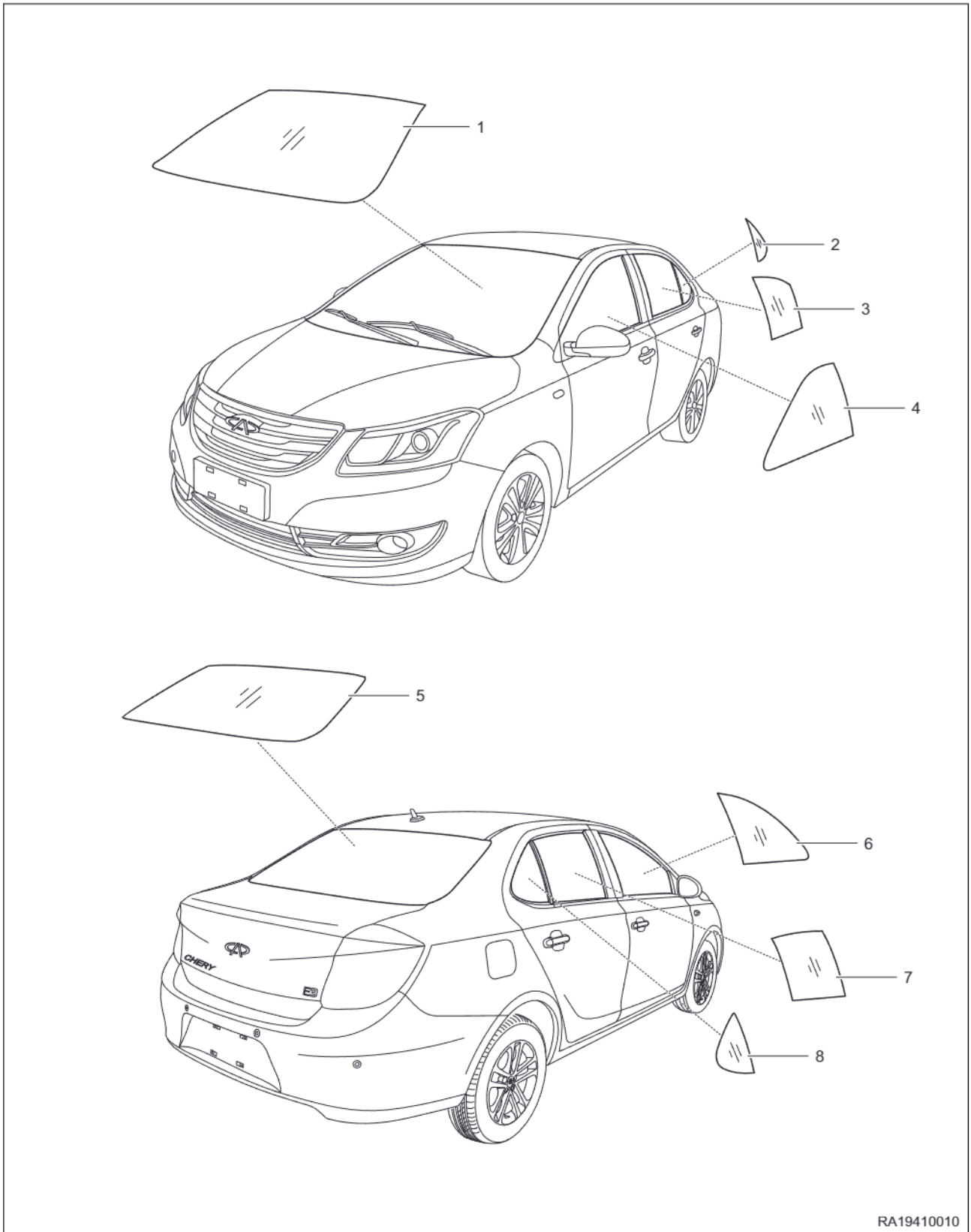


WINDSHIELD/WINDOW GLASS

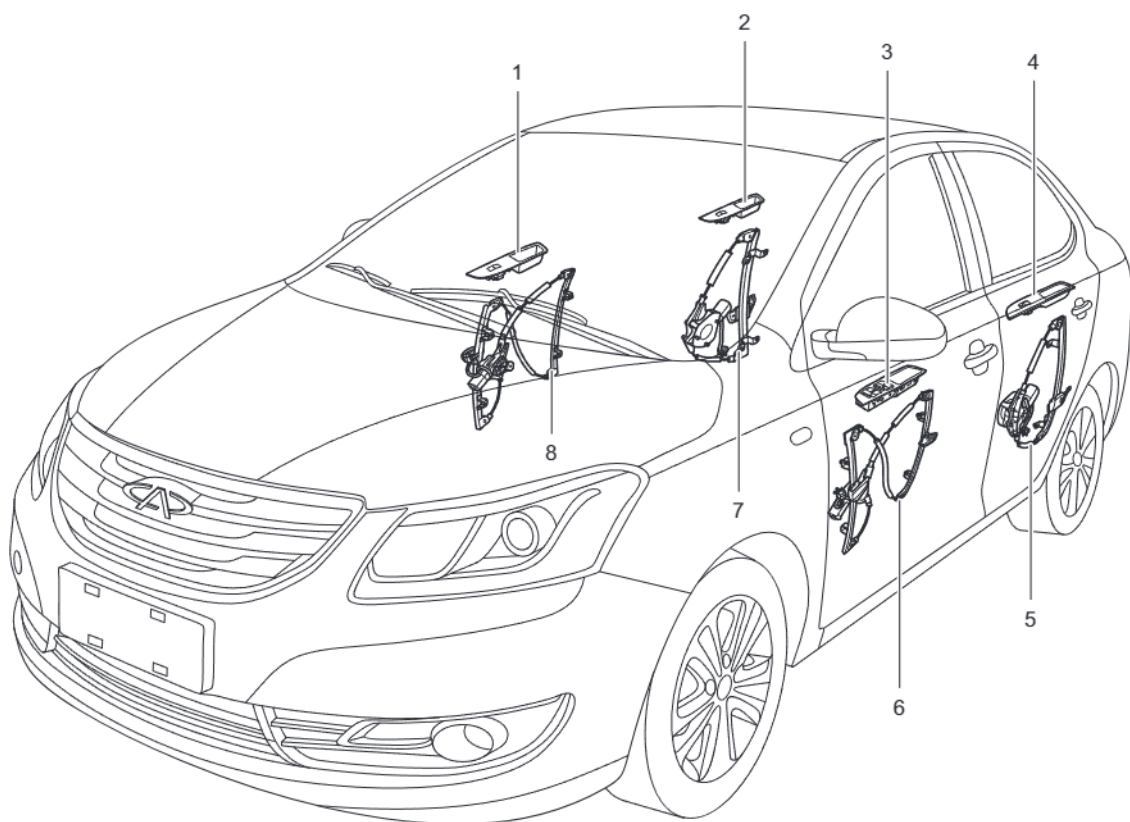
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GENERAL INFORMATION

Description



1 - Front Windshield Assembly	2 - Left Triangular Window Glass Assembly
3 - Rear Left Door Glass Assembly	4 - Front Left Door Glass Assembly
5 - Rear Windshield Assembly	6 - Front Right Door Glass Assembly
7 - Rear Right Door Glass Assembly	8 - Right Triangular Window Glass Assembly



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1 - Front Right Door Glass Regulating Control Switch	2 - Rear Right Door Glass Regulating Control Switch
3 - Front Left Door Glass Regulating Control Switch	4 - Rear Left Door Glass Regulating Control Switch
5 - Rear Left Door Power Glass Regulator Assembly	6 - Front Left Door Power Glass Regulator Assembly
7 - Rear Right Door Power Glass Regulator Assembly	8 - Front Right Door Power Glass Regulator Assembly

The power window control system controls the power window glass UP/DOWN function by operating the power glass regulating control switch on the door inner protector assembly. The main control devices of this system include: power glass regulating control master switch (built into the driver side door) and power glass regulating control switches (built into the front passenger side door and rear doors). Press the power glass regulating control master switch or any power glass regulating control switch to transmit the UP/DOWN signal to the corresponding power glass regulator motor, thus controlling the UP/DOWN operation of corresponding power window glass.

Main Components Function

Component	Description
Power window lock switch	Locates on the front left door inner protector assembly and controls the operations of front and rear passenger door power window glass. When the power window lock switch is in the lock position, only the driver side power glass regulating control master switch can control the UP/DOWN operation of driver side power window glass.
Power glass regulating control switch	Locates on the door inner protector assembly. Each power glass regulating control switch controls the UP/DOWN operation of corresponding power window glass.
Power glass regulator motor	Receives the switch signal and performs conversion to activate the power glass regulator motor to change the power window glass position.

System Function

Function	Description
Manual UP function	All the power glass regulating control switches have the manual UP function. The power window glass goes up when the power glass regulating control switch is pulled up and stops when the switch is released.
Manual DOWN function	All the power glass regulating control switches have the manual DOWN function. The power window glass goes down when the power glass regulating control switch is pressed and held (≥ 300 ms), and stops when the switch is released.
Automatic DOWN function	All the power glass regulating switches have the automatic DOWN function. The window glass goes down automatically when the power glass regulating switch is pressed ($50 \text{ ms} < T < 300 \text{ ms}$). To stop it partway, press the power glass regulating switch again.
Power window LOCK function	When the power window lock switch is pressed, the corresponding power window glass cannot be operated with the passenger side power glass regulating control switches. In this case, only the driver side power window glass can be operated. This function can be canceled only when the power window lock switch is pressed again.

Operation Inspection

1. Check the power window lock switch.
 - a. Check that the front passenger side power window glass and rear power window glass cannot be operated by the front passenger side power glass regulating control switch and rear power glass regulating control switches when the power window lock switch is pressed.

OK: Front passenger side power glass regulating control switch and rear power glass regulating control switches are disabled.

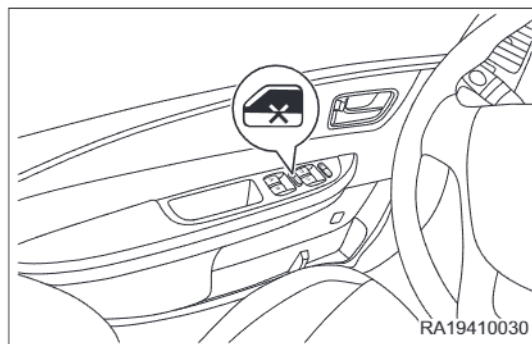
- b. Check that the front passenger side power window glass and rear power window glass can be operated by the front passenger side power glass regulating control switch and rear power glass regulating control switches when the power window lock switch is pressed again.

OK: Front passenger side power glass regulating control switch and rear power glass regulating control switches can be operated.

2. Check the manual UP/DOWN function.

- a. Check that the driver side power window glass operates as follows:

OK



Condition	Power Glass Regulating Control Switch	Switch Operation	Power Window Glass
Ignition Switch ON	Driver side	Pulled	UP (close)
		Pushed	DOWN (open)

- b. Check that the power window glass other than driver side power window glass operate as follows:

OK

Condition	Power Glass Regulating Control Switch	Switch Operation	Power Window Glass
- Ignition switch ON - Window lock switch OFF	Passenger side	Pulled	UP (close)
		Pushed	DOWN (open)
	Rear left side	Pulled	UP (close)
		Pushed	DOWN (open)
	Rear right side	Pulled	UP (close)
		Pushed	DOWN (open)

3. Check the remote manual UP/DOWN function.

- a. Check that the driver side power window glass operates as follows:

OK

Condition	Power Glass Regulating Control Switch	Switch Operation	Power Window Glass
Ignition switch ON	Driver side	Fully pulled	UP (close)
		Fully pushed	DOWN (open)

- b. Check that the power window glass other than driver side power window glass operate as follows:

OK

Condition	Power Glass Regulating Control Switch	Switch Operation	Power Window Glass
- Ignition switch ON - Window lock switch OFF	Passenger side	Pulled	UP (close)
		Pushed	DOWN (open)
	Rear left side	Pulled	UP (close)
		Pushed	DOWN (open)
	Rear right side	Pulled	UP (close)
		Pushed	DOWN (open)

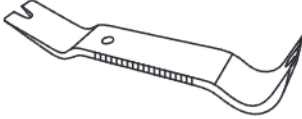
Specifications

Description	Torque (N·m)
Glass Regulating Control Master Switch Assembly Fixing Screw	1.5 ± 0.5
Front Door Glass Front Guide Rail Fixing Bolt	7 ± 1.5
Front Door Glass Rear Guide Rail Fixing Bolt	7 ± 1.5
Rear Door Glass Front Guide Rail Fixing Bolt	7 ± 1.5
Rear Door Glass Rear Guide Rail Fixing Screw	3.5 ± 0.5
Front Door Glass Assembly Fixing Bolt	7 ± 1.5
Rear Door Glass Fixing Bolt	7 ± 1.5
Front Door Power Glass Regulator Fixing Bolt	7 ± 1.5
Rear Door Power Glass Regulator Fixing Bolt	7 ± 1.5
Front Door Glass Outer Weatherstrip Fixing Screw	1.5 ± 0.5
Rear Door Glass Outer Weatherstrip Fixing Screw	1.5 ± 0.5
Blower Speed Switch Fixing Screw	1.5 ± 0.5
Fog Switch Set Fixing Screw	1.5 ± 0.5
Air Spring Hinge Fixing Bolt	7 ± 1.5
Fixing Bolt Between Luggage Compartment Door Hinge and Rear Windshield Assembly	7 ± 1.5

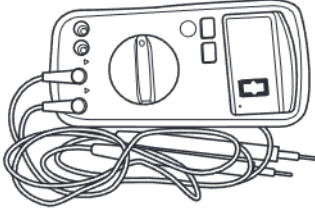
Description	Torque (N·m)
Luggage Compartment Outside Handle Assembly Fixing Bolt	7 ± 1.5

Tools

Special Tool

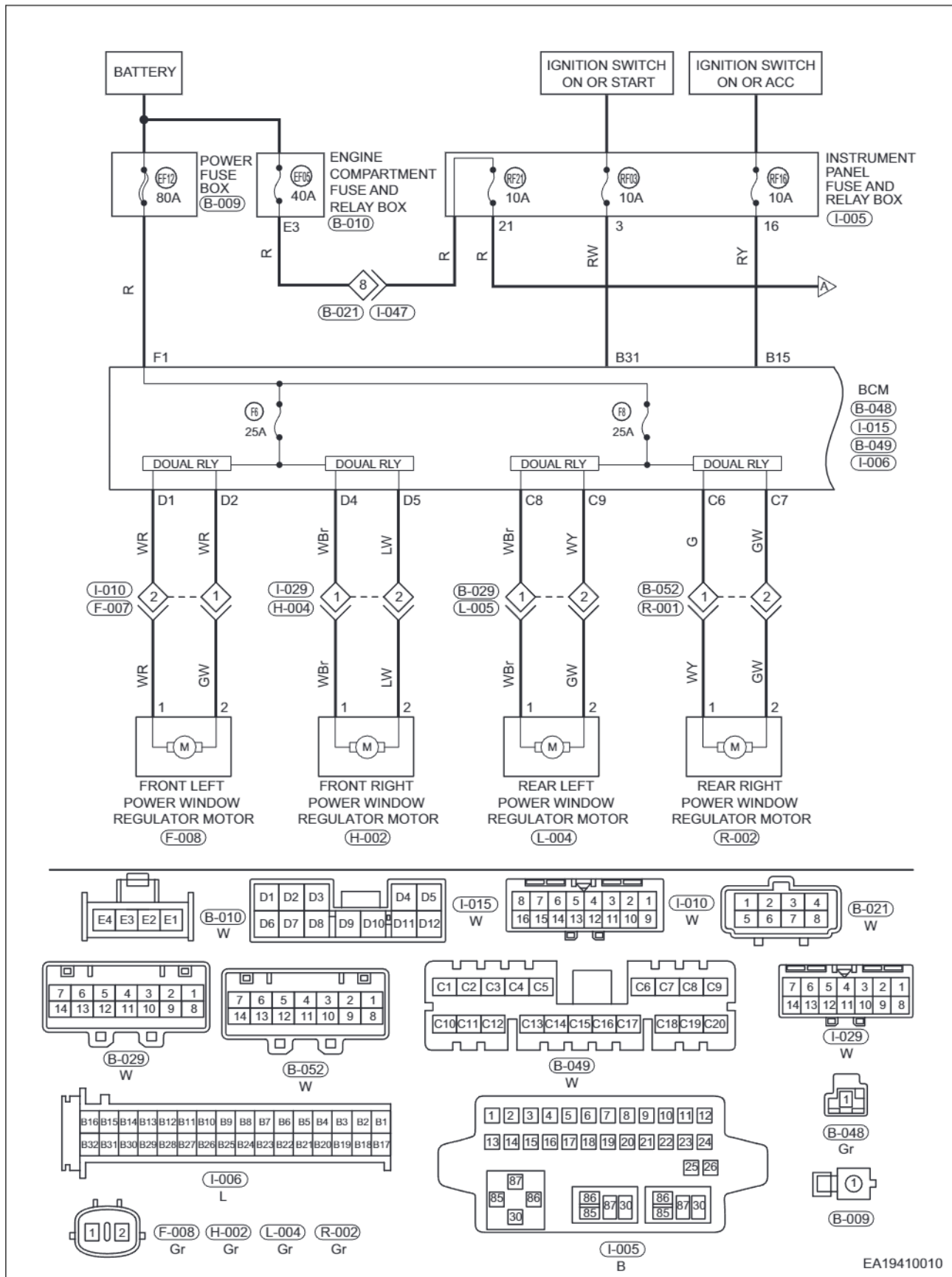
Interior Crow Plate	 RCH0000025
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General Tool

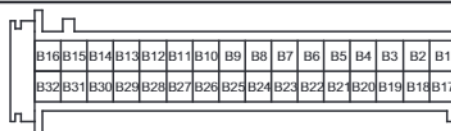
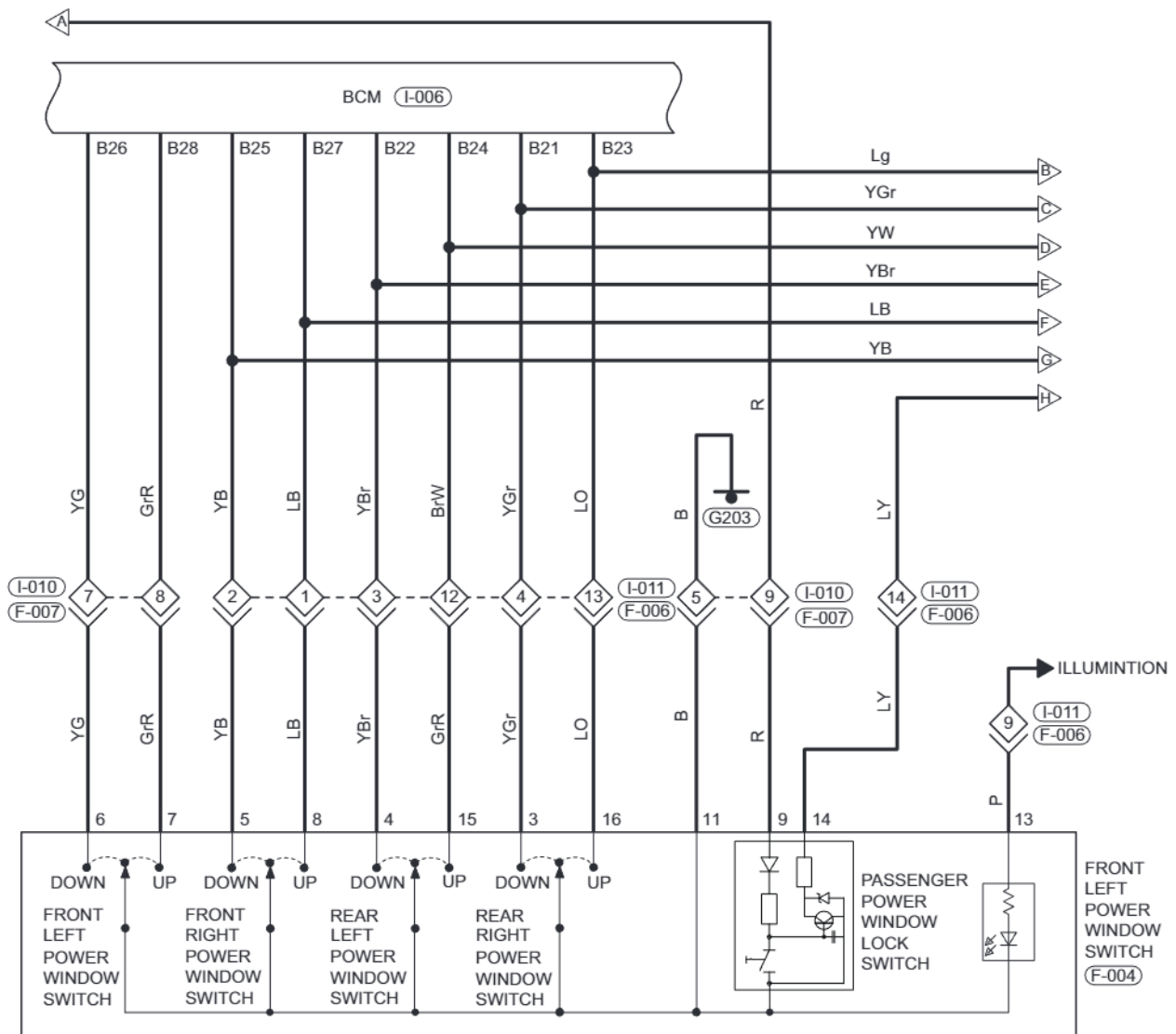
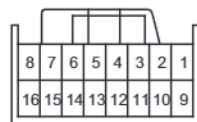
Digital Multimeter	 RCH0000002
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Circuit Diagram

Power Window Control System (Page 1 of 3)

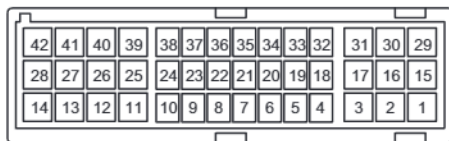
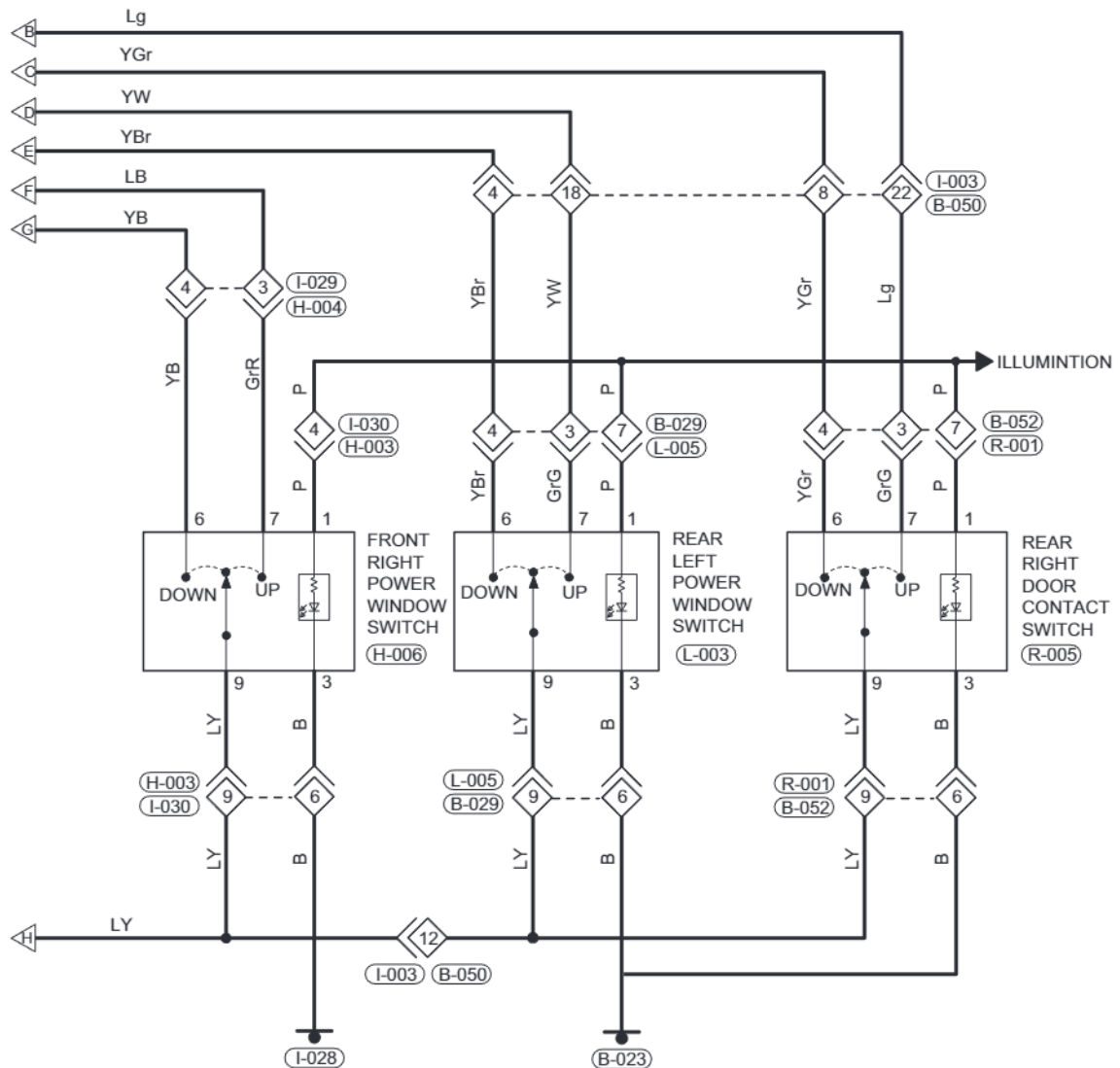
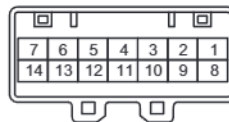
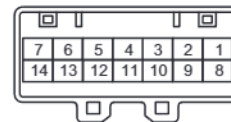


Power Window Control System (Page 2 of 3)

I-006
LI-010
WF-004
BrI-011
W

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Power Window Control System (Page 3 of 3)

(B-050)
W(B-029)
W(B-052)
W(I-030)
W(I-029)
W(H-006) (L-003) (R-005)
B B B

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DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of problem symptoms. Check each suspected area in sequence. Repair or replace the faulty components, or adjust them as necessary.

Symptom	Suspected Area	See page
Driver side power window glass cannot be operated with driver side power glass regulating control switch	Fuse	49-29
	Driver side power glass regulating control switch	41-48
	Driver side power glass regulator motor	41-54
	Wire harness or connector	-
	Body Control Module (BCM)	-
Passenger side power window glass cannot be operated with passenger side power glass regulating control switch	Fuse	49-29
	Passenger side power glass regulating control switch	41-57
	Passenger side power glass regulator motor	41-54
	Wire harness or connector	-
	Body Control Module (BCM)	-
Power window has intermittent problem	Ground	-
	Wire harness or connector	-

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Diagnosis Tools

X-431 3G Diagnostic Tester

When connecting the X-431 3G diagnostic tester:

- Connect the X-431 3G diagnostic tester (the latest software) to the Data Link Connector (DLC) for communication with the vehicle.
- DLC is located at the driver side instrument panel crossmember.
- DLC is a trapezoidal design which can hold 16 terminals.

Digital Multimeter

When using the digital multimeter:

- Troubleshoot the electrical problems and wiring systems.
- Look for the basic fault.
- Measure the voltage, current and resistance.

DTC Confirmation Procedure

Confirm that the battery voltage is normal before performing the following procedures.

- Turn the ignition switch to LOCK.
- Connect the X-431 3G diagnostic tester (the latest software) to the Data Link Connector (DLC), and make it communicate with the vehicle electronic module by the data network.
- Turn the ignition switch to ON.

- Using the X-431 3G diagnostic tester, record and clear the DTCs stored in the Body Control Module (BCM).
- Turn the ignition switch to LOCK and wait for a few seconds.
- Turn the ignition switch to ON, and select Read Code.
- If the DTC is detected, the malfunction indicated by the DTC is current. Go to the diagnosis procedure - Step 1.
- If the DTC is not detected, the malfunction indicated by the DTC is intermittent. Refer to the Intermittent DTC Troubleshooting.

Intermittent DTC Troubleshooting

If the malfunction is intermittent, perform the followings:

- Check if the connectors are loose.
- Check if the wire harnesses are worn, pierced, pinched or partially broken.
- Wiggle the related wire harnesses and connectors and observe if the signal is interrupted in the related circuit.
- If possible, try to duplicate the conditions under which the DTC was set.
- Look for the data that has changed or the DTC to reset during the wiggle test.
- Look for broken, bent, protruded or corroded terminals.
- Check for conditions that would cause the incorrect signals such as breakage, foreign matter, etc. when installing the components such as power window assembly, wire harness or connector etc.
- Check and clean all the wire harness connectors and grounds related to the current DTC.
- Remove the Body Control Module (BCM) from the malfunctioning vehicle and install it to a new vehicle and perform a test. If the DTC cannot be cleared, the Body Control Module (BCM) is malfunctioning. If the DTC can be cleared, reinstall the Body Control Module (BCM) to the original vehicle.
- If multiple trouble codes were set, refer to the circuit diagrams to look for any common ground circuit or power supply circuit applied to the DTC.
- Refer to the Technical Bulletin that is applied to the malfunction.

41

Ground Inspection

Ground points in the circuit system are very important to the proper operation of whole circuit system. Whether grounds are normal or not has serious influence to the whole circuit system. Ground points are often exposed to moisture, dirt and other corrosive areas. Corrosion (rust) and oxidation may increase load resistance. This situation will seriously affect the circuit operation.

Ground inspection operation is as follows:

1. Remove the ground bolt or nut.
2. Check all the contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that the contacting is in a good condition.
4. Reinstall the ground bolt or nut securely.
5. Check for add-on accessories which may interfere with the ground circuit.
6. If several wire harnesses are crimped into one ground terminal, check for proper crimps. Make sure all the wire harnesses are clean, securely fastened and providing a good ground path.

Diagnosis Procedure

HINT:

Use the following procedures to troubleshoot the power window control system.

1 Vehicle brought to workshop

NEXT

2 Check battery voltage

Standard voltage: 11 to 14 V

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

NEXT

3 Customer problem analysis

NEXT

4 Check for DTCs (current DTC and history DTC)

DTC
occurs

For current DTC, go to step 6

No
DTC

For history DTC, go to step 7

5 Problem repair (for no DTC), then go to step 8

NEXT

6 Troubleshoot according to Diagnostic Trouble Code (DTC) chart, then go to step 8

NEXT

7 Troubleshoot according to Problem Symptoms Table, then go to step 8

NEXT

8	Adjust, repair or replace
----------	----------------------------------

NEXT

9	Conduct confirmation test
----------	----------------------------------

NEXT

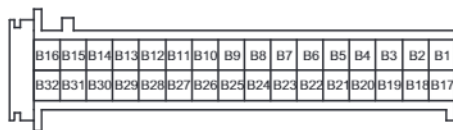
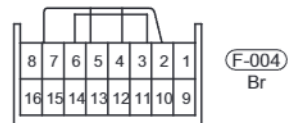
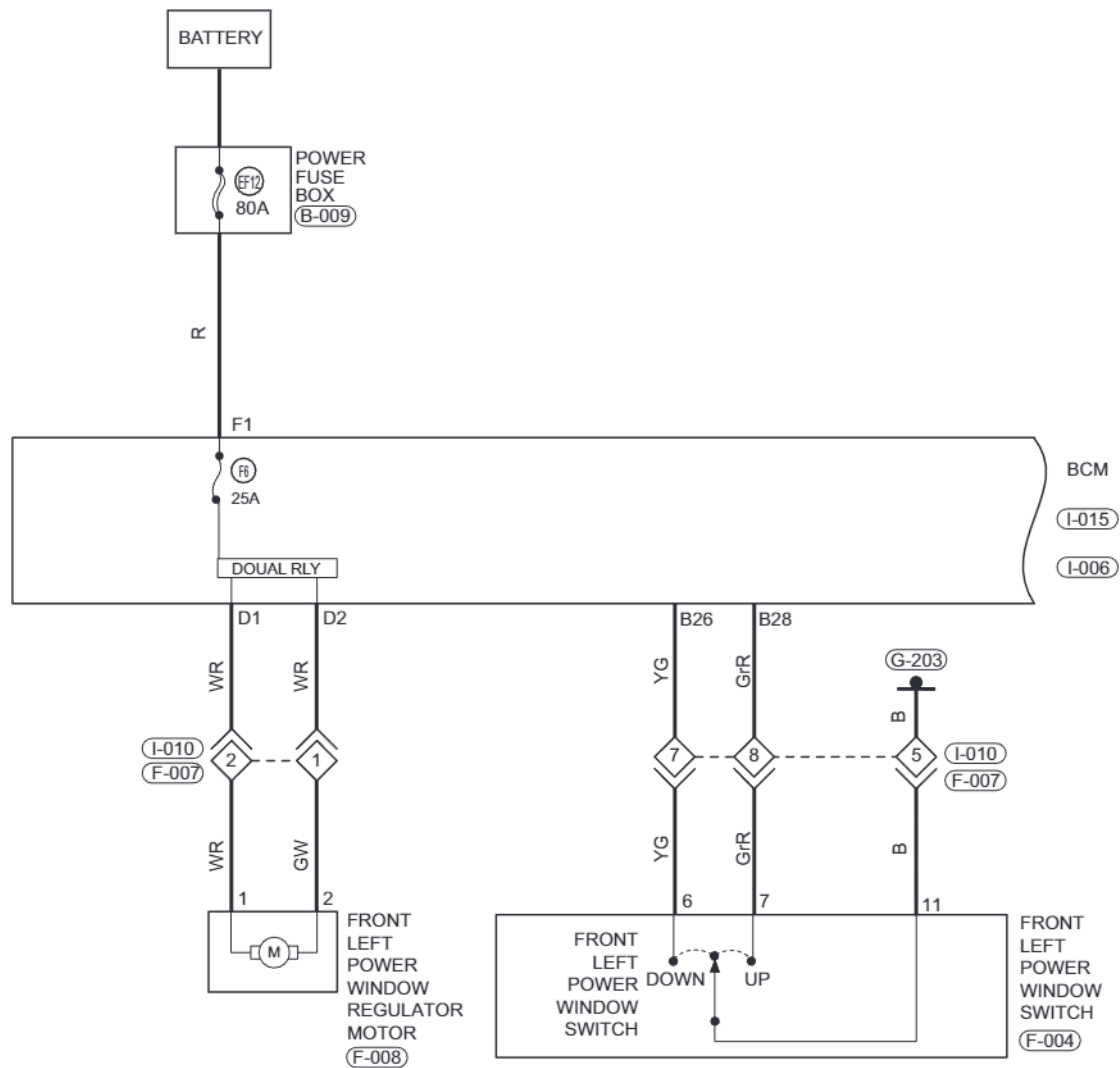
10	End
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Diagnostic Trouble Code (DTC) Chart

DTC Code	DTC Definition
B100C-11	FL Window Up Control Circuit Current Below Threshold
B100C-13	FL Window Up Control Circuit Current Above Threshold
B100C-71	FL Window Up Control Circuit Actuator Stuck
B100D-18	FL Window Down Control Circuit Current Below Threshold
B100D-19	FL Window Down Control Circuit Current Above Threshold
B100D-71	FL Window Down Control Circuit Actuator Stuck
B100E-18	FR Window Up Control Circuit Current Below Threshold
B100E-19	FR Window Up Control Circuit Current Above Threshold
B100E-71	FR Window Up Control Circuit Actuator Stuck
B100F-18	FR Window Down Control Circuit Current Below Threshold
B100F-19	FR Window Down Control Circuit Current Above Threshold
B100F-71	FR Window Down Control Circuit Actuator Stuck
B1010-18	RL Window Up Control Circuit Current Below Threshold
B1010-19	RL Window Up Control Circuit Current Above Threshold
B1010-71	RL Window Up Control Circuit Actuator Stuck
B1011-18	RL Window Down Control Circuit Current Below Threshold
B1011-19	RL Window Down Control Circuit Current Above Threshold
B1011-71	RL Window Down Control Circuit Actuator Stuck
B1012-18	RR Window Up Control Circuit Current Below Threshold
B1012-19	RR Window Up Control Circuit Current Above Threshold
B1012-71	RR Window Up Control Circuit Actuator Stuck
B1013-18	RR Window Down Control Circuit Current Below Threshold
B1013-19	RR Window Down Control Circuit Current Above Threshold
B1013-71	RR Window Down Control Circuit Actuator Stuck

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DTC	B100C-11	FL Window Up Control Circuit Current Below Threshold
DTC	B100C-13	FL Window Up Control Circuit Current Above Threshold
DTC	B100C-71	FL Window Up Control Circuit Actuator Stuck
DTC	B100D-18	FL Window Down Control Circuit Current Below Threshold
DTC	B100D-19	FL Window Down Control Circuit Current Above Threshold
DTC	B100D-71	FL Window Down Control Circuit Actuator Stuck



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Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B100C-11	FL Window Up Control Circuit Current Below Threshold	Ignition switch ON	ON	• Fuse • Glass regulating control master switch • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B100C-13	FL Window Up Control Circuit Current Above Threshold			
B100C-71	FL Window Up Control Circuit Actuator Stuck			
B100D-18	FL Window Down Control Circuit Current Below Threshold			
B100D-19	FL Window Down Control Circuit Current Above Threshold			
B100D-71	FL Window Down Control Circuit Actuator Stuck			

 CAUTION

- When performing the circuit diagnosis and test, always refer to the circuit diagram for the specific circuit and the component information.

41

Diagnosis Procedure

1 Check Body Control Module (BCM) fuse F6 (25A)

- Turn the ignition switch to LOCK.
- Disconnect the negative battery cable.
- Pull out the Body Control Module (BCM) fuse F6 (25A).
- Check if the fuse is blown.

NG

Replace Body Control Module (BCM) fuse F6 (25A)

OK

2 Check glass regulating control master switch

- a. Check the glass regulating control master switch (See page 41-48).

NG

Replace glass regulating control master switch

OK

3 Check front left door power glass regulator assembly

- a. Check the front left door power glass regulator assembly (See page 41-54).

NG

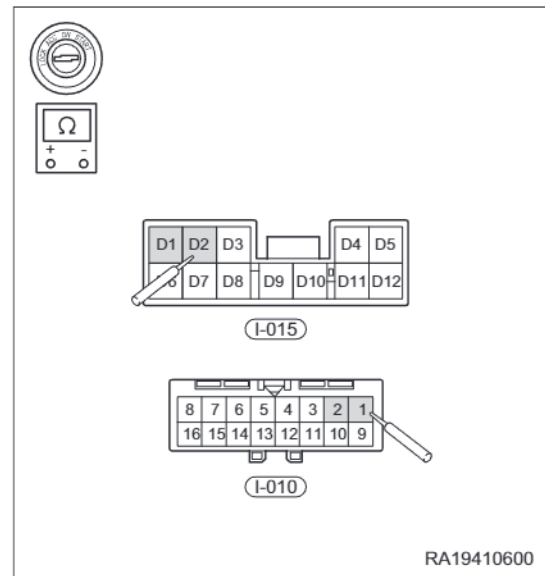
Replace front left door power glass regulator assembly

OK

4 Check instrument panel wire harness and connector

- a. Turn the ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the instrument panel wire harness connectors I-015 and I-010.
d. Using a digital multimeter, check for continuity between the instrument panel wire harness connectors I-015 and I-010 according to the value(s) in the table below.

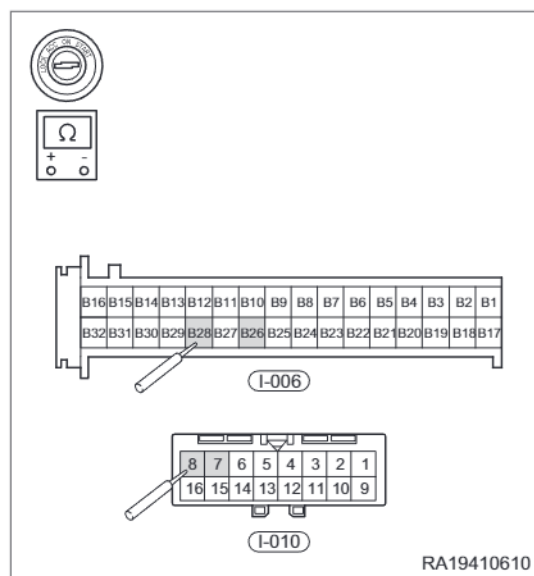
Multimeter Connection	Condition	Specified Condition
I-015 (D1) - I-010 (2)	Always	Continuity
I-015 (D2) - I-010 (1)	Always	Continuity



41

- e. Disconnect the instrument panel wire harness connectors I-006 and I-010.
- f. Using a digital multimeter, check for continuity between the instrument panel wire harness connectors I-006 and I-010 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
I-006 (B26) - I-010 (7)	Always	Continuity
I-006 (B28) - I-010 (8)	Always	Continuity



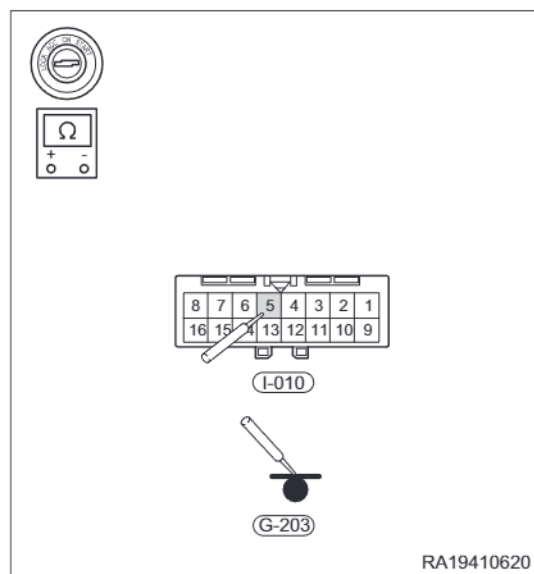
- g. Disconnect the instrument panel wire harness connector I-010 and ground G-203.
- h. Using a digital multimeter, check for continuity between the instrument panel wire harness connector I-010 and ground G-203 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
I-010 (5) - G-203	Always	Continuity

41

NG

Repair or replace instrument panel wire harness and connector

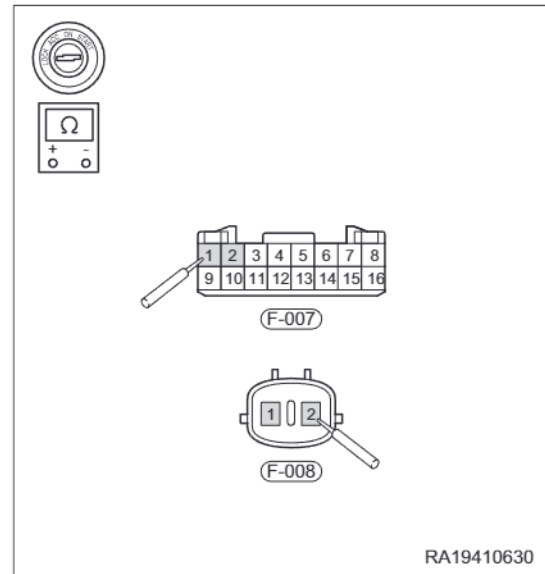


OK

5 Check front left door wire harness and connector

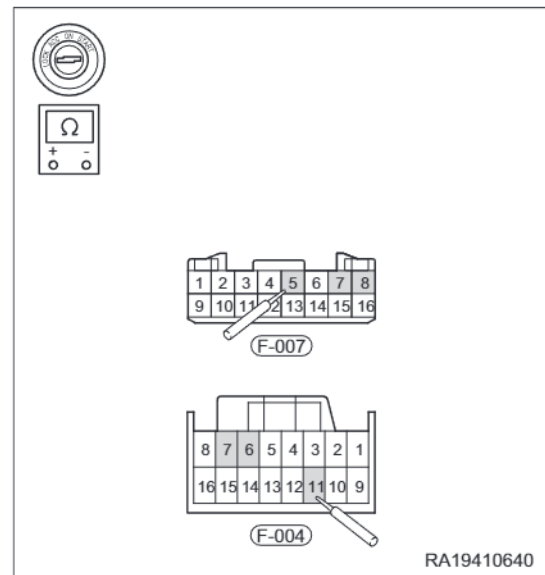
- Turn the ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the front left door wire harness connectors F-007 and F-008.
- Using a digital multimeter, check for continuity between the front left door wire harness connectors F-007 and F-008 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
F-007 (2) - F-008 (1)	Always	Continuity
F-007 (1) - F-008 (2)	Always	Continuity



- Disconnect the front left door wire harness connectors F-007 and F-004.
- Using a digital multimeter, check for continuity between the front left door wire harness connectors F-007 and F-004 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
F-007 (7) - F-004 (6)	Always	Continuity
F-007 (8) - F-004 (7)	Always	Continuity
F-007 (5) - F-004 (11)	Always	Continuity



NG

Repair or replace front left door wire harness and connector

OK

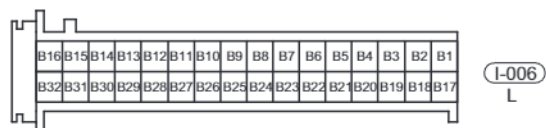
6**Reconfirm DTCs**

- a. Connect all the connectors.
- b. Connect the negative battery cable.
- c. Turn the ignition switch to ON.
- d. Using the X-431 3G diagnostic tester (the latest software), record and clear the DTCs stored in the Body Control Module (BCM).
- e. Turn the ignition switch to LOCK and wait for a few seconds.
- f. Turn the ignition switch to ON.
- g. Use the X-431 3G diagnostic tester (the latest software) to record the DTCs stored in the Body Control Module (BCM) again.
- h. Read the DTCs.

Result	Proceed to
DTC B100C-11, B100C-13, B100C-71, B100D-18, B100D-19 and B100D-71 are output	NG
No DTC output	OK

NG**Replace Body Control Module (BCM)****OK****System is normal**

DTC	B100E-18	FR Window Up Control Circuit Current Below Threshold
DTC	B100E-19	FR Window Up Control Circuit Current Above Threshold
DTC	B100E-71	FR Window Up Control Circuit Actuator Stuck
DTC	B100F-18	FR Window Down Control Circuit Current Below Threshold
DTC	B100F-19	FR Window Down Control Circuit Current Above Threshold
DTC	B100F-71	FR Window Down Control Circuit Actuator Stuck



Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B100E-18	FR Window Up Control Circuit Current Below Threshold	Ignition switch ON	ON	• Fuse • Glass regulating control switch • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B100E-19	FR Window Up Control Circuit Current Above Threshold			
B100E-71	FR Window Up Control Circuit Actuator Stuck			
B100F-18	FR Window Down Control Circuit Current Below Threshold			
B100F-19	FR Window Down Control Circuit Current Above Threshold			
B100F-71	FR Window Down Control Circuit Actuator Stuck			

 CAUTION

- When performing the circuit diagnosis and test, always refer to the circuit diagram for the specific circuit and the component information.

41

Diagnosis Procedure

1 Check Body Control Module (BCM) fuse F6 (25A)

- Turn the ignition switch to LOCK.
- Disconnect the negative battery cable.
- Pull out the Body Control Module (BCM) fuse F6 (25A).
- Check if the fuse is blown.

NG

Replace Body Control Module (BCM) fuse F6 (25A)

OK

2 Check glass regulating control switch

- a. Check the glass regulating control switch ([See page 41-56](#)).

NG**Replace glass regulating control switch****OK****3 Check front right door power glass regulator assembly**

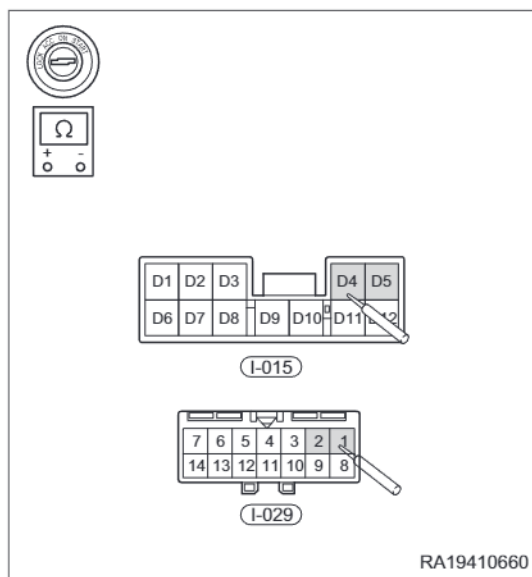
- a. Check the front right door power glass regulator assembly ([See page 41-54](#)).

NG**Replace front right door power glass regulator assembly****OK****4 Check instrument panel wire harness and connector**

- a. Turn the ignition switch to LOCK.
 b. Disconnect the negative battery cable.
 c. Disconnect the instrument panel wire harness connectors I-015 and I-029.
 d. Using a digital multimeter, check for continuity between the instrument panel wire harness connectors I-015 and I-029 according to the value(s) in the table below.

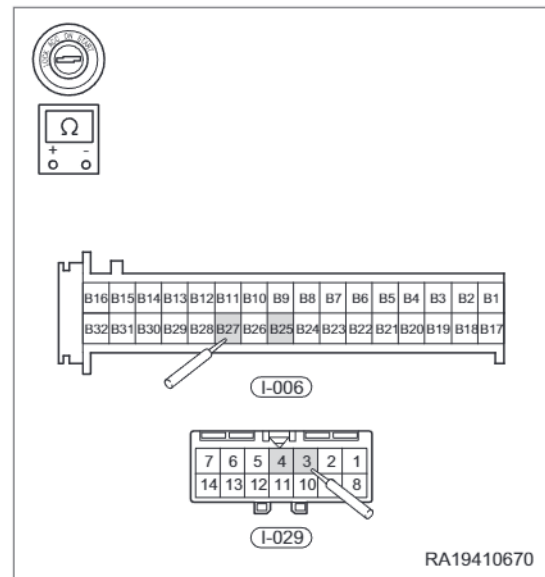
41

Multimeter Connection	Condition	Specified Condition
I-015 (D4) - I-029 (1)	Always	Continuity
I-015 (D5) - I-029 (2)	Always	Continuity



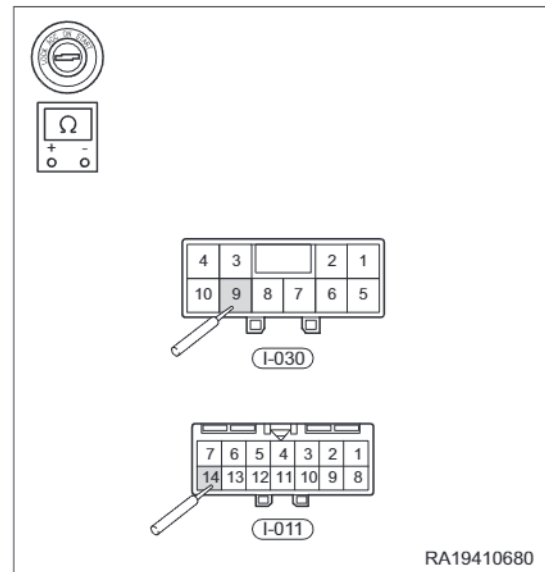
- e. Disconnect the instrument panel wire harness connectors I-006 and I-029.
- f. Using a digital multimeter, check for continuity between the instrument panel wire harness connectors I-006 and I-029 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
I-006 (B25) - I-029 (4)	Always	Continuity
I-006 (B27) - I-029 (3)	Always	Continuity



- g. Disconnect the instrument panel wire harness connectors I-030 and I-011.
- h. Using a digital multimeter, check for continuity between the instrument panel wire harness connectors I-030 and I-011 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
I-030 (9) - I-011 (14)	Always	Continuity

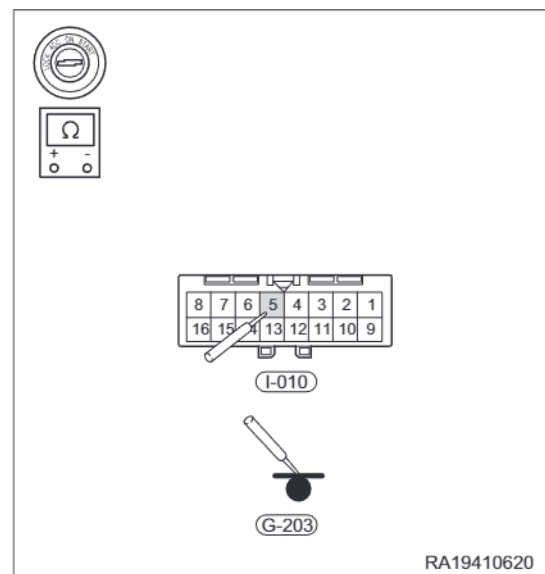


- i. Disconnect the instrument panel wire harness connector I-010 and ground G-203.
- j. Using a digital multimeter, check for continuity between the instrument panel wire harness connector I-010 and ground G-203 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
I-010 (5) - G-203	Always	Continuity

NG

Repair or replace instrument panel wire harness and connector

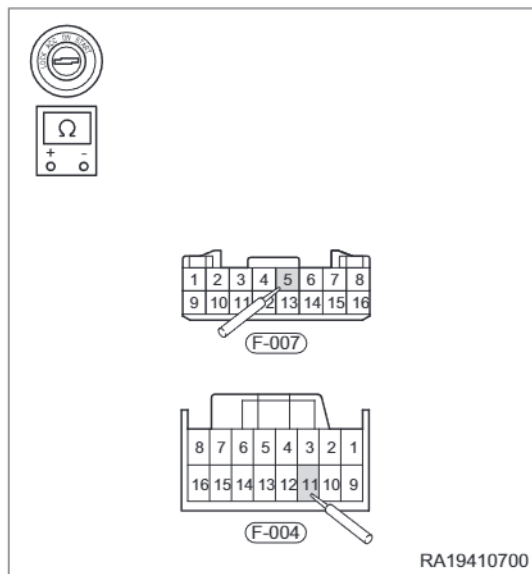


OK

5 Check front left door wire harness and connector

- Turn the ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the front left door wire harness connectors F-004 and F-007.
- Using a digital multimeter, check for continuity between the front left door wire harness connectors F-004 and F-007 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
F-004 (11) - F-007 (5)	Always	Continuity

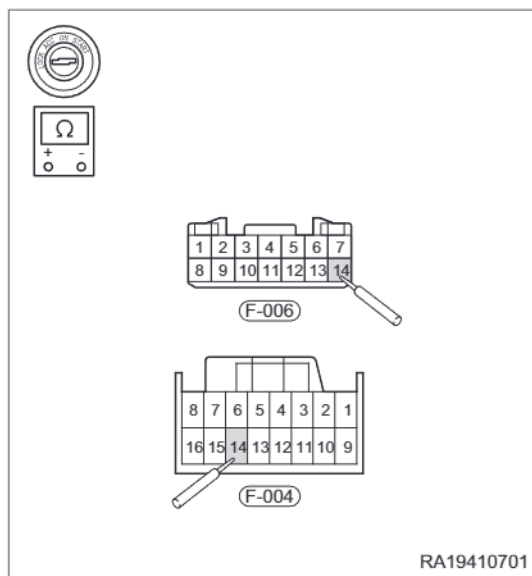


- Disconnect the front left door wire harness connectors F-004 and F-006.
- Using a digital multimeter, check for continuity between the front left door wire harness connectors F-004 and F-006 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
F-004 (14) - F-006 (14)	Always	Continuity

NG

Repair or replace front left door wire harness and connector

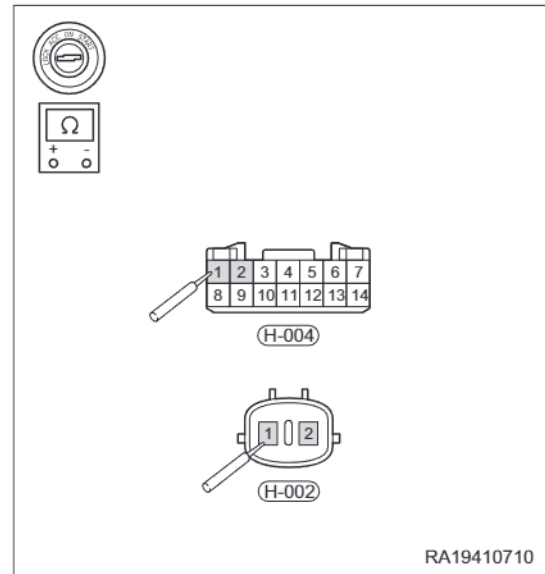


OK

6 Check front right door wire harness and connector

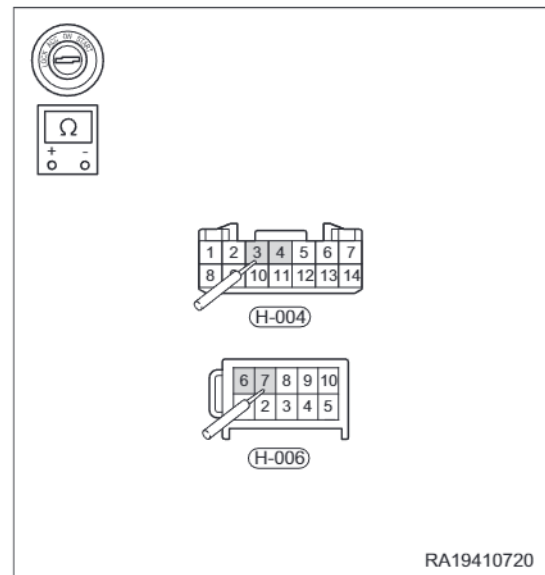
- Turn the ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the front right door wire harness connectors H-004 and H-002.
- Using a digital multimeter, check for continuity between the front right door wire harness connectors H-004 and H-002 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
H-004 (1) - H-002 (1)	Always	Continuity
H-004 (2) - H-002 (2)	Always	Continuity



- Disconnect the front right door wire harness connectors H-004 and H-006.
- Using a digital multimeter, check for continuity between the front right door wire harness connectors H-004 and H-006 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
H-004 (3) - H-006 (7)	Always	Continuity
H-004 (4) - H-006 (6)	Always	Continuity

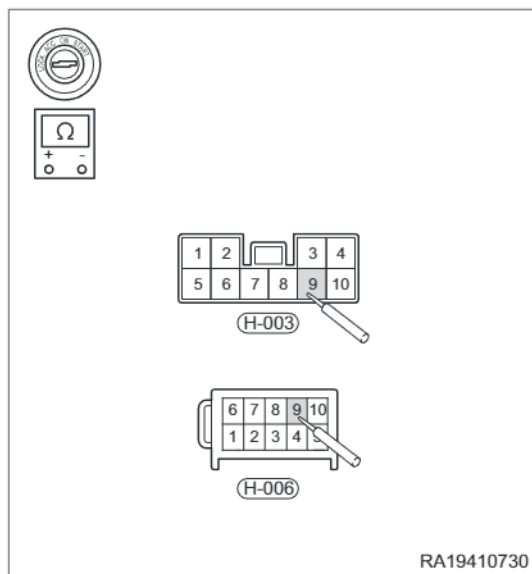


- g. Disconnect the front right door wire harness connectors H-003 and H-006.
- h. Using a digital multimeter, check for continuity between the front right door wire harness connectors H-003 and H-006 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
H-003 (9) - H-006 (9)	Always	Continuity

NG

Repair or replace front right door wire harness and connector



OK

7

Reconfirm DTCs

- a. Connect all the connectors.
- b. Connect the negative battery cable.
- c. Turn the ignition switch to ON.
- d. Using the X-431 3G diagnostic tester (the latest software), record and clear the DTCs stored in the Body Control Module (BCM).
- e. Turn the ignition switch to LOCK and wait for a few seconds.
- f. Turn the ignition switch to ON.
- g. Use the X-431 3G diagnostic tester (the latest software) to record the DTCs stored in the Body Control Module (BCM) again.
- h. Read the DTCs.

Result	Proceed to
DTC B100E-18, B100E-19, B100E-71, B100F-18, B100F-19 and B100F-71 are output	NG
No DTC output	OK

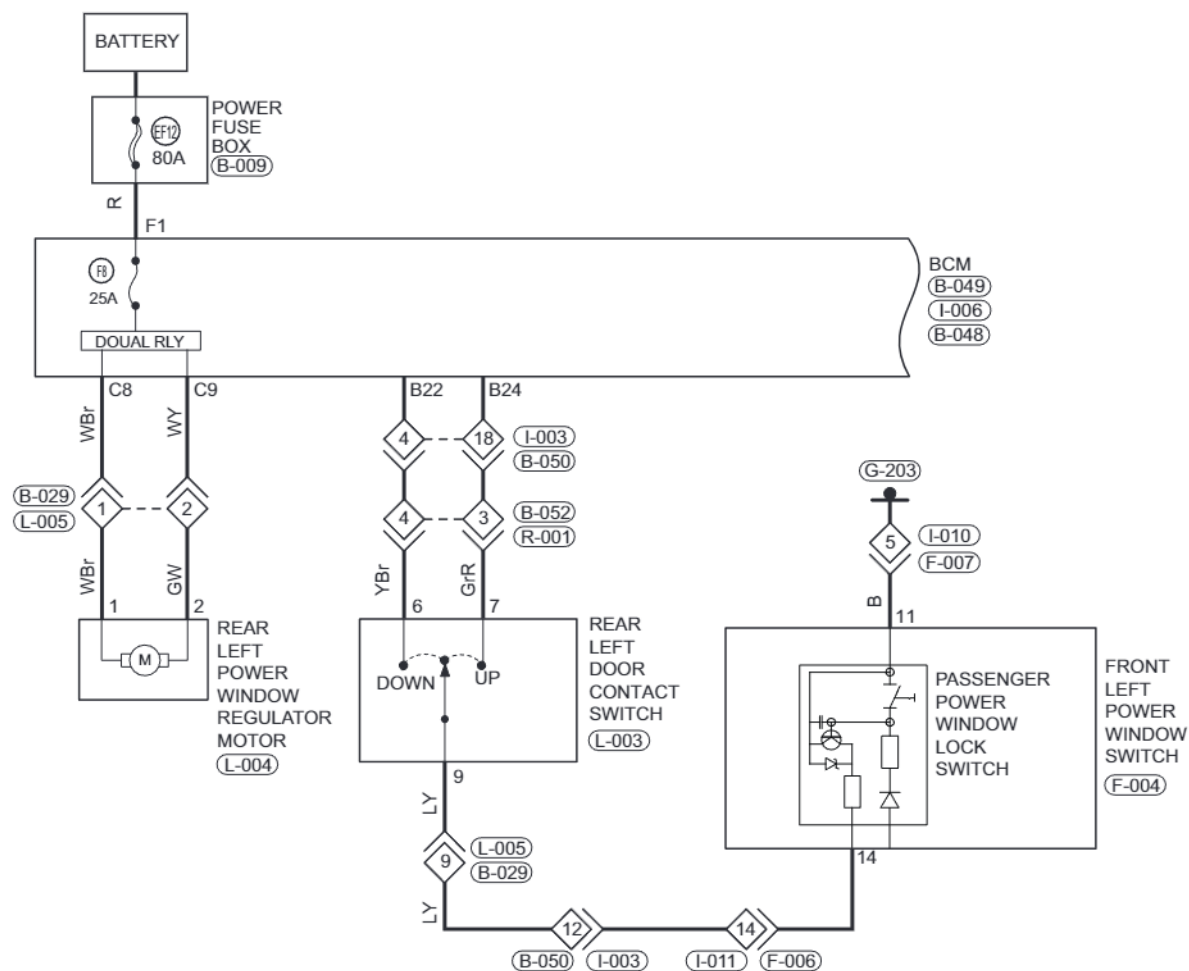
NG

Replace Body Control Module (BCM)

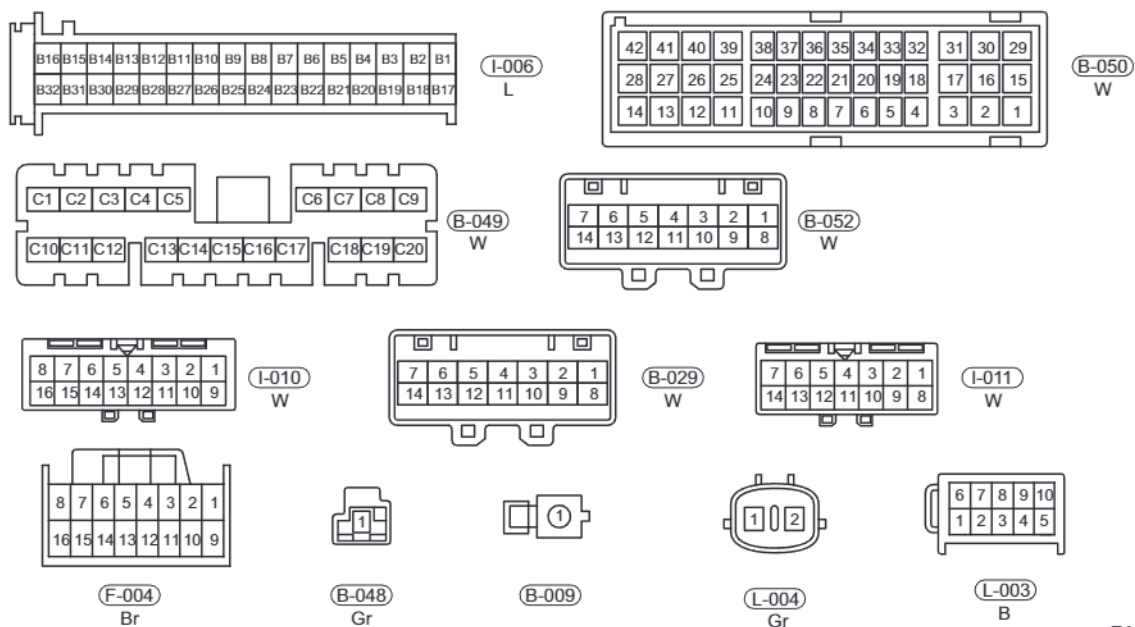
OK

System is normal

DTC	B1010-18	RL Window Up Control Circuit Current Below Threshold
DTC	B1010-19	RL Window Up Control Circuit Current Above Threshold
DTC	B1010-71	RL Window Up Control Circuit Actuator Stuck



41



EA19410080

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B1010-18	RL Window Up Control Circuit Current Below Threshold	Ignition switch ON	ON	- Fuse - Glass regulating control switch - Power glass regulator assembly - Wire harness or connector - Body Control Module (BCM)
B1010-19	RL Window Up Control Circuit Current Above Threshold			
B1010-71	RL Window Up Control Circuit Actuator Stuck			

 CAUTION

- When performing the circuit diagnosis and test, always refer to the circuit diagram for the specific circuit and the component information.

Diagnosis Procedure

1 Check Body Control Module (BCM) fuse F8 (25A)

- Turn the ignition switch to LOCK.
- Disconnect the negative battery cable.
- Pull out the Body Control Module (BCM) fuse F8 (25A).
- Check if the fuse is blown.

NG

Replace Body Control Module (BCM) fuse F8 (25A)

OK

2 Check glass regulating control switch

- Check the glass regulating control switch ([See page 41-56](#)).

NG

Replace glass regulating control switch

OK

3 Check rear left door power glass regulator assembly

- Check the rear left door power glass regulator assembly ([See page 41-63](#)).

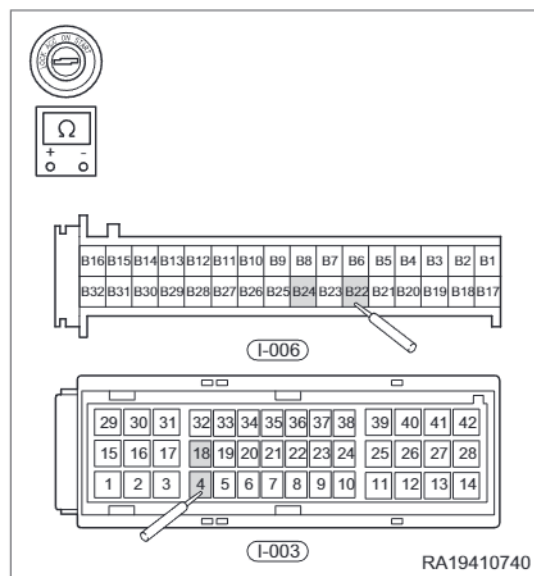
NG

Replace rear left door power glass regulator assembly

4 Check instrument panel wire harness and connector

- Turn the ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the instrument panel wire harness connectors I-006 and I-003.
- Using a digital multimeter, check for continuity between the instrument panel wire harness connectors I-006 and I-003 according to the value(s) in the table below.

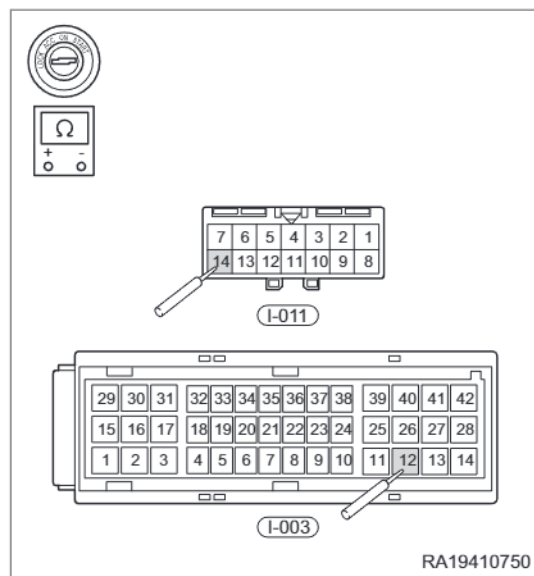
Multimeter Connection	Condition	Specified Condition
I-006 (B22) - I-003 (4)	Always	Continuity
I-006 (B24) - I-003 (18)	Always	Continuity



- Disconnect the instrument panel wire harness connectors I-003 and I-011.
- Using a digital multimeter, check for continuity between the instrument panel wire harness connectors I-003 and I-011 according to the value(s) in the table below.

41

Multimeter Connection	Condition	Specified Condition
I-003 (12) - I-011 (14)	Always	Continuity

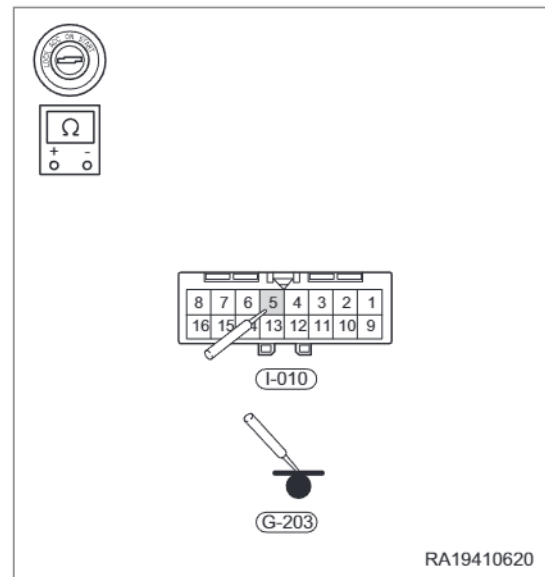


- g. Disconnect the instrument panel wire harness connector I-010 and ground G-203.
- h. Using a digital multimeter, check for continuity between the instrument panel wire harness connector I-010 and ground G-203 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
I-010 (5) - G-203	Always	Continuity

NG

Repair or replace instrument panel wire harness and connector

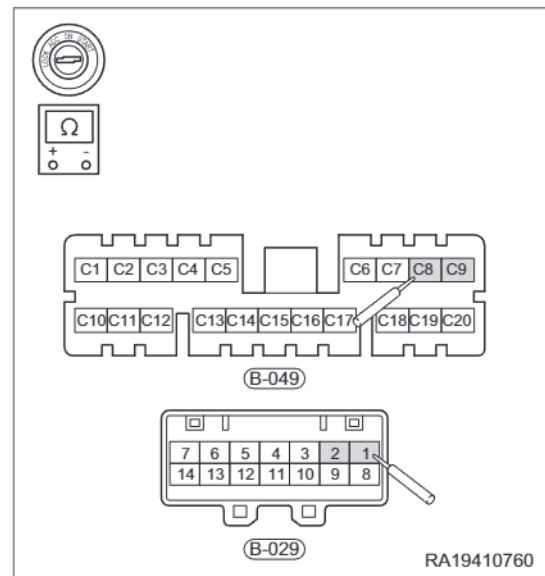


OK

5 Check body wire harness and connector

- a. Turn the ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the body wire harness connectors B-049 and B-029.
- d. Using a digital multimeter, check for continuity between the body wire harness connectors B-049 and B-029 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
B-049 (C8) - B-029 (1)	Always	Continuity
B-049 (C9) - B-029 (2)	Always	Continuity



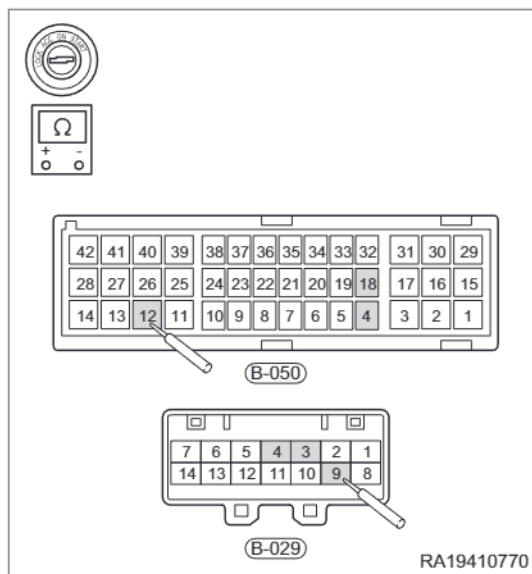
41

- e. Disconnect the body wire harness connectors B-050 and B-029.
- f. Using a digital multimeter, check for continuity between the body wire harness connectors B-050 and B-029 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
B-050 (4) - B-029 (4)	Always	Continuity
B-050 (18) - B-029 (3)	Always	Continuity
B-050 (12) - B-029 (9)	Always	Continuity

NG

Repair or replace body wire harness and connector



OK

6

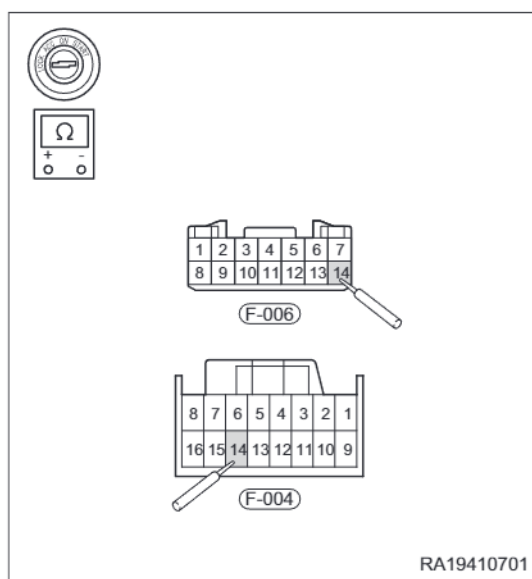
Check front left door wire harness and connector

- a. Turn the ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the front left door wire harness connectors F-004 and F-006.
- d. Using a digital multimeter, check for continuity between the front left door wire harness connectors F-004 and F-006 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
F-004 (14) - F-006 (14)	Always	Continuity

NG

Repair or replace front left door wire harness and connector

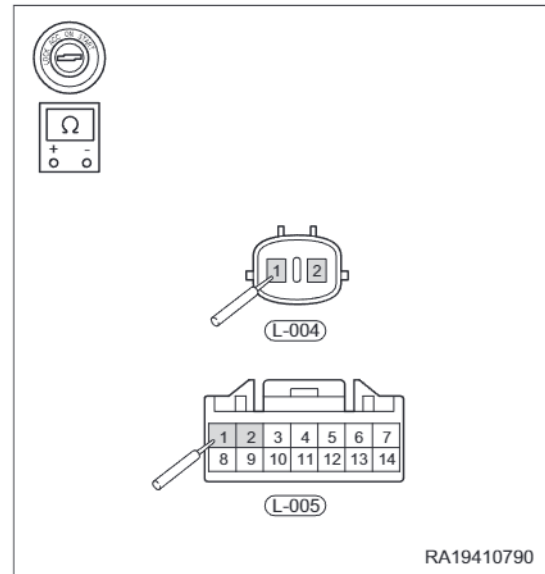


OK

7 Check rear left door wire harness and connector

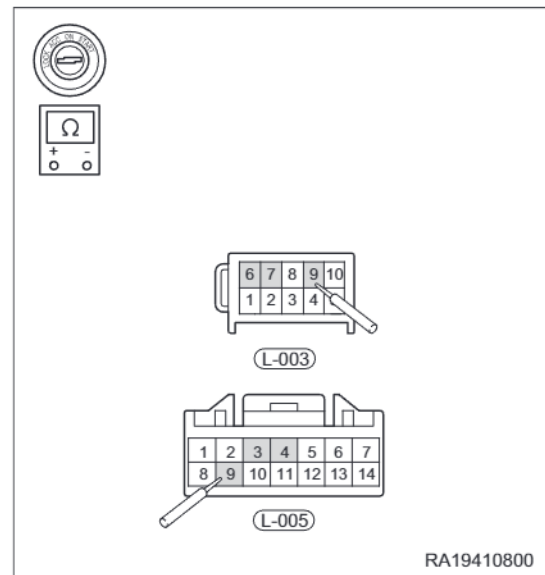
- Turn the ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the rear left door wire harness connectors L-005 and L-004.
- Using a digital multimeter, check for continuity between the rear left door wire harness connectors L-005 and L-004 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
L-005 (1) - L-004 (1)	Always	Continuity
L-005 (2) - L-004 (2)	Always	Continuity



- Disconnect the rear left door wire harness connectors L-005 and L-003.
- Using a digital multimeter, check for continuity between the rear left door wire harness connectors L-005 and L-003 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
L-005 (4) - L-003 (6)	Always	Continuity
L-005 (3) - L-003 (7)	Always	Continuity
L-005 (9) - L-003 (9)	Always	Continuity



NG

Repair or replace rear left door wire harness and connector

OK

8 Reconfirm DTCs

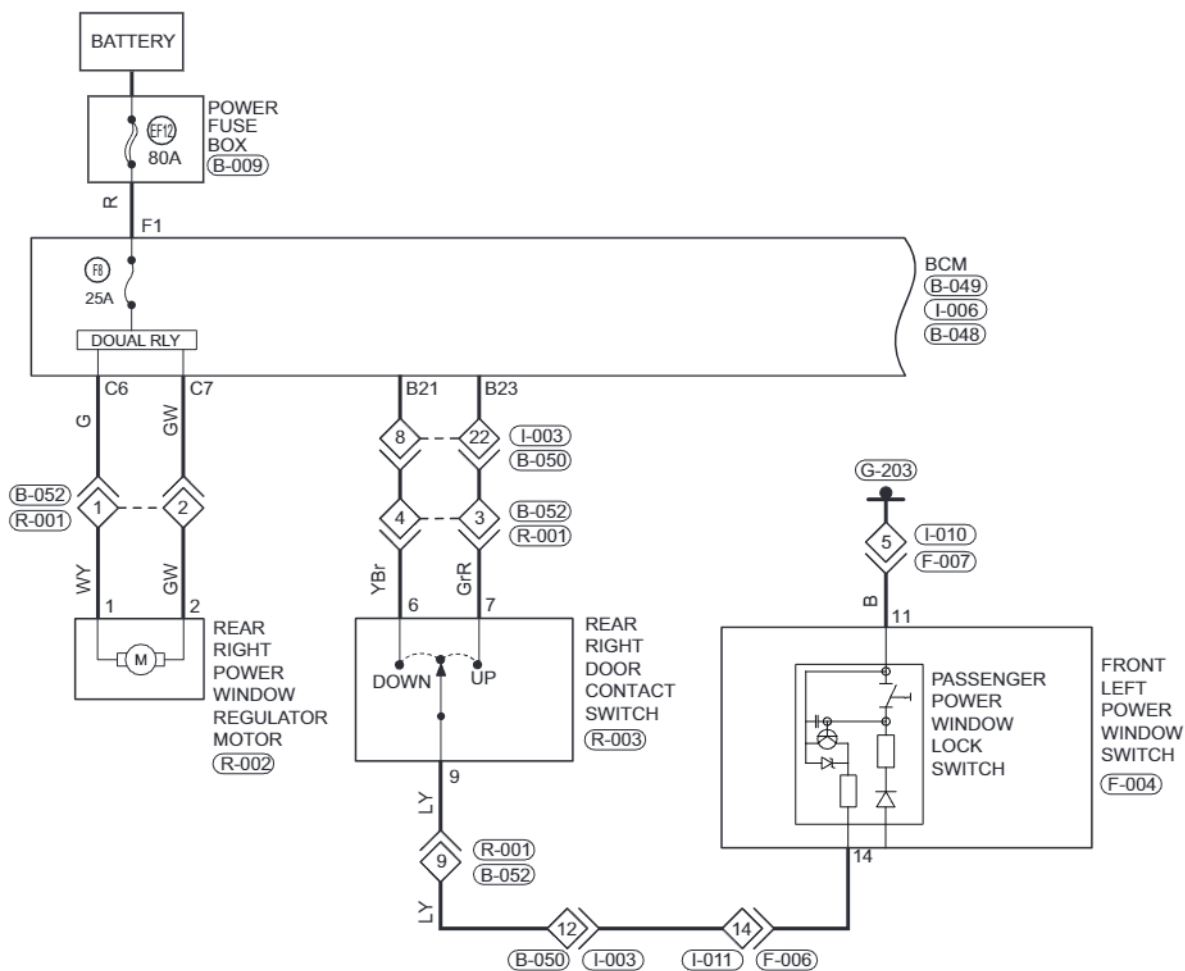
- Connect all the connectors.
- Connect the negative battery cable.
- Turn the ignition switch to ON.
- Using the X-431 3G diagnostic tester (the latest software), record and clear the DTCs stored in the Body Control Module (BCM).
- Turn the ignition switch to LOCK and wait for a few seconds.
- Turn the ignition switch to ON.

- g. Use the X-431 3G diagnostic tester (the latest software) to record the DTCs stored in the Body Control Module (BCM) again.
- h. Read the DTCs.

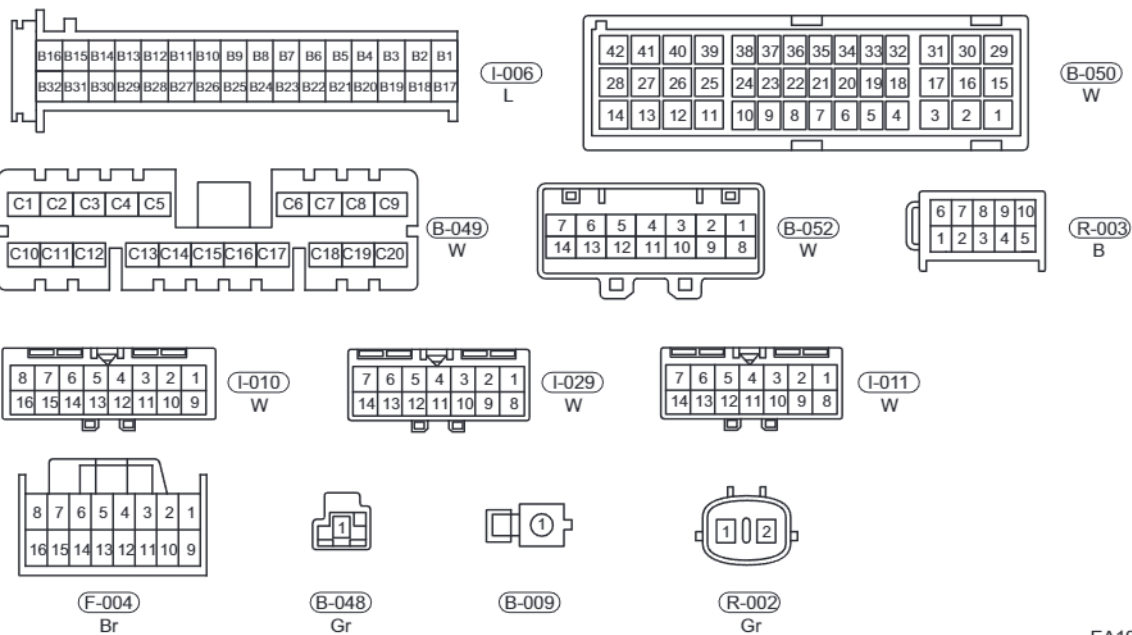
Result	Proceed to
DTC B1010-18, B1010-19 and B1010-71 are output	NG
No DTC output	OK

NG**Replace Body Control Module (BCM)****OK****System is normal**

DTC	B1011-18	RL Window Down Control Circuit Current Below Threshold
DTC	B1011-19	RL Window Down Control Circuit Current Above Threshold
DTC	B1011-71	RL Window Down Control Circuit Actuator Stuck
DTC	B1012-18	RR Window Up Control Circuit Current Below Threshold
DTC	B1012-19	RR Window Up Control Circuit Current Above Threshold
DTC	B1012-71	RR Window Up Control Circuit Actuator Stuck
DTC	B1013-18	RR Window Down Control Circuit Current Below Threshold
DTC	B1013-19	RR Window Down Control Circuit Current Above Threshold
DTC	B1013-71	RR Window Down Control Circuit Actuator Stuck



41



EA19410090

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B1011-18	RL Window Down Control Circuit Current Below Threshold	Ignition switch ON	ON	• Fuse • Glass regulating control switch • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B1011-19	RL Window Down Control Circuit Current Above Threshold			
B1011-71	RL Window Down Control Circuit Actuator Stuck			
B1012-18	RR Window Up Control Circuit Current Below Threshold			
B1012-19	RR Window Up Control Circuit Current Above Threshold			
B1012-71	RR Window Up Control Circuit Actuator Stuck			
B1013-18	RR Window Down Control Circuit Current Below Threshold			
B1013-19	RR Window Down Control Circuit Current Above Threshold			
B1013-71	RR Window Down Control Circuit Actuator Stuck			

41

 CAUTION

- When performing the circuit diagnosis and test, always refer to the circuit diagram for the specific circuit and the component information.

Diagnosis Procedure

1	Check Body Control Module (BCM) fuse F8 (25 A)
----------	---

- Turn the ignition switch to LOCK.
- Disconnect the negative battery cable.
- Pull out the Body Control Module (BCM) fuse F8 (25 A).
- Check if the fuse is blown.

NG

Replace Body Control Module (BCM) fuse F8 (25 A)



OK

2 Check glass regulating control switch

- a. Check the glass regulating control switch (See page 41-56).

NG

Replace glass regulating control switch

OK

3 Check rear right door power glass regulator assembly

- a. Check the rear right door power glass regulator assembly (See page 41-63).

NG

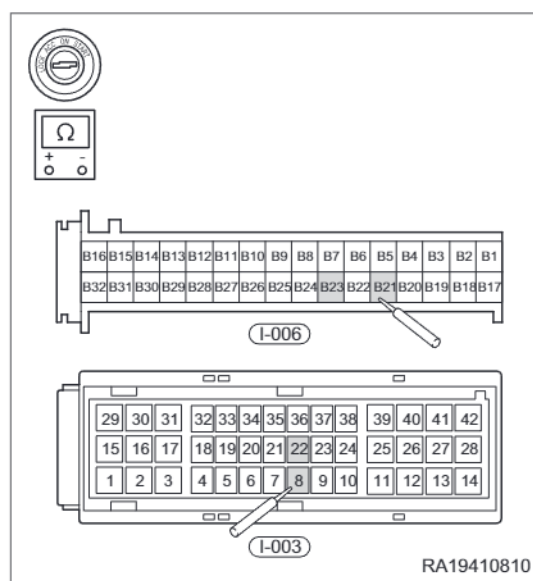
Replace rear right door power glass regulator assembly

OK

4 Check instrument panel wire harness and connector

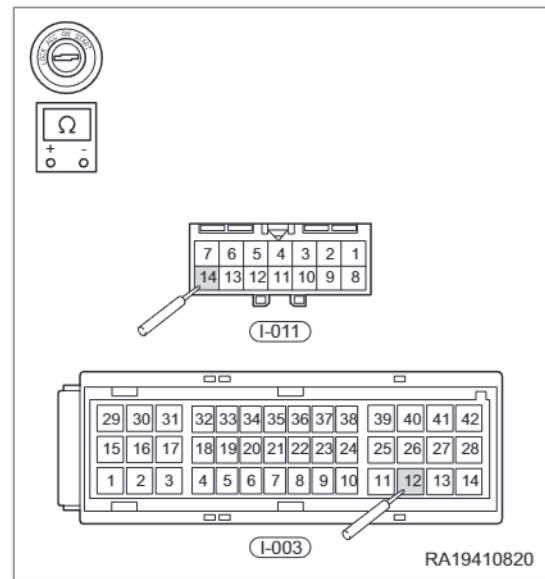
- a. Turn the ignition switch to LOCK.
 b. Disconnect the negative battery cable.
 c. Disconnect the instrument panel wire harness connectors I-006 and I-003.
 d. Using a digital multimeter, check for continuity between the instrument panel wire harness connectors I-006 and I-003 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
I-006 (B21) - I-003 (8)	Always	Continuity
I-006 (B23) - I-003 (22)	Always	Continuity



- e. Disconnect the instrument panel wire harness connectors I-003 and I-011.
- f. Using a digital multimeter, check for continuity between the instrument panel wire harness connectors I-003 and I-011 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
I-003 (12) - I-011 (14)	Always	Continuity

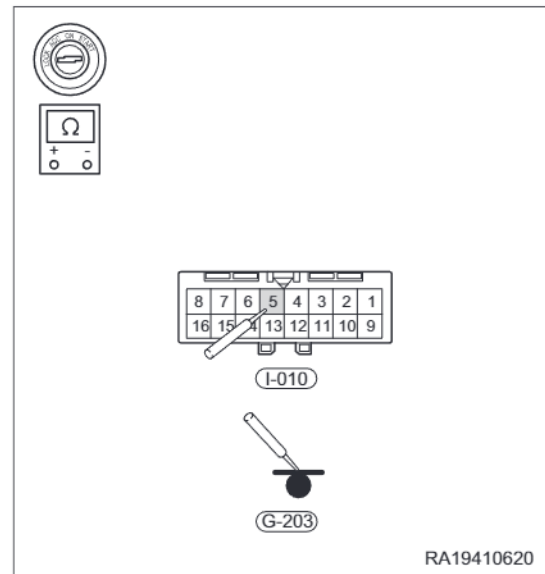


- g. Disconnect the instrument panel wire harness connector I-010 and ground G-203.
- h. Using a digital multimeter, check for continuity between the instrument panel wire harness connector I-010 and ground G-203 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
I-010 (5) - G-203	Always	Continuity

NG

Repair or replace instrument panel wire harness and connector



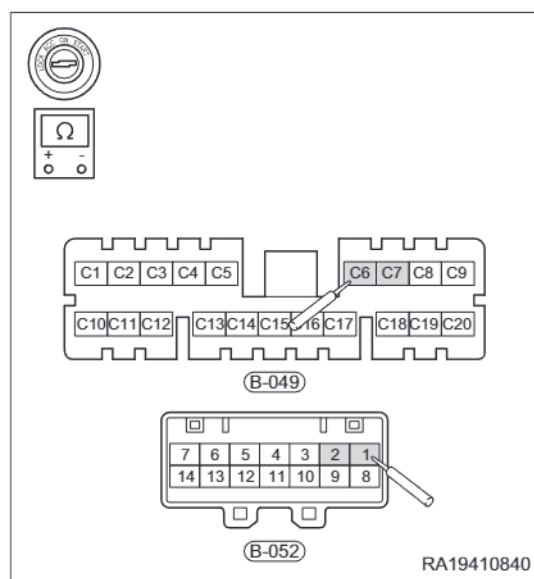
OK

41

5 Check body wire harness and connector

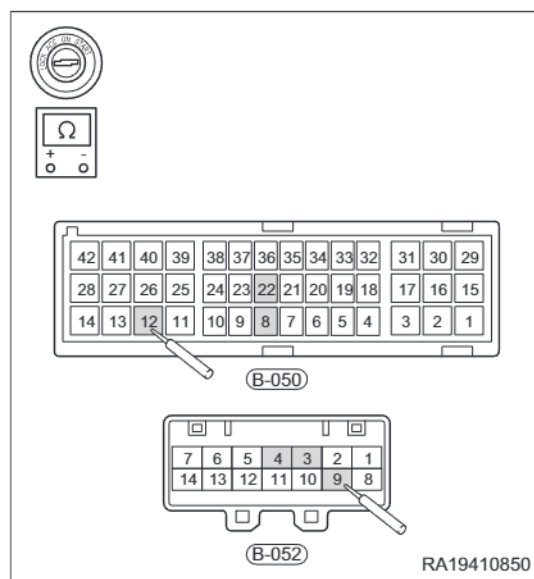
- Turn the ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the body wire harness connectors B-049 and B-052.
- Using a digital multimeter, check for continuity between the body wire harness connectors B-049 and B-052 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
B-049 (C6) - B-052 (1)	Always	Continuity
B-049 (C7) - B-052 (2)	Always	Continuity



- Disconnect the body wire harness connectors B-050 and B-052.
- Using a digital multimeter, check for continuity between the body wire harness connectors B-050 and B-052 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
B-050 (8) - B-052 (4)	Always	Continuity
B-050 (22) - B-052 (3)	Always	Continuity
B-050 (12) - B-052 (9)	Always	Continuity



41

NG

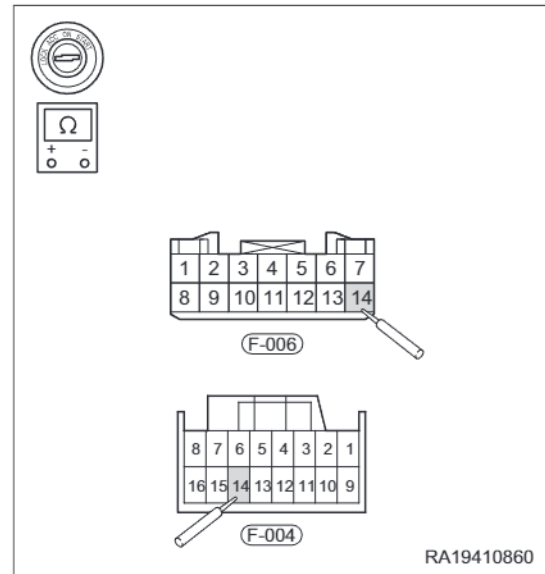
Repair or replace body wire harness and connector

OK

6 Check front left door wire harness and connector

- Turn the ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the front left door wire harness connectors F-004 and F-006.
- Using a digital multimeter, check for continuity between the front left door wire harness connectors F-004 and F-006 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
F-004 (14) - F-006 (14)	Always	Continuity

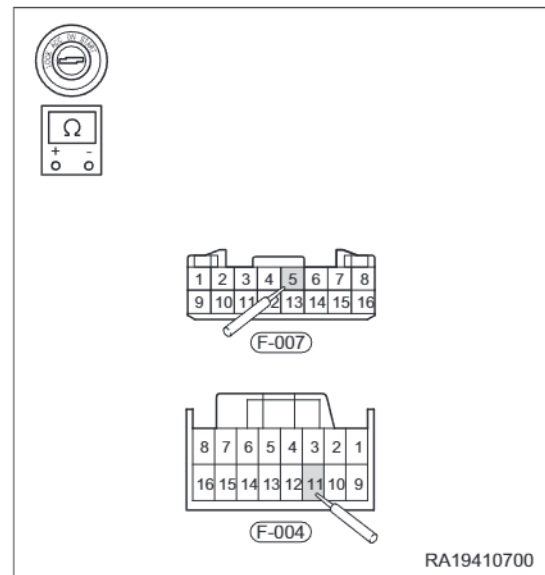


- Disconnect the front left door wire harness connectors F-004 and F-007.
- Using a digital multimeter, check for continuity between the front left door wire harness connectors F-004 and F-007 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
F-004 (11) - F-007 (5)	Always	Continuity

NG

Repair or replace front left door wire harness and connector



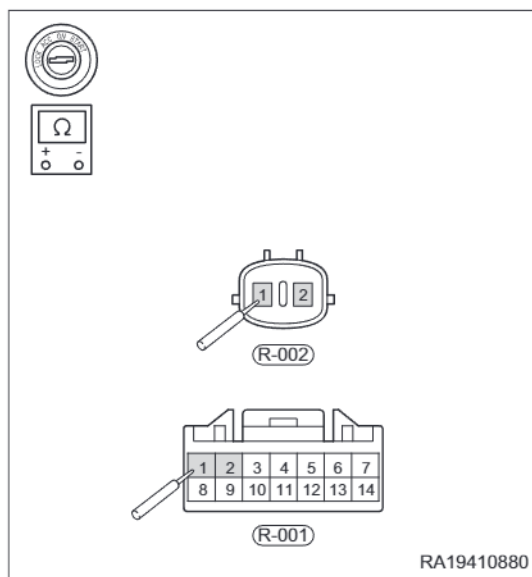
OK

7

Check rear right door wire harness and connector

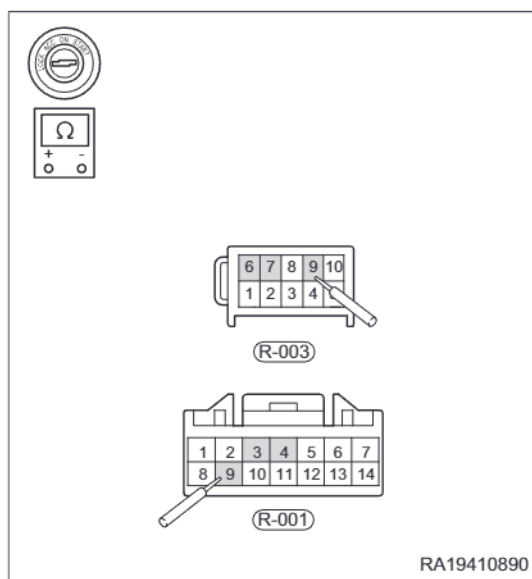
- Turn the ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the rear right door wire harness connectors R-001 and R-002.
- Using a digital multimeter, check for continuity between the rear right door wire harness connectors R-001 and R-002 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
R-001 (1) - R-002 (1)	Always	Continuity
R-001 (2) - R-002 (2)	Always	Continuity



- Disconnect the rear right door wire harness connectors R-001 and R-003.
- Using a digital multimeter, check for continuity between the rear right door wire harness connectors R-001 and R-003 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
R-001 (4) - R-003 (6)	Always	Continuity
R-001 (3) - R-003 (7)	Always	Continuity
R-001 (9) - R-003 (9)	Always	Continuity



41

NG

Repair or replace rear right door wire harness and connector

OK

8

Reconfirm DTCs

- Connect all the connectors.
- Connect the negative battery cable.
- Turn the ignition switch to ON.
- Using the X-431 3G diagnostic tester (the latest software), record and clear the DTCs stored in the Body Control Module (BCM).
- Turn the ignition switch to LOCK and wait for a few seconds.
- Turn the ignition switch to ON.

- g. Use the X-431 3G diagnostic tester (the latest software) to record the DTCs stored in the Body Control Module (BCM) again.
- h. Read the DTCs.

Result	Proceed to
DTC B1011-18, B1011-19, B1011-71, B1012-18, B1012-19, B1012-71, B1013-18, B1013-19 and B1013-71 are output	NG
No DTC output	OK

NG

Replace Body Control Module (BCM)

OK

System is normal

ON-VEHICLE SERVICE

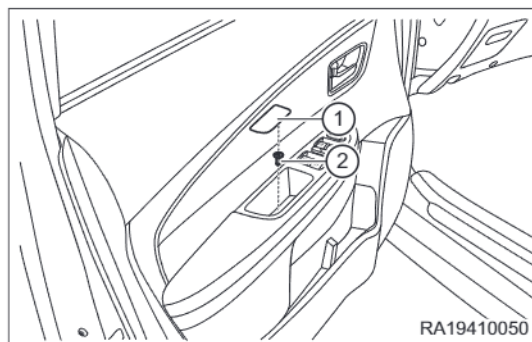
Glass Regulating Control Master Switch

Removal

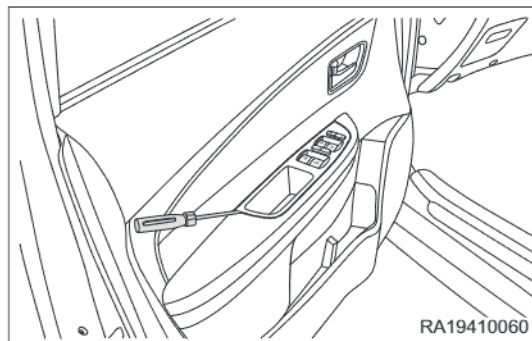
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing the glass regulating control master switch.
- Try to prevent the front door inner protector surface from being damaged when removing the glass regulating control master switch.

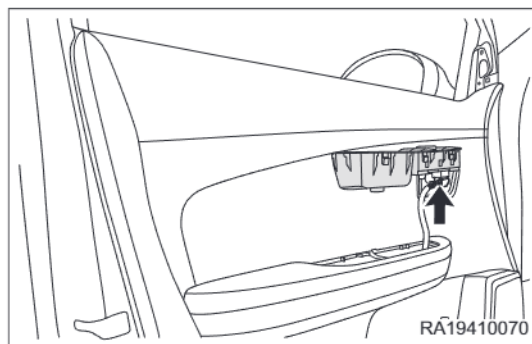
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the glass regulating control master switch assembly.
 - a. Remove the rubber pad (1).
 - b. Remove the fixing screw (2) from the glass regulating control master switch assembly.
(Tightening torque: 1.5 ± 0.5 N·m)



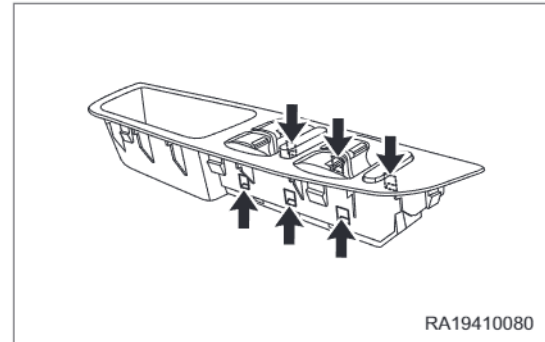
- c. Using a screwdriver wrapped with protective tape, pry out the glass regulating control master switch assembly.



- d. Disconnect the glass regulating control master switch assembly connector (arrow) and remove the glass regulating control master switch assembly.



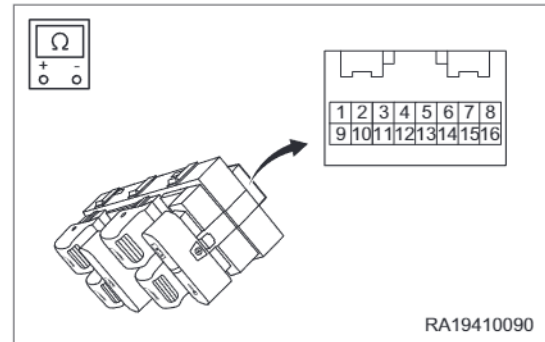
4. Remove the glass regulating control master switch.
 - a. Using a screwdriver wrapped with protective tape, pry out the claws (arrow) on the glass regulating control master switch and remove the glass regulating control master switch.



Inspection

1. Check the glass regulating control master switch.
 - a. Using a digital multimeter, check for continuity of glass regulating control master switch according to the table below.

Area	Multimeter Connection	Switch Condition	Specified Condition
Front left door glass regulating and control switch	7 - 11	UP	Continuity
		OFF	No continuity
	6 - 11	DOWN	Continuity
		OFF	No continuity
Front right door glass regulating switch	8 - 11	UP	Continuity
		OFF	No continuity
	5 - 11	DOWN	Continuity
		OFF	No continuity
Rear left door glass regulating switch	11 - 15	UP	Continuity
		OFF	No continuity
	4 - 11	DOWN	Continuity
		OFF	No continuity
Rear right door glass regulating switch	11 - 16	UP	Continuity
		OFF	No continuity
	3 - 11	DOWN	Continuity
		OFF	No continuity



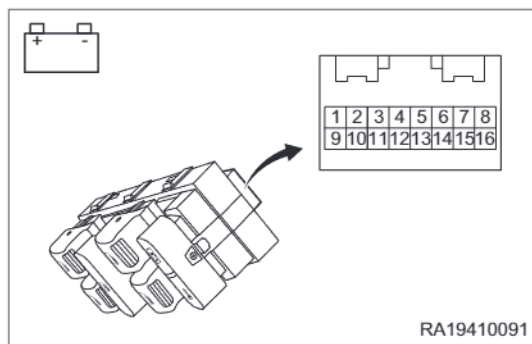
If the result is not as specified, replace the glass regulating control master switch.

2. Check the glass regulating control master switch illumination.

- a. Apply battery voltage to the terminals of glass regulating control master switch connector and check the operation of glass regulating control master switch according to the table below.

Measurement Condition		Specified Condition
Battery positive (+)	Battery negative (-)	
13	11	LED comes on

If the result is not as specified, replace the glass regulating control master switch.



Installation

Installation is in the reverse order of removal.

CAUTION

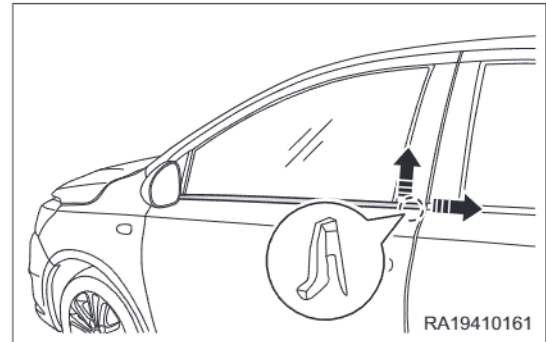
- Check if the connector is correctly installed when installing the glass regulating control master switch.
- Check if the switch operates normally after installing the glass regulating control master switch.

Front Door Glass Assembly

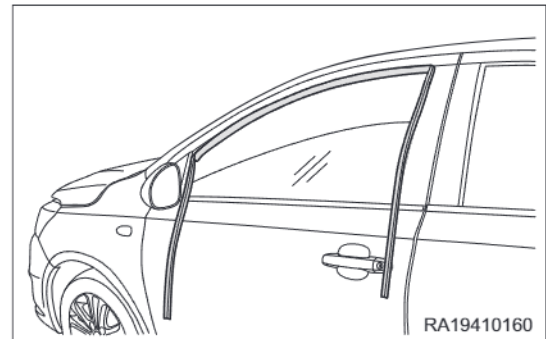
Removal

HINT:

- Use the same procedures for the right side and left side.
 - The procedures listed below are for the left side.
1. Turn off all the electrical equipment and ignition switch.
 2. Disconnect the negative battery cable.
 3. Remove the front left door glass outer weatherstrip.
 - a. Using a screwdriver wrapped with protective tape, pry out the clip on the front left door glass outer weatherstrip.
 - b. Remove the front left door glass outer weatherstrip in the directions of arrow as shown in the illustration.



4. Remove the front left door inner protector assembly (See page 45-19).
5. Remove the front left door protector bracket (See page 45-24).
6. Remove the front left door protective film assembly (See page 45-24).
7. Remove the front left door glass run.
 - a. Lower the front left door glass assembly to the proper position and pull out the front left door glass run from the slot.

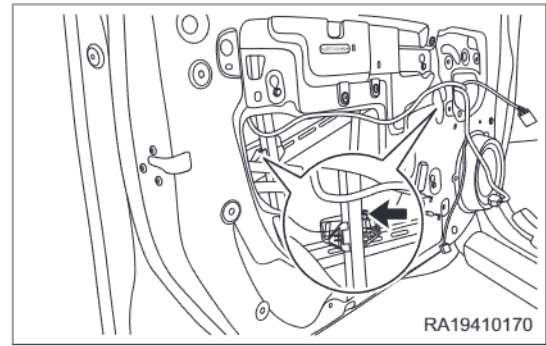


8. Remove the front left door glass assembly.

CAUTION

- Try to prevent the window glass from being damaged due to dropping when removing the front door glass assembly.

- a. Raise the front left door glass assembly to the proper position.
- b. Using a screwdriver wrapped with protective tape, pry out the clip and remove the front left door glass assembly.



Installation

Installation is in the reverse order of removal.

CAUTION

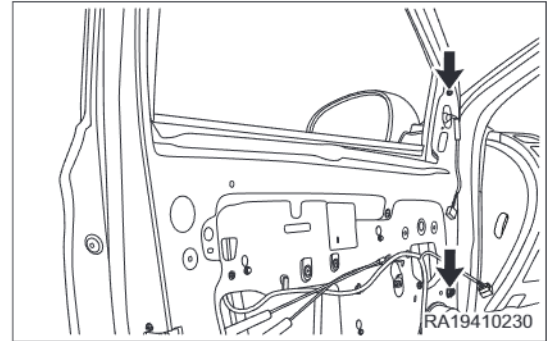
- Try to prevent the window glass from being damaged due to dropping when installing the front door glass assembly.

Front Door Glass Front Guide Rail Assembly

Removal

HINT:

- Use the same procedures for the right side and left side.
 - The procedures listed below are for the left side.
1. Turn off all the electrical equipment and ignition switch.
 2. Disconnect the negative battery cable.
 3. Remove the front left door inner protector assembly (See page 45-19).
 4. Remove the front left door protector bracket (See page 45-24).
 5. Remove the front left door protective film assembly (See page 45-24).
 6. Remove the front left door glass assembly (See page 41-51).
 7. Remove the front left door glass front guide rail assembly.
 - a. Remove 2 fixing bolts (2) from the front left door glass front guide rail assembly, and remove the front left door glass front guide rail assembly.
(Tightening torque: $3.5 \pm 0.5 \text{ N}\cdot\text{m}$)



Installation

Installation is in the reverse order of removal.

CAUTION

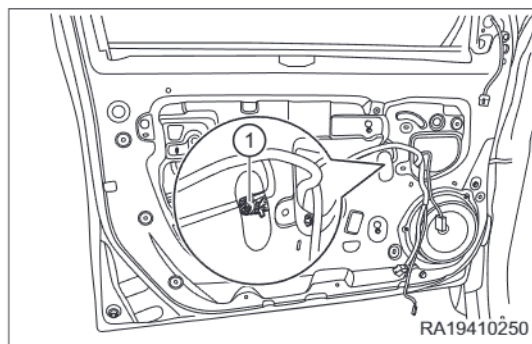
- After the glass regulating system is installed, make sure that the window glass can move up and down smoothly and freely without any vibration, chattering or shock loading, etc.

Front Door Power Glass Regulator Assembly

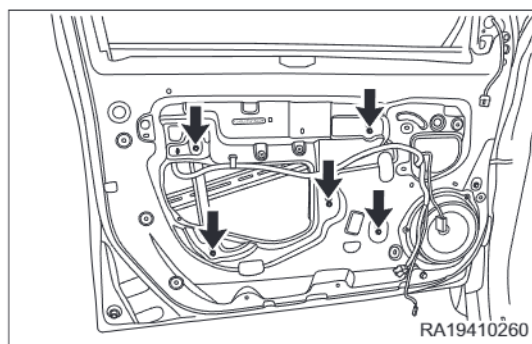
Removal

HINT:

- Use the same procedures for the right side and left side.
 - The procedures listed below are for the left side.
1. Turn off all the electrical equipment and ignition switch.
 2. Disconnect the negative battery cable.
 3. Remove the front left door inner protector assembly (See page 45-19).
 4. Remove the front left door protector bracket (See page 45-24).
 5. Remove the front left door protective film assembly (See page 45-24).
 6. Remove the front left door glass assembly (See page 41-51).
 7. Remove the front left door power glass regulator assembly.
 - a. Using a screwdriver wrapped with protective tape, pry out the clip on the connector.
 - b. Disconnect the connector (1) from the front left door power glass regulator assembly.



- c. Remove 5 fixing bolts (arrow) from the front left door power glass regulator assembly, and remove the front left door power glass regulator assembly. (Tightening torque: $7 \pm 1.5 \text{ N}\cdot\text{m}$)



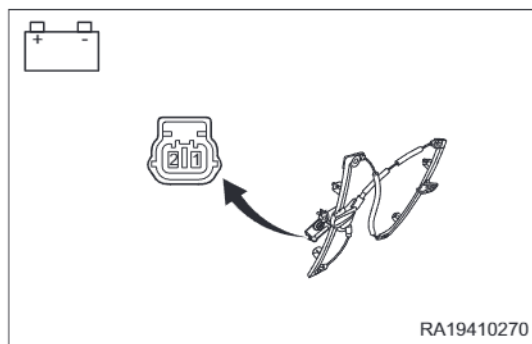
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Inspection

1. Check the front door power glass regulator motor.
 - a. Apply battery voltage to the terminals of power glass regulator motor connector, and check the operation of power glass regulator motor according to the table below.

Measurement Condition		Specified Condition
Battery positive (+)	Battery negative (-)	
1	2	UP smoothly
2	1	Down smoothly

If the result is not as specified, replace the front door power glass regulator motor.



Installation

Installation is in the reverse order of removal.

CAUTION

- After the front door power glass regulator is installed, make sure that the window glass can move up and down smoothly and freely without any vibration, chattering or shock loading, etc.

Glass Regulating Control Switch

Removal

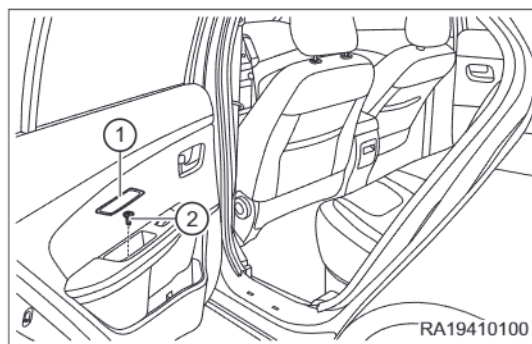
HINT:

- Use the same procedures for the front right/rear right side and rear left side.
- The procedures listed below are for the rear left side.

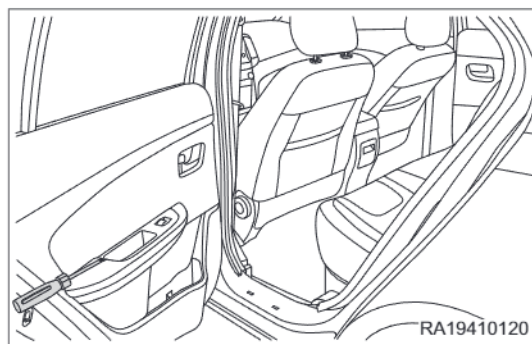
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing the glass regulating control switch.
- Try to prevent the rear door inner protector surface from being damaged when removing the glass regulating control switch.

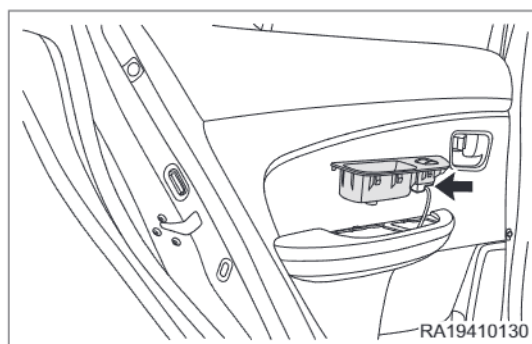
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the left glass regulating control switch assembly.
 - a. Remove the rubber pad (1).
 - b. Remove the fixing screw (2) from the glass regulating control switch assembly.
(Tightening torque: 1.5 ± 0.5 N·m)



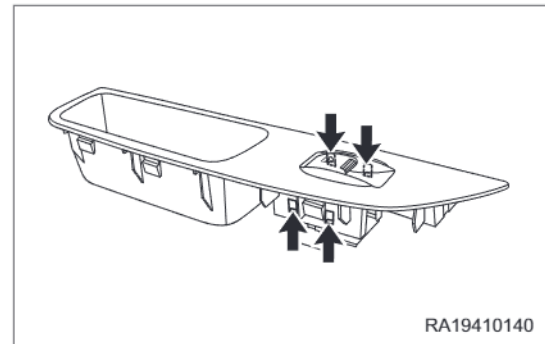
- c. Using a screwdriver wrapped with protective tape, pry out the glass regulating control switch assembly.



- d. Disconnect the glass regulating control switch assembly connector (arrow) and remove the left glass regulating control switch assembly.



4. Remove the left glass regulating control switch.
 - a. Using a screwdriver wrapped with protective tape, pry out the claws (arrow) on the glass regulating control switch and remove the left glass regulating control switch.



Inspection

1. Check the glass regulating control switch.
 - a. Using a digital multimeter, check for continuity of glass regulating control switch according to the table below.

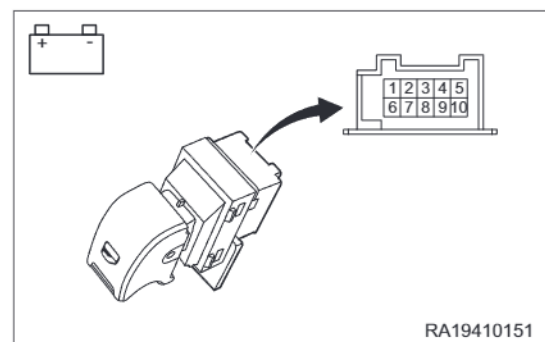
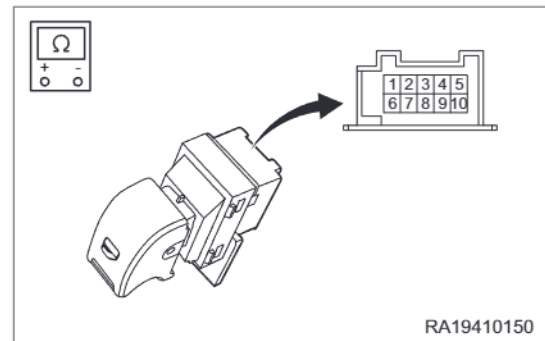
Area	Multimeter Connection	Switch Condition	Specified Condition
Front right door glass regulating control switch	7 - 9	UP	Continuity
		OFF	No continuity
	6 - 9	DOWN	Continuity
		OFF	No continuity
Rear left door glass regulating switch	7 - 9	UP	Continuity
		OFF	No continuity
	6 - 9	DOWN	Continuity
		OFF	No continuity
Rear right door glass regulating switch	7 - 9	UP	Continuity
		OFF	No continuity
	6 - 9	DOWN	Continuity
		OFF	No continuity

If the result is not as specified, replace the glass regulating control switch.

2. Check the glass regulating control switch illumination.
 - a. Apply battery voltage to the terminals of glass regulating control switch connector and check the operation of glass regulating control switch according to the table below.

Measurement Condition		Specified Condition
Battery positive (+)	Battery negative (-)	
1	3	LED comes on

If the result is not as specified, replace the glass regulating control switch.



Installation

Installation is in the reverse order of removal.

CAUTION

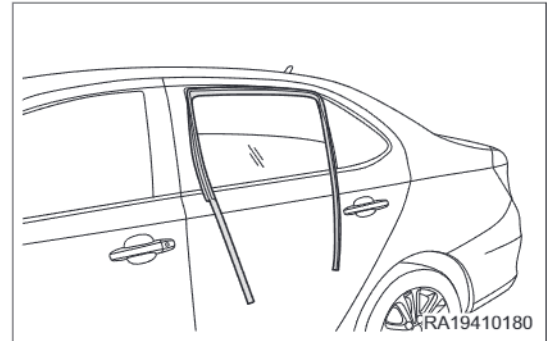
- Check if the connector is correctly installed when installing the glass regulating control switch.
- Check if the switch operates normally after installing the glass regulating control switch.

Rear Door Glass Assembly

Removal

HINT:

- Use the same procedures for the right side and left side.
 - The procedures listed below are for the left side.
1. Turn off all the electrical equipment and ignition switch
 2. Disconnect the negative battery cable.
 3. Remove the rear left door inner protector assembly (See page 45-34).
 4. Remove the rear left door protector bracket (See page 45-38).
 5. Remove the rear left door protective film assembly (See page 45-38).
 6. Remove the rear left door glass run.
 - a. Lower the rear left door glass assembly to the proper position and pull out the rear left door glass run from the slot.



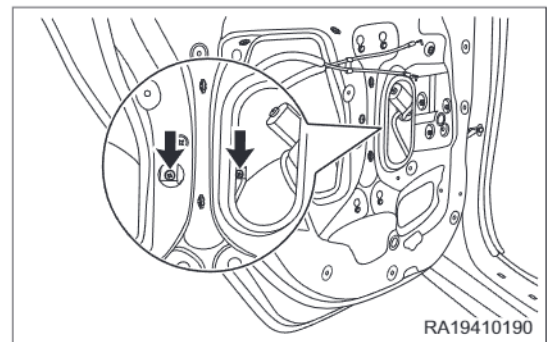
7. Remove the rear left door glass assembly.

CAUTION

- Try to prevent the window glass from being damaged due to dropping when removing the rear door glass assembly.

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- a. Raise the rear left door glass assembly to the proper position.
- b. Remove 2 fixing screws (arrow) from the rear left door glass assembly, and remove the rear left door glass assembly.
(Tightening torque: $2.5 \pm 0.5 \text{ N}\cdot\text{m}$)



Installation

Installation is in the reverse order of removal.

CAUTION

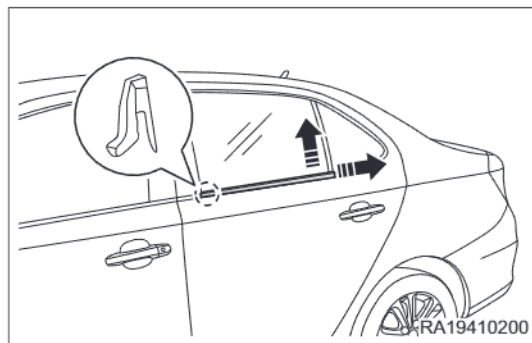
- Try to prevent the window glass from being damaged due to dropping when installing the rear door glass assembly.

Triangular Window Glass Assembly

Removal

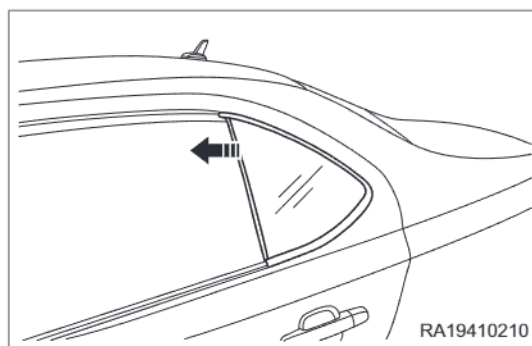
HINT:

- Use the same procedures for the right side and left side.
 - The procedures listed below are for the left side.
1. Turn off all the electrical equipment and ignition switch.
 2. Disconnect the negative battery cable.
 3. Remove the rear left door glass outer weatherstrip.
 - a. Using a screwdriver wrapped with protective tape, pry out the clip on the rear left door glass outer weatherstrip.
 - b. Remove the rear left door glass outer weatherstrip in the directions of arrow as shown in the illustration.

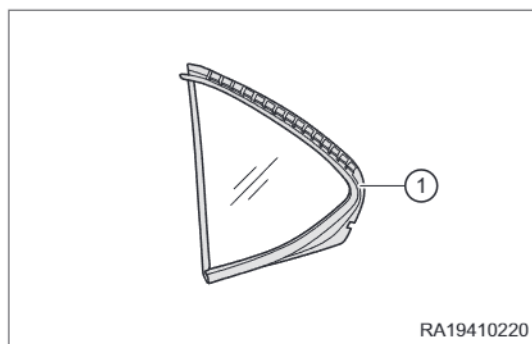


4. Remove the rear left door inner protector assembly (See page 45-34).
5. Remove the rear left door protector bracket (See page 45-38).
6. Remove the rear left door protective film assembly (See page 45-38).
7. Remove the rear left door glass assembly (See page 41-59).
8. Remove the rear left door glass rear guide rail assembly (See page 41-62).
9. Remove the triangular window glass assembly.

- a. Remove the triangular window glass assembly in the direction of arrow as shown in the illustration.



- b. Remove the triangular window glass rubber strip (1) from the triangular window glass assembly.



Installation

Installation is in the reverse order of removal.

CAUTION

- Try to prevent the window glass from being damaged due to dropping when installing the rear door glass assembly.

Rear Door Glass Rear Guide Rail Assembly

Removal

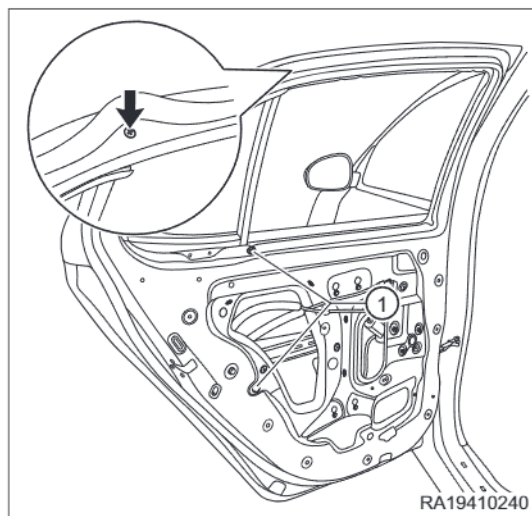
HINT:

- Use the same procedures for the right side and left side.
 - The procedures listed below are for the left side.
1. Turn off all the electrical equipment and ignition switch.
 2. Disconnect the negative battery cable.
 3. Remove the rear left door inner protector assembly (See page 45-34).
 4. Remove the rear left door protector bracket (See page 45-38).
 5. Remove the rear left door protective film assembly (See page 45-38).
 6. Remove the rear left door glass assembly (See page 41-59).
 7. Remove the rear left door glass rear guide rail assembly.
 - a. Remove the rear left door opening weatherstrip.

HINT:

It is unnecessary to fully remove the rear left door opening weatherstrip. A fixing screw is inside the rear left door opening weatherstrip.

- b. Remove the fixing screw (arrow) from the rear left door glass rear guide rail assembly.
(Tightening torque: $3.5 \pm 0.5 \text{ N}\cdot\text{m}$)
- c. Remove 2 fixing bolts (1) from the rear left door glass rear guide rail assembly, and remove the rear left door glass rear guide rail assembly.
(Tightening torque: $7 \pm 1.5 \text{ N}\cdot\text{m}$)



Installation

Installation is in the reverse order of removal.

CAUTION

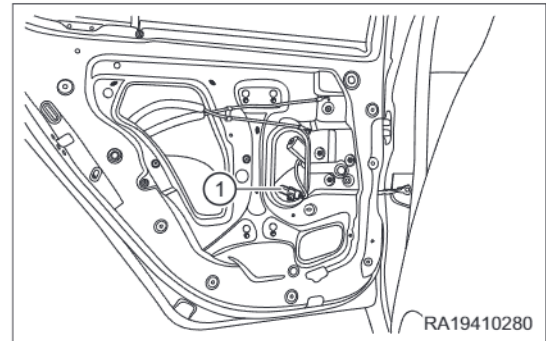
- After the glass regulating system is installed, make sure that the window glass can move up and down smoothly and freely without any vibration, chattering or shock loading, etc.

Rear Door Power Glass Regulator Assembly

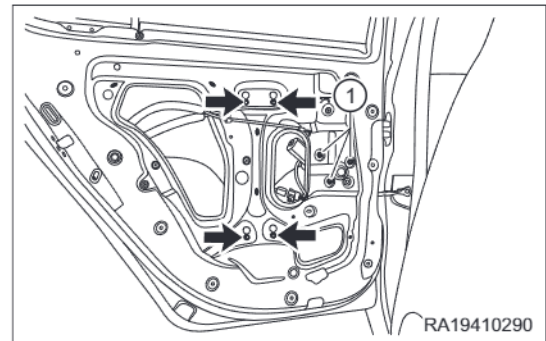
Removal

HINT:

- Use the same procedures for the right side and left side.
 - The procedures listed below are for the left side.
1. Turn off all the electrical equipment and ignition switch.
 2. Disconnect the negative battery cable.
 3. Remove the rear left door inner protector assembly (See page 45-34).
 4. Remove the rear left door protector bracket (See page 45-38).
 5. Remove the rear left door protective film assembly (See page 45-38).
 6. Remove the rear left door glass assembly (See page 41-59).
 7. Remove the rear left door power glass regulator assembly.
 - a. Using a screwdriver wrapped with protective tape, pry out the clip on the connector.
 - b. Disconnect the connector (1) from the rear left door power glass regulator assembly.



- c. Remove 4 fixing bolts (arrow) from the rear left door power glass regulator assembly.
(Tightening torque: $7 \pm 1.5 \text{ N}\cdot\text{m}$)
- d. Remove 3 fixing nuts (1) from the rear left door power glass regulator assembly, and remove the rear left door power glass regulator assembly.
(Tightening torque: $7 \pm 1.5 \text{ N}\cdot\text{m}$)

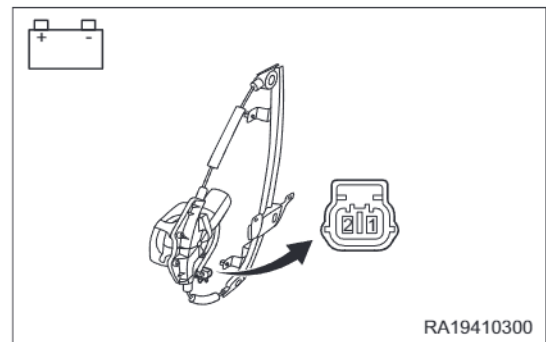


Inspection

1. Check the rear door power glass regulator motor.
 - a. Apply battery voltage to the terminals of power glass regulator motor connector, and check the operation of power glass regulator motor according to the table below.

Measurement Condition		Specified Condition
Battery positive (+)	Battery negative (-)	
1	2	UP smoothly
2	1	Down smoothly

If the result is not as specified, replace the rear door power glass regulator motor.



Installation

Installation is in the reverse order of removal.

CAUTION

- After the rear door power glass regulator is installed, make sure that the window glass can move up and down smoothly and freely without any vibration, chattering or shock loading, etc.

Front Windshield Assembly

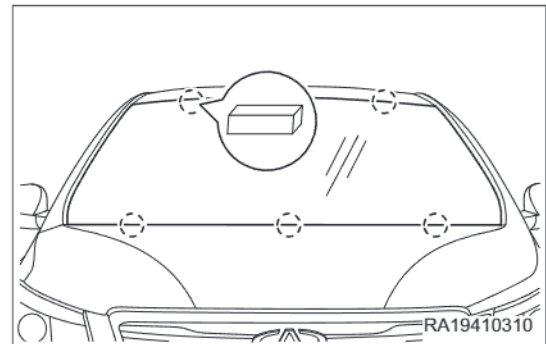
Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the roof assembly (See page 47-28).

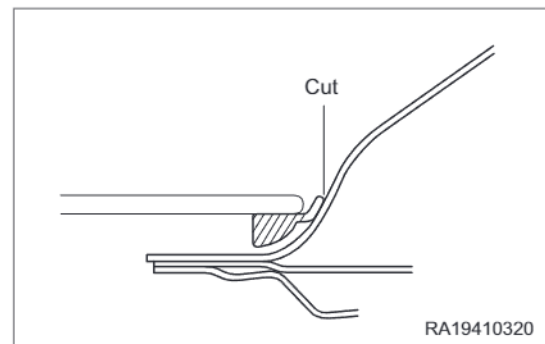
HINT:

It is unnecessary to fully remove the roof assembly, but the front of the roof assembly needs to be lowered to remove the front windshield assembly.

4. Remove the inside rear view mirror assembly (See page 42-12).
5. Remove the wiper arms assembly (See page 34-10).
6. Remove the front windshield lower garnish assembly (See page 46-31).
7. Remove the front windshield weatherstrip.
8. Remove the rubber adjusting plates.
 - a. Using a screwdriver wrapped with protective tape, remove the rubber adjusting plates.



9. Remove the front windshield assembly.
 - a. Cut the adhesive with a knife.



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CAUTION

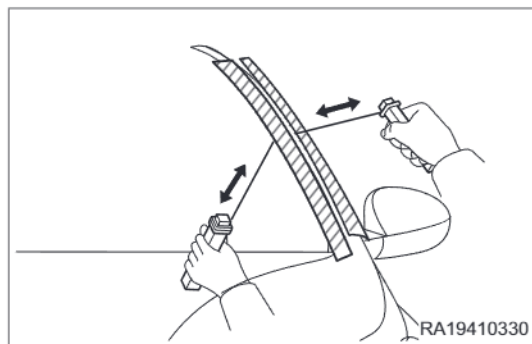
- Try to prevent the body paint surface from being scratched when cutting the adhesive.

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

CAUTION

- To prevent the instrument panel upper body assembly from being scratched, place a plastic sheet between the piano wire and instrument panel upper body assembly.

- c. Pass a piano wire through the seam between the vehicle body and front windshield assembly.
- d. Tie wooden blocks or similar objects to both piano wire ends, cut off the adhesive by pulling the piano wire around the front windshield assembly, and remove the front windshield assembly.

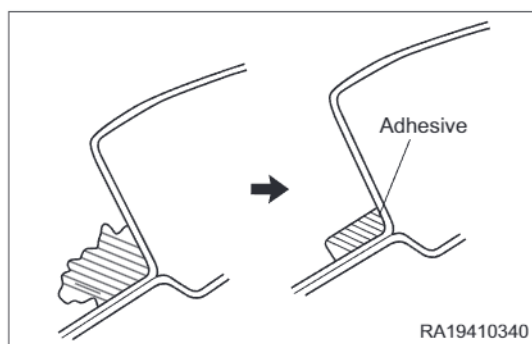


CAUTION

- When removing the front windshield assembly, 2 persons are required.
- DO NOT drop the front windshield assembly when removing it.
- Leave as much adhesive on the body as possible when cutting the adhesive.
- When separating the front windshield assembly from the vehicle, be careful not to damage the body paint and the interior and exterior ornaments.

10. Clean the vehicle body.

- a. Using a knife, cut away any extra adhesive on the contact surface of vehicle body as shown in the illustration.



CAUTION

- Try to prevent the body paint surface from being scratched when cutting the adhesive.
- Leave as much adhesive on the body as possible when cutting the adhesive.

- b. Clean the contact surface of vehicle body with cleaner.

CAUTION

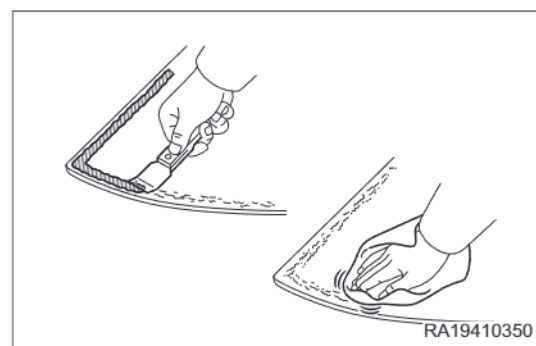
- Even if all the adhesive has been removed, clean the vehicle body.

11. Clean the removed glass.

CAUTION

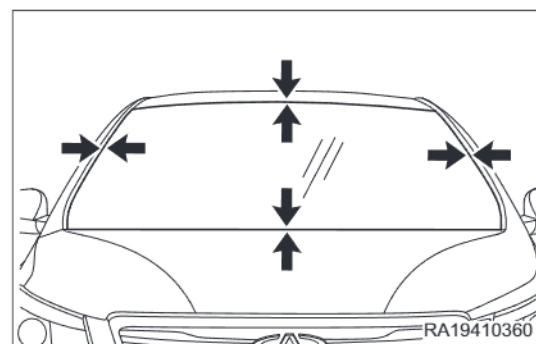
- DO NOT touch the glass after cleaning it.
- Even if new glass is used, clean it with glass cleaner.

- Remove the adhesive sticking to the glass with a scraper.
- Clean the outer edges of the glass with glass cleaner.



Installation

- Position the front windshield assembly.
 - Align the front windshield dowel pin with the installation positioning hole on the tonneau cover metal plate.
 - Check if the whole contact surface of the front windshield rim is perfectly even.
 - Make matchmarks on the front windshield and vehicle body at the positions shown in the illustration.



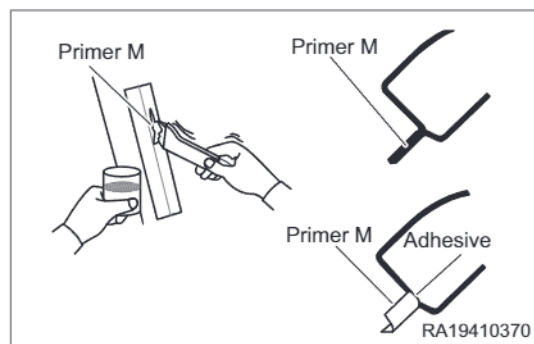
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- Remove the front windshield assembly.
- Apply a coat of primer M to the contact surface of vehicle body.

CAUTION

- Allow the primer to dry for at least 3 minutes.
- DO NOT apply primer to the adhesive.
- DO NOT apply too much primer.
- DO NOT keep any opened primer M for later use.

- a. Using a brush, apply a coat of primer M to the contact surface of vehicle body.
- b. The primer width is 15 - 17 mm.

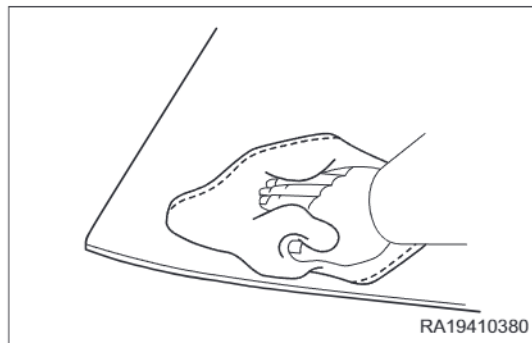


3. Clean the contact surface of front windshield assembly.

CAUTION

- DO NOT touch the surface of front windshield after cleaning it.

- a. Remove any residue on the contact surface of front windshield assembly with a piece of clean cloth soaked with glass cleaner.



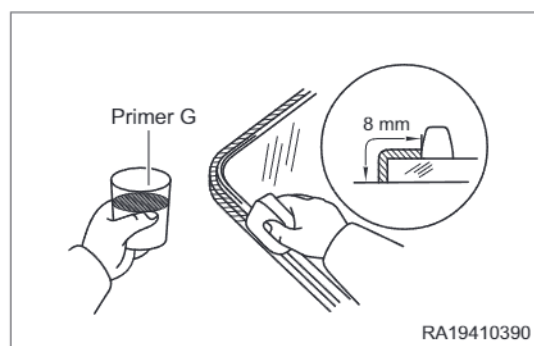
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4. Apply a coat of primer G to the contact surface of front windshield assembly.

CAUTION

- Allow the primer to dry for at least 3 minutes.
- DO NOT apply primer to the adhesive.
- DO NOT apply too much primer.
- DO NOT keep any of the opened primer G for later use.

- a. Using a brush or sponge, apply a coat of primer G to the windshield rim and contact surface.
- b. Use a clean cloth to wipe off the excess primer before drying.
- c. The primer width is 8 mm.

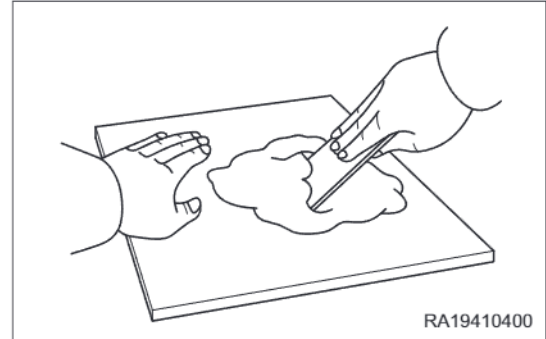


5. Mix the adhesive.

CAUTION

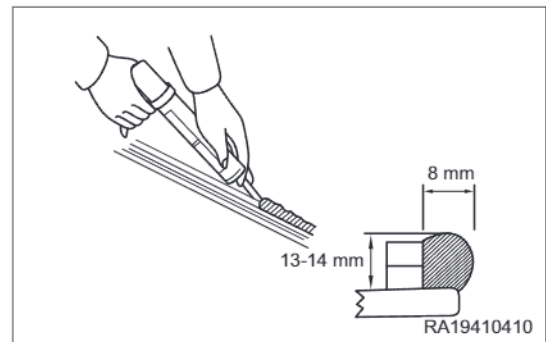
- The adhesive should be mixed thoroughly within 5 minutes.

- Using solvent, thoroughly clean the mixing board and scraper.
- Using a scraper, thoroughly mix the 500 g main adhesive and 75 g hardener on the mixing board.



6. Apply the adhesive.

- Cut off the tip of the cartridge nozzle and add the adhesive.
- Install the cartridge to the sealer gun.
- Apply adhesive evenly to the front windshield assembly as shown in the illustration.
Adhesive width: 8 mm
Adhesive thickness: 13 - 14 mm

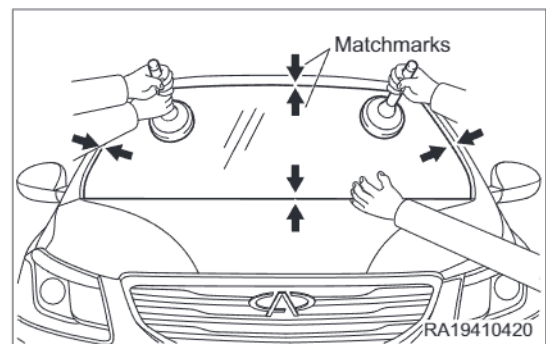


7. Install the front windshield assembly.

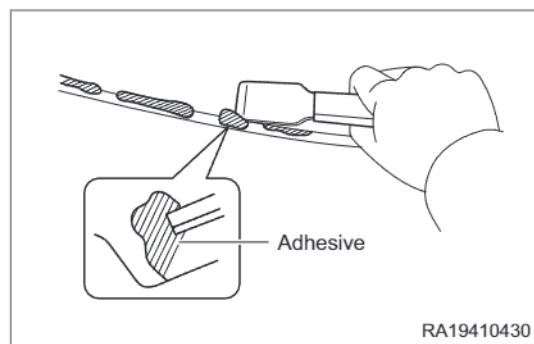
CAUTION

- Check that the lower/upper clearance and right/left clearance of front windshield are uniform to ensure fitting well with the surrounding moulding.

- Align the matchmarks on the windshield and vehicle body, and gently press in the windshield along the rim.



- b. Uniformly apply adhesive to the windshield rim with a scraper.
- c. Remove any excessive or spilled adhesive with a scraper.



- d. Apply tape around the windshield, and remove it when the adhesive becomes hard.
Adhesive thickness after compressing: 6 mm
- 8. Install the rubber adjusting plate.
 - 9. Install the front windshield weatherstrip.
 - 10. Check and repair the sealing of glass.
 - a. Check the glass for leakage after the adhesive has completely hardened.
 - b. If it leaks, seal the leaks with glass sealer.
 - 11. Remove the front windshield lower garnish assembly ([See page 46-31](#)).
 - 12. Remove the wiper arms assembly ([See page 34-10](#)).
 - 13. Remove the inside rear view mirror assembly ([See page 42-12](#)).
 - 14. Remove the roof assembly ([See page 47-28](#)).
 - 15. Disconnect the negative battery cable.
 - 16. Turn off all the electrical equipment and ignition switch.

Rear Windshield Assembly

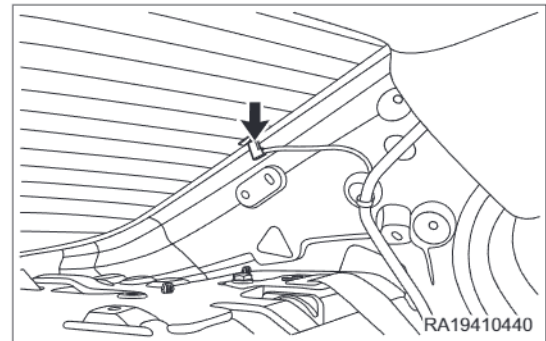
Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the C-pillar upper protector assembly (See page 47-19).
4. Remove the tonneau cover assembly (See page 47-34).
5. Remove the roof assembly (See page 47-28).

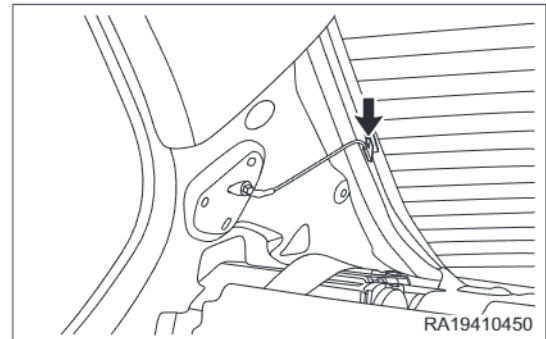
HINT:

It is unnecessary to fully remove the roof assembly, but the rear of the roof assembly needs to be lowered to remove the rear windshield assembly.

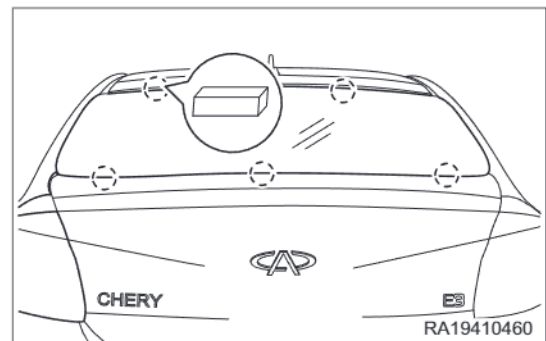
6. Remove the defroster negative wire harness assembly.
 - a. Remove the left defroster negative wire harness connector (arrow).



- b. Remove the right defroster positive wire harness connector (arrow).



7. Remove the rear windshield weatherstrip.
8. Remove the rubber adjusting plates.
 - a. Using a screwdriver wrapped with protective tape, remove the rubber adjusting plates.

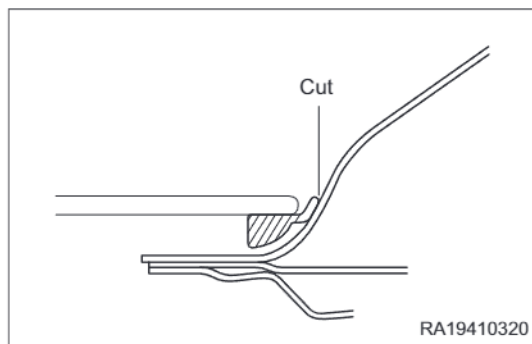


9. Remove the rear windshield assembly.
 - a. Cut the adhesive with a knife.

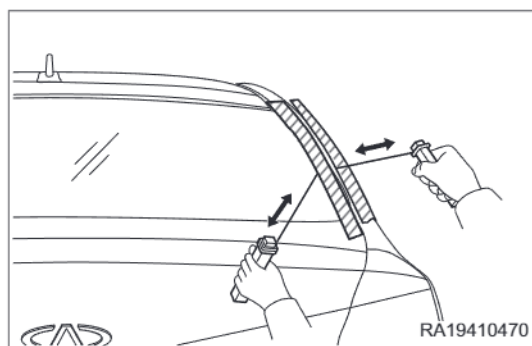
CAUTION

- Try to prevent the body paint surface from being scratched when cutting the adhesive.

- b. Apply protective tape to the outer surface of the vehicle body to prevent scratches.
- c. Pass a piano wire through the seam between body and rear windshield assembly.



- d. Tie wooden blocks or similar objects to both piano wire ends, cut off the adhesive by pulling the piano wire around the rear windshield assembly, and remove the rear windshield assembly.

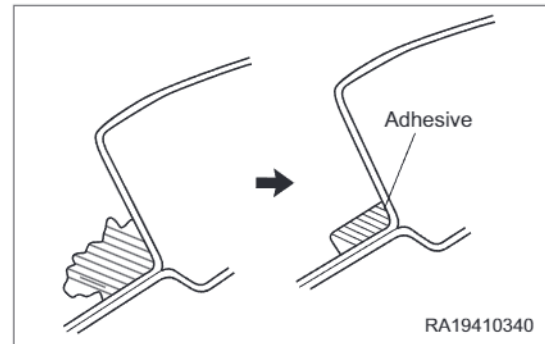


CAUTION

- When removing the rear windshield assembly, 2 persons are required.
- DO NOT drop the rear windshield assembly when removing it.
- Leave as much adhesive on the body as possible when cutting the adhesive.
- When separating the rear windshield assembly from the vehicle, be careful not to damage the body paint or the interior and exterior ornaments.

10. Clean the vehicle body.

- a. Using a knife, cut away any extra adhesive on the contact surface of vehicle body as shown in the illustration.


CAUTION

- Try to prevent the body paint surface from being scratched when cutting the adhesive.
- Leave as much adhesive on the body as possible when cutting the adhesive.

- b. Clean the contact surface of vehicle body with cleaner.

CAUTION

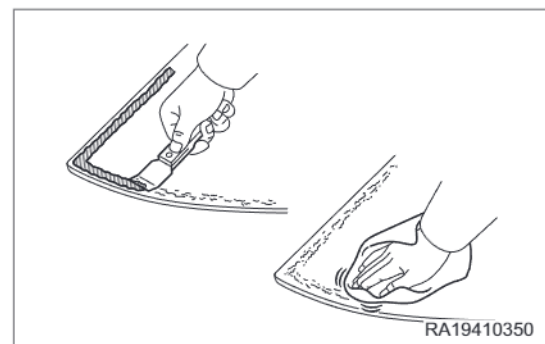
- Even if all the adhesive has been removed, clean the vehicle body.

11. Clean the removed glass.

CAUTION

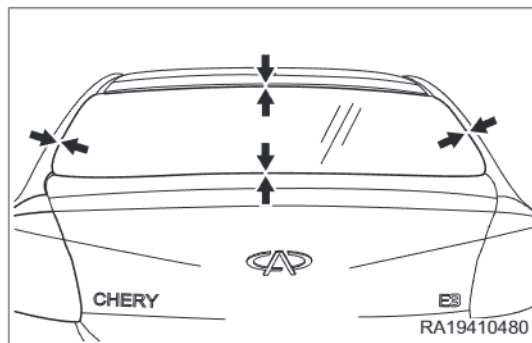
- DO NOT touch the glass after cleaning it.
- Even if new glass is used, clean it with glass cleaner.

- a. Remove the adhesive sticking to the glass with a scraper.
- b. Clean the outer edges of the glass with glass cleaner.



Installation

1. Position the rear windshield assembly.
 - a. Align the rear windshield dowel pin with the installation positioning hole on the tonneau cover metal plate.
 - b. Check if the whole contact surface of rear windshield rim is perfectly even.
 - c. Make matchmarks on the rear windshield and vehicle body at the positions shown in the illustration.

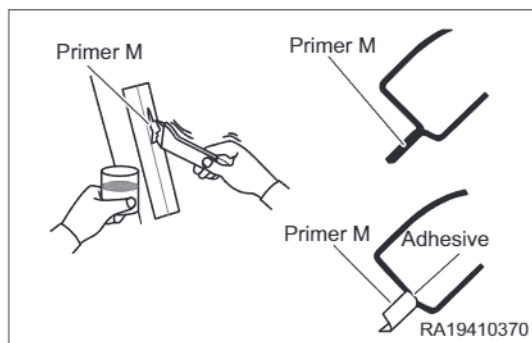


- d. Remove the rear windshield assembly.
2. Apply a coat of primer M to the contact surface of vehicle body.

CAUTION

- Allow the primer to dry for at least 3 minutes.
- DO NOT apply primer to the adhesive.
- DO NOT apply too much primer.
- DO NOT keep any opened primer M for later use.

- a. Using a brush, apply a coat of primer M to the contact surface of vehicle body.
- b. The primer width is 15 - 17 mm.

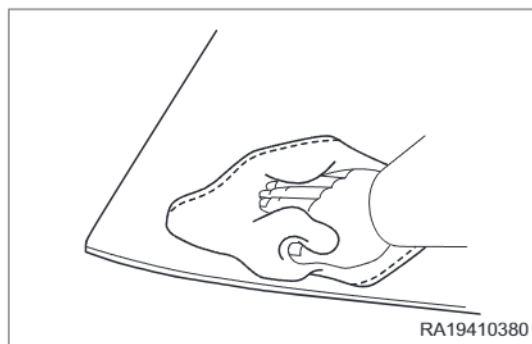


3. Clean the contact surface of rear windshield.

CAUTION

- DO NOT touch the surface of rear windshield after cleaning it.

- a. Remove any residue on the contact surface of rear windshield with a piece of clean cloth soaked with glass cleaner.

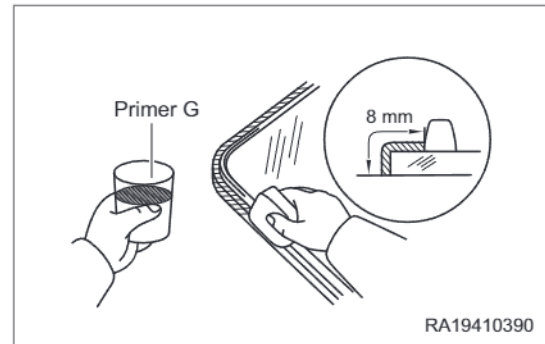


4. Apply a coat of primer G to the contact surface of rear windshield assembly.

CAUTION

- Allow the primer to dry for at least 3 minutes.
- DO NOT apply primer to the adhesive.
- DO NOT apply too much primer.
- DO NOT keep any of the opened primer G for later use.

- Using a brush or sponge, apply a coat of primer G to the windshield rim and contact surface.
- Use a clean cloth to wipe off the excess primer before drying.
- The primer width is 8 mm.

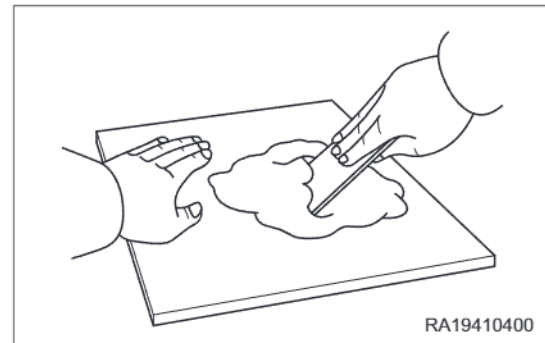


5. Mix the adhesive.

CAUTION

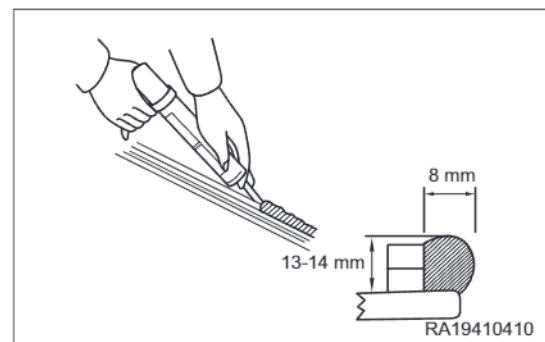
- The adhesive should be mixed thoroughly within 5 minutes.

- Using solvent, thoroughly clean the mixing board and scraper.
- Using a scraper, thoroughly mix the 500 g main adhesive and 75 g hardener on the mixing board.



6. Apply the adhesive.

- Cut off the tip of the cartridge nozzle and add the adhesive.
- Install the cartridge to the sealer gun.
- Apply adhesive evenly to the rear windshield assembly as shown in the illustration.
Adhesive width: 8 mm
Adhesive thickness: 13 - 14 mm

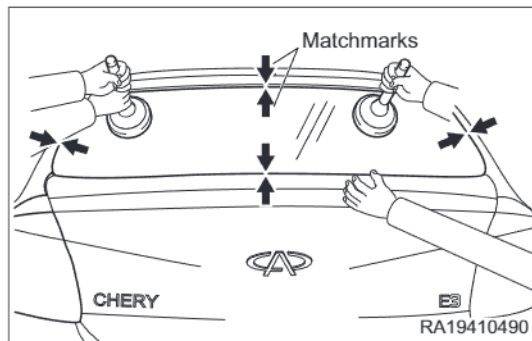


7. Install the rear windshield assembly.

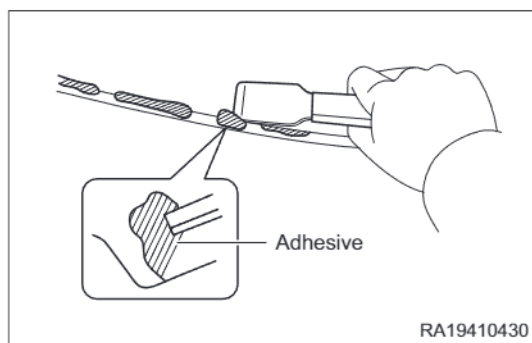
CAUTION

- Check that the lower/upper clearance and right/left clearance of rear windshield are uniform to ensure fitting well with the surrounding moulding.

- a. Align the matchmarks on the windshield and vehicle body, and gently press in the windshield along the rim.



- b. Uniformly apply adhesive to the windshield rim with a scraper.
- c. Remove any excessive or spilled adhesive with a scraper.



- d. Apply tape around the windshield, and remove it when the adhesive becomes hard.
Adhesive thickness after compressing: 6 mm

8. Install the rubber adjusting plate.

9. Install the rear windshield weatherstrip.

10. Check and repair the sealing of glass.

- a. Check the glass for leakage after the adhesive has completely hardened.
- b. If it leaks, seal the leaks with glass sealer.

11. Remove the roof assembly (See page 47-28).

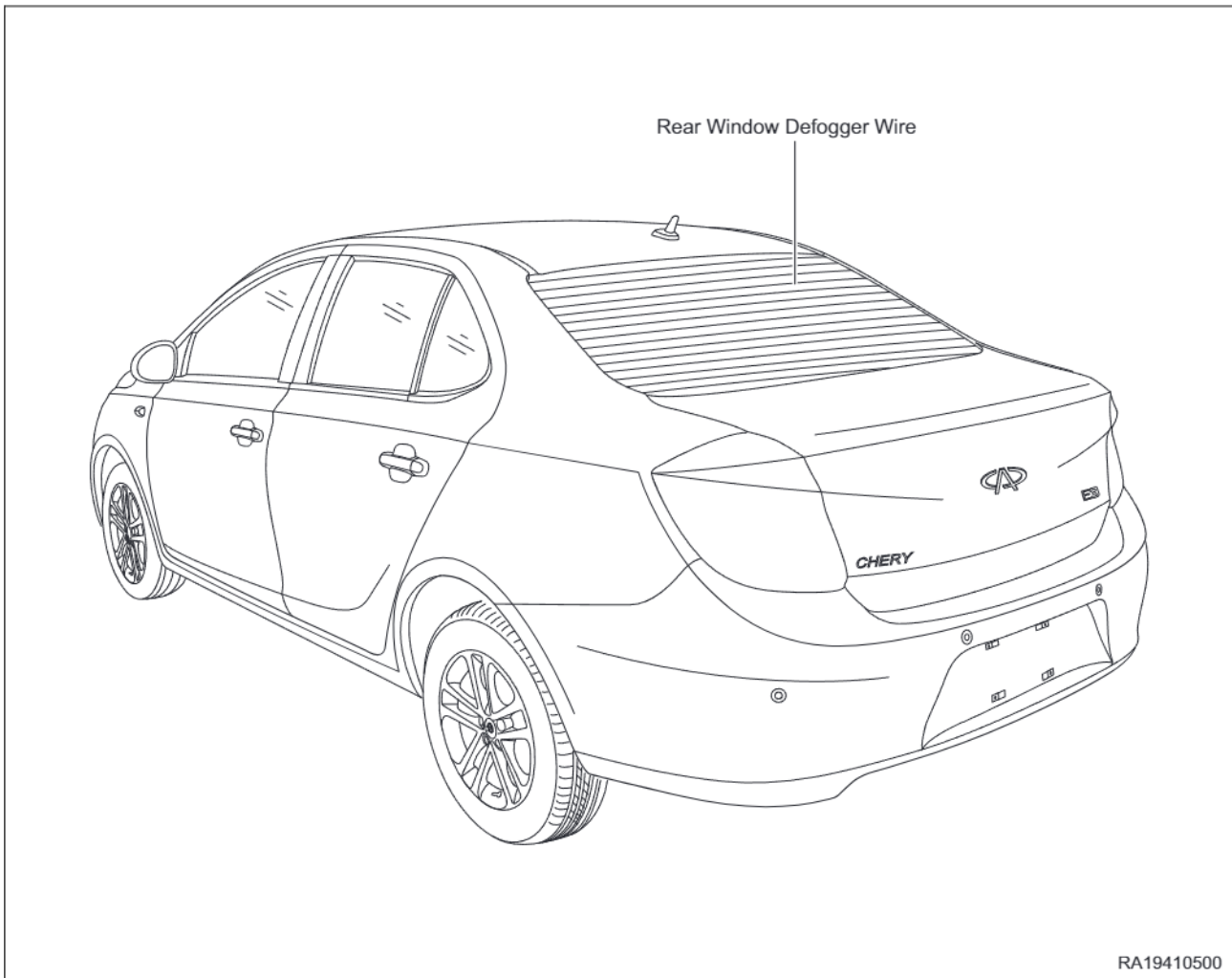
12. Remove the tonneau cover assembly (See page 47-34).

13. Remove the C-pillar upper protector assembly (See page 47-19).

Rear Defroster

General Information

Description



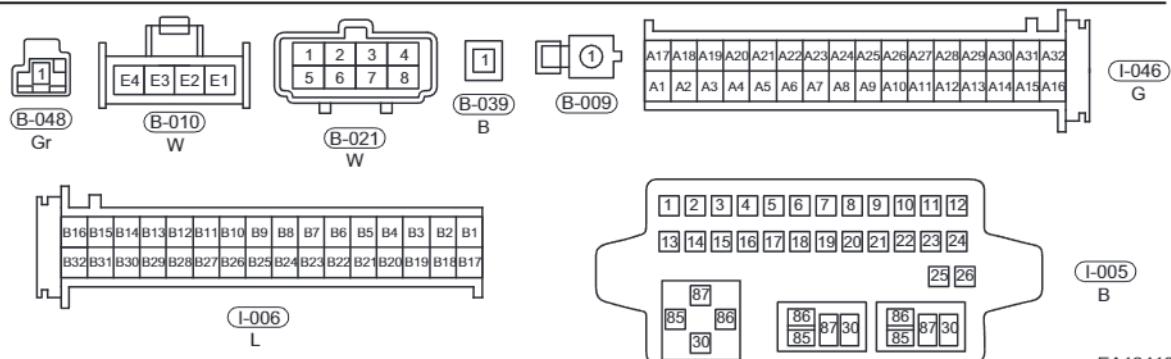
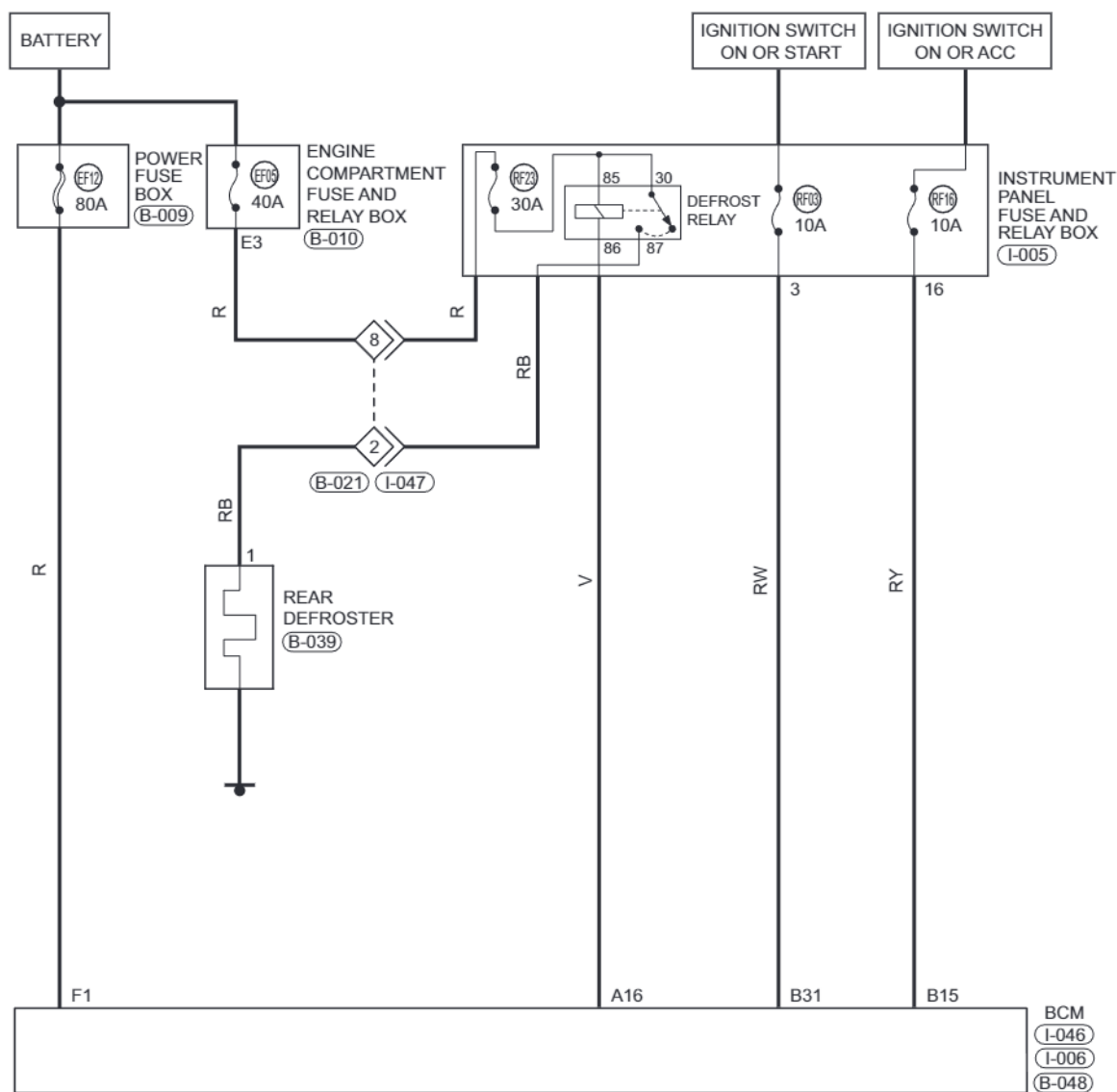
41

Turn the rear defroster switch on, and heat defroster wire to remove the fog, frost or water vapors on the rear windshield, thus realizing a clear view.

To open the rear defroster, turn the ignition switch to ON and press the rear defroster switch. The rear defroster switch indicator comes on while the rear defroster operation begins. The rear defroster stops and the indicator turns off after pressing the rear defroster switch again.

Circuit Diagram

Rear Defroster System



EA19410040

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of problem symptoms. Check each suspected area in sequence. Repair or replace the faulty components, or adjust them as necessary.

Symptom	Suspected Area	See page
Rear defroster switch is turned on but does not operate (indicator on)	Fuse	49-27
	Rear defroster switch	41-80
	Rear defroster wire	-
	Wire harness or connector	-
Rear defroster switch is turned on but does not operate (indicator off)	Fuse	49-27
	Rear defroster switch	41-80
	Wire harness or connector	-
Rear defroster has intermittent problem	Ground	-
	Wire harness or connector	-

Removal & Installation - Rear Defroster Switch

Removal

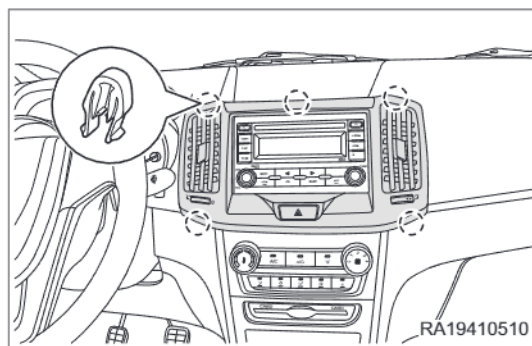
HINT:

The rear defroster switch is installed on the A/C control panel assembly, and cannot be disassembled.

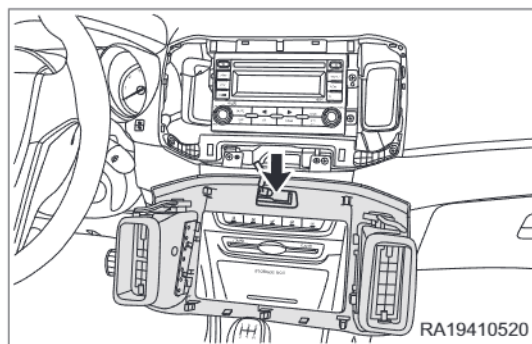
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing the rear defroster switch.
- Appropriate force should be applied when removing the rear defroster switch, and avoid operating roughly.
- Try to prevent the interior ornament from being scratched when removing the rear defroster switch.

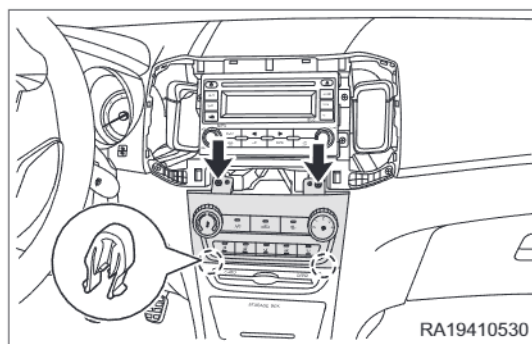
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the center control panel assembly.
 - a. Using a screwdriver wrapped with protective tape, pry out the clips on the center control panel assembly.



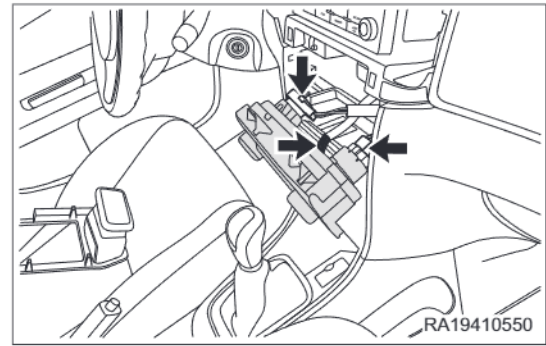
- b. Disconnect the warning light switch connector and remove the center control panel assembly.



4. Remove the A/C control panel.
 - a. Remove 2 fixing screws (arrow) from the A/C control panel.
(Tightening torque: $1.5 \pm 0.5 \text{ N}\cdot\text{m}$)
 - b. Using a screwdriver wrapped with protective tape, pry out the clips on the A/C control panel.



- c. Disconnect the connectors (arrow) from the A/C control panel and remove the A/C control panel.



Installation

Installation is in the reverse order of removal.

CAUTION

- Install the connector in place when installing the rear defroster switch.
- Always operate carefully to prevent the components from being damaged when installing the rear defroster switch.
- Check if the switch operates normally after installing the rear defroster switch.

