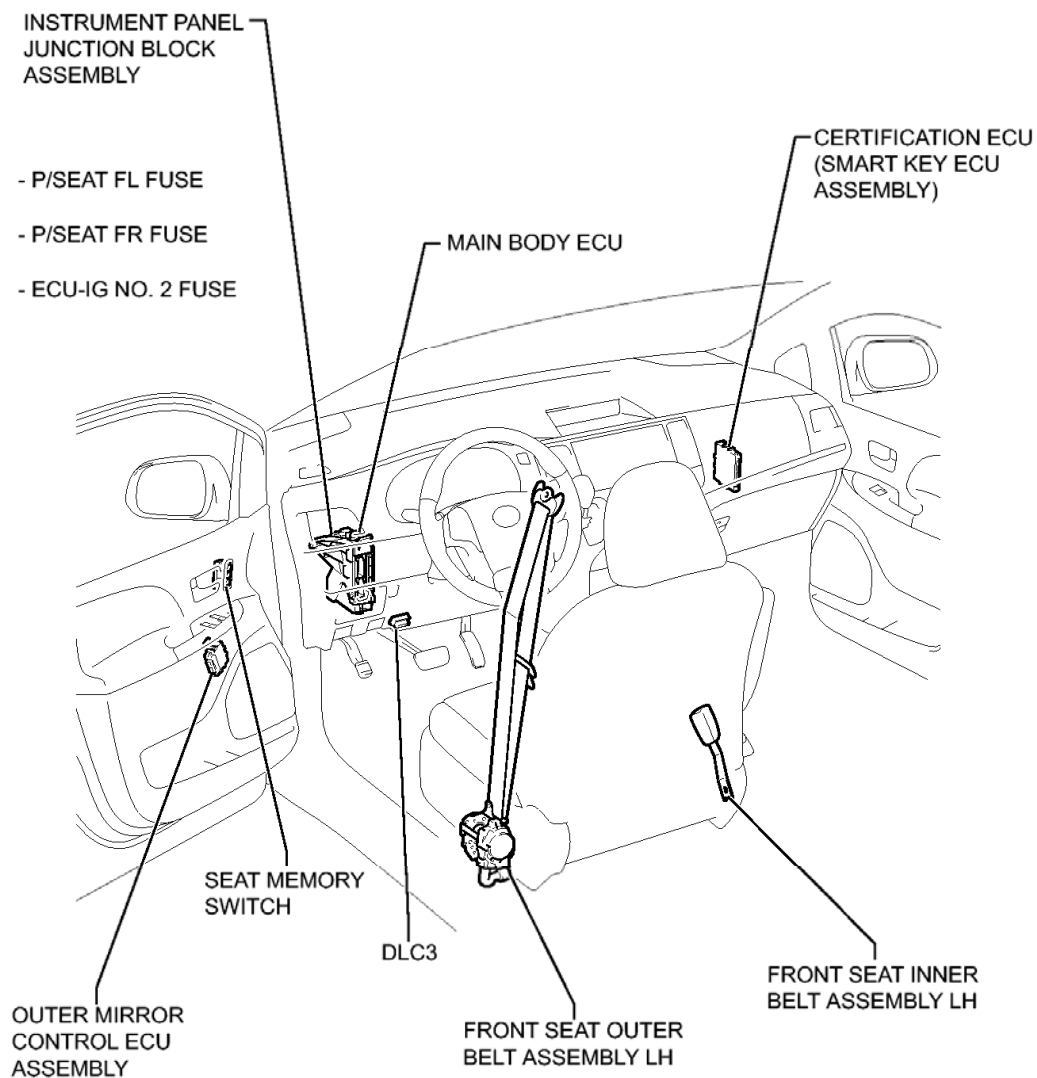
ILLUSTRATION



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Fig. 1: Front Power Seat Control System (w/ Memory) Components Location (1 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

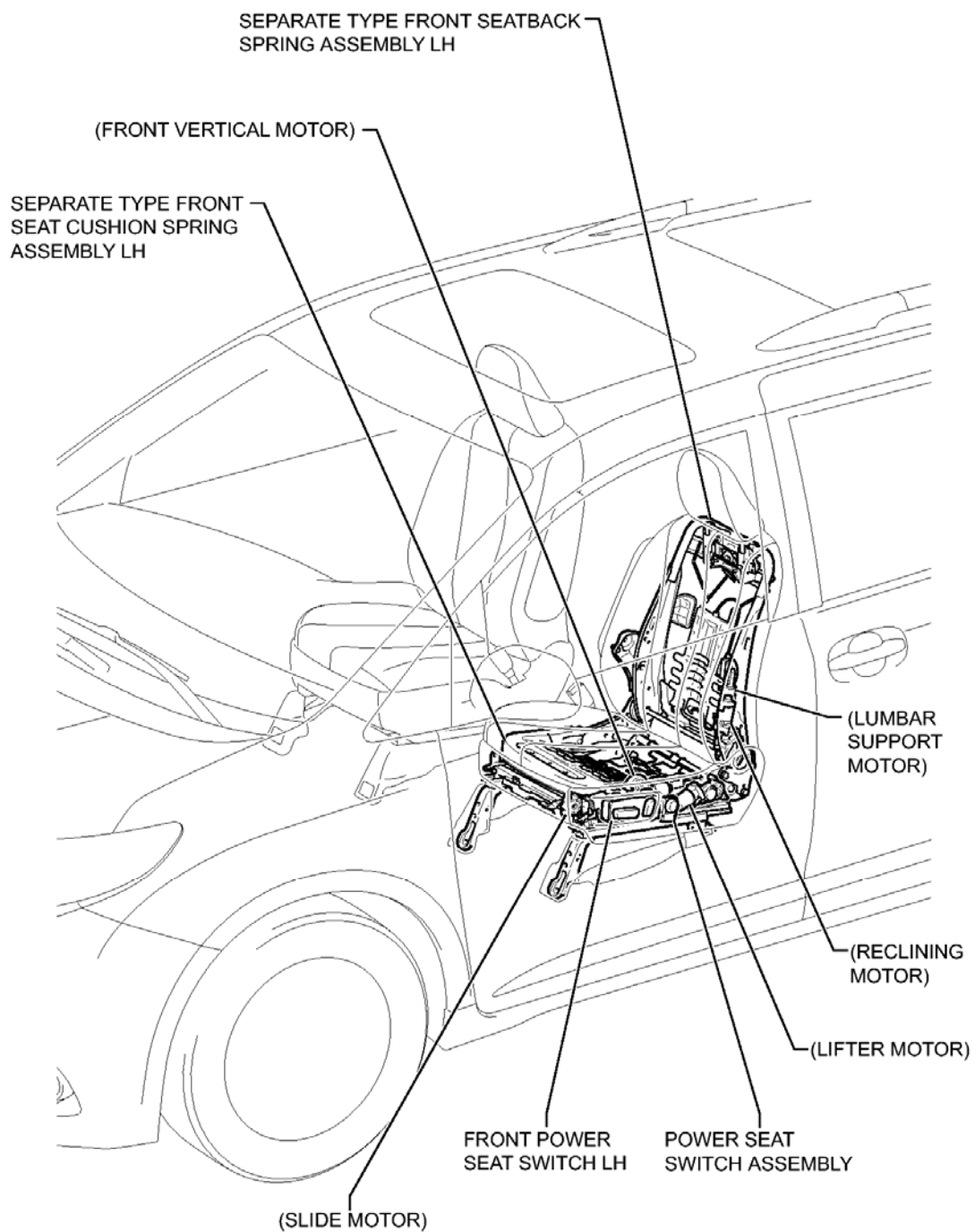


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Fig. 2: Front Power Seat Control System (w/ Memory) Components Location (2 Of 4)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

Driver Side:

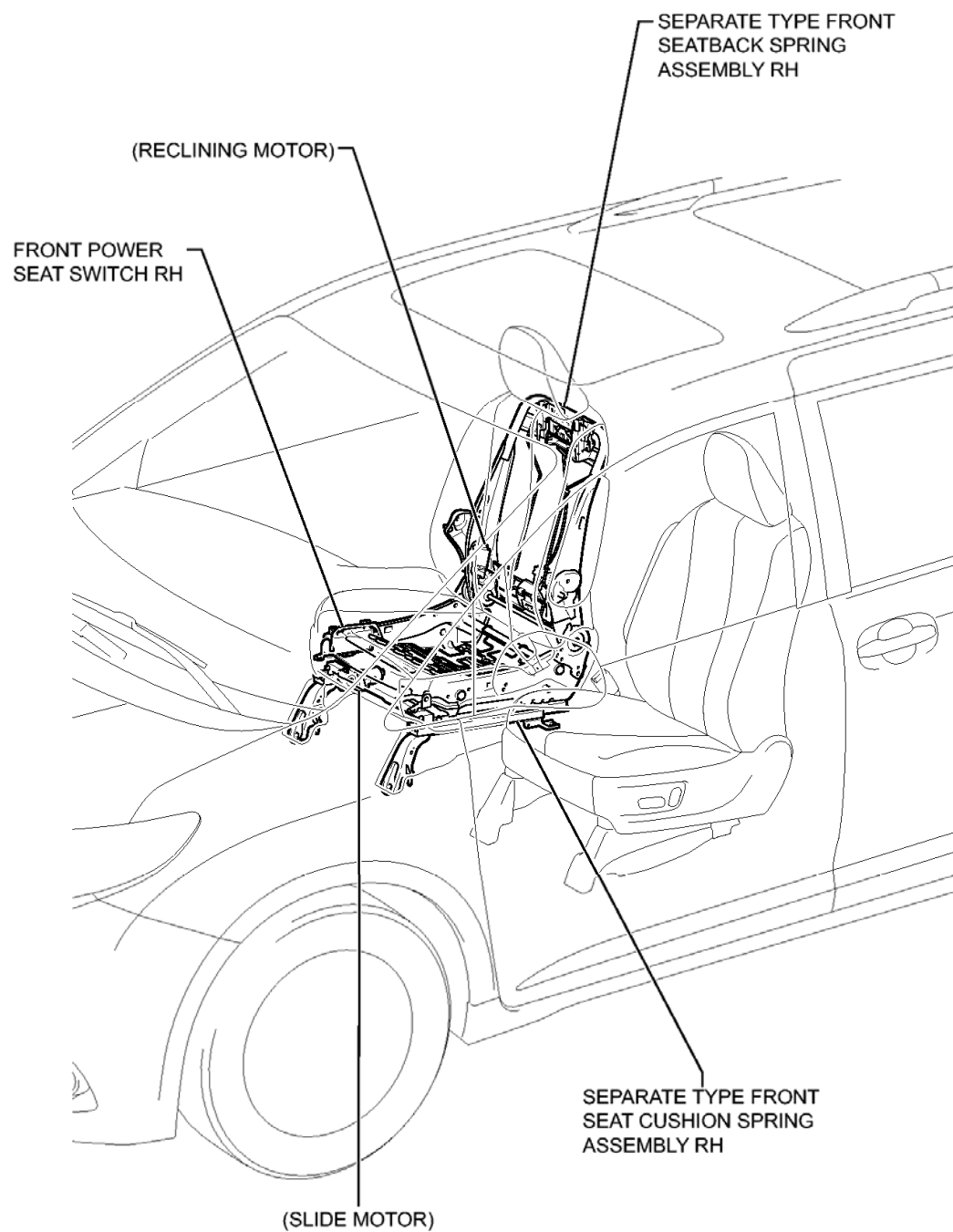


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Fig. 3: Front Power Seat Control System (w/ Memory) Components Location (3 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

Front Passenger Side:



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Fig. 4: Front Power Seat Control System (w/ Memory) Components Location (4 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DIAGRAM

SYSTEM DIAGRAM

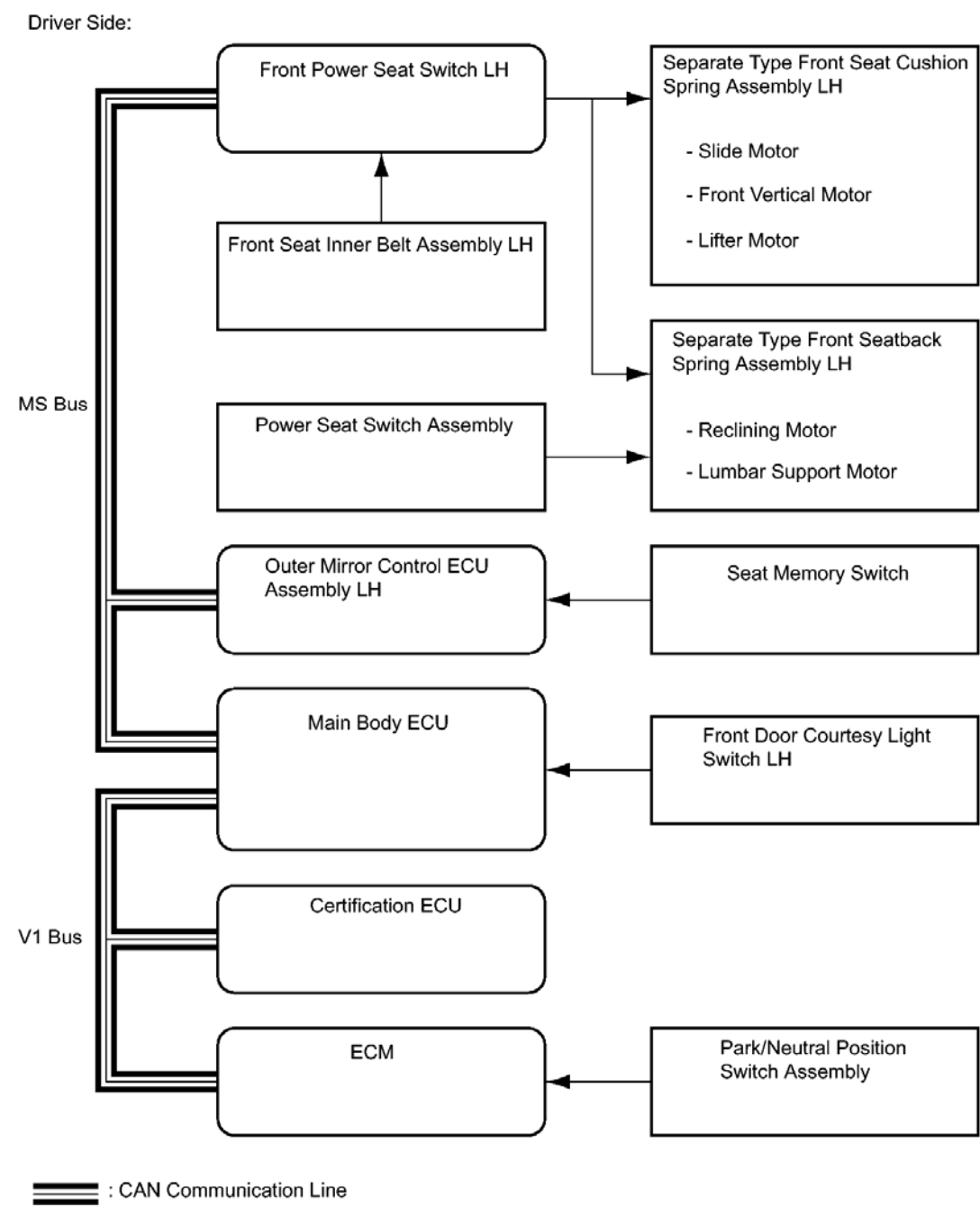


Fig. 5: Front Power Seat Control System Diagram (Driver Side)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

COMMUNICATION TABLE

Sender	Receiver	Signal	Line
		• Transmission information	

ECM	Main body ECU	• Shift position P signal	CAN
Outer mirror control ECU assembly LH	Main body ECU	• Seat memory switch M1 signal • Seat memory switch M2 signal • Seat memory switch SET signal	CAN
Main body ECU	Front power seat switch LH	• Engine switch signal • Shift position P signal • Parking brake switch signal • Transmission information • Driver's position buzzer request • Driver seat return and away position data • Driver seat position request • Driver seat position data	CAN
Certification ECU	Main body ECU	• Smart memory call replay request • Key identification No. 1 to No. 7 acquisition condition	CAN
Front power seat switch LH	Main body ECU	• State signal of driver seat • State signal of driver position buzzer • Driver's seat belt buckle switch status	CAN

Front Passenger Side:

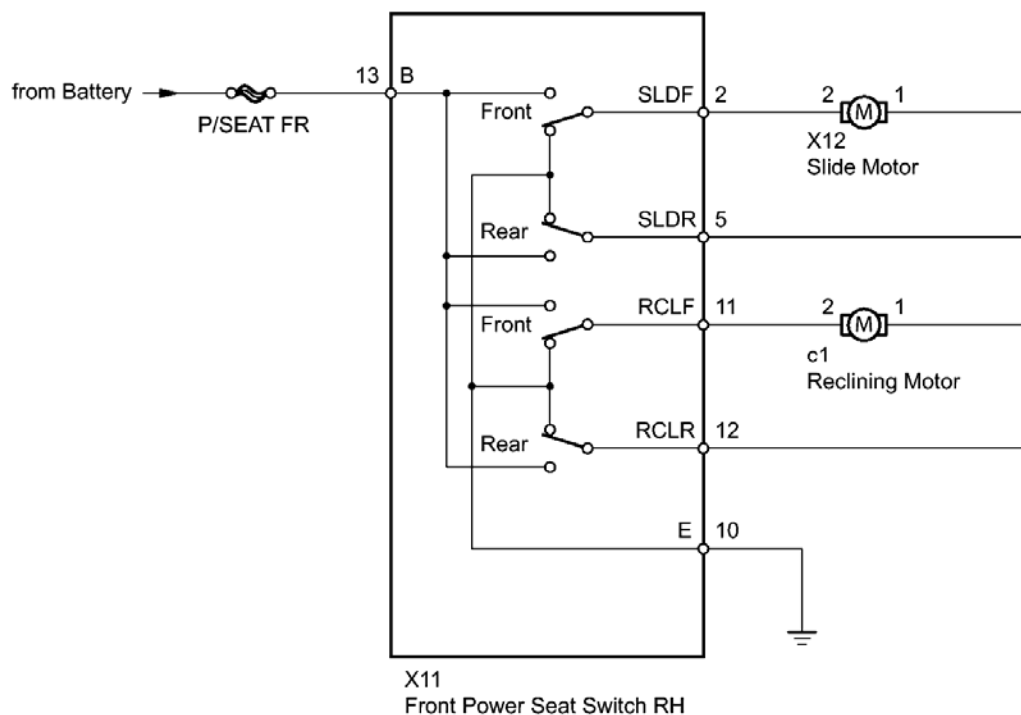


Fig. 6: Front Power Seat Control System Diagram (Passenger Side)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DESCRIPTION

SYSTEM DESCRIPTION

1. FRONT POWER SEAT CONTROL SYSTEM DESCRIPTION

- a. The driver seat is equipped with slide, reclining, lifter, front vertical and lumbar support adjustment functions.
- b. The front passenger seat is equipped with slide and reclining functions.

2. FUNCTION OF MAIN COMPONENTS

- a. The following functions are available.

Components	Function
Slide motor	Receives a signal from the front power seat switch and

	slides the seat forward and rearward.
Reclining motor	Receives a signal from the front power seat switch and tilts the seatback forward and rearward.
Front vertical motor (driver side)	Receives a signal from the front power seat switch and raises and lowers the front of the seat cushion.
Lifter motor (driver side)	Receives a signal from the front power seat switch and raises and lowers the seat cushion.
Lumbar support motor (driver side)	Receives a signal from the power seat switch assembly and adjusts the lumbar support adjuster.
	Built into each power seat motor and sends

Seat position sensor (driver side)	position data to the front power seat switch so that it can detect seat position at all times.
Front power seat switch	Based on the switch operation, seat adjuster signals are input to the front power seat switch to adjust the seat accordingly (driver side). Directly sends seat adjuster signals to each power seat motor (front passenger side).
Power seat switch assembly (driver side)	Directly sends seat adjuster signals to the lumbar support motor.
	If the seat memory SET switch is being pressed when one of the M1 or M2

Seat memory switch	switches is pressed, or if one of the M1 or M2 switches is pressed within 3 seconds of pressing the seat memory SET switch, the outer mirror control ECU assembly (driver side) sends the signals so that the seat position can be recorded. Then, when the memory switch is pressed, signal is input to outer mirror control ECU assembly (driver side) and seat position changes according to memory.
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3. SYSTEM OPERATION

- a. The front power seat functions which can be adjusted with power seat motors and/or memorized are shown in the chart below.

Seat Adjustment Function	Driver Seat	Front Passenger Seat
Sliding	Power and memory	Power
Reclining	Power and memory	Power
Front Vertical	Power and memory	-
Lifter	Power and memory	-
Lumbar Support	Power	-

- b. The seat memory switch sends memory switch information to the outer mirror control ECU assembly (driver side). Then the information is sent to the main body ECU via CAN. The information is received by the main body ECU and an instruction to memorize the seat position is sent to the front power seat switch via CAN. As a result, the seat position is memorized.

HOW TO PROCEED WITH TROUBLESHOOTING

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedures to troubleshoot the front power seat control system.
- *: Use the Techstream.

1. VEHICLE BROUGHT TO WORKSHOP

NEXT: Go to next step

2. INSPECT BATTERY VOLTAGE

Standard voltage

11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT: Go to next step

3. CHECK COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*

- a. Use the Techstream to check if the CAN communication system is functioning normally. Refer to **HOW TO PROCEED WITH TROUBLESHOOTING** .

RESULT

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output	B

B --> GO TO CAN COMMUNICATION SYSTEM. Refer to DIAGNOSTIC TROUBLE CODE CHART

A: Go to next step

4. CHECK DTC OUTPUT*

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR**.
- b. Clear the DTCs. Refer to **DTC CHECK / CLEAR**.
- c. Recheck for DTCs. Refer to **DTC CHECK / CLEAR**.

RESULT

Result	Proceed to
DTC is not output	A
DTC is output	B

B --> GO TO DIAGNOSTIC TROUBLE CODE CHART. Refer to DIAGNOSTIC TROUBLE CODE CHART

A: Go to next step

5. PROBLEM SYMPTOMS TABLE

- a. Refer to **PROBLEM SYMPTOMS TABLE**.

RESULT

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B --> Go to step 7

A: Go to next step

6. OVERALL ANALYSIS AND TROUBLESHOOTING*

- Operation Check. Refer to **OPERATION CHECK**
- Data List / Active Test. Refer to **DATA LIST / ACTIVE TEST**
- Terminals of ECU. Refer to **TERMINALS OF ECU**

NEXT: Go to next step

7. ADJUST, REPAIR OR REPLACE

NEXT: Go to next step

8. CONFIRMATION TEST

NEXT --> END

OPERATION CHECK

OPERATION CHECK

1. CHECK FRONT POWER SEAT FUNCTION

- Check the basic functions.



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Fig. 7: Identifying Front Power Seat Function
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Sliding Function
*b	Front Vertical Function
*c	Lifter Function
*d	Reclining Function
*e	Lumbar Support

Function

1. Operate the power seat switches and check to make sure each seat function operates properly:

- Sliding
- Front vertical
- Lifter
- Reclining
- Lumbar support

2. **CHECK POWER SEAT MOTOR ASSEMBLY (SLIDING, FRONT VERTICAL, LIFTER, RECLINING)**

a. Check the PTC thermistor operation inside the power seat motor.

HINT:

The resistance of the PTC thermistor increases when the front power seat switch is held down even after the power seat has been moved to the farthest possible position in one direction. If the resistance increases beyond a specified level, the current is shut off to prevent a short circuit.

NOTE:

- **Make sure the inspection is performed with the seat installed in the vehicle.**
- **Perform the 4 steps below for each power seat function.**

1. Choose a power seat function. Operate the front power seat switch and move the seat to the farthest possible position in one direction. Keep the seat in that position for approximately 60 seconds.
2. Operate the front power seat switch again and continue to try to move the seat in the same direction as in the previous step. Measure the time until the current is shut off (motor operation sound will stop).

Standard

4 to 90 seconds

3. After the current is shut off, release the front power seat switch and wait for approximately 60 seconds.
4. Operate the same front power seat switch and move the seat in the opposite direction. Check that the motor operates.

3. **CHECK LUMBAR SUPPORT MOTOR**

a. Check the PTC thermistor operation inside the lumbar support motor.

NOTE:

Make sure the inspection is performed with the seat installed in the vehicle.

1. Operate the power seat switch assembly and move the lumbar support to either the foremost or rearmost position. Keep the lumbar support in that position for approximately 60 seconds.
2. Operate the power seat switch assembly again and continue to try to move the lumbar support in the same direction as in the previous step. Measure the time until current is shut off (motor operation sound will stop).

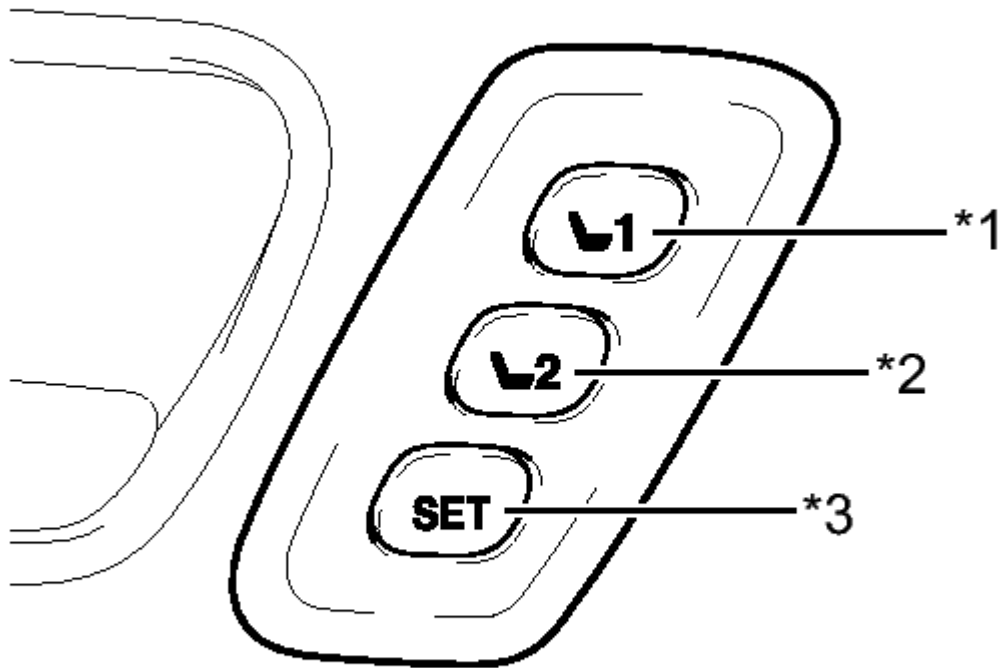
Standard

4 to 90 seconds

3. After current is shut off, release the power seat switch assembly and wait for approximately 60 seconds.
4. Operate the power seat switch assembly and move the lumbar support in the opposite direction. Check that the motor operates.

4. CHECK MEMORY AND SEAT RESTORING OPERATION

- a. Check the memory and restore operation.



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Fig. 8: Checking Memory And Seat Restoring Operation
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	M1 switch
*2	M2 switch
*3	SET switch

HINT:

If the M1 switch and M2 switch are simultaneously pressed while the SET switch is pressed and held, the seat position will not be stored.

1. Turn the engine switch on (IG) and move the shift lever to P.
 2. Move the seat to the maximum front and upper positions via the seat switch.
 3. Check that the buzzer sounds for 0.5 seconds and the seat position is memorized when the M1 switch and the SET switch are pressed and held, or the SET switch is pressed and then the M1 switch is pressed within 3 seconds.
 4. Move the seat out of the maximum front and upper positions via the seat switch.
 5. Check that the buzzer sounds for 0.5 seconds and the seat position is memorized when the M2 switch and the SET switch are pressed and held, or the SET switch is pressed and then the M2 switch is pressed within 3 seconds.
 6. Check that the buzzer sounds for 0.1 seconds and the seat automatically moves into the maximum front and upper positions (memorized positions) when the M1 switch is pressed.
 7. Check that the buzzer sounds for 0.1 seconds and the seat automatically moves out of the maximum front and upper positions (memorized positions) when the M2 switch is pressed.
 8. Turn the engine switch off and open the driver door. Check that the buzzer sounds for 0.1 seconds and the seat automatically moves to the memorized position by pressing the M1 or M2 switch within 180 seconds after the engine switch is turned off.
 9. Turn the engine switch off and close the driver door. Check that the buzzer sounds for 0.1 seconds and the seat automatically moves to the memorized position by pressing the M1 or M2 switch within 60 seconds after the engine switch is turned off.
- b. Clear the memory.
1. Turn the engine switch on (IG).
 2. Press the front power seat switch (front vertical switch) downward 3 times.

HINT:

Perform each switch operation within 10 seconds of the previous operation.

3. Within 10 seconds of the above operation, begin the following operation: perform the rearward reclining operation and upward lifter operation simultaneously for 10 seconds or more (a buzzer sounds for 0.5 seconds). This clears the memory.

5. CHECK MEMORY CALL FUNCTION

- a. Automatic memory call function check
1. With a transmitter key recognition code registered:

Perform a wireless door unlock operation and check that opening the driver side door causes the following:

- The buzzer sounds for 0.1 seconds.
- The driver seat and outer mirror automatically move to the memorized positions.

HINT:

- The registered transmitter key recognition code is recalled automatically.

- If the automatic memory call function is not operated, the buzzer will not sound.

b. Memory registration

1. Prepare by recording the driving position through the memory switch (M1 or M2).
2. With the driver side door closed, turn the engine switch from on (IG) to off, and while holding down the previously registered M1 or M2 switch, press and hold the unlock switch on the key to be registered until the answer-back buzzer sounds.

c. Memory deletion

1. With the driver side door closed, turn the engine switch from on (IG) to off, and while holding down the SET switch, press and hold the unlock switch on the key to be deleted until the answer-back buzzer sounds.

6. CHECK MEMORY CALL EMERGENCY STOP FUNCTION

- a. During a memory call operation, perform one of the following operations and check that the memory call operation stops.
 - Press a memory switch (M1, M2 or SET).
 - Press the front power seat switch LH.

7. CHECK POWER SEAT POWER EASY ACCESS SYSTEM

HINT:

When troubleshooting a function, first make sure that the function is set to the default setting.

a. Away function

1. Turn the engine switch off and move the shift lever to P.
2. Disengage the seat belt tongue plate from the buckle.
3. Make sure that the seat slides rearward.

b. Return function

1. Turn the engine switch on (ACC or IG) or move the shift lever to P, and then engage the seat belt tongue plate with the buckle.
2. Make sure that the seat slides forward.

CUSTOMIZE PARAMETERS

CUSTOMIZE PARAMETERS

1. CUSTOMIZE FUNCTION WITH TECHSTREAM

HINT:

The following items can be customized.

NOTE:

- When the customer requests a change in a function, first make sure that the function can be customized.

- **Record the current settings before customizing.**
- **When troubleshooting a function, first make sure that the function is set to the default setting.**

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Main Body / Utility / Customize Setting.
- Select the setting by referring to the table below.

MAIN BODY

Tester Display	Default	Content	Setting
Seat Move Distance	Standard	Allows customization of the seat movement distance for the power easy access system.	OFF, Little or Standard
Seat position/Tilt & Telesco memory recall setting	D Door	This customize function switches the condition of the seat position, mirror position and tilt and telescopic memory recall. Possible recall activation parameters are "driver door unlocked with smart entry and start system and opened"	D Door or ANY Door

		or "any door unlocked with smart entry and start system and opened".	
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PROBLEM SYMPTOMS TABLE

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

FRONT POWER SEAT CONTROL SYSTEM (DRIVER SIDE)

Symptom	Suspected Area	See
Front power seat does not operate with front power seat switch.	Proceed to "Front Power Seat does not Operate with Front Power Seat Switch"	Refer to <u>Front Power Seat does not Operate with Front Power Seat Switch</u>
One or more power seat motors do not operate.	Proceed to "One or more Power Seat Motors do not Operate"	Refer to <u>One or more Power Seat Motors do not Operate</u>
Power seat position is not memorized.	Proceed to "Power Seat Position is not Memorized"	Refer to <u>Power Seat Position is not Memorized</u>
Power seat does not return to memorized position.	Proceed to "Power Seat does not Return to Memorized Position"	Refer to <u>Power Seat does not Return to Memorized Position</u>
Wireless transmitter memory function does not operate.	Proceed to "Wireless Transmitter Memory Function does not Operate"	Refer to <u>Wireless Transmitter Memory Function does not Operate</u>
Wireless-linked return function does not operate.	Proceed to "Wireless-linked Return Function does not Operate"	Refer to <u>Wireless-linked Return Function does not Operate</u>
Power seat power easy access system function does not operate.	Proceed to "Power Seat Power Easy Access System Function does not Operate"	Refer to <u>Power Seat Power Easy Access System Function does not Operate</u>
Lumbar support function does not operate.	Power seat switch assembly	Refer to <u>INSPECTION</u>
	Separate type front seatback spring assembly LH (lumbar support motor)	Refer to <u>DISASSEMBLY</u>

	Harness or connector	-
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FRONT POWER SEAT CONTROL SYSTEM (FRONT PASSENGER SIDE)

Symptom	Suspected Area	See
All functions do not operate.	Front power seat switch RH	Refer to <u>INSPECTION</u>
	Harness or connector	-
Only slide function does not operate.	Front power seat switch RH	Refer to <u>INSPECTION</u>
	Separate type front seat cushion spring assembly (slide motor)	Refer to <u>DISASSEMBLY</u>
	Harness or connector	-
Only reclining function does not operate.	Front power seat switch RH	Refer to <u>INSPECTION</u>
	Separate type front seatback spring assembly RH (reclining motor)	Refer to <u>DISASSEMBLY</u>
	Harness or connector	-

TERMINALS OF ECU

TERMINALS OF ECU

1. CHECK FRONT POWER SEAT SWITCH LH

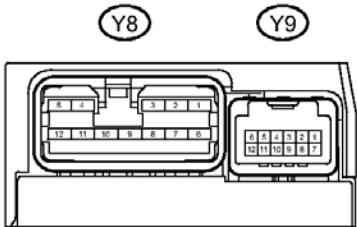


Fig. 9: Front Power Seat Switch LH Connector Terminal Identification
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disconnect the Y8 and Y9 front power seat switch LH connectors.
- b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
Y8-2 (GND1) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
Y8-7				

(+B1) - Y8-2 (GND1)	W - W- B	Power source	Always	11 to 14 V
Y9-12 (SYSB) - Y8-2 (GND1)	P - W- B	System power source	Always	11 to 14 V

If the result is not as specified, there may be a malfunction on the wire harness side.

- c. Reconnect the front power seat switch LH connectors.
- d. Measure the voltage and resistance according to the value(s) in the table below.

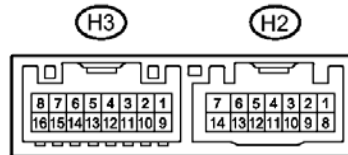
Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
Y8-3 (SLD+) - Y8-2 (GND1)	L - W- B	Sliding motor signal (forward)	Slide switch off	Below 1 V
			Slide switch on (Forward)	11 to 14 V
Y8-4 (SLD-) - Y8-2 (GND1)	GR - W-B	Sliding motor signal (rearward)	Slide switch off	Below 1 V
			Slide switch on (Rearward)	11 to 14 V
Y8-5 (FRV-) - Y8-2 (GND1)	R - W- B	Front vertical motor signal (downward)	Front vertical switch off	Below 1 V
			Front vertical switch on (Downward)	11 to 14 V
Y8-6 (+B2) - Y8-1 (GND2)	SB - W-B	Power source	Always	11 to 14 V
Y8-8 (FRV+) - Y8-2 (GND1)	B - W- B	Front vertical motor signal (upward)	Front vertical switch off	Below 1 V
			Front vertical switch on (Upward)	11 to 14 V
Y8-9		Reclining	Reclining	Below 1

(RCL+) - Y8-2 (GND1)	P - W- B	motor signal (forward)	switch off	V
			Reclining switch on (Forward)	11 to 14 V
Y8-10 (LFT+) - Y8-2 (GND1)	V - W- B	Lifter motor signal (upward)	Lifter switch off	Below 1 V
			Lifter switch on (Upward)	11 to 14 V
Y8-11 (RCL-) - Y8-2 (GND1)	LG - W-B	Reclining motor signal (rearward)	Reclining switch off	Below 1 V
			Reclining switch on (Rearward)	11 to 14 V
Y8-12 (LFT-) - Y8-2 (GND1)	G - W- B	Lifter motor signal (downward)	Lifter switch off	Below 1 V
			Lifter switch on (Downward)	11 to 14 V
Y9-1 (SGND) - Y8-2 (GND1)	BR - W-B	Ground	Always	Below 1 ohms
Y9-3 (SSFV) - Y9-1 (SGND)	R - BR	Front vertical position signal	Front vertical function operating	4.5 to 4.8 V
Y9-4 (SSRL) - Y9-1 (SGND)	P - BR	Lifter position signal	Lifter function operating	4.5 to 4.8 V
Y9-5 (SSRS) - Y9-1 (SGND)	G - BR	Slide position signal	Slide function operating	4.5 to 4.8 V
Y9-10 (DBCL) - Y8-2 (GND1)	GR - W-B	Buckle switch signal	Engine switch off Driver side seat belt unfastened	11 to 14 V
			Engine switch off Driver side seat belt fastened	Below 1 V
Y9-11				

(SSRR) - Y9-1 (SGND)	V - BR	Reclining position signal	Reclining function operating	4.5 to 4.8 V
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If the result is not as specified, the front power seat switch LH may have a malfunction.

2. CHECK OUTER MIRROR CONTROL ECU ASSEMBLY LH



H

Fig. 10: Outer Mirror Control ECU Assembly LH Connector Terminal Identification
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Disconnect the H2 outer mirror control ECU assembly LH connector.
- Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
H2-5 (SIG) - H2-7 (GND)	L - W- B	Power source (IG)	Engine switch off Engine switch on (IG)	Below 1 V 11 to 14 V
H2-6 (CPUB) - H2-7 (GND)	LG - W-B	Power source	Always	11 to 14 V
H2-7 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
H2-14 (BDR) - H2-7 (GND)	V - W- B	Power source	Always	11 to 14 V

If the result is not as specified, there may be a malfunction on the wire harness side.

- Reconnect the outer mirror control ECU assembly LH connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
H3-1 (MM) - H3-13 (MSWE)	GR - Y	Seat memory switch SET signal	SET switch off	11 to 14 V
			SET switch on	Below 1 V
H3-2 (M1) - H3-13 (MSWE)	B - Y	Seat memory switch M1 signal	M1 switch off	11 to 14 V
			M1 switch on	Below 1 V
H3-3 (M2) - H3-13 (MSWE)	V - Y	Seat memory switch M2 signal	M2 switch off	11 to 14 V
			M2 switch on	Below 1 V

If the result is not as specified, the outer mirror control ECU assembly LH may have a malfunction.

3. CHECK MAIN BODY ECU AND INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

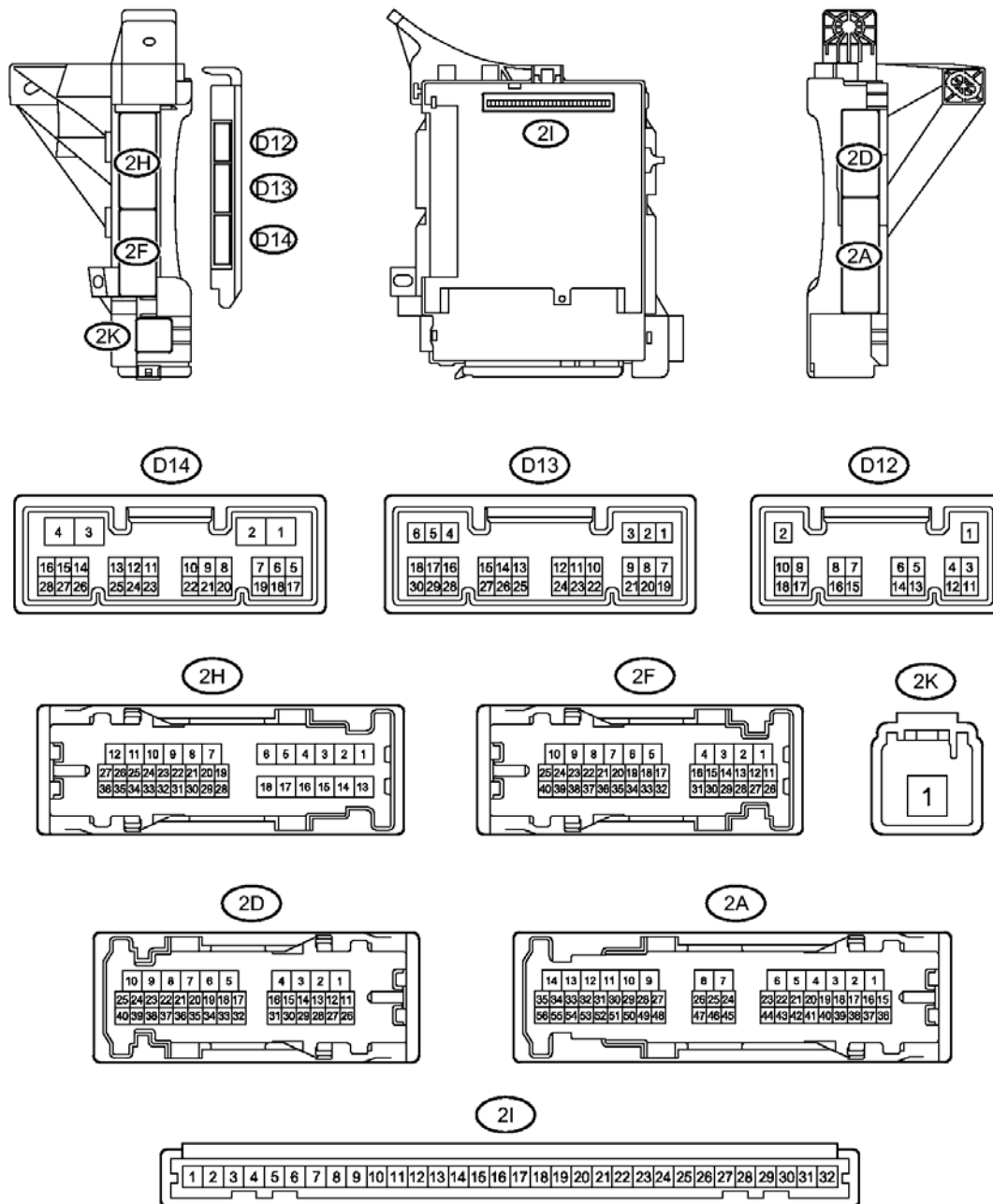


Fig. 11: Main Body ECU And Instrument Panel Junction Block Assembly Connector Terminal Identification

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Remove the main body ECU.
- Measure the voltage and resistance according to the value(s) in the table below.

Terminal				
----------	--	--	--	--

No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
2I-30 (BECU) - Body ground	-	Power source	Always	11 to 14 V
2I-32 (IG) - Body ground	-	Power source (IG)	Engine switch on (IG)	11 to 14 V
			Engine switch off	Below 1 V
2I-11 (GND1) - Body ground	-	Ground	Always	Below 1 ohms
D14-3 (GND2) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms

If the result is not as specified, there may be a malfunction on the wire harness side.

- c. Reinstall the main body ECU.
- d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
2H-35 (FLCY) - Body ground	P - Body ground	Front door courtesy light switch LH signal	Front door LH closed	11 to 14 V
			Front door LH open	Below 1 V

DIAGNOSIS SYSTEM

DIAGNOSIS SYSTEM

1. DESCRIPTION

- a. Front power seat control system data and Diagnostic Trouble Codes (DTCs) can be read through the Data Link Connector 3 (DLC3) of the vehicle. When the system seems to be malfunctioning, use the Techstream to check for malfunctions and perform repairs.

2. CHECK DLC3

- a. Check the DLC3. Refer to **GENERAL INFORMATION** .

3. INSPECT BATTERY VOLTAGE

- a. Check the battery voltage.

Standard voltage

11 to 14 V

If the voltage is below 11 V, recharge or replace the battery.

DTC CHECK / CLEAR

DTC CHECK / CLEAR

1. CHECK DTC

- a. Connect the Techstream to the DLC3.
- b. Turn the engine switch on (IG).
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Driver Seat / Trouble Codes.
- e. Check for DTCs.

2. CLEAR DTC

- a. Connect the Techstream to the DLC3.
- b. Turn the engine switch on (IG).
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Driver Seat / Trouble Codes.
- e. Clear the DTCs.

DATA LIST / ACTIVE TEST

DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

Using the Techstream to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTE: In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

- a. Connect the Techstream to the DLC3.
- b. Turn the engine switch on (IG).
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / (desired system) / Data List.

- e. According to the display on the Techstream, read the Data List.

DRIVER SEAT

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Reclining Rear	Reclining switch signal (Rearward) / ON or OFF	ON: Reclining switch (Rearward) on OFF: Reclining switch (Rearward) off	-
Reclining Front	Reclining switch signal (Forward) / ON or OFF	ON: Reclining switch (Forward) on OFF: Reclining switch (Forward) off	-
Front Vertical Down	Front vertical switch signal (Downward) / ON or OFF	ON: Front vertical switch (Downward) on OFF: Front vertical switch (Downward) off	-
Front Vertical Up	Front vertical switch signal (Upward) / ON or OFF	ON: Front vertical switch (Upward) on OFF: Front vertical switch (Upward) off	-
Lifter Switch Down	Lifter switch signal (Downward) / ON or OFF	ON: Lifter switch (Downward) on OFF: Lifter switch	-

		(Downward) off	
Lifter Switch Up	Lifter switch signal (Upward) / ON or OFF	ON: Lifter switch (Upward) on OFF: Lifter switch (Upward) off	-
Slide Rear	Sliding switch signal (Rearward) / ON or OFF	ON: Sliding switch (Rearward) on OFF: Sliding switch (Rearward) off	-
Slide Front	Sliding switch signal (Forward) / ON or OFF	ON: Sliding switch (Forward) on OFF: Sliding switch (Forward) off	-
Seat Memory No1	Seat position memorized with M1 switch / Mem or Not Mem	Mem: Memorized Not Mem: Not memorized	-
Seat Memory No2	Seat position memorized with M2 switch / Mem or Not Mem	Mem: Memorized Not Mem: Not memorized	-
Ignition Switch	Communication state of engine switch signal / ON or OFF	ON: engine switch on (IG) signal received OFF: engine switch on (IG) signal not received	-
P Switch	Shift lever position P signal / ON or OFF	ON: Shift lever in P OFF: Shift lever not in P	-
Parking	Parking brake switch status / ON	ON: Parking brake applied OFF: Parking	-

Brake SW	or OFF	brake released	
Vehicle Speed	Vehicle speed data / min.: 0 km/h (0 mph), max.: 255 km/h (158 mph)	Actual vehicle speed	-
Power Voltage	Power supply for front power seat switch / min: 0 V, max: 19.89 V	Within range of 11 to 14 V	-
Slide Position	Seat sliding position / min: 0000, max: 65535	Within range of 0 to 65535	-
Reclining Position	Seat reclining position / min: 0000, max: 65535	Within range of 0 to 65535	-
Front Vertical Position	Seat front vertical position / min: 0000, max: 65535	Within range of 0 to 65535	-
Lifter Position	Seat lifter position / min: 0000, max: 65535	Within range of 0 to 65535	-
Slide Pos Mem No1	Seat sliding position memorized with M1 switch / min: 0000, max: 65535	Within range of 0 to 65535	-
Reclining Pos Mem No1	Seat reclining position memorized with M1 switch / min: 0000, max: 65535	Within range of 0 to 65535	-
Frnt Vrtcl Pos Mem No1	Front vertical position memorized with M1 switch / min: 0000, max: 65535	Within range of 0 to 65535	-
Lifter Pos Mem No1	Lifter position memorized with M1 switch / min: 0000, max: 65535	Within range of 0 to 65535	-
Slide Pos Mem No2	Seat sliding position memorized with M2 switch / min: 0000, max: 65535	Within range of 0 to 65535	-

Reclining Pos Mem No2	Seat reclining position memorized with M2 switch / min: 0000, max: 65535	Within range of 0 to 65535	-
Frnt Vrtcl Pos Mem No2	Front vertical position memorized with M2 switch / min: 0000, max: 65535	Within range of 0 to 65535	-
Lifter Pos Mem No2	Lifter position memorized with M2 switch / min: 0000, max: 65535	Within range of 0 to 65535	-
Motor Status	State of slide motor control/STANDBY, MOVING or LOCK	STANDBY: Slide motor is idle MOVING: Slide motor is moving LOCK: Slide motor is locked	-
Slide Position Init Flg	Seat sliding limit position memory / ON or OFF	ON: Memorized OFF: Not memorized	-
Slide Position Rear Limit	Seat sliding position / min: 0000, max: 65535	Within range of 0 to 65535	-
Shift P SW (PMN)	Shift lever position P signal / ON or OFF	ON: Shift lever in P OFF: Shift lever not in P	-
		OFF: Buzzer does not sound MOVE: Request to sound buzzer when starting memory replay REGISTRY: Request to sound buzzer	

Memory Button Buzzer Request	Driver seat buzzer request display / OFF, MOVE, REGISTRY, CANCEL, REG NG or REG WAIT	when starting memory registration CANCEL: Request to sound buzzer when canceling memory call registration REG NG: Request to sound buzzer when memory call registration not possible REG WAIT: Request to sound buzzer when starting memory call cabin scan	-
Driver Seat Request Command	Driver seat operation request received / OFF, MEMORY, MEM MOV, MEM SOD, RES MOV, AWY MOV, AWY SOD, MEM AWY or MEM RET	OFF: No instruction MEMORY: Request to memorize MEM MOV: Request to recall memory MEM SOD: Request to recall through memory call function RET MOV: Request to return AWY MOV: Request to move away AWY SOD: Request to recall away position memory	-

		MEM AWY: Request to recall memorized position of seat MEM RET: Request to restore seat to memorized position	
Driver Seat POS REQ	Seat memory switch operation value / OFF, MEM1, MEM2, MEM3, DRV1, DRV2 or DRV3	OFF: No operation MEM1: M1 switch operation status MEM2: M2 switch operation status MEM3: Related switch does not exist DRV1: Memory call 1 function operating DRV2: Memory call 2 function operating DRV3: Related function does not exist	-
Away Move Range Scale	Driver seat slide away distance / NONE, SMALL, STANDARD or LONG	NONE: No movement SMALL: Moves short distance STANDARD: Moves standard distance LONG: Moves long	-

		distance	
Return Move	Return destination / AVAIL or NOT AVL	AVAIL: Return destination set NOT AVL: Return destination not set	-
Return and Away Function	Power easy access system status / AVAIL or NOT AVL	AVAIL: Power easy access system functioning NOT AVL: Power easy access system not functioning	-
Driver Seat Buckle SW	Status of driver seat belt / ON or OFF	ON: Tongue plate engaged OFF: Tongue plate not engaged	-
Slide Pos Mem Drv1	Seat sliding position memorized for memory call 1 / min: 0000, max: 65535	Within range of 0 to 65535	-
Reclining Pos Mem Drv1	Seat reclining position memorized for memory call 1 / min: 0000, max: 65535	Within range of 0 to 65535	-
Front Vertical Pos Mem Drv1	Seat front vertical position memorized for memory call 1 / min: 0000, max: 65535	Within range of 0 to 65535	-
Lifter Pos Mem Drv1	Seat lifter position memorized for memory call 1 / min: 0000, max: 65535	Within range of 0 to 65535	-
Slide Pos Mem Drv2	Seat sliding position memorized for memory call 2 / min: 0000, max:	Within range of 0 to 65535	-

	65535		
Reclining Pos Mem Drv2	Seat reclining position memorized for memory call 2 / min: 0000, max: 65535	Within range of 0 to 65535	-
Front Vertical Pos Mem Drv2	Seat front vertical position memorized for memory call 2 / min: 0000, max: 65535	Within range of 0 to 65535	-
Lifter Pos Mem Drv2	Seat lifter position memorized for memory call 2 / min: 0000, max: 65535	Within range of 0 to 65535	-
Return Position	Slide return position / min.: 0000, max.: 65535	Within range of 0 to 65535	-

MIRROR L

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Seat Memory Switch 1	Seat memory switch M1 signal / ON or OFF	ON: M1 switch on OFF: M1 switch off	-
Seat Memory Switch 2	Seat memory switch M2 signal / ON or OFF	ON: M2 switch on OFF: M2 switch off	-
Seat Memory Set Switch	Seat memory switch SET signal / ON or OFF	ON: SET switch on OFF: SET switch off	-

MAIN BODY

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
FL Door Courtesy	Front door courtesy light switch assembly signal / ON or OFF	ON: Driver side door open OFF: Driver side door closed	-

Mem SW No. w/KeyID1	Memory switch linked with key ID1 / NONE, MEM SW1, MEM SW2 or MEM SW3	NONE: No switches linked with key ID1 MEM SW1: M1 switch linked with key ID1 MEM SW2: M2 switch linked with key ID1 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID2	Memory switch linked with key ID2 / NONE, MEM SW1, MEM SW2 or MEM SW3	NONE: No switches linked with key ID2 MEM SW1: M1 switch linked with key ID2 MEM SW2: M2 switch linked with key ID2 MEM SW3: Related switch does not exist	-
		NONE: No switches linked with key ID3 MEM SW1: M1 switch linked with	

Mem SW No. w/KeyID3	Memory switch linked with key ID3 / NONE, MEM SW1, MEM SW2 or MEM SW3	key ID3 MEM SW2: M2 switch linked with key ID3 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID4	Memory switch linked with key ID4 / NONE, MEM SW1, MEM SW2 or MEM SW3	NONE: No switches linked with key ID4 MEM SW1: M1 switch linked with key ID4 MEM SW2: M2 switch linked with key ID4 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID5	Memory switch linked with key ID5 / NONE, MEM SW1, MEM SW2 or MEM SW3	NONE: No switches linked with key ID5 MEM SW1: M1 switch linked with key ID5 MEM SW2: M2 switch linked with key ID5 MEM SW3:	-

		Related switch does not exist	
Mem SW No. w/KeyID6	Memory switch linked with key ID6 / NONE, MEM SW1, MEM SW2 or MEM SW3	NONE: No switches linked with key ID6 MEM SW1: M1 switch linked with key ID6 MEM SW2: M2 switch linked with key ID6 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID7	Memory switch linked with key ID7 / NONE, MEM SW1, MEM SW2 or MEM SW3	NONE: No switches linked with key ID7 MEM SW1: M1 switch linked with key ID7 MEM SW2: M2 switch linked with key ID7 MEM SW3: Related switch does not exist	-
Driver Seat Memory1	Seat position memorized with M1 switch/OFF or ON	OFF: Not memorized ON:	-

		Memorized	
Driver Seat Memory2	Seat position memorized with M2 switch/OFF or ON	OFF: Not memorized ON: Memorized	-
D Seat Configuration	Driver seat configuration/NONE, Not RTN or Return	NONE: Driver seat without memory system Not RTN: Driver seat with memory system (w/o power easy access system) Return: Driver seat with memory system (w/ power easy access system)	-

2. ACTIVE TEST

HINT:

Using the Techstream to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Driver Seat / Active Test.
- According to the display on the Techstream, perform the Active Test.

DRIVER SEAT

Tester Display	Test Part	Control Range	Diagnostic Note
----------------	-----------	---------------	-----------------

Seat Reclining	Seat reclining operation	Front / OFF / Rear	-
Front Vertical Operation	Seat front vertical operation	Up / OFF / Down	-
Lifter Operation	Seat lifter operation	Up / OFF / Down	-
Seat Slide Operation	Seat sliding operation	Front / OFF / Rear	-
Buzzer	Buzzer operation	ON / OFF	-

DIAGNOSTIC TROUBLE CODE CHART

DIAGNOSTIC TROUBLE CODE CHART

HINT:

If trouble code is displayed during the DTC check, inspect the trouble areas listed for that code. For details of the code, refer to the appropriate information below.

FRONT POWER SEAT CONTROL SYSTEM

DTC Code	Detection Item	Trouble Area	See
B2650	Slide Sensor Malfunction	- Front power seat switch LH - Separate type front seat cushion spring assembly LH (Slide motor) - Harness or connector	Refer to <u>DTC B2650: Slide Sensor Malfunction</u>
B2651	Reclining Sensor Malfunction	- Front power seat switch LH - Separate type front seatback spring assembly LH (Reclining motor) - Harness or connector	Refer to <u>DTC B2651: Reclining Sensor Malfunction</u>
B2652	Front Vertical Sensor Malfunction	- Front power seat switch LH - Separate type front seat cushion spring assembly LH (Front vertical motor) - Harness or connector	Refer to <u>DTC B2652: Front Vertical Sensor Malfunction</u>
		- Front power seat switch	

B2653	Lifter Sensor Malfunction	LH - Separate type front seat cushion spring assembly LH (Lifter motor) - Harness or connector	Refer to <u>DTC B2653: Lifter Sensor Malfunction</u>
B2658	Short in Sensor with Motor Power Supply Circuit	- Front power seat switch LH - Separate type front seat cushion spring assembly LH (Slide motor, Front vertical motor, Lifter motor) - Separate type front seatback spring assembly LH (Reclining motor) - Harness or connector	Refer to <u>DTC B2658: Short in Sensor with Motor Power Supply Circuit</u>

ACCESSORIES & EQUIPMENT

Front Power Seat Control System (w/Memory) (Diagnostic Codes & Symptom Tests) - Sienna

FRONT POWER SEAT CONTROL SYSTEM (W/ MEMORY)

DTC B2650: SLIDE SENSOR MALFUNCTION

DESCRIPTION

When the front power seat switch does not receive a sensor signal despite forward or backward movement of the seat by power seat motor operation, this DTC is stored.

DTC Code	DTC Detection Condition	Trouble Area
B2650	The forward and backward lock detection position of the sensor is the same.	- Front power seat switch LH - Separate type front seat cushion spring assembly LH (Slide motor) - Harness or connector

WIRING DIAGRAM

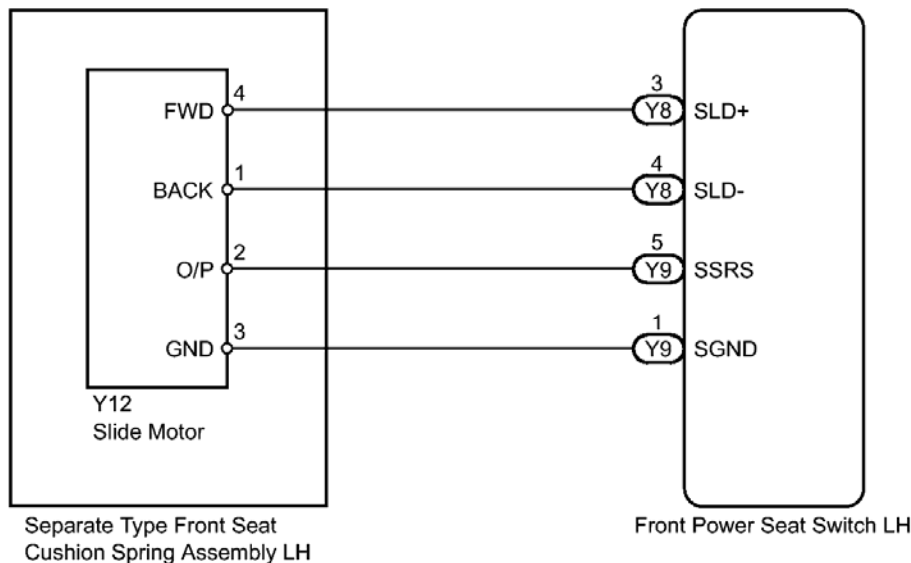


Fig. 1: Slide Sensor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. PERFORM ACTIVE TEST USING TECHSTREAM (POWER SEAT MOTOR FUNCTION)

- a. Connect the Techstream to the DLC3.
- b. Turn the engine switch on (IG).
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Driver Seat / Active Test.
- e. According to the display on the Techstream, perform the Active Test.

DRIVER SEAT

Tester Display	Test Part	Control Range	Diagnostic Note
Seat Slide Operation	Seat sliding operation	Front / OFF / Rear	-

OK

Motor operates normally.

NG --> See step 5

OK: Go to next step

2. CHECK FRONT POWER SEAT SWITCH LH (SLIDE MOTOR CIRCUIT)

- a. Disconnect the Y12 slide motor connector.

*a

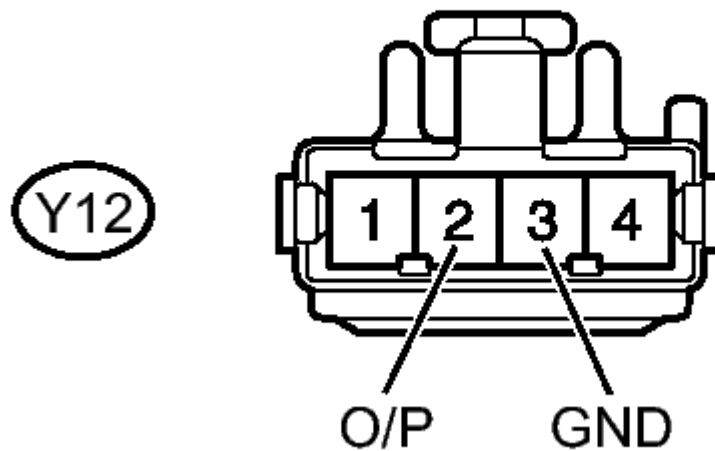


Fig. 2: Checking Y12 Slide Motor

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Y12-2 (O/P) - Y12-3 (GND)	Sliding switch on	4.8 to 5.1 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Separate Type Front Seat Cushion Spring
----	--

Assembly LH (Slide Motor))

c. Reconnect the slide motor connector.

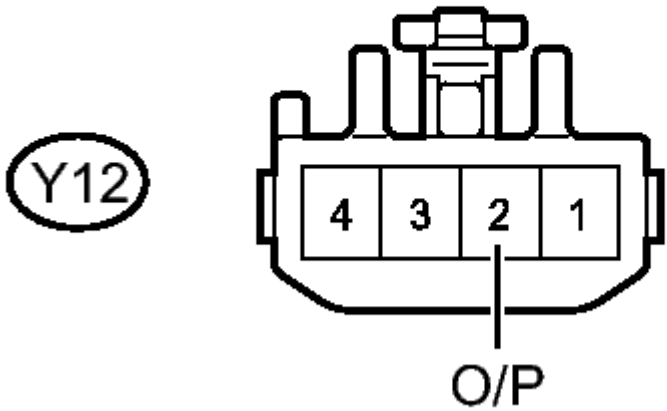
NG --> See step 4

OK: Go to next step

3. CHECK SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH (SLIDE MOTOR)

a. Measure the voltage according to the value(s) in the table below.

*a



H

Fig. 3: Measuring Voltage Of Y12 Slide Motor
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Y12-2 (O/P) - Body ground	Sliding switch on	4.5 to 4.8 V

TEXT IN ILLUSTRATION

*a	Component with harness connected (Separate Type Front Seat Cushion Spring Assembly LH (Slide Motor))
----	---

NG --> See step 7

OK --> See step 8

4. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - SLIDE MOTOR)

- Disconnect the Y9 front power seat switch LH connector.
- Disconnect the Y12 slide motor connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y9-5 (SSRS) - Y12-2 (O/P)	Always	Below 1 ohms
Y9-1 (SGND) - Y12-3 (GND)	Always	Below 1 ohms
Y9-5 (SSRS) - Body ground	Always	10 kohms or higher
Y9-1 (SGND) - Body ground	Always	10 kohms or higher

- Reconnect the slide motor connector.

e. Reconnect the front power seat switch LH connector.

NG --> **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK --> See step 9

5. **INSPECT SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH (SLIDE MOTOR)**

- a. Remove the separate type front seat cushion spring assembly LH (slide motor). Refer to **DISASSEMBLY** .

*a

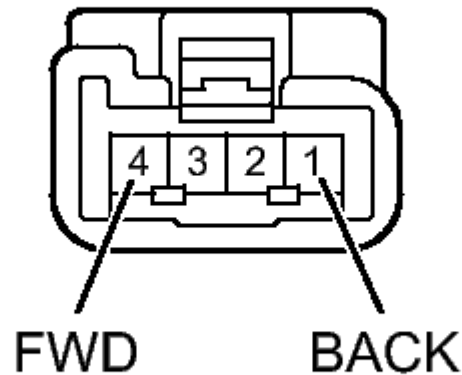


Fig. 4: Inspecting Separate Type Front Seat Cushion Spring Assembly LH (Slide Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Check if the seat cushion spring moves smoothly when the battery is connected to the slide motor connector terminals.

OK

Measurement Condition	Specified Condition
Battery positive (+) -- > 4 (FWD) Battery negative (-) --	Forward

> 1 (BACK)	
Battery positive (+) -- > 1 (BACK) Battery negative (-) -- > 4 (FWD)	Backward

TEXT IN ILLUSTRATION

*a	Component without harness connected (Separate Type Front Seat Cushion Spring Assembly LH (Slide Motor))
----	--

- c. Reinstall the separate type front seat cushion spring assembly LH (slide motor).

NG --> See step 10

OK: Go to next step

6. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - SLIDE MOTOR)

- Disconnect the Y8 front power seat switch LH connector.
- Disconnect the Y12 slide motor connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y8-3 (SLD+) - Y12-4 (FWD)	Always	Below 1 ohms
Y8-4 (SLD-) - Y12-1 (BACK)	Always	Below 1 ohms
Y8-3		

(SLD+) - Body ground	Always	10 kohms or higher
Y8-4 (SLD-) - Body ground	Always	10 kohms or higher

- d. Reconnect the slide motor connector.
- e. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 11

7. **REPLACE SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH. Refer to DISASSEMBLY**
8. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
9. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
10. **REPLACE SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH. Refer to DISASSEMBLY**
11. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**

DTC B2651: RECLINING SENSOR MALFUNCTION

DESCRIPTION

When the front power seat switch does not receive a sensor signal despite forward or backward movement of the seatback by power seat motor operation, this DTC is stored.

DTC Code	DTC Detection Condition	Trouble Area
B2651	The forward and backward lock detection position of the sensor is the same.	• Front power seat switch LH • Separate type front seatback spring assembly LH (Reclining motor) • Harness or connector

WIRING DIAGRAM

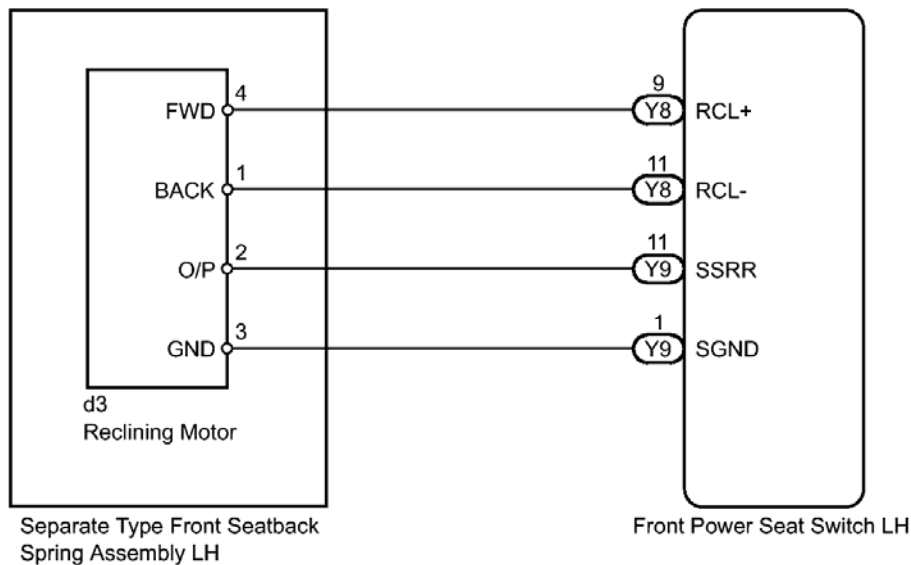


Fig. 5: Reclining Sensor Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **PERFORM ACTIVE TEST USING TECHSTREAM (POWER SEAT MOTOR FUNCTION)**
 - a. Connect the Techstream to the DLC3.
 - b. Turn the engine switch on (IG).
 - c. Turn the Techstream on.
 - d. Enter the following menus: Body Electrical / Driver Seat / Active Test.
 - e. According to the display on the Techstream, perform the Active Test.

DRIVER SEAT

Tester Display	Test Part	Control Range	Diagnostic Note
Seat Reclining	Seat reclining operation	Front / OFF / Rear	-

OK

Motor operates normally.

NG --> See step 5

OK: Go to next step

2. CHECK FRONT POWER SEAT SWITCH LH (RECLINING MOTOR CIRCUIT)

- a. Disconnect the d3 reclining motor connector.

*a

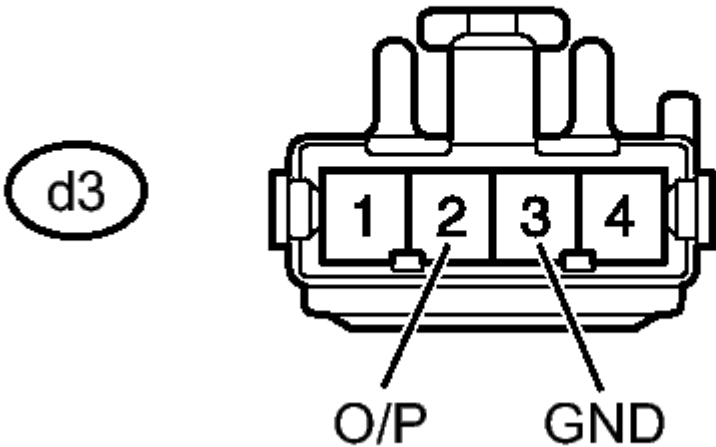


Fig. 6: Checking D3 Reclining Motor Circuit
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
d3-2 (O/P) - d3-3 (GND)	Reclining switch on	4.8 to 5.1 V

TEXT IN ILLUSTRATION

Front view of wire harness connector

*a	(to Separate Type Front Seatback Spring Assembly LH (Reclining Motor))
----	---

c. Reconnect the reclining motor connector.

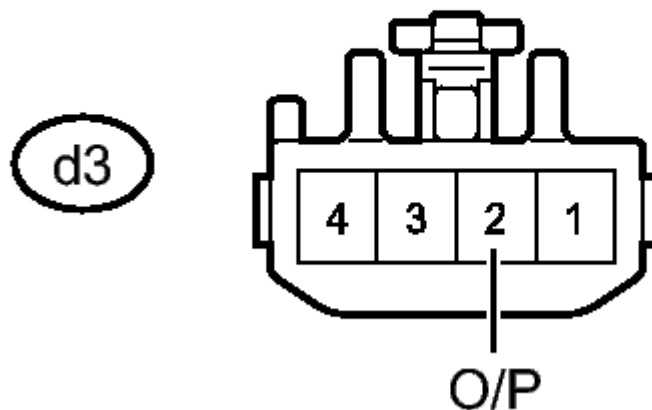
NG --> See step 4

OK: Go to next step

3. CHECK SEPARATE TYPE FRONT SEATBACK SPRING ASSEMBLY LH (RECLINING MOTOR)

a. Measure the voltage according to the value(s) in the table below.

*a



H

Fig. 7: Checking Separate Type Front Seatback Spring Assembly LH (Reclining Motor)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester	Switch	Specified
--------	--------	-----------

Connection	Condition	Condition
d3-2 (O/P) - Body ground	Reclining switch on	4.5 to 4.8 V

TEXT IN ILLUSTRATION

*a	Component with harness connected (Separate Type Front Seatback Spring Assembly LH (Reclining Motor))
----	--

NG --> See step 7

OK --> See step 8

4. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - RECLINING MOTOR)

- Disconnect the Y9 front power seat switch LH connector.
- Disconnect the d3 reclining motor connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y9-11 (SSRR) - d3-2 (O/P)	Always	Below 1 ohms
Y9-1 (SGND) - d3-3 (GND)	Always	Below 1 ohms
Y9-11 (SSRR) - Body ground	Always	10 kohms or higher
Y9-1		

(SGND) - Body ground	Always	10 kohms or higher
----------------------------	--------	-----------------------

- d. Reconnect the reclining motor connector.
- e. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 9

5. INSPECT SEPARATE TYPE FRONT SEATBACK SPRING ASSEMBLY LH (RECLINING MOTOR)

- a. Remove the separate type front seatback spring assembly LH (reclining motor). Refer to **DISASSEMBLY** .

***a**

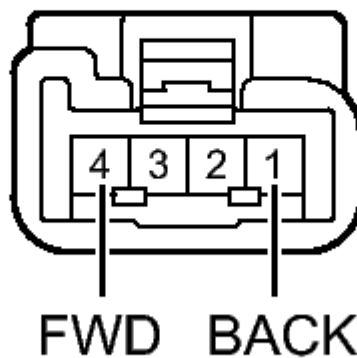


Fig. 8: Inspecting Separate Type Front Seatback Spring Assembly LH (Reclining Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Check if the seatback moves smoothly when the battery is connected to the reclining motor connector terminals.

OK

Measurement Condition	Specified Condition

Battery positive (+) -- > 4 (FWD) Battery negative (-) -- > 1 (BACK)	Forward
Battery positive (+) -- > 1 (BACK) Battery negative (-) -- > 4 (FWD)	Backward

TEXT IN ILLUSTRATION

*a	Component without harness connected (Separate Type Front Seatback Spring Assembly LH (Reclining Motor))
----	--

- c. Reinstall the separate type front seatback spring assembly LH (reclining motor).

NG --> See step 10

OK: Go to next step

6. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - RECLINING MOTOR)

- Disconnect the Y8 front power seat switch LH connector.
- Disconnect the d3 reclining motor connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y8-9 (RCL+) - d3-4	Always	Below 1 ohms

(FWD)		
Y8-11 (RCL-) - d3-1 (BACK)	Always	Below 1 ohms
Y8-9 (RCL+) - Body ground	Always	10 kohms or higher
Y8-11 (RCL-) - Body ground	Always	10 kohms or higher

- d. Reconnect the reclining motor connector.
- e. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 11

7. **REPLACE SEPARATE TYPE FRONT SEATBACK SPRING ASSEMBLY LH. Refer to DISASSEMBLY**
8. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
9. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
10. **REPLACE SEPARATE TYPE FRONT SEATBACK SPRING ASSEMBLY LH. Refer to DISASSEMBLY**
11. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**

DTC B2652: FRONT VERTICAL SENSOR MALFUNCTION

DESCRIPTION

When the front power seat switch does not receive a sensor signal despite upward or downward movement of the front of the seat cushion by power seat motor operation, this DTC is stored.

DTC Code	DTC Detection Condition	Trouble Area
B2652	The upward and downward lock detection position of the sensor is the same.	• Front power seat switch LH • Separate type front seat cushion Spring assembly LH (Front vertical motor) • Harness or connector

WIRING DIAGRAM

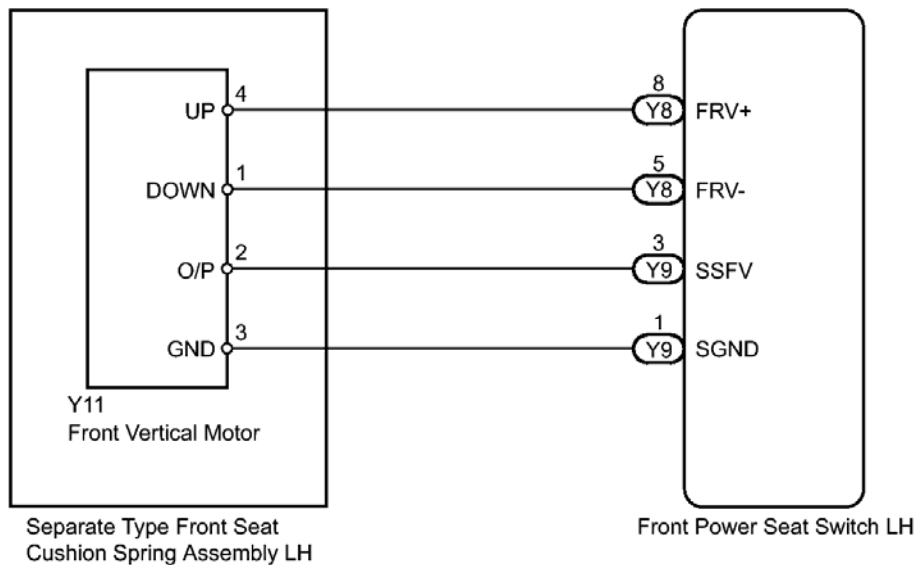


Fig. 9: Front Vertical Sensor Circuit - Wiring Diagram

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. PERFORM ACTIVE TEST USING TECHSTREAM (POWER SEAT MOTOR FUNCTION)

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Driver Seat / Active Test.
- According to the display on the Techstream, perform the Active Test.

DRIVER SEAT

Tester Display	Test Part	Control Range	Diagnostic Note
Front Vertical Operation	Seat front vertical operation	Up / OFF / Down	-

OK

Motor operates normally.

NG --> See step 5

OK: Go to next step

2. CHECK FRONT POWER SEAT SWITCH LH (FRONT VERTICAL MOTOR CIRCUIT)

- a. Disconnect the Y11 front vertical motor connector.

*a

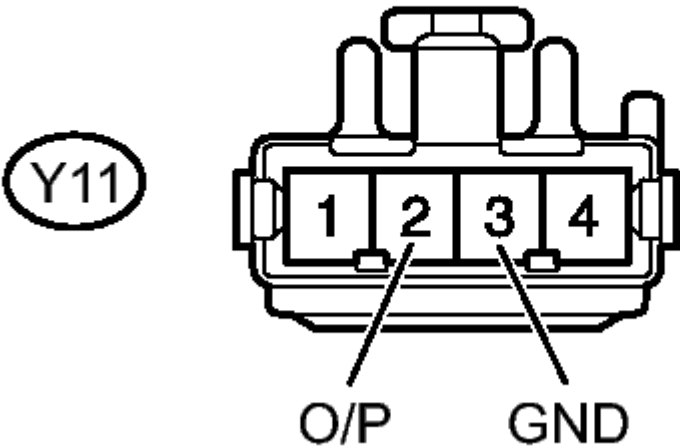


Fig. 10: Checking Y11 Front Vertical Motor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Y11-2 (O/P) - Y11-3 (GND)	Front vertical switch on	4.8 to 5.1 V

TEXT IN ILLUSTRATION

Front view of wire harness

	connector
	(to
	Separate
	Type
	Front
	Seat
*a	Cushion
	Spring
	Assembly
	LH
	(Front
	Vertical
	Motor))

c. Reconnect the front vertical motor connector.

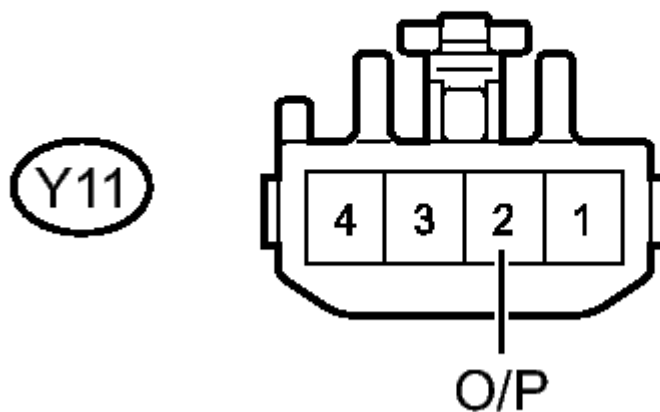
NG --> See step 4

OK: Go to next step

3. **CHECK SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH (FRONT VERTICAL MOTOR)**

a. Measure the voltage according to the value(s) in the table below.

*a



H

Fig. 11: Checking Separate Type Front Seat Cushion Spring Assembly LH (Front Vertical Motor)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Y11-2 (O/P) - Body ground	Front vertical switch on	4.5 to 4.8 V

TEXT IN ILLUSTRATION

*a	Component with harness connected (Separate Type Front Seat Cushion Spring Assembly LH (Front Vertical Motor))
----	---

NG --> See step 7

OK --> See step 8

4. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - FRONT VERTICAL MOTOR)

- Disconnect the Y9 front power seat switch LH connector.
- Disconnect the Y11 front vertical motor connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y9-3 (SSFV) - Y11-2 (O/P)	Always	Below 1 ohms
Y9-1 (SGND) - Y11-3 (GND)	Always	Below 1 ohms

Y9-3 (SSFV) - Body ground	Always	10 kohms or higher
Y9-1 (SGND) - Body ground	Always	10 kohms or higher

- d. Reconnect the front vertical motor connector.
- e. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 9

5. INSPECT SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH (FRONT VERTICAL MOTOR)

- a. Remove the separate type front seat cushion spring assembly LH (front vertical motor). Refer to **DISASSEMBLY**.

***a**

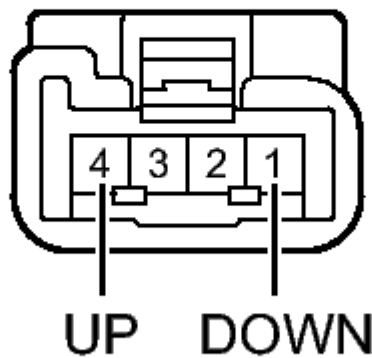


Fig. 12: Inspecting Separate Type Front Seat Cushion Spring Assembly LH (Front Vertical Motor)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Check if the seat cushion spring moves smoothly when the battery is connected to the front vertical

motor connector terminals.

OK

Measurement Condition	Specified Condition
Battery positive (+) --> 4 (UP) Battery negative (-) --> 1 (DOWN)	Upward
Battery positive (+) --> 1 (DOWN) Battery negative (-) --> 4 (UP)	Downward

TEXT IN ILLUSTRATION

*a	Component without harness connected (Separate Type Front Seat Cushion Spring Assembly LH (Front Vertical Motor))
----	--

- c. Reinstall the separate type front seat cushion spring assembly LH (front vertical motor).

NG --> See step 10

OK: Go to next step

6. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - FRONT VERTICAL MOTOR)

- Disconnect the Y8 front power seat switch LH connector.
- Disconnect the Y11 front vertical motor connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y8-8 (FRV+) - Y11-4 (UP)	Always	Below 1 ohms
Y8-5 (FRV-) - Y11-1 (DOWN)	Always	Below 1 ohms
Y8-8 (FRV+) - Body ground	Always	10 kohms or higher
Y8-5 (FRV-) - Body ground	Always	10 kohms or higher

- d. Reconnect the front vertical motor connector.
- e. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 11

7. **REPLACE SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH. Refer to DISASSEMBLY**
8. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
9. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
10. **REPLACE SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH. Refer to DISASSEMBLY**
11. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**

DTC B2653: LIFTER SENSOR MALFUNCTION

DESCRIPTION

When the front power seat switch does not receive a sensor signal despite upward or downward movement of the seat by power seat motor operation, this DTC is stored.

DTC Code	DTC Detection Condition	Trouble Area
	The upward and downward lock	Front power seat switch LH

B2653	detection position of the sensor is the same.	- Separate type front seat cushion spring assembly LH (Lifter motor) - Harness or connector
-------	---	--

WIRING DIAGRAM

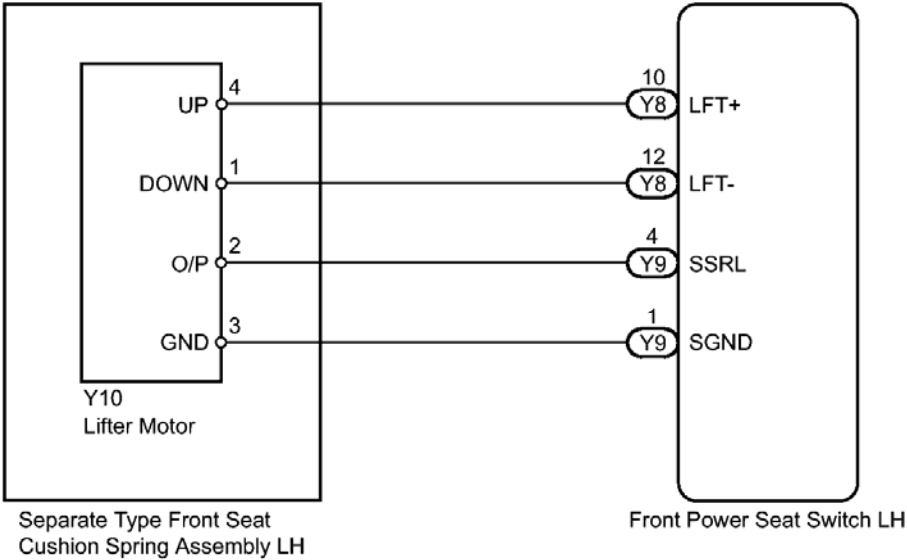


Fig. 13: Lifter Sensor Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **PERFORM ACTIVE TEST USING TECHSTREAM (POWER SEAT MOTOR FUNCTION)**
 - a. Connect the Techstream to the DLC3.
 - b. Turn the engine switch on (IG).
 - c. Turn the Techstream on.
 - d. Enter the following menus: Body Electrical / Driver Seat / Active Test.
 - e. According to the display on the Techstream, perform the Active Test.

Tester Display	Test Part	Control Range	Diagnostic Note
Lifter	Seat lifter	Up / OFF /	-

Operation	operation	Down	
-----------	-----------	------	--

OK

Motor operates normally.

NG --> See step 5

OK: Go to next step

2. CHECK FRONT POWER SEAT SWITCH LH (LIFTER MOTOR CIRCUIT)

- Disconnect the Y10 lifter motor connector.

*a

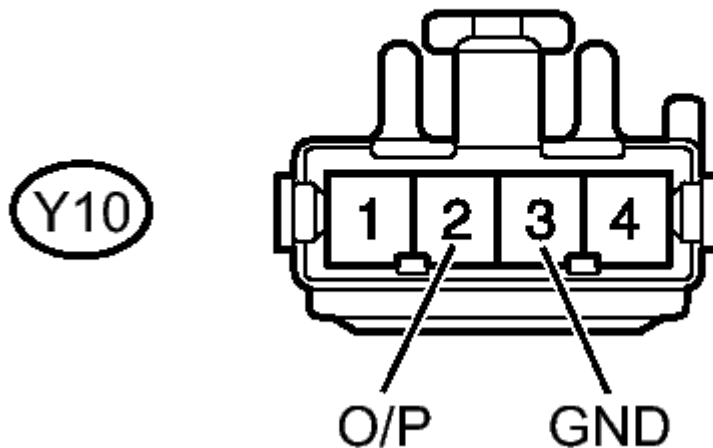


Fig. 14: Checking Y10 Lifter Motor

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Y10-2 (O/P) - Y10-3 (GND)	Lifter switch on	4.8 to 5.1 V

TEXT IN ILLUSTRATION

*a	Front
	view of
	wire
	harness
	connector
	(to
	Separate
	Type
	Front
	Seat
	Cushion
	Spring
	Assembly

LH
(Lifter
Motor))

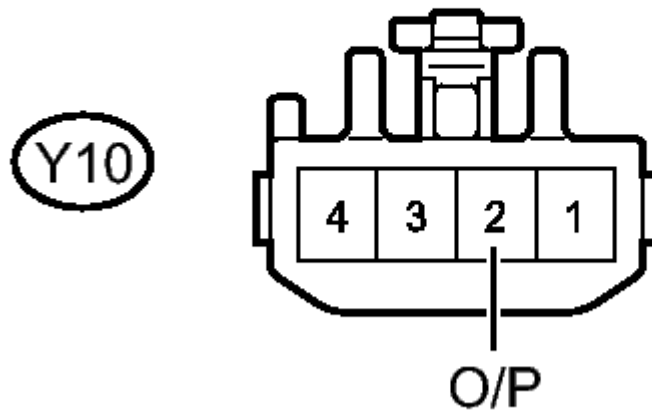
- c. Reconnect the lifter motor connector.

NG --> See step 4

OK: Go to next step

- 3. **CHECK SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH (LIFTER MOTOR)**
 - a. Measure the voltage according to the value(s) in the table below.

*a



H

Fig. 15: Checking Separate Type Front Seat Cushion Spring Assembly LH (Lifter Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Y10-2 (O/P) - Body ground	Lifter switch on	4.5 to 4.8 V

TEXT IN ILLUSTRATION

*a	Component with harness connected (Separate Type Front Seat Cushion Spring Assembly LH (Lifter Motor))
----	--

NG --> See step 7

OK --> See step 8

4. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - LIFTER MOTOR)

- a. Disconnect the Y9 front power seat switch LH connector.
- b. Disconnect the Y10 lifter motor connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y9-4 (SSRL) - Y10-2 (O/P)	Always	Below 1 ohms
Y9-1 (SGND) - Y10-3 (GND)	Always	Below 1 ohms
Y9-4 (SSRL) - Body ground	Always	10 kohms or higher
Y9-1 (SGND) - Body ground	Always	10 kohms or higher

- d. Reconnect the lifter motor connector.
- e. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 9

5. INSPECT SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH (LIFTER MOTOR)

- a. Remove the separate type front seat cushion spring assembly LH (lifter motor). Refer to **DISASSEMBLY** .

*a

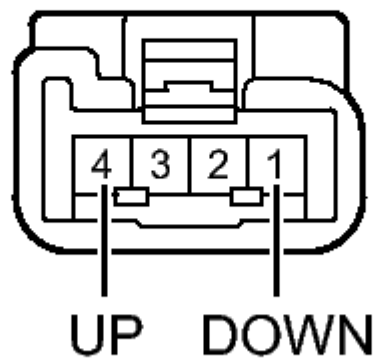


Fig. 16: Inspecting Separate Type Front Seat Cushion Spring Assembly LH (Lifter Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Check if the seat cushion spring moves smoothly when the battery is connected to the lifter motor connector terminals.

OK

Measurement Condition	Specified Condition
Battery positive (+) -- > 4 (UP) Battery negative (-) -- > 1 (DOWN)	Upward
Battery positive (+) -- > 1 (DOWN) Battery negative (-) -- > 4 (UP)	Downward

TEXT IN ILLUSTRATION

Component without harness

	connected (Separate Type Front Seat Cushion Spring Assembly LH (Lifter Motor))
--	--

- c. Reinstall the separate type front seat cushion spring assembly LH (lifter motor).

NG --> See step 10

OK: Go to next step

6. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - LIFTER MOTOR)

- Disconnect the Y8 front power seat switch LH connector.
- Disconnect the Y10 lifter motor connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y8-10 (LFT+) - Y10-4 (UP)	Always	Below 1 ohms
Y8-12 (LFT-) - Y10-1 (DOWN)	Always	Below 1 ohms
Y8-10 (LFT+) - Body ground	Always	10 kohms or higher
Y8-12 (LFT-) - Body ground	Always	10 kohms or higher

- Reconnect the lifter motor connector.
- Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 11

7. **REPLACE SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH. Refer to DISASSEMBLY**
8. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
9. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
10. **REPLACE SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH. Refer to DISASSEMBLY**
11. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**

DTC B2658: SHORT IN SENSOR WITH MOTOR POWER SUPPLY CIRCUIT

DESCRIPTION

This DTC is stored when a power seat motor operates (a position control sensor is being supplied with power) and the power supply voltage does not rise to the specified value.

DTC Code	DTC Detection Condition	Trouble Area
B2658	A problem with the voltage supplied to the position control sensor.	• Front power seat switch LH • Separate type front seat cushion spring assembly LH (Slide motor, Front vertical motor, Lifter motor) • Separate type front seatback spring assembly LH (Reclining motor) • Harness or connector

WIRING DIAGRAM

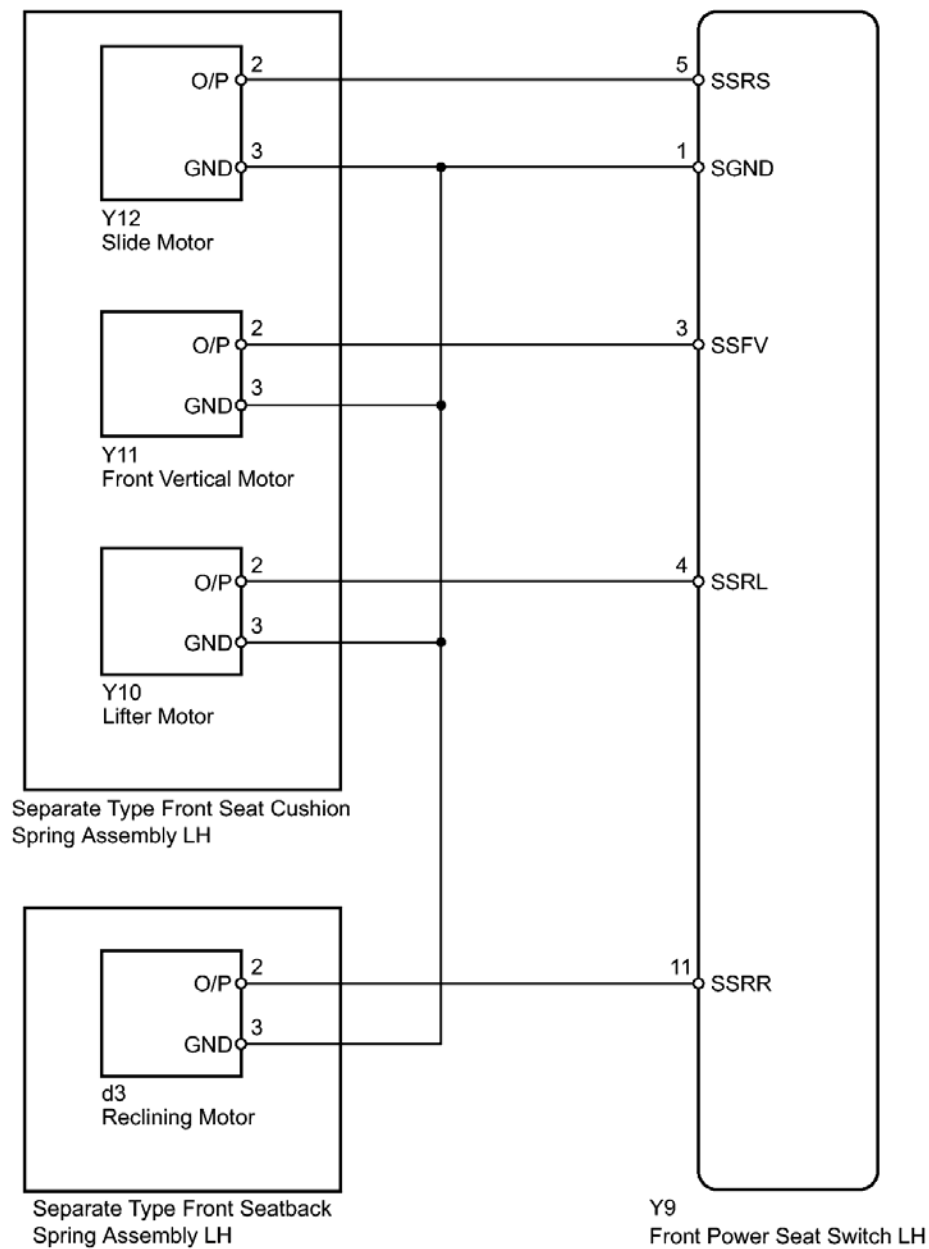


Fig. 17: Motor Power Supply Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. CHECK FOR DTC

- a. Connect the Techstream to the DLC3.
- b. Turn the engine switch on (IG).
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Driver Seat / Trouble Codes.
- e. Clear the DTC. Refer to **DTC CHECK / CLEAR** .
- f. Recheck for DTC B2658.

RESULT

Result	Proceed to
DTC B2658 is not output	A
DTC B2658 is output	B

B --> See step 2

A --> See step 12

2. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - SLIDE MOTOR)

- a. Disconnect the Y9 front power seat switch LH connector.
- b. Disconnect the Y12 slide motor connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y9-5 (SSRS) - Y12-2 (O/P)	Always	Below 1 ohms
Y9-1 (SGND) - Y12-3 (GND)	Always	Below 1 ohms
Y9-5 (SSRS) - Y9-1 (SGND)	Always	10 kohms or higher

Y9-5 (SSRS) - Body ground	Always	10 kohms or higher
Y9-1 (SGND) - Body ground	Always	10 kohms or higher

- d. Reconnect the slide motor connector.
- e. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

- 3. CHECK FRONT POWER SEAT SWITCH LH (SLIDE MOTOR CIRCUIT)
 - a. Disconnect the Y12 slide motor connector.

*a

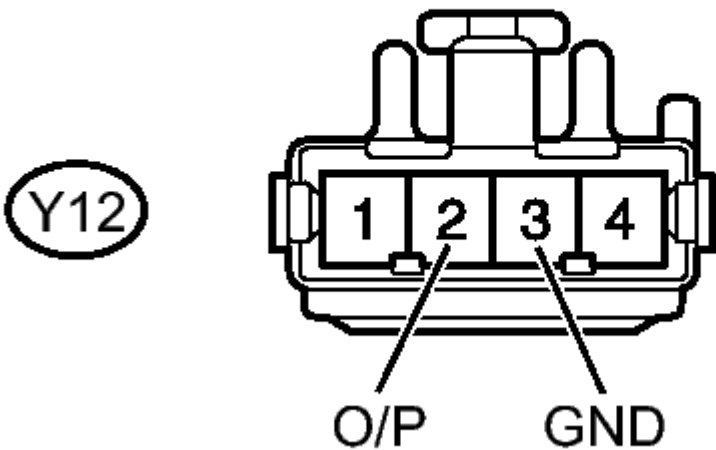


Fig. 18: Checking Y12 Slide Motor
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

--	--	--

Tester Connection	Switch Condition	Specified Condition
Y12-2 (O/P) - Y12-3 (GND)	Sliding switch on	4.8 to 5.1 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Separate Type Front Seat Cushion Spring Assembly LH (Slide Motor))
----	---

- c. Reconnect the slide motor connector.

NG --> See step 13

OK: Go to next step

4. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - FRONT VERTICAL MOTOR)

- a. Disconnect the Y9 front power seat switch LH connector.
- b. Disconnect the Y11 front vertical motor connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y9-3 (SSFV) - Y11-2 (O/P)	Always	Below 1 ohms
Y9-1 (SGND) -		Below 1

Y11-3 (GND)	Always	ohms
Y9-3 (SSFV) - Y9-1 (SGND)	Always	10 kohms or higher
Y9-3 (SSFV) - Body ground	Always	10 kohms or higher
Y9-1 (SGND) - Body ground	Always	10 kohms or higher

- d. Reconnect the front vertical motor connector.
- e. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. CHECK FRONT POWER SEAT SWITCH LH (FRONT VERTICAL MOTOR CIRCUIT)

- a. Disconnect the Y11 front vertical motor connector.

***a**

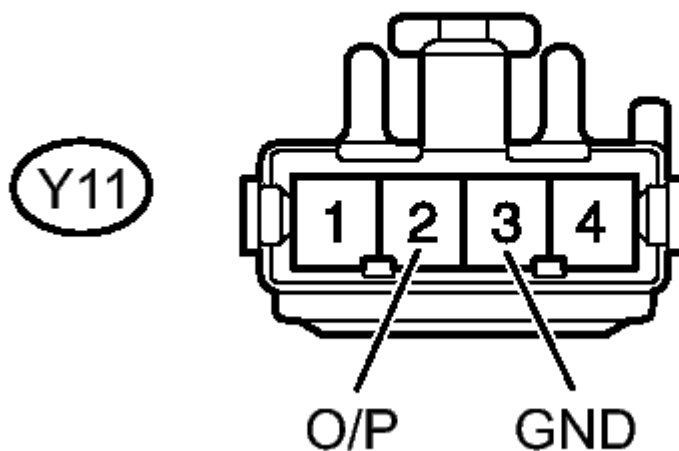


Fig. 19: Checking Y11 Front Vertical Motor

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Y11-2 (O/P) - Y11-3 (GND)	Front vertical switch on	4.8 to 5.1 V

TEXT IN ILLUSTRATION

	Front view of wire harness connector (to Separate Type
*a	Front Seat Cushion Spring Assembly LH (Front Vertical Motor))

- c. Reconnect the front vertical motor connector.

NG --> See step 14

OK: Go to next step

6. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - LIFTER MOTOR)

- Disconnect the Y9 front power seat switch LH connector.
- Disconnect the Y10 lifter motor connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester		Specified
--------	--	-----------

Connection	Condition	Condition
Y9-4 (SSRL) - Y10-2 (O/P)	Always	Below 1 ohms
Y9-1 (SGND) - Y10-3 (GND)	Always	Below 1 ohms
Y9-4 (SSRL) - Y9-1 (SGND)	Always	10 kohms or higher
Y9-4 (SSRL) - Body ground	Always	10 kohms or higher
Y9-1 (SGND) - Body ground	Always	10 kohms or higher

- d. Reconnect the lifter motor connector.
- e. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

7. CHECK FRONT POWER SEAT SWITCH LH (LIFTER MOTOR CIRCUIT)

- a. Disconnect the Y10 lifter motor connector.

*a

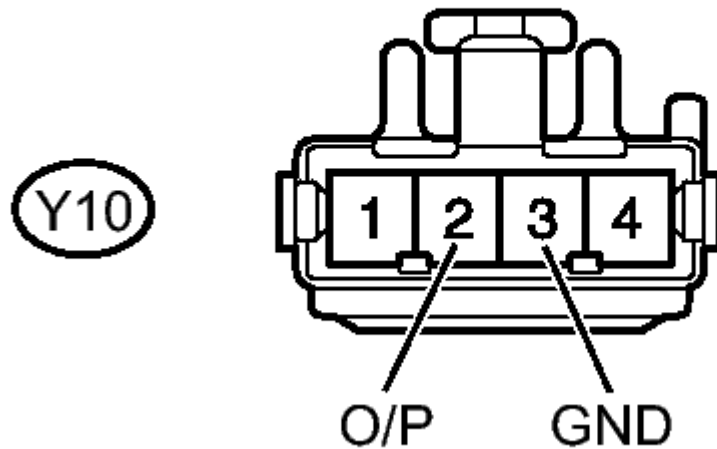


Fig. 20: Checking Y10 Lifter Motor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
Y10-2 (O/P) - Y10-3 (GND)	Lifter switch on	4.8 to 5.1 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Separate Type Front Seat Cushion Spring
----	--

Assembly LH (Lifter Motor))

- c. Reconnect the lifter motor connector.

NG --> See step 15

OK: Go to next step

8. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - RECLINING MOTOR)

- a. Disconnect the Y9 front power seat switch LH connector.
- b. Disconnect the d3 reclining motor connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y9-11 (SSRR) - d3-2 (O/P)	Always	Below 1 ohms
Y9-1 (SGND) - d3-3 (GND)	Always	Below 1 ohms
Y9-11 (SSRR) - Y9-1 (SGND)	Always	10 kohms or higher
Y9-11 (SSRR) - Body ground	Always	10 kohms or higher
Y9-1 (SGND) - Body ground	Always	10 kohms or higher

- d. Reconnect the reclining motor connector.
- e. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

9. CHECK FRONT POWER SEAT SWITCH LH (RECLINING MOTOR CIRCUIT)
- a. Disconnect the d3 reclining motor connector.

*a

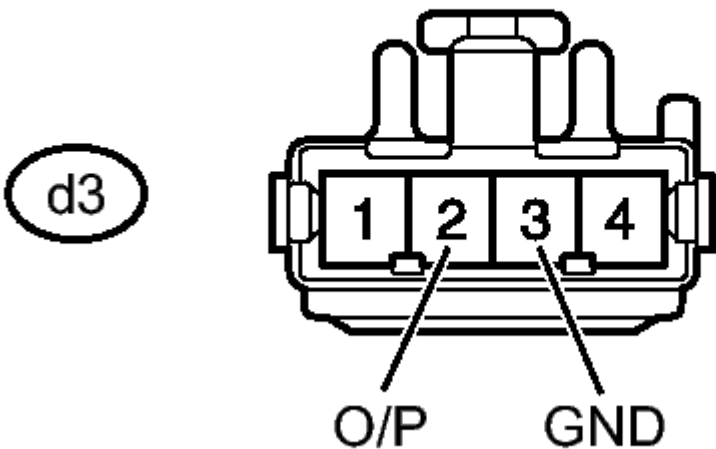


Fig. 21: Checking D3 Reclining Motor Circuit
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
d3-2 (O/P) - d3-3 (GND)	Reclining switch on	4.8 to 5.1 V

TEXT IN ILLUSTRATION

Front view of wire harness connector (to Separate

*a	Type
	Front
	Seatback
	Spring
	Assembly
	LH (Reclining Motor))

- c. Reconnect the reclining motor connector.

NG --> See step 16

OK: Go to next step

10. CHECK SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH

- Temporarily replace the separate type front seat cushion springs one at a time with a new or normally functioning one. Refer to **DISASSEMBLY** .
- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Driver Seat / Trouble Codes.
- Clear the DTC. Refer to **DTC CHECK / CLEAR** .
- Recheck for DTC B2658.

RESULT

Result	Proceed to
DTC B2658 is not output	A
DTC B2658 is output	B

B --> See step 11

A --> END (SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH IS DEFECTIVE)

11. CHECK SEPARATE TYPE FRONT SEATBACK SPRING ASSEMBLY LH

- Temporarily replace the separate type front seatback springs one at a time with a new or normally functioning one. Refer to **DISASSEMBLY** .

- b. Connect the Techstream to the DLC3.
- c. Turn the engine switch on (IG).
- d. Turn the Techstream on.
- e. Enter the following menus: Body Electrical / Driver Seat / Trouble Codes.
- f. Clear the DTC. Refer to **DTC CHECK / CLEAR**.
- g. Recheck for DTC B2658.

RESULT

Result	Proceed to
DTC B2658 is not output	A
DTC B2658 is output	B

B --> See step 17

A --> END (SEPARATE TYPE FRONT SEATBACK SPRING ASSEMBLY LH IS DEFECTIVE)

12. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
13. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
14. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
15. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
16. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
17. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**

SYMPTOM TESTS

Front Power Seat does not Operate with Front Power Seat Switch

DESCRIPTION

When a signal is input into the front power seat switch (position ECU), the ECU manages the signals received from the front power seat switch and operates each motor. When 2 or more signals are input, the motors only operate when the signals are from the slide switch and reclining switch.

WIRING DIAGRAM

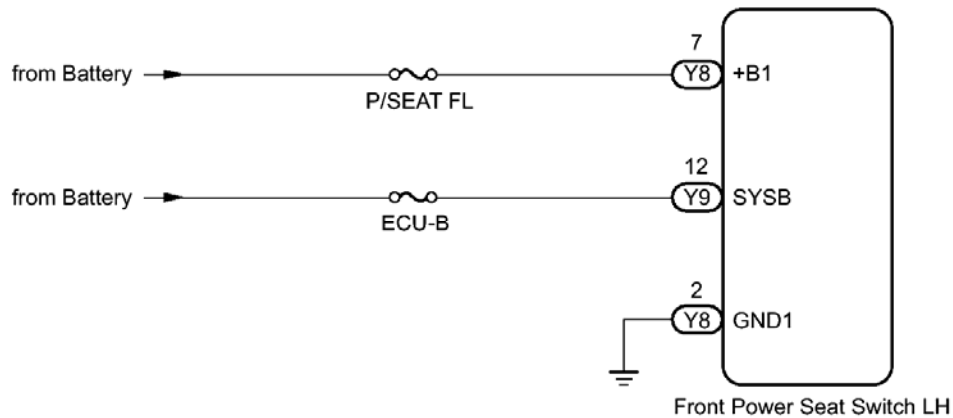


Fig. 22: Front Power Seat Switch Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - BATTERY AND BODY GROUND)**
 - a. Disconnect the Y8 and Y9 front power seat switch LH connectors.

*a

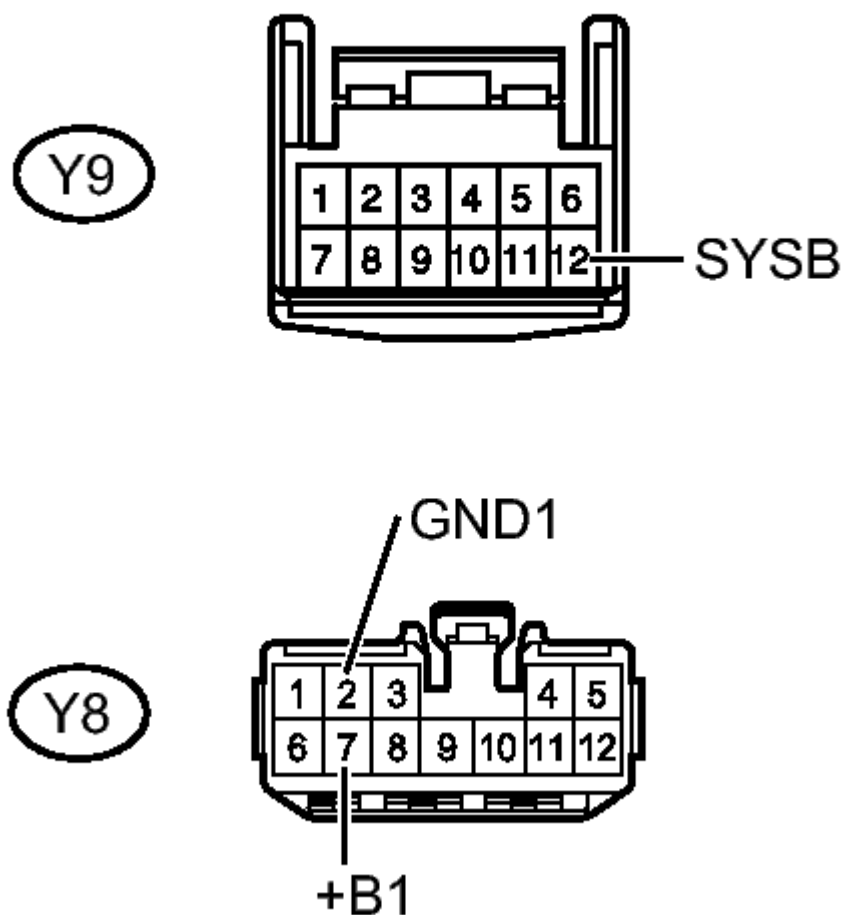


Fig. 23: Checking Y8 & Y9 Harness And Connector (Front Power Seat Switch - Battery And Body Ground)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Condition	Specified Condition
Y8-7 (+B1) - Body ground	Always	11 to 14 V
Y9-12 (SYSB) - Body	Always	11 to 14 V

ground		
--------	--	--

- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y8-2 (GND1) - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Front Power Seat Switch LH)
----	---

- d. Reconnect the front power seat switch LH connectors.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

2. REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY

One or more Power Seat Motors do not Operate

DESCRIPTION

When a signal is input into the front power seat switch (position ECU), the ECU manages the signals received from the front power seat switch and operates each motor. When 2 or more signals are input, the motors only operate when the signals are from the slide switch and reclining switch.

WIRING DIAGRAM

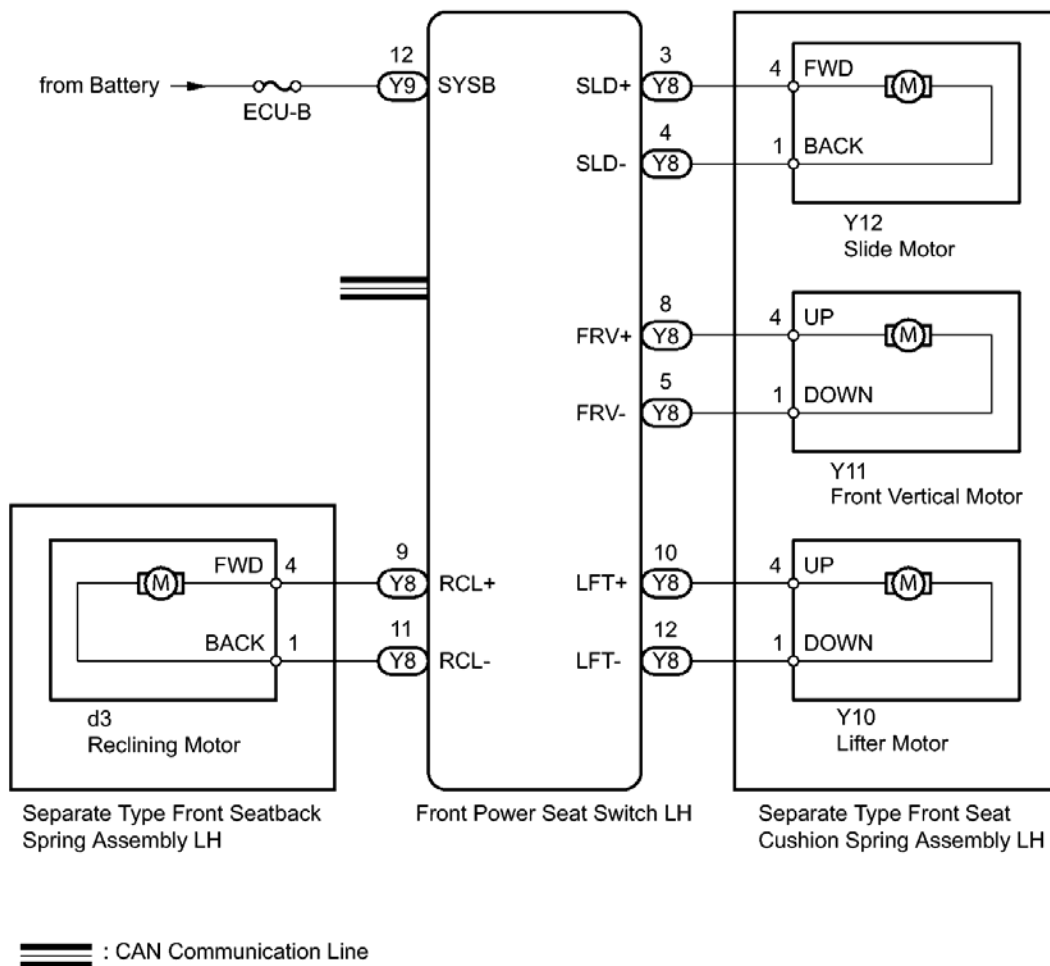


Fig. 24: Power Seat Motor Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. CHECK CAN COMMUNICATION SYSTEM

- Use the Techstream to check if the CAN communication system is functioning normally. Refer to **HOW TO PROCEED WITH TROUBLESHOOTING**.

OK

CAN communication DTC is not output.

NG --> See step 8

OK: Go to next step

2. READ VALUE USING TECHSTREAM (FRONT POWER SEAT SWITCH)

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Driver Seat / Data List.
- According to the display on the Techstream, read the Data List.

DRIVER SEAT

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Reclining Rear	Reclining switch signal (Rearward) / ON or OFF	ON: Reclining switch (Rearward) on OFF: Reclining switch (Rearward) off	-
Reclining Front	Reclining switch signal (Forward) / ON or OFF	ON: Reclining switch (Forward) on OFF: Reclining switch (Forward) off	-
Front Vertical Down	Front vertical switch signal (Downward) / ON or OFF	ON: Front vertical switch (Downward) on OFF: Front vertical switch (Downward) off	-
		ON: Front vertical	

Front Vertical Up	Front vertical switch signal (Upward) / ON or OFF	switch (Upward) on OFF: Front vertical switch (Upward) off	-
Lifter Switch Down	Lifter switch signal (Downward) / ON or OFF	ON: Lifter switch (Downward) on OFF: Lifter switch (Downward) off	-
Lifter Switch Up	Lifter switch signal (Upward) / ON or OFF	ON: Lifter switch (Upward) on OFF: Lifter switch (Upward) off	-
Slide Rear	Sliding switch signal (Rearward) / ON or OFF	ON: Sliding switch (Rearward) on OFF: Sliding switch (Rearward) off	-
Slide Front	Sliding switch signal (Forward) / ON or OFF	ON: Sliding switch (Forward) on OFF: Sliding switch (Forward) off	-

OK

ON or OFF is displayed on the Techstream according to the table above.

NG --> See step 7

OK: Go to next step

3. PERFORM ACTIVE TEST USING TECHSTREAM (POWER SEAT MOTOR)

- a. Connect the Techstream to the DLC3.
- b. Turn the engine switch on (IG).
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Driver Seat / Active Test.
- e. According to the display on the Techstream, perform the Active Test.

DRIVER SEAT

Tester Display	Test Part	Control Range	Diagnostic Note
Seat Reclining	Seat reclining operation	Front / OFF / Rear	-
Front Vertical Operation	Seat front vertical operation	Up / OFF / Down	-
Lifter Operation	Seat lifter operation	Up / OFF / Down	-
Seat Slide Operation	Seat sliding operation	Front / OFF / Rear	-

OK

The power seat motors operate normally.

NG --> See step 4

OK --> See step 9

4. INSPECT SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH

- a. Remove the separate type front seat cushion spring assembly LH. Refer to **DISASSEMBLY**.
- b. Check operation of the slide motor.

*a

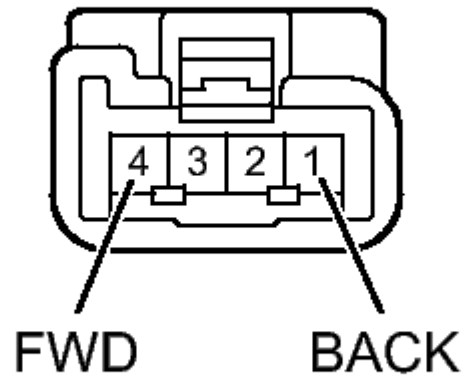


Fig. 25: Inspecting Separate Type Front Seat Cushion Spring Assembly LH (Slide Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Check if the seat moves smoothly when the battery is connected to the slide motor connector terminals.

OK

Measurement Condition	Specified Condition
Battery positive (+) -- > 4 (FWD) Battery negative (-) -- > 1 (BACK)	Forward
Battery positive (+) -- > 1 (BACK) Battery negative (-) -- > 4 (FWD)	Backward

TEXT IN ILLUSTRATION

Component without harness

	connected (Separate Type Front Seat Cushion Spring Assembly LH (Slide Motor))
--	---

- c. Check operation of the front vertical motor.

***a**

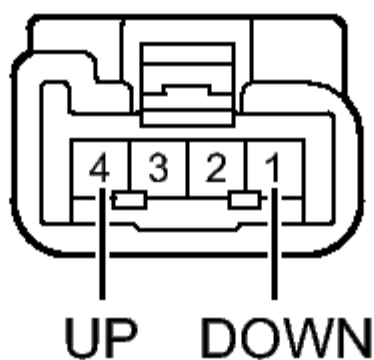


Fig. 26: Inspecting Separate Type Front Seat Cushion Spring Assembly LH (Front Vertical Motor)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Check if the seat moves smoothly when the battery is connected to the front vertical motor connector terminals.

OK

Measurement Condition	Specified Condition
Battery positive (+) -- > 4 (UP) Battery	Upward

negative (-) -- > 1 (DOWN)	
Battery positive (+) -- > 1 (DOWN) Battery negative (-) -- > 4 (UP)	Downward

TEXT IN ILLUSTRATION

*a	Component without harness connected (Separate Type Front Seat Cushion Spring Assembly LH (Front Vertical Motor))
----	--

d. Check operation of the lifter motor.

*a

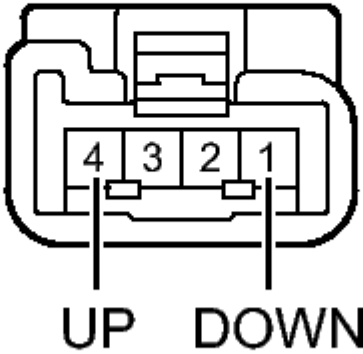


Fig. 27: Inspecting Separate Type Front Seat Cushion Spring Assembly LH (Lifter Motor)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Check if the seat moves smoothly when the battery is connected to the lifter motor connector terminals.

OK

Measurement Condition	Specified Condition
Battery positive (+) --> 4 (UP) Battery negative (-) --> 1 (DOWN)	Upward
Battery positive (+) --> 1 (DOWN) Battery negative (-) --> 4 (UP)	Downward

TEXT IN ILLUSTRATION

*a	Component without harness connected (Separate Type Front Seat Cushion Spring Assembly LH (Lifter Motor))
----	--

- e. Reinstall the separate type front seat cushion spring assembly LH.

NG --> See step 10

OK: Go to next step

5. INSPECT SEPARATE TYPE FRONT SEATBACK SPRING ASSEMBLY LH

- a. Remove the separate type front seatback spring assembly LH. Refer to **DISASSEMBLY**.
- b. Check operation of the reclining motor.

*a

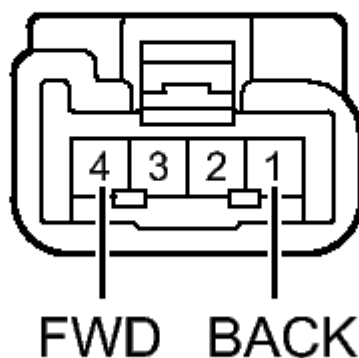


Fig. 28: Inspecting Separate Type Front Seatback Spring Assembly LH (Reclining Motor)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Check if the seatback moves smoothly when the battery is connected to the reclining motor connector terminals.

OK

Measurement Condition	Specified Condition
Battery positive (+) -- > 4 (FWD) Battery negative (-) -- > 1 (BACK)	Forward
Battery positive (+) -- > 1 (BACK) Battery negative (-) -- > 4 (FWD)	Backward

TEXT IN ILLUSTRATION

Component without harness

	connected (Separate Type Front Seatback *a Spring Assembly LH (Reclining Motor))
--	--

- c. Reinstall the separate type front seatback spring assembly LH.

NG --> See step 11

OK: Go to next step

6. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - SEAT MOTOR)

- Disconnect the Y8 front power seat switch LH connector.
- Disconnect the Y12, Y11, Y10 or d3 seat motor connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y8-3 (SLD+) - Y12-4 (FWD)	Always	Below 1 ohms
Y8-4 (SLD-) - Y12-1 (BACK)	Always	Below 1 ohms
Y8-8 (FRV+) - Y11-4 (UP)	Always	Below 1 ohms
Y8-5 (FRV-) - Y11-1 (DOWN)	Always	Below 1 ohms
Y8-10 (LFT+) - Y10-4 (UP)	Always	Below 1 ohms
Y8-12 (LFT-) - Y10-1	Always	Below 1 ohms

(DOWN)		
Y8-9 (RCL+) - d3-4 (FWD)	Always	Below 1 ohms
Y8-11 (RCL-) - d3-1 (BACK)	Always	Below 1 ohms
Y8-3 (SLD+) - Body ground	Always	10 kohms or higher
Y8-4 (SLD-) - Body ground	Always	10 kohms or higher
Y8-8 (FRV+) - Body ground	Always	10 kohms or higher
Y8-5 (FRV-) - Body ground	Always	10 kohms or higher
Y8-10 (LFT+) - Body ground	Always	10 kohms or higher
Y8-12 (LFT-) - Body ground	Always	10 kohms or higher
Y8-9 (RCL+) - Body ground	Always	10 kohms or higher
Y8-11 (RCL-) - Body ground	Always	10 kohms or higher

- d. Reconnect the seat motor connector.
- e. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 12

7. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH POWER SOURCE)
- a. Disconnect the Y9 front power seat switch LH connector.

*a

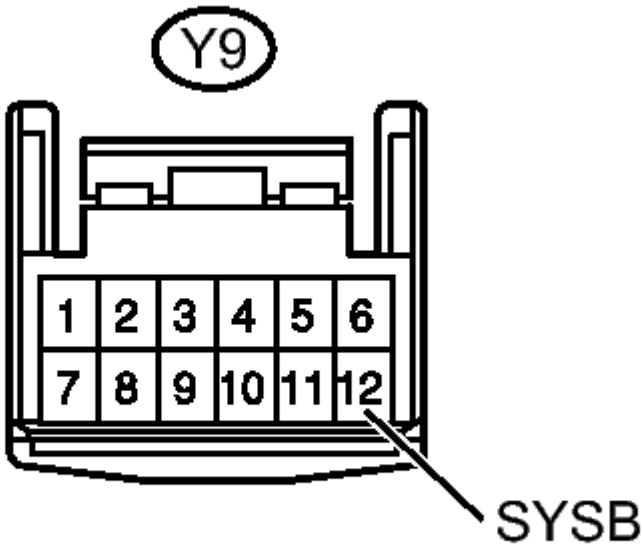


Fig. 29: Checking Y9 Harness And Connector (Front Power Seat Switch Power Source)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

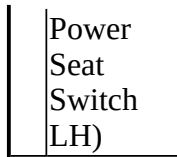
- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Condition	Specified Condition
Y9-12 (SYSB) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Front
----	--



c. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 13

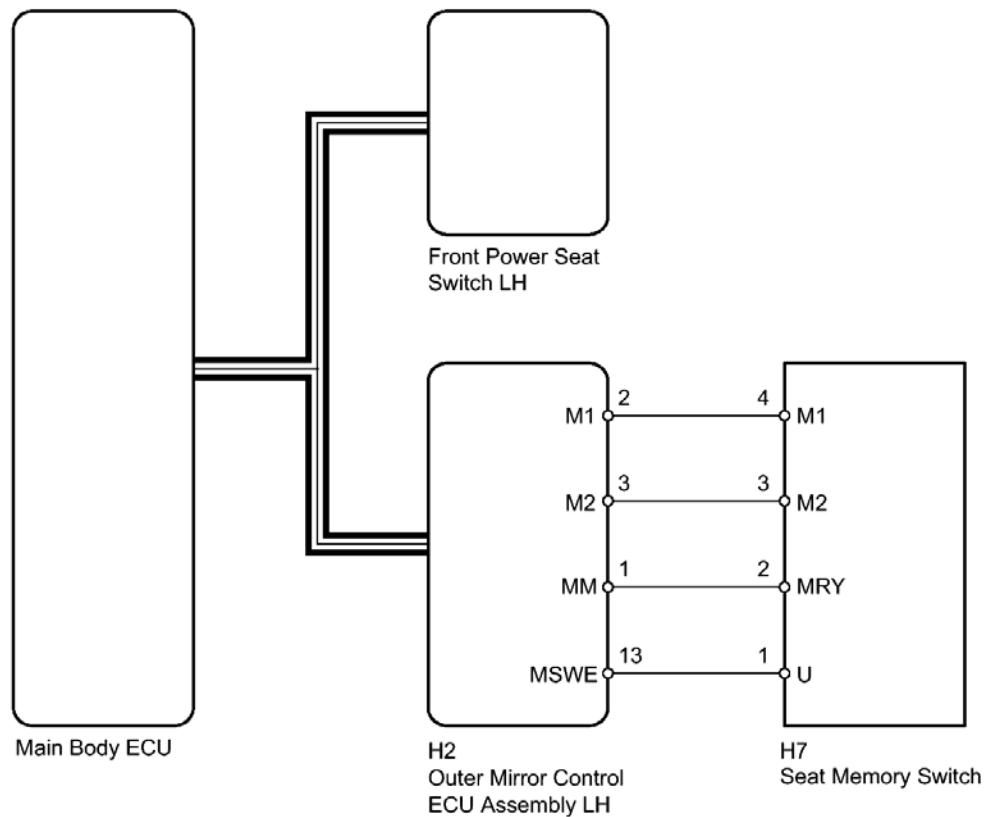
8. **GO TO CAN COMMUNICATION SYSTEM. Refer to DIAGNOSTIC TROUBLE CODE CHART**
9. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
10. **REPLACE SEPARATE TYPE FRONT SEAT CUSHION SPRING ASSEMBLY LH. Refer to DISASSEMBLY**
11. **REPLACE SEPARATE TYPE FRONT SEATBACK SPRING ASSEMBLY LH. Refer to DISASSEMBLY**
12. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
13. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**

Power Seat Position is not Memorized

DESCRIPTION

The main body ECU receives seat memory switch signals from the outer mirror control ECU (driver side) via CAN. If the SET switch is being pressed when one of the M1 or M2 switches is pressed, or if one of the M1 or M2 switches is pressed within 3 seconds of pressing the SET switch, the main body ECU sends a memory request signal to the front power seat switch LH. After receiving the request signal, the front power seat switch LH memorizes location data of each motor.

WIRING DIAGRAM



≡ : CAN Communication Line

Fig. 30: Seat Memory Switch Circuit Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- The seat position will not be recorded if the SET switch and 2 or more of the seat memory switches (for example, M1 switch and M2 switch) are pressed simultaneously.
- If a memorizing operation has failed, release all switches. The seat memory function does not operate unless the switches are released.

PROCEDURE

1. CHECK CAN COMMUNICATION SYSTEM

- a. Use the Techstream to check if the CAN communication system is functioning normally. Refer to **HOW TO PROCEED WITH TROUBLESHOOTING** .

OK

CAN communication DTC is not output.

NG --> See step 10

OK: Go to next step

2. CHECK POWER SEAT CONTROL FUNCTION

- a. Check that each function of the power seat operates normally by using the front power seat switch LH. Refer to **OPERATION CHECK**.

OK

Each function of power seat operates normally by using front power seat switch LH.

NG --> See step 11

OK: Go to next step

3. READ VALUE USING TECHSTREAM (MIRROR)

- a. Connect the Techstream to the DLC3.
- b. Turn the engine switch on (IG).
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Mirror L / Data List
- e. According to the display on the Techstream, read the Data List.

MIRROR L

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Seat Memory Switch 1	Seat memory switch M1 signal / ON or OFF	ON: M1 switch on OFF: M1 switch off	-
Seat Memory Switch 2	Seat memory switch M2 signal / ON or OFF	ON: M2 switch on OFF: M2 switch off	-
Seat Memory Set Switch	Seat memory switch SET signal / ON or OFF	ON: SET switch on OFF: SET switch off	-

OK

ON or OFF is displayed on the Techstream according to the table above.

NG --> See step 8

OK: Go to next step

4. REPLACE OUTER MIRROR CONTROL ECU ASSEMBLY (DRIVER SIDE)

- a. Replace the outer mirror control ECU assembly (driver side). Refer to **REMOVAL** .

NEXT: Go to next step

5. CHECK SEAT MEMORY FUNCTION (SEAT POSITION MEMORY FUNCTION)

- a. Perform a memory operation properly. Check that the buzzer sounds to indicate the completion of the memory operation. Refer to **OPERATION CHECK** .

NOTE:

- The seat position will not be recorded if the SET switch and 2 or more of the seat memory switches (for example, M1 switch and M2 switch) are pressed simultaneously.
- If a memorizing operation has failed, release all switches. The seat memory function does not operate unless the switches are released.

OK

Seat memory switch function operates normally.

NG --> See step 6

OK --> END (OUTER MIRROR CONTROL ECU ASSEMBLY (DRIVER SIDE) WAS DEFECTIVE)

6. REPLACE FRONT POWER SEAT SWITCH LH

- a. Replace the front power seat switch LH. Refer to **DISASSEMBLY** .

NEXT: Go to next step

7. CHECK SEAT MEMORY SWITCH

- a. Perform a memory operation properly. Check that the buzzer sounds to indicate the completion of the memory operation. Refer to **OPERATION CHECK** .

NOTE:

- The seat position will not be recorded if the SET switch and 2 or more of the seat memory switches (for example, M1 switch and M2 switch) are pressed simultaneously.
- If a memorizing operation has failed, release all switches. The

seat memory function does not operate unless the switches are released.

OK

Seat memory switch function operates normally.

NG --> See step 12

OK --> END (FRONT POWER SEAT SWITCH LH WAS DEFECTIVE)

8. INSPECT SEAT MEMORY SWITCH

- a. Remove the seat memory switch. Refer to REMOVAL .

*a

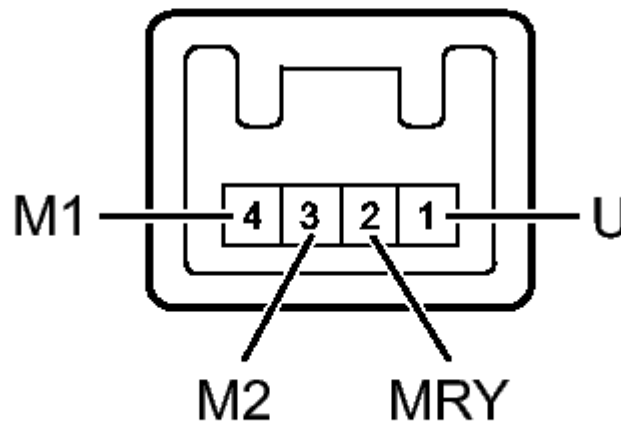


Fig. 31: Inspecting Seat Memory Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
4 (M1) - 1 (U)	Seat memory switch M1	Below 1 ohms

	pressed	
3 (M2) - 1 (U)	Seat memory switch M2 pressed	Below 1 ohms
2 (MRY) - 1 (U)	Seat memory switch SET pressed	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Seat Memory Switch)
----	--

- c. Reinstall the seat memory switch.

NG --> See step 13

OK: Go to next step

9. CHECK HARNESS AND CONNECTOR (OUTER MIRROR CONTROL ECU - SEAT MEMORY SWITCH)

- Disconnect the H3 outer mirror control ECU assembly LH connector.
- Disconnect the H7 seat memory switch connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
H3-2 (M1) - H7-4 (M1)	Always	Below 1 ohms
H3-3 (M2) - H7-3 (M2)	Always	Below 1 ohms
H3-1 (MM) - H7-2 (MRY)	Always	Below 1 ohms

H3-13 (MSWE) - H7-1 (U)	Always	Below 1 ohms
H3-1 (MM) - Body ground	Always	10 kohms or higher
H3-2 (M1) - Body ground	Always	10 kohms or higher
H3-3 (M2) - Body ground	Always	10 kohms or higher
H3-13 (MSWE) - Body ground	Always	10 kohms or higher

- d. Reconnect the seat memory switch connector.
- e. Reconnect the outer mirror control ECU assembly LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 14

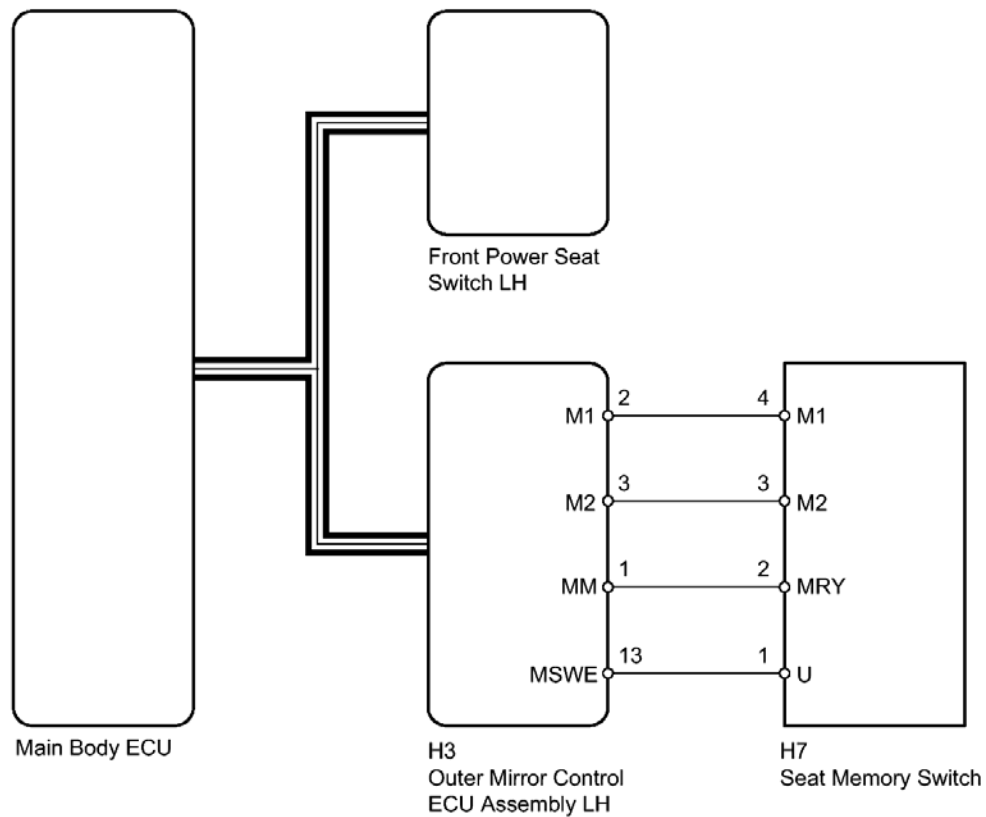
- 10. **GO TO CAN COMMUNICATION SYSTEM. Refer to DIAGNOSTIC TROUBLE CODE CHART**
- 11. **GO TO OTHER FLOW CHART (Front Power Seat does not Operate with Front Power Seat Switch). Refer to Front Power Seat does not Operate with Front Power Seat Switch**
- 12. **REPLACE MAIN BODY ECU. Refer to REMOVAL**
- 13. **REPLACE SEAT MEMORY SWITCH. Refer to REMOVAL**
- 14. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**

Power Seat does not Return to Memorized Position

DESCRIPTION

When any of the M1 or M2 switches is pressed, the outer mirror control ECU assembly (driver side) sends a switch signal to the main body ECU via CAN. Then, the main body ECU sends a recall request signal to the front power seat switch LH. The front power seat switch LH operates each motor to achieve each memorized position value.

WIRING DIAGRAM



≡ : CAN Communication Line

Fig. 32: Seat Memory Switch Wiring Diagram

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. CHECK CAN COMMUNICATION SYSTEM

- Use the Techstream to check if the CAN communication system is functioning normally. Refer to **HOW TO PROCEED WITH TROUBLESHOOTING** .

OK

CAN communication DTC is not output.

NG --> See step 9

OK: Go to next step

2. CHECK POWER SEAT CONTROL FUNCTION

- a. Check that each function of the power seat operates normally by using the front power seat switch LH. Refer to **OPERATION CHECK** .

OK

Each function of power seat operates normally by using front power seat switch LH.

NG --> See step 10

OK: Go to next step

3. CHECK SEAT POSITION MEMORY FUNCTION

- a. Perform a memory operation and check that the buzzer sounds to indicate the completion of the memory operation. Refer to **OPERATION CHECK** .

NOTE:

- The seat position will not be recorded if the SET switch and 2 or more of the memory switches (for example, M1 switch and M2 switch) are pressed simultaneously.
- If a memorizing operation has failed, release all switches. The seat memory function does not operate unless the switches are released.

OK

Seat position memory function is normal.

NG --> See step 11

OK: Go to next step

4. CHECK FOR DTC

- a. Check for DTC P0705.
- b. Clear the DTC. Refer to **DTC CHECK / CLEAR** .
- c. Recheck for DTC P0705.

RESULT

Result	Proceed to
DTC P0705 is not output	A

DTC P0705 is output	B
------------------------------	---

B --> See step 12

A: Go to next step

5. CHECK SEAT POSITION RESTORING FUNCTION

- Under each of the following conditions, check that the seat restoring operation operates by pressing the M1 switch, M2 switch or M3 switch. Refer to **OPERATION CHECK** .

HINT:

- Engine switch is on (ACC) or on (IG), Shift lever is in P.
- Engine switch is off, within 180 seconds after driver door is closed and opened.
- Engine switch is off, within 60 seconds after driver door is opened and closed (only driver side).

RESULT

Result	Proceed to
Seat restoring operation does not operate	A
Seat restoring operation operates	B

B --> See step 13

A: Go to next step

6. READ VALUE USING TECHSTREAM (SEAT POSITION MEMORY)

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Driver Seat / Data List.
- According to the display on the Techstream, read the Data List.

DRIVER SEAT

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Seat Memory No1	Seat position memorized with M1 switch / Mem or Not Mem	Mem: Memorized Not Mem: Not memorized	-
Seat Memory No2	Seat position memorized with M2 switch / Mem or Not Mem	Mem: Memorized Not Mem: Not memorized	-

OK

Mem or Not Mem appears on the screen.

NG --> See step 14

OK: Go to next step

7. REPLACE FRONT POWER SEAT SWITCH LH

- Replace the front power seat switch LH. Refer to DISASSEMBLY .

NEXT: Go to next step

8. CHECK POWER SEAT CONTROL FUNCTION

- Perform a seat memory operation properly.
- Check that the buzzer sounds for 0.1 seconds and the seat automatically moves to the memorized position. Refer to OPERATION CHECK .

NOTE:

- The seat position will not return to the memorized position if the 2 or more of the seat memory switches (for example, M1 switch and M2 switch) are pressed simultaneously.
- If a restoring operation has failed, release all switches. The seat memory restoring function does not operate unless the switches are released.

OK

Seat position restoring function operates normally.

NG --> See step 15

OK --> END (FRONT POWER SEAT SWITCH LH WAS DEFECTIVE)

9. **GO TO CAN COMMUNICATION SYSTEM. Refer to DIAGNOSTIC TROUBLE CODE CHART**
10. **GO TO OTHER FLOW CHART (Front Power Seat does not Operate with Front Power Seat Switch). Refer to Front Power Seat does not Operate with Front Power Seat Switch**
11. **GO TO OTHER FLOW CHART (Power Seat Position is not Memorized). Refer to Power Seat Position is not Memorized**
12. **GO TO ENGINE CONTROL SYSTEM. Refer to DTC P0705: Transmission Range Sensor Circuit Malfunction (PRNDL Input)**
13. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**
14. **GO TO OTHER FLOW CHART (Power Seat Position is not Memorized). Refer to Power Seat Position is not Memorized**
15. **REPLACE MAIN BODY ECU. Refer to REMOVAL**

Wireless Transmitter Memory Function does not Operate

DESCRIPTION

With the driver side door closed, turn the engine switch from on (IG) to off and press the manual lock or unlock switch while holding a seat memory switch (M1 switch or M2 switch). Doing so will register the transmitter recognition code into the seat memory switch that was pressed. After the registration is completed, the answer-back buzzer sounds.

NOTE:

- The seat position will not be recorded if the SET switch and 2 or more of the seat memory switches (for example, M1 switch and M2 switch) are pressed simultaneously.
- If a memorizing operation has failed, release all switches. The seat memory function does not operate unless the switches are released.

INSPECTION PROCEDURE

PROCEDURE

1. CHECK CAN COMMUNICATION SYSTEM

- a. Use the Techstream to check if the CAN communication system is functioning normally. Refer to HOW TO PROCEED WITH TROUBLESHOOTING .

OK

CAN communication DTC is not output.

NG --> See step 14

OK: Go to next step

2. CHECK POWER DOOR LOCK CONTROL FUNCTION

- a. Using the standard operation procedure, check that the power door lock/unlock function operates normally. Refer to **OPERATION CHECK**

OK

Power door lock/unlock function operates normally.

NG --> See step 15

OK: Go to next step

3. CHECK SMART KEY SYSTEM (for Entry Function)

- a. Check the entry unlock function of smart key system. Refer to **OPERATION CHECK** .

OK

Entry unlock function operates normally.

NG --> See step 16

OK: Go to next step

4. CHECK SEAT MEMORY FUNCTION

- a. Perform a seat memory operation properly. Refer to **OPERATION CHECK** .
- b. Check that the buzzer sounds for 0.5 seconds to indicate the completion of the memory operation.

NOTE:

- The seat position will not be recorded if the SET switch and 2 or more of the seat memory switches (for example, M1 switch and M2 switch) are pressed simultaneously.
- If a memorizing operation has failed, release all switches. The seat memory function does not operate unless the switches are released.

OK

Seat position memory function operates normally.

NG --> See step 17

OK: Go to next step

5. CHECK SEAT RESTORING FUNCTION (SEAT POSITION RESTORING FUNCTION)

- a. Perform a seat restoring operation properly. Refer to **OPERATION CHECK** .

- b. Check that the buzzer sounds for 0.1 seconds and the seat automatically moves to the memorized position.

NOTE:

- The seat position will not return to the memorized position if the 2 or more of the seat memory switches (for example, M1 switch and M2 switch) are pressed simultaneously.
- If a restoring operation has failed, release all switches. The seat memory restoring function does not operate unless the switches are released.

OK

Seat position restoring function operates normally.

NG --> See step 18

OK: Go to next step

6. READ VALUE USING TECHSTREAM (DOOR COURTESY)

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Main Body / Data List.
- According to the display on the Techstream, read the Data List.

MAIN BODY

Tester Connection	Measurement Item/Range	Normal condition	Diagnostic Note
FL Door Courtesy	Front door courtesy light switch assembly signal / ON or OFF	ON: Driver side door open OFF: Driver side door closed	-

OK

ON or OFF appears on the screen.

NG --> See step 19

OK: Go to next step

7. CHECK MEMORY CALL FUNCTION

- While pressing M1 switch or M2 switch, press the manual lock or unlock switch.
- Check that the buzzer sounds normally. Refer to **OPERATION CHECK** .

OK

Buzzer sounds normally.

NG --> See step 11

OK: Go to next step

8. READ VALUE USING TECHSTREAM (MEMORY CALL REGISTRATION CANCELLATION)

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Main Body / Data List.
- According to the display on the Techstream, read the Data List.
- Cancel the memory call registration.

MAIN BODY

Tester Connection	Measurement Item/Range	Normal condition	Diagnostic Note
Mem SW No. w/KeyID1	Memory switch linked with key ID1 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID1 MEM SW1: M1 switch linked with key ID1 MEM SW2: M2 switch linked with key ID1 MEM SW3: Related	-

		switch does not exist	
Mem SW No. w/KeyID2	Memory switch linked with key ID2 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID2 MEM SW1: M1 switch linked with key ID2 MEM SW2: M2 switch linked with key ID2 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID3	Memory switch linked with key ID3 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID3 MEM SW1: M1 switch linked with key ID3 MEM SW2: M2 switch linked with key ID3 MEM SW3: Related	-

		switch does not exist	
Mem SW No. w/KeyID4	Memory switch linked with key ID4 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID4 MEM SW1: M1 switch linked with key ID4 MEM SW2: M2 switch linked with key ID4 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID5	Memory switch linked with key ID5 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID5 MEM SW1: M1 switch linked with key ID5 MEM SW2: M2 switch linked with key ID5 MEM SW3: Related	-

		switch does not exist	
Mem SW No. w/KeyID6	Memory switch linked with key ID6 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID6 MEM SW1: M1 switch linked with key ID6 MEM SW2: M2 switch linked with key ID6 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID7	Memory switch linked with key ID7 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID7 MEM SW1: M1 switch linked with key ID7 MEM SW2: M2 switch linked with key ID7 MEM SW3: Related	-

		switch does not exist	
--	--	-----------------------------	--

OK

On the tester display, it is confirmed that the memory call has been cleared.

NG --> See step 20

OK: Go to next step

9. READ VALUE USING TECHSTREAM (MEMORY CALL REGISTRATION)

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Main Body / Data List.
- According to the display on the Techstream, read the Data List.
- Register the memory call.

MAIN BODY

Tester Connection	Measurement Item/Range	Normal condition	Diagnostic Note
Mem SW No. w/KeyID1	Memory switch linked with key ID1 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID1 MEM SW1: M1 switch linked with key ID1 MEM SW2: M2 switch linked with key ID1 MEM SW3: Related switch	-

		does not exist	
Mem SW No. w/KeyID2	Memory switch linked with key ID2 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID2 MEM SW1: M1 switch linked with key ID2 MEM SW2: M2 switch linked with key ID2 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID3	Memory switch linked with key ID3 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID3 MEM SW1: M1 switch linked with key ID3 MEM SW2: M2 switch linked with key ID3 MEM SW3: Related switch	-

		does not exist	
Mem SW No. w/KeyID4	Memory switch linked with key ID4 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID4 MEM SW1: M1 switch linked with key ID4 MEM SW2: M2 switch linked with key ID4 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID5	Memory switch linked with key ID5 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID5 MEM SW1: M1 switch linked with key ID5 MEM SW2: M2 switch linked with key ID5 MEM SW3: Related switch	-

		does not exist	
Mem SW No. w/KeyID6	Memory switch linked with key ID6 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID6 MEM SW1: M1 switch linked with key ID6 MEM SW2: M2 switch linked with key ID6 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID7	Memory switch linked with key ID7 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID7 MEM SW1: M1 switch linked with key ID7 MEM SW2: M2 switch linked with key ID7 MEM SW3: Related switch	-

		does not exist	
--	--	-------------------	--

OK

On the tester display, it is confirmed that the memory call has been registered.

NG --> See step 12

OK: Go to next step

10. CHECK MEMORY CALL FUNCTION (SEAT MEMORY CALL)

- With a recognition code stored in memory, open the driver door by performing an entry unlock operation or by pressing the transmitter unlock switch. Check that the driver side power seat moves to the memorized position. Refer to **OPERATION CHECK** .

OK

Driver side power seat moves to the memorized position.

NG --> See step 21

OK --> See step 22

11. PERFORM ACTIVE TEST USING TECHSTREAM (BUZZER)

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Driver Seat / Active Test.
- According to the display on the Techstream, perform the Active Test.

DRIVER SEAT

Tester Display	Test Part	Control Range	Diagnostic Note
Buzzer	Buzzer operation	ON / OFF	-

OK

Buzzer sounds normally.

NG --> See step 23

OK: Go to next step

12. REPLACE MAIN BODY ECU

- Replace the main body ECU. Refer to **REMOVAL** .

NEXT: Go to next step

13. READ VALUE USING TECHSTREAM (MEMORY CALL REGISTRATION)

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Main Body / Data List.
- According to the display on the Techstream, read the Data List.
- Register the memory call.

MAIN BODY

Tester Connection	Measurement Item/Range	Normal condition	Diagnostic Note
Mem SW No. w/KeyID1	Memory switch linked with key ID1 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID1 MEM SW1: M1 switch linked with key ID1 MEM SW2: M2 switch linked with key ID1 MEM SW3: Related switch does not exist	-
		NONE: No switches linked with key	

Mem SW No. w/KeyID2	Memory switch linked with key ID2 / NONE, MEM SW1, MEM SW2, or MEM SW3	ID2 MEM SW1: M1 switch linked with key ID2 MEM SW2: M2 switch linked with key ID2 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID3	Memory switch linked with key ID3 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID3 MEM SW1: M1 switch linked with key ID3 MEM SW2: M2 switch linked with key ID3 MEM SW3: Related switch does not exist	-
		NONE: No switches linked with key	

Mem SW No. w/KeyID4	Memory switch linked with key ID4 / NONE, MEM SW1, MEM SW2, or MEM SW3	ID4 MEM SW1: M1 switch linked with key ID4 MEM SW2: M2 switch linked with key ID4 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID5	Memory switch linked with key ID5 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID5 MEM SW1: M1 switch linked with key ID5 MEM SW2: M2 switch linked with key ID5 MEM SW3: Related switch does not exist	-
		NONE: No switches linked with key	

Mem SW No. w/KeyID6	Memory switch linked with key ID6 / NONE, MEM SW1, MEM SW2, or MEM SW3	ID6 MEM SW1: M1 switch linked with key ID6 MEM SW2: M2 switch linked with key ID6 MEM SW3: Related switch does not exist	-
Mem SW No. w/KeyID7	Memory switch linked with key ID7 / NONE, MEM SW1, MEM SW2, or MEM SW3	NONE: No switches linked with key ID7 MEM SW1: M1 switch linked with key ID7 MEM SW2: M2 switch linked with key ID7 MEM SW3: Related switch does not exist	-

OK

On the tester display, it is confirmed that the memory call has been registered.

NG --> See step 24

OK --> END (MAIN BODY ECU WAS DEFECTIVE)

14. GO TO CAN COMMUNICATION SYSTEM. Refer to DIAGNOSTIC TROUBLE CODE CHART
15. GO TO POWER DOOR LOCK CONTROL SYSTEM. Refer to PROBLEM SYMPTOMS TABLE
16. GO TO SMART KEY SYSTEM (for Entry Function). Refer to PROBLEM SYMPTOMS TABLE
17. GO TO OTHER FLOW CHART (Power Seat Position is not Memorized). Refer to Power Seat Position is not Memorized
18. GO TO OTHER FLOW CHART (Power Seat does not Return to Memorized Position). Refer to Power Seat does not Return to Memorized Position
19. GO TO LIGHTING SYSTEM (Door Courtesy Switch Circuit). Refer to Door Courtesy Switch Circuit
20. REPLACE MAIN BODY ECU. Refer to REMOVAL
21. GO TO OTHER FLOW CHART (Wireless-linked Return Function does not Operate). Refer to Wireless-linked Return Function does not Operate
22. USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING
23. REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY
24. REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY). Refer to REMOVAL

Wireless-linked Return Function does not Operate

DESCRIPTION

When a door is unlocked, the certification ECU (smart key ECU assembly) sends a door unlock signal and key ID signal to the main body ECU. When the main body ECU receives the door unlock signal, it stores the key ID. When the driver door is opened, the memory call and memory command information of the stored key ID is sent to each driving position related control ECU. Each control ECU receives the memory commands and performs the memory call operation according to predetermined control timing values.

HINT:

The position control ECU and front power seat switch are built into an assembly that is referred to as the position control ECU and switch assembly.

INSPECTION PROCEDURE

PROCEDURE

1. CHECK CAN COMMUNICATION SYSTEM

- a. Use the Techstream to check if the CAN communication system is functioning normally. Refer to HOW TO PROCEED WITH TROUBLESHOOTING .

OK

CAN communication DTC is not output.

NG --> See step 28

OK: Go to next step

2. CHECK MEMORY CALL FUNCTION

- a. While pressing M1 switch or M2 switch, press the manual lock or unlock switch.
- b. Check that the buzzer sounds normally. Refer to **OPERATION CHECK** .

OK

Buzzer sounds normally.

NG --> See step 29

OK: Go to next step

3. CHECK MEMORY CALL FUNCTION (WIRELESS UNLOCK OR ENTRY UNLOCK)

- a. Make sure that the engine switch is off. Refer to **OPERATION CHECK** .
- b. Make sure that all doors are closed and locked.
- c. Unlock the doors using the wireless function and entry function respectively. Check if the memory call function operates.

RESULT

Result	Proceed to
Automatic wireless memory call function is not normal	A
Automatic smart entry call function is not normal	B
Both are abnormal	C

B --> See step 12

C --> See step 20

A: Go to next step

4. CHECK WIRELESS UNLOCK FUNCTION

- a. Check the wireless unlock function. Refer to **OPERATION CHECK** .

OK

Wireless unlock function is normal.

NG --> See step 30

OK: Go to next step

5. CHECK MEMORY CALL FUNCTION (MIRROR)

- a. Perform memory call to check outer mirror operation. Refer to **OPERATION CHECK** .

RESULT

Result	Proceed to
Operates normally	A
Does not operate normally	B

B --> See step 9

A: Go to next step

6. CHECK POWER SEAT POWER EASY ACCESS SYSTEM

- a. Move the shift lever to P.
- b. Check if the power easy access system operates normally when engaging and disengaging the seatbelt tongue plate.

HINT:

- Make sure that the power easy access system customize setting is set to Standard. Refer to **CUSTOMIZE PARAMETERS** .

OK

Power seat power easy access system is normal.

NG --> See step 31

OK: Go to next step

7. REPLACE FRONT POWER SEAT SWITCH LH

- a. Replace the front power seat switch LH. Refer to **DISASSEMBLY** .

NEXT: Go to next step

8. CHECK MEMORY CALL FUNCTION

- a. With a recognition code stored in memory, open the driver door by pressing the transmitter unlock switch. Check that the driver side power seat moves to the memorized position. Refer to **OPERATION CHECK** .

OK

Driver side power seat moves to the memorized position.

NG --> See step 32

OK --> END (FRONT POWER SEAT SWITCH LH WAS DEFECTIVE)

9. READ VALUE USING TECHSTREAM (DOOR COURTESY)

- a. Connect the Techstream to the DLC3.
- b. Turn the engine switch on (IG).
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Main Body / Data List.
- e. According to the display on the Techstream, read the Data List.

MAIN BODY

Tester Connection	Measurement Item/Range	Normal Condition	Diagnostic Note
FL Door Courtesy	Front door courtesy light switch assembly signal / ON or OFF	ON: Driver side door open OFF: Driver side door closed	-

OK

ON or OFF appears on the screen.

NG --> See step 33

OK: Go to next step

10. REPLACE MAIN BODY ECU

- a. Replace the main body ECU. Refer to **REMOVAL** .

NEXT: Go to next step

11. CHECK MEMORY CALL FUNCTION

- a. With a recognition code stored in memory, open the driver door by pressing the transmitter unlock switch. Check that the driver side power seat moves to the memorized position. Refer to **OPERATION CHECK** .

OK

Driver side power seat moves to the memorized position.

NG --> See step 34

OK --> END (MAIN BODY ECU WAS DEFECTIVE)

12. CHECK SMART KEY SYSTEM (for Entry Function)

- a. Check the entry unlock function of smart key system. Refer to **OPERATION CHECK** .

OK

Entry unlock function is normal.

NG --> See step 35

OK: Go to next step

13. CHECK MEMORY CALL FUNCTION (MIRROR)

- a. Perform memory call to check outer mirror operation. Refer to **OPERATION CHECK** .

RESULT

Result	Proceed to
Operates normally	A
Does not operate normally	B

B --> See step 17

A: Go to next step

14. CHECK POWER SEAT POWER EASY ACCESS SYSTEM

- a. Move the shift lever to P.
- b. Check if the power easy access system operates normally when engaging and disengaging the seatbelt tongue plate.

HINT:

- Make sure that the power easy access system customize setting is set to Standard. Refer to **CUSTOMIZE PARAMETERS** .

OK

Power seat power easy access system is normal.

NG --> See step 36

OK: Go to next step

15. REPLACE FRONT POWER SEAT SWITCH LH

- a. Replace the front power seat switch LH. Refer to **DISASSEMBLY** .

NEXT: Go to next step

16. CHECK MEMORY CALL FUNCTION

- a. With a recognition code stored in memory, open the driver door by performing an entry unlock operation. Check that the driver side power seat moves to the memorized position. Refer to **OPERATION CHECK** .

OK

Driver side power seat moves to the memorized position.

NG --> See step 37

OK --> END (FRONT POWER SEAT SWITCH LH WAS DEFECTIVE)

17. READ VALUE USING TECHSTREAM (DOOR COURTESY)

- a. Connect the Techstream to the DLC3.
- b. Turn the engine switch on (IG).
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Main Body / Data List.
- e. According to the display on the Techstream, read the Data List.

MAIN BODY

--	--	--	--

Tester Connection	Measurement Item/Range	Normal Condition	Diagnostic Note
FL Door Courtesy	Front door courtesy light switch assembly signal / ON or OFF	ON: Driver side door open OFF: Driver side door closed	-

OK

ON or OFF appears on the screen.

NG --> See step 38

OK: Go to next step

18. REPLACE MAIN BODY ECU

- Replace the main body ECU. Refer to **REMOVAL** .

NEXT: Go to next step

19. CHECK MEMORY CALL FUNCTION

- With a recognition code stored in memory, open the driver door by performing an entry unlock operation. Check that the driver side power seat moves to the memorized position. Refer to **OPERATION CHECK** .

OK

Driver side power seat moves to the memorized position.

NG --> See step 39

OK --> END (MAIN BODY ECU WAS DEFECTIVE)

20. CHECK MEMORY CALL FUNCTION (MIRROR)

- Perform memory call to check outer mirror operation. Refer to **OPERATION CHECK** .

RESULT

Result	Proceed to
Operates normally	A
Does not	

operate normally	B
---------------------	---

B --> See step 24

A: Go to next step

21. CHECK SEAT MEMORY FUNCTION

- Perform a seat memory operation properly. Refer to OPERATION CHECK .
- Check that the buzzer sounds for 0.5 seconds to indicate the completion of the memory operation.

NOTE:

- The seat position will not be recorded if the SET switch and 2 or more of the seat memory switches (for example, M1 switch and M2 switch) are pressed simultaneously.
- If a memorizing operation has failed, release all switches. The seat memory function does not operate unless the switches are released.

OK

Seat position memory function operates normally.

NG --> See step 27

OK: Go to next step

22. REPLACE FRONT POWER SEAT SWITCH LH

- Replace the front power seat switch LH. Refer to DISASSEMBLY .

NEXT: Go to next step

23. CHECK SEAT RESTORING FUNCTION

- With a recognition code stored in memory, open the driver door by performing an entry unlock operation or by pressing the transmitter unlock switch. Check that the driver side power seat moves to the memorized position. Refer to OPERATION CHECK .

OK

Driver side power seat moves to the memorized position.

NG --> See step 40

OK --> END (FRONT POWER SEAT SWITCH LH WAS DEFECTIVE)

24. READ VALUE USING TECHSTREAM (DOOR COURTESY)

- a. Connect the Techstream to the DLC3.
- b. Turn the engine switch on (IG).
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Main Body / Data List.
- e. According to the display on the Techstream, read the Data List.

MAIN BODY

Tester Connection	Measurement Item/Range	Normal Condition	Diagnostic Note
FL Door Courtesy	Front door courtesy light switch assembly signal / ON or OFF	ON: Driver side door open OFF: Driver side door closed	-

OK

ON or OFF appears on the screen.

NG --> See step 41

OK: Go to next step

25. REPLACE MAIN BODY ECU

- a. Replace the main body ECU. Refer to **REMOVAL** .

NEXT: Go to next step

26. CHECK MEMORY CALL FUNCTION

- a. With a recognition code stored in memory, open the driver door by performing an entry unlock operation or by pressing the transmitter unlock switch. Check that the driver side power seat moves to the memorized position. Refer to **OPERATION CHECK** .

OK

Driver side power seat moves to the memorized position.

NG --> See step 42

OK --> END (MAIN BODY ECU WAS DEFECTIVE)

27. CHECK FRONT SEAT CONTROL FUNCTION

- a. Check that each function of the power seat operates normally by using the switches on the front power seat switch LH. Refer to **OPERATION CHECK** .

OK

Each function of the power seat operates normally by using the switches on the front power seat switch LH.

NG --> See step 43

OK --> See step 44

28. GO TO CAN COMMUNICATION SYSTEM. Refer to **DIAGNOSTIC TROUBLE CODE CHART**
29. GO TO OTHER FLOW CHART (Wireless Transmitter Memory Function does not Operate). Refer to **Wireless Transmitter Memory Function does not Operate**
30. GO TO WIRELESS DOOR LOCK CONTROL SYSTEM. Refer to **PROBLEM SYMPTOMS TABLE**
31. GO TO OTHER FLOW CHART (Power Seat Power Easy Access System Function does not Operate). Refer to **Power Seat Power Easy Access System Function does not Operate**
32. REPLACE MAIN BODY ECU. Refer to **REMOVAL**
33. GO TO LIGHTING SYSTEM (Door Courtesy Switch Circuit). Refer to **Door Courtesy Switch Circuit**
34. REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY). Refer to **REMOVAL**
35. GO TO SMART KEY SYSTEM (for Entry Function). Refer to **PROBLEM SYMPTOMS TABLE**
36. GO TO OTHER FLOW CHART (Power Seat Power Easy Access System Function does not Operate). Refer to **Power Seat Power Easy Access System Function does not Operate**
37. REPLACE MAIN BODY ECU. Refer to **REMOVAL**
38. GO TO LIGHTING SYSTEM (Door Courtesy Switch Circuit). Refer to **Door Courtesy Switch Circuit**
39. REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY). Refer to **REMOVAL**
40. REPLACE MAIN BODY ECU. Refer to **REMOVAL**
41. GO TO LIGHTING SYSTEM (Door Courtesy Switch Circuit). Refer to **Door Courtesy Switch Circuit**
42. REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY). Refer to **REMOVAL**
43. GO TO OTHER FLOW CHART (Front Power Seat does not Operate with Front Power Seat Switch). Refer to **Front Power Seat does not Operate with Front Power Seat Switch**
44. GO TO OTHER FLOW CHART (Power Seat does not Return to Memorized Position). Refer to **Power Seat does not Return to Memorized Position**

Power Seat Power Easy Access System Function does not Operate

DESCRIPTION

When the engine switch off and the shift lever is in P, the power seat slides rearwards when the seat belt tongue plate is disengaged from the front seat inner belt assembly LH (auto away function). Also the power seat slides forward when the seat belt tongue plate is engaged to the front seat inner belt assembly LH with the engine switch on (ACC) or on (IG), or the shift lever in P.

WIRING DIAGRAM

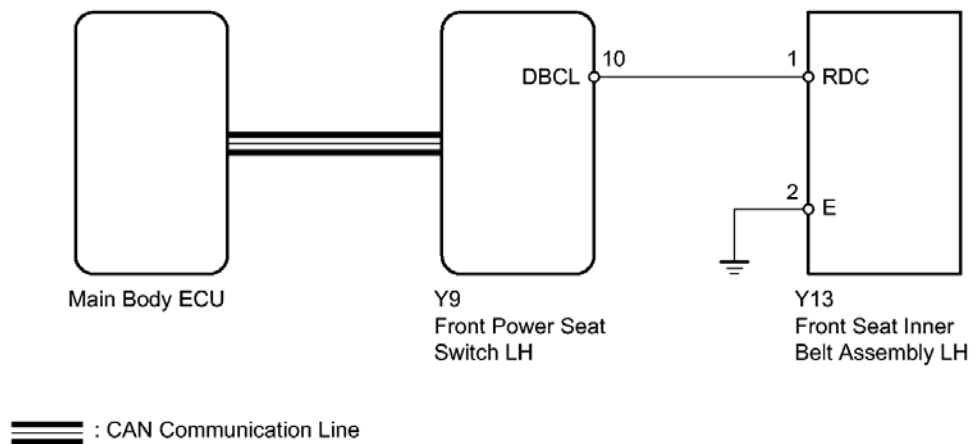


Fig. 33: Front Seat Inner Belt Assembly Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. CHECK CAN COMMUNICATION SYSTEM

- Use the Techstream to check if the CAN communication system is functioning normally. Refer to HOW TO PROCEED WITH TROUBLESHOOTING .

OK

CAN communication DTC is not output.

NG --> See step 8

OK: Go to next step

2. CHECK FRONT POWER SEAT OPERATION

- Check that each function of the power seat operates normally by using the front power seat switch LH. Refer to OPERATION CHECK .

RESULT

Result	Proceed to
Power seat function normally	A
All power seat functions do not operate	B
One or more power seat motors do not operate	C

B --> See step 9

C --> See step 10

A: Go to next step

3. READ VALUE USING TECHSTREAM (BUCKLE SWITCH)

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Driver Seat / Data List.
- According to the display on the Techstream, read the Data List.

DRIVER SEAT

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Driver Seat Buckle SW	Status of driver seat belt / ON or OFF	ON: Tongue plate engaged OFF: Tongue plate not engaged	-

NG --> See step 6

OK: Go to next step

4. REPLACE FRONT POWER SEAT SWITCH LH

- a. Replace the front power seat switch LH. Refer to DISASSEMBLY .

NEXT: Go to next step

5. CHECK POWER SEAT POWER EASY ACCESS SYSTEM

- a. Check that the power seat power easy access system operates normally when engaging and disengaging the tongue plate of the seat belt with the shift lever in P. Refer to OPERATION CHECK .

OK

Power seat power easy access system is normal.

NG --> See step 11

OK --> END (FRONT POWER SEAT SWITCH LH WAS DEFECTIVE)

6. INSPECT FRONT SEAT INNER BELT ASSEMBLY LH

- a. Remove the front seat inner belt assembly LH. Refer to REMOVAL .

*a

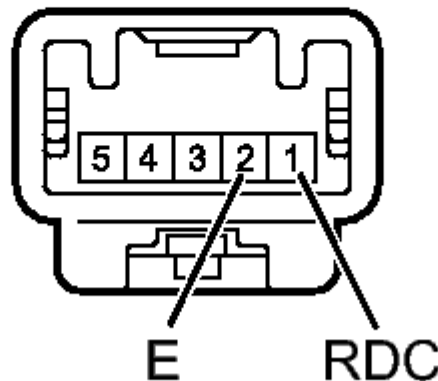


Fig. 34: Inspecting Front Seat Inner Belt Assembly LH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
1 (RDC) - 2 (E)	Tongue plate engaged	Below 1 ohms
	Tongue plate not engaged	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Component without harness connected (Front Seat Inner Belt Assembly LH)
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- c. Reinstall the front seat inner belt assembly LH.

NG --> See step 12

OK: Go to next step

7. CHECK HARNESS AND CONNECTOR (FRONT POWER SEAT SWITCH - FRONT SEAT INNER BELT)

- Disconnect the Y9 front power seat switch LH connector.
- Disconnect the Y13 front seat inner belt assembly LH connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
Y9-10 (DBCL) - Y13-1 (RDC)	Always	Below 1 ohms
Y13-2 (E) - Body	Always	Below 1

ground		ohms
Y9-10 (DBCL) - Body ground	Always	10 kohms or higher

- d. Reconnect the front seat inner belt assembly LH connector.
- e. Reconnect the front power seat switch LH connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 13

- 8. **GO TO CAN COMMUNICATION SYSTEM. Refer to DIAGNOSTIC TROUBLE CODE CHART**
- 9. **GO TO OTHER FLOW CHART (Front Power Seat does not Operate with Front Power Seat Switch). Refer to Front Power Seat does not Operate with Front Power Seat Switch**
- 10. **GO TO OTHER FLOW CHART (One or more Power Seat Motors do not Operate). Refer to One or more Power Seat Motors do not Operate**
- 11. **REPLACE MAIN BODY ECU. Refer to REMOVAL**
- 12. **REPLACE FRONT SEAT INNER BELT ASSEMBLY LH. Refer to REMOVAL**
- 13. **REPLACE FRONT POWER SEAT SWITCH LH. Refer to DISASSEMBLY**