

# POWER WINDOW CONTROL SYSTEM

## PRECAUTION

### NOTICE:

When disconnecting the negative (-) battery cable, initialize the following systems after the cable is reconnected.

System Name	See procedure
Power Window Control System	<a href="#">IN-29</a>
Sliding Roof System	<a href="#">IN-29</a>

### 1. EXPRESSIONS OF IGNITION SWITCH

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

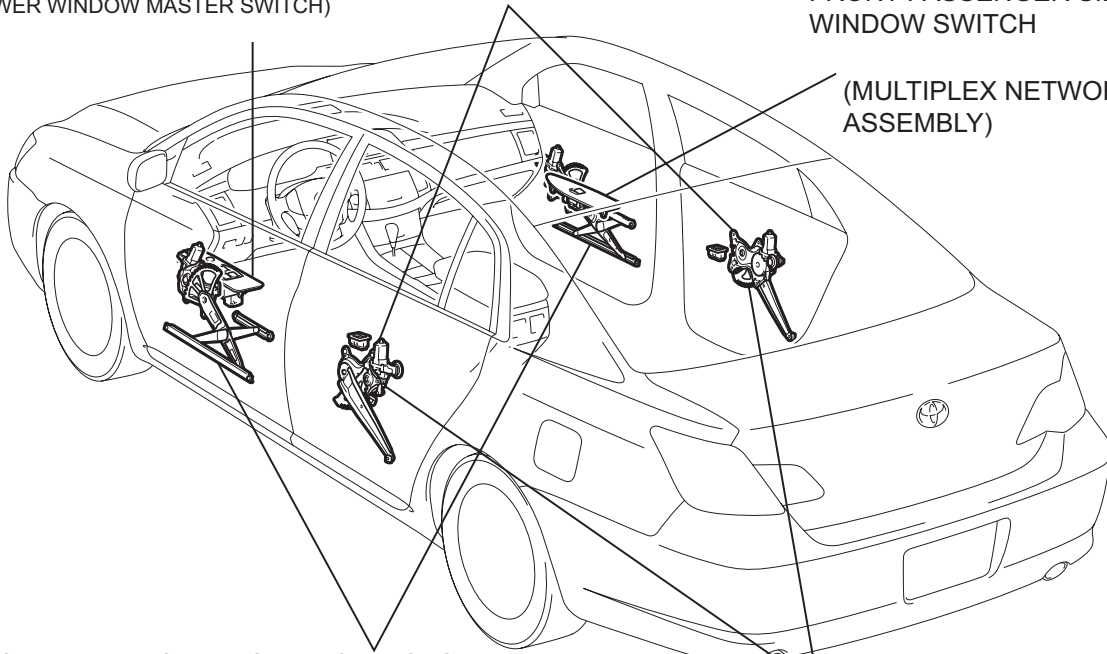
Switch Type		Ignition Switch (position)	Engine Switch (condition)
Expression	Ignition Switch off	LOCK	Off
	Ignition Switch on (IG)	ON	On (IG)
	Ignition Switch on (ACC)	ACC	On (ACC)
	Engine Start	START	Start

# PARTS LOCATION

MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY  
(POWER WINDOW MASTER SWITCH)

POWER WINDOW REGULATOR SWITCH ASSEMBLY (REAR LH, RH)

FRONT PASSENGER SIDE POWER WINDOW SWITCH  
(MULTIPLEX NETWORK SWITCH ASSEMBLY)



POWER WINDOW REGULATOR MOTOR  
- MOTOR POSITION DETECTION SENSOR

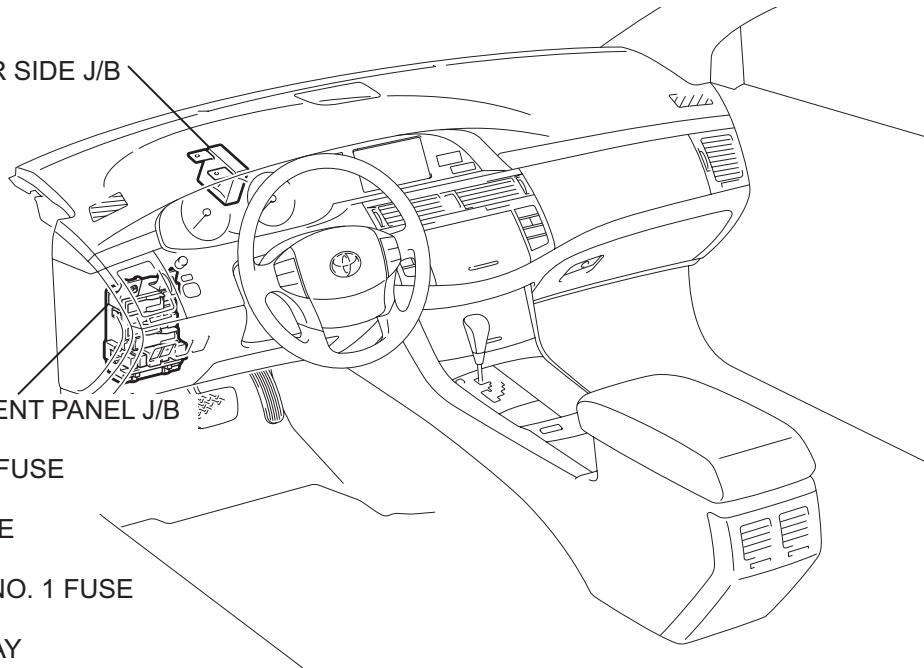
POWER WINDOW REGULATOR MOTOR  
- MOTOR POSITION DETECTION SENSOR

**WS**

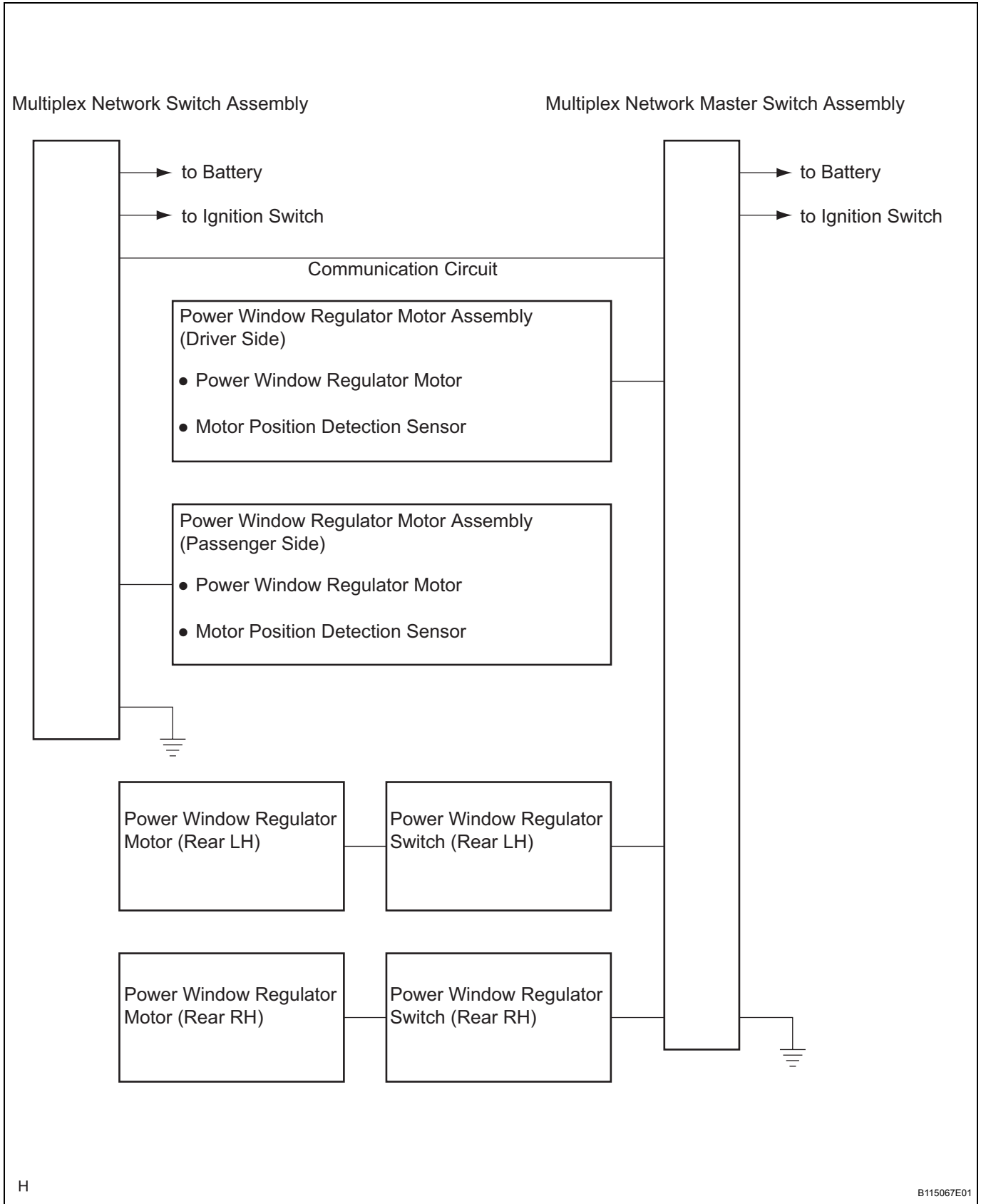
DRIVER SIDE J/B

INSTRUMENT PANEL J/B

- POWER FUSE
- P/W FUSE
- ECU-IG NO. 1 FUSE
- IG1 RELAY
- PWR RELAY



# SYSTEM DIAGRAM



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## 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: the multiplex network master switch assembly, which is built into the driver side door, and the power window regulator switches, which are built into the passenger side door and rear doors. Pressing each regulator switch on the multiplex network master switch assembly transmits a remote UP/DOWN signal to each power window regulator switch.

### 2. FUNCTION OF MAIN COMPONENT

Component	Outline
Multiplex Network Master Switch Assembly	Control window operations for all windows. Also, when window lock switch is set to lock position, window operation will only be possible for driver side power window.
Multiplex Network Switch Assembly	Located on passenger side door. Regulator switch assembly controls window operations for its respective window.
Power Window Regulator Switch (Rear LH, RH)	Located on rear door. Regulator switch assembly controls window operations for its respective window.
Power Window Regulator Motor Assembly	Receives switch signals and changes signals into motor activation. As a result, window position changes. Also, regulator motor assembly uses pulse sensor(s) to detect window position.

### 3. SYSTEM FUNCTION

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

Function	Outline
Manual UP/DOWN function	Function that raises window while power window switch is pulled halfway up and lowers window while switch is pushed halfway down. Window stops as soon as the switch is released.
Auto UP/DOWN function	Function that enables window to be fully opened or fully closed by one full push or pull of power window switch.
Jam protection function	Function that automatically stops power window and moves it downward if object is jammed in all power windows during AUTO UP operation. During key-off operation function, jam protection function works for manual UP and AUTO UP operation. Jam protection is available for front doors.
Remote control function	Function that allows multiplex network master switch assembly to control manual and AUTO UP/DOWN operations of passenger door power window and rear door power window.
Key-off operation function	Function that makes it possible to operate power window for approximately 43 seconds after ignition switch is turned to ACC or LOCK position and both front doors are closed.
Window lock function	Function where passenger door power window and rear door power windows' operations are disabled when window lock switch of the multiplex network master switch assembly is pressed. Passenger door power window and rear door 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 and make diagnoses. Power window switch light starts blinking to inform driver.
Fail-safe	Function that disables power window AUTO UP/DOWN function if pulse sensor (Hall IC) or limit sensor in power window regulator motor malfunction. Manual operation is possible through power window switches.

## HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

Use this procedure to troubleshoot the power window control system.

**1** VEHICLE BROUGHT TO WORKSHOP

NEXT

**2** CUSTOMER PROBLEM ANALYSIS CHECK AND SYMPTOM CHECK

NEXT

**3** PROBLEM SYMPTOMS TABLE

HINT:

See page [WS-7](#)

NEXT

**4** ADJUST, REPAIR OR REPLACE

NEXT

**5** CONFIRMATION TEST

NEXT

END



### OPERATION CHECK

#### 1. CHECK WINDOW LOCK SWITCH

- (a) Check that the front passenger side power window and rear power window operation is disabled when the window lock switch of the multiplex network master switch is pressed.
- (b) Check that the front passenger side power window and rear power windows can be operated when the window lock switch is pressed again.

**2. CHECK MANUAL UP/DOWN FUNCTION**

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

OK

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

(b) Check that the power windows except the driver side power window operates as follows:

OK

Condition	Master Switch	Switch Operation	Power Window
<ul style="list-style-type: none"> <li>Ignition switch ON</li> <li>Window lock switch OFF</li> </ul>	Passenger side	Pulled halfway up	UP (Closed)
		Pushed halfway down	DOWN (Open)
	Rear LH	Pulled halfway up	UP (Closed)
		Pushed halfway down	DOWN (Open)
	Rear RH	Pulled halfway up	UP (Closed)
		Pushed halfway down	DOWN (Open)

**3. CHECK AUTO UP/DOWN FUNCTION**

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

OK

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

(b) Check that the power windows except the driver side power window operate as follows:

OK

Condition	Master Switch	Switch Operation	Power Window
<ul style="list-style-type: none"> <li>Ignition switch ON</li> <li>Window lock switch OFF</li> </ul>	Passenger side	Pulled fully up	AUTO UP (Fully closed)
		Pushed fully down	AUTO DOWN (Fully open)

**4. CHECK REMOTE MANUAL UP/DOWN FUNCTION**

(a) Check that the power windows except the driver side power window operate as follows:

OK

Condition	Master Switch	Switch Operation	Power Window
<ul style="list-style-type: none"> <li>Ignition switch ON</li> <li>Window lock switch OFF</li> </ul>	Passenger side	Pulled halfway up	UP (Closed)
		Pushed halfway down	DOWN (Open)
	Rear LH	Pulled halfway up	UP (Closed)
		Pushed halfway down	DOWN (Open)
	Rear RH	Pulled halfway up	UP (Closed)
		Pushed halfway down	DOWN (Open)

**5. CHECK REMOTE AUTO UP/DOWN FUNCTION**

(a) Check that the power windows except the driver side power window operate as follows:

OK

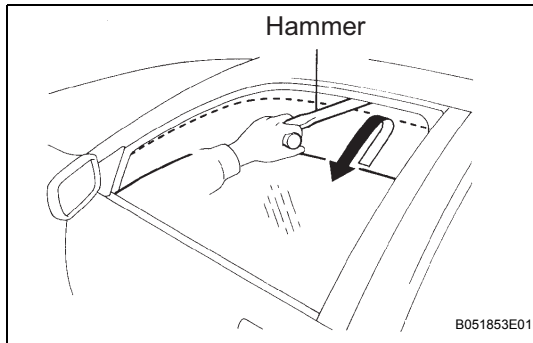
Condition	Master Switch	Switch Operation	Power Window
<ul style="list-style-type: none"> <li>Ignition switch ON</li> <li>Window lock switch OFF</li> </ul>	Passenger side	Pulled fully up	AUTO UP (Fully closed)
		Pushed fully down	AUTO DOWN (Fully open)

**6. CHECK JAM PROTECTION FUNCTION****HINT:**

The jam protection function prevents any part of your body from getting caught by accident between the door frame and the door glass during power window operation.

**NOTICE:**

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



- (a) Check that the door glass goes down by approximately 50 mm (1.97 in.) right when something gets 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 go down and does not stop until an opening of 200 mm (7.87 in.) is achieved.

**Operative conditions:**

- AUTO UP (FRONT DOORS)
- AUTO UP/MANUAL UP function after the ignition switch is turned off (FRONT DOORS)

## INITIALIZATION

### 1. INITIALIZE POWER WINDOW REGULATOR MOTOR

#### NOTICE:

**If the jam protection function does not function properly, perform the following procedures.**

- (a) Ignition switch on (IG).
- (b) (Power window can be partially or fully open.)
- (c) Close the power window by holding the Auto UP knob ON.
- (d) Continue to hold the Auto UP knob ON a minimum of 1 second after the power window completely closes.
- (e) Release the Auto UP knob.

#### HINT:

Front passenger must be initialized from actual multiplex network switch assembly. After initialization operation (from the multiplex network master switch assembly to the multiplex network switch assembly) will be allowed.

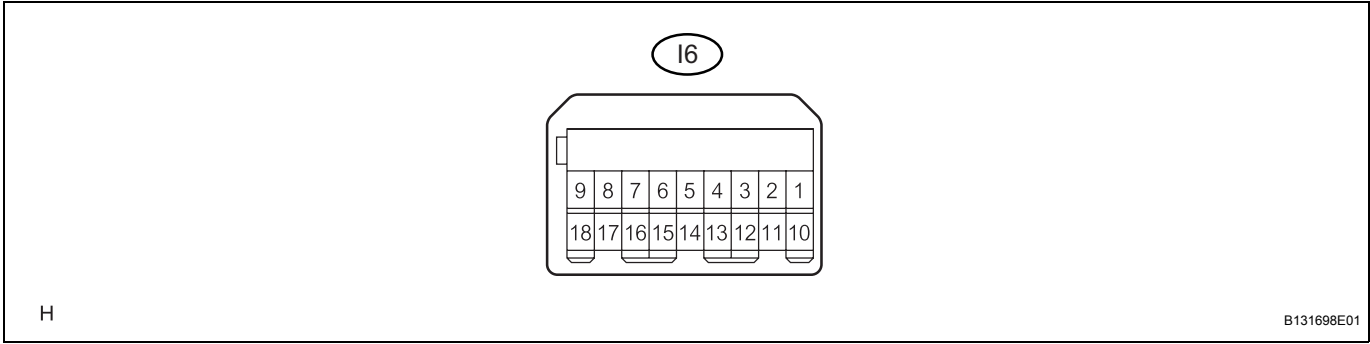


## PROBLEM SYMPTOMS TABLE

### POWER WINDOW CONTROL SYSTEM

Symptom	Suspected area	See page
Power window does not operate at all	1. Power source circuit (multiplex network master switch assembly)	WS-11
	2. Multiplex network master switch assembly	-
Driver side power window does not operate	1. Power source circuit (multiplex network master switch assembly)	WS-11
	2. Power window motor circuit (driver side)	WS-21
	3. Multiplex network master switch assembly	-
Passenger side power window does not operate (with master switch)	1. Window lock signal circuit	WS-29
	2. Multiplex network master switch assembly	-
Passenger side power window does not operate (with front passenger switch)	1. Power source circuit (front passenger switch)	WS-13
	2. Multiplex network switch assembly	-
	3. Power window motor circuit (front passenger side)	WS-13
Rear LH power window does not operate	1. Power source circuit (multiplex network master switch assembly)	WS-11
	2. Power window motor circuit (rear LH)	WS-25
	3. Power window regulator switch circuit (rear LH)	WS-17
Rear RH power window does not operate	1. Power source circuit (multiplex network master switch assembly)	WS-11
	2. Power window motor circuit (rear RH)	WS-27
	3. Power window regulator switch circuit (rear RH)	WS-19
Jam protection function and AUTO UP/DOWN function do not operate on driver side	1. Initialization	WS-7
	2. Multiplex network master switch assembly	-
	3. Power window regulator motor assembly	-
Jam protection function and AUTO UP/DOWN function do not front passenger side	1. Initialization	WS-7
	2. Multiplex network switch assembly	-
	3. Power window regulator motor assembly (front passenger side)	-
Window lock function does not operate	1. Window lock signal circuit	WS-29
	2. Multiplex network master switch assembly	-
Window control function does not operate	1. Window lock signal circuit	WS-29
	2. Multiplex network master switch assembly	-

# TERMINALS OF ECU

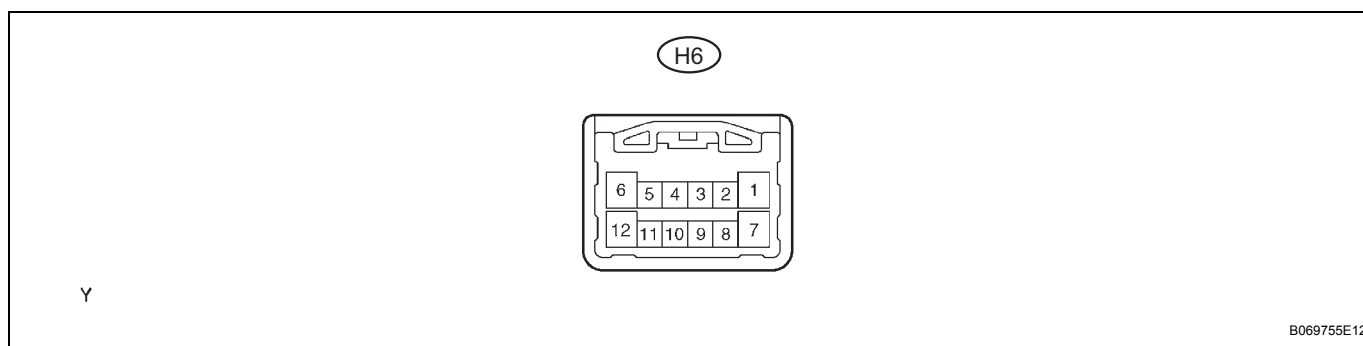


## 1. MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
E (I6-1) - Body ground	W-B - Body ground	Ground	Always	Below 1 V
SGND (I6-2) - Body ground	W-B - Body ground	Ground	Always	Below 1 V
VC (I6-3) - E(I6-1)	L - Body ground	Power window motor position sensor power source	Always	10 to 14 V
DU (I6-4) - Body ground	P - Body ground	Power window motor UP output signal (Driver side)	Ignition switch on (IG), power window OFF → UP	0 V → 10 to 14 V
L (I6-5) - E (I6-1)	G - Body ground	Door lock signal	Door lock switch position is OFF → LOCK	10 to 14 V → 0 V
B (I6-6) - E (I6-1)	R - Body ground	Power window switch power source	Always	10 to 14 V
BW (I6-7) - E (I6-1)	W - Body ground	Power window switch power source	Always	10 to 14 V
UL (I6-8) - E (I6-1)	L - Body ground	Door lock signal	Door lock switch position is OFF → UNLOCK	10 to 14 V → 0 V
DD (I6-9) - Body ground	BR - Body ground	Power window motor DOWN output signal (Driver side)	Ignition switch on (IG), power window OFF → DOWN	0 V → 10 to 14 V
RLD (I6-10) - Body ground	R - Body ground	Power window motor DOWN output signal (Rear RL)	Ignition switch on (IG), power window OFF → DOWN	0 V → 10 to 14 V
IG (I6-11) - E (I6-1)	GR - Body ground	Power window switch power source	Ignition switch OFF → ON	0 V → 10 to 14 V
RLU (I6-12) - Body ground	BR - Body ground	Power window motor UP output signal (Rear RL)	Ignition switch on (IG), power window OFF → UP	0 V → 10 to 14 V
TX (I6-13) - E (I6-1)	B - Body ground	Communication circuit	-	-
PLS1 (I6-14) - E (I6-1)	LG - Body ground	Power window motor position sensor input signal (Driver side)	Power window operating	Pulse generation
PCT (I6-15) - E (I6-1)	Y- Body ground	Power window lock switch output signal	Ignition switch on (IG), power window lock switch NORMAL → LOCK	10 to 14 V → 0 V
RRD (I6-16) - Body ground	V - Body ground	Power window motor DOWN output signal (Rear RH)	Ignition switch on (IG), power window OFF → DOWN	0 V → 10 to 14 V
PLS2 (I6-17) - E (I6-1)	LG - Body ground	Power window motor position sensor input signal (Driver side)	Power window operating	Pulse generation
RRU (I6-18) - Body ground	L - Body ground	Power window motor UP output signal (Rear RHL)	Ignition switch on (IG), power window OFF → UP	0 V → 10 to 14 V

## 2. MULTIPLEX NETWORK SWITCH ASSEMBLY

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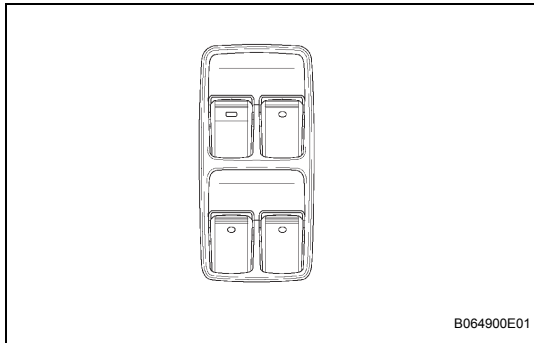


Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
D (H6-1) - Body ground	R - Body ground	Power window motor DOWN output signal (Front passenger side)	Ignition switch on (IG), power window OFF → DOWN	0 V → 10 to 14 V
RX (H6-2) - E (H6-7)	GR - Body ground	Communication circuit	-	-
PLS1 (H6-3) - E (H6-7)	B - Body ground	Power window motor position sensor input signal (Driver side)	Power window operating	Pulse generation
PLS2 (H6-4) - E (H6-7)	LG - Body ground	Power window motor position sensor input signal (Driver side)	Power window operating	Pulse generation
VCC (H6-5) - E (H6-7)	W - Body ground	Power window motor position sensor power source	Always	10 to 14 V
U (H6-6) - Body ground	G - Body ground	Power window motor UP output signal (Front passenger side)	Ignition switch on (IG), power window OFF → UP	0 V → 10 to 14 V
E (H6-7) - Body ground	W-B - Body ground	Ground	Always	Below 1 V
SGND (H6-8) - Body ground	W-B - Body ground	Ground	Always	Below 1 V
PCT (H6-11) - E (H6-7)	BR - Body ground	Power window lock switch output signal	Ignition switch on (IG), power window lock switch NORMAL → LOCK	10 to 14 V → 0 V
BW (H6-12) - E (H6-7)	V - Body ground	Power window switch power source	Always	10 to 14 V

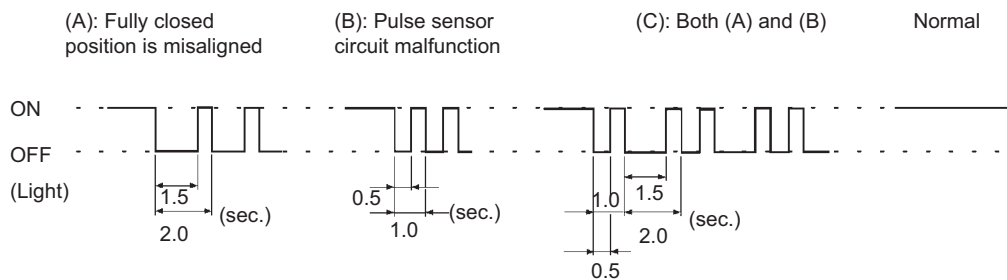
# DIAGNOSIS SYSTEM

## 1. CHECK DIAGNOSIS

- (a) Turn the ignition switch ON.
- (b) Operate the driver side switch of the master switch.
- (c) Check the blinking pattern of the AUTO light as shown in the illustration.



### Blinking Pattern of Light:



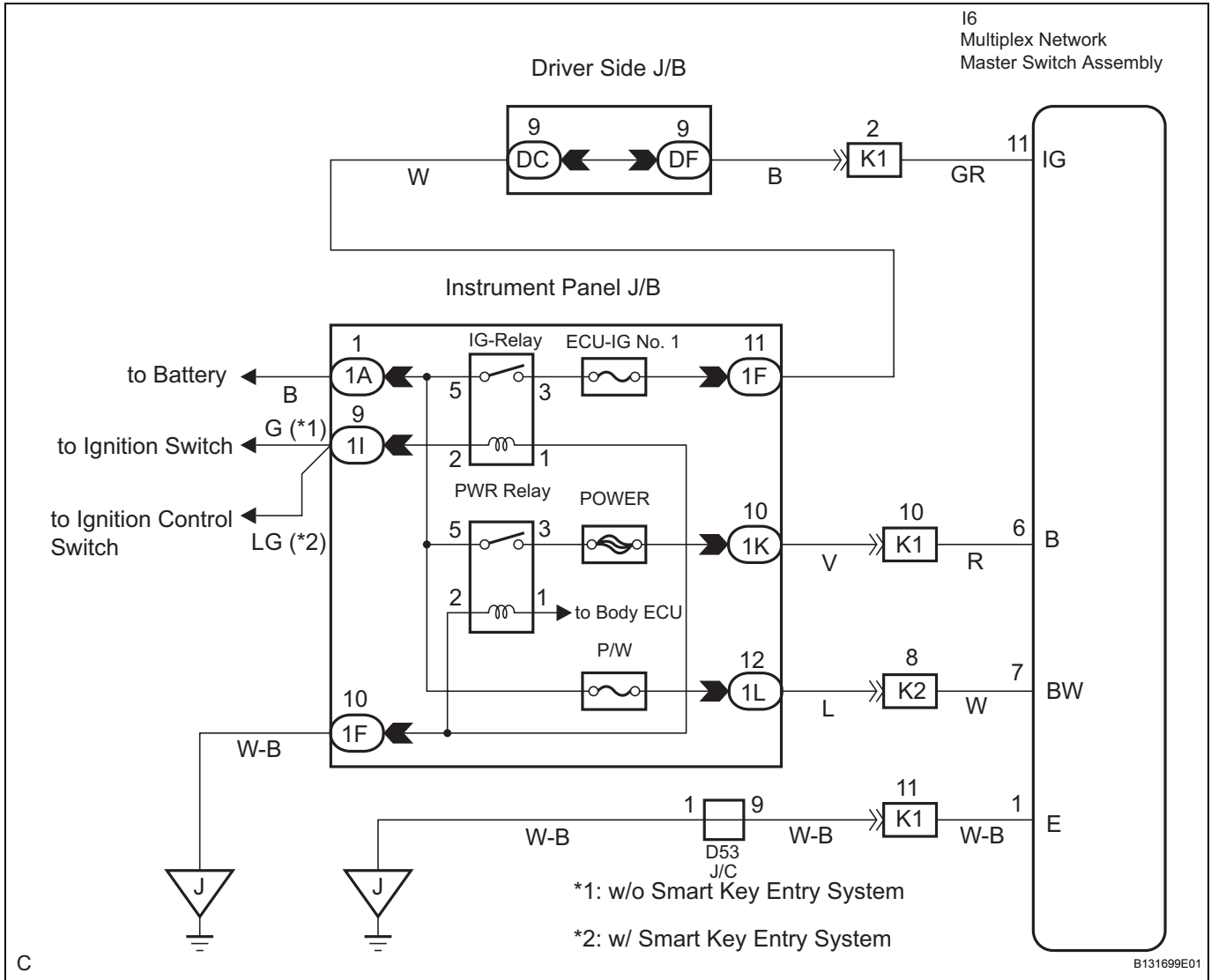
- (1) If pattern (A) is displayed, reset power window regulator motor.
- (2) If pattern (B) or (C) displayed, check the wire harness.
- (3) If the normal pattern is displayed, replace the multiplex network master switch.

# Power Window Master Switch Power Source Circuit

## DESCRIPTION

This circuit supplies power to operate the multiplex network master switch.

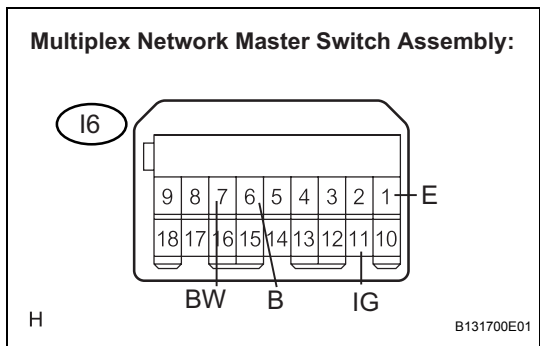
## WIRING DIAGRAM



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**INSPECTION PROCEDURE**

**1 CHECK WIRE HARNESS (MULTIPLEX NETWORK MASTER SWITCH - BATTERY AND BODY GROUND)**



- (a) Disconnect the I6 connector.
- (b) Measure the resistance and voltage according to the value(s) in the table below.

**Resistance**

Tester Connection	Condition	Specified Condition
I6-1 (E) - Body ground	Always	Below 1 Ω

**Voltage**

Tester Connection	Condition	Specified Condition
I6-7 (BW) - Body ground	Always	10 to 14 V
I6-6 (B) - Body ground	Always	10 to 14 V
I6-11 (IG) - Body ground	Ignition switch OFF → ON	0 V → 10 to 14 V

**NG** → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

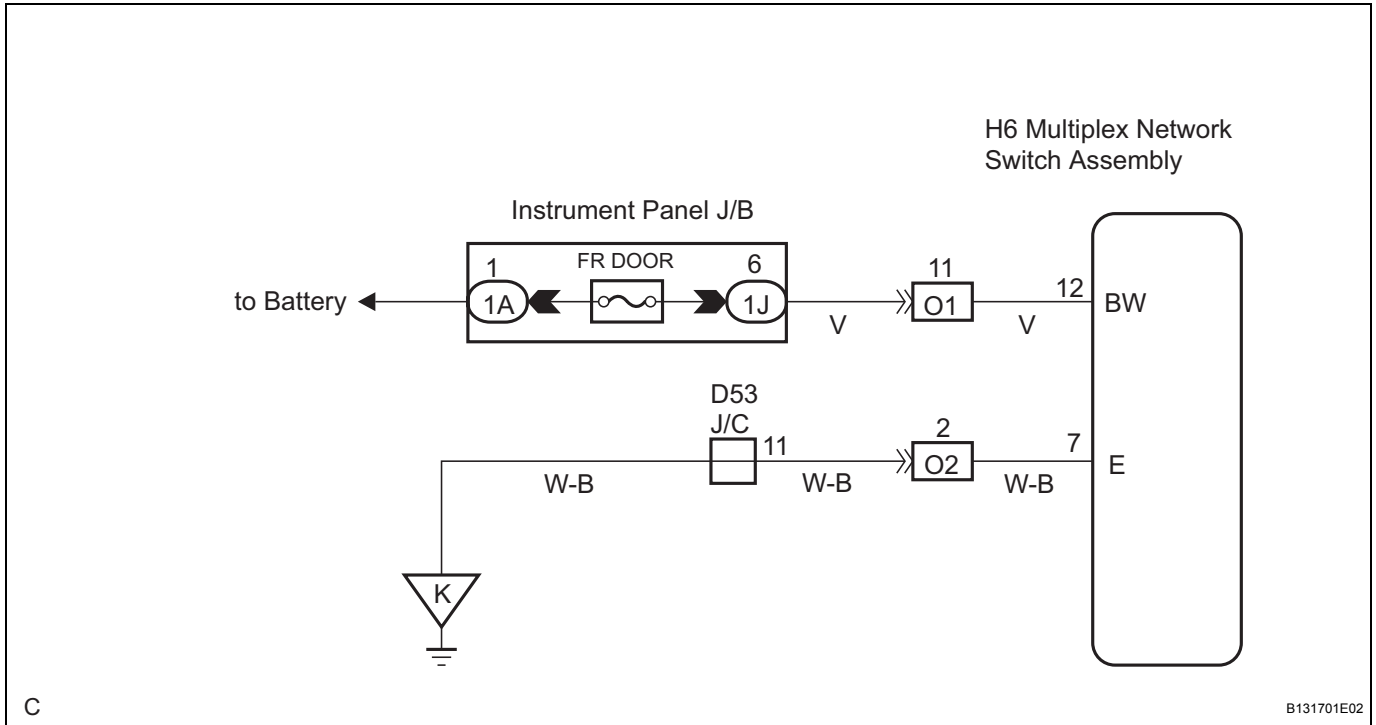
**PROCEED TO NEXT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

# Front Passenger Side Power Window Switch Power Source Circuit

## DESCRIPTION

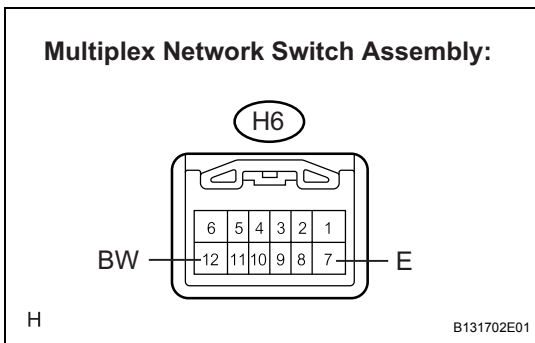
This circuit supplies power to operate the multiplex network switch.

## WIRING DIAGRAM



## INSPECTION PROCEDURE

### 1 CHECK WIRE HARNESS (MULTIPLEX NETWORK SWITCH - BATTERY AND BODY GROUND)



- (a) Disconnect the H6 connector.
- (b) Measure the resistance and voltage according to the value(s) in the table below.

#### Resistance

Tester Connection	Condition	Specified Condition
H6-7(E) - Body ground	Always	Below 1 Ω

#### Voltage

Tester Connection	Condition	Specified Condition
H6-12(BW) - Body ground	Always	10 to 14 V

**NG** REPAIR OR REPLACE HARNESS OR CONNECTOR

**OK**

**PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

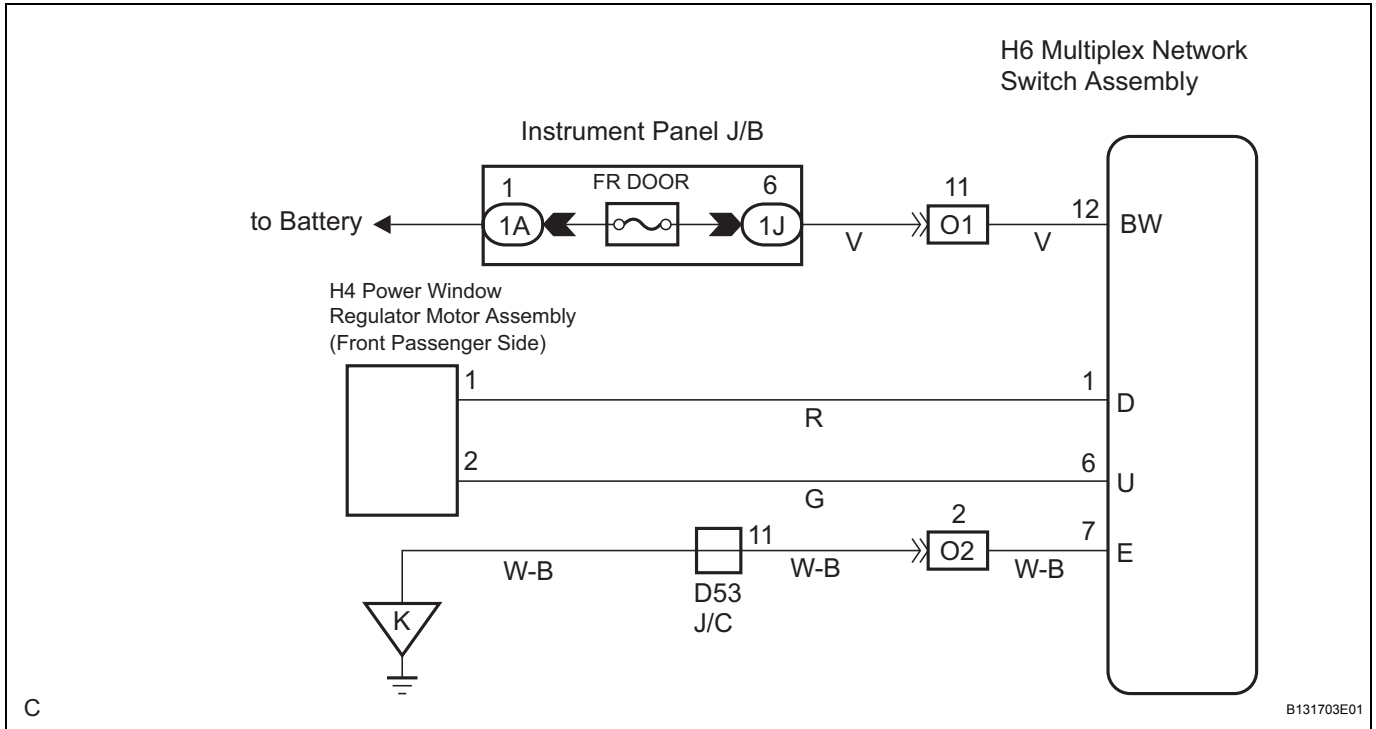


## Front Passenger Side Power Window Switch Circuit

### DESCRIPTION

This circuit transmits signals from the multiplex network master switch assembly to multiplex network switch assembly.

### WIRING DIAGRAM

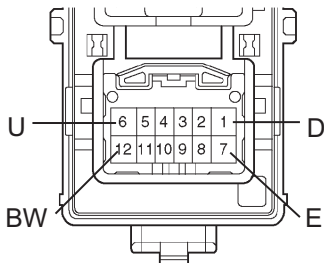


WS

### INSPECTION PROCEDURE

#### 1 INSPECT MULTIPLEX NETWORK SWITCH ASSEMBLY

##### Multiplex Network Switch Assembly:



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

##### Resistance

Switch Condition	Tester Connection	Specified Condition
AUTO UP	1 (D) - 7 (E) 6 (U) - 12 (BW)	Below 1Ω
UP	1 (D) - 7 (E) 6 (U) - 12 (BW)	Below 1Ω
OFF	1 (D) - 7 (E) 6 (U) - 7 (E)	Below 1Ω
DOWN	6 (U) - 7 (E) 1 (D) - 12 (BW)	Below 1Ω
AUTO DOWN	6 (U) - 7 (E) 1 (D) - 12 (BW)	Below 1Ω

NG

REPLACE MULTIPLEX NETWORK SWITCH ASSEMBLY

OK

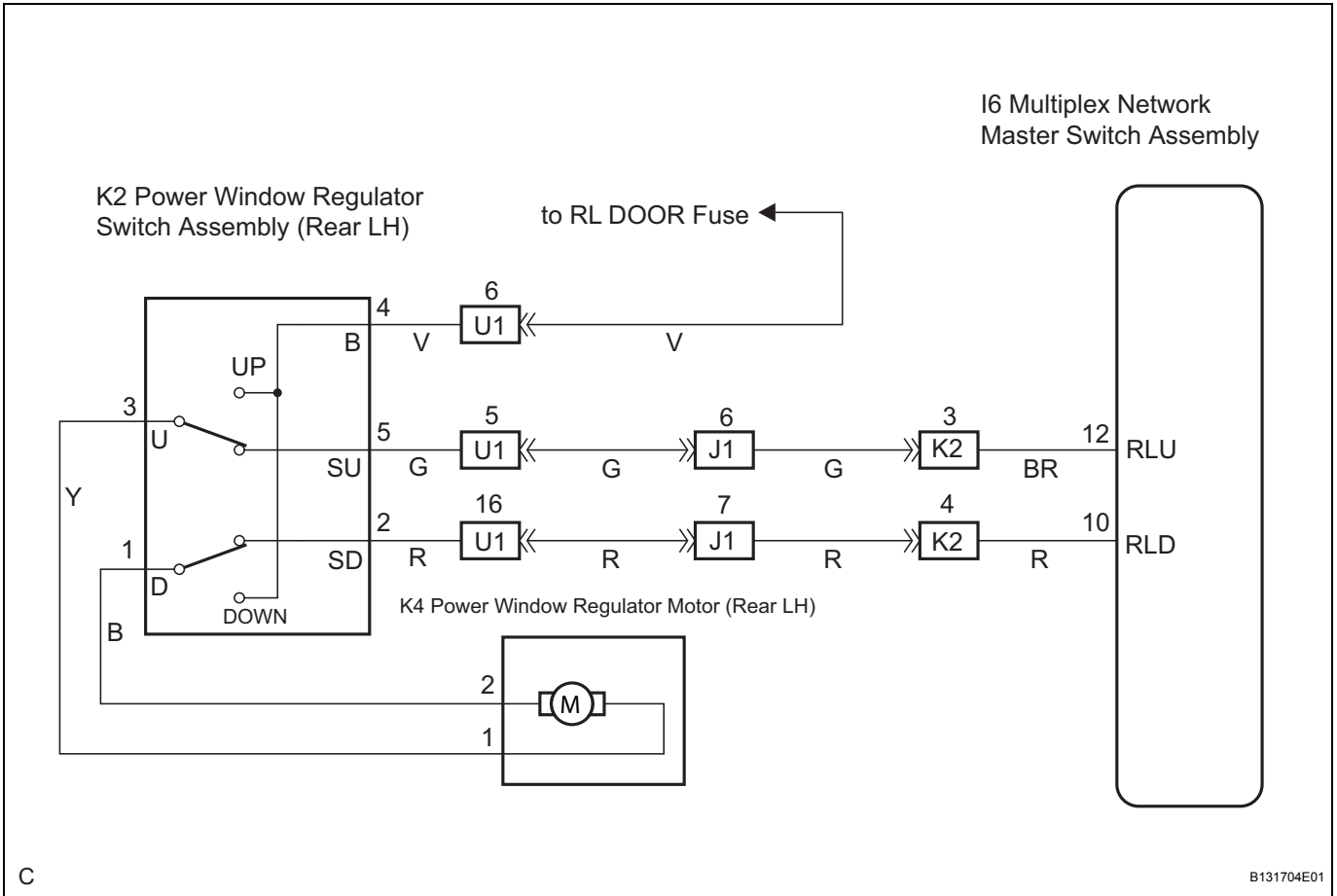
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE

## Rear Power Window Switch LH Circuit

### DESCRIPTION

This circuit transmits signals from the multiplex network master switch assembly to power window regulator switch assembly (Rear LH).

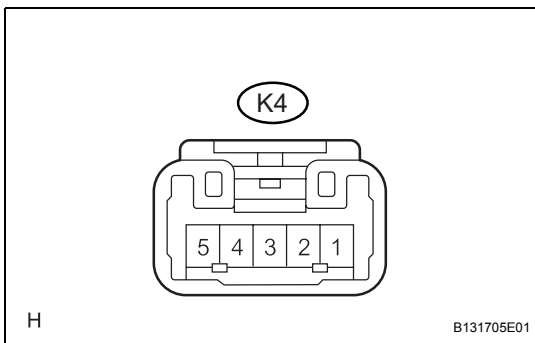
### WIRING DIAGRAM



WS

### INSPECTION PROCEDURE

#### 1 INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (REAR LH)



- Remove the switch.
- Measure the resistance of the switch when the switch is operated.

#### Resistance

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

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REPLACE POWER WINDOW REGULATOR  
SWITCH ASSEMBLY (REAR LH)

OK

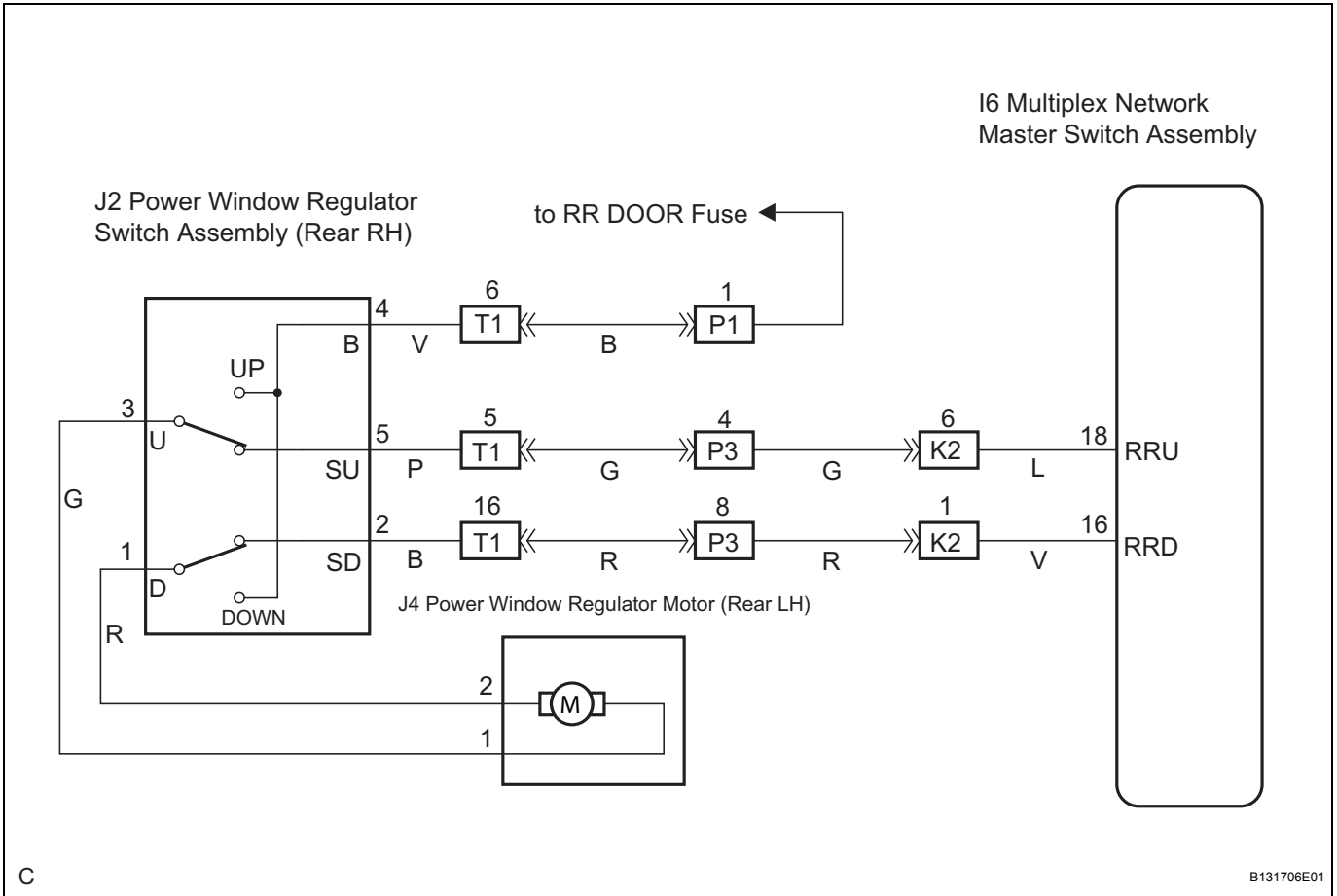
PROCEED TO NEXT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

## Rear Power Window Switch RH Circuit

### DESCRIPTION

This circuit transmits signals from the multiplex network master switch assembly to power window regulator switch assembly (Rear RH).

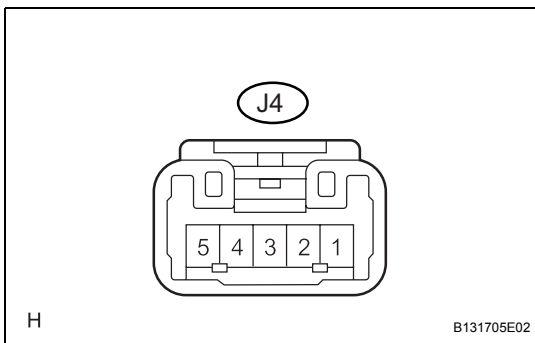
### WIRING DIAGRAM



WS

### INSPECTION PROCEDURE

#### 1 INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (REAR RH)



- Remove the switch.
- Measure the resistance of the switch when the switch is operated.

#### Resistance

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

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REPLACE POWER WINDOW REGULATOR  
SWITCH ASSEMBLY (REAR RH)

OK

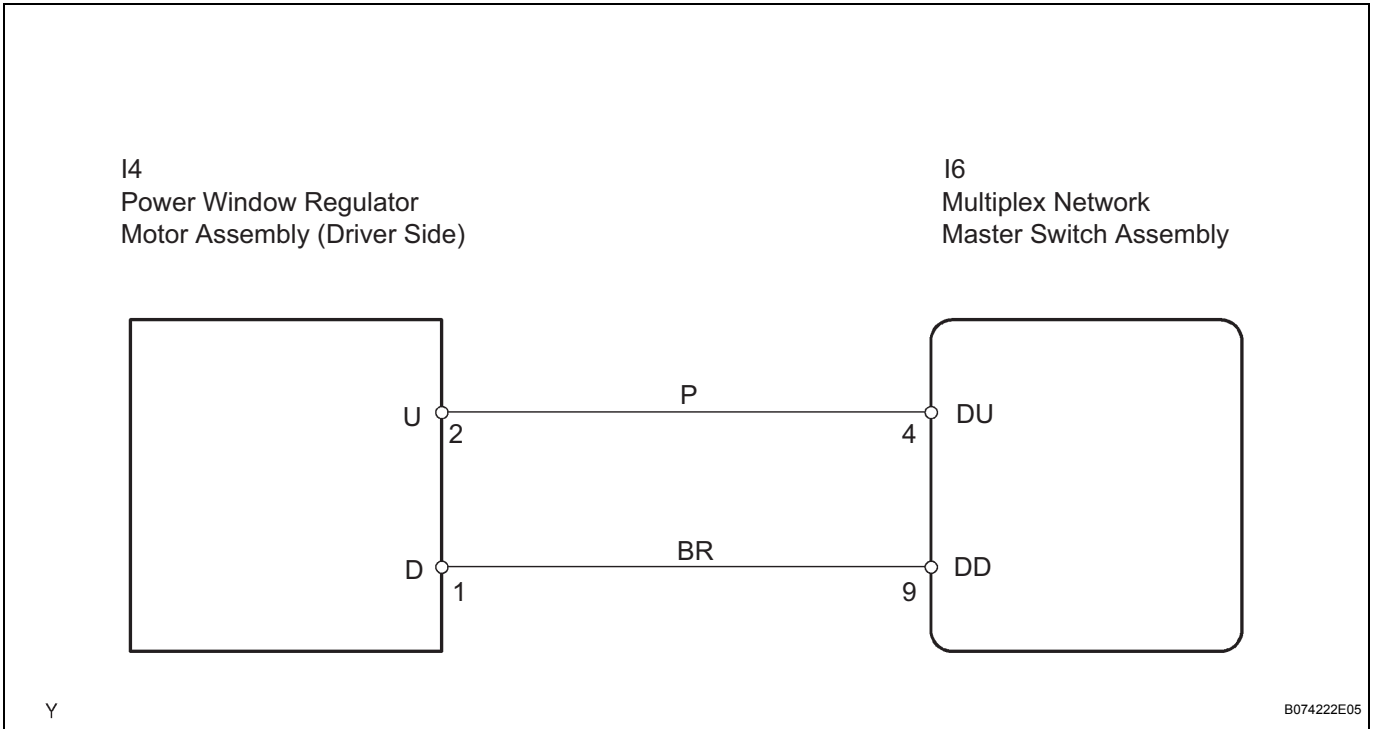
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

## Driver Side Power Window Motor Circuit

### DESCRIPTION

This circuit transmits signal from the multiplex network master switch assembly to power window regulator motor assembly (Driver side).

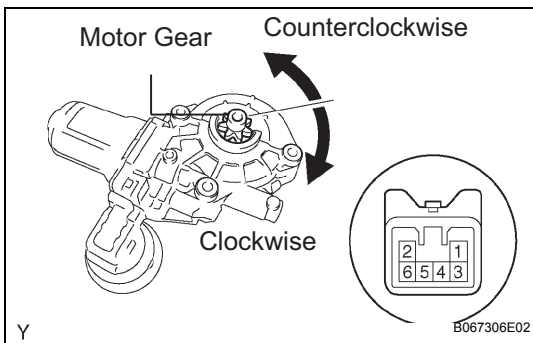
### WIRING DIAGRAM



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### INSPECTION PROCEDURE

#### 1 INSPECT POWER WINDOW REGULATOR MOTOR (DRIVER SIDE)



- (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 terminal 1 and 2.  
Standard

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

NG

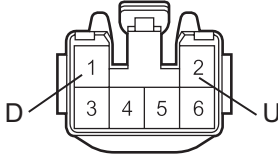
**REPLACE POWER WINDOW REGULATOR MOTOR (DRIVER SIDE)**

OK

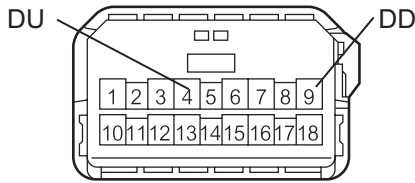
**2 CHECK WIRE HARNESS (WINDOW REGULATOR MOTOR - MULTIPLEX NETWORK MASTER SWITCH)**

**Wire Harness Side:**

I4  
Power Window Regulator  
Motor Assembly (Driver Side)



I6  
Multiplex Network  
Master Switch Assembly



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- (a) Disconnect the I4 and I6 connectors.
- (b) Measure the resistance of the wire harness side connectors.

**Resistance**

Tester Connection	Condition	Specified Condition
I4-1 - I6-9	Always	Below 1 Ω
I4-2 - I6-4	Always	Below 1 Ω
I4-1 - Body ground	Always	10 kΩ or higher
I4-2 - Body ground	Always	10 kΩ or higher

**NG**

**REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

**WS**

**PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOM TABLE**

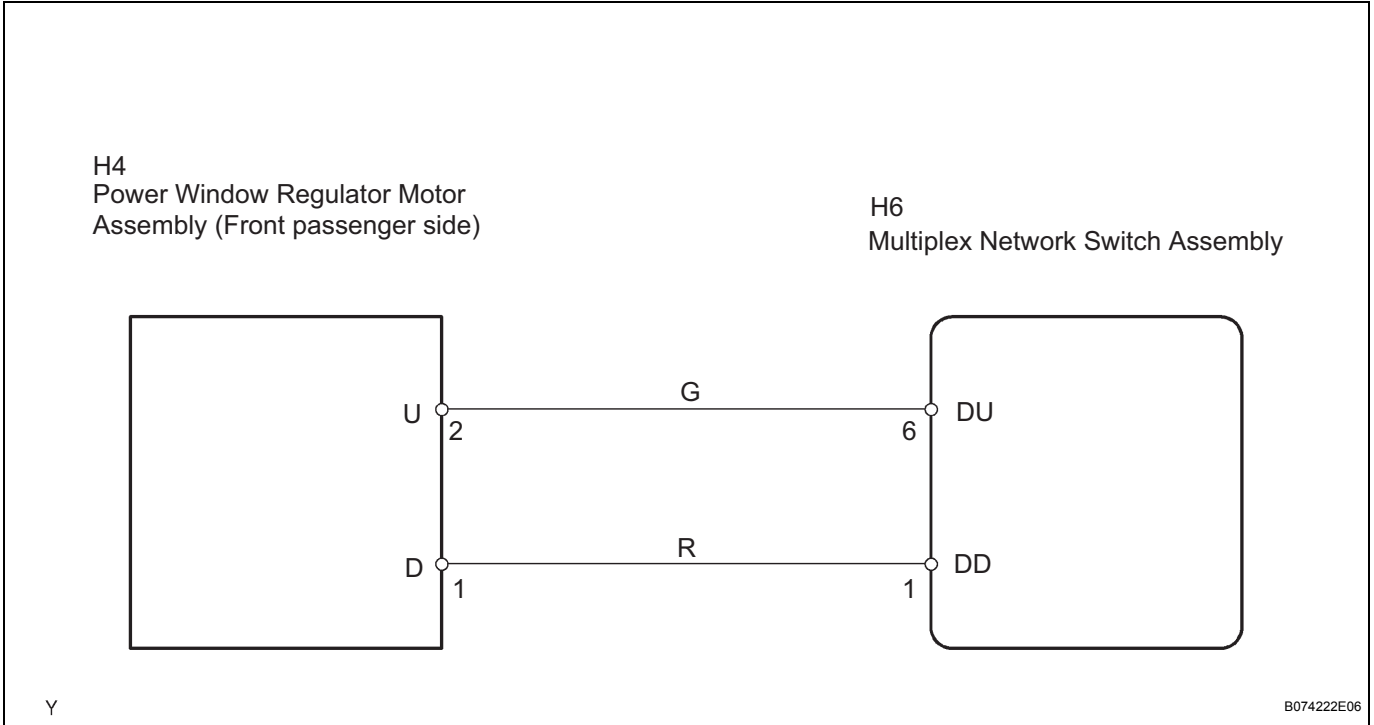


# Front Passenger Side Power Window Motor Circuit

## DESCRIPTION

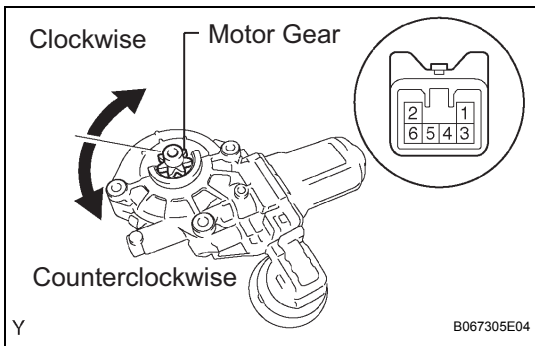
This circuit transmits signal from the multiplex network switch to power window regulator motor.

## WIRING DIAGRAM



## INSPECTION PROCEDURE

### 1 INSPECT POWER WINDOW REGULATOR MOTOR (FRONT PASSENGER SIDE)



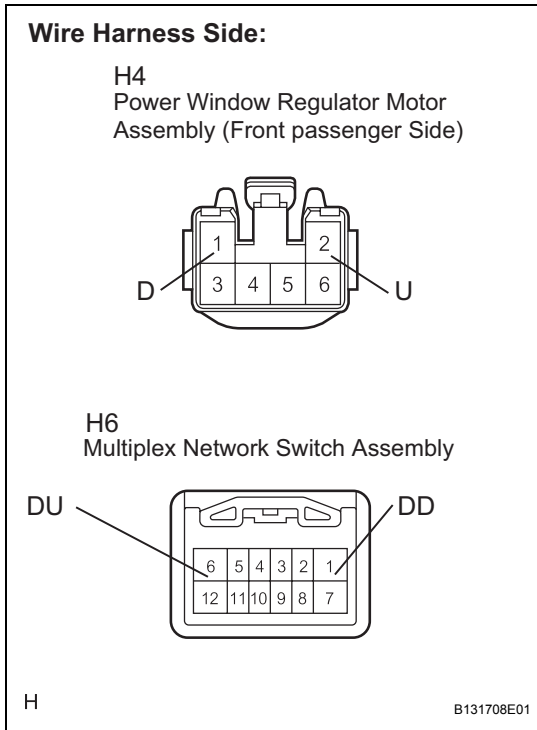
- (a) Remove the power window motor.
  - (b) Apply battery voltage to the motor connector according to the table below.
- NOTICE:**  
Do not apply battery voltage to any terminals except terminals 1 and 2.  
Standard

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

**NG** → REPLACE POWER WINDOW REGULATOR MOTOR (FRONT PASSENGER SIDE)

**OK**

**2 CHECK WIRE HARNESS (WINDOW REGULATOR MOTOR - MULTIPLEX NETWORK SWITCH)**



- (a) Disconnect the H4 and H6 connectors.
- (b) Measure the resistance of the wire harness side connectors.

**Resistance**

Tester Connection	Condition	Specified Condition
H4-2 - H6-6	Always	Below 1 Ω
H4-1 - H6-1	Always	Below 1 Ω
H4-2 - Body ground	Always	10 kΩ or higher
H4-1 - Body ground	Always	10 kΩ or higher

**NG** REPAIR OR REPLACE HARNESS OR CONNECTOR

**OK**

**WS**

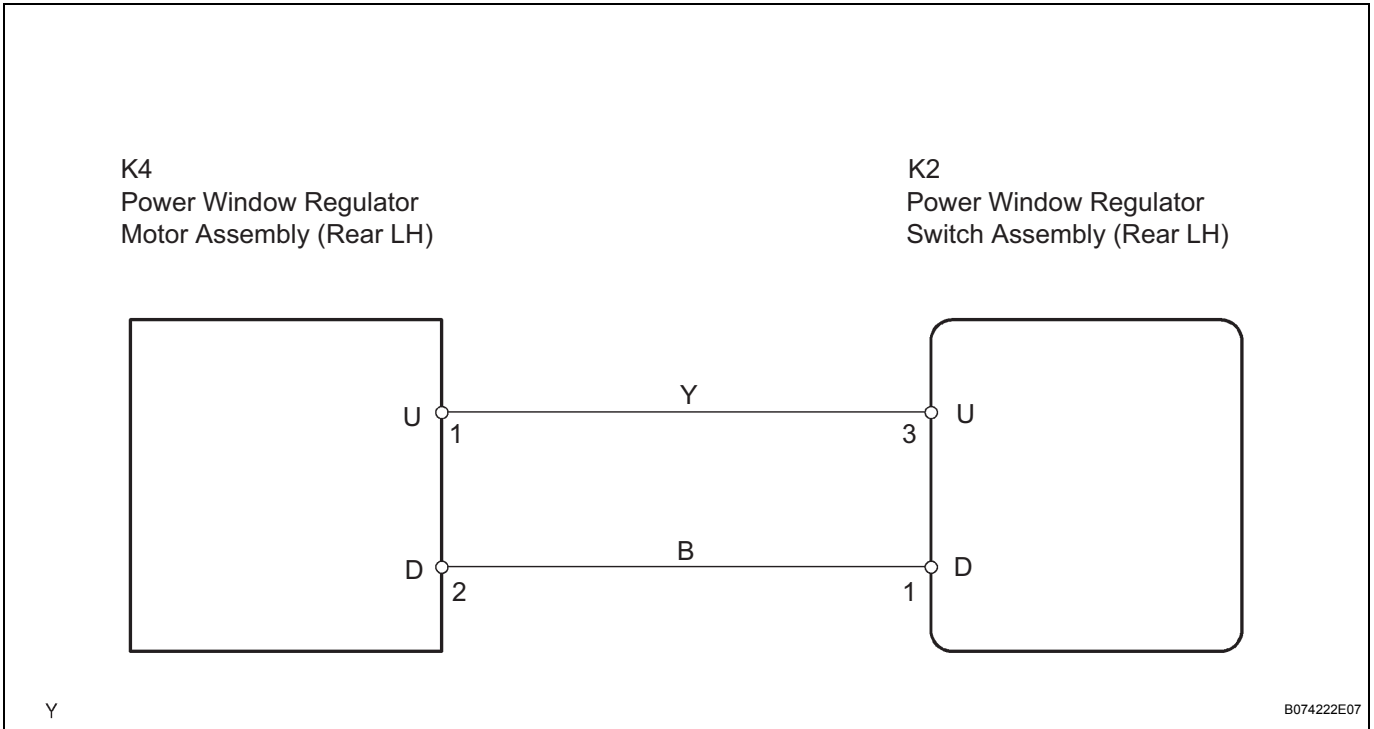
**PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

## Rear Power Window Motor LH Circuit

### DESCRIPTION

This circuit transmits signal from the power window regulator switch assembly (Rear LH) to power window regulator motor assembly (Rear LH).

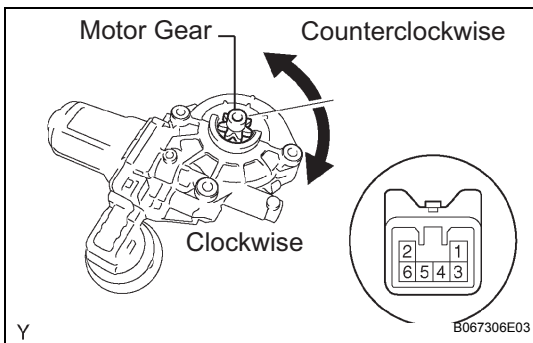
### WIRING DIAGRAM



WS

### INSPECTION PROCEDURE

#### 1 INSPECT POWER WINDOW REGULATOR MOTOR (REAR LH)



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

**NOTICE:**

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

**Standard**

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

NG

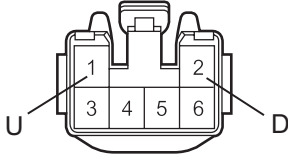
**REPLACE POWER WINDOW REGULATOR MOTOR (REAR LH)**

OK

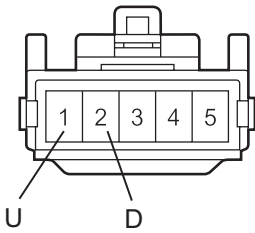
**2 CHECK WIRE HARNESS (WINDOW REGULATOR MOTOR - POWER WINDOW REGULATOR SWITCH)**

**Wire Harness Side:**

K4  
Power Window Regulator  
Motor Assembly (Rear LH)



K2  
Power Window Regulator  
Switch Assembly (Rear LH)



B131709E01

- (a) Disconnect the K2 and K4 connectors.
- (b) Measure the resistance of the wire harness side connectors.

**Resistance**

Tester Connection	Condition	Specified Condition
K4-1 - K2-3	Always	Below 1 Ω
K4-2 - K2-1	Always	Below 1 Ω
K4-1 - Body ground	Always	10 kΩ or higher
K4-2 - Body ground	Always	10 kΩ or higher

**NG**

**REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

**WS**

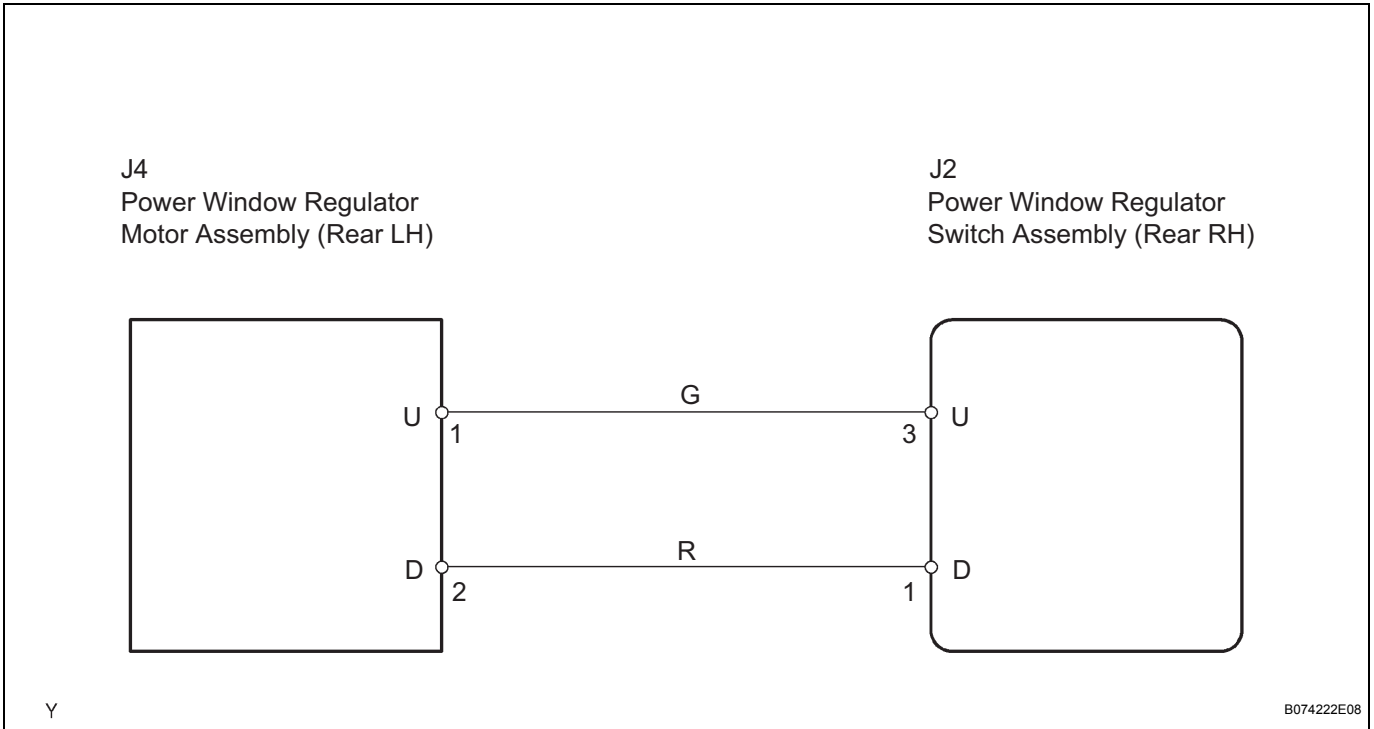
**PROCEED TO NEXT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

## Rear Power Window Motor RH Circuit

### DESCRIPTION

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

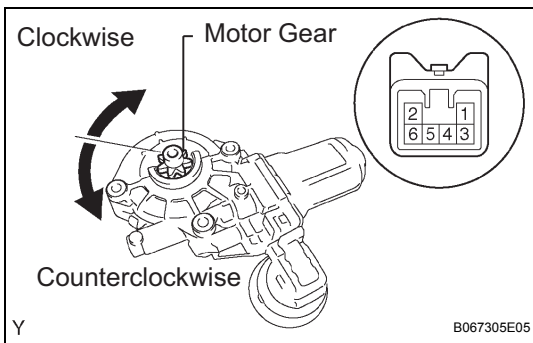
### WIRING DIAGRAM



WS

### INSPECTION PROCEDURE

#### 1 INSPECT POWER WINDOW REGULATOR MOTOR (REAR RH)



- Remove the power window regulator motor.
- 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 (U) Battery negative (-) → Terminal 2 (D)	Motor gear rotates clockwise
Battery positive (+) → Terminal 2 (D) Battery negative (-) → Terminal 1 (U)	Motor gear rotates counterclockwise

NG

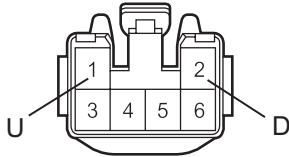
**REPLACE POWER WINDOW REGULATOR MOTOR (REAR RH)**

OK

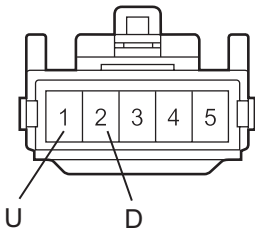
**2 CHECK WIRE HARNESS (WINDOW REGULATOR MOTOR - POWER WINDOW REGULATOR SWITCH)**

**Wire Harness Side:**

J4  
Power Window Regulator  
Motor Assembly (Rear RH)



J2  
Power Window Regulator  
Switch Assembly (Rear RH)



B131709E02

- (a) Disconnect the J2 and J4 connectors.
- (b) Measure the resistance of the wire harness side connectors.

**Resistance**

Tester Connection	Condition	Specified Condition
J4-1 - J2-3	Always	Below 1 Ω
J4-2 - J2-1	Always	Below 1 Ω
J4-1 - Body ground	Always	10 kΩ or higher
J4-2 - Body ground	Always	10 kΩ or higher

**NG**

**REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

**WS**

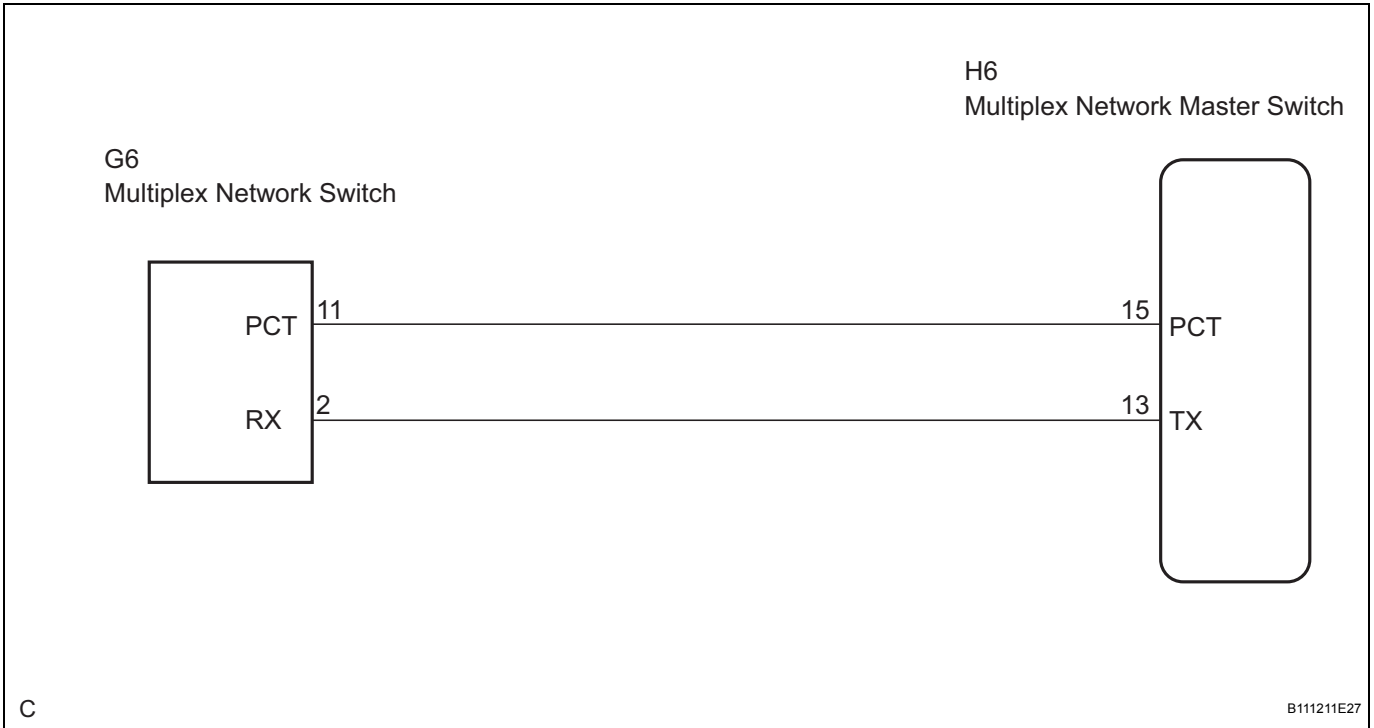
**PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOM TABLE**

# Window Lock Signal Circuit

## DESCRIPTION

When the window lock switch on the multiplex network master switch is in the LOCK position, the front passenger door power window regulator and rear LH and RH power window switches cannot operate their respective power windows.

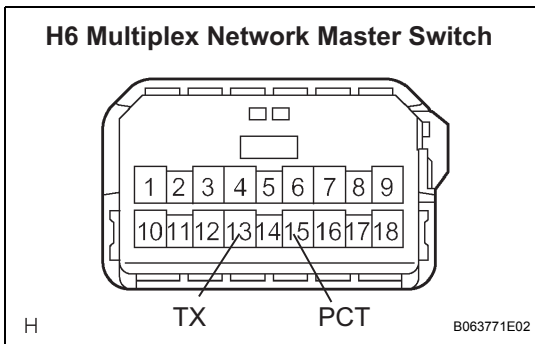
## WIRING DIAGRAM



WS

## INSPECTION PROCEDURE

### 1 CHECK MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY



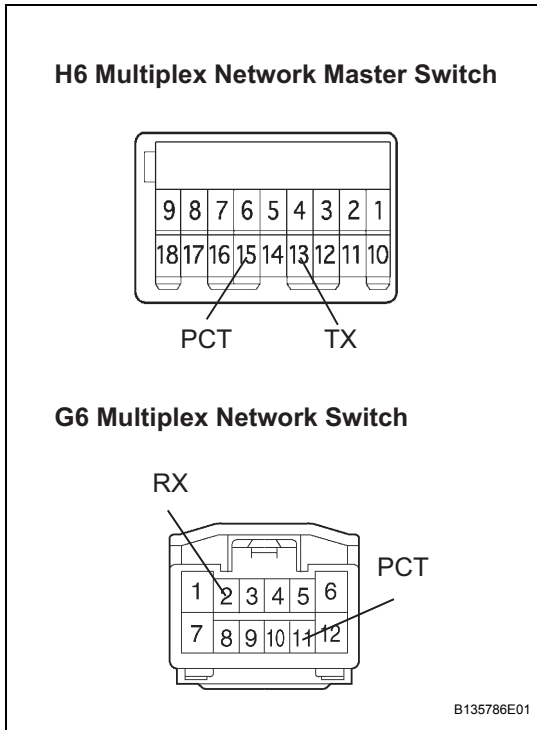
- (a) Remove the multiplex network master switch with connector still connected.
  - (b) Measure the voltage of the wire harness side connector.
- Standard voltage**

Switch Condition	Tester Connection	Specified Condition
H6-15 (PCT) - Body ground	Window lock switch is OFF → ON	0 V → 2 V or less
H6-13 (TX) - Body ground	Ignition switch ON	10 to 14 V

**NG** → **REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY**

**OK**

**2 CHECK WIRE HARNESS (MULTIPLEX NETWORK MASTER SWITCH - MULTIPLEX NETWORK SWITCH)**



- (a) Disconnect the H6 and G6 connectors.
- (b) Measure the resistance of the wire harness side connector.

**Standard resistance**

Switch Condition	Tester Connection	Specified Condition
H6-15 (PCT) - G6-11 (PCT)	Always	Below 1 Ω
H6-15 (PCT) - Body ground	Always	10 kΩ or higher
H6-13 (TX) - G6-2 (RX)	Always	Below 1 Ω
H6-13 (TX) - Body ground	Always	10 kΩ or higher

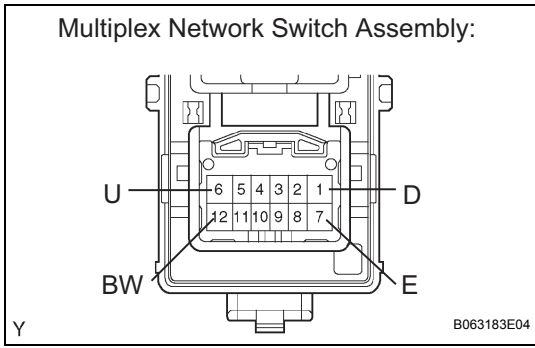
**NG** **REPAIR OR REPLACE HARNESS AND CONNECTOR**

**OK**

**WS**

**PROCEED TO NEXT CIRCUIT INSPECTION SHOWN PROBLEM SYMPTOMS TABLE**





# FRONT PASSENGER SIDE POWER WINDOW SWITCH

## INSPECTION

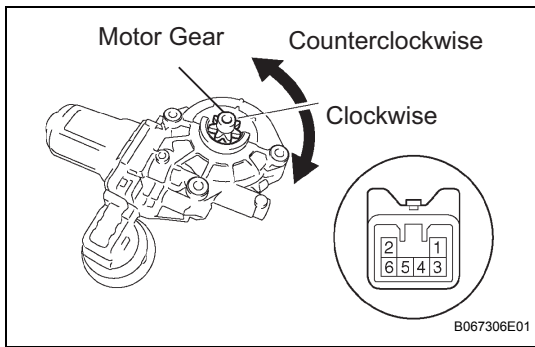
### 1. INSPECT FRONT PASSENGER POWER WINDOW SWITCH ASSEMBLY

- (a) Remove the multiplex network switch assembly.
- (b) Measure the resistance of the switch when the switch is operated.

#### Resistance

Switch Condition	Tester Connection	Specified Condition
<b>AUTO UP</b>	1 (D) - 7 (E) 6 (U) - 12 (BW)	<b>Below 1 Ω</b>
<b>UP</b>	1 (D) - 7 (E) 6 (U) - 12 (BW)	<b>Below 1 Ω</b>
<b>OFF</b>	1 (D) - 7 (E) 6 (U) - 7 (E)	<b>Below 1 Ω</b>
<b>DOWN</b>	6 (U) - 7 (E) 1 (D) - 12 (BW)	<b>Below 1 Ω</b>
<b>AUTO DOWN</b>	6 (U) - 7 (E) 1 (D) - 12 (BW)	<b>Below 1 Ω</b>

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



# POWER WINDOW REGULATOR MOTOR

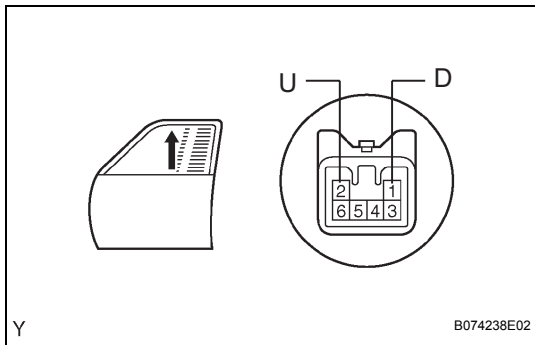
## INSPECTION

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

- (a) Check operation of the regulator motor.
    - (1) Remove the power window regulator motor assembly.
    - (2) Apply battery voltage to the motor terminals.
 

**NOTICE:**  
Do not apply voltage to the terminals except 1 and 2.
    - (3) Check that the motor operates 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



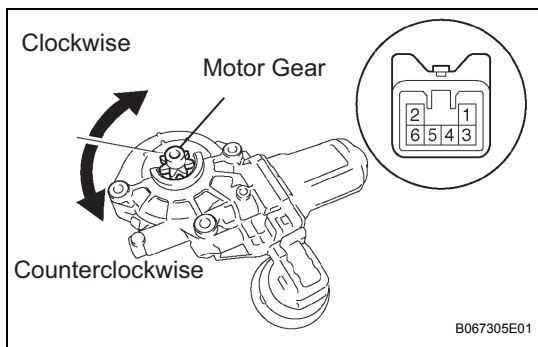
- (b) Check the PTC operation inside the regulator motor.
 

**NOTICE:**  
The work must be performed with the power window regulator and door glass installed in the vehicle.

  - (1) Disconnect the driver side power window regulator motor connector.
  - (2) Connect the ammeter's positive (+) lead to terminal 1 (D) of the wire harness side connector and the negative (-) lead to the battery's negative terminal.
  - (3) Connect the battery's positive (+) lead to terminal 2 (U) of the wire harness side connector, and raise the window to the fully closed position.
  - (4) Continue to apply voltage, and check that the current changes to less than 1 A within 4 to 90 seconds.
  - (5) Disconnect the leads from the terminals.
  - (6) Approximately 60 seconds later, connect the battery's positive (+) lead to terminal 1 (D) and the negative (-) lead to terminal 2 (U). Check that the window begins to descend. If the result is not as specified, replace the motor assembly.

WS

Y



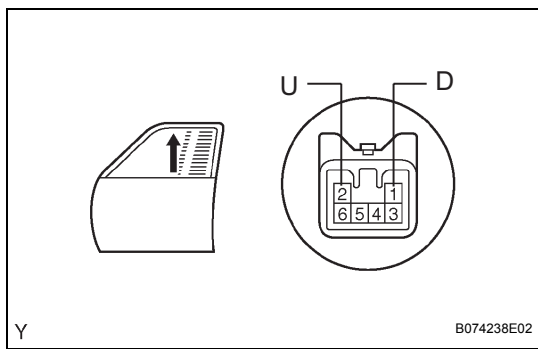
**2. INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY**

- (a) Check operation of the regulator motor.
  - (1) Remove the power window regulator motor assembly.
  - (2) Apply battery voltage to the motor terminals.
 

**NOTICE:**  
Do not apply voltage to the terminals except 1 and 2.
  - (3) Check that the motor operates 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

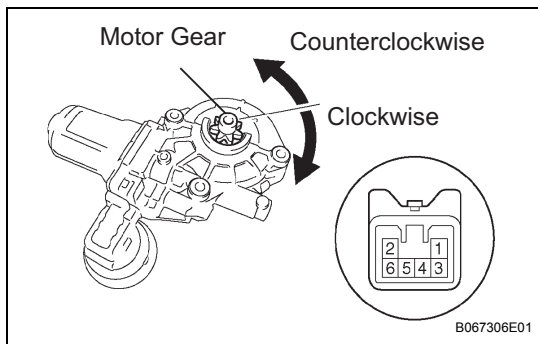


- (b) Check the PTC operation inside the regulator motor.
 

**NOTICE:**  
The work must be performed with the power window regulator and door glass installed in the vehicle.

- (1) Disconnect the driver side power window regulator motor connector.
- (2) Connect the ammeter's positive (+) lead to terminal 2 (U) of the wire harness side connector and the negative (-) lead to the battery's negative terminal.
- (3) Connect the battery's positive (+) lead to terminal 1 (D) of the wire harness side connector, and raise the window to the fully closed position.
- (4) Continue to apply voltage, and check that the current changes to less than 1 A within 4 to 90 seconds.
- (5) Disconnect the leads from the terminals.
- (6) Approximately 60 seconds later, connect the battery's positive (+) lead to terminal 2 (U) and the negative (-) lead to terminal 1 (D). Check that the window begins to descend. If the result is not as specified, replace the motor assembly.

**WS**



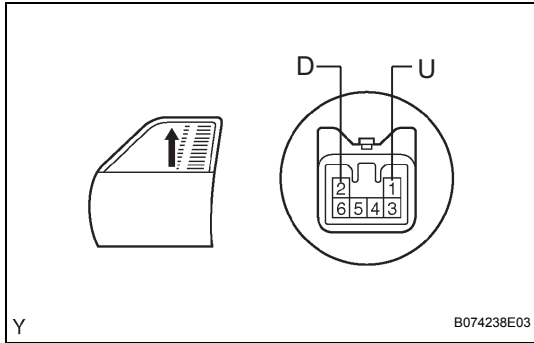
**3. INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH)**

- (a) Check operation of the regulator motor.
  - (1) Remove the power window regulator motor assembly.
  - (2) Apply battery voltage to the motor terminals.
 

**NOTICE:**  
Do not apply voltage to the terminals except 1 and 2.

- (3) Check that the motor operates smoothly.  
**OK**

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



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

**NOTICE:**

**The work must be performed with the power window regulator and door glass installed in the vehicle.**

- (1) Disconnect the driver side power window regulator motor connector.
- (2) Connect the ammeter's positive (+) lead to terminal 1 (U) of the wire harness side connector and the negative (-) lead to the battery's negative terminal.
- (3) Connect the battery's positive (+) lead to terminal 2 (D) of the wire harness side connector, and raise the window to the fully closed position.
- (4) Continue to apply voltage, and check that the current changes to less than 1 A within 4 to 90 seconds.
- (5) Disconnect the leads from the terminals.
- (6) Approximately 60 seconds later, connect the battery's positive (+) lead to terminal 1 (U) and the negative (-) lead to terminal 2 (D). Check that the window begins to descend.  
If the result is not as specified, replace the motor assembly.

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

- (a) Check operation of the regulator motor.

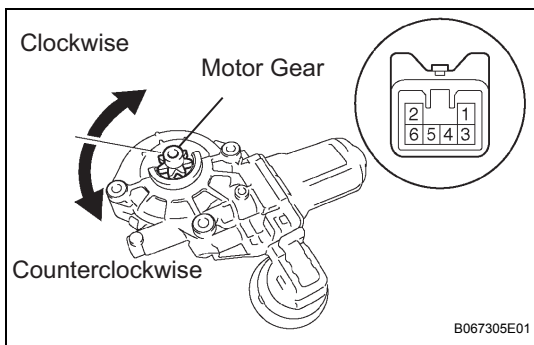
- (1) Remove the power window regulator motor assembly.
- (2) Apply battery voltage to the motor terminals.

**NOTICE:**

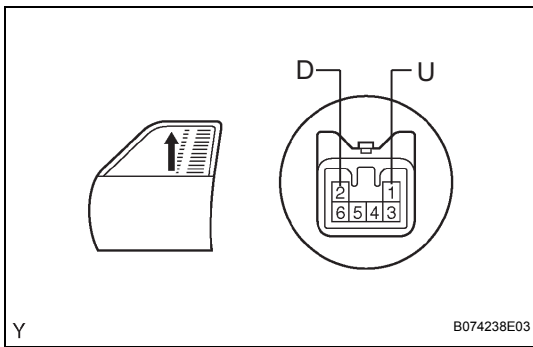
**Do not apply voltage to the terminals except 1 and 2.**

- (3) Check that the motor operates smoothly.  
**OK**

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



**WS**



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

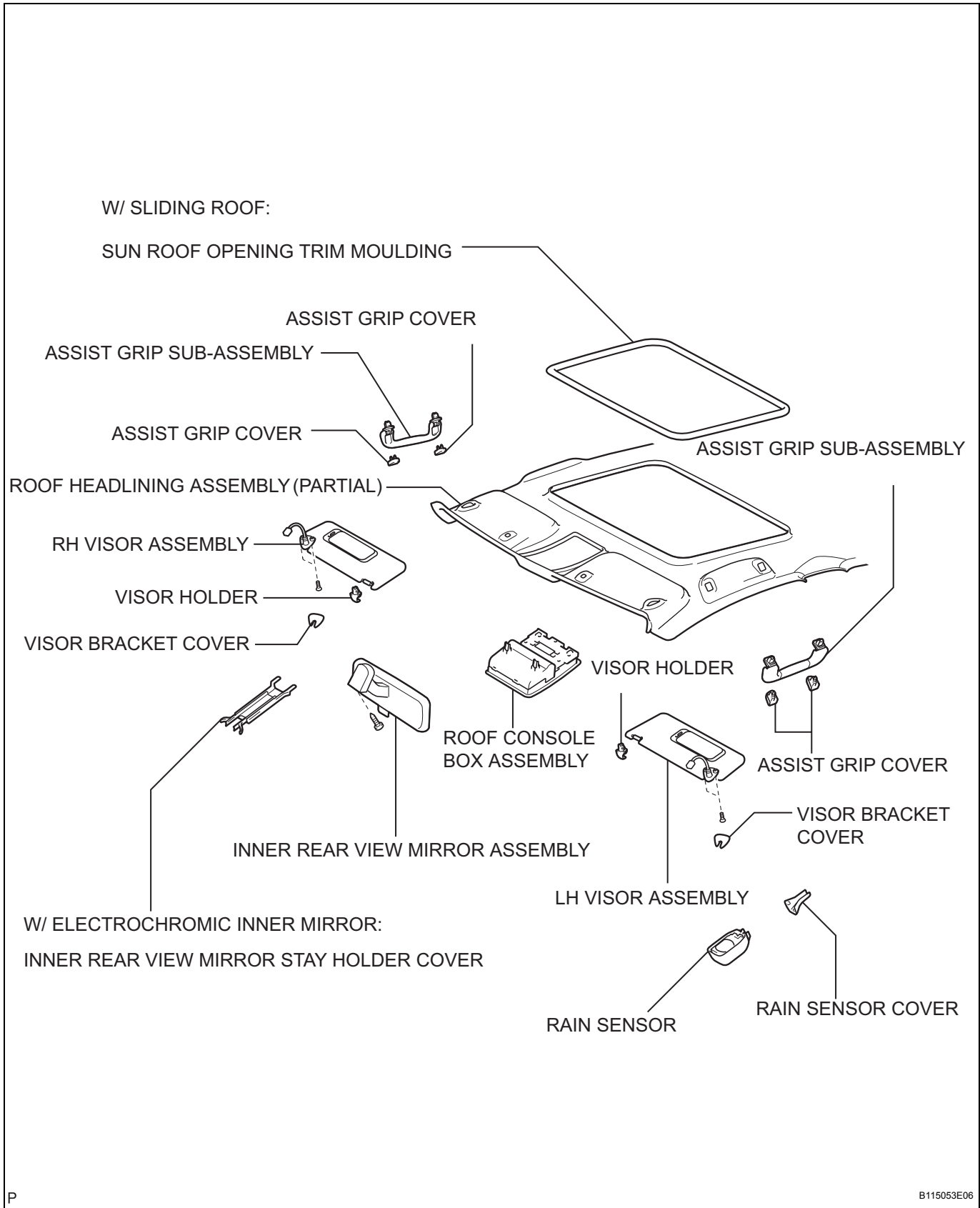
**NOTICE:**

**The work must be performed with the power window regulator and door glass installed in the vehicle.**

- (1) Disconnect the driver side power window regulator motor connector.
- (2) Connect the ammeter's positive (+) lead to terminal 2 (D) of the wire harness side connector and the negative (-) lead to the battery's negative terminal.
- (3) Connect the battery's positive (+) lead to terminal 1 (U) of the wire harness side connector, and raise the window to the fully closed position.
- (4) Continue to apply voltage, and check that the current changes to less than 1 A within 4 to 90 seconds.
- (5) Disconnect the leads from the terminals.
- (6) Approximately 60 seconds later, connect the battery's positive (+) lead to terminal 2 (D) and the negative (-) lead to terminal 1 (U). Check that the window begins to descend.  
If the result is not as specified, replace the motor assembly.

# WINDSHIELD GLASS

## COMPONENTS

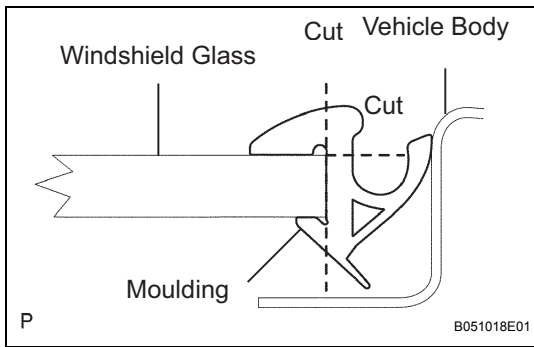


## REMOVAL

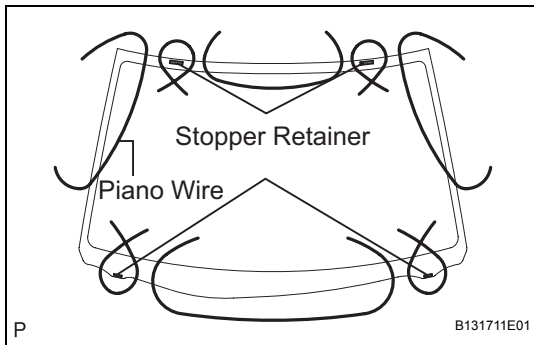
### HINT:

However, only installation procedures requiring additional information are included.

1. REMOVE WINDSHIELD WIPER ARM AND BLADE ASSEMBLY LH (See page [WW-38](#))
2. REMOVE WINDSHIELD WIPER ARM AND BLADE ASSEMBLY RH (See page [WW-38](#))
3. REMOVE COWL TOP VENTILATOR LOUVER RH (See page [WW-38](#))
4. REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP LH
5. REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP RH
6. REMOVE FRONT PILLAR GARNISH LH (See page [IR-15](#))
7. REMOVE FRONT PILLAR GARNISH RH (See page [IR-15](#))
8. REMOVE ASSIST GRIP SUB-ASSEMBLY FRONT (See page [IR-15](#))
9. REMOVE ASSIST GRIP SUB-ASSEMBLY (See page [IR-15](#))
10. REMOVE VISOR BRACKET COVER (See page [IR-16](#))
11. REMOVE LH VISOR ASSEMBLY (See page [IR-16](#))
12. REMOVE RH VISOR ASSEMBLY (See page [IR-16](#))
13. REMOVE ROOF CONSOLE BOX ASSEMBLY (See page [IR-16](#))
14. REMOVE VISOR HOLDER (See page [IR-17](#))
15. REMOVE INNER REAR VIEW MIRROR STAY HOLDER COVER (See page [MI-35](#))
16. REMOVE RAIN SENSOR COVER (See page [WW-52](#))
17. REMOVE RAIN SENSOR (See page [WW-52](#))
18. REMOVE SUN ROOF OPENING TRIM MOULDING (w/ Sliding Roof) (See page [IR-17](#))
19. REMOVE ROOF HEADLINING ASSEMBLY (See page [IR-17](#))



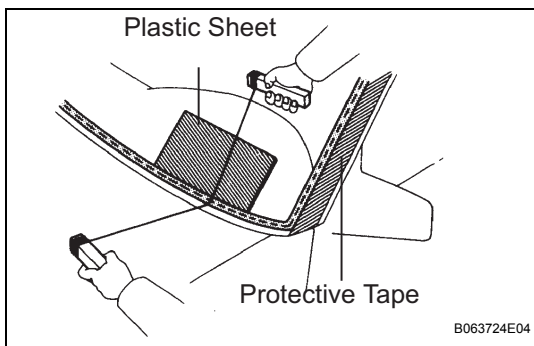
- 20. REMOVE WINDSHIELD MOULDING OUTER UPPER**
- (a) Using a knife, cut off the moulding as shown in the illustration.
- NOTICE:**  
**Be careful not to damage the vehicle body with the knife.**
- (b) Remove the remaining moulding.
- HINT:**  
 Partially cut the moulding. Then pull and remove it by hand.



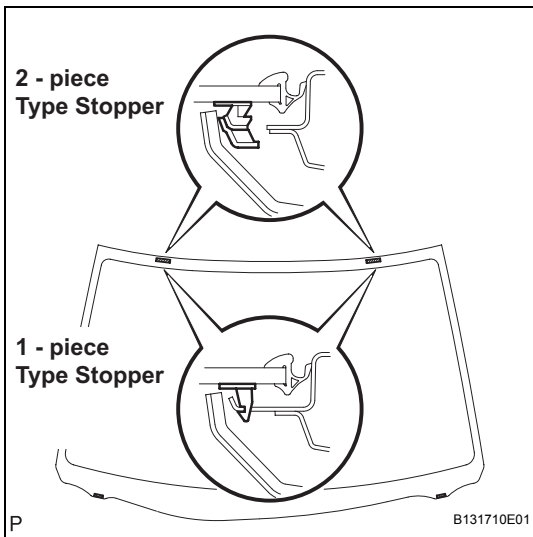
- 21. REMOVE WINDSHIELD GLASS**
- (a) From the interior, insert piano wires between the vehicle body and glass as shown in the illustration.
  - (b) Tie objects that can serve as handles to all wire ends.
- HINT:**  
 Apply protective tape to the outer surface of the vehicle body to prevent its surface from being scratched.

- NOTICE:**
- **w/ Curtain shield airbag:**  
**When working around the curtain shield airbag, be careful not to damage the airbag.**
  - **When separating the glass from the vehicle, be careful not to damage the vehicle's paint or interior/exterior ornaments.**
  - **To prevent the safety pad from being scratched when removing the glass, place a plastic sheet between the piano wire and safety pad.**

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







(d) Disengage the stoppers.

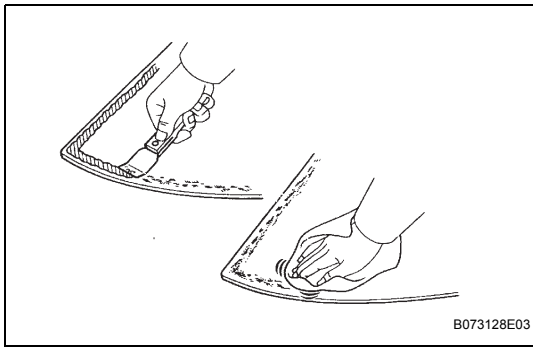
HINT:

In some cases, both 1-piece type and 2-piece type stoppers are installed in the same vehicle.

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

**NOTICE:**

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



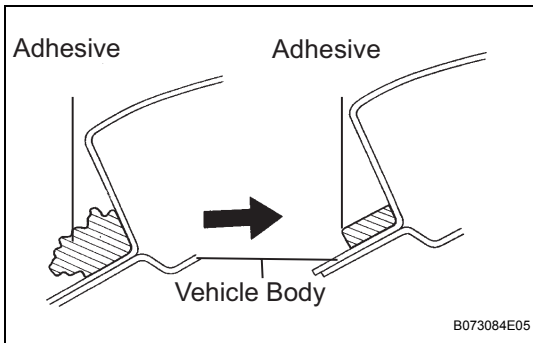
## 22. CLEAN WINDSHIELD GLASS

(a) Using a scraper, remove the damaged stoppers, the damaged any adhesive remaining the glass.

(b) Clean the outer circumference on of the glass with white gasoline.

**NOTICE:**

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



## 23. CLEAN VEHICLE BODY

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

(1) Using a knife, cut away any rough adhesive on the contact surface of the vehicle body to ensure a proper fit.

**NOTICE:**

Be careful not to damage the vehicle body.

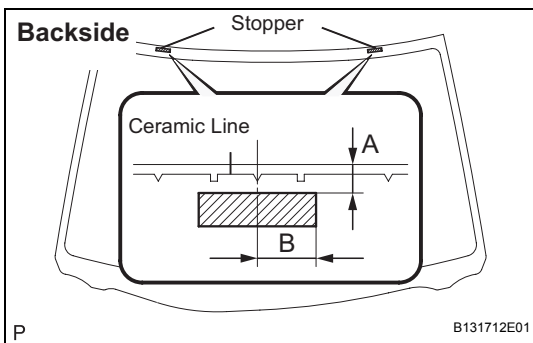
HINT:

Leave as much adhesive on the vehicle body as possible.

(2) Clean the contact surface of the vehicle body with a shop rag or piece of cloth saturated with cleaner.

HINT:

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



## INSTALLATION

### 1. INSTALL WINDSHIELD GLASS STOPPER NO.2

(a) Coat the installation part of the stopper with Primer G.

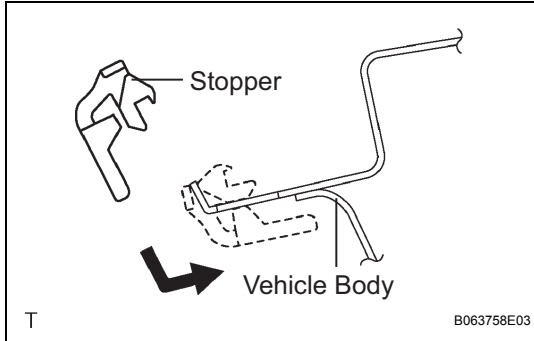
**NOTICE:**

- Allow the primer coating to dry for 3 minutes or more.
- Dispose of any excess Primer G.
- Do not apply too much Primer G.

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

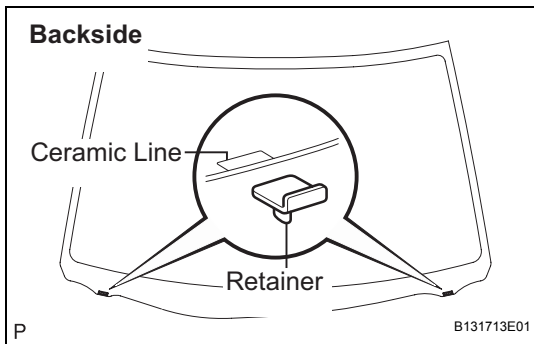
**Specification**

Area	Measurement
A	7.7 mm (0.303 in.)
B	40.0 mm (1.575 in.)



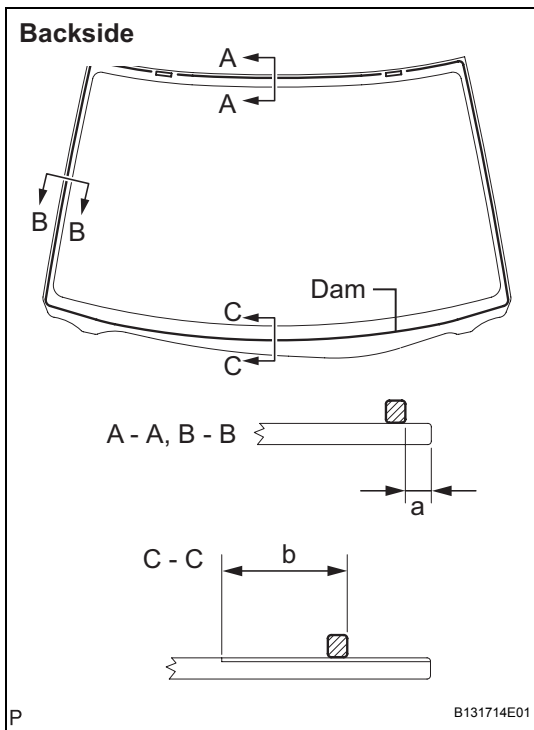
**2. INSTALL WINDSHIELD GLASS STOPPER NO.1**

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



**3. INSTALL WINDSHIELD GLASS RETAINER**

- (a) Install 2 new retainers onto the glass as shown in the illustration.



**4. INSTALL WINDOW GLASS ADHESIVE DAM**

- (a) Coat the installation part of the windshield glass adhesive dam with Primer G.

**NOTICE:**

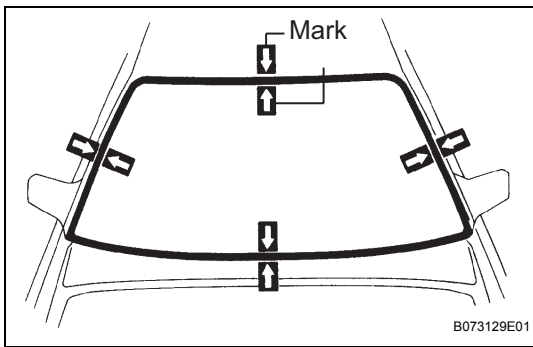
- Allow the primer coating to dry for 3 minutes or more.
- Dispose of any excess Primer G.
- Do not apply too much primer.

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

**Specification**

Area	Measurement
a	7.0 mm (0.276 in.)
b	48.4 mm (1.905 in.)

WS



## 5. INSTALL WINDSHIELD GLASS

(a) Position the glass.

- (1) Using the suction cup, place the glass in the correct position.
- (2) Check that the whole contact surface of the glass rim is perfectly even.
- (3) Place reference marks on the glass and vehicle body.

**NOTICE:**

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

**HINT:**

When reusing the glass, check and correct the reference mark positions.

- (4) Using a suction cup, remove the glass.

(b) Using a brush, coat the exposed areas of the vehicle body, where all adhesive has been removed with Primer M.

**NOTICE:**

- **Allow the primer coating to dry for 3 minutes or more.**
- **Dispose of any excess Primer M.**
- **Do not apply too much Primer M.**

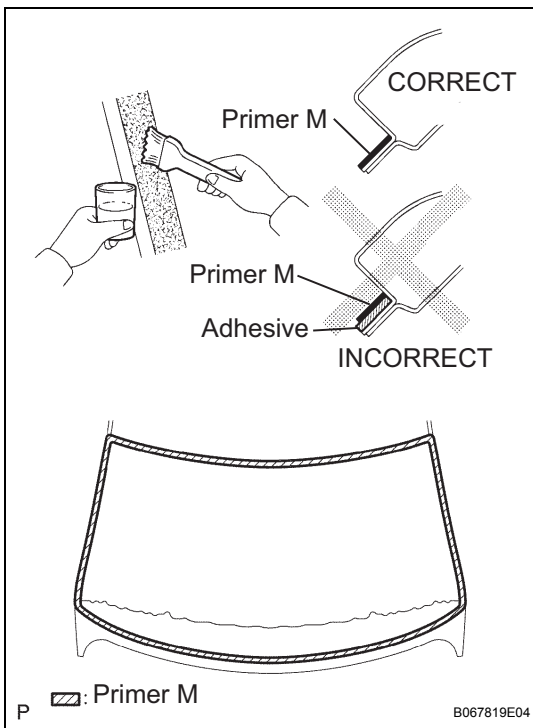
(c) Using a brush or sponge, coat the edge of the glass and the contact surface with Primer M.

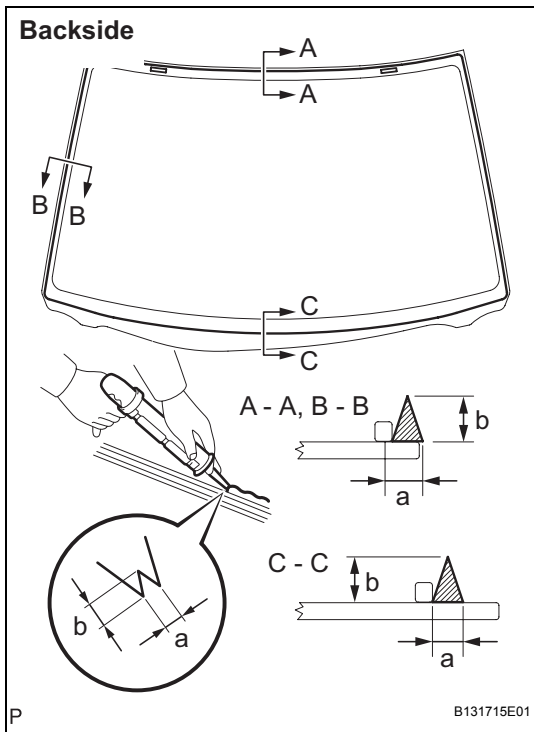
**HINT:**

If a non-specified area is coated by accident, wipe off the primer with a clean piece of cloth before it dries.

**NOTICE:**

- **Allow the primer coating to dry for 3 minutes or more.**
- **Dispose of away any excess Primer M.**
- **Do not apply too much Primer M.**





(d) Apply adhesive.

**Adhesive:**

**Part No. 00850-00801 or equivalent**

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

**HINT:**

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

**Usage time frame**

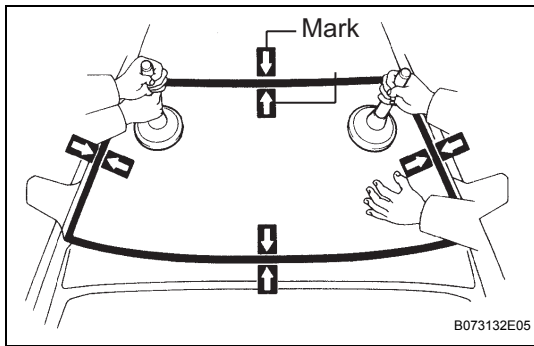
Temperature	Usage time frame
35°C(95°F)	15 minutes
20°C(68°F)	1 hour 40 minutes
5°C(41°F)	8 hour

(2) Load a sealer gun with the cartridge.

(3) Coat the glass with adhesive as shown in the illustration.

**Specification**

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



(e) Install the glass.

(1) Using a suction cup, position the glass so that the reference marks are aligned. Press it in gently along the rim.

**NOTICE:**

- Allow the primer coating to dry for 3 minutes or more.
- Check that the stoppers are attached to the vehicle body correctly.
- Check that there is a small gap between the vehicle body and glass.

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

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

**HINT:**

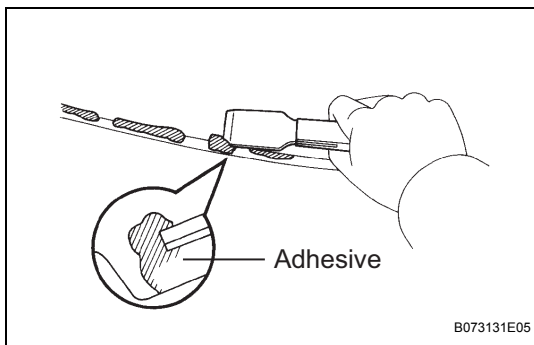
Make sure that adhesive is applied up to the glass rim.

**NOTICE:**

The vehicle should not be driven until the time indicated in the table below has elapsed after procedure A.

**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



WS

6. **INSTALL WINDSHIELD MOULDING OUTER UPPER**
  - (a) Using a brush or sponge, coat the edge of the glass and the contact surface with Primer G.  
**NOTICE:**
    - Allow the primer coating to dry for 3 minutes or more.
    - Dispose of away any excess Primer G.
    - Do not apply too much Primer G.
  - (b) Install the moulding.
7. **INSPECT FOR LEAKS AND REPAIR**
  - (a) Conduct a leak test after the adhesive has completely hardened.
  - (b) Seal any leaks with out glass sealer.
8. **INSTALL ROOF HEADLINING ASSEMBLY**
9. **INSTALL SUN ROOF OPENING TRIM MOULDING**
10. **INSTALL RAIN SENSOR**
11. **INSTALL RAIN SENSOR COVER**
12. **INSTALL INNER REAR VIEW MIRROR STAY HOLDER COVER**
13. **INSTALL VISOR HOLDER**
14. **INSTALL ROOF CONSOLE BOX ASSEMBLY**
15. **INSTALL RH VISOR ASSEMBLY**
16. **INSTALL LH VISOR ASSEMBLY**
17. **INSTALL VISOR BRACKET COVER**
18. **INSTALL ASSIST GRIP SUB-ASSEMBLY**
19. **INSTALL ASSIST GRIP SUB-ASSEMBLY FRONT**
20. **INSTALL FRONT PILLAR GARNISH RH (See page [IR-19](#))**
21. **INSTALL FRONT PILLAR GARNISH LH (See page [IR-19](#))**
22. **INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP RH**
23. **INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP LH**
24. **INSTALL COWL TOP VENTILATOR LOUVER RH**
25. **INSTALL WINDSHIELD WIPER ARM AND BLADE ASSEMBLY RH**
26. **INSTALL WINDSHIELD WIPER ARM AND BLADE ASSEMBLY LH**

# BACK WINDOW GLASS

## COMPONENTS

ROOF HEADLINING ASSEMBLY (PARTIAL)

ASSIST GRIP SUB-ASSEMBLY

ASSIST GRIP SUB-ASSEMBLY

ASSIST GRIP COVER

ASSIST GRIP COVER

● BACK WINDOW GLASS STOPPER NO.2 \*1

● BACK WINDOW GLASS STOPPER NO.2 \*2

● BACK WINDOW GLASS STOPPER NO.1 \*2

REAR ROOM LIGHT ASSEMBLY

BACK WINDOW GLASS

BACK WINDOW OUTSIDE MOULDING

REAR DOOR OPENING TRIM WEATHERSTRIP LH (PARTIAL)

ROOF SIDE GARNISH ASSEMBLY INNER RH

PACKAGE TRAY TRIM PANEL ASSEMBLY

REAR DOOR OPENING TRIM WEATHERSTRIP RH (PARTIAL)

ROOF SIDE GARNISH ASSEMBLY INNER LH

\*1: 1-piece type

\*2: 2-piece type

● Non-reusable part

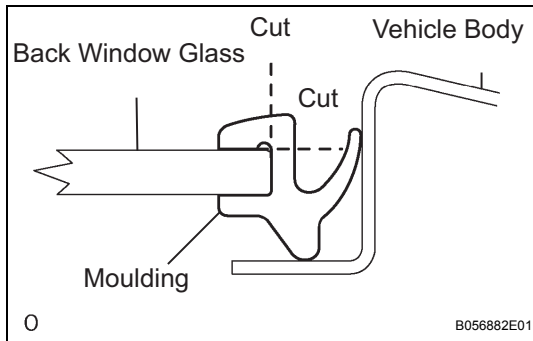
WS

## REMOVAL

### HINT:

However, only installation procedures requiring additional information are included.

1. REMOVE REAR DOOR OPENING TRIM WEATHERSTRIP LH
2. REMOVE REAR DOOR OPENING TRIM WEATHERSTRIP RH
3. REMOVE ROOF SIDE GARNISH ASSEMBLY INNER LH (See page [IR-14](#))
4. REMOVE ROOF SIDE GARNISH ASSEMBLY INNER RH (See page [IR-14](#))
5. REMOVE PACKAGE TRAY TRIM PANEL ASSEMBLY (See page [SB-31](#))
6. REMOVE ASSIST GRIP SUB-ASSEMBLY
7. REMOVE REAR ROOM LIGHT ASSEMBLY (See page [IR-16](#))
8. REMOVE ROOF HEADLINING ASSEMBLY (See page [IR-17](#))



9. REMOVE BACK WINDOW MOULDING OUTSIDE UPPER

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

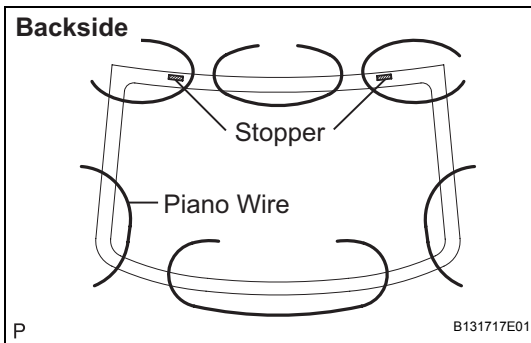
### NOTICE:

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

- (b) Remove the remaining moulding.

### HINT:

Partially cut the moulding. Then pull and remove it by hand.



10. REMOVE BACK WINDOW GLASS

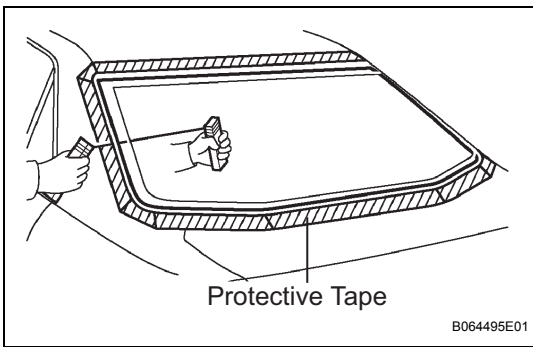
- (a) From the interior, insert piano wires between the vehicle body and glass as shown in the illustration.
- (b) Tie wooden blocks or other objects that can serve as handles to all wire ends.

### HINT:

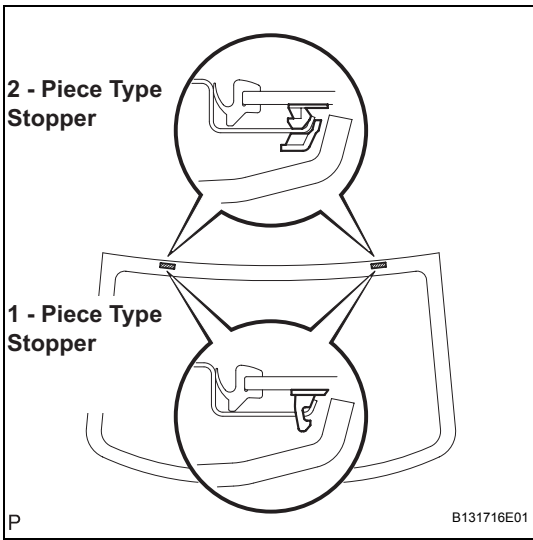
Apply protective tape to the outer surface of the vehicle body to prevent its surface from being scratched.

### NOTICE:

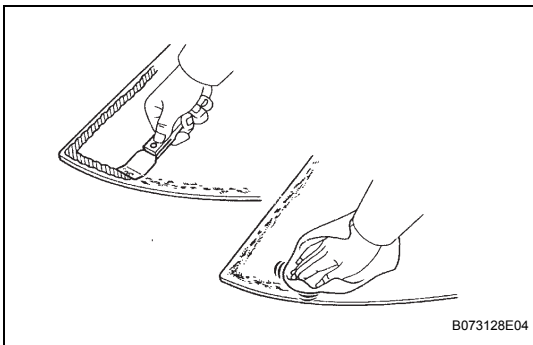
**When separating the glass from the vehicle, be careful not to damage the vehicle's paint or interior/exterior ornaments.**



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

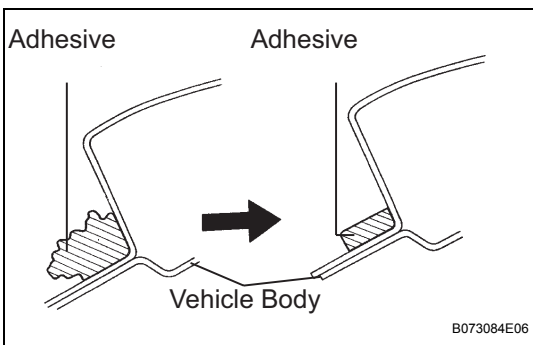


- (d) Disengage the stoppers.  
 HINT:  
 In some cases, both 1-piece type and 2-piece type stoppers are installed in the same vehicle.
- (e) Using a suction cup, remove the glass.  
**NOTICE:**  
**Leave as much adhesive on the vehicle body as possible when removing the glass.**



**11. CLEAN BACK WINDOW GLASS**

- (a) Using a scraper, remove the damaged stoppers the demand any adhesive remaining on the glass.
- (b) Clean the outer circumference of the glass with white gasoline.  
**NOTICE:**
  - Do not tough the glass after cleaning it.
  - Even if using new glass, clean the glass with white gasoline.



**12. CLEAN VEHICLE BODY**

- (a) Clean and shape the contact surface of the vehicle body.
  - (1) Using a knife, cut away any rough adhesive on the contact surface of the vehicle body to ensure a proper fit.  
**NOTICE:**  
**Be careful not to damage the vehicle body.**  
 HINT:  
 Leave as much adhesive on the vehicle body as possible.

WS



- (2) Clean the contact surface of the vehicle body with a piece of a shop rag or piece of cloth saturated with cleaner.

HINT:

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

## INSTALLATION

### 1. INSTALL BACK WINDOW GLASS STOPPER NO.2

- (a) Coat the installation part of the stopper with Primer G.

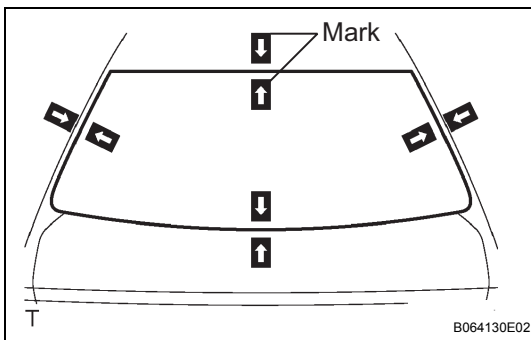
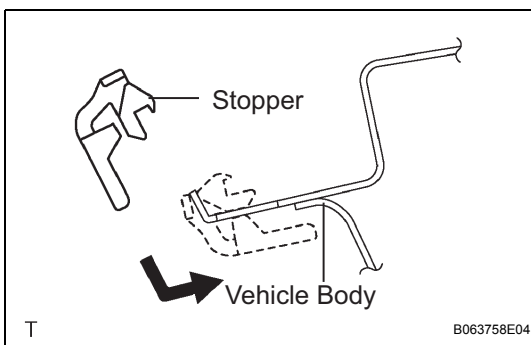
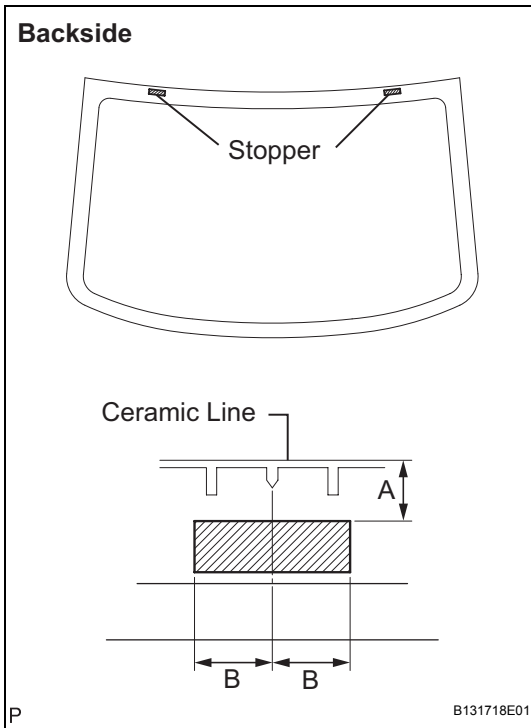
**NOTICE:**

- Allow the primer coating to dry for 3 minutes or more.
- Dispose of any excess Primer G.
- Do not apply too much Primer G.

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

**Specification**

Area	Measurement
A	12.5 mm (0.492 in.)
B	50.0 mm (1.968 in.)



### 2. INSTALL BACK WINDOW GLASS STOPPER NO.1

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

### 3. INSTALL BACK WINDOW MOULDING OUTSIDE UPPER

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

**NOTICE:**

- Allow the primer coating to dry for 3 minutes or more.
- Dispose of any excess Primer G.
- Do not apply too much Primer G.

- (b) Install the moulding.

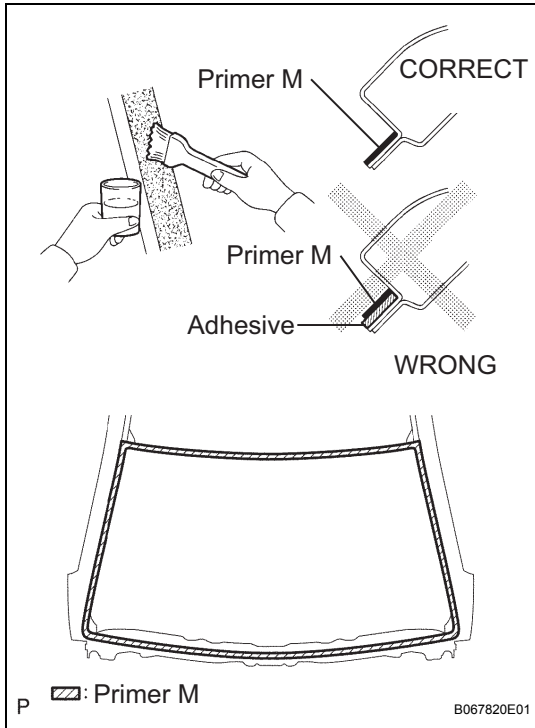
### 4. INSTALL BACK WINDOW GLASS

- (a) Position the glass.
- (1) Using a suction cup, place the glass in the correct position.
  - (2) Check that the whole contact surface of the glass rim perfectly even.
  - (3) Place reference marks on the glass and vehicle body.

**NOTICE:**

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

WS



**HINT:**

When reusing the glass, check and correct the reference mark positions.

- (4) Using a suction cup, remove the glass.
- (b) Using a brush, coat the exposed areas of the vehicle body, where all adhesive has been removed with Primer M.

**NOTICE:**

- Allow the primer coating to dry for 3 minutes or more.
- Do not coat the area adhesive is still remaining with Primer M.
- Dispose of any excess Primer M.
- Do not apply too much Primer M.
- (c) Using a brush or sponge, coat the edge of the glass and the contact surface with Primer M.

**HINT:**

If a non-specified area is coated by accident, wipe off the primer with a clean piece of cloth before it dries out.

**NOTICE:**

- Allow the primer coating to dry for 3 minutes or more.
- Dispose of any excess Primer M.
- Do not apply too much Primer M.

- (d) Apply adhesive.

**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 adhesive within the time described in the table below.

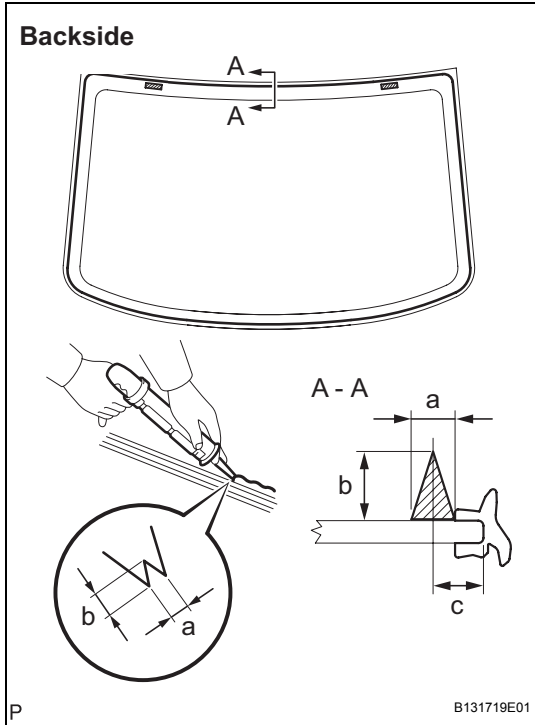
**Usage time frame**

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

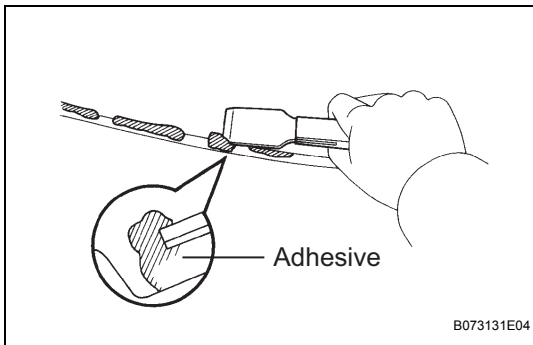
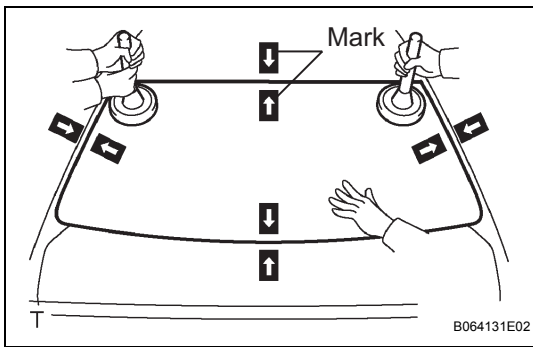
- (2) Load a sealer gun with the cartridge.
- (3) Coat the glass with adhesive as shown in the illustration.

**Specification**

Area	Measurement
a	8.0 mm (0.315 in.)
b	12.0 mm (0.472 in.)
c	7.0 mm (0.275 in.)



WS



(e) Install the glass.

- (1) Using a suction cup, position the glass so that the reference marks are aligned. Press it in gently along the rim.

**NOTICE:**

- Allow the primer coating to dry for 3 minutes or more.
- Check that the stoppers are attached to the vehicle body correctly.
- Check that there is a small gap between the vehicle body and glass.

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

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

**HINT:**

Make sure that adhesive is applied up to the glass rim.

**NOTICE:**

The vehicle should not be driven until the time indicated in the table below has elapsed after applying adhesive.

**Minimum time**

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

**5. INSPECT FOR LEAKS AND REPAIR**

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

**6. INSTALL ROOF HEADLINING ASSY**

**7. INSTALL REAR ROOM LIGHT ASSEMBLY**

**8. INSTALL ASSIST GRIP SUB-ASSEMBLY**

**9. INSTALL PACKAGE TRAY TRIM PANEL ASSEMBLY**

**10. INSTALL ROOF SIDE GARNISH ASSEMBLY INNER RH (See page IR-19)**

**11. INSTALL ROOF SIDE GARNISH ASSEMBLY INNER LH (See page IR-19)**

**12. INSTALL REAR DOOR OPENING TRIM WEATHERSTRIP RH**

**13. INSTALL REAR DOOR OPENING TRIM WEATHERSTRIP LH**

# WINDOW DEFOGGER SYSTEM

## PRECAUTION

### NOTICE:

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

System Name	See procedure
Power Window Control system	<a href="#">IN-29</a>
Sliding Roof System	<a href="#">IN-29</a>

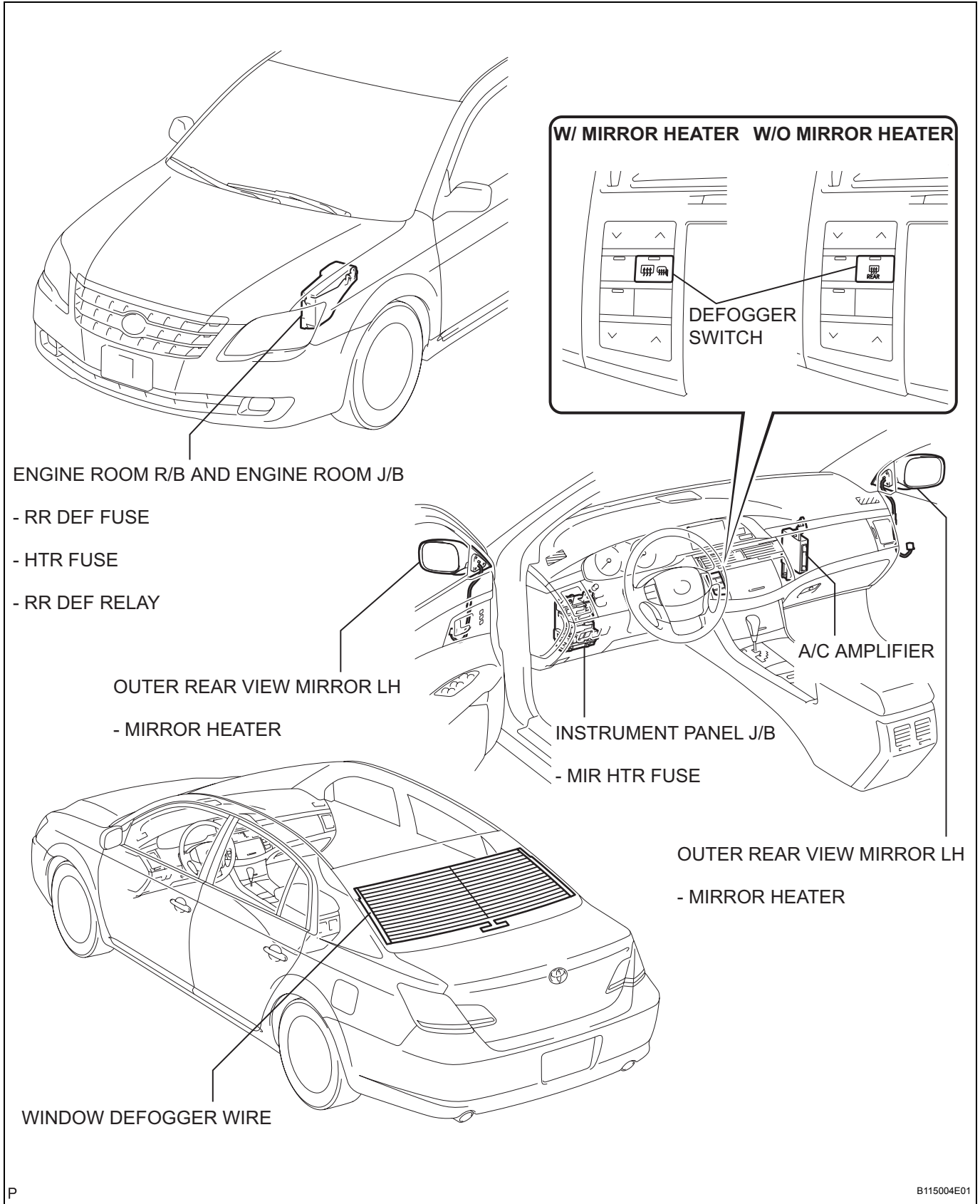
### 1. EXPRESSIONS OF IGNITION SWITCH

The type of ignition switch used on this model differs according to the specifications of the vehicle.

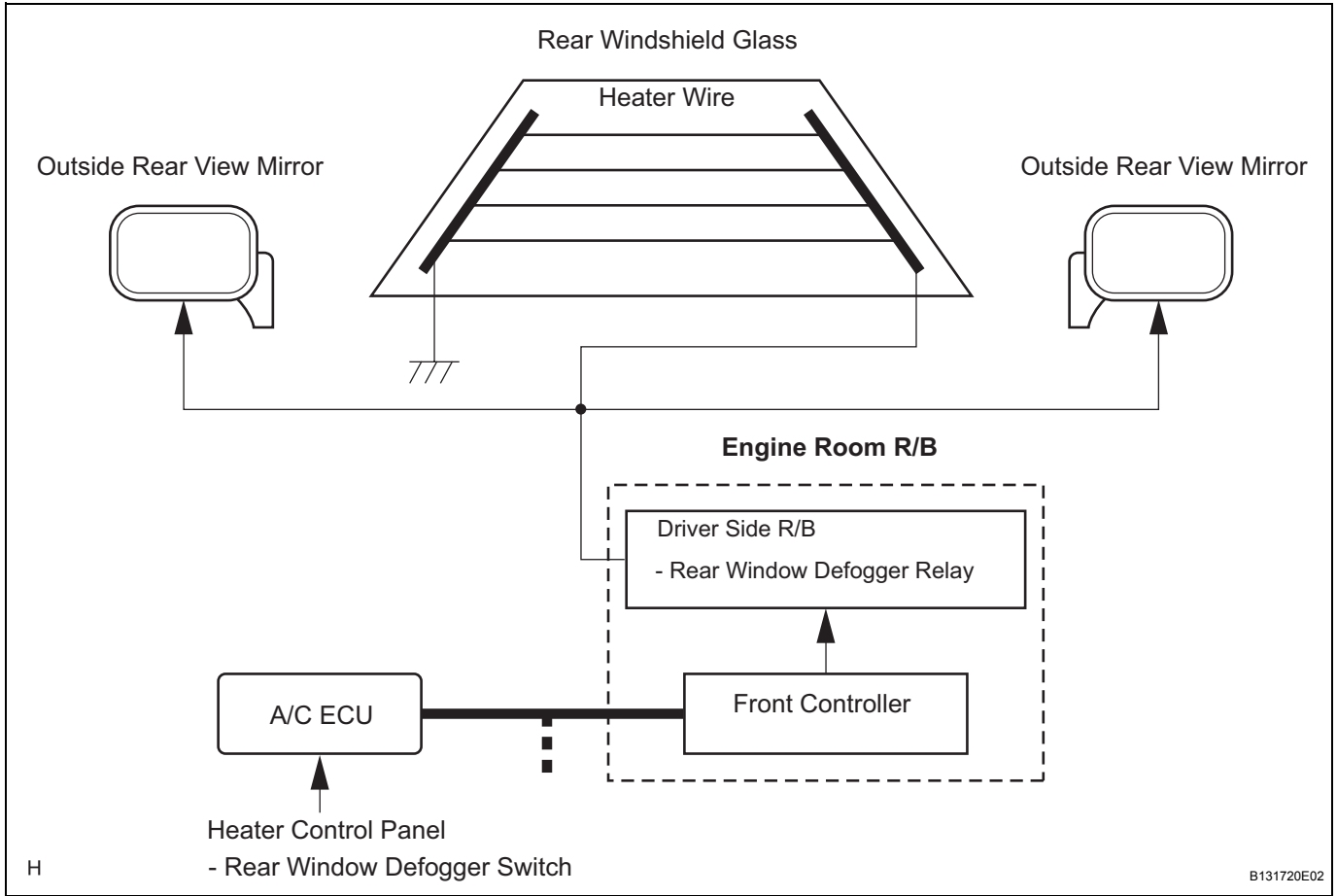
The expressions listed in the table below are used in this section.

Switch Type		Ignition Switch (position)	Engine Switch (condition)
Expression	Ignition Switch off	LOCK	Off
	Ignition Switch on (IG)	ON	On (IG)
	Ignition Switch on (ACC)	ACC	On (ACC)
	Engine Start	START	Start

# PARTS LOCATION



# SYSTEM DIAGRAM



## SYSTEM DESCRIPTION

- The defogger system and rear view mirror system use heater wires to defog the rear windshield and rear view mirror, respectively. The defogger switch is installed on the vehicles equipped with the rear window defogger system and rear view mirror system. The defogger switch operates both the defogger system and the rear view heater system. Both systems are part of the same circuit.
- This system is activated when the ignition switch is turned on (IG) and the rear window defogger switch is pushed. This switch is provided with a timer function to keep the defogger and mirror heater on for approximately. 15 minutes.

## PROBLEM SYMPTOMS TABLE

If a normal system code is displayed during the DTC check but the problem still occurs, check the circuits for each problem symptom in the order given in the table below and proceed to the relevant troubleshooting page.

**HINT:**

Inspect the "Fuse" and "Relay" before confirming the suspected areas shown in the table below.

Inspect each suspected area in numerical order, in relation to the corresponding symptom.

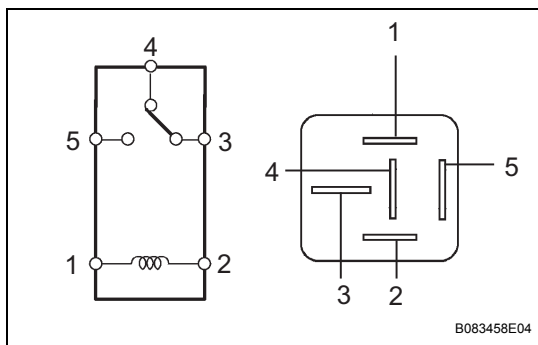
If the malfunction still exists after checking and confirming that all the circuits are normal, replace the ECM.

### WINDOW DEFOGGER SYSTEM

Symptom	Suspected area	See page
Rear window defogger does not operate (Indicator ON)	1. RR DEF relay	<a href="#">WS-54</a>
	2. Rear window defogger wire	<a href="#">WS-55</a>
	3. A/C ECU, Front controller	-
	4. Wire harness	-
Rear window defogger does not operate (Indicator OFF)	1. RR DEF relay	<a href="#">WS-54</a>
	2. Air conditioning control panel	-
	3. A/C ECU	<a href="#">AC-32</a>
	4. Front controller	-
	5. Rear window defogger wire	<a href="#">WS-55</a>
	6. Wire harness	-
Mirror heater does not operate (Indicator ON)	1. RR DEF relay	<a href="#">WS-54</a>
	2. Outer rear view mirror assembly	<a href="#">MI-37</a>
	3. A/C ECU, Front controller	-
	4. Wire harness	-
Mirror heater does not operate (Indicator OFF)	1. RR DEF relay	<a href="#">WS-54</a>
	2. Air conditioning control panel	-
	3. A/C ECU	<a href="#">AC-32</a>
	4. Front controller	-
	5. Outer rear view mirror	<a href="#">MI-37</a>
	6. Wire harness	-

WS





# DEFOGGER RELAY

## INSPECTION

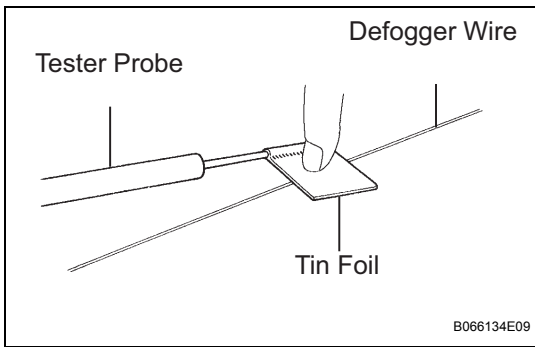
### 1. INSPECT RELAY

- (a) Remove the RR DEF relay from the engine room R/B.
- (b) Measure the resistance according to the value(s) in the table below.

#### Resistance

Tester connection	Condition	Specified condition
3 - 5	Always	10 kΩ or higher
3 - 5	Voltage is applied between terminals 1 and 2	Below 1 Ω (Battery voltage is applied between terminals 1 and 2)

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



# WINDOW DEFOGGER WIRE

## ON-VEHICLE INSPECTION

### 1. INSPECT BACK WINDOW

- (a) Prepare a piece of tin foil to wrap the tip of the negative tester probe.

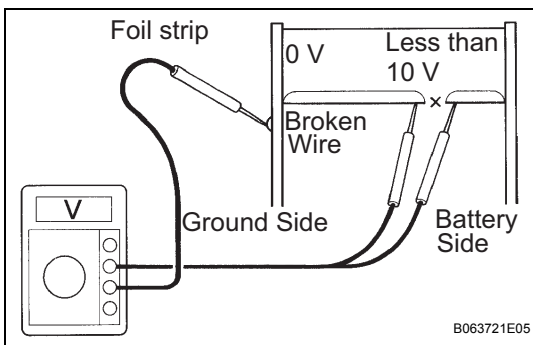
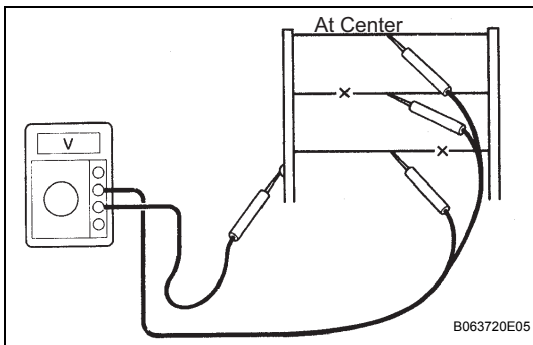
**NOTICE:**

- When cleaning the glass, wipe the glass along the wire using a soft and dry cloth. Take care not to damage the 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.

- (b) Turn the ignition switch on (IG).
- (c) Turn the defogger switch on.
- (d) Check the voltage at the center of each defogger wire, as shown in the illustration.

**Voltage**

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



- (1) 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.
- (2) If there is no voltage, the wire may be faulty between the center of the wire and the wire end on the ground side.

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

**HINT:**

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

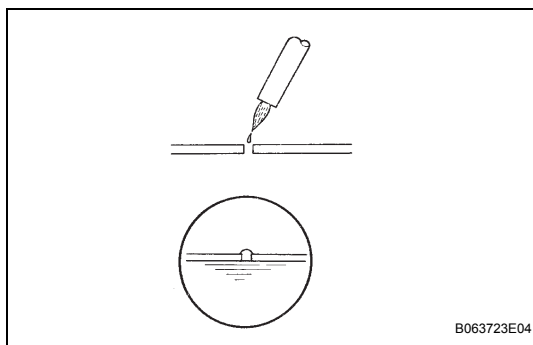
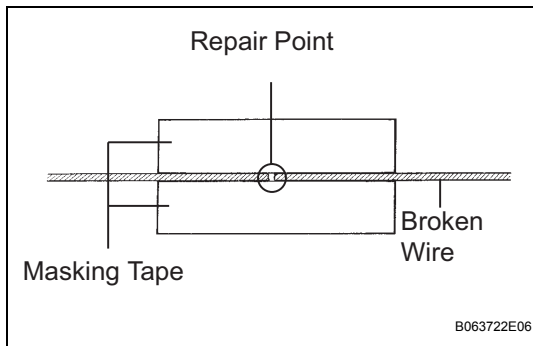
## REPAIR

### 1. REPAIR REAR WINDOW DEFOGGER WIRE

#### HINT:

If necessary, repair the defogger wire.

- (a) Clean the broken wire tips with grease, wax and silicone remover.
- (b) Place 2 pieces of masking tape along both sides of the wire.
- (c) Thoroughly mix the repair agent (Dupont paste No. 4817 of equivalent).



- (d) Using a fine tip brush, apply a small amount of the agent to the wire.
- (e) After a few minutes, remove the masking tape.

#### NOTICE:

**Do not touch the repaired part on the wire for at least 24 hours, until the repair agent is completely fixed.**