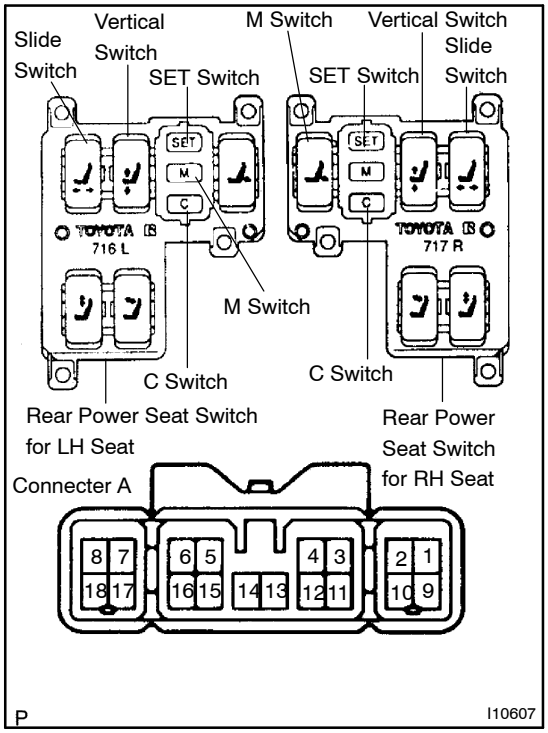
BE153–01

INSPECTION

1. INSPECT DRIVER'S POWER SEAT SWITCH CONTINUITY



Slide switch:

Switch position	Tester connection	Specified condition
FRONT	10 – 13	Continuity
OFF	–	No continuity
REAR	10 – 14	Continuity

Front vertical switch:

Switch position	Tester connection	Specified condition
UP	10 – 15	Continuity
OFF	–	No continuity
DOWN	10 – 16	Continuity

SET switch:

Switch position	Tester connection	Specified condition
OFF	–	No continuity
ON	10 – 11	Continuity

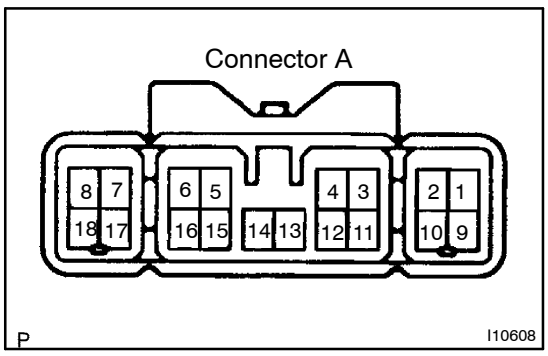
M switch:

Switch position	Tester connection	Specified condition
OFF	–	No continuity
ON	10 – 12	Continuity

C switch:

Switch position	Tester connection	Specified condition
OFF	–	No continuity
ON	10 – 18	Continuity

If continuity is not as specified, replace the switch.



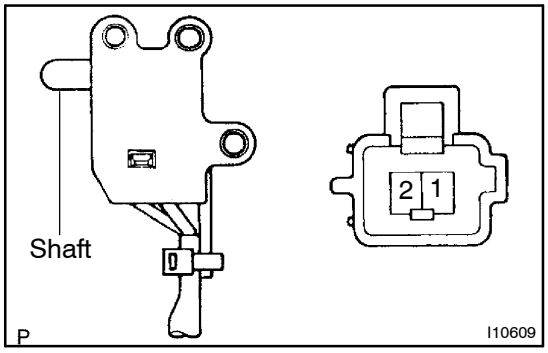
2. INSPECT POWER SEAT SWITCH INDICATOR AND NIGHT ILLUMINATION

(a) Check that the indicator in the C (Cancel) switch lights up when connector terminals 17 and 10 are connected to the battery (+) and (–), respectively.

NOTICE:

- **Use two 1.5 V batteries which are connected in series to form a 3.0 V battery.**
- **If the vehicle's battery voltage is applied, the light emitting diode (LED) will be damaged.**

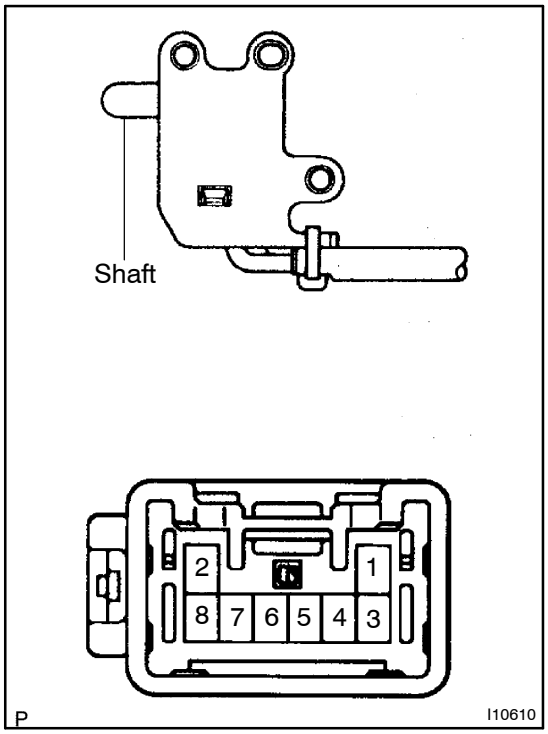
(b) Change the connection from the above to connector terminals 9 and 10 being connected to battery (+) and (–), respectively. Check that night illuminations of switches other than C switch light up and the C switch indicator blinks.



3. INSPECT LIMIT SWITCH (IN FRONT LH SEAT FOOT REST) CONTINUITY

Switch position	Tester connection	Specified condition
Limit switch OFF (SW pin pushed in)	–	No continuity
Limit switch ON (SW pin released)	1 – 2	Continuity

If continuity is not as specified, replace the switch.



4. INSPECT LIMIT SWITCH (SLIDE DETECTION) CONTINUITY

Switch position	Tester connection	Specified condition
Limit switch OFF (SW pin pushed in)	–	No continuity
Limit switch ON (SW pin released)	4 – 5	Continuity

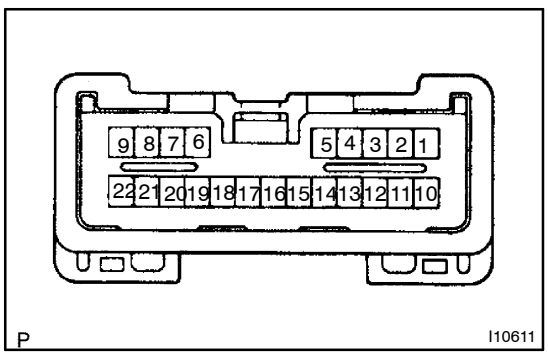
5. INSPECT LIMIT SWITCH (VERTICAL UP–MOST DETECTION) CONTINUITY

Switch position	Tester connection	Specified condition
Limit switch OFF (SW pin pushed in)	–	No continuity
Limit switch ON (SW pin released)	6 – 7	Continuity

6. INSPECT LIMIT SWITCH (VERTICAL DOWN MOST DETECTION) CONTINUITY

Switch position	Tester connection	Specified condition
Limit switch OFF (SW pin pushed in)	–	No continuity
Limit switch ON (SW pin released)	2 – 8	Continuity

If continuity is not as specified, replace the switch.



7. INSPECT POSITION SENSOR SIGNAL

HINT:

When the position control computer connector terminal 15 (CHK) is the ground level, the mode is set to the position sensor check mode to output the position sensor signal status to the computer connector terminal 22 (DOUT).

(a) Remove the rear cushion and seat back.

(b) Connect the rear seat switch (for rear seat) connector. (When the connector was disconnected at removing the rear seat back)

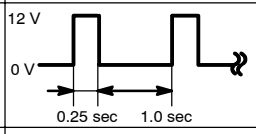
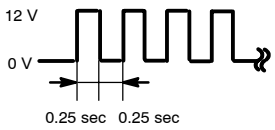
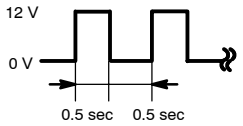
(c) Connect the circuit tester leads (+) and (–) to connector terminal 22 of position control computer and the body earth, respectively.

(d) Connect connector terminal 15 of position control computer to the body earth.

HINT:

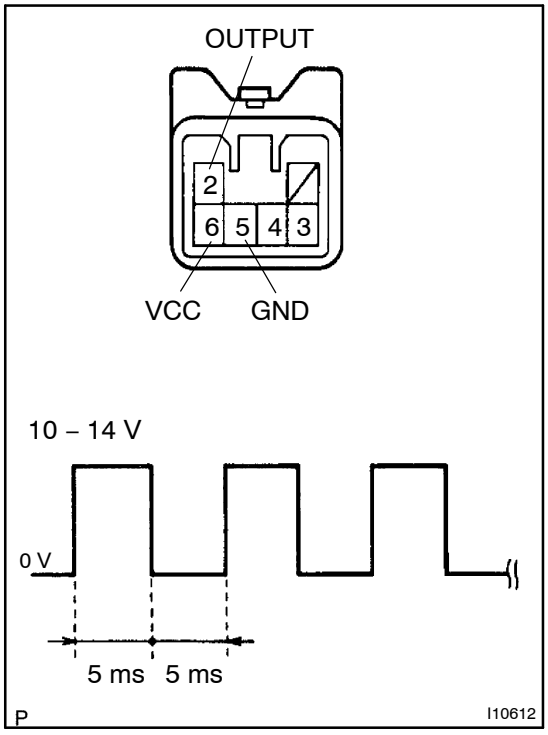
- Terminal 15 of the vehicle side connector is a black terminal.
- Use the body earth from the vehicle side for grounding.

(e) Operate the slide or vertical switch and check the output code.

Code name	Output code	Description
Waiting code		When no power seat switch input received
OK code		When pulses corresponding to the switch are input from position sensor while power seat switch input is ON
NG code		When pulses corresponding to the switch are not input from position sensor or input is discontinued while power seat switch input is ON

HINT:

- The OK or NG code is output while the power seat switch is ON.
- When an NG code is output upon entering the check mode, short circuiting of the position sensor circuit (terminal 4) is possible.
- When no codes are output, the position control computer is possibly faulty as it is not set to the check mode.



8. INSPECT SLIDE AND VERTICAL POSITION

(a) Connect an oscilloscope to connector terminal 2 (OUTPUT) and 5 (GND).

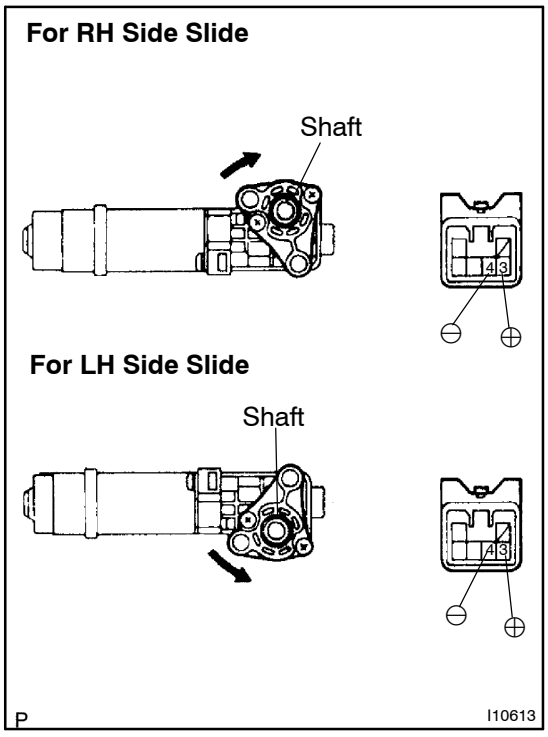
(b) Connect connector terminals 6 (VCC) and 5 (GND) to battery (+) and (–), respectively.

(c) Measure the output waveform at terminal 2 (OUTPUT) when the battery voltage is applied between connector terminals 3 and 4 and the motor is revolving.

Standard: Repetition of 0 V ↔ 10 – 14 V at every approx. 5 ms.

HINT:

The direction of motor revolution is not specified.

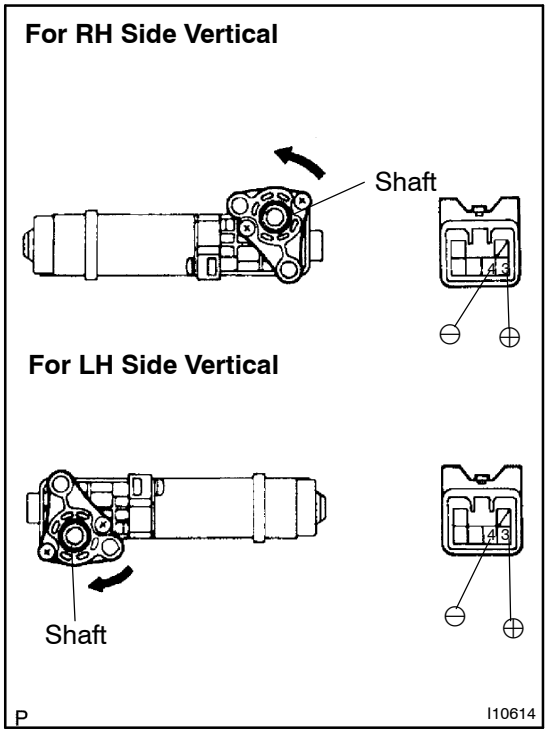


9. INSPECT SLIDE MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 4, check that the motor turns clockwise.

(b) Reverse the polarity, check that the motor turns counterclockwise.

If operation is not as specified, replace the seat adjuster.

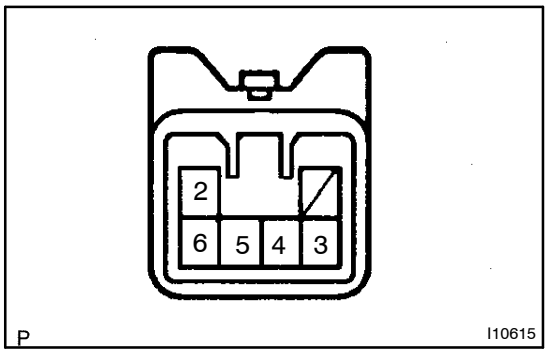


10. INSPECT VERTICAL MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 4, check that the motor turns counterclockwise.

(b) Reverse the polarity, check that the motor turns clockwise.

If operation is not as specified, replace the seat adjuster.



11. INSPECT PTC IN POWER SEAT MOTOR OPERATION

NOTICE:

Carry out the check with the power seat motor being assembled to the adjuster.

(a) Move the seat all the way longitudinally or vertically and wait for about 60 seconds..

(b) Measure the time required until the current is shut down (the motor operating sounds stop) when the power seat switch is operated further in the same direction.

Standard: Current is shut off by about 4 – 40 sec.

(c) Check that the motor is activated when the power seat is operated in the reverse direction after waiting about 60 sec after completion of current shut–down check.

12. INSPECT POSITION CONTROL ECU

NOTICE:

As the position control computer cannot be check as a single unit, check if it functions normally using the Troubleshooting Flowchart.

HINT:

The Status of terminals when the connector is connected are shown below.

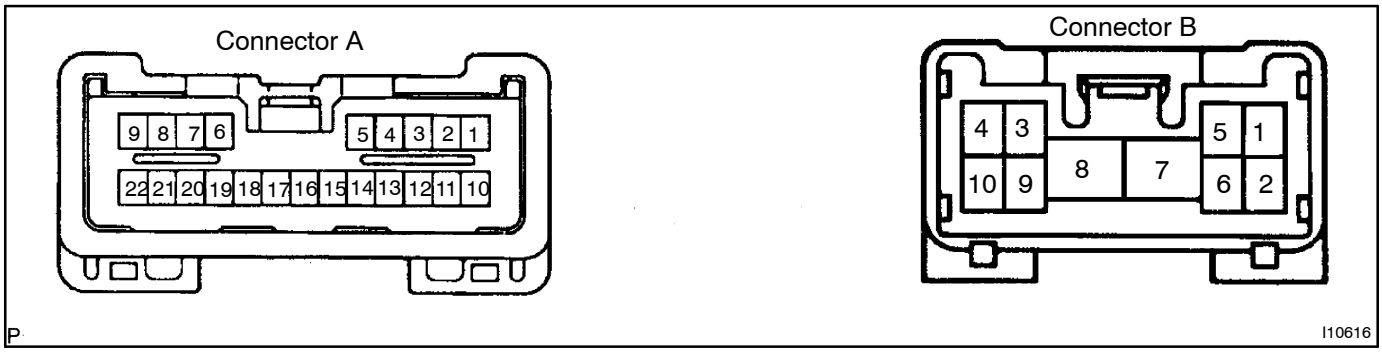
13. INSPECT POSITION CONTROL ECU

NOTICE:

As the position control computer cannot be check as a single unit, check if it functions normally using the Trouble-shooting Flowchart.

HINT:

The Status of terminals when the connector is connected are shown below.



Terminal No.	Condition	Specified condition
A1 ↔ Ground	Ignition switch ON, slide motor from stopping to revolving	Repetition between 0 and 8 V
A2 ↔ Ground	Ignition switch ON, vertical motor from stopping to revolving	Repetition between 0 and 8 V
A4 ↔ Ground	Ignition switch from OFF to ON	0 V → 8 V or more
A5 ↔ Ground	Ignition switch ON, M (Memory operation) switch from OFF to ON	8 V or more → 0V
A6 ↔ Ground	Ignition switch ON, C (Cancel) switch from OFF to ON	8 V or more → 0V
A7 ↔ Ground	Ignition switch ON, SET (Save) switch from OFF to ON	8 V or more → 0V
A8 ↔ Ground	Ignition switch ON, vehicle speed of 5 km/h or less, stop light switch ON Shift position "P", door switch (latch switch) ON (rear seat open)	10 V – 14 V → 0 V
A9 ↔ Ground	Always	10 V – 14 V
A10 ↔ Ground	Ignition switch ON, LH seat foot rest from stored to used	0 V → 8 V or more
A11 ↔ Ground	Always	Continuity
A12 ↔ Ground	Slide switch from OFF to Front	8 V or more → 0V
A13 ↔ Ground	Slide switch OFF → Front	8 V or more → 0V
A14 ↔ Ground	Slide switch OFF → Front	8 V or more → 0V
A15	–	–
A16 ↔ Ground	Vertical switch OFF → Up	8 V or more → 0V
A17 ↔ Ground	Vertical switch OFF → Down	8 V or more → 0V
A18 ↔ Ground	Vertical switch Up–most → Other than up–most position	0 V → 8 V or more
A19 ↔ Ground	Vertical switch Down–most → Other than down–most position	0 V → 8 V or more
A20 ↔ Ground	Ignition switch OFF → ON	0 V → 10 V – 14 V
A21 ↔ Ground	Ignition switch ON, door linked return function set → Cancel	0 V → Approx. 2 V or more
A22 ↔ Ground	–	–
B3 ↔ Ground	Slide switch OFF → Rear	0 V → 9 V or more
B4 ↔ Ground	Slide switch OFF → Front	0 V → 9 V or more
B7 ↔ Ground	Always	Continuity

B8 ↔ Ground	Always	10 V – 14 V
B9 ↔ Ground	Vertical switch OFF → Front	0 V → 9 V or more
B10 ↔ Ground	Vertical switch OFF → Front	0 V → 9 V or more

If circuit is not as specified, replace the ECU.