

POWER WINDOW CONTROL
SYSTEM (w/ Jam Protection
Function)

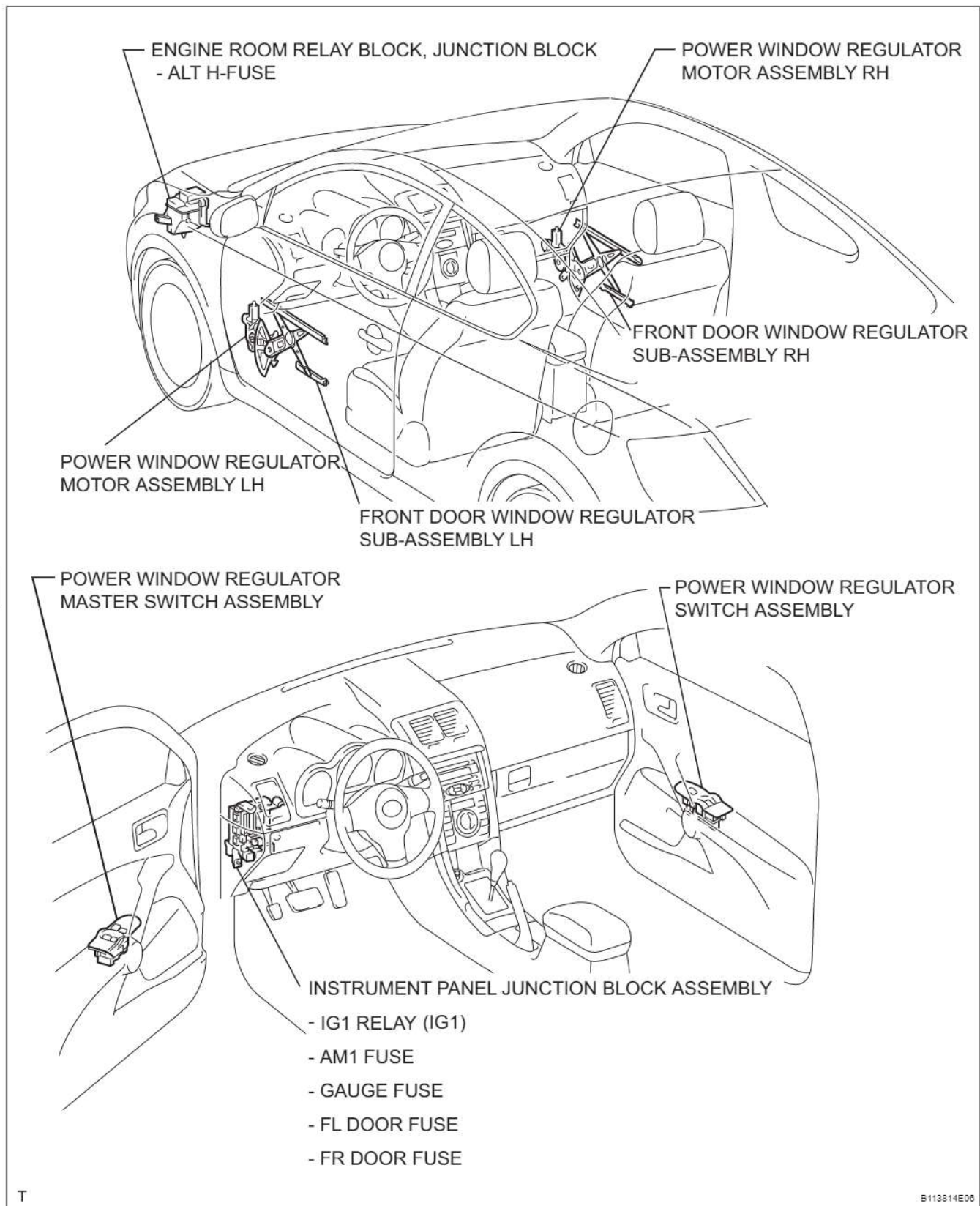
PRECAUTION

NOTICE:
When disconnecting the cable from the negative (-) battery terminal, initialize the following system(s) after the cable is reconnected.

System Name	See procedure
Power Window Control System	IN-23
Sliding Roof Control System	

WS-2 WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

PARTS LOCATION



WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)**WS-3****SYSTEM DESCRIPTION****1. POWER WINDOW CONTROL SYSTEM DESCRIPTION**

- (a) The power window control system controls the power windows' UP / DOWN function using regulator motors.

The main controls of this system are: 1) the power window regulator master switch assembly (built into the driver side door), and 2) the power window regulator switch assembly (built into the passenger side door). Pressing the regulator switch or either of the 2 switches on the master switch transmits an UP / DOWN signal to the corresponding power window regulator motor.

The jammed window detection mechanism consists of a magnet on the worm gear of the power window motor and the 2 Hall ICs on the motor.

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

Function	Outline
Manual UP/DOWN function	Function that causes window to raise while power window switch is being pulled halfway up, and lower while switch is pushed halfway down. Window stops as soon as switch is released.
AUTO UP/DOWN function	Function that enables window of all doors to be fully opened or closed by one press or pull of power window switch respectively.
Jam protection function	Function that automatically stops power window and moves it downward if object is jammed in power window during AUTO UP operation.
Remote control function	Function that allows power window master switch assembly to control AUTO and manual UP / DOWN operations of passenger door power window.
Window lock function	Function where passenger side power window operation is disabled when window lock switch of master switch is pressed. Passenger side power window can be operated when window lock switch is pressed again.
Diagnosis	Function where power window switch can detect malfunctions in power window system. Power window switch light illuminates or blinks to inform driver.
Fall-safe	Function that disables power window AUTO UP / DOWN function if pulse sensor (Hall IC) in power window regulator motor has malfunction. Manual operation is possible through power window switches.

WS

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HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

Use these procedure to troubleshoot the power window control system.

1 VEHICLE BROUGHT TO WORKSHOP

NEXT

2 INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V

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

NEXT

3 PROBLEM SYMPTOMS TABLE

Result

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

B

Go to step 5

A

4 OVERALL ANALYSIS AND TROUBLESHOOTING

- (a) Terminals of ECU (See page [WS-7](#)).
- (b) On-vehicle inspection (See page [WS-9](#)).
- (c) Inspection (See page [WS-52](#)).

NEXT

5 REPAIR OR REPLACE

NEXT

6 RESET POWER WINDOW MOTOR

- (a) If the AUTO switch light of the power window switch is blinking after the repair, reset the power window motor (See page [WS-5](#)).

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WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

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NEXT

7	CONFIRMATION TEST
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NEXT

END

WS

INITIALIZATION

1. RESET (INITIALIZE) POWER WINDOW REGULATOR MOTOR

NOTICE:

- Resetting the power window motors (initializing the pulse sensors) is necessary if one of the following occur: 1) the cable is disconnected from the negative (-) battery terminal: 2) the power window regulator master switch, power window regulator switch, wire harness, power window regulator and power window motor are replaced or removed/installed: or 3) the GAUGE fuse, AM1 fuse, FL DOOR fuse and FR DOOR fuse are replaced. the AUTO operation function, jam protection function and remote operation function via the power window regulator master switch will not operate unless the motors are reset.
- Be sure to reset the power window regulator motors using the power window switch on each door. The motors cannot be reset by remote operation through the power window regulator master switch.
- In order to prevent overcurrent into the system, do not simultaneously reset 2 or more power window regulator motors.
- If the power window switch has been continuously operated for a long time, the power window regulator motor will stop so that no additional load can be applied to the motor. Continuing to operate the switch even after the motor has stopped will cause the switch indicator to blink while restricting the AUTO UP/DOWN function and the remote UP/DOWN function. If this happens, reset the motor again after a few minutes have passed.

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- (a) Turn the ignition switch ON.
- (b) Halfway open the power window by pressing the power window switch.
- (c) Fully pull up the switch until the power window is fully closed and continue to hold the switch for approximately 1 second after the power window is fully closed.
- (d) Check that the AUTO UP/DOWN function operates normally.
If the AUTO/DOWN function operates normally, reset operations are complete.
If not normal, follow steps (e) to (g) below.
- (e) Disconnect the cable from the negative (-) battery terminal for 10 seconds.
- (f) Connect the cable.
- (g) Perform steps (a) to (d) again.
If the AUTO/DOWN function operates normally, reset operations are complete.
If not normal, proceed to steps (h) to (k) below.
- (h) Turn the ignition switch ON.
- (i) Halfway open the power window by pressing the power window switch.
- (j) Fully pull up the switch until the power window is fully closed, and continue to hold the switch for approximately 12 seconds after the power window is fully closed.
- (k) Check that the AUTO UP/DOWN function operates normally.

WS

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PROBLEM SYMPTOMS TABLE

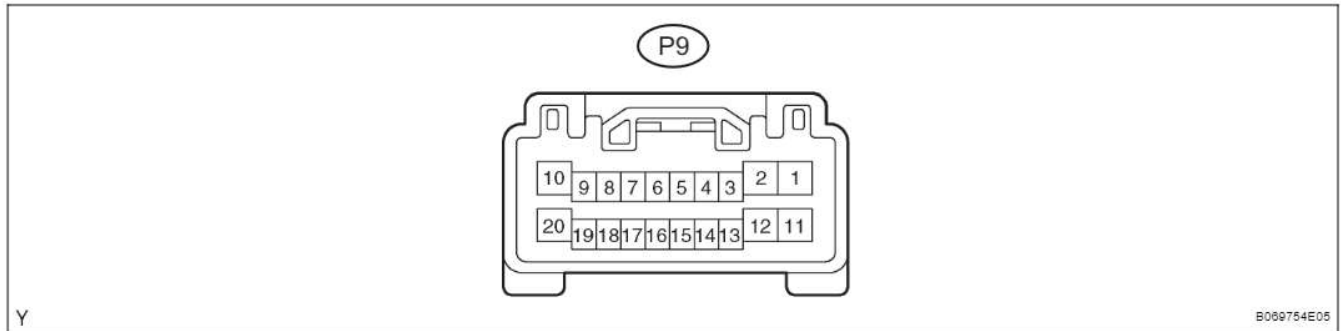
Symptom	Suspected Area	See page
Power Window do not Operate at All	1. Power window regulator master switch assembly	WS-27
	2. AM1 fuse	WS-27
	3. GAUGE fuse	WS-27
	4. FL DOOR fuse	WS-27
	5. IG1 relay	WS-27
	6. Wire harness	WS-27
Driver Side Power Window Auto Up / Down Function dose not Operate with Power Window Master Switch	1. Power window regulator master switch assembly	WS-21
	2. Power window regulator motor assembly LH (driver side)	WS-21
	3. Wire harness	WS-21
Front Passenger Side Power Window Auto Up / Down Function dose not Operate with Front Passenger Side Power Window Switch	1. Power window regulator switch assembly (passenger side)	WS-24
	2. Power window regulator motor assembly RH (passenger side)	WS-24
	3. Wire harness	WS-24
Driver Side Power Window dose not Operate with Power Window Master Switch	1. Power window regulator master switch assembly	WS-15
	2. Power window regulator motor assembly LH (driver side)	WS-15
	3. Wire harness	WS-15
Front Passenger Side Power Window dose not Operate with Front Passenger Side Power Window Switch	1. Power window regulator master switch assembly	WS-17
	2. Power window regulator switch assembly (passenger side)	WS-17
	3. Power window regulator motor assembly RH (passenger side)	WS-17
	4. FR DOOR fuse	WS-17
	5. Wire harness	WS-17
Remote Up / Down Function dose not Operate	1. Power window regulator master switch assembly	WS-12
	2. Power window regulator switch assembly (passenger side)	WS-12
	3. Wire harness	WS-12
Auto Up Operation dose not Fully Close Power Window (Jam Protection Function is Activated)	1. Power window regulator motor assembly	WS-31
	2. Front door window regulator sub-assembly	WS-31
	3. Door glass run	WS-31
Jam Protection Function dose not Operate	1. Power window regulator switch assembly	WS-32
	2. Power window regulator motor assembly	WS-32

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

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TERMINALS OF ECU

1. CHECK POWER WINDOW REGULATOR MASTER SWITCH (DRIVER SIDE)



- (a) Disconnect the P9 switch connector.
- (b) Measure the voltage and resistance of the wire harness side connector.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
GND (P9-2) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
B (P9-10) - GND (P9-2)	B - W-B	+B (B) power supply	Always	11 to 14 V
IG (P9-20) - GND (P9-2)	R - W-B	Ignition power supply	Ignition switch OFF	Below 1 V
IG (P9-20) - GND (P9-2)	R - W-B	Ignition power supply	Ignition switch ON	11 to 14 V

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

- (c) Reconnect the P9 switch connector.
- (d) Reset the power window motor (See page [WS-5](#)).
- (e) Measure the voltage of the connector.

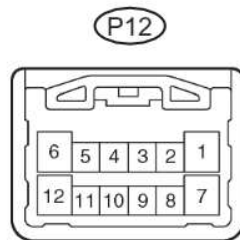
Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
U (P9-1) - GND (P9-2)	Y - W-B	Power window motor UP output	Ignition switch ON, driver side power window switch OFF	Below 1 V
U (P9-1) - GND (P9-2)	Y - W-B	Power window motor UP output	Ignition switch ON, driver side power window switch UP (manual operation)	11 to 14 V
U (P9-1) - GND (P9-2)	Y - W-B	Power window motor UP output	Ignition switch ON, driver side window fully open	Below 1 V
U (P9-1) - GND (P9-2)	Y - W-B	Power window motor UP output	Ignition switch ON, driver side power window switch UP (AUTO operation)	11 to 14 V
U (P9-1) - GND (P9-2)	Y - W-B	Power window motor UP output	Ignition switch ON, driver side power window fully closed	Below 1 V
D (P9-11) - GND (P9-2)	P - W-B	Power window motor DOWN output	Ignition switch ON, driver side power window switch OFF	Below 1 V
D (P9-11) - GND (P9-2)	P - W-B	Power window motor DOWN output	Ignition switch ON, driver side power window switch DOWN (manual operation)	11 to 14 V
D (P9-11) - GND (P9-2)	P - W-B	Power window motor DOWN output	Ignition switch ON, driver side power window fully closed	Below 1 V
D (P9-11) - GND (P9-2)	P - W-B	Power window motor DOWN output	Ignition switch ON, driver side power window switch DOWN (AUTO operation)	11 to 14 V

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Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
D (P9-11) - GND (P9-2)	P - W-B	Power window motor DOWN output	Ignition switch ON, driver side power window fully open	Below 1 V
PCT (P9-6) - GND (P9 - 2)	B - W-B	Power window lock switch output	Ignition switch ON, power window lock switch NORMAL	11 to 14 V
PCT (P9-6) - GND (P9 - 2)	B - W-B	Power window lock switch output	Ignition switch ON, power window lock switch LOCK	Below 1 V
VC (P9-19) - SGND (P9-12)	W - BR	Power window motor sensor power source	Always	11 to 14 V
VC (P9-19) - SGND (P9-12)	W - BR	Power window sensor ground	Always	11 to 14 V

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

2. CHECK POWER WINDOW REGULATOR SWITCH (PASSENGER SIDE)



B099755E07

- Disconnect the P12 switch connector.
- Measure the voltage and resistance of the wire harness side connector.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
GND (P12-7) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
B (P12-12) - GND (P12-7)	P - W-B	+B (B) power supply	Always	11 to 14 V

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

- Reconnect the P12 switch connector.
- Reset the power window motor (See page [WS-5](#)).
- Measure the voltage of the connector.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
U (P12-6) - GND (P12-7)	Y - W-B	Power window motor UP output	Ignition switch ON, regulator switch OFF	Below 1 V
U (P12-6) - GND (P12-7)	Y - W-B	Power window motor UP output	Ignition switch ON, regulator switch UP (manual operation)	11 to 14 V
U (P12-6) - GND (P12-7)	Y - W-B	Power window motor UP output	Ignition switch ON, passenger side power window fully open	Below 1 V
U (P12-6) - GND (P12-7)	Y - W-B	Power window motor UP output	Ignition switch ON, regulator switch UP (AUTO operation)	11 to 14 V
U (P12-6) - GND (P12-7)	Y - W-B	Power window motor UP output	Ignition switch ON, passenger side power window fully closed	Below 1 V

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Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
D (P12-1) - GND (P12-7)	G - W-B	Power window motor DOWN output	Ignition switch ON, regulator switch OFF	Below 1 V
D (P12-1) - GND (P12-7)	G - W-B	Power window motor DOWN output	Ignition switch ON, regulator switch DOWN (manual operation)	11 to 14 V
D (P12-1) - GND (P12-7)	G - W-B	Power window motor DOWN output	Ignition switch ON, passenger side power window fully closed	Below 1 V
D (P12-1) - GND (P12-7)	G - W-B	Power window motor DOWN output	Ignition switch ON, regulator switch DOWN (AUTO operation)	11 to 14 V
D (P12-1) - GND (P12-7)	G - W-B	Power window motor DOWN output	Ignition switch ON, passenger side power window fully open	Below 1 V
PCT (P12-11) - GND (P12-7)	B - W-B	Power window lock switch input	Ignition switch ON, power window lock switch of master switch NORMAL	11 to 14 V
PCT (P12-11) - GND (P12-7)	B - W-B	Power window lock switch input	Ignition switch ON, power window lock switch of master switch LOCK	Below 1 V
VCC (P12-5) - SGND (P12-8)	R - BR	Power window motor sensor power source	Always	11 to 14 V
VCC (P12-5) - SGND (P12-8)	R - BR	Power window motor sensor ground	Always	11 to 14 V

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

HINT:

An operation permission signal is output from terminal PCT of the master switch to the power window regulator switch. If the value is not as specified, there may be a malfunction on the wire harness side. An operation permission signal is also output through the MPX line to the power window regulator switch. Even if both signals are not output, the power windows will function normally.

**ON-VEHICLE INSPECTION****1. CHECK WINDOW LOCK SWITCH**

- Check that the passenger side power window operation is disabled when the window lock switch of the power window regulator master switch is pressed.
- Check that the passenger side power window can be operated when the window lock switch is pressed again.

2. CHECK MANUAL UP/DOWN FUNCTION

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

Condition	Master Switch	Switch Operation	Power Window
Ignition switch ON	Driver side	Pulled halfway up	UP (closes)
Ignition switch ON	Driver side	Pushed halfway down	DOWN (opens)

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- (b) Check that the passenger side power window operates as follows:

Condition	Regulator switch	Switch Operation	Power Window
Ignition switch ON	Passenger side	Pulled halfway up	UP (closes)
Window lock switch OFF			
Ignition switch ON	Passenger side	Pushed halfway down	DOWN (opens)
Window lock switch OFF			

3. CHECK AUTO UP/DOWN FUNCTION

- (a) Check that the driver side power window operates as follows:

Condition	Master Switch	Switch Operation	Power Window
Ignition switch ON	Driver side	Pulled fully up	AUTO UP (fully closes)
Ignition switch ON	Driver side	Pushed fully down	AUTO DOWN (fully opens)

- (b) Check that the passenger side power window operates as follows:

Condition	Regulator switch	Switch Operation	Power Window
Ignition switch ON	Passenger side	Pulled fully up	AUTO UP (fully closes)
Window lock switch OFF			
Ignition switch ON	Passenger side	Pushed fully down	AUTO DOWN (fully opens)
Window lock switch OFF			

4. CHECK REMOTE MANUAL UP/DOWN FUNCTION

- (a) Check that the passenger side power window operates as follows:

Condition	Master Switch	Switch Operation	Power Window
Ignition switch ON	Passenger side	Pulled fully up	UP (closes)
Window lock switch OFF			
Ignition switch ON	Passenger side	Pushed fully down	DOWN (opens)
Window lock switch OFF			

5. CHECK REMOTE AUTO UP/DOWN FUNCTION

- (a) Check that the passenger driver side power window operates as follows:

Condition	Master Switch	Switch Operation	Power Window
Ignition switch ON	Passenger side	Pulled fully up	AUTO UP (fully closes)
Window lock switch OFF			
Ignition switch ON	Passenger side	Pushed fully down	AUTO DOWN (fully opens)
Window lock switch OFF			

6. CHECK JAM PROTECTION FUNCTION

HINT:

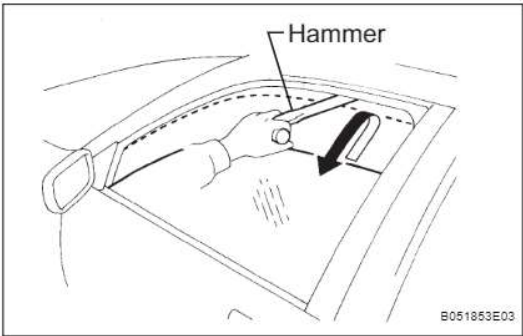
The jam protection function helps prevent power window operation related injuries.

NOTICE:

If the power window motor has just been reset, raise and lower the door glass several times through **MANUAL** operation before performing the check.

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

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- (a) Check that the door glass moves down by approximately 50 mm (1.97 in.) when something is caught between the door frame and door glass during power window operation. However, when the opening between the door frame and the door glass is less than 200 mm (7.87 in.), the door glass continues to move down and does not stop until an opening of 200 mm (7.87 in.) is achieved.
- Operative condition
- AUTO UP

7. CHECK POWER WINDOW FAIL-SAFE FUNCTION
HINT:

If there is a malfunction in the power window system, some of the power window functions will be disabled.

Driver side power window

Malfunctioning Part	Disabled Function	Operative Function
Pulse sensor circuit in power window motor	AUTO UP/DOWN function	• Manual UP (fully pulled UP position) • Manual DOWN • Remote (AUTO and manual)
CPU in master switch	AUTO UP/DOWN function	Manual UP (fully pulled UP position)
		Manual DOWN
	Remote function (AUTO and manual)	• Manual UP (fully pulled UP position) • Manual DOWN

Passenger side power window

Malfunctioning Part	Disabled Function	Operative Function
Pulse sensor circuit in power window motor	AUTO UP/DOWN function	• Manual UP (fully pulled UP position) • Manual DOWN
CPU in power window switch	AUTO UP/DOWN function	• Manual UP (fully pulled UP position) • Manual DOWN
Communication between master switch and power window switch	AUTO UP/DOWN function	• Manual UP (fully pulled UP position) • Manual DOWN

WS

8. CHECK POWER WINDOW SWITCH'S LED OPERATION

- (a) Make sure that the power window lock switch on the power window regulator master switch is not pressed.
- (b) Turn the ignition switch ON. Then check that all the LEDs on the power window switches illuminate.

WS-14

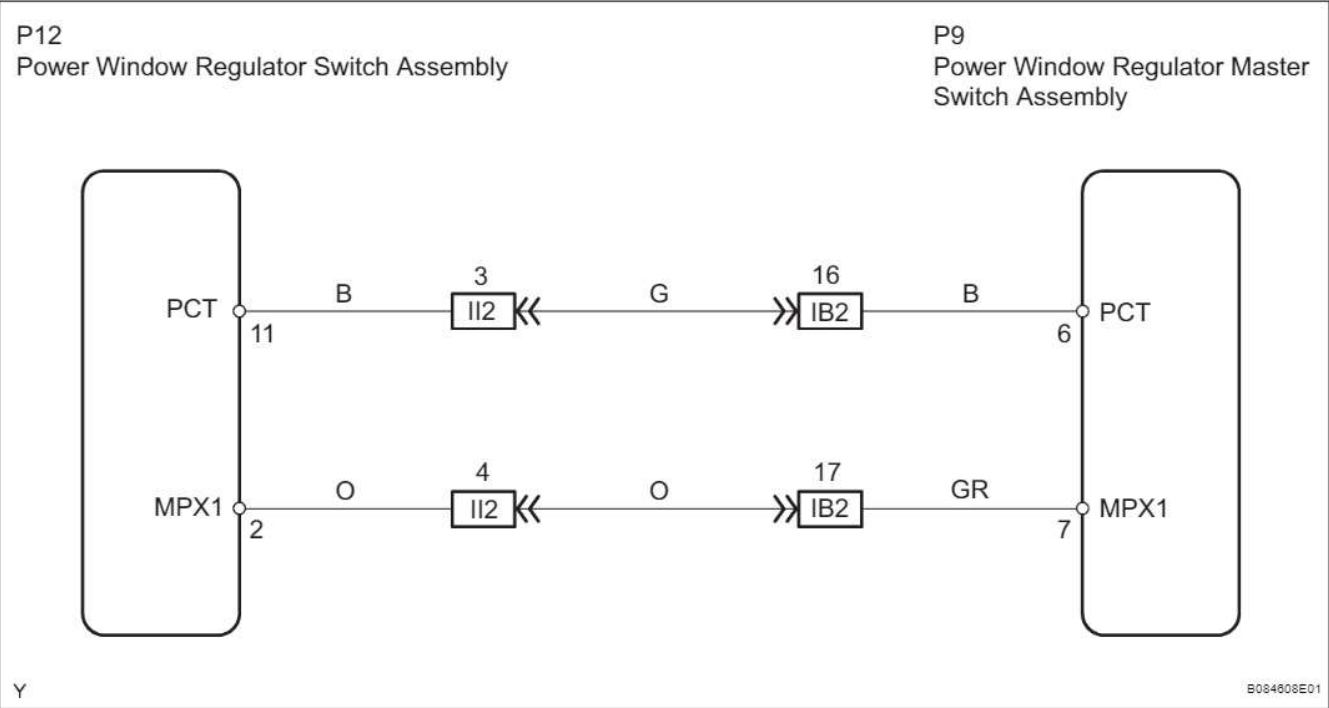
WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

Remote Up / Down Function does not Operate

DESCRIPTION

Operating the passenger side power window switch on the power window regulator master switch inputs a remote signal to the power window regulator switch. Then, the power window regulator switch drives the passenger side window motor.

WIRING DIAGRAM



INSPECTION PROCEDURE

1

CHECK POWER WINDOW LOCK SWITCH

Y

B086761E01

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

OK:
Remote UP/DOWN function operates normally.

OK

END

NG

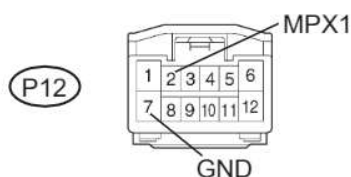
2

CHECK MANUAL UP/DOWN FUNCTION (PASSENGER SIDE)

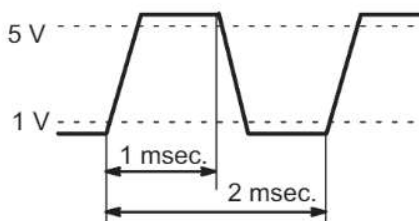
- (a) Check that the power window can be operated with the power window regulator switch.

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)
WS-15
OK:
Manual UP/DOWN function operates normally.
NG
GO TO PROBLEM SYMPTOMS TABLE
OK
3
CHECK AUTO UP/DOWN FUNCTION (PASSENGER SIDE)

- (a) Check that the power window can be operated with the power window regulator switch.

OK:
AUTO UP/DOWN function operates normally.
NG
GO TO PROBLEM SYMPTOMS TABLE
OK
4
CHECK WIRE HARNESS (REGULATOR SWITCH (PASSENGER SIDE))
Wire Harness Side:


10 V/DIV., 1 msec./DIV.



B082654E02

- (a) Disconnect the P12 regulator switch connector.
 (b) Turn the ignition switch ON.
 (c) Using an oscilloscope, check the waveform of the connector.

Standard:
The waveform is as shown in the illustration.

Tester Connection	Tool Setting	Condition
P12-2 (MPX1) - P12-7 (GND)	10 V/DIV., 1 msec./DIV.	Operating passenger side switch on master switch

OK
REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (PASSENGER SIDE)
NG
WS

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5 CHECK WIRE HARNESS (POWER WINDOW REGULATOR SWITCH ASSEMBLY - POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY)

Wire Harness Side:

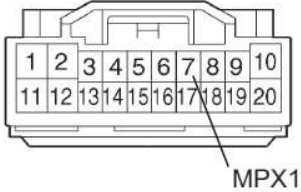
Power Window Regulator Switch Assembly (Passenger Side)



P12

MPX1

Power Window Regulator Master Switch Assembly (Driver Side)



P9

MPX1

B082614E03

- (a) Disconnect the P12 regulator switch connector.
- (b) Disconnect the P9 regulator master switch connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

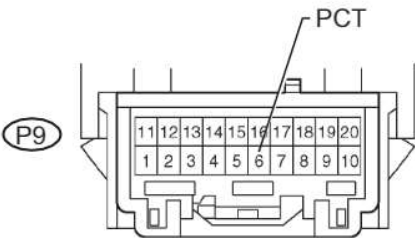
Tester Connection	Specified Condition
P12-2 (MPX1) - P9-7 (MPX1)	Below 1 Ω
P12-2 (MPX1) - Body ground	10 kΩor higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

6 INSPECT POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY (WINDOW LOCK SWITCH)



P9

PCT

B071002E02

- (a) Remove the master switch but do not disconnect the connector.
- (b) Turn the ignition switch ON.
- (c) Measure the voltage of the connector.

Standard voltage

Tester Connection	Condition	Specified Condition
P9-6 (PCT) - Body ground	Window LOCK switch OFF (Normal)	11 to 14 V
P9-6 (PCT) - Body ground	Window LOCK switch ON (Lock)	Below 1 V

NG

REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

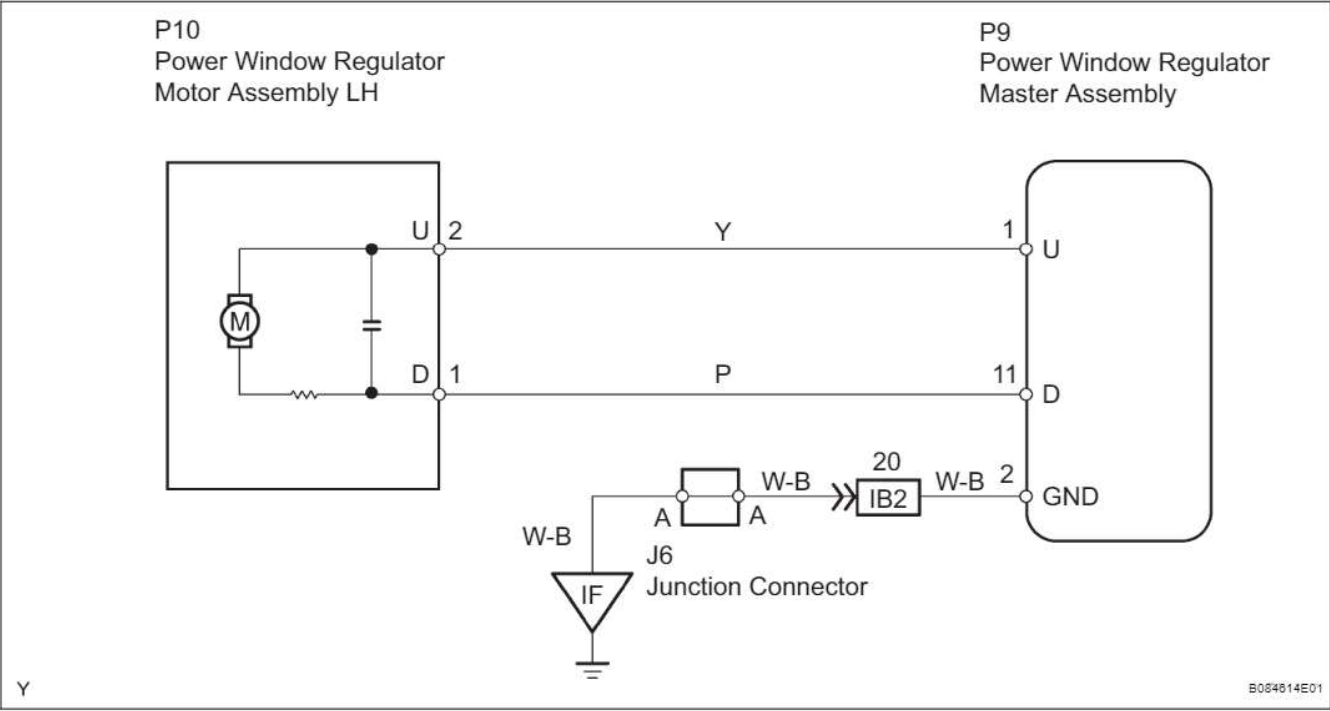
OK

REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY

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

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

WIRING DIAGRAM



INSPECTION PROCEDURE

1

CHECK AUTO UP/DOWN FUNCTION (DRIVER SIDE)

(a) Check that the power window AUTO UP/DOWN function operates normally.

OK

REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

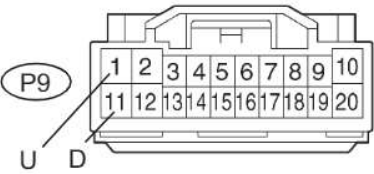
NG

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2 CHECK WIRE HARNESS (POWER WINDOW MASTER SWITCH - POWER WINDOW MOTOR)

Wire Harness Side:

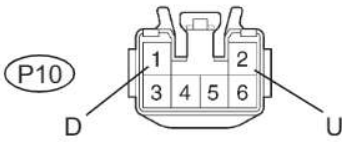
Power Window Regulator Master Switch Assembly



P9

U D

Power Window Regulator Motor Assembly LH (Driver Side)



P10

D U

B052055E13

- (a) Disconnect the P9 master switch connector.
- (b) Disconnect the P10 motor connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

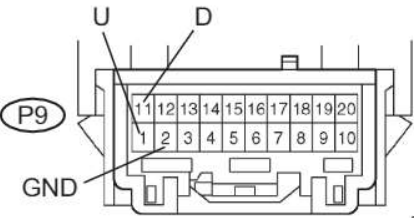
Tester Connection	Specified Condition
P9-1 (U) - P10-2 (U)	Below 1 Ω
P9-11 (D) - P10-1 (D)	Below 1 Ω
P9-1 (U) - Body ground	10 kΩor higher
P9-11 (D) - Body ground	10 kΩor higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

3 CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY



P9

U D

GND

B071002E01

- (a) Remove the master switch but do not disconnect the connector.
- (b) Turn the ignition switch ON.
- (c) Measure the voltage of the connector.

Standard voltage

Tester Connection	Switch Condition	Specified Condition
P9-1 (U) - P9-2 (GND)	UP	11 to 14 V
P9-11 (D) - P9-2 (GND)	DOWN	11 to 14 V

NG

REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

OK

REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (DRIVER SIDE)

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

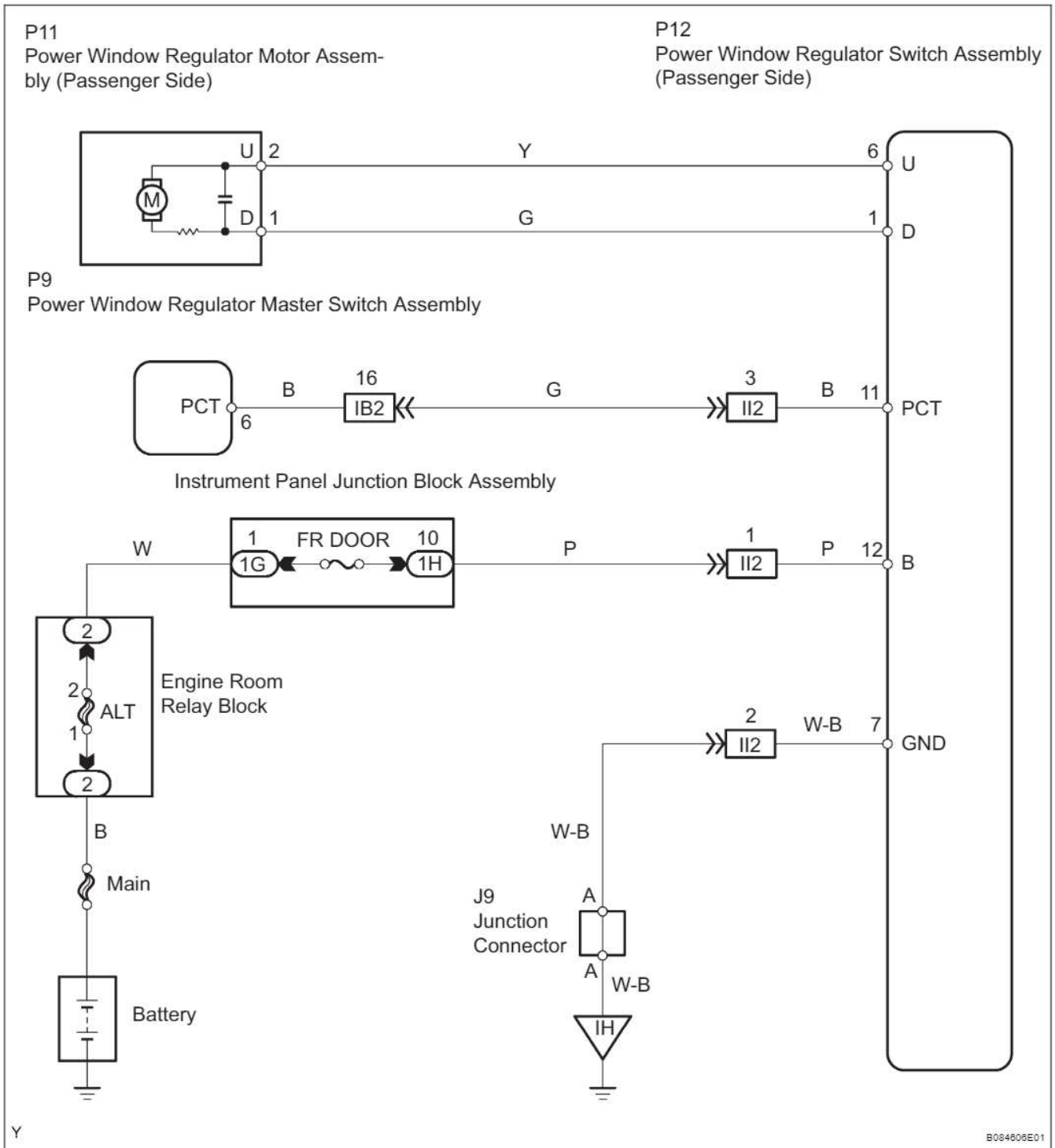
WS-19

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

DESCRIPTION

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

WIRING DIAGRAM



WS

WS-20 WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

INSPECTION PROCEDURE

1 CHECK AUTO UP/DOWN FUNCTION (PASSENGER SIDE)

- (a) Check that the power window AUTO UP/DOWN function operates normally.

OK

REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (PASSENGER SIDE)

NG

2 INSPECT FUSE (FR DOOR)

- (a) Disconnect the FR DOOR fuse from the instrument panel junction block.
(b) Measure the resistance of the fuse.

Standard resistance:

Below 1 Ω

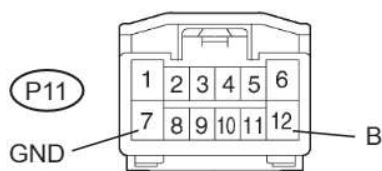
NG

REPLACE FUSE

OK

3 CHECK WIRE HARNESS (POWER WINDOW REGULATOR SWITCH ASSEMBLY (PASSENGER SIDE) - BATTERY AND BODY GROUND)

Wire Harness Side:



B069757E02

- (a) Disconnect the P11 regulator switch connector.
(b) Measure the voltage and resistance of the wire harness side connector.

Standard voltage

Tester Connection	Specified Condition
P11-12 (B) - Body ground	11 to 14 V

Standard resistance

Tester Connection	Specified Condition
P11-7 (GND) - Body ground	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

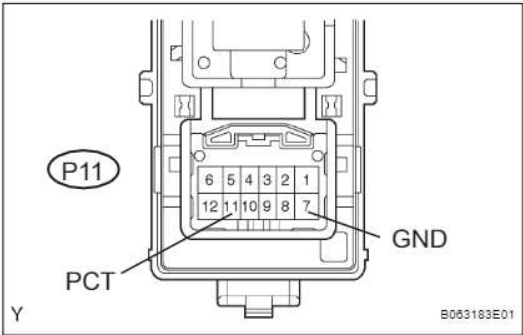
OK

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

WS-21

4

CHECK POWER WINDOW REGULATOR SWITCH ASSEMBLY (WINDOW LOCK SWITCH SIGNAL)



- (a) Remove the regulator switch but do not disconnect the connector.
- (b) Turn the ignition switch ON.
- (c) Measure the voltage of the connector.

Standard voltage

Tester Connection	Condition	Specified Condition
P11-11 (PCT) - P11-7 (GND)	Window LOCK switch OFF (Normal)	11 to 14 V
P11-11 (PCT) - P11-7 (GND)	Window LOCK switch ON (Lock)	Below 1 V

OK

Go to step 6

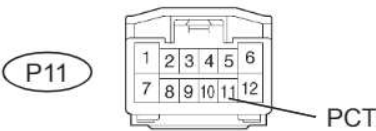
NG

5

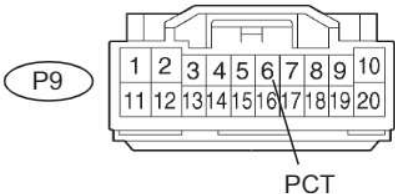
CHECK WIRE HARNESS (POWER WINDOW REGULATOR SWITCH ASSEMBLY - POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY)

Wire Harness Side:

Power Window Regulator Switch Assembly (Passenger Side)



Power Window Regulator Master Switch Assembly (Driver Side)



- (a) Disconnect the P11 regulator switch connector.
- (b) Disconnect the P9 master switch connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
P11-11 (PCT) - P9-6 (PCT)	Below 1 Ω
P11-11 (PCT) - Body ground	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

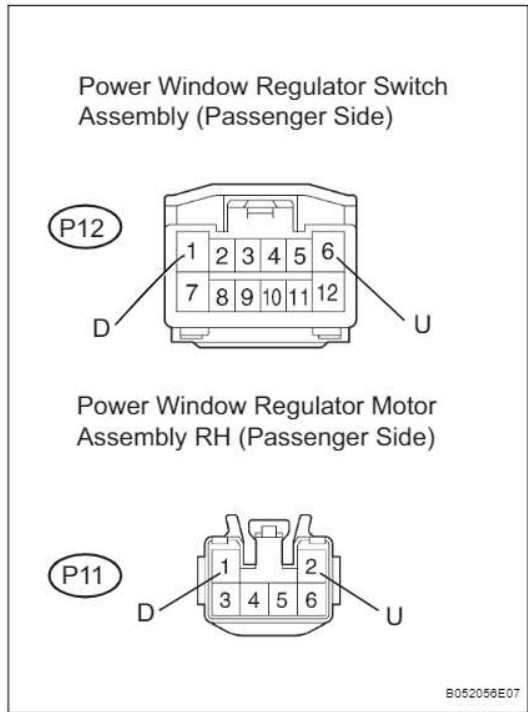
REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

WS-22

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

6

CHECK WIRE HARNESS (REGULATOR SWITCH ASSEMBLY - POWER WINDOW REGULATOR MOTOR ASSEMBLY RH)



- (a) Disconnect the P12 regulator switch connector.
- (b) Disconnect the P11 power window motor connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
P12-1 (D) - P11-1 (D)	Below 1 Ω
P12-6 (U) - P11-2 (U)	Below 1 Ω
P12-1 (D) - Body ground	10 kΩor higher
P12-6 (U) - Body ground	10 kΩor higher

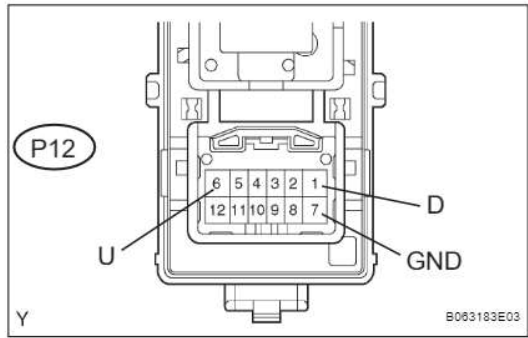
NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

7

CHECK POWER WINDOW REGULATOR SWITCH ASSEMBLY (PASSENGER SIDE)



- (a) Remove the regulator switch but do not disconnect the connector.
- (b) Turn the ignition switch ON.
- (c) Measure the voltage of the connector.

Standard voltage

Tester Connection	Condition	Specified Condition
P12-6 (U) - P12-7 (GND)	UP	11 to 14 V
P12-1 (D) - P12-7 (GND)	DOWN	11 to 14 V

NG

REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (PASSENGER SIDE)

OK

REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (PASSENGER SIDE)

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

WS-23

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

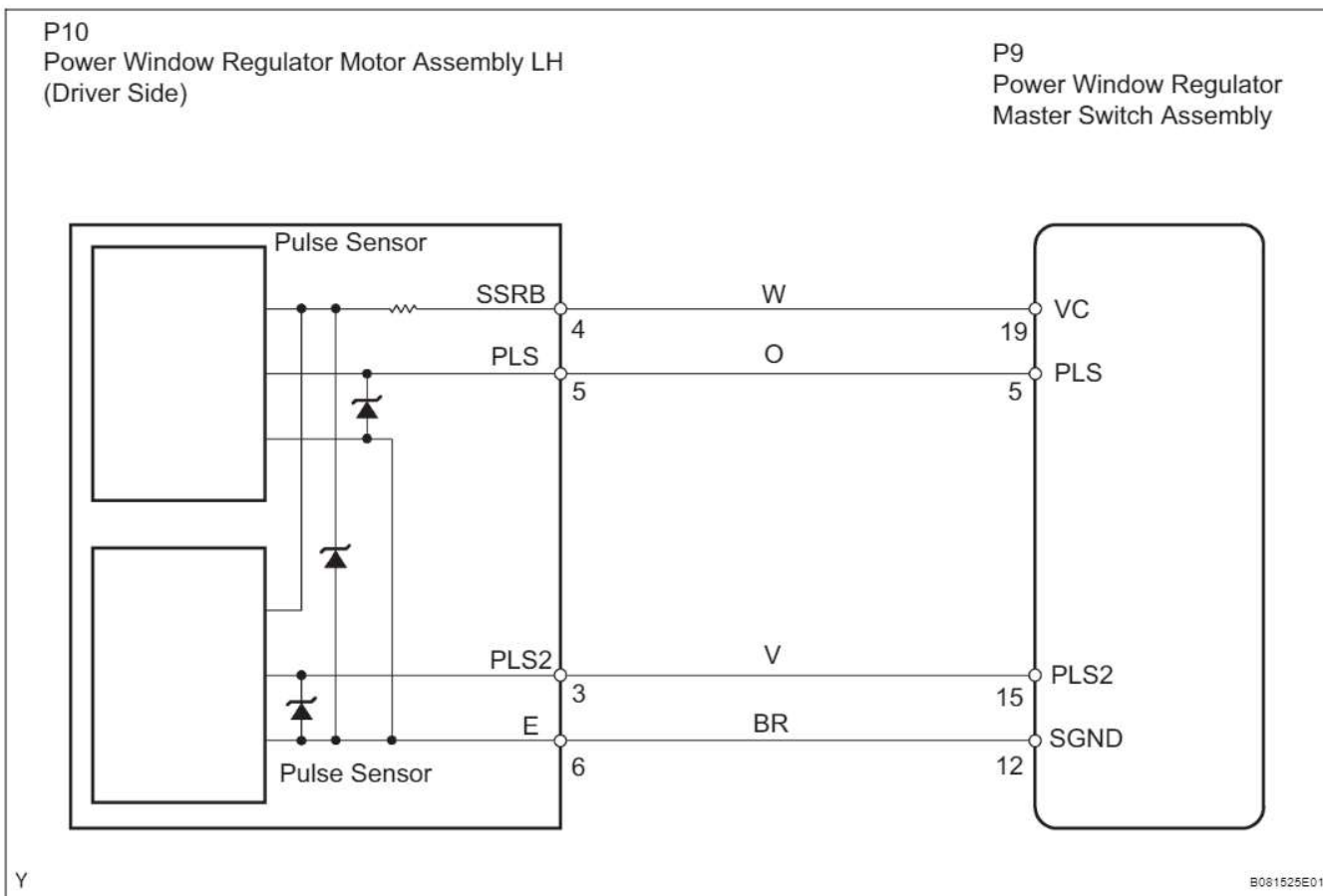
DESCRIPTION

The power window regulator master switch controls the driver side power window and activates the driver side power window motor. If a malfunction is found in the pulse sensor during motor operation, the fail-safe function will stop UP/DOWN operation.

If the AUTO UP/DOWN function does not operate, the cause may be one or more of the following:

- The recorded power window fully closed position, which is stored in the power window regulator master switch, was erased as a result of the battery terminal cable or the power window regulator master switch connector being disconnected.
- The pulse sensor in the power window regulator motor has a malfunction.
- The wiring between the power window regulator master switch and the corresponding power window regulator motor is open or short circuited.
- The power window regulator master switch has a malfunction.

WIRING DIAGRAM



INSPECTION PROCEDURE

1

CHECK MANUAL UP/DOWN FUNCTION (DRIVER SIDE)

- (a) Check that the power window manual UP/DOWN function operates normally.

WS-24

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

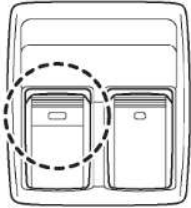
OK

NG

OTHER PROBLEM

2

CHECK LIGHT OF POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY (DRIVER SIDE SWITCH)



ALL AUTO

Y

B084615E01

(a) Turn the ignition switch ON.

(b) Operate the driver side switch on the master switch.

(c) Check the blinking pattern of the AUTO light as shown in the illustration.

Result

Result	Proceed to
Pattern (1) or (3) is displayed	A
Pattern (2) is displayed	B
Normal pattern is displayed	C

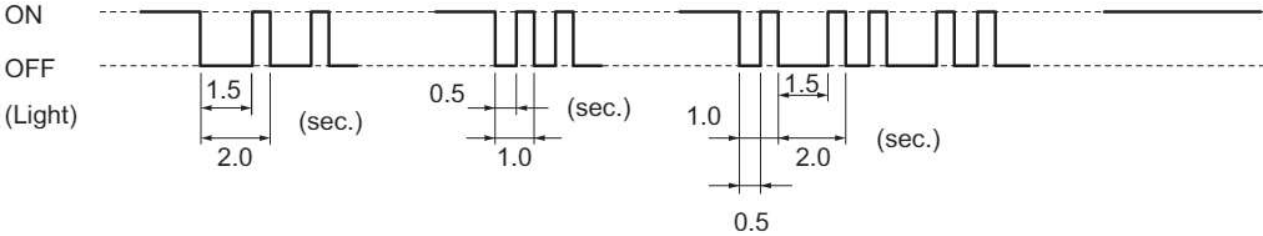
Blinking Pattern of Light

(1): Fully closed position is misaligned

(2): Pulse sensor circuit malfunction

(3): Both (1) and (2)

Normal



ON

OFF

(Light)

1.5 (sec.)

2.0

0.5 (sec.)

1.0

1.0 1.5 (sec.)

2.0

0.5

Y

B105775E03

B

Go to step 4

C

REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY (DRIVER SIDE)

A

3

RESET POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (DRIVER SIDE)

OK

END

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

WS-25

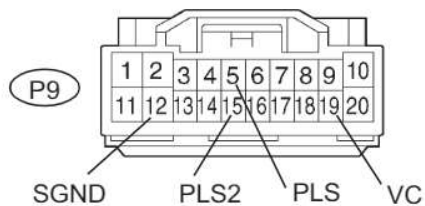
NG

4

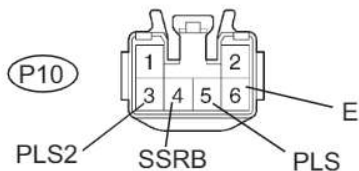
CHECK WIRE HARNESS (POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY - POWER WINDOW REGULATOR MOTOR ASSEMBLY LH)

Wire Harness Side:

Power Window Regulator Master Switch Assembly



Power Window Regulator Motor Assembly LH (Driver Side)



B052055E14

- (a) Disconnect the P9 master switch connector.
- (b) Disconnect the P10 motor connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
P9-19 (VC) - P10-4 (SSRB)	Below 1 Ω
P9-5 (PLS) - P10-5 (PLS)	Below 1 Ω
P9-15 (PLS2) - P10-3 (PLS2)	Below 1 Ω
P9-12 (SGND) - P10-6 (E)	Below 1 Ω
P9-19 (VC) - Body ground	10 kΩor higher
P9-5 (PLS) - Body ground	10 kΩor higher
P9-15 (PLS2) - Body ground	10 kΩor higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (DRIVER SIDE)

WS

WS-26

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

Front Passenger Side Power Window Auto Up / Down Function does not Operate with Front Passenger Side Power Window Switch

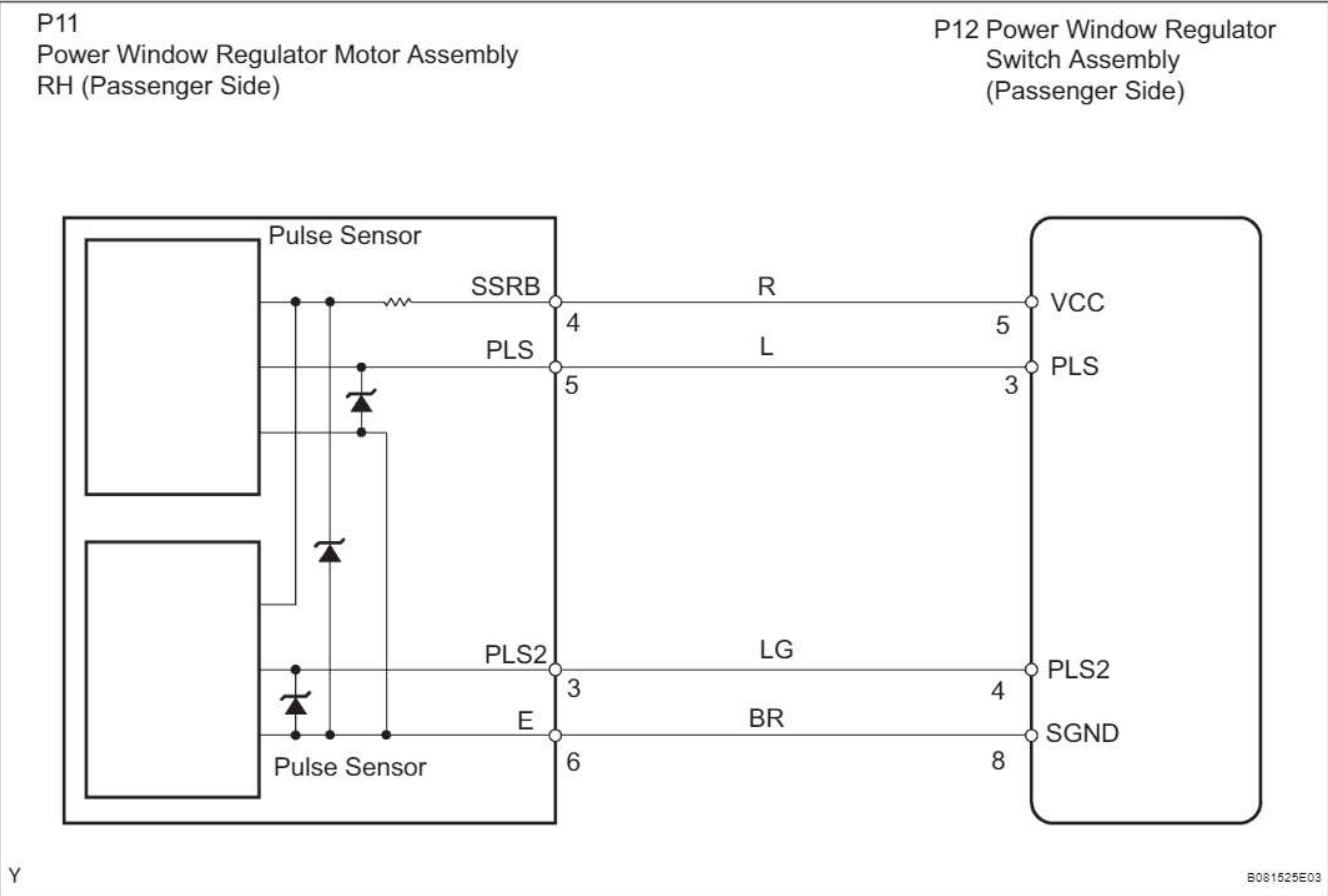
DESCRIPTION

The power window regulator switch controls the passenger side power window and activates the passenger side power window motor.

If the AUTO UP/DOWN function does not operate, the cause may be one or more of the following:

- The recorded power window fully closed position, which is stored in the power window regulator switch, was erased as a result of the battery terminal cable or the power window switch connector being disconnected.
- The pulse sensor in the power window regulator motor has a malfunction.
- The wiring between the power regulator window switch and the corresponding power window regulator motor is open or short circuited.
- The power window regulator switch has a malfunction.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	CHECK MANUAL UP/DOWN FUNCTION (PASSENGER SIDE)
---	--

- (a) Check that the power window manual UP/DOWN function operates normally.

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

WS-27

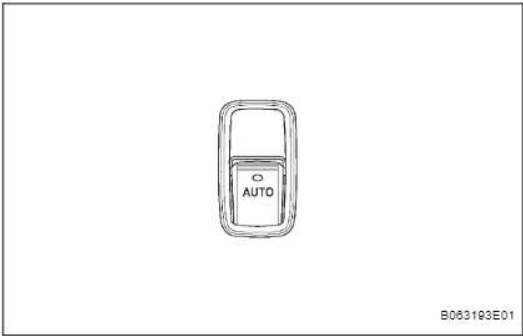
NG

OTHER PROBLEM

OK

2

CHECK LIGHT OF POWER WINDOW REGULATOR SWITCH ASSEMBLY (PASSENGER SIDE)



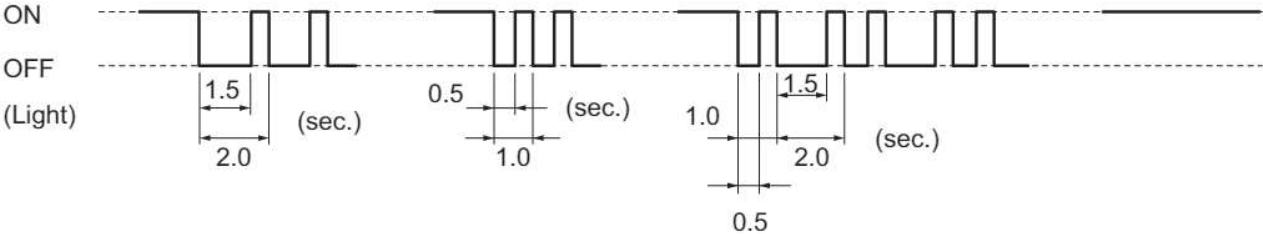
- (a) Turn the ignition switch ON.
- (b) Operate the power window regulator switch.
- (c) Check the blinking pattern of the light as shown in the illustration below.

Result

Result	Proceed to
Pattern (1) or (3) is displayed	A
Pattern (2) is displayed	B
Normal pattern is displayed	C

Blinking Pattern of Light

- 1: Fully closed position is misaligned
- 2: Pulse sensor circuit malfunction
- 3: Both (1) and (2)
- 4: Normal



B

Go to step 4

C

REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (PASSENGER SIDE)

A

3

RESET POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (PASSENGER SIDE)

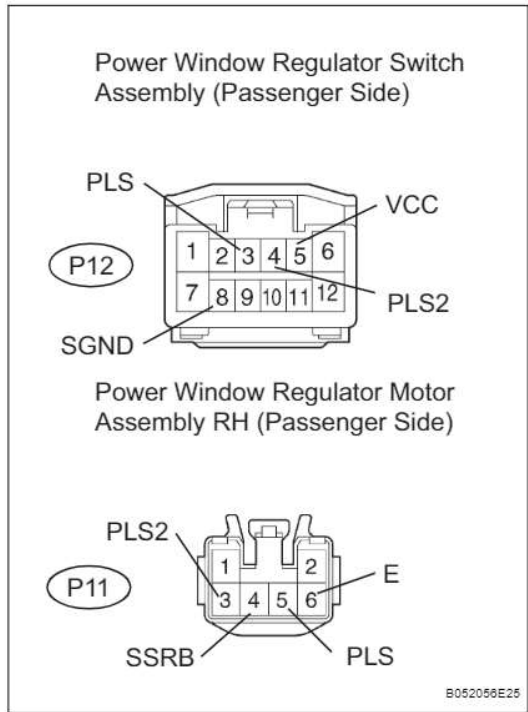
OK

END

NG

WS-28 WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

4 CHECK WIRE HARNESS (POWER WINDOW REGULATOR SWITCH ASSEMBLY - POWER WINDOW REGULATOR MOTOR ASSEMBLY RH)



- (a) Disconnect the P12 regulator switch connector.
- (b) Disconnect the P11 power window motor connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
P12-5 (VCC) - P11-4 (SSRB)	Below 1 Ω
P12-3 (PLS) - P11-5 (PLS)	Below 1 Ω
P12-4 (PLS2) - P11-3 (PLS2)	Below 1 Ω
P12-8 (SGND) - P11-6 (E)	Below 1 Ω
P12-5 (VCC) - Body ground	10 kΩor higher
P12-3 (PLS) - Body ground	10 kΩor higher
P12-4 (PLS2) - Body ground	10 kΩor higher

NG **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (PASSENGER SIDE)

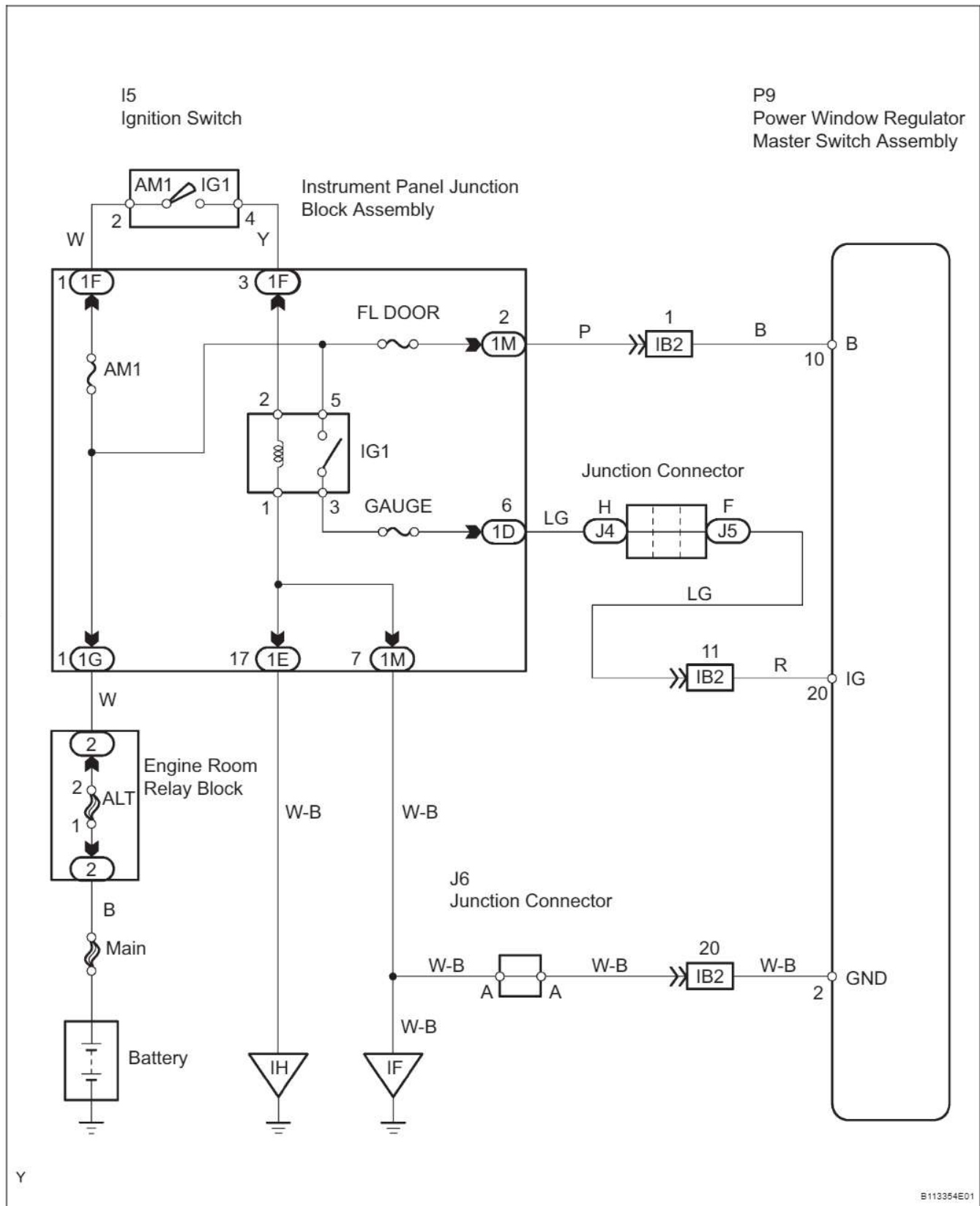
WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)**WS-29****Power Windows do not Operate at All****DESCRIPTION**

If all of the power windows do not operate, it is possible that no power is being supplied to the power window master switch, or that the power window master switch is malfunctioning.

WS

WS-30 WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

WIRING DIAGRAM



WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

WS-31

INSPECTION PROCEDURE

1

INSPECT FUSE (AM1, GAUGE, FL DOOR)

- (a) Remove the AM1, GAUGE, FL DOOR fuses from the instrument panel junction block.
- (b) Measure the resistance of the fuses.
- Standard resistance:
Below 1 Ω

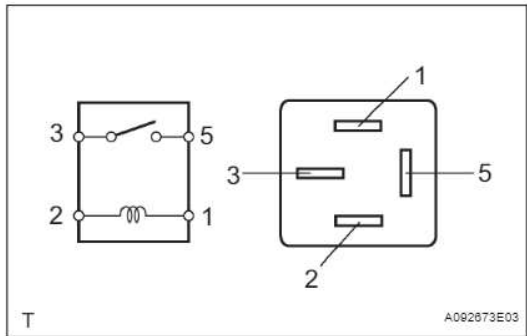
NG

REPLACE FUSE

OK

2

INSPECT IG1 RELAY (Marking: IG1)



- (a) Remove the IG1 relay from the instrument panel junction block.
- (b) Measure the resistance of the relay.
- Standard resistance

Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)

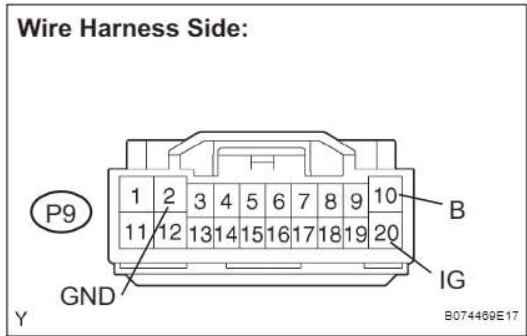
NG

REPLACE IG1 RELAY

OK

3

CHECK WIRE HARNESS (POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY - BATTERY AND BODY GROUND)



- (a) Disconnect the P9 master switch connector.
- (b) Measure the voltage and resistance of the wire harness side connector.
- Standard voltage

Tester Connection	Condition	Specified Condition
P9-10 (B) - Body ground	Always	11 to 14 V
P9-20 (IG) - Body ground	Ignition switch OFF	Below 1 V
P9-20 (IG) - Body ground	Ignition switch ON	11 to 14 V

Standard resistance

Tester Connection	Specified Condition
P9-2 (GND) - Body ground	Below 1 kΩ

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

WS-32 WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

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

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

DESCRIPTION

If the AUTO UP operation does not fully close the power window, the cause may be one or more of the following:

- The power window motor has not been reset, resulting in activation of the jam protection function.
- The power window switch memory cannot recognize true fully close position and incorrectly stops the window AUTO UP operation halfway.
- The jam protection function is activated at the fully closed position.
- During what should be smooth window movement, too much resistance occurs and the jam protection function is activated.

INSPECTION PROCEDURE

1RESET POWER WINDOW REGULATOR MOTOR ASSEMBLY (LH AND RH)

- (a) Reset the power window regulator motor for the power window that does not fully close (See page [WS-5](#)).
- (b) Check if the window AUTO UP/DOWN function operates normally.
- OK:
AUTO UP/DOWN function operates normally.

OK

END

NG

2CHECK FRONT DOOR WINDOW REGULATOR SUB-ASSEMBLY (LH AND RH)

- (a) Remove the door glass (See page [ED-3](#)).
- (b) Operate the power window regulator without installing the door glass using the power window switch.
- (c) Check that the power window regulator operates smoothly.
- OK:
Power window regulator operates smoothly.

NG

REPLACE FRONT DOOR WINDOW REGULATOR SUB-ASSEMBLY (LH AND RH)

OK

REPLACE DOOR GLASS RUN (LH AND RH)

WS-34 WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function)

Jam Protection Function does not Operate

DESCRIPTION

The power window regulator master switch controls the driver and passenger side power window regulator motors. The power window regulator switch controls the passenger side power window regulator motor. The jam protection function operates only within the specified range during AUTO UP operation.

HINT:

The jam protection function is available on the driver side power window and passenger side power window.

INSPECTION PROCEDURE

1 POWER WINDOW REGULATOR MOTOR ASSEMBLY (LH AND RH)

- (a) Reset the power window regulator motor (See page [WS-5](#)).
- (b) Check if the power window AUTO UP/DOWN function operates normally.

OK:

AUTO UP/DOWN function operates normally.

NG

OTHER PROBLEM

OK

2 CHECK JAM PROTECTION FUNCTION OPERATING RANGE

- (a) Check that the jam protection function operates normally (See page [WS-9](#)).

HINT:

The jam protection function does not operate from the fully closed position of the door glass to 4 mm (0.16 in.) below that.

NG

REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (LH AND RH)

OK

END

WS

POWER WINDOW CONTROL
SYSTEM (w/o Jam Protection
Function)

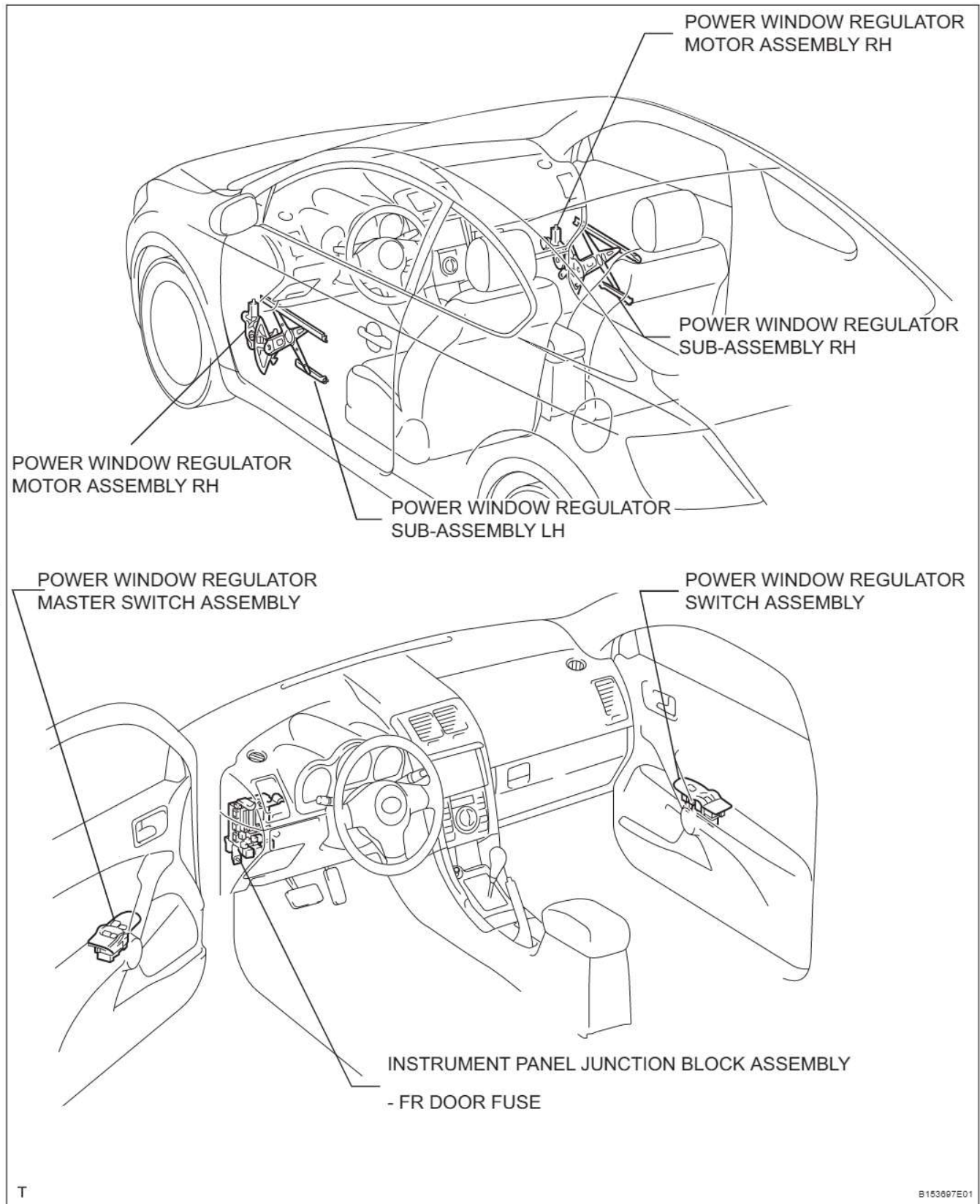
PRECAUTION

NOTICE:
When disconnecting the cable from the negative (-) battery terminal, initialize the following system after the cable is reconnected.

System Name	See procedure
Power Window Control System	IN-23
SFI System	IN-23

WS-34 WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function)

PARTS LOCATION

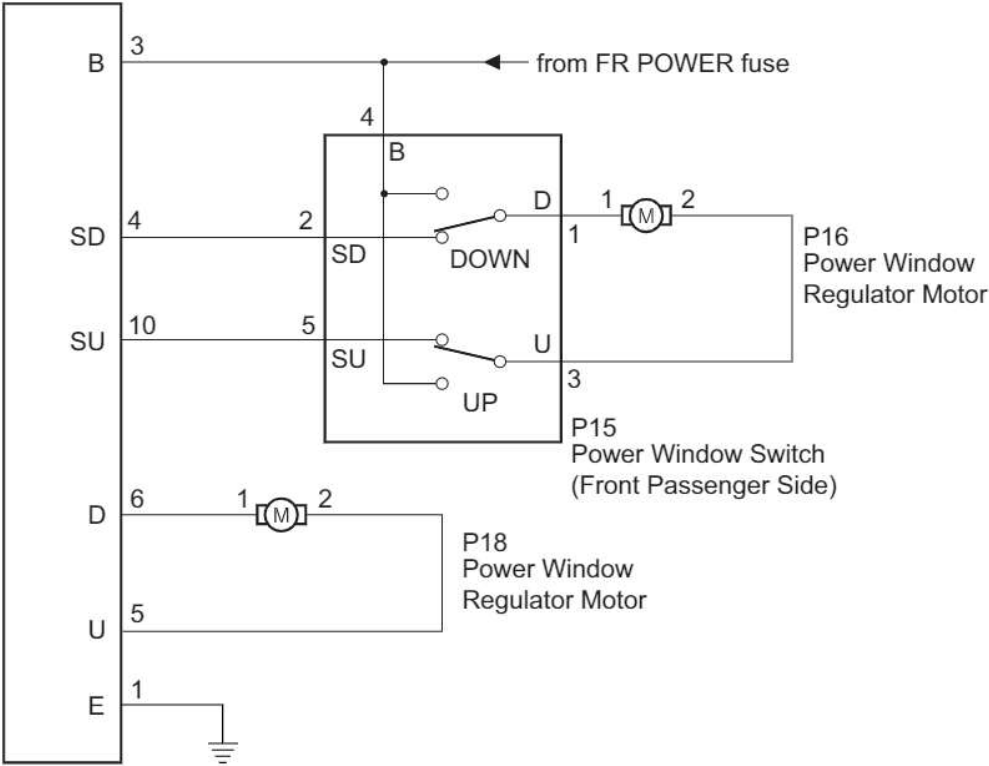


WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function)

WS-35

SYSTEM DIAGRAM

P17
Power Window Master Switch



WS

H

B153605E02

SYSTEM DESCRIPTION

1. POWER WINDOW CONTROL SYSTEM DESCRIPTION

- (a) The power window control system controls the power window operation using the power window regulator motors. The main controls of this system are the power window regulator master switch, which is mounted on the driver side door, and the power window regulator switches, which are mounted on the passenger side door. Operating a window switch results in electrical power being transmitted to the corresponding power window regulator motor.
- (b) The power window control system has the following functions:

Function	Outline
Manual up-and-down function	Function that causes window to go up while power window switch is being pulled halfway up and to go down while pushed halfway down. Window stops as soon as the switch is released.
Remote control function	Function that allows power window master switch to control MANUAL up-and-down operations of front passenger door window and rear door windows.

WS

HOW TO PROCEED WITH TROUBLESHOOTING

- HINT:
- Use the following procedure to troubleshoot the power window control system.
 - The intelligent tester should be used in step 4.

1 VEHICLE BROUGHT TO WORKSHOP

NEXT

2 CUSTOMER PROBLEM ANALYSIS CHECK AND SYMPTOM CHECK

NEXT

3 PROBLEM SYMPTOMS TABLE

- HINT:
See page [WS-37](#).

NEXT

4 OVERALL ANALYSIS AND TROUBLESHOOTING

- (a) Circuit inspection
(b) Terminal of ECU
HINT:
See page [WS-38](#).

NEXT

5 ADJUST, REPAIR OR REPLACE

NEXT

END

WS



B140183

OPERATION CHECK

1. CHECK WINDOW LOCK SWITCH
- (a) Check that the front passenger side power window operation is disabled when the window lock switch of the power window master switch is pressed.
- Standard:**
Front passenger side power window operation is disabled.

WS-38 WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function)

- (b) Check that the front passenger side power window can be operated when the window lock switch is pressed again.

Standard:

Front passenger side power window can be operated.

2. CHECK MANUAL UP/DOWN FUNCTION

- (a) Check that the driver side power window operates as follows:

Standard

Condition	Master Switch	Switch Operation	Power Window
Ignition switch ON	Driver side	Pulled halfway up	UP (Closed)
		Pushed halfway down	DOWN (Open)

- (b) Check that the front passenger side power window operates as follows:

Standard

Condition	Switch	Switch Operation	Power Window
- Ignition switch ON - Window lock switch OFF	Passenger side	Pulled up	UP (Closed)
		Pushed down	DOWN (Open)

3. CHECK AUTO DOWN FUNCTION

- (a) Check that the driver side power window operates as follows:

Standard

Condition	Master Switch	Switch Operation	Power Window
Ignition switch ON	Driver side	Pulled up fully	UP (Closed)
		Pushed down fully	DOWN (Open)

4. CHECK REMOTE MANUAL UP/DOWN FUNCTION

- (a) Check that the front passenger side power window operates as follows:

Standard

Condition	Master Switch	Switch Operation	Power Window
- Ignition switch ON - Window lock switch OFF	Passenger side	Pulled up	UP (Closed)
		Pushed down	DOWN (Open)

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function)
WS-39

PROBLEM SYMPTOMS TABLE

POWER WINDOW CONTROL SYSTEM

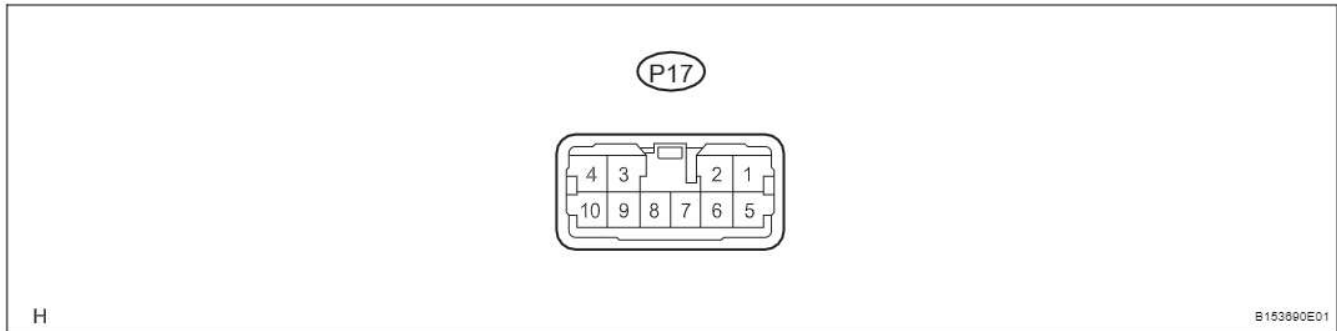
Symptom	Suspected Area	See page
Power window does not operate with power window regulator master switch	1. FR DOOR fuse	-
	2. Power window master switch circuit (power source)	WS-40
	3. Power window regulator motor circuit	WS-44
	4. Power window regulator master switch	WS-48
Front passenger side power window does not operate with power window regulator switch	1. Power window switch circuit (power source)	WS-43
	2. Power window regulator motor circuit (front passenger side)	WS-46
	3. Power window regulator switch (front passenger side)	WS-43
Remote UP/DOWN function does not operate	1. Power window regulator master switch	WS-40
	2. Wire harness	-
Power window can be operated after power switch is turned off even if operation conditions are not met	1. Front door courtesy switch	LI-50
	2. Wire harness	-

WS

WS-40 WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function)

TERMINALS OF ECU

1. POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY



- (a) Disconnect the P17 switch connector.
- (b) Measure the voltage and resistance of each terminal according to the value(s) in the table below.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
E (P17-1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
B (P17-3) - E (P17-1)	G - W-B	Power supply	Ignition switch ON	11 to 14 V

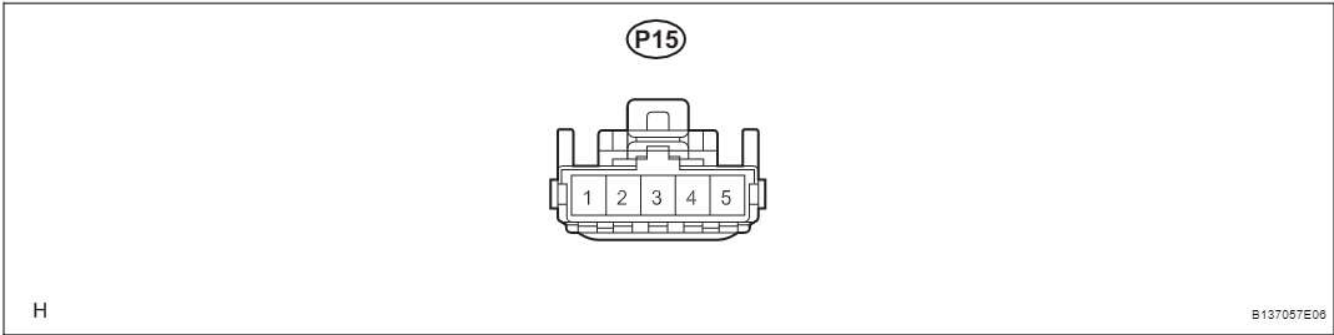
If the result is not as specified, there may be a malfunction in the wire harness.

- (c) Reconnect the P17 switch connector and reset the power window motor.
- (d) Measure the voltage according to the value(s) in the table below.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
U (P17-5) - E (P17-1)	Y - W-B	Power window motor UP output	Ignition switch ON, driver side power window switch OFF $\rightarrow$ UP (Manual operation)	0 V $\rightarrow$ 11 to 14 V
D (P17-6) - E (P17-1)	P - W-B	Power window motor DOWN output	Ignition switch ON, driver side power window switch OFF $\rightarrow$ DOWN (Manual operation)	0 V $\rightarrow$ 11 to 14 V
SU (P17-10) - E (P17-1)	GR - W-B	Power window motor UP output	Ignition switch ON, front passenger side power window switch OFF $\rightarrow$ UP (Manual operation)	0 V $\rightarrow$ 11 to 14 V
SD (P17-4) - E (P17-1)	B - W-B	Power window motor DOWN output	Ignition switch ON, front passenger side power window switch OFF $\rightarrow$ DOWN (Manual operation)	0 V $\rightarrow$ 11 to 14 V

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

2. CHECK POWER WINDOW REGULATOR SWITCH ASSEMBLY (FRONT PASSENGER)



- (a) Disconnect the P15 switch connector.
- (b) Measure the voltage according to the value(s) in the table below.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
B (P15-4) - Body ground	P - Body ground	Power supply	Ignition switch ON	11 to 14 V

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

- (c) Reconnect the P15 switch connector and reset the power window motor.
- (d) Measure the voltage according to the value(s) in the table below.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
U (P15-3) - Body ground	Y - Body ground	Power window motor UP output	Ignition switch ON, front passenger side power window switch OFF → UP (Manual operation)	0 V → 11 to 14 V
D (P15-1) - Body ground	G - Body ground	Power window motor DOWN output	Ignition switch ON, front passenger side power window switch OFF → DOWN (Manual operation)	0 V → 11 to 14 V

If the result is not as specified, the power window regulator switch assembly may have a malfunction.

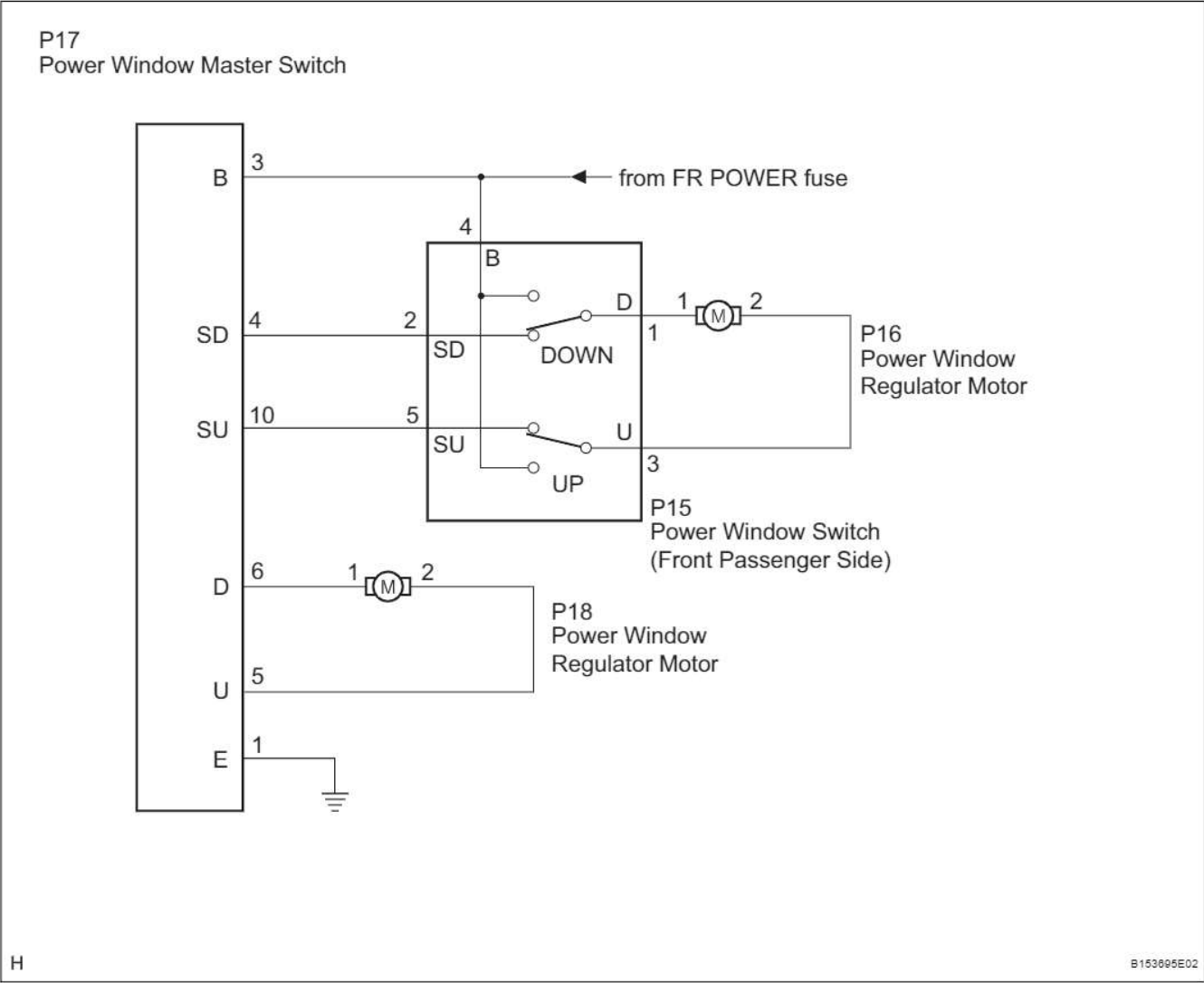
WS-42

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function)

Power Window Master Switch Circuit

DESCRIPTION
This circuit transmits signals from the power window regulator master switch assembly to the power window regulator switch.

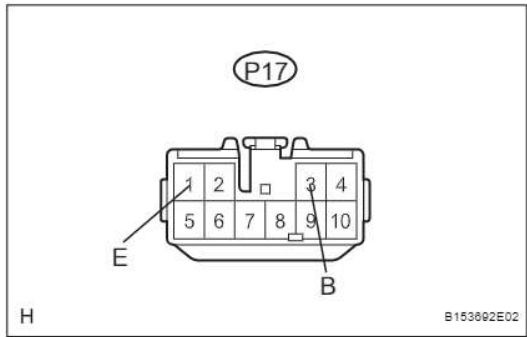
WIRING DIAGRAM



INSPECTION PROCEDURE

1

INSPECT POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY



- (a) Disconnect the P17 connector.
(b) Measure the voltage and resistance according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
3 (B) - Body ground	Ignition switch ON	11 to 14 V

Standard resistance

Tester Connection	Condition	Specified Condition
1 (E) - Body ground	Always	Below 1 Ω

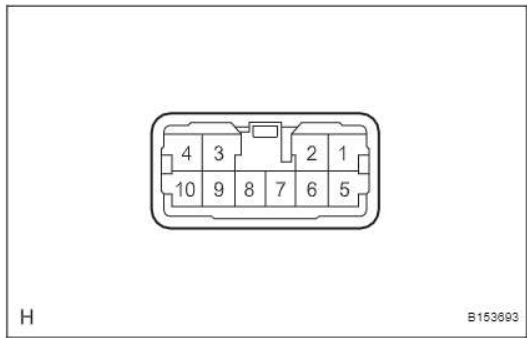
NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

2

INSPECT POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY



- (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
1 (E) - 6 (D)	Manual UP	Below 1 Ω
5 (U) - 3 (B)		Below 1 Ω
1 (E) - 5 (U) - 6 (D)	OFF	Below 1 Ω
1 (E) - 5 (U)	Manual DOWN	Below 1 Ω
6 (D) - 3 (B)		Below 1 Ω
1 (E) - 5 (U)	Auto DOWN	Below 1 Ω
6 (D) - 3 (B)		Below 1 Ω

NG

REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

OK

WS

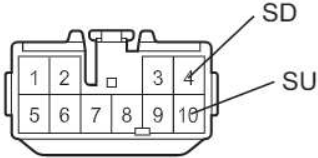
WS-44

WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function)

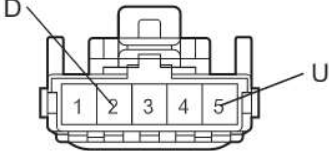
3

CHECK WIRE HARNESS (POWER WINDOW MASTER SWITCH - POWER WINDOW SWITCH)

P17
Power Window Regulator Master Switch Assembly:



P15
Power Window Switch (Front Passenger):



H

B153894E03

- (a) Disconnect the P17 and P15 connectors.
- (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
P17-10 (SU) - P15-5 (SU)	Always	Below 1 Ω
P17-4 (SD) - P15-2 (SD)	Always	Below 1 Ω
P17-10 (SU) - Body ground	Always	10 kΩ or higher
P17-4 (SD) - Body ground	Always	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

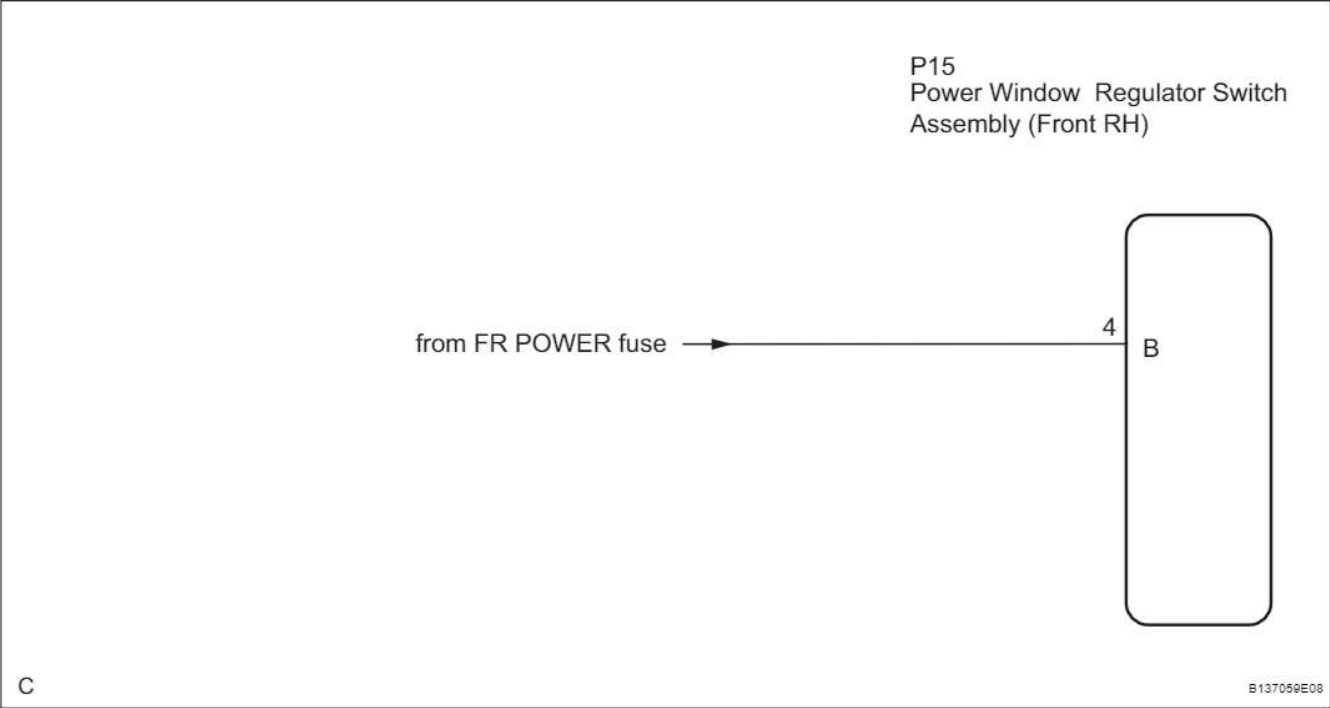
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Front Passenger Side Power Window Switch Power Source Circuit

DESCRIPTION
This circuit supplies power to operate the power window regulator switch assembly (Front RH).

WIRING DIAGRAM

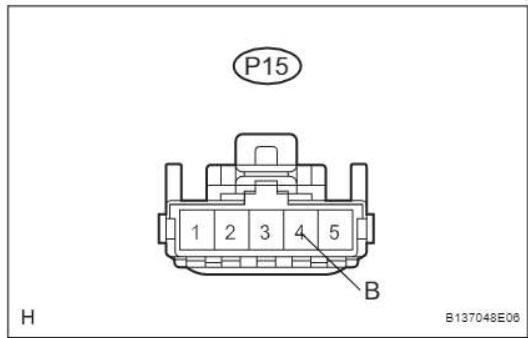


WS

INSPECTION PROCEDURE

1

CHECK WIRE HARNESS (POWER WINDOW REGULATOR SWITCH - BATTERY AND BODY GROUND)



- (a) Disconnect the P15 connector.
- (b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
4 (B) - Body ground	Ignition switch ON	11 to 14 V

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

WS-46

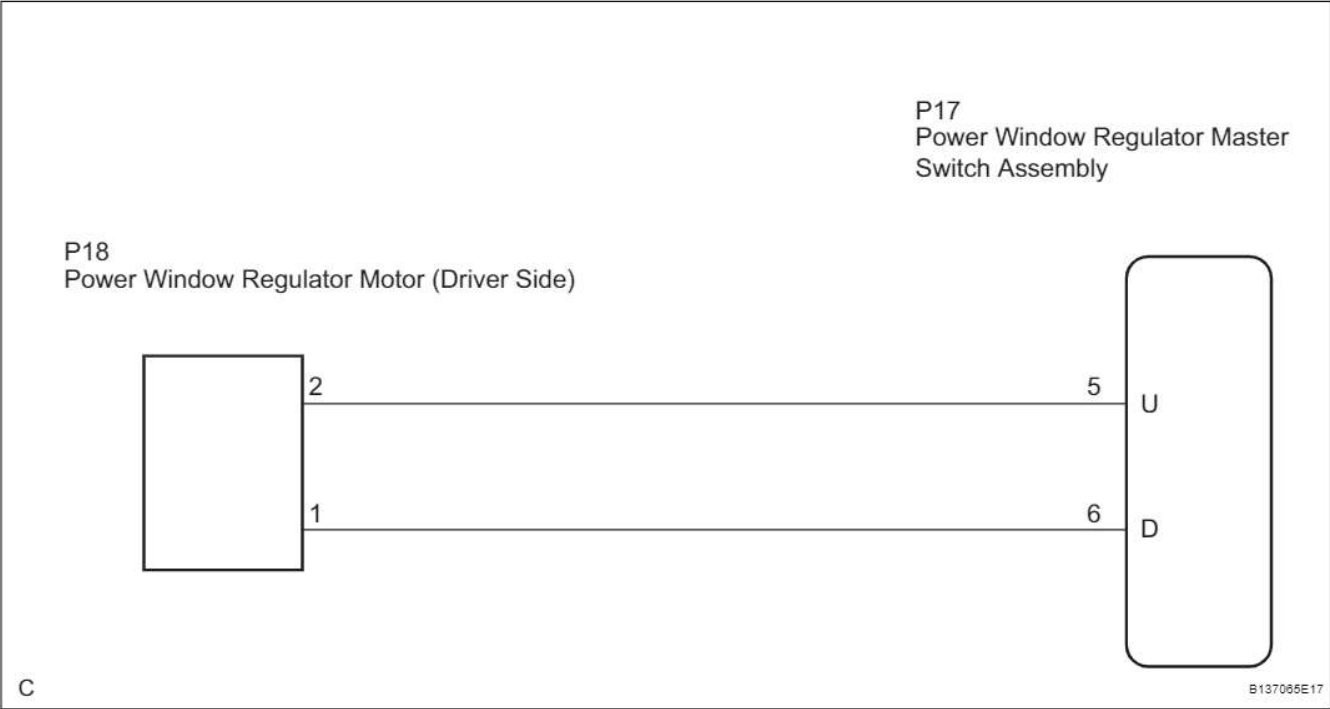
WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function)

Driver Side Power Window Motor Circuit

DESCRIPTION

This circuit transmits signals from the power window regulator master switch assembly to the power window regulator motor (Front LH).

WIRING DIAGRAM



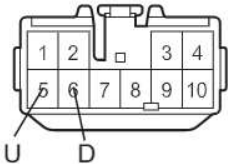
WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function)

WS-47

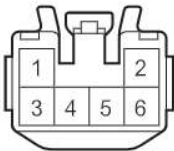
2

CHECK WIRE HARNESS (WINDOW REGULATOR MOTOR - WINDOW REGULATOR MASTER SWITCH)

P17
Power Window Regulator Master
Switch Assembly:



P18
Power Window Regulator Motor
(Driver Side):



- (a) Disconnect the P17 and P18 connectors.
- (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
P17-5 (U) - P18-2	Always	Below 1 Ω
P17-6 (D) - P18-1	Always	Below 1 Ω
P17-5 (U) - Body ground	Always	10 kΩ or higher
P17-6 (D) - Body ground	Always	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS OR
CONNECTOR

OK

WS

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

WS-48

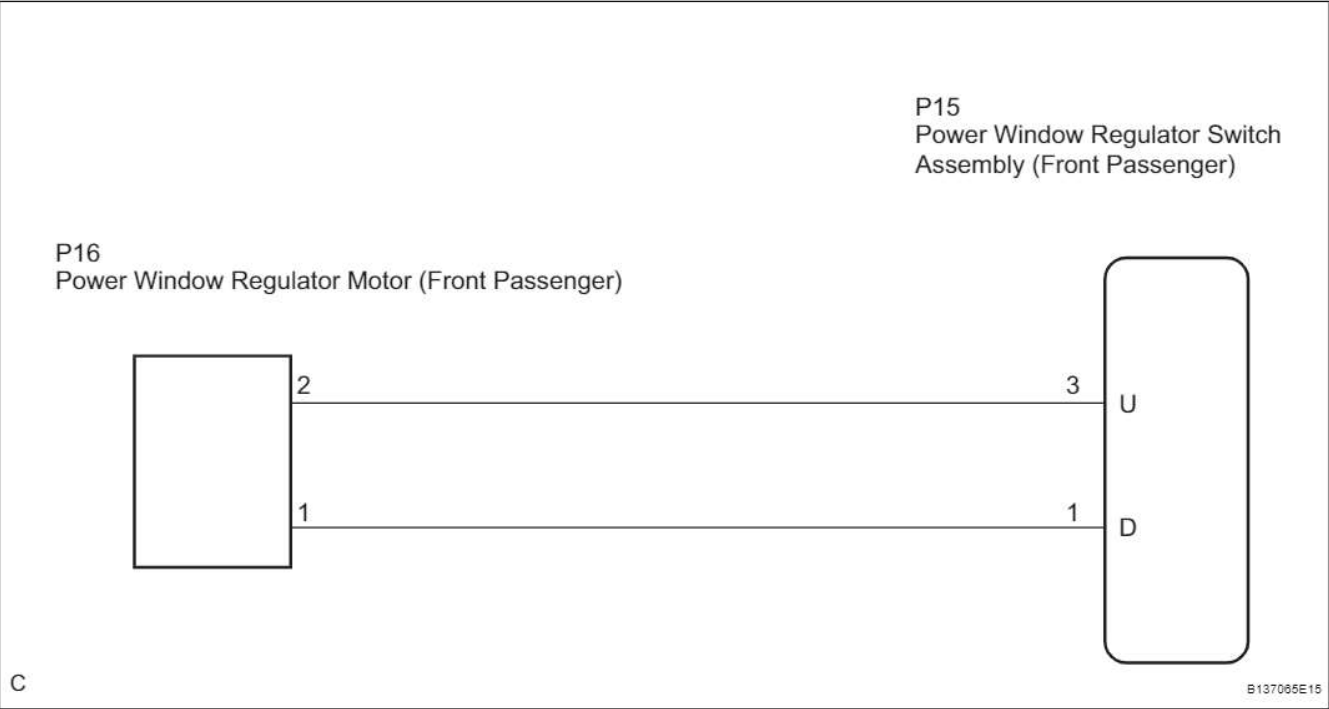
WINDSHIELD / WINDOWGLASS – POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function)

Front Passenger Side Power Window Motor Circuit

DESCRIPTION

This circuit transmits signals from the power window regulator switch assembly (Front RH) to the power window regulator motor (Front RH).

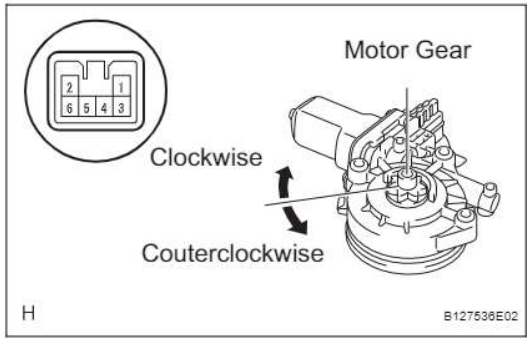
WIRING DIAGRAM



INSPECTION PROCEDURE

1

INSPECT POWER WINDOW REGULATOR MOTOR



- (a) Remove the power window motor.
(b) Apply battery voltage to the motor connector according to the table below.

NOTICE:

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

Standard

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Motor gear rotates clockwise
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1	Motor gear rotates counterclockwise

NG

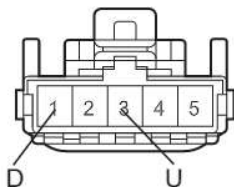
REPLACE POWER WINDOW REGULATOR MOTOR

OK

2

CHECK WIRE HARNESS (WINDOW REGULATOR MOTOR - POWER WINDOW REGULATOR SWITCH)

P15
Power Window Regulator Switch
Assembly (Front Passenger):



P16
Power Window Regulator
Motor (Front Passenger):



B137068E07

- (a) Disconnect the P15 and P16 connectors.
- (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
P15-1 (D) - P16-1	Always	Below 1 Ω
P15-3 (U) - P16-2	Always	Below 1 Ω
P15-1 (D) - Body ground	Always	10 kΩ or higher
P15-3 (U) - Body ground	Always	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

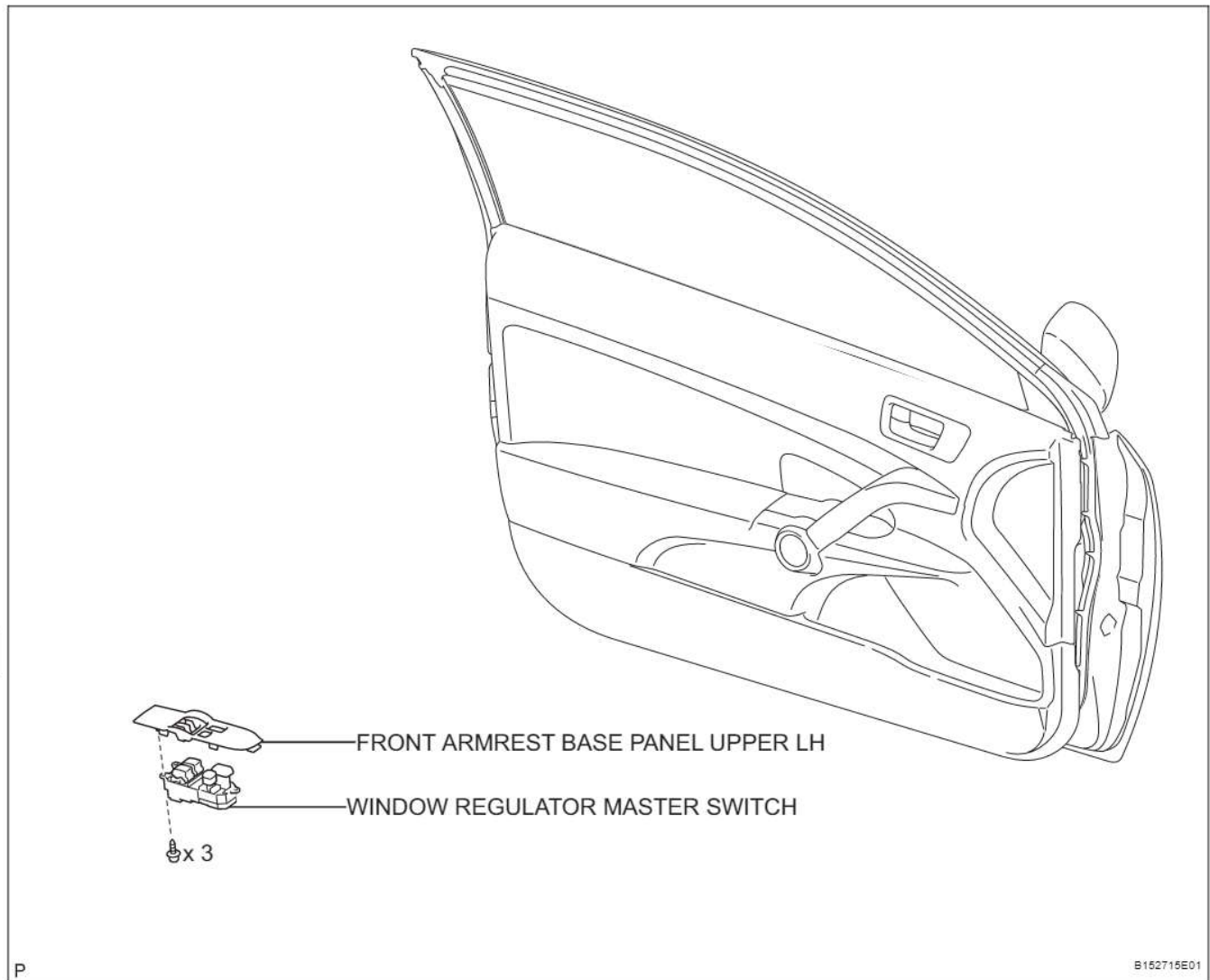
WS

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

WS-48

WINDSHIELD / WINDOWGLASS – POWER WINDOW MASTER SWITCH

POWER WINDOW MASTER SWITCH COMPONENTS

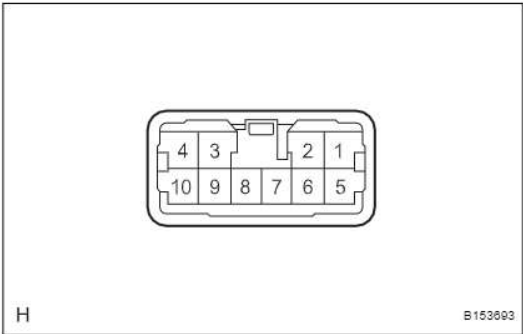


REMOVAL

1. REMOVE FRONT ARMREST BASE PANEL UPPER LH (See page [ED-8](#))

INSPECTION

1. INSPECT POWER WINDOW MASTER SWITCH (w/o Jam Protection Function)
- (a) Measure the resistance when the switch is operated according to the value(s) in the table below.
- Standard resistance**



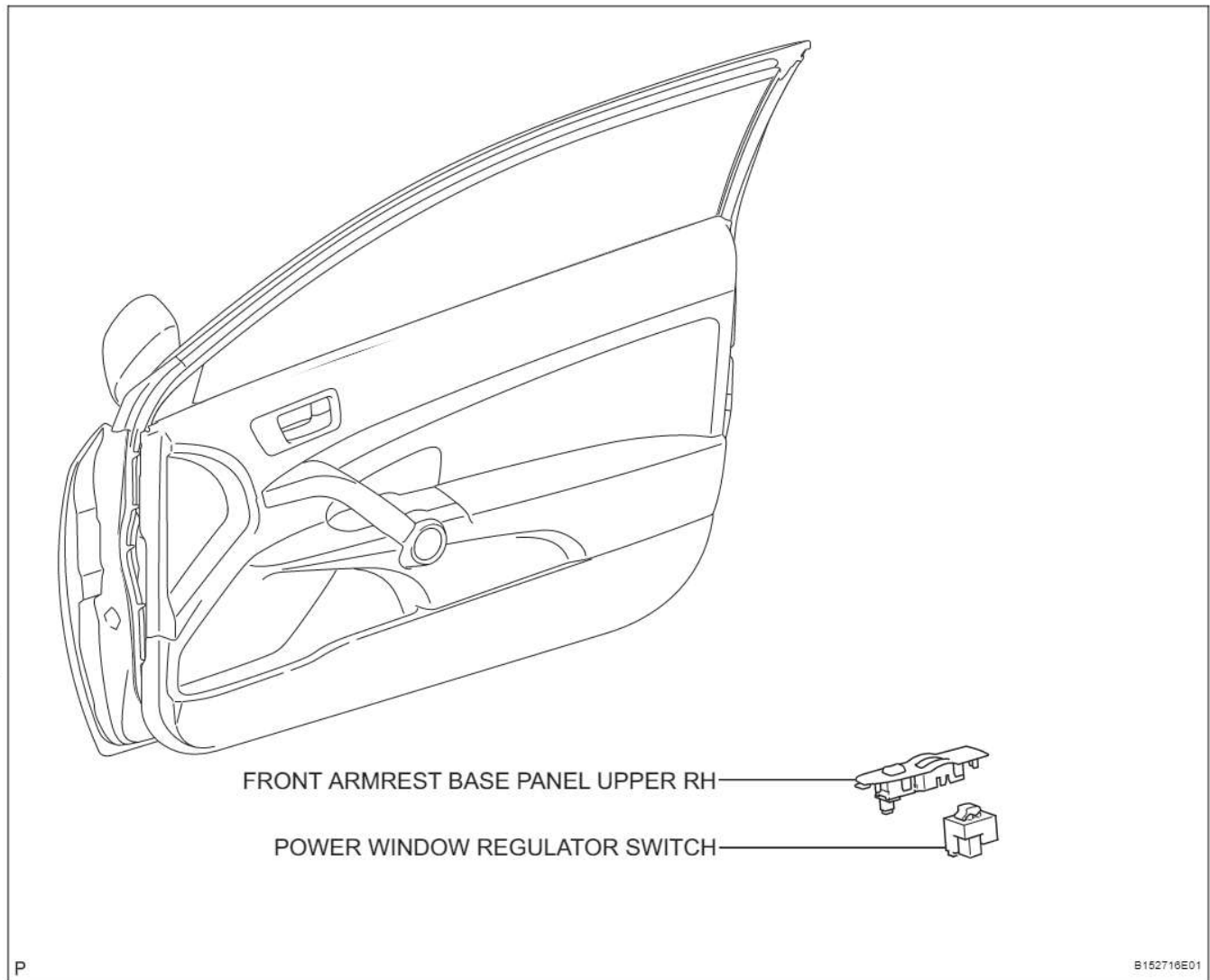
Tester Connection	Switch Condition	Specified Condition
1 (E) - 6 (D)	Manual UP	Below 1 Ω
5 (U) - 3 (B)		Below 1 Ω
1 (E) - 5 (U) - 6 (D)	OFF	Below 1 Ω
1 (E) - 5 (U)	Manual DOWN	Below 1 Ω
6 (D) - 3 (B)		Below 1 Ω
1 (E) - 5 (U)	Auto DOWN	Below 1 Ω
6 (D) - 3(B)		Below 1 Ω
1 (E) - 2 (L)	LOCK	Below 1 Ω
1 (E) - 11 (UL)	UNLOCK	Below 1 Ω

WS-50**WINDSHIELD / WINDOWGLASS – POWER WINDOW MASTER SWITCH**

INSTALLATION

1. **INSTALL FRONT ARMREST BASE PANEL UPPER LH**
(See page [ED-20](#))

WS

WS-50 WINDSHIELD / WINDOWGLASS – FRONT PASSENGER SIDE POWER WINDOW SWITCH**FRONT PASSENGER SIDE POWER WINDOW SWITCH
COMPONENTS**

REMOVAL

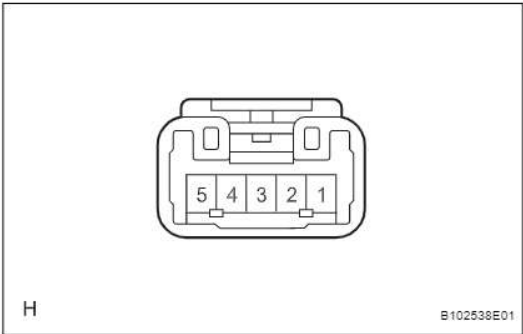
1. REMOVE FRONT ARMREST BASE PANEL UPPER RH (See page [ED-8](#))

INSPECTION

1. INSPECT POWER WINDOW SWITCH (w/o Jam Protection Function)
- (a) Remove the power window switch.
 - (b) Measure the resistance when the switch is operated according to the value(s) in the table below.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
1 (D) - 2 (SD)	UP	Below 1 Ω
3 (U) - 4 (B)		Below 1 Ω
1 (D) - 2 (SD)	OFF	Below 1 Ω
3 (U) - 5 (SU)		Below 1 Ω
3 (U) - 5 (SU)	DOWN	Below 1 Ω
1 (D) - 4 (B)		Below 1 Ω

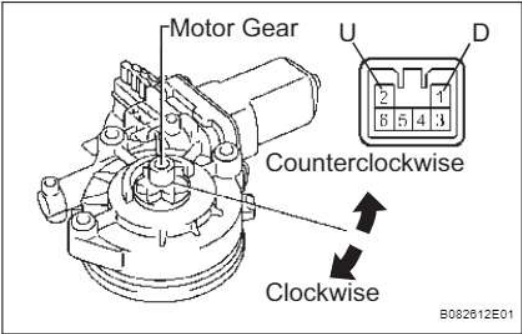


WS-52 WINDSHIELD / WINDOWGLASS – FRONT PASSENGER SIDE POWER WINDOW SWITCH

INSTALLATION

1. **INSTALL FRONT ARMREST BASE PANEL UPPER RH**
(See page [ED-20](#))

WS



POWER WINDOW REGULATOR MOTOR

INSPECTION

1. INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (DRIVER SIDE)

- (a) Check operation of the regulator motor.

NOTICE:

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

- (1) Apply battery voltage to the motor terminals.
- (2) Check that the motor rotates smoothly.

OK

Measurement Condition	Specified Condition
Battery Positive (+) → Terminal 1 (D) Battery Negative (-) → Terminal 2 (U)	Motor gear rotates clockwise
Battery Positive (+) → Terminal 2 (U) Battery Negative (-) → Terminal 1 (D)	Motor gear rotates counterclockwise

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

- (b) Check operation of the PTC inside the regulator motor.

NOTICE:

Work must be performed with the power window regulator and door glass installed to the vehicle.

- (1) Set an electrical tester DC 400 A probe to the wire harness of terminal 2.

NOTICE:

Match the arrow mark of the probe with the current direction.

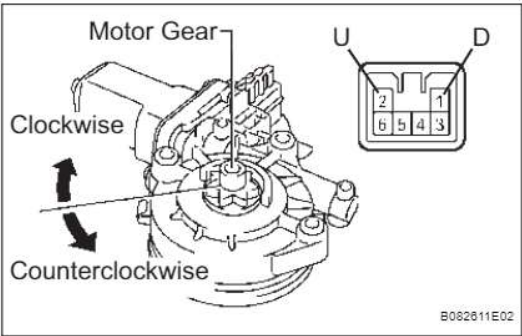
- (2) Fully close the door glass by operating the power window switch and keep the door glass there for approximately 60 seconds.
- (3) With the door glass fully closed, operate the power window switch in the closing direction again. Check how long the current takes to change from a range of 16 A to 34 A, to less than 1 A.

Standard:

4 to 90 seconds

- (4) Check that the door glass moves down when the power window regulator switch is pushed DOWN.

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



2. INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

- (a) Check operation of the regulator motor.

NOTICE:

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

- (1) Apply battery voltage to the motor terminals.
- (2) Check that the motor rotates smoothly.

OK

Measurement Condition	Specified Condition
Battery Positive (+) → Terminal 2 (U) Battery Negative (-) → Terminal 1 (D)	Motor gear rotates clockwise
Battery Positive (+) → Terminal 1 (D) Battery Negative (-) → Terminal 2 (U)	Motor gear rotates counterclockwise

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

- (b) Check operation of the PTC inside the regulator motor.

NOTICE:

Work must be performed with the power window regulator and door glass installed to the vehicle.

- (1) Set an electrical tester DC 400 A probe to the wire harness of terminal 2.

NOTICE:

Match the arrow mark of the probe with the current direction.

- (2) Fully close the door glass by operating the power window switch and keep the door glass there for approximately 60 seconds.
- (3) With the door glass fully closed, operate the power window switch in the closing direction again. Check how long the current takes to change from a range of 16 A to 34 A, to less than 1 A.

Standard:

4 to 90 seconds

- (4) Check that the door glass moves down when the power window regulator switch is pushed DOWN.

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

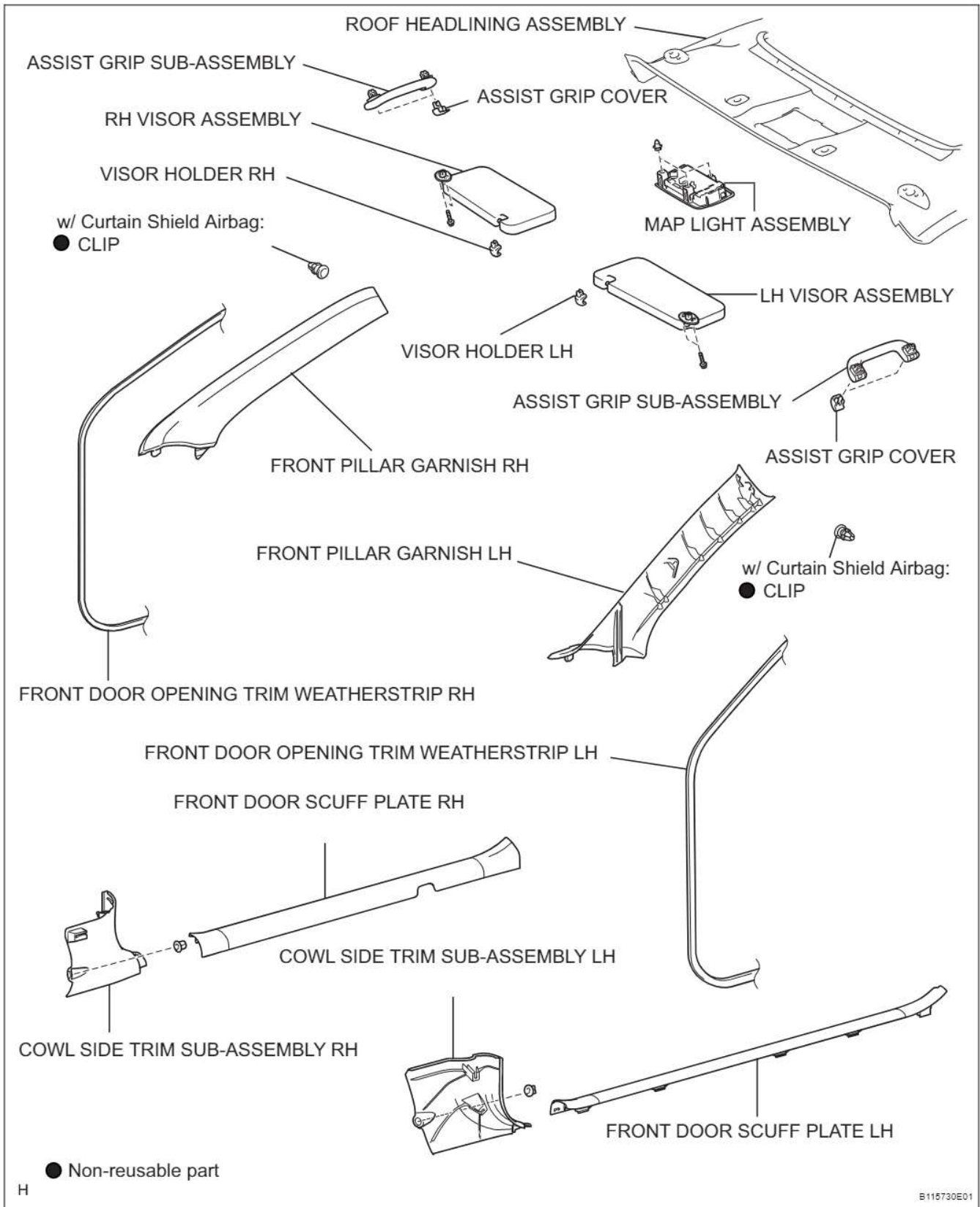
WS

WS-54

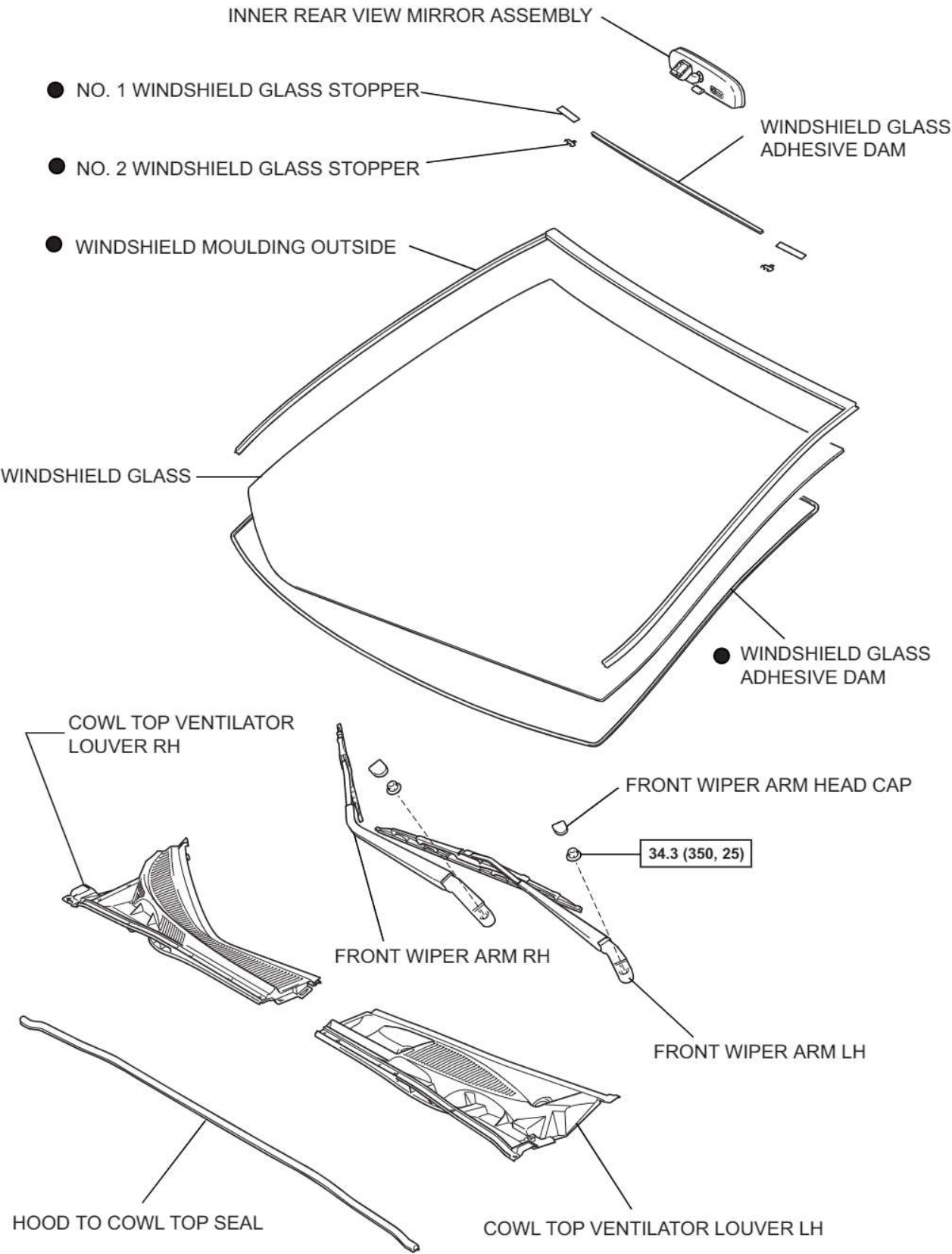
WINDSHIELD / WINDOWGLASS – WINDSHIELD GLASS

WINDSHIELD GLASS

COMPONENTS



WS



N*m (kgf*cm, ft.*lbf) : Specified torque ● Non-reusable part

H

B115731E02

REMOVAL

1. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
CAUTION:
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.
2. **REMOVE INNER REAR VIEW MIRROR ASSEMBLY**
(See page [MI-6](#))
3. **REMOVE FRONT DOOR SCUFF PLATE LH** (See page [IR-9](#))
4. **REMOVE FRONT DOOR SCUFF PLATE RH** (See page [IR-9](#))
5. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH** (See page [IR-9](#))
6. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH**
(See page [IR-9](#))
7. **REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP LH**
8. **REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP RH**
9. **REMOVE FRONT PILLAR GARNISH LH** (See page [IR-12](#))
10. **REMOVE FRONT PILLAR GARNISH RH** (See page [IR-12](#))
11. **REMOVE ASSIST GRIP COVER** (See page [IR-13](#))
12. **REMOVE ASSIST GRIP SUB-ASSEMBLY** (See page [IR-14](#))
13. **REMOVE LH VISOR ASSEMBLY** (See page [IR-13](#))
14. **REMOVE RH VISOR ASSEMBLY** (See page [IR-13](#))
15. **REMOVE VISOR HOLDER LH** (See page [IR-13](#))
16. **REMOVE VISOR HOLDER RH** (See page [IR-13](#))
17. **REMOVE MAP LIGHT ASSEMBLY** (See page [IR-12](#))
18. **REMOVE ROOF HEADLINING ASSEMBLY**
 - (a) Slightly lower the front section of the roof headlining (see page [IR-14](#)).
HINT:
It is not necessary to completely remove the roof headlining.
19. **REMOVE FRONT WIPER ARM HEAD CAP** (See page [WW-4](#))
20. **REMOVE FRONT WIPER ARM LH** (See page [WW-4](#))
21. **REMOVE FRONT WIPER ARM RH** (See page [WW-4](#))

22. REMOVE HOOD TO COWL TOP SEAL (See page [WW-4](#))
23. REMOVE COWL TOP VENTILATOR LOUVER LH (See page [WW-4](#))
24. REMOVE COWL TOP VENTILATOR LOUVER RH
25. REMOVE WINDSHIELD MOULDING OUTSIDE
 - (a) Using a knife, cut off the windshield moulding outside.

NOTICE:

Be careful not to damage the vehicle body with the knife.

- (b) Remove the remaining moulding.

HINT:

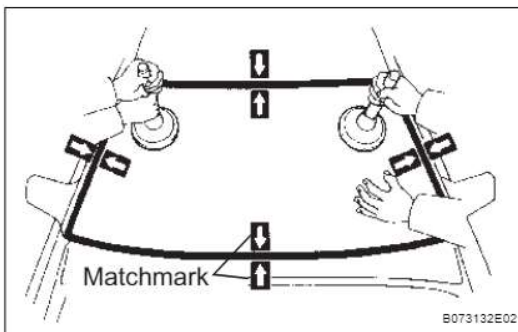
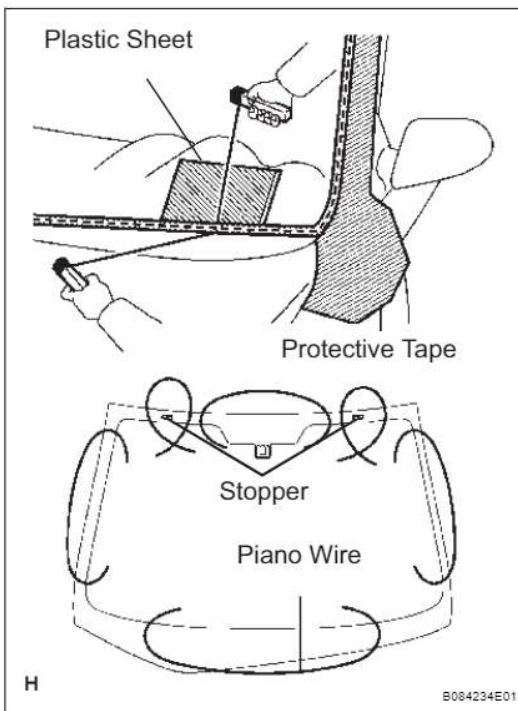
Make a partial cut in the moulding. Then pull and remove it by hand.

26. REMOVE WINDSHIELD GLASS

- (a) Apply protective tape to the outer surface of the vehicle body to prevent scratches.
- (b) From the interior, insert a piano wire between the vehicle body and glass as shown in the illustration.
- (c) Tie objects that can serve as handles (for example, wooden blocks) to all wire ends.

NOTICE:

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



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

HINT:

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

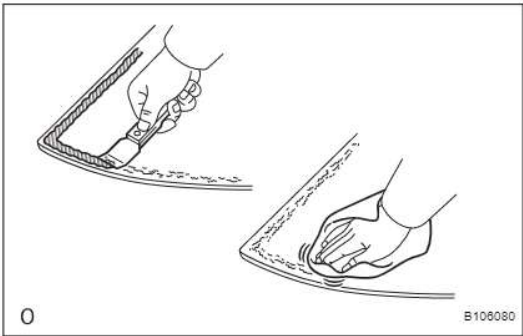
- (e) Cut through the adhesive by pulling the piano wire around the glass.

NOTICE:

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

- (f) Disengage the stoppers.
- (g) Using suction cups, remove the glass.

WS

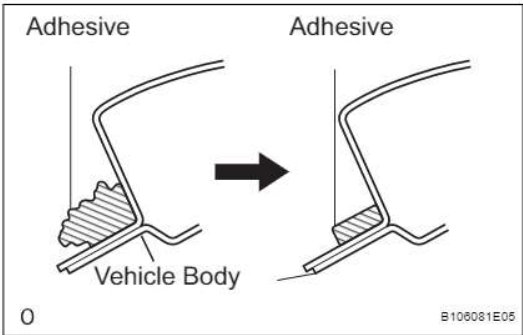


27. CLEAN WINDSHIELD GLASS

- (a) Using a scraper, remove the damaged stoppers, dams and adhesive sticking to the glass.
- (b) Clean the outer edges of the glass with white gasoline.

NOTICE:

Do not touch the glass surface after cleaning it. Even if using new glass, clean it with white gasoline.



28. CLEAN VEHICLE BODY

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

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

HINT:

Leave as much adhesive on the vehicle body as possible.

NOTICE:

Be careful not to damage the vehicle body.

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

HINT:

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

INSTALLATION

1. INSTALL NO. 2 WINDSHIELD GLASS STOPPER

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

HINT:

If primer G is applied to an area other than that which is specified, wipe off the primer with white gasoline before it dries.

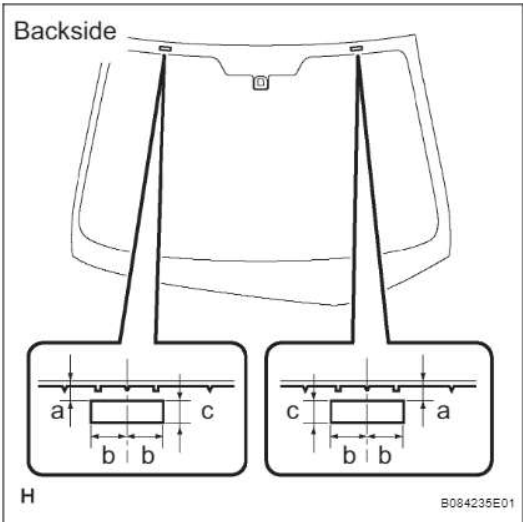
NOTICE:

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

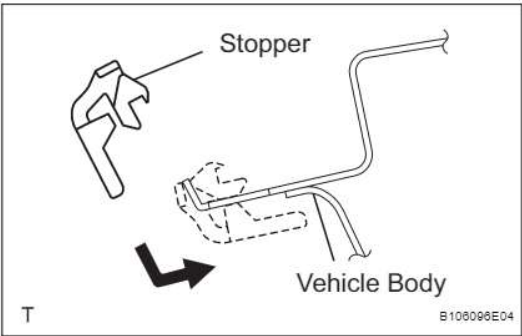
- (b) Install 2 new stoppers onto the windshield glass as shown in the illustration.

Standard measurement

Area	Measurement
a	7.7 mm (0.303 in.)
b	7.7 mm (0.303 in.)
c	12.5 mm (0.492 in.)

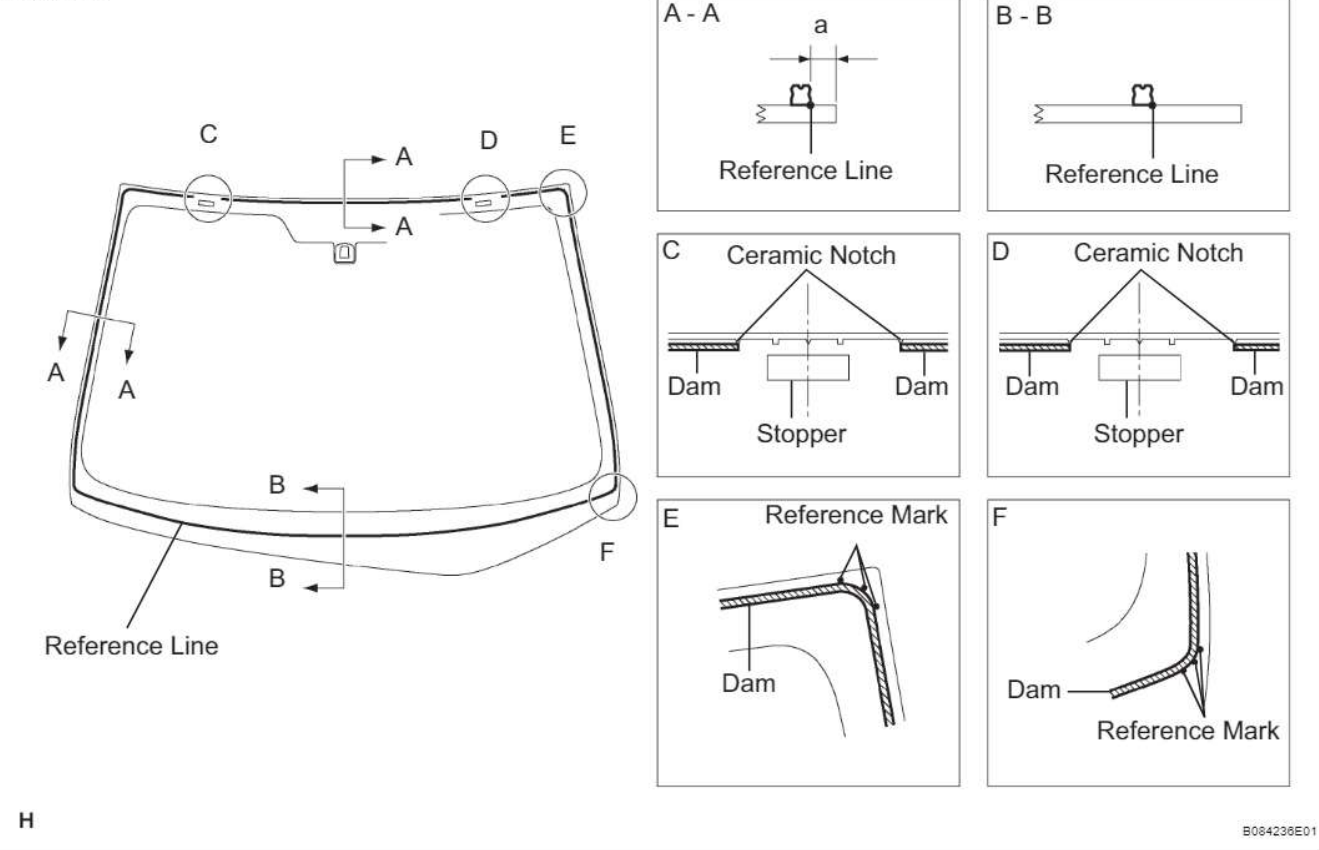


WINDSHIELD / WINDOWGLASS – WINDSHIELD GLASS



- 2. INSTALL NO. 1 WINDSHIELD GLASS STOPPER**
(a) Install 2 new stoppers to the vehicle body as shown in the illustration.
- 3. INSTALL WINDSHIELD GLASS ADHESIVE DAM**
(a) Apply Primer G to the glass where the glass adhesive dams will be installed.
HINT:
If primer G is applied to an area other than that which is specified, wipe off the primer with white gasoline before it dries.
NOTICE:
- Allow the primer to dry for 3 minutes or more.
 - Throw away any leftover primer.
 - Do not apply too much primer.
- (b) Remove the peeling paper from the adhesive part of the dam. Install the dam (adhesive side) to the glass (Primer G area), but exclude the spacer area A as shown in the illustration.

Backside

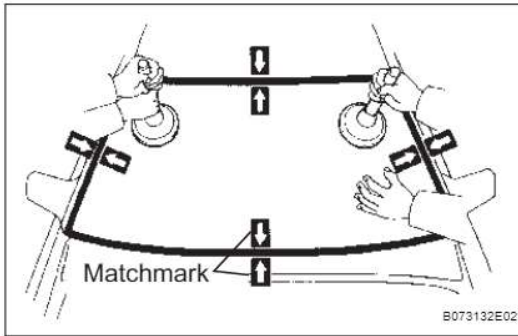


Standard measurement

Area	Measurement
a	7.0 mm (0.276 in.)

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WINDSHIELD / WINDOWGLASS – WINDSHIELD GLASS



4. INSTALL WINDSHIELD GLASS

(a) Position the glass.

- (1) Using suction cups, place the glass in the correct position.
- (2) Check that the entire contact surface of the glass rim is perfectly even.
- (3) Place matchmarks on the glass and vehicle body on the locations indicated in the illustration.

HINT:

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

NOTICE:

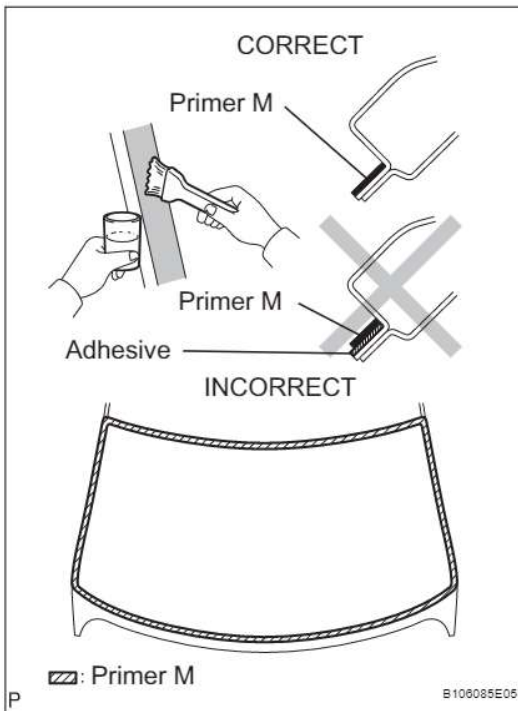
Check that the stoppers are attached to the vehicle body correctly.

(4) Using suction cups, remove the glass.

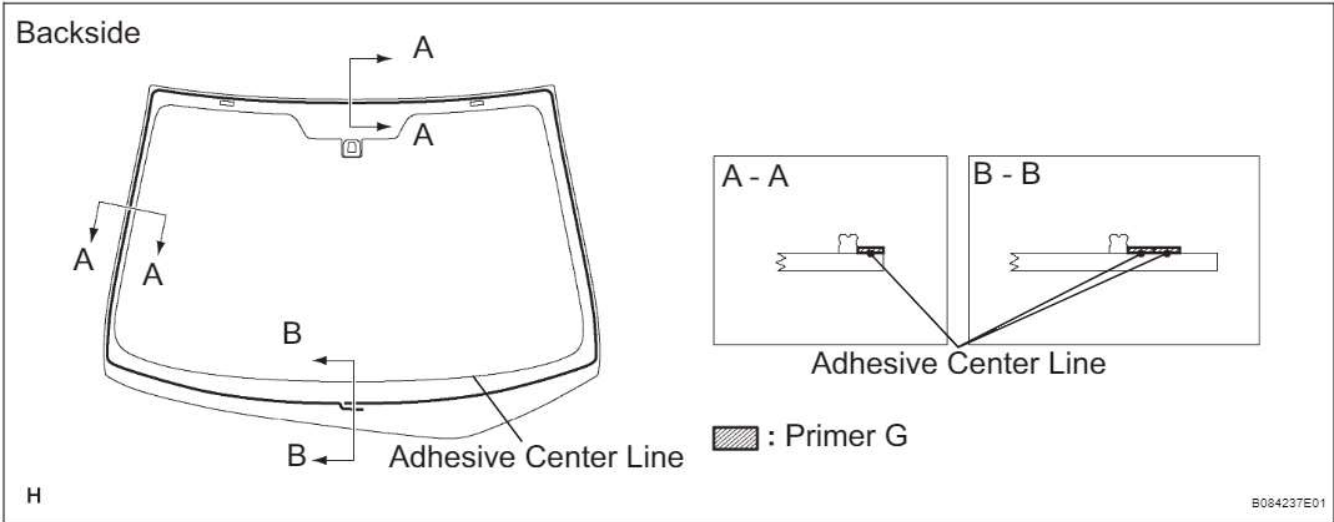
(b) Using a brush, apply Primer M to the exposed part of the vehicle body.

NOTICE:

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



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



HINT:
If the primer is applied to an area that is not specified, apply white gasoline to a clean cloth and wipe off the excess primer.

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

- (d) Apply adhesive to the glass.

Adhesive :
Part No. 08850-00801 or equivalent

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

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

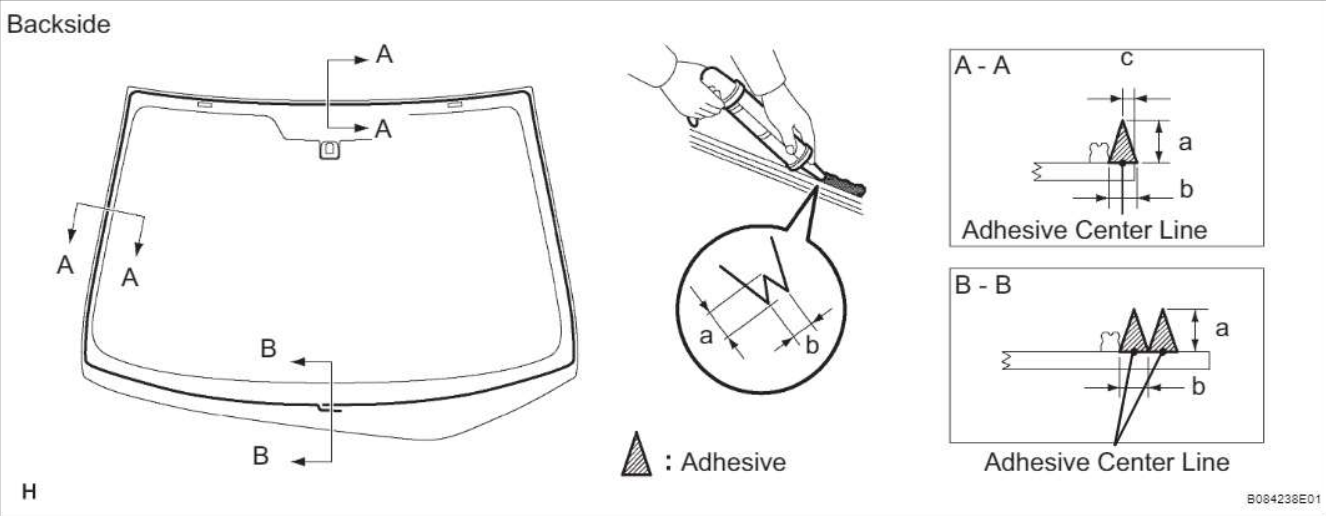
Usage time frame

Temperature	Usage Time Frame
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

- (2) Load the sealer gun with the cartridge.

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



Standard measurement

Area	Measurement
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)
c	3.0 mm (0.118 in.)

- (e) Install the glass to the vehicle body.
- (1) Using suction cups, position the glass so that the matchmarks are aligned. Press it in gently along the rim.
- (2) Lightly press the outer surface of the glass to ensure that it is securely fit to the vehicle body.
- NOTICE:**
- Check that the stoppers are attached to the vehicle body correctly.
 - Check that the vehicle body and glass have a small gap between them.
- (3) Hold the glass in place securely with protective tape or equivalent until the adhesive hardens.

5. INSTALL WINDSHIELD MOULDING OUTSIDE

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

HINT:

If primer G is applied to an area other than that which is specified, wipe off the primer with white gasoline before it dries.

NOTICE:

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

- (b) Align the moulding's marks with glass notches and install the moulding before the adhesive dries.

NOTICE:

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

Minimum time

Temperature	Minimum time prior to driving vehicle
35°C (95°F)	1 hour 30 minutes
20°C (68°F)	5 hours
5°C (41°F)	24 hours

6. INSTALL COWL TOP VENTILATOR LOUVER RH
7. INSTALL COWL TOP VENTILATOR LOUVER LH (See page [WW-7](#))
8. INSTALL HOOD TO COWL TOP SEAL (See page [WW-7](#))
9. INSTALL FRONT WIPER ARM RH (See page [WW-8](#))
10. INSTALL FRONT WIPER ARM LH (See page [WW-7](#))
11. INSTALL FRONT WIPER ARM HEAD CAP
12. INSTALL ROOF HEADLINING ASSEMBLY (See page [IR-15](#))
13. INSTALL MAP LIGHT ASSEMBLY (See page [IR-16](#))
14. INSTALL VISOR HOLDER LH (See page [IR-15](#))
15. INSTALL VISOR HOLDER RH (See page [IR-15](#))
16. INSTALL LH VISOR ASSEMBLY (See page [IR-15](#))
17. INSTALL RH VISOR ASSEMBLY (See page [IR-16](#))
18. INSTALL ASSIST GRIP SUB-ASSEMBLY (See page [IR-15](#))
19. INSTALL ASSIST GRIP COVER (See page [IR-15](#))
20. INSTALL FRONT PILLAR GARNISH LH (See page [IR-17](#))
21. INSTALL FRONT PILLAR GARNISH RH (See page [IR-17](#))
22. INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP LH
23. INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP RH
24. INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH (See page [IR-19](#))
25. INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH (See page [IR-19](#))
26. INSTALL FRONT DOOR SCUFF PLATE LH (See page [IR-20](#))
27. INSTALL FRONT DOOR SCUFF PLATE RH (See page [IR-20](#))
28. INSTALL INNER REAR VIEW MIRROR ASSEMBLY (See page [MI-6](#))

WS

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29. CHECK FOR LEAKS AND REPAIR

- (a) Conduct a leak test after the adhesive has completely hardened.
- (b) Seal any leaks with auto glass sealer.

30. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**31. PERFORM INITIALIZATION**

- (a) Perform initialization (see page [IN-23](#)).

NOTICE:

Certain systems need to be initialized after disconnecting and reconnecting the cable from the negative (-) battery terminal.

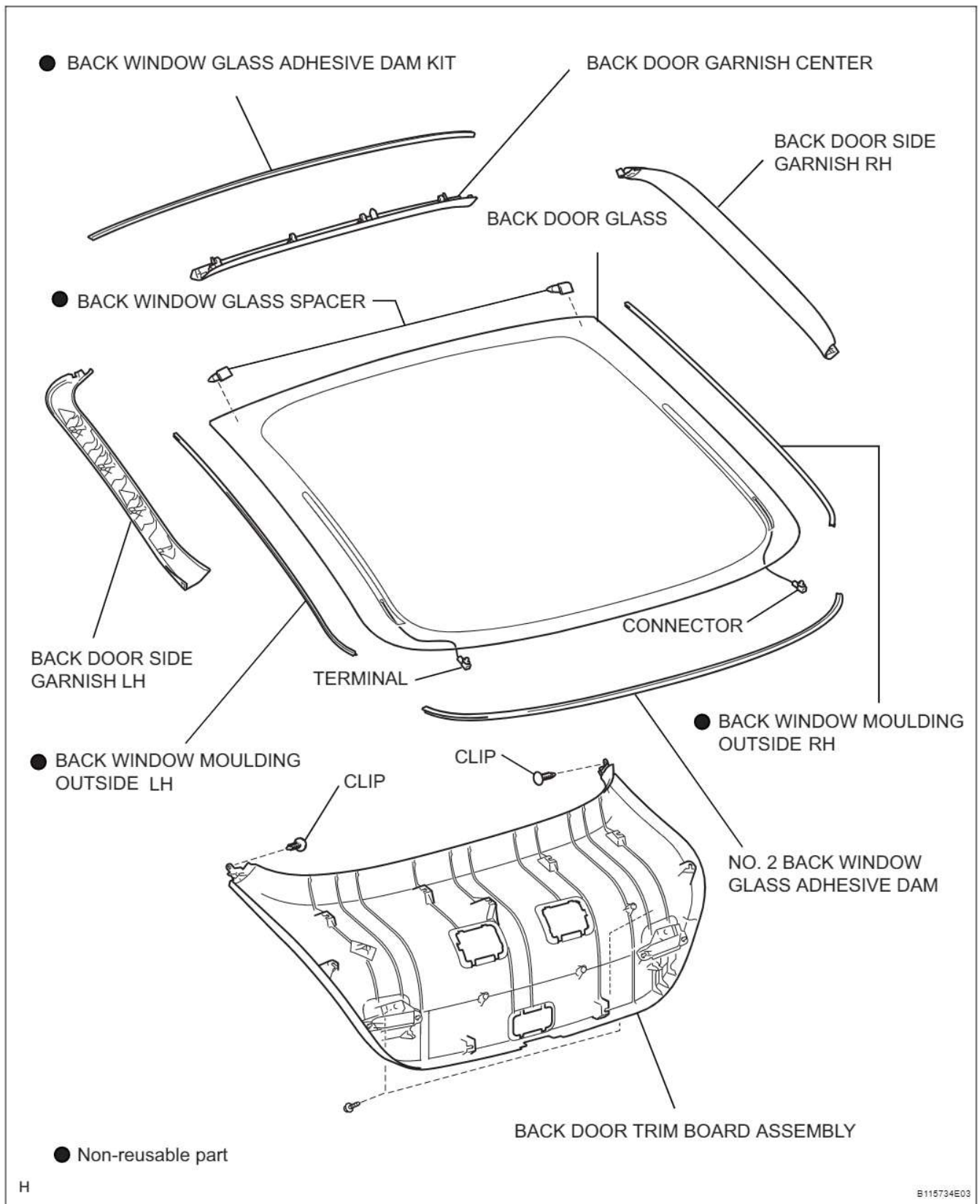
WS

WINDSHIELD / WINDOWGLASS – BACK DOOR GLASS

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BACK DOOR GLASS

COMPONENTS



WS

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WINDSHIELD / WINDOWGLASS – BACK DOOR GLASS

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

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

2. REMOVE BACK DOOR GARNISH CENTER
3. REMOVE BACK DOOR SIDE GARNISH LH
4. REMOVE BACK DOOR SIDE GARNISH RH
5. REMOVE BACK DOOR TRIM BOARD ASSEMBLY
6. REMOVE BACK DOOR GLASS

- (a) Apply protective tape to the outer surface of the vehicle body to prevent scratches.
- (b) From the interior, insert piano wires between the vehicle body and back door glass as shown in the illustration.
- (c) Tie objects that can serve as handles (for example, wooden blocks) to all wire ends.

NOTICE:

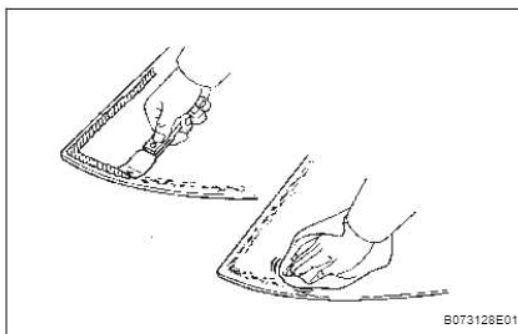
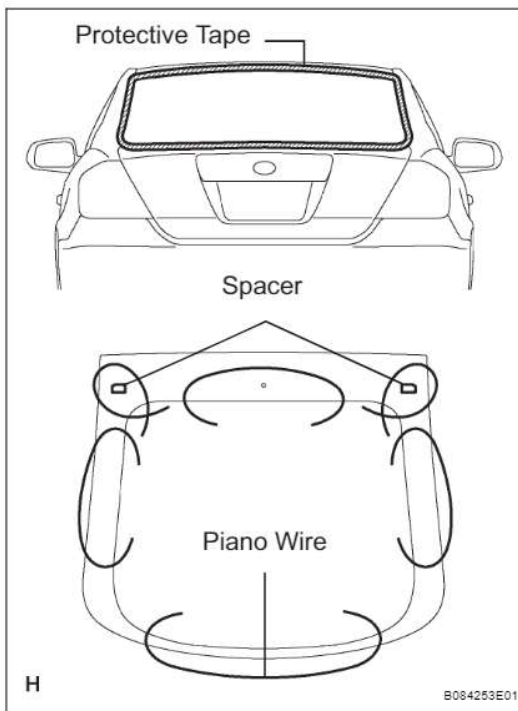
When separating the back door glass from the vehicle, be careful not to damage the vehicle's paint or interior/exterior ornaments.

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

NOTICE:

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

- (e) Using a suction cup, remove the back door glass.

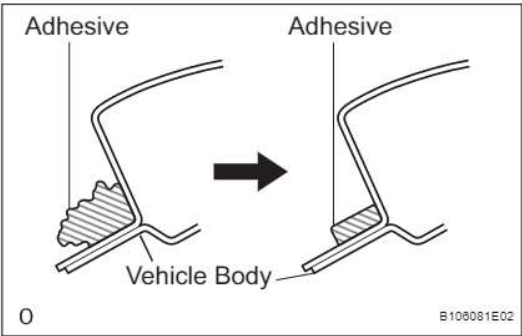


7. CLEAN BACK DOOR GLASS

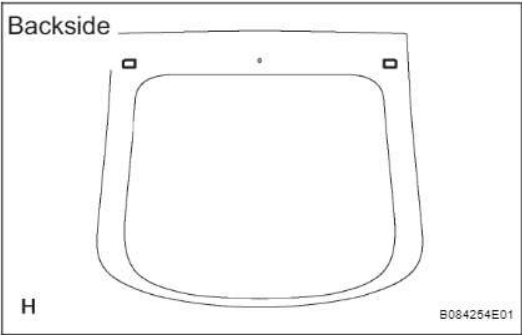
- (a) Using a scraper, remove the spacers, moulding and adhesive from the back door glass.
- (b) Clean the outer edge of the back door glass with white gasoline.

NOTICE:

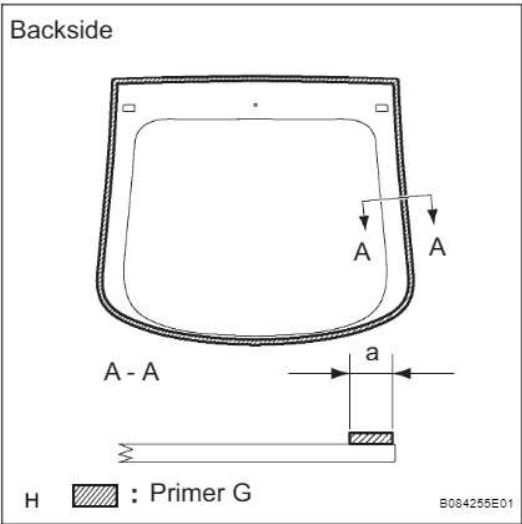
- Do not touch the back door glass surface after cleaning it.
- Even if using new back door glass, clean the back door glass with white gasoline.



- 8. CLEAN VEHICLE BODY**
- (a) Clean and shape the contact surface of the vehicle body.
- (1) On the contact surface of the vehicle body, use a knife to cut away excess adhesive as shown in the illustration.
- HINT:**
Leave as much adhesive on the vehicle body as possible.
- NOTICE:**
Be careful not to damage the vehicle body.
- (2) Clean the contact surface of the vehicle body with cleaner.
- HINT:**
Even if all the adhesive has been removed, clean the vehicle body.



- INSTALLATION**
- 1. INSTALL BACK WINDOW GLASS SPACER**
- (a) Apply Primer G to the glass where the spacers will be installed.
- HINT:**
If primer G is applied to an area other than that which is specified, wipe off the primer with white gasoline before it dries.
- NOTICE:**
- Allow the primer to dry for 3 minutes or more.
 - Throw away any leftover primer.
 - Do not apply too much primer.
- (b) Install 2 new spacers onto the back door glass as shown in the illustration.



- 2. INSTALL BACK WINDOW GLASS ADHESIVE DAM KIT**
- (a) Apply Primer G to the installation part of the back window glass adhesive dam kit.
- Standard measurement**

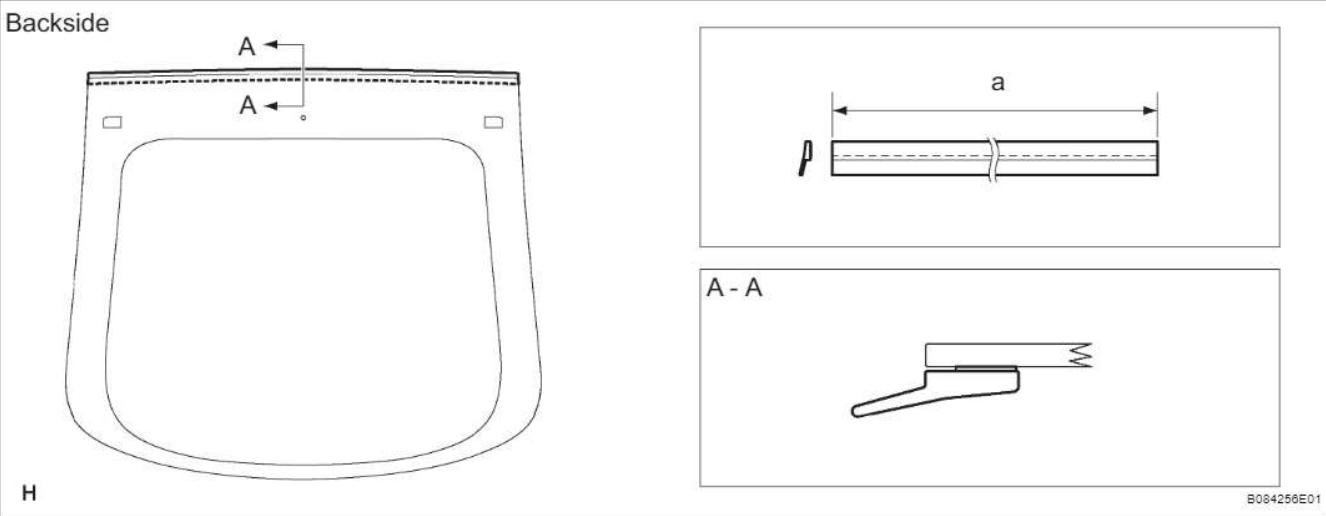
Area	Measurement
a	14.0 mm (0.551 in.)

- HINT:**
If primer G is applied to an area other than that which is specified, wipe off the primer with white gasoline before it dries.
- NOTICE:**
- Allow the primer to dry for 3 minutes or more.
 - Throw away any leftover primer.
 - Do not apply too much primer.

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WINDSHIELD / WINDOWGLASS – BACK DOOR GLASS

- (b) Install the back window glass adhesive dam kit as shown in the illustration.

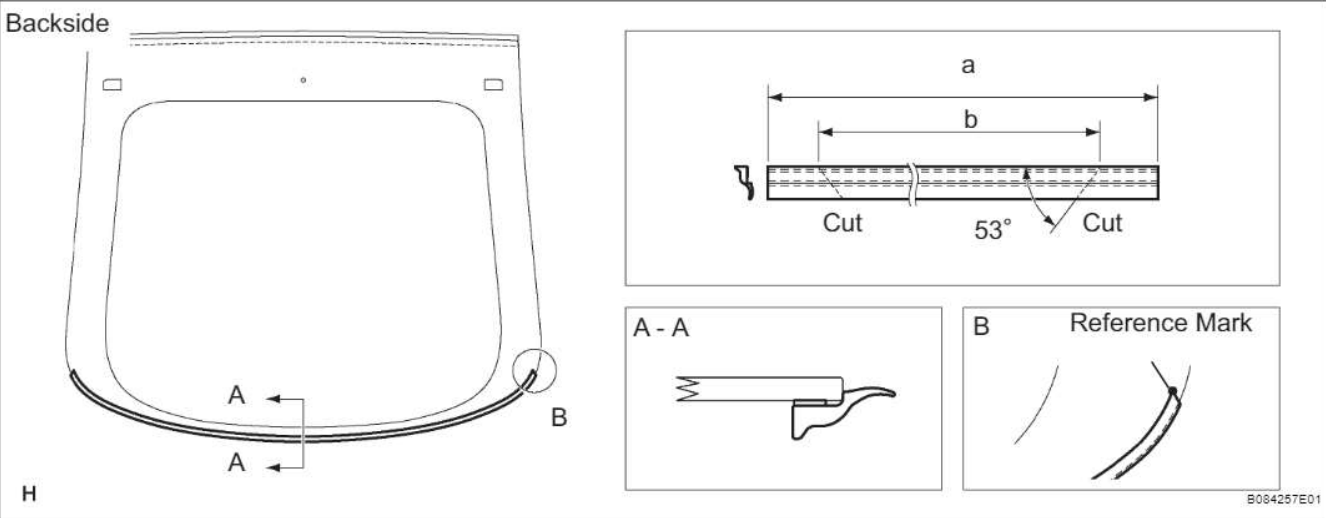


Standard measurement

Area	Measurement
a	1,090.0 mm (42.913 in.)

3. INSTALL NO. 2 BACK WINDOW GLASS ADHESIVE DAM

- (a) Cut the No. 2 back window glass adhesive dam as shown in the illustration.
- (b) Install the No. 2 back window glass adhesive dam as shown in the illustration.



Standard measurement

Area	Measurement
a	1,320.0 mm (51.968 in.)
b	1,258.0 mm (49.527 in.)

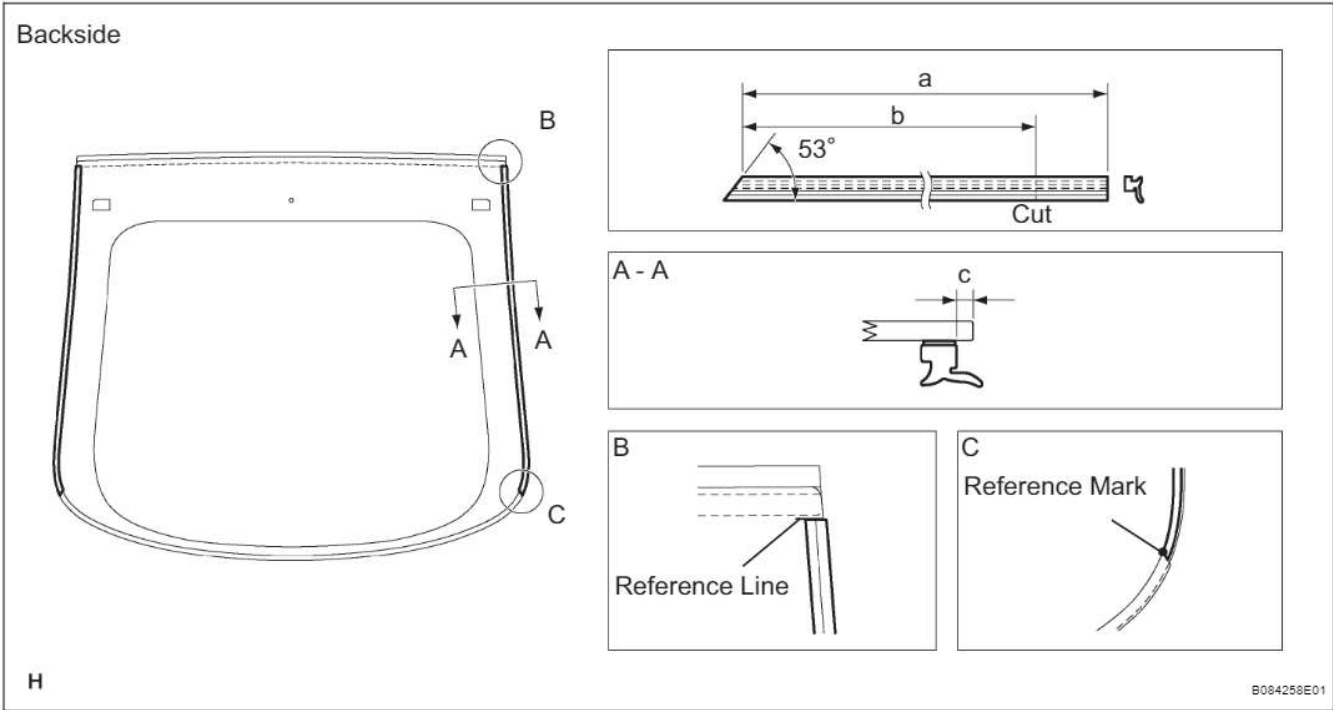
4. INSTALL BACK WINDOW MOULDING OUTSIDE

- (a) Cut the back window outside moulding as shown in the illustration.

WINDSHIELD / WINDOWGLASS – BACK DOOR GLASS

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- (b) Install the back window outside moulding LH and RH as shown in the illustration.



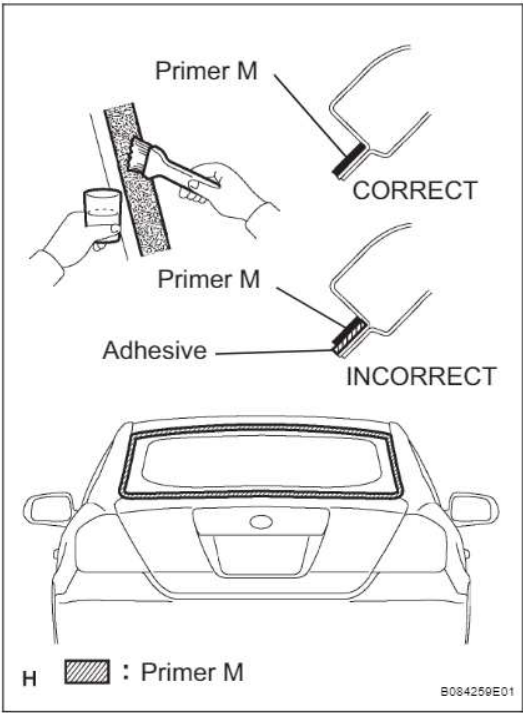
Standard measurement

Area	Measurement
a	853.0 mm (33.583 in.)
b	823.0 mm (32.402 in.)
c	2.3 mm (0.091 in.)

WS

5. INSTALL BACK DOOR GLASS

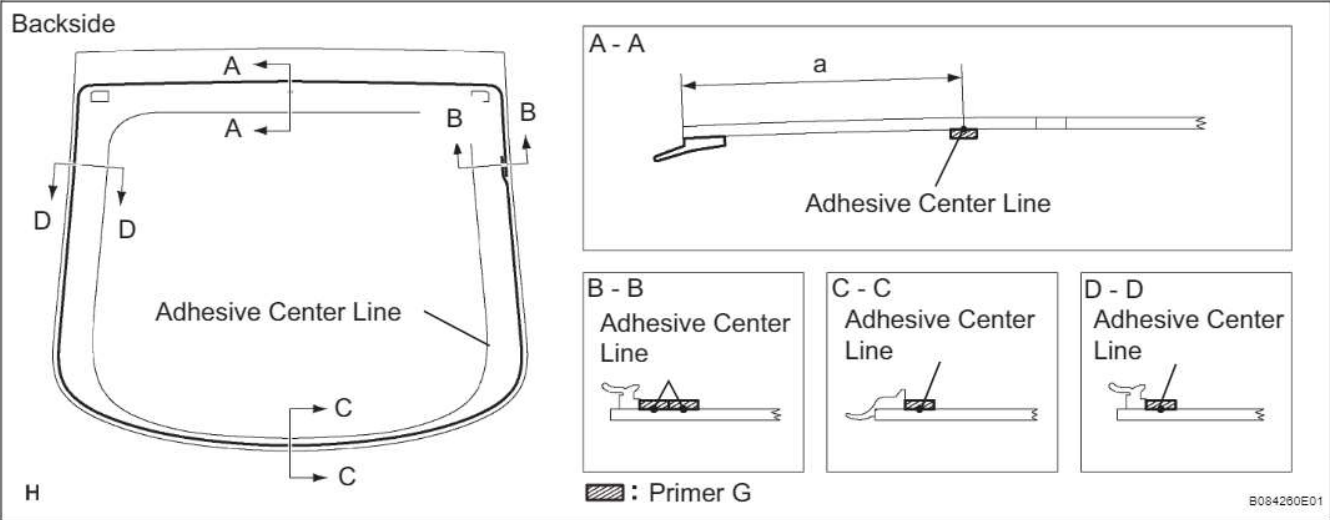
- (a) Using a brush or sponge, apply Primer M to the exposed part of the vehicle body.
- NOTICE:**
- Allow the primer to dry for 3 minutes or more.
 - Do not apply primer to the adhesive.
 - Throw away any leftover primer.
 - Do not apply too much primer.



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WINDSHIELD / WINDOWGLASS – BACK DOOR GLASS

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



Standard measurement

Area	Measurement
a	85.6 mm (3.370 in.)

HINT:

If Primer G is applied to an area other than that which is specified, wipe off the primer with white gasoline before it dries.

NOTICE:

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

(c) Apply adhesive to the back door glass.

Adhesive:

Part No. 08850-00801 or equivalent

- (1) Cut off the tip of the cartridge nozzle as shown in the illustration on the following page.

HINT:

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

Usage time frame

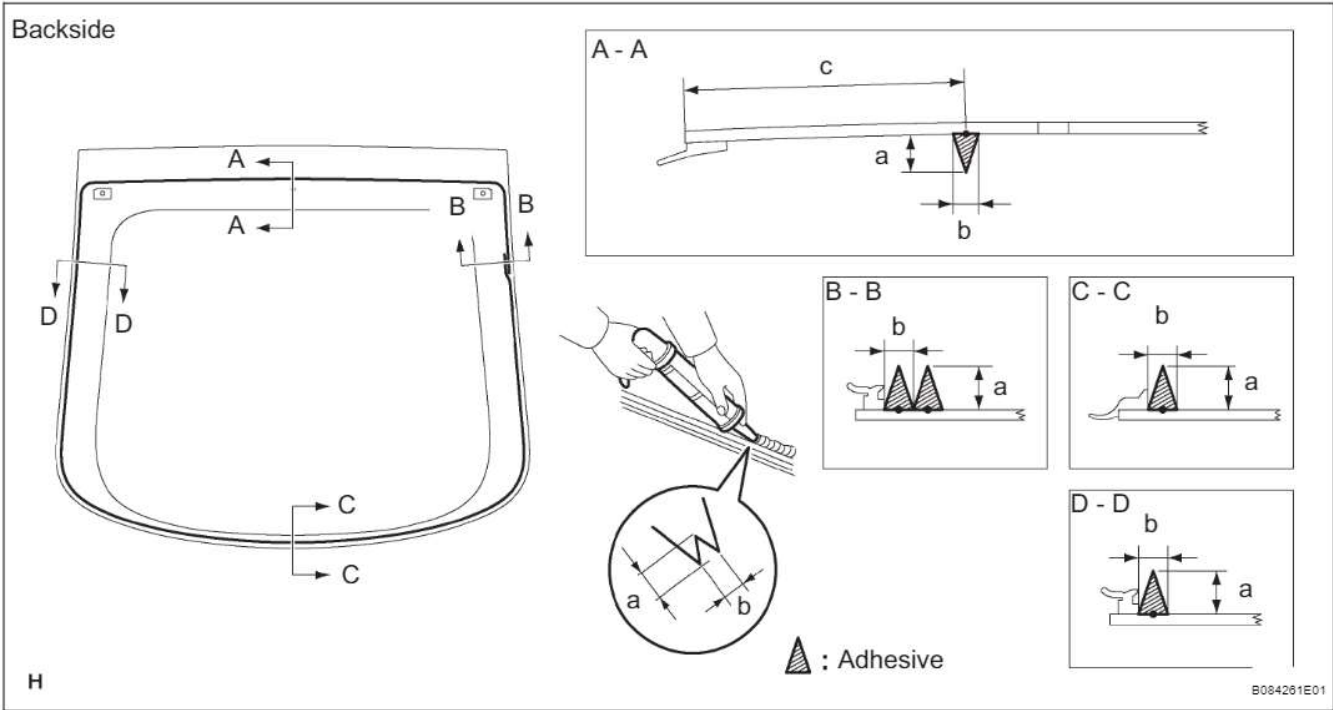
Temperature	Usage Time Frame
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

- (2) Load the sealer gun with the cartridge.

WINDSHIELD / WINDOWGLASS – BACK DOOR GLASS

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



Standard measurement

Area	Measurement
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)
c	85.6 mm (3.370 in.)

WS

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

NOTICE:

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

- (2) Hold the back door glass in place securely with protective tape or equivalent until the adhesive hardens.

NOTICE:

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

Minimum time

Temperature	Minimum time prior to driving vehicle
35°C (95°F)	1 hour 30 minutes
20°C (68°F)	5 hours
5°C (41°F)	24 hours

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6. CHECK FOR LEAKS AND REPAIR

- (a) Conduct a leak test after the adhesive has completely hardened.
- (b) Seal any leaks with auto glass sealer.

7. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**8. PERFORM INITIALIZATION**

- (a) Perform initialization (see page [IN-23](#)).

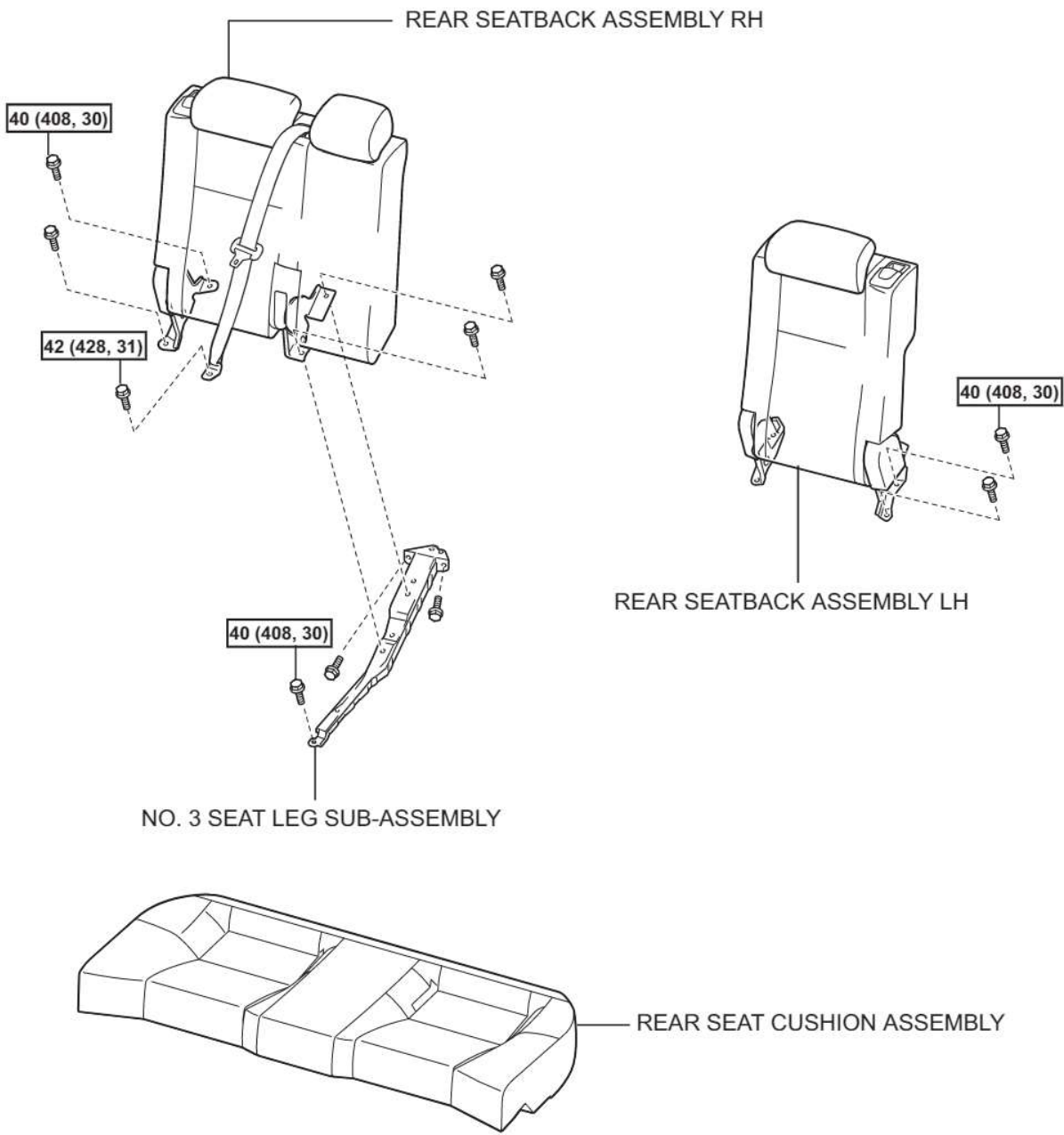
NOTICE:

Certain systems need to be initialized after disconnecting and reconnecting the cable from the negative (-) battery terminal.

WS

ROOF WINDOW FIX GLASS

COMPONENTS

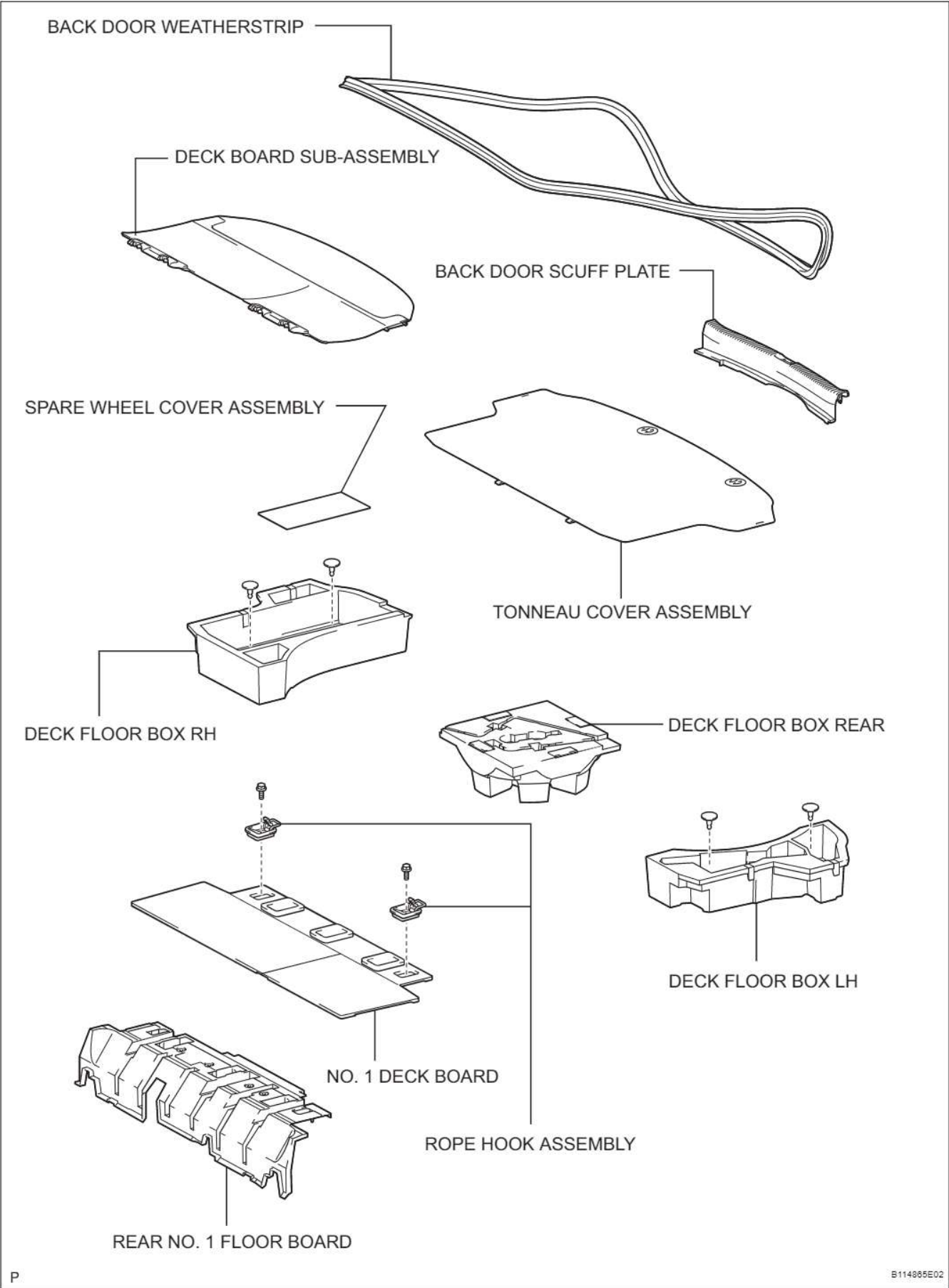


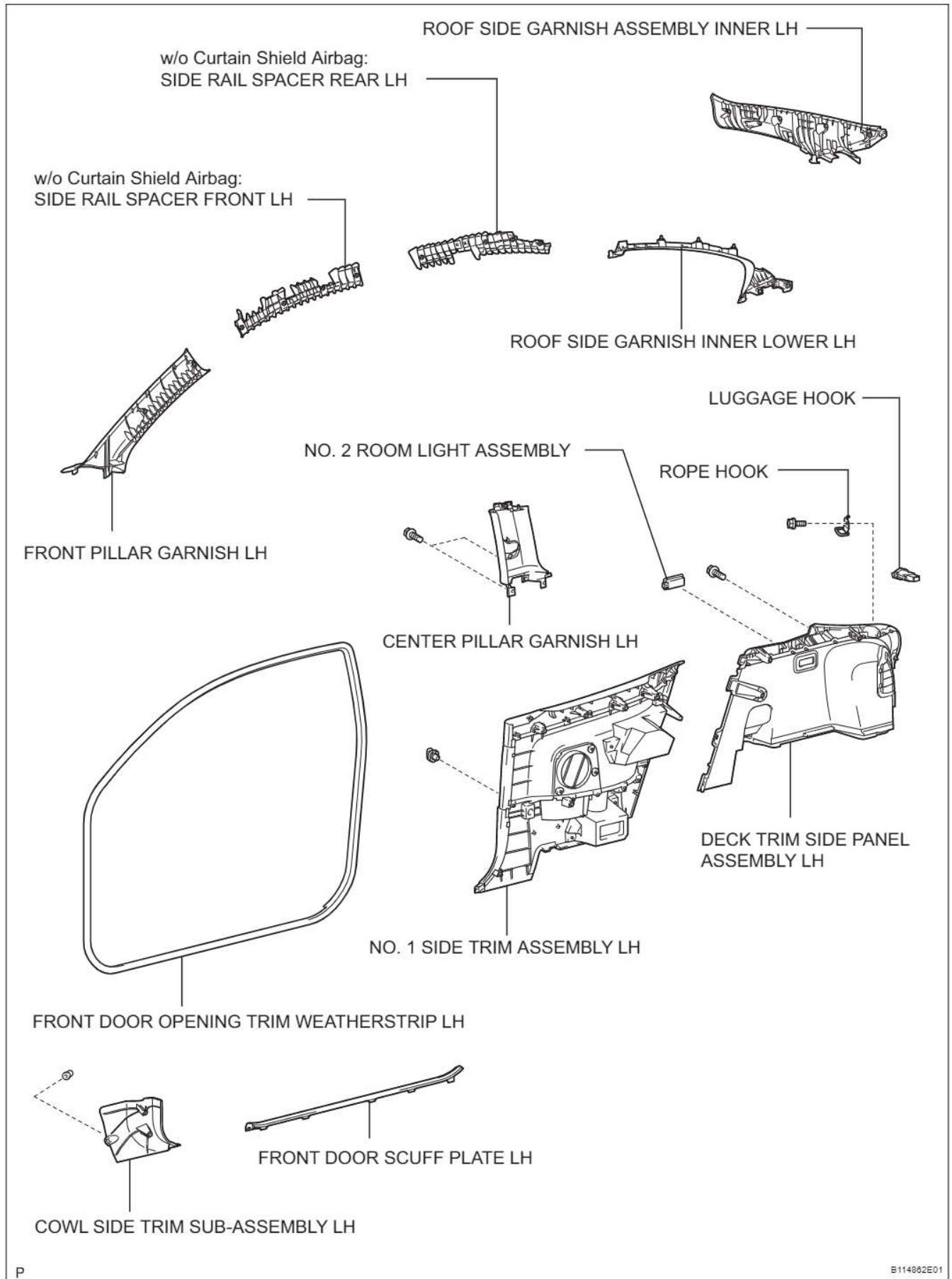
N*m (kgf*cm, ft.*lbf) : Specified torque

B117915E01

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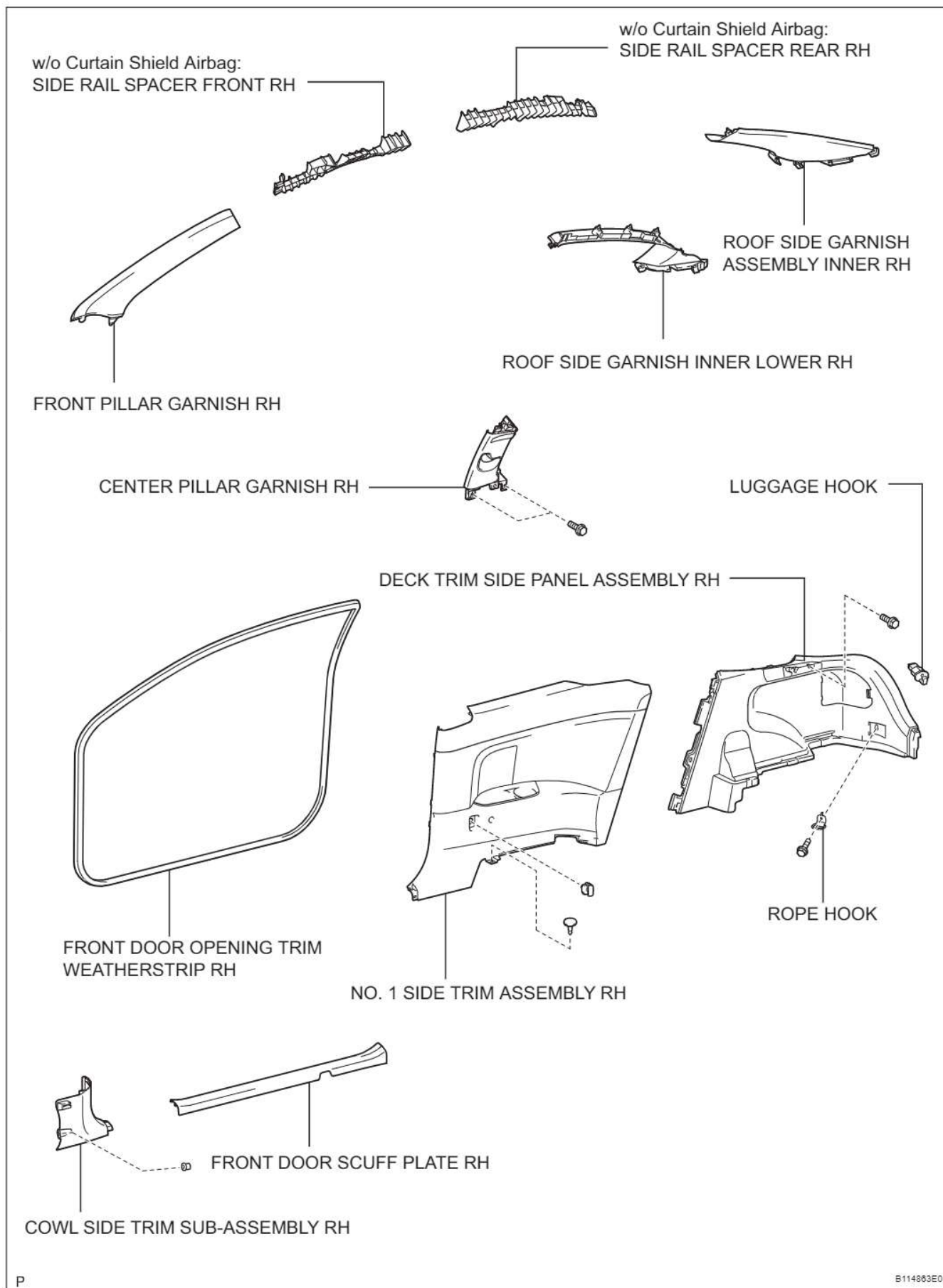
WINDSHIELD / WINDOWGLASS – ROOF WINDOW FIX GLASS





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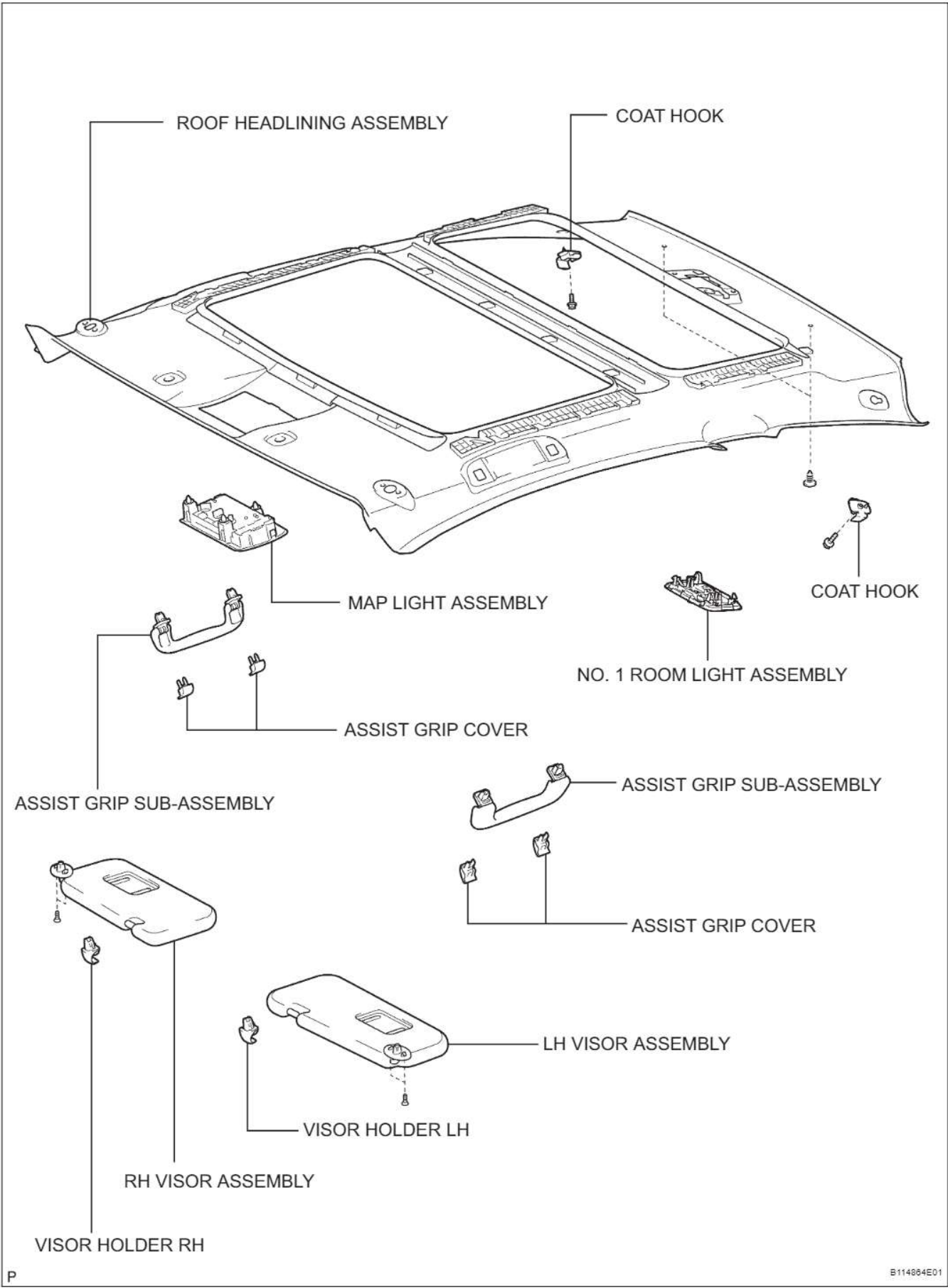
WINDSHIELD / WINDOWGLASS – ROOF WINDOW FIX GLASS



WINDSHIELD / WINDOWGLASS – ROOF WINDOW FIX GLASS

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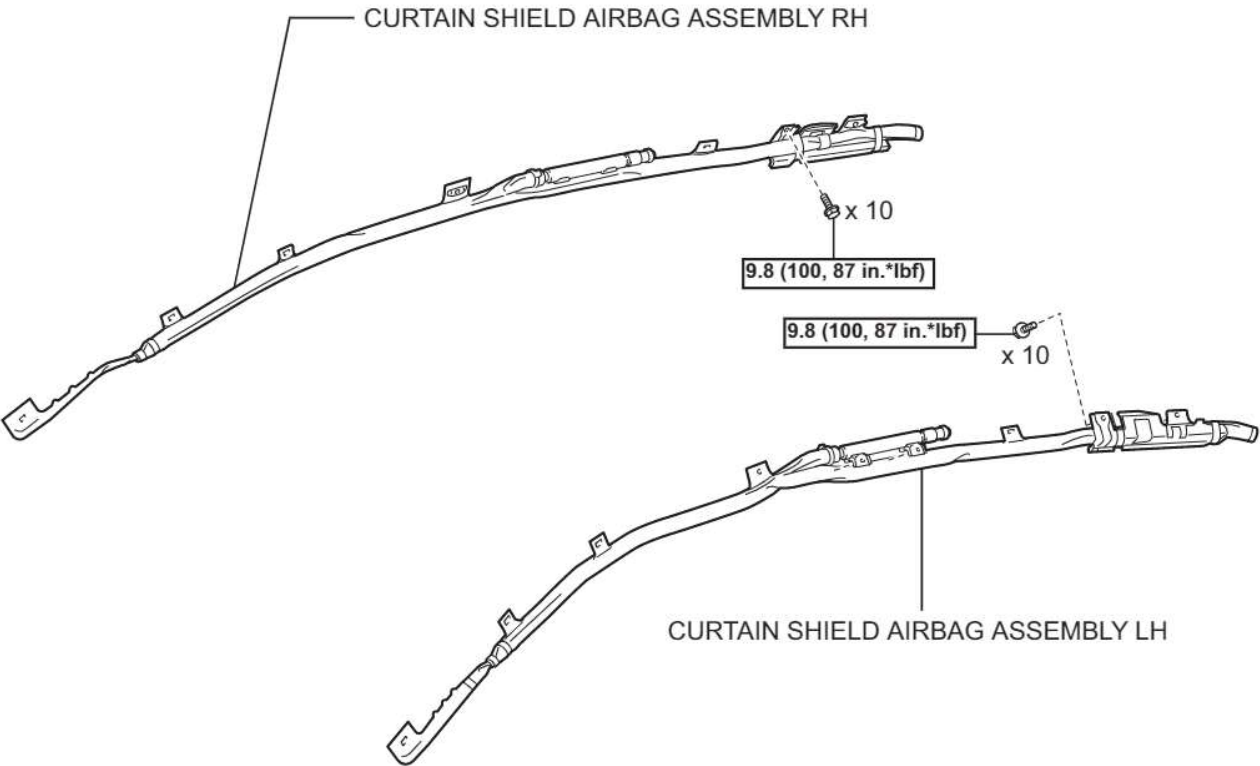
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WINDSHIELD / WINDOWGLASS – ROOF WINDOW FIX GLASS

with Curtain Shield Airbag:



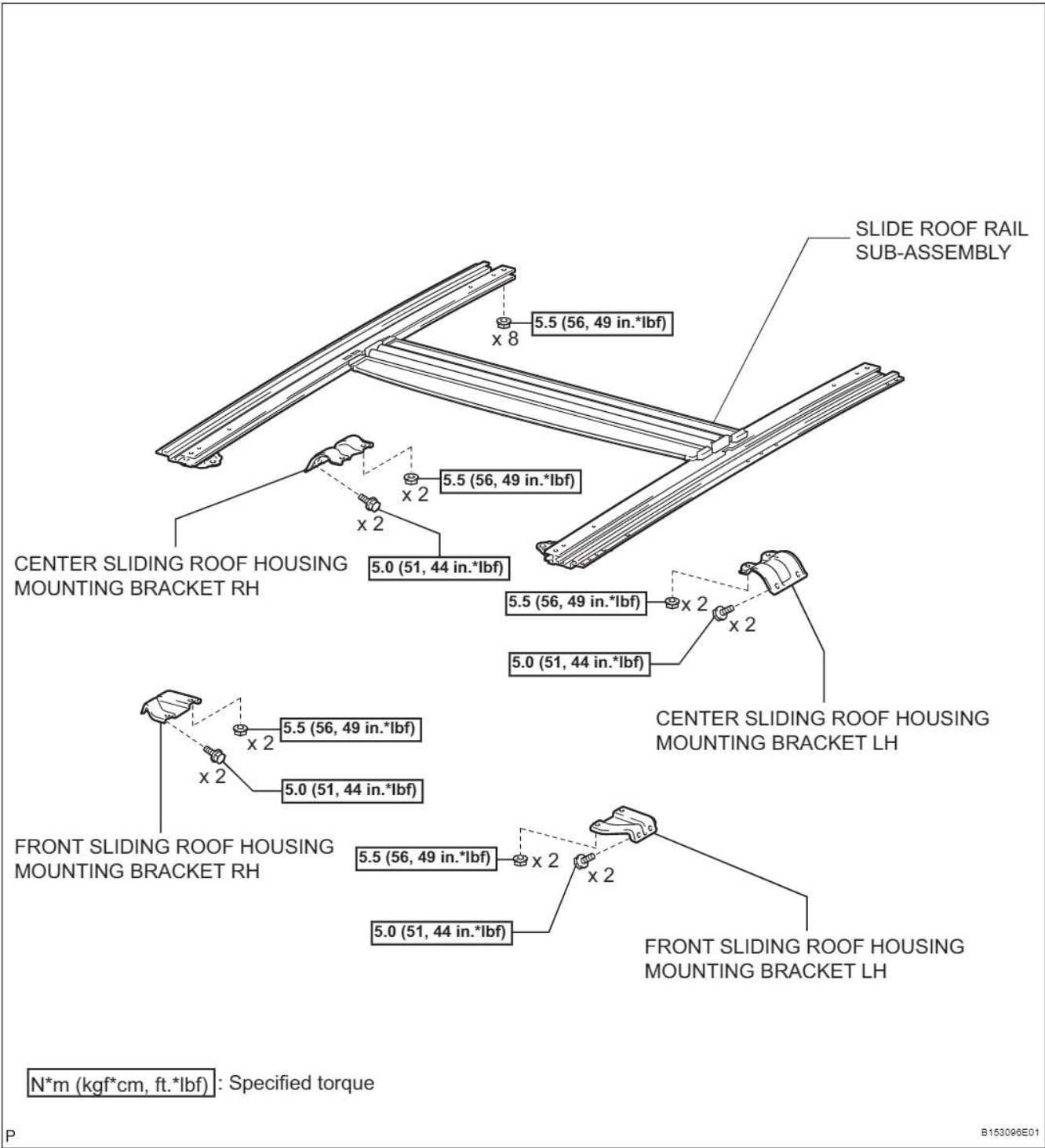
N*m (kgf*cm, ft.*lbf) : Specified torque

P

B153105E01

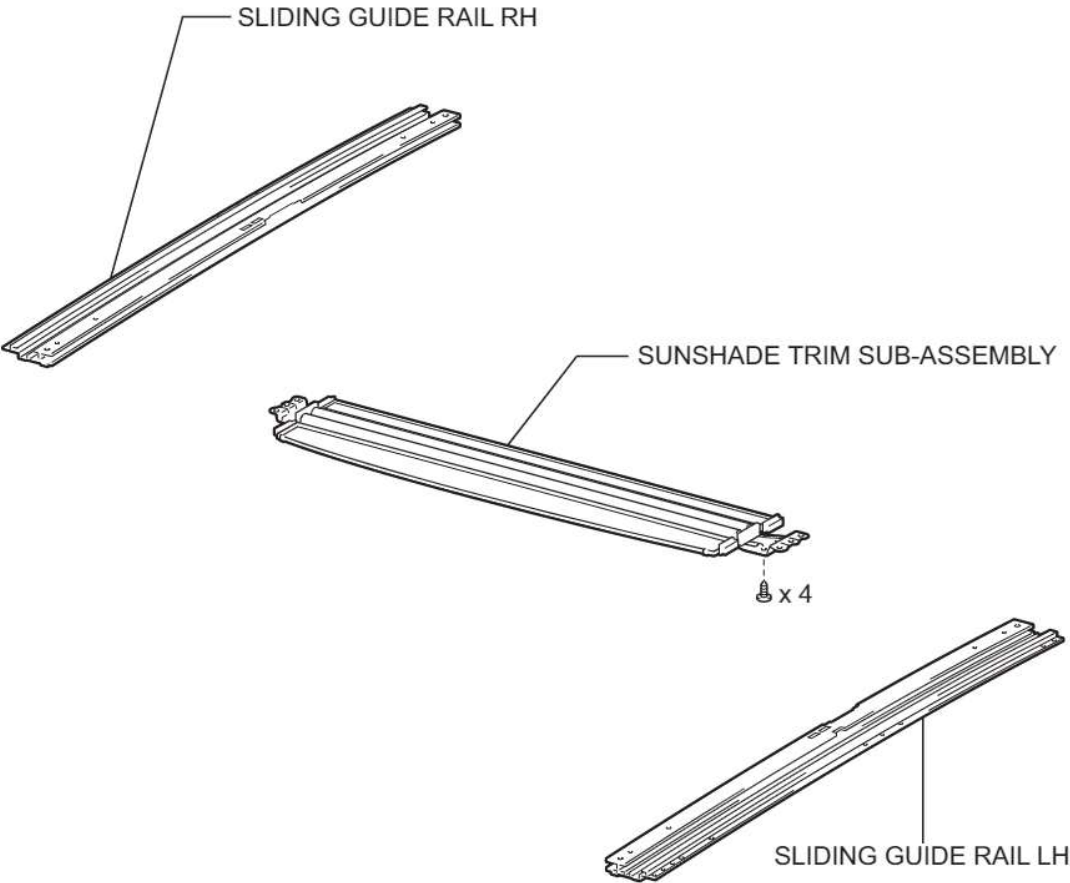
WINDSHIELD / WINDOWGLASS – ROOF WINDOW FIX GLASS

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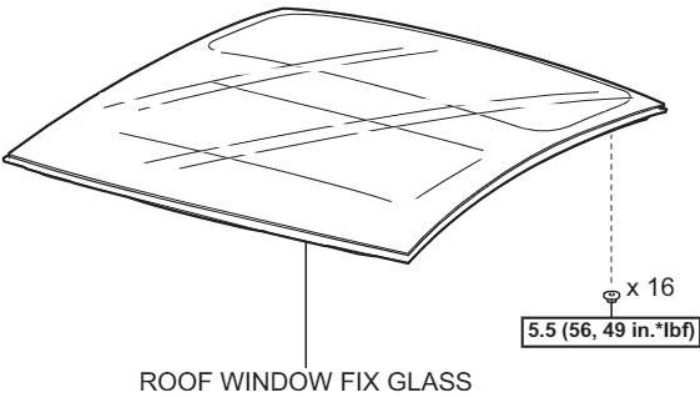


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B153097E01

WINDSHIELD / WINDOWGLASS – ROOF WINDOW FIX GLASS

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N*m (kgf*cm, ft. *lbf): Specified torque

P

B153116E01

WS

REMOVAL

1. DISCONNECT BATTERY NEGATIVE TERMINAL
NOTICE:
Wait for 90 seconds after disconnecting the terminal to prevent the airbag from deploying. (See page [RS-1](#))
2. REMOVE TONNEAU COVER ASSEMBLY
3. REMOVE DECK BOARD SUB-ASSEMBLY
4. REMOVE BACK DOOR SCUFF PLATE (See page [IR-8](#))
5. REMOVE BACK DOOR WEATHERSTRIP
6. REMOVE SPARE WHEEL COVER ASSEMBLY
7. REMOVE DECK FLOOR BOX LH (See page [IR-8](#))
8. REMOVE DECK FLOOR BOX RH (See page [IR-8](#))
9. REMOVE DECK FLOOR BOX REAR
10. REMOVE NO. 1 DECK BOARD (See page [IR-8](#))
11. REMOVE REAR NO. 1 FLOOR BOARD (See page [IR-9](#))
12. REMOVE FRONT DOOR SCUFF PLATE OUTSIDE LH (See page [IR-9](#))
13. REMOVE FRONT DOOR SCUFF PLATE OUTSIDE RH (See page [IR-9](#))
14. REMOVE FRONT DOOR SCUFF PLATE LH (See page [IR-9](#))
15. REMOVE FRONT DOOR SCUFF PLATE RH (See page [IR-9](#))
16. REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH (See page [IR-9](#))
17. REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH (See page [IR-9](#))
18. REMOVE REAR SEAT CUSHION ASSEMBLY (See page [SE-17](#))
19. REMOVE REAR SEATBACK ASSEMBLY LH (See page [SE-17](#))
20. REMOVE REAR SEATBACK ASSEMBLY RH (See page [SE-18](#))
21. REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP LH
22. REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP RH
23. REMOVE NO. 1 SIDE TRIM ASSEMBLY LH (See page [IR-10](#))

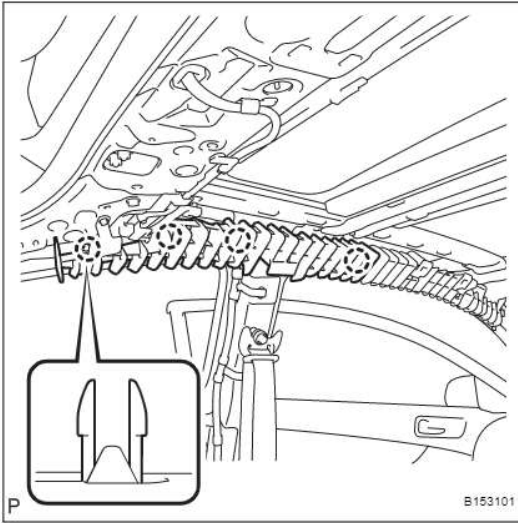
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24. REMOVE NO. 1 SIDE TRIM ASSEMBLY RH (See page [IR-10](#))
25. REMOVE CENTER PILLAR GARNISH LH (See page [IR-10](#))
26. REMOVE CENTER PILLAR GARNISH RH (See page [IR-10](#))
27. REMOVE ROOF SIDE GARNISH INNER LOWER LH (See page [IR-10](#))
28. REMOVE ROOF SIDE GARNISH INNER LOWER RH (See page [IR-10](#))
29. REMOVE DECK TRIM SIDE PANEL ASSEMBLY LH (See page [IR-11](#))
30. REMOVE DECK TRIM SIDE PANEL ASSEMBLY RH (See page [IR-11](#))
31. REMOVE ROOF SIDE GARNISH ASSEMBLY INNER LH (See page [IR-11](#))
32. REMOVE ROOF SIDE GARNISH ASSEMBLY INNER RH (See page [IR-11](#))
33. REMOVE FRONT PILLAR GARNISH LH (See page [IR-12](#))
34. REMOVE FRONT PILLAR GARNISH RH (See page [IR-12](#))
35. REMOVE MAP LIGHT ASSEMBLY (See page [IR-12](#))
36. REMOVE NO. 1 ROOM LIGHT ASSEMBLY (See page [IR-13](#))
37. REMOVE NO. 2 ROOM LIGHT ASSEMBLY (See page [IR-13](#))
38. REMOVE LH VISOR ASSEMBLY (See page [IR-13](#))
39. REMOVE RH VISOR ASSEMBLY (See page [IR-13](#))
40. REMOVE VISOR HOLDER LH (See page [IR-13](#))
41. REMOVE VISOR HOLDER RH (See page [IR-13](#))
42. REMOVE ASSIST GRIP COVER (See page [IR-13](#))
43. REMOVE ASSIST GRIP SUB-ASSEMBLY (See page [IR-14](#))
44. REMOVE COAT HOOK (See page [IR-14](#))
45. REMOVE ROOF HEADLINING ASSEMBLY (See page [IR-14](#))

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WINDSHIELD / WINDOWGLASS – ROOF WINDOW FIX GLASS



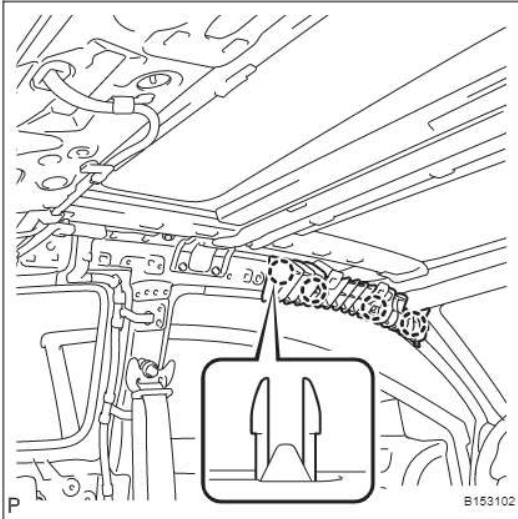
46. REMOVE SIDE RAIL SPACER REAR LH (w/o Curtain Shield Airbag)

- (a) Disengage the 4 claws and remove the rear side rail spacer LH.

47. REMOVE SIDE RAIL SPACER REAR RH (w/o Curtain Shield Airbag)

HINT:

Use the same procedure for the RH side and the LH side.



48. REMOVE SIDE RAIL SPACER FRONT LH (w/o Curtain Shield Airbag)

- (a) Disengage the 4 claws and remove the side rail spacer front LH

49. REMOVE SIDE RAIL SPACER FRONT RH (w/o Curtain Shield Airbag)

HINT:

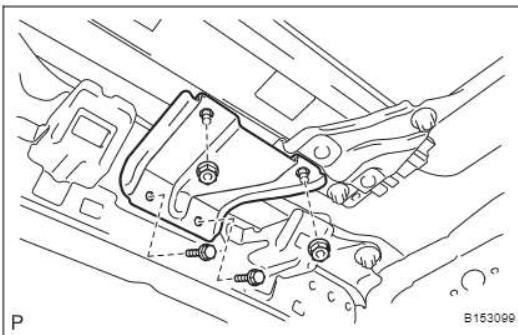
Use the same procedure for the RH side and the LH side.

50. REMOVE CURTAIN SHIELD AIRBAG ASSEMBLY LH (w/ Curtain Shield Airbag) (See page [RS-376](#))

51. REMOVE CURTAIN SHIELD AIRBAG ASSEMBLY RH (w/ Curtain Shield Airbag)

HINT:

Use the same procedure for the RH side and the LH side.



52. REMOVE FRONT SLIDING ROOF HOUSING MOUNTING BRACKET LH

- (a) Remove the 2 bolts, 2 nuts, and front sliding roof housing mounting bracket LH.

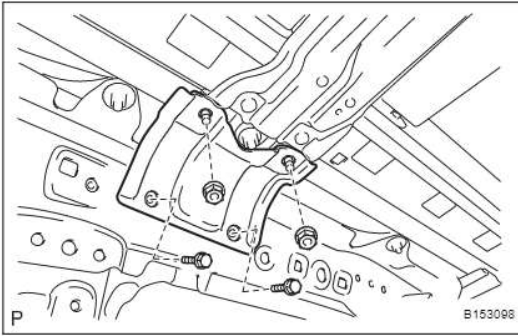
53. REMOVE FRONT SLIDING ROOF HOUSING MOUNTING BRACKET RH

HINT:

Use the same procedure for the RH side and the LH side.

WINDSHIELD / WINDOWGLASS – ROOF WINDOW FIX GLASS

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**54. REMOVE CENTER SLIDING ROOF HOUSING MOUNTING BRACKET LH**

- (a) Remove the 2 bolts, 2 nuts, and center sliding roof housing mounting bracket LH.

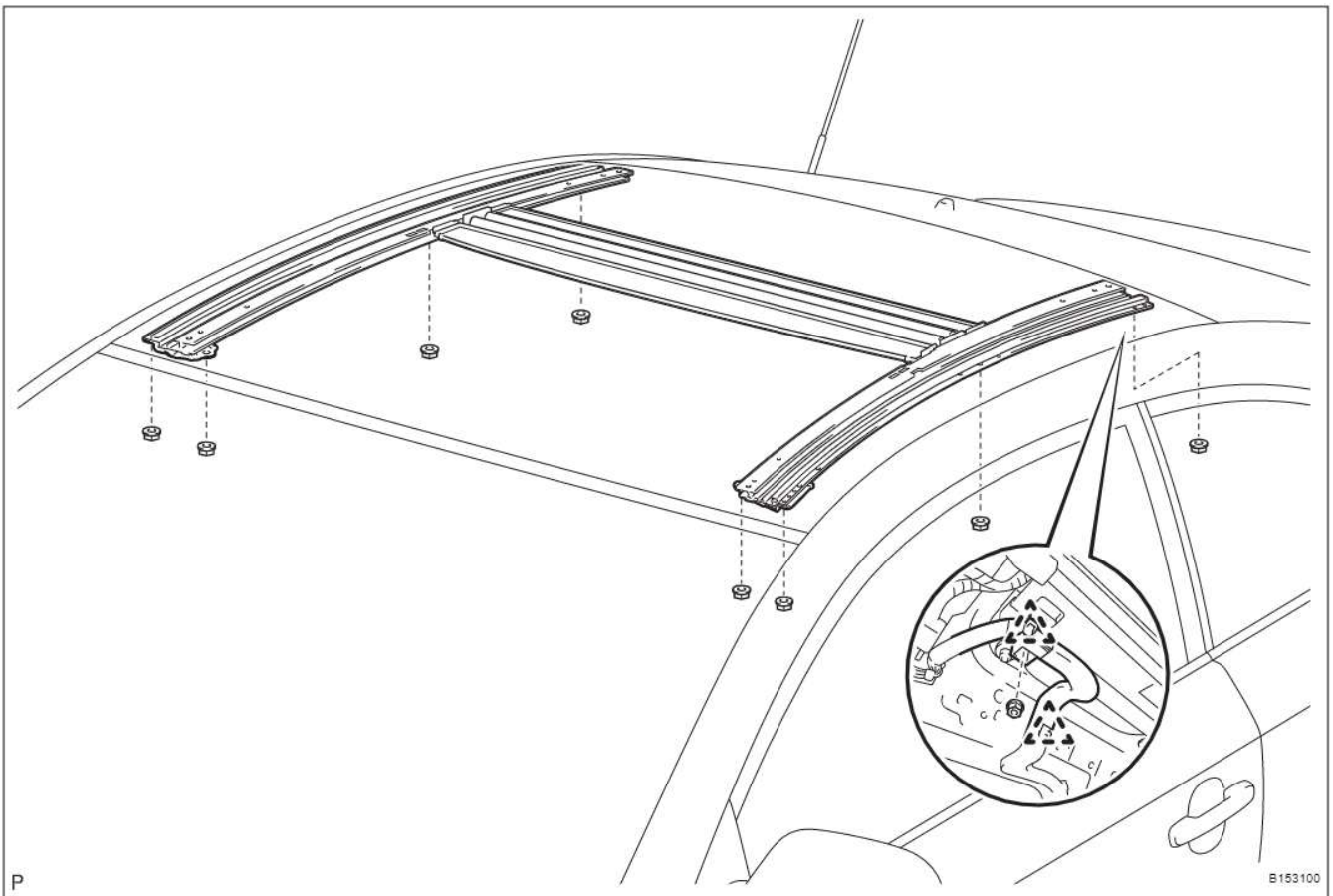
55. REMOVE CENTER SLIDING ROOF HOUSING MOUNTING BRACKET RH

HINT:

Use the same procedure for the RH side and the LH side.

56. REMOVE SLIDE ROOF RAIL SUB-ASSEMBLY

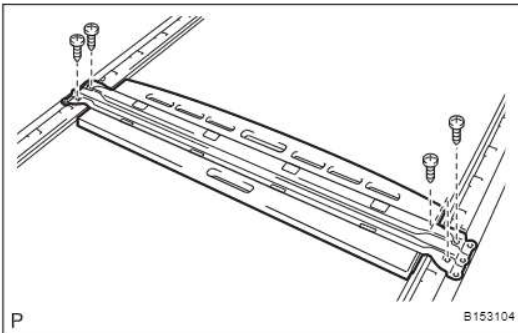
- (a) Remove the 2 clamps.



- (b) Remove the 8 nuts and slide roof rail sub-assembly.

57. REMOVE SUNSHADE TRIM SUB-ASSEMBLY

- (a) Remove the 4 screws and sunshade trim sub-assembly.



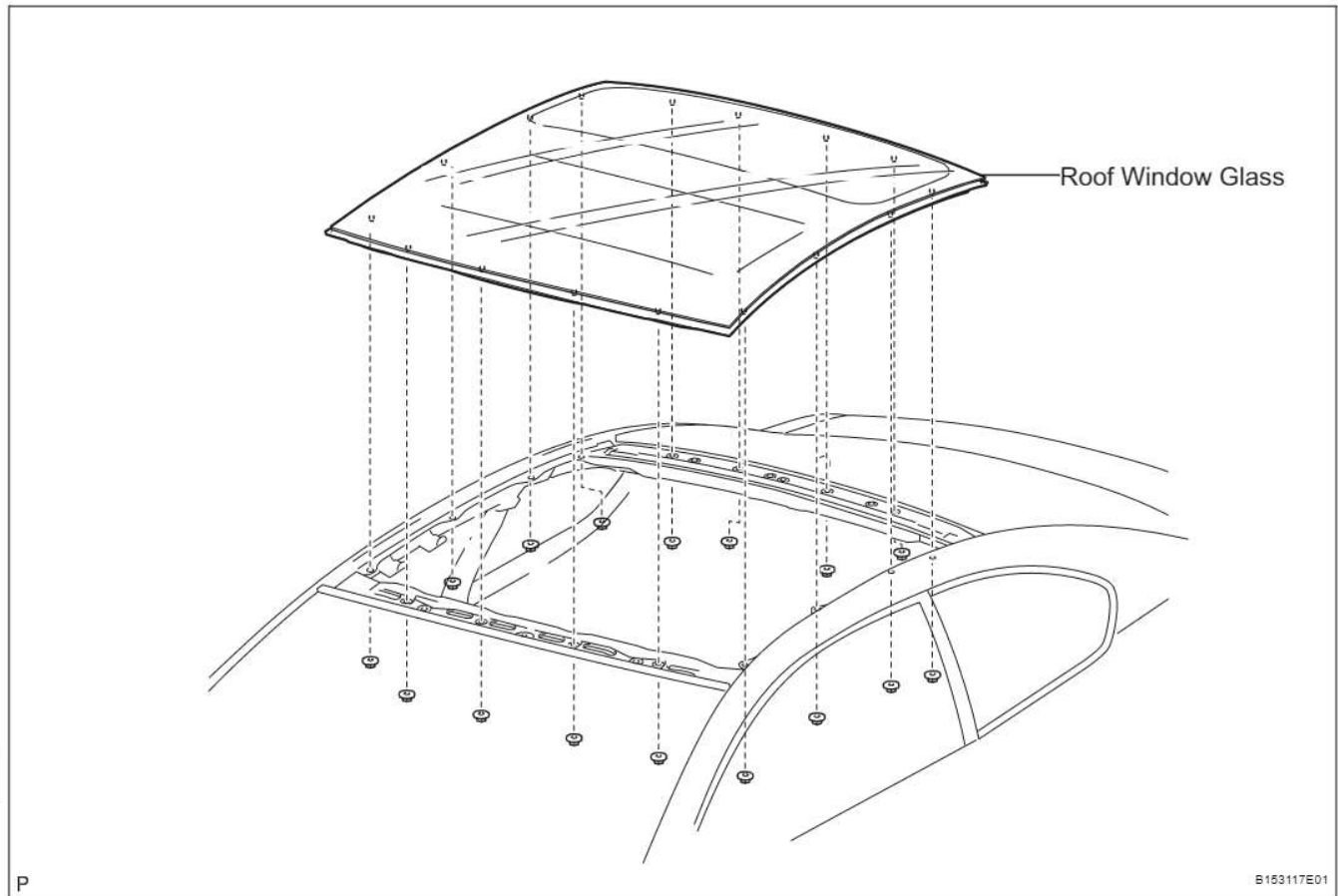
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WINDSHIELD / WINDOWGLASS – ROOF WINDOW FIX GLASS

58. REMOVE ROOF WINDOW FIX GLASS

- (a) Remove the 16 nuts and roof window fix glass.

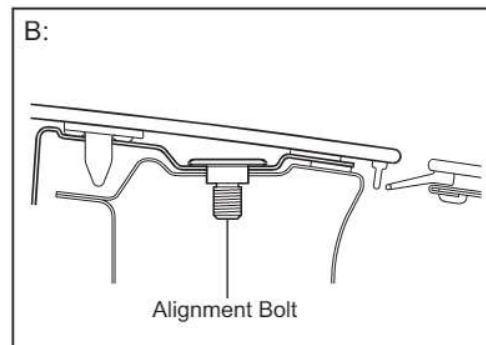
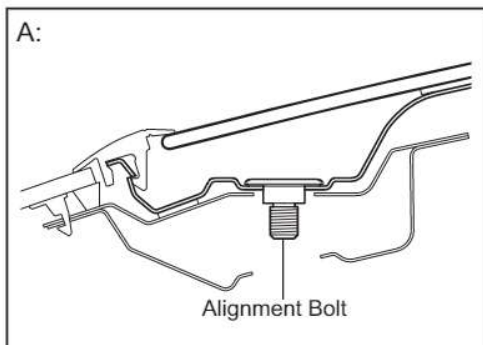
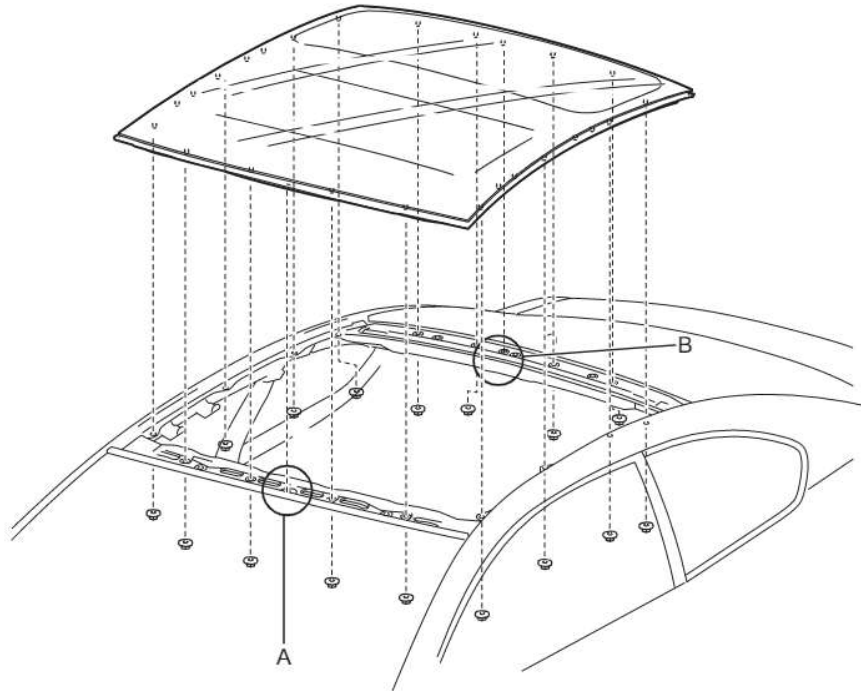
**NOTICE:**

When removing the panel, be careful not to damage the vehicle. Performing this step will require 2 or more technicians.

INSTALLATION

1. TEMPORARILY TIGHTEN ROOF WINDOW FIX GLASS

- (a) Temporarily install the roof window fix glass with the 16 nuts.



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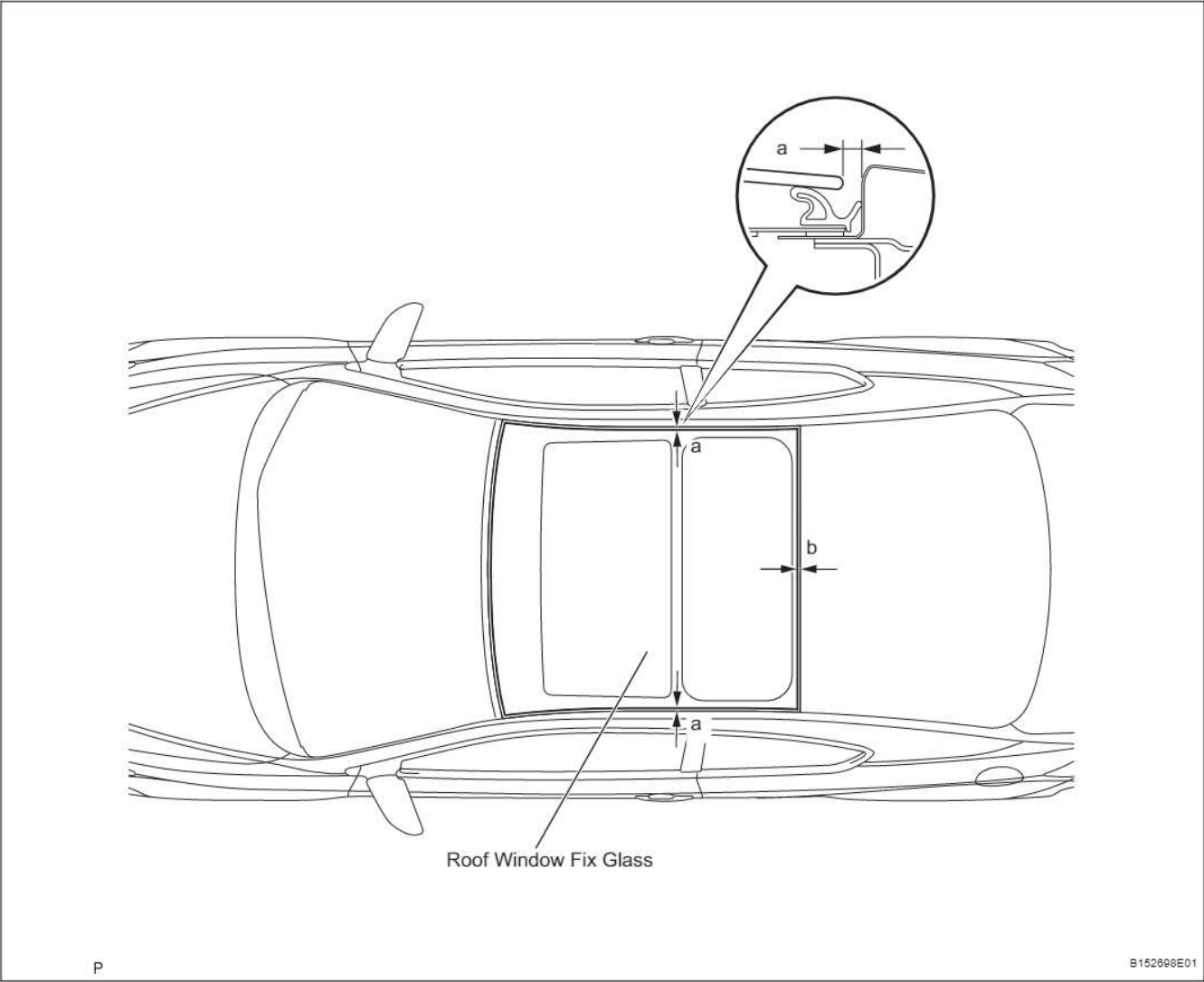
NOTICE:

- When installing the panel to the vehicle, first install the panel center front and center rear alignment bolts to the vehicle, as shown in the illustration.
- When installing the panel, be careful not to damage the vehicle.
- Performing this step will require 2 or more technicians.

- (b) Check that the alignment bolts are firmly installed.
NOTICE:
When the bolts are not firmly installed, water will leak, causing malfunctions.

2. ADJUST ROOF WINDOW FIX GLASS

- (a) The roof window fix glass does not have adjusting screws. Instead, adjust the position of the roof window glass within the measurement range shown in the illustration and table.



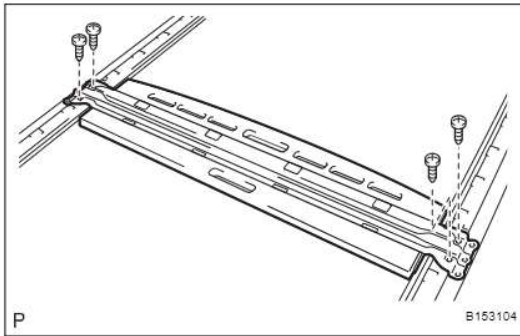
Standard

Area	Measurement range
a	6.0 mm + 1.5 mm (0.244 in. + 0.059 in.) 6.0 mm - 1.5 mm (0.244 in. - 0.059 in.)
b	7.0 mm + 2.0 mm (0.276 in. + 0.039 in.) 7.0 mm - 2.0 mm (0.276 in. - 0.039 in.)

HINT:
"+" represents the condition that the glass is above the panel level. "-" represents the condition that the glass is below the panel level.
Torque: 5.5 N*m (56 kgf*cm, 49 in.*lbf)

WINDSHIELD / WINDOWGLASS – ROOF WINDOW FIX GLASS

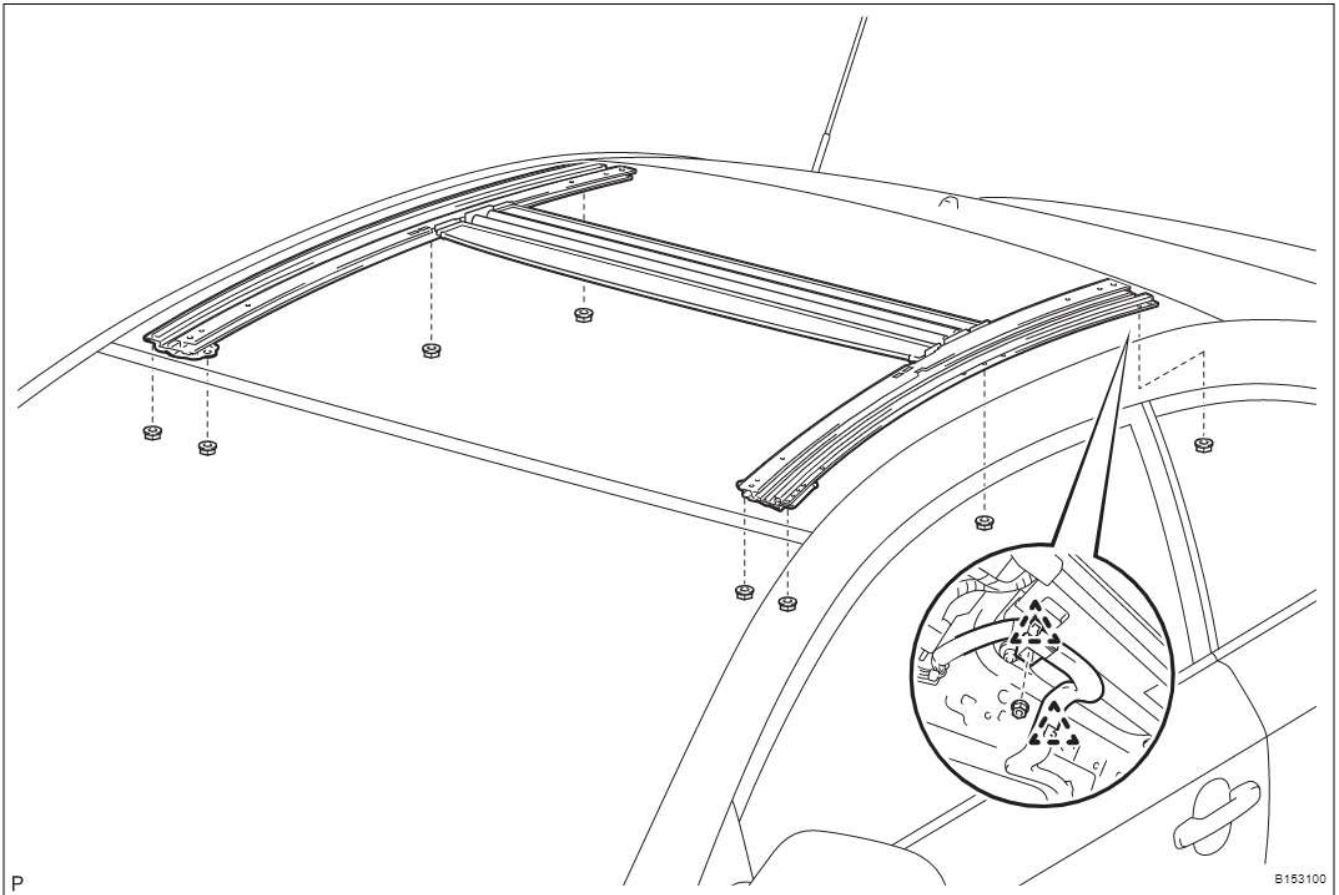
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**3. INSTALL SUNSHADE TRIM SUB-ASSEMBLY**

- (a) Install the sunshade trim sub-assembly with the 4 screws.

4. INSTALL SLIDE ROOF RAIL SUB-ASSEMBLY

- (a) Install the slide roof rail sub-assembly with the 8 nuts.



P

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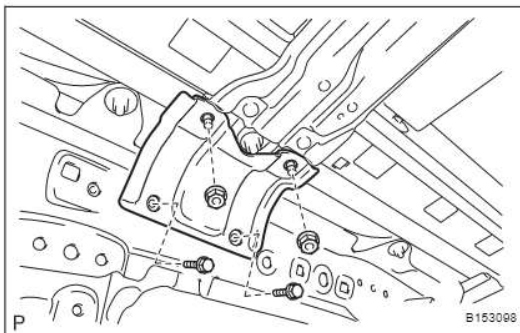
Torque: 5.5 N*m (56 kgf*cm, 49 in.*lbf)

- (b) Install the 2 clamps.

5. INSTALL CENTER SLIDING ROOF HOUSING MOUNTING BRACKET LH

- (a) Install the center sliding roof housing mounting bracket LH with the 2 bolts and 2 nuts.

Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf) (bolt)
5.5 N*m (56 kgf*cm, 49 in.*lbf) (nut)



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6. INSTALL CENTER SLIDING ROOF HOUSING MOUNTING BRACKET RH

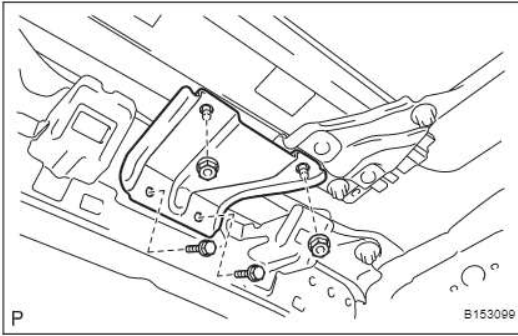
HINT:

Use the same procedure for the rear side and the front side.

WS

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WINDSHIELD / WINDOWGLASS – ROOF WINDOW FIX GLASS



7. INSTALL FRONT SLIDING ROOF HOUSING MOUNTING BRACKET LH

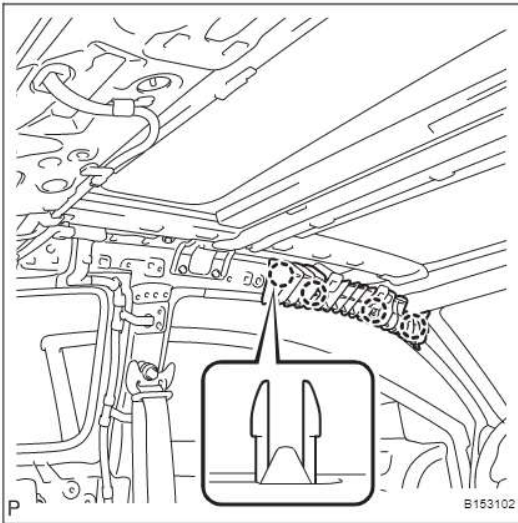
- (a) Install the front sliding roof housing mounting bracket LH with the 2 bolts and 2 nuts.

**Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf) (bolt)
5.5 N*m (56 kgf*cm, 49 in.*lbf) (nut)**

8. INSTALL FRONT SLIDING ROOF HOUSING MOUNTING BRACKET RH

HINT:

Use the same procedure for the rear side and the front side.



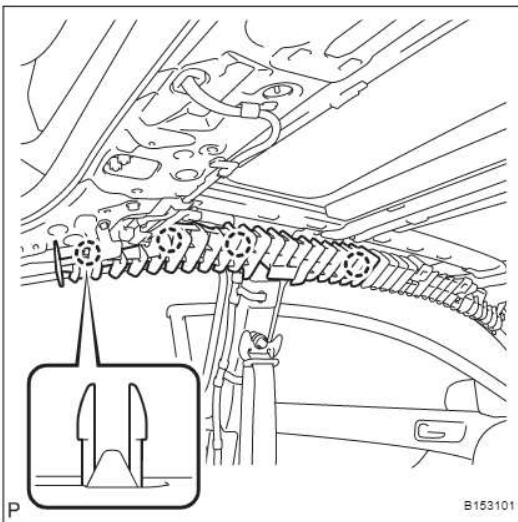
9. INSTALL SIDE RAIL SPACER FRONT LH (w/o Curtain Shield Airbag)

- (a) Engage the 4 claws to install the front side rail spacer LH

10. INSTALL SIDE RAIL SPACER FRONT RH (w/o Curtain Shield Airbag)

HINT:

Use the same procedure for the rear side and the front side.



11. INSTALL SIDE RAIL SPACER REAR LH (w/o Curtain Shield Airbag)

- (a) Engage the 4 claws to install the

12. INSTALL SIDE RAIL SPACER REAR RH (w/o Curtain Shield Airbag)

HINT:

Use the same procedure for the rear side and the front side.

13. INSTALL CURTAIN SHIELD AIRBAG ASSEMBLY LH (w/ Curtain Shield Airbag) (See page [RS-377](#))

14. INSTALL CURTAIN SHIELD AIRBAG ASSEMBLY RH (w/ Curtain Shield Airbag)

HINT:

Use the same procedure for the rear side and the front side.

15. INSTALL ROOF HEADLINING ASSEMBLY (See page [IR-15](#))

16. INSTALL COAT HOOK (See page [IR-15](#))

17. INSTALL ASSIST GRIP SUB-ASSEMBLY (See page [IR-15](#))

18. INSTALL ASSIST GRIP COVER (See page [IR-15](#))

19. INSTALL VISOR HOLDER LH (See page [IR-15](#))

20. INSTALL VISOR HOLDER RH (See page [IR-15](#))
21. INSTALL LH VISOR ASSEMBLY (See page [IR-15](#))
22. INSTALL RH VISOR ASSEMBLY (See page [IR-16](#))
23. INSTALL NO. 2 ROOM LIGHT ASSEMBLY (See page [IR-16](#))
24. INSTALL NO. 1 ROOM LIGHT ASSEMBLY (See page [IR-16](#))
25. INSTALL MAP LIGHT ASSEMBLY (See page [IR-16](#))
26. INSTALL FRONT PILLAR GARNISH LH (See page [IR-17](#))
27. INSTALL FRONT PILLAR GARNISH RH (See page [IR-17](#))
28. INSTALL ROOF SIDE GARNISH ASSEMBLY INNER LH (See page [IR-17](#))
29. INSTALL ROOF SIDE GARNISH ASSEMBLY INNER RH (See page [IR-18](#))
30. INSTALL DECK TRIM SIDE PANEL ASSEMBLY LH (See page [IR-18](#))
31. INSTALL DECK TRIM SIDE PANEL ASSEMBLY RH (See page [IR-18](#))
32. INSTALL ROOF SIDE GARNISH INNER LOWER LH (See page [IR-18](#))
33. INSTALL ROOF SIDE GARNISH INNER LOWER RH (See page [IR-18](#))
34. INSTALL CENTER PILLAR GARNISH LH (See page [IR-19](#))
35. INSTALL CENTER PILLAR GARNISH RH (See page [IR-19](#))
36. INSTALL NO. 1 SIDE TRIM ASSEMBLY LH (See page [IR-19](#))
37. INSTALL NO. 1 SIDE TRIM ASSEMBLY RH (See page [IR-19](#))
38. INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP LH
39. INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP RH
40. INSTALL REAR SEATBACK ASSEMBLY LH (See page [SE-28](#))
41. INSTALL REAR SEATBACK ASSEMBLY RH (See page [SE-28](#))
42. INSTALL REAR SEAT CUSHION ASSEMBLY (See page [SE-29](#))
43. INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH (See page [IR-19](#))

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44. INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH (See page [IR-19](#))
45. INSTALL FRONT DOOR SCUFF PLATE LH (See page [IR-20](#))
46. INSTALL FRONT DOOR SCUFF PLATE RH (See page [IR-20](#))
47. INSTALL FRONT DOOR SCUFF PLATE OUTSIDE LH (See page [IR-20](#))
48. INSTALL FRONT DOOR SCUFF PLATE OUTSIDE RH (See page [IR-20](#))
49. INSTALL REAR NO. 1 FLOOR BOARD (See page [IR-20](#))
50. INSTALL NO. 1 DECK BOARD (See page [IR-20](#))
51. INSTALL DECK FLOOR BOX REAR
52. INSTALL DECK FLOOR BOX LH (See page [IR-20](#))
53. INSTALL DECK FLOOR BOX RH (See page [IR-20](#))
54. INSTALL SPARE WHEEL COVER ASSEMBLY
55. INSTALL BACK DOOR WEATHERSTRIP
56. INSTALL BACK DOOR SCUFF PLATE (See page [IR-21](#))
57. INSTALL DECK BOARD SUB-ASSEMBLY
58. INSTALL TONNEAU COVER ASSEMBLY
59. CONNECT NEGATIVE BATTERY TERMINAL
60. PERFORM INITIALIZATION
(See Page [IN-23](#))
61. INSPECT SRS WARNING LIGHT

WS

WINDOW DEFOGGER SYSTEM

PRECAUTION

NOTICE:
When disconnecting the cable from the negative (-) battery terminal, initialize the following system(s) after the cable is reconnected.

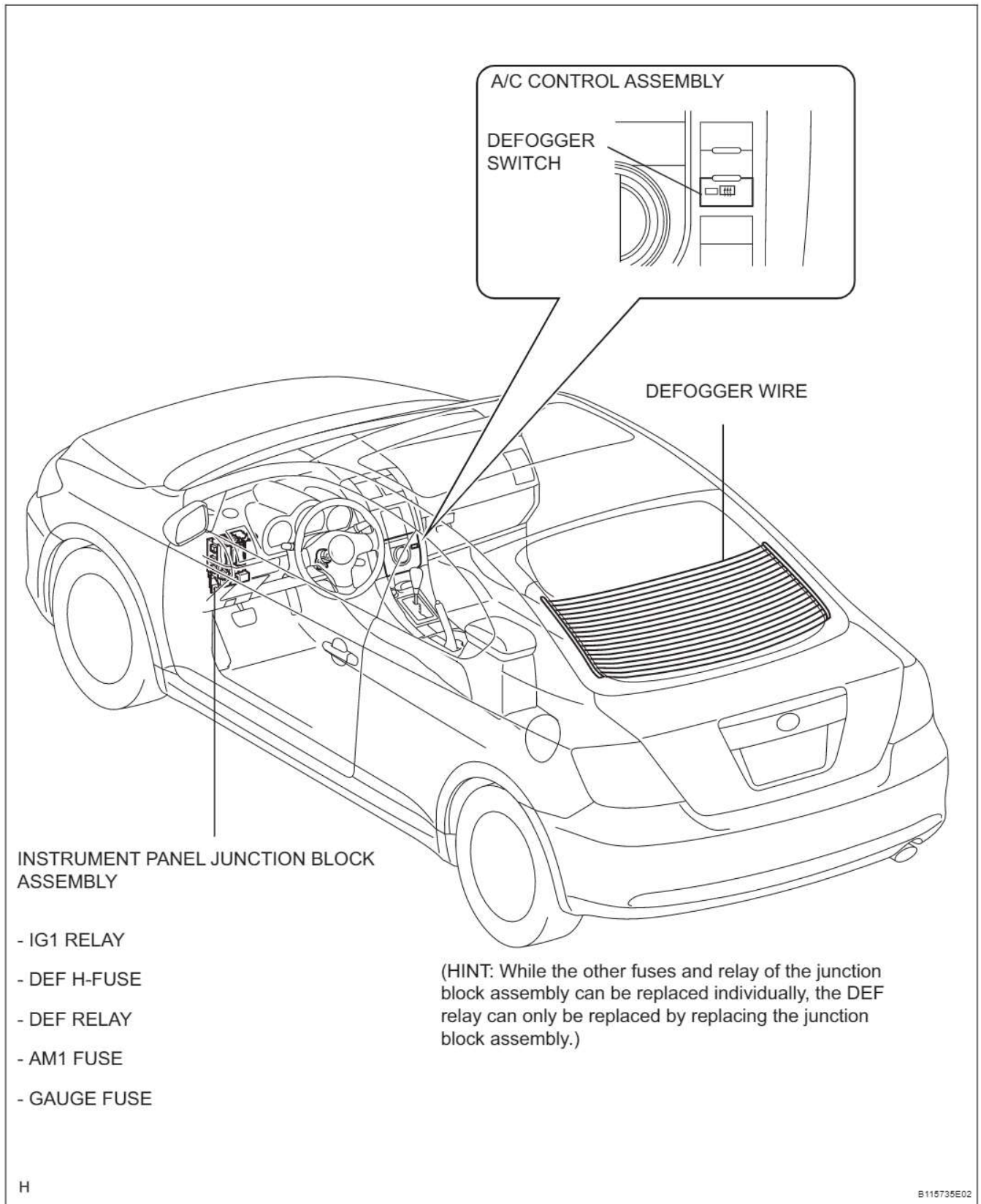
System Name	See Page
Power window control system (with Jam Protection Function)	IN-23
Sliding Roof System	

WS

WINDSHIELD / WINDOWGLASS – WINDOW DEFOGGER SYSTEM

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PARTS LOCATION



WS

WS-94

WINDSHIELD / WINDOWGLASS – WINDOW DEFOGGER SYSTEM

PROBLEM SYMPTOMS TABLE

HINT:

Use the table below to help determine the causes of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in order they are listed. Replace parts as necessary.

Window defogger system

Symptom	Suspected Area	See page
Rear window defogger does not operate (indicator ON)	1. DEF H-fuse	WS-93
	2. Defogger wire	WS-94
	3. Wire harness	-
Rear window defogger does not operate (indicator OFF)	1. IG1 relay	WS-94
	2. DEF relay	WS-94
	3. AM1 fuse	WS-93
	4. GAUGE fuse	WS-93
	5. DEF H-fuse	WS-93
	6. A/C control assembly	AC-7
	7. Defogger wire	WS-94
	8. Wire harness	-

INSPECTION

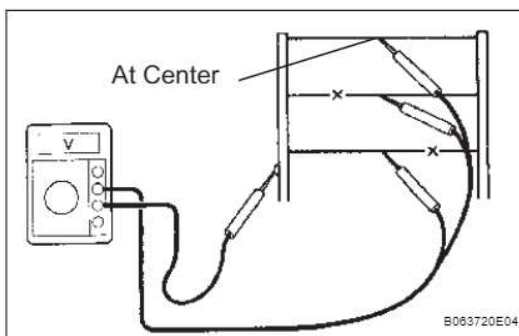
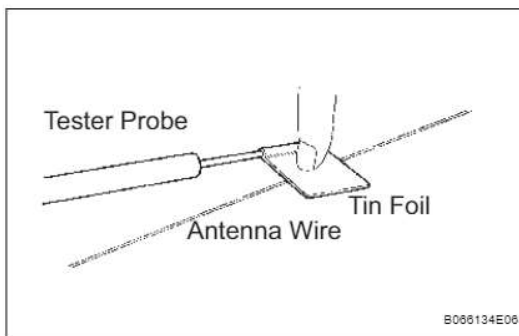
1. INSPECT BACK DOOR GLASS (DEFOGGER WIRE)

NOTICE:

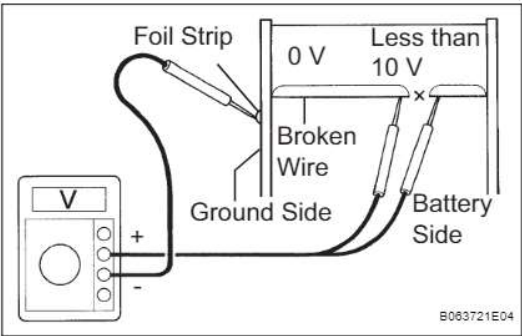
- When cleaning the glass, wipe the glass along the wire using a soft, dry cloth. Take care not to damage the defogger wires.
 - Do not use detergents or glass cleaners that have abrasive ingredients.
 - When measuring voltage, wrap a piece of tin foil around the tip of the negative (-) tester probe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

Standard voltage

Voltage	Criteria
Approx. 5 V	Wire is not broken
Approx. 10 or 0 V	Wire is broken



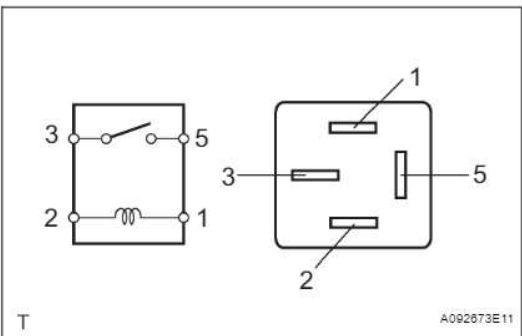
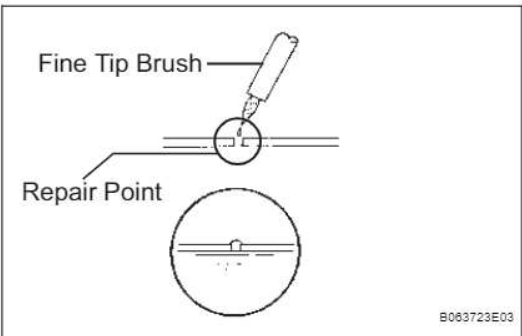
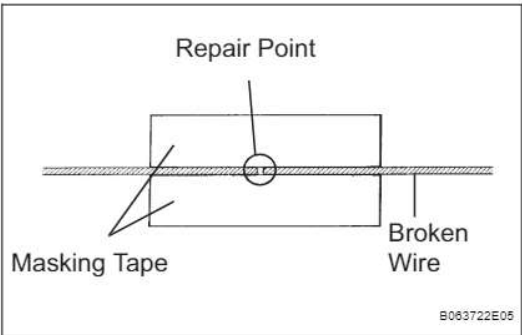
WINDSHIELD / WINDOWGLASS – WINDOW DEFOGGER SYSTEM



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

- (d) Place the voltmeter's positive (+) lead against the defogger wire on the battery side.
- (e) Place the voltmeter's negative (-) lead with the foil strip against the wire on the ground side.
- (f) Slide the positive (+) lead from the battery side to the ground side.
- (g) The point where the voltage drops from approximately 10 V to 0 V is where the defogger wire is broken.

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



- (h) If necessary, repair the defogger wire.
 - (1) Clean the broken wire tips with grease, wax and silicone remover.
 - (2) Place masking tape along both sides of the wire.
 - (3) Thoroughly mix the repair agent.
Dupont paste:
No. 4817 or equivalent
 - (4) Using a fine tip brush, apply a small amount of the agent to the wire.
 - (5) After a few minutes, remove the masking tape.
- NOTICE:**
Do not repair the defogger wire again for at least 24 hours.

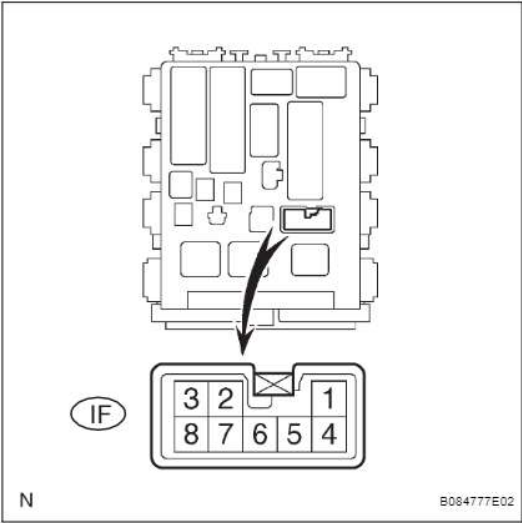
2. INSPECT IG1 RELAY (Marking: IG1)

- (a) Remove the IG1 relay from the instrument panel junction block.
- (b) Measure the resistance of the relay.

Standard resistance

Tester Condition	Specified Condition
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)

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



3. INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (DEF RELAY)

(a) Measure the voltage of the connector.

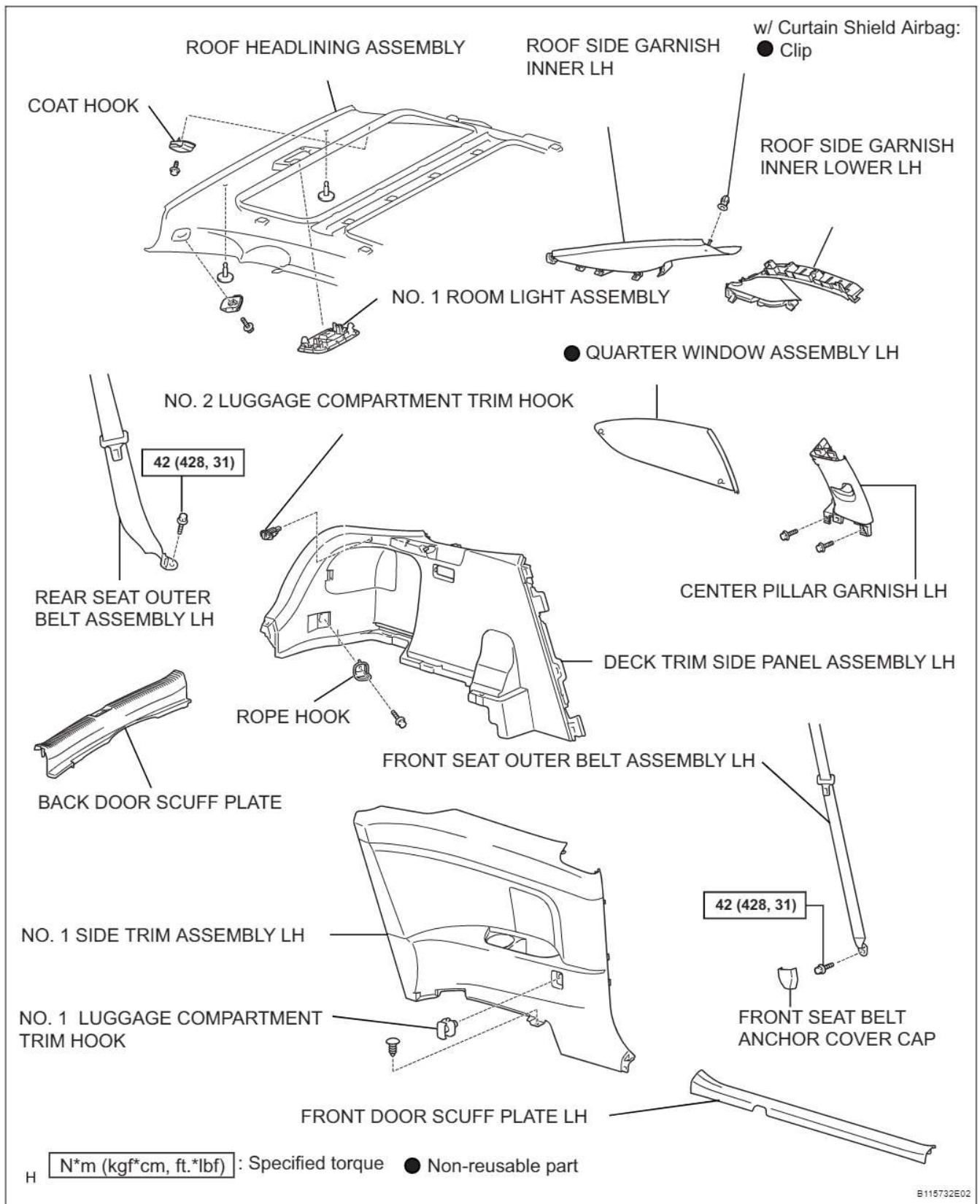
Standard

Tester Connection	Defogger Switch Condition	Specified Condition
1F-2 - Body ground	OFF	0 V
	ON	10 to 14 V

If the result is not as specified, replace the instrument panel junction block assembly.

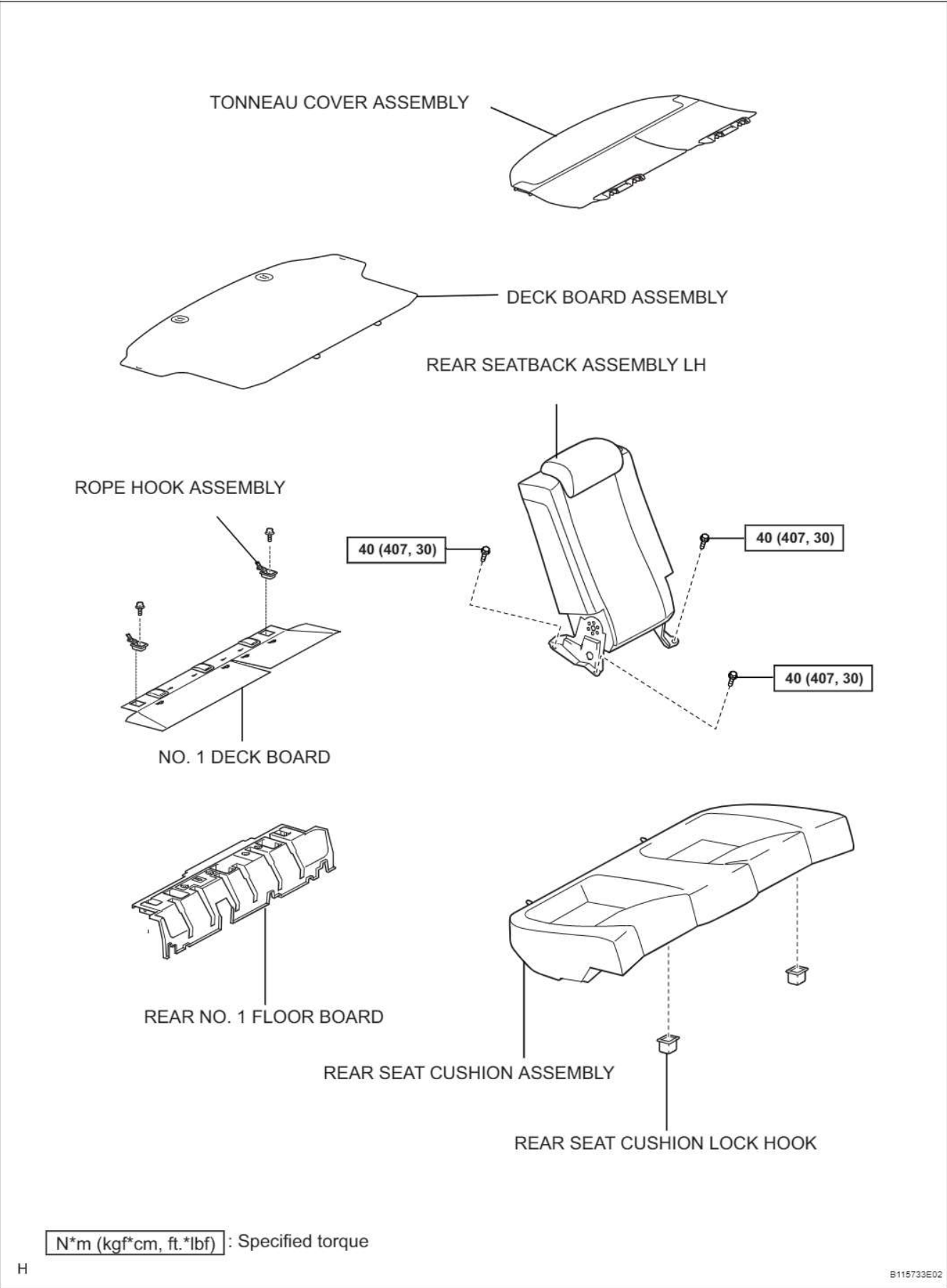
QUARTER WINDOW GLASS

COMPONENTS



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WINDSHIELD / WINDOWGLASS – QUARTER WINDOW GLASS



REMOVAL

HINT:

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

1. REMOVE TONNEAU COVER ASSEMBLY
2. REMOVE REAR SEAT CUSHION ASSEMBLY (See page [SE-17](#))
3. REMOVE REAR SEATBACK ASSEMBLY LH (See page [SE-17](#))
4. REMOVE FRONT DOOR SCUFF PLATE LH (See page [IR-9](#))
5. REMOVE DECK BOARD ASSEMBLY
6. REMOVE NO. 1 DECK BOARD (See page [IR-8](#))
7. REMOVE REAR NO. 1 FLOOR BOARD (See page [IR-9](#))
8. REMOVE BACK DOOR SCUFF PLATE (See page [IR-8](#))
9. REMOVE FRONT SEAT BELT ANCHOR COVER CAP
10. REMOVE FRONT SEAT OUTER BELT ASSEMBLY LH (See page [SB-10](#))
11. REMOVE REAR SEAT OUTER BELT ASSEMBLY LH (See page [SB-24](#))
12. REMOVE NO. 1 LUGGAGE COMPARTMENT TRIM HOOK
13. REMOVE NO. 1 SIDE TRIM ASSEMBLY LH (See page [IR-10](#))
14. REMOVE ROPE HOOK
15. REMOVE DECK TRIM SIDE PANEL ASSEMBLY LH (See page [IR-11](#))
16. REMOVE CENTER PILLAR GARNISH LH (See page [IR-10](#))
17. REMOVE ROOF SIDE GARNISH INNER LOWER LH (See page [IR-10](#))
18. REMOVE ROOF SIDE GARNISH INNER LH (See page [IR-11](#))
19. REMOVE NO. 1 ROOM LIGHT ASSEMBLY (See page [IR-13](#))
20. REMOVE COAT HOOK (See page [IR-14](#))

WS

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WINDSHIELD / WINDOWGLASS – QUARTER WINDOW GLASS

21. REMOVE ROOF HEADLINING ASSEMBLY

- (a) Slightly lower the rear section of the roof headlining so that the quarter window glass can be removed (see page [IR-14](#)).

HINT:

It is not necessary to completely remove the roof headlining.

22. REMOVE QUARTER WINDOW ASSEMBLY LH

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

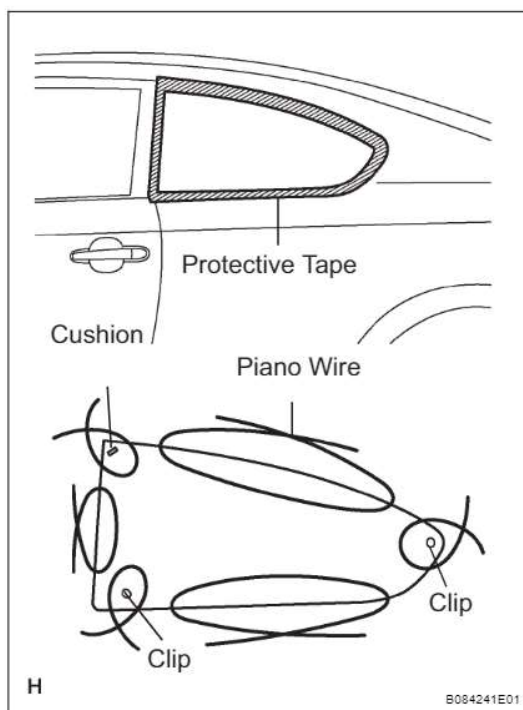
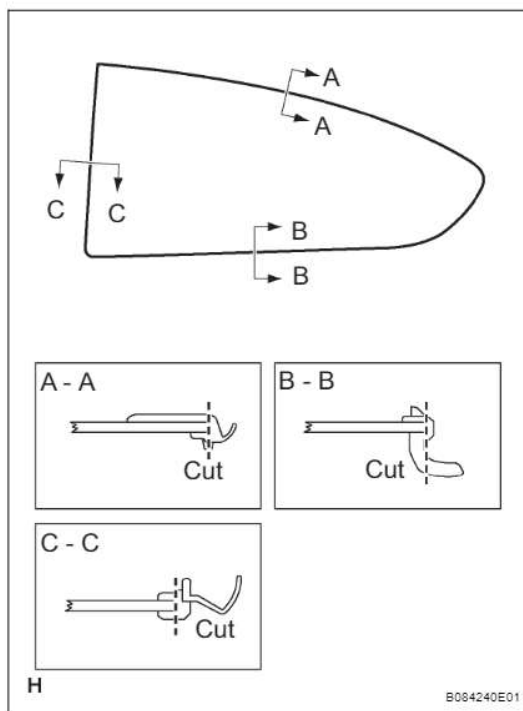
NOTICE:

Be careful not to damage the vehicle body with the knife.

- (b) Remove the remaining moulding.

HINT:

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



- (c) Apply protective tape to the outer surface of the vehicle body to prevent scratches.
- (d) From the interior, insert piano wire between the vehicle body and the quarter window glass as shown in the illustration.
- (e) Tie objects that can serve as handles (for example, wooden blocks) to all wire ends.

NOTICE:

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

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

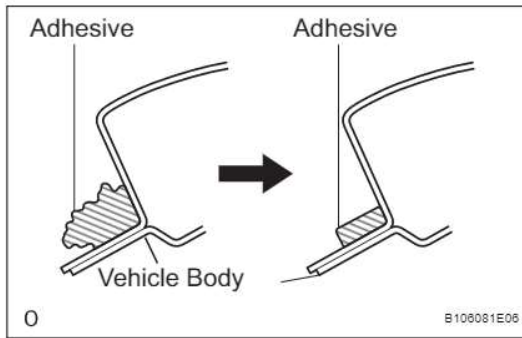
NOTICE:

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

- (g) Using a suction cup, remove the quarter window glass.

WINDSHIELD / WINDOWGLASS – QUARTER WINDOW GLASS

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23. CLEAN VEHICLE BODY

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

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

HINT:

Leave as much adhesive on the vehicle body as possible.

NOTICE:

Be careful not to damage the vehicle body.

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

HINT:

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

INSTALLATION

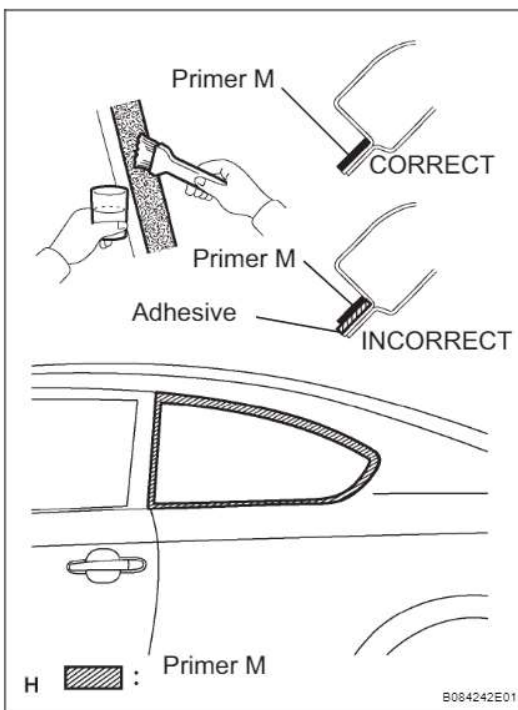
1. INSTALL QUARTER WINDOW ASSEMBLY LH

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

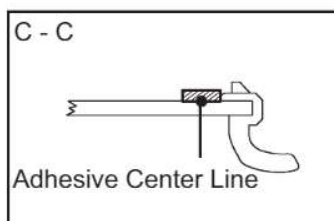
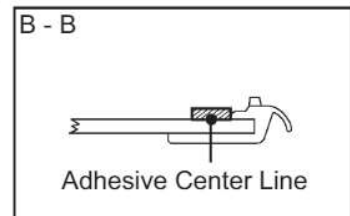
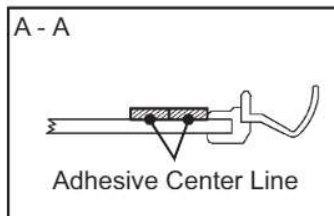
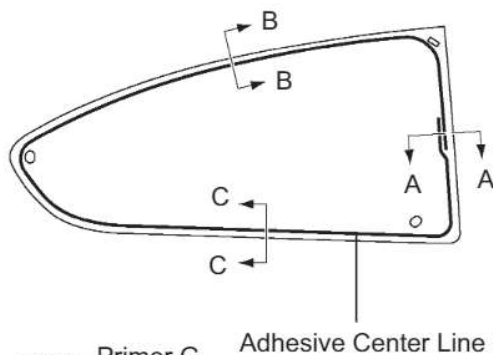
NOTICE:

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

- (b) Using a brush or sponge, apply Primer G to the contact surface of the quarter window glass.



Backside



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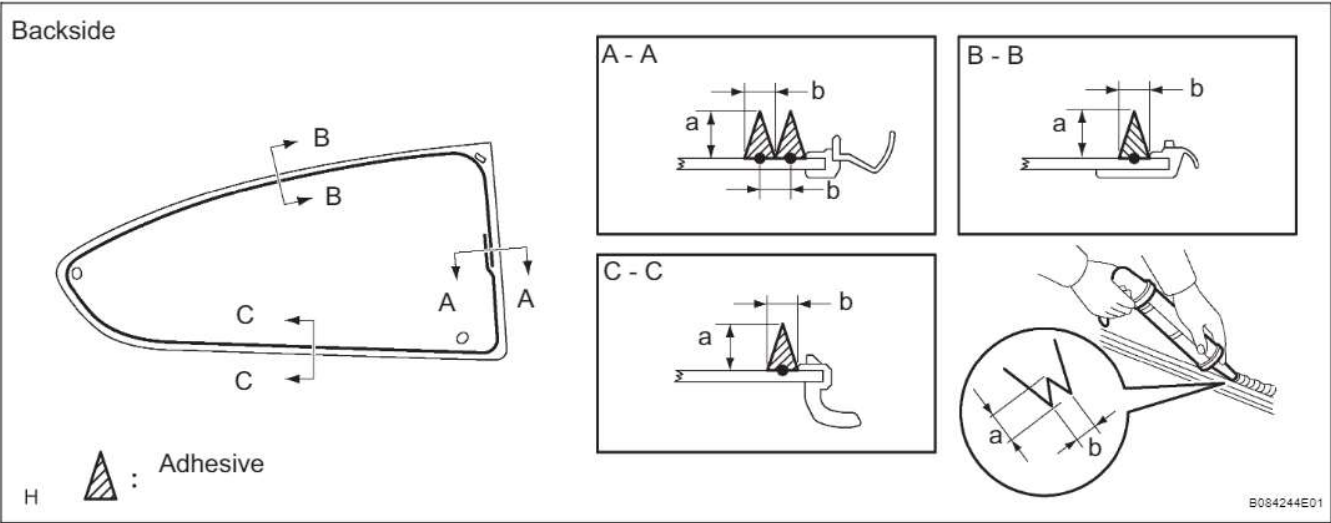
WINDSHIELD / WINDOWGLASS – QUARTER WINDOW GLASS

HINT:
If Primer G is applied to an area other than that which is specified, wipe off the primer with white gasoline before it dries.

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

(c) Apply adhesive to the quarter window glass.

Adhesive:
Part No. 08850-00801 or equivalent
(1) Cut off the tip of the cartridge nozzle as shown in the illustration.



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

Usage time frame

Temperature	Usage Time Frame
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

- (2) Load the sealer gun with the cartridge.
- (3) Apply adhesive to the quarter window glass as shown in the illustration.
- (d) Install the quarter window glass to the vehicle body.
- (1) Lightly press the front surface of the quarter window glass to ensure that the quarter window glass is securely fit to the vehicle body.

- NOTICE:**
- Check that the clips are attached to the vehicle body correctly.
 - Check that the vehicle body and quarter window glass have a small gap between them.

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

NOTICE:

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

2. INSTALL ROOF HEADLINING ASSEMBLY (See page [IR-15](#))
3. INSTALL COAT HOOK (See page [IR-15](#))
4. INSTALL NO. 1 ROOM LIGHT ASSEMBLY (See page [IR-16](#))
5. INSTALL ROOF SIDE GARNISH INNER LH (See page [IR-17](#))
6. INSTALL ROOF SIDE GARNISH INNER LOWER LH (See page [IR-18](#))
7. INSTALL CENTER PILLAR GARNISH LH (See page [IR-19](#))
8. INSTALL DECK TRIM SIDE PANEL ASSEMBLY LH (See page [IR-18](#))
9. INSTALL ROPE HOOK
10. INSTALL NO. 1 SIDE TRIM ASSEMBLY LH (See page [IR-19](#))
11. INSTALL NO. 1 LUGGAGE COMPARTMENT TRIM HOOK
12. INSTALL REAR SEAT OUTER BELT ASSEMBLY LH (See page [SB-26](#))
13. INSTALL FRONT SEAT OUTER BELT ASSEMBLY LH
 - (a) Install the anchor part of the outer belt with the bolt.
Torque: 42 N*m (428 kgf*cm, 31 ft.*lbf)
14. INSTALL FRONT SEAT BELT ANCHOR COVER CAP
15. INSTALL BACK DOOR SCUFF PLATE (See page [IR-21](#))
16. INSTALL REAR NO. 1 FLOOR BOARD (See page [IR-20](#))
17. INSTALL NO. 1 DECK BOARD (See page [IR-20](#))
18. INSTALL DECK BOARD ASSEMBLY
19. INSTALL FRONT DOOR SCUFF PLATE LH (See page [IR-20](#))
20. INSTALL REAR SEATBACK ASSEMBLY LH (See page [SE-28](#))
21. INSTALL REAR SEAT CUSHION ASSEMBLY (See page [SE-29](#))
22. INSTALL TONNEAU COVER ASSEMBLY

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23. CHECK FOR LEAKS AND REPAIR

- (a) Conduct a leak test after the adhesive has completely hardened.
- (b) Seal any leaks with auto glass sealer.

24. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**25. PERFORM INITIALIZATION**

- (a) Perform initialization (see page [IN-23](#)).
HINT:
Certain systems need to be initialized after disconnecting and reconnecting the cable from the negative (-) battery terminal.

WS