WINDSHIELD/WINDOW GLASS

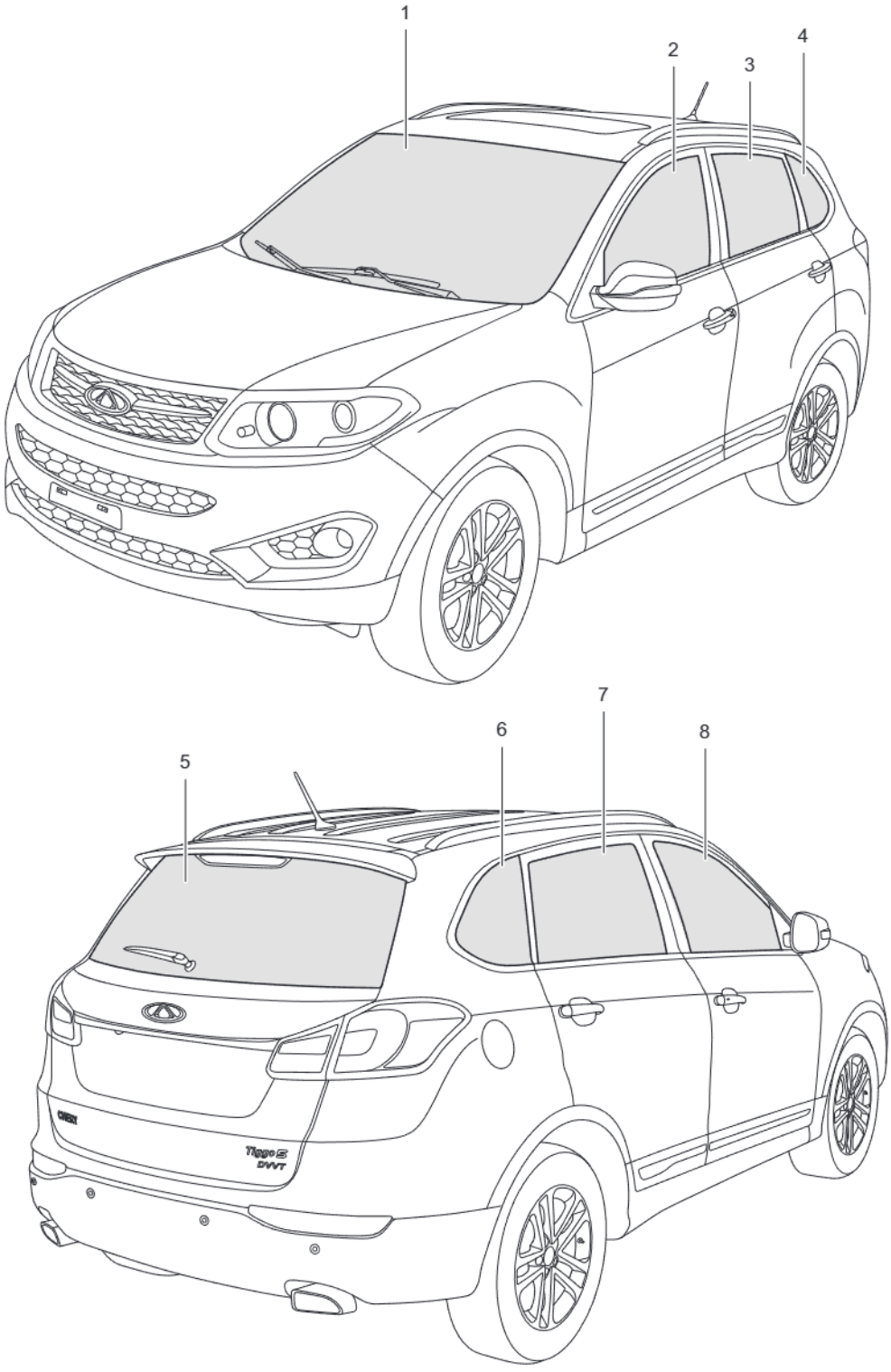
GENERAL INFORMATION 43-3
- **Description** 43-3
- **Specifications** 43-8
- **Tools** 43-9
- **Circuit Diagram** 43-10

DIAGNOSIS & TESTING 43-13
- **Problem Symptoms Table** 43-13
- **Diagnosis Tools** 43-13
- **DTC Confirmation Procedure** 43-13
- **Intermittent DTC Troubleshooting** 43-14
- **Ground Inspection** 43-14
- **Diagnosis Procedure** 43-15
- **Diagnostic Trouble Code (DTC) Chart** 43-16
- **B100C13** 43-17
- **B100C71** 43-17
- **B100D13** 43-17
- **B100D71** 43-17
- **B100E13** 43-23
- **B100E71** 43-23
- **B100F13** 43-23
- **B100F71** 43-23
- **B101013** 43-30
- **B101071** 43-30
- **B101113** 43-30
- **B101171** 43-30
- **B101213** 43-37
- **B101271** 43-37
- **B101313** 43-37
- **B101371** 43-37

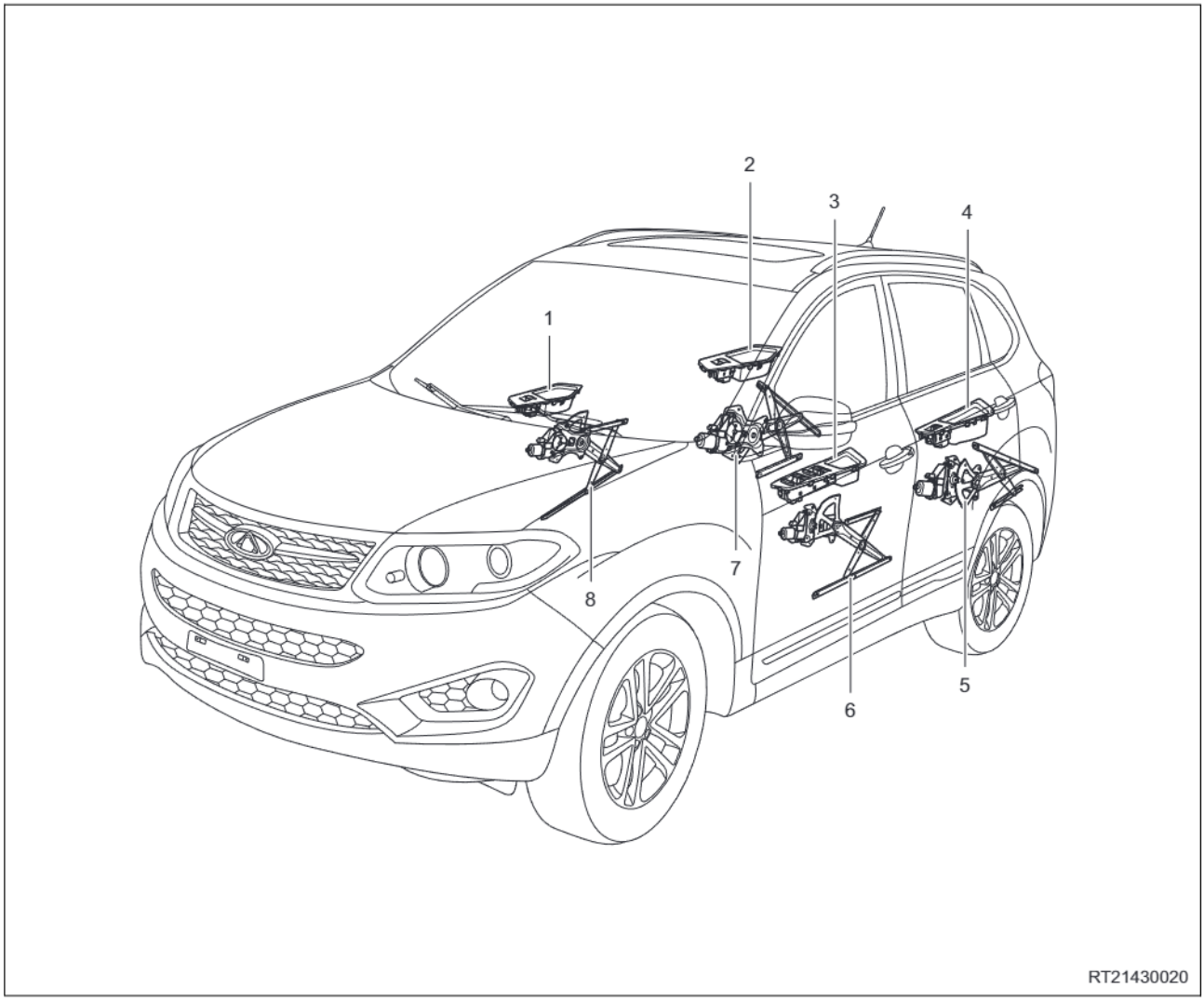
ON-VEHICLE SERVICE 43-44
- **Power Glass Regulating Control Master Switch** 43-44
  - Removal 43-44
  - Inspection 43-45
  - Installation 43-46
- **Front Door Outer Weather bar** 43-47
  - Removal 43-47
  - Installation 43-48
- **Front Door Glass Assembly** 43-49
  - Removal 43-49
  - Installation 43-50
- **Front Door Glass Rear Guide Rail Assembly** 43-51
  - Removal 43-51
  - Installation 43-52
- **Front Door Power Glass Regulator Assembly** 43-53
  - Removal 43-53
  - Inspection 43-54
  - Installation 43-54
- **Power Glass Regulating Switch** 43-55
  - Removal 43-55
  - Inspection 43-57
  - Installation 43-57
- **Rear Door Outer Weather bar** 43-58
  - Removal 43-58
  - Installation 43-58
- **Rear Door Glass Assembly** 43-59
  - Removal 43-59
  - Installation 43-60
- **Rear Door Glass Rear Guide Rail Assembly** 43-61
  - Removal 43-61
  - Installation 43-61
- **Rear Door Power Glass Regulator Assembly** 43-62
  - Removal 43-62
  - Inspection 43-63
  - Installation 43-63
- **Triangular Window Glass Assembly** 43-64
  - Removal 43-64
  - Installation 43-66
- **Front Windshield Assembly** 43-70
  - Removal 43-70
  - Installation 43-72
- **Rear Windshield Assembly** 43-77
  - Removal 43-77
  - Installation 43-79
- **Rear Window Defroster** 43-83
  - General Information 43-83
- **Circuit Diagram** 43-84
  - Rear Window Defroster System 43-84
  - Problem Symptoms Table 43-85
- **Rear Window Defogger Switch** 43-86
  - Removal 43-86
  - Installation 43-87

GENERAL INFORMATION

Description



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



1 - Front Right Door Power Glass Regulating Switch Assembly	2 - Rear Right Door Power Glass Regulating Switch Assembly
3 - Front Left Door Power Glass Regulating Control Master Switch Assembly	4 - Rear Left Door Power Glass Regulating Switch Assembly
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

Power window control system controls the power window glass UP/DOWN function by operating power glass regulating control switch on the door inner protector assembly. Main control devices of this system include: power glass regulating control master switch (built into driver side door) and power glass regulating switches (built into front passenger side door and rear doors). Press the power glass regulating control master switch or any power glass regulating switch to transmit the UP/DOWN signal to 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 front left door inner protector assembly and controls operations of front and rear passenger door power window glass. When power window lock switch is in lock position, only driver side power glass regulating control master switch can control UP/DOWN operation of driver side power window glass.
Power glass regulating switch	Locates on door inner protector assembly. Each power glass regulating switch controls UP/DOWN operation of corresponding power window glass.
Power glass regulator motor	Receives switch signal and performs conversion in order to activate power glass regulator motor to change power window glass position.

System Function

Function	Description
Manual UP function	Power glass regulating control master switch and power glass regulating switches have manual UP function. Power window glass goes up when power glass regulating control master switch or any power glass regulating switch is pulled up and stops when switch is released.
Manual DOWN function	Power glass regulating control master switch and power glass regulating switches have manual DOWN function. Power window glass goes down when power glass regulating control master switch or any power glass regulating switch is pressed and held and stops when switch is released.
Automatic DOWN function	Power glass regulating control master switch and power glass regulating switches have automatic DOWN function. Power window glass goes down automatically when power glass regulating control master switch or any power glass regulating switch is pressed. To stop it partway, press switch again.
Power window LOCK function	When power window lock switch is pressed, corresponding power window glass cannot be operated with passenger side power glass regulating control switches. In this case, only driver side power window glass can be operated. This function can be canceled only when power window lock switch is pressed again.

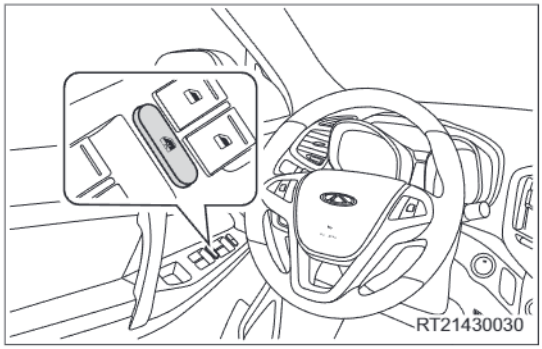
Operation Inspection

1. Check power window lock switch.
   a. Check that front passenger side power window glass and rear door window glass cannot be operated with front passenger side power glass regulating switch and rear door glass regulating switch when power window lock switch is pressed.

      OK: Operation for front passenger side power glass regulating switch and rear door glass regulating switch is failed.

   b. Check that front passenger side power window glass and rear door window glass can be operated with front passenger side power glass regulating switch and rear door glass regulating switch when power window lock switch is pressed again.

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



2. Check manual UP/DOWN function.
   a. Check that driver side power window glass operates as follows:

      OK

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

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

      OK

Condition	Power Glass Regulating 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 remote manual UP/DOWN function.
   a. Check that driver side power window glass operates as follows:
      OK

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

   b. Check that power window glasses other than driver side power window glass operate as follows:
      OK

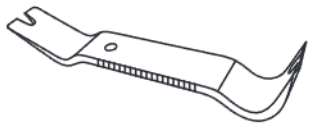
Condition	Power Glass Regulating Switch	Switch Operation	Power Window Glass
Ignition switch ON Window lock switch OFF	Passenger side	Pulled	UP (close)
		Pushed	DOWN (open)
	Rear left side	Pulled	UP (close)
		Pushed	DOWN (open)
	Rear right side	Pulled	UP (close)
		Pushed	DOWN (open)

Specifications

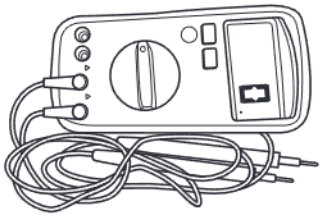
Description	Torque (N·m)
Power Glass Regulating Control Master Switch Assembly Fixing Screw	2 ± 0.5
Power Glass Regulating Switch Assembly Fixing Screw	2 ± 0.5
Front Door Outer Weather Bar Fixing Screw	1.3 ± 0.2
Rear Door Outer Weather Bar Fixing Screw	1.3 ± 0.2
Front Door Glass Rear Guide Rail Assembly Fixing Bolt	9 ± 1
Rear Door Glass Rear Guide Rail Assembly Fixing Bolt	9 ± 1
Rear Door Glass Rear Guide Rail Assembly Fixing Screw	5 ± 0.5
Front Door Glass Assembly Fixing Bolt	9 ± 1
Rear Door Glass Assembly Fixing Bolt	9 ± 1
Front Door Power Glass Regulator Assembly Fixing Bolt	9 ± 1
Rear Door Power Glass Regulator Assembly Fixing Bolt	9 ± 1
A/C Control Panel Fixing Screw	2 ± 0.5

Tools

Special Tool

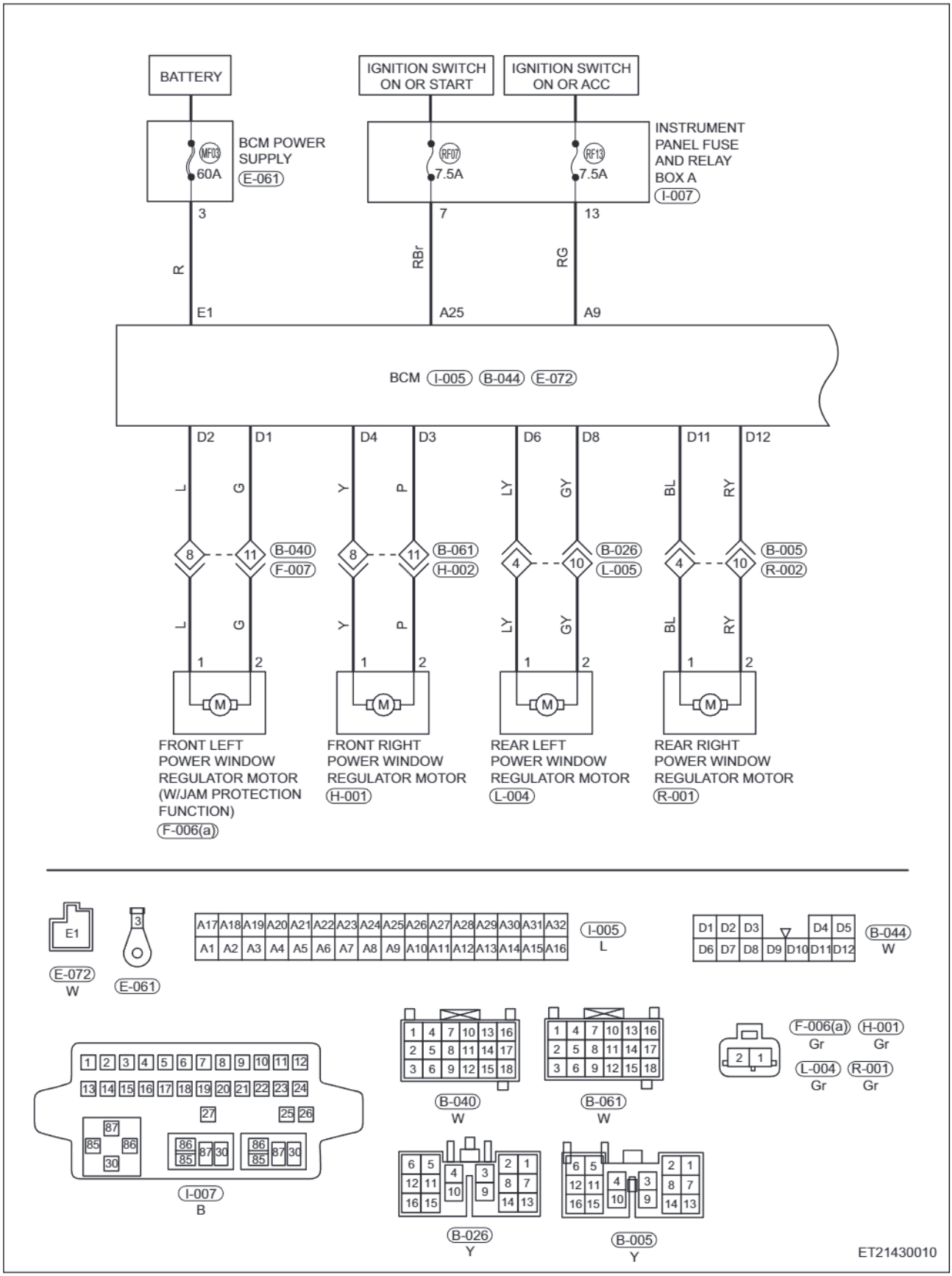
Interior Crow Plate	 RCH0000025

General Tool

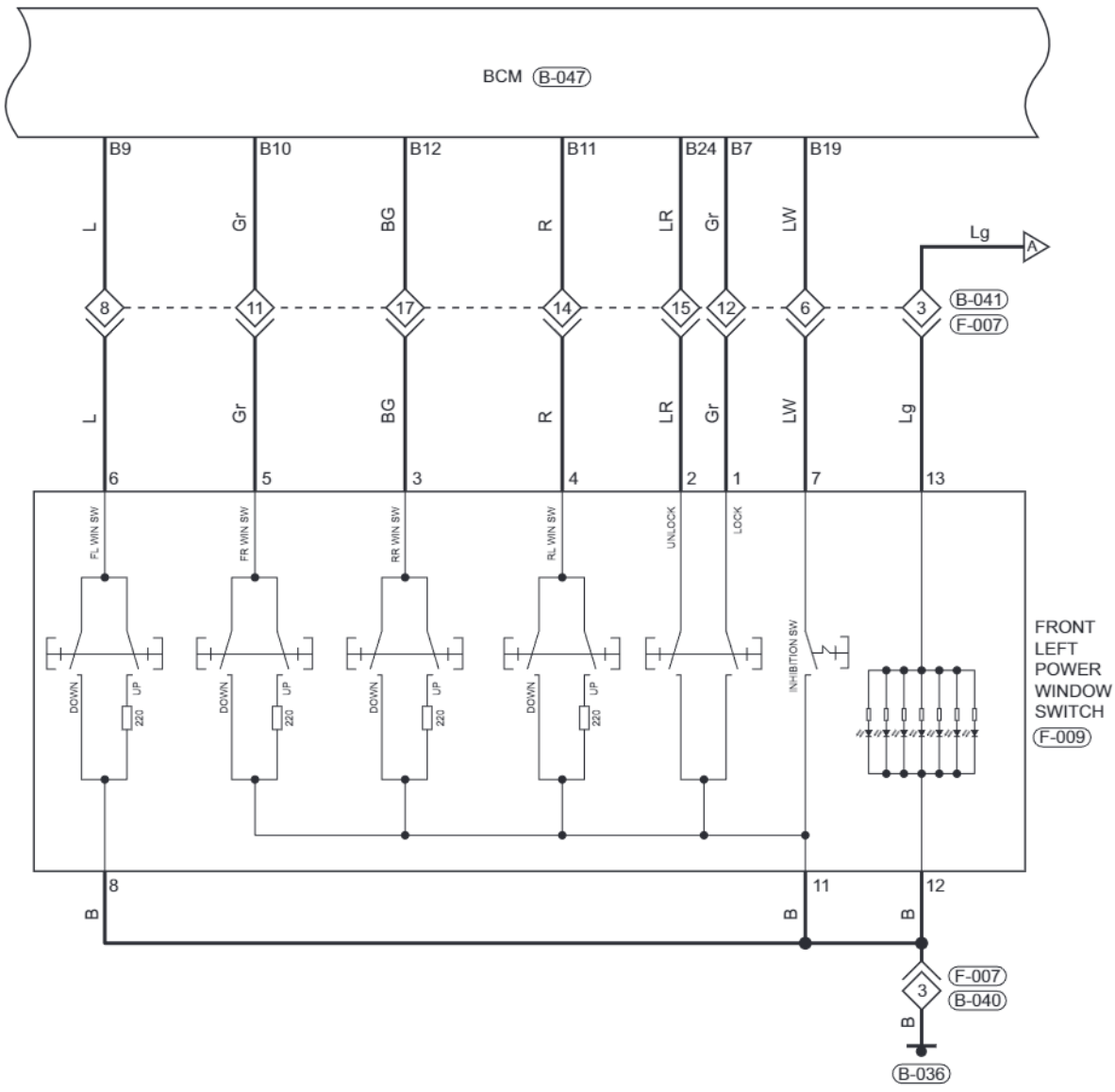
Digital Multimeter	 RCH0000002

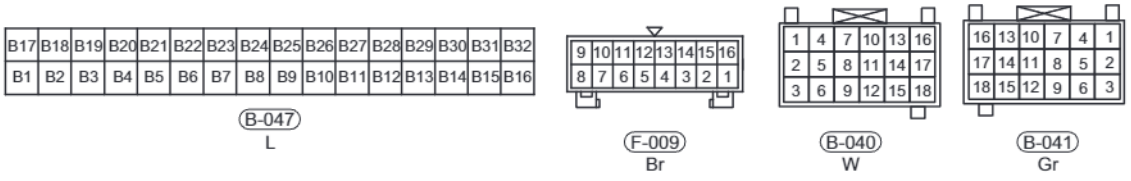
Circuit Diagram

Power Window Control System (Page 1 of 3)



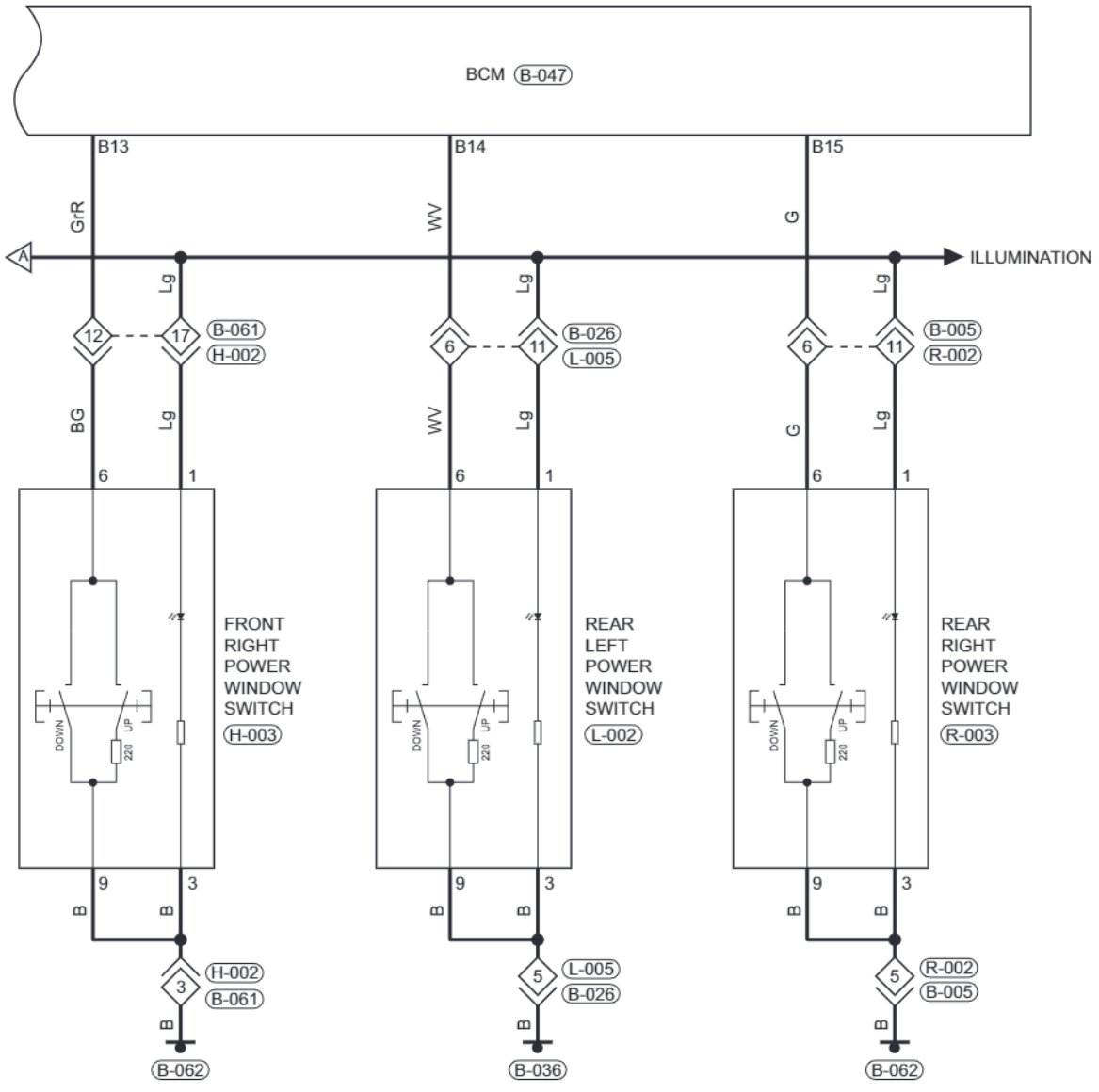
Power Window Control System (Page 2 of 3)

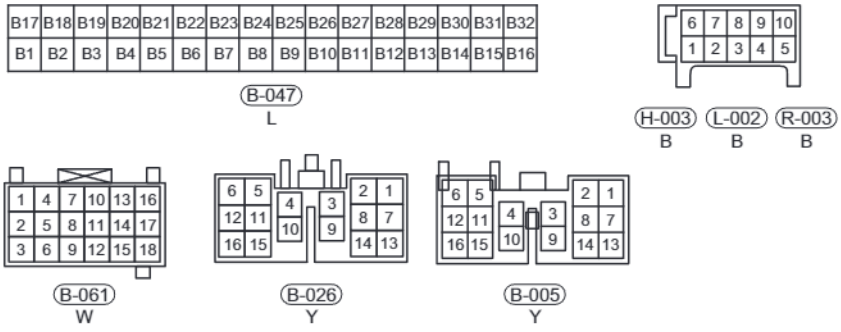




ET21430020

Power Window Control System (Page 3 of 3)





ET21430030

DIAGNOSIS & TESTING

Problem Symptoms Table

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

Symptom	Suspected Area	See page
Driver side power window cannot be operated with driver side power glass regulating control switch	Fuse	51-37
	Driver side power glass regulating control switch	43-44
	Driver side power glass regulator assembly	43-53
	Wire harness or connector	-
	Body Control Module (BCM)	-
Passenger side power window cannot be operated with passenger side power glass regulating switch	Fuse	51-37
	Passenger side power glass regulating switch	43-55
	Passenger side power glass regulator assembly	43-62
	Wire harness or connector	-
	Body Control Module (BCM)	-
Power window has intermittent problem	Ground	-
	Wire harness or connector	-

Diagnosis Tools

X-431 3G Diagnostic Tester

When connecting X-431 3G diagnostic tester:

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

Digital Multimeter

When using digital multimeter:

- Troubleshoot electrical malfunctions and wire harness system.
- Look for basic fault.
- Measure voltage, current and resistance.

DTC Confirmation Procedure

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

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

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

Intermittent DTC Troubleshooting

If malfunction is intermittent, perform the followings:

- Check if connectors are loose.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Wiggle related wire harnesses and connectors and observe if 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 be reset during the wiggle test.
- Look for broken, bent, protruded or corroded terminals.
- Inspect the mounting areas of power window assembly, wire harness or wire harness connector and so on for damage, foreign matter, etc. that will cause incorrect signals.
- Check and clean all wire harness connectors and grounding parts 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 DTC cannot be cleared, the Body Control Module (BCM) is malfunctioning. If DTC can be cleared, reinstall the Body Control Module (BCM) to 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 Technical Bulletin that is applied to the malfunction.

Ground Inspection

Grounding are very important to entire circuit system, which are normal or not can seriously affect the entire circuit system. Ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) and oxidation may increase load resistance. This situation will seriously affect the normal operation of the circuit. The operations to check the ground points are as follows:

1. Remove the ground bolt or nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contacting is in a good condition.
4. Reinstall the ground bolt or nut securely.
5. Check if add-on accessories interfere with the ground circuit.
6. If several wire harnesses are crimped into one ground terminal, check if they are installed correctly. Make sure all 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 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 (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	Confirm troubleshooting, perform test

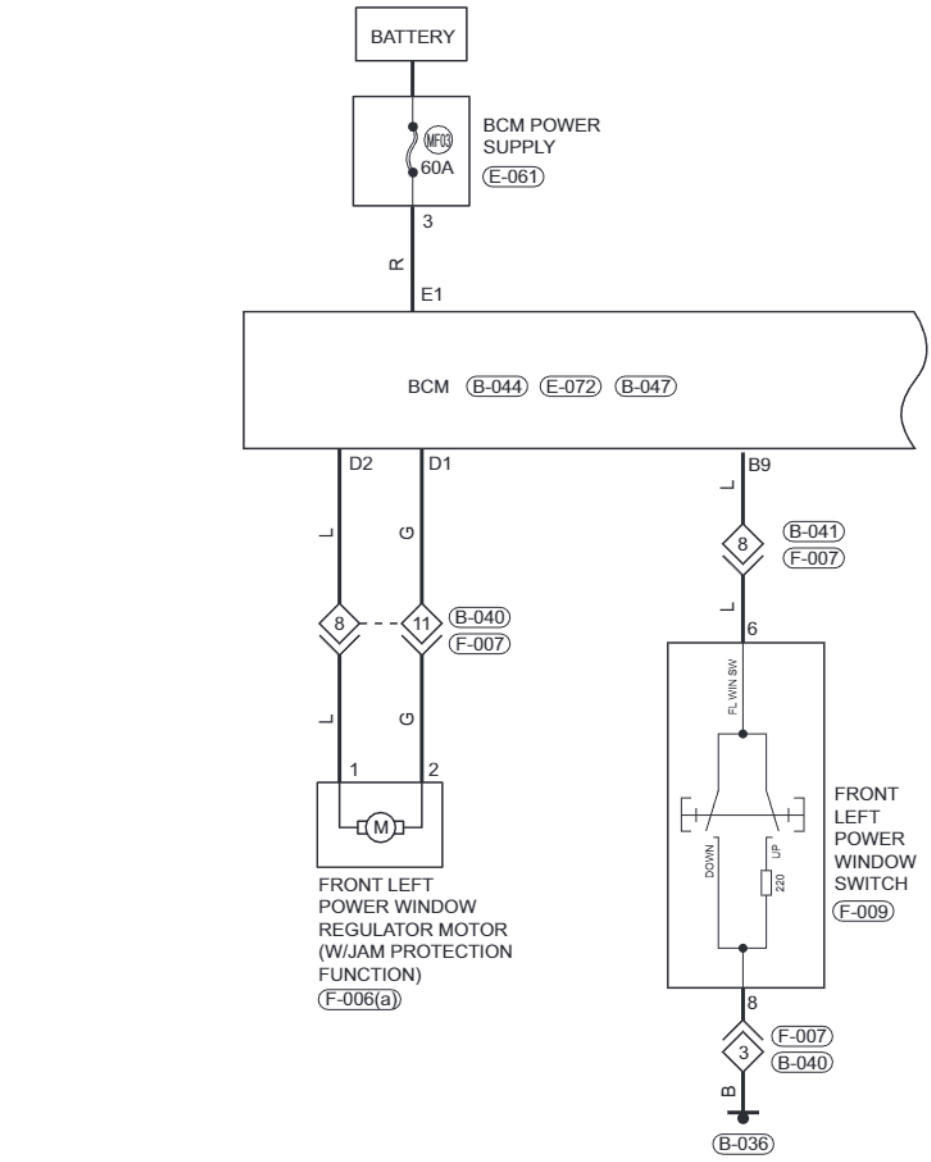
NEXT

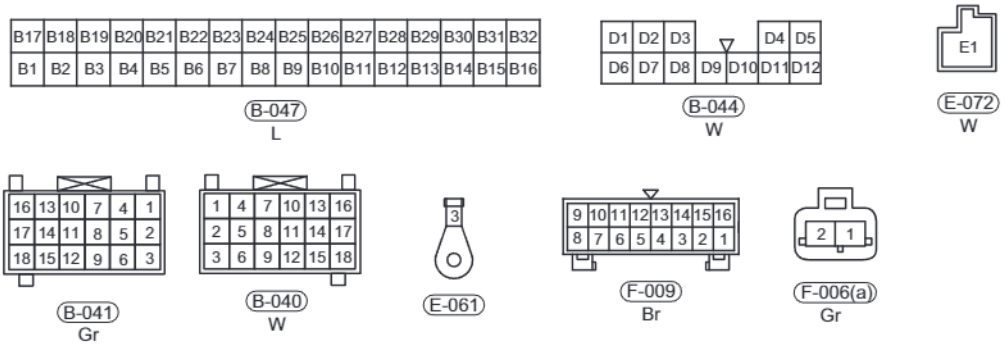
10	End

Diagnostic Trouble Code (DTC) Chart

DTC Code	DTC Definition
B100C13	FL Window Up Control Circuit Circuit Open
B100C71	FL Window Up Control Circuit Actuator Stuck
B100D13	FL Window Down Control Circuit Circuit Open
B100D71	FL Window Down Control Circuit Actuator Stuck
B100E13	FR Window Up Control Circuit Circuit Open
B100E71	FR Window Up Control Circuit Actuator Stuck
B100F13	FR Window Down Control Circuit Circuit Open
B100F71	FR Window Down Control Circuit Actuator Stuck
B101013	RL Window Up Control Circuit Circuit Open
B101071	RL Window Up Control Circuit Actuator Stuck
B101113	RL Window Down Control Circuit Circuit Open
B101171	RL Window Down Control Circuit Actuator Stuck
B101213	RR Window Up Control Circuit Circuit Open
B101271	RR Window Up Control Circuit Actuator Stuck
B101313	RR Window Down Control Circuit Circuit Open
B101371	RR Window Down Control Circuit Actuator Stuck

DTC	B100C13	FL Window Up Control Circuit Circuit Open
DTC	B100C71	FL Window Up Control Circuit Actuator Stuck
DTC	B100D13	FL Window Down Control Circuit Circuit Open
DTC	B100D71	FL Window Down Control Circuit Actuator Stuck


BATTERY
MF03
60A
BCM POWER SUPPLY
E-061
3
R
E1
BCM B-044 E-072 B-047
D2
D1
B9
L
G
L
8
11
B-040
F-007
L
G
1
2
M
FRONT LEFT POWER WINDOW REGULATOR MOTOR (W/JAM PROTECTION FUNCTION)
F-006(a)
L
8
B-041
F-007
L
6
FL WIN SW
DOWN
UP
220
FRONT LEFT POWER WINDOW SWITCH
F-009
8
3
F-007
B-040
B
B-036


B17 B18 B19 B20 B21 B22 B23 B24 B25 B26 B27 B28 B29 B30 B31 B32
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16
B-047
L
D1 D2 D3 D4 D5
D6 D7 D8 D9 D10 D11 D12
B-044
W
E1
E-072
W
16 13 10 7 4 1
17 14 11 8 5 2
18 15 12 9 6 3
B-041
Gr
1 4 7 10 13 16
2 5 8 11 14 17
3 6 9 12 15 18
B-040
W
3
E-061
9 10 11 12 13 14 15 16
8 7 6 5 4 3 2 1
F-009
Br
2 1
F-006(a)
Gr

ET21430050

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B100C13	FL Window Up Control Circuit Circuit Open	Ignition switch ON	ON	• Glass regulating control master switch • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B100C71	FL Window Up Control Circuit Actuator Stuck			
B100D13	FL Window Down Control Circuit Circuit Open			
B100D71	FL Window Down Control Circuit Actuator Stuck			

CAUTION

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

Diagnosis Procedure

1	Check power glass regulating control master switch

a. Remove the power glass regulating control master switch from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG → **Replace power glass regulating control master switch**

OK

2	Check front left door power glass regulator assembly

a. Remove the front left door power glass regulator assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

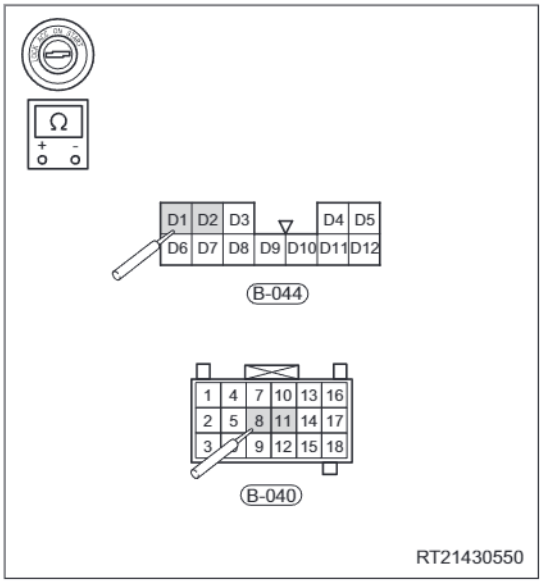
NG → **Replace front left door power glass regulator assembly**

OK

3	Check body wire harness and connector

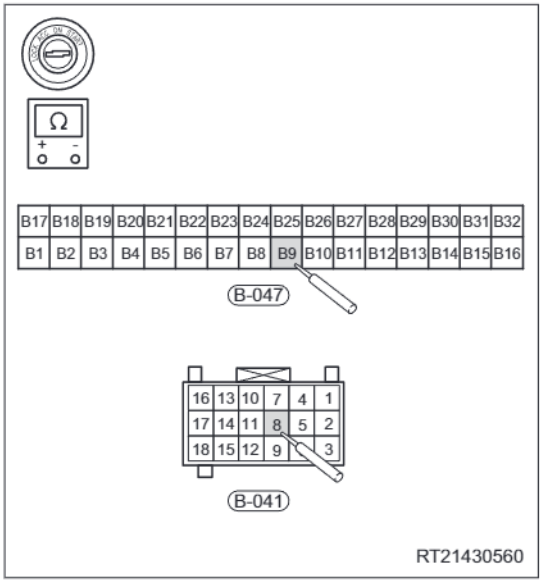
a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the body wire harness connectors B-044 and B-040.
d. Using a digital multimeter, check for continuity between body wire harness connectors B-044 and B-040 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-044 (D1) - B-040 (11)	Always	Continuity
B-044 (D2) - B-040 (8)	Always	Continuity



e. Disconnect the body wire harness connectors B-047 and B-041.
f. Using a digital multimeter, check for continuity between body wire harness connectors B-047 and B-041 according to the table below.

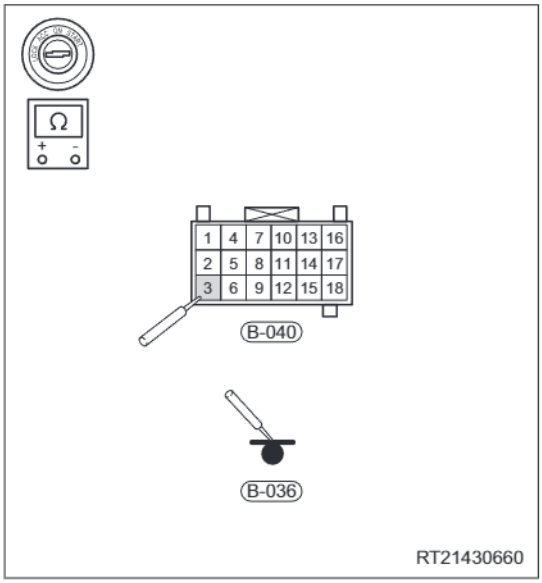
Multimeter Connection	Condition	Specified Condition
B-047 (B9) - B-041 (8)	Always	Continuity



g. Disconnect the body wire harness connector B-040 and ground B-036.
h. Using a digital multimeter, check for continuity between body wire harness connector B-040 and ground B-036 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-040 (3) - B-036	Always	Continuity

NG → **Repair or replace body wire harness and connector**

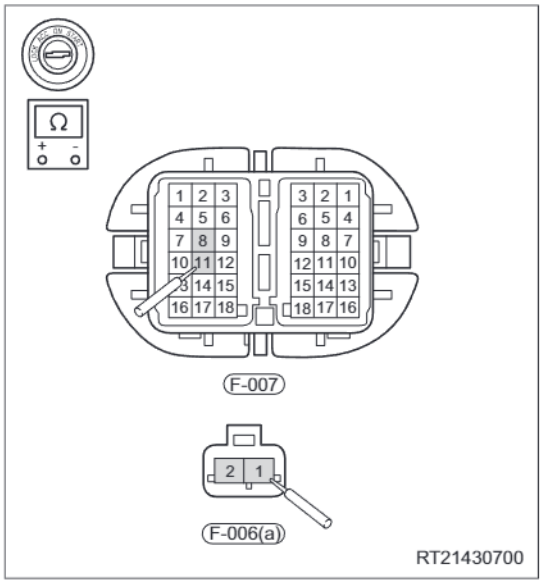


OK

4	Check front left door wire harness and connector

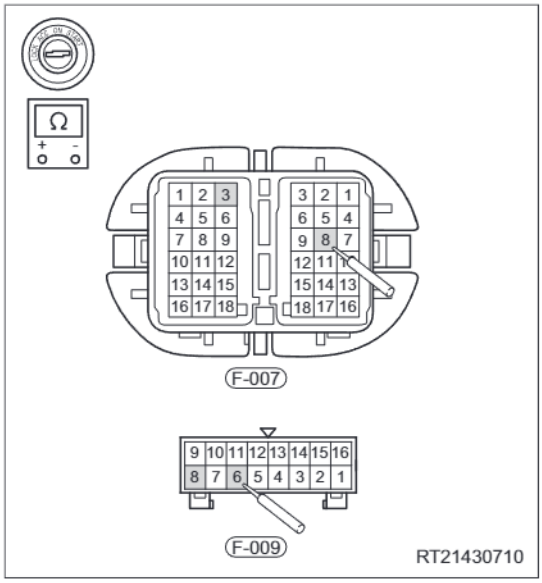
a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the front left door wire harness connectors F-007 and F-006 (a).
d. Using a digital multimeter, check for continuity between front left door wire harness connectors F-007 and F-006 (a) according to the table below.

Multimeter Connection	Condition	Specified Condition
F-007 (8) - F-006 (a) (1)	Always	Continuity
F-007 (11) - F-006 (a) (2)	Always	Continuity



e. Disconnect the front left door wire harness connectors F-007 and F-009.
f. Using a digital multimeter, check for continuity between front left door wire harness connectors F-007 and F-009 according to the table below.

Multimeter Connection	Condition	Specified Condition
F-007 (3) - F-009 (8)	Always	Continuity
F-007 (8) - F-009 (6)	Always	Continuity



NG → Repair or replace front left door wire harness and connector

OK

5	Reconfirm DTCs

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

f. Turn ignition switch to ON.

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

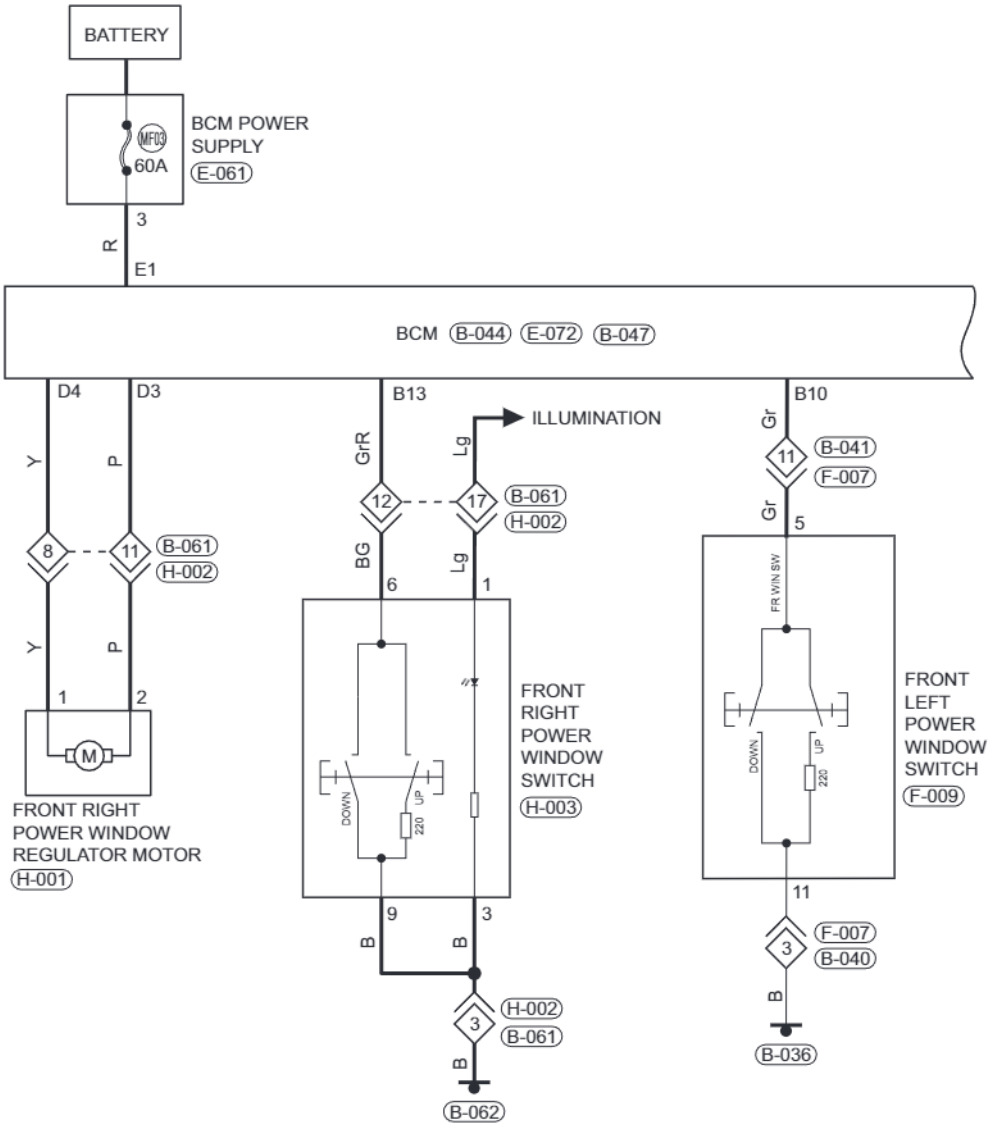
Result	Proceed to
DTC B100C13, B100C71, B100D13 and B100D71 are output	NG
No DTC is output	OK

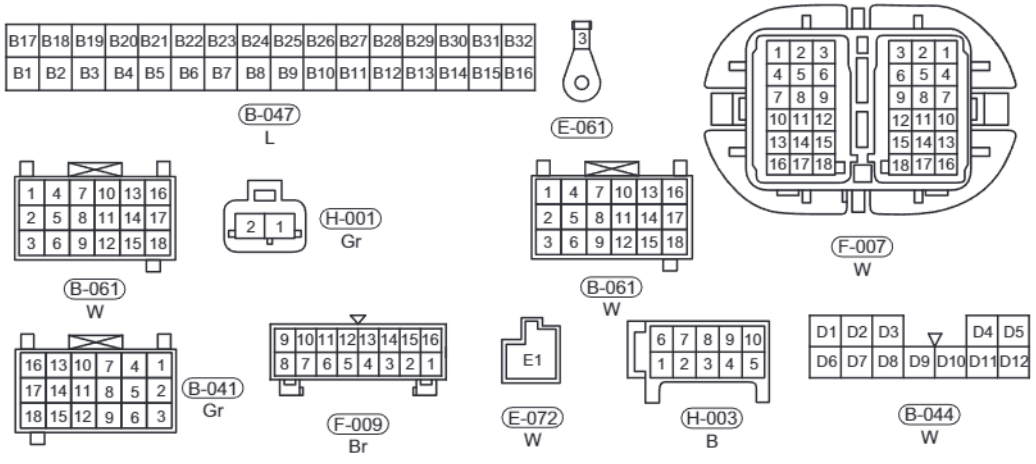
NG → **Replace Body Control Module (BCM)**

OK

System is normal

DTC	B100E13	FR Window Up Control Circuit Circuit Open
DTC	B100E71	FR Window Up Control Circuit Actuator Stuck
DTC	B100F13	FR Window Down Control Circuit Circuit Open
DTC	B100F71	FR Window Down Control Circuit Actuator Stuck


BATTERY
MF03
60A
BCM POWER SUPPLY
E-061
3
R
E1
BCM B-044 E-072 B-047
D4
D3
B13
B10
ILLUMINATION
Y
P
GrR
Lg
Gr
8
11
B-061
H-002
12
17
B-041
F-007
BG
Lg
Gr
5
6
1
FR WIN SW
FRONT RIGHT POWER WINDOW REGULATOR MOTOR
H-001
FRONT RIGHT POWER WINDOW SWITCH
H-003
FRONT LEFT POWER WINDOW SWITCH
F-009
DOWN
UP
220
9
3
11
B
F-007
B-040
H-002
B-061
B-036
B-062


B-047
L
E-061
B-061
W
H-001
Gr
B-061
W
F-007
W
B-041
Gr
F-009
Br
E-072
W
H-003
B
B-044
W

ET21430060

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B100E13	FR Window Up Control Circuit Circuit Open	Ignition switch ON	ON	• Glass regulating control switch • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B100E71	FR Window Up Control Circuit Actuator Stuck			
B100F13	FR Window Down Control Circuit Circuit Open			
B100F71	FR Window Down Control Circuit Actuator Stuck			

CAUTION

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

Diagnosis Procedure

1	Check power glass regulating switch

a. Remove the power glass regulating switch from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG → Replace power glass regulating switch

OK

2	Check front right door power glass regulator assembly

a. Remove the front right door power glass regulator assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

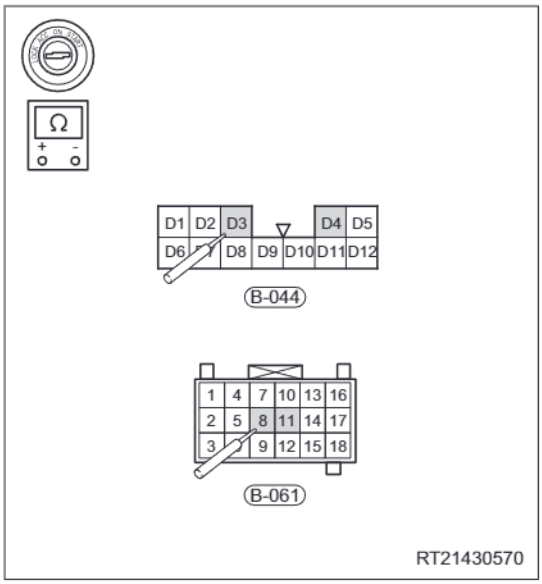
NG → Replace front right door power glass regulator assembly

OK

3	Check body wire harness and connector

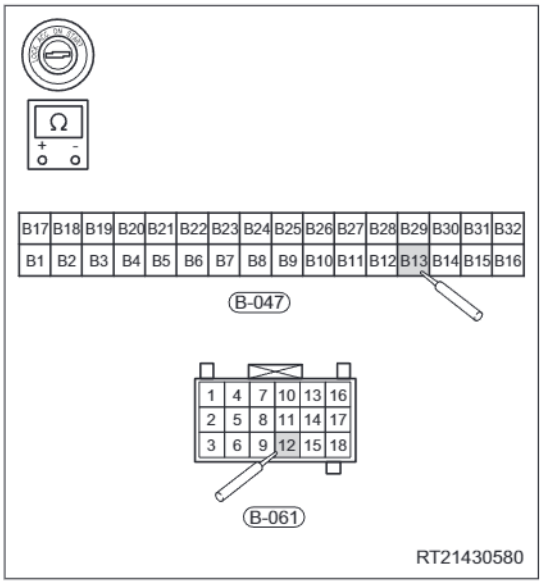
a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the body wire harness connectors B-044 and B-061.
d. Using a digital multimeter, check for continuity between body wire harness connectors B-044 and B-061 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-044 (D3) - B-061(11)	Always	Continuity
B-044 (D4) - B-061(8)	Always	Continuity



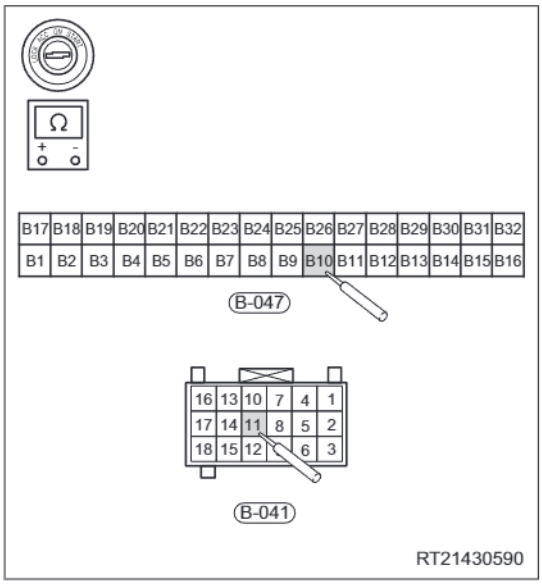
e. Disconnect the body wire harness connectors B-047 and B-061.
f. Using a digital multimeter, check for continuity between body wire harness connectors B-047 and B-061 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-047 (B13) - B-061 (12)	Always	Continuity



g. Disconnect the body wire harness connectors B-047 and B-041.
h. Using a digital multimeter, check for continuity between body wire harness connectors B-047 and B-041 according to the table below.

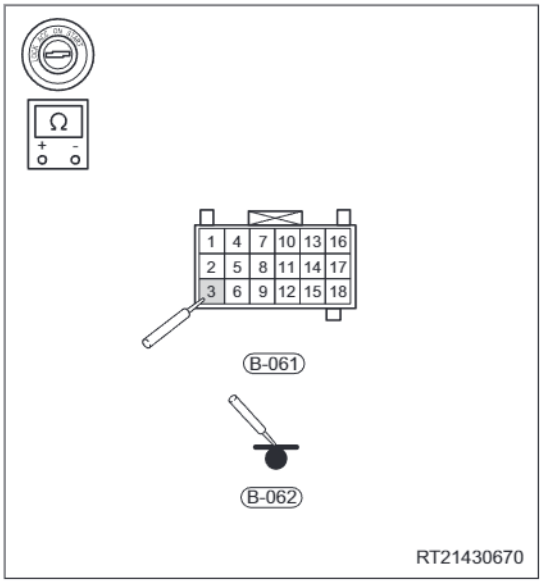
Multimeter Connection	Condition	Specified Condition
B-047 (B10) - B-041 (11)	Always	Continuity



i. Disconnect the body wire harness connector B-061 and ground B-062.

j. Using a digital multimeter, check for continuity between body wire harness connector B-061 and ground B-062 according to the table below.

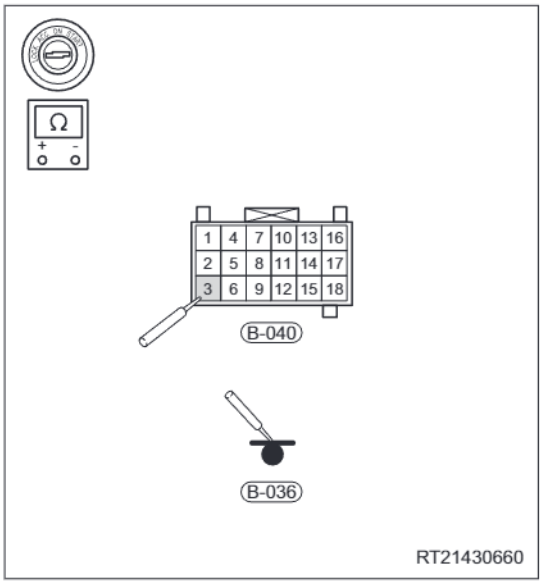
Multimeter Connection	Condition	Specified Condition
B-061 (3) - B-062	Always	Continuity



k. Disconnect the body wire harness connector B-040 and ground B-036.

l. Using a digital multimeter, check for continuity between body wire harness connector B-040 and ground B-036 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-040 (3) - B-036	Always	Continuity



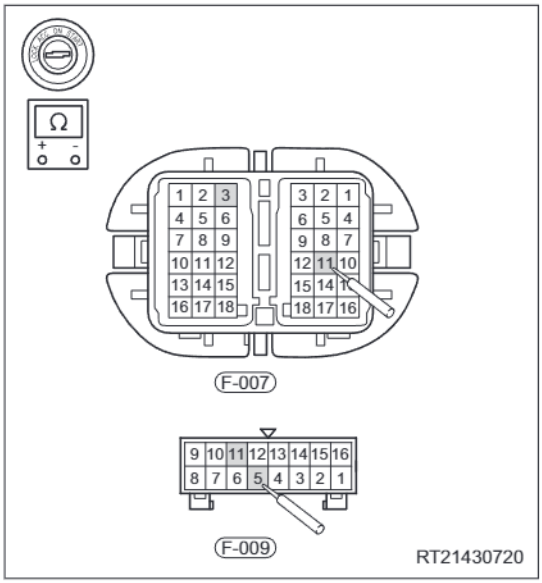
NG → **Repair or replace body wire harness and connector**

OK

4	Check front left door wire harness and connector

a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the front left door wire harness connectors F-007 and F-009.
d. Using a digital multimeter, check for continuity between front left door wire harness connectors F-007 and F-009 according to the table below.

Multimeter Connection	Condition	Specified Condition
F-007 (11) - F-009 (5)	Always	Continuity
F-007 (3) - F-009(11)	Always	Continuity



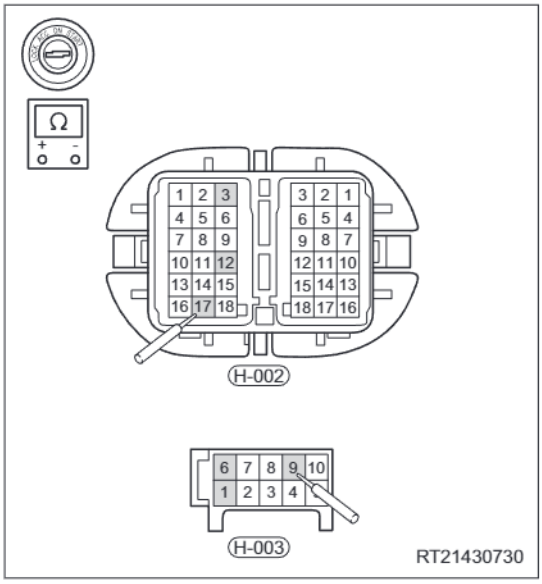
NG → **Repair or replace front left door wire harness and connector**

OK

5	Check front right door wire harness and connector

a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the front right door wire harness connectors H-002 and H-003.
d. Using a digital multimeter, check for continuity between front right door wire harness connectors H-002 and H-003 according to the table below.

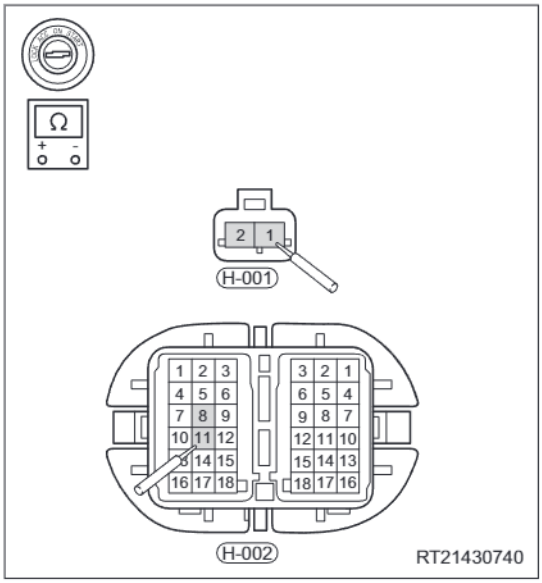
Multimeter Connection	Condition	Specified Condition
H-002 (12) - H-003 (6)	Always	Continuity
H-002 (17) - H-003 (1)	Always	Continuity
H-002 (3) - H-003 (9)	Always	Continuity



e. Disconnect the front right door wire harness connectors H-001 and H-002.

f. Using a digital multimeter, check for continuity between front right door wire harness connectors H-001 and H-002 according to the table below.

Multimeter Connection	Condition	Specified Condition
H-001 (1) - H-002 (8)	Always	Continuity
H-001 (2) - H-002 (11)	Always	Continuity



NG → **Repair or replace front right door wire harness and connector**

OK

6 Reconfirm DTCs

a. Connect all connectors.

b. Connect the negative battery cable.

c. Turn ignition switch to ON.

d. Use X-431 3G diagnostic tester (the latest software) to record and clear DTCs stored in the Body Control Module (BCM).

e. Turn ignition switch to LOCK and wait for a few seconds.

f. Turn ignition switch to ON.

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

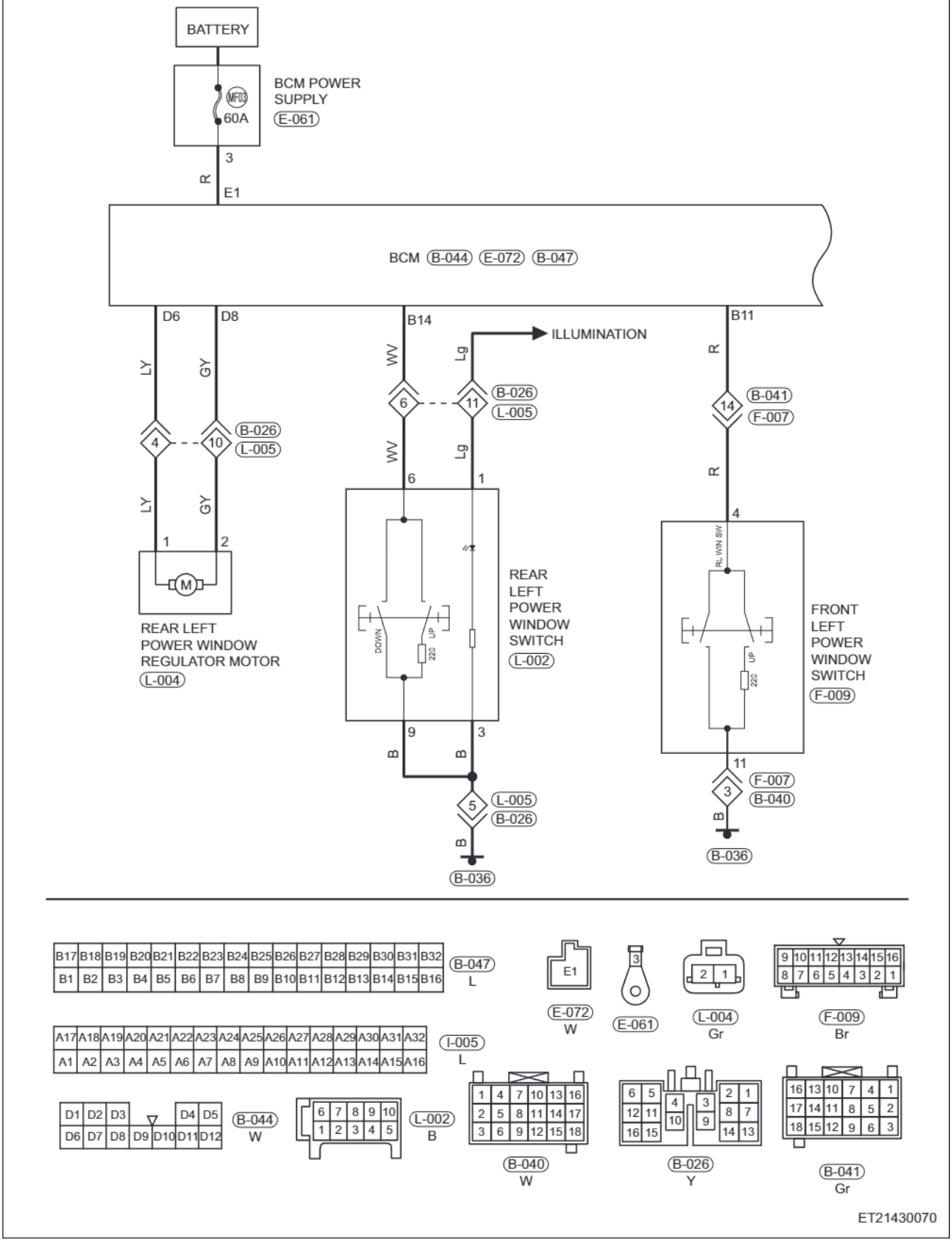
Result	Proceed to
DTC B100E13, B100E71, B100F13 and B100F71 are output	NG
No DTC is output	OK

NG → **Replace Body Control Module (BCM)**

OK

System is normal

DTC	B101013	RL Window Up Control Circuit Circuit Open
DTC	B101071	RL Window Up Control Circuit Actuator Stuck
DTC	B101113	RL Window Down Control Circuit Circuit Open
DTC	B101171	RL Window Down Control Circuit Actuator Stuck


BATTERY
MF03
60A
BCM POWER SUPPLY
E-061
3
R
E1
BCM B-044 E-072 B-047
D6
D8
B14
B11
LY
GY
WV
Lg
R
ILLUMINATION
6
11
B-026
L-005
14
B-041
F-007
4
10
1
2
M
REAR LEFT POWER WINDOW REGULATOR MOTOR
L-004
DOWN
UP
220
REAR LEFT POWER WINDOW SWITCH
L-002
RL WIN SW
FRONT LEFT POWER WINDOW SWITCH
F-009
9
3
5
B
B-036
11
F-007
B-040
B17 B18 B19 B20 B21 B22 B23 B24 B25 B26 B27 B28 B29 B30 B31 B32
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16
B-047
L
A17 A18 A19 A20 A21 A22 A23 A24 A25 A26 A27 A28 A29 A30 A31 A32
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16
I-005
L
D1 D2 D3 D4 D5
D6 D7 D8 D9 D10 D11 D12
B-044
W
6 7 8 9 10
1 2 3 4 5
L-002
B
1 4 7 10 13 16
2 5 8 11 14 17
3 6 9 12 15 18
B-040
W
6 5
12 11
16 15
4 3
10 9
2 1
8 7
14 13
B-026
Y
16 13 10 7 4 1
17 14 11 8 5 2
18 15 12 9 6 3
B-041
Gr
E1
E-072
W
3
E-061
2 1
L-004
Gr
9 10 11 12 13 14 15 16
8 7 6 5 4 3 2 1
F-009
Br
ET21430070

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B101013	RL Window Up Control Circuit Circuit Open	Ignition switch ON	ON	• Glass regulating switch • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B101071	RL Window Up Control Circuit Actuator Stuck			
B101113	RL Window Down Control Circuit Circuit Open			
B101171	RL Window Down Control Circuit Actuator Stuck			

CAUTION

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

Diagnosis Procedure

1	Check power glass regulating switch

a. Remove the power glass regulating switch from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG → Replace power glass regulating switch

OK

2	Check rear left door power glass regulator assembly

a. Remove the rear left door power glass regulator assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

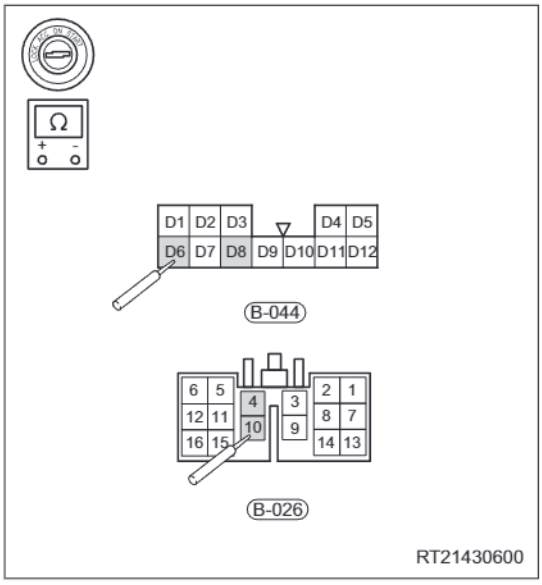
NG → Replace rear left door power glass regulator assembly

OK

3	Check body wire harness and connector

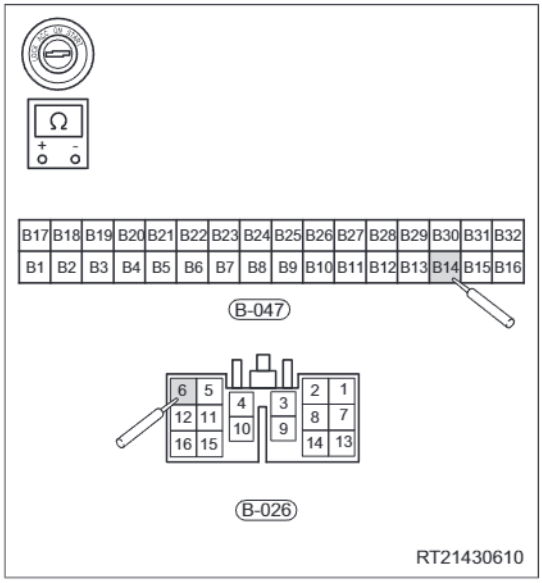
a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the body wire harness connectors B-044 and B-026.
d. Using a digital multimeter, check for continuity between body wire harness connectors B-044 and B-026 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-044 (D6) - B-026 (4)	Always	Continuity
B-044 (D8) - B-026 (10)	Always	Continuity



e. Disconnect the body wire harness connectors B-047 and B-026.
f. Using a digital multimeter, check for continuity between body wire harness connectors B-047 and B-026 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-047 (B14) - B-026 (6)	Always	Continuity

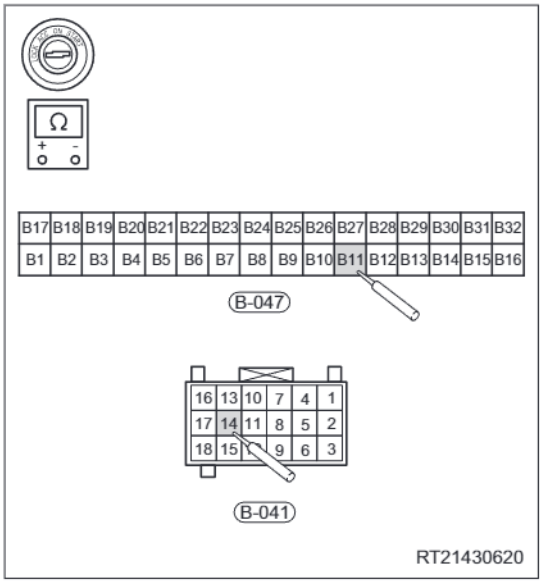


43

g. Disconnect the body wire harness connectors B-047 and B-041.

h. Using a digital multimeter, check for continuity between body wire harness connectors B-047 and B-041 according to the table below.

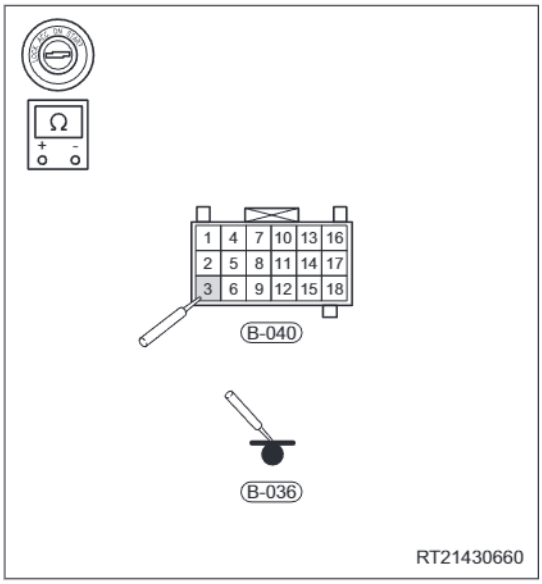
Multimeter Connection	Condition	Specified Condition
B-047 (B11) - B-041 (14)	Always	Continuity



i. Disconnect the body wire harness connector B-040 and ground B-036.

j. Using a digital multimeter, check for continuity between body wire harness connector B-040 and ground B-036 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-040 (3) - B-036	Always	Continuity

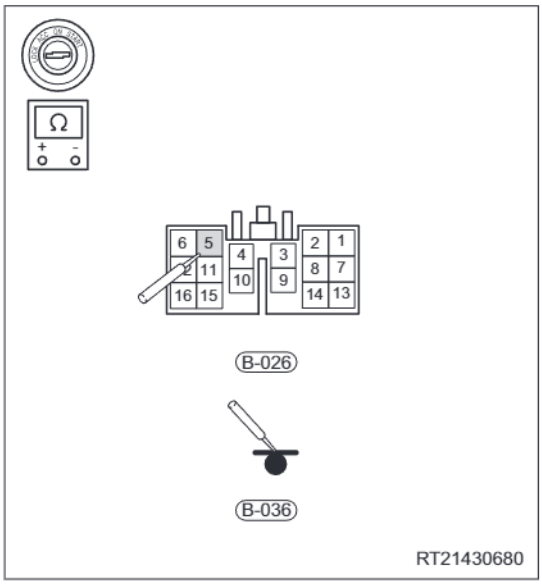


k. Disconnect the body wire harness connector B-026 and ground B-036.

l. Using a digital multimeter, check for continuity between body wire harness connector B-026 and ground B-036 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-026 (5) - B-036	Always	Continuity

NG → **Repair or replace body wire harness and connector**

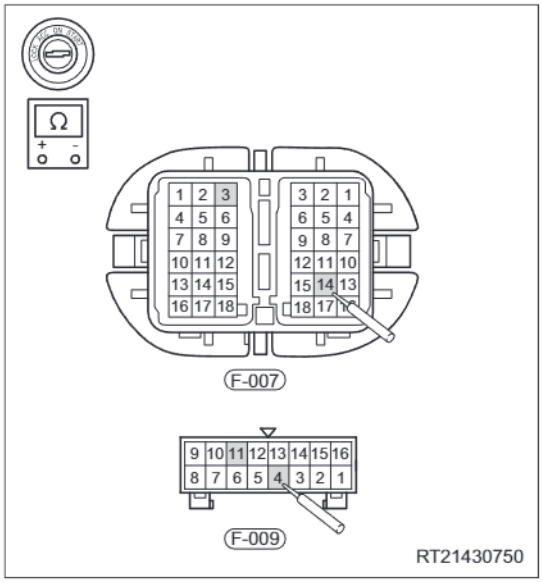


OK

4	Check front left door wire harness and connector

a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the front left door wire harness connectors F-007 and F-009.
d. Using a digital multimeter, check for continuity between front left door wire harness connectors F-007 and F-009 according to the table below.

Multimeter Connection	Condition	Specified Condition
F-007 (14) - F-009 (4)	Always	Continuity
F-007 (3) - F-009 (11)	Always	Continuity



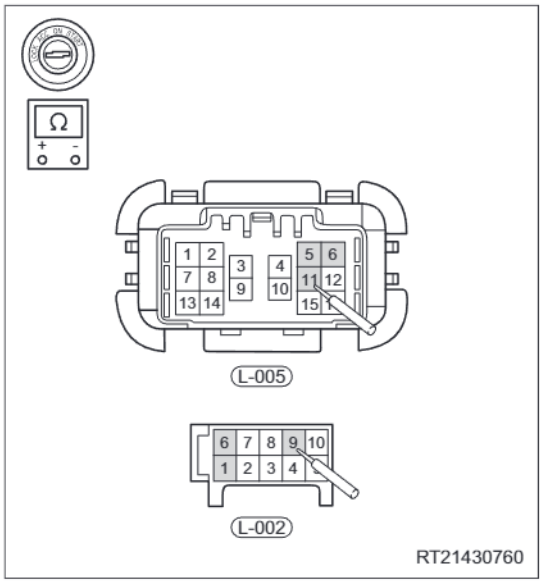
NG → **Repair or replace front left door wire harness and connector**

OK

5	Check rear left door wire harness and connector

a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the rear left door wire harness connectors L-005 and L-002.
d. Using a digital multimeter, check for continuity between rear left door wire harness connectors L-005 and L-002 according to the table below.

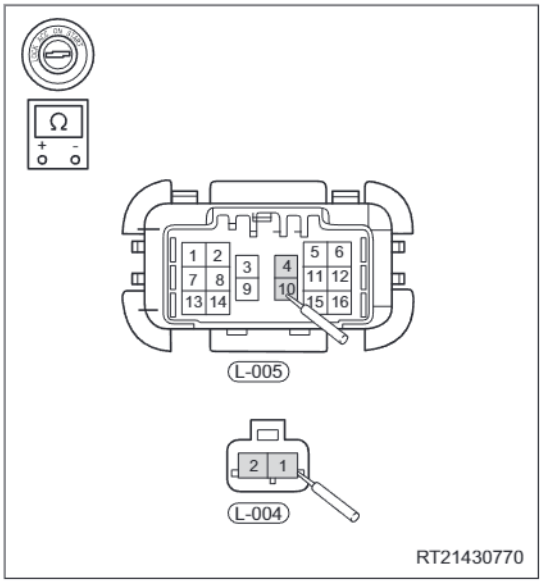
Multimeter Connection	Condition	Specified Condition
L-005 (6) - L-002 (6)	Always	Continuity
L-005 (11) - L-002 (1)	Always	Continuity
L-005 (5) - L-002 (9)	Always	Continuity



e. Disconnect the rear left door wire harness connectors L-005 and L-004.

f. Using a digital multimeter, check for continuity between rear left door wire harness connectors L-005 and L-004 according to the table below.

Multimeter Connection	Condition	Specified Condition
L-005 (4) - L-004 (1)	Always	Continuity
L-005 (10) - L-004 (2)	Always	Continuity



NG → **Repair or replace rear left wire harness and connector**

OK

6 Reconfirm DTCs

a. Connect all connectors.

b. Connect the negative battery cable.

c. Turn ignition switch to ON.

d. Use X-431 3G diagnostic tester (the latest software) to record and clear DTCs stored in the Body Control Module (BCM).

e. Turn ignition switch to LOCK and wait for a few seconds.

f. Turn ignition switch to ON.

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

43

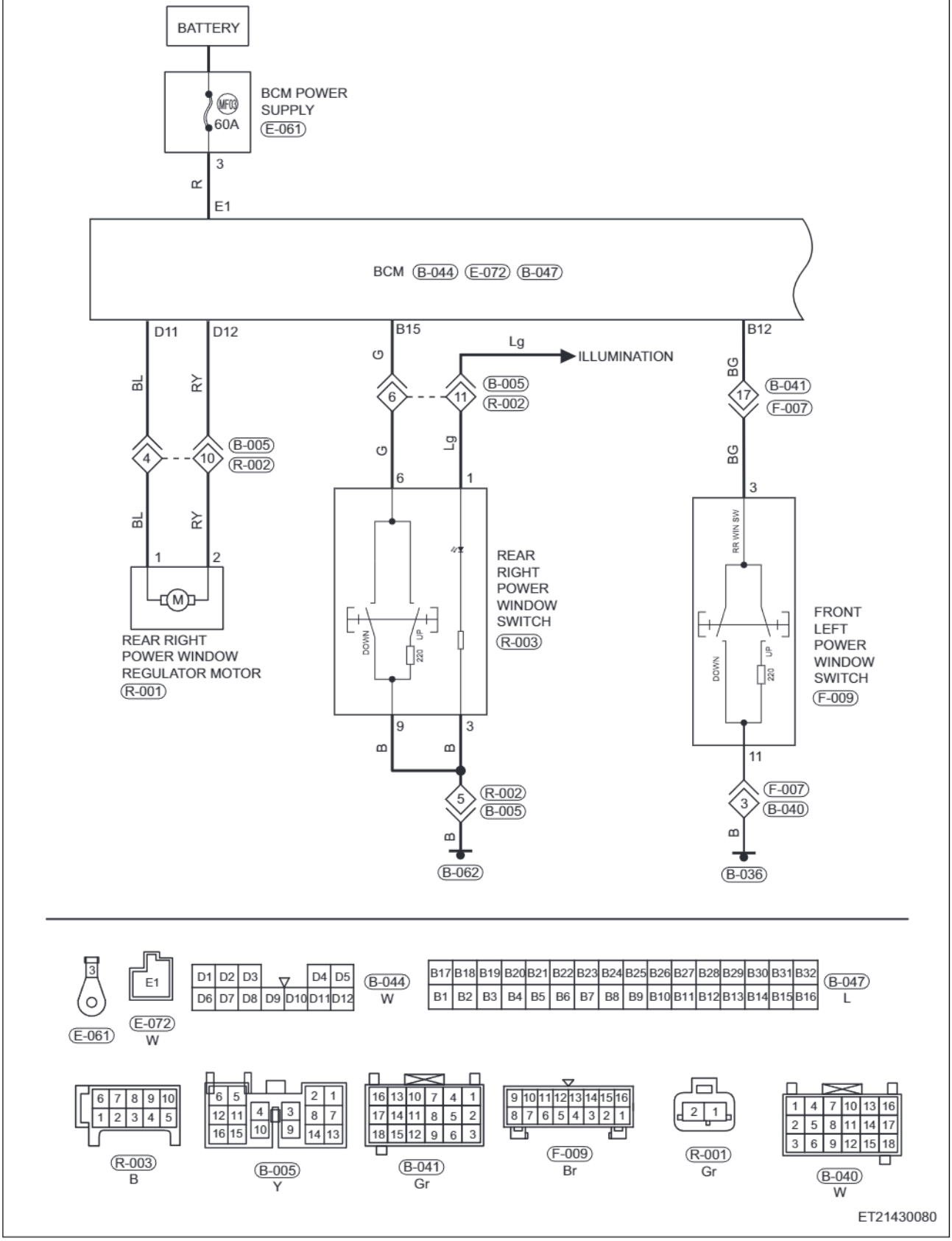
Result	Proceed to
DTC B101013, B101071, B101113 and B101171 are output	NG
No DTC is output	OK

NG → **Replace Body Control Module (BCM)**

OK

System is normal

DTC	B101213	RR Window Up Control Circuit Circuit Open
DTC	B101271	RR Window Up Control Circuit Actuator Stuck
DTC	B101313	RR Window Down Control Circuit Circuit Open
DTC	B101371	RR Window Down Control Circuit Actuator Stuck


BATTERY
MF03
60A
BCM POWER SUPPLY
E-061
3
R
E1
BCM B-044 E-072 B-047
D11
D12
B15
B12
BL
RY
G
Lg
ILLUMINATION
BG
B-005
R-002
B-041
F-007
4
10
6
11
17
1
2
3
M
REAR RIGHT POWER WINDOW REGULATOR MOTOR
R-001
REAR RIGHT POWER WINDOW SWITCH
R-003
DOWN
UP
220
RR WIN SW
FRONT LEFT POWER WINDOW SWITCH
F-009
9
B
5
R-002
B-005
B-062
B-036
11
F-007
B-040
E-061
E-072
W
D1 D2 D3 D4 D5
D6 D7 D8 D9 D10 D11 D12
B-044
W
B17 B18 B19 B20 B21 B22 B23 B24 B25 B26 B27 B28 B29 B30 B31 B32
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16
B-047
L
R-003
B
B-005
Y
B-041
Gr
F-009
Br
R-001
Gr
B-040
W
ET21430080

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B101213	RR Window Up Control Circuit Circuit Open	Ignition switch ON	ON	• Glass regulating switch • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B101271	RR Window Up Control Circuit Actuator Stuck			
B101313	RR Window Down Control Circuit Circuit Open			
B101371	RR Window Down Control Circuit Actuator Stuck			

CAUTION

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

Diagnosis Procedure

1	Check power glass regulating switch

a. Remove the power glass regulating switch from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG → Replace power glass regulating switch

OK

2	Check rear right door power glass regulator assembly

a. Remove the rear right door power glass regulator assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

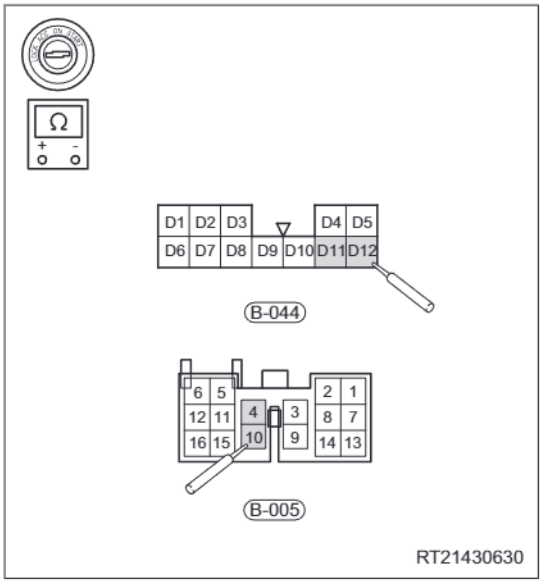
NG → Replace rear right door power glass regulator assembly

OK

3	Check body wire harness and connector

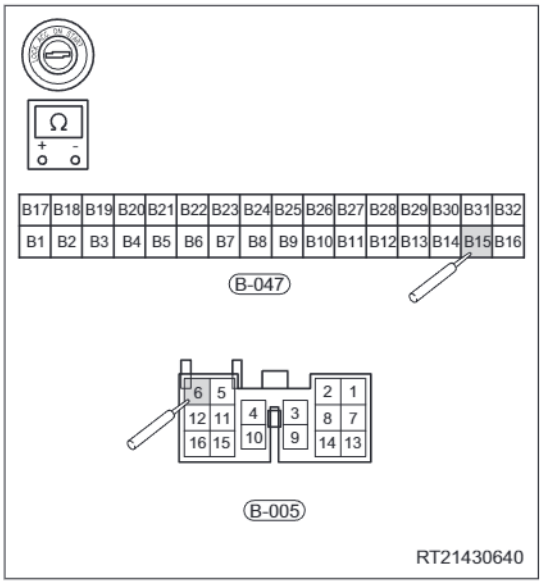
a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the body wire harness connectors B-044 and B-005.
d. Using a digital multimeter, check for continuity between body wire harness connectors B-044 and B-005 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-044 (D11) - B-005 (4)	Always	Continuity
B-044 (D12) - B-005 (10)	Always	Continuity



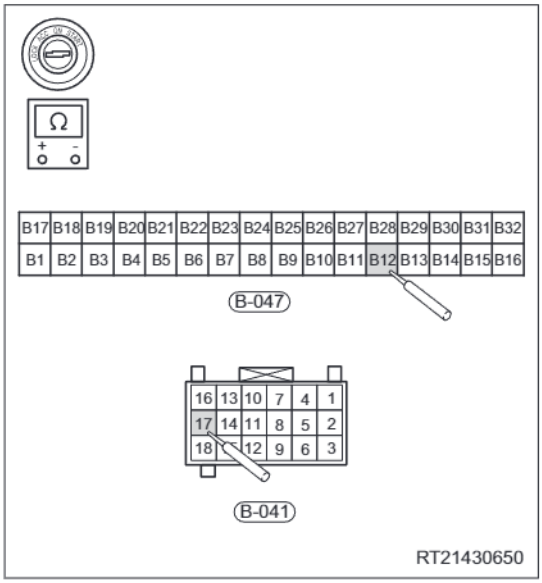
e. Disconnect the body wire harness connectors B-047 and B-005.
f. Using a digital multimeter, check for continuity between body wire harness connectors B-047 and B-005 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-047 (B15) - B-005 (6)	Always	Continuity



g. Disconnect the body wire harness connectors B-047 and B-041.
h. Using a digital multimeter, check for continuity between body wire harness connectors B-047 and B-041 according to the table below.

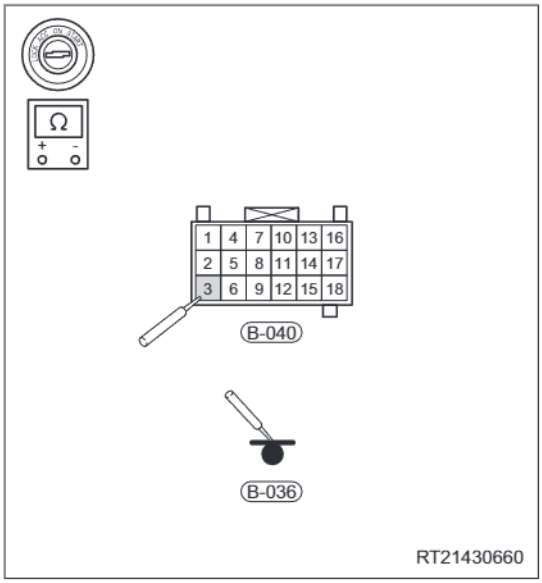
Multimeter Connection	Condition	Specified Condition
B-047 (B12) - B-041 (17)	Always	Continuity



i. Disconnect the body wire harness connector B-040 and ground B-036.

j. Using a digital multimeter, check for continuity between body wire harness connector B-040 and ground B-036 according to the table below.

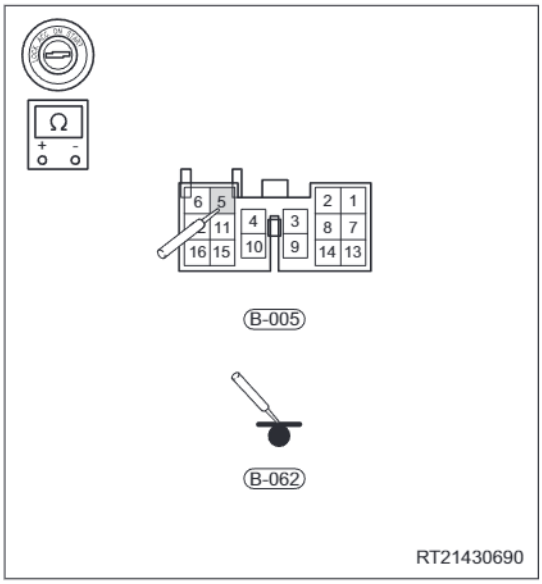
Multimeter Connection	Condition	Specified Condition
B-040 (3) - B-036	Always	Continuity



k. Disconnect the body wire harness connector B-005 and ground B-062.

l. Using a digital multimeter, check for continuity between body wire harness connector B-005 and ground B-062 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-005 (5) - B-062	Always	Continuity



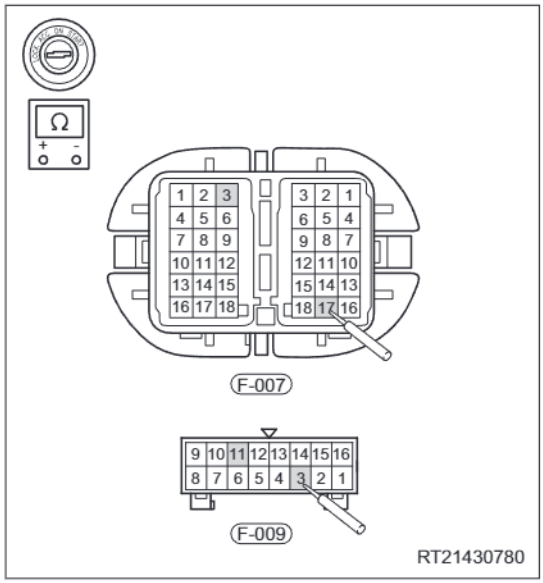
NG → **Repair or replace body wire harness and connector**

OK

4	Check front left door wire harness and connector

a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the front left door wire harness connectors F-007 and F-009.
d. Using a digital multimeter, check for continuity between front left door wire harness connectors F-007 and F-009 according to the table below.

Multimeter Connection	Condition	Specified Condition
F-007 (17) - F-009 (3)	Always	Continuity
F-007 (3) - F-009 (11)	Always	Continuity



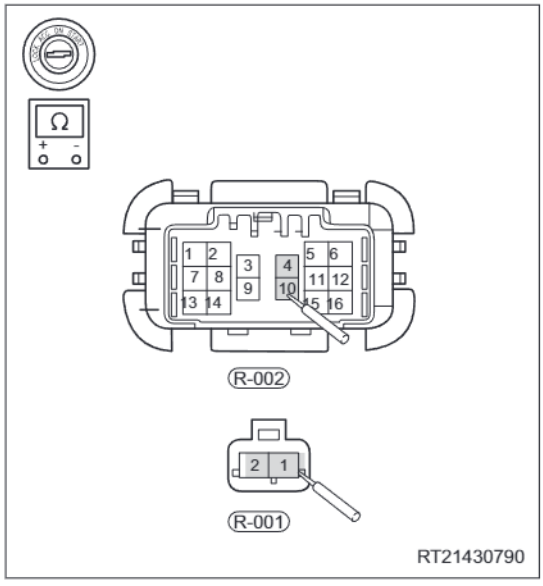
NG → Repair or replace front left door wire harness and connector

OK

5	Check rear right door wire harness and connector

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

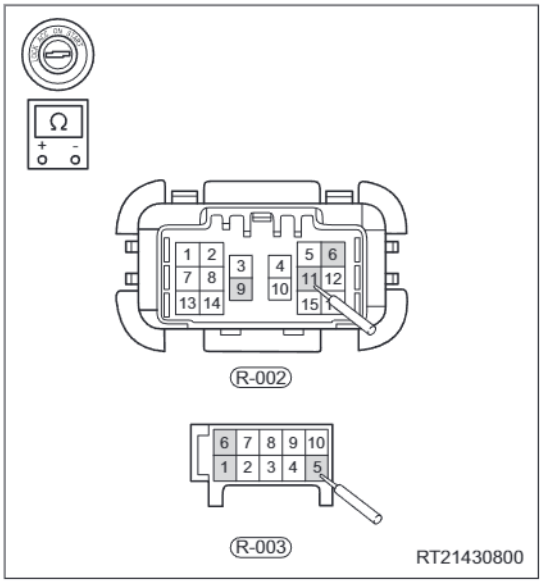
Multimeter Connection	Condition	Specified Condition
R-001 (1) - R-002 (4)	Always	Continuity
R-001 (2) - R-002 (10)	Always	Continuity



e. Disconnect the rear right door wire harness connectors R-002 and R-003.

f. Using a digital multimeter, check for continuity between rear right door wire harness connectors R-002 and R-003 according to the table below.

Multimeter Connection	Condition	Specified Condition
R-002 (6) - R-003 (6)	Always	Continuity
R-002 (11) - R-003 (1)	Always	Continuity
R-002 (9) - R-003 (5)	Always	Continuity



NG → **Repair or replace rear right door wire harness and connector**

OK

6 Reconfirm DTCs

a. Connect all connectors.

b. Connect the negative battery cable.

c. Turn ignition switch to ON.

d. Use X-431 3G diagnostic tester (the latest software) to record and clear DTCs stored in the Body Control Module (BCM).

e. Turn ignition switch to LOCK and wait for a few seconds.

f. Turn ignition switch to ON.

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

Result	Proceed to
DTC B101213, B101271, B101313 and B101371 are output	NG
No DTC is output	OK

NG → **Replace Body Control Module (BCM)**

OK

System is normal

ON-VEHICLE SERVICE

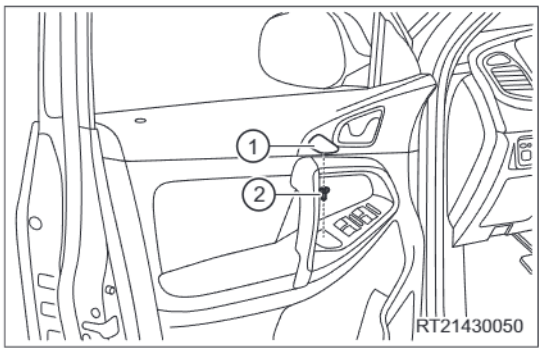
Power Glass Regulating Control Master Switch

Removal

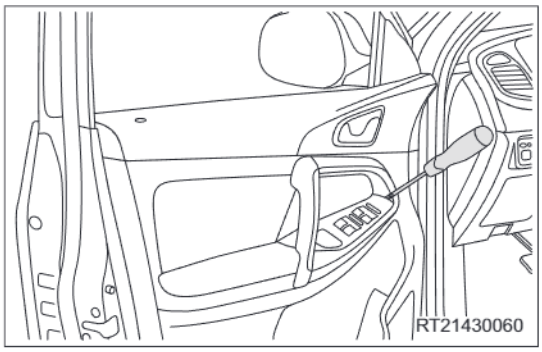
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing power glass regulating control master switch.
- Appropriate force should be applied when removing power glass regulating control master switch. Be careful not to operate roughly.
- Try to prevent front door protector assembly from being scratched when removing power glass regulating control master switch.

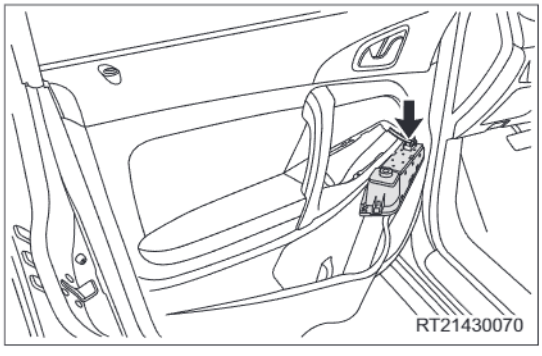
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the power glass regulating control master switch assembly.
   a. Remove the cushion rubber (1) from power glass regulating control master switch assembly.
   b. Remove the fixing screw (2)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



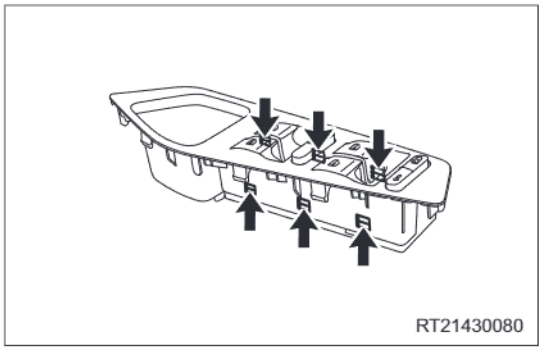
   c. Using a screwdriver wrapped with protective tape, pry up the power glass regulating control master switch assembly.



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

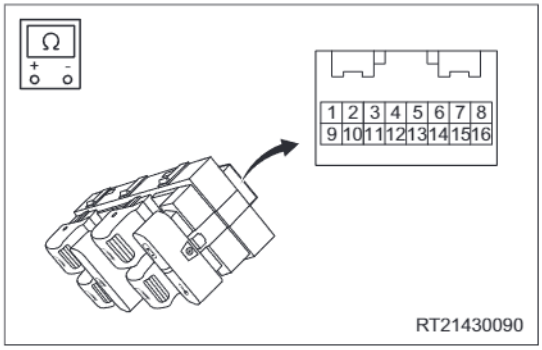


4. Remove the power glass regulating control master switch.
   a. Using a screwdriver wrapped with protective tape, pry up the claws (arrow) on power glass regulating control master switch, and remove the power glass regulating control master switch.



Inspection

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



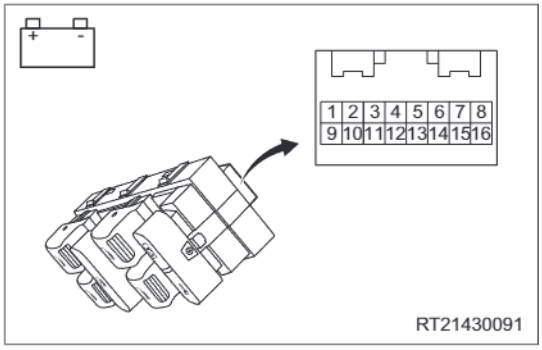
Area	Multimeter Connection	Switch Condition	Specified Condition
Front left door glass regulating switch	6 - 8	UP	220 Ω
		OFF	No continuity
	6 - 8	DOWN	Continuity
		OFF	No continuity
Front right door glass regulating switch	5 - 11	UP	220 Ω
		OFF	No continuity
	5 - 11	DOWN	Continuity
		OFF	No continuity
Rear left door glass regulating switch	4 - 11	UP	220 Ω
		OFF	No continuity
	4 - 11	DOWN	Continuity
		OFF	No continuity
Rear right door glass regulating switch	3 - 11	UP	220 Ω
		OFF	No continuity
	3 - 11	DOWN	Continuity
		OFF	No continuity

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

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

Measurement Condition		Specified Condition
Battery positive (+)	Battery negative (-)	
13	12	LED comes on

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



Installation

Installation is in the reverse order of removal.

CAUTION

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

Front Door Outer Weather bar

Removal

HINT:
- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

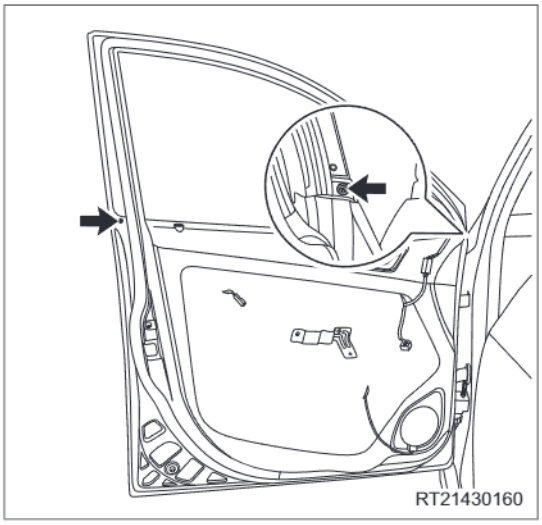
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing front door outer weather bar.
- Appropriate force should be applied when removing front door outer weather bar. Be careful not to operate roughly.
- Try to prevent body paint surface from being scratched when removing front door outer weather bar.

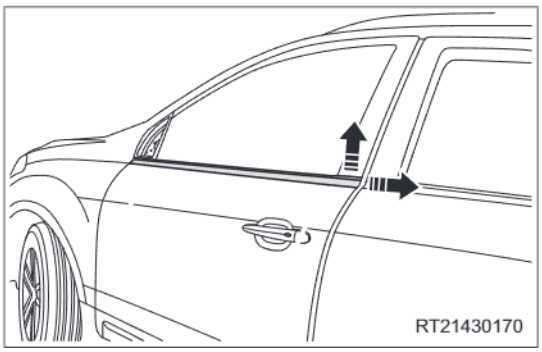
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the outside rear view mirror assembly (See page 44-7).
4. Remove the front left door outer weather bar.
   a. Remove the front left door frame weatherstrip.

      HINT:
      It is not necessary to remove the front left door frame weatherstrip completely. There is a fixing screw in the front door frame weatherstrip.

   b. Remove 2 fixing screws (arrow) from front door outer weather bar.
      (Tightening torque: 1.3 ± 0.2 N·m)


RT21430160

   c. Remove the front left door outer weather bar in the direction of arrow as shown in the illustration.


RT21430170

Installation

Installation is in the reverse order of removal.

Front Door Glass Assembly

Removal

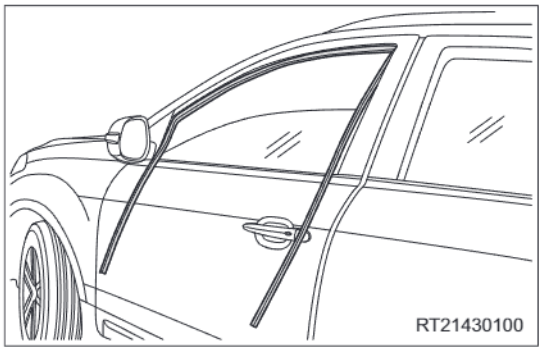
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

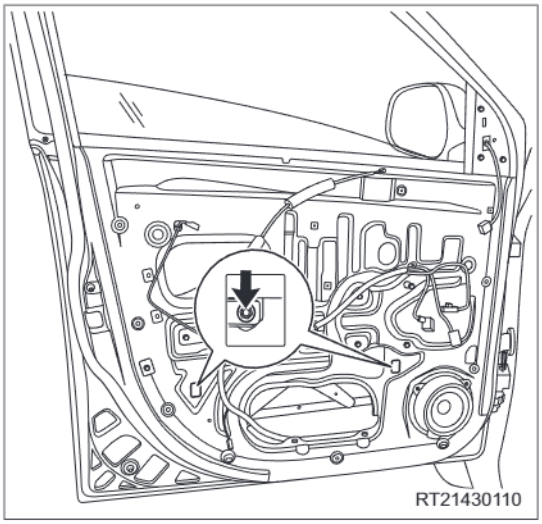
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing front door glass assembly.
- Appropriate force should be applied when removing front door glass assembly. Be careful not to operate roughly.
- When removing front door glass assembly, avoid the window glass from dropping and becomes damaged.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front left door protector assembly (See page 47-23).
4. Remove the front left door assist grip mounting bracket assembly (See page 47-28).
5. Remove the front left door protective film assembly (See page 47-28).
6. Remove the front left door glass run.
   a. Lower the front door glass assembly and pull out the front left door glass run from the slot.



7. Remove the front left door glass assembly.
   a. Raise the front door glass assembly to the proper position.
   b. Remove 2 fixing bolts (arrow) from front left door glass assembly, and remove the front left door glass assembly.
   (Tightening torque: 9 ± 1 N·m)



Installation

Installation is in the reverse order of removal.

Front Door Glass Rear Guide Rail Assembly

Removal

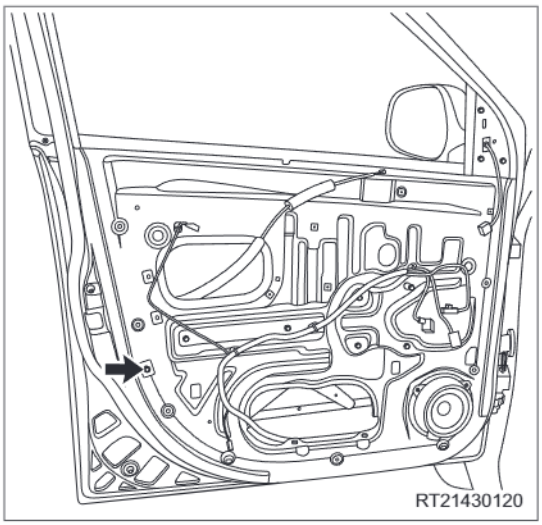
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

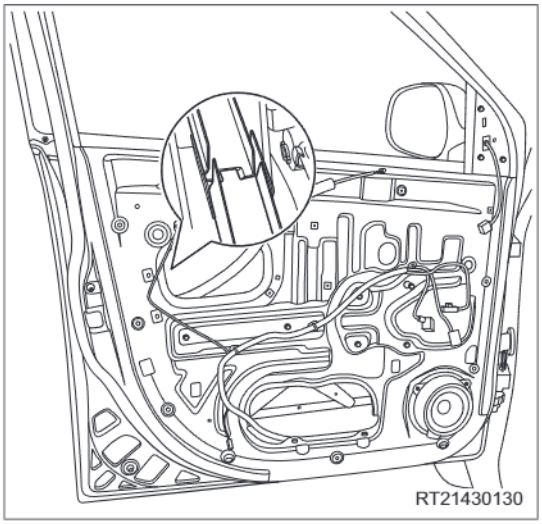
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing front door glass rear guide rail assembly.
- Appropriate force should be applied when removing front door glass rear guide rail assembly. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front left door protector assembly (See page 47-23).
4. Remove the front left door assist grip mounting bracket assembly (See page 47-28).
5. Remove the front left door protective film assembly (See page 47-28).
6. Remove the front left door glass rear guide rail assembly.
   a. Remove the fixing bolt (arrow) from front door glass rear guide rail assembly.
   (Tightening torque: 9 ± 1 N·m)



b. Take out the front left door glass rear guide rail assembly from the slot.



Installation

Installation is in the reverse order of removal.

CAUTION

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

Front Door Power Glass Regulator Assembly

Removal

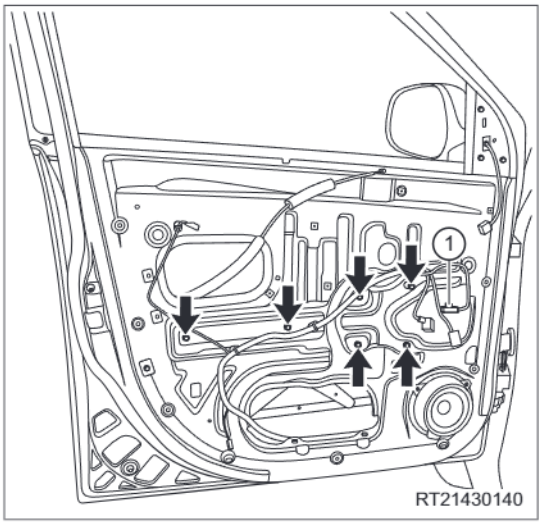
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

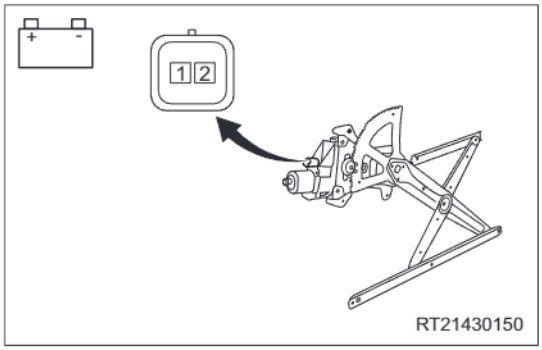
- Make sure to wear safety equipment to prevent accidents when removing front door power glass regulator assembly.
- Appropriate force should be applied when removing front door power glass regulator assembly. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front left door protector assembly (See page 47-23).
4. Remove the front left door assist grip mounting bracket assembly (See page 47-28).
5. Remove the front left door protective film assembly (See page 47-28).
6. Remove the front left door glass assembly (See page 43-49).
7. Remove the front left door power glass regulator assembly.
   a. Disconnect the connector (1) from front left door power glass regulator assembly.
   b. Remove 6 fixing bolts (arrow) from front left door power glass regulator assembly, and remove the front left door power glass regulator assembly.
   (Tightening torque: 9 ± 1 N·m)



Inspection

1. Check 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 result is not as specified, replace front door power glass regulator assembly.

Installation

Installation is in the reverse order of removal.

CAUTION

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

Power Glass Regulating Switch

Removal

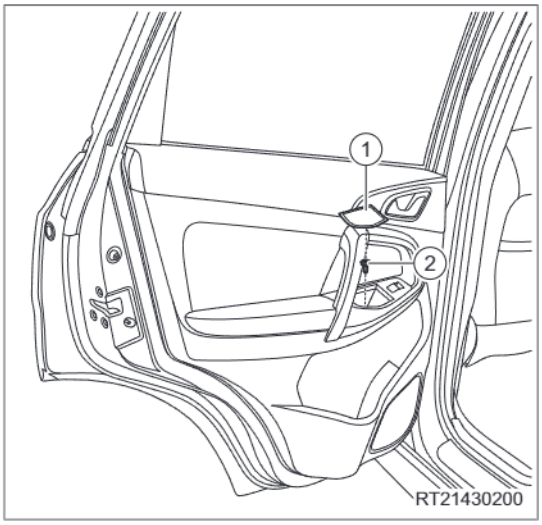
HINT:

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

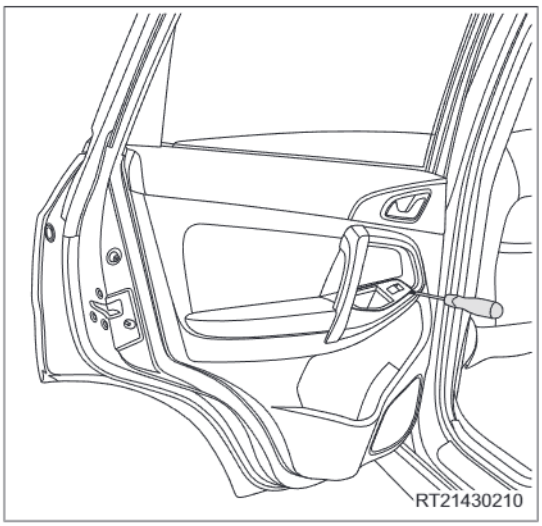
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing power glass regulating switch.
- Appropriate force should be applied when removing power glass regulating switch. Be careful not to operate roughly.
- Try to prevent rear door protector assembly from being scratched when removing power glass regulating switch.

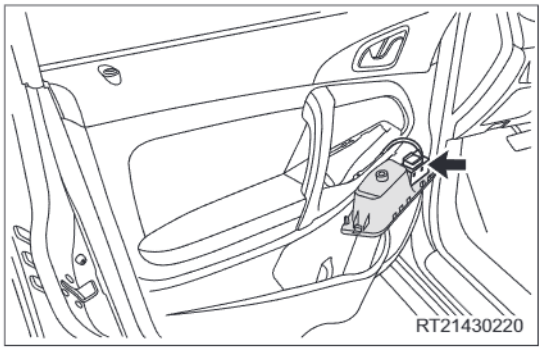
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the left power glass regulating switch assembly.
   a. Remove the cushion rubber (1) from power glass regulating switch assembly.
   b. Remove the fixing screw (2) from power glass regulating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



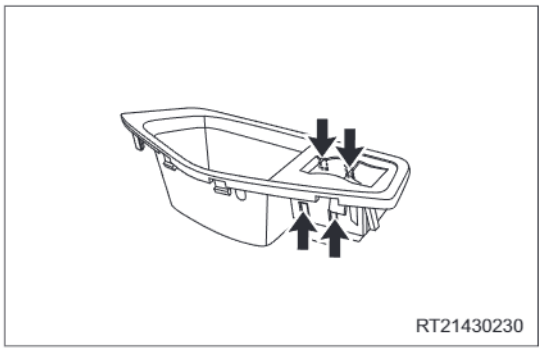
   c. Using a screwdriver wrapped with protective tape, pry up the power glass regulating switch assembly.



d. Disconnect the connector (arrow) from power glass regulating switch assembly, and remove the left power glass regulating switch assembly.

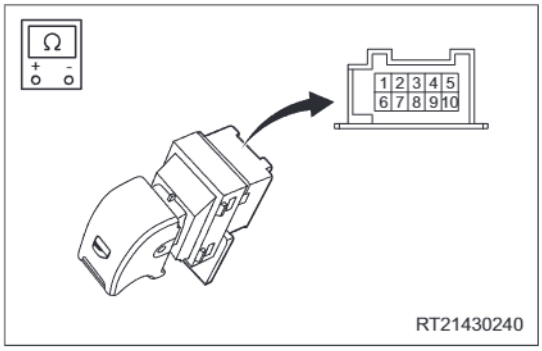


4. Remove the left power glass regulating switch.
   a. Using a screwdriver wrapped with protective tape, pry up the claws (arrow) on power glass regulating switch, and remove the left power glass regulating control switch.



Inspection

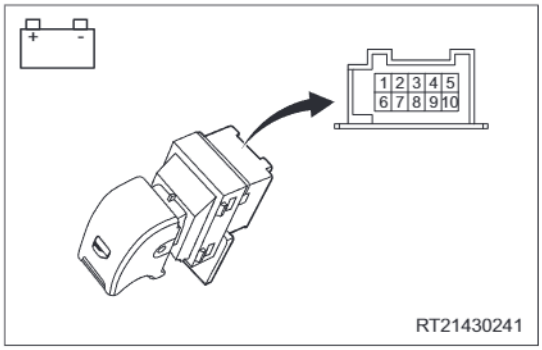
1. Check power glass regulating switch.
   a. Using a digital multimeter, check for continuity of power glass regulating switch according to the table below.



Area	Multimeter Connection	Switch Condition	Specified Condition
Front right door glass regulating switch	6 - 9	UP	220 Ω
		OFF	No continuity
	6 - 9	DOWN	Continuity
		OFF	No continuity
Rear left door glass regulating switch	6 - 9	UP	220 Ω
		OFF	No continuity
	6 - 9	DOWN	Continuity
		OFF	No continuity
Rear right door glass regulating switch	6 - 9	UP	220 Ω
		OFF	No continuity
	6 - 9	DOWN	Continuity
		OFF	No continuity

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

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



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

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

Installation

Installation is in the reverse order of removal.

CAUTION

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

Rear Door Outer Weather bar

Removal

HINT:
- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

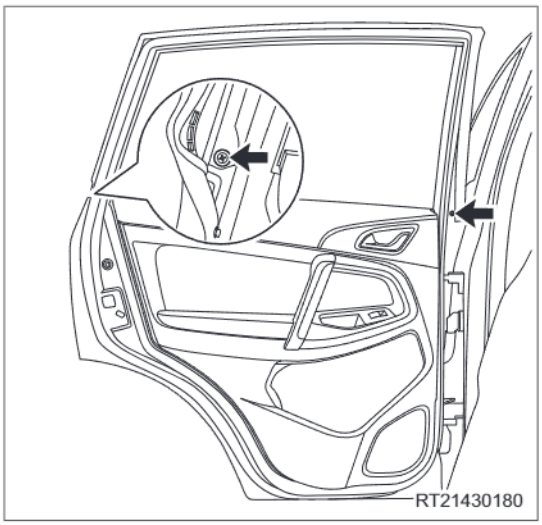
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing rear door outer weather bar.
- Appropriate force should be applied when removing rear door outer weather bar. Be careful not to operate roughly.
- Try to prevent body paint surface from being scratched when removing rear door outer weather bar.

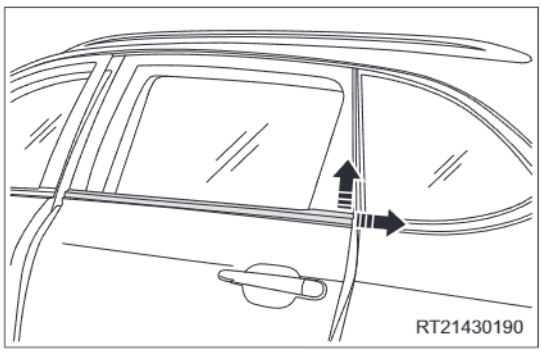
1. Remove the rear left door outer weather bar.
   a. Remove the rear left door frame weatherstrip.

      HINT:
      It is not necessary to remove the rear left door weatherstrip completely. There is a fixing screw in the rear door weatherstrip.

   b. Remove 2 fixing screws (arrow) from rear door outer weather bar.
      (Tightening torque: 1.3 ± 0.2 N·m)



   c. Remove the rear left door outer weather bar in the direction of arrow as shown in the illustration.



Installation

Installation is in the reverse order of removal.

Rear Door Glass Assembly

Removal

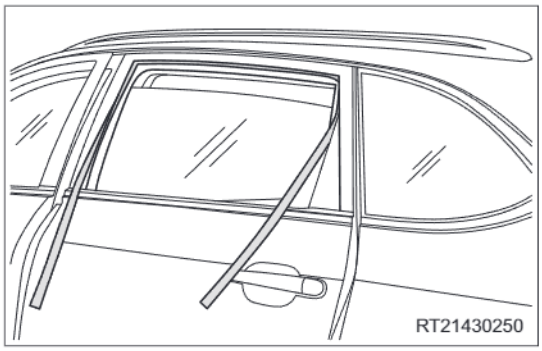
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

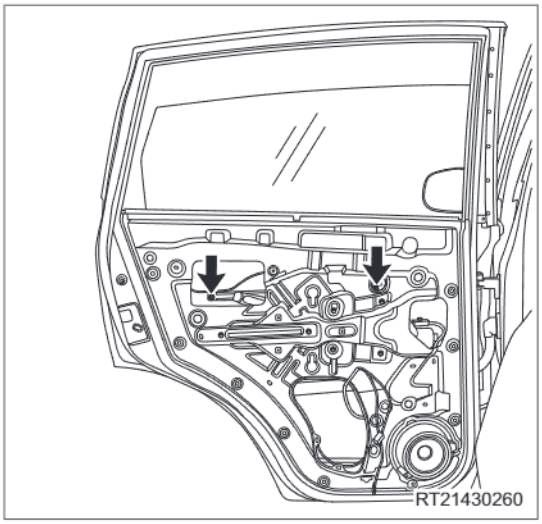
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing rear door glass assembly.
- Appropriate force should be applied when removing rear door glass assembly. Be careful not to operate roughly.
- When removing the rear door glass assembly, avoid the window glass from dropping and becomes damaged.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear door outer weather bar (See page 43-58).
4. Remove the rear left door protector assembly (See page 47-36).
5. Remove the rear left door assist grip mounting bracket assembly (See page 47-39).
6. Remove the rear left door protective film assembly (See page 47-39).
7. Remove the rear door glass rear guide rail assembly (See page 43-61).
8. Remove the rear left door glass run.
   a. Lower the rear door glass assembly and pull out the rear left door glass run from the slot.



9. Remove the rear left door glass assembly.
   a. Raise the rear door glass assembly to the proper position.
   b. Remove 2 fixing bolts (arrow) from rear door glass assembly, and remove the rear left door glass assembly.
   (Tightening torque: 9 ± 1 N·m)



Installation

Installation is in the reverse order of removal.

CAUTION

- When installing rear door glass assembly, avoid the window glass from dropping and becomes damaged.

Rear Door Glass Rear Guide Rail Assembly

Removal

HINT:
- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

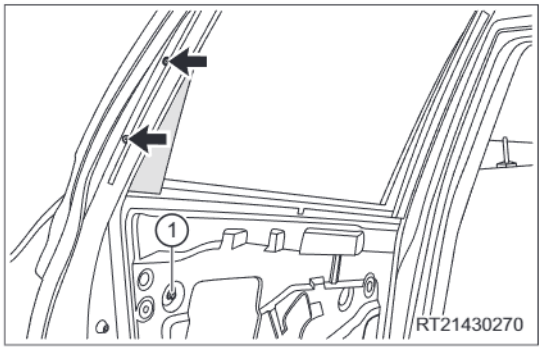
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing rear door glass rear guide rail assembly.
- Appropriate force should be applied when removing rear door glass rear guide rail assembly. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear left door protector assembly (See page 47-36).
4. Remove the rear left door assist grip mounting bracket assembly (See page 47-39).
5. Remove the rear left door protective film assembly (See page 47-39).
6. Remove the rear left door glass rear guide rail assembly.
   a. Remove the rear left door frame weatherstrip.

      HINT:
      It is not necessary to remove the rear left door frame weatherstrip completely. There is a fixing screw in the rear door frame weatherstrip.

   b. Remove 2 fixing screws (arrow) from rear door glass rear guide rail assembly.
      (Tightening torque: 5 ± 0.5 N·m)
   c. Remove the fixing bolt (1) from rear door glass rear guide rail assembly, and remove the rear left door glass rear guide rail assembly.
      (Tightening torque: 9 ± 1 N·m)



Installation

Installation is in the reverse order of removal.

CAUTION

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

Rear Door Power Glass Regulator Assembly

Removal

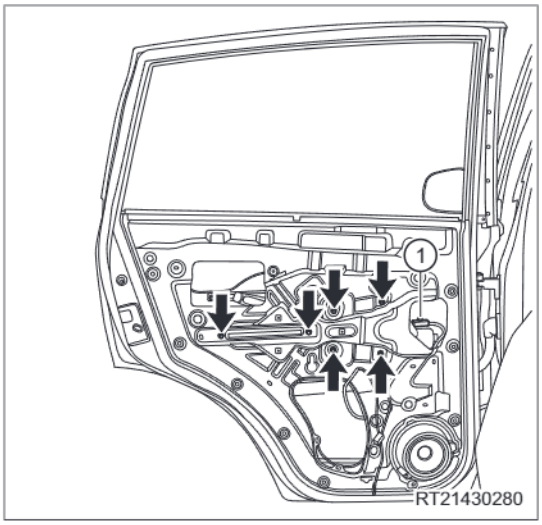
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

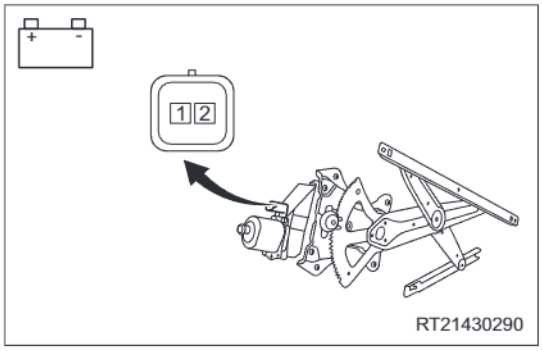
- Make sure to wear safety equipment to prevent accidents when removing rear door power glass regulator assembly.
- Appropriate force should be applied when removing rear door power glass regulator assembly. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear door outer weather bar (See page 43-58).
4. Remove the rear left door protector assembly (See page 47-36).
5. Remove the rear left door assist grip mounting bracket assembly (See page 47-39).
6. Remove the rear left door protective film assembly (See page 47-39).
7. Remove the rear door glass rear guide rail assembly (See page 43-61).
8. Remove the rear left door glass assembly (See page 43-59).
9. Remove the rear left door power glass regulator assembly.
   a. Disconnect the connector (1) from rear door power glass regulator assembly.
   b. Remove 6 fixing bolts (arrow) from rear door power glass regulator assembly, and remove the rear left door power glass regulator assembly.
   (Tightening torque: 9 ± 1 N·m)



Inspection

1. Check 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 result is not as specified, replace rear door power glass regulator assembly.

Installation

Installation is in the reverse order of removal.

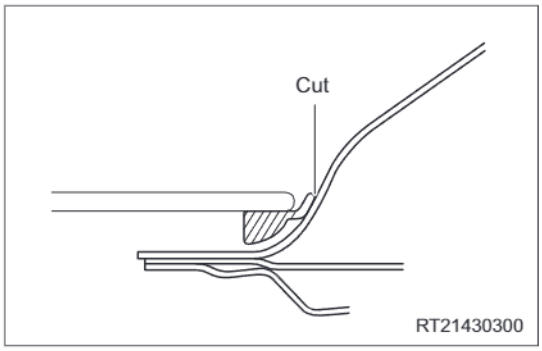
CAUTION

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

Triangular Window Glass Assembly

Removal

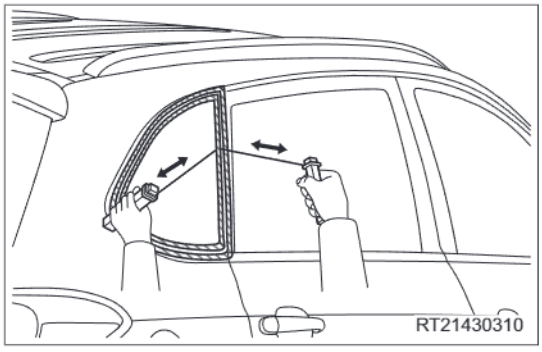
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the C-pillar upper protector assembly (See page 49-26).
4. Remove the triangular window glass trim board.
5. Remove the triangular window glass assembly.
   a. Cut the adhesive with a knife.



CAUTION

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

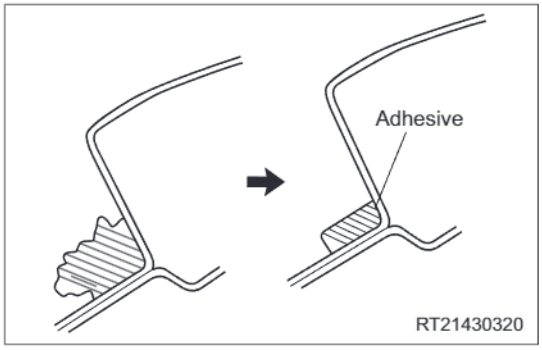
   b. Apply protective tape to the outer surface of body to prevent scratches.
   c. Pass a piano wire through the seam between body and triangular window glass assembly.
   d. Tie wooden blocks or similar objects to both piano wire ends, cut off adhesive by pulling the piano wire around triangular window glass assembly, and remove the triangular window glass assembly.



CAUTION

- When removing triangular window glass assembly, two technicians are required.
- DO NOT drop the triangular window glass assembly when removing it.
- Leave as much adhesive on body as possible when cutting the adhesive.
- When separating the triangular window glass assembly from vehicle, be careful not to damage the body paint or interior/exterior ornaments.

6. Clean the vehicle body.
   a. Using a knife, cut away excess adhesive on the contact surface of vehicle body as shown in the illustration.



CAUTION

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

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

CAUTION

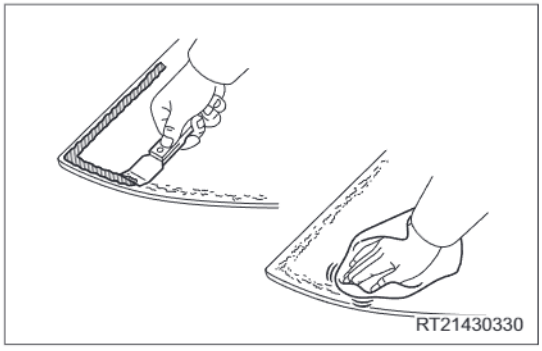
- Even if all adhesive has been removed, cleaning of vehicle would be necessary.

7. Clean the removed glass.

CAUTION

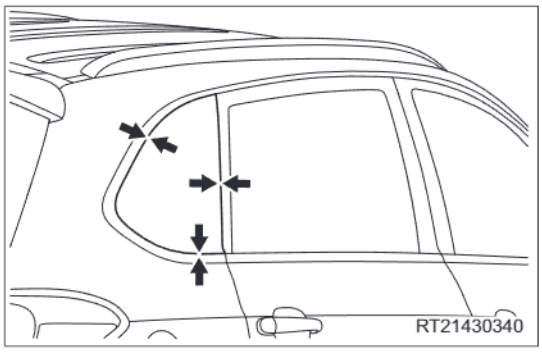
- DO NOT touch the glass after cleaning it.
- Even if new glass is used, it is necessary to clean it with glass cleaner.

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



Installation

1. Position the triangular window glass assembly.
   a. Align the clip with installation hole on roof panel.
   b. Check if whole contact surface of glass rim is perfectly even.
   c. Place matchmarks on the triangular window glass assembly and body at the positions shown in the illustration.

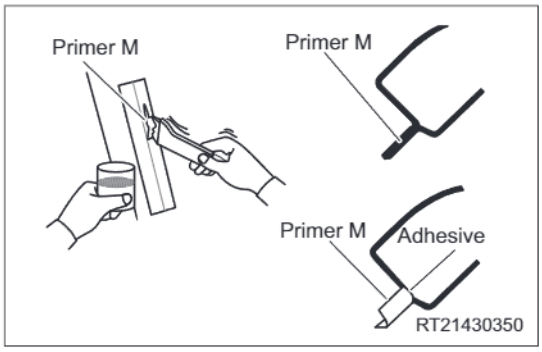


   d. Remove the triangular window glass assembly.
2. Apply a coat of primer M to the contact surface of body.

CAUTION

- Allow 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 body.
   b. Width of primer is 13 - 15 mm.

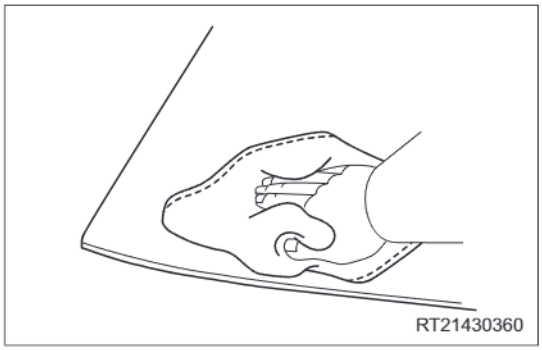


3. Clean the contact surface of triangular window glass.

CAUTION

- DO NOT touch the triangular window glass surface after cleaning it.

a. Remove any residue on the contact surface of triangular window glass assembly with a piece of clean cloth soaked with glass cleaner.

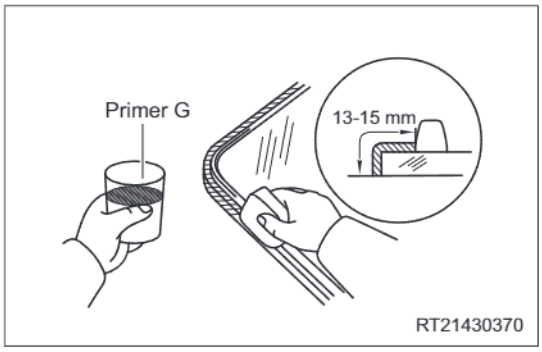


4. Apply a coat of primer G to the contact surface of triangular window glass assembly.

CAUTION

- Allow 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 glass rim and contact surface.
b. Use a piece of clean cloth to wipe off the excess primer before drying.
c. Width of primer is 13 - 15 mm.



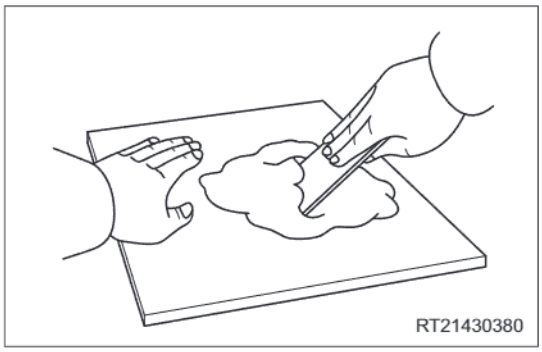
5. Mix the adhesive.

CAUTION

- Adhesive should be mixed thoroughly within 5 minutes.

a. Using solvent, thoroughly clean the mixing board and scraper.

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



6. Apply the adhesive.

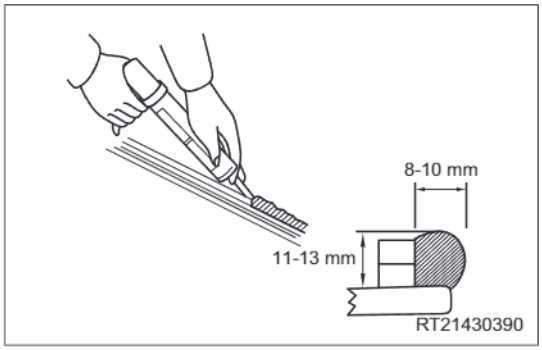
a. Cut off the tip of cartridge nozzle and add adhesive.

b. Install the cartridge to sealer gun.

c. Apply adhesive evenly to the triangular window glass assembly as shown in the illustration.

Adhesive width: 8 - 10 mm

Adhesive height: 11 - 13 mm

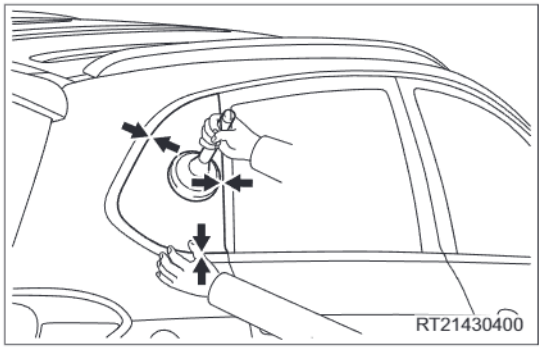


7. Install the triangular window glass assembly.

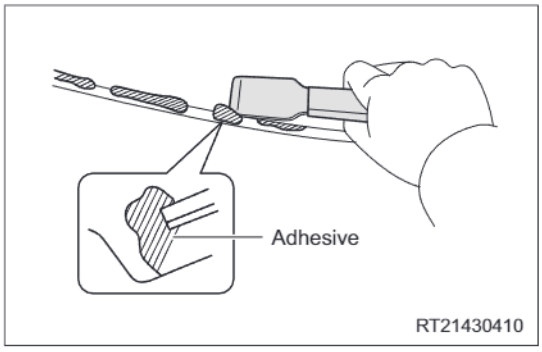
CAUTION

- Check that lower/upper clearance and right/left clearance of triangular window glass assembly are uniform.

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



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



d. Apply tape around the triangular window glass, and remove them when the adhesive becomes hard.

8. Install the triangular window glass trim board.
9. Check and repair the sealing of glass.
   a. Check the glass for leakage after adhesive has completely hardened.
   b. If it leaks, seal the leaks by adding adhesive.
10. Install the C-pillar upper protector assembly.
11. Connect the negative battery cable.

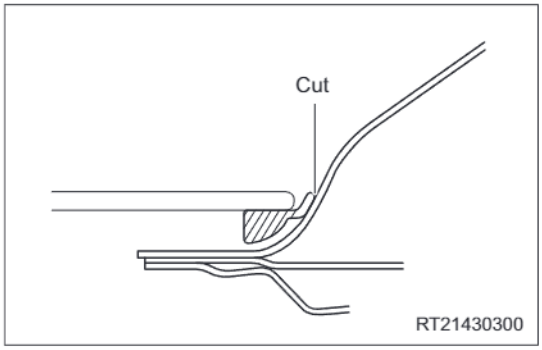
Front Windshield Assembly

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the roof assembly (See page 49-30).

   HINT:
   It is not necessary to completely remove the roof assembly. Lower the front part of roof assembly so that the front windshield assembly can be removed.
4. Remove the inside rear view mirror assembly (See page 44-11).
5. Remove the wiper arm assembly (See page 36-24).
6. Remove the front windshield lower garnish assembly (See page 48-39).
7. Remove the front windshield weatherstrip.
8. Remove the front windshield assembly

   a. Cut the adhesive with a knife.



CAUTION

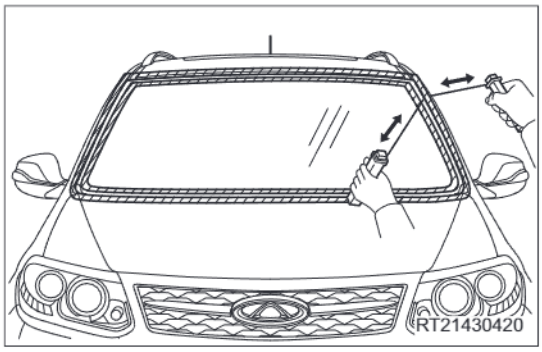
- Try to prevent body paint surface from being scratched when cutting the adhesive.

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

CAUTION

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

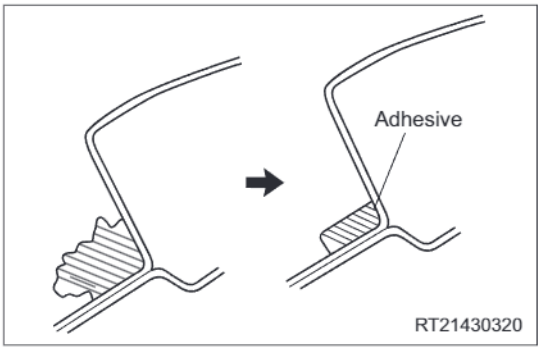
   c. Pass a piano wire through the seam between body and front windshield assembly.
   d. Tie wooden blocks or similar objects to both piano wire ends, cut off adhesive by pulling the piano wire around front windshield assembly, and remove the front windshield assembly.



CAUTION

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

9. Clean the vehicle body.
   a. Using a knife, cut away excess adhesive on the contact surface of vehicle body as shown in the illustration.



CAUTION

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

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

CAUTION

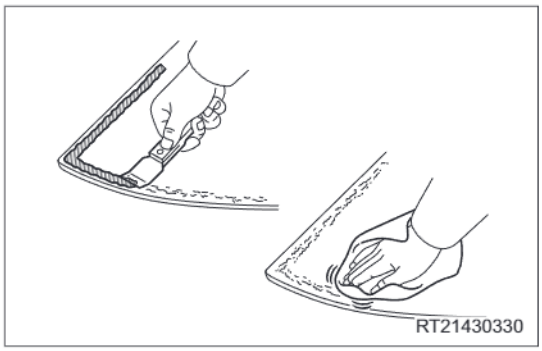
- Even if all adhesive has been removed, cleaning of vehicle would be necessary.

10.Clean the removed glass.

CAUTION

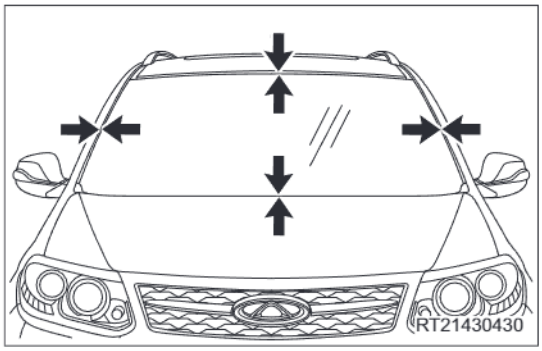
- DO NOT touch the glass after cleaning it.
- Even if new glass is used, it is necessary to clean it with glass cleaner.

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



Installation

1. Position the front windshield assembly.
   a. Align the clip with installation hole on roof panel.
   b. Check if whole contact surface of glass rim is perfectly even.
   c. Place matchmarks on the front windshield and body at the positions shown in the illustration.



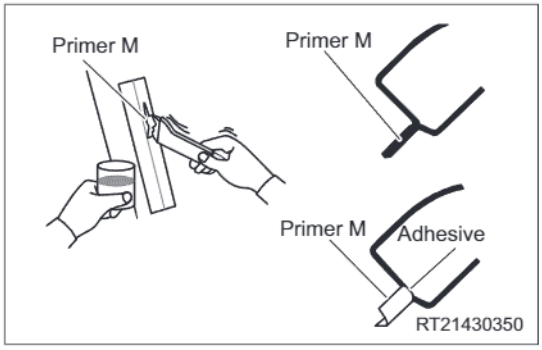
   d. Remove the front windshield assembly.

2. Apply a coat of primer M to the contact surface of body.

CAUTION

- Allow 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 body.
b. Width of primer is 13 - 15 mm.

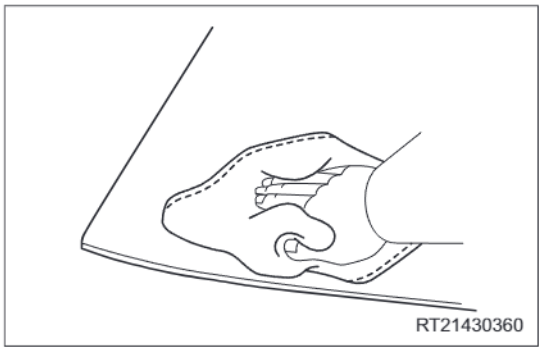


3. Clean the contact surface of the front windshield assembly.

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.

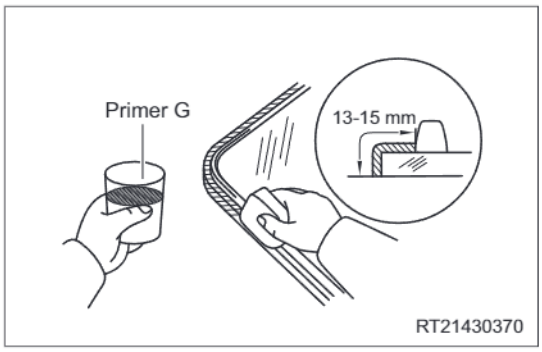


4. Apply a coat of primer G to the contact surface of front windshield assembly.

CAUTION

- Allow 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 glass rim and contact surface.
b. Use a piece of clean cloth to wipe off the excess primer before drying.
c. Width of primer is 13 - 15 mm.

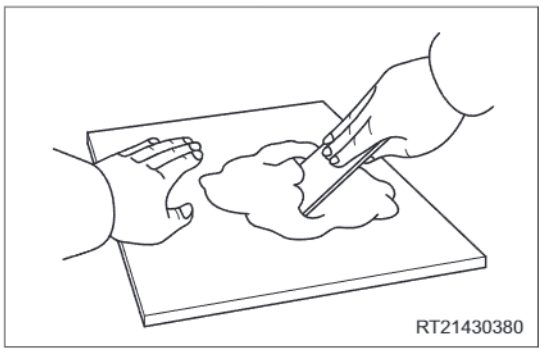


5. Mix the adhesive.

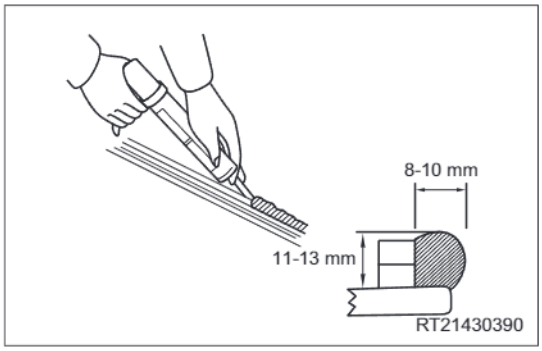
CAUTION

- Adhesive should be mixed thoroughly within 5 minutes.

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



6. Apply the adhesive.
   a. Cut off the tip of the cartridge nozzle and add the adhesive.
   b. Install the cartridge to sealer gun.
   c. Apply adhesive evenly to the front windshield assembly as shown in the illustration.
      Adhesive width: 8 - 10 mm
      Adhesive height: 11 - 13 mm

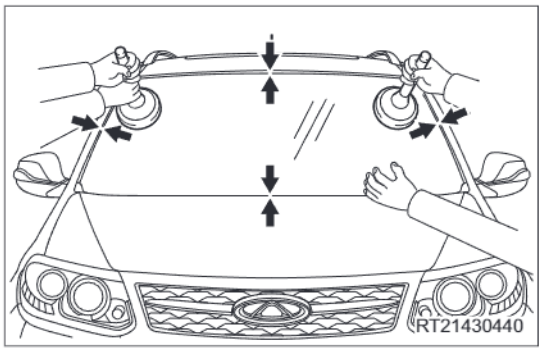


7. Install the front windshield assembly.

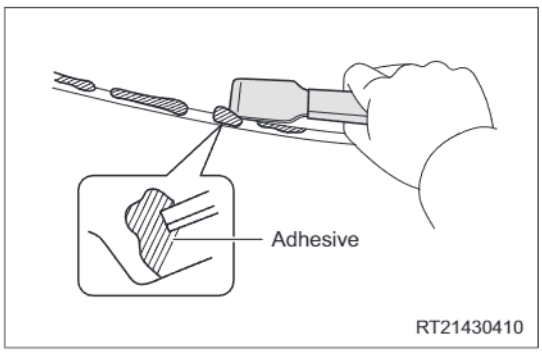
CAUTION

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

   a. Align the matchmarks on 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.



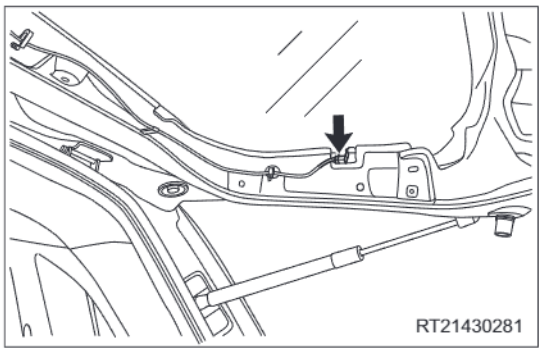
   d. Apply tape around the windshield, and remove them when the adhesive becomes hard.

8. Install the front windshield weatherstrip.
9. Check and repair the sealing of the glass.
   a. Check the glass for leakage after adhesive has completely hardened.
   b. If it leaks, seal the leaks by adding adhesive.
10. Install the front windshield lower garnish assembly.
11. Install the wiper arm assembly.
12. Install the inside rear view mirror assembly.
13. Install the roof assembly.
14. Connect the negative battery cable.

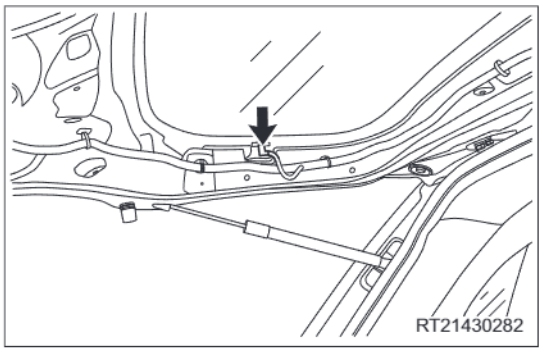
Rear Windshield Assembly

Removal

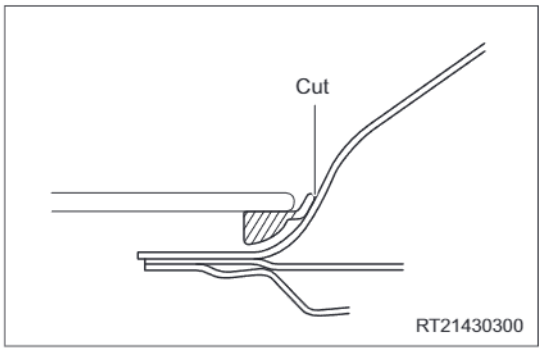
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the back door protector assembly (See page 47-47).
4. Remove the rear wiper arm assembly (See page 36-31).
5. Remove the rear wiper motor assembly (See page 36-33).
6. Remove the rear spoiler assembly (See page 48-43).
7. Remove the defroster wire harness assembly.
   a. Disconnect the left defroster wire harness connector (arrow).



   b. Disconnect the right defroster wire harness connector (arrow).



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



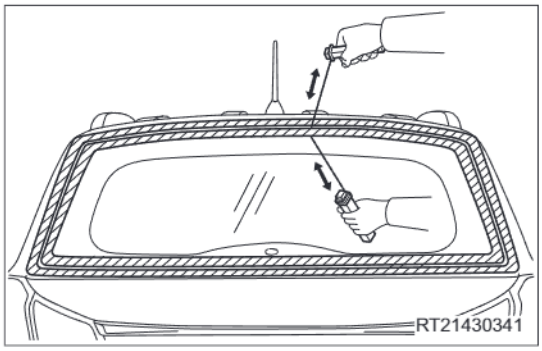
CAUTION

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

b. Apply protective tape to the outer surface of 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 adhesive by pulling the piano wire around rear windshield assembly, and remove the rear windshield assembly.

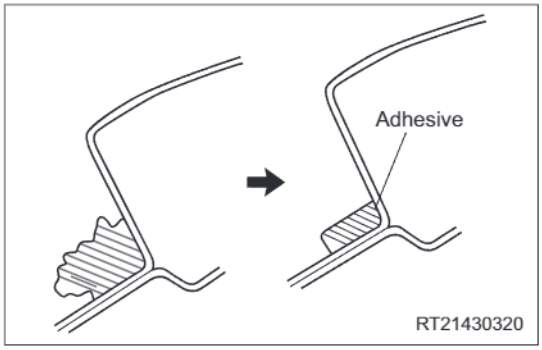


CAUTION

- When removing the rear windshield assembly, 2 technicians are required.
- DO NOT drop the rear windshield assembly when removing it.
- Leave as much adhesive on 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 interior/exterior ornaments.

10. Clean the vehicle body.

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



CAUTION

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

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

CAUTION

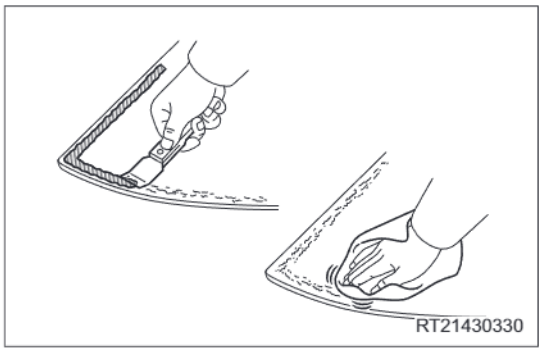
- Even if all adhesive has been removed, cleaning of vehicle would be necessary.

11. Clean the removed glass.

CAUTION

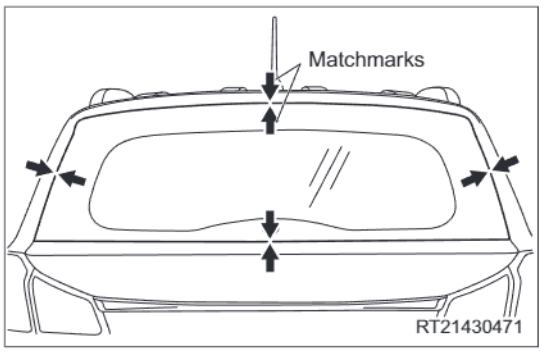
- DO NOT touch the glass after cleaning it.
- Even if new glass is used, it is necessary to clean it with glass cleaner.

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



Installation

1. Position the rear windshield assembly.
   a. Align the clip with installation hole on roof panel.
   b. Check if whole contact surface of glass rim is perfectly even.
   c. Place matchmarks on the rear windshield and body at the positions shown in the illustration.



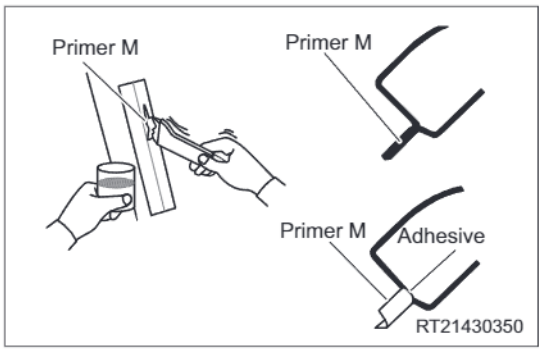
   d. Remove the rear windshield assembly.

2. Apply a coat of primer M to the contact surface of body.

CAUTION

- Allow 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 body.
b. Width of primer is 13 - 15 mm.

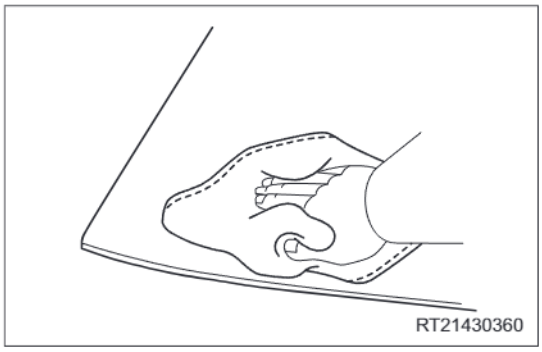


3. Clean the contact surface of rear windshield.

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.

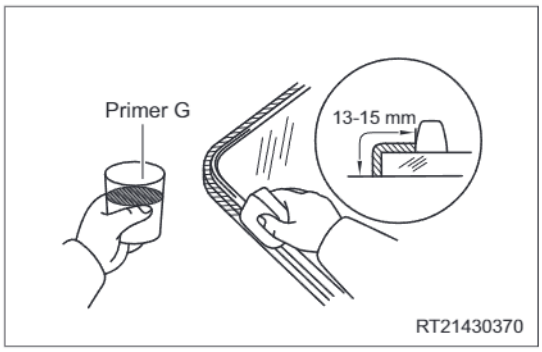


4. Apply a coat of primer G to the contact surface of rear windshield assembly.

CAUTION

- Allow 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 glass rim and contact surface.
b. Use a piece of clean cloth to wipe off the excess primer before drying.
c. Width of primer is 13 - 15 mm.

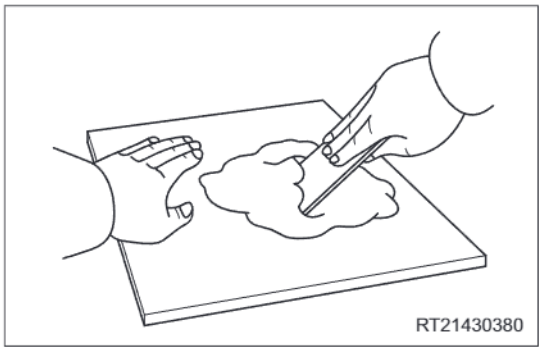


5. Mix the adhesive.

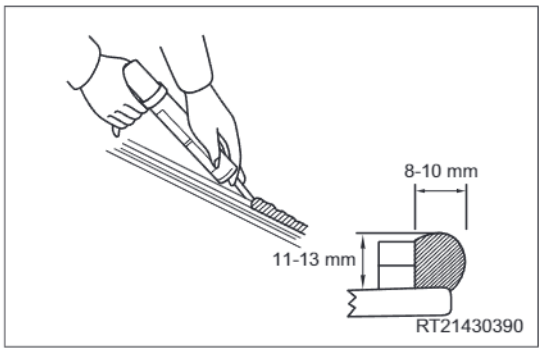
CAUTION

- Adhesive should be mixed thoroughly within 5 minutes.

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



6. Apply the adhesive.
   a. Cut off the tip of the cartridge nozzle and add adhesive.
   b. Install the cartridge to sealer gun.
   c. Apply adhesive evenly to the rear windshield assembly as shown in the illustration.
      Adhesive width: 8 - 10 mm
      Adhesive height: 11 - 13 mm

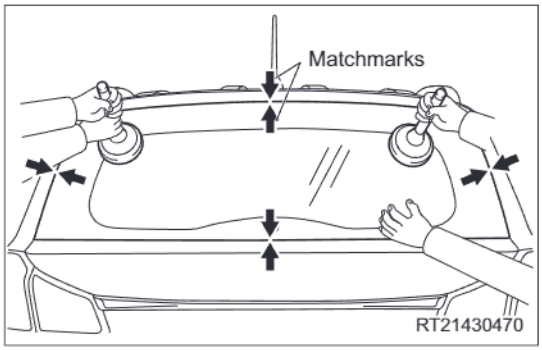


7. Install the rear windshield assembly.

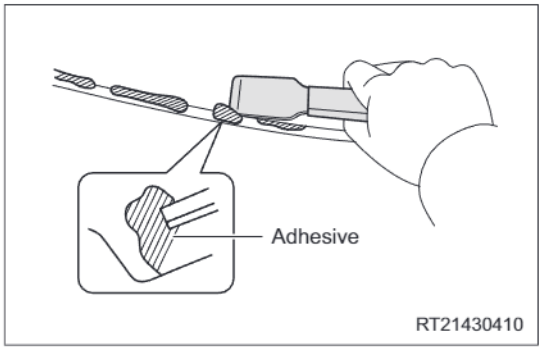
CAUTION

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

a. Align the matchmarks on 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.

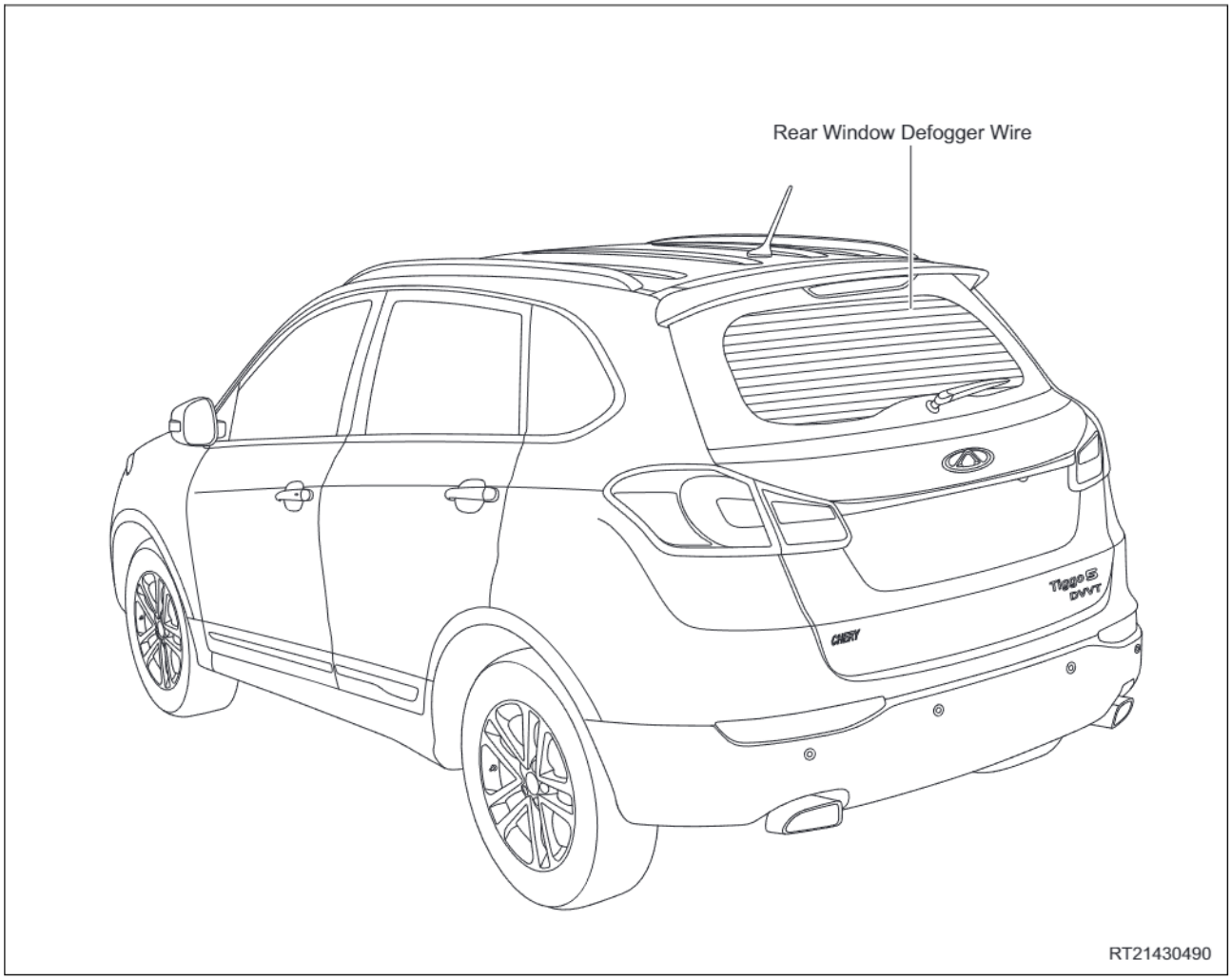


d. Apply tape around the windshield, and remove them when the adhesive becomes hard.
8. Install the rear windshield weatherstrip.
9. Check and repair the sealing of glass.
   a. Check the glass for leakage after adhesive has completely hardened.
   b. If it leaks, seal the leaks by adding adhesive.
10. Install the rear spoiler assembly.
11. Install the rear wiper motor assembly.
12. Install the rear wiper arm assembly.
13. Install the back door protector assembly.
14. Connect the negative battery cable.

Rear Window Defroster

General Information

Description

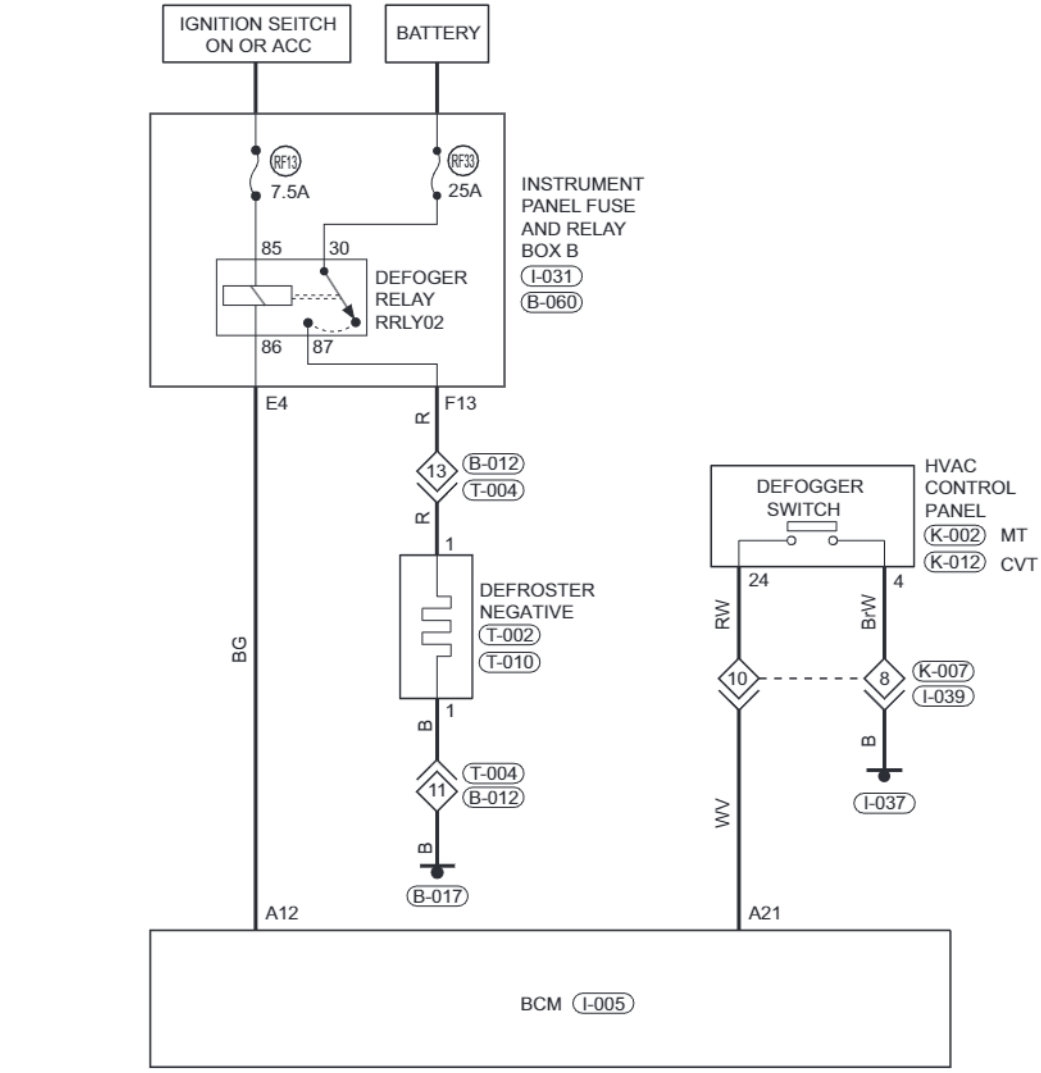


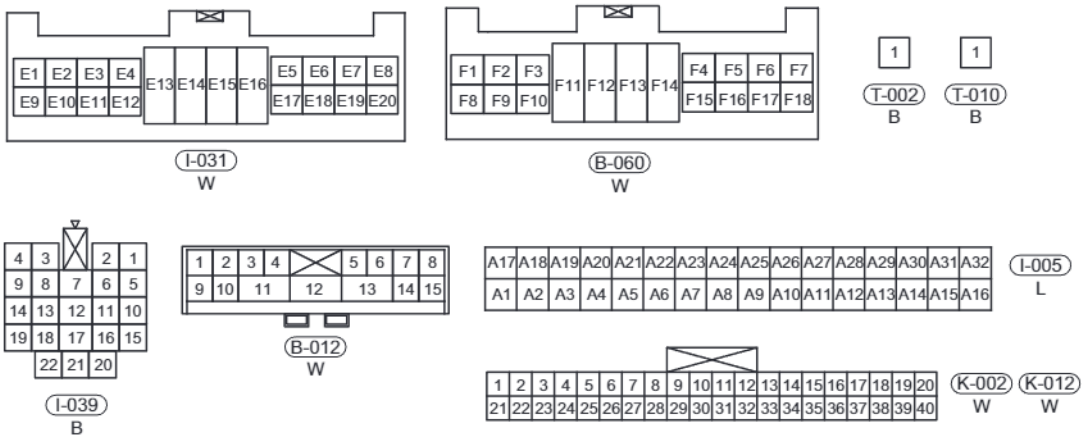
When rear window defroster switch is turned on, rear window defogger wire is heated to remove the fog, frost or water vapors on rear windshield, thus realizing a clear view.

To turn on the rear window defogger, it is necessary to turn ignition switch to ON and press rear window defogger switch. The rear window defogger switch indicator comes on while the rear window defogger operation begins. The rear window defogger stops and the indicator turns off after pressing the rear window defogger switch again.

Circuit Diagram

Rear Window Defroster System





ET21430040

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 as necessary.

Symptom	Suspected Area	See page
Rear window defogger switch is turned on but does not operate (indicator on)	Fuse	51-37
	Rear window defogger switch	-
	Rear window defogger wire	-
	Wire harness or connector	-
Rear window defogger switch is turned on but does not operate (indicator off)	Fuse	51-37
	Rear window defogger switch	-
	Wire harness or connector	-
Rear window defogger have intermittent problem	Ground	-
	Wire harness or connector	-

Rear Window Defogger Switch

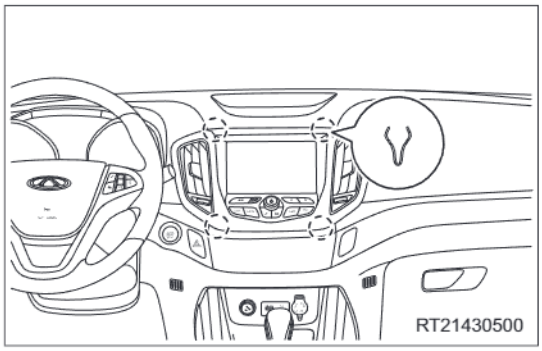
Removal

HINT:
Rear window defogger switch is installed on A/C control panel assembly, and cannot be disassembled.

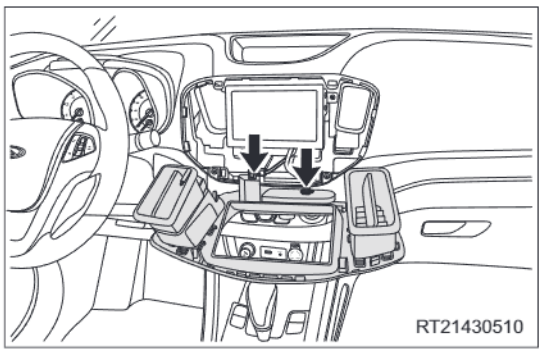
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing rear window defogger switch.
- Appropriate force should be applied when removing rear window defogger switch. Be careful not to operate roughly.
- Try to prevent interior from being scratched when removing rear window defogger switch.

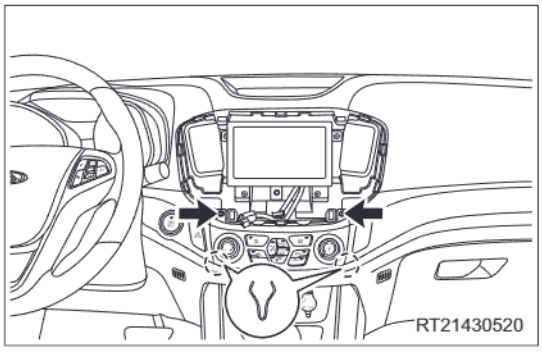
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the DVD panel assembly.
   a. Using a screwdriver wrapped with protective tape, pry up the clips on DVD panel assembly.



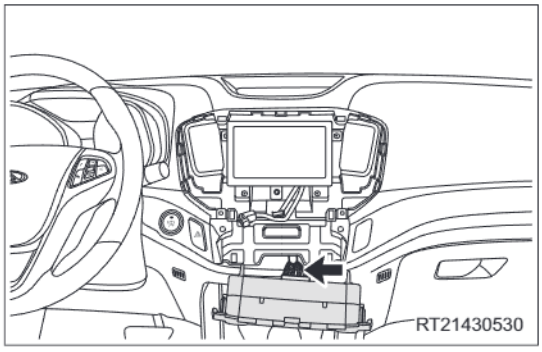
   b. Disconnect the connectors (arrow) from DVD panel assembly, and remove the DVD panel assembly.



4. Remove the A/C control panel
   a. Remove 2 fixing screws (arrow) from A/C control panel. (Tightening torque: 2 ± 0.5 N·m)
   b. Using a screwdriver wrapped with protective tape, pry up the clips on A/C control panel.



   c. Disconnect the connector (arrow) from A/C control panel, and remove the A/C control panel.



Installation

Installation is in the reverse order of removal.

CAUTION

- Install connectors in place when installing rear window defogger switch.
- Always operate carefully to prevent components from being damaged when installing rear window defogger switch.
- Check rear window defogger switch for proper operation after installation.