

**BODY SECTION**

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

<b>HVAC SYSTEM (HEATER, VENTILATOR AND A/C)</b>	<b>AC</b>
<b>HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)</b>	<b>AC(diag)</b>
<b>AIRBAG SYSTEM</b>	<b>AB</b>
<b>AIRBAG SYSTEM (DIAGNOSTICS)</b>	<b>AB(diag)</b>
<b>SEAT BELT SYSTEM</b>	<b>SB</b>
<b>LIGHTING SYSTEM</b>	<b>LI</b>
<b>WIPER AND WASHER SYSTEMS</b>	<b>WW</b>
<b>ENTERTAINMENT</b>	<b>ET</b>
<b>COMMUNICATION SYSTEM</b>	<b>COM</b>
<b>GLASS/WINDOWS/MIRRORS</b>	<b>GW</b>
<b>BODY STRUCTURE</b>	<b>BS</b>
<b>INSTRUMENTATION/DRIVER INFO</b>	<b>IDI</b>
<b>SEATS</b>	<b>SE</b>
<b>SECURITY AND LOCKS</b>	<b>SL</b>
<b>SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)</b>	<b>SR</b>
<b>EXTERIOR/INTERIOR TRIM</b>	<b>EI</b>
<b>EXTERIOR BODY PANELS</b>	<b>EB</b>

**BODY SECTION**

**CRUISE CONTROL SYSTEM                      CC**

**CRUISE CONTROL SYSTEM  
(DIAGNOSTICS)                      CC(diag)**

**IMMOBILIZER (DIAGNOSTICS)                      IM(diag)**

**LAN SYSTEM (DIAGNOSTICS)                      LAN(diag)**

# GLASS/WINDOWS/MIRRORS

# GW

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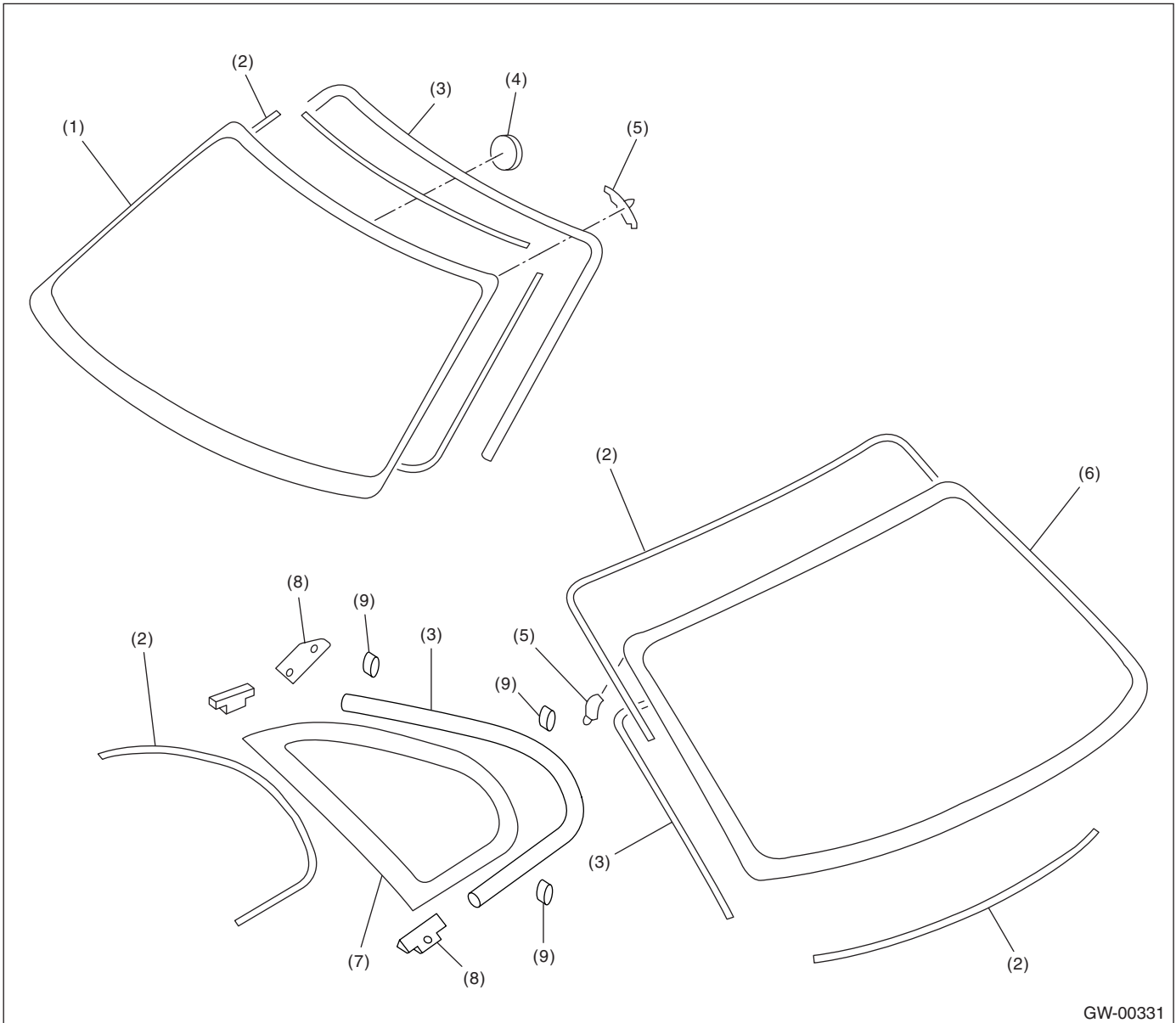
# General Description

GLASS/WINDOWS/MIRRORS

## 1. General Description

### A: COMPONENT

#### 1. FIXED GLASS (SEDAN MODEL)



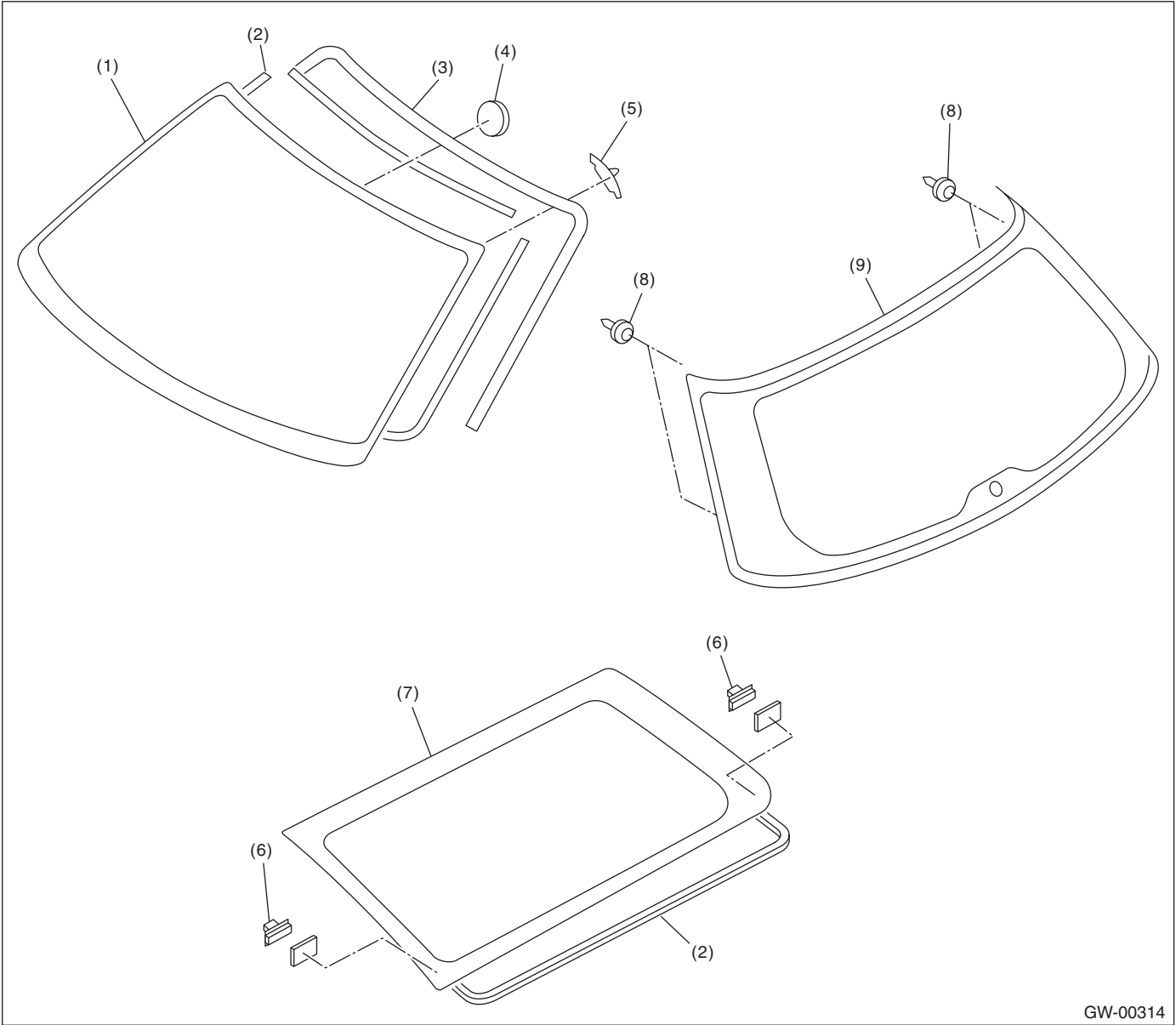
GW-00331

- (1) Windshield glass
- (2) Dam rubber
- (3) Molding

- (4) Rearview mirror mount
- (5) Locating pin
- (6) Rear window glass

- (7) Six light glass
- (8) Bracket
- (9) Clip

## 2. FIXED GLASS (WAGON MODEL)



GW-00314

- (1) Windshield glass
- (2) Dam rubber
- (3) Molding

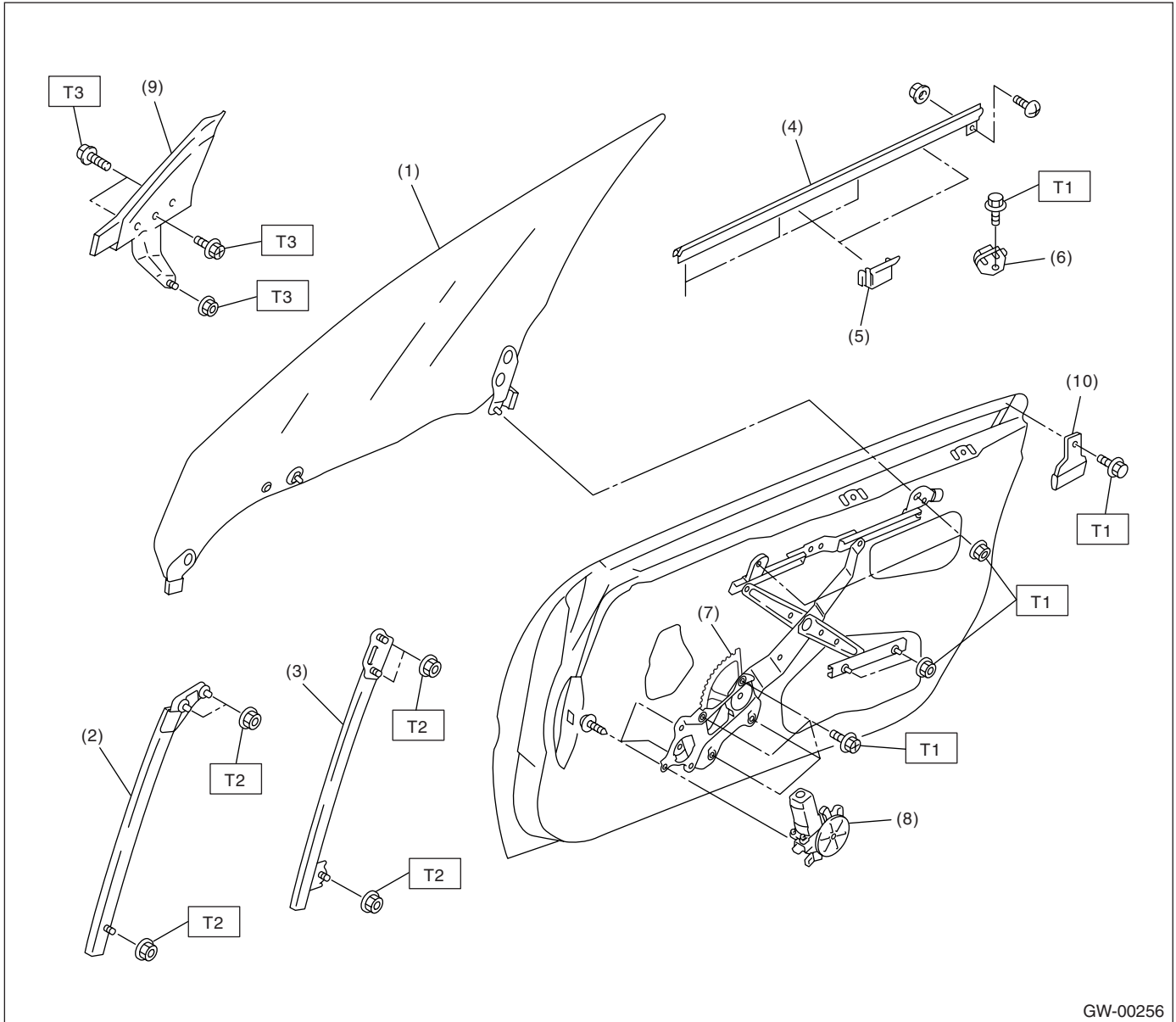
- (4) Rearview mirror mount
- (5) Locating pin
- (6) Fastener

- (7) Rear quarter glass
- (8) Locating pin
- (9) Glass

# General Description

GLASS/WINDOWS/MIRRORS

## 3. FRONT DOOR GLASS



GW-00256

- |                        |                        |
|------------------------|------------------------|
| (1) Glass              | (6) Stabilizer (Inner) |
| (2) Door sash (Front)  | (7) Regulator ASSY     |
| (3) Door sash (Rear)   | (8) Motor ASSY         |
| (4) Weather strip      | (9) Mirror gusset      |
| (5) Stabilizer (Outer) | (10) Guide ASSY        |

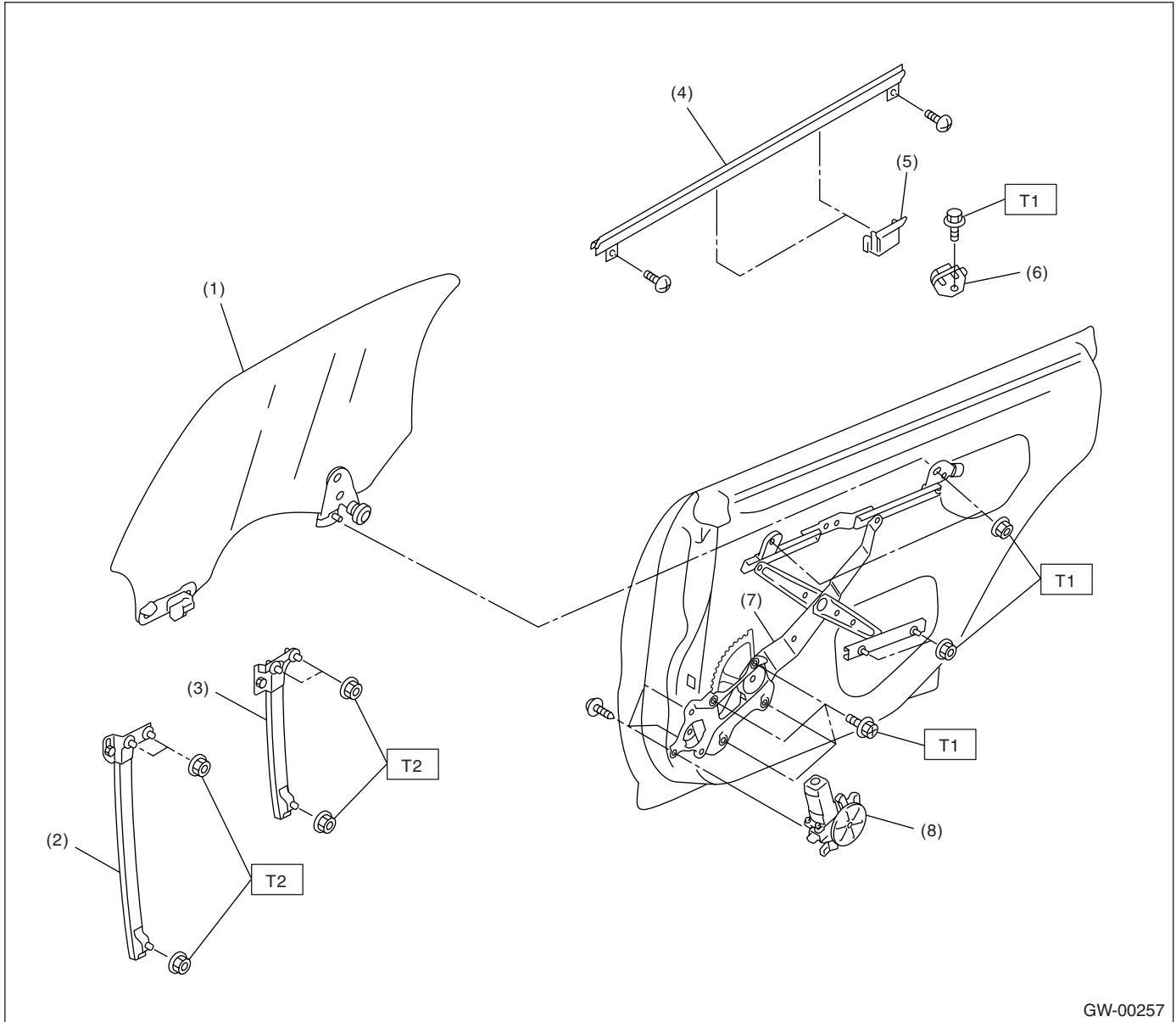
**Tightening torque: N·m (kgf·m, ft·lb)**

**T1: 7.4 (0.75, 5.5)**

**T2: 13.7 (1.4, 10.1)**

**T3: 5.9 (0.60, 4.4)**

## 4. REAR DOOR GLASS



GW-00257

- |                       |                        |
|-----------------------|------------------------|
| (1) Glass             | (5) Stabilizer (Outer) |
| (2) Door sash (Front) | (6) Stabilizer (Inner) |
| (3) Door sash (Rear)  | (7) Regulator ASSY     |
| (4) Weather strip     | (8) Motor ASSY         |

**Tightening torque: N·m (kgf·m, ft·lb)**

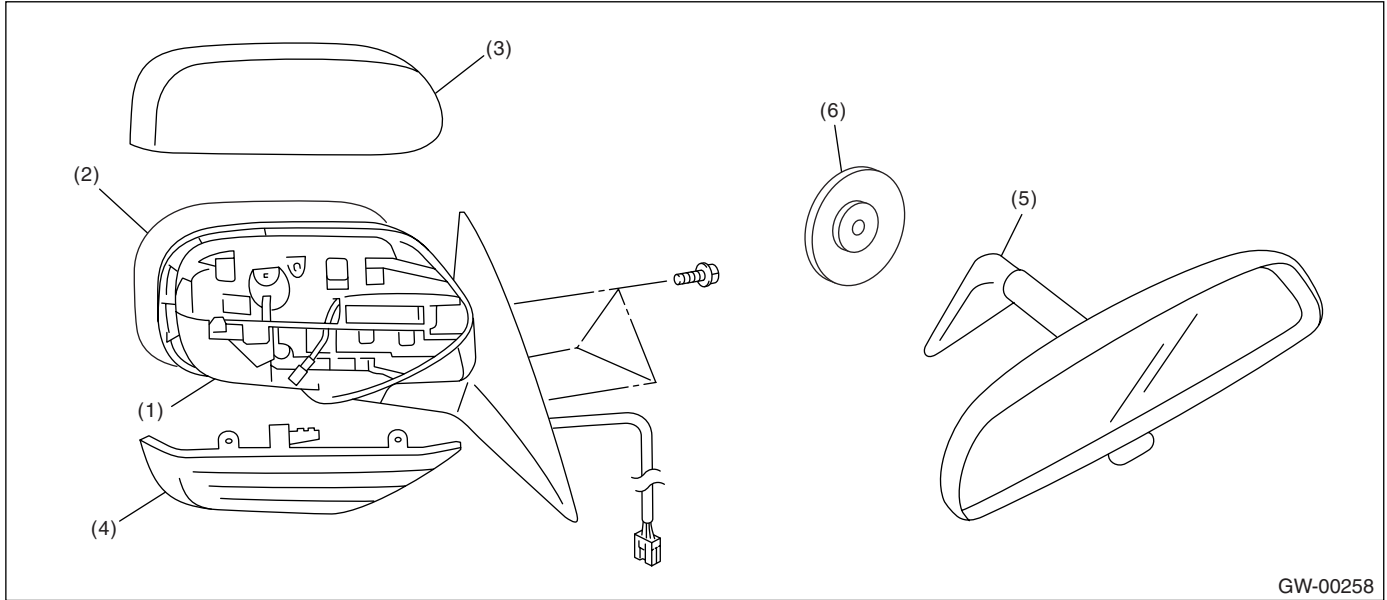
**T1: 7.4 (0.75, 5.5)**

**T2: 13.7 (1.4, 10.1)**

# General Description

GLASS/WINDOWS/MIRRORS

## 5. MIRROR



GW-00258

(1) Outer mirror  
(2) Mirror

(3) Scalp cap  
(4) Side turn signal light

(5) Rearview mirror  
(6) Mount

### **B: CAUTION**

- When electrical connectors are disconnected, always conduct an operational check after connecting them again.
- Avoid impact and damage to the glass.

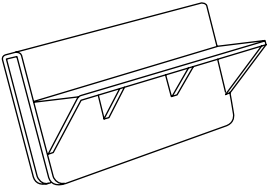
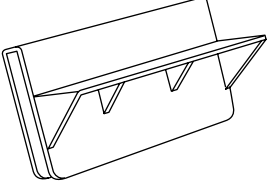


# General Description

GLASS/WINDOWS/MIRRORS

## C: PREPARATION TOOL

### 1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
  ST61299AE000	61299AE000	SPACER	Used for adjusting the upper end position of front door glass. (Glass thickness: 5 mm (0.197 in))
  ST61299AE010	61299AE010	SPACER	Used for adjusting the upper end position of rear door glass. (Glass thickness: 4 mm (0.157 in))

### 2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for checking voltage and continuity.
Piano wire	Used for removing the window glass.
Windshield glass knife	Used for removing the window glass.

# Power Window System

GLASS/WINDOWS/MIRRORS

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## 2. Power Window System

### A: WIRING DIAGRAM

<Ref. to WI-294, Power Window System.>

### B: INSPECTION

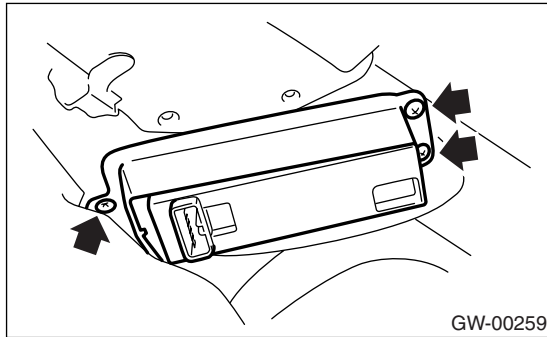
Symptom	Repair order
All power windows do not operate.	(1) Fuse (SBF-5) (2) Power window circuit breaker (3) Power window relay (4) Wiring harness (5) Body integrated unit
One window does not operate.	(1) Power window main switch (2) Power window sub switch (3) Power window motor (4) Wiring harness
"Window Lock" does not operate.	Power window main switch

### 3. Power Window Control Switch

#### A: REMOVAL

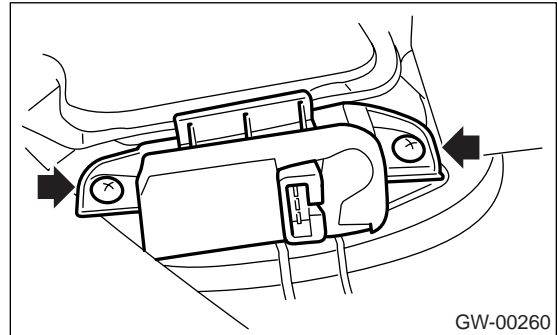
##### 1. MAIN SWITCH

- 1) Disconnect the ground cable from battery.
- 2) Remove the front door trim. <Ref. to EI-48, REMOVAL, Door Trim.>
- 3) Disconnect the harness connector.
- 4) Remove the screws from the reverse side of front door trim to remove the power window main switch.



##### 2. SUB SWITCH

- 1) Disconnect the ground cable from battery.
- 2) Remove the door trim. <Ref. to EI-48, REMOVAL, Door Trim.>
- 3) Disconnect the connector.
- 4) Remove the screws from the reverse side of door trim to remove the power window sub switch.



#### B: INSTALLATION

##### 1. MAIN SWITCH

Install in the reverse order of removal.

##### 2. SUB SWITCH

Install in the reverse order of removal.

#### C: INSPECTION

##### 1. MAIN SWITCH

Measure switch resistance.

- LHD model

	Switch position	Terminal No.	Standard
Driver's seat	AUTO UP	10 and 2, 7 and 1	Less than 1 Ω
	UP	10 and 2, 7 and 1	Less than 1 Ω
	DOWN	10 and 1, 7 and 2	Less than 1 Ω
	AUTO DOWN	10 and 1, 7 and 2	Less than 1 Ω

- RHD model

	Switch position	Terminal No.	Standard
Driver's seat	AUTO UP	11 and 1, 14 and 2	Less than 1 Ω
	UP	11 and 1, 14 and 2	Less than 1 Ω
	DOWN	11 and 2, 14 and 1	Less than 1 Ω
	AUTO DOWN	11 and 2, 14 and 1	Less than 1 Ω

Replace the main switch if faulty.

##### 2. SUB SWITCH

Measure switch resistance.

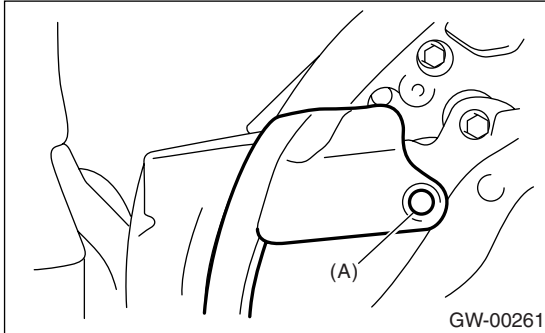
	Switch position	Terminal No.	Standard
Passenger's seat and rear	UP	2 and 3, 4 and 5	Less than 1 Ω
	OFF	1 and 2, 4 and 5	Less than 1 Ω
	DOWN	1 and 2, 3 and 4	Less than 1 Ω

Replace the sub switch if faulty.

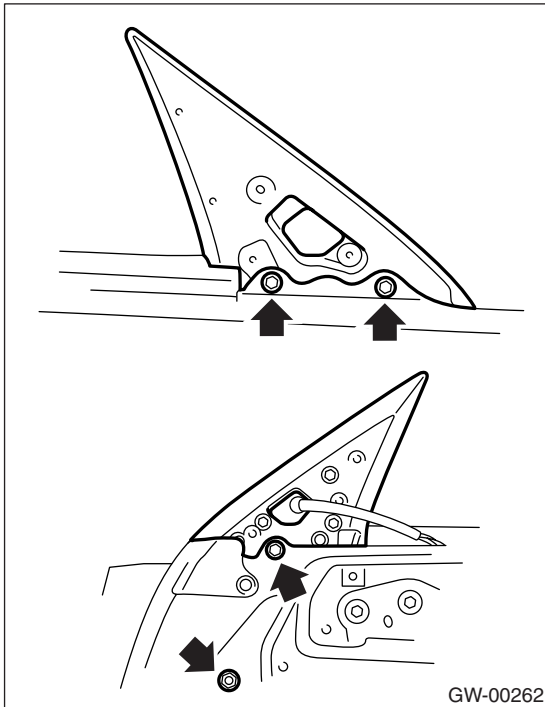
## 4. Front Door Glass

### A: REMOVAL

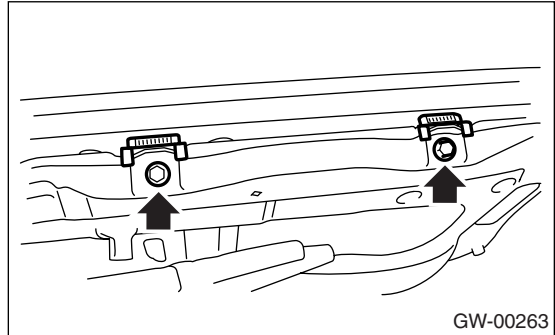
- 1) Remove the front door trim. <Ref. to EI-48, REMOVAL, Door Trim.>
- 2) Remove the sealing cover. <Ref. to EB-20, REMOVAL, Front Sealing Cover.>
- 3) Remove the outer mirror assembly. <Ref. to GW-18, REMOVAL, Outer Mirror Assembly.>
- 4) Remove the clip (A), and remove the front end of weather strip.



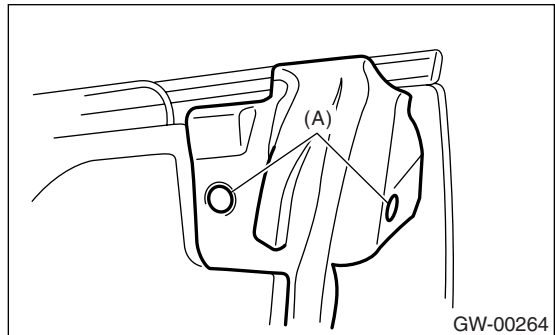
- 5) Remove the gusset.



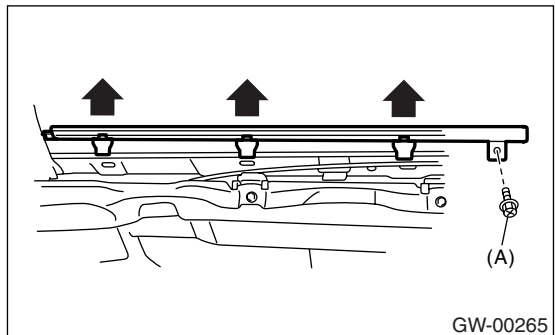
- 6) Remove the stabilizer.



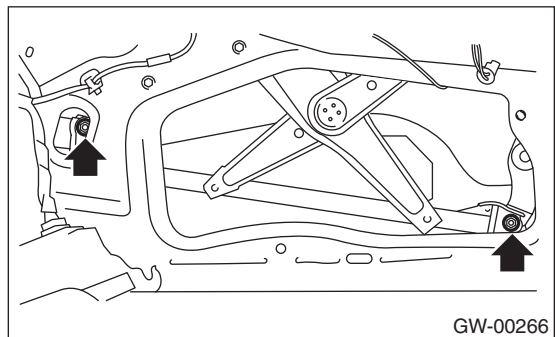
- 7) Remove the clips (A), and remove the rear end of weather strip.



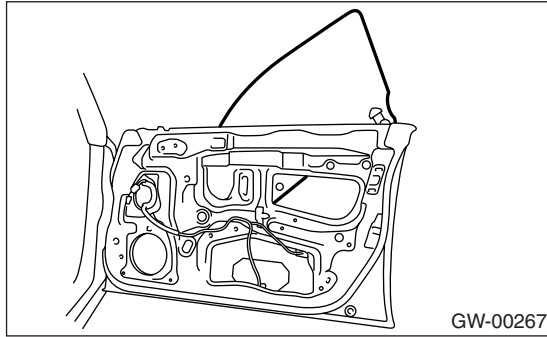
- 8) Remove the screw (A) from the rear end of weather strip outer to remove weather strip outer.



- 9) Remove the screws to remove guide assembly.
- 10) Operate the power window switch to move glass to position shown in the figure, and then remove the two nuts through service holes.



11) Remove the door glass.



**CAUTION:**

- Since the gear may be disengaged, do not turn regulator in the closing direction after removal of the glass.
- Avoid impact and damage to the glass.

**B: INSTALLATION**

1) Install in the reverse order of removal.

**CAUTION:**

Make sure that glass stay is placed securely in sash.

2) Adjust the front door glass. <Ref. to GW-11, ADJUSTMENT, Front Door Glass.>

**Tightening torque:**

Refer to “COMPONENT” of “General Description”. <Ref. to GW-4, FRONT DOOR GLASS, COMPONENT, General Description.>

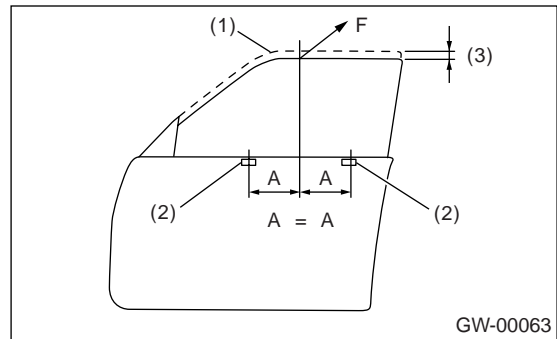
**C: ADJUSTMENT**

**NOTE:**

Before adjustment, ensure that all adjusting bolts of stabilizer, upper stopper and sash are loose and door glass is raised so that it is in contact with weather strip.

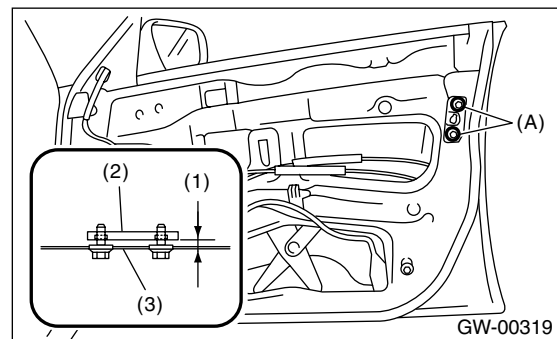
- 1) Temporarily tighten one adjusting bolt on one side of rear sash at the midpoint of slotted hole in the inner panel.
- 2) Temporarily tighten the regulator B-channel in a position at the top of slotted hole.
- 3) Lower the door glass 10 — 15 mm (0.39 — 0.59 in) from fully closed position. While applying outward pressure of  $45.0 \pm 5.0$  N ( $4.5 \pm 0.5$  kgf,  $9.9 \pm 1.1$  lb) (F) to upper edge of glass above midpoint of two outer stabilizers, press the inner stabilizer at pres-

sure of  $25 \pm 5$  N ( $2.5 \pm 0.5$  kgf,  $5.5 \pm 1.1$  lb) to the glass, then secure it.

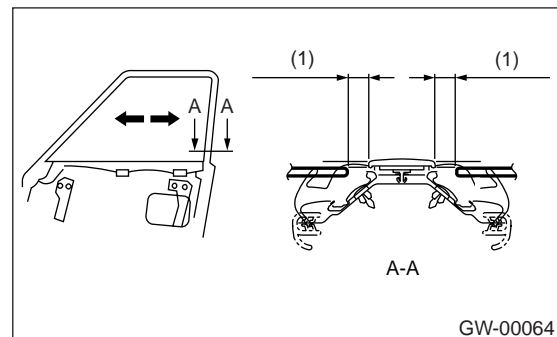


- (1) Fully closed position
- (2) Stabilizer
- (3) 10 — 15 mm (0.39 — 0.59 in)

4) For adjustment of clearance between front glass and center pillar cover, loosen the nuts (A), and move the glass sash back and forward until clearance becomes the value shown.



- (1) Adjust a line parallel
- (2) Sash
- (3) Inner panel

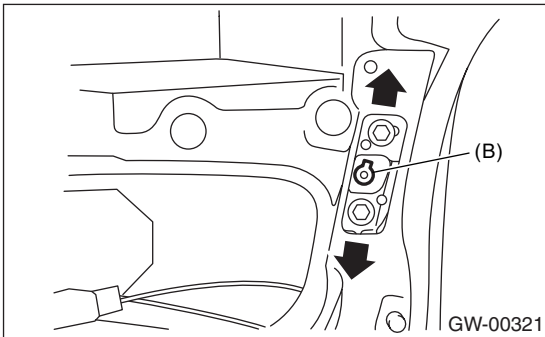
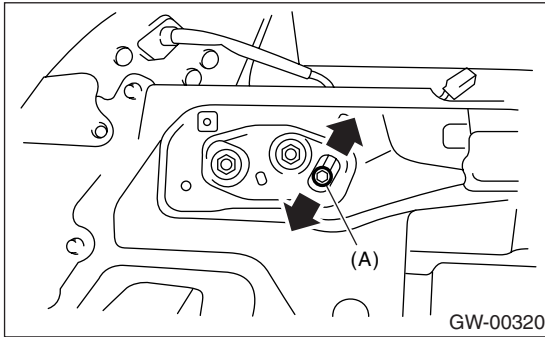


- (1) 11 mm (0.433 in)

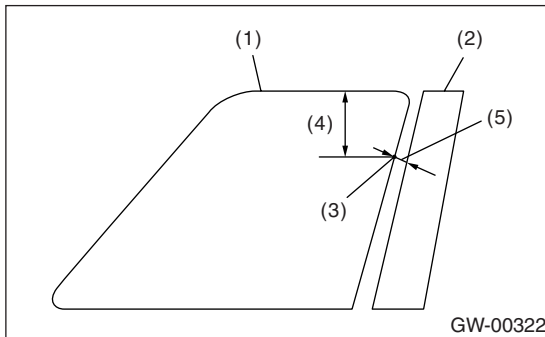
# Front Door Glass

## GLASS/WINDOWS/MIRRORS

5) To adjust the upper end and lower end of center pillar, loosen the stopper bolt (A) or nut (B) securing door sash, move the stopper position until the clearance between center pillar cover is equal.

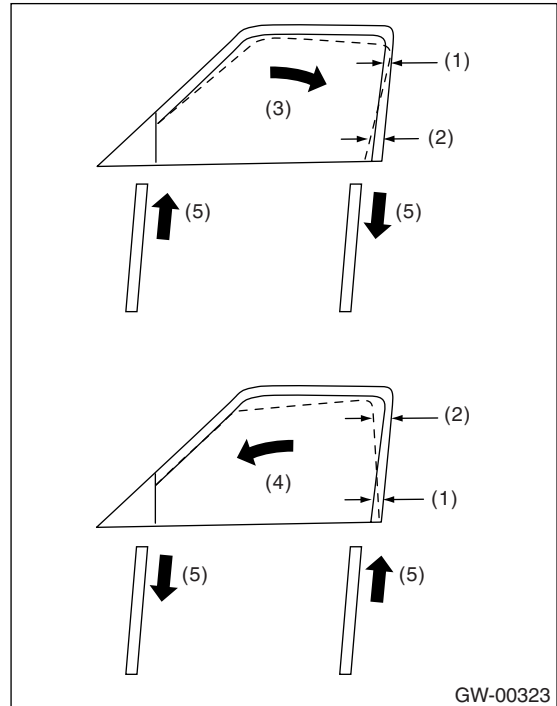


**CAUTION:**  
Perform the measurement of clearance between center pillar at less than 50 mm (1.969 in) from upper end of window glass.



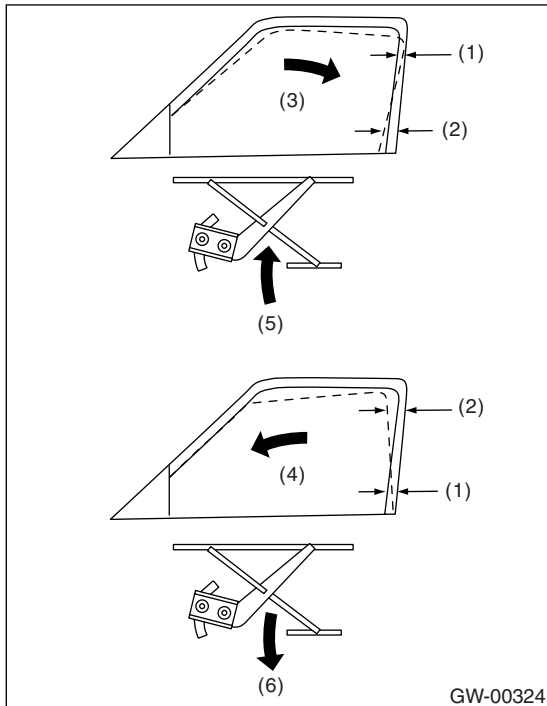
- (1) Glass
- (2) Center pillar cover
- (3) Check point
- (4) 50 mm (1.969 in)
- (5) 11 mm (0.433 in)

6) Adjust so that the upper and lower ends of center pillar are the same size.



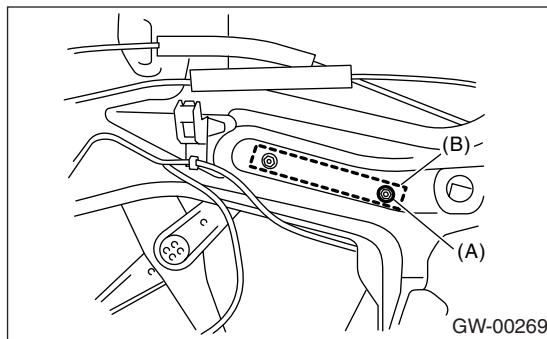
- (1) Narrow
- (2) Wide
- (3) Glass tilts too far rearward
- (4) Glass tilts too far forward
- (5) Stopper adjusting direction

7) After adjusting the clearance between center pillar, up and down the glass several times to check glass contact to stopper when glass is fully closed. Adjust it to contact the front and rear stopper simultaneously.



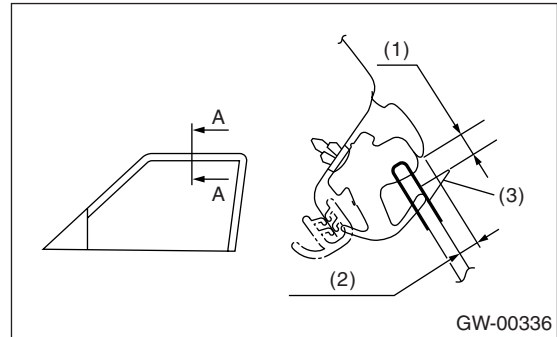
- (1) Narrow
- (2) Wide
- (3) When the stopper of door sash (rear) contacts first
- (4) When the stopper of door sash (front) contacts first
- (5) Raise B channel
- (6) Lower B channel

8) For adjustment of the upper and lower ends of center pillar, loosen the adjusting nut (A) of B-channel (B).



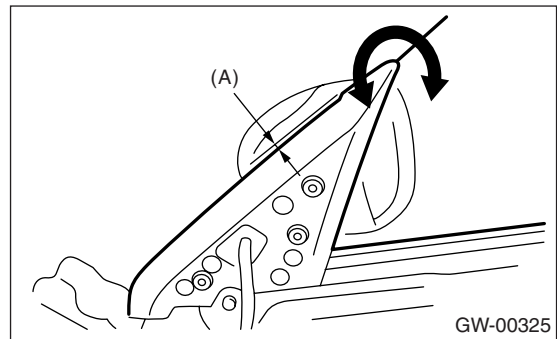
9) For glass stroke adjustment, install the ST to glass, close the door, and raise the glass with regulator until positional relationship between glass and weather strip becomes as shown. And secure the glass so that the upper stopper correctly touches the glass holder.

ST 61299AE00 SPACER  
(Glass thickness: 5 mm (0.197 in) for front door glass)



- (1) 3.2 — 4.8 mm (0.126 — 0.189 in)
- (2) 7 mm (0.276 in)
- (3) ST

For preventing wind noise, adjust the glass at the position where tip of gusset is raised up a little.



- (A) 0 — 1.5 mm (0 — 0.059 in)

10) After stabilizer adjustment, carry out the glass cohesion adjustment. First, visually ensure the positional relationship between retainer & molding and glass of the roof side, and then begin with rear sash adjustment. Install the ST to glass and adjust two adjusting bolts alternately step by step to obtain dimensions shown below (cross-section A).

**NOTE:**

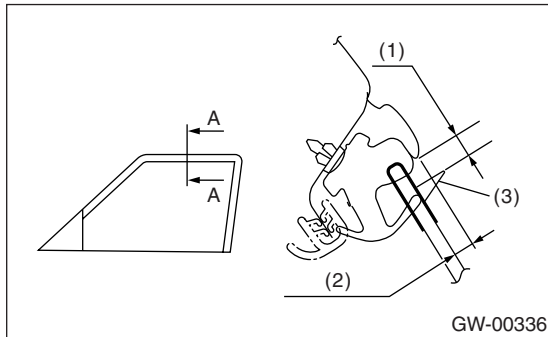
If two nuts are loosened at the same time, the sash moves back and forth. Therefore, when one nut is adjusted, secure the other.

# Front Door Glass

## GLASS/WINDOWS/MIRRORS

11) Make the same adjustment of two adjusting bolts of rear sash.

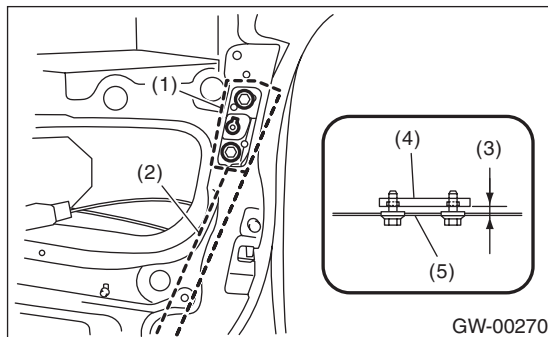
ST 61299AE000 SPACER  
(Glass thickness: 5 mm (0.197 in) for front door glass)



- (1) 3.2 — 4.8 mm (0.126 — 0.189 in)
- (2) 7 mm (0.276 in)
- (3) ST

**NOTE:**

Do not tilt the sash bracket to inner panel during adjustment. Otherwise smooth regulator operation cannot be achieved.



- (1) Sash bracket
- (2) Rear sash
- (3) Adjust a line parallel
- (4) Sash
- (5) Inner panel

12) Make adjustment of front sash in the same manner as that of rear sash.

**NOTE:**

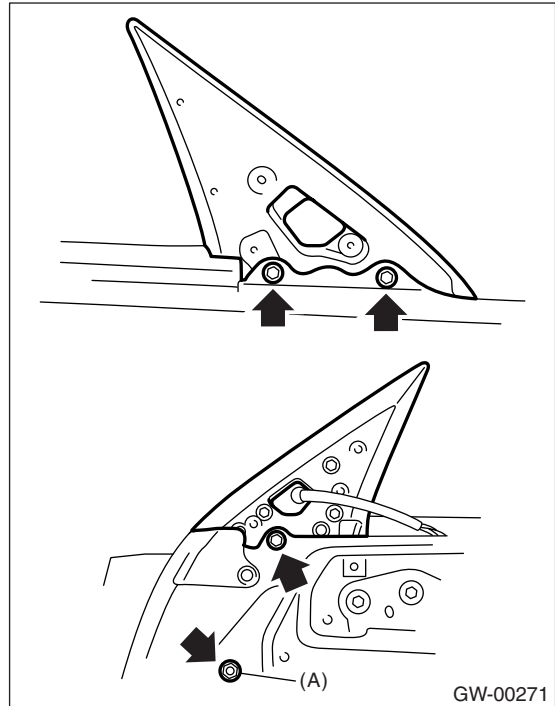
Although front and rear sashes must, as a rule, be adjusted in the same manner, in some door installation, the adjustment in a different manner may be required. However, adjustment of one sash to the maximum amount and the other to the minimum amount is not permitted. Such adjustment may result in application of excessive load to regulator.

13) After adjustments, tighten the nuts.

14) After adjustment of the glass, close the door. If there is a gap between outer lip of gusset and glass surface, adjust the gap with adjusting bolt (A) in

lower fitting part of gusset to prevent generation of wind noise.

15) During adjustment, loosen the other three clamping bolts.



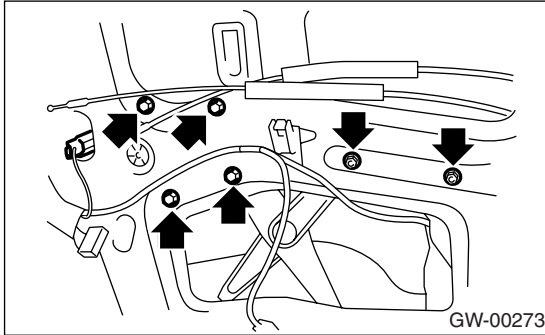
16) After adjustment, tighten the bolts and nuts.



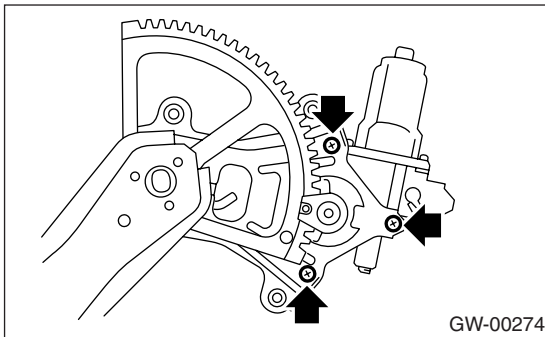
## 5. Front Regulator and Motor Assembly

### A: REMOVAL

- 1) Remove the door glass. <Ref. to GW-10, REMOVAL, Front Door Glass.>
- 2) Disconnect the motor connector.
- 3) Remove the four bolts and two nuts to remove regulator assembly.



- 4) Remove the screws to remove motor assembly.



#### NOTE:

When removing the motor assembly, secure the arm correctly, because the regulator arm moves in the force of balancing spring.

### B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Adjust the front door glass. <Ref. to GW-11, ADJUSTMENT, Front Door Glass.>

#### **Tightening torque:**

*Refer to "COMPONENT" of "General Description". <Ref. to GW-4, FRONT DOOR GLASS, COMPONENT, General Description.>*

### C: INSPECTION

- 1) Make sure that the power window motor rotates properly when the battery voltage is applied to the terminals of motor connector.
- 2) Change polarity of battery connection to terminals to ensure that the motor rotates in reverse direction.

# Remote Control Mirror System

GLASS/WINDOWS/MIRRORS

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## 6. Remote Control Mirror System

### A: WIRING DIAGRAM

<Ref. to WI-306, Remote Control Mirror System.>

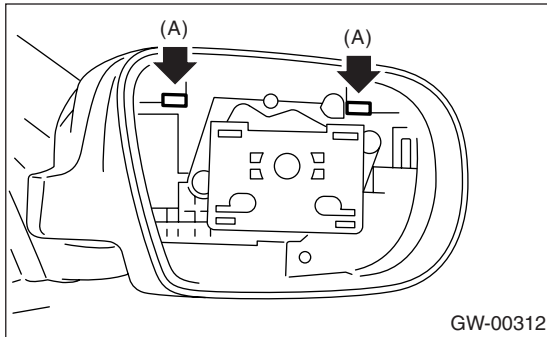
### B: INSPECTION

Symptom	Repair order
All function does not operate.	(1) Fuse (F/B No. 6) (2) Mirror switch (3) Wiring harness
One side of the mirror motor does not operate.	(1) Mirror switch (2) Mirror motor (3) Wiring harness
Mirror heater does not operate.	(1) Mirror switch (2) Mirror heater (3) Wiring harness

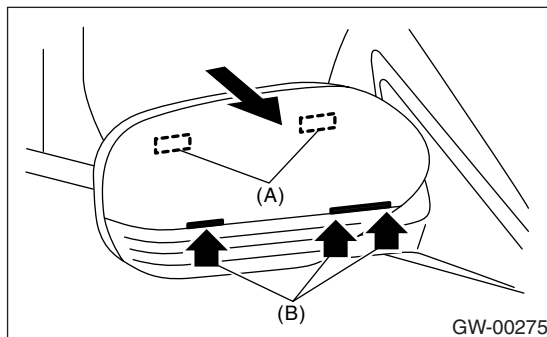
## 7. Scalp Cap

### A: REPLACEMENT

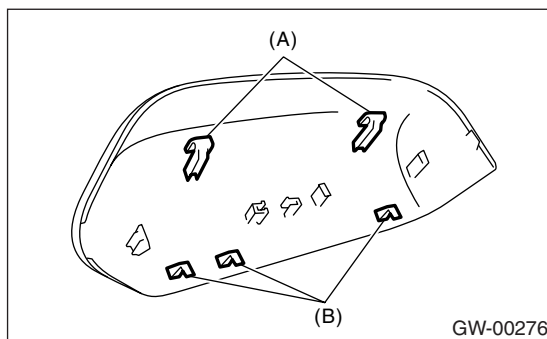
- 1) Remove the outer mirror. <Ref. to GW-19, REPLACEMENT, Outer Mirror.>
- 2) Press-in the upper side clips (A) from inside of door mirror.



- 3) Pull the scalp cap forward of door mirror, remove the upper side clips (A) and lower side hooks (B), and then remove the scalp cap.



- 4) Insert the lower hooks (B) of scalp cap to door mirror and push the upper clips (A) in.



- 5) Install the scalp cap securely.

**CAUTION:**

**Do not remove the scalp cap forcibly. The lower hooks may be damaged.**

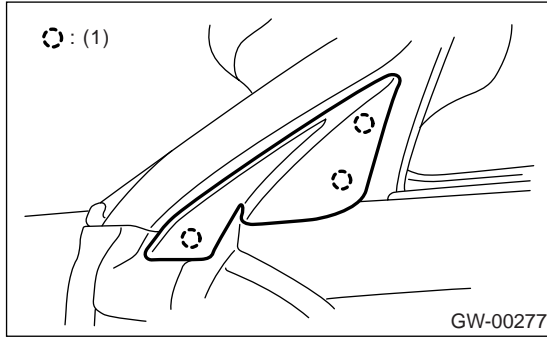
# Outer Mirror Assembly

GLASS/WINDOWS/MIRRORS

## 8. Outer Mirror Assembly

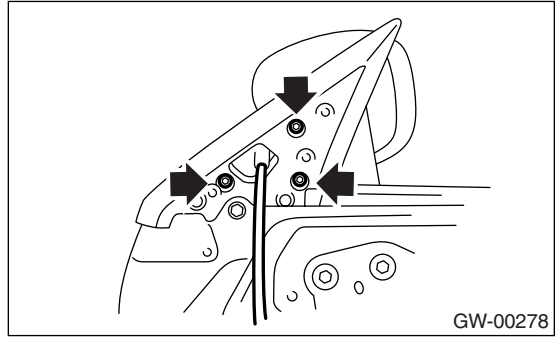
### A: REMOVAL

1) Remove the mirror gusset cover.



(1) Hook

- 2) Remove the door trim. <Ref. to EI-48, REMOVAL, Door Trim.>
- 3) Disconnect the mirror connector.
- 4) Remove the screws to remove mirror assembly.



### B: INSTALLATION

Install in the reverse order of removal.

### C: INSPECTION

Check that the rearview mirror moves properly when the battery voltage is applied to terminals.

- Model without mirror heater

Switch position	Terminal No.
OFF	—
UP	6 (+) and 3 (-) or 8 (-)
DOWN	3 (+) or 8 (+) and 6 (-)
LEFT	7 (+) and 3 (-) or 8 (-)
RIGHT	3 (+) or 8 (+) and 7 (-)

- Model with mirror heater

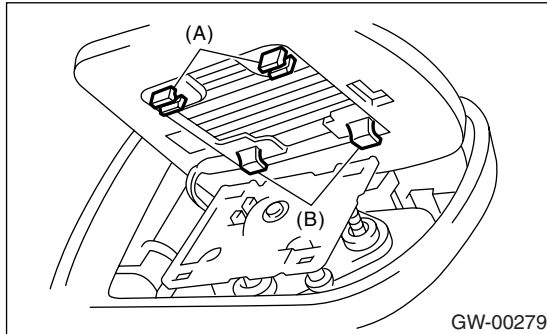
Switch position	Terminal No.
OFF	—
UP	7 (+) and 3 (-) or 9 (-)
DOWN	3 (+) or 9 (+) and 7 (-)
LEFT	8 (+) and 3 (-) or 9 (-)
RIGHT	3 (+) or 9 (+) and 8 (-)

Replace the outer mirror assembly if defective.

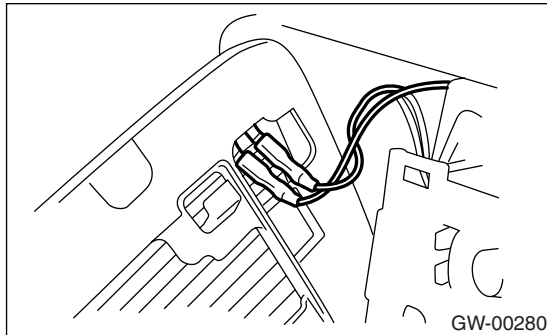
## 9. Outer Mirror

### A: REPLACEMENT

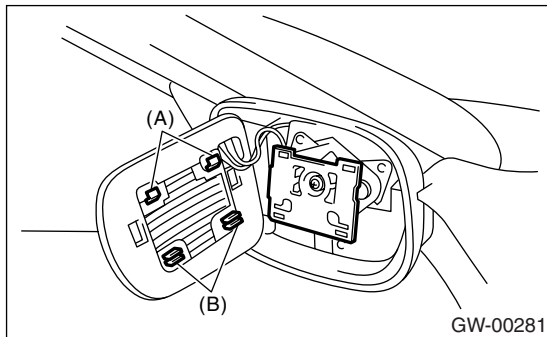
- 1) Face the mirror upward.
- 2) Use a flat tip screwdriver to remove clip (A).
- 3) Lift the lower mirror up to remove hooks (B).



- 4) Disconnect the mirror heater connector from the end of mirror. (Model with mirror heater)



- 5) Catch the hooks (A) and install clips (B).



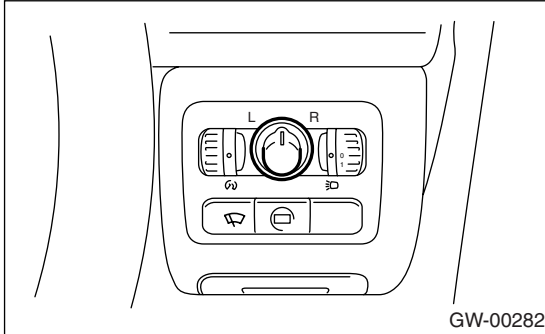
#### CAUTION:

- When removing the mirror, be careful not to damage the back side of mirror with a flat tip screwdriver.
- When installing the mirror, insert the hook and clip securely.

## 10. Remote Control Mirror Switch

### A: REMOVAL

- 1) Remove the instrument panel lower cover. <Ref. to EI-50, REMOVAL, Instrument Panel Lower Cover.>
- 2) Disconnect the connector.



- 3) Remove the remote control mirror switch from instrument panel lower cover.

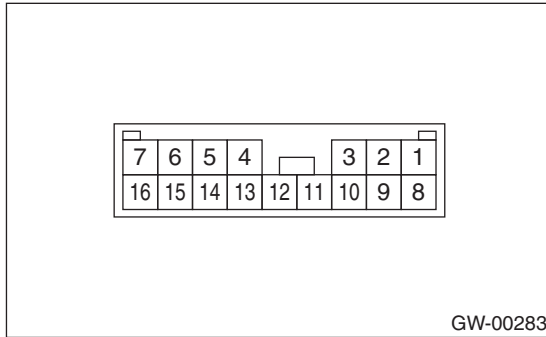
### B: INSTALLATION

Install in the reverse order of removal.

## C: INSPECTION

### 1. REMOTE CONTROL MIRROR SWITCH

Move the remote control mirror switch to each position and check continuity between terminals.



- Change over switch R

Switch position	Terminal No.	Standard
OFF	—	More than 1 M $\Omega$
UP	10 and 12, 15 and 14	Less than 1 $\Omega$
DOWN	10 and 15, 12 and 14	Less than 1 $\Omega$
LEFT	10 and 11, 15 and 14	Less than 1 $\Omega$
RIGHT	10 and 15, 11 and 14	Less than 1 $\Omega$

- Change over switch L

Switch position	Terminal No.	Standard
OFF	—	More than 1 M $\Omega$
UP	10 and 8, 15 and 14	Less than 1 $\Omega$
DOWN	10 and 15, 8 and 14	Less than 1 $\Omega$
LEFT	10 and 9, 15 and 14	Less than 1 $\Omega$
RIGHT	10 and 15, 9 and 14	Less than 1 $\Omega$

Replace the remote control mirror switch if defective.

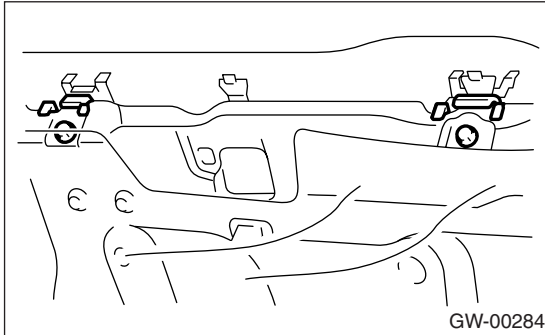
# Rear Door Glass

GLASS/WINDOWS/MIRRORS

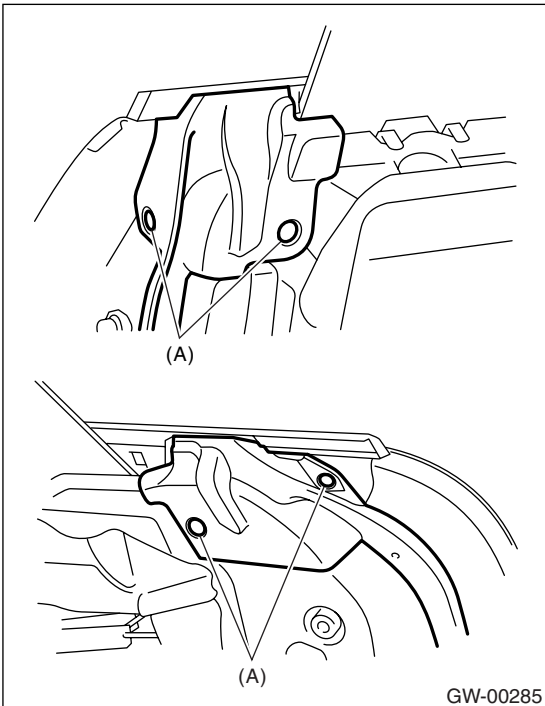
## 11.Rear Door Glass

### A: REMOVAL

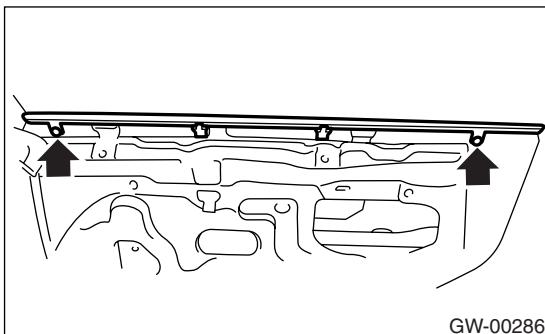
- 1) Remove the rear door trim. <Ref. to EI-48, REMOVAL, Door Trim.>
- 2) Remove the sealing cover. <Ref. to EB-24, REMOVAL, Rear Sealing Cover.>
- 3) Remove the stabilizer.



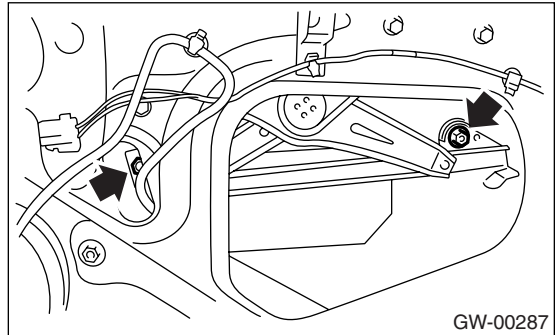
- 4) Remove the clips (A), and remove the front end and rear end of weather strip.



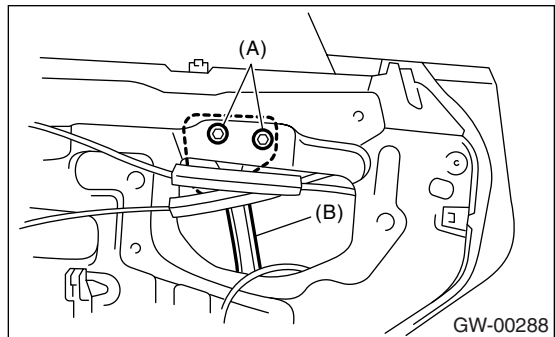
- 5) Loosen the two screws to remove weather strip outer.



- 6) Operate the power window switch to move the glass to position shown in the figure, and then remove the two nuts through service holes.



- 7) Remove the rear sash retaining nuts (A) and move rear sash (B) backward.



- 8) Remove the door glass.

### CAUTION:

- Since the gear may be disengaged, do not turn regulator in the closing direction after removal of the glass.
- Avoid impact and damage to the glass.



## B: INSTALLATION

1) Install in the reverse order of removal.

### CAUTION:

**Make sure that glass stay is placed securely in sash.**

2) Adjust the rear door glass. <Ref. to GW-23, ADJUSTMENT, Rear Door Glass.>

### Tightening torque:

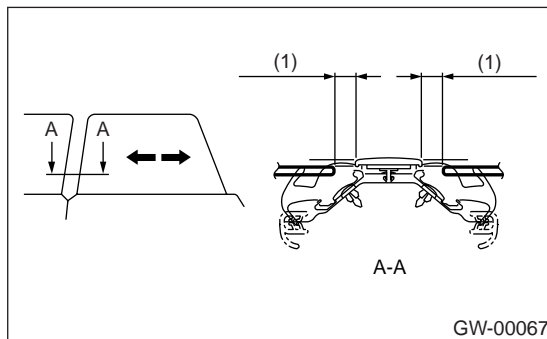
Refer to "COMPONENT" of "General Description". <Ref. to GW-5, REAR DOOR GLASS, COMPONENT, General Description.>

## C: ADJUSTMENT

### NOTE:

The rear door glass, as a rule, should be adjusted in the same manner as front door glass, although they are different in dimension. <Ref. to GW-11, ADJUSTMENT, Front Door Glass.>

1) Adjust the glass position using the following dimensions as a guide line.



(1) 11 mm (0.433 in)

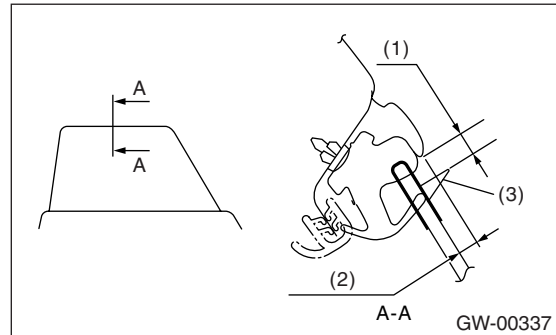
### NOTE:

- If dimensions are smaller than the given dimensions, glass may get caught in weather strip during lifting/lowering operation and may not be fully open.
- After adjustment, move the glass up and down to check whether it is caught.

2) Install the ST to glass and adjust the glass adhesion to the value shown.

ST 61299AE010 SPACER

(Glass thickness: 4 mm (0.157 in) for rear door glass)



(1) 3.2 — 4.8 mm (0.126 — 0.189 in)

(2) 7 mm (0.276 in)

(3) ST

### NOTE:

- If rear glass adhesion is higher than necessary, glass may get caught in weather strip of center pillar corner, resulting in early wear of weather strip. Care should be taken for adjustment.
- After adjustment, move the glass up and down to check whether it is caught.

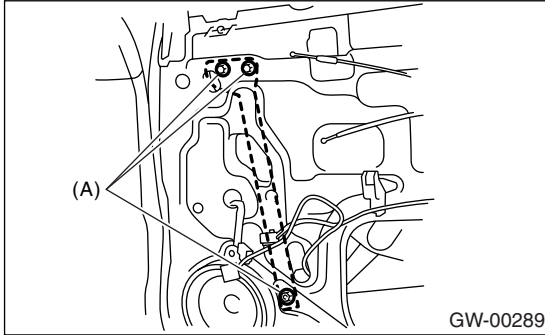
## Rear Regulator and Motor Assembly

GLASS/WINDOWS/MIRRORS

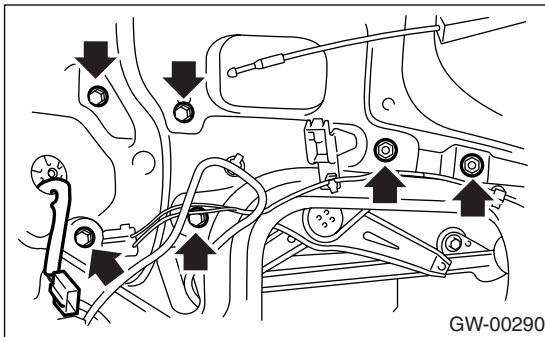
### 12. Rear Regulator and Motor Assembly

#### A: REMOVAL

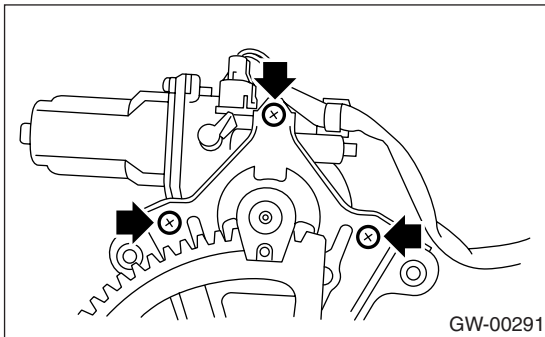
- 1) Remove the rear door glass. <Ref. to GW-22, REMOVAL, Rear Door Glass.>
- 2) Remove the nut (A) to remove front sash.



- 3) Disconnect the motor connector.
- 4) Remove the four bolts and two nuts to remove regulator assembly.



- 5) Remove the screws to remove motor assembly.



#### B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Adjust the rear door glass. <Ref. to GW-23, ADJUSTMENT, Rear Door Glass.>

#### Tightening torque:

Refer to "COMPONENT" of "General Description". <Ref. to GW-5, REAR DOOR GLASS, COMPONENT, General Description.>

#### C: INSPECTION

- 1) Make sure that the power window motor rotates properly when the battery voltage is applied to the terminals of motor connector.
- 2) Change polarity of battery connection to terminals to ensure that the motor rotates in reverse direction.

## 13. Windshield Glass

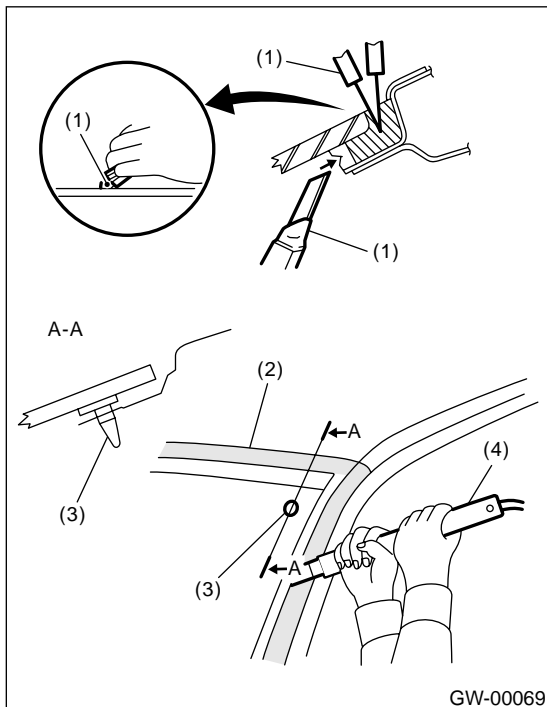
### A: REMOVAL

#### 1. USING WINDSHIELD GLASS KNIFE

- 1) Remove the cowl panel. <Ref. to EI-39, REMOVAL, Cowl Panel.>
- 2) Remove the glass molding.
- 3) Tape the body side of the circumference of windshield glass for protection.
- 4) Apply sufficient amount of soapy water to the adhesive part.
- 5) Insert the windshield glass knife into adhesive part.
- 6) While holding the knife edge and windshield glass edge at a right angle, move the windshield glass knife in parallel to the windshield glass edge along face and edge of windshield glass to cut the adhesive part.

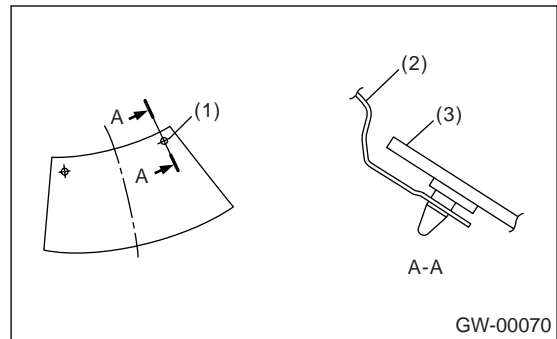
#### NOTE:

- Do not twist windshield glass knife.
- Cutting of adhesive part shall be started with wider gap between windshield glass and body.



- (1) Putty knife
- (2) Tape for protection
- (3) Locating pin
- (4) Windshield glass knife

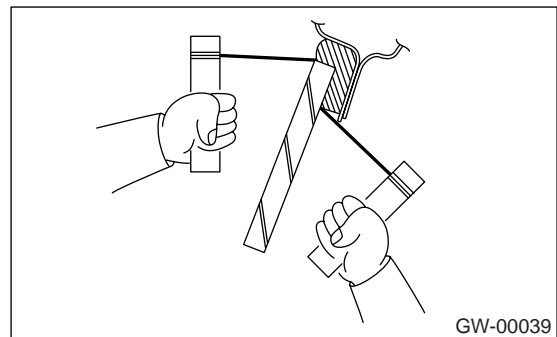
- Because the locating pins are bonded to the corners of glass, use piano wire to cut the pin.



- (1) Locating pin
- (2) Body panel
- (3) Windshield glass

#### 2. USING PIANO WIRE

- 1) Remove the cowl panel. <Ref. to EI-39, REMOVAL, Cowl Panel.>
- 2) Remove the molding.
- 3) Tape the body side of the circumference of windshield glass for protection.
- 4) Make a hole in the adhesive part using drill or knife.
- 5) Pass the piano wire through the hole, and attach securely both the wire ends to pieces of wood.



- 6) Pull the wire ends alternately to cut off the adhesive part.

#### CAUTION:

- Do not tightly pull the piano wire against the windshield glass edge.
- Be careful not to damage interior and exterior parts.
- When removal is made with area close to instrument panel, place a protection plate over it. Pay particular attention to the removal.
- Do not cross piano wires. Otherwise they may be cut.

# Windshield Glass

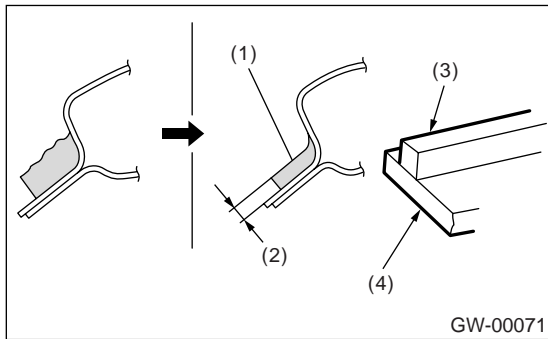
GLASS/WINDOWS/MIRRORS

## B: INSTALLATION

- 1) Clean the external circumference of windshield glass with alcohol or white gasoline.
- 2) Remove the adhesive layer on the body using cutter knife to obtain smooth face of 2 mm (0.08 in) thick.

### CAUTION:

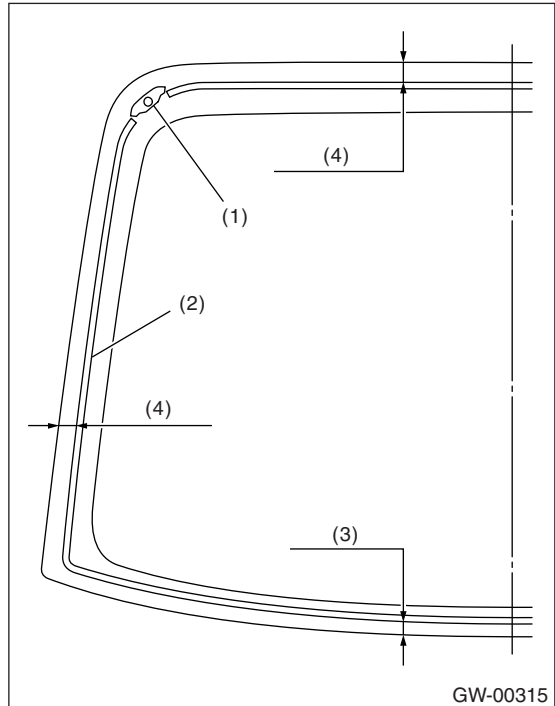
Be careful not to damage the body and paint surface.



- (1) Adhesive
- (2) 2 mm (0.08 in)
- (3) Dam rubber
- (4) Glass

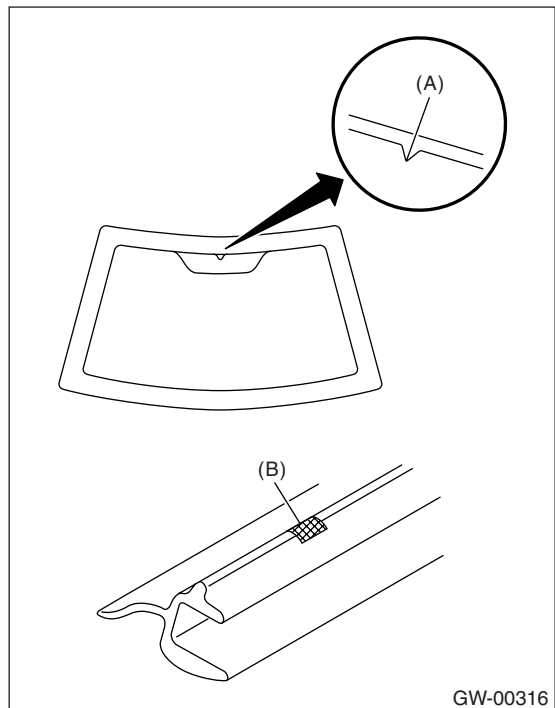
- 3) Clean the body with alcohol or white gasoline to eliminate cutting power, dust and dirt completely from body.
- 4) Align the locating pin of glass side with the hole of body side, and place the glass on the body.

- 5) Adjust the glass position to make uniform clearance between body and glass in four corners.



- (1) Locating pin
- (2) Dam rubber
- (3) 9 mm (0.354 in)
- (4) 11 mm (0.433 in)

- 6) Remove the glass temporarily from body.
- 7) Install the dam rubber.
- 8) Fit molding mark (B) to notch (A) of glass side and install the molding to entire perimeter of glass.



9) Apply two types of primers to the adhesive layer of glass using sponge.

**Glass primer:**

**Betawipe VP04604**

**Betaprime 5001**

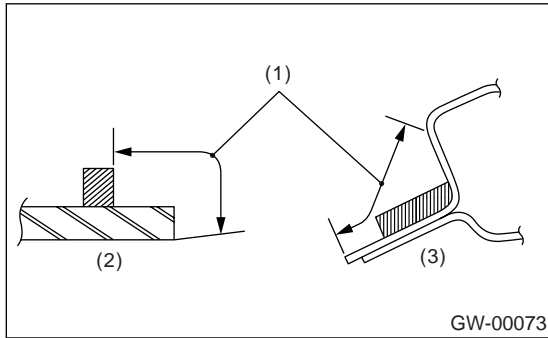
10) Apply primer to the adhesive layer of body.

**Painted surface primer:**

**Betaprime 5402**

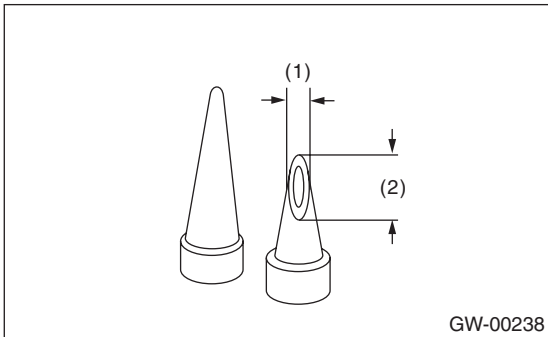
**NOTE:**

- Primer once attached to the painted surface of the body and internal trim is hard to wipe off. Mask the circumference of such area.
- Let primer dry for about ten minutes before installing the glass.
- Do not touch the surface coated with primer.



- (1) Application of primer
- (2) Glass side
- (3) Body side

11) Cut off the cartridge nozzle tip as shown and set it in sealant gun.



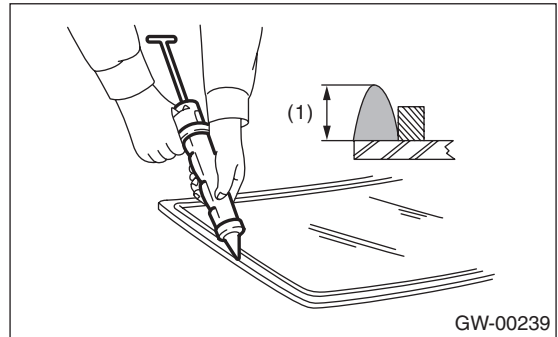
- (1) 10 mm (0.39 in)
- (2) 15 mm (0.59 in)

12) Apply adhesive to the glass end surface as shown.

**Adhesive:**

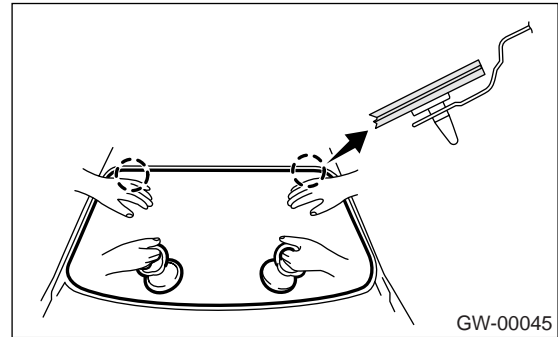
**Gurit-ESSEX**

**Betaseal 1502 or equivalent**



- (1) 9 — 12 mm (0.35 — 0.47 in)

13) Fit the locating pins using suction rubber cup to install windshield glass.



14) Lightly press the windshield glass for tight fit.

15) Make flush the adhesive surface juttred out using spatula.

16) After completion of all work, allow the vehicle to stand for about 24 hours.

**NOTE:**

- When door is opened/closed after glass is bonded, always lower the door glass and then open/close it carefully.
- Move the vehicle slowly.
- For minimum drying time and vehicle standing time before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.

17) After curing of adhesive, pour the water on external surface of vehicle to check that there are no water leaks.

**NOTE:**

When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

18) Install the cowl panel. <Ref. to EI-39, INSTALLATION, Cowl Panel.>

## 14.Rear Gate Glass

### A: REMOVAL

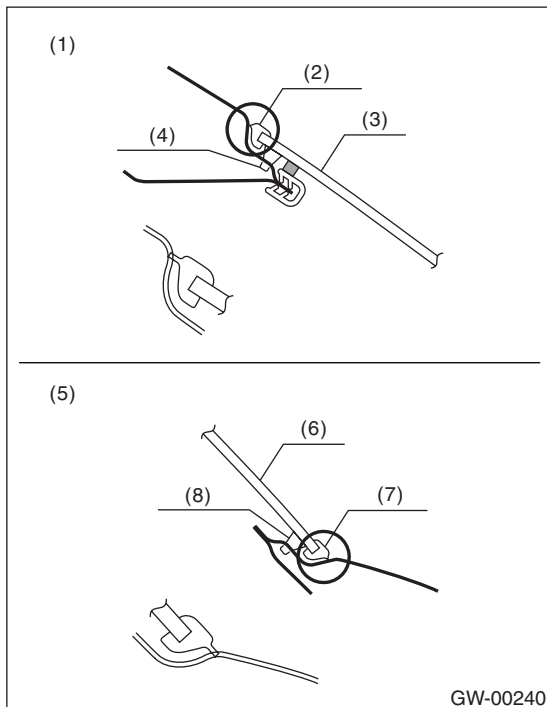
- 1) Remove the rear wiper motor. <Ref. to WW-22, REMOVAL, Rear Wiper Motor.>
- 2) Disconnect the electrical connectors from rear defogger terminal.
- 3) Remove the glass in the same procedure as for windshield glass. <Ref. to GW-25, REMOVAL, Windshield Glass.>

### B: INSTALLATION

- 1) Apply adhesive in the same procedure as for windshield glass. <Ref. to GW-26, INSTALLATION, Windshield Glass.>
- 2) Insert the glass clip pin into rear gate hole, and after pushing on the area around the clip pin to secure it, push lightly all around the area to seal it.
- 3) About one hour after installation, conduct a leak test.

#### NOTE:

- When door is opened/closed after glass is bonded, always lower the door glass and then open/close it carefully.
  - Move the vehicle slowly.
  - For minimum drying time and vehicle standing time before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.
  - When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.
- 5) Connect the rear defogger terminals.
  - 6) Install the rear wiper. <Ref. to WW-22, INSTALLATION, Rear Wiper Motor.>



- (1) Upside
- (2) Molding
- (3) Glass
- (4) Adhesive
- (5) Downside
- (6) Glass
- (7) Molding
- (8) Adhesive

- 4) After completion of all work, allow the vehicle to stand for about 24 hours.

## 15.Rear Window Glass

### A: REMOVAL

- 1) Disconnect the electrical connectors from rear defogger terminal.
- 2) Remove the glass in the same procedure as for windshield glass. <Ref. to GW-25, REMOVAL, Windshield Glass.>

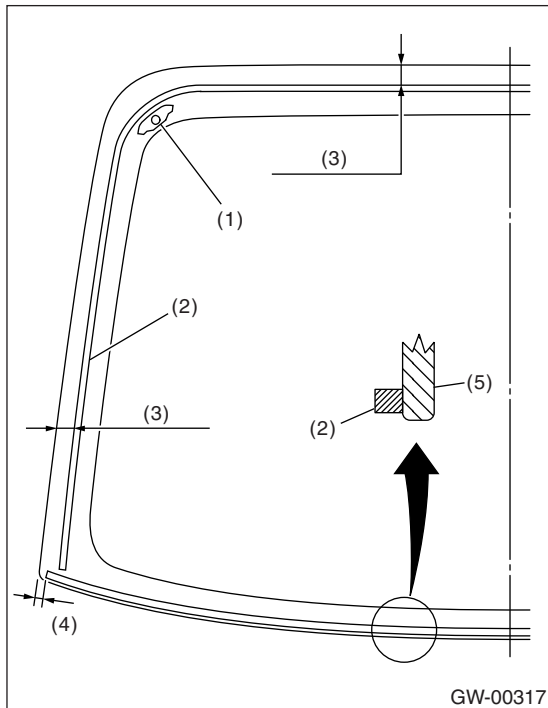
### B: INSTALLATION

- 1) Bond the dam rubber.

- 5) After curing of adhesive, pour the water on external surface of vehicle to check that there are no water leaks.

#### NOTE:

When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.



- (1) Locating pin (bonded)
- (2) Dam rubber
- (3) 11 mm (0.433 in)
- (4) 4 mm (0.157 in)
- (5) Rear window glass

- 2) Install the glass in the same procedure as for windshield glass. <Ref. to GW-26, INSTALLATION, Windshield Glass.>

- 3) Connect the connector to the rear defogger and antenna terminals.

- 4) After completion of all work, allow the vehicle to stand for about 24 hours.

#### NOTE:

- When door is opened/closed after glass is bonded, always lower the door glass and then open/close it carefully.
- Move the vehicle slowly.
- For minimum drying time and vehicle standing time before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.

# Rear Window Defogger System

GLASS/WINDOWS/MIRRORS

## 16.Rear Window Defogger System

### A: WIRING DIAGRAM

<Ref. to WI-304, Rear Window Defogger System.>

### B: INSPECTION

Symptom	Repair order
Rear window defogger does not operate.	(1) Fuse (M/B No. 10) (F/B No. 22) (2) Rear defogger relay (3) Defogger switch (4) Rear defogger condenser (5) Defogger wire (6) Wiring harness (7) Body integrated unit

#### NOTE:

Rear window defogger system can be customized on the touch panel in center display or Subaru Select Monitor.

System name	Initial setting	Customize setting
Rear window defogger timer	OFF after 15 min.	Repeat 15 min. operation and 2 min. stop.



## 17.Rear Window Defogger

### A: INSPECTION

#### 1. WITH SUBARU SELECT MONITOR

**CAUTION:**

Check that the rear window defogger timer is in initial setting or customize setting before inspection.

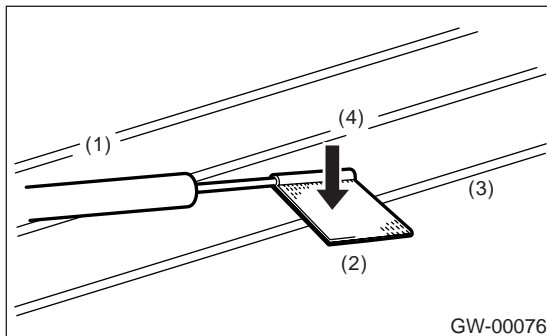
Step	Check	Yes	No
<b>1 CHECK INPUT SIGNAL TO BODY INTEGRATED UNIT.</b> When the rear window defogger switch is operated, check the input signal using Subaru Select Monitor. 1) Connect the Subaru Select Monitor to data link connector. 2) Turn the ignition switch to ON. 3) Select {Body Integrated Unit} from «Main Menu». 4) Select {Current Data Display & Save}. 5) When the rear window defogger switch is set to ON, check the input signal.	After rear defogger switch is set to ON, does it turn to OFF in 15 minutes? Or does it repeat 15 minutes operation and 2 minutes stop?	END.	Replace the body integrated unit. <Ref. to SL-46, REMOVAL, Body Integrated Unit.>

#### 2. HEAT WIRE INSPECTION

**CAUTION:**

When wiping stain on glass off with cloth, use a dry and soft cloth and move it along the heat wire to avoid damage to the heat wire.

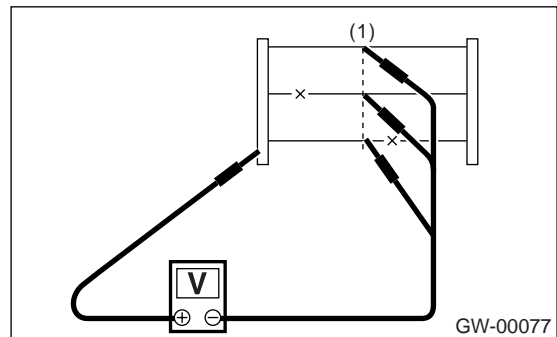
- 1) Turn the ignition switch to ON.
- 2) Turn the defogger switch to ON.
- 3) Wrap the tips of tester probe with aluminum foil to avoid damage to heat wire.



- (1) Tester probe
- (2) Aluminum foil
- (3) Heat wire
- (4) Push

4) Measure the voltage at heat wire center with DC voltmeter.

**Standard voltage:**  
**Approx. 6 V**



(1) Center of heat wire

Voltage	Criteria
Approx. 6 V	Normal Operation
Approx. 12 V or 0 V	Broken

**NOTE:**

- If the measured value is 12 volts, heat wire is open between heat wire center and positive (+) terminal of tester probe.
- If zero volt, heat wire is open between wire center and ground.

5) Connect the tester probe of positive lead of voltmeter to positive terminal of heat wire and move tester probe of negative lead along the heat wire up to the negative terminal end. If voltage changes from zero to several volts during movement of tester probe, heat wire is open at the voltage change point.

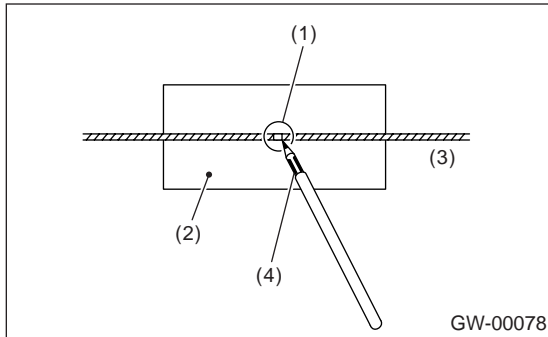
## Rear Window Defogger

GLASS/WINDOWS/MIRRORS

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### B: REPAIR

- 1) Clean the broken portion with alcohol or white gasoline.
- 2) Mask both side of wire with thin film.
- 3) Apply the conductive silver composition (DUPONT No. 4817) to the broken portion.



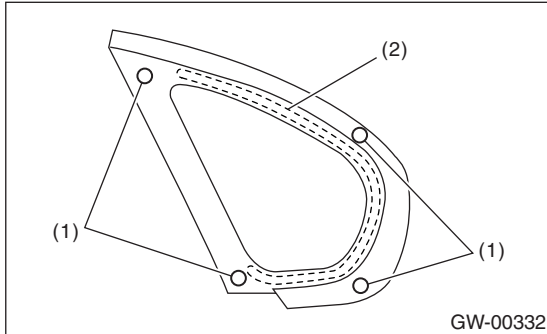
- (1) Broken portion
- (2) Thin film
- (3) Broken wire
- (4) Conductive silver composition (DUPONT No. 4817)

- 4) After repair, check the wire.

## 18.Rear Quarter Glass

### A: REMOVAL

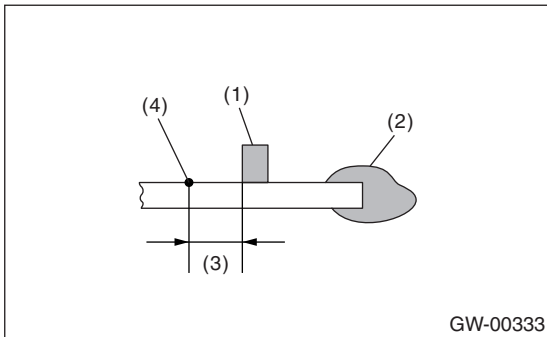
Remove the glass in the same procedure as for windshield glass. <Ref. to GW-25, REMOVAL, Windshield Glass.>



- (1) Locating pin
- (2) Dam rubber

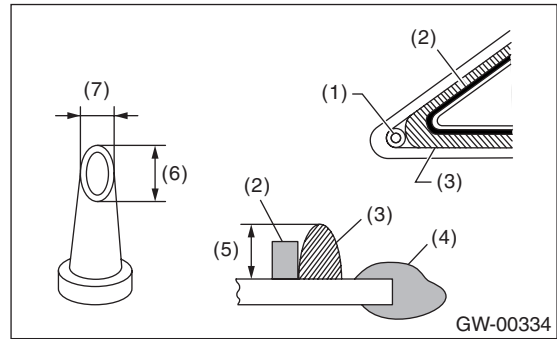
### B: INSTALLATION

1) Install the dam rubber.



- (1) Dam rubber
- (2) Molding
- (3) 10.5 mm (0.413 in) (constant)
- (4) Ceramic terminal

2) Cut out the nozzle head and apply adhesive to the glass end surface as shown.



- (1) Locating pin
- (2) Dam rubber
- (3) Adhesive
- (4) Molding
- (5) 8 — 10 mm (0.31 — 0.39 in)
- (6) 15 mm (0.59 in)
- (7) 10 mm (0.39 in)

3) Install the glass in the same procedure as for windshield glass. <Ref. to GW-26, INSTALLATION, Windshield Glass.>

4) After completion of all work, allow the vehicle to stand for about 24 hours.

#### NOTE:

- When door is opened/closed after glass is bonded, always lower the door glass and then open/close it carefully.
- Move the vehicle slowly.
- For minimum drying time and vehicle standing time before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.

5) After curing of adhesive, pour the water on external surface of vehicle to check that there are no water leaks.

#### NOTE:

When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

### **19.Sun Roof Glass**

#### **A: REMOVAL**

<Ref. to SR-6, REMOVAL, Glass Lid.>

#### **B: INSTALLATION**

<Ref. to SR-7, INSTALLATION, Glass Lid.>

#### **C: ADJUSTMENT**

<Ref. to SR-7, ADJUSTMENT, Glass Lid.>

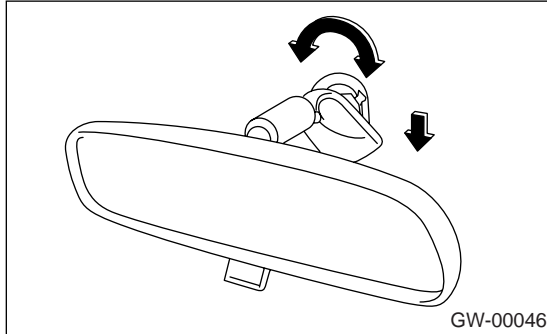
## 20.Rearview Mirror

### A: REMOVAL

#### NOTE:

Never reuse the spring. Prepare a new spring before removal.

- 1) Turn the mirror base 90° clockwise or counter-clockwise to remove it.



- 2) Remove the spring from rearview mirror mount.

#### CAUTION:

**Be careful not to damage the mirror surface.**

- 3) When the rearview mirror mount is damaged, use the piano wire or spatula to remove.

#### CAUTION:

**Be careful not to damage the windshield glass.**

### B: INSTALLATION

- 1) When the rearview mirror mount is removed, clean the old adhesive, and mate with the windshield glass mark to install.

#### **Adhesive:**

***REPAIR KIT IN MR (Part No. 65029FC000) or equivalent***

- 2) Ensure the rearview mirror mount is securely attached and then install the spring to it.
- 3) Install in the reverse order of removal.

### C: INSPECTION

Check that the mirror is not damaged.  
Check that the spring is not damaged.

# Wiper Deicer System

GLASS/WINDOWS/MIRRORS

## 21. Wiper Deicer System

### A: WIRING DIAGRAM

<Ref. to WI-328, Wiper Deicer System.>

### B: INSPECTION

Symptom	Repair order
Wiper deicer does not operate.	(1) Fuse (F/B No. 4, 9) (2) Wiper deicer relay (3) Wiper deicer switch (4) Wiring harness (5) Body integrated unit

Refer to “Rear Window Defogger” for inspection.

<Ref. to GW-31, INSPECTION, Rear Window Defogger.>

#### NOTE:

Wiper deicer system can be customized on the touch panel in center display or Subaru Select Monitor.

System name	Initial setting	Customize setting
Wiper deicer timer	OFF after 15 min.	Continuous operation*

\*: When one of following items is occurred, finish the continuous operation and goes to OFF after 15 min.

- Ambient temperature that is more than 10°C (41°F) continues for 10 sec.
- Malfunction occurs on ambient temperature sensor
- Vehicle speed that is below 15 km/h (9 MPH) continues 15 min.
- Malfunction occurs on CAN communication

### C: REPAIR

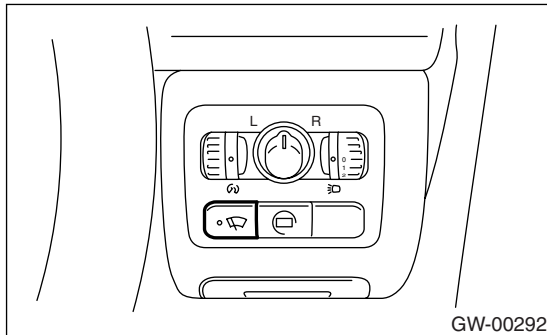
Refer to “Rear Window Defogger” for repair.

<Ref. to GW-32, REPAIR, Rear Window Defogger.>

## 22. Wiper Deicer Switch

### A: REMOVAL

- 1) Remove the instrument panel lower cover. <Ref. to EI-50, REMOVAL, Instrument Panel Lower Cover.>
- 2) Disconnect the harness connector and remove the wiper deicer switch.



### B: INSTALLATION

Install in the reverse order of removal.

### C: INSPECTION

#### 1. WITH SUBARU SELECT MONITOR

##### CAUTION:

Check that the wiper deicer timer is in initial setting or customize setting before inspection.

Step	Check	Yes	No
<b>1 CHECK INPUT SIGNAL TO BODY INTEGRATED UNIT.</b> When the wiper deicer switch is operated, check the input signal using Subaru Select Monitor. 1) Connect the Subaru Select Monitor to data link connector. 2) Turn the ignition switch to ON. 3) Select {Body Integrated Unit} from «Main Menu». 4) Select {Current Data Display & Save}. 5) When the wiper deicer switch is set to ON, check the input signal.	After the wiper deicer switch is set to ON, does it turn to OFF in 15 minutes? Or does it operates continuously?	END.	Replace the body integrated unit. <Ref. to SL-46, REMOVAL, Body Integrated Unit.>

#### 2. CHECK SWITCH

Remove the wiper deicer switch and measure the switch resistance.

Switch position	Terminal No.	Standard
OFF	1 and 2	More than 1 MΩ
ON		Less than 1 Ω

Replace the wiper deicer switch if faulty.

