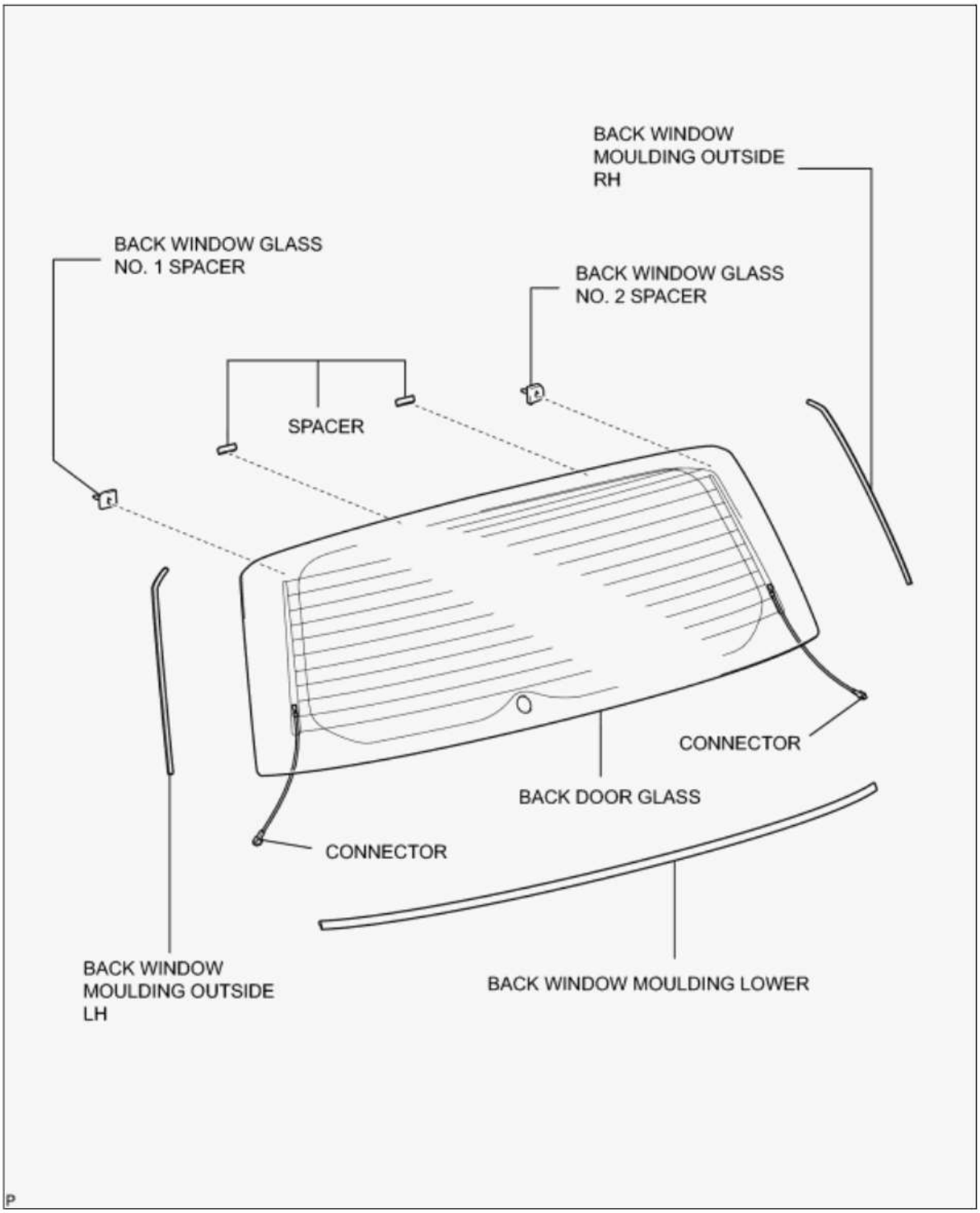
Last Modified: 9-7-2011	6.4 K	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM00000203N015X
Title: WINDSHIELD / WINDOWGLASS: BACK DOOR GLASS: COMPONENTS (2011 RAV4)		

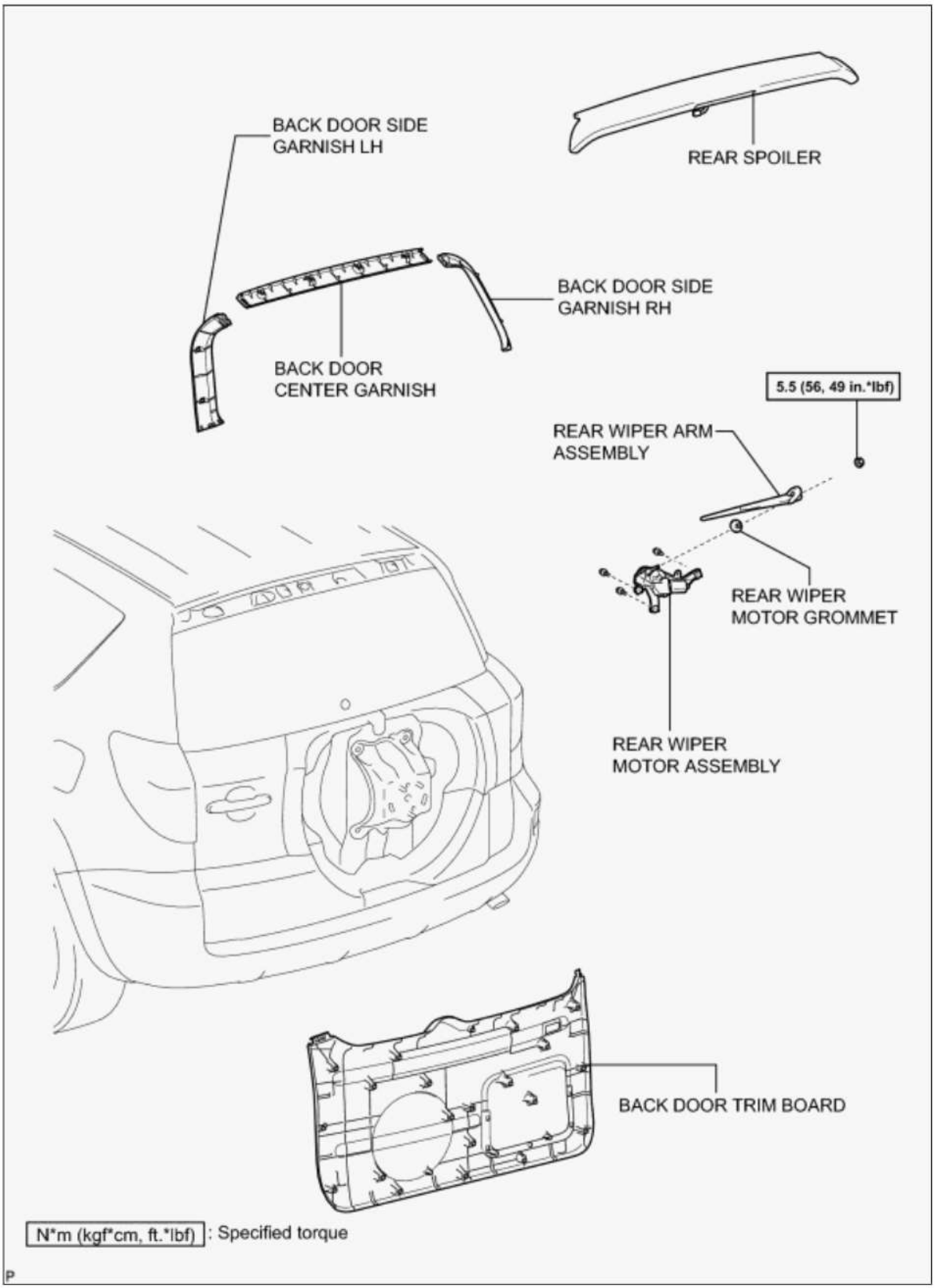
COMPONENTS

ILLUSTRATION



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ILLUSTRATION



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Last Modified: 9-7-2011	6.4 A	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001925037X
Title: WINDSHIELD / WINDOWGLASS: BACK DOOR GLASS: INSTALLATION (2011 RAV4)		

INSTALLATION

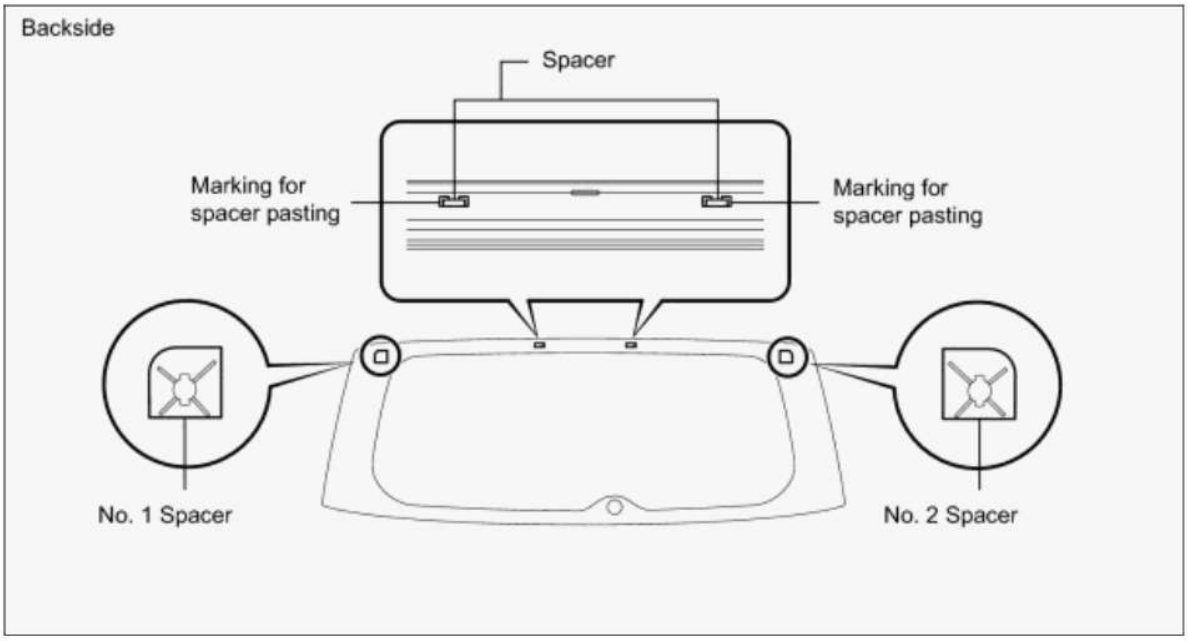
1. INSTALL BACK WINDOW GLASS SPACER

(a) Apply Primer G to the installation part of the clips.

HINT:

If primer is applied to an area that is not specified, wipe off the primer with non-residue solvent before it dries.

(b) Install 4 new spacers onto the glass as shown in the illustration.

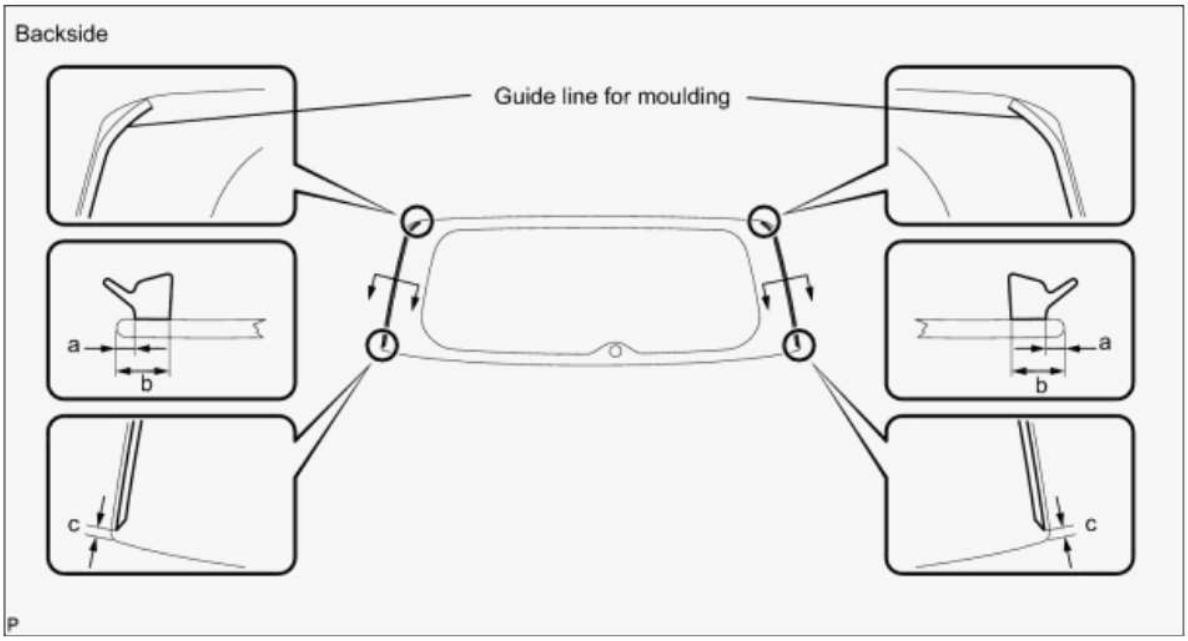


NOTICE:

- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

2. INSTALL BACK WINDOW MOULDING OUTSIDE

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(a) Apply Primer G to the installation part of the window moulding.

NOTICE:

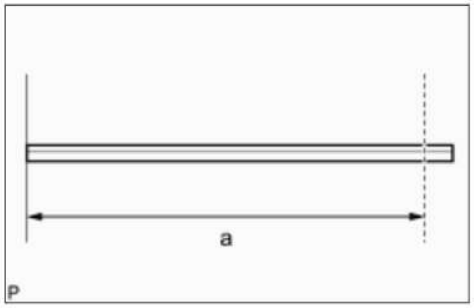
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

(b) Install a new moulding as shown in the illustration.

Standard measurement:

AREA	SPECIFIED CONDITION
a	3.0 mm (0.118 in.)
b	9.0 mm (0.354 in.)
c	9.0 to 11.0 mm (0.118 to 0.433 in.)

3. INSTALL BACK WINDOW MOULDING LOWER



(a) Cut the back window moulding lower so that it is the size shown in the illustration.

Standard measurement:

AREA	SPECIFIED CONDITION
a	1285 mm (50.6 in.)

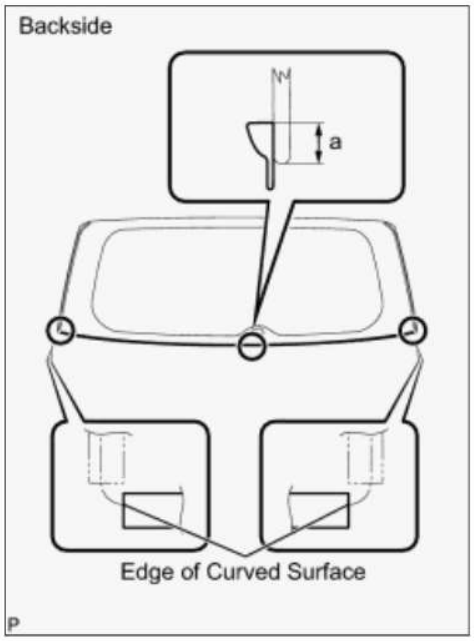
(b) Remove the release paper from the back window moulding lower.

(c) Apply Primer G to the installation part of the window moulding.

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NOTICE:

- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

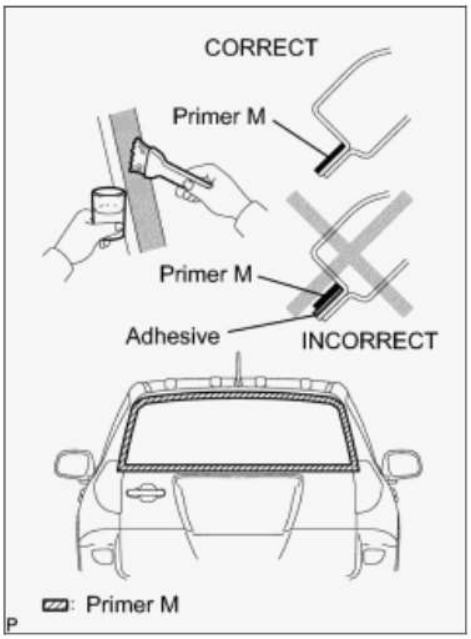


(d) Install a new moulding as shown in the illustration.

Standard measurement:

AREA	SPECIFIED CONDITION
a	7.3 mm (0.287 in.)

4. INSTALL BACK DOOR GLASS



(a) Using a brush or sponge, apply Primer M to the exposed part of the vehicle body.

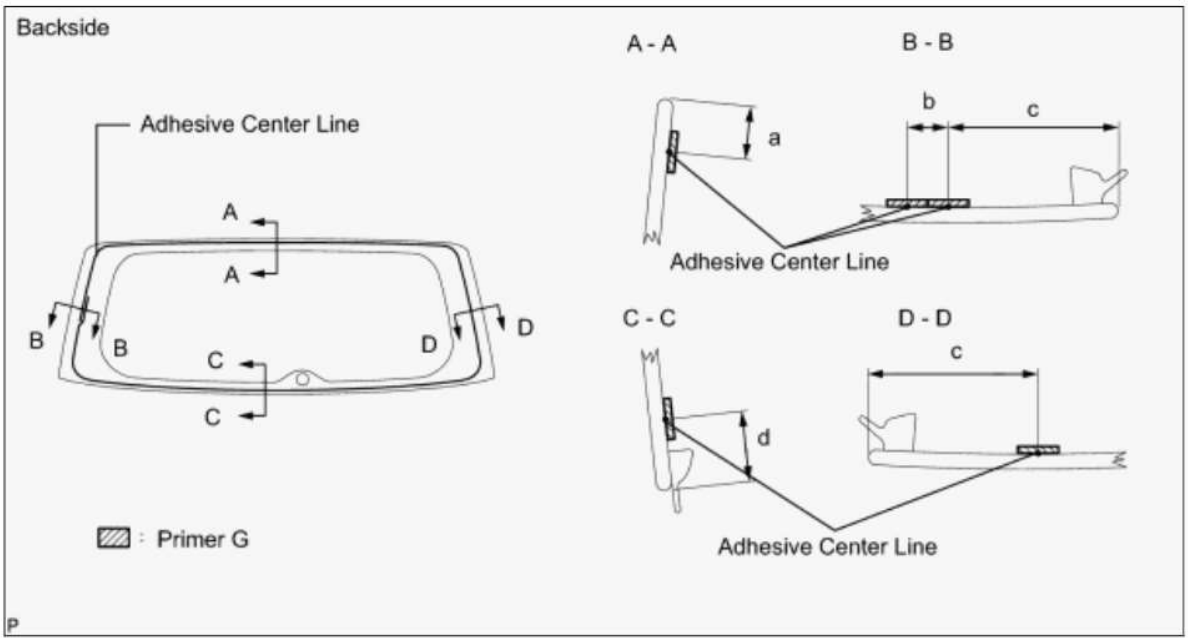
NOTICE:

- Allow the primer to dry for 3 minutes or more.

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- Do not apply primer to the adhesive.
- Throw away any leftover primer.
- Do not apply too much primer.

(b) Using a brush or sponge, apply Primer G to the contact surface of the back door glass.



Standard measurement:

AREA	SPECIFIED CONDITION
a	10.4 mm (0.409 in.)
b	7.0 mm (0.275 in.)
c	35.5 mm (1.397 in.)
d	13.0 mm (0.511 in.)

HINT:

If primer is applied to an area that is not specified, wipe off the primer with non-residue solvent before it dries.

NOTICE:

- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

(c) Apply adhesive to the back door glass.

Adhesive:
Toyota Genuine Windshield Glass Adhesive or Equivalent

(1) Cut off the tip of the cartridge nozzle as shown in the illustration below.

HINT:

After cutting off the tip, use all adhesive within the time written in the table below.

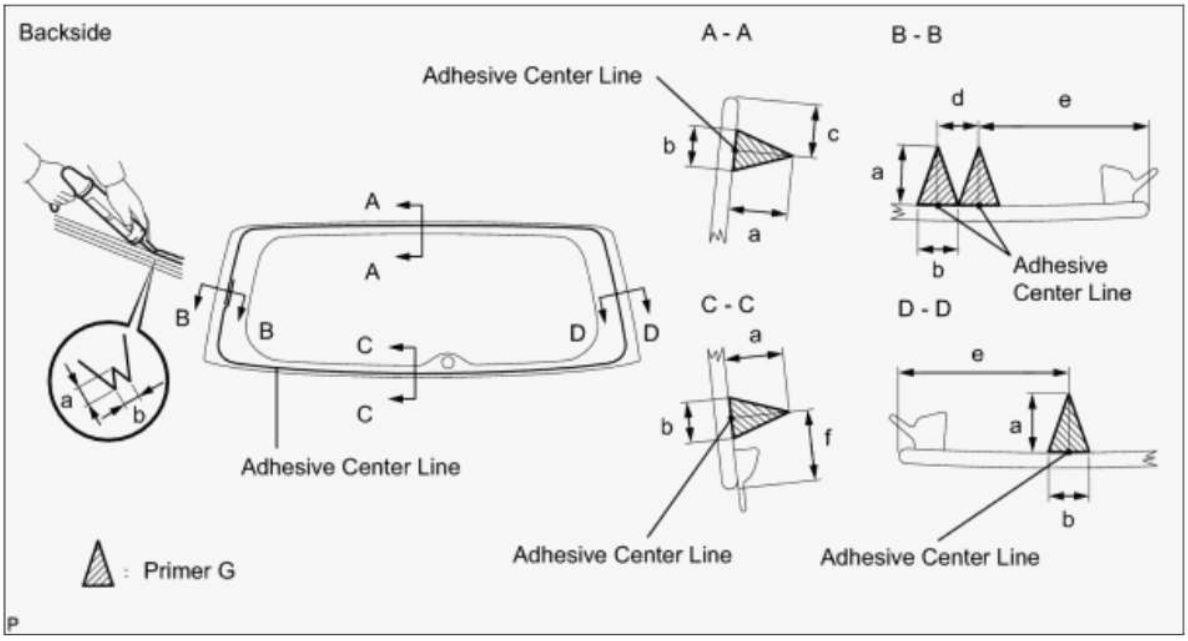
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Usage time frame:

TEMPERATURE	USAGE TIME FRAME
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

(2) Load the sealer gun with the cartridge.

(3) Apply adhesive to the back door glass as shown in the illustration.



Standard measurement:

AREA	SPECIFIED CONDITION
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)
c	10.4 mm (0.409 in.)
d	7.0 mm (0.275 in.)
e	35.5 mm (1.397 in.)
f	13.0 mm (0.511 in.)

(d) Install the back door glass to the vehicle body.

(1) Hold the back window glass in place securely with tape or equivalent until the adhesive has hardened.

NOTICE:

- Allow the primer coating to dry for 3 minutes or more.
- Check that the clips are attached to the vehicle body correctly.
- Check the clearance between the vehicle body and glass.

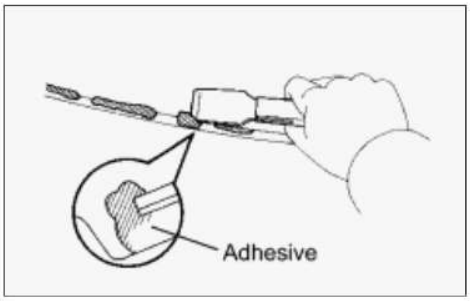
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(2) Lightly press the front surface of the back door glass to ensure that the back door glass is securely fit to the vehicle body.

(3) Using a scraper, remove any excess or protruding adhesive.

HINT:

Apply adhesive onto the glass rim.



NOTICE:

Do not drive the vehicle within the time written in the table below.

Minimum time:

TEMPERATURE	MINIMUM TIME PRIOR TO DRIVING VEHICLE
35°C (95°F)	1 hour 30 minutes
20°C (68°F)	5 hours
5°C (41°F)	24 hours

5. INSTALL REAR SPOILER INFO

6. INSTALL REAR WIPER MOTOR ASSEMBLY INFO

7. INSTALL REAR WIPER MOTOR GROMMET

8. INSTALL BACK DOOR TRIM BOARD INFO

9. INSTALL BACK DOOR SIDE GARNISH LH INFO

10. INSTALL BACK DOOR SIDE GARNISH RH INFO

11. INSTALL BACK DOOR CENTER GARNISH INFO

12. INSTALL REAR WIPER ARM ASSEMBLY INFO

13. INSPECT FOR LEAKS AND REPAIR

(a) Conduct a leak test after the adhesive has completely hardened.

(b) Seal any leaks with auto glass sealer.

14. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

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Last Modified: 9-7-2011	6.4 A	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001927034X
Title: WINDSHIELD / WINDOWGLASS: BACK DOOR GLASS: REMOVAL (2011 RAV4)		

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

2. REMOVE REAR WIPER ARM ASSEMBLY INFO

3. REMOVE BACK DOOR TRIM BOARD INFO

4. REMOVE BACK DOOR CENTER GARNISH INFO

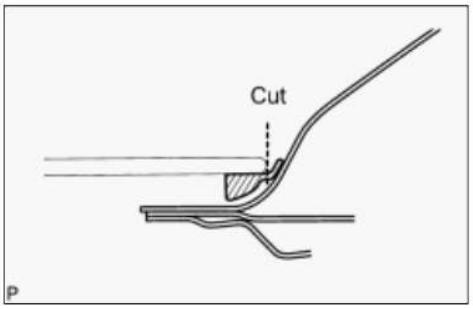
5. REMOVE BACK DOOR SIDE GARNISH LH INFO

6. REMOVE BACK DOOR SIDE GARNISH RH INFO

7. REMOVE REAR WIPER MOTOR GROMMET

8. REMOVE REAR WIPER MOTOR ASSEMBLY INFO

9. REMOVE REAR SPOILER INFO



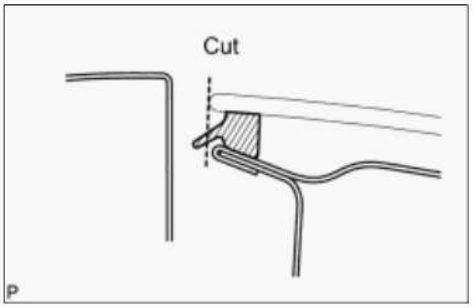
10. REMOVE BACK WINDOW MOULDING LOWER

(a) Using a knife, cut off the moulding as shown in the illustration.

NOTICE:

Do not damage the body with the knife.

(b) Remove the remaining moulding.



11. REMOVE BACK WINDOW MOULDING OUTSIDE

(a) Using a knife, cut off the moulding as shown in the illustration.

NOTICE:

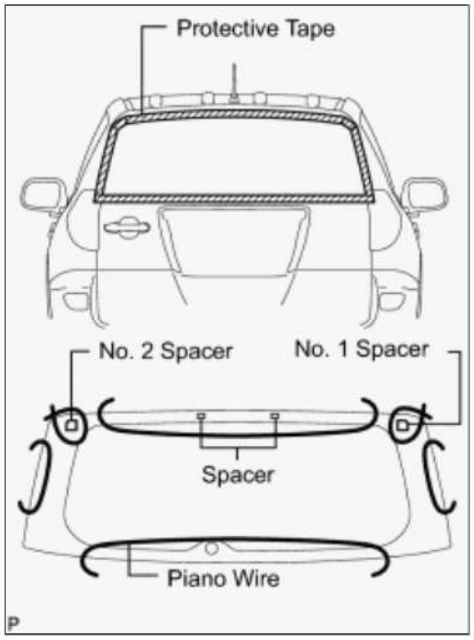
Do not damage the body with the knife.

(b) Remove the remaining moulding.

12. REMOVE BACK DOOR GLASS

(a) Disconnect the rear window defogger connector.

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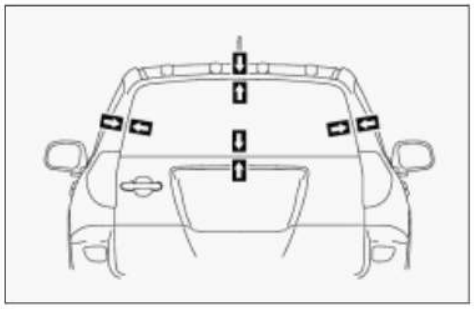
(b) Apply protective tape to the outer surface of the vehicle body to prevent scratches.

NOTICE:

When separating the back door glass from the vehicle, be careful not to damage the vehicle's paint or interior/exterior ornaments.

(c) From the interior, insert a piano wire between the vehicle body and back door glass as shown in the illustration.

(d) Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.



(e) Place matchmarks over the glass and vehicle body on the locations indicated in the illustration.

HINT:

Matchmarks do not need to be placed if the glass is not going to be reused.

(f) Cut through the adhesive by pulling the piano wire around the back door glass.

NOTICE:

Leave as much adhesive on the vehicle body as possible when removing the back door glass.

(g) Using suction cups, remove the back door glass.

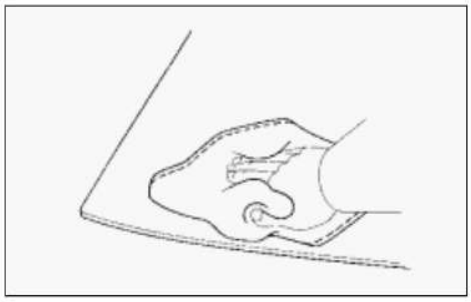
13. CLEAN BACK DOOR GLASS

(a) Clean the outer edge of the back door glass with non-residue solvent.

NOTICE:

- Do not touch the back door glass surface after cleaning it.

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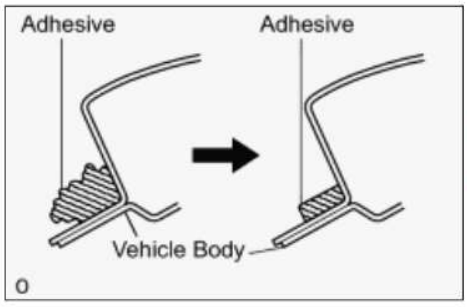
- Be careful not to damage the glass.
- Even if using new back door glass, clean the back door glass with non-residue solvent.

14. CLEAN VEHICLE BODY

(a) Using a scraper, remove the moulding and adhesive from the back door glass.

(b) Clean and shape the contact surface of the vehicle body.

(1) On the contact surface of the vehicle body, use a knife to cut away excess adhesive as shown in the illustration.



HINT:

Leave as much adhesive on the vehicle body as possible.

NOTICE:

Be careful not to damage the vehicle body.

(2) Clean the contact surface of the vehicle body with cleaner.

HINT:

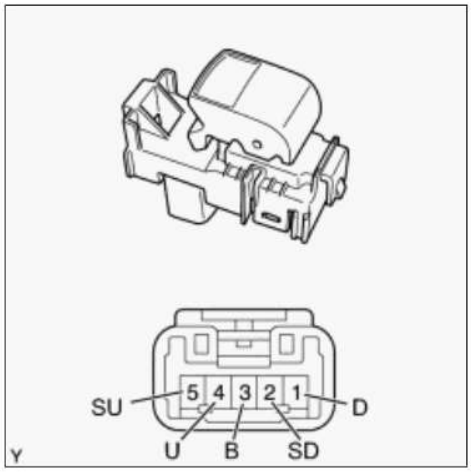
Even if all the adhesive has been removed, clean the vehicle body.

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Last Modified: 9-7-2011	6.4 G	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM00000226700CX
Title: WINDSHIELD / WINDOWGLASS: FRONT PASSENGER SIDE POWER WINDOW SWITCH: INSPECTION (2011 RAV4)		

INSPECTION

1. INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY



(a) Measure the resistance of the switch when the switch is operated.

Standard resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 (D) - 2 (SD) 3 (B) - 4 (U)	UP	Below 1 Ω
4 (U) - 5 (SU) 1 (D) - 2 (SD)	OFF	Below 1 Ω
1 (D) - 3 (B) 4 (U) - 5 (SU)	DOWN	Below 1 Ω

If the result is not as specified, replace the regulator switch assembly.

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Last Modified: 9-7-2011	6.4 J	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000T3K01ZX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: Auto Up Operation does not Fully Close Power Window (Jam Protection Function is Activated) (2011 RAV4)		

Auto Up Operation does not Fully Close Power Window (Jam Protection Function is Activated)

DESCRIPTION

The driver door power window regulator motor is activated by operating the power window regulator master switch. The driver door power window regulator motor has motor, regulator and ECU functions. DTC B2311 is set when the main body ECU determines that the driver door power window regulator motor malfunctions.

CAUTION:

- The power window control system uses a multiplex communication system (LIN). Inspect the communication function by following HOW TO PROCEED WITH TROUBLESHOOTING. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (on the driver side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the AUTO UP function is used. In such cases, the AUTO UP function can be resumed by repeating the following operation at least 5 times:

  a. Close the power window by fully pulling up the power window switch and holding it in the AUTO UP position.
  b. Open the power window by fully pushing down the switch.

HINT:

If the pulse sensor in the power window regulator motor assembly (on the driver side) malfunctions, the power window control system enters fail-safe mode. The remote UP / DOWN and AUTO UP / DOWN functions cannot be operated during fail-safe mode. (However, the power window can be closed by holding the power window switch at the AUTO UP position, and opened manually by pushing down the switch.)

INSPECTION PROCEDURE

PROCEDURE

1.	**INITIALIZE POWER WINDOW CONTROL SYSTEM**

(a) Initialize the power window regulator motor assembly (on the driver side) INFO .

(b) Check that the power window operates normally by opening and closing the window.

OK:
AUTO UP / DOWN function operates normally.

OK ▶ END (PROBLEM DUE TO INITIALIZATION

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FAILURE)

NG

2.	**CHECK WINDOW GLASS SLIDING MOVEMENT (for Driver Side)**

(a) Remove the window regulator.

(b) Install the window glass onto the door glass run.

(c) Check if the door window regulator operates smoothly.

(d) Check that the window glass slides smoothly when sliding it up by hand.

OK:
Door window glass slides smoothly.

HINT:

Ensure the following:

- The window glass fits with the glass run without improper contact.
- Neither deformation nor foreign objects in the glass run.

NOTICE:

Perform initialization again.

NG ▶ **FIT WINDOW GLASS CORRECTLY (REMOVE FOREIGN OBJECTS CAUSING IMPROPER FITTING OR REPLACE PARTS)**

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)**

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Last Modified: 9-7-2011	6.4 C	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001LZX01ZX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: B2311: Driver Door Motor Malfunction (2011 RAV4)		

DTC	**B2311**	**Driver Door Motor Malfunction**

DESCRIPTION

The driver door power window regulator motor is driven by operating the power window regulator master switch. The driver door power window regulator motor has motor, regulator, and ECU functions.

DTC B2311 is output when the driver door power window regulator motor assembly has a malfunction, or the ECU built into the regulator motor assembly determines that the fully closed window position has deviated approximately 20 mm (0.79 in.) or more from the normal position.

NOTICE:

- The power window control system uses a multiplex communication system (LIN). Inspect the communication function by following HOW TO PROCEED WITH TROUBLESHOOTING. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (on the driver side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the AUTO UP function is used. In such cases, the AUTO UP function can be resumed by repeating the following operation at least 5 times:
  a. Close the power window by fully pulling up the power window switch and holding it in the AUTO UP position.
  b. Open the power window by fully pushing down the switch.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2311	When either condition below is met: • Power window regulator motor (on driver side) malfunctions • When ECU in power widow regulator motor (on driver side) determines that fully closed window position has deviated approximately 20 mm (0.79 in.) or more from normal position	• Battery disconnection when ignition switch ON • Power window regulator motor (on driver side) • Incorrect installation of power window components • Overheated power window regulator motor (on driver side)

INSPECTION PROCEDURE

NOTICE:

When using Techstream to troubleshoot the LIN communication line: Connect Techstream to the vehicle, and turn a courtesy light switch on and off at 1.5 second intervals until communication between the

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tester and vehicle begins.

PROCEDURE

1.	PERFORM ACTIVE TEST USING TECHSTREAM (POWER WINDOW UP/DOWN)

(a) Perform the Active Test, using Techstream to generate a control command, and then check the power window operation.

D-Door Motor

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
P/W Up / Down	Power window	UP / OFF	-
P/W Up / Down	Power window	DOWN / OFF	-

OK:
Driver side power window operates normally.

CAUTION:

Be careful to avoid injuries as this test causes vehicle parts to move.

During the Active Test, the jam protection function does not operate.

NG ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)**

OK ▼

2.	INITIALIZE POWER WINDOW CONTROL SYSTEM

(a) Initialize the power window regulator motor assembly (on the driver side) INFO .

(b) Check that the power window operates normally by opening and closing the window.

OK:
Driver side power window operates normally.

NG ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)**

OK

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3.	CHECK WHETHER PARTS HAVE BEEN INSTALLED CORRECTLY

(a) Check that the power window components (on the driver side) are installed correctly.

OK:

Power window components (on driver side) are installed correctly.

HINT:

When the power window components are installed correctly, the problem has been caused by battery disconnection while the ignition switch is ON, improper installation of the power window components or the motor being overheated.

NG ▶ **INSTALL PARTS CORRECTLY**

OK ▶ **END**

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Last Modified: 9-7-2011	6.4 C	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001LZY021X
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: B2312: Driver Side Door Master Switch Malfunction (2011 RAV4)		

DTC	**B2312**	**Driver Side Door Master Switch Malfunction**

DESCRIPTION

The driver door power window regulator motor is driven by operating the power window regulator master switch. The driver door power window regulator motor has motor, regulator, and ECU functions.

When the ECU determines that the power window regulator master switch is stuck, DTC B2312 is set.

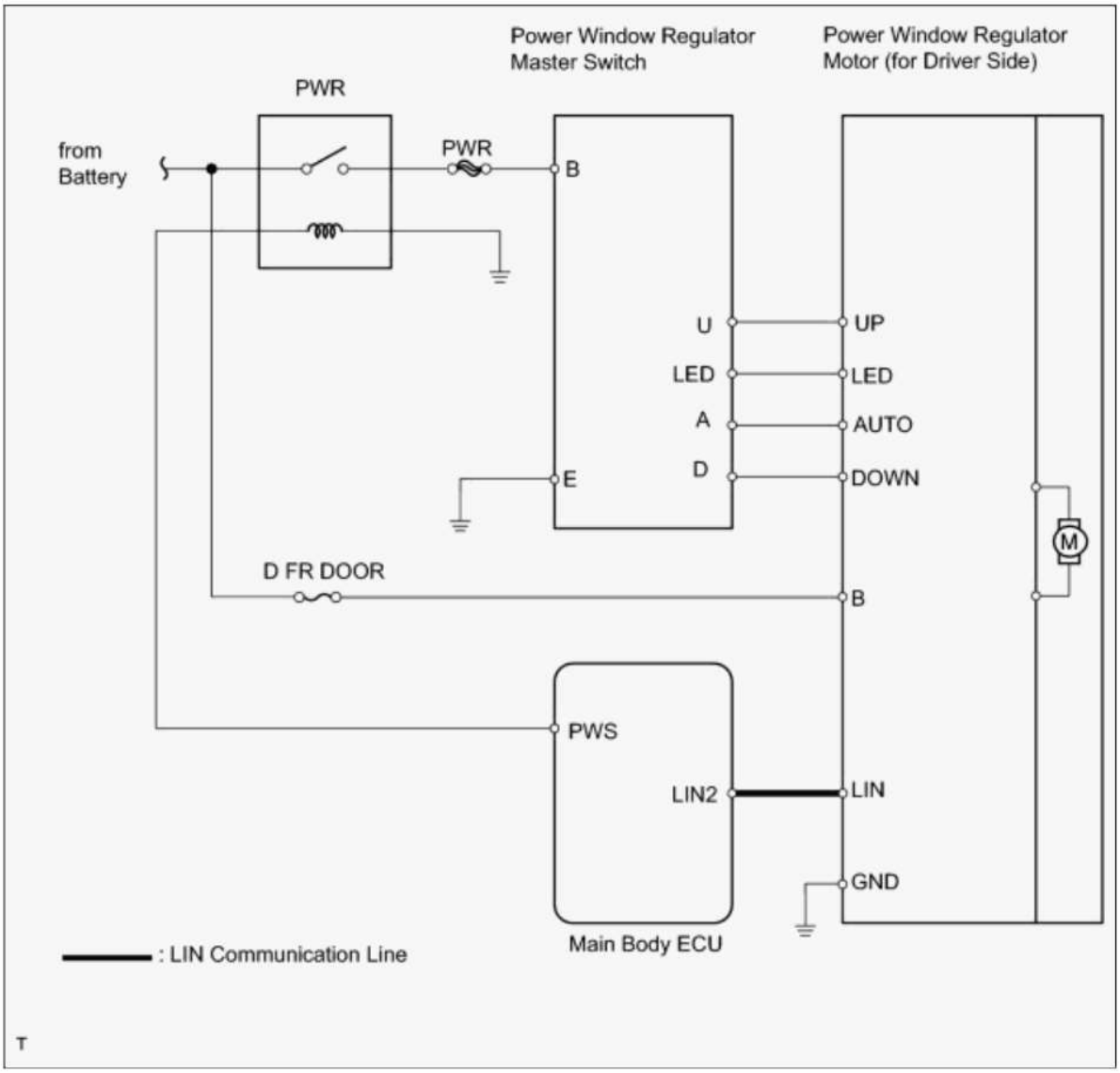
NOTICE:

- The power window control system uses a multiplex communication system (LIN). Inspect the communication function by following HOW TO PROCEED WITH TROUBLESHOOTING. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (on the driver side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the AUTO UP function is used. In such cases, the AUTO UP function can be resumed by repeating the following operation at least 5 times:
  a. Close the power window by fully pulling up the power window switch and holding it in the AUTO UP position.
  b. Open the power window by fully pushing down the switch.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2312	Power window regulator master switch stuck	• Power window regulator motor (on driver side) • Power window regulator master switch • Wire harness • Power window regulator master switch held in same position for more than 20 seconds

WIRING DIAGRAM

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INSPECTION PROCEDURE

PROCEDURE

1.	**READ VALUE USING TECHSTREAM (MASTER SWITCH)**

(a) Using the Data List to check the function of the power window master switch.

D-Door Motor

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
D Door P/W Auto SW	Driver side power window AUTO switch signal / ON	ON: Driver side power window AUTO switch operates	-

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TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
	or OFF	OFF: Driver side power window AUTO switch does not operate	
D Door P/W Up SW	Driver side power window UP switch signal / ON or OFF	ON: Driver side power window UP switch operates OFF: Driver side power window UP switch does not operate	-
D Door P/W Down SW	Driver side power window DOWN switch signal / ON or OFF	ON: Driver side power window DOWN switch operates OFF: Driver side power window DOWN switch does not operate	-

OK:

ON (switch operates) appears on screen.

HINT:

When the power window operates normally, the problem has been caused by irregular switch operation (for example, the power window regulator master switch was held in the same position for more than 20 seconds).

OK ▶ REPLACE POWER WINDOW REGULATOR MOTOR (for Driver Side)

NG ▼

2.	**CHECK WIRE HARNESS (SWITCH INPUT POWER SUPPLY)**

(a) Disconnect the H2 switch connector.

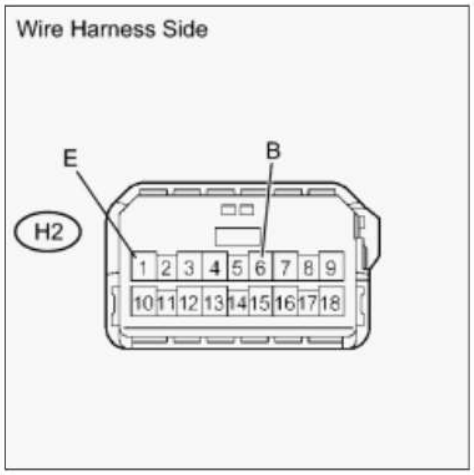
(b) Measure the voltage of the wire harness and connector.

Standard voltage:

TESTER CONNECTION	SPECIFIED CONDITION
H2-6 (B) - H2-1 (E)	10 to 14 V

NG ▶ REPAIR OR REPLACE HARNESS AND

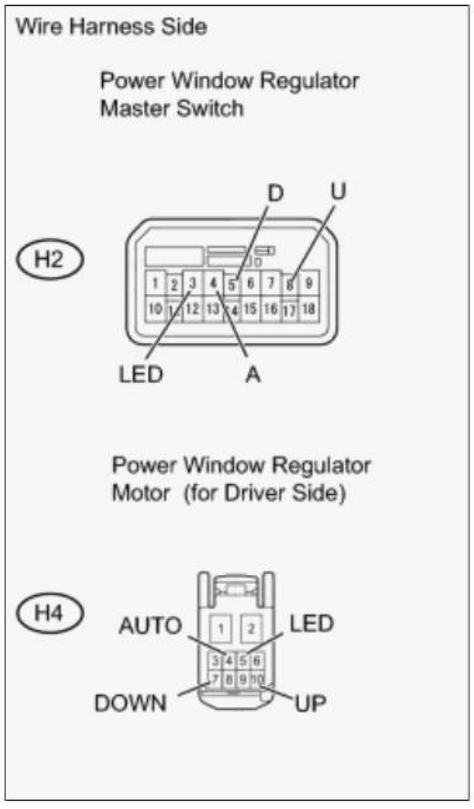
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CONNECTOR

OK

3.	**CHECK WIRE HARNESS (MASTER SWITCH - REGULATOR MOTOR)**



(a) Disconnect the H2 switch connector.

(b) Disconnect the H4 motor connector.

(c) Measure the resistance of the wire harness side connectors.

Standard resistance:

TESTER CONNECTION	SPECIFIED CONDITION

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TESTER CONNECTION	SPECIFIED CONDITION
H2-8 (U) - H4-10 (UP)	Below 1 Ω
H2-5 (D) - H4-7 (DOWN)	Below 1 Ω
H2-4 (A) - H4-4 (AUTO)	Below 1 Ω
H2-3 (LED) - H4-5 (LED)	Below 1 Ω

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

OK ▼

4.	**REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY**

(a) Temporarily replace the power window regulator master switch with a new or normally functioning one.

(b) Check for DTC.

OK:
DTC is not output.

NG ▶ **REPLACE POWER WINDOW REGULATOR MOTOR (for Driver Side)**

OK ▶ **END**

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Last Modified: 9-7-2011	6.4 C	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001LZZ029X
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: B2313: Glass Position Initialization Incomplete (2011 RAV4)		

DTC	**B2313**	**Glass Position Initialization Incomplete**

DESCRIPTION

The driver door power window regulator motor is driven by operating the power window regulator master switch. The driver door power window regulator motor has motor, regulator, and ECU functions.

When the ECU determines that the driver door power window regulator motor assembly has not been initialized, DTC B2313 is set.

NOTICE:

- The power window control system uses a multiplex communication system (LIN). Inspect the communication function by following HOW TO PROCEED WITH TROUBLESHOOTING. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (on the driver side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the AUTO UP function is used. In such cases, the AUTO UP function can be resumed by repeating the following operation at least 5 times:
  a. Close the power window by fully pulling up the power window switch and holding it in the AUTO UP position.
  b. Open the power window by fully pushing down the switch.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2313	• Power window regulator motor (on driver side) not initialized • Power window regulator motor (on driver side) malfunctions	• Power window regulator motor (on driver side) • Power window regulator motor (on driver side) not initialized

INSPECTION PROCEDURE

NOTICE:

When using Techstream to troubleshoot the LIN communication line: Connect Techstream to the vehicle, and turn the courtesy light switch on and off at 1.5 second intervals until communication between the tester and vehicle begins.

PROCEDURE

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1.	CHECK DTC OUTPUT

(a) Turn the ignition switch ON and initialize the power window regulator motor (on the driver side) INFO .

(b) Turn the ignition switch OFF.

(c) Wait for at least 10 seconds, and then turn the ignition switch ON.

(d) Check whether the DTC output recurs.

Result

DISPLAY (DTC OUTPUT)	PROCEED TO
B2313	A
No output	B

B ▶ **END (POWER WINDOW CONTROL SYSTEM HAS NOT BEEN INITIALIZED)**

A ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)**

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Last Modified: 9-7-2011	6.4 C	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001NLJ00UX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: B2321: Driver Side Door ECU Communication Stop (2011 RAV4)		

DTC	**B2321**	**Driver Side Door ECU Communication Stop**

DESCRIPTION

DTC B2321 is output when the communication between the power window regulator motor (driver side) and main body ECU stops for more than 10 seconds.

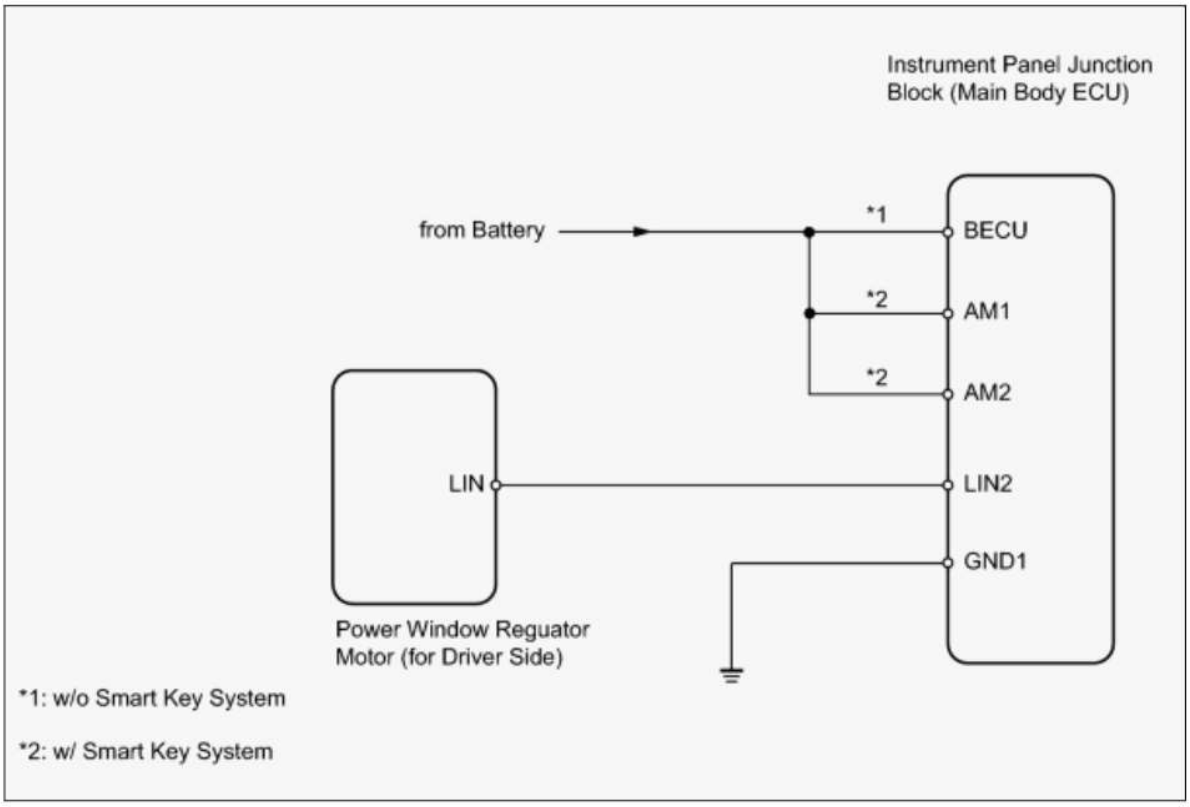
NOTICE:

When using Techstream to troubleshoot the LIN communication line: Connect Techstream to the vehicle, and turn a courtesy light switch on and off at 1.5 second intervals until communication between the tester and vehicle begins.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2321	No communication from power window regulator motor (driver side) for more than 10 seconds	• Power window regulator motor (driver side) • Instrument panel junction block (Main body ECU) • Wire harness

WIRING DIAGRAM

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INSPECTION PROCEDURE

PROCEDURE

1.	**CHECK WHETHER DTC OUTPUT RECURS (DTC B2321)**

(a) Connect Techstream to the DLC3.

(b) Turn the ignition switch ON and turn the tester on.

(c) Clear the DTCs.

(d) Recheck the DTCs.

Result

DISPLAY (DTC OUTPUT)	PROCEED TO
B2321	A
No DTC output	B

B ▶ SYSTEM IS OK

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A

2.	**READ VALUE USING TECHSTREAM (COMMUNICATION D DOOR MOTOR)**

(a) Connect Techstream to the DLC3.

(b) Turn the ignition switch ON and turn the tester on.

(c) Read the indication displayed on the tester.

Main body

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Communication D-Door Motor	Connection status between power window regulator motor assembly (driver door) and main body ECU / OK or Stop	OK: Connection Stop: No connection	-

OK:
OK is displayed on Techstream screen.

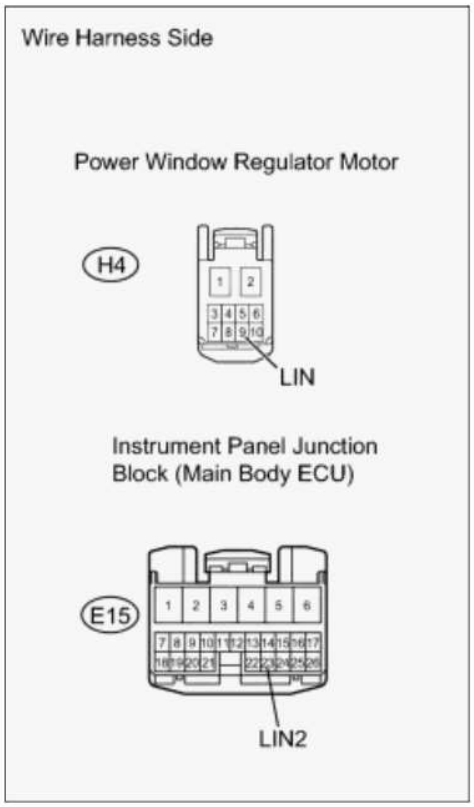
OK ▶ **REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)**

NG

3.	**CHECK WIRE HARNESS (MAIN BODY ECU - REGULATOR MOTOR)**

(a) Disconnect the H4 motor connector.

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(b) Disconnect the E15 junction block connector.

(c) Measure the resistance of the wire harness side connectors.

Standard resistance:

TESTER CONNECTION	SPECIFIED CONDITION
H4-9 (LIN) - E15-23 (LIN2)	Below 1 Ω
H4-9 (LIN) or E15-23 (LIN2) - Body ground	10 kΩ or higher

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

OK ▼

4.	**CHECK WHETHER DTC OUTPUT RECURS (DTC B2321)**

(a) Connect Techstream to the DLC3.

(b) Turn the ignition switch ON and turn the tester on.

(c) Clear the DTCs.

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(d) Check whether DTC B2321 recurs 10 seconds or more after the ignition switch is turned ON.

OK:

No DTC is output.

NG ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)**

OK ▶ **REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)**

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Last Modified: 9-7-2011	6.4 C	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001MT600JX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: B2325: LIN Communication Bus Malfunction (2011 RAV4)		

DTC	**B2325**	**LIN Communication Bus Malfunction**

DESCRIPTION

DTC B2325 is output when the LIN communication line is abnormal inside the instrument panel junction block (main body ECU).

CAUTION:

When using Techstream to troubleshoot the LIN communication line: Connect Techstream to the vehicle, and turn the courtesy light switch on and off at 1.5 second intervals until communication between the tester and vehicle begins.

DTC NO.	DTC DETECTION	TROUBLE AREA
B2325	LIN communication is abnormal inside instrument panel junction block (Main body ECU).	Instrument panel junction block (Main body ECU)

INSPECTION PROCEDURE

PROCEDURE

1.	**CHECK DTC (DTC B2325)**

(a) Connect Techstream to the DLC3.

(b) Turn the ignition switch ON and turn the tester on.

(c) Clear the DTCs.

(d) Recheck DTCs.

Result

DISPLAY (DTC OUTPUT)	PROCEED TO
B2325	A
Other DTCs	B
No DTC output	C

B ▶ GO TO DTC CHART

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C ▶ **SYSTEM IS NORMAL**

A ▼

2.	**READ VALUE USING TECHSTREAM (Main body ECU)**

(a) Connect Techstream to the DLC3.

(b) Turn the ignition switch ON and turn the tester ON.

(c) Read the indication displayed on the tester.

Main body

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Communication D-Door Motor	Connection status between power window regulator motor and main body ECU / OK or Stop	OK: Connection Stop: No connection	-

OK:
OK is displayed on Techstream screen.

OK ▶ **REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)**

NG ▼

3.	**RECHECK DTC (DTC B2325)**

(a) Connect Techstream to the DLC3.

(b) Turn the ignition switch ON and turn the tester on.

(c) Clear the DTCs.

(d) Read DTCs.

Result

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DISPLAY (DTC OUTPUT)	PROCEED TO
B2325	A
No DTC output	B

B ▶ **SYSTEM IS NORMAL**

A ▶ **REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)**

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Last Modified: 9-7-2011	6.4 U	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000022HJ006X
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: DATA LIST / ACTIVE TEST (2011 RAV4)		

DATA LIST / ACTIVE TEST

1. READ DATA LIST

HINT:

Using the Techstream's Data List allows switch, sensor, actuator and other item values to be read without removing any parts. Reading the Data List early in troubleshooting is one way to save time.

(a) Connect the Techstream to the DLC3.

(b) Turn the ignition switch ON.

(c) Read the Data List.

D-Door Motor

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSIS NOTE
D Door P/W Auto SW	Driver side power window auto UP / DOWN switch signal / ON or OFF	ON: Driver side power window AUTO switch operates OFF: Driver side power window AUTO switch does not operate	-
D Door P/W Up SW	Driver side power window manual UP switch signal / ON or OFF	ON: Driver side power window UP switch operates OFF: Driver side power window UP switch does not operate	-
D Door P/W Down SW	Driver side power window manual DOWN switch signal / ON or OFF	ON: Driver side power window DOWN switch operates OFF: Driver side power window DOWN switch does not operate	-

Main body

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSIS NOTE
Communication D Door Motor	Connection status between power window regulator motor assembly (driver door) and main body ECU / OK or STOP	OK: Connection Stop: No connection	-
D Door Courtesy SW	Driver side door courtesy switch signal / ON or OFF	ON: Driver door open OFF: Driver door closed	-

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TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSIS NOTE
P Door Courtesy SW	Front passenger side door courtesy switch signal / ON or OFF	ON: Front passenger door open OFF: Front passenger door closed	-

2. PERFORM ACTIVE TEST

CAUTION:

Be careful to avoid injuries as this test causes vehicle parts to move.

HINT:

Performing the Techstream's Active Test allows relay, VSV, actuator, and other items to be operated without removing any parts. Performing the Active Test early in troubleshooting is one way to save time. The Data List can be displayed during the Active Test.

(a) Connect the Techstream to the DLC3.

(b) Turn the ignition switch ON.

(c) Performing the Active Test by following the prompts on the tester screen.

D-Door Motor

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSIS NOTE
P/W Up/Down	Power window	UP / OFF	-
P/W Up/Down	Power window	DOWN / OFF	-

Main body

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSIS NOTE
IG OFF P/W Control Permission Output	Power window	ON / OFF	-

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Last Modified: 9-7-2011	6.4 D	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000PY905EX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: DIAGNOSIS SYSTEM (2011 RAV4)		

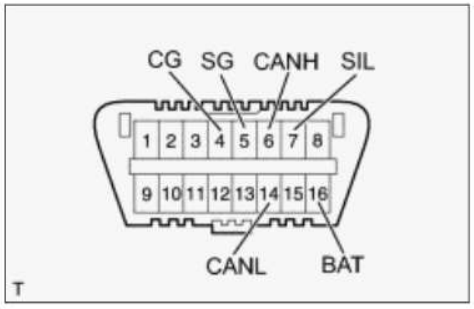
DIAGNOSIS SYSTEM

1. DESCRIPTION

(a) The driver side power window regulator motor (power window ECU) controls the power window control system functions on the vehicle. Power window control system data can be read through the Data Link Connector 3 (DLC3) of the vehicle. When the system seems to be malfunctioning, use Techstream to check for malfunctions and perform repairs.

2. CHECK DLC3

(a) The vehicle's ECU uses ISO 15765-4 for communication protocol. The terminal arrangement of the DLC3 complies with SAE J1962 and matches the ISO 15765-4 format.



SYMBOLS (TERMINAL NO.)	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
SIL (7) - SG (5)	Bus "+" line	During transmission	Pulse generation
CG (4) - Body ground	Chassis ground	Always	Below 1 Ω
SG (5) - Body ground	Signal ground	Always	Below 1 Ω
BAT (16) - Body ground	Battery positive	Always	10 to 14 V
CANH (6) - CANL (14)	CAN bus line	Ignition switch OFF*	54 to 69 Ω
CANH (6) - CG (4)	HIGH-level CAN bus line	Ignition switch OFF*	200 Ω or higher
CANL (14) - CG (4)	LOW-level CAN bus line	Ignition switch OFF*	200 Ω or higher
CANH (6) - BAT (16)	HIGH-level CAN bus line	Ignition switch OFF*	6 kΩ or higher
CANL (14) - BAT (16)	LOW-level CAN bus line	Ignition switch OFF*	6 kΩ or higher

NOTICE:

***: Before measuring the resistance, leave the vehicle as is for at least 1 minute and do not operate the ignition switch, any other switches or the doors.**

If the result is not as specified, the DLC3 may have a malfunction. Repair or replace the harness and connector.

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(b) Connect the cable of Techstream to the DLC3, turn the ignition switch to the ON position and attempt to use Techstream. If the screen displays a communication error message, a problem exists in the vehicle side of the tester side.

HINT:

- If communication is normal when the tool is connected to another vehicle, inspect the DLC3 on the original vehicle.
- If communication is still impossible when the tool is connected to another vehicle, the problem is probably in the tool itself. Consult the Service Department listed in the tool's instruction manual.

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Last Modified: 9-7-2011	6.4 S	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001H3O02JX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: DIAGNOSTIC TROUBLE CODE CHART (2011 RAV4)		

DIAGNOSTIC TROUBLE CODE CHART

DTC CODE	DETECTION ITEM	TROUBLE AREA	SEE PAGE
B2311	Driver Door Motor Malfunction	- Battery disconnection when ignition switch ON - Power window regulator motor assembly (on driver side) - Incorrect installation of power window components - Overheated power window regulator motor assembly (on driver side)	INFO
B2312	Driver Side Door Master Switch Malfunction	- Power window regulator motor assembly (on driver side) - Power window regulator master switch assembly - Wire harness - Power window regulator master switch held in same position for more than 20 seconds	INFO
B2313	Glass Position Initialization Incomplete	- Power window regulator motor assembly (on driver side) - Power window regulator motor assembly (on driver side) not initialized	INFO
B2321	Driver Side Door ECU Communication stop	- Instrument panel junction block assembly (Main body ECU) - Power window regulator motor assembly (on driver side) - Double door lock ECU - Wire harness	INFO
B2325	LIN Communication Bus Malfunction	- Power window regulator motor assembly (on driver side) - Instrument panel junction block assembly (Main body ECU) - Wire harness	INFO

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Last Modified: 9-7-2011	6.4 J	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000Y4602RX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: Driver Side Power Window Auto Up / Down Function does not Operate with Power Window Master Switch (2011 RAV4)		

Driver Side Power Window Auto Up / Down Function does not Operate with Power Window Master Switch

DESCRIPTION

When the AUTO UP / DOWN does not function, the power window control system may be in fail-safe mode. If the system has not been initialized after replacement of the driver door power window regulator motor, it also results in the same problem.

NOTICE:

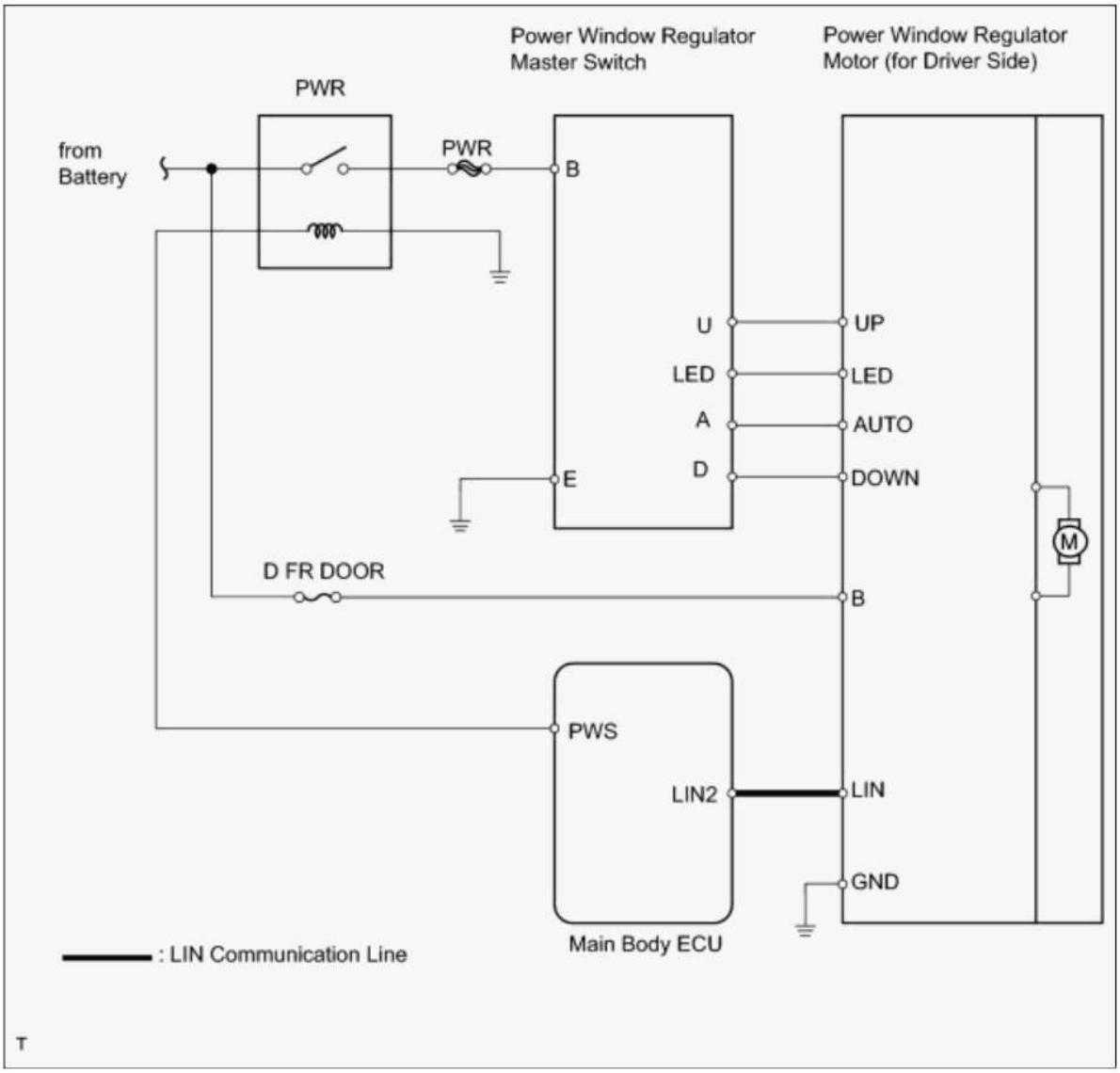
- The power window control system uses a multiplex communication system (LIN). Inspect the communication function by following HOW TO PROCEED WITH TROUBLESHOOTING. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (on the driver side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the AUTO UP function is used. In such cases, the AUTO UP function can be resumed by repeating the following operation at least 5 times:
    a. Close the power window by fully pulling up the power window switch and holding it in the AUTO UP position.
    b. Open the power window by fully pushing down the switch.

HINT:

If the pulse sensor built into the power window regulator motor assembly (on the driver side) malfunctions, the power window control system enters fail-safe mode. The remote UP / DOWN and AUTO UP / DOWN functions cannot be operated during fail-safe mode. (However, the power window can be closed by holding the power window switch at the AUTO UP position, and opened manually by pushing down the switch.)

WIRING DIAGRAM

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INSPECTION PROCEDURE

PROCEDURE

1.	**CHECK DTC**

(a) Check for DTCs.

(b) Connect Techstream to the DLC3.

(c) By following the tester screen display, check whether any DTCs are output.

Result

DISPLAY	PROCEED TO

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DISPLAY	PROCEED TO
No output	A
DTC output	B

B ▶ **PROCEED TO INSPECTION PROCEDURE RELEVANT TO OUTPUT DTC**

A ▼

2.	READ VALUE USING TECHSTREAM (MASTER SWITCH)

(a) Use the Data List to check the function of the power window master switch.

D-Door Motor

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
D Door P/W Auto SW	Driver side power window AUTO switch signal / ON or OFF	ON: Driver side power window AUTO switch operates OFF: Driver side power window AUTO switch does not operate	-
D Door P/W Up SW	Driver side power window UP switch signal / ON or OFF	ON: Driver side power window UP switch operates OFF: Driver side power window UP switch does not operate	-
D Door P/W Down SW	Driver side power window DOWN switch signal / ON or OFF	ON: Driver side power window DOWN switch operates OFF: Driver side power window DOWN switch does not operate	-

OK:
ON (switch operates) appears on screen.

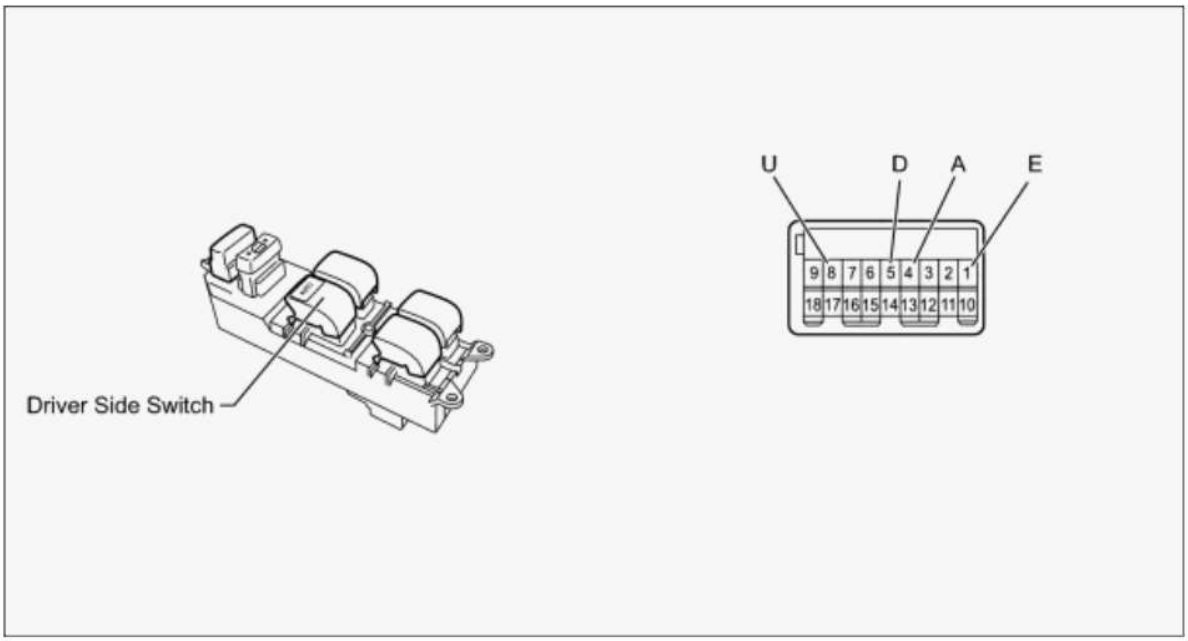
OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)**

NG ▼

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3.	INSPECT POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

(a) Remove the power window regulator master switch assembly



(b) Measure the resistance of the master switch

Standard resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
8 (U) - 1 (E) - 4 (A)	Auto UP	Below 1 Ω
4 (A) - 5 (D) - 1 (E)	Auto Down	Below 1 Ω

NG ▶ **REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY**

OK ▼

4.	INSPECT FUSE (D FR DOOR)

(a) Remove the D FR DOOR fuse from the instrument panel junction block.

Standard resistance:

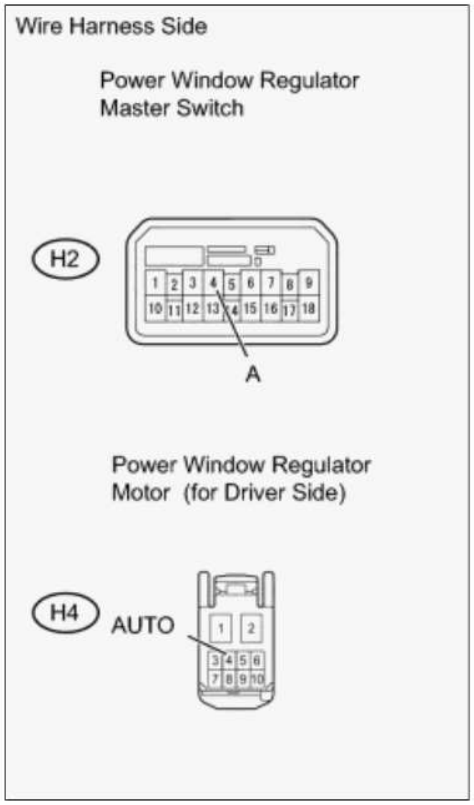
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Below 1 Ω

NG ▶ **REPLACE FUSE (D FR DOOR)**

OK ▼

5.	CHECK WIRE HARNESS (MASTER SWITCH - REGULATOR MOTOR)



(a) Disconnect the H2 switch connector.

(b) Disconnect the H4 motor connector.

(c) Measure the resistance of the wire harness side connectors.

Standard resistance:

TESTER CONNECTION	SPECIFIED CONDITION
H2-4 (A) - H4-4 (AUTO)	Below 1 Ω

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

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR**

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ASSEMBLY (for Driver Side)

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Last Modified: 9-7-2011	6.4 J	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000XHI04UX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: Driver Side Power Window does not Operate with Power Window Master Switch (2011 RAV4)		

Driver Side Power Window does not Operate with Power Window Master Switch

DESCRIPTION

When the engine is running or the ignition switch is ON, the driver door power window regulator motor is driven by operating the power window regulator master switch. The driver door power window regulator motor has motor, regulator, and ECU functions.

NOTICE:

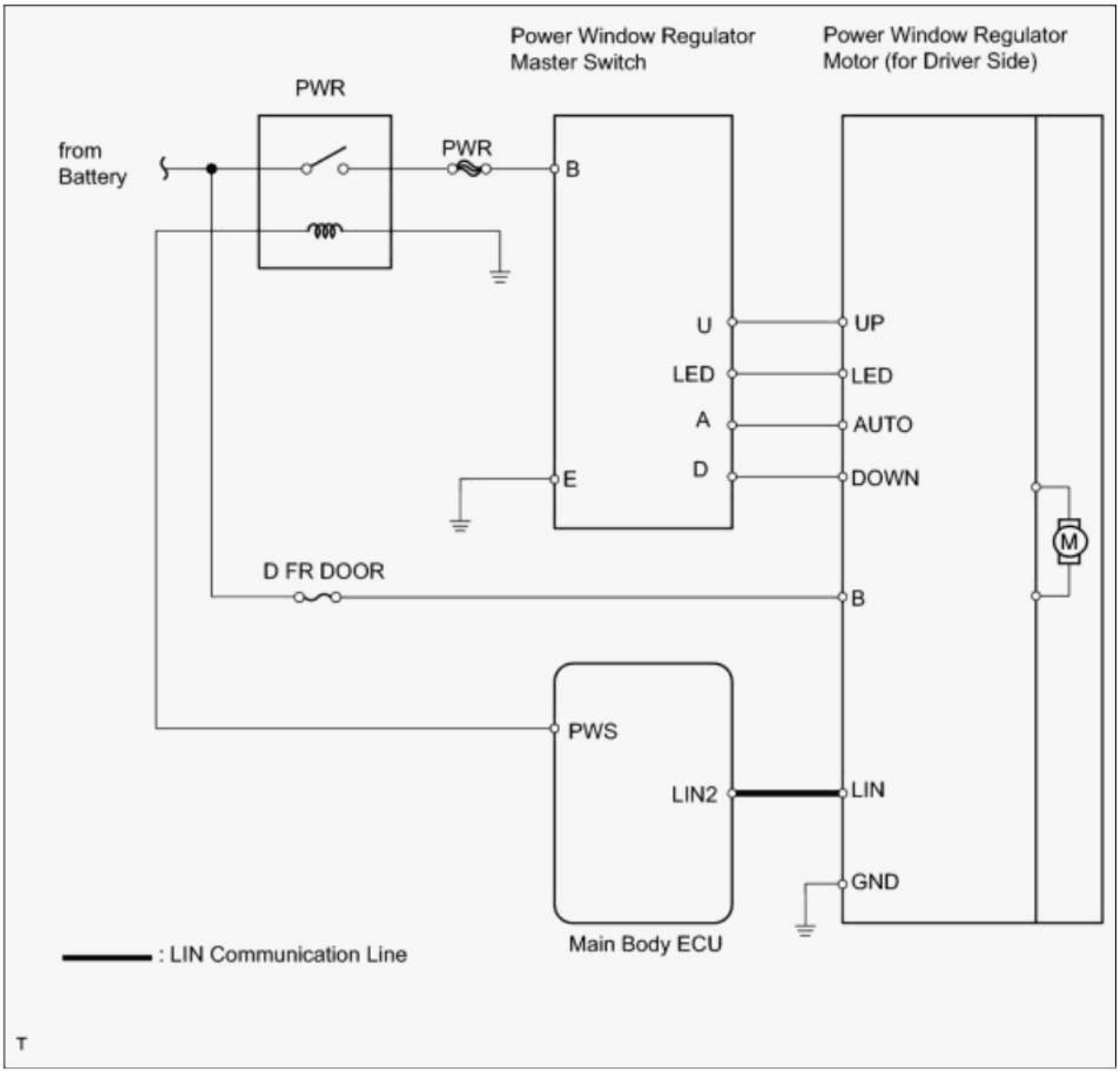
- The power window control system uses a multiplex communication system (LIN). Inspect the communication function by following HOW TO PROCEED WITH TROUBLESHOOTING. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (on the driver side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the AUTO UP function is used. In such cases, the AUTO UP function can be resumed by repeating the following operation at least 5 times:
    a. Close the power window by fully pulling up the power window switch and holding it at the AUTO UP position.
    b. Open the power window by fully pushing down the switch.
- When the ECU determines that the driver door power window regulator motor has a malfunction, DTC B2311 is set.

HINT:

If the pulse sensor built into the power window regulator motor (on the driver side) malfunctions, the power window control system enters fail-safe mode. The remote UP / DOWN and AUTO UP / DOWN functions cannot be operated during fail-safe mode. (However, the power window can be closed by holding the power window switch in the AUTO UP position, and opened manually by pushing down the switch.)

WIRING DIAGRAM

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INSPECTION PROCEDURE

PROCEDURE

1.	**CHECK DTC**

(a) Check for DTCs.

(b) Connect Techstream to the DLC3.

(c) By following the tester screen display, check whether any DTCs are output.

Result

DISPLAY	PROCEED TO

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DISPLAY	PROCEED TO
No output	A
DTC output	B

B ▶ **GO TO DIAGNOSTIC TROUBLE CODE CHART**

A

▼

2.	PERFORM ACTIVE TEST USING TECHSTREAM (POWER WINDOW UP/DOWN)

(a) Perform the Active Test, using Techstream to generate a control command, and then check the power window operation.

D-Door Motor

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
P/W Up / Down	Power Window	UP / OFF	-
P/W Up / Down	Power Window	DOWN / OFF	-

OK:

Driver side power window operates normally.

CAUTION:

Be careful to avoid injuries as this test causes vehicle parts to move.

NG ▶ **INSPECT FUSE (D FR DOOR)**

OK

▼

3.	READ VALUE USING TECHSTREAM (MASTER SWITCH)

(a) Check the Data list for proper functioning of the power window master switch.

D-Door Motor

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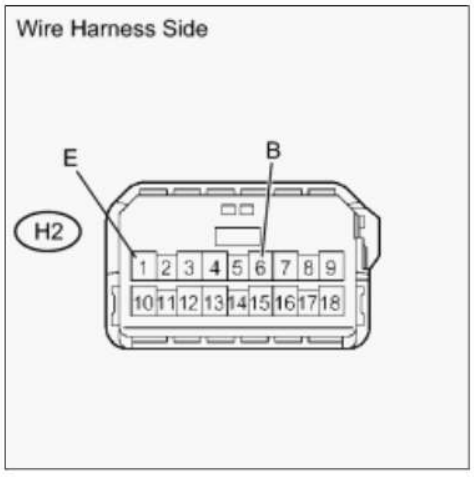
TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
D Door P/W Auto SW	Driver side power window AUTO switch signal / ON or OFF	ON: Driver side power window AUTO switch operates OFF: Driver side power window AUTO switch does not operate	-
D Door P/W Up SW	Driver side power window UP switch signal / ON or OFF	ON: Driver side power window UP switch operates OFF: Driver side power window UP switch does not operate	-
D Door P/W Down SW	Driver side power window DOWN switch signal / ON or OFF	ON: Driver side power window DOWN switch operates OFF: Driver side power window DOWN switch does not operate	-

OK:
ON (switch operates) appears on screen.

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)**

NG ▼

4.	**CHECK WIRE HARNESS (SWITCH INPUT POWER SUPPLY)**



(a) Disconnect the H2 switch connector.

(b) Turn the ignition switch ON.

(c) Measure the voltage of the wire harness side connector.

Standard voltage:

TESTER CONNECTION	SPECIFIED CONDITION
H2-6 (B) - H2-1 (E)	10 to 14 V

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

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OK

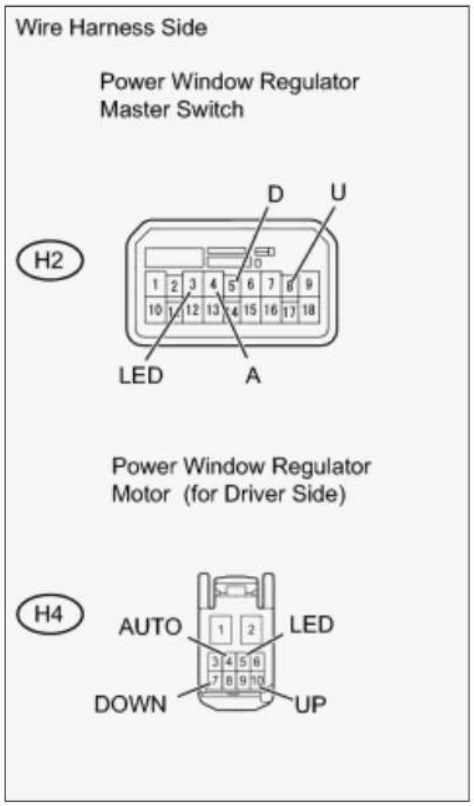
5.	CHECK WIRE HARNESS (MASTER SWITCH - REGULATOR MOTOR)

(a) Disconnect the H2 switch connector.

(b) Disconnect the H4 motor connector.

(c) Measure the resistance of the wire harness side connectors.

Standard resistance:



TESTER CONNECTION	SPECIFIED CONDITION
H2-8 (U) - H4-10 (UP)	Below 1 Ω
H2-5 (D) - H4-7 (DOWN)	Below 1 Ω
H2-4 (A) - H4-4 (AUTO)	Below 1 Ω
H2-3 (LED) - H4-5 (LED)	Below 1 Ω

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

OK ▶ **REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY**

6.	INSPECT FUSE (D FR DOOR)

(a) Remove the D FR DOOR fuse from the instrument panel junction block.

Standard resistance:

Below 1 Ω

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NG ▶ **REPLACE FUSE (D FR DOOR)**

OK ▼

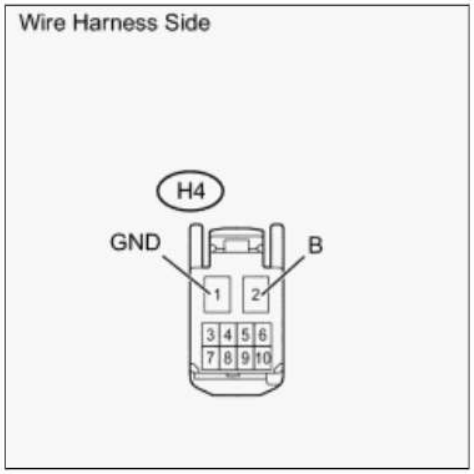
7.	**CHECK WIRE HARNESS (MOTOR INPUT POWER SUPPLY)**

(a) Disconnect the H4 motor connector.

(b) Measure the voltage of the wire harness side connector.

Standard voltage:

TESTER CONNECTION	SPECIFIED CONDITION
H4-2 (B) - H4-1 (GND)	10 to 14 V



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

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)**

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Last Modified: 9-7-2011	6.4 D	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000022SM006X
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: DTC CHECK / CLEAR (2011 RAV4)		

DTC CHECK / CLEAR

1. CHECK DTC

(a) Connect Techstream to the DLC3.

(b) Turn the ignition switch ON and turn the tester on.

(c) Check the DTC(s).

2. CLEAR DTC

(a) Connect Techstream to the DLC3.

(b) Turn the ignition switch ON and turn the tester on.

(c) Check that "DTCs are cleared" is displayed.

NOTICE:

If any DTCs are output, troubleshoot those DTCs again.

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Last Modified: 9-7-2011	6.4 U	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000X8Z05KX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: FAIL-SAFE CHART (2011 RAV4)		

FAIL-SAFE CHART

1. POWER WINDOW OPERATION IN FAIL-SAFE MODE

HINT:

If the pulse sensor built into the power window regulator motor (on the driver side) malfunctions, the power window control system enters fail-safe mode.

(a) The power window control system prohibits the following power window operation when the pulse sensor for the jam protection function has problems and the window position or the learned value is abnormal.

Power window control system

POWER WINDOW OPERATION	IGNITION SWITCH ON	KEY-OFF (WITHIN APPROX. 45 SECONDS AFTER IGNITION SWITCH TURNED OFF)	KEY-OFF (AFTER APPROX. 45 SECONDS ELAPSED AFTER IGNITION SWITCH TURNED OFF)
Manual UP	Operation prohibited	Operation prohibited	Operation prohibited
Manual DOWN	Operative (Jam protection not operative)	Operation prohibited	Operation prohibited
AUTO UP (hold switch at AUTO UP position)	Operative (in MANUAL mode) (Jam protection not operative)	Operation prohibited	Operation prohibited
AUTO UP	Operation prohibited	Operation prohibited	Operation prohibited
AUTO DOWN	Operation prohibited	Operation prohibited	Operation prohibited

HINT:

When the pulse sensor is normal, the AUTO UP / DOWN function can be resumed by deactivating fail-safe mode. To deactivate fail-safe mode, pull up the driver door power window switch to the AUTO UP position and hold it for at least 1 second to fully close the window from the fully open position.

(b) If the LIN communication system malfunctions (communication blackout), the power window control system prohibits the following operations.

LIN communication system

POWER WINDOW OPERATION	IGNITION SWITCH ON

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POWER WINDOW OPERATION	IGNITION SWITCH ON
MANUAL UP	Operative (Jam protection operative)
MANUAL DOWN	Operative (Jam protection not operative)
AUTO UP (hold switch at AUTO UP position)	Operative (Jam protection operative)*
AUTO UP	Operative (Jam protection operative)*
AUTO DOWN	Operative (Jam protection not operative)*

HINT:

***: The driver side power window does not operate.**

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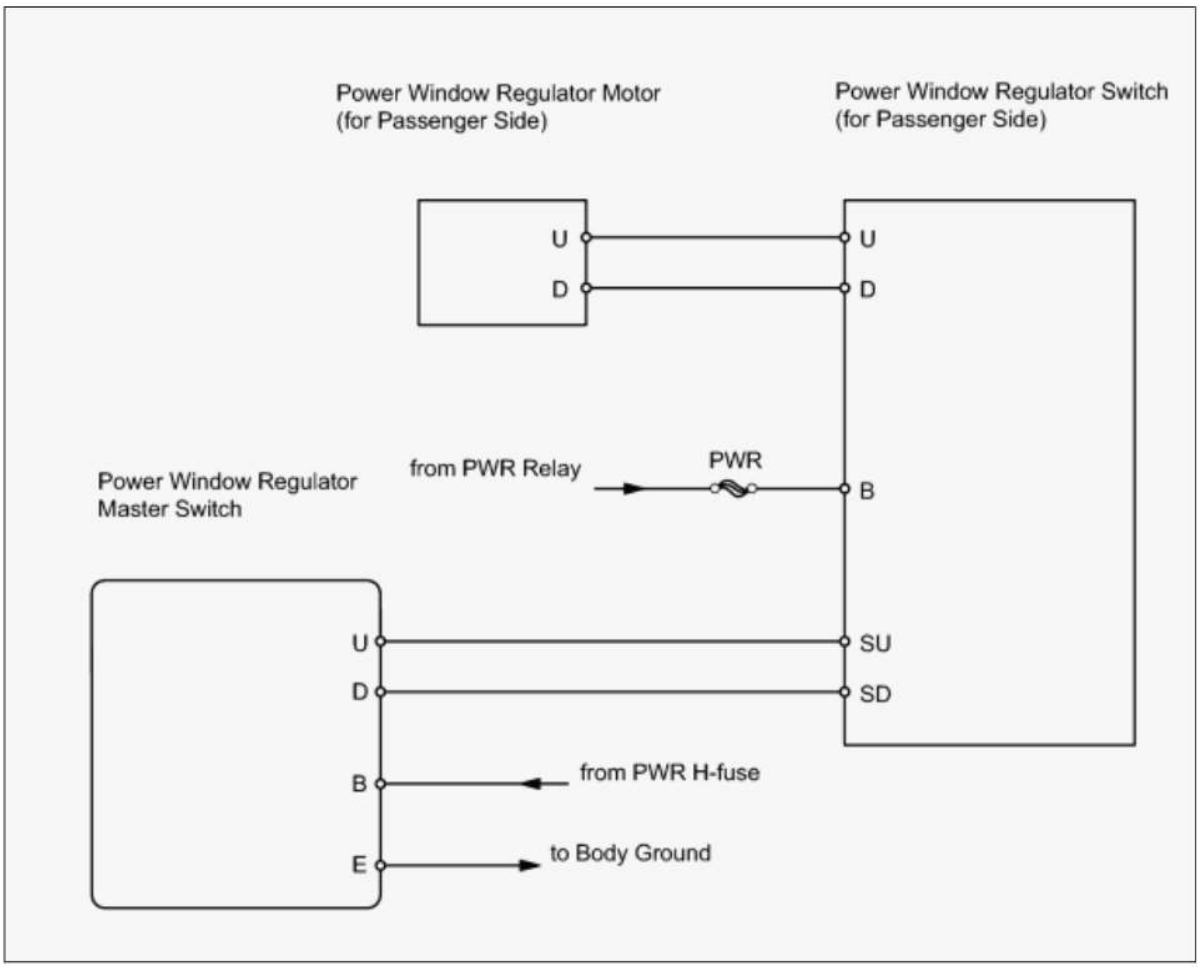
Last Modified: 9-7-2011	6.4 J	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000XI0028X
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: Front Passenger Side Power Window does not Operate with Front Passenger Side Power Window Switch (2011 RAV4)		

Front Passenger Side Power Window does not Operate with Front Passenger Side Power Window Switch

DESCRIPTION

When the engine is running or the ignition switch is ON and the window lock switch of the power window regulator master switch is normal, the front passenger door power window regulator motor is driven by operating the front passenger door power window regulator switch.

WIRING DIAGRAM

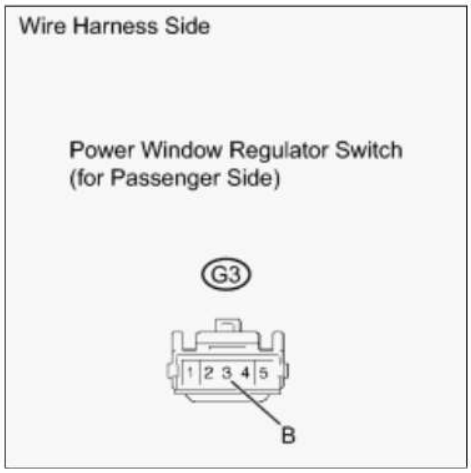


INSPECTION PROCEDURE

PROCEDURE

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1.	**CHECK WIRE HARNESS (INPUT POWER SUPPLY)**



(a) Disconnect the G3 switch connector.

(b) Turn the ignition switch ON.

(c) Measure the voltage of the wire harness side connector.

Standard voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
G3-3 (B) - Body ground	Ignition switch ON	10 to 14 V

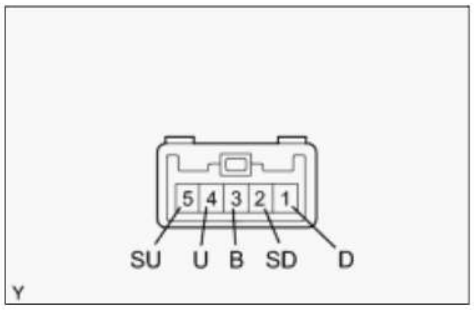
NG ▶ **INSPECT FUSE AND REPLACE IT IF NECESSARY, OR INSPECT AND REPAIR WIRE HARNESS AND CONNECTOR**

OK ▼

2.	**INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Front Passenger Side)**

(a) Remove the power window regulator switch.

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(b) Measure the resistance of the switch when the switch is operated.

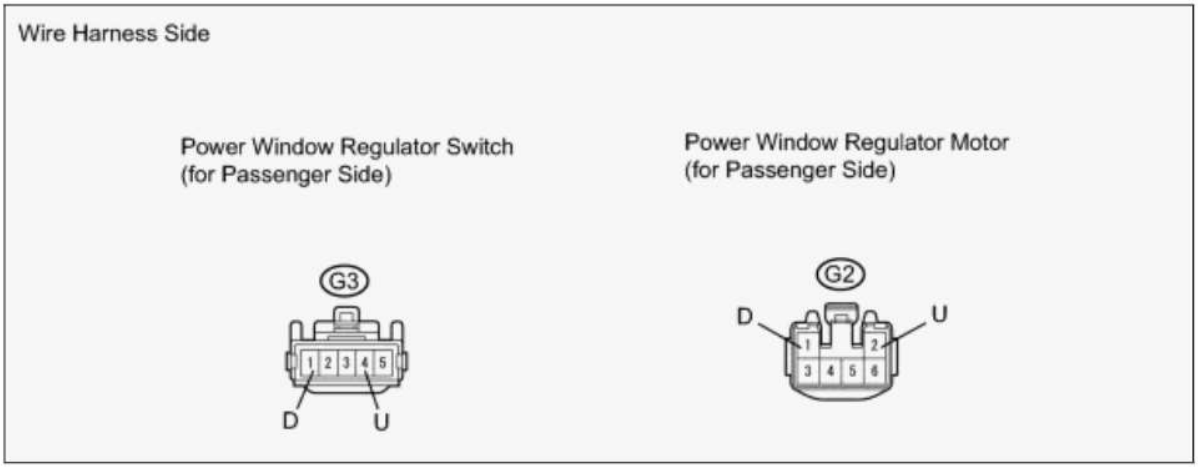
Standard resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 (D) - 2 (SD) 3 (B) - 4 (U)	UP	Below 1 Ω
4 (U) - 5 (SU) 1 (D) - 2 (SD)	OFF	Below 1 Ω
1 (D) - 3 (B) 4 (U) - 5 (SU)	DOWN	Below 1 Ω

NG ▶ **REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Front Passenger Side)**

OK ▼

3.	**CHECK WIRE HARNESS (REGULATOR SWITCH - REGULATOR MOTOR)**



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(a) Disconnect the G3 switch connector.

(b) Disconnect the G2 motor connector.

(c) Measure the resistance of the wire harness side connectors.

Standard resistance:

TESTER CONNECTION	SPECIFIED CONDITION
G3-4 (U) - G2-2 (U)	Below 1 Ω
G3-1 (D) - G2-1 (D)	Below 1 Ω
G3-4 (U) or G2-2 (U) - Body ground	10 kΩ or higher
G3-1 (D) or G2-1 (D) - Body ground	10 kΩ or higher

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

OK ▼

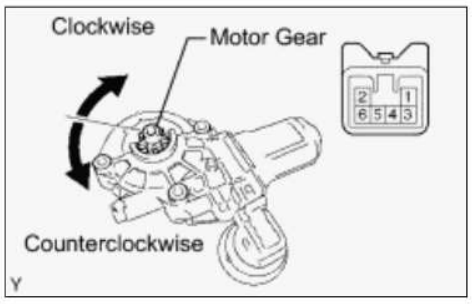
4.	**INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)**

(a) Remove the power window regulator motor.

(b) Apply the battery voltage to connector terminals 1 and 2.

NOTICE:

Do not apply the battery voltage to any terminals except terminals 1 and 2.



(c) Check that the motor gear rotates smoothly as follows.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates clockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates counterclockwise

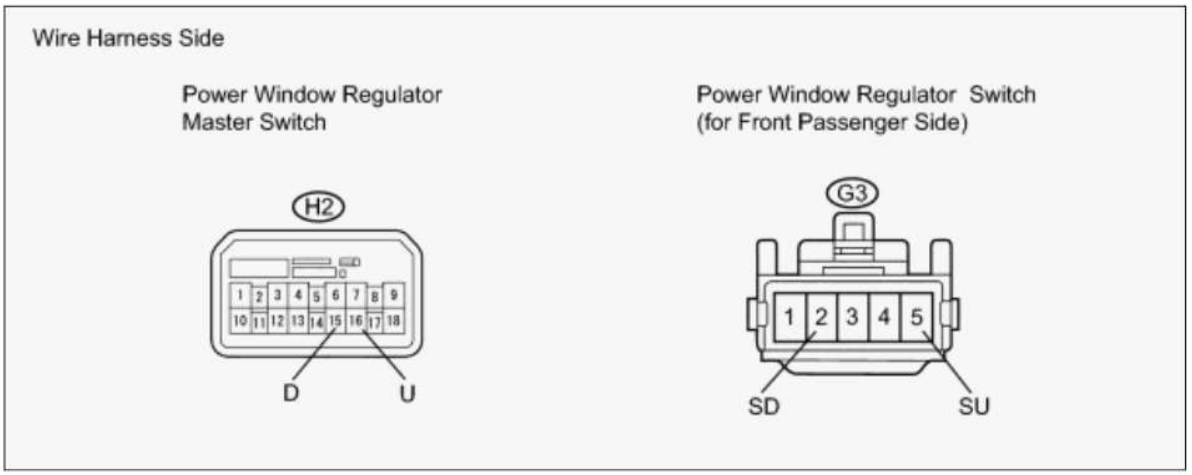
NG ▶ **REPLACE POWER WINDOW REGULATOR**

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MOTOR ASSEMBLY (for Front Passenger Side)

OK

5.	**CHECK WIRE HARNESS (MASTER SWITCH - REGULATOR SWITCH)**



(a) Disconnect the H2 switch connector.

(b) Disconnect the G3 switch connector.

(c) Measure the resistance of the wire harness side connectors.

Standard resistance:

TESTER CONNECTION	SPECIFIED CONDITION
H2-16 (U) - G3-5 (SU)	Below 1Ω
H2-15 (D) - G3-2 (SD)	Below 1Ω
H2-16 (U) or G3-5 (SU) - Body ground	10 kΩ or higher
H2-15 (D) or G3-2 (SD) - Body ground	10 kΩ or higher

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

OK ▶ **REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY**

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Last Modified: 9-7-2011	6.4 D	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000PY202JX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING (2011 RAV4)		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use these procedures to troubleshoot the power window control system.
- *: Use Techstream.

1.	**VEHICLE BROUGHT TO WORKSHOP**

NEXT

2.	**INSPECT BATTERY VOLTAGE**

Standard voltage:
11 to 14 V

HINT:

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

NEXT

3.	**INSPECT COMMUNICATION FUNCTION OF LIN COMMUNICATION SYSTEM***

(a) Using Techstream, inspect the LIN communication function to ensure there are no malfunctions in the communication system.

Result

RESULT	PROCEED TO
No DTCs output	A

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RESULT	PROCEED TO
DTCs output	B

B ▶ **GO TO DIAGNOSTIC TROUBLE CODE CHART**

A ▼

4.	**PROBLEM SYMPTOMS TABLE**

Result

RESULT	PROCEED TO
Fault not listed in problem symptoms table	A
Fault listed in problem symptoms table	B

B ▶ **GO TO STEP 6**

A ▼

5.	**OVERALL ANALYSIS AND TROUBLESHOOTING***

(a) Operation Check INFO .

(b) Terminals of ECU INFO .

(c) DATA LIST / ACTIVE TEST INFO .

NEXT ▼

6.	**ADJUST, REPAIR OR REPLACE**

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NEXT

7.	CONFIRMATION TEST

NEXT

8.	RESET POWER WINDOW MOTOR

(a) If the power window master switch AUTO light is blinking, reset the power window motor INFO .

NEXT END

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Last Modified: 9-7-2011	6.4 D	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000PYB01RX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: INITIALIZATION (2011 RAV4)		

INITIALIZATION

CAUTION:

When the power window regulator motor assembly (on the driver side) is reinstalled or replaced, the power window control system must be initialized. Functions such as the AUTO UP / DOWN, jam protection and key-off do not operate if the initialization is not performed.

NOTICE:

- When the power window regulator motor assembly (on the driver side) is replaced, DTC B2313 is output. Clear the DTC after the initialization.
- When the initialization cannot be completed successfully, LIN communication problems are a possible cause, therefore the LIN system needs to be inspected.
- When performing initialization, do not perform any other procedures.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the AUTO UP function is used, due to detection of the different operation learned value of the door glass movement speed. In such cases, the AUTO UP function can be resumed by repeating the following operation at least 5 times:

  a. Open the power window by fully pushing down the switch.
  b. Close the power window by fully pulling up the power window switch and holding it at the AUTO UP position.

1. INITIALIZE POWER WINDOW CONTROL SYSTEM (POWER WINDOW REGULATOR MOTOR ASSEMBLY (ON DRIVER SIDE))

HINT:

By resetting the door glass position of the driver door power window (the pulse sensor), the power window regulator motor (on the driver side) is initialized.

(a) Connect the battery and turn the ignition switch ON.

(b) The AUTO Light of the power window regulator master switch flashes when the initialization preparation is complete.

(c) *1: Fully open the driver door power window by pressing down the driver door power window switch, and continue pressing it for at least 1 second after the window is fully opened.

(d) *2: Fully close the driver door power window by pulling up the switch, and continue pulling it up for at least 1 second after the window is fully closed.

(e) The driver door power window position is reset (the pulse sensor is initialized), and the power window regulator master switch AUTO Light changes from flashing to continuous illumination to indicate that the initialization has been successfully completed.

HINT:

If the AUTO Light does not change to continuous illumination, even when step *2 is finished, repeat the procedure from step *1.

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Last Modified: 9-7-2011	6.4 J	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000014PG03HX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: Key-off Operation Function Operates even if Operating Conditions are not Satisfied (2011 RAV4)		

Key-off Operation Function Operates even if Operating Conditions are not Satisfied

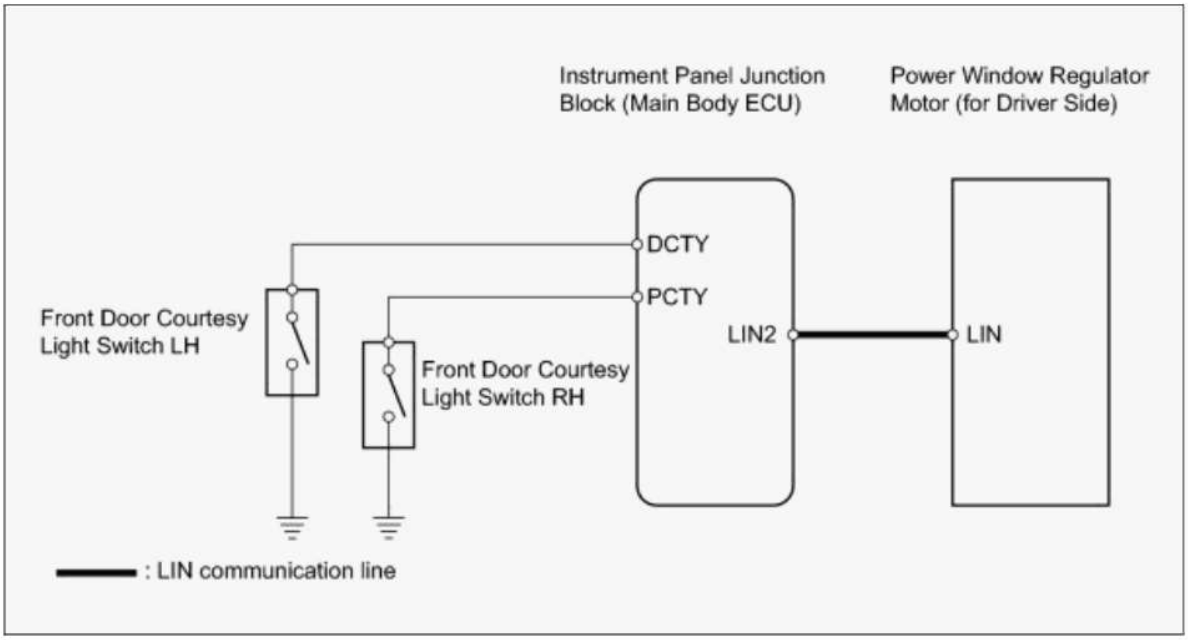
DESCRIPTION

When the driver door has not been opened and fully closed, each door power window regulator motor can control its power window operation for approximately 45 seconds after the ignition switch is turned from ON to OFF (the key is removed) by receiving operation permission signals from the main body ECU. However, when approximately 45 seconds have elapsed, or the driver door or front passenger side door is opened within approximately 45 seconds of the ignition switch being turned OFF (the key is removed), the power window regulator motor stops operating.

NOTICE:

- The power window control system uses a multiplex communication system (LIN). Inspect the communication function by following HOW TO PROCEED WITH TROUBLESHOOTING. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- The power window control system prohibits the AUTO UP / DOWN function when the jam protection function malfunctions. Therefore, troubleshoot the power window control system after confirming that no diagnostic codes are displayed.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

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When using Techstream to troubleshoot the LIN communication line: Connect Techstream to the vehicle, and turn the courtesy light switch on and off at 1.5 second intervals until communication between the tester and vehicle begins.

PROCEDURE

1.	**READ VALUE USING TECHSTREAM (LIN COMMUNICATION)**

(a) Use the Data List to check the function of the power window regulator master switch.

(1) Connect Techstream to the DLC3.

(2) Turn the ignition switch ON and turn the tester on.

(3) Read the indication displayed on the tester.

Main body

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Communication D-Door Motor	Connection status between power window regulator motor assembly (driver side) and main body ECU / OK or Stop	OK: Connection Stop: No connection	-

OK:
OK is displayed on Techstream screen.

NG ▶ **GO TO ENGINE IMMOBILISER SYSTEM (B2785)**

OK ▼

2.	**CHECK OPERATION FUNCTION AFTER IGNITION SWITCH IS TURNED OFF**

(a) Check the power window operation function after the ignition switch is turned off.

Result

STATUS	PROCEED TO
When power window can still be operated even after opening driver door and passenger door within approximately 45 seconds of ignition switch being turned off	A
When power window can still be operated even after approximately 45 seconds have elapsed after ignition switch turned off	B

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B **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)**

A

3.	**READ VALUE USING TECHSTREAM (DOOR COURTESY LIGHT SWITCH)**

(a) Use the Data List to check the driver side door courtesy switch signal.

(1) Connect Techstream to the DLC3.

(2) Turn the ignition switch ON and turn the tester on.

(3) Read the indication displayed on the tester.

Main body

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
D Door Courtesy SW	Driver side door courtesy switch signal / ON or OFF	ON: Driver door open OFF: Driver door closed	-
P Door Courtesy SW	Front passenger side door courtesy switch signal / ON or OFF	ON: Front passenger door open OFF: Front passenger door closed	-

OK:

OK is displayed on Techstream screen.

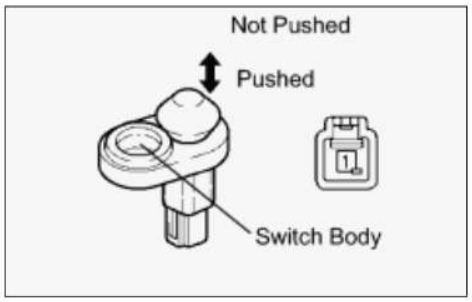
OK **REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)**

NG

4.	**INSPECT FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY**

(a) Measure the resistance of the switch.

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Standard resistance:

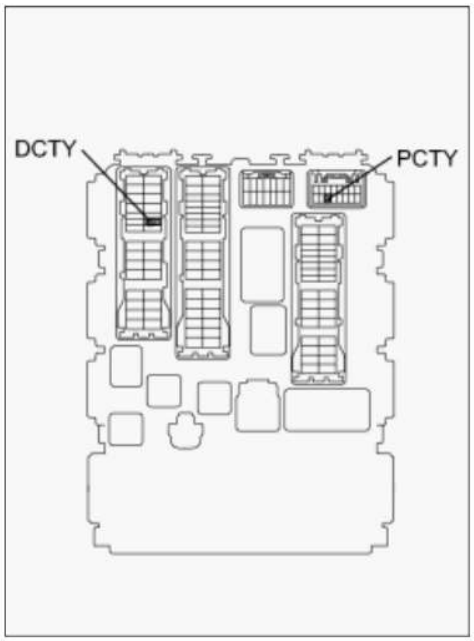
TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 - Switch body	Pushed	10 kΩ or higher
1 - Switch body	Not pushed	Below 1 Ω

NG ▶ **REPLACE DOOR COURTESY LIGHT SWITCH ASSEMBLY**

OK ▼

5.	CHECK INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)

(a) Measure the voltage without removing the IA, IC junction block connector.



Standard voltage:

for Driver side

for Passenger side

TESTER CONNECTION	DRIVER DOOR CONDITION	SPECIFIED CONDITION
IA-21 (DCTY) - Body ground	Fully closed	10 to 14 V
IA-21 (DCTY) - Body ground	Open	Below 1 V

TESTER CONNECTION	DRIVER DOOR CONDITION	SPECIFIED CONDITION
IC-14 (PCTY) - Body ground	Fully closed	10 to 14 V
IC-14 (PCTY) - Body ground	Open	Below 1 V

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

OK ▶ **REPLACE INSTRUMENT PANEL JUNCTION BLOCK**

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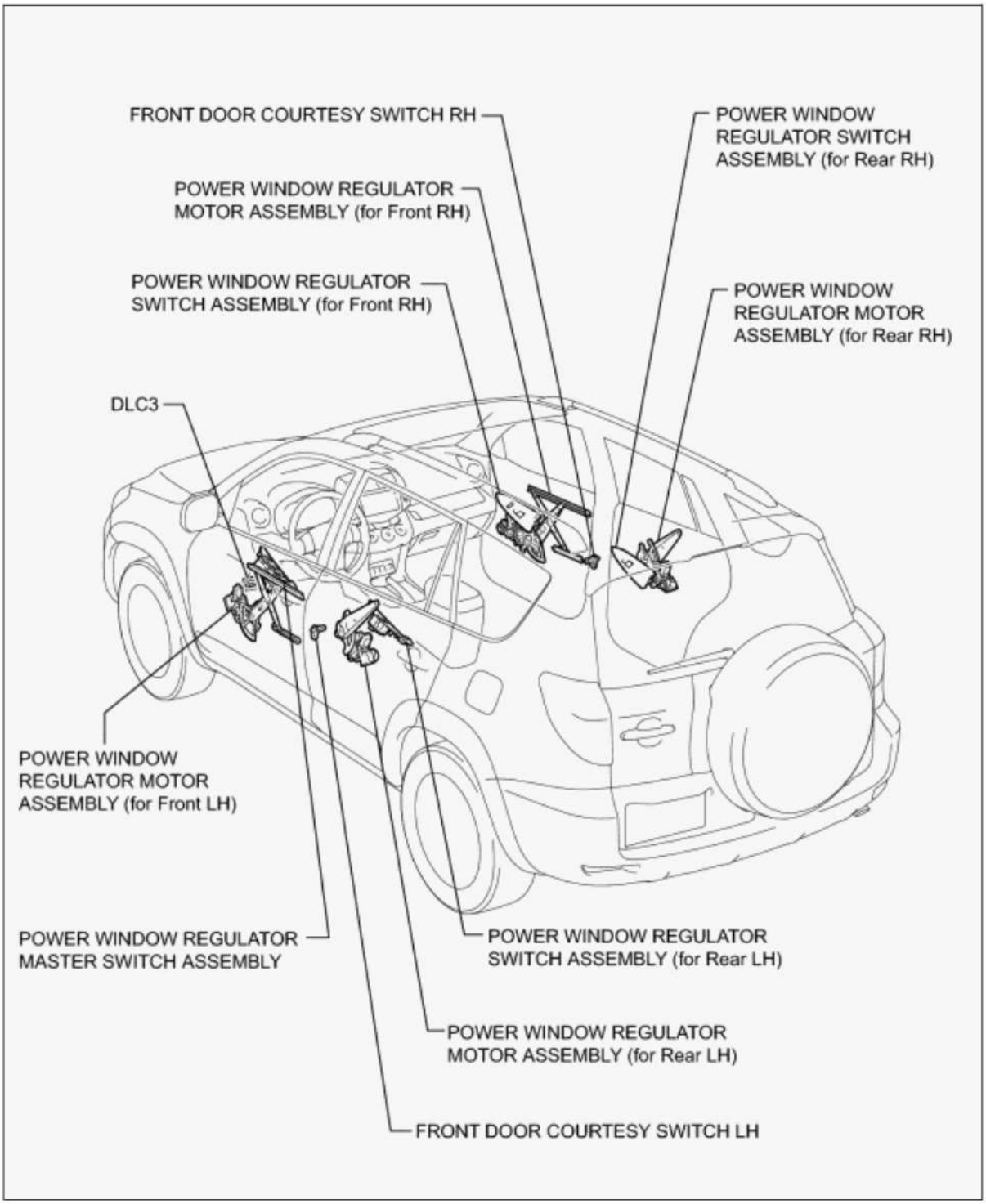
(MAIN BODY ECU)

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Last Modified: 9-7-2011	6.4 R	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000PY1016X
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: PARTS LOCATION (2011 RAV4)		

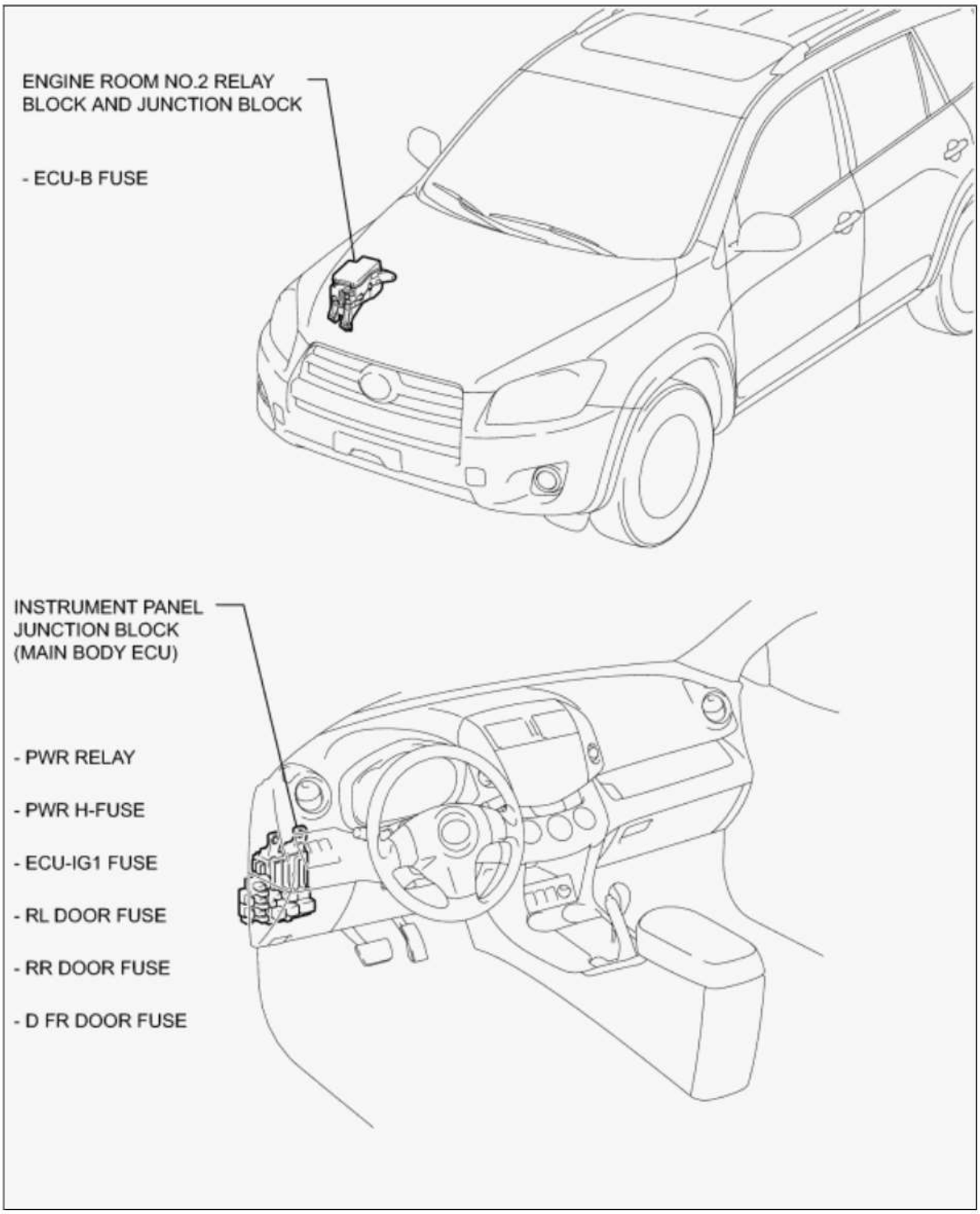
PARTS LOCATION

ILLUSTRATION



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ILLUSTRATION



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Last Modified: 9-7-2011	6.4 L	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000PY0014X
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: PRECAUTION (2011 RAV4)		

PRECAUTION

1. IGNITION SWITCH EXPRESSION

HINT:

The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

EXPRESSION	IGNITION SWITCH (POSITION)	ENGINE SWITCH (CONDITION)
Ignition Switch off	Off	Off
Ignition Switch ON	ON	On (IG)
Ignition Switch ACC	ACC	On (ACC)
Engine Start	START	Start

2. PRECAUTIONS WHEN USING TECHSTREAM

(a) When using the Techstream to troubleshoot the LIN communication line: Connect the Techstream to the vehicle, and turn the courtesy light switch on and off at 1.5 second intervals until communication between the tester and vehicle begins.

(b) After all DTCs are cleared, check if the trouble occurs again 6 seconds after the ignition switch is turned ON.

3. POWER WINDOW CONTROL SYSTEM PRECAUTIONS

NOTICE:

- The power window control system uses a multiplex communication system (LIN). Inspect the communication function by following HOW TO PROCEED WITH TROUBLESHOOTING. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- The power window control system prohibits the AUTO UP / DOWN function when the jam protection function malfunctions. Therefore, troubleshoot the power window control system after confirming that no diagnostic codes are displayed.
- When the front door window regulator (on the driver side) or the power window regulator motor assembly (on the driver side) is replaced, the power window control system must be initialized INFO .
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the AUTO UP function is used. In such cases, the AUTO UP function can be resumed by repeating the following operation at least 5 times:
    a. Close the power window by fully pulling up the power window switch and holding it at the AUTO UP position.
    b. Open the power window by fully pushing down the switch.
- The jam protection function may operate unexpectedly even when the power window control system is normal, due to detection of the different operation learned value when the door glass moving speed changes sharply under any of the following conditions:
    a. A power window being opened or closed while the vehicle is running on a rough road.

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b. A power window being opened or closed while the door is being opened or closed.
c. A sharp voltage change.

- Do not disconnect the battery while the ignition switch is ON. Otherwise DTC B2311 will be output.





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Last Modified: 9-7-2011	6.4 T	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000PY801BX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: PROBLEM SYMPTOMS TABLE (2011 RAV4)		

PROBLEM SYMPTOMS TABLE

Power window control system

SYMPTOM	SUSPECTED AREA	SEE PAGE
Unable to operate driver power window with power window regulator master switch	1. D FR DOOR fuse	INFO
	2. Power fuse	-
	3. Power window regulator master switch	-
	4. Power window regulator motor (on driver side)	-
	5. Main body ECU	-
Unable to operate passenger power window with power window regulator switch (on front passenger side)	1. Power fuse	INFO
	2. Power window regulator master switch (on passenger side)	-
	3. Power window regulator motor (on passenger side)	-
	4. Wire harness	-
Unable to operate rear power window LH with power window regulator switch (on rear LH)	1. RL DOOR fuse	INFO
	2. Power window regulator switch (rear LH)	-
	3. Power window regulator motor (rear LH)	-
Unable to operate rear power window RH with power window regulator switch (on rear RH)	1. RR DOOR fuse	INFO
	2. Power window regulator switch (rear RH)	-
	3. Power window regulator motor (rear RH)	-
AUTO UP / DOWN function does not operate (MANUAL UP / DOWN function operates)	1. D FR DOOR fuse	INFO
	2. Power window regulator master switch	-
	3. Power window regulator motor (on driver side)	-
	4. Wire harness	-

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SYMPTOM	SUSPECTED AREA	SEE PAGE
Unable to operate passenger power window with power regulator master switch (regulator switch normal	1. Power window regulator master switch	INFO
	2. Wire harness	-
Power windows operate under improper operating conditions after ignition switch turned off (key-off)	1. Power window regulator master switch	INFO
	2. Front door courtesy light switch	-
	3. Main body ECU	-
	4. Wire harness	-
Unable to fully close power window with AUTO UP function (jam protection activated)	1. Door glass run and window guide	INFO
	2. Power window regulator master switch	-
	3. Power window regulator motor (on driver side)	-

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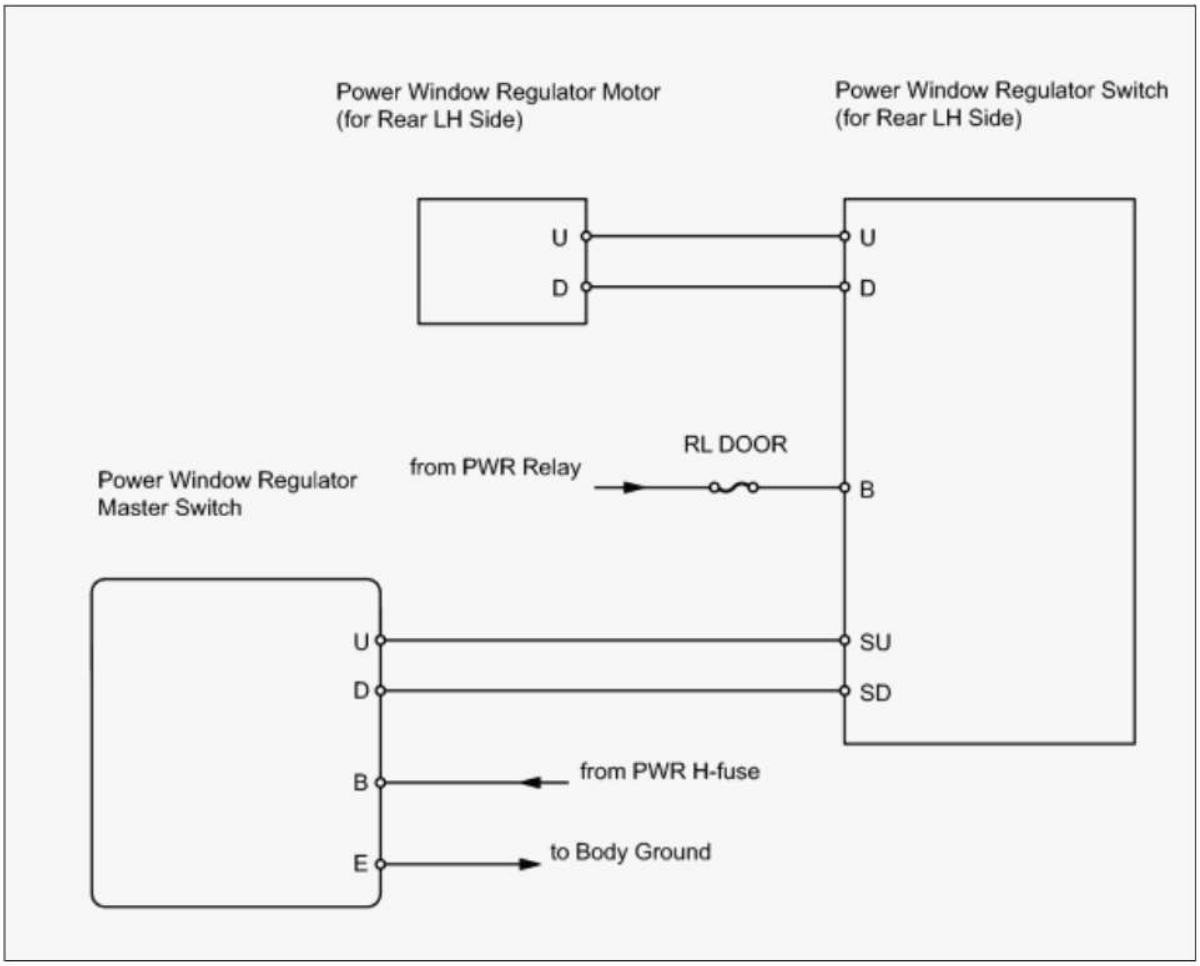
Last Modified: 9-7-2011	6.4 J	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000010ZM03UX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: Rear Power Window LH does not Operate with Rear Power Window Switch LH (2011 RAV4)		

Rear Power Window LH does not Operate with Rear Power Window Switch LH

DESCRIPTION

If the rear LH side manual UP / DOWN function does not operate, a malfunction may exist in the power window regulator motor, power window regulator switch, power window regulator master switch or wire harness.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

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1.	**INSPECT FUSE (RL DOOR)**

(a) Remove the RL DOOR fuse from the instrument panel junction block.

(b) Measure the resistance of the fuse.

Standard resistance:
Below 1 Ω

NG ▶ **REPLACE FUSE (RL DOOR)**

OK ▼

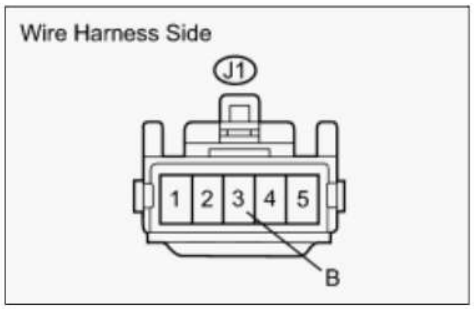
2.	**CHECK POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH) (POWER SOURCE)**

(a) Disconnect the J1 switch connector.

(b) Measure the voltage of the wire harness side connector.

Standard voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
J1-3 (B) - Body ground	Ignition switch ON	10 to 14 V



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

OK ▼

3.	**INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH)**

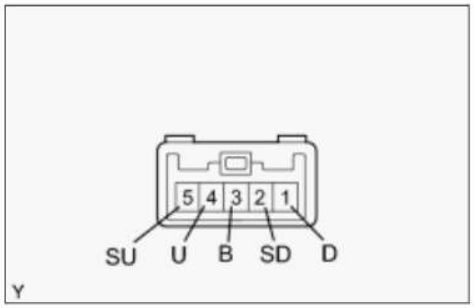
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(a) Remove the power window regulator switch.

(b) Measure the resistance of the switch when the switch is operated.

Standard resistance:

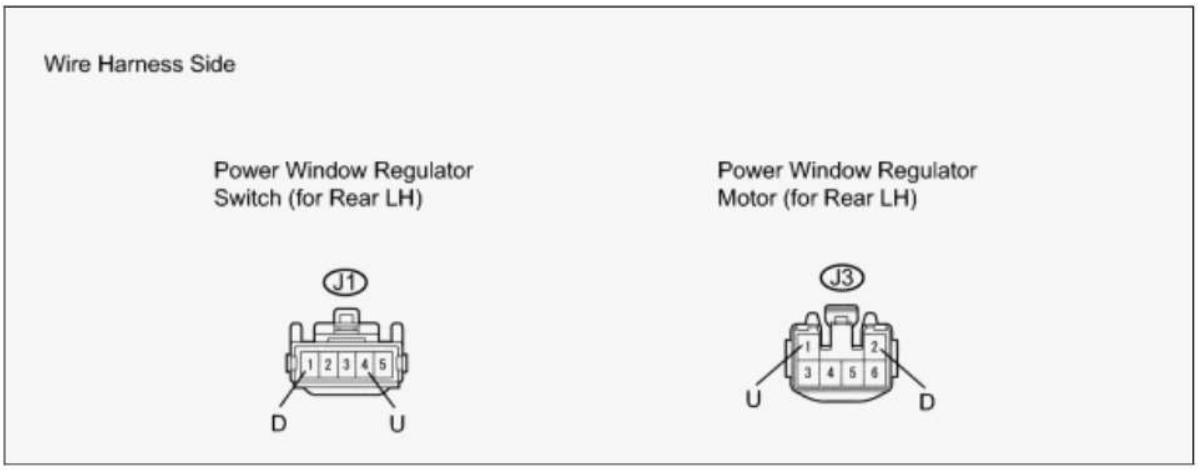
TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 (D) - 2 (SD) 3 (B) - 4 (U)	UP	Below 1 Ω
4 (U) - 5 (SU) 1 (D) - 2 (SD)	OFF	Below 1 Ω
1 (D) - 3 (B) 4 (U) - 5 (SU)	DOWN	Below 1 Ω



NG ▶ **REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH)**

OK ▼

4.	**CHECK WIRE HARNESS (REGULATOR SWITCH - REGULATOR MOTOR)**



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(a) Disconnect the J1 switch connector.

(b) Disconnect the J3 motor connector.

(c) Measure the resistance of the wire harness side connectors.

Standard resistance:

TESTER CONNECTION	SPECIFIED CONDITION
J1-4 (U) - J3-1 (U)	Below 1 Ω
J1-1 (D) - J3-2 (D)	Below 1 Ω
J1-4 (U) or J3-1 (U) - Body ground	10 kΩ or higher
J1-1 (D) or J3-2 (D) - Body ground	10 kΩ or higher

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

OK ▼

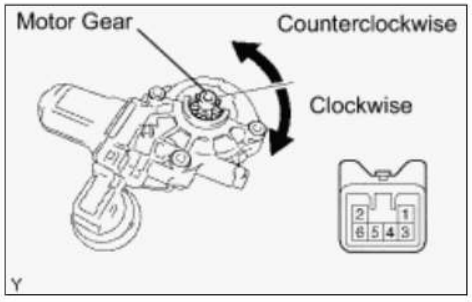
5.	**INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH)**

(a) Remove the power window regulator motor.

(b) Apply the battery voltage to connector terminals 1 and 2.

(c) Check that the motor gear rotates smoothly as follows.

OK:



MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates clockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates counterclockwise

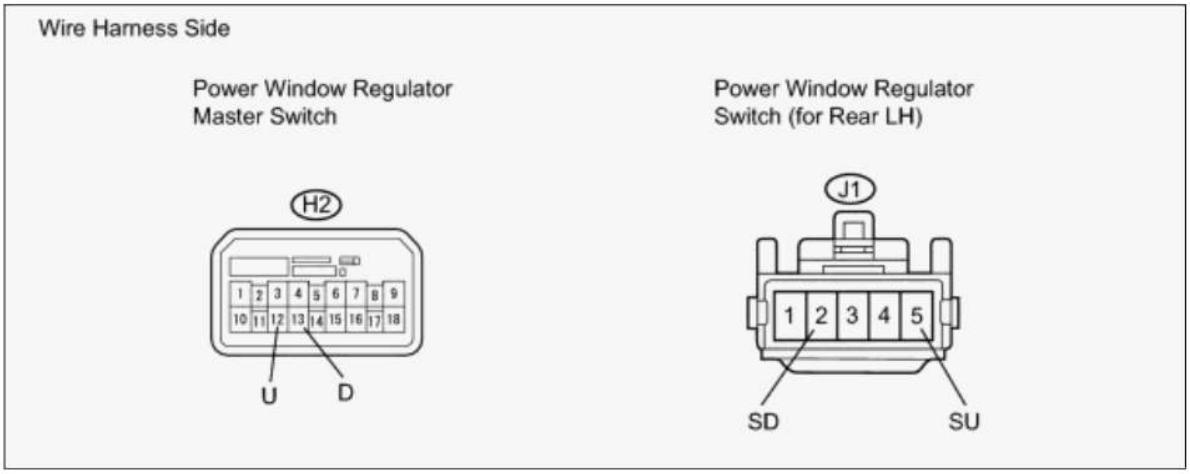
NG ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear**

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LH)

OK

6.	**CHECK WIRE HARNESS (REGULATOR MASTER SWITCH - REGULATOR SWITCH)**



(a) Disconnect the H2 switch connector.

(b) Disconnect the J1 switch connector.

(c) Measure the resistance of the wire harness side connectors.

Standard resistance:

TESTER CONNECTION	SPECIFIED CONDITION
H2-12 (U) - J1-5 (SU)	Below 1 Ω
H2-13 (D) - J1-2 (SD)	Below 1 Ω
H2-12 (U) or J1-5 (SU) - Body ground	10 kΩ or higher
H2-13 (D) or J1-2 (SD) - Body ground	10 kΩ or higher

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

OK ▶ **REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY**

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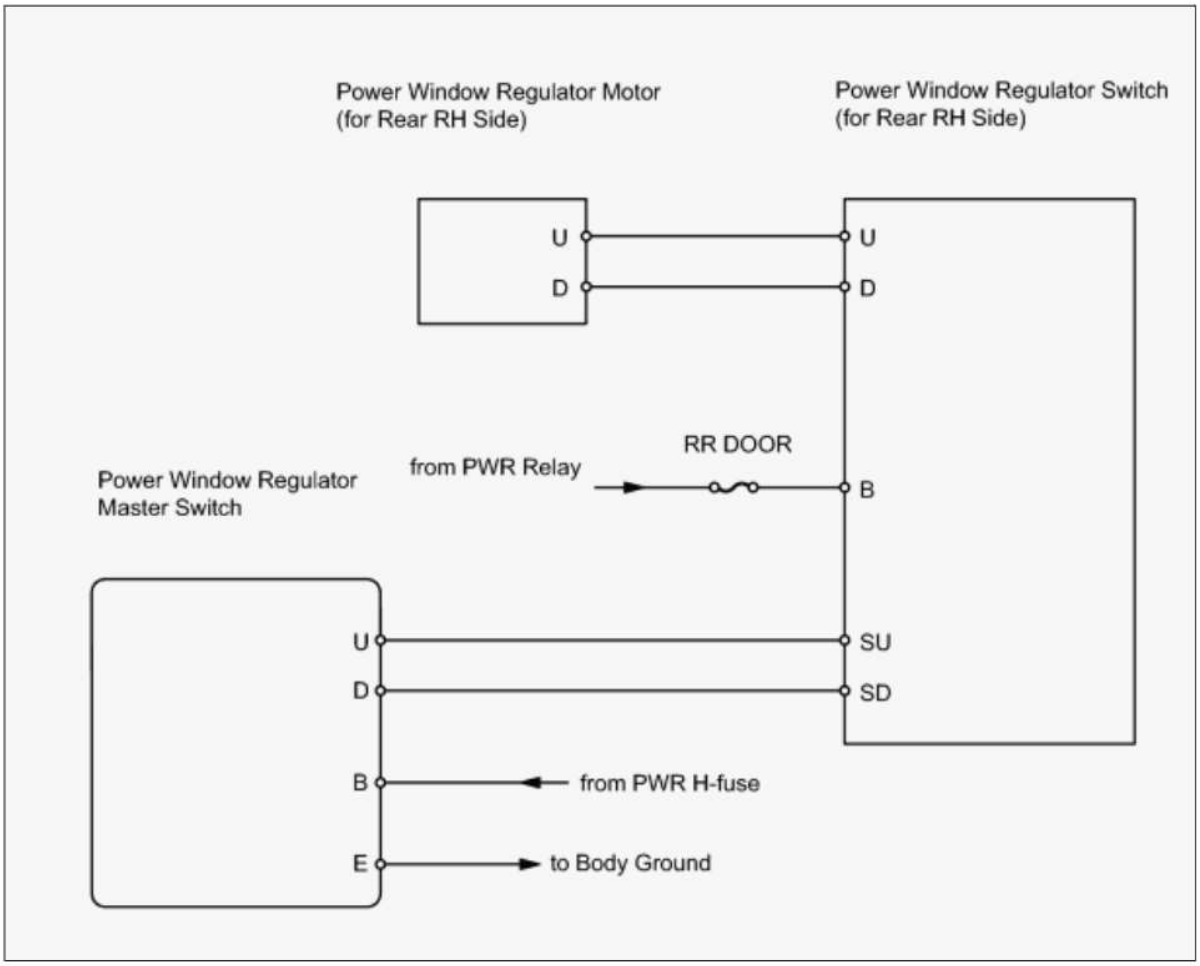
Last Modified: 9-7-2011	6.4 J	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000010ZH03RX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: Rear Power Window RH does not Operate with Rear Power Window Switch RH (2011 RAV4)		

Rear Power Window RH does not Operate with Rear Power Window Switch RH

DESCRIPTION

If the rear RH side manual UP / DOWN function does not operate, a malfunction may be present in the power window regulator motor, power window regulator switch, power window regulator master switch or wire harness.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

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1.	**INSPECT FUSE (RR DOOR)**

(a) Remove the RR DOOR fuse from the instrument panel junction block.

(b) Measure the resistance of the fuse.

Standard resistance:
Below 1 Ω

NG ▶ **REPLACE FUSE (RR DOOR)**

OK ▼

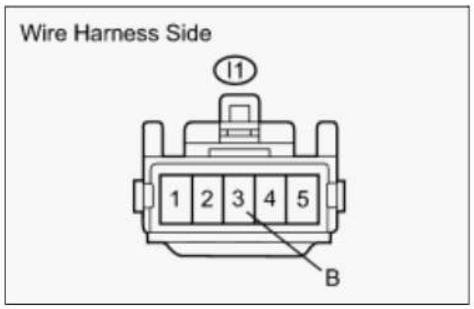
2.	**CHECK POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH) (POWER SOURCE)**

(a) Disconnect the I1 switch connector.

(b) Measure the voltage of the wire harness side connector.

Standard voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I1-3 (B) - Body ground	Ignition switch ON	10 to 14 V



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

OK ▼

3.	**INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH)**

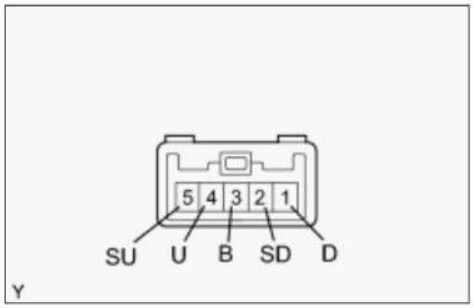
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(a) Remove the power window regulator switch.

(b) Measure the resistance of the switch when the switch is operated.

Standard resistance:

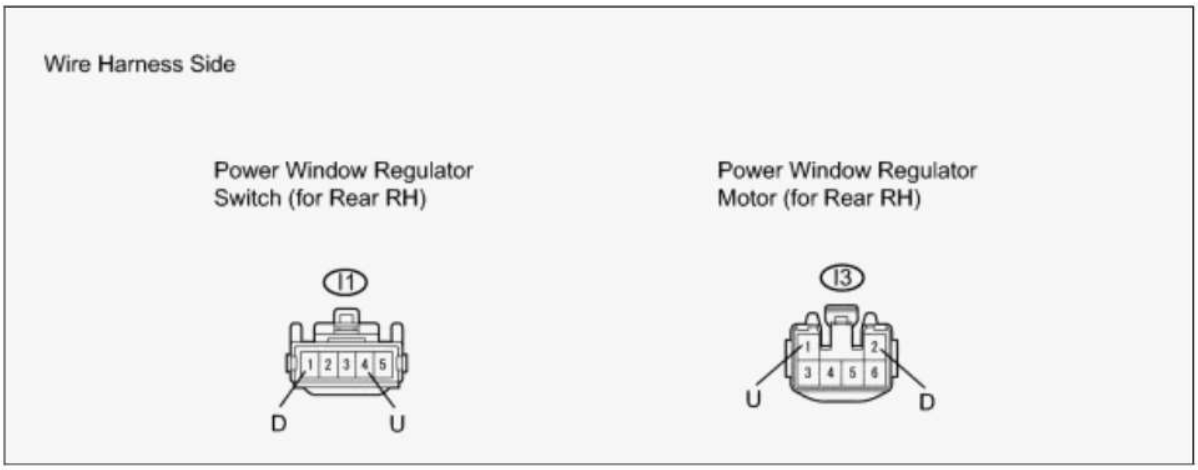
TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 (D) - 2 (SD) 3 (B) - 4 (U)	UP	Below 1 Ω
1 (D) - 2 (SD) 4 (U) - 5 (SU)	OFF	Below 1 Ω
1 (D) - 3 (B) 4 (U) - 5 (SU)	DOWN	Below 1 Ω



NG ▶ **REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH)**

OK ▼

4.	**CHECK WIRE HARNESS (REGULATOR SWITCH - REGULATOR MOTOR)**



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(a) Disconnect the I1 switch connector.

(b) Disconnect the I3 motor connector.

(c) Measure the resistance of the wire harness side connectors.

Standard resistance:

TESTER CONNECTION	SPECIFIED CONDITION
I1-4 (U) - I3-1 (U)	Below 1 Ω
I1-1 (D) - I3-2 (D)	Below 1 Ω
I1-4 (U) or I3-1 (U) - Body ground	10 kΩ or higher
I1-1 (D) or I3-2 (D) - Body ground	10 kΩ or higher

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

OK ▼

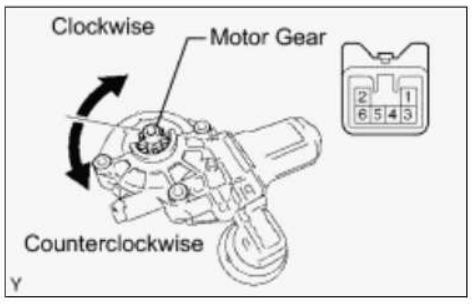
5.	**INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH)**

(a) Remove the power window regulator motor.

(b) Apply the battery voltage to connector terminals 1 and 2.

(c) Check that the motor gear rotates smoothly as follows.

OK:



MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates counterclockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates clockwise

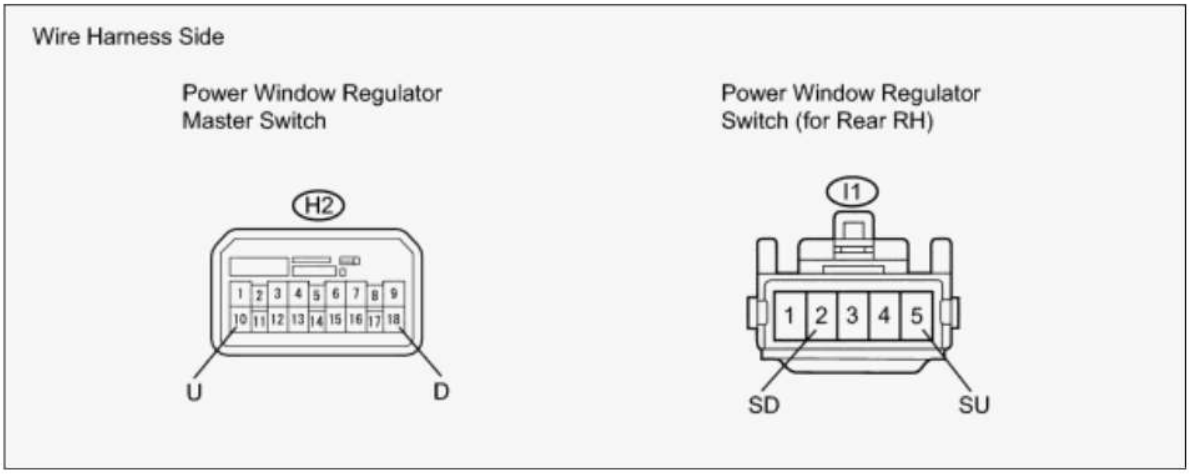
NG ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear**

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RH)

OK

6.	**CHECK WIRE HARNESS (MASTER SWITCH - REGULATOR SWITCH)**



(a) Disconnect the H2 switch connector.

(b) Disconnect the I1 switch connector.

(c) Measure the resistance of the wire harness side connectors.

Standard resistance:

TESTER CONNECTION	SPECIFIED CONDITION
H2-10 (U) - I1-5 (SU)	Below 1 Ω
H2-18 (D) - I1-2 (SD)	Below 1 Ω
H2-10 (U) or I1-5 (SU) - Body ground	10 kΩ or higher
H2-18 (D) or I1-2 (SD) - Body ground	10 kΩ or higher

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

OK ▶ **REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY**

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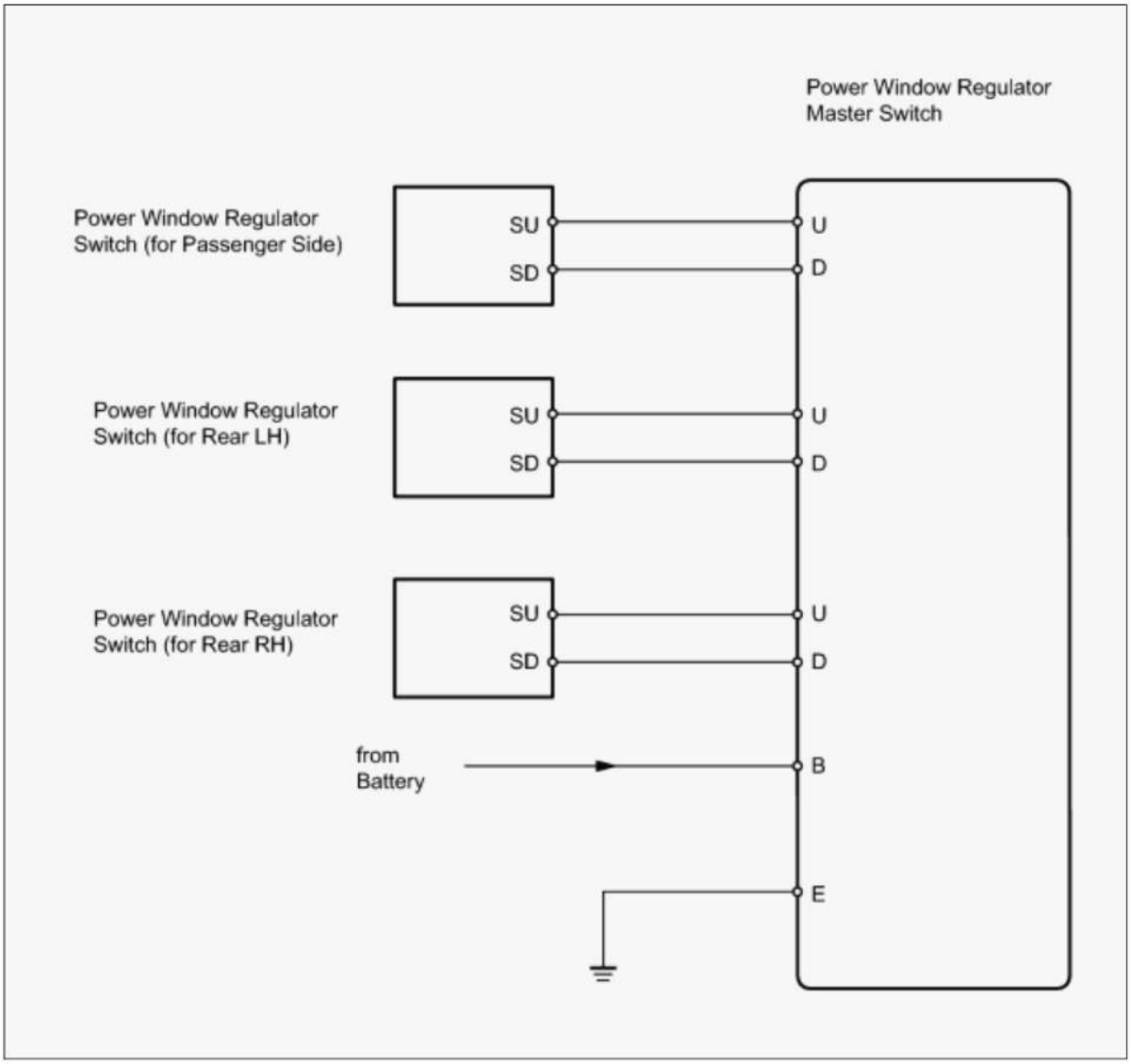
Last Modified: 9-7-2011	6.4 J	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000010ZI02KX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: Remote Up / Down Function does not Operate (2011 RAV4)		

Remote Up / Down Function does not Operate

DESCRIPTION

With the ignition switch ON, the power window regulator master switch transmits remote switch signals to the regulator switches of the passenger door power window and rear door power windows. Then, each regulator switch drives its respective power window regulator motor.

WIRING DIAGRAM

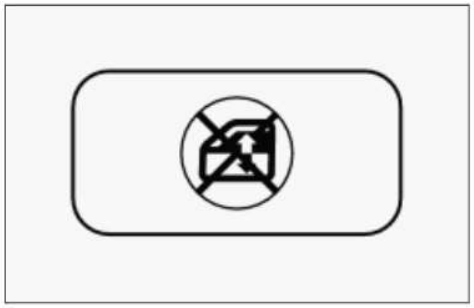


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INSPECTION PROCEDURE

PROCEDURE

1.	CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY



(a) Turn the window lock switch OFF and operate the switches on the master switch. Check that the remote UP / DOWN function operates normally.

OK:

Remote UP / DOWN function operates normally.

OK ▶ END

NG ▼

2.	CHECK MANUAL UP / DOWN FUNCTION

(a) Check that the passenger door power window and rear door power window manual UP / DOWN function operates normally.

OK:

Manual UP / DOWN function operates normally.

NG ▶ OTHER PROBLEM

OK ▶ REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

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Last Modified: 9-7-2011	6.4 D	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000Z0S018X
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: SYSTEM DESCRIPTION (2011 RAV4)		

SYSTEM DESCRIPTION

1. POWER WINDOW CONTROL SYSTEM DESCRIPTION

(a) The power window control system controls the power window UP / DOWN function using the regulator motors. The main controls of this system are: the power window regulator master switch, which is built into the driver side door, and the power window regulator switches, which are built into the passenger side door and rear doors. Pressing the regulator switch or either of the switches on the master switch transmits an UP / DOWN signal to the corresponding power window regulator motor.

2. FUNCTION OF MAIN COMPONENT

COMPONENT	OUTLINE
Power Window Regulator Master Switch	Controls power window operation for all windows When window lock switch is set to lock position, window operation will only be possible with driver's master switch
Power Window Regulator Switch	Located on passenger side door and rear doors Each regulator switch controls window operations for its respective window
Power Window Regulator Motor	Receives switch signals and changes signals into motor activation to change window position Also uses 2 Hall-ICs in regulator motor to detect window position and jamming (Only for driver side window)

3. SYSTEM FUNCTION

(a) The power window control system has the following functions:

FUNCTION	OUTLINE
Manual UP / DOWN function	• Driver side power window: Function that raises window while power window master regulator switch is pulled up, and lowers window while pushed halfway down (window stops as soon as switch is released) • Passenger side power window: Function that raises window while power window regulator switch is pulled up, and lowers window while pushed down (window stops as soon as switch is released)
AUTO UP / DOWN function	Function that enables window of driver side door to be fully opened or closed by one full push or pull of power window master regulator switch
Jam protection function	Function that automatically stops power window and moves it downward if object is jammed in power window Jam protection function works for AUTO UP and manual UP operation

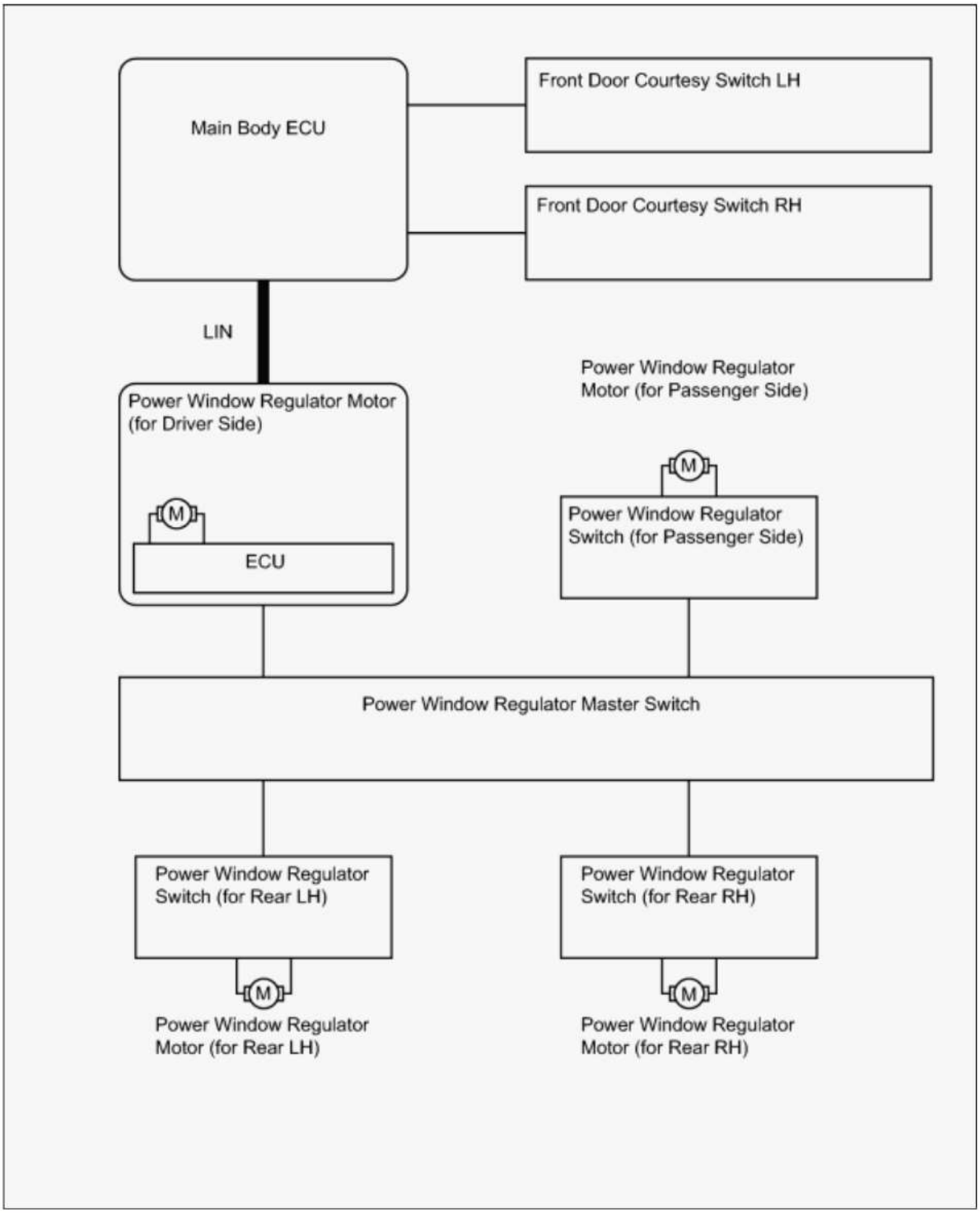
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FUNCTION	OUTLINE
Remote UP / DOWN function	Function that allows power window master switch to control manual UP / DOWN operation of passenger side power window and rear power windows
Key-off operation function	Function that makes it possible to operate all power windows for approximately 45 seconds after ignition switch is turned on (ACC) or off when driver door or front passenger side door has not been opened
Window lock function	Function where passenger side power window and rear power window operation is disabled when window lock switch of master switch is pressed Passenger side power window and rear power windows can be operated when window lock switch is pressed again
Diagnosis	Function where power window regulator switch detects malfunctions in power window system and makes diagnosis Power window regulator switch light blinks to inform driver of malfunction
Fail-safe	If pulse sensor(s) (Hall IC(s)) in power window regulator motor malfunctions, power window AUTO UP and DOWN function is disabled, but remote control function is active as long as micro computer built into power window regulator operates normally

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Last Modified: 9-7-2011	6.4 U	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000010ZF024X
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: SYSTEM DIAGRAM (2011 RAV4)		

SYSTEM DIAGRAM

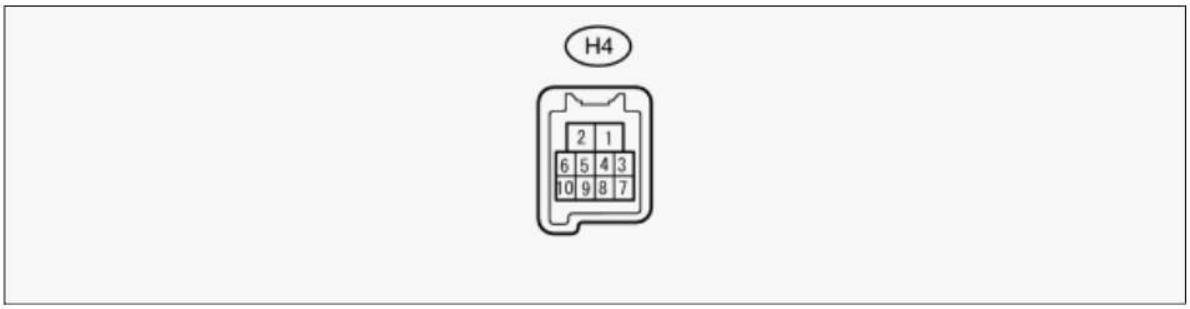


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Last Modified: 9-7-2011	6.4 U	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000010ZC027X
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM: TERMINALS OF ECU (2011 RAV4)		

TERMINALS OF ECU

1. CHECK POWER WINDOW REGULATOR MOTOR ASSEMBLY (ON DRIVER DOOR) (POWER WINDOW ECU)



(a) Disconnect the H4 motor connector (on the driver side).

(b) Measure the resistance and voltage of the wire harness side connector.

SYMBOLS (TERMINAL NO.)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
GND (H4-1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
B (H4-2) - GND (H4-1)	GR - W-B	Battery power supply	Always	9 to 14 V
UP (H4-10) - DOWN (H4-7)	P - W	Driver side door power window regulator motor UP DOWN	Always	Below 1 Ω

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

(c) Reconnect the H4 motor connector.

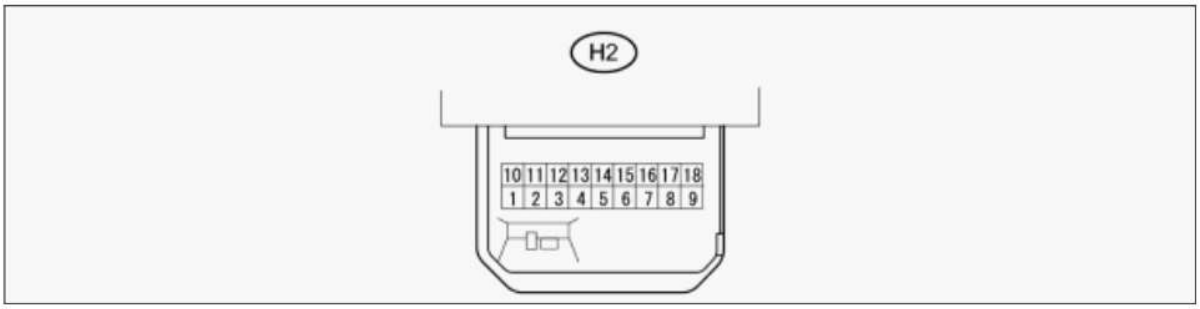
(d) Measure the voltage of the connector.

SYMBOLS (TERMINAL NO.)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
LED (H4-5) - GND (H4-1)	SB - W-B	Ignition power supply	Ignition switch ON	9 to 14 V

If the result is not as specified, the motor may have a malfunction.

2. CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

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(a) Disconnect the H2 switch connector.

(b) Measure the resistance and voltage of the wire harness side connector.

SYMBOLS (TERMINAL NO.)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
E (H2-1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
B (H2-6) - Body ground	L - Body ground	Ignition power supply	Ignition switch ON	9 to 14 V
B (H2-6) - Body ground	L - Body ground	Ignition power supply	Ignition switch OFF	Below 1 V

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

(c) Reconnect the H2 switch connector.

(d) Reset the power window regulator motor.

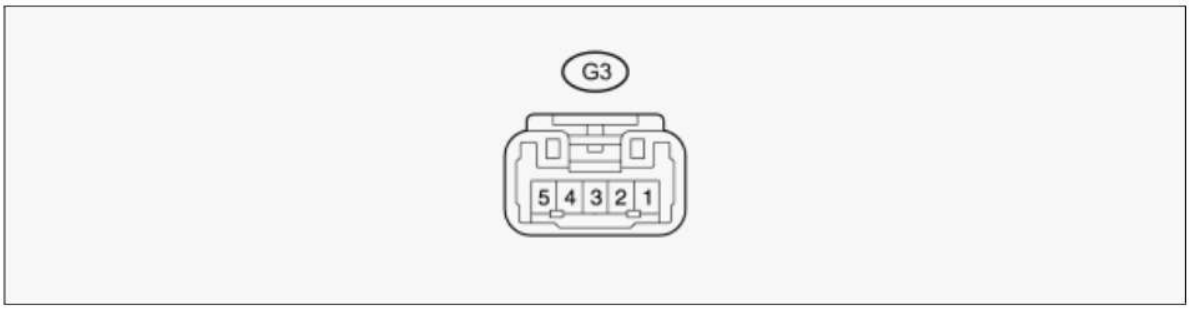
(e) Measure the voltage of the connector.

SYMBOLS (TERMINAL NO.)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
U (H2-8) - E (H2-1)	P - W-B	Driver side door power window regulator motor UP output	Ignition switch ON, driver power window regulator switch off	9 to 14 V
U (H2-8) - E (H2-1)	P - W-B	Driver side door power window regulator motor UP output	Ignition switch ON, driver side power window regulator switch UP (manual operation)	9 to 14 V →Below 1 V
U (H2-8) - E (H2-1)	P - W-B	Driver side door power window regulator motor UP output	Ignition switch ON, driver side power window fully open → driver side power window regulator switch UP (AUTO operation) → driver side power window fully closed	9 to 14 V → Below 1 V
D (H2-5) - E (H2-1)	W - W-B	Driver side door power window regulator motor DOWN output	Ignition switch ON, driver side power window regulator switch DOWN (manual operation)	Below 1 V → 9 to 14 V

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SYMBOLS (TERMINAL NO.)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
D (H2-5) - E (H2-1)	W - W-B	Driver side door power window regulator motor DOWN output	Ignition switch ON, driver side power window fully closed → driver side power window regulator switch DOWN (AUTO operation) → driver side power window fully open	Below 1 V → 9 to 14 V → Below 1 V

3. CHECK POWER WINDOW REGULATOR SWITCH (for Passenger Side)



(a) Disconnect the G3 switch connector.

(b) Measure the voltage of the wire harness side connector.

SYMBOLS (TERMINAL NO.)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
B (G3-3) - Body ground	L - Body ground	Ignition power supply	Ignition switch ON	9 to 14 V

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

(c) Reconnect the G3 switch connector.

(d) Measure the voltage of the wire harness side connector.

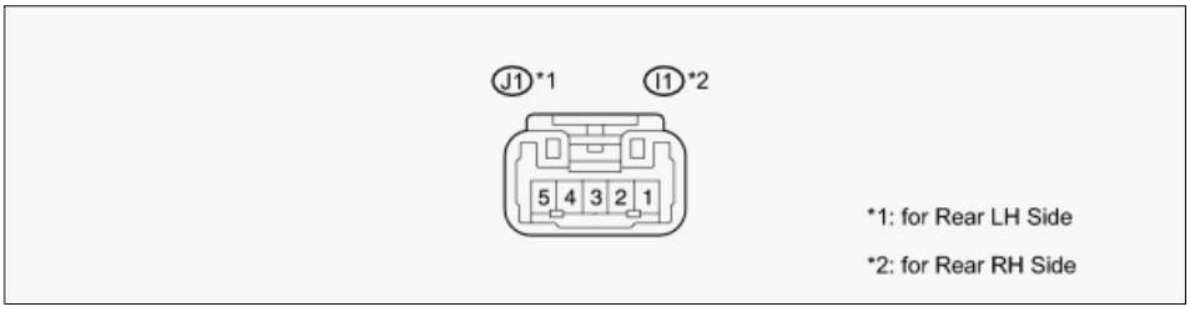
SYMBOLS (TERMINAL NO.)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
B (G3-3) - D (G3-1)	L - B	Passenger side door power window regulator motor UP output	Ignition switch ON, front passenger window regulator switch off	Below 1 V
B (G3-3) - D (G3-1)	L - B	Passenger side door power window regulator motor UP output	Ignition switch ON, front passenger window regulator switch UP	9 to 14 V
B (G3-3) - U (G3-4)	L - Y	Passenger side door power window regulator motor DOWN output	Ignition switch ON, front passenger window regulator switch off	Below 1 V

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SYMBOLS (TERMINAL NO.)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
B (G3-3) - U (G3-4)	L - Y	Passenger side door power window regulator motor DOWN output	Ignition switch ON, front passenger window regulator switch DOWN	9 to 14 V

If the result is not as specified, there may be a malfunction.

4. CHECK POWER WINDOW REGULATOR SWITCH (for Rear Door Side)



(a) Disconnect the J1 or I1 switch connectors.

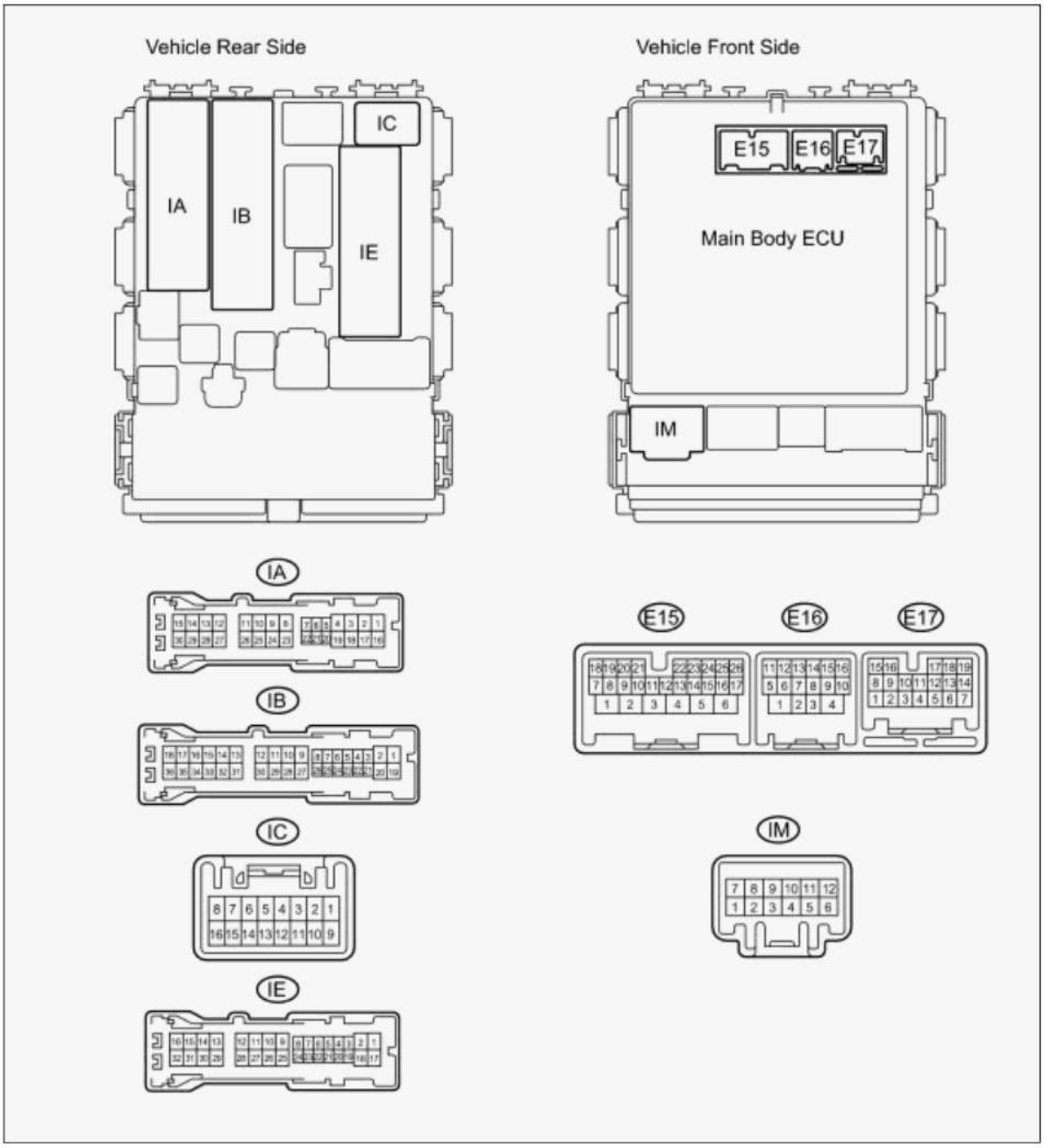
(b) Measure the voltage of the wire harness side connector.

SYMBOLS (TERMINAL NO.)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
B (3) - Body ground	L - Body ground	Ignition power supply	Ignition switch OFF	Below 1 V
B (3) - Body ground	L - Body ground	Ignition power supply	Ignition switch ON	10 to 14 V
U (4) - Body ground	R - Body ground	Power window motor UP output	Ignition switch ON, power window switch off → UP	Below 1 V → 10 to 14 V
D (1) - Body ground	G - Body ground	Power window motor DOWN output	Ignition switch ON, power window switch off → DOWN	Below 1 V → 10 to 14 V
SU (5) - Body ground	G - Body ground	Power window motor UP input (Remote)	Ignition switch ON, power window master switch off → UP (Remote)	Below 1 V → 10 to 14 V
SD (2) - Body ground	BR - Body ground	Power window motor DOWN input (Remote)	Ignition switch ON, power window master switch off → UP (Remote)	Below 1 V → 10 to 14 V

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

5. CHECK INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)

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(a) Disconnect the IA, IB, IC, IE and IM junction block connectors.

(b) Disconnect the E15 and E16 ECU connectors.

(c) Measure the voltage and resistance of the wire harness side connectors.

SYMBOLS (TERMINAL NO.)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
BECU (IB-30) - GND1 (IE-17)	R - W-B	Battery (power supply)	Always	9 to 14 V
AM1 (E16-1) - GND1 (IE-17)	W - W-B	Battery (power supply)	Always	9 to 14 V

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SYMBOLS (TERMINAL NO.)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
AM2 (E15-6) - GND1 (IE-17)	W - W-B	Battery (power supply)	Always	9 to 14 V
IG (IM-9) - GND1 (IE-17)	W - W-B	Ignition power supply	Ignition switch ON	9 to 14 V
IG (IM-9) - GND1 (IE-17)	W - W-B	Ignition power supply	Ignition switch OFF	Below 1 V
DCTY (IA-21) - Body ground	W - Body ground	Driver side door courtesy light switch input	Driver side door closed	10 kΩ or higher
DCTY (IA-21) - Body ground	W - Body ground	Driver side door courtesy light switch input	Driver side door open	Below 1 Ω
PCTY (IC-14) - Body ground	BR - Body ground	Front passenger side door courtesy light switch input	Front passenger side door closed	10 kΩ or higher
PCTY (IC-14) - Body ground	BR - Body ground	Front passenger side door courtesy light switch input	Front passenger side door open	Below 1 Ω
LIN2 (E15-23) - Body ground	V - Body ground	LIN communication	Always	10 kΩ or higher
GND1 (IE-17) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

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

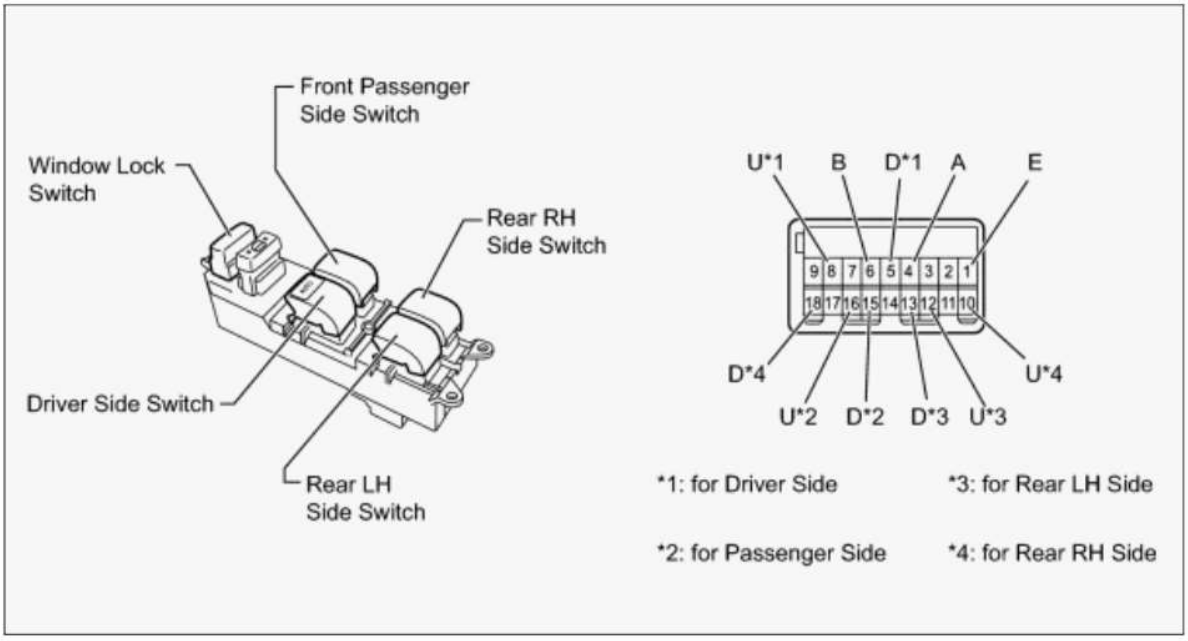
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Last Modified: 9-7-2011	6.4 G	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000226600CX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW MASTER SWITCH: INSPECTION (2011 RAV4)		

INSPECTION

1. INSPECT POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

(a) Measure the resistance of the power switch.



Standard resistance:

for Front driver switch

for Front passenger switch

for Rear LH switch

for Rear RH switch

TESTER CONNECTION	POWER WINDOW SWITCH CONDITION	SPECIFIED CONDITION
H2-1 (E) - H2-4 (A) - H2-8 (U) H2-5 (D) - H2-6 (B)	AUTO UP	Below 1 Ω
H2-1 (E) - H2-8 (U) H2-5 (D) - H2-6 (B)	UP	Below 1 Ω
H2-5 (D) - H2-6 (B) - H2-8 (U)	OFF	Below 1 Ω
H2-1 (E) - H2-5 (D) H2-6 (B) - H2-8 (U)	DOWN	Below 1 Ω
H2-1 (E) - H2-4 (A) - H2-5 (D) H2-6 (B) - H2-8 (U)	AUTO DOWN	Below 1 Ω

TESTER	WINDOW LOCK SWITCH	POWER WINDOW SWITCH	SPECIFIED

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CONNECTION	CONDITION	CONDITION	CONDITION
H2-1 (E) - H2-15 (D) H2-6 (B) - H2-16 (U)	OFF	UP	Below 1 Ω
H2-1 (E) - H2-16 (U) H2-1 (E) - H2-15 (D)	OFF	OFF	Below 1 Ω
H2-1 (E) - H2-16 (U) H2-6 (B) - H2-15 (D)	OFF	DOWN	Below 1 Ω
H2-1 (E) - H2-15 (D)	ON	UP	10 kΩ or higher
H2-6 (B) - H2-16 (U)			Below 1 Ω
H2-16 (U) - H2-15 (D)	ON	OFF	Below 1 Ω
H2-1 (E) - H2-16 (U)	ON	DOWN	10 kΩ or higher
H2-6 (B) - H2-15 (D)			Below 1 Ω

TESTER CONNECTION	WINDOW LOCK SWITCH CONDITION	POWER WINDOW SWITCH CONDITION	SPECIFIED CONDITION
H2-1 (E) - H2-13 (D) H2-6 (B) - H2-12 (U)	OFF	UP	Below 1 Ω
H2-1 (E) - H2-12 (U) H2-1 (E) - H2-13 (D)	OFF	OFF	Below 1 Ω
H2-1 (E) - H2-12 (U) H2-6 (B) - H2-13 (D)	OFF	DOWN	Below 1 Ω
H2-1 (E) - H2-13 (D)	ON	UP	10 kΩ or higher
H2-6 (B) - H2-12 (U)			Below 1 Ω

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TESTER CONNECTION	WINDOW LOCK SWITCH CONDITION	POWER WINDOW SWITCH CONDITION	SPECIFIED CONDITION
H2-12 (U) - H2-13 (D)	ON	OFF	Below 1 Ω
H2-1 (E) - H2-12 (U)	ON	DOWN	10 kΩ or higher
H2-6 (B) - H2-13 (D)			Below 1 Ω

TESTER CONNECTION	WINDOW LOCK SWITCH CONDITION	POWER WINDOW SWITCH CONDITION	SPECIFIED CONDITION
H2-1 (E) - H2-18 (D) H2-6 (B) - H2-10 (U)	OFF	UP	Below 1 Ω
H2-1 (E) - H2-10 (U) H2-1 (E) - H2-18 (D)	OFF	OFF	Below 1 Ω
H2-1 (E) - H2-10 (U) H2-6 (B) - H2-18 (D)	OFF	DOWN	Below 1 Ω
H2-1 (E) - H2-18 (D)	ON	UP	10 kΩ or higher
H2-6 (B) - H2-10 (U)			Below 1 Ω
H2-10 (U) - H2-18 (D)	ON	OFF	Below 1 Ω
H2-1 (E) - H2-10 (U)	ON	DOWN	10 kΩ or higher
H2-6 (B) - H2-18 (D)			Below 1 Ω

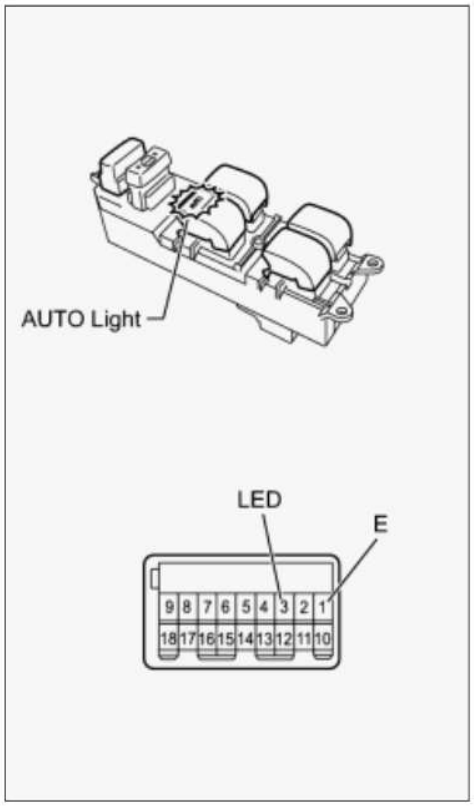
If the result is not as specified, replace the switch assembly.

(b) Apply battery voltage to the master switch and check that the AUTO light illuminates.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION

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Battery positive (+) → Terminal 3 (LED) Battery negative (-) → Terminal 1 (E)	AUTO light illuminates

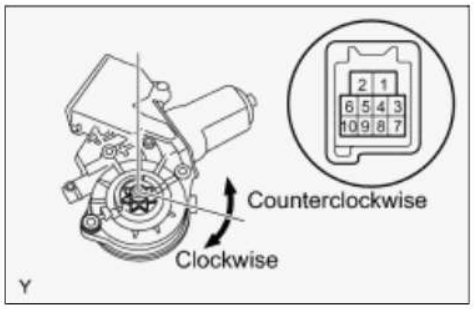
If the result is not as specified, replace the switch assembly.

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Last Modified: 9-7-2011	6.4 G	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM00000226A00DX
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW REGULATOR MOTOR: INSPECTION (2011 RAV4)		

INSPECTION

1. INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)



(a) Apply battery voltage to connector terminals 1 and 2.

NOTICE:

- Do not apply voltage to any terminals except terminals 1 and 2, to avoid damaging the pulse sensor inside the motor.
- Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.

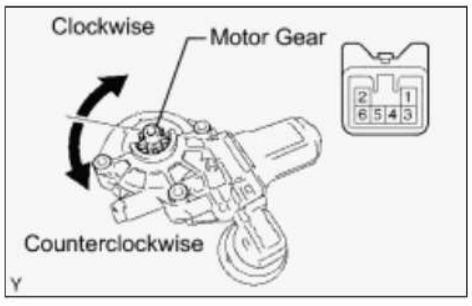
(b) Check that the motor gear rotates smoothly as follows.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1 and 10	Motor gear rotates clockwise
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1 and 7	Motor gear rotates counterclockwise

If the result is not as specified, replace the regulator motor assembly.

2. INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Passenger Side)



(a) Apply battery voltage to connector terminals 1 and 2.

NOTICE:

Do not apply battery voltage to any terminals except terminals 1 and 2.

(b) Check that the motor gear rotates smoothly as follows.

OK:

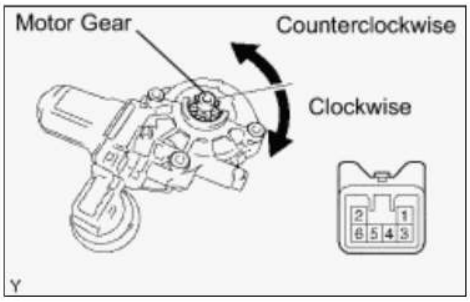
MEASUREMENT CONDITION	SPECIFIED CONDITION

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MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates clockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates counterclockwise

If the result is not as specified, replace the regulator motor assembly.

3. INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH Side)



(a) Apply battery voltage to connector terminals 1 and 2.

NOTICE:

Do not apply battery voltage to any terminals except terminals 1 and 2.

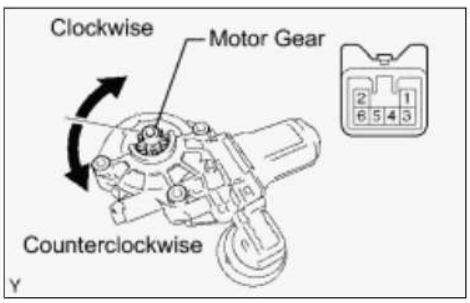
(b) Check that the motor gear rotates smoothly as follows.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates clockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates counterclockwise

If the result is not as specified, replace the regulator motor assembly.

4. INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH Side)



(a) Apply battery voltage to connector terminals 1 and 2.

NOTICE:

Do not apply battery voltage to any terminals except terminals 1 and 2.

(b) Check that the motor gear rotates smoothly as follows.

OK:

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MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates clockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates counterclockwise

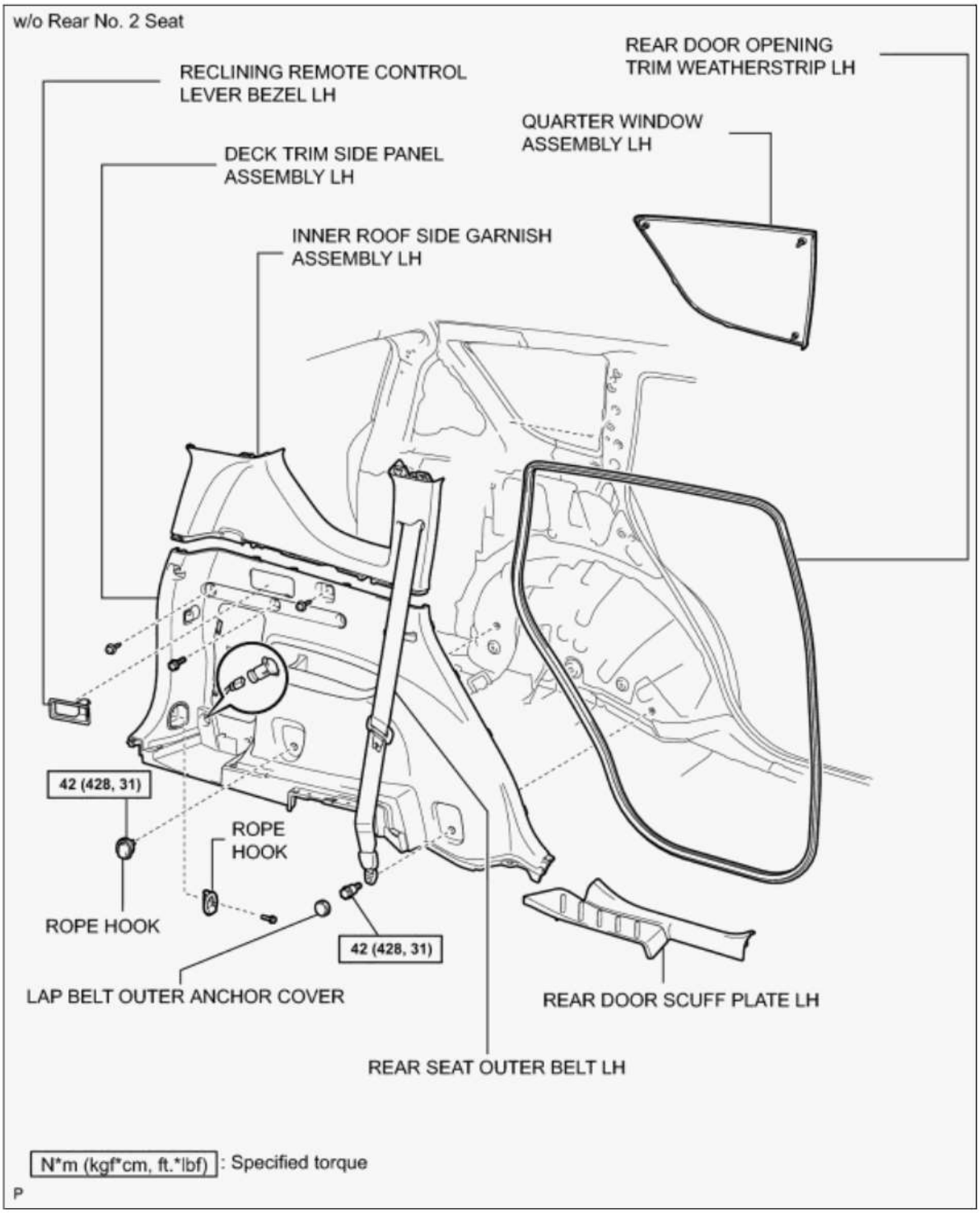
If the result is not as specified, replace the regulator motor assembly.

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Last Modified: 9-7-2011	6.4 K	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM00000203Q00JX
Title: WINDSHIELD / WINDOWGLASS: QUARTER WINDOW GLASS: COMPONENTS (2011 RAV4)		

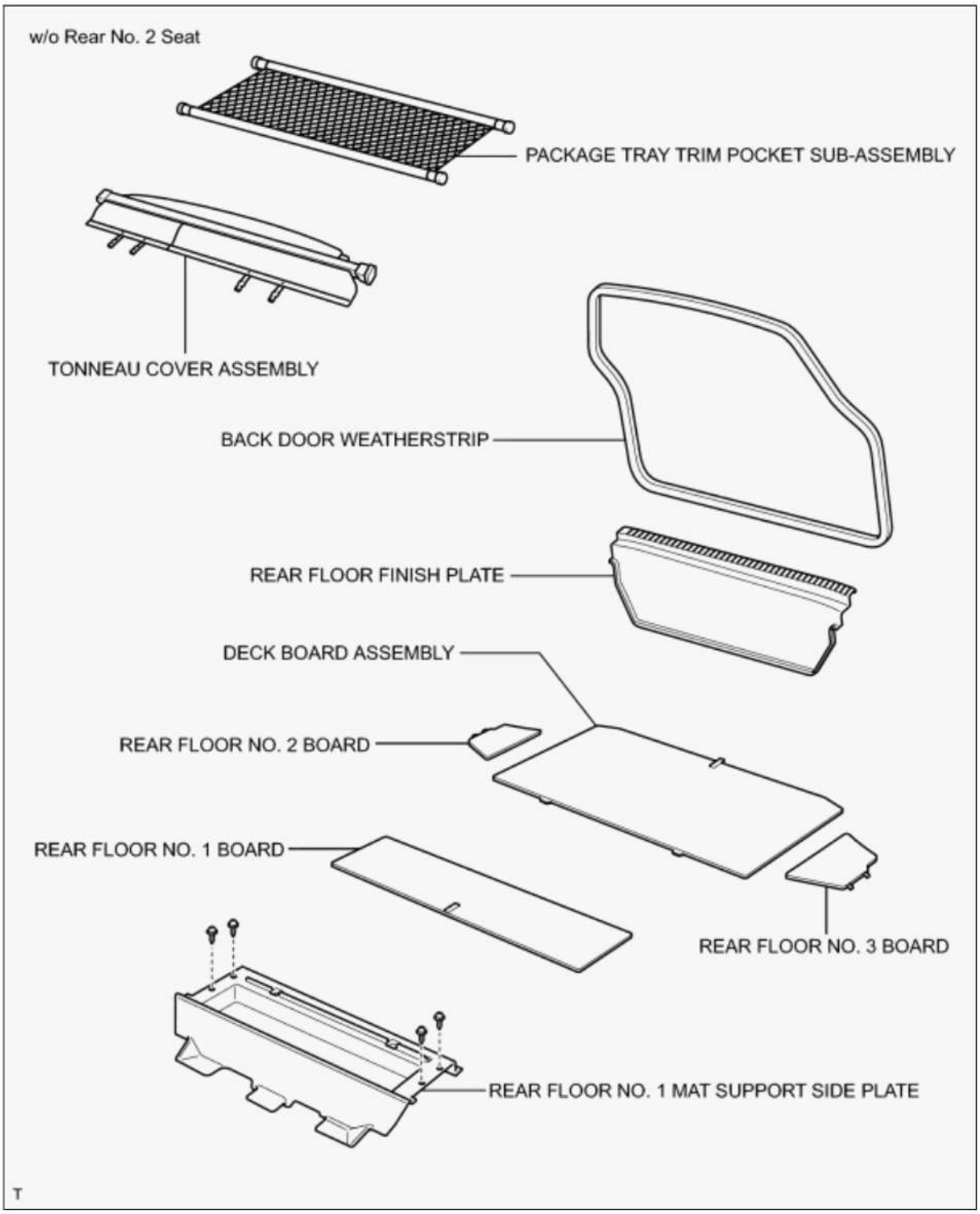
COMPONENTS

ILLUSTRATION



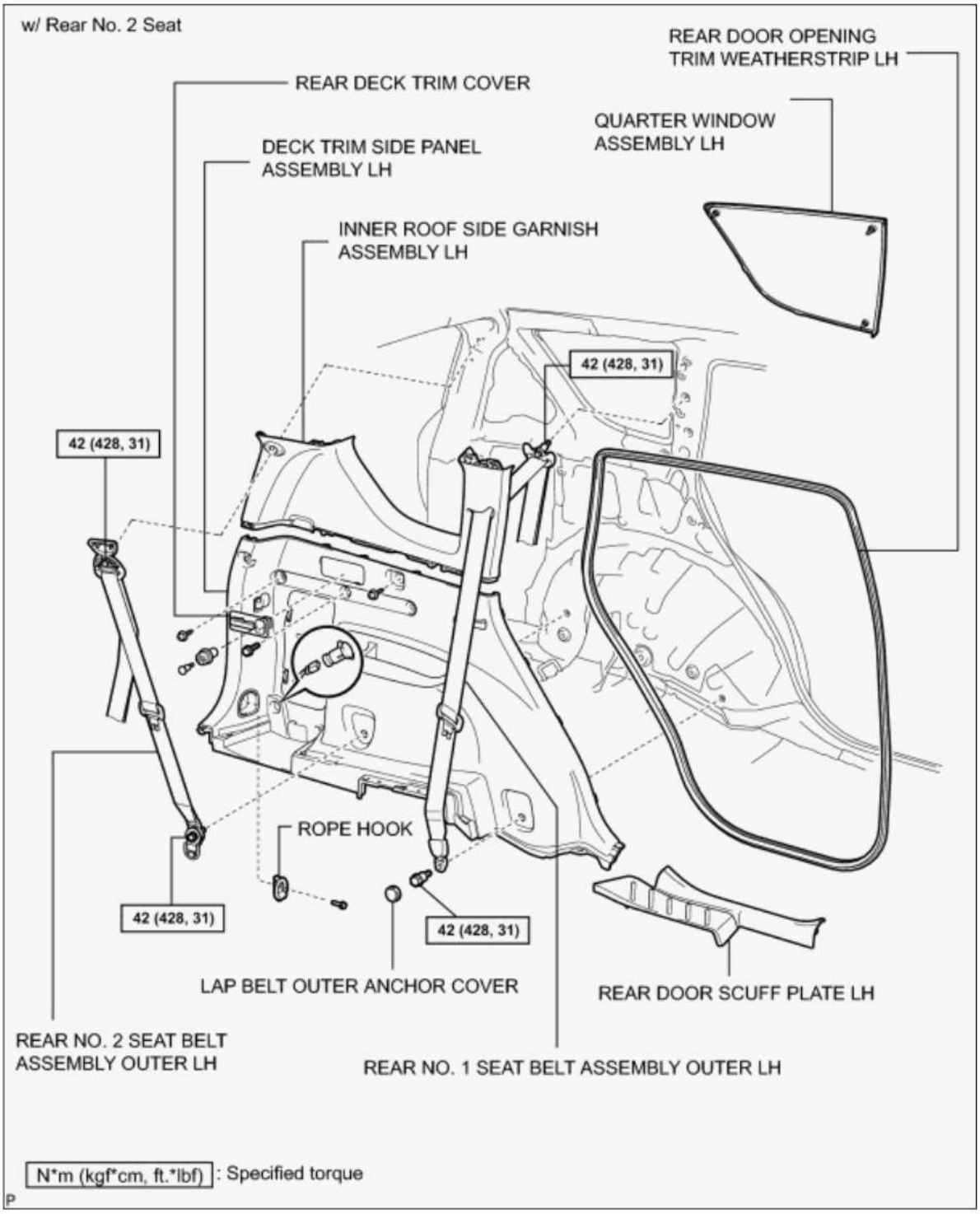
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ILLUSTRATION



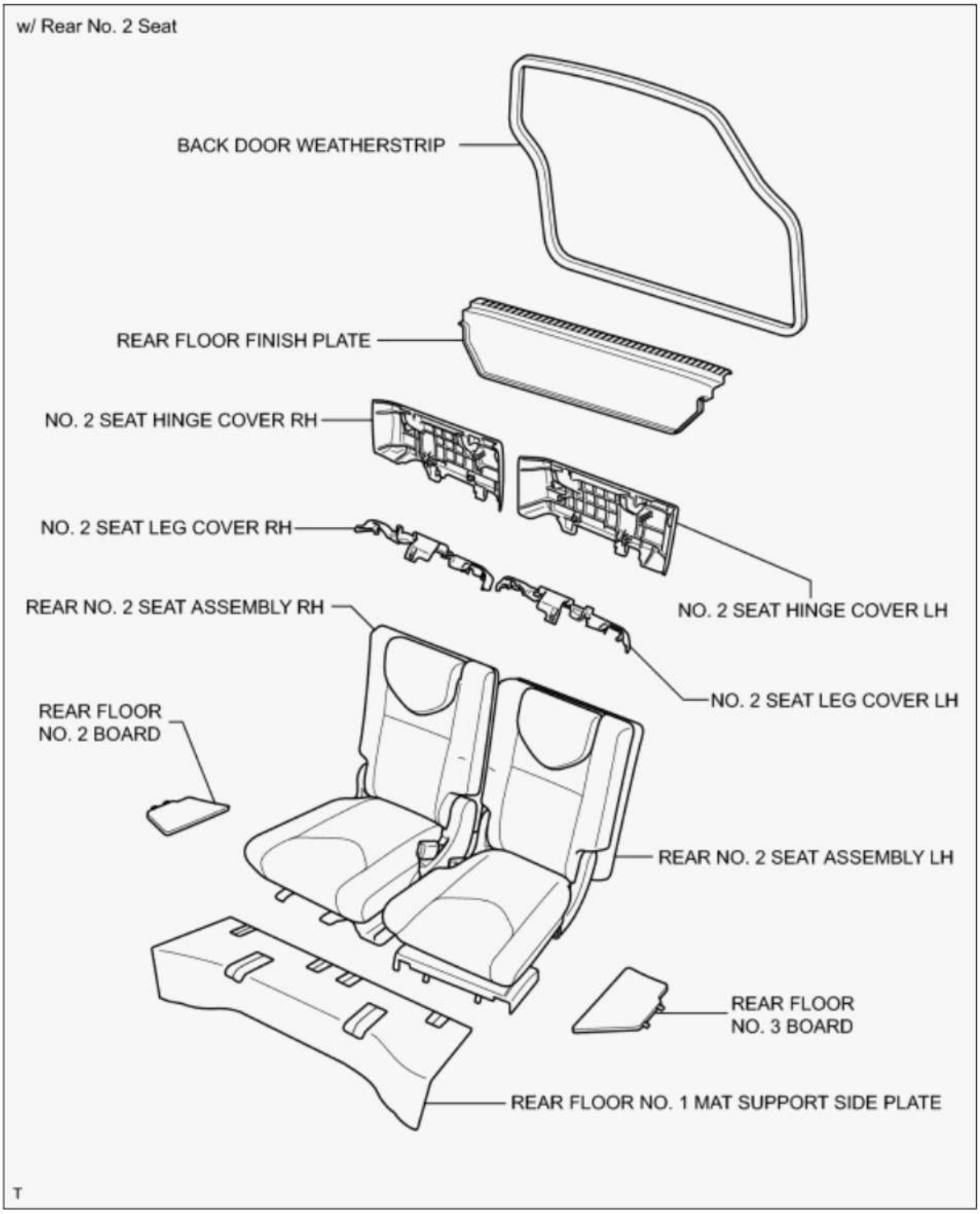
ILLUSTRATION

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ILLUSTRATION

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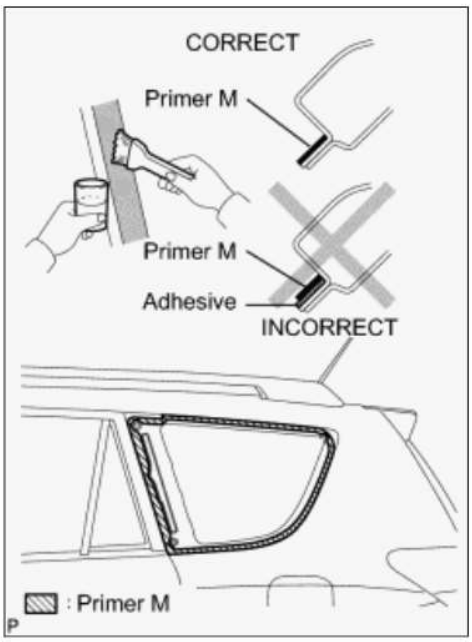
Last Modified: 9-7-2011	6.4 A	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000192802EX
Title: WINDSHIELD / WINDOWGLASS: QUARTER WINDOW GLASS: INSTALLATION (2011 RAV4)		

INSTALLATION

HINT:

- Use the same procedures for the LH side and RH side.
- The procedures listed below are for the LH side.
- A bolt without a torque specification is shown in the standard bolt chart INFO .

1. INSTALL QUARTER WINDOW ASSEMBLY LH



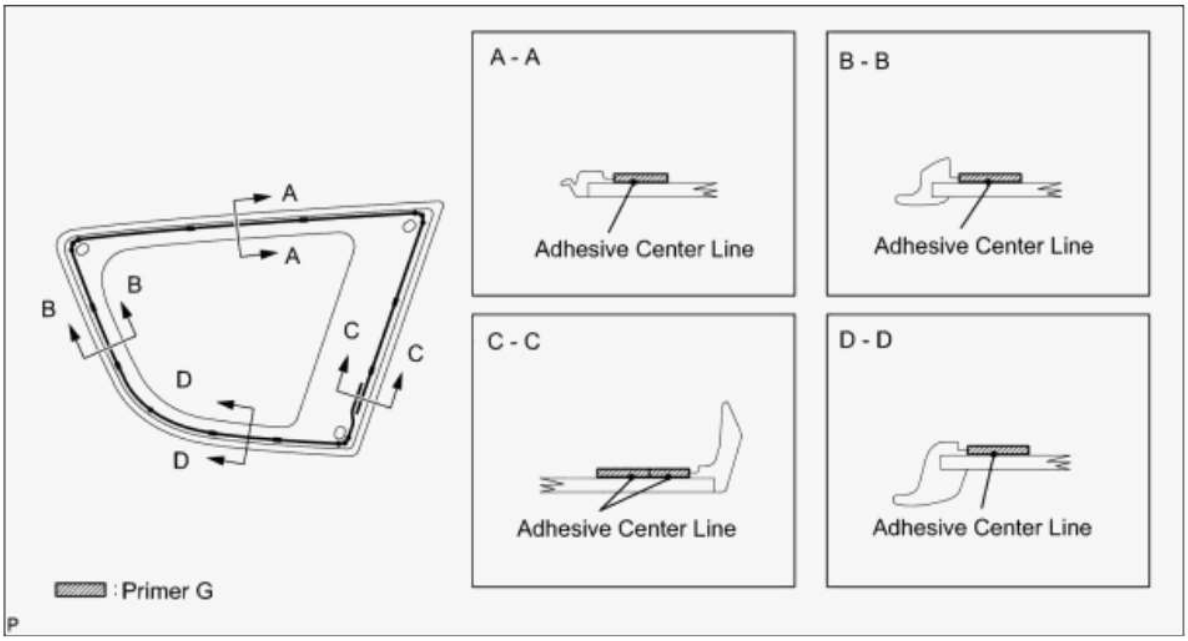
(a) Using a brush or sponge, apply primer M to the exposed part of the vehicle body.

NOTICE:

- Allow the primer coating to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

(b) Using a brush or sponge, apply primer G to the contact surface of the glass.

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HINT:

If primer is applied to an area that is specified, wipe off the primer with non-residue solvent before it dries.

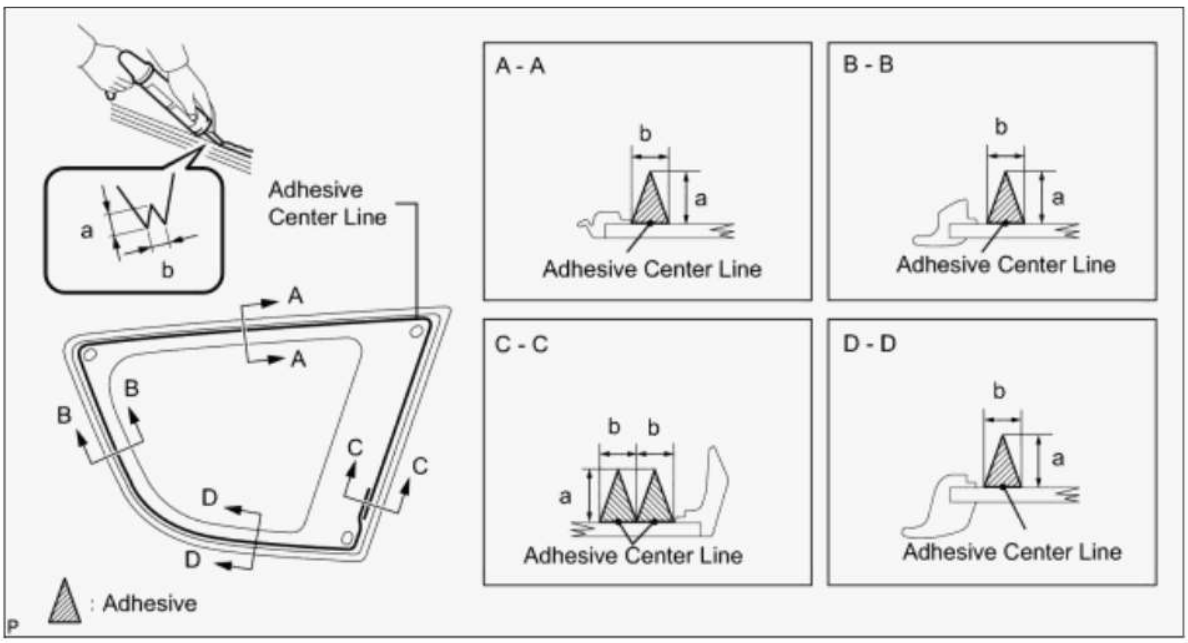
NOTICE:

- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

(c) Apply adhesive to the quarter window glass.

Adhesive:
Toyota Genuine Windshield Glass Adhesive or Equivalent or equivalent

(1) Cut off the tip of the cartridge nozzle as shown in the illustration.



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Standard measurement:

AREA	SPECIFIED CONDITION
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)

HINT:

After cutting off the tip, use all adhesive within the time written in the table below.

Usage time frame:

TEMPERATURE	USAGE TIME FRAME
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

(2) Load the sealer gun with the cartridge.

(3) Apply adhesive to the quarter window glass as shown in the illustration.

(d) Install the quarter window glass to the vehicle body.

(1) Hold the quarter window glass in place securely with protective tape or equivalent until the adhesive hardens.

NOTICE:

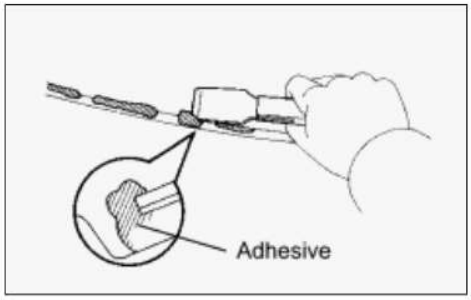
- Allow the primer coating to dry for 3 minutes or more.
- Check that the clips are attached to the body correctly.
- Check the clearance between the body and glass.

(2) Lightly press the front surface of the glass to ensure a close fit.

(3) Using a scraper, remove any excess or protruding adhesive.

HINT:

Apply adhesive onto the glass rim.



NOTICE:

Do not drive the vehicle within the time written in the table below.

Minimum time:

TEMPERATURE	MINIMUM TIME PRIOR TO DRIVING VEHICLE
35°C (95°F)	1 hour 30 minutes
20°C (68°F)	5 hours
5°C (41°F)	24 hours

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2. INSPECT FOR LEAKS AND REPAIR

(a) Conduct a leak test after the adhesive has completely hardened.

(b) Seal any leaks with auto glass sealer.

3. INSTALL ROOF HEADLINING ASSEMBLY

(a) Install the roof headlining INFO .

4. INSTALL REAR NO. 1 SEAT BELT ASSEMBLY OUTER LH INFO

5. INSTALL INNER ROOF SIDE GARNISH ASSEMBLY LH (w/ Rear No. 2 Seat) INFO

6. INSTALL INNER ROOF SIDE GARNISH ASSEMBLY LH (w/o Rear No. 2 Seat) INFO

7. INSTALL REAR NO. 2 SEAT BELT ASSEMBLY OUTER LH (w/ Rear No. 2 Seat) INFO

8. INSTALL DECK TRIM SIDE PANEL ASSEMBLY LH (w/ Rear No. 2 Seat) INFO

9. INSTALL DECK TRIM SIDE PANEL ASSEMBLY LH (w/o Rear No. 2 Seat) INFO

10. CONNECT REAR NO. 2 SEAT BELT ASSEMBLY OUTER LH (w/ Rear No. 2 Seat) INFO

11. CONNECT REAR NO. 1 SEAT BELT ASSEMBLY OUTER LH INFO

12. INSTALL RECLINING REMOTE CONTROL LEVER BEZEL LH (w/o Rear No. 2 Seat) INFO

13. INSTALL REAR FLOOR FINISH PLATE INFO

14. INSTALL BACK DOOR WEATHERSTRIP

15. INSTALL REAR FLOOR NO. 1 MAT SUPPORT SIDE PLATE INFO

16. INSTALL REAR NO. 3 FLOOR BOARD

17. INSTALL REAR NO. 2 FLOOR BOARD

18. INSTALL REAR NO. 2 SEAT ASSEMBLY LH (w/ Rear No. 2 Seat) INFO

19. INSTALL REAR NO. 2 SEAT ASSEMBLY RH (w/ Rear No. 2 Seat) INFO

20. INSTALL NO. 2 SEAT LEG COVER LH (w/ Rear No. 2 Seat) INFO

21. INSTALL NO. 2 SEAT LEG COVER RH (w/ Rear No. 2 Seat) INFO

22. INSTALL NO. 2 SEAT HINGE COVER LH (w/ Rear No. 2 Seat) INFO

23. INSTALL NO. 2 SEAT HINGE COVER RH (w/ Rear No. 2 Seat) INFO

24. INSTALL DECK BOARD ASSEMBLY (w/o Rear No. 2 Seat)

25. INSTALL REAR NO. 1 FLOOR BOARD (w/o Rear No. 2 Seat)

26. INSTALL TONNEAU COVER ASSEMBLY (w/o Rear No. 2 Seat)

27. INSTALL PACKAGE TRAY TRIM POCKET SUB-ASSEMBLY (w/o Rear No. 2 Seat)

28. INSTALL REAR DOOR OPENING TRIM WEATHERSTRIP LH

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29. INSTALL REAR DOOR SCUFF PLATE LH INFO

30. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

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Last Modified: 9-7-2011	6.4 A	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM00000192A02CX
Title: WINDSHIELD / WINDOWGLASS: QUARTER WINDOW GLASS: REMOVAL (2011 RAV4)		

REMOVAL

HINT:

- Use the same procedures for the LH side and RH side.
- The procedures listed below are for the LH side.

1. REMOVE REAR DOOR SCUFF PLATE LH INFO

2. REMOVE REAR DOOR OPENING TRIM WEATHERSTRIP LH

3. REMOVE PACKAGE TRAY TRIM POCKET SUB-ASSEMBLY (w/o Rear No. 2 Seat)

4. REMOVE TONNEAU COVER ASSEMBLY (w/o Rear No. 2 Seat)

5. REMOVE REAR FLOOR NO. 1 BOARD (w/o Rear No. 2 Seat)

6. REMOVE DECK BOARD ASSEMBLY (w/o Rear No. 2 Seat)

7. REMOVE NO. 2 SEAT HINGE COVER LH (w/ Rear No. 2 Seat) INFO

8. REMOVE NO. 2 SEAT HINGE COVER RH (w/ Rear No. 2 Seat) INFO

9. REMOVE NO. 2 SEAT LEG COVER LH (w/ Rear No. 2 Seat) INFO

10. REMOVE NO. 2 SEAT LEG COVER RH (w/ Rear No. 2 Seat) INFO

11. REMOVE REAR NO. 2 SEAT ASSEMBLY LH (w/ Rear No. 2 Seat) INFO

12. REMOVE REAR NO. 2 SEAT ASSEMBLY RH (w/ Rear No. 2 Seat) INFO

13. REMOVE REAR FLOOR NO. 2 BOARD

14. REMOVE REAR FLOOR NO. 3 BOARD

15. REMOVE REAR FLOOR NO. 1 MAT SUPPORT SIDE PLATE INFO

16. REMOVE BACK DOOR WEATHERSTRIP

17. REMOVE REAR FLOOR FINISH PLATE INFO

18. REMOVE RECLINING REMOTE CONTROL LEVER BEZEL LH (w/ Rear No. 2 Seat)

19. DISCONNECT REAR NO. 1 SEAT BELT ASSEMBLY OUTER LH INFO

20. DISCONNECT REAR NO. 2 SEAT BELT ASSEMBLY (w/ Rear No. 2 Seat) INFO

21. REMOVE DECK TRIM SIDE PANEL ASSEMBLY LH (w/ Rear No. 2 Seat) INFO

22. REMOVE DECK TRIM SIDE PANEL ASSEMBLY LH (w/o Rear No. 2 Seat) INFO

23. REMOVE REAR NO. 2 SEAT BELT ASSEMBLY OUTER LH (w/ Rear No. 2 Seat) INFO

24. REMOVE INNER ROOF SIDE GARNISH ASSEMBLY LH (w/ Rear No. 2 Seat) INFO

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25. REMOVE INNER ROOF SIDE GARNISH ASSEMBLY LH (w/o Rear No. 2 Seat)

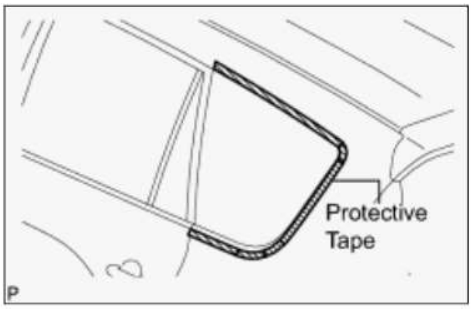
26. REMOVE ROOF HEADLINING ASSEMBLY

(a) Partially remove the roof headlining INFO .

HINT:

It is not necessary to completely remove the roof headlining. Slightly lower the rear section of the roof headlining so that the quarter window glass can be removed.

27. REMOVE QUARTER WINDOW ASSEMBLY LH



HINT:

Apply protective tape to the outer surface of the vehicle body to prevent scratches.

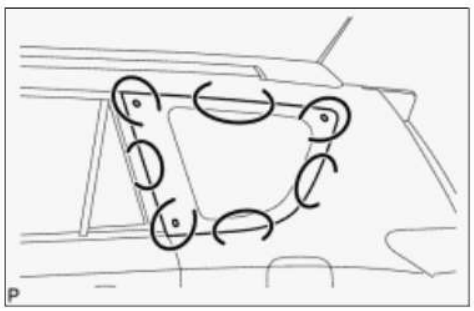
NOTICE:

When separating the quarter window glass from the vehicle, be careful not to damage the vehicle's paint or interior/exterior ornaments.

(a) Disconnect the connector.

(b) From the interior, insert a piano wire between the vehicle body and the quarter window glass as shown in the illustration.

(c) Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.



(d) Cut through the adhesive by pulling the piano wire around the quarter window glass.

NOTICE:

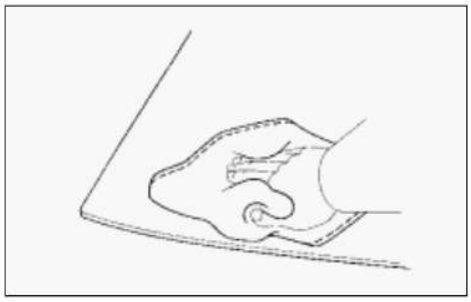
Leave as much adhesive on the vehicle body as possible when removing the quarter window glass.

(e) Using suction cups, remove the quarter window glass.

28. CLEAN QUARTER WINDOW ASSEMBLY

(a) Clean the outer edges of the glass with non-residue solvent.

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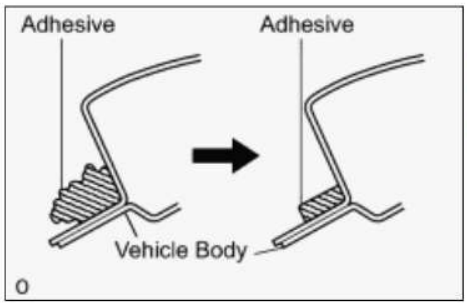
NOTICE:

- Do not touch the glass surface after cleaning it.
- Be careful not to damage the glass.
- Ever if using new glass, clean the glass with non-residue solvent.

29. CLEAN VEHICLE BODY

(a) Clean and shape the contact surface of the vehicle body.

(1) On the contact surface of the vehicle body, use a knife to cut away excess adhesive as shown in the illustration.



HINT:

Leave as much adhesive on the vehicle body as possible.

NOTICE:

Be careful not to damage the vehicle body.

(2) Clean the contact surface of the vehicle body with cleaner.

HINT:

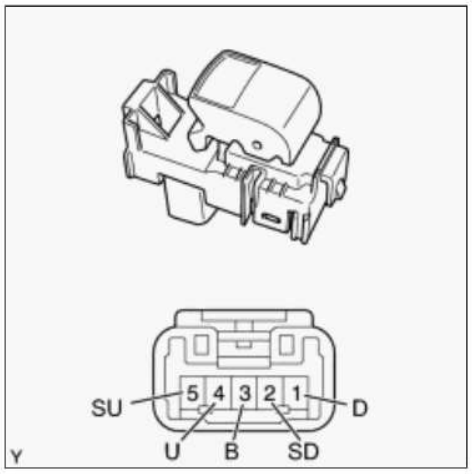
Even if all the adhesive has been removed, clean the vehicle body.

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Last Modified: 9-7-2011	6.4 G	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000000226800CX
Title: WINDSHIELD / WINDOWGLASS: REAR POWER WINDOW SWITCH: INSPECTION (2011 RAV4)		

INSPECTION

1. INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY



(a) Measure the resistance of the switch when the switch is operated.

Standard resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 (D) - 2 (SD) 3 (B) - 4 (U)	UP	Below 1 Ω
4 (U) - 5 (SU) 1 (D) - 2 (SD)	OFF	Below 1 Ω
1 (D) - 3 (B) 4 (U) - 5 (SU)	DOWN	Below 1 Ω

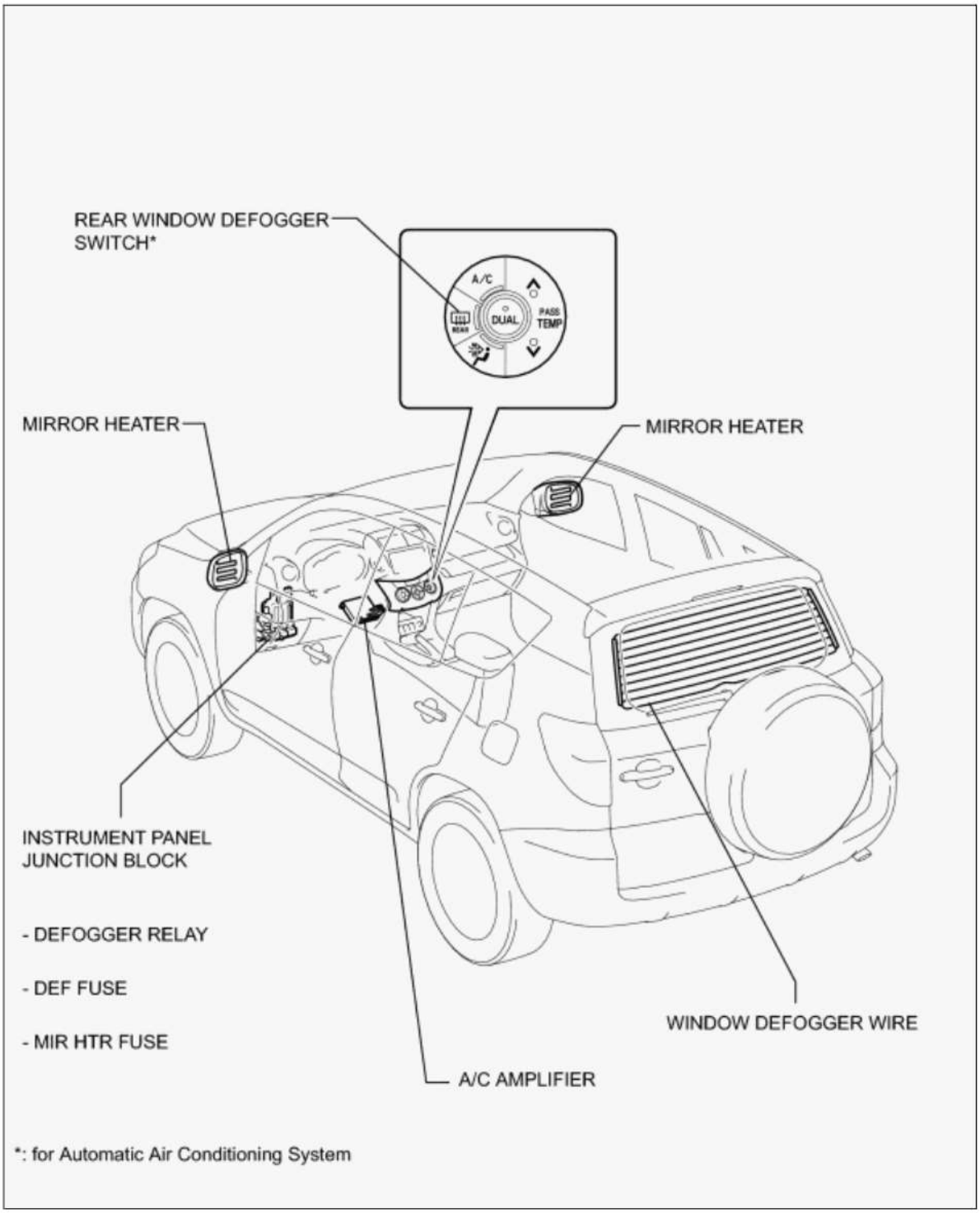
If the result is not as specified, replace the regulator switch assembly.

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Last Modified: 9-7-2011	6.4 R	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000020HB00JX
Title: WINDSHIELD / WINDOWGLASS: WINDOW DEFOGGER SYSTEM: PARTS LOCATION (2011 RAV4)		

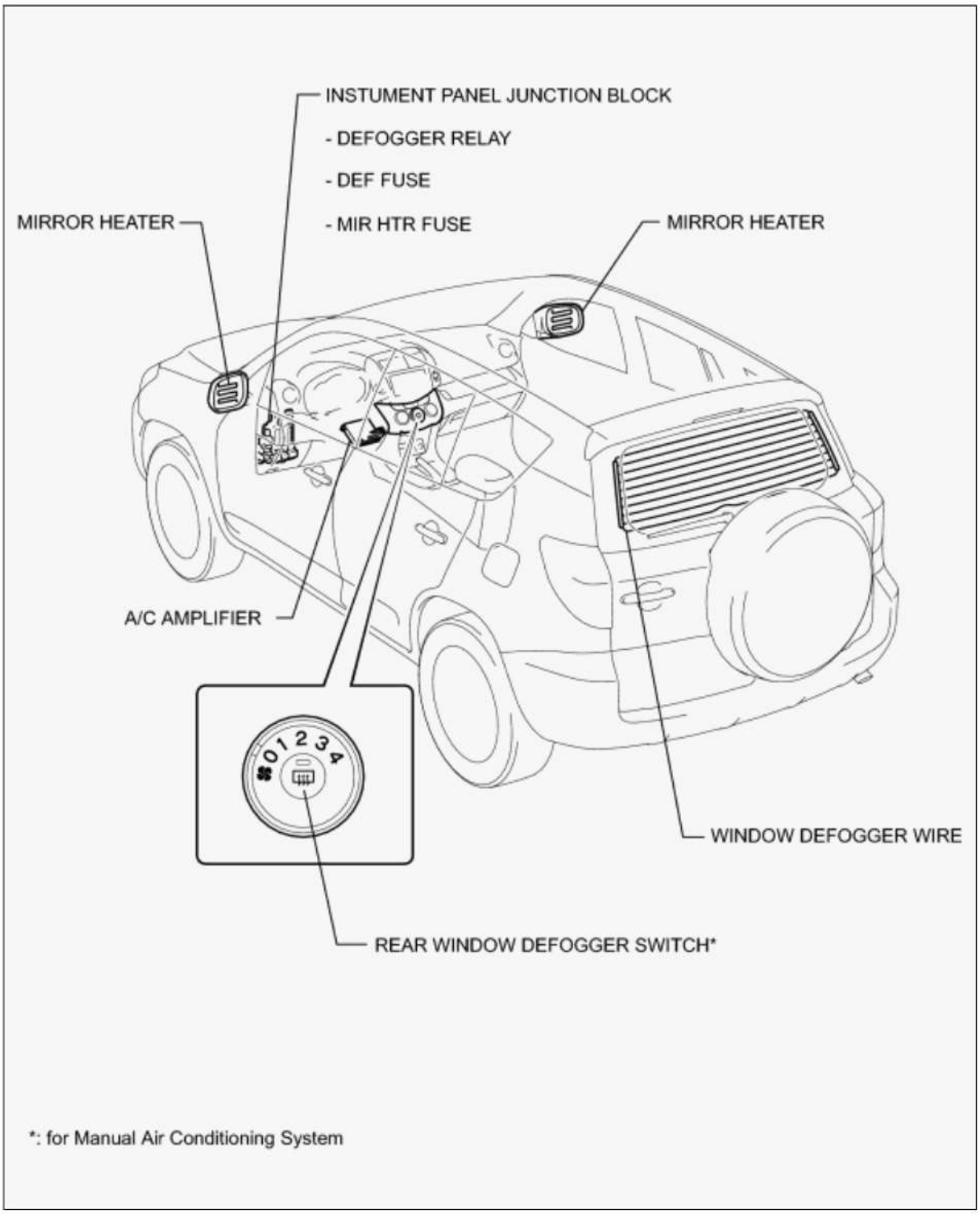
PARTS LOCATION

ILLUSTRATION



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ILLUSTRATION



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Last Modified: 9-7-2011	6.4 T	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000020HC00PX
Title: WINDSHIELD / WINDOWGLASS: WINDOW DEFOGGER SYSTEM: PROBLEM SYMPTOMS TABLE (2011 RAV4)		

PROBLEM SYMPTOMS TABLE

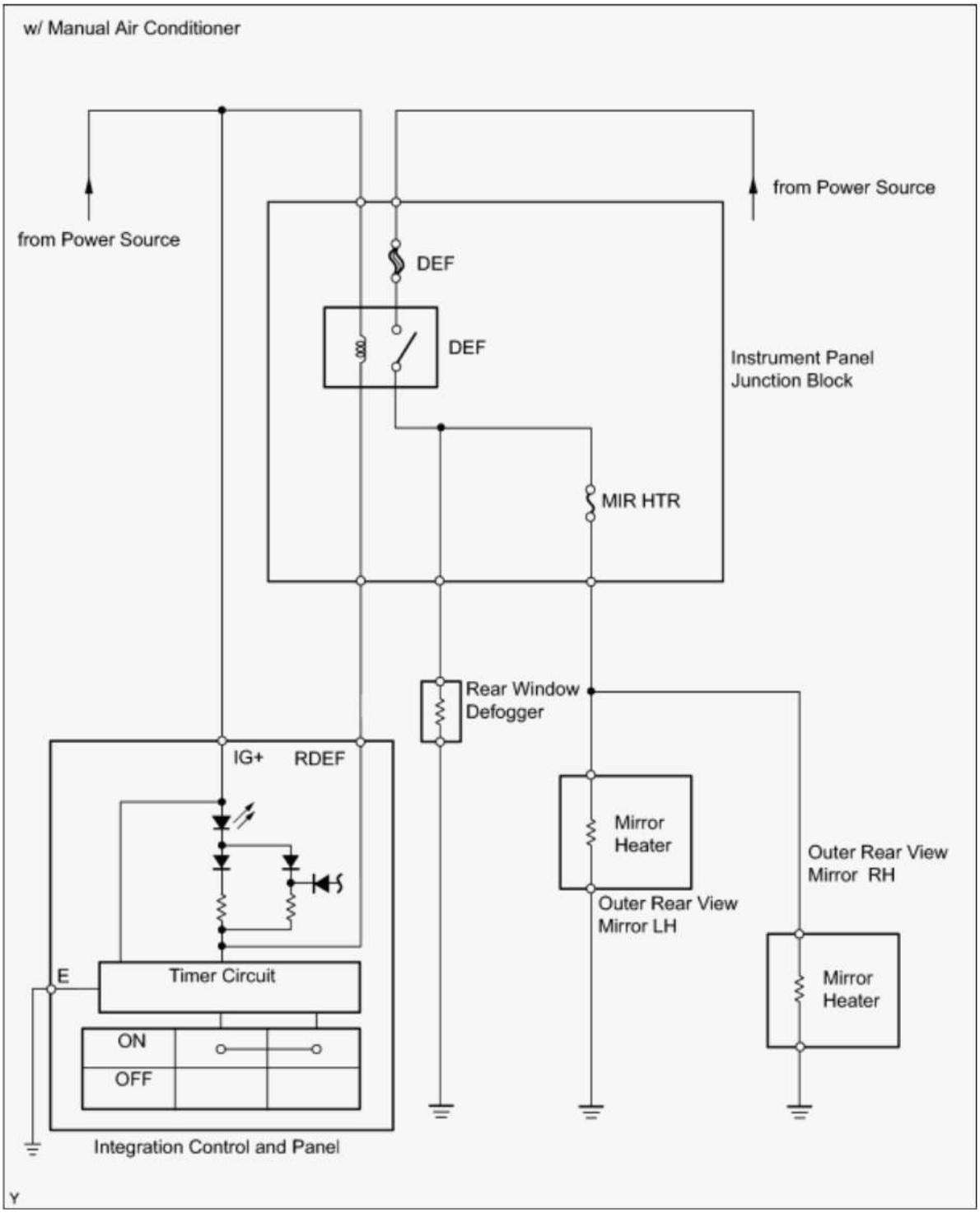
Window defogger system

SYMPTOM	SUSPECTED AREA	SEE PAGE
Rear window defogger switch is turned ON but does not operate (indicator ON)	DEF H-fuse	INFO
	Rear window defogger wire	INFO
	Instrument panel junction block (Defogger relay)	INFO
	Wire harness	-
Rear window defogger switch is turned ON but does not operate (indicator OFF)	DEF H-fuse	INFO
	Rear window defogger wire	INFO
	Wire harness	-
	A/C Amplifier (Automatic A/C)	INFO
	Instrument panel junction block (Defogger relay)	INFO
	Integration Control and Panel (Manual A/C)	-
Mirror heater does not operate (Indicator ON)	DEF H-fuse	INFO
	MIR HTR fuse	INFO
	Outer rear view mirror assembly	INFO
	Wire harness	-
	Instrument panel junction block (Defogger relay)	INFO
Mirror heater does not operate (Indicator OFF)	DEF H-fuse	INFO
	MIR HTR fuse	INFO
	Outer rear view mirror assembly	INFO
	Wire harness	-
	A/C Amplifier (Automatic A/C)	INFO
	Instrument panel junction block (Defogger relay)	INFO
	Integration Control and Panel (Manual A/C)	-

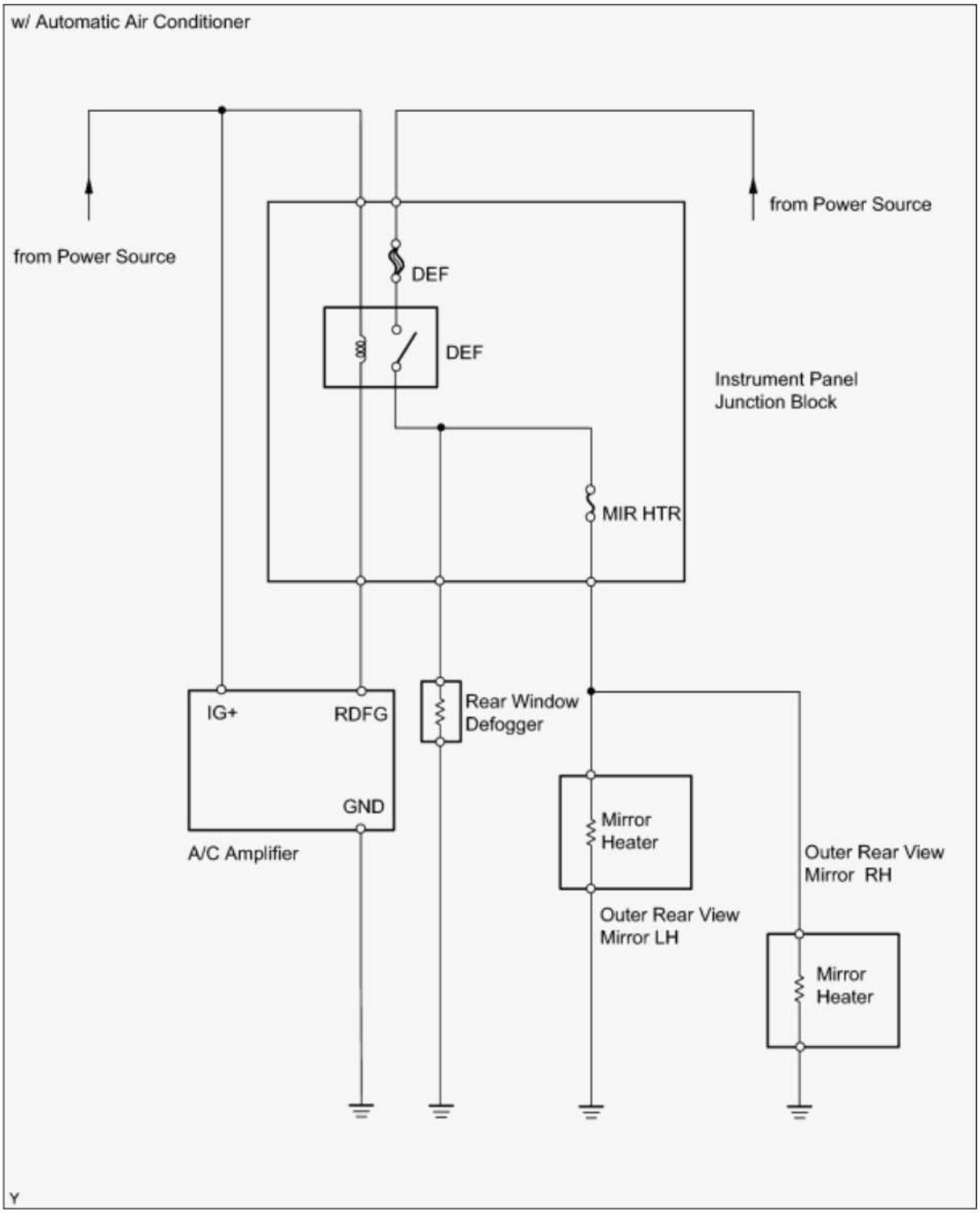
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Last Modified: 9-7-2011	6.4 U	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001ZXZ00JX
Title: WINDSHIELD / WINDOWGLASS: WINDOW DEFOGGER SYSTEM: SYSTEM DIAGRAM (2011 RAV4)		

SYSTEM DIAGRAM



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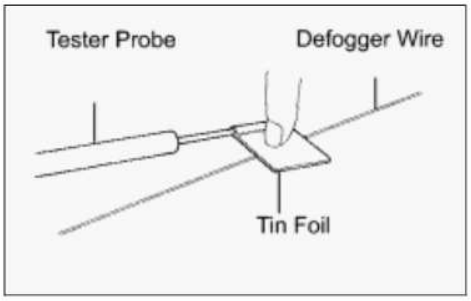
Last Modified: 9-7-2011	6.4 G	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001L6402GX
Title: WINDSHIELD / WINDOWGLASS: WINDOW DEFOGGER WIRE: ON-VEHICLE INSPECTION (2011 RAV4)		

ON-VEHICLE INSPECTION

1. INSPECT BACK DOOR GLASS (DEFOGGER WIRE)

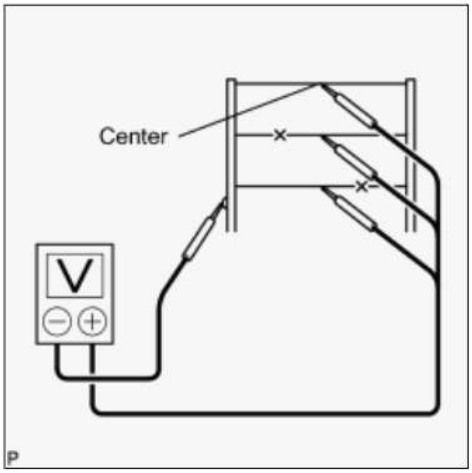
NOTICE:

- When cleaning the glass, wipe the glass along the wire using a soft, dry cloth. Take care not to damage the defogger wires.
- Do not use detergents or glass cleaners that have abrasive ingredients.
- When measuring voltage, wrap a piece of tin foil around the tip of the negative (-) tester probe and press the foil against the wire with your finger, as shown in the illustration.



(a) Turn the ignition switch ON.

(b) Turn the defogger switch ON.

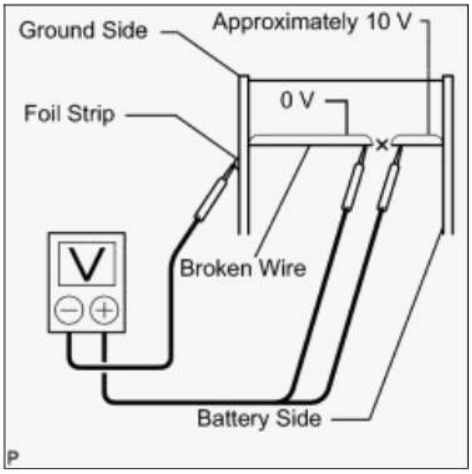


(c) Measure the voltage at the center of each defogger wire as shown in the illustration.

Standard voltage:

VOLTAGE	CRITERIA
Approx. 5 V	Wire is not broken
Approx. 10 or 0 V	Wire is broken

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HINT:

If there is approximately 10 V, the wire may be faulty between the center of the wire and the wire end on the battery side. If there is no voltage, the wire may be faulty between the center of the wire end and the wire end on the ground side.

(d) Place the voltmeter's positive (+) lead against the defogger wire on the battery side.

(e) Place the voltmeter's negative (-) lead with the foil strip against the wire on the ground side.

(f) Slide the positive (+) lead from the battery side to the ground side.

(g) The point where the voltage drops from approximately 10 V to 0 V is where the defogger wire is broken.

HINT:

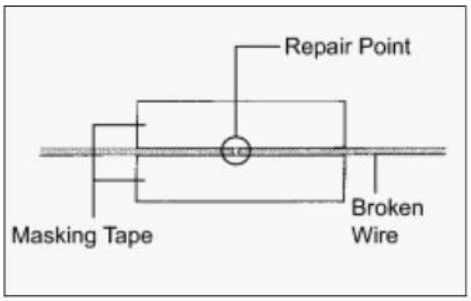
If the defogger wire is not broken, the voltmeter indicates 0 V at the positive (+) end of the defogger wire and gradually increases to approximately 12 V as the meter probe moves to the other end.

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Last Modified: 9-7-2011	6.4 A	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001L6502GX
Title: WINDSHIELD / WINDOWGLASS: WINDOW DEFOGGER WIRE: REPAIR (2011 RAV4)		

REPAIR

1. REPAIR DEFOGGER WIRE

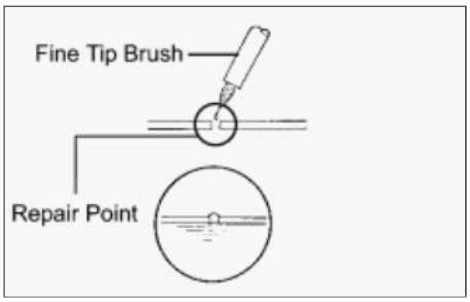


(a) Clean the broken wire tips with grease, wax and silicone remover.

(b) Place masking tape along both sides of the wire.

(c) Thoroughly mix the repair agent.

Dupont paste:
No. 4817 or equivalent



(d) Using a fine tip brush, apply a small amount of the agent to the wire.

(e) After a few minutes, remove the masking tape.

NOTICE:

Do not repair the defogger wire again for at least 24 hours.

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Last Modified: 9-7-2011	6.4 G	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001L8501HX
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD DEICER RELAY: ON-VEHICLE INSPECTION (2011 RAV4)		

ON-VEHICLE INSPECTION

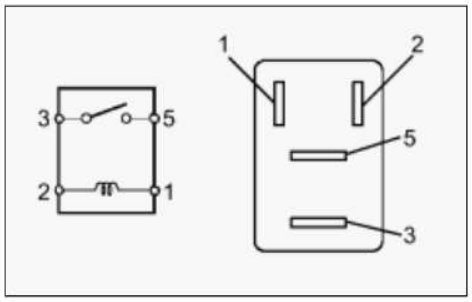
1. REMOVE WINDSHIELD DEICER RELAY (Marking: DEICER)

(a) Remove the defogger relay from the engine room No. 2 relay block.

2. INSPECT WINDSHIELD DEICER RELAY

(a) Measure the resistance of the relay.

Standard resistance:



TESTER CONNECTION	SPECIFIED CONDITION
3 - 5	10 kΩ or higher
	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)

If the result is not as specified, replace the relay.

3. INSTALL WINDSHIELD DEICER RELAY

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Last Modified: 9-7-2011	6.4 G	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000022O000IX
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD DEICER SWITCH: ON-VEHICLE INSPECTION (2011 RAV4)		

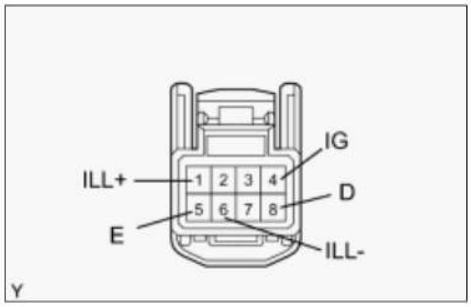
ON-VEHICLE INSPECTION

1. CHECK WINDSHIELD DEICER SWITCH

(a) Disconnect the windshield deicer switch connector.

(b) Measure the voltage and resistance of the switch.

Standard voltage:



TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 (ILL+) - 6 (ILL-)	Headlight dimmer switch OFF → ON	Below 1 V → 10 to 14 V
8 (D) - 5 (E)	Ignition switch ON	10 to 14 V
4 (IG) - 5 (E)	Ignition switch ON	10 to 14 V

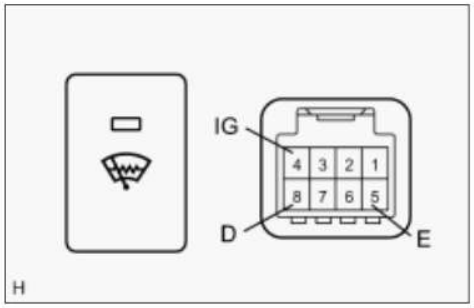
Standard resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
6 (ILL-) - Body ground	Always	Below 1 Ω
5 (E) - Body ground	Always	Below 1 Ω

(c) Reconnect the windshield deicer connector.

(d) Measure the voltage of the switch.

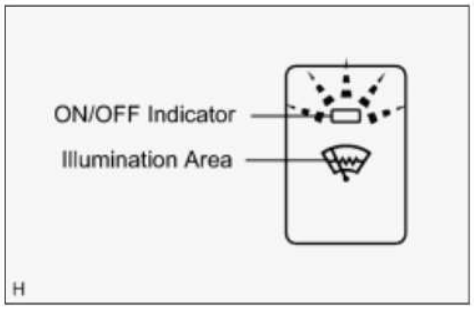
Standard voltage:



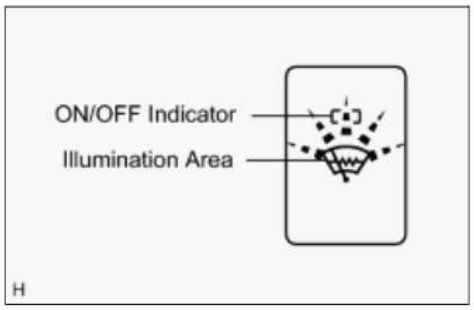
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
8 (D) - 5(E)	Ignition switch ON, windshield deicer switch OFF → ON	10 to 14 V → Below 1 V (after 15 +-3 minutes: 10 to 14 V)
4 (IG) - 5(E)	Ignition switch ON, windshield deicer switch ON	10 to 14 V → Below 1 V

(e) Check the ON/OFF indicator of the switch.

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(1) Push the switch several times. Check that the ON/OFF indicator illuminates or turns off according to the switch operation.



(f) Check the illumination area of the switch.

(1) Check that the ON/OFF indicator illuminates or turns off according to the switch operation.

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Last Modified: 9-7-2011	6.4 G	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000022RP00CX
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD DEICER SYSTEM: ON-VEHICLE INSPECTION (2011 RAV4)		

ON-VEHICLE INSPECTION

1. CHECK WINDSHIELD DEICER SYSTEM OPERATION

(a) When the ignition switch is turned ON and the deicer switch is pressed, check that the windshield deicer operates.

HINT:

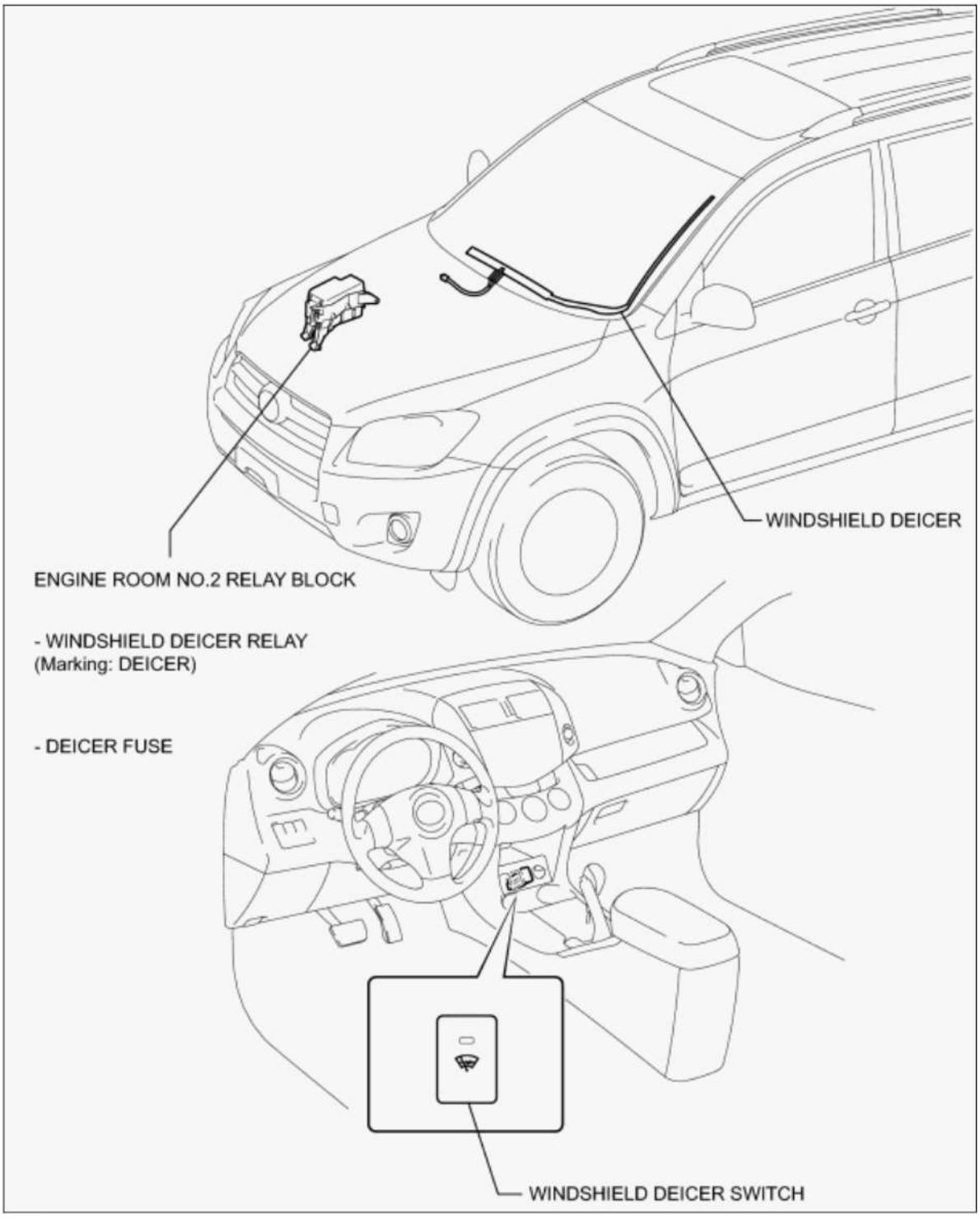
After waiting approximately 15 minutes, check that the defogger automatically turns off.

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Last Modified: 9-7-2011	6.4 R	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001ZYY00MX
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD DEICER SYSTEM: PARTS LOCATION (2011 RAV4)		

PARTS LOCATION

ILLUSTRATION



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Last Modified: 9-7-2011	6.4 T	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001ZYZ00QX
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD DEICER SYSTEM: PROBLEM SYMPTOMS TABLE (2011 RAV4)		

PROBLEM SYMPTOMS TABLE

HINT:

Use the table below to help determine the cause of the problem symptom. 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.

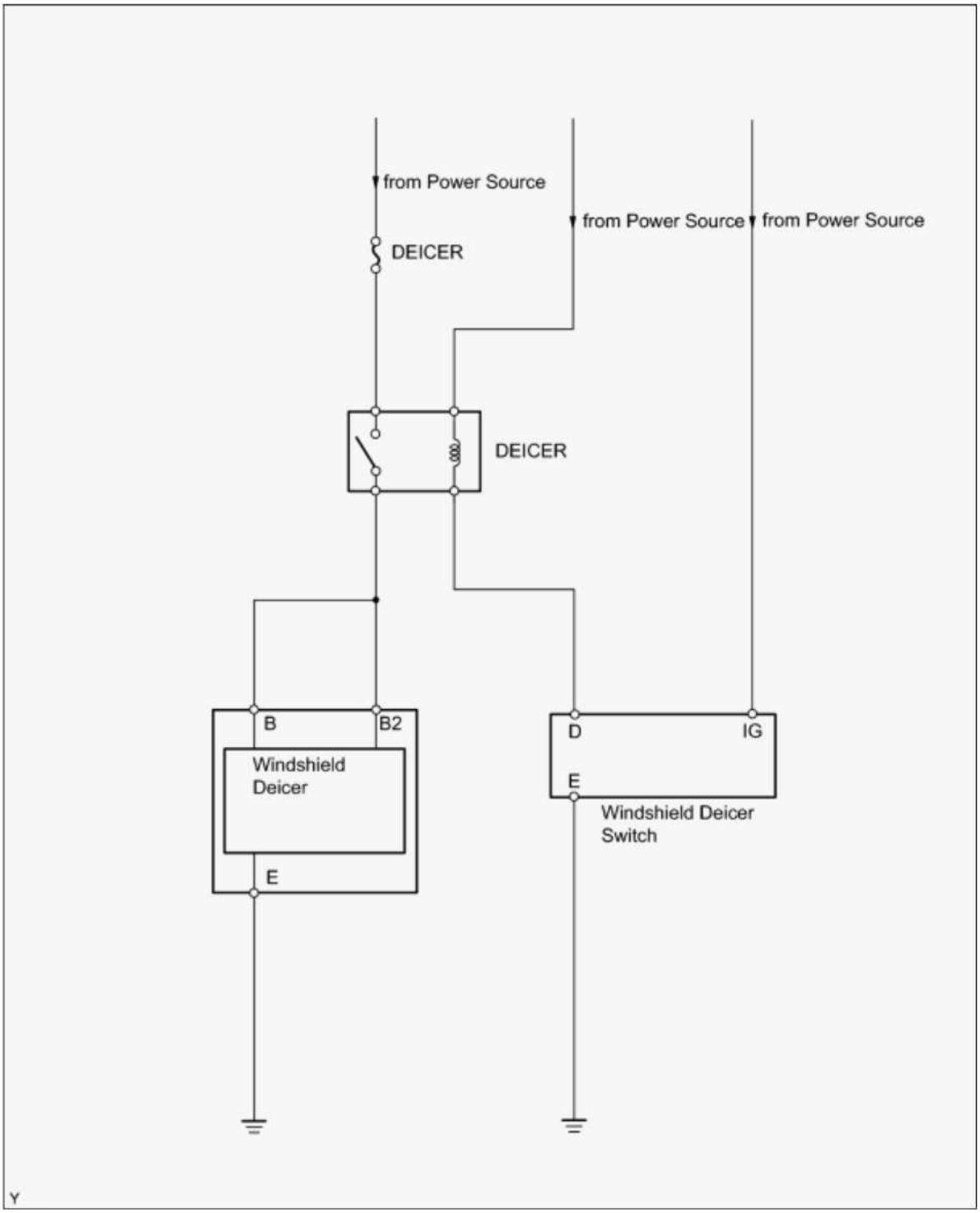
Window deicer system

SYMPTOM	SUSPECTED AREA	SEE PAGE
Window deicer switch is turned ON but does not operate (indicator ON)	1. DEICER fuse	INFO
	2. Windshield deicer switch	INFO
	3. Wire harness	-
Window deicer switch is turned ON but does not operate (indicator OFF)	1. DEICER fuse	INFO
	2. Deicer relay	INFO
	3. Windshield deicer switch	INFO
	4. Windshield deicer wire	INFO
	5. Wire harness	-

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Last Modified: 9-7-2011	6.4 U	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001ZZ000QX
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD DEICER SYSTEM: SYSTEM DIAGRAM (2011 RAV4)		

SYSTEM DIAGRAM

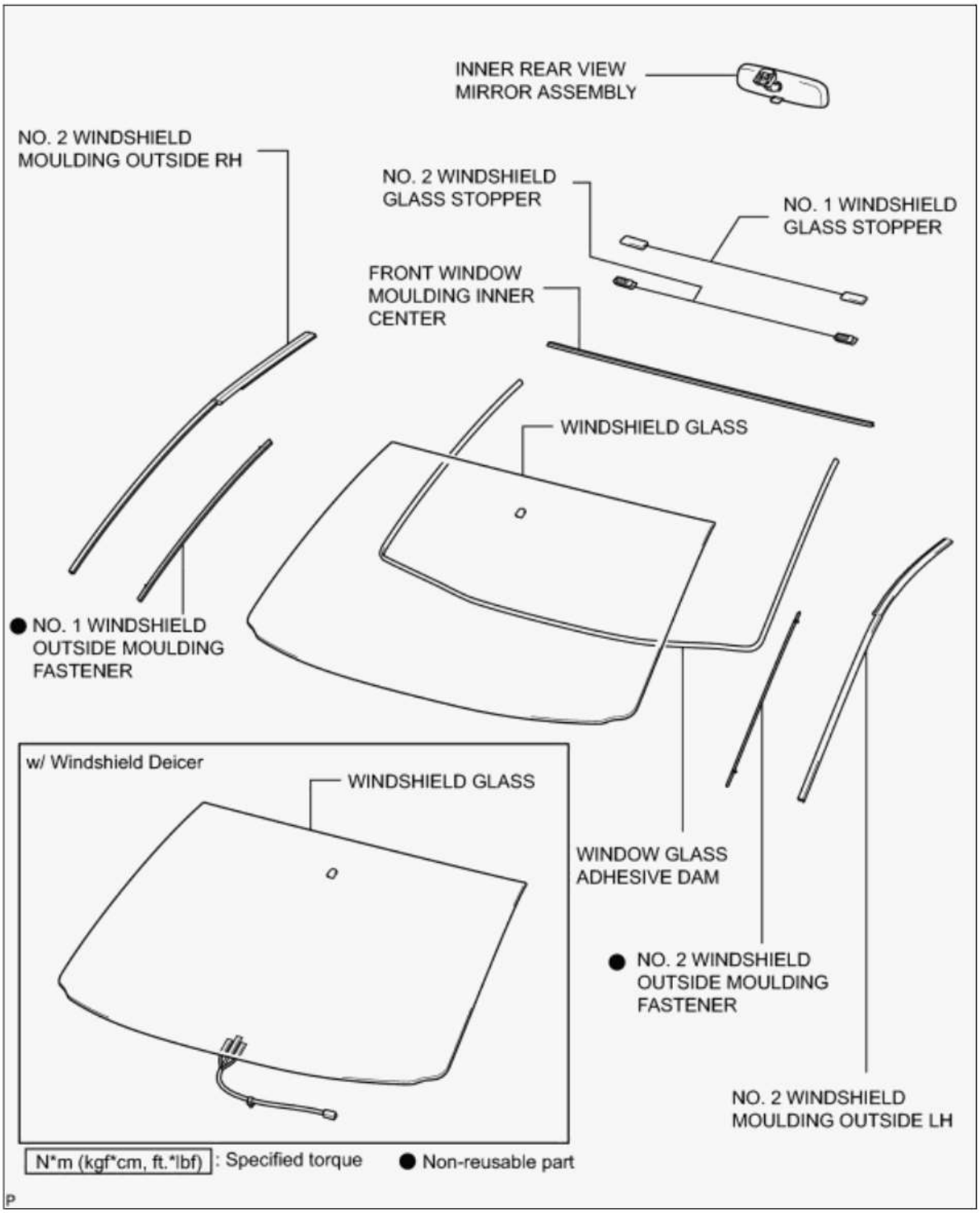


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Last Modified: 9-7-2011	6.4 K	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM000001YRK016X
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD GLASS: COMPONENTS (2011 RAV4)		

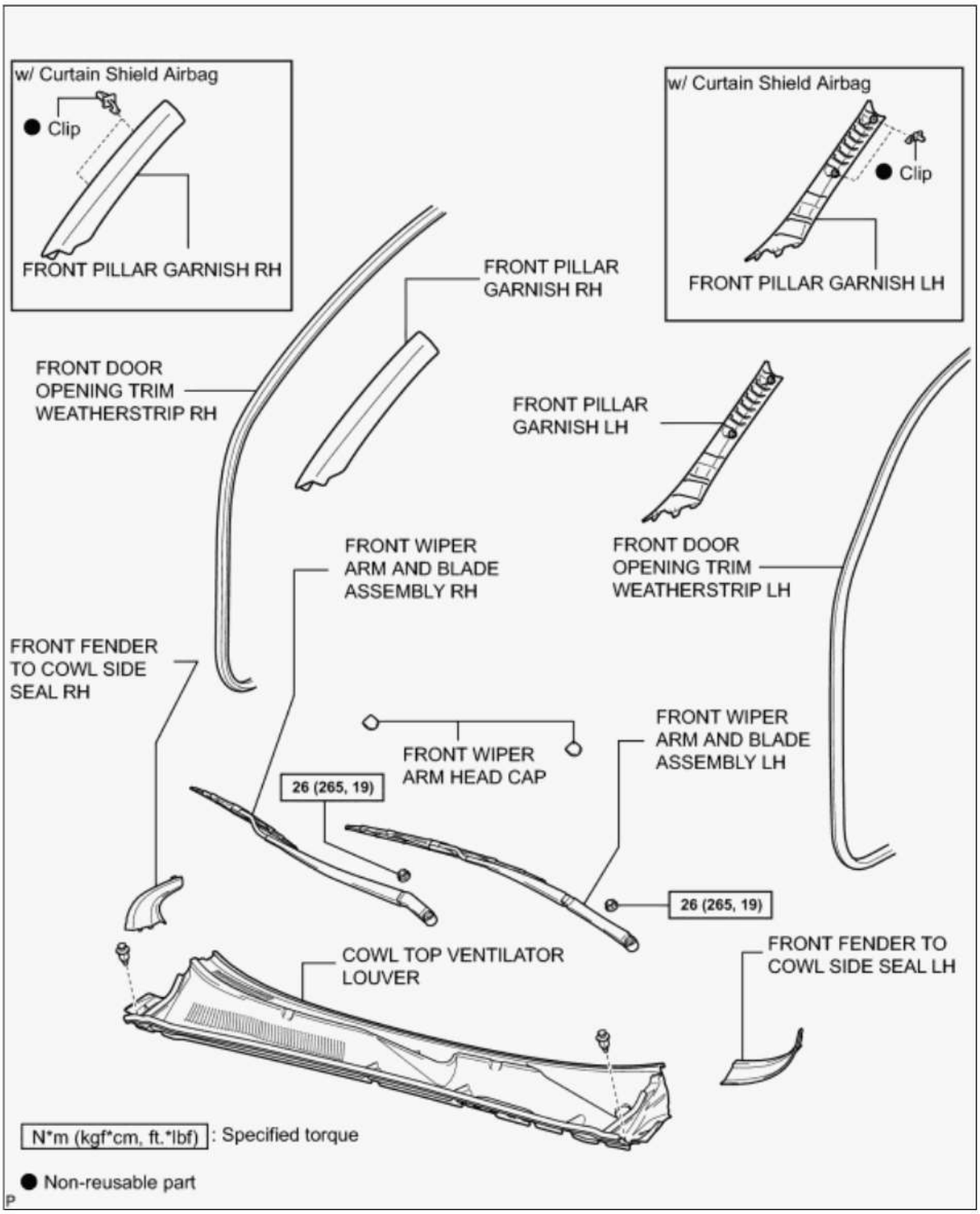
COMPONENTS

ILLUSTRATION



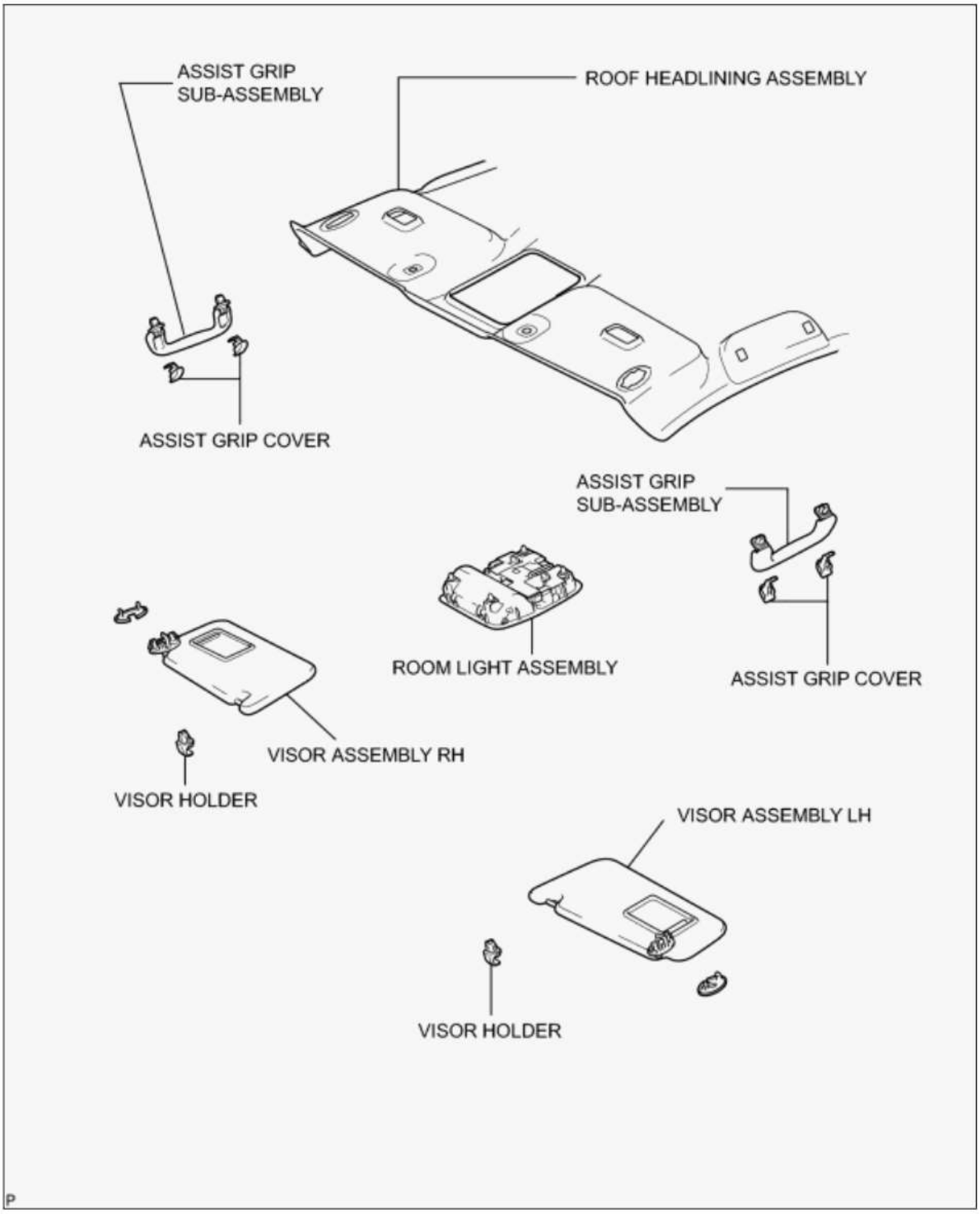
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ILLUSTRATION



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Last Modified: 9-7-2011	6.4 A	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000013KE03BX
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD GLASS: INSTALLATION (2011 RAV4)		

INSTALLATION

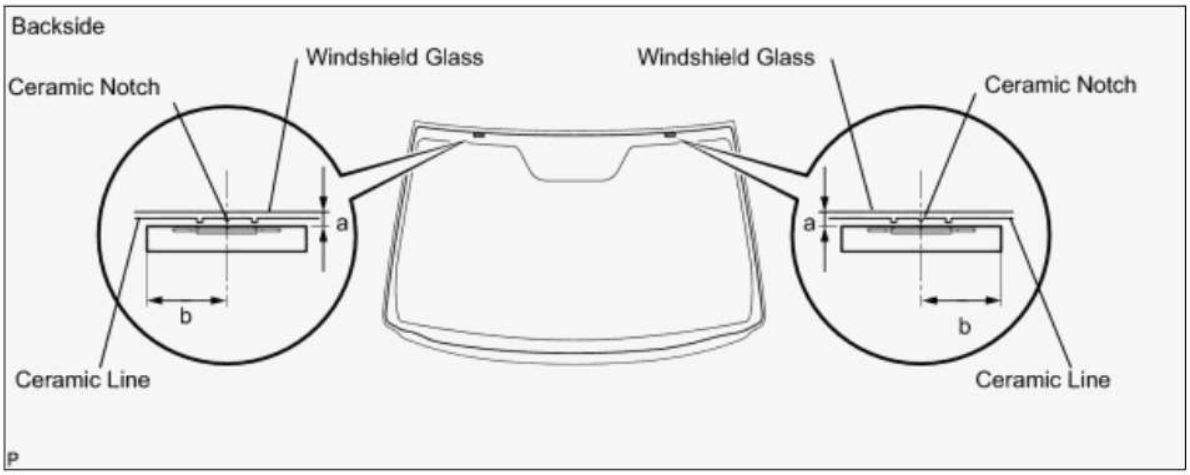
1. INSTALL NO. 2 WINDSHIELD GLASS STOPPER

(a) Apply Primer G to the glass where the spacers will be installed.

NOTICE:

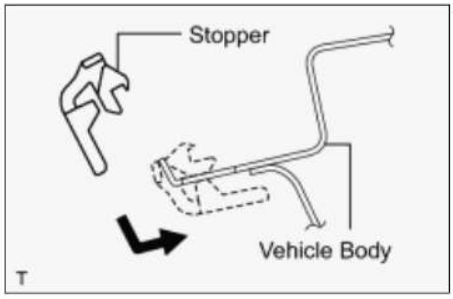
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

(b) Install 2 new spacers onto the glass as shown in the illustration.



Standard measurement:

AREA	SPECIFIED CONDITION
a	7.7 mm (0.303 in.)
b	40.0 mm (1.575 in.)



2. INSTALL NO. 1 WINDSHIELD GLASS STOPPER

(a) Install 2 new stoppers to the vehicle body as shown in the illustration.

3. INSTALL WINDOW GLASS ADHESIVE DAM

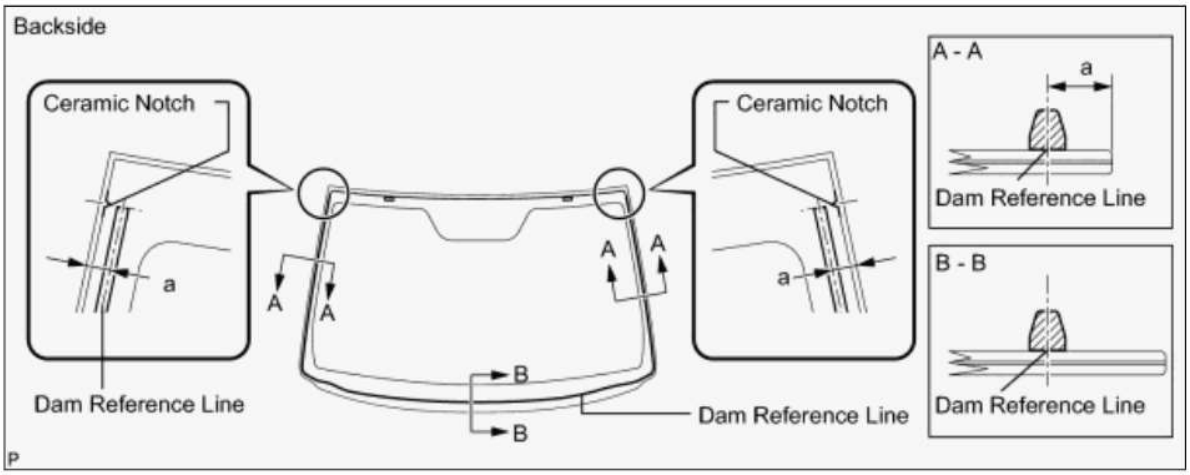
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(a) Apply Primer G to the glass where the glass adhesive dams will be installed.

NOTICE:

- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

(b) Remove the peeling paper from the adhesive part of the dam. Install the dam (adhesive side) to the glass (Primer G area), but exclude the spacer area A as shown in the illustration.



Standard measurement:

AREA	SPECIFIED CONDITION
a	11.5 mm (0.452 in.)

4. INSTALL FRONT WINDOW MOULDING INNER CENTER

(a) Using a brush or sponge, coat the edge of the glass and the contact surface with Primer G.



NOTICE:

- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

(b) Install the windshield outside moulding, as shown in the illustration.

NOTICE:

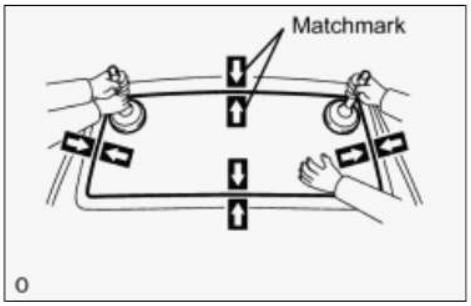
Do not drive the vehicle for the amount of time written in the table below.

Temperature	Usage Time Frame
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes

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5°C (41°F)	8 hours

5. INSTALL WINDSHIELD GLASS



(a) Position the glass.

(1) Using suction cups, place the glass in the correct position.

(2) Check that the entire contact surface of the glass rim is perfectly even.

(3) Place matchmarks on the glass and vehicle body on the locations indicated in the illustration.

HINT:

- Placing matchmarks is only necessary when installing new glass. If it is the reused glass, matchmarks should already be present.
- When reusing the glass, check and correct the matchmark positions.

NOTICE:

Check that the stoppers are attached to the vehicle body correctly.

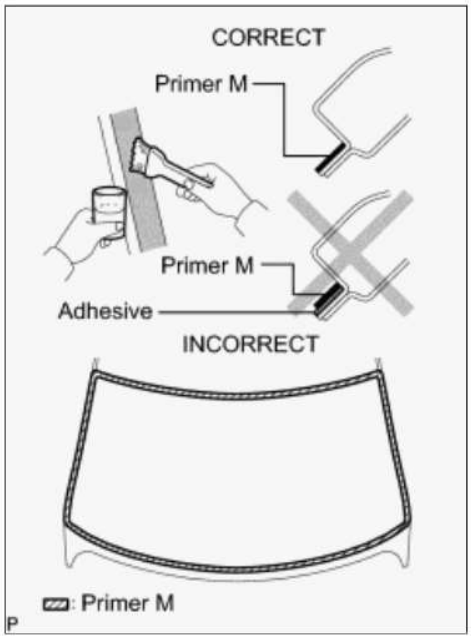
(4) Using suction cups, remove the glass.

(b) Using a brush, apply Primer M to the exposed part of the vehicle body.

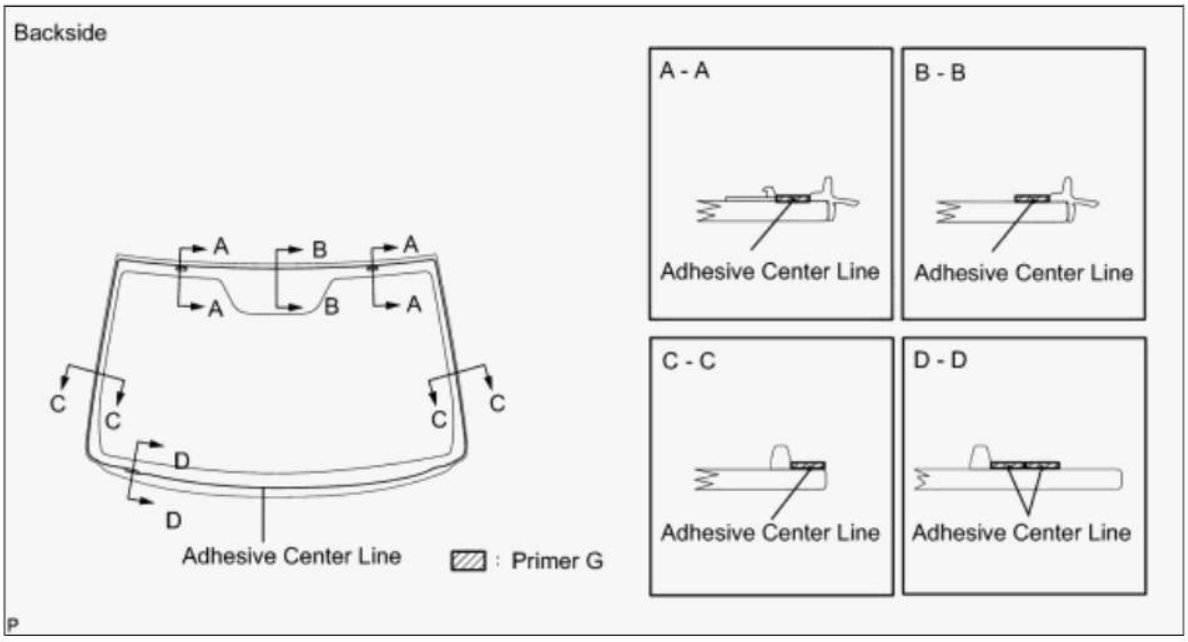
NOTICE:

- Allow the primer to dry for 3 minutes or more.
- Do not apply primer to the adhesive.
- Throw away any leftover primer.
- Do not apply too much primer.

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(c) Using a brush or sponge, apply Primer G to the contact surface of the glass.



HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer.

NOTICE:

- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

(d) Apply adhesive to the glass.

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Adhesive:
Toyota Genuine Windshield Glass Adhesive or Equivalent

(1) Cut off the tip of the cartridge nozzle as shown in the illustration.

HINT:

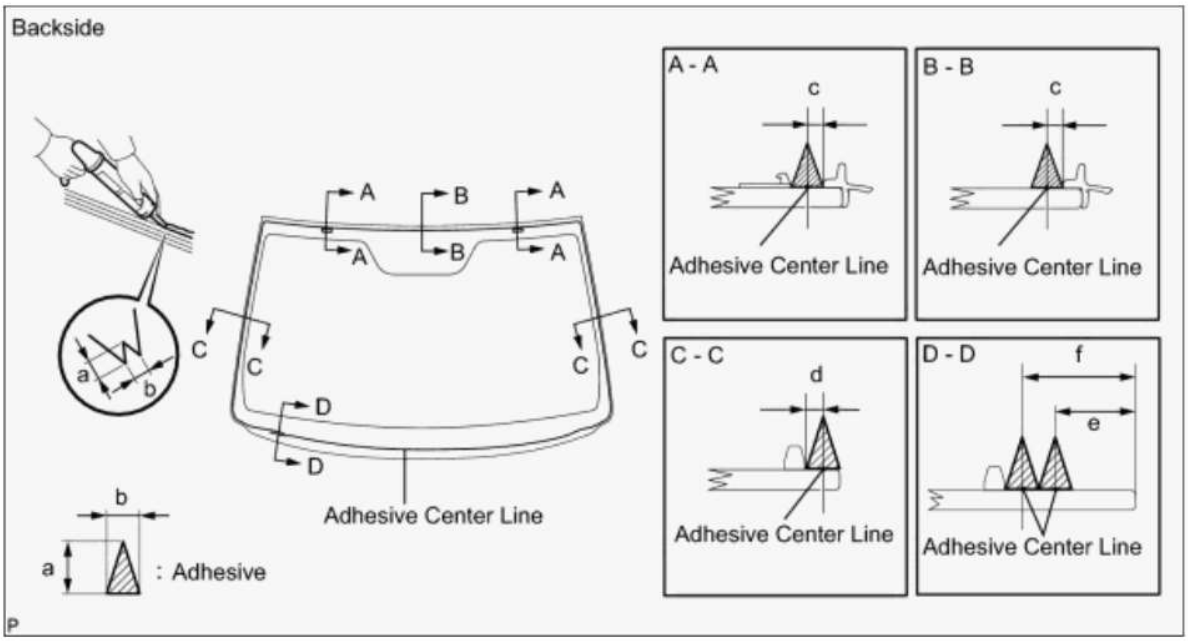
After cutting off the tip, use all adhesive within the time written in the table below.

Usage time frame:

TEMPERATURE	USAGE TIME FRAME
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

(2) Load the sealer gun with the cartridge.

(3) Apply adhesive to the glass as shown in the illustration.

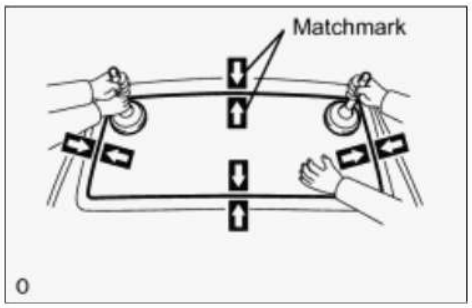


Standard measurement:

AREA	SPECIFIED CONDITION
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)
c	5.0 mm (0.196 in.)
d	28.3 mm (1.114 in.)

(e) Install the glass to the vehicle body.

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(1) Using suction cups, position the glass so that the matchmarks are aligned. Press it in gently along the rim.

(2) Lightly press the outer surface of the glass to ensure that it is securely fit to the vehicle body.

NOTICE:

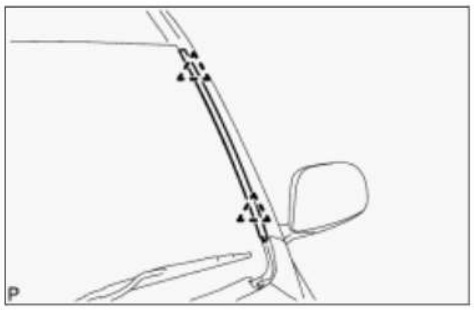
- Check that the stoppers are attached to the vehicle body correctly.
- Check that the vehicle body and glass have a small gap between them.

(3) Hold the glass in place securely with protective tape or equivalent until the adhesive hardens.

(f) w/ Windshield deicer:

Install the clip and connect the connector.

6. INSTALL COWL TOP VENTILATOR LOUVER INFO

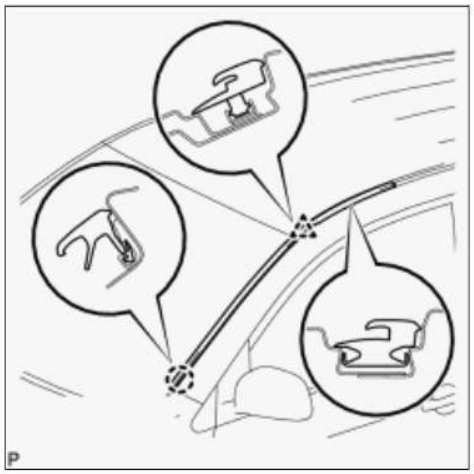


7. INSTALL NO. 2 WINDSHIELD OUTSIDE MOULDING FASTENER

(a) Install the moulding fastener with the 2 clips and double-sided tape.

8. INSTALL NO. 1 WINDSHIELD OUTSIDE MOULDING FASTENER

(a) Install the moulding fastener with the 2 clips and double-sided tape.



9. INSTALL NO. 2 WINDSHIELD MOULDING OUTSIDE LH

(a) Install the moulding with claw and clip.

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10. INSTALL NO. 2 WINDSHIELD MOULDING OUTSIDE RH

(a) Install the moulding with claw and clip.

11. INSTALL FRONT FENDER TO COWL SIDE SEAL LH INFO

12. INSTALL FRONT FENDER TO COWL SIDE SEAL RH INFO

13. INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY LH INFO

14. INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY RH INFO

15. INSTALL FRONT WIPER ARM HEAD CAP INFO

16. INSTALL ROOF HEAD LINING

(a) Install the roof headlining INFO .

17. INSTALL VISOR HOLDER INFO

18. INSTALL VISOR ASSEMBLY LH INFO

19. INSTALL VISOR ASSEMBLY RH INFO

20. INSTALL ASSIST GRIP SUB-ASSEMBLY INFO

21. INSTALL ASSIST GRIP COVER INFO

22. INSTALL ROOM LIGHT ASSEMBLY INFO

23. INSTALL INNER REAR VIEW MIRROR ASSEMBLY INFO

24. INSTALL FRONT PILLAR GARNISH LH INFO

25. INSTALL FRONT PILLAR GARNISH RH INFO

26. INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP LH

27. INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP RH

28. INSPECT FOR LEAKS AND REPAIR

(a) Conduct a leak test after the adhesive has completely hardened.

(b) Seal any leaks with auto glass sealer.

29. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

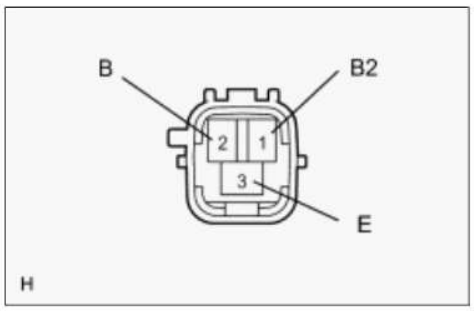
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Last Modified: 9-7-2011	6.4 G	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000022QN00NX
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD GLASS: ON-VEHICLE INSPECTION (2011 RAV4)		

ON-VEHICLE INSPECTION

1. CHECK WINDSHIELD GLASS

(a) Disconnect the windshield deicer wire.



(b) Measure the resistance of the deicer wire.

Standard resistance:

TESTER CONNECTION	SPECIFIED CONDITION
1 (B2) - 3 (E)	Below 1 Ω
2 (B) - 3 (E)	Below 1 Ω

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Last Modified: 9-7-2011	6.4 A	**From:** 201008
Model Year: 2011	**Model:** RAV4	**Doc ID:** RM0000013KG03AX
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD GLASS: REMOVAL (2011 RAV4)		

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

2. REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP LH

(a) Partially remove the front door opening trim weatherstrip LH so that the front pillar garnish LH can be removed INFO .

3. REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP RH

HINT:

Use the same procedures described for the LH side.

4. REMOVE FRONT PILLAR GARNISH LH INFO

5. REMOVE FRONT PILLAR GARNISH RH INFO

6. REMOVE INNER REAR VIEW MIRROR ASSEMBLY INFO

7. REMOVE ROOM LIGHT ASSEMBLY INFO

8. REMOVE ASSIST GRIP COVER INFO

9. REMOVE ASSIST GRIP SUB-ASSEMBLY INFO

10. REMOVE VISOR ASSEMBLY LH INFO

11. REMOVE VISOR ASSEMBLY RH INFO

12. REMOVE VISOR HOLDER INFO

13. REMOVE ROOF HEADLINING ASSEMBLY

HINT:

It is not necessary to completely remove the roof headlining. Slightly lower the front section of the roof headlining.

(a) Partially remove the roof headlining INFO .

14. REMOVE FRONT WIPER ARM HEAD CAP INFO

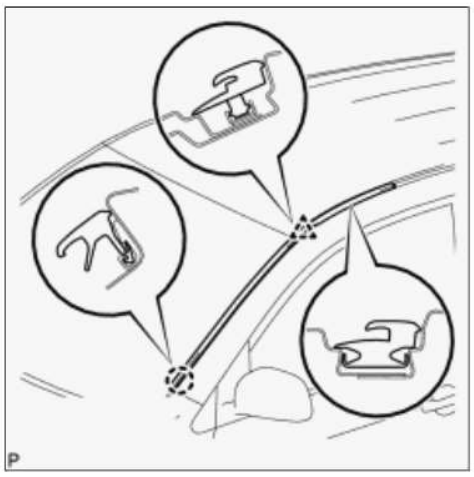
15. REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY LH INFO

16. REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY RH INFO

17. REMOVE FRONT FENDER TO COWL SIDE SEAL LH INFO

18. REMOVE FRONT FENDER TO COWL SIDE SEAL RH INFO

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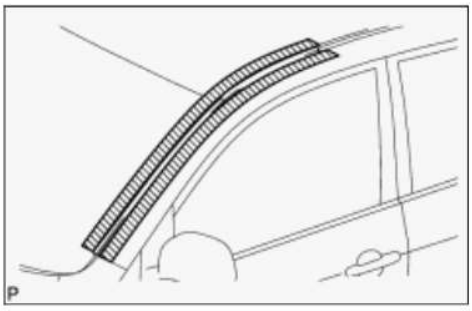
19. REMOVE NO. 2 WINDSHIELD MOULDING OUTSIDE LH

(a) Remove the moulding with the clip and claw.

20. REMOVE NO. 2 WINDSHIELD MOULDING OUTSIDE RH

(a) Remove the moulding with the clip and claw.

21. REMOVE NO. 2 WINDSHIELD OUTSIDE MOULDING FASTENER



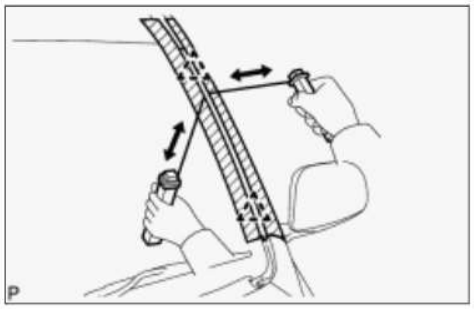
(a) Apply protective tape to the outer surface of the vehicle body to prevent scratches.

Using a heat light, heat the moulding to 40 to 60°C (104 to 140°F).

NOTICE:

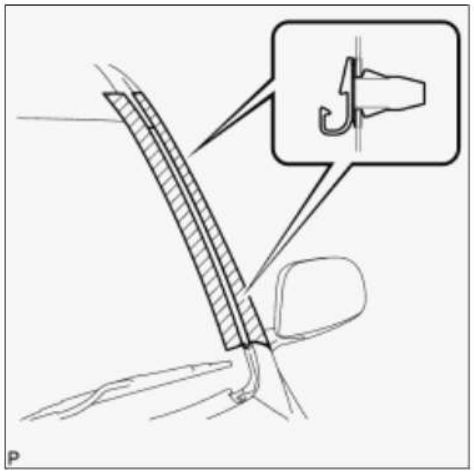
Do not heat the moulding excessively.

(b) Tie both piano wire ends to wooden blocks or similar objects.



(c) Cut the adhesive tape by pulling the piano wire as shown in the illustration.

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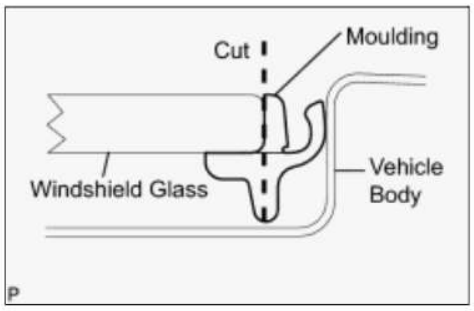
(d) Remove the 2 clips and moulding fastener.

22. REMOVE NO. 1 WINDSHIELD OUTSIDE MOULDING FASTENER

HINT:

Use the same procedures described for the LH side.

23. REMOVE COWL TOP VENTILATOR LOUVER INFO



24. REMOVE FRONT WINDOW MOULDING INNER CENTER

(a) Using a knife, cut off the moulding as shown in the illustration.

NOTICE:

Be careful not to damage the vehicle body.

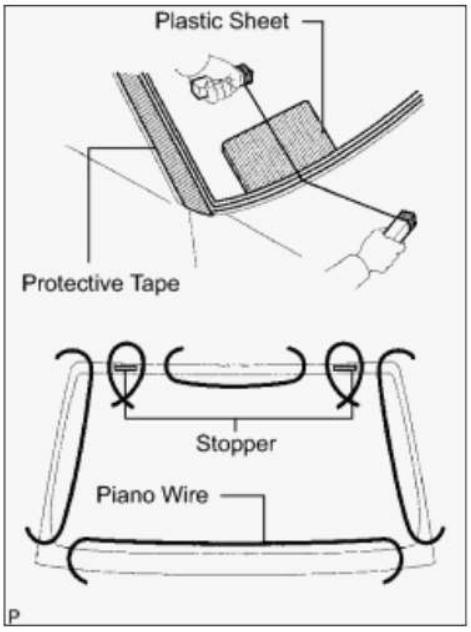
(b) Remove the remaining moulding.

HINT:

Make a partial cut in the moulding. Then pull and remove it by hand.

25. REMOVE WINDSHIELD GLASS

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(a) w/ Windshield Deicer:

Remove the clip and disconnect the connector.

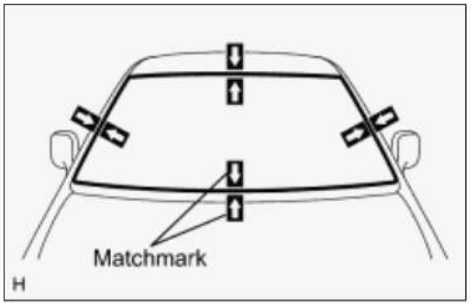
(b) Apply protective tape to the outer surface of the vehicle body to prevent scratches.

(c) From the interior, insert a piano wire between the vehicle body and glass as shown in the illustration.

(d) Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

NOTICE:

- When separating the glass from the vehicle, be careful not to damage the vehicle's paint or interior/exterior ornaments.
- To prevent the instrument panel from being scratched when removing the glass, place a plastic sheet between the piano wire and instrument panel.



(e) Place matchmarks over the glass and vehicle body on the locations indicated in the illustration.

HINT:

Matchmarks do not need to be placed if not reusing the glass.

(f) Cut through the adhesive by pulling the piano wire around the glass.

NOTICE:

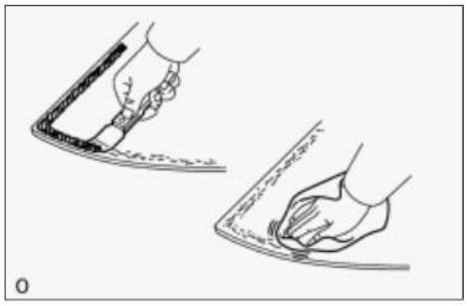
Leave as much adhesive on the vehicle body as possible when cutting through the adhesive.

(g) Disengage the stoppers.

(h) Using suction cups, remove the glass.

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26. CLEAN WINDSHIELD GLASS



(a) Using a scraper, remove the damaged stoppers, dams and adhesive sticking to the glass.

(b) Clean the outer edges of the glass with non-residue solvent.

Do not touch the glass surface after cleaning it.

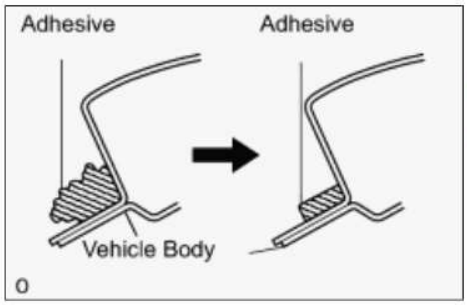
NOTICE:

Even if using new glass, clean it with non-residue solvent.

27. CLEAN VEHICLE BODY

(a) Clean and shape the contact surface of the vehicle body.

(1) On the contact surface of the vehicle body, use a knife to cut away excess adhesive as shown in the illustration.



HINT:

Leave as much adhesive on the vehicle body as possible.

NOTICE:

Be careful not to damage the vehicle body.

(b) Clean the contact surface of the vehicle body with cleaner.

HINT:

Even if all the adhesive has been removed, clean the vehicle body.

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