

POWER WINDOW SYSTEM

OPERATION CHECK

1. CHECK MANUAL OPERATION

(a) CHECK BASIC FUNCTION

- (1) Turn the ignition switch to the ON position.
- (2) Check that when operating the UP modes of the remote switches that control each of the vehicle's windows on the power window regulator master switch assembly (driver's seat power window SW), the power windows (door glass) go up, and when operating the DOWN modes of the remote switches of the power window regulator master switch assembly (driver seat power window SW), the power windows (door glass) go down.
- (3) Check that when operating the UP side of the remote remote switches of the power window master switch assembly for each seat (each power window SW) the power windows (door glass) go up. Also check that when operating the DOWN side of the remote switches of each power window master switch assembly for each seat (each power window SW) the power windows (door glass) go down.
- (4) Check that when operating the LOCK button of the window lock switch of the power window regulator master switch assembly (driver's seat power window SW), the illumination (LED) of the power window regulator switch assembly (for each power window SW), except the one for the driver seat, is turned off. Also check that each power window (each door glass) does not operate.

WS

2. CHECK AUTO OPERATION

- (a) Check basic functions (driver's seat).
 - (1) Turn the ignition switch to the ON position.
 - (2) Check that the power windows go down automatically (AUTO DOWN) and the drivers side door glass goes to the fully open position when the driver's seat switch of the power window regulator master switch assembly (driver's seat power window SW) is pushed to the DOWN position twice.

3. CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

(a) CHECK ILLUMINATION

- (1) Check that when the ignition switch is turned to the ON position while the connector is connected, the illumination (LED) on the switch of the power window regulator master switch assembly (driver's seat power window SW) turns on.

4. CHECK POWER WINDOW REGULATOR SWITCH ASSEMBLY

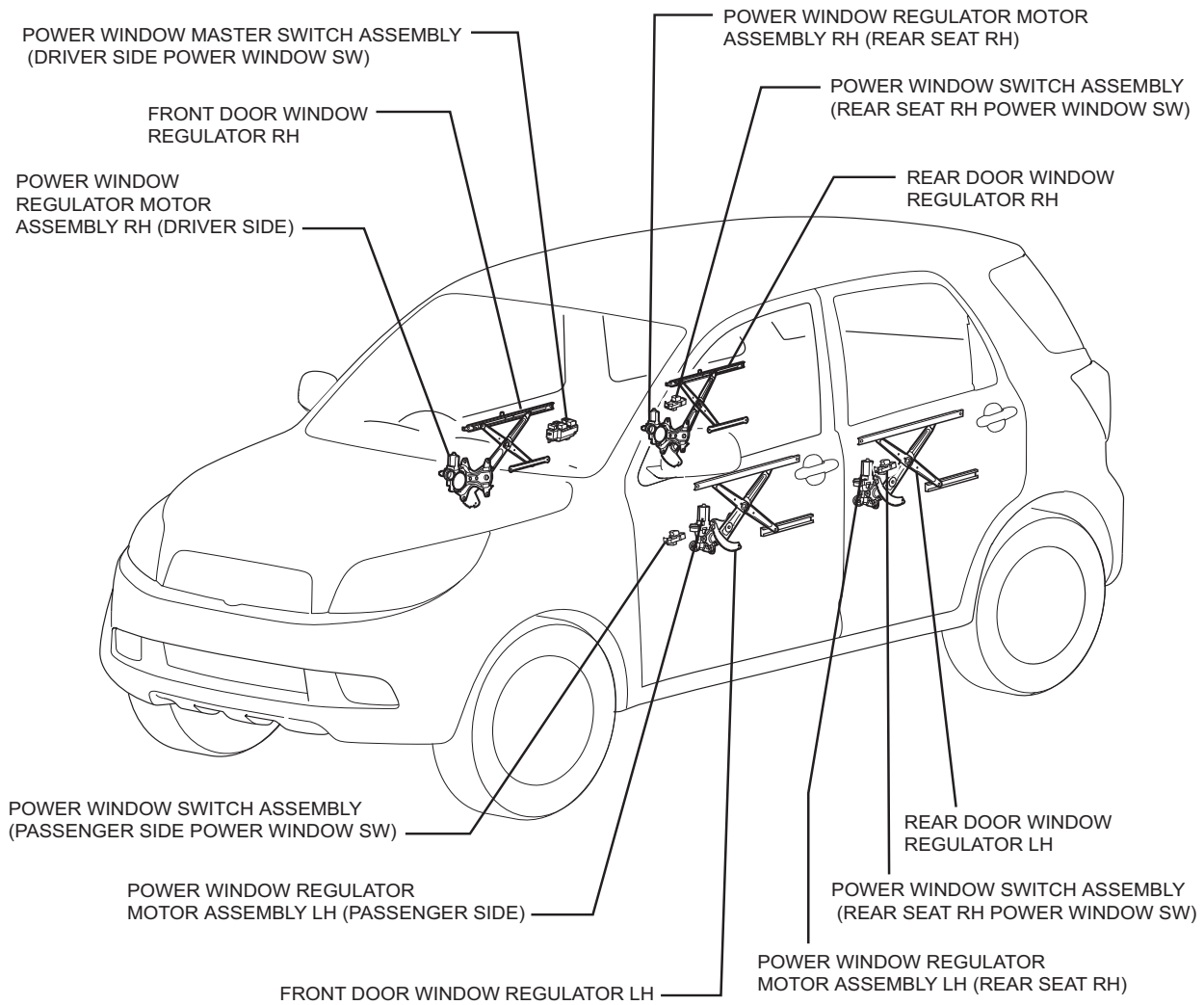
(a) CHECK ILLUMINATION

- (1) Check that when the ignition switch is turned to the ON position while the connector is connected, the illumination (LED) on the switch of the power window regulator switch



assembly (power window SW of passenger seat, rear seat right side and rear seat left side) turns on.

LOCATION



PROBLEM SYMPTOMS TABLE

Symptom	Suspected Area	See Page
Window cannot be operated from the power window regulator master switch assembly (driver's seat power window SW)	Go to the flowchart	WS-9
Window cannot be operated from the power window regulator switch assembly (passenger seat power window SW)	Go to the flowchart	WS-13
Window cannot be operated from the power window regulator switch assembly (rear seat right side power window SW)	Go to the flowchart	WS-18
Window cannot be operated from the power window switch regulator assembly (rear seat left side power window SW)	Go to the flowchart	WS-23
The (driver's seat power window SW) power window regulator master switch assembly does not operate the non-driver seat windows (although the windows can be operated via their respective door switches)	Go to the flowchart	WS-28

DESCRIPTION

1. POWER WINDOW OPERATION MODE

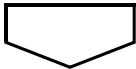
Standard:

WS

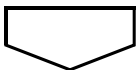
Power Window Operation	IG ON
Manual UP	Operates
Manual DOWN	Operates
AUTO DOWN	Operates

HOW TO PROCEED WITH TROUBLE-SHOOTING

1 VEHICLE BROUGHT TO WORKSHOP



2 CONDUCT CUSTOMER PROBLEM ANALYSIS AND CHECK SYMPTOMS (See page WS-5)



3 PROBLEM SYMPTOMS TABLE (See page WS-3)

(a) Check that the symptom is listed in the problem symptoms table.

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

B

GO TO INSPECTION PROCEDURE 5

A

4 TROUBLESHOOT BASED ON THE SYMPTOM

- (a) ECU terminals (See page WS-6.)
- (b) CHECK FUNCTION (See page WS-1.)

5 ADJUST, REPAIR OR REPLACE

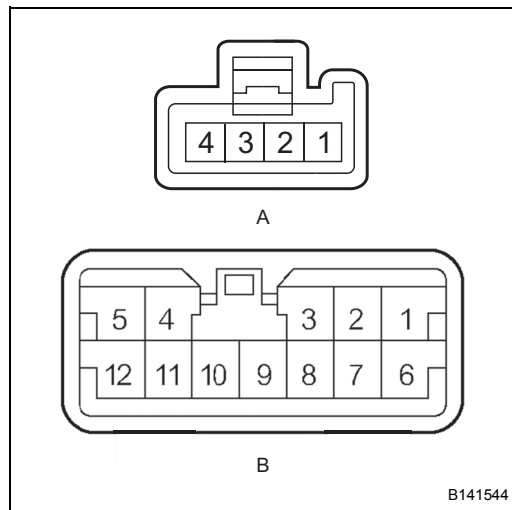
END

CUSTOMER PROBLEM ANALYSIS CHECK

Power Window System Problem Diagnosis Check Sheet				Date Vehicle Brought In / /	
Customer's Name		License Plate No.	First Registered Year 20___/ /		
		Model			
Written by	Inspector's Name	Engine Type	Odometer Reading km / mile		
Description of Symptoms					
Date Problem First Occured		Date		Time	
Frequency Problem Occurs		Constant Occasionally (___times per day, ___times per month)			
Conditions (Method of use and result)					
Weather	Clear Cloudy Rainy Cloudy Others()			Air Temperature	Approx. ()°C / °F
Road	City Suburb Highway Others ()				Paved Unpaved
Problem Symptoms	☐ Power window switches (each seat door glass) does not operate ☐ Driver seat ☐ Right rear seat ☐ Passenger Seat ☐ Left rear seat				
	☐ Door Glass AUTO DOWN do not operate				
	☐ Master switch (D seat) cannot remotely operate other seats (operation possible by the switch for each seat)				
	☐				
	☐				
	☐				
	☐				
	☐				
	☐ Others				
Normal Operation Resume Condition		☐ IG ON ☐ Engine starting ☐ () SW operation			
If Condition Exists At Time Of Occurance		☐ IG OFF to ON ☐ () SW operation ☐ Others			

WS

TERMINALS OF ECU



1. POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY (DRIVER'S SEAT POWER WINDOW SW)

- (a) Check the power window regulator master switch assembly (driver's seat power window SW).
- (1) Disconnect the power window regulator master switch assembly (driver's seat power window SW).
 - (2) Using the tester, check the voltage and the continuity between the terminals of the connector on the vehicle wire harness side of the power window regulator master switch assembly (driver's seat power window SW).

Standard:

Terminal No.	Item	Measurement Condition	Standard
B6 (E) ↔ Body ground	Continuity	Always	Continuity
B1 (IG) ↔ B6 (E)	Voltage	Always	10 to 14 V

HINT:

If the result is not as specified, the vehicle side is malfunctioning.

- (3) Check the voltage between the terminals of the connector of the power window regulator master switch assembly (driver's seat power window SW).

Standard:

Terminal No.	Item	Measurement Condition	Standard
B11 (DD) ↔ B6 (E)	Voltage	• IG ON • Power window regular master switch assembly (driver's seat power window SW) OFF → UP (manual operation)	1 V or less → 10 to 14 V
B11 (DD) ↔ B6 (E)	Voltage	• IG ON • Driver's seat door glass fully closed → Power window regulator master switch assembly (driver's seat power window SW) DOWN (auto operation) → Driver door glass fully open	1 V or less → 10 to 14 V → 1 V or less
B10 (IG) ↔ B6 (E)	Voltage	• IG ON • Power window master switch assembly (driver's seat power window SW) OFF → DOWN (manual operation)	1 V or less → 10 to 14 V
B10 (IG) ↔ B6 (E)	Voltage	• IG ON • Driver's seat door glass fully open → Power window regulator master switch assembly (driver seat power window SW) UP (auto operation) → Driver seat door glass fully closed	1 V or less → 10 to 14 V → 1 V or less
B12 (PD) ↔ B6 (E)	Voltage	• IG ON • Window lock switch ON • Passenger seat power window switch OFF → DOWN	0 → 10 to 14 V
B7 (PU) ↔ B6 (E)	Voltage	• IG ON • Window lock switch ON • Passenger seat power window switch OFF → UP	0 → 10 to 14 V
B3 (RRD) ↔ B6 (E)	Voltage	• IG ON • Window lock switch ON • Rear seat right side power window switch OFF → DOWN	0 → 10 to 14 V

Terminal No.	Item	Measurement Condition	Standard
B2 (RRU) ↔ B6 (E)	Voltage	• IG ON • Window lock switch ON • Rear seat right side power window switch OFF → UP	0 → 10 to 14 V
B4 (RLD) ↔ B6 (E)	Voltage	• IG ON • Window lock switch ON • Rear seat left side power window switch OFF → DOWN	0 → 10 to 14 V
B5 (RLU) ↔ B6 (E)	Voltage	• IG ON • Window lock switch ON • Rear seat left side power window switch OFF → UP	0 → 10 to 14 V

HINT:

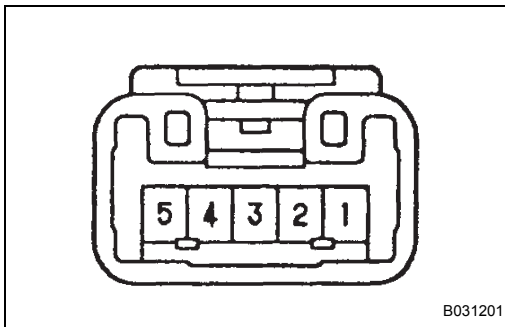
If the result is not as specified, the power window regulator master switch assembly (driver's seat power window SW) is malfunctioning.

2. CHECK ILLUMINATION

- (a) Connect the positive battery terminal to terminal 1 of the connector B, and the negative battery terminal to terminal 6, then check the illumination condition.

Standard:

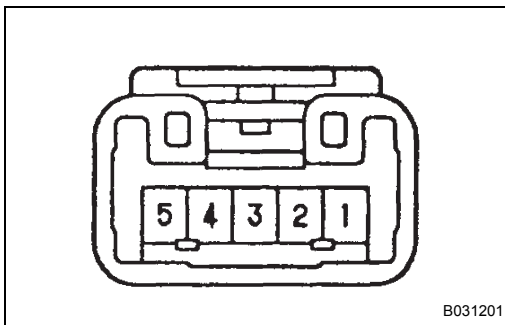
The illumination comes on.

**3. POWER WINDOW REGULATOR SWITCH ASSEMBLY (PASSENGER SEAT POWER WINDOW SW)**

- (a) Check the power window regulator switch assembly (passenger seat power window SW).
- (1) Remove the power window regulator switch assembly (passenger seat power window SW).
 - (2) Using the electrical tester, check the continuity between the terminals of the connector when operating each switch of the power window regulator switch assembly (passenger seat power window SW).

Standard:

Switch Operation	Terminal No.	Standard
UP	2↔3	Continuity
	4↔5	
OFF	1↔2	
	4↔5	
DOWN	1↔2	
	3↔4	

**4. POWER WINDOW REGULATOR SWITCH ASSEMBLY (REAR SEAT POWER WINDOW SW)**

- (a) Check the power window regulator switch assembly (rear seat power window SW).
- (1) Remove the power window regulator switch assembly (rear seat power window SW).

WS

- (2) Using the electrical tester, check the continuity between the terminals of the connector when operating each switch of the power window regulator switch assembly (rear seat power window SW).

Standard:

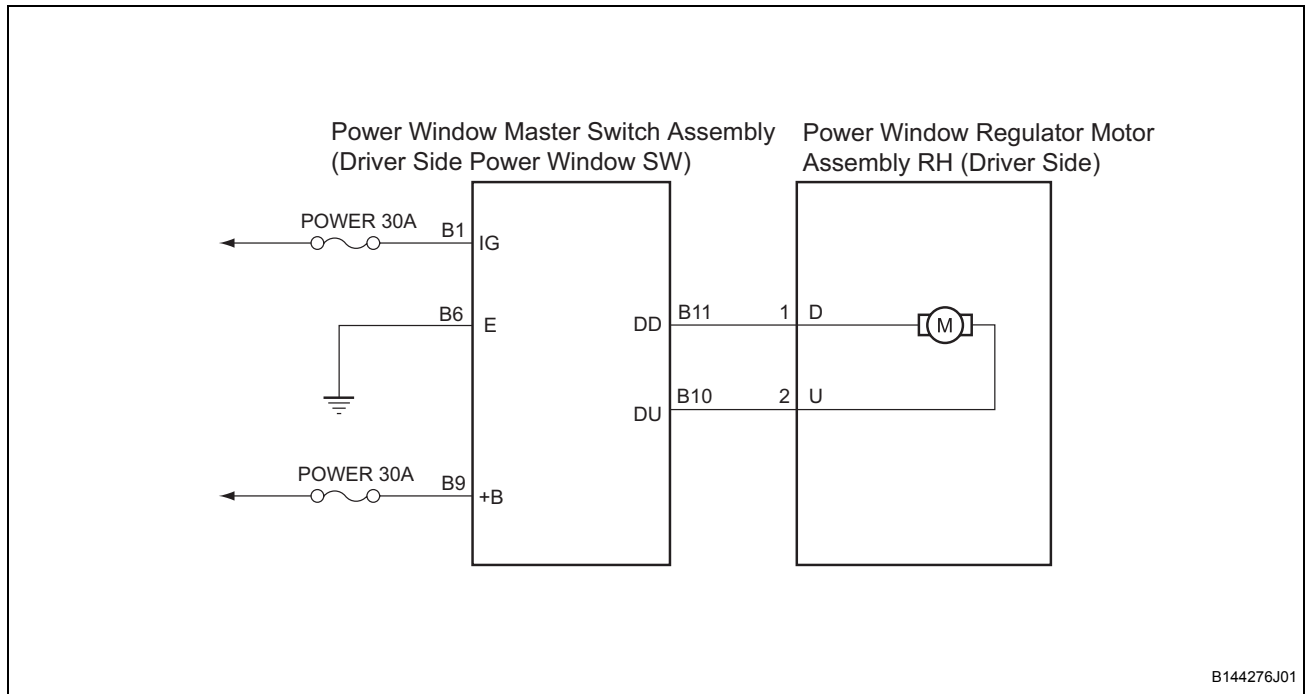
Switch Operation	Terminal No.	Standard
UP	2↔3	Continuity
	4↔5	
OFF	1↔2	
	4↔5	
DOWN	1↔2	
	3↔4	

DRIVER SIDE WINDOW DOES NOT OPERATE WITH REGULATOR SWITCH

DESCRIPTION

The power window regulator motor assembly RH (driver's seat) is activated when the power window regulator master switch assembly (driver's seat power window SW) is operated while the ignition switch is the ON position. The power window regulator motor assembly RH (driver's seat) has a motor function and a regulator function.

CIRCUIT DIAGRAM



INSPECTION PROCEDURE

1 INSPECT FUSES

(a) Check the fuses in the junction block.

Inspection Parts (Cabin)

Suspected Area	Inspection Fuse
Instrument panel junction block assembly (body ECU)	POWER 30 A

Standard:

The fuses are not damaged.

NG

REPLACE FUSES

OK

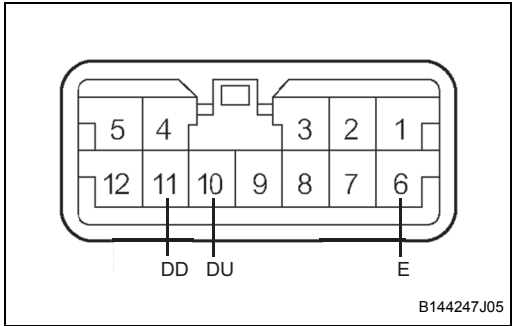
2 CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

HINT:

For inspection procedures and precautions, See page IN-38.

WS

- (a) PREPARE FOR INSPECTION
- (1) Remove the power window regulator master switch assembly (driver seat power window SW). (while the connector is connected)
- (b) CHECK POWER SOURCE VOLTAGE
- (1) Using the electrical tester, check the voltage between each terminal of the connector when the driver's seat switch is operated. (For terminal layout, See page WS-6.)



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Terminal No.	Item	Measurement Condition	Standard
B11 (DD) ↔ 6 (E)	Voltage	- IG ON - Power window regular master switch assembly (driver's seat power window SW) OFF → UP (manual operation)	1 V or less → 10 to 14 V
B11 (DD) ↔ 6 (E)	Voltage	- IG ON - Driver's seat door glass fully closed → Power window regulator master switch assembly (driver's seat power window SW) DOWN (auto operation) → Driver's door glass fully open	1 V or less → 10 to 14 V → 1 V or less
B10 (DU) ↔ 6 (E)	Voltage	- IG ON - Power window regulator master switch assembly (driver's seat power window SW) OFF → DOWN (manual operation)	1 V or less → 10 to 14 V
B10 (DU) ↔ 6 (E)	Voltage	- IG ON - Driver's seat door glass fully closed → Power window regulator master switch assembly (driver's seat power window SW) UP (auto operation) → Driver's seat door glass fully closed	1 V or less → 10 to 14 V → 1 V or less

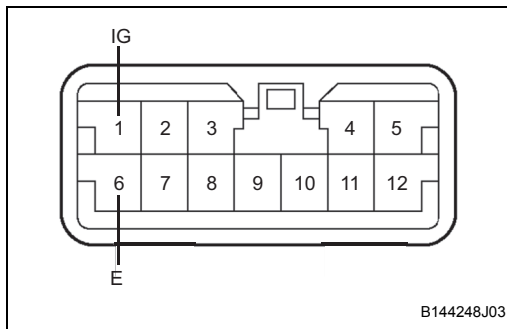
NG

OK GO TO INSPECTION PROCEDURE 5

3

CHECK WIRE HARNESS OR CONNECTOR (BETWEEN POWER WINDOW FUSE AND POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY)

- HINT:
For inspection procedures and precautions, See page IN-38.
- (a) PREPARE FOR INSPECTION
- (1) Disconnect the connector of the power window master switch assembly (driver's seat power window SW).



- (b) Check the continuity.
- (1) Using the electrical tester, measure the continuity between terminals of the connector on the vehicle wire harness side. (For terminal layout, See page WS-6.)

Standard:

Tester Connection (Terminal symbol)	Item	Measurement Condition	Voltage
1 (IG) ↔ 6 (E)	Voltage	Always	10 to 14 V

NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

OK

4

CHECK POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

- (a) Check the operation of the power window regulator motor assembly RH (driver's seat).

NOTICE:

Do not apply voltage to any terminals of the motor other the terminals 1 and 2. Doing so will damage the pulse sensor in the motor.

- (1) Check that the motor operates smoothly when battery voltage is applied to the terminals of the connector.

Standard:

Measurement Condition	Operational Direction
Positive (+) battery terminal ↔ Terminal 1 Negative (-) battery terminal ↔ Terminal 2	Turn it clockwise to the drive axis
Positive (+) battery terminal ↔ Terminal 2 Negative (-) battery terminal ↔ Terminal 1	Turn it counterclockwise to the drive axis

- (b) Check the operation of the power window motor.

NOTICE:

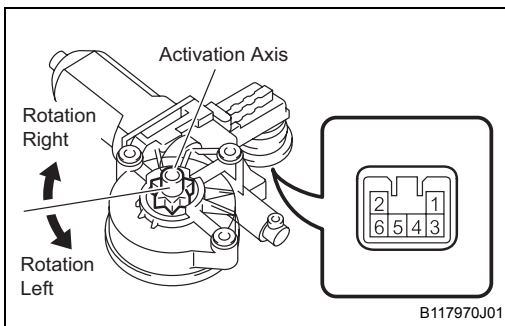
The operation check should be performed with the front window regulator RH, the power window regulator motor assembly RH (driver's seat) and the door glass installed in the vehicle.

- (1) Set the probe of the electrical tester to the wire harness of connector terminal 2 of the power window regulator motor assembly RH (driver seat).

NOTICE:

Turn the probe arrow toward the power window regulator motor assembly RH (driver's seat).

- (2) Fully close the power window (driver's seat door glass).
- (3) Wait about 60 seconds after the window is fully closed, and re-operate (first time) the power window regulator master switch assembly (driver's seat power window SW) by pressing and holding the UP side of the switch. While doing so, check how



WS

long the current of the power window regulator motor assembly RH (driver's seat) takes to change from about 16 - 28 A to 1 A or less. (Cut-off check)

Standard:

About 4 to 90 seconds

- (4) Wait about 60 seconds after the cut-off check, and check that the door glass goes down by operating the power window regulator master switch assembly (driver's seat power window SW). (Recovery check)

NG

REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

OK

5

CHECK WIRE HARNESS OR CONNECTOR (BETWEEN POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY AND POWER WINDOW REGULATOR MOTOR ASSEMBLY RH)

HINT:

For inspection procedures and precautions, See page IN-38.

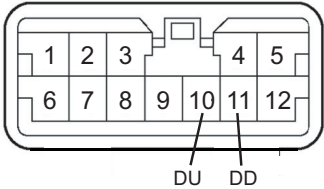
- (a) Disconnect the connector of the power window regulator master switch assembly (driver's seat power window SW) and the power window regulator motor assembly RH (driver's seat).
- (b) Using the tester, measure the continuity between terminals of the connector on the vehicle wire harness side. (For terminal layout, See page WS-6.)

Standard:

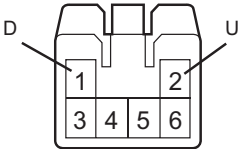
Switch ↔ Motor Terminal Connection (Terminal Symbol)	Item	Measure- ment Con- dition	Standard
10 (DU) ↔ 2 (U)	Continuity	Always	There is continuity between terminals and no short on +B or GND
11 (DD) ↔ 1 (D)	Continuity	Always	There is continuity between terminals and no short on +B or GND

WS

Power Window Regulator Master Switch Assembly
(Driver Side Power Window SW)



Power Window Regulator Motor Assembly RH (Driver Side)



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OK

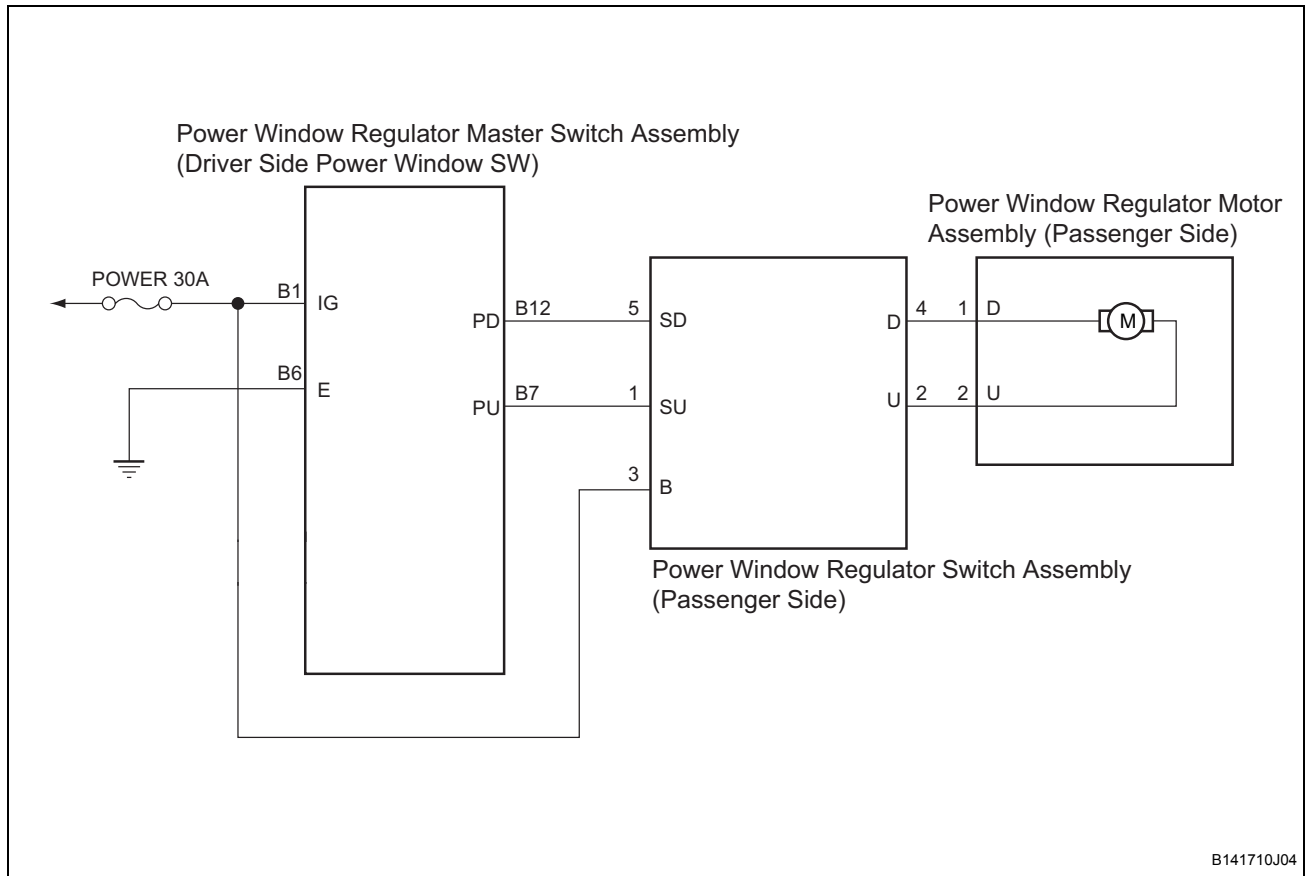
REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

FRONT PASSENGER SIDE WINDOW DOES NOT OPERATE WITH REGULATOR SWITCH

DESCRIPTION

The power window regulator motor assembly RH (passenger seat) is activated when the power window regulator switch assembly (passenger seat power window SW) is operated when the window lock switch of the power window regulator master switch assembly (driver's seat power window SW) is NORMAL and the ignition switch is the ON position.

CIRCUIT DIAGRAM



WS

INSPECTION PROCEDURE

NOTICE:

- Perform initialization on the power window system if the connectors of the power window regulator master switch assembly (driver seat power window SW) are disconnected.

1

INSPECT FUSES

- (a) Check the fuses in each junction block.

Inspection Parts (Cabin)

Suspected Area	Inspection Fuse
Instrument panel junction block assembly (driver's seat body ECU)	POWER 30 A

Standard:

The fuses are not damaged.

NG

REPLACE FUSES

OK

2

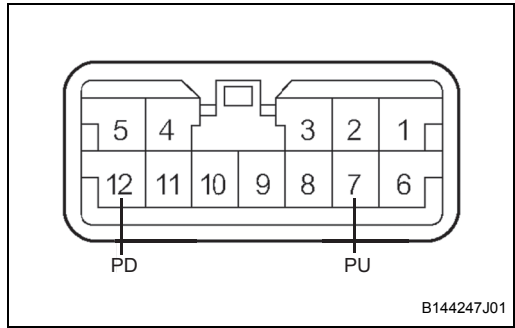
CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

HINT:
For inspection procedures and precautions, See page IN-38.

- (a) PREPARE FOR INSPECTION
- (1) Remove the power window regulator master switch assembly (driver's seat power window SW). (while the connector is connected)
- (b) CHECK POWER SOURCE VOLTAGE
- (1) Using a tester, check the voltage between terminal B12 (PD) and terminal B7 (PU) of the connector when the passenger seat switch is operated.

Standard:

10 to 14 V



NG

REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

WS

OK

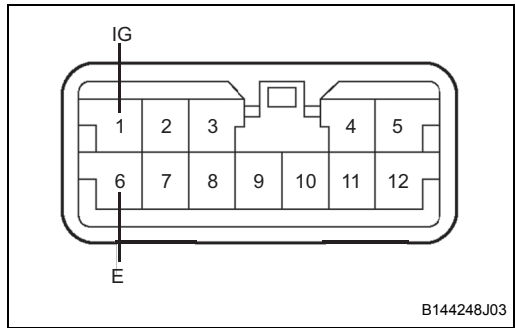
3

CHECK WIRE HARNESS OR CONNECTOR (BETWEEN POWER WINDOW FUSE AND POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY)

HINT:
For inspection procedures and precautions, See page IN-38.

- (a) PREPARE FOR INSPECTION
- (1) Disconnect connector B of the power window regulator master switch assembly (driver's seat power window SW).
- (b) Check the continuity.
- (1) Using the tester, measure the continuity between terminals of the connector on the vehicle wire harness side. (For terminal layout, See page WS-6.)

Standard



Tester Connection (Terminal symbol)	Item	Measurement Condition	Voltage
1 (IG) ↔ B6 (E)	Voltage	Always	10 to 14 V

NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

OK

4**CHECK POWER WINDOW REGULATOR SWITCH ASSEMBLY****HINT:**

For inspection procedures and precautions, See page IN-38.

(a) PREPARE FOR INSPECTION

- (1) Disconnect the power window regulator switch assembly (passenger seat power window SW).

(b) CHECK POWER SOURCE VOLTAGE

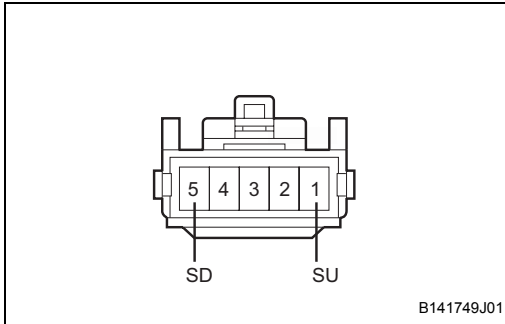
- (1) Using a tester, check the voltage between terminal 5 (SD) and terminal 1 (SU) of the connector when the passenger seat switch is operated. (For terminal layout, See page WS-6.)

Standard:

10 to 14 V

NG

REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY



OK

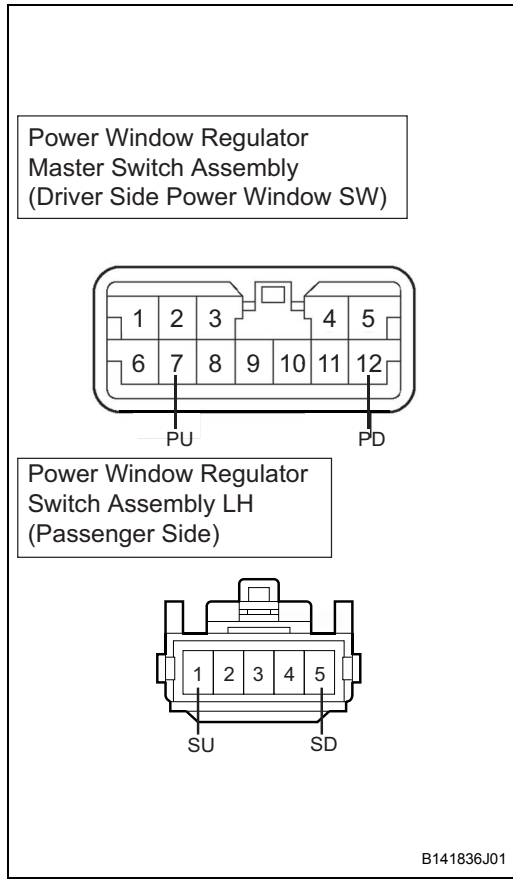
5**CHECK WIRE HARNESS OR CONNECTOR (BETWEEN POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY AND POWER WINDOW REGULATOR SWITCH ASSEMBLY)****HINT:**

For inspection procedures and precautions, See page IN-38.

(a) PREPARE FOR INSPECTION

- (1) Disconnect connector B of the power window regulator switch assembly (passenger seat) and the power window regulator master switch assembly.

WS



- (b) Check the continuity.
- (1) Using the electrical tester, measure the continuity between terminals of the connector on the vehicle wire harness side. (For terminal layout, See page WS-6.)

(c)

Standard:

POWER WINDOW MASTER SW ↔ POWER WINDOW SW (PAS- SENGER SEAT) Terminal Connection (Terminal Symbol)	Item	Measure- ment Con- dition	Voltage
12 (PD) ↔ 5 (SD)	Continuity	Always	There is continuity between terminals and no short on +B or GND
7 (PU) ↔ 1 (SU)	Continuity	Always	There is continuity between terminals and no short on +B or GND

NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

OK

6 CHECK POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

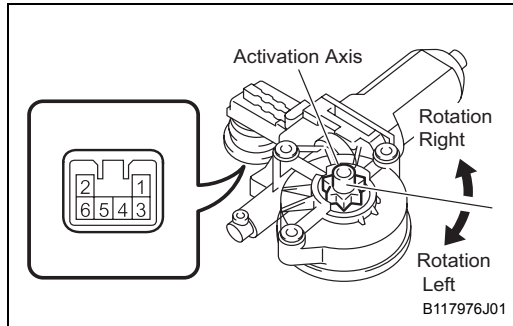
- (a) Check the operation of the power window regulator motor assembly LH (passenger seat)

NOTICE:

Do not apply voltage to any terminals of the motor other the terminals 1 and 2. Doing so will damage the pulse sensor in the motor.

- (1) Check that the motor operates smoothly when battery voltage is applied to the terminals of the connector.

Standard:



Tester Connection	Operational Direction
Positive (+) battery terminal ↔ Terminal 2 Negative (-) battery terminal ↔ Terminal 1	Turn it clockwise to the drive axis
Positive (+) battery terminal ↔ Terminal 1 Negative (-) battery terminal ↔ Terminal 2	Turn it counterclockwise to the drive axis

- (b) Check the operation of the power window motor.

NOTICE:

The operation should be performed with front door window regulator LH, power window regulator motor assembly LH (passenger seat) and front door glass (LH) installed in the vehicle.

- (1) Set the DC400A probe of the electrical tester to the wire harness of connector terminal 2 of the power window regulator motor assembly LH (passenger seat).

NOTICE:

Turn the probe arrow toward the power window regulator motor assembly LH (FR).

- (2) Fully close the power window (passenger seat door glass).
- (3) Wait about 60 seconds after the window is fully closed, and re-operate (first time) the power window regulator master switch assembly (passenger seat power window SW) by pressing and holding the UP side of the switch. While doing so, check how long the current of the power window regulator motor assembly RH (passenger seat) takes to change from about 16 - 28 A to 1 A or less. (Cut-off check)

Standard:

4 to 90 sec.

- (4) Wait about 60 seconds after the cut-off check, and check that the door glass goes down by operating the power window regulator master switch assembly (passenger seat power window SW). (Recovery check)

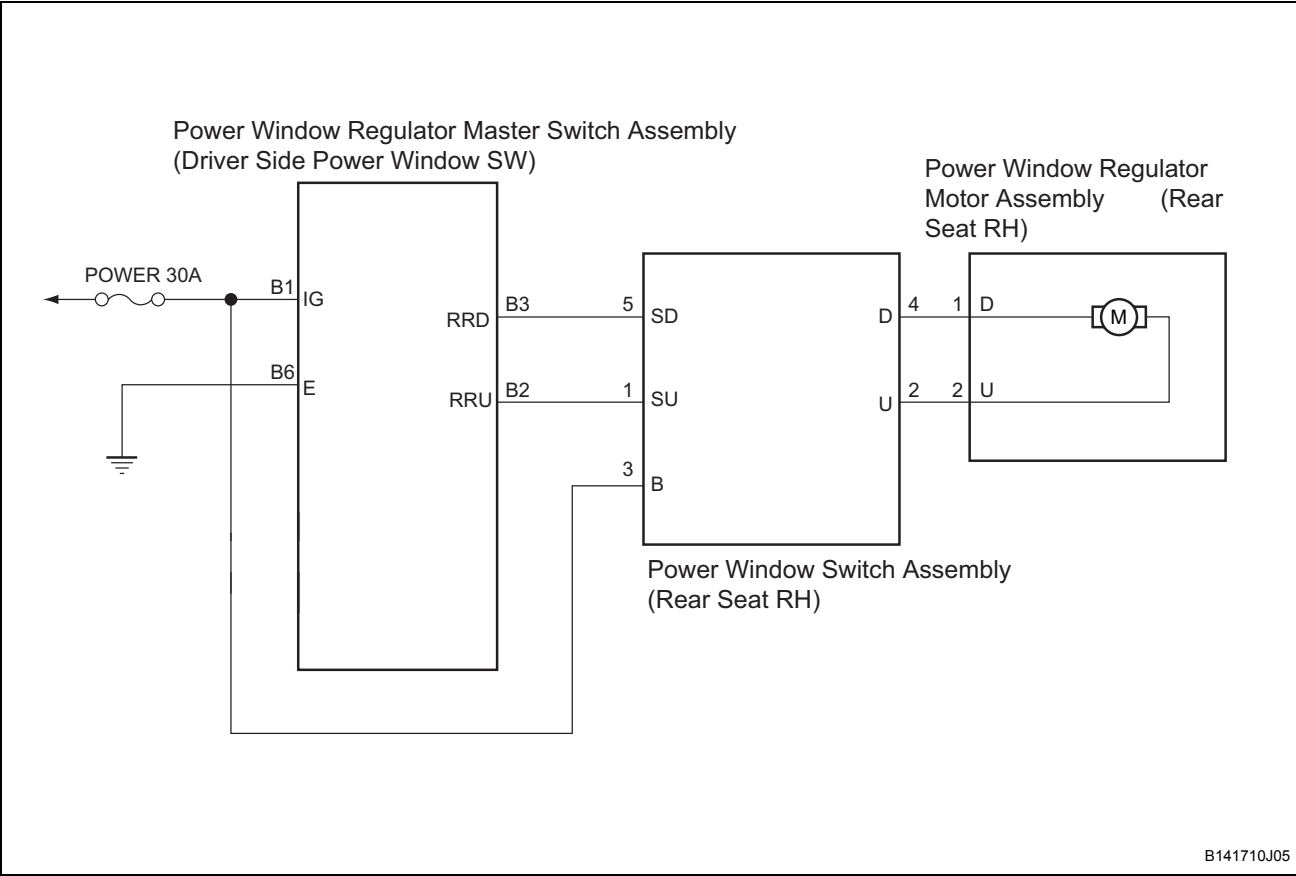
NG**REPAIR OR REPLACE POWER WINDOW
REGULATOR MOTOR ASSEMBLY LH****WS****OK****REPLACE WIRE HARNESS OR CONNECTOR (BETWEEN POWER WINDOW REGULATOR SWITCH ASSEMBLY AND POWER WINDOW REGULATOR MOTOR ASSEMBLY LH)**

REAR RIGHT SIDE WINDOW DOES NOT OPERATE WITH REGULATOR SWITCH

DESCRIPTION

The power window regulator motor assembly RH (rear seat right side) is activated when the power window regulator switch assembly (driver's seat power window SW) is operated when the window lock switch of the power window regulator master switch assembly (driver's seat power window SW) is NORMAL and the ignition switch is the ON position.

CIRCUIT DIAGRAM



INSPECTION PROCEDURE

1	INSPECT FUSES
---	---------------

(a) Check the fuses in each junction block.

Inspection Parts (Cabin)

Suspected Area	Inspection Fuse
Instrument panel junction block assembly (body ECU)	POWER 30 A

Standard:
The fuses are not damaged.

NG

REPLACE FUSES

OK

2

CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

HINT:

For inspection procedures and precautions, See page IN-38.

(a) PREPARE FOR INSPECTION

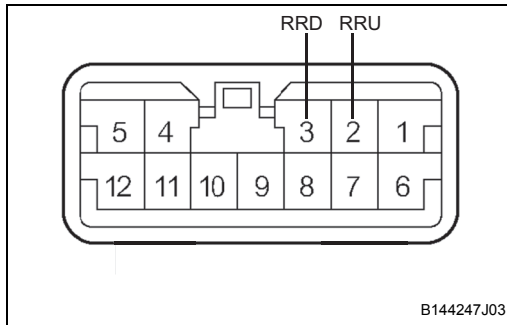
- (1) Remove the power window regulator master switch assembly (driver seat power window SW). (while the connector is connected)

(b) CHECK POWER SOURCE VOLTAGE

- (1) Using the electrical tester, check the voltage between terminal B2 (RRU) and terminal B3 (RRD) of the connector when the driver's seat switch is operated. (For terminal layout, See page WS-6.)

Standard:

10 to 14 V



NG

REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

OK

3

CHECK WIRE HARNESS OR CONNECTOR (BETWEEN POWER WINDOW FUSE AND POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY)

HINT:

For inspection procedures and precautions, See page IN-38.

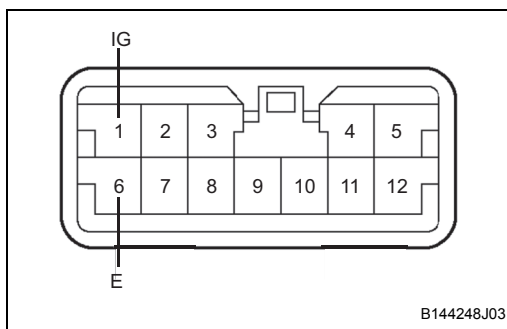
(a) PREPARE FOR INSPECTION

- (1) Disconnect connector B of the power window regulator master switch assembly (driver's seat power window SW).

(b) Check the continuity.

- (1) Using the tester, measure the continuity between terminals of the connector on the vehicle side. (For terminal layout, See page WS-6.)

Standard:



NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

OK

4

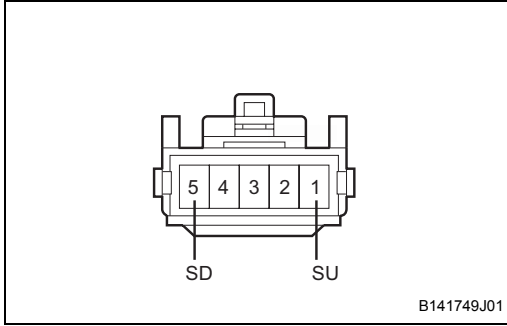
CHECK POWER WINDOW REGULATOR SWITCH ASSEMBLY

HINT:

For inspection procedures and precautions, See page IN-38.

(a) PREPARE FOR INSPECTION

WS



OK

- (1) Disconnect the connector of the power window regulator switch assembly (rear seat right side power window SW).
- (b) CHECK POWER SOURCE VOLTAGE
 - (1) Using the electrical tester, check the voltage between terminal 5 (SD) and terminal 1 (SU) of the connector when the rear seat right side switch is operated. (For terminal layout, See page WS-6.)

Standard:

10 to 14 V

NG

REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY

5

CHECK WIRE HARNESS OR CONNECTOR (BETWEEN POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY AND POWER WINDOW REGULATOR SWITCH ASSEMBLY (REAR SEAT RIGHT SIDE))

HINT:

For inspection procedures and precautions, See page IN-38.

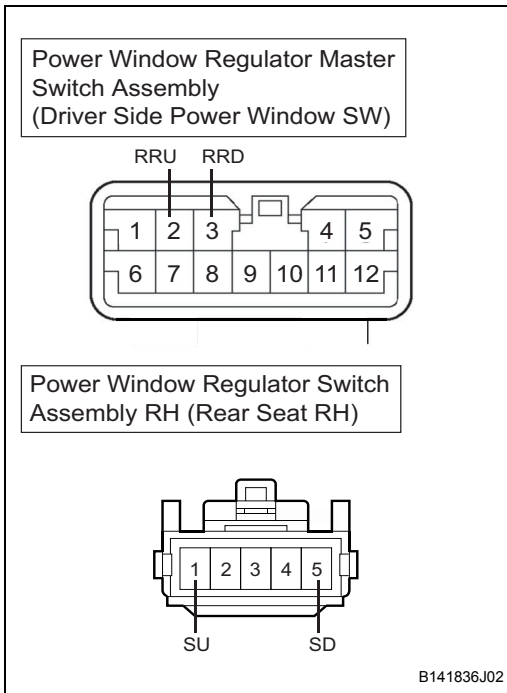
- (a) PREPARE FOR INSPECTION

- (1) Disconnect the connector of the power window regulator switch assembly (rear seat right side power window SW) and the power window regulator master switch assembly RH.

- (b) Check the continuity.

- (1) Using the tester, measure the continuity between terminals of the connector on the vehicle wire harness side. (For terminal layout, See page WS-6.)

Standard:



POWER WINDOW MASTER SW ↔ POWER WINDOW SW (REAR SEAT RIGHT SIDE) Terminal Connection (Terminal Symbol)	Item	Measurement Condition	Voltage
B3 (RRD) ↔ 5 (SD)	Continuity	Always	There is continuity between terminals and no short on +B or GND
B2 (RRU) ↔ 1 (SU)	Continuity	Always	There is continuity between terminals and no short on +B or GND

NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

OK

6

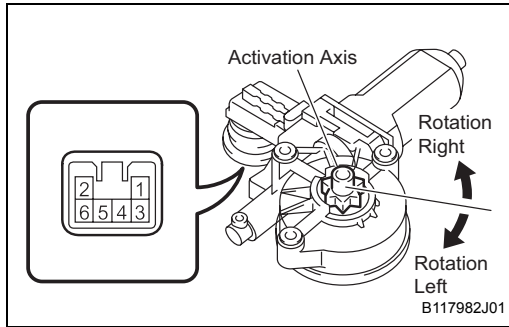
CHECK POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

- (a) Check the operation of the power window regulator motor assembly RH (rear seat right side)

NOTICE:

Do not apply voltage to any terminals of the motor other the terminals 1 and 2. Doing so will damage the pulse sensor in the motor.

- (1) Check that the motor operates smoothly when battery voltage is applied to the terminals of the connector.

Standard:

Measurement Condition	Operational Direction
Positive (+) battery terminal ↔ Terminal 2 Negative (-) battery terminal ↔ Terminal 1	Turn it clockwise to the drive axis
Positive (+) battery terminal ↔ Terminal 1 Negative (-) battery terminal ↔ Terminal 2	Turn it counterclockwise to the drive axis

- (b) Check the operation of the power window motor.

NOTICE:

The operation check should be performed with the front window regulator RH, the power window regulator motor assembly RH (driver's seat) and the door glass installed in the vehicle.

- (1) Set the probe of the tester to the wire harness of connector terminal 1 of the power window regulator motor assembly RH (driver seat).

NOTICE:

Turn the probe arrow toward the power window regulator motor assembly RH (driver's seat).

- (2) Fully close the power window (rear seat right side door glass).
 (3) Wait about 60 seconds after the window is fully closed, and re-operate (first time) the power window regulator master switch assembly (rear seat right side power window SW) by pressing and holding the UP side of the switch. While doing so, check how long the current of the power window regulator motor assembly RH (rear seat right side) takes to change from about 16 - 28 A to 1 A or less. (Cut-off check)

Standard:

About 4 to 90 seconds

- (4) Wait about 60 seconds after the cut-off check, and check that the power window (rear seat right side door glass) goes down by operating the power window regulator switch assembly (rear seat right side power window SW). (Recovery check)

NG

REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

WS

A button with a downward-pointing arrow shape and the text "OK" inside.

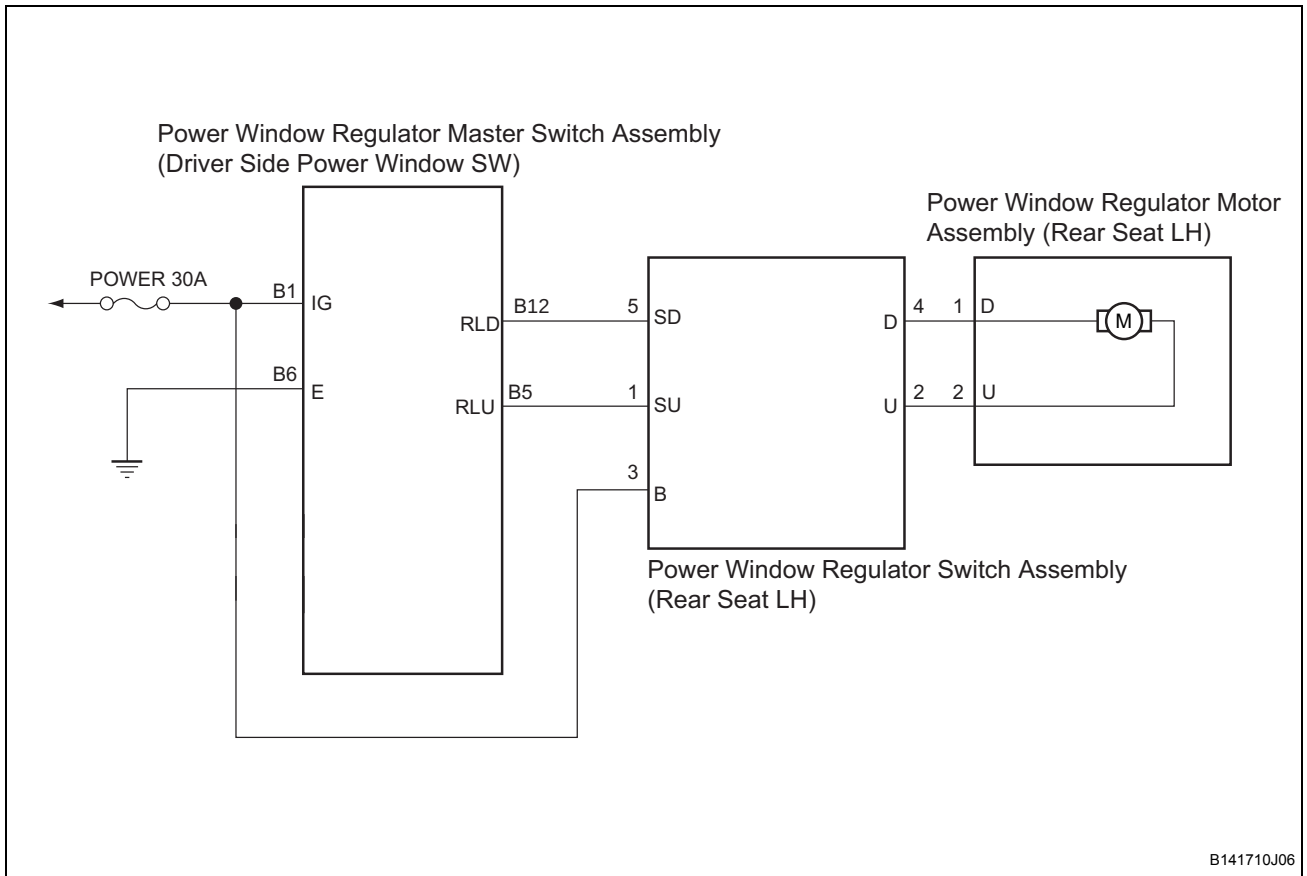
REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR (BETWEEN POWER WINDOW
REGULATOR SW [REAR SEAT RIGHT SIDE] AND POWER WINDOW REGULATOR
MOTOR ASSEMBLY RH)

REAR LEFT SIDE WINDOW DOES NOT OPERATE WITH REGULATOR SWITCH

DESCRIPTION

The power window regulator motor assembly LH (rear seat left side) is activated when the power window switch assembly (rear seat left side power window SW) is operated when the window lock switch of the power window regulator master switch assembly (driver seat power window SW) is NORMAL and the ignition switch is the ON position.

CIRCUIT DIAGRAM



WS

INSPECTION PROCEDURE

1

INSPECT FUSES

(a) Check the fuses in the junction block.

Inspection Parts (Cabin)

Suspected Area	Inspection Fuse
Instrument panel junction block assembly (body ECU)	POWER 30 A

Standard:

The fuses are not damaged.

NG

REPLACE FUSES

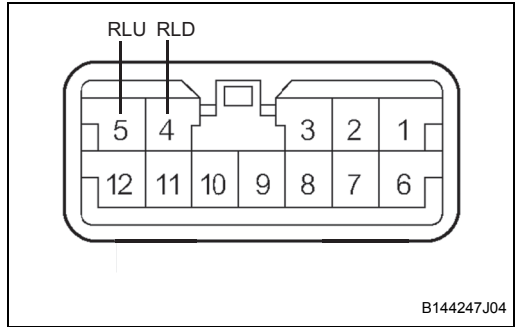
OK

2 CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

HINT:
For inspection procedures and precautions, See page IN-38.

- (a) PREPARE FOR INSPECTION
 - (1) Remove the power window regulator master switch assembly (driver seat power window SW). (while the connector is connected)
- (b) CHECK POWER SOURCE VOLTAGE
 - (1) Using a tester, check the voltage between terminal B4 (RLD) and terminal B5 (RLU) of the connector when the switch of the rear seat left side is operated.

Standard:
10 to 14 V



NG

REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

WS

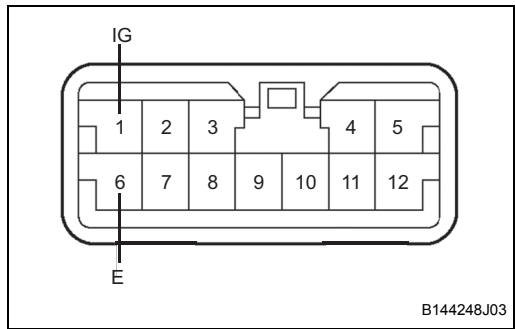
OK

3 CHECK WIRE HARNESS OR CONNECTOR (BETWEEN POWER WINDOW FUSE AND POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY)

HINT:
For inspection procedures and precautions, See page IN-38.

- (a) PREPARE FOR INSPECTION
 - (1) Disconnect the power window regulator master switch assembly (driver's seat power window SW).
- (b) Check the continuity.
 - (1) Using the tester, measure the continuity between terminals of the connector on the vehicle wire harness side. (For terminal layout, See page WS-6.)

Standard:



Tester Connection (Terminal symbol)	Item	Measure- ment Con- dition	Voltage
B1 (IG) ↔ B6 (E)	Voltage	Always	10 to 14 V

NG

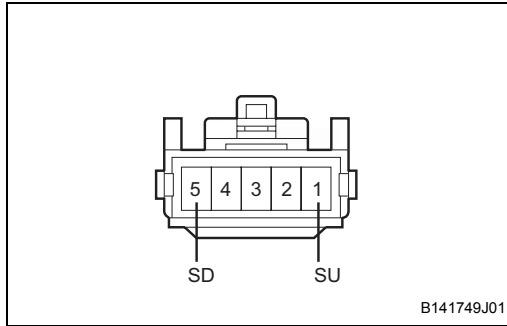
REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

OK

4 CHECK POWER WINDOW REGULATOR SWITCH ASSEMBLY

HINT:
For inspection procedures and precautions, See page IN-38.

- (a) PREPARE FOR INSPECTION



OK

- (1) Disconnect the connector of the power window switch assembly (rear seat left side power window SW).
- (b) CHECK POWER SOURCE VOLTAGE
- (1) Using the electrical tester, check the voltage between terminal 5 (SD) and terminal 1 (SU) of the connector when the passenger seat switch is operated. (For terminal layout, See page WS-6.)

Standard:**10 to 14 V**

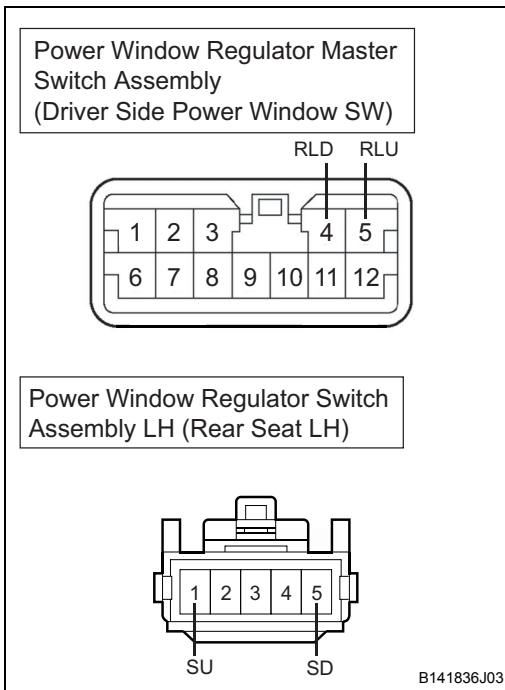
NG

REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY
5
CHECK WIRE HARNESS OR CONNECTOR (BETWEEN POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY AND POWER WINDOW REGULATOR SWITCH ASSEMBLY [REAR SEAT LEFT SIDE])

HINT:

For inspection procedures and precautions, See page IN-38.

- (a) PREPARE FOR INSPECTION
- (1) Disconnect connector B of the power window SW (rear seat left side) and the power window regulator master switch assembly.
- (b) Check the continuity.
- (1) Using the electrical tester, measure the continuity between the terminals of the connector on the vehicle wire harness side and body ground. (For terminal layout, See page WS-6.)

Standard:
**Power Window Regulator Master Switch Assembly
(Driver Side Power Window SW)**
Power Window Regulator Switch Assembly LH (Rear Seat LH)

Power Window Regulator Master Switch SW ↔ Power Window SW Terminal Connection (Terminal Symbol)	Item	Measurement Condition	Voltage
B4 (RLD) ↔ 5 (SD)	Continuity	Always	There is continuity between terminals and no short on +B or GND
B5 (RLU) ↔ 1 (SU)	Continuity	Always	There is continuity between terminals and no short on +B or GND

NG

REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

OK

WS

6

CHECK POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

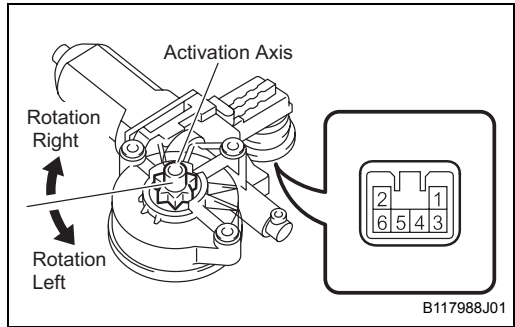
- (a) Check the operation of the power window regulator motor assembly LH (rear seat left side)

NOTICE:

Do not apply voltage to any terminals of the motor other the terminals 1 and 2. Doing so will damage the pulse sensor in the motor.

- (1) Check that the motor operates smoothly when battery voltage is applied to the terminals of the connector.

Standard:



Measurement Condition	Operational Direction
Positive (+) battery terminal ↔ Terminal 1 Negative (-) battery terminal ↔ Terminal 2	Turn it clockwise to the drive axis
Positive (+) battery terminal ↔ Terminal 2 Negative (-) battery terminal ↔ Terminal 1	Turn it counterclockwise to the drive axis

- (b) Check the operation of the power window motor.

NOTICE:

The operation should be performed with the rear window regulator LH, the power window regulator motor assembly LH (rear seat left side) and the door glass installed in the vehicle.

- (1) Set the probe of the electrical tester to the wire harness of connector terminal 1 of the power window regulator motor assembly LH (passenger seat).

NOTICE:

Turn the probe arrow toward the power window regulator motor assembly LH (rear seat left side).

- (2) Fully close the rear seat left side door glass.
- (3) Wait about 60 seconds after the window is fully closed, and re-operate (first time) the power window regulator master switch assembly (rear seat left side power window SW) by pressing and holding the UP side of the switch. While doing so, check how long the current of the power window regulator motor assembly RH (rear seat left side) takes to change from about 16 - 28 A to 1 A or less. (Cut-off check)

Standard:

4 to 90 sec.

- (4) Wait about 60 seconds after the cut-off check, and check that the door glass goes down by operating the power window regulator master switch assembly (rear seat left side power window SW). (Recovery check)

NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

A button with a downward-pointing arrow shape and the text "OK" inside.

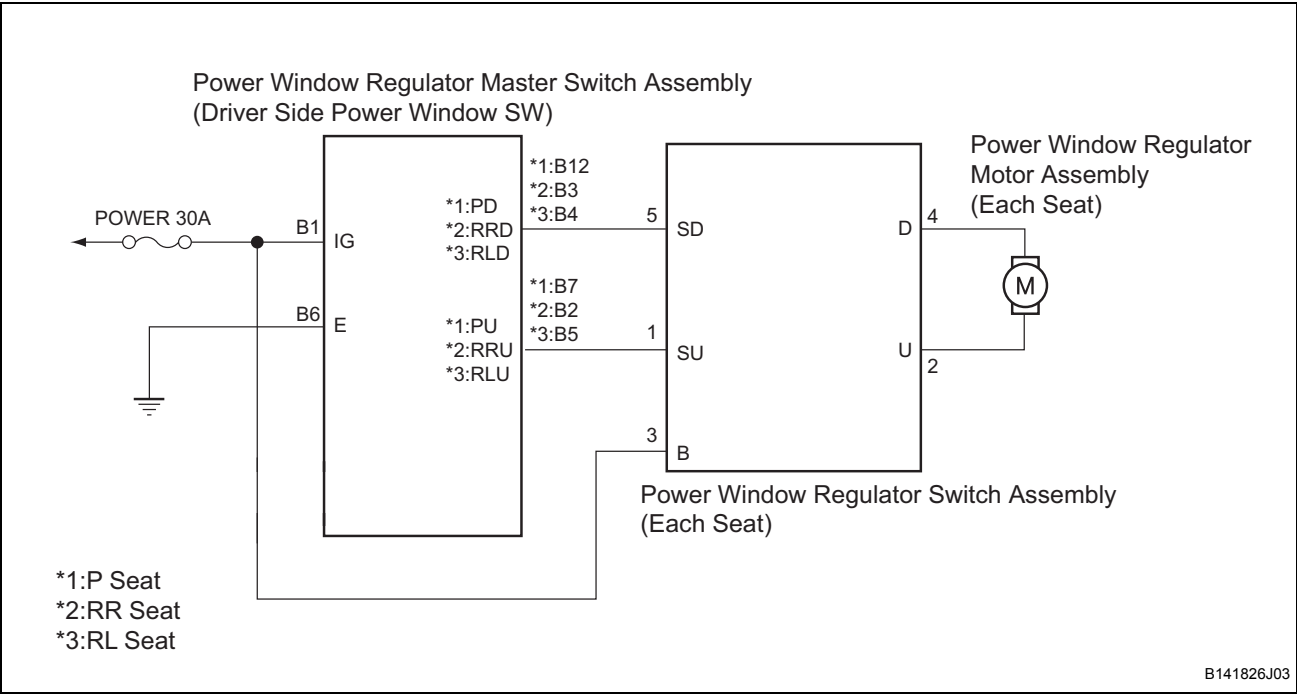
REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR (BETWEEN POWER WINDOW
REGULATOR SWITCH ASSEMBLY (REAR SEAT LEFT SIDE) AND POWER WINDOW
REGULATOR MOTOR ASSEMBLY LH)

EACH WINDOW DOES NOT OPERATE WITH MASTER SWITCH
(SWITCH INSTALLED AT EACH WINDOW IS AVAILABLE)

DESCRIPTION

The power window motor of each seat is activated when remote switch signals for the other seats are sent by the power window regulator master switch assembly to the power window switch assemblies while the ignition switch is in the ON position.

CIRCUIT DIAGRAM

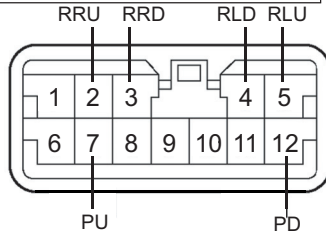


INSPECTION PROCEDURE

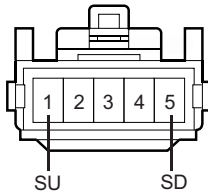
1	CHECK WIRE HARNESS OR CONNECTOR (RELEVANT AREA)
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- HINT:
For inspection procedures and precautions, See page IN-38.
- (a) PREPARE FOR INSPECTION
- (1) Disconnect the power window regulator switch assembly (relevant seats power window SW).
 - (2) Disconnect connector B of the power window regulator master switch assembly.

Power Window Regulator
Master Switch Assembly
(Driver Side Power Window SW)



Power Window Regulator
Switch Assembly (Each Seat)



B141836J04

(b) Check the continuity.

- (1) Using the tester, measure the continuity between terminals of the connector on the vehicle wire harness side. (For terminal layout, See page WS-6.)

Standard:

Passenger seat

POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY ↔ POWER WINDOW REGULATOR SWITCH ASSEMBLY Terminal Connection (Terminal Symbol)	Continuity
12 (PD) ↔ 5 (SD)	Continuity
7 (PU) ↔ 1 (SU)	Continuity

Rear seat right side

POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY ↔ POWER WINDOW REGULATOR SWITCH ASSEMBLY Terminal Connection (Terminal Symbol)	Continuity
3 (RRD) ↔ 5 (SD)	Continuity
2 (RRU) ↔ 1 (SU)	Continuity

Rear seat left side

POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY ↔ POWER WINDOW REGULATOR SWITCH ASSEMBLY Terminal Connection (Terminal Symbol)	Continuity
4 (RLD) ↔ 5 (SD)	Continuity
5 (RLU) ↔ 1 (SU)	Continuity

NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

OK

REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

WS

