

## GROUP 42A

## BODY

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# HOOD

## HOOD DIAGNOSIS

### INTRODUCTION TO HOOD DIAGNOSIS

Wind noise at the hood may be caused by improper hood adjustment.

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### HOOD DIAGNOSTIC TROUBLESHOOTING STRATEGY

Use these steps to plan your diagnostic strategy. If you follow them carefully, you will be sure that you have exhausted most of the possible ways to find a hood fault.

1. Gather information from the customer.

2. Verify that the condition described by the customer exists.

3. Find the malfunction by following the Symptom Chart.

4. Verify malfunction is eliminated.

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### SYMPTOM CHART

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| Symptom                         | Inspection procedure | Reference page          |
|---------------------------------|----------------------|-------------------------|
| Difficult locking and unlocking | 1                    | <a href="#">P.42A-3</a> |
| Uneven body clearance           | 2                    | <a href="#">P.42A-4</a> |
| Uneven height                   | 3                    | <a href="#">P.42A-4</a> |

### SYMPTOM PROCEDURES

#### INSPECTION PROCEDURE 1: Difficult Locking and Unlocking

##### DIAGNOSIS

**STEP 1. Check that the release cable is routed correctly.**

**Q: Is the release cable routed correctly?**

**YES :** Go to Step 2.

**NO :** Re-route the release cable. Then go to Step 4.

**STEP 2. Check the engagement of the hood latch and hood striker.**

**Q: Are the hood latch and hood striker engaged correctly?**

**YES :** Go to Step 3.

**NO :** Adjust the hood latch (Refer to [P.42A-4](#)). Then go to Step 4.

**STEP 3. Check for proper lubrication of release cable.**

**Q: Is the release cable properly lubricated?**

**YES :** Go to Step 4.

**NO :** Lubricate, then go to Step 4.

**STEP 4. Retest the system.**

**Q: Does the hood lock operate normally?**

**YES :** The procedure is complete.

**NO :** Return to Step 1.

**INSPECTION PROCEDURE 2: Uneven Body Clearance****DIAGNOSIS****STEP 1. Check the clearance around the hood.**

**Q: Is the clearance around the hood even?**

**YES :** Go to Step 2.

**NO :** Adjust the hood (Refer to [P.42A-4](#)). Then go to Step 2 .

**STEP 2. Retest the system.**

**Q: Is the clearance around the hood even?**

**YES :** The procedure is complete.

**NO :** Return to Step 1.

**INSPECTION PROCEDURE 3: Uneven Height****DIAGNOSIS****STEP 1. Check the hood damper height.**

**Q: Is the hood damper height proper?**

**YES :** Go to Step 2.

**NO :** Adjust the hood damper (Refer to [P.42A-5](#)). Then go to Step 2.

**STEP 2. Retest the system.**

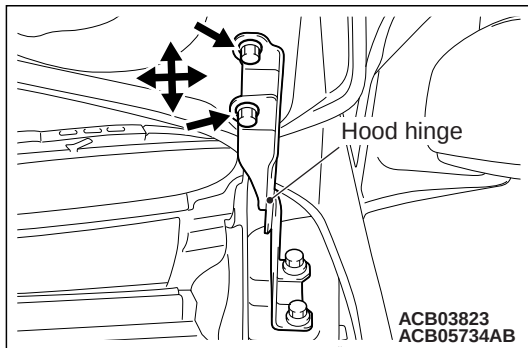
**Q: Is the hood damper height proper?**

**YES :** The procedure is complete.

**NO :** Return to Step 1.

**ON-VEHICLE SERVICE****ADJUSTMENT OF CLEARANCE AROUND HOOD**

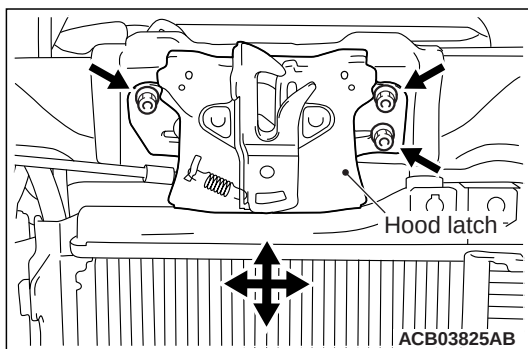
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1. Loosen the hood hinge mounting bolts but do not remove them. Move the hood hinge back/forth and left/right to align the clearance around hood.
2. After the adjustment, tighten the hood hinge mounting bolts to  $23 \pm 6$  N·m ( $17 \pm 4$  ft·lb).

**ADJUSTMENT OF HOOD LEVEL AND HOOD STRIKER ENGAGEMENT**

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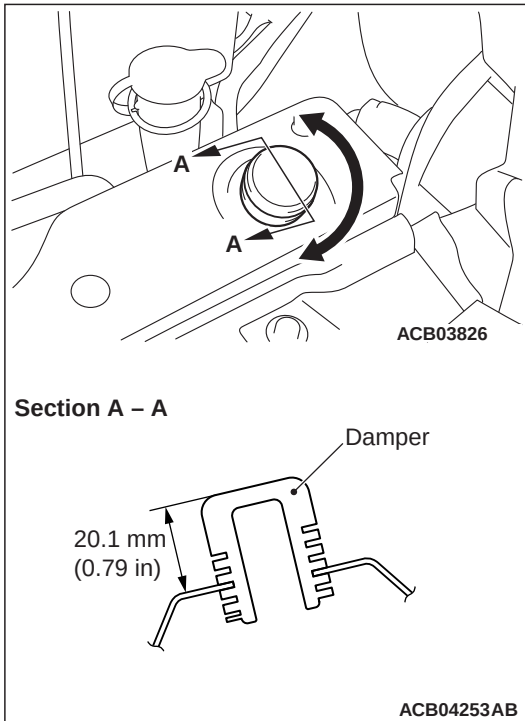
1. Loosen the hood latch mounting bolts but do not remove them. Move the hood latch up/down and left/right to align the hood level and adjust the hood striker engagement.
2. After the adjustment, tighten the hood latch mounting bolts to  $9.0 \pm 1.0$  N·m ( $80 \pm 8$  in·lb).

## ADJUSTMENT OF HOOD HEIGHT

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Turn the damper to the dimension shown in the figure to adjust the hood height. If the hood height is still not even, turn the damper again until the height is even. The damper height is altered by roughly 4 mm (0.2 inches) when the damper is rotated once.

*NOTE: If a rattling noise is heard due to the vibration of the hood when the vehicle is being driven, adjust the damper height until the damper is seated on the hood.*



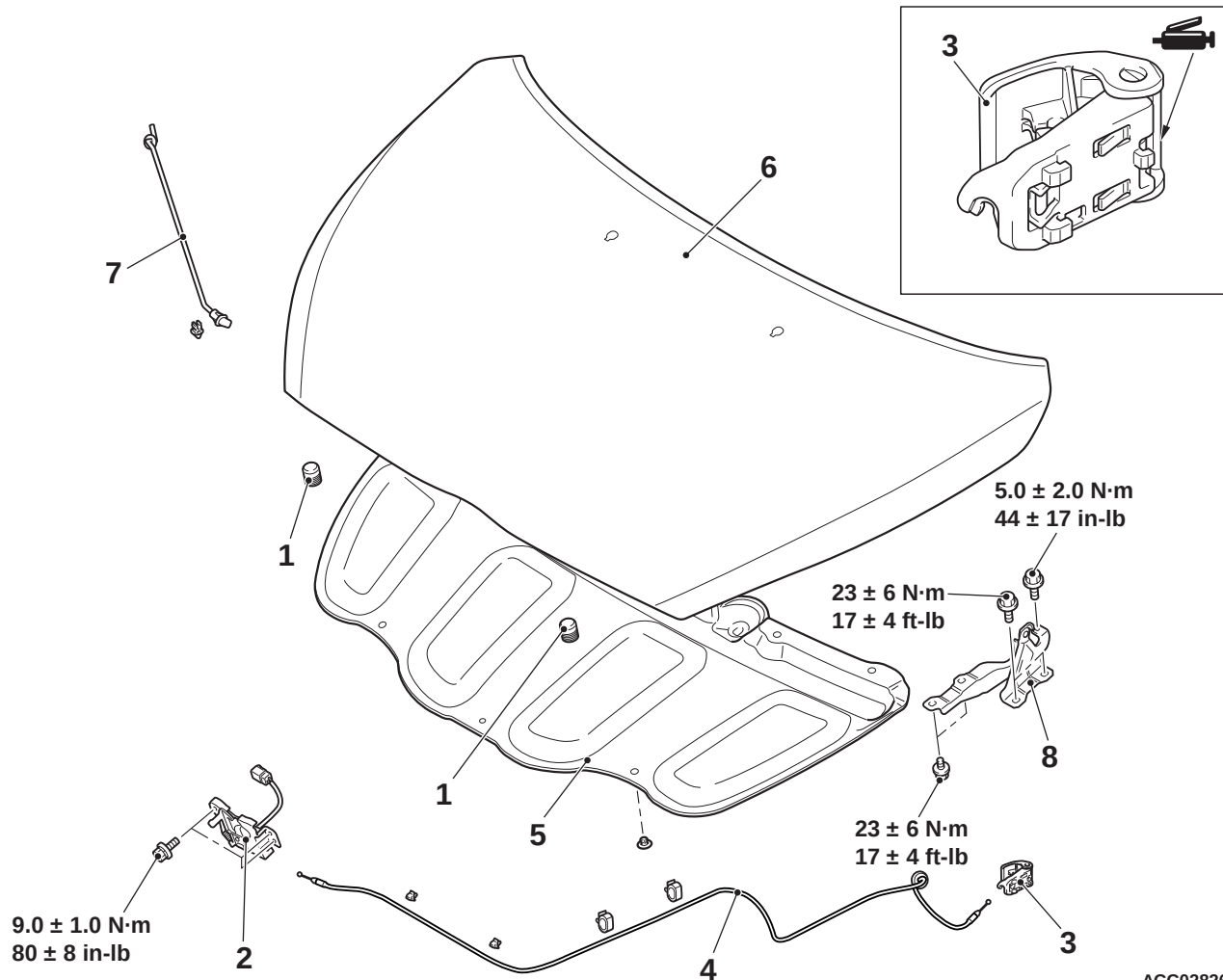
## HOOD

## REMOVAL AND INSTALLATION

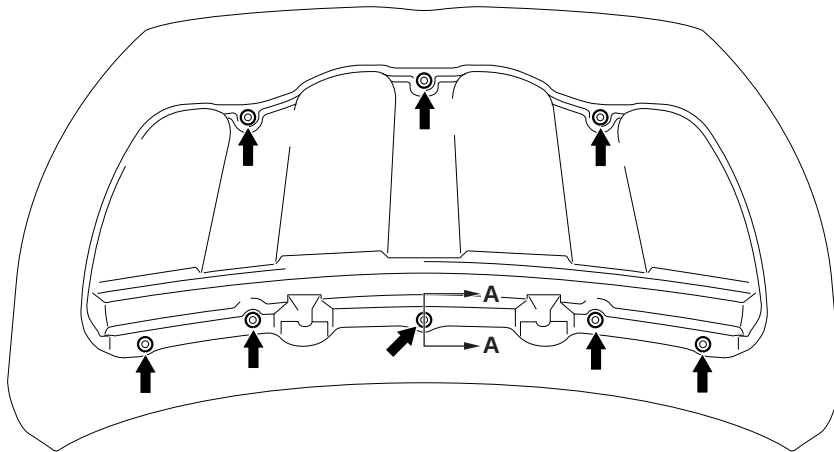
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**Post-installation Operation**

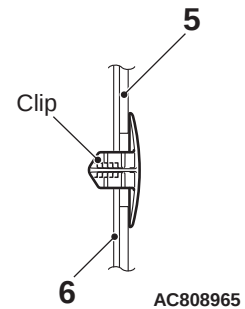
- Clearance Check Around the Hood (Refer to [P.42A-4](#)).
- Adjustment of the Hood Level and Hood Striker Engagement (Refer to [P.42A-4](#)).
- Adjustment of Hood Height (Refer to [P.42A-5](#)).



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Section A – A



NOTE

← : Clip positions

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**Damper removal**

1. Damper

**Hood latch and hood lock release cable removal steps**

<<A>>

2. Hood latch
3. Hood lock release handle
  - Cowl side trim <driver's side> (Refer to GROUP 52A – Interior Trim P.52A-9)
  - Front splash shield <driver's side> (Refer to P.42A-10)

- >>A<< 4. Hood lock release cable

**Hood removal steps**

5. Hood insulator
  - Windshield washer hose and washer nozzles (Refer to GROUP 51 – Windshield Washer P.51-39)

6. Hood
7. Hood support rod

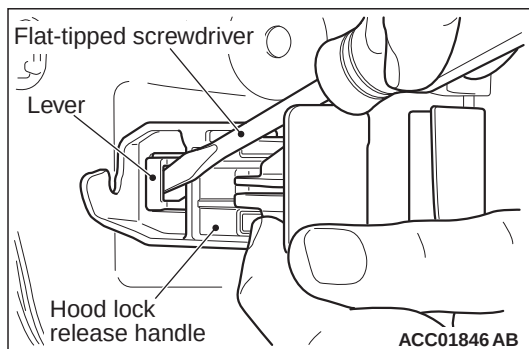
**Hood hinge removal**

6. Hood
8. Hood hinge

**REMOVAL SERVICE POINT**

**<<A>> HOOD LOCK RELEASE HANDLE REMOVAL**

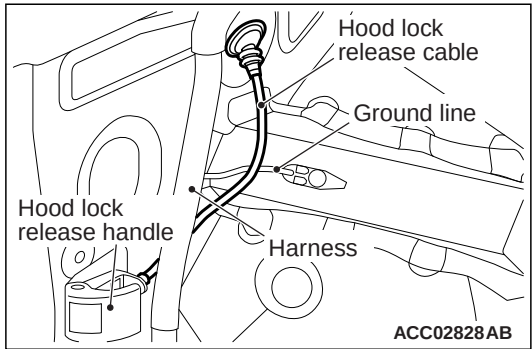
1. Insert a flat-tipped screwdriver as shown.
2. Pull up the lever.
3. Slide the hood lock release handle out to remove.



INSTALLATION SERVICE POINT

>>A<< HOOD LOCK RELEASE CABLE INSTALLATION

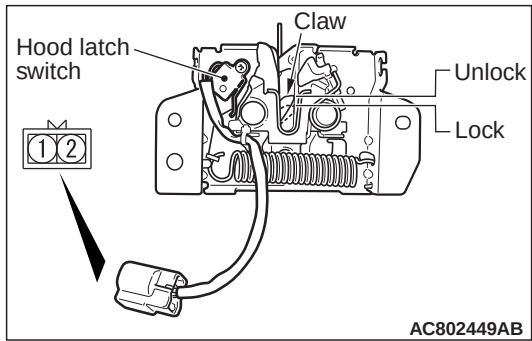
Engage the hood lock release cable as shown.



INSPECTION

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HOOD LATCH SWITCH CONTINUITY CHECK



| Claw position | Terminal number | Normal value                       |
|---------------|-----------------|------------------------------------|
| Unlock (ON)   | 1 – 2           | Continuity exists (2 ohms or less) |
| Lock (OFF)    | 1 – 2           | No continuity                      |

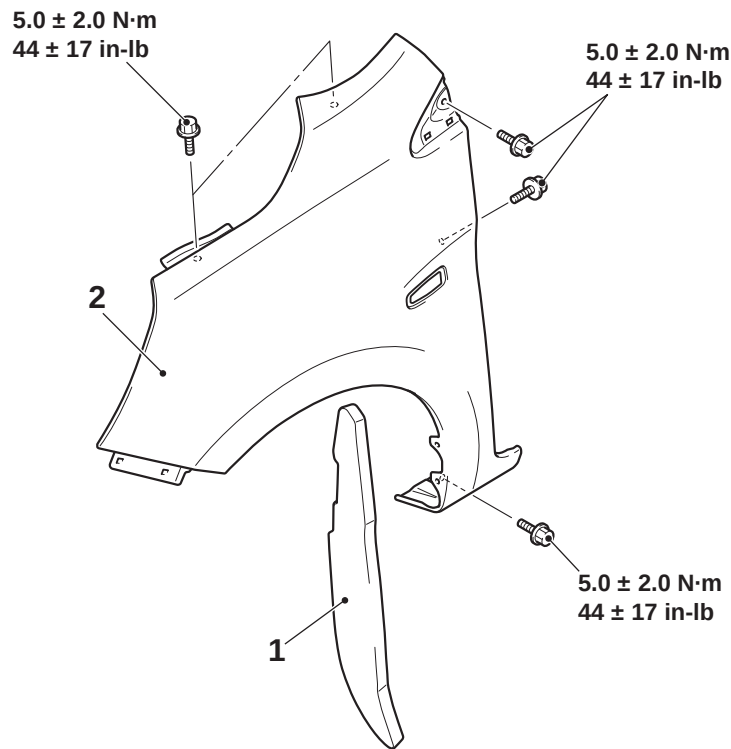
# FENDER

## REMOVAL AND INSTALLATION

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### Pre-removal and post-installation Operation

- Front Wheelhouse Splash Shield Removal and Installation (Refer to [P.42A-10](#)).
- Front Bumper Side Bracket Removal and Installation (Refer to GROUP 51 – Front Bumper Assembly and Radiator Grille [P.51-3](#)).
- Headlight Assembly Removal and Installation (Refer to GROUP 54A – Headlight [P.54A-98](#)).
- Side Turn-signal Light Removal and Installation (Refer to GROUP 54A – Side Turn-signal Light [P.54A-121](#)).
- Front Fender Garnish Assembly Removal and Installation <Side turn-signal light integrated in door mirror type> (Refer to GROUP 51, Garnishes and Moldings [P.51-7](#)).
- Front Delta Garnish Removal and Installation (Refer to GROUP 51 – Garnish and Molding [P.51-7](#)).
- Front Deck Garnish Cover Removal and Installation (Refer to GROUP 51 – Windshield Wiper [P.51-34](#)).



### Removal

1. Front pillar pad
2. Front fender

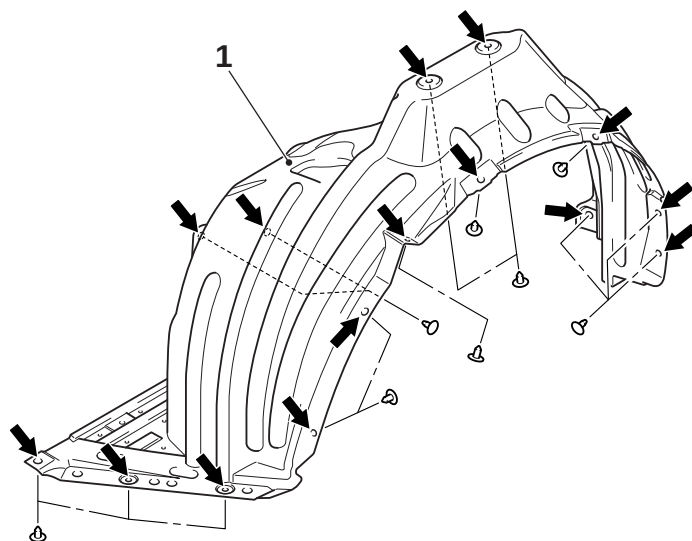
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# SPLASH SHIELD

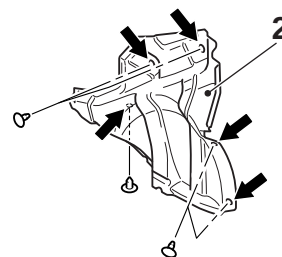
## REMOVAL AND INSTALLATION

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&lt;Front&gt;



&lt;Rear&gt;



← : Clip positions

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### Front wheelhouse splash shield removal

1. Front wheelhouse splash shield

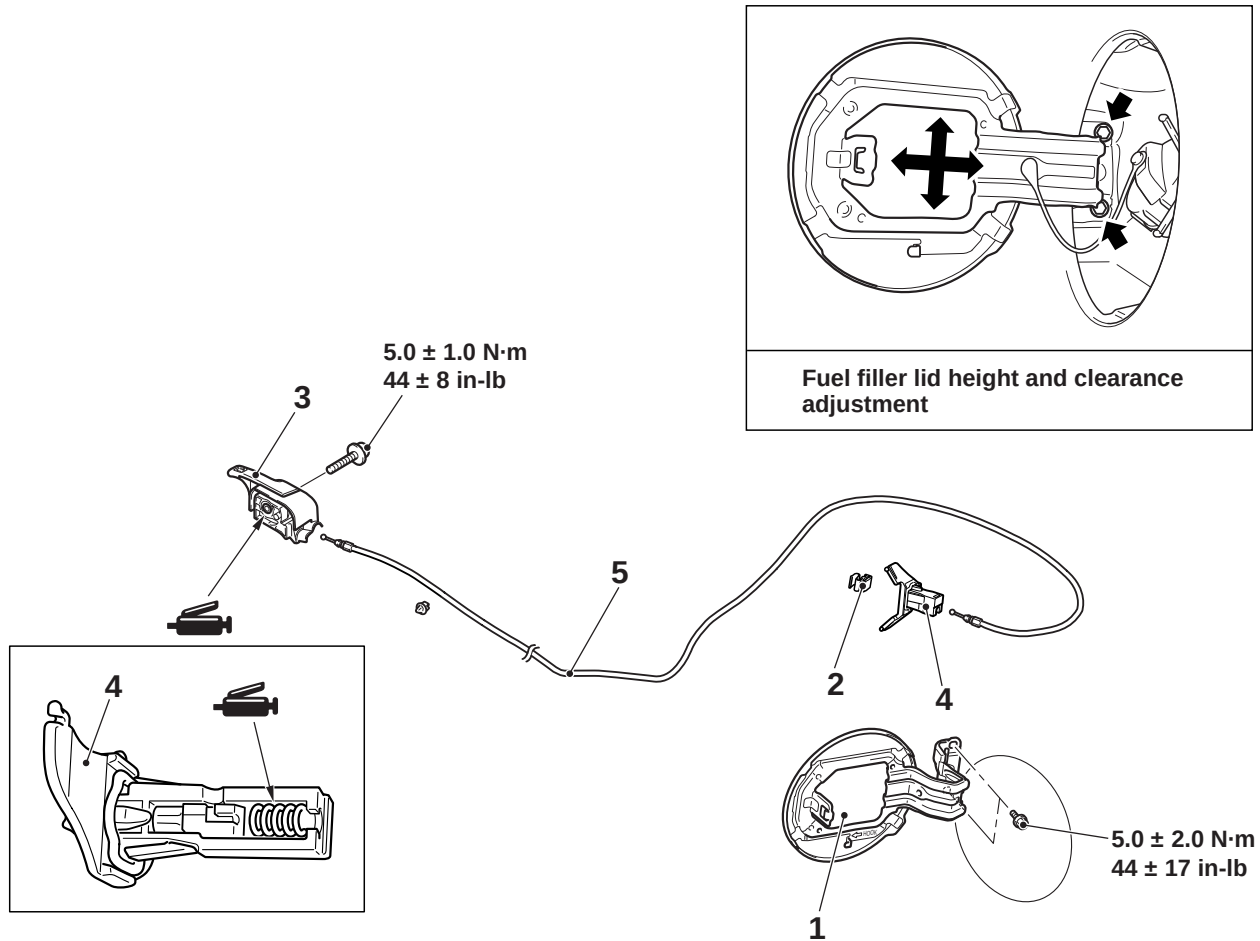
### Rear wheelhouse splash shield removal

2. Rear wheelhouse splash shield

# FUEL FILLER LID

## REMOVAL AND INSTALLATION

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### Fuel filler lid removal steps

1. Fuel filler lid
2. Fuel filler lid lock clip

### Fuel filler lid lock release cable removal steps

- Front scuff plate (RH) (Refer to GROUP 52A – Interior Trims [P.52A-9](#))
- 3. Fuel filler lid lock release handle

### Fuel filler lid lock release cable removal steps (Continued)

- Rear scuff plate, center pillar trim lower, quarter trim lower (Refer to GROUP 52A – Interior Trims [P.52A-9](#))
- Rear seat cushion assembly (Refer to GROUP 52A – Rear Seat Assembly [P.52A-23](#))
- 4. Fuel filler lid hook
- 5. Fuel filler lid lock release cable

**WINDOW GLASS****SPECIFICATION(S)****ADHESIVE**

M1422000500672

| Item                                      | Specified adhesive                                                                                                                         |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Windshield glass<br>Liftgate window glass | 3M™ AAD Part No.8609 Super Fast Urethane Auto Glass Sealant or equivalent<br>3M™ AAD Part No.8608 Super Fast Urethane Primer or equivalent |

**LUBRICANT**

M1422000400028

| Item           | Specified lubricant                        | Quantity                                           |
|----------------|--------------------------------------------|----------------------------------------------------|
| Degrease agent | Grease and dirt removal from parts surface | 3M™ AAD Part No. 8906 or equivalent<br>As required |

**GENERAL INFORMATION**

M1422000101150

The windshield glass and liftgate window glass are attached by an urethane-base adhesive to the window frame. This adhesive provides improved glass holding and sealing, and also gives body openings a greater structural strength.

**ITEMS**

| Name                                                     | Remark                                                                                   |
|----------------------------------------------------------|------------------------------------------------------------------------------------------|
| Adhesive                                                 | 3M ATD Part No.8609 Super Fast Urethane Auto Glass Sealant or equivalent                 |
| Primer                                                   | 3M ATD Part No.8608 Super Fast Urethane Primer or equivalent                             |
| Spacers                                                  | Available as service part                                                                |
| Dam                                                      | Available as service part                                                                |
| Anti-rust solvent (or Tectyl 506T.Valvoline Oil Company) | For rust prevention                                                                      |
| Degrease agent                                           | Parts cleaner (MZ100387 or equivalent) (For grease and dirt removal from bonded surface) |
| Steel piano wire                                         | Dia. × length. 0.6mm (0.02 inches) × 1m (3.3 feet) (For cutting adhesive)                |
| Glass adhesive knife                                     | For cutting adhesive                                                                     |
| Adhesive gun                                             | For pressing-out adhesive                                                                |

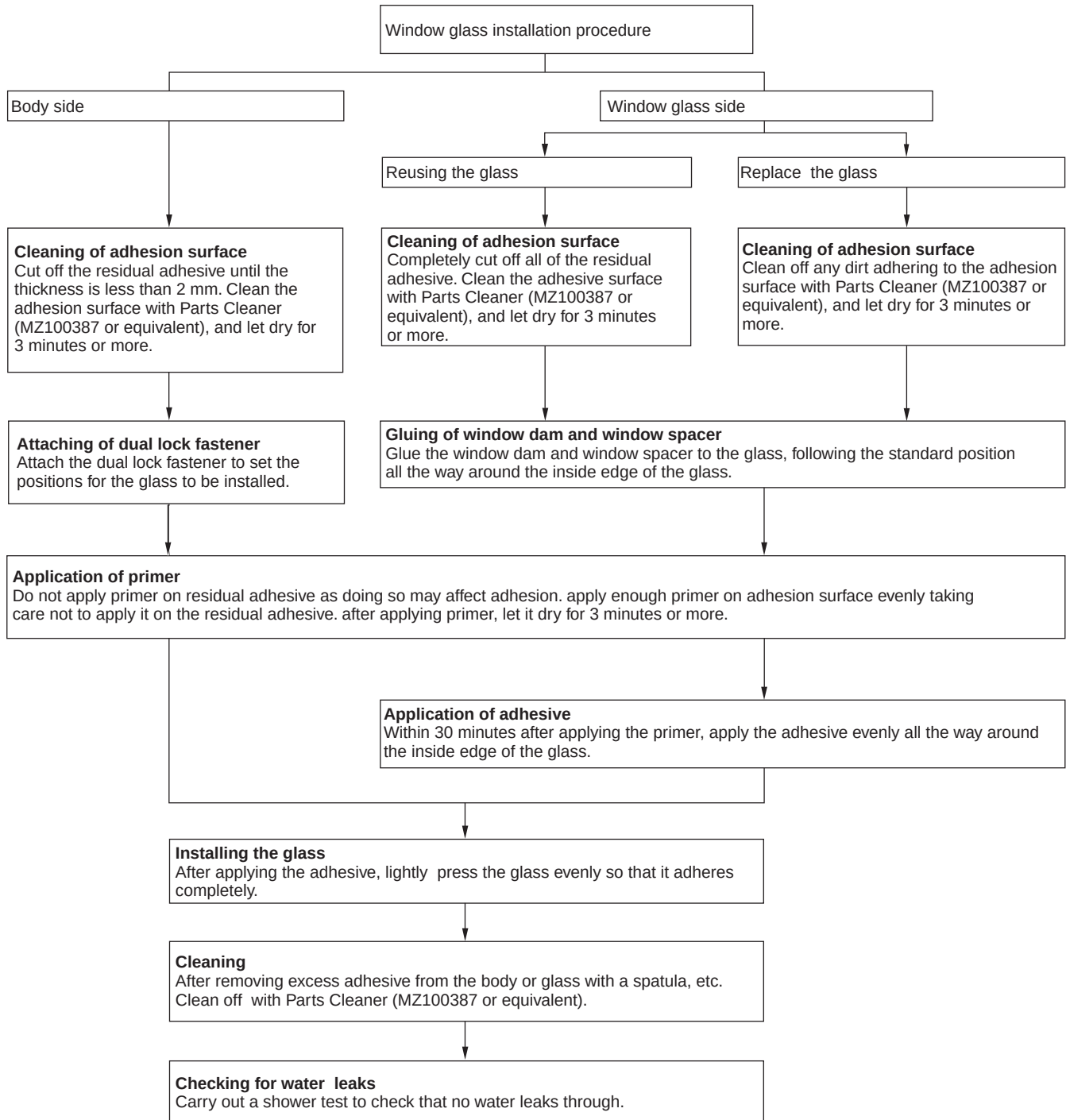
**HANDLING OF AUTO WINDOW SEALER**

Keep the sealant in a cool place, not exposed to the direct rays of the sun. Do not place any heavy article on the sealant nor press it, otherwise it will become deformed. Avoid storing the sealant for more than 6 months, because it will lose its sealing effect.

## BODY PINCH-WELD FLANGE SERVICING

Before servicing the body pinch-weld flange, remove old adhesive completely. If the flange requires painting, bake it after painting is completed.

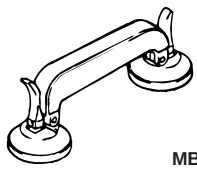
## WINDOW GLASS INSTALLATION



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## SPECIAL TOOL

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| Tool                                                                                          | Tool number and name  | Supersession         | Application                              |
|-----------------------------------------------------------------------------------------------|-----------------------|----------------------|------------------------------------------|
| <br>MB990480 | MB990480 Glass holder | General service tool | Removal and installation of window glass |

## WINDOW GLASS DIAGNOSIS

## INTRODUCTION TO WINDOW GLASS DIAGNOSIS

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If water emerges from the following points, there is a problem in the seal or body flange.

- Windshield glass
- Quarter window glass
- Liftgate window glass
- Roof glass

## WINDOW GLASS DIAGNOSTIC TROUBLESHOOTING STRATEGY

M1422006800303

Use these steps to plan your diagnostic strategy. If you follow them carefully, you will be sure that you have exhausted most of the possible ways to find a window glass fault.

1. Gather information from the customer.
2. Verify that the condition described by the customer exists.
3. Find the malfunction by following the Symptom Chart.
4. Verify malfunction is eliminated.

## WINDOW GLASS DIAGNOSTIC TROUBLE SYMPTOM CHART

M1422006900418

| Symptom                                  | Inspection procedure | Reference page           |
|------------------------------------------|----------------------|--------------------------|
| Water leak through windshield glass      | 1                    | <a href="#">P.42A-14</a> |
| Water leak through quarter window glass  |                      |                          |
| Water leak through liftgate window glass |                      |                          |
| Water leak through roof glass            |                      |                          |

## SYMPTOM PROCEDURES

## INSPECTION PROCEDURE 1: Water Leak Through Windshield Glass/Water Leak Through Quarter Window Glass/Water Leak Through Liftgate Window Glass/Water Leak Through Roof Glass

## DIAGNOSIS

## STEP 1. Check if the seal is faulty.

Q: Is the seal faulty?

- YES : Repair the seal, then go to Step 3.  
NO : Go to Step 2.

## STEP 2. Check if the body flange is deformed.

Q: Is the body flange deformed?

- YES : Repair the body flange, then go to Step 3.  
NO : Go to Step 3.

## STEP 3. Retest the system.

Q: Is any water leaking?

- YES : Return to Step 1.  
NO : The procedure is complete.

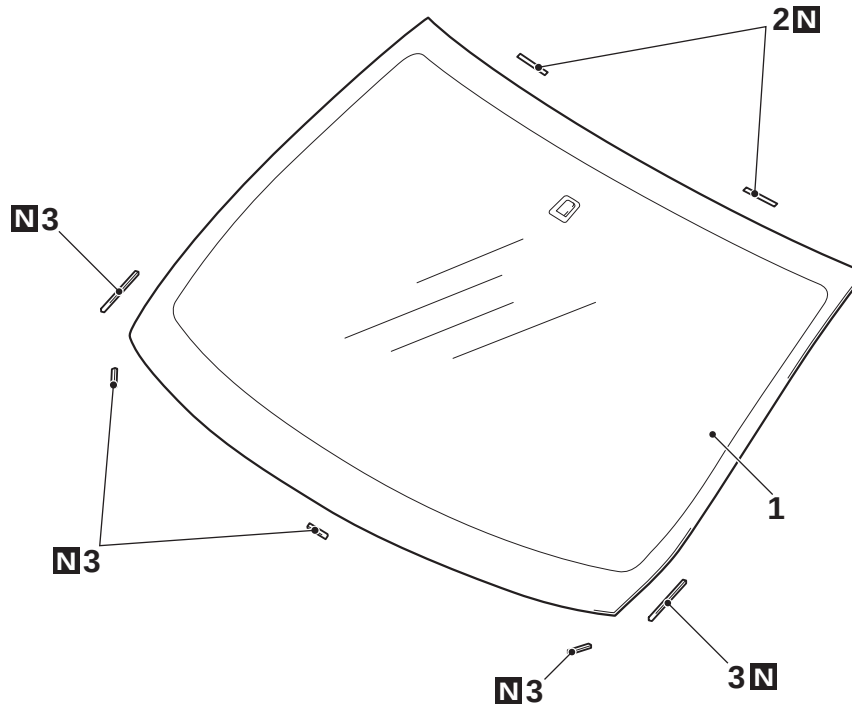
## WINDSHIELD

### REMOVAL AND INSTALLATION

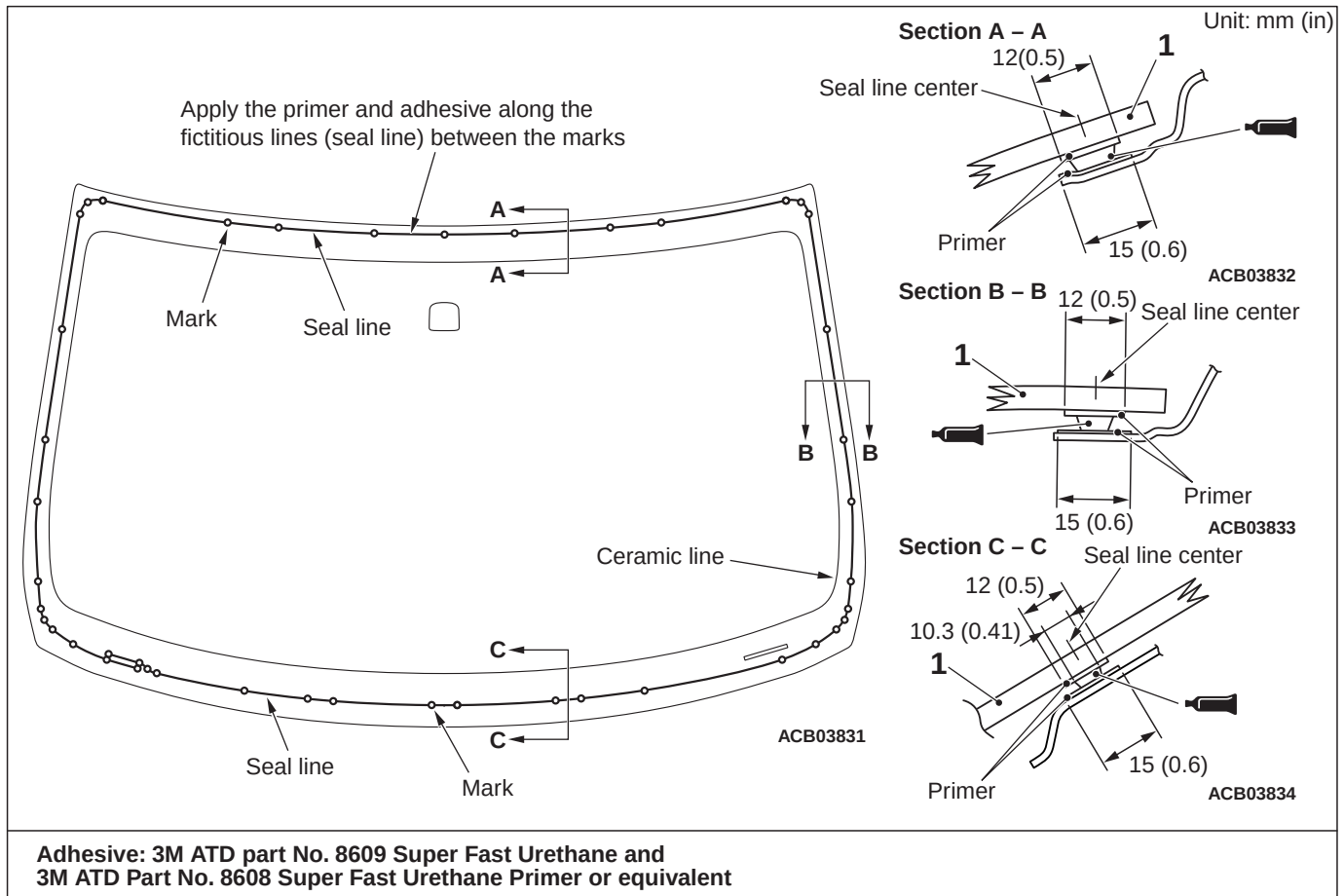
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#### Pre-removal and post-installation operation

- Front Deck Garnish Removal and Installation (Refer to GROUP 51 – Windshield Wiper [P.51-34](#)).
- Front Pillar Trim Removal and Installation (Refer to GROUP 52A – Interior Trim [P.52A-9](#)).
- Inside Rear View Mirror Removal and Installation



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**Removal steps**  
 <<A>> >>B<< 1. Windshield glass

**Removal steps (Continued)**  
 >>A<< 2. Glass stopper  
 >>A<< 3. Windshield spacer

## REMOVAL SERVICE POINT

### <<A>> WINDSHIELD GLASS REMOVAL

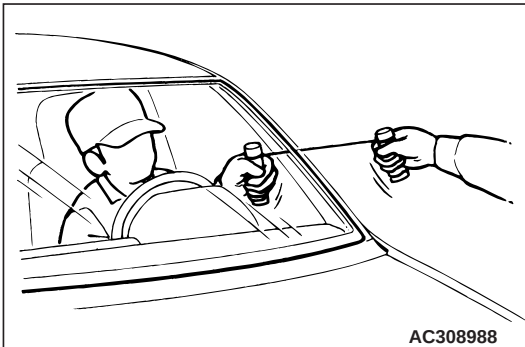
1. In order to protect the body paint surface, apply a protective tape to the body area around the windshield glass.
2. When separating adhesive using a piano wire
  - (1) Use a sharp-point drill to make a hole in the windshield adhesive.
  - (2) Pass the piano wire from the inside to outside of the vehicle through the hole.

**⚠ CAUTION**

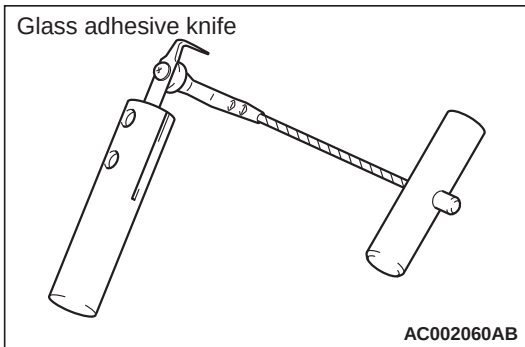
Do not let the piano wire touch the edge of the windshield glass.

- (3) Pull the piano wire alternately from the inside and outside along the windshield glass to cut the adhesive.

3. When separating adhesive using a glass adhesive knife



Glass adhesive knife

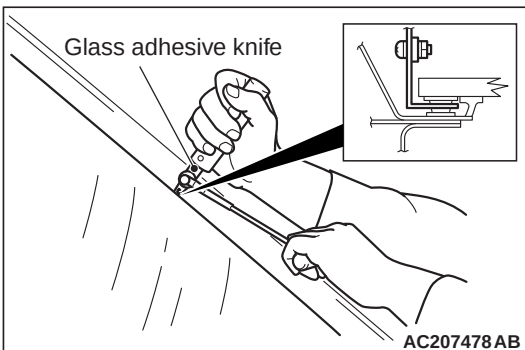


- (1) Prepare the following recommended tool:

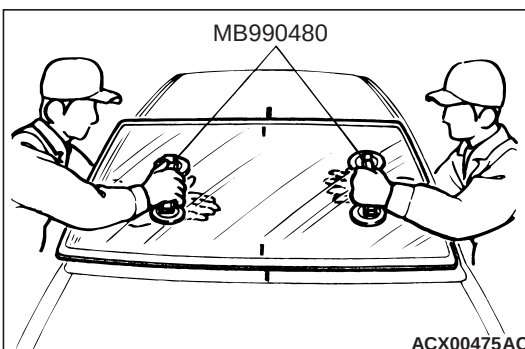
Tool name: Glass adhesive knife [with blade length of 25 mm (1.0 inches) or more]

**⚠ CAUTION**

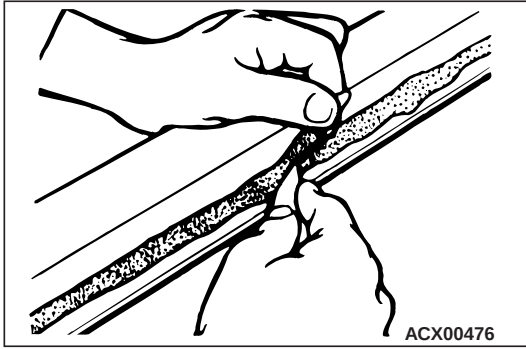
If you lever the glass adhesive knife, the windshield glass may be damaged.



- (2) Holding the tip of the glass adhesive knife and the windshield glass edge at right angles, align the blade of the glass adhesive knife with the windshield glass surface and edge, and pull the blade parallel to the edge to separate the adhesive.



4. Make mating marks on the windshield glass and body. Use the window glass holder (Special tool: MB990480) to remove the windshield glass.

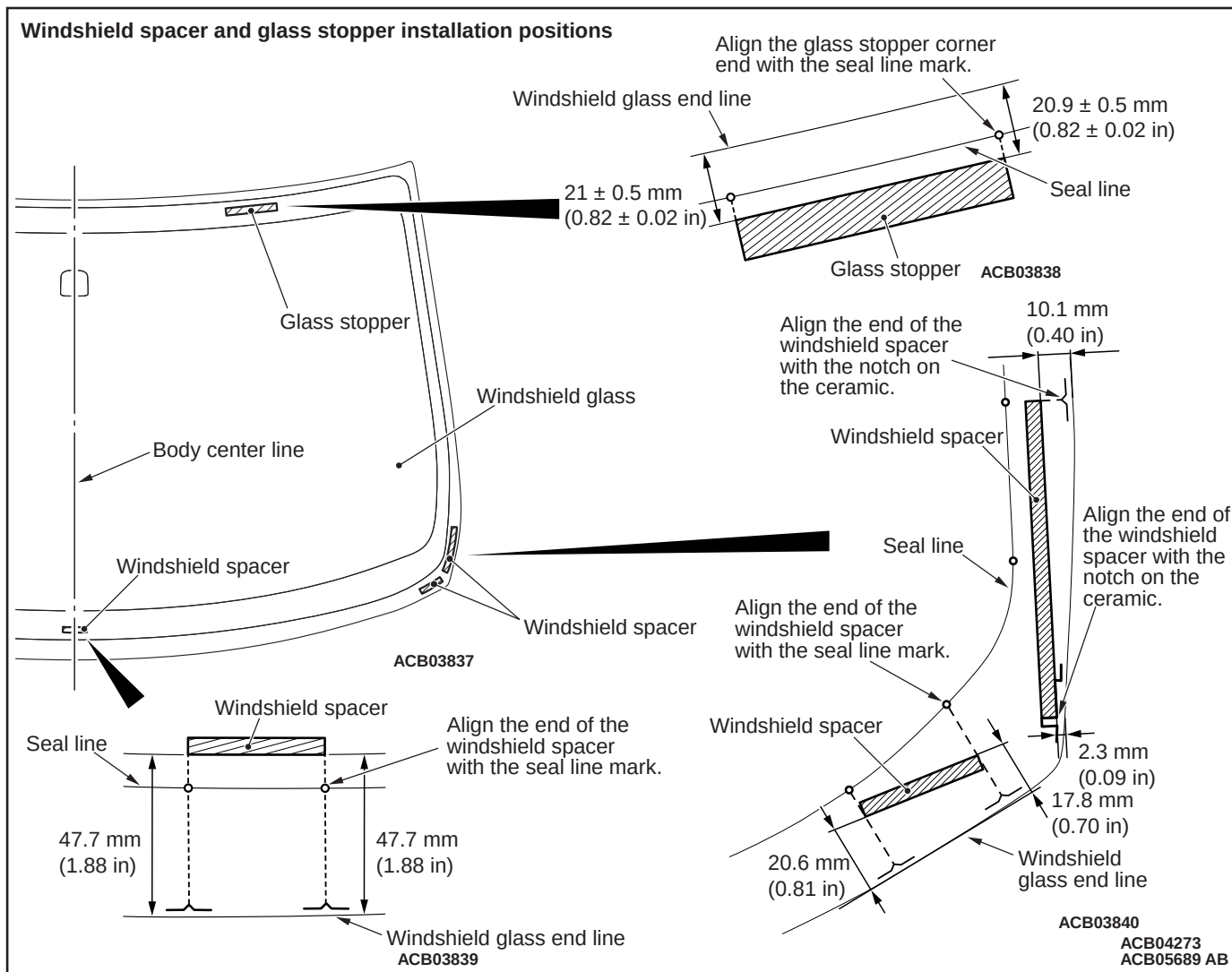
**⚠ CAUTION**

- Be careful not to remove more adhesive than necessary.
  - Be careful not to damage the paintwork on the body surface with the knife. If the paintwork is damaged, repair the damaged area with repair paint or anti-rust agent.
5. Use a knife to cut away the remaining adhesive so that the adhesive thickness is within 2 mm (0.1 inches) around the entire circumference of the body flange.
  6. Finish the flange surfaces so that they are smooth.
  7. If the windshield glass is reused, scrape away all traces of old adhesive, the glass stopper and the windshield spacer.

**INSTALLATION SERVICE POINTS****>>A<< WINDSHIELD SPACER/ GLASS STOPPER  
INSTALLATION****⚠ CAUTION**

Before proceeding to the next operation, leave the decreased parts for 3 minutes or more to dry. Do not touch the coated surface.

1. Use the parts cleaner (MZ100387 or equivalent) to degrease the inside circumference of the windshield glass and the body flanges.



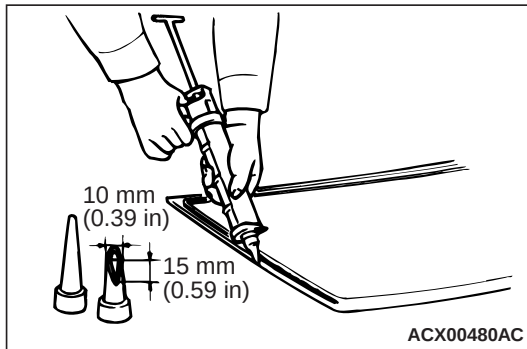
2. Position the windshield spacer to the specified position of the windshield glass so that there is no adrift or warped surface inside the windshield glass.
3. Install the glass stoppers to the specified position of the windshield glass.

## **>>B<< WINDSHIELD GLASS INSTALLATION**

1. When replacing the windshield glass, temporarily set the windshield glass against the body, and make mating marks on the windshield glass and body.

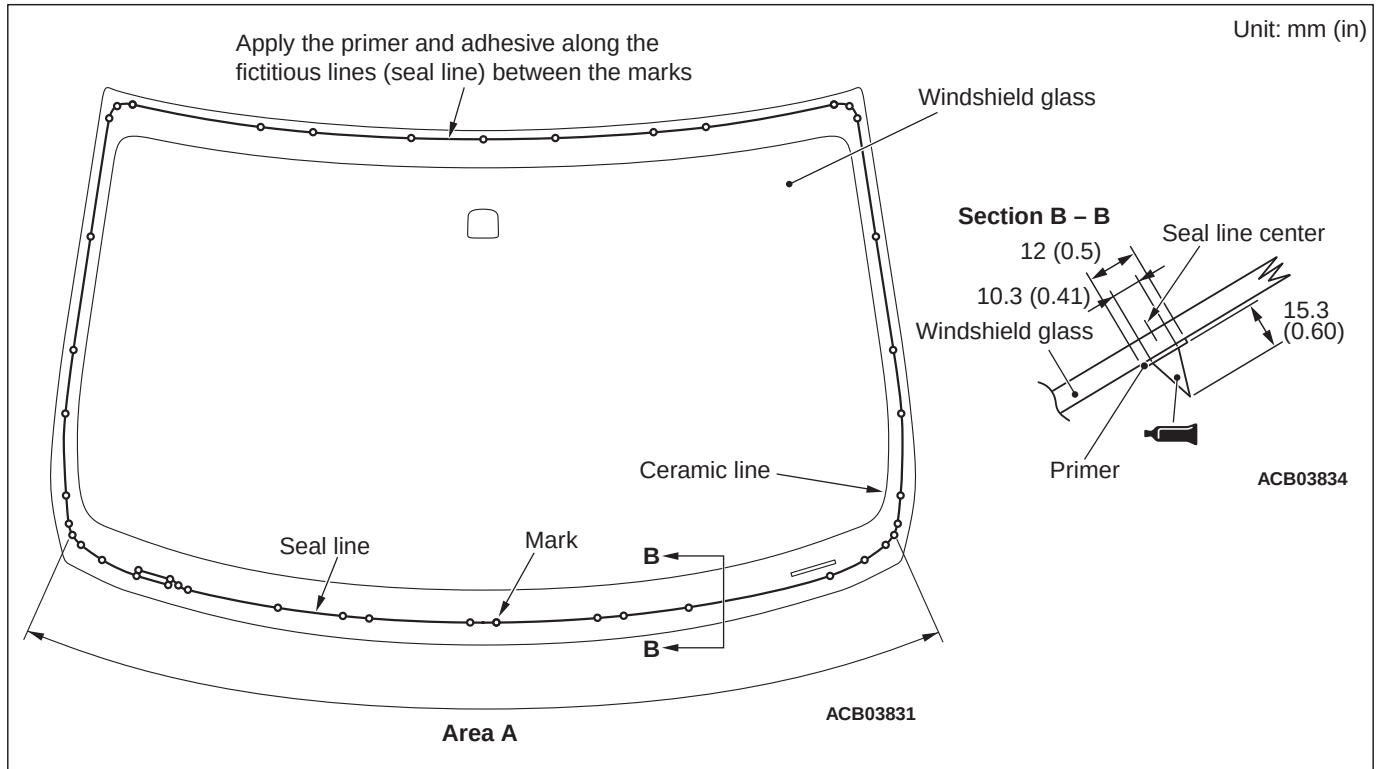
### **⚠ CAUTION**

- The primer strengthens the adhesive, so be sure to apply it. However, a too thick application will weaken the adhesive.
  - Do not touch the coated surface.
  - Do not apply the primer on the remaining adhesive. The adhesive strength may be weakened.
2. Soak a sponge in the primer, and apply evenly to the windshield glass and the body in the specified places.
  3. After applying the primer, let it dry for 3 minutes or more.



4. Fill a sealant gun with adhesive. Then apply the adhesive evenly around the windshield glass within 30 minutes after the primer application.

*NOTE: Cut the tip of the sealant gun nozzle into a V shape to simplify adhesive application.*



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5. When applying the adhesive to area "A" of the windshield glass, make sure that the adhesive bead should be 10.3 mm (0.41 inches) wide and 15.3 mm (0.60 inches) high.
6. After applying the adhesive, align the mating marks on the windshield glass and the body, and then press the windshield glass gently to seat it.
7. Use a spatula or the like to remove any excessive adhesive. Then clean the surface with the parts cleaner (MZ100387 or equivalent). Leave the vehicle stationary until the adhesive sets.

#### ⚠ CAUTION

- Move the vehicle carefully.
- When testing for water leakage, do not pinch the end of the hose to spray the water.

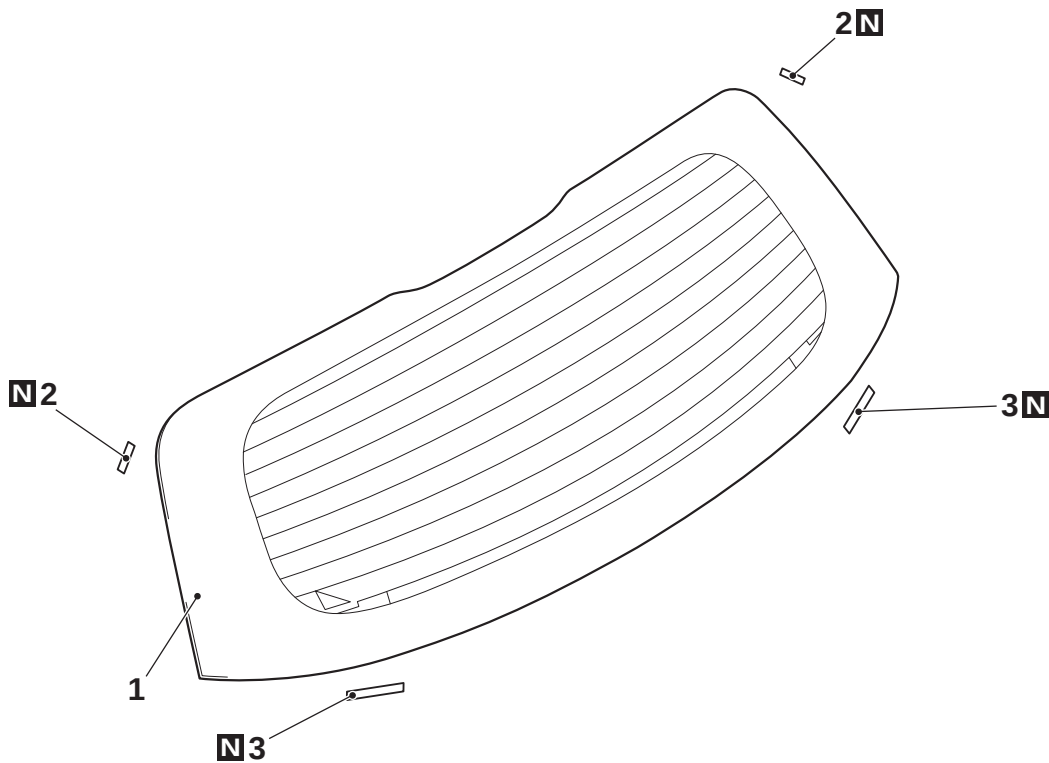
8. Wait 30 minutes or more, and then test for water leakage.

## LIFTGATE WINDOW GLASS REMOVAL AND INSTALLATION

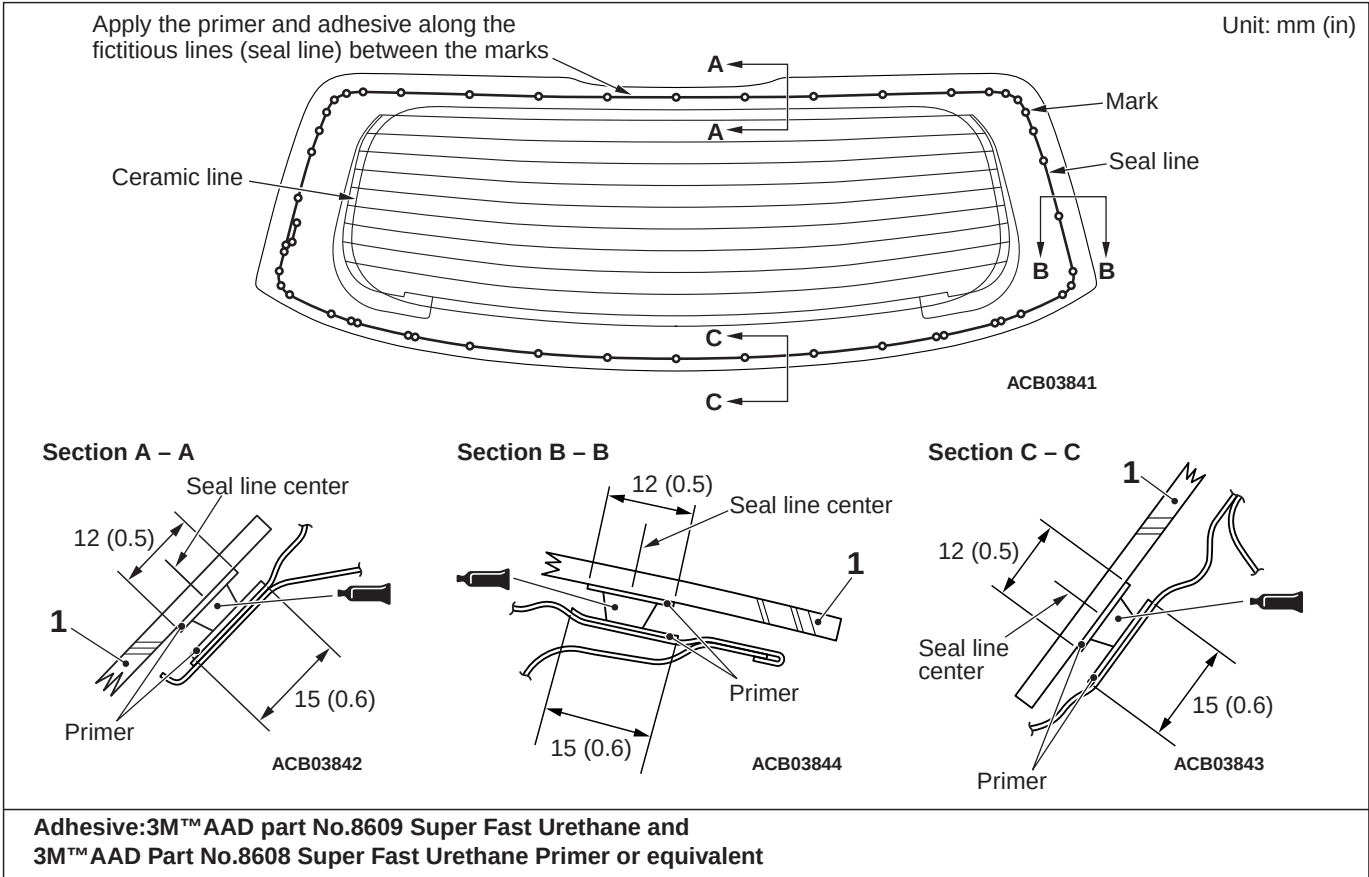
M1422003701065

### Pre-removal and post-installation operation

- Rear Washer Nozzle, Rear Wiper Blade and Wiper Arm Assembly Removal and Installation (Refer to GROUP 51 – Rear Wiper and Washer [P.51-53](#)).
- High-mounted Stop Light Removal and Installation <Vehicles without Liftback Spoiler> (Refer to GROUP 54A – High-mounted Stop Light [P.54A-132](#)).
- Liftback Spoiler Assembly Removal and Installation <Vehicles with Liftback Spoiler> (Refer to GROUP 51 – Liftback Spoiler [P.51-16](#)).



ACB03396AB



ACB04277 AB

- <<A>> >>B<<
- Removal steps**
1. Liftback window glass
  - Liftback window defogger wiring harness connector connection

- >>A<< >>A<<
- Removal steps (Continued)**
2. Liftback window glass spacer
  3. Glass stopper

**REMOVAL SERVICE POINT**

**<<A>> LIFTBACK WINDOW GLASS REMOVAL**

Remove the liftback window glass by the same procedure as for the windshield (Refer to [P.42A-15](#)).

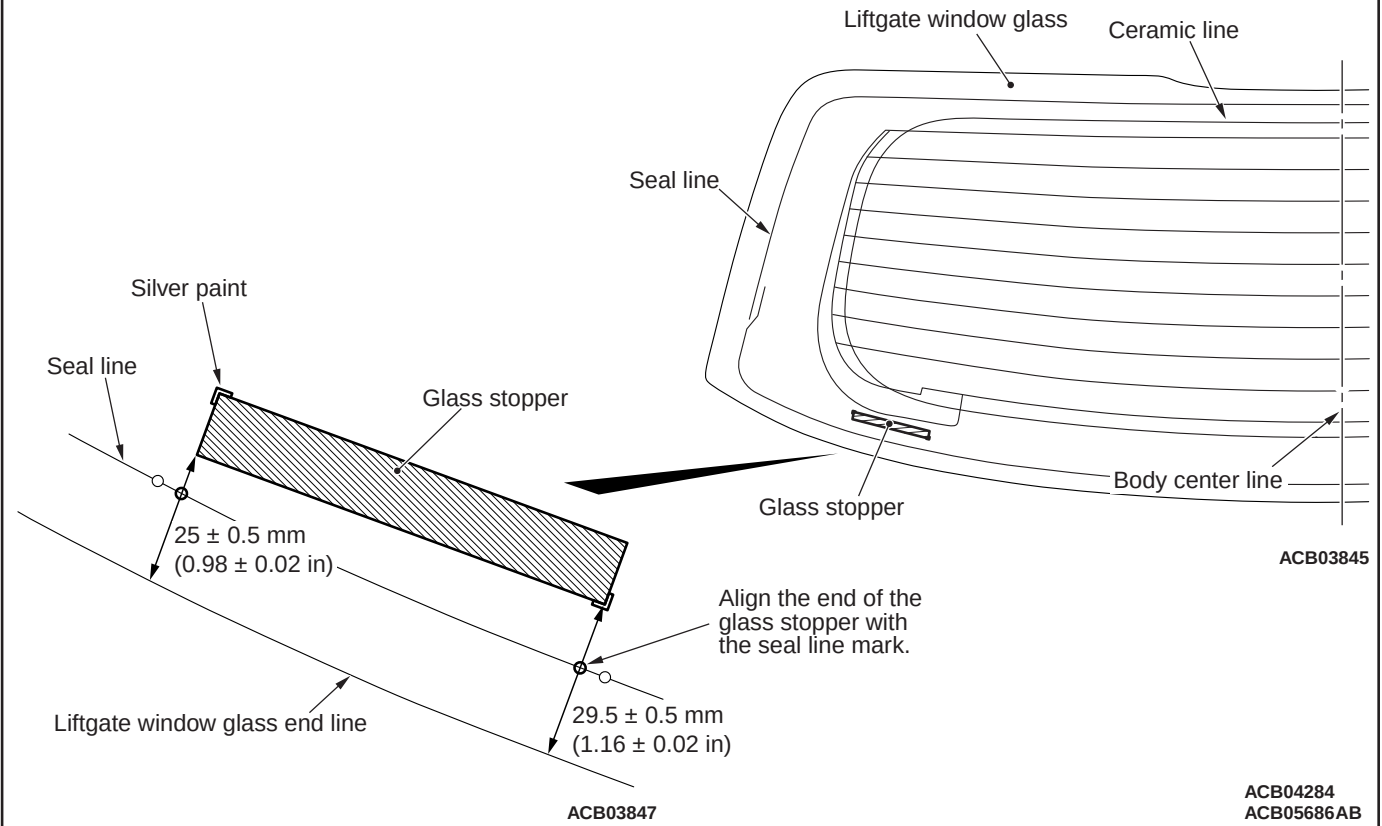
*NOTE: Use a piano wire to remove the liftback window glass.*

**INSTALLATION SERVICE POINTS**

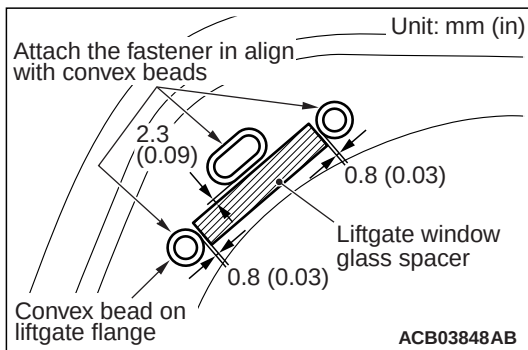
**>>A<< GLASS STOPPER/LIFTBACK WINDOW GLASS SPACER INSTALLATION**

1. Use the parts cleaner (MZ100387 or equivalent) to degrease the inside circumference of the liftback window glass and liftback flanges.

Glass stopper installation positions



2. Install the glass stopper to the specified position on the liftback window glass
3. Peel off the protection sheet of the liftback window glass spacer.
4. Install the liftback window glass spacers to the specified positions on the liftback flange.



## >>B<< LIFTBACK WINDOW GLASS INSTALLATION

1. Apply the primer and adhesive.
2. Install the liftback window glass by the same procedure as for the windshield glass (refer to [P.42A-15](#)).

DOOR

GENERAL INFORMATION

M1423000100644

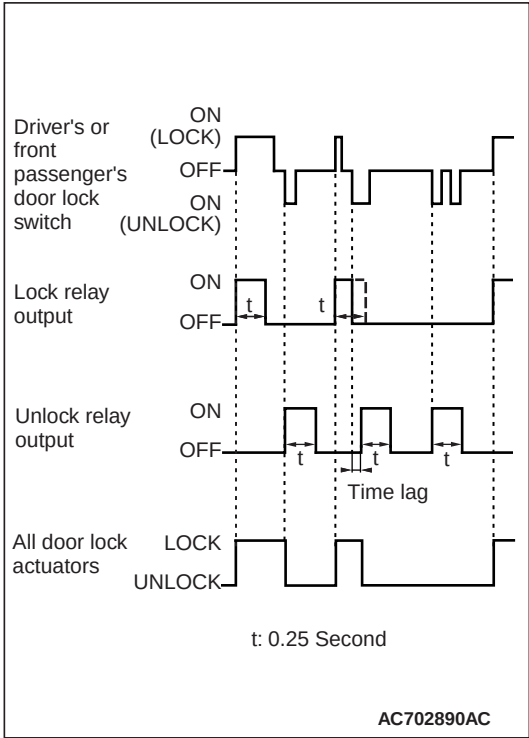
CENTRAL DOOR LOCKING SYSTEM

The central door locking system operates the door lock actuator to lock or unlock the doors and liftgate using the door lock switches built into the front driver's power window main switch or front passenger's power window sub switch. This system has the following operations and features:

- All doors and liftgate can be locked or unlocked using the door lock switches built into the front driver's power window main switch or front passenger's power window sub switch.
- The key reminder function automatically unlocks all doors and liftgate when door lock operation is performed and the front doors are opened while the key is inserted into the ignition switch.

CENTRAL DOOR LOCKING OPERATION

The function that allows the driver's door to be opened by pulling the driver's door inside handle even when the driver's door inside lock knob is in the lock position is called "override function".



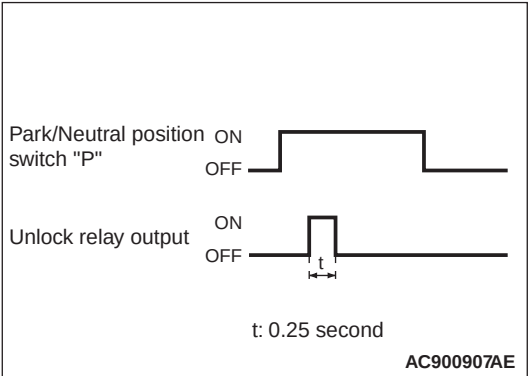
When the door is locked by the driver's or front passenger's door lock switch, the ETACS-ECU operates its door lock relay and passes a current through the door lock actuators of all the doors (including the liftgate) for 0.25 second to lock all the doors (including the liftgate).

When the door is unlocked by the driver's or front passenger's door lock switch, the ETACS-ECU operates its door unlock relay and passes a current through the door lock actuators of all the doors (including the liftgate) for 0.25 second to unlock all the doors (including the liftgate).

When a door is locked and unlocked by driver's or front passenger's door lock switch consecutively, the ETACS-ECU operates its door lock relay and passes a current through the door lock actuators of all the doors (including the liftgate) for 0.25 second to lock all the doors (including the liftgate). Then, the ETACS-ECU operates its door unlock relay and passes a current through the door lock actuators of all the doors (including the liftgate) for 0.25 second to unlock all the doors (including the liftgate). Due to this, there may be a time lag between the driver's or front passenger's door lock switch actuation and the time when all the doors (including the liftgate) are unlocked.

SELECTOR "P" POSITION-LINKED DOOR UNLOCKING FUNCTION

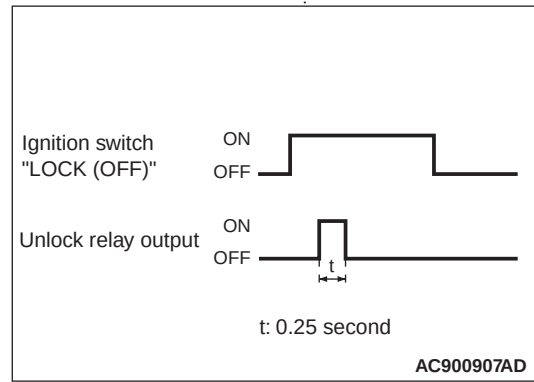
When the selector lever is shifted to the "P" (parking) position with the ignition switch turned ON, all the doors (including the liftgate) will be unlocked automatically, improving passengers' convenience for getting out. Using a customization function, the selector "P" position-linked door unlocking function can be switched (Refer to P.42A-64).



When the selector lever is shifted to the P position with the ignition switch turned ON, the transmission range switch "P" turns ON, ETACS-ECU turns the unlock relay output ON for 0.25 second to unlock all the doors (including the liftgate).

## IGNITION SWITCH "LOCK (OFF)" POSITION-LINKED DOOR UNLOCKING FUNCTION

- When the ignition switch is turned to the " LOCK (OFF)" position, all the doors (including liftgate) will be unlocked automatically, improving passengers' convenience for getting out. Using a customization function, the ignition switch " LOCK (OFF)" position-linked door unlocking function can be changed (Refer to [P.42A-64](#)).



When the ignition switch is turned to the " LOCK (OFF)" position, ETACS-ECU turns the unlock relay output ON for 0.25 second to unlock all the doors.

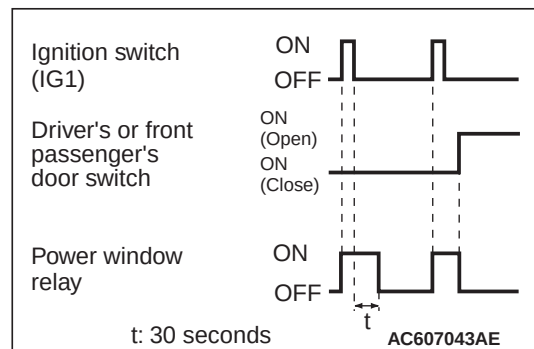
## POWER WINDOWS

When the power window (main or sub) switch is operated, the door windows will open or close. This system has the following operations and features:

- A power window lock switch on the power window main switch prevents the door window glass from opening/closing with the front passenger's and rear power window sub switches.
- The power windows can be opened/closed for 30 seconds after the ignition switch is turned OFF (timer expires if the driver's or front passenger's door is opened).
- The power window main switch contains a one-touch switch that will automatically open and close the driver's side door window only.
- With the safety mechanism, the power window main switch detects the pinching of obstacle such as a hand or a head when the driver's door window glass is raised. Then, the mechanism lowers the driver's door window glass for approximately 150 mm (6.0 inches). The safety mechanism is activated when the power window main switch is operated by auto-closing operation (the status when the hand is released from the switch knob after auto-closing operation). The safety mechanism operates as follows.
  - At the manual-closing operation or the continuous auto-closing operation (keep pulling up the switch knob) of the power window switch, the door window glass can be forcibly closed without safety mechanism activation even when the obstacle is detected to be pinched.

- To secure the safety when the power window switch manual-closing or auto-closing operation is performed accidentally during the safety mechanism activation, the power window switch manual-closing and auto-closing operations are prohibited for 3 seconds after the activation of safety mechanism due to the obstacle pinching detection.

## POWER WINDOW TIMER FUNCTION



Even after the ignition is switched off, the ETACS-ECU keeps the power window relay activated for approximately 30 seconds, enabling raising or lowering of the power windows by using the power window switches (timer function). After approximately 30 seconds, the power window relay is deactivated.

During this timer operation, if the driver's or front passenger's door is opened, the power window relay is deactivated from that moment.

## SPECIFICATION(S)

## SERVICE SPECIFICATIONS

M1423000300626

| Item                                                                                    | Standard value                                        |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------|
| Power window operating current [with power supply of $14.5 \pm 0.5$ V at 25°C (77°F)] A | 7 or less                                             |
| Door outside handle play mm (in)                                                        | 0.2 – 5.4 (0.01 – 0.21) [Target value: 2.6 (0.10)]    |
| Door inside handle knob mm (in)                                                         | 0.2 – 24.5 (0.01 – 0.96) [Target value: 17.9 (0.70)]  |
| Stroke of the door inside handle lock knob mm (in)                                      | 13.5 – 15.5 (0.53 – 0.61) [Target value: 14.5 (0.57)] |

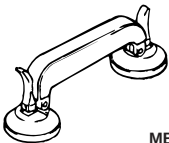
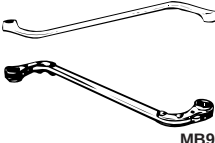
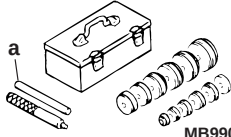
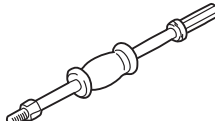
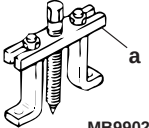
## SEALANT

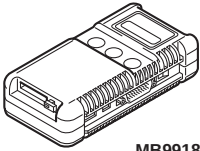
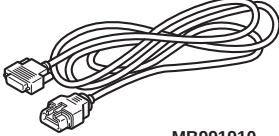
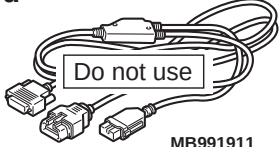
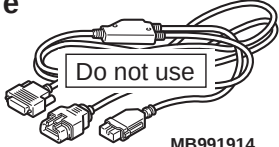
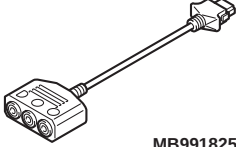
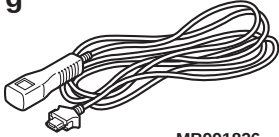
M1423000500534

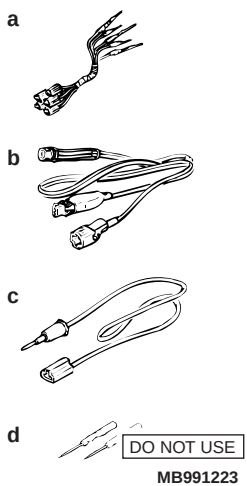
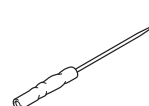
| Item                 | Specified sealant                  |
|----------------------|------------------------------------|
| Door waterproof film | 3M™ AAD Part No.8625 or equivalent |

## SPECIAL TOOLS

M1423000601073

| Tool                                                                                              | Tool number and name                                                   | Supersession                        | Application                                        |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------|
| <br>MB990480     | MB990480 Glass holder                                                  | General service tool                | Removal and installation of power window regulator |
| <br>MB990900   | MB990900 or MB991164 Door adjusting wrench                             | MB990900-01                         | Adjustment of door fit                             |
| <br>MB990925AI | MB990925 Bearing and oil seal installer set<br>a: MB990939 Remover bar | MB990925-01 or General service tool | Adjustment of door striker                         |
| <br>MB990211   | MB990211 Slider hammer                                                 | MB990211-01                         |                                                    |
| <br>MB990241AI | MB990241 Axle shaft puller<br>a: MB990243 Body puller                  | MB990241-01 or General service tool |                                                    |

| Tool                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Tool number and name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Supersession                                                                                                                   | Application                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>a</b></p>  <p>MB991824</p> <p><b>b</b></p>  <p>MB991827</p> <p><b>c</b></p>  <p>MB991910</p> <p><b>d</b></p>  <p>MB991911</p> <p><b>e</b></p>  <p>MB991914</p> <p><b>f</b></p>  <p>MB991825</p> <p><b>g</b></p>  <p>MB991826<br/>MB991958</p> | <p>MB991958</p> <p>a: MB991824<br/>b: MB991827<br/>c: MB991910<br/>d: MB991911<br/>e: MB991914<br/>f: MB991825<br/>g: MB991826</p> <p>Scan tool (M.U.T.-III sub assembly)</p> <p>a: Vehicle communication interface (V.C.I.)<br/>b: M.U.T.-III USB cable<br/>c: M.U.T.-III main harness A (Vehicles with CAN communication system)<br/>d: M.U.T.-III main harness B (Vehicles without CAN communication system)<br/>e: M.U.T.-III main harness C (for Daimler Chrysler models only)<br/>f: M.U.T.-III measurement adapter<br/>g: M.U.T.-III trigger harness</p> | <p>MB991824-KIT</p> <p><i>NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.</i></p> | <p><b>⚠ CAUTION</b></p> <p><b>For vehicles with CAN communication, use M.U.T.-III main harness A to send simulated vehicle speed. If you connect M.U.T.-III main harness B instead, the CAN communication does not function correctly.</b></p> <p>Communication line check (ECU check and service data)</p> |

| Tool                                                                                          | Tool number and name                                                                                                                | Supersession          | Application                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | MB991223 Harness set<br>a: MB991219 Test harness<br>b: MB991220 LED harness<br>c: MB991221 LED harness adapter<br>d: MB991222 Probe | General service tools | Making voltage and resistance measurement during troubleshooting<br>a: Connector pin contact pressure inspection<br>b: Power circuit inspection<br>c: Power circuit inspection<br>d: Commercial tester connection |
| <br>MB992006 | MB992006<br>Extra fine probe                                                                                                        | —                     | Making voltage and resistance measurement during troubleshooting                                                                                                                                                  |

## DOOR DIAGNOSIS

### STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1423009600011

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points, Contents of Troubleshooting [P.00-6](#).

### TROUBLE SYMPTOM CHART <CENTRAL DOOR LOCKING SYSTEM>

M1427001801209

#### **CAUTION**

During diagnosis, a diagnostic trouble code associated with other system may be stored when the ignition switch is turned on with connector(s) disconnected. On completion, confirm all systems for diagnostic trouble code(s). If diagnostic trouble code(s) are stored, erase them all.

| Trouble symptom                                                                    | Inspection procedure number | Reference page           |
|------------------------------------------------------------------------------------|-----------------------------|--------------------------|
| Central door locking system does not work at all.                                  | 1                           | <a href="#">P.42A-29</a> |
| Door(s) or a liftgate cannot be locked or unlocked by central door locking system. | 2                           | <a href="#">P.42A-30</a> |
| Selector "P" position-linked door unlock function does not operate <CVT>.          | 3                           | <a href="#">P.42A-31</a> |
| The ignition key reminder function does not work normally.                         | 4                           | <a href="#">P.42A-32</a> |

**SYMPTOM PROCEDURES <CENTRAL DOOR LOCKING SYSTEM>****INSPECTION PROCEDURE 1: Central door locking system does not work at all.****⚠ CAUTION**

Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

**OPERATION**

The ETACS-ECU controls the central door locking system, locking or unlocking all the doors by activating the door lock relay or the door unlock relay (built in the ETACS-ECU). The ETACS-ECU uses input signals from the front door lock actuator (driver's side).

**COMMENTS ON TROUBLE SYMPTOM**

If the central door locking system does not work at all, a malfunction of the front door lock actuator (driver's side) or ETACS-ECU is suspected.

**PROBABLE CAUSES**

- Malfunction of the front door lock actuator (driver's side)
- Malfunction of ETACS-ECU
- Damaged wiring harness and connectors

**DIAGNOSIS****STEP 1. Using scan tool MB991958, DTC check.**

Check that ETACS-ECU stores a diagnostic trouble code.

**Q: Is the diagnostic trouble code stored?**

**YES** : Refer to GROUP 54A – Diagnostic Trouble Code Chart [P.54A-218](#).

**NO** : Go to Step 2.

**STEP 4. Retest the system.**

Check that the central door locking system works normally.

**Q: Is the check result normal?****STEP 2. Using scan tool MB991958, check data list.**

Check the ETACS-ECU service items related to the central door locking system operation.

- Inside handle lock knob (driver's side): Unlock → Lock.

| Item No. | Item name                   | Normal condition |
|----------|-----------------------------|------------------|
| 20       | Driver's door unlock switch | ON → OFF         |
| 21       | Driver's door lock switch   | OFF → ON         |

- Inside handle lock knob (driver's side): Lock → Unlock.

| Item No. | Item name                   | Normal condition |
|----------|-----------------------------|------------------|
| 20       | Driver's door unlock switch | OFF → ON         |
| 21       | Driver's door lock switch   | ON → OFF         |

**OK:** Normal conditions are displayed for all the items.

**Q: Is the check result normal?**

**YES** : Go to Step 3.

**NO** : Refer to GROUP 54A – Inspection

Procedure 4 "The front door lock actuator (driver's side) signal is not received.

[P.54A-243](#)".

**STEP 3. Check of short to power supply, short to ground, and open circuit in ETACS +B1 line between ETACS-ECU connector and fusible link (2).****Q: Is the check result normal?**

**YES** : Go to Step 4.

**NO** : Repair the wiring harness.

**YES** : No action is necessary and testing is complete.

**NO** : Replace ETACS-ECU.

---

**INSPECTION PROCEDURE 2: Door(s) or a liftgate cannot be locked or unlocked by central door locking system.**


---

**COMMENTS ON TROUBLE SYMPTOM**

No operation of the door lock actuator or a malfunction of the liftgate lock actuator is suspected.

**PROBABLE CAUSES**

- Malfunction of the door lock actuator
- Malfunction of the liftgate lock actuator
- Damaged wiring harness and connectors

**DIAGNOSIS**


---

**STEP 1. Confirmation of the defective door lock actuator or liftgate lock actuator.**

**Q: Which doors or liftgate is not locked normally?**

**Front left door :** Go to Step 2.

**Front right door :** Go to Step 4.

**Rear left door :** Go to Step 6.

**Rear right door :** Go to Step 8.

**Liftgate :** Go to Step 10.

---

**STEP 2. Front door lock actuator (LH) check**

Check that the front door lock actuator (LH) works normally. Refer to Door Latch Assembly Inspection [P.42A-58](#).

**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Replace the front door lock actuator (LH).

---

**STEP 3. Check of short to power supply, short to ground, and open circuit in RR-L, RL-U line between the ETACS-ECU connector and front door lock actuator (LH) connector**

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

---

**STEP 4. Front door lock actuator (RH) check**

Check that the front door lock actuator (RH) works normally. Refer to Door Latch Assembly Inspection [P.42A-58](#).

**Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Replace the front door lock actuator (RH).

---

**STEP 5. Check of short to power supply, short to ground, and open circuit in RR-L, RL-U line between the ETACS-ECU connector and the front door lock actuator (RH) connector**

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

---

**STEP 6. Rear door lock actuator (LH) check**

Check that the rear door lock actuator works normally. Refer to Door Latch Assembly Inspection [P.42A-58](#).

**Q: Is the check result normal?**

**YES :** Go to Step 7.

**NO :** Replace the rear door lock actuator (LH).

---

**STEP 7. Check of short to power supply, short to ground, and open circuit in RR-L, RL-U line between the ETACS-ECU connector and the rear door lock actuator (LH) connector**

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

---

**STEP 8. Rear door lock actuator (RH) check**

Check that the rear door lock actuator (RH) is in good condition. Refer to Door Latch Assembly Inspection [P.42A-58](#).

**Q: Is the check result normal?**

**YES :** Go to Step 9.

**NO :** Replace the rear door lock actuator (RH).

**STEP 9. Check of short to power supply, short to ground, and open circuit in RR-L, RL-U line between the ETACS-ECU connector and the rear door lock actuator (RH) connector**

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

**STEP 10. Liftgate lock actuator check**

Check that the liftgate lock actuator is in good condition. Refer to [P.42A-88](#).

**Q: Is the check result normal?**

**YES :** Go to Step 11.

**NO :** Replace the liftgate lock actuator.

**STEP 11. Check of short to power supply, short to ground, and open circuit in RR-L, RL-U line between the ETACS-ECU connector and the liftgate lock actuator connector**

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

**INSPECTION PROCEDURE 3: Selector "P" position-linked door unlock function does not operate <CVT>.**

**⚠ CAUTION**

Before replacing the ECU, ensure that the input and output signal circuits are normal.

**OPERATION**

ETACS-ECU determines whether the shift position is at "P" or not according to the shift position signal which is sent by CVT-ECU.

**COMMENTS ON TROUBLE SYMPTOM**

If the doors are not unlocked when the selector lever is shifted to the P position, a malfunction of the shift position signal input circuit(s) or ETACS-ECU is suspected. Also, the selector "P" position-linked door unlock function may have been "disabled" with the customization function.

**PROBABLE CAUSES**

- Malfunction of CAN bus line
- Malfunction of ETACS-ECU
- Damaged wiring harness and connectors

**STEP 3. Using scan tool MB991958, diagnose the CAN bus lines.**

Use scan tool MB991958 to diagnose the CAN bus lines.

**Q: Is the CAN bus normal?**

**DIAGNOSIS**

**STEP 1. Checking central door unlocking operation**

Check that the central door locking system works normally.

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to Central Door Locking System Symptom Chart [P.42A-28](#).

**STEP 2. Check the customization function.**

Check that "Enable" is set for "Door unlock (Shift "P" position)" with the customization function.

**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Set "Enable" for "Door unlock (Shift "P" position)" with the customization function (Refer to Customization Function [P.42A-64](#)).

**YES :** Go to Step 4.

**NO :** Repair the CAN bus line (Refer to GROUP 54C – Troubleshooting [P.54C-12](#)).

**STEP 4. Check the scan tool MB991958****Diagnostic trouble code of other systems**

Check that CVT stores a diagnostic trouble code.

**Q: Is the diagnostic trouble code stored?**

**YES :** Diagnose CVT (Refer to GROUP 23A – Troubleshooting [P.23A-16](#)).

**NO :** Go to Step 5.

**STEP 5. Retest the system.**

Check that shifting the selector lever to the P position unlocks the doors.

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Replace ETACS-ECU.

**INSPECTION PROCEDURE 4: The ignition key reminder function does not work normally.****⚠ CAUTION**

Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

**COMMENTS ON TROUBLE SYMPTOM**

If the key reminder function does not work normally, the input signal circuits below or the ETACS-ECU may be defective.

- Key reminder switch
- Driver's door switch
- Driver's door lock actuator

**PROBABLE CAUSES**

- Malfunction of the key reminder switch
- Malfunction of the driver's door switch
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSIS****STEP 1. Check the power supply system.**

With the ignition switch in the "LOCK" (OFF) position, check if the following function operates normally:

- Hazard warning light

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to GROUP 54A – Malfunction of ETACS-ECU Power Supply Circuit [P.54A-237](#).

**STEP 2. Using scan tool MB991958, check data list.**

Check the signals related to the ignition key reminder function operation.

- Open the driver's door.
- Change the status of driver's door from unlocked to locked.
- Ignition switch: "LOCK" (OFF) (key inserted)

| Item No. | Item name                   | Normal condition |
|----------|-----------------------------|------------------|
| 19       | Driver's door switch        | ON               |
| 20       | Driver's door unlock switch | ON → OFF         |
| 21       | Driver's door lock switch   | OFF → ON         |
| 28       | Steering lock switch        | OFF              |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**

**Normal conditions are displayed for all the items. :**  
Go to Step 3.

**Normal condition is not displayed for item No. 19. :**  
Refer to GROUP 54A – Inspection Procedure 5 "The front door switch (driver's side) signal is not received. [P.54A-244](#)".

**Normal condition is not displayed for item No. 20, 21. :** Refer to GROUP 54A – Inspection Procedure 4 "The front door lock actuator (driver's side) signal is not received. [P.54A-243](#)".

**Normal condition is not displayed for item No. 270 or 271. :** Refer to GROUP 54A – Inspection Procedure 3 "The key reminder switch signal is not received. [P.54A-242](#)".

**STEP 3. Retest the system.**

**Q: Does the ignition key reminder function work normally?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Replace the ETACS-ECU.

**SYMPTOM CHART <POWER WINDOW (Vehicles without safety system)>**

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**⚠ CAUTION**

During diagnosis, a diagnostic trouble code associated with other system may be stored when the ignition switch is turned on with connector(s) disconnected. On completion, confirm all systems for diagnostic trouble code(s). If diagnostic trouble code(s) are stored, erase them all.

| Trouble symptom                                                                                                                                    | Inspection procedure number | Reference page           |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------|
| Power windows do not work at all.                                                                                                                  | 1                           | <a href="#">P.42A-33</a> |
| Front power window right do not work <Vehicles without driver's side auto down mechanism>                                                          | 2                           | <a href="#">P.42A-35</a> |
| Front power window left do not work <Vehicles without driver's side auto down mechanism>                                                           | 3                           | <a href="#">P.42A-36</a> |
| Driver's power window does not work by means of the power window main switch <Vehicles with driver's side auto down mechanism>.                    | 4                           | <a href="#">P.42A-37</a> |
| Relevant power window does not work by means of the front passenger's power window sub switches <Vehicles with driver's side auto down mechanism>. | 5                           | <a href="#">P.42A-38</a> |
| Front passenger's power window do not work by means of the power window main switch <Vehicles with driver's side auto down mechanism>.             | 6                           | <a href="#">P.42A-39</a> |
| Power window timer function does not work normally.                                                                                                | 7                           | <a href="#">P.42A-40</a> |

**SYMPTOM PROCEDURES <POWER WINDOW (Vehicles without safety system)>****INSPECTION PROCEDURE 1: Power windows do not work at all.****COMMENTS ON TROUBLE SYMPTOM**

If the power windows do not work at all, the power window relay or the ETACS-ECU may be defective.

**PROBABLE CAUSES**

- Malfunction of the power window relay
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSIS****STEP 1. Check the power supply system.**

With the ignition switch in the "LOCK" (OFF) position, check if the following function operates normally:

- Hazard warning light

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to GROUP 54A – Malfunction of ETACS-ECU Power Supply Circuit  
[P.54A-237](#).

**STEP 2. Using scan tool MB991958, DTC check.**

Check that ETACS-ECU sets a diagnostic trouble code.

**Q: Is the diagnostic trouble code set?**

**YES :** Refer to GROUP 54A – Diagnostic Trouble Code Chart [P.54A-218](#).

**NO :** Go to Step 3.

**STEP 3. Using scan tool MB991958, check data list.**

Check the ETACS-ECU service item related to the power window.

- Turn the ignition switch to the "ON" position.

| Item No. | Item name            | Normal condition |
|----------|----------------------|------------------|
| 30       | Ignition switch(IG1) | ON               |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Refer to GROUP 54A – Inspection Procedure 2: The ignition switch (IG1) signal is not received [P.54A-241](#).

**STEP 4. Check the power window relay.**

Refer to check the power window relay [P.42A-56](#).

**Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Replace the power window relay.

**STEP 5. Voltage measurement at the power window relay connector (power supply line).**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Check the voltage between the power window relay connector (power supply line) and body ground.

**OK: System voltage**

**Q: Is the check result normal?**

**YES :** Go to Step 7.

**NO :** Go to Step 6.

**STEP 6. Check of short to power supply, short to ground, and open circuit in power supply line between power window relay connector and fusible link.**

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

**STEP 7. Voltage measurement at the power window relay connector (B. PW line).**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Check the voltage between the power window relay connector (B. PW line) and body ground.

**OK: System voltage**

**Q: Is the check result normal?**

**YES :** Go to Step 9.

**NO :** Go to Step 8.

**STEP 8. Check of short to power supply, short to ground, and open circuit in B. PW line between ETACS-ECU connector and power window relay connector.**

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

---

**STEP 9. Resistance measurement at the power window relay connector (ground line).**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Continuity between power window relay connector (ground line) and body ground

**OK: Continuity exists (2 ohms or less)**

**Q: Is the check result normal?**

**YES :** Go to Step 11.

**NO :** Go to Step 10.

---

**STEP 10. Check of open circuit in ground line between power window relay connector and body ground.**

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

---

**STEP 11. Voltage measurement at the intermediate connector (power supply line).**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Check the voltage between the intermediate connector (power supply line) and body ground.

**OK: System voltage**

**Q: Is the check result normal?**

**YES <Vehicles with driver's side auto down mechanism> :** Go to Step 13.

**YES <Vehicles without driver's side auto down mechanism> :** Go to Step 15.

**NO :** Go to Step 12.

---

**STEP 12. Check of short to power supply, short to ground, and open circuit in power supply line between power window relay connector and intermediate connector.**

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the harness wire.

---

**STEP 13. Resistance measurement at the power window main switch connector (E line).**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Continuity between power window main switch connector (E line) and body ground

**OK: Continuity exists (2 ohms or less)**

**Q: Is the check result normal?**

**YES :** Go to Step 15.

**NO :** Go to Step 14.

---

**STEP 14. Check of open circuit in E line between power window main switch connector and body ground.**

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

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**STEP 15. Retest the system.**

Check that the all power windows work normally.

**Q: Is the check result normal?**

**YES :** The procedure is complete.

**NO :** Replace the ETACS-ECU.

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**INSPECTION PROCEDURE 2: Front right power window does not work <Vehicles without driver's side auto down mechanism>**

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**COMMENTS ON TROUBLE SYMPTOM**

If the front power window (RH) does not work by means of the front power window switch (passenger's side), the front power window switch (passenger's side) or the front power window motor (RH) may be defective.

**PROBABLE CAUSES**

- Malfunction of the front power window switch (passenger's side)
- Malfunction of the front power window motor (RH)
- Damaged harness wires and connectors

**DIAGNOSIS****STEP 1. Voltage measurement at the front power window switch (passenger's side) connector (power supply line) connector (power supply line).**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Check the voltage between the power window main switch connector (power supply line) and body ground.

**OK: System voltage****Q: Is the check result normal?****YES :** Go to Step 3.**NO :** Go to Step 2.**STEP 2. Check of short to power supply, short to ground, and open circuit in power supply line between intermediate connector and front power window switch (passenger's side) connector.****Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.**STEP 3. Check the front power window switch (passenger's side).**

Check that the front power window switch (passenger's side) works normally (Refer to inspection [P.42A-69](#)).

**Q: Is the check result normal?****YES :** Go to Step 4.**NO :** Replace the front power window switch (passenger's side).**STEP 4. Check the front power window motor (RH).**

Check that the front power window motor (RH) works normally (Refer to inspection [P.42A-69](#)).

**Q: Is the check result normal?****YES :** Go to Step 5.**NO :** Replace the front power window motor (RH).**STEP 5. Check of short to power supply, short to ground, and open circuit in input and output line between front power window switch (passenger's side) connector and front power window motor (RH) connector.****Q: Is the check result normal?****YES :** Go to Step 6.**NO :** Repair the wiring harness.**STEP 6. Check of open circuit in ground line between front power window switch (passenger's side) connector and body ground.****Q: Is the check result normal?****YES :** Go to Step 7.**NO :** Repair the wiring harness.**STEP 7. Retest the system.**

- (1) Check that the front power window (RH) works by means of the front power window switch (passenger's side).

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#).)

**NO :** Go to Step 1.**INSPECTION PROCEDURE 3: Front left power window does not work <Vehicles without driver's side auto down mechanism>****COMMENTS ON TROUBLE SYMPTOM**

If the front power window (LH) does not work by means of the front power window switch (driver's side), the front power window switch (driver's side) or the front power window motor (LH) may be defective.

**PROBABLE CAUSES**

- Malfunction of the front power window switch (driver's side)
- Malfunction of the front power window motor (LH)
- Damaged harness wires and connectors

## DIAGNOSIS

### STEP 1. Voltage measurement at the front power window switch (driver's side) connector (power supply line).

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Check the voltage between the front power window switch (driver's side) connector (power supply line) connector (power supply line) and body ground.

**OK: System voltage**

**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Go to Step 2.

### STEP 2. Check of short to power supply, short to ground, and open circuit in power supply line between intermediate connector and front power window switch (driver's side) connector.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

### STEP 3. Check the front power window switch (driver's side).

Check that the front power window switch (driver's side) works normally (Refer to inspection [P.42A-69](#)).

**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Replace the front power window switch (driver's side).

### STEP 4. Check the front power window motor (LH).

Check that the front power window motor (LH) works normally (Refer to inspection [P.42A-69](#)).

**Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Replace the front power window motor (LH).

### STEP 5. Check of short to power supply, short to ground, and open circuit in input and output line between front power window switch (driver's side) connector and front power window motor (LH) connector.

**Q: Is the check result normal?**

**YES :** Go to Step 6.

**NO :** Repair the wiring harness.

### STEP 6. Check of open circuit in ground line between front power window switch (driver's side) connector and body ground.

**Q: Is the check result normal?**

**YES :** Go to Step 7.

**NO :** Repair the wiring harness.

### STEP 7. Retest the system.

- (1) Check that the front power window (LH) works by means of the front power window switch (driver's side).

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#).)

**NO :** Go to Step 1.

## INSPECTION PROCEDURE 4: Driver's power window does not work by means of the power window main switch <Vehicles with driver's side auto down mechanism>.

### CAUTION

Before replacing the power window main switch (ECU), ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

## COMMENTS ON TROUBLE SYMPTOM

If the driver's power window does not work by means of the power window main switch, a malfunction of the power window main switch or the front power window motor (driver's side) is suspected.

## PROBABLE CAUSES

- Malfunction of the power window relay

- Malfunction of the power window main switch
- Malfunction of the front power window motor (driver's side)
- Damaged wiring harness and connectors

## DIAGNOSIS

### STEP 1. Check the power window main switch.

- (1) Check that the power window lock switch is turned off.
- (2) Check that the passenger's power window works by means of the power window main switch.

#### Q: Is the check result normal?

**YES :** Go to Step 2.

**NO :** Replace the power window main switch.

### STEP 2. Voltage measurement at power window main switch connector (+B line).

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Measure the voltage between the power window main switch connector (+B line) and the body ground.

**OK: System voltage**

#### Q: Is the check result normal?

**YES :** Go to Step 4.

**NO :** Go to Step 3.

### STEP 3. Check of short to power supply, short to ground, and open circuit in +B line between the fusible link (6) and the power window main switch connector .

#### Q: Is the check result normal?

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

### STEP 4. Check of short to power supply, short to ground, and open circuit in U.DR, D.DR line between the power window main switch connector and front power window motor (LH) connector.

#### Q: Is the check result normal?

**YES :** Go to Step 5.

**NO :** Repair the wiring harness.

### STEP 5. Retest the system.

Check that the driver's power window works normally by means of the power window main switch.

#### Q: Is the check result normal?

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Replace the front power window motor (LH).

**INSPECTION PROCEDURE 5: Relevant power window does not work by means of the front passenger's power window sub switch <Vehicles with driver's side auto down mechanism>.**

### CAUTION

Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

### COMMENTS ON TROUBLE SYMPTOM

If the front passenger's power window do not work by means of the respective power window sub switch, a malfunction of the power window sub switch or the power window motor is suspected. Also, the power window lock switch "ON" signal may be sent from the power window main switch, because the power window lock switch of the power window main switch is "ON", or the power window main switch has a malfunction.

### PROBABLE CAUSES

- Malfunction of front passenger's power window sub switch
- Malfunction of front passenger's power window motor(s)
- Damaged wiring harness and connectors

## DIAGNOSIS

### STEP 1. Check the power window main switch.

Check that the power window lock switch is turned off.

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Turn off the power window lock switch.

### STEP 2. Check the front power window sub switch

Check that the front power window sub switch works normally. Refer to Power Window Sub Switch Continuity Check [P.15-5](#).

**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Replace the front power window sub switch.

### STEP 3. Check the front power window motor (LH)

Check that the front power window motor (LH) works normally. Refer to Power Window Motor Continuity Check [P.54A-7](#).

**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Replace the front power window motor (LH).

### STEP 4. Voltage measurement at front power window sub switch connector (power supply line)

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between the front power window sub switch connector (power supply line) and the body ground.

**OK: System voltage**

**Q: Is the check result normal?**

**YES :** Go to Step 6.

**NO :** Go to Step 5.

### STEP 5. Check of short to power supply, short to ground, and open circuit in power supply line between the front power window sub switch connector and the power window relay connector

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

### STEP 6. Check of short to power supply, short to ground, and open circuit in input/output line between the front power window sub switch connector and the front power window motor (LH) connector

**Q: Is the check result normal?**

**YES :** Go to Step 7.

**NO :** Repair the wiring harness.

### STEP 7. Retest the system.

- (1) Check that the front passenger's door power window can be operated by the front power window sub switch.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Go to Step 1.

## INSPECTION PROCEDURE 6: Front passenger's power window does not work by means of the power window main switch <Vehicles with driver's side auto down mechanism>.

### COMMENTS ON TROUBLE SYMPTOM

If the front passenger's power window does not work by means of the power window main switch, the power window main switch or the respective power window sub switch may be defective.

### PROBABLE CAUSES

- Malfunction of the power window main switch
- Malfunction of the front power window sub switch
- Damaged harness wires and connectors

**DIAGNOSIS****STEP 1. Check the power window main switch.**

Check that the driver's power window works by means of the power window main switch.

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to inspection procedure 4 "Driver's power window does not work by means of the power window main switch [P.42A-37](#)."

**STEP 2. Check the power window sub switch.**

Check that each power window works by means of the respective power window sub switch when the power window lock switch is turned off.

**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Refer to inspection procedure 5 "Relevant power window does not work by means of the front passenger's power window sub switch [P.42A-38](#)."

**STEP 3. Check of short to power supply, short to ground, and open circuit in input/output line between power window main switch connector and front power window sub switch connector.**

**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Repair the wiring harness.

**STEP 4. Retest the system.**

(1) Check that the front passenger's power window works by means of the power window main switch.

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Replace the power window main switch.

**INSPECTION PROCEDURE 7: Power window timer function does not work normally.****⚠ CAUTION**

Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

**COMMENTS ON TROUBLE SYMPTOM**

If the power window timer does not work normally, a malfunction of the power window main switch or ETACS-ECU is suspected.

**PROBABLE CAUSES**

- Malfunction of the door switch (Driver's side)
- Malfunction of the door switch (Front passenger's side)
- Malfunction of the power window main switch
- Malfunction of ETACS-ECU
- Damaged wiring harness and connectors

**DIAGNOSIS**

1. Check the power supply system.
2. Scan tool MB991958 data list
  - Turn the ignition switch to the "ON" position.
  - Close the driver's door.
  - Close the front passenger's door.
3. Retest the system.

**TROUBLE SYMPTOM CHART <POWER WINDOW (Vehicles with safety system)>**

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**⚠ CAUTION**

During diagnosis, a diagnostic trouble code associated with other system may be set when the ignition switch is turned on with connector(s) disconnected. On completion, confirm all systems for diagnostic trouble code(s). If diagnostic trouble code(s) are set, erase them all.

| Trouble symptom                                                                                              | Inspection procedure number | Reference page           |
|--------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------|
| Power windows do not work at all.                                                                            | 1                           | <a href="#">P.42A-41</a> |
| Driver's power window does not work by means of the power window main switch.                                | 2                           | <a href="#">P.42A-43</a> |
| Relevant power window(s) does not work by means of the front and rear passenger's power window sub switches. | 3                           | <a href="#">P.42A-44</a> |
| Front and/or rear passenger's power window(s) do not work by means of the power window main switch.          | 4                           | <a href="#">P.42A-47</a> |
| Power window timer function does not work normally.                                                          | 5                           | <a href="#">P.42A-48</a> |
| Power window anti-trap function does not work normally <Driver's side door>.                                 | 6                           | <a href="#">P.42A-48</a> |
| Window glass lowers automatically while it is rising <Driver's side door>.                                   | 7                           | <a href="#">P.42A-49</a> |
| Power window main switch one-touch function does not work <Driver's side door>.                              | 8                           | <a href="#">P.42A-50</a> |

**SYMPTOM PROCEDURES <POWER WINDOW (Vehicles with safety system)>****INSPECTION PROCEDURE 1: Power windows do not work at all.****⚠ CAUTION**

Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

**COMMENTS ON TROUBLE SYMPTOM**

If the power windows do not work at all, the power window relay or the ETACS-ECU may be defective.

**PROBABLE CAUSES**

- Malfunction of the power window relay
- Malfunction of ETACS-ECU
- Damaged wiring harness and connectors

**DIAGNOSIS****STEP 1. Check the power supply system.**

With the ignition switch in the "LOCK" (OFF) position, check if the following function operates normally:

- Hazard warning light

**Q: Is the check result normal?**

**YES** : Go to Step 2.

**NO** : Refer to GROUP 54A – Malfunction of ETACS-ECU Power Supply Circuit  
[P.54A-237](#).

**STEP 2. Using scan tool MB991958, DTC check.**

Check that ETACS-ECU sets a diagnostic trouble code.

**Q: Is the diagnostic trouble code set?**

**YES** : Refer to GROUP 54A – Diagnostic Trouble Code Chart [P.54A-218](#).

**NO** : Go to Step 3.

**STEP 3. Using scan tool MB991958, check data list.**

Check the ETACS-ECU service item related to the power window.

| Item No. | Item name            | Normal condition |
|----------|----------------------|------------------|
| 30       | Ignition switch(IG1) | ON               |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Refer to GROUP 54A – Inspection Procedure 2: The ignition switch (IG1) signal is not received [P.54A-241](#).

**STEP 4. Check the power window relay.**

Refer to check the power window relay [P.42A-56](#).

**Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Replace the power window relay.

**STEP 5. Voltage measurement at the power window relay connector (power supply line).**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Check the voltage between the power window relay connector (power supply line) and body ground.

**OK: System voltage**

**Q: Is the check result normal?**

**YES :** Go to Step 7.

**NO :** Go to Step 6.

**STEP 6. Check of short to power supply, short to ground, and open circuit in power supply line between power window relay connector and fusible link.****Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

**STEP 7. Voltage measurement at the power window relay connector (B. PW line).**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Check the voltage between the power window relay connector (B. PW line) and body ground.

**OK: System voltage**

**Q: Is the check result normal?**

**YES :** Go to Step 9.

**NO :** Go to Step 8.

**STEP 8. Check of short to power supply, short to ground, and open circuit in B. PW line between ETACS-ECU connector and power window relay connector.****Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

**STEP 9. Resistance measurement at the power window relay connector (ground line).**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Continuity between power window relay connector (ground line) and body ground

**OK: Continuity exists (2 ohms or less)**

**Q: Is the check result normal?**

**YES :** Go to Step 11.

**NO :** Go to Step 10.

**STEP 10. Check of open circuit in ground line between power window relay connector and body ground.****Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

---

**STEP 11. Retest the system.**

Check that the all power windows work normally.

**Q: Is the check result normal?**

**YES :** The procedure is complete.

**NO :** Replace the ETACS-ECU.

---

**INSPECTION PROCEDURE 2: Driver's power window does not work by means of the power window main switch.**

---

** CAUTION**

Before replacing the power window main switch (ECU), ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

**COMMENTS ON TROUBLE SYMPTOM**

If the driver's power window does not work by means of the power window main switch, a malfunction of the power window main switch or the front power window motor (driver's side) is suspected.

**PROBABLE CAUSES**

- Malfunction of the power window relay
- Malfunction of the power window main switch
- Malfunction of the front power window motor (driver's side)
- Damaged wiring harness and connectors

**DIAGNOSIS**

---

**STEP 1. Check the power window main switch.**

- (1) Check that the power window lock switch is turned off.
- (2) Check that the passenger's or rear power window works by means of the power window main switch.

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Replace the power window main switch.

---

**STEP 2. Voltage measurement at power window main switch connector (+BP line).**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Measure the voltage between the power window main switch connector (+BP line) and the body ground.

**OK: System voltage**

**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Go to Step 3.

---

**STEP 3. Check of short to power supply, short to ground, and open circuit in +BP line between the fusible link and the power window main switch connector .**

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13.](#))

**NO :** Repair the wiring harness.

---

**STEP 4. Check of short to power supply, short to ground, and open circuit in MU, MD line between the power window main switch connector and front power window motor (LH) connector.**

**Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Repair the wiring harness.

**STEP 5. Retest the system.**

Check that the driver's power window works normally by means of the power window main switch.

**Q: Is the check result normal?**

- YES** : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13.](#))
- NO** : Replace the front power window motor (LH).

---

**INSPECTION PROCEDURE 3: Relevant power window(s) does not work by means of the front and rear passenger's power window sub switches.**


---

**⚠ CAUTION**

Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

**COMMENTS ON TROUBLE SYMPTOM**

If the front passenger's or rear power window(s) do not work by means of the respective power window sub switch, a malfunction of the power window sub switch or the power window motor is suspected. Also, the power window lock switch "ON" signal may be sent from the power window main switch, because the power window lock switch of the power window main switch is "ON", or the power window main switch has a malfunction.

**PROBABLE CAUSES**

- Malfunction of front passenger's or rear passenger's power window sub switch(es)
- Malfunction of front passenger's or rear passenger's power window motor(s)
- Damaged wiring harness and connectors

**DIAGNOSIS****STEP 1. Check the power window main switch.**

Check that the power window lock switch is turned off.

**Q: Is the check result normal?**

- YES** : Go to Step 2.
- NO** : Turn off the power window lock switch.

**STEP 2. Using scan tool MB991958, DTC check.**

Check that ETACS-ECU sets a diagnostic trouble code.

**Q: Is the diagnostic trouble code set?**

- YES** : Refer to GROUP 54A – Diagnostic Trouble Code Chart [P.54A-218.](#)
- NO** : Go to Step 3.

**STEP 3. Determine a trouble spot.****Q: Which power window does not work?**

- Front passenger's door** : Go to Step 4.
- Rear right door** : Go to Step 10.
- Rear left door** : Go to Step 16.

**STEP 4. Check the front power window sub switch**

Check that the front power window sub switch works normally. Refer to Power Window Sub Switch Continuity Check [P.15-5.](#)

**Q: Is the check result normal?**

- YES** : Go to Step 5.
- NO** : Replace the front power window sub switch.

**STEP 5. Check the front power window motor (RH)**

Check that the front power window motor (RH) works normally. Refer to Power Window Motor Continuity Check [P.54A-7.](#)

**Q: Is the check result normal?**

- YES** : Go to Step 6.
- NO** : Replace the front power window motor (RH).

---

**STEP 6. Voltage measurement at front power window sub switch connector (power supply line)**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between the front power window sub switch connector (power supply line) and the body ground.

**OK: System voltage**

**Q: Is the check result normal?**

**YES :** Go to Step 8.

**NO :** Go to Step 7.

---

**STEP 7. Check of short to power supply, short to ground, and open circuit in power supply line between the front power window sub switch connector and the power window relay connector**

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

---

**STEP 8. Check of short to power supply, short to ground, and open circuit in input/output line between the front power window sub switch connector and the front power window motor (RH) connector**

**Q: Is the check result normal?**

**YES :** Go to Step 9.

**NO :** Repair the wiring harness.

---

**STEP 9. Retest the system.**

- (1) Check that the front passenger's door power window can be operated by the front power window sub switch.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Go to Step 4.

---

**STEP 10. Check the rear power window sub switch (RH)**

Check that the rear power window sub switch (RH) works normally. Refer to Power Window Sub Switch Continuity Check [P.42A-69](#).

**Q: Is the check result normal?**

**YES :** Go to Step 11.

**NO :** Replace the rear power window sub switch (RH).

---

**STEP 11. Check the rear power window motor (RH)**

Check that the rear power window motor (RH) works normally. Refer to Power Window Motor Continuity Check [P.42A-69](#).

**Q: Is the check result normal?**

**YES :** Go to Step 12.

**NO :** Replace the rear power window motor (RH).

---

**STEP 12. Voltage measurement at rear power window sub switch (RH) connector (power supply line)**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between the rear power window sub switch (RH) connector (power supply line) and the body ground.

**OK: System voltage**

**Q: Is the check result normal?**

**YES :** Go to Step 14.

**NO :** Go to Step 13.

---

**STEP 13. Check of short to power supply, short to ground, and open circuit in power supply line between the rear power window sub switch (RH) connector and the power window relay connector**

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

**STEP 14. Check of short to power supply, short to ground, and open circuit in input/output line between the rear power window sub switch (RH) connector and the rear power window motor (RH) connector**

**Q: Is the check result normal?**

**YES :** Go to Step 15.

**NO :** Repair the wiring harness.

**STEP 15. Retest the system.**

(1) Check that the rear right door power window can be operated by the rear power window sub switch (RH).

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Go to Step 10.

**STEP 16. Check the rear power window sub switch (LH)**

Check that the rear power window sub switch (LH) works normally. Refer to Power Window Sub Switch Continuity Check [P.42A-69](#).

**Q: Is the check result normal?**

**YES :** Go to Step 17.

**NO :** Replace the rear power window sub switch (LH).

**STEP 17. Check the rear power window motor (LH)**

Check that the rear power window motor (LH) works normally. Refer to Power Window Motor Continuity Check [P.42A-69](#).

**Q: Is the check result normal?**

**YES :** Go to Step 18.

**NO :** Replace the rear power window motor (LH).

**STEP 18. Voltage measurement at rear power window sub switch (LH) connector (power supply line)**

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between the rear power window sub switch (LH) connector (power supply line) and the body ground.

**OK: System voltage**

**Q: Is the check result normal?**

**YES :** Go to Step 20.

**NO :** Go to Step 19.

**STEP 19. Check of short to power supply, short to ground, and open circuit in power supply line between the rear power window sub switch (LH) connector and the power window relay connector**

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Repair the wiring harness.

**STEP 20. Check of short to power supply, short to ground, and open circuit in input/output line between the rear power window sub switch (LH) connector and the rear power window motor (LH) connector**

**Q: Is the check result normal?**

**YES :** Go to Step 21.

**NO :** Repair the wiring harness.

**STEP 21. Retest the system.**

(1) Check that the rear left door power window can be operated by the rear power window sub switch (LH).

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Go to Step 16.

---

**INSPECTION PROCEDURE 4: Front and/or rear passenger's power window(s) do not work by means of the power window main switch.**

---

**COMMENTS ON TROUBLE SYMPTOM**

If the passenger's and/or rear power window does not work by means of the power window main switch, the power window main switch or the respective power window sub switch(es) may be defective.

**PROBABLE CAUSES**

- Malfunction of the power window main switch
- Malfunction of the front power window sub switch, rear power window sub switch (RH) or rear power window sub switch (LH)
- Damaged harness wires and connectors

**DIAGNOSIS**

---

**STEP 1. Check the power window main switch.**

Check that the driver's power window works by means of the power window main switch.

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to inspection procedure 2 "Driver's power window does not work by means of the power window main switch [P.42A-43](#)."

---

**STEP 2. Check the power window sub switch.**

Check that each power window works by means of the respective power window sub switch when the power window lock switch is turned off.

**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Refer to inspection procedure 3 "Relevant power window(s) does not work by means of the front and rear passenger's power window sub switches [P.42A-44](#)."

---

**STEP 3. Determine a trouble spot.****Q: Which power window does not work?**

Front passenger's door : Go to Step 4.

Rear right door : Go to Step 6.

Rear left door : Go to Step 8.

---

**STEP 4. Check of short to power supply, short to ground, and open circuit in input/output line between power window main switch connector and front power window sub switch connector.****Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Repair the wiring harness.

---

**STEP 5. Retest the system.**

(1) Check that the front passenger's power window works by means of the power window main switch.

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Replace the power window main switch.

---

**STEP 6. Check of short to power supply, short to ground, and open circuit in input/output line between power window main switch connector and rear power window sub switch (RH) connector.****Q: Is the check result normal?**

**YES :** Go to Step 7.

**NO :** Repair the wiring harness.

---

**STEP 7. Retest the system.**

(1) Check that the rear right power window works by means of the power window main switch.

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Replace the power window main switch.

---

**STEP 8. Check of short to power supply, short to ground, and open circuit in input/output line between power window main switch connector and rear power window sub switch (LH) connector.****Q: Is the check result normal?**

**YES :** Go to Step 9.

**NO :** Repair the wiring harness.

**STEP 9. Retest the system.**

(1) Check that the rear left power window works by means of the power window main switch.

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Replace the power window main switch.

**INSPECTION PROCEDURE 5: Power window timer function does not work normally.****⚠ CAUTION**

Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

**COMMENTS ON TROUBLE SYMPTOM**

If the power window timer does not work normally, a malfunction of the power window main switch or ETACS-ECU is suspected.

**PROBABLE CAUSES**

- Malfunction of the door switch (Driver's side)
- Malfunction of the door switch (Front passenger's side)
- Malfunction of the power window main switch
- Malfunction of ETACS-ECU
- Damaged wiring harness and connectors

**DIAGNOSIS**

1. Check the power supply system.
2. scan tool MB991958 data list
  - Turn the ignition switch to the "ON" position.
  - Close the driver's door.
  - Close the front passenger's door.
3. Retest the system.

**INSPECTION PROCEDURE 6: Power window anti-trap function does not work normally <Driver's side door>.****⚠ CAUTION**

Before replacing the ECU, ensure that the input and output signal circuits are normal.

**COMMENTS ON TROUBLE SYMPTOM**

Malfunction of the power window motor revolution detection sensor or incorrectly installed or warped glass slider is suspected.

**PROBABLE CAUSES**

- Malfunction of the power window motor
- Incorrectly installed or warped glass slider
- Improperly adjusted door window glass

**DIAGNOSIS****STEP 1. Check the power window fully closed position**

- (1) Carry out the learning procedures of the power window fully closed position. Refer to [P.52B-229](#).
- (2) Fully open the door window glass. Operate the power window switch to fully close the door window glass, and check if the door window glass raise without lowering automatically.

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to adjustment of faulty power window [P.15-5](#).

**STEP 2. Check of short to power supply, short to ground, and open circuit in VCC, SEN1, SEN2, SGND line between the power window main switch connector and the front power window motor (RH) connector**

**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Repair the wiring harness.

**STEP 3. Retest the system.**

Check that the power window anti-trap function works.

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Replace the power window motor of the door which the power window anti-trap function does not work on.

## INSPECTION PROCEDURE 7: Window glass lowers automatically while it is rising <Driver's side door>.

### CAUTION

Before replacing the ECU, ensure that the input and output signal circuits are normal.

### COMMENTS ON TROUBLE SYMPTOM

If the sliding resistance is too great when the window is being raised or the window glass encounters an object, the window glass will lower by approximately 150 mm.

### PROBABLE CAUSES

- Improperly adjusted door window glass
- Incorrectly installed or warped glass slider
- Damaged harness wires and connectors
- Malfunction of the power window motor
- Malfunction of the window regulator

### DIAGNOSIS

**STEP 1. Check the power window fully closed position**

- (1) Carry out the learning procedures of the power window fully closed position. Refer to [P.42A-57](#).
- (2) Fully open the door window glass. Operate the power window switch to fully close the door window glass, and check if the door window glass raise without lowering automatically.

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to adjustment of faulty power window [P.42A-57](#).

**STEP 2. Check of short to power supply, short to ground, and open circuit in VCC, SEN1, SEN2, SGND line between the power window main switch connector and the front power window motor (LH) connector**

**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Repair the wiring harness.

**STEP 3. Retest the system.**

Fully open the door window glass. Operate the power window switch to fully close the door window glass, and check if the door window glass raise without lowering automatically.

**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Adjustment of faulty power window (Refer to [P.42A-57](#)) and carry out the learning procedures of the power window fully closed position (Refer to [P.42A-57](#)). Then go to Step 4.

**STEP 4. Retest the system.**

Fully open the door window glass. Operate the power window switch to fully close the door window glass, and check if the door window glass raise without lowering automatically.

**Q: Is the check result normal?**

**YES** : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO** : Replace the front power window motor (LH).

---

**INSPECTION PROCEDURE 8: Power window main switch one-touch function does not work <Driver's side door>.**


---

**⚠ CAUTION**

Before replacing the power window main switch (ECU), ensure that the input and output signal circuits are normal.

**COMMENTS ON TROUBLE SYMPTOM**

Malfunction of the power window motor revolution detection sensor or power window main switch.

**PROBABLE CAUSES**

- Malfunction of the power window main switch
- Damaged harness wires and connectors
- Malfunction of the power window motor

**DIAGNOSIS****STEP 1. Check the power window fully closed position**

- (1) Carry out the learning procedures of the power window fully closed position (Refer to [P.42A-57](#)).
- (2) Check that the one-touch function works by means of the power window main switch.

**Q: Is the check result normal?**

**YES** : Go to Step 2.

**NO** : Refer to adjustment of faulty power window [P.42A-57](#).

---

**STEP 2. Check of short to power supply, short to ground, and open circuit in VCC, SEN1, SEN2, SGND line between the power window main switch connector and the front power window motor (LH) connector**


---

**Q: Is the check result normal?**

**YES** : Go to Step 3.

**NO** : Repair the wiring harness.

**STEP 3. Retest the system.**

Check that the one-touch function works by means of the power window main switch.

**Q: Is the check result normal?**

**YES** : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO** : Replace the power window main switch. Then go to Step 4.

**STEP 4. Retest the system.**

Check that the one-touch function works by means of the power window main switch.

**Q: Is the check result normal?**

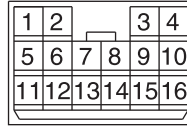
**YES** : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO** : Replace the front power window motor (LH).

CHECK AT ECU TERMINAL <POWER WINDOW (Vehicles with safety system)>

M1429013600841

POWER WINDOW MAIN SWITCH TERMINAL CHECK



ACB04990 AB

| Terminal No. | Terminal code | Check items                                                  | Check conditions                     | Normal conditions       |
|--------------|---------------|--------------------------------------------------------------|--------------------------------------|-------------------------|
| 1            | D. AS         | Output to power window motor (Passenger's side)              | —                                    | —                       |
| 2            | U. AS         | Output to power window motor (Passenger's side)              | —                                    | —                       |
| 3            | MD            | Output to power window motor (Driver's side)                 | —                                    | —                       |
| 4            | MU            | Output to power window motor (Driver's side)                 | —                                    | —                       |
| 5            | +BP           | Power supply                                                 | Always                               | System voltage          |
| 6            | SEN1          | Input from power window motor (pulse sensor signal)          | When the power windows are operating | 0 to 5 V (pulse signal) |
| 7            | SGND          | Input from power window motor (pulse sensor earth)           | —                                    | 1 V or less             |
| 8            | E             | Earth                                                        | Always                               | 1 V or less             |
| 9            | VCC           | Input from power window motor (power supply to pulse sensor) | When the power windows are operating | 5 V                     |
| 10           | +B            | Power supply                                                 | Ignition switch: ON                  | System voltage          |
| 11           | D. RR         | Output to power window motor (Rear right side)               | —                                    | —                       |
| 12           | U. RR         | Output to power window motor (Rear right side)               | —                                    | —                       |
| 13           | SEN2          | Input from power window motor (pulse sensor signal)          | When the power windows are operating | 0 to 5 V (pulse signal) |
| 14           | —             | —                                                            | —                                    | —                       |
| 15           | D. RL         | Output to power window motor (Rear left side)                | —                                    | —                       |
| 16           | U. RL         | Output to power window motor (Rear left side)                | —                                    | —                       |

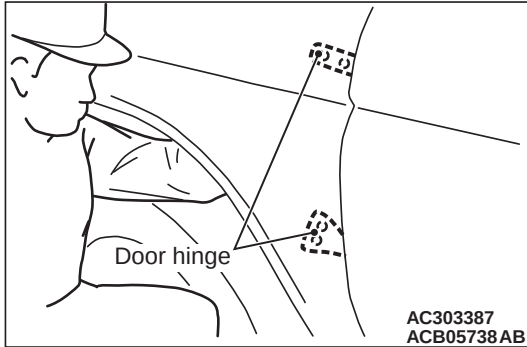
## ON-VEHICLE SERVICE

## DOOR ADJUSTMENT

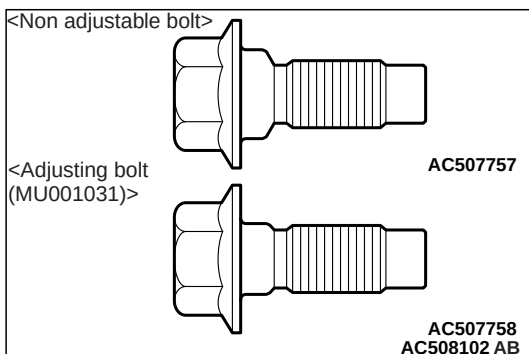
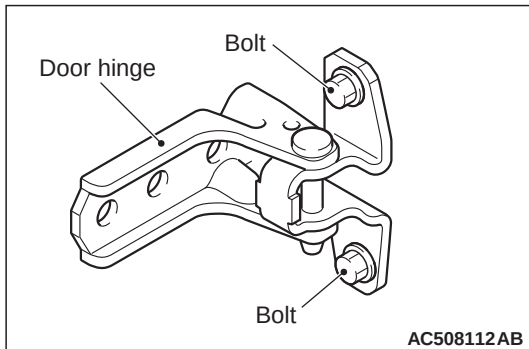
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**⚠ CAUTION**

**Do not apply 98 N·m or more to the door hinge adjusting wrench (Special tool: MB991163).**



1. When the clearance between the door and the body is uneven:
  - (1) Apply protective tape to the fender around the hinge installation position and door edge.
  - (2) Remove the front pillar pad <Front door> (Refer to P.42A-9).
  - (3) Remove the center pillar trim <Rear door> (Refer to GROUP 52A – Interior Trim P.52A-9).
  - (4) Use the door hinge adjusting wrench (Special tool: MB991164) to loosen the body-side door hinge mounting bolts (mounting nuts for the door upper hinge of the rear door).
  - (5) Move the door to adjust the clearance between the door and the body is even.
2. When the door is not flush with the body surface:
  - (1) Loosen the door-side hinge mounting bolts.
  - (2) Move the door to adjust so that the door is flush with the body surface.



- (3) If adjustment is not possible, replace the door-side door hinge mounting bolt with the adjustment bolt (MU001031).

*NOTE: If the adjustment bolt has been already installed, reuse it.*

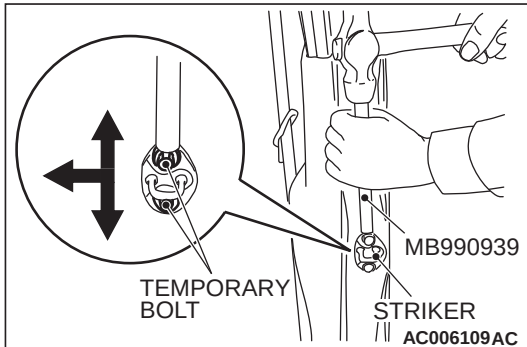
- (4) Move the door to adjust so that the door is flush with the body surface.
- (5) Tighten the door-side door hinge mounting bolt to the specified torque.

**Tightening torque: 27 ± 6 N·m (20 ± 4 ft·lb)**

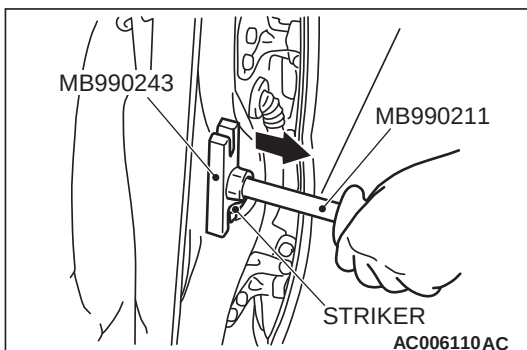
3. When the door is stiff to close and open:

**⚠ CAUTION**

To avoid inadvertent airbag deployment, always turn ignition switch to the "OFF" position and wait 60 seconds or more before adjust the striker.

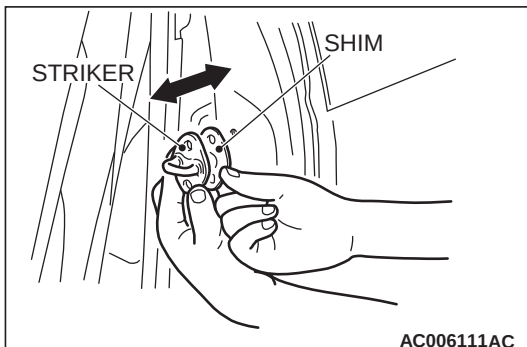


- (1) Adjustment using the striker (toward the inside of the vehicle and vertical direction):  
Install a temporary bolt instead of the striker mounting bolt, and use the remover bar (Special tool: MB990939) and a hammer to tap the temporary bolt to the desired direction.



- (2) Adjustment by using the striker (toward the outside of the vehicle):  
Using the following tools, pull the striker toward the outside of the vehicle to adjust.

- Slide hammer (MB990211)
- Body puller (MB990243)



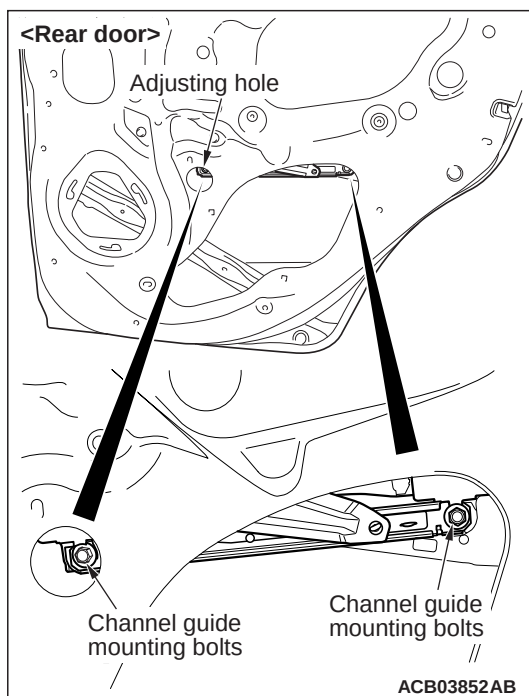
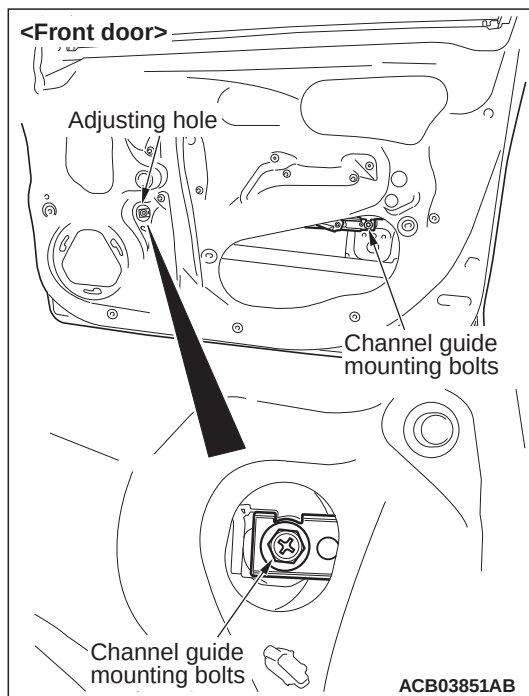
- (3) Adjustment using shims: (forward and rearward)  
Increase or decrease the number of shims so that the striker engages with the door latch properly.

**DOOR WINDOW GLASS ADJUSTMENT**

M1423001000877

Check that a door window glass operates smoothly and moves along the door window glass runchannel when the window glass is fully raised and lowered. If there is a problem, adjust the window glass by the following procedures:

1. Remove a door trim assembly (Refer to GROUP 52A – Door Trim [P.52A-11](#)).
2. Remove a waterproof film (Refer to [P.42A-77](#)).
3. Remove the power window switch from the removed door trim assembly, and connect it to the door side connector.



4. Set the channel guide mounting bolts to the adjusting hole.
5. Raise the window glass with the power window switch to check that the window glass to door clearance is even. If there is a problem, loosen the channel guide mounting bolts to adjust tilting up/down of the glass.

## POWER WINDOW CHECK

Check the power window as described below. If it does not work, perform troubleshooting (Refer to [P.42A-33](#) <Vehicles without safety system>, [P.42A-41](#) <Vehicles with safety system>).

- Turn off the power window lock switch of the power window main switch. Operate the front and rear passenger's power window sub switches to check that the power windows work.
- Turn on the power window lock switch of the power window main switch, and operate the main switch to check that the driver's power window works but the front and rear passenger's power windows do not work.

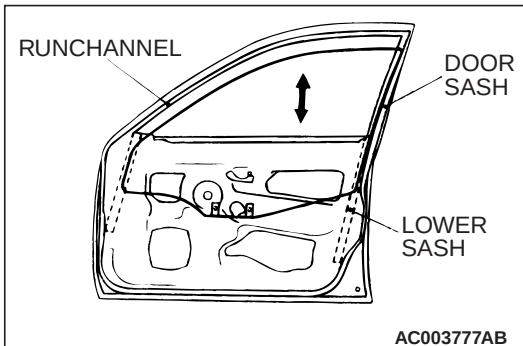
M1429004400883

## ADJUSTMENT OF FAULTY POWER WINDOW

M1429002100273

If the door window glass wrongly, automatically lowers while being raised, adjust or replace as follows:

1. Remove the door trim assembly (Refer to GROUP 52A – Door Trim [P.52A-11](#)).
2. Remove waterproof film (Refer to [P.42A-77](#)).
3. Remove the window regulator assembly from the door window glass, and then raise and lower the door window glass by hand to check the operation force.
4. If the door window glass does not move up and down smoothly, check and repair as follows:
  - Check the installation condition of the runchannel.
  - Straighten twist in the door sash.
  - Check the installation condition of the lower sash.
5. If repair or adjustment is impossible, replace the door assembly.



## POWER WINDOW SAFETY MECHANISM CHECK <Vehicles with safety system (driver's side door)>

M1429001000916

1. Place an approximately 10 mm (0.4 inches)-thick wood board as shown. Then, close the door window glass by one-shot up action of the power window switch.
2. Check that the window glass lowers by about 150 mm (5.9 inches) when it clamps the board. This is called anti-trap function (safety mechanism). If this does not happen, carry out troubleshooting (Refer to [P.42A-41](#)).
3. Check that the window glass continue raising up to the door upmost position without activating the anti-trap function while the switch is kept pulling up (this is called forced closing function).

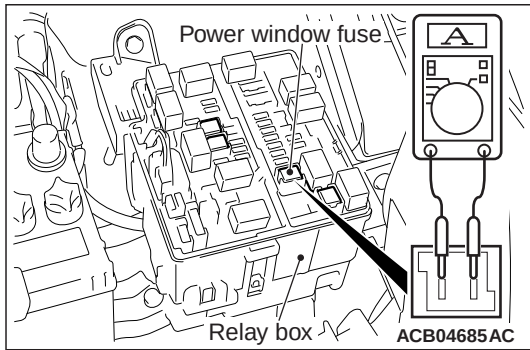
*NOTE: If the battery terminals are disconnected or the fuse for power window is removed, carry out the learning procedures of the power window fully closed position (Refer to [P.42A-57](#)).*

## POWER WINDOW TIMER FUNCTION CHECK

M1429004300972

Check that the power window timer works as described below. If it does not work, perform troubleshooting (Refer to [P.42A-33](#) <Vehicles without safety system>, [P.42A-41](#) <Vehicles with safety system>).

- Close the doors and turn the ignition switch to the "LOCK" (OFF) position. Check that the power window operates for 30 seconds.
- While the timer is on, check that it is cancelled when the driver's or front passenger's door is opened.



POWER WINDOW OPERATING CURRENT CHECK

M1429001100850

1. Remove the power window fuse to check that it is normal, and connect a multimeter as shown in the illustration.
2. Raise a door window glass with the power window switch to measure the current during operation.

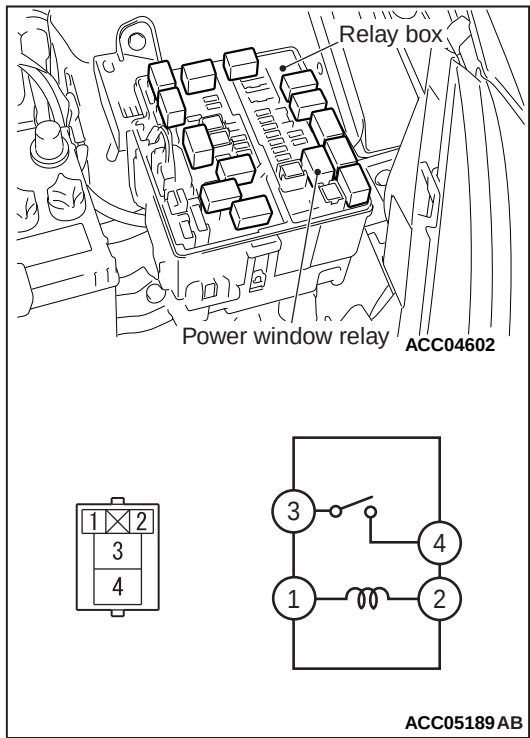
**Standard value: 7 A or less [Power supply voltage 14.5 ± 0.5V at 25°C (77°F)]**

*NOTE: If the power supply voltage does not meet the standard value, check and repair the generator and the battery. Then carry out this check again.*

3. If the value is outside the standard value, adjust the door window glass (Refer to P.42A-53).
4. The fuse for power window is removed, carry out the learning procedures of the power window fully closed position (Refer to P.42A-57).

CHECK THE POWER WINDOW RELAY

M1429001800655



| Battery voltage                                       | Terminal number | Normal value                        |
|-------------------------------------------------------|-----------------|-------------------------------------|
| No current supply                                     | 3 – 4           | No continuity                       |
| With current supply [terminal 1 (+) – terminal 2 (-)] | 3 – 4           | Continuity exists (2 ohms or less). |

## LEARNING PROCEDURES OF POWER WINDOW FULLY CLOSED POSITION <Vehicles with safety system (driver's side door)>

M1429004600531

### LEARNING PROCEDURES OF FULLY CLOSED POSITION WHEN POWER WINDOW SWITCH IS REMOVED, OR POWER WINDOW REGULATOR ASSEMBLY IS REMOVED OR REPLACED

1. If the battery terminals are disconnected or the fuse for power window is removed, the fully closed position that the power window switch has learned will be erased (initialized).
2. Operate the power window switch and fully open the door window glass.

#### CAUTION

The anti-trap function will not activated until the learning procedures of the fully closed position have been completed (because the anti-trap function was reset).

3. Operate the power window switch and fully close the door window glass. Release the power window switch once. Then, hold the power window switch to the fully closed side again for 1 second so that the power window switch completes learning the fully closed position.

*NOTE: If the power window switch is operated to open the door window glass while the switch is in learning procedure, the learning will be cancelled. If this happens, return to Step 2.*

## LEARNING PROCEDURES WHEN POWER WINDOW SWITCH IS REPLACED WITH A NEW ONE

#### CAUTION

The anti-trap function will not activated until the learning procedures of the fully closed position have been completed (because the anti-trap function was reset).

Operate the power window switch to fully close the door window glass by one-shot up action so that the power window switch will complete learning (no initialization is required).

## CENTRAL DOOR LOCKING SYSTEM CHECK

M1427001100810

- Check that the central door locking system works by operating the driver's door key cylinder <Vehicles without keyless operation system> or the driver's door inside lock knob. If it does not work, perform troubleshooting (Refer to [P.42A-28.](#))

*NOTE: When the inside lock knob is operated with the driver's door opened, the driver's door cannot be locked.*

- Check whether the driver's door is opened when the driver's door inside handle knob is pulled with all the doors locked. If it does not operate, replace the driver's door latch assembly (Refer to [P.42A-73.](#))

**KEY REMINDER FUNCTION INSPECTION**

M1427003300412

1. Turn the ignition switch to the "LOCK" (OFF) position.
2. Keep the ignition key into the ignition cylinder inserted.
3. Open the driver's seat side door, and check that it remains unlocked even when attempts are made to lock the driver's seat inside door lock knob.
4. Carry out troubleshooting if the door is not unlocked (Refer to [P.42A-28](#)).

**SELECTOR "P" POSITION-LINKED DOOR  
UNLOCKING FUNCTION CHECK <CVT>**

M1427003400378

When the selector lever is moved to the P (parking) position with the ignition switch on, all the doors (including liftgate) will be unlocked. Carry out the troubleshooting if a door does not operate (Refer to [P.42A-41](#)).

*NOTE: The selector "P" position-linked door unlocking function can be switched with the customize function. Confirm it before check (Refer to [P.42A-43](#)).*

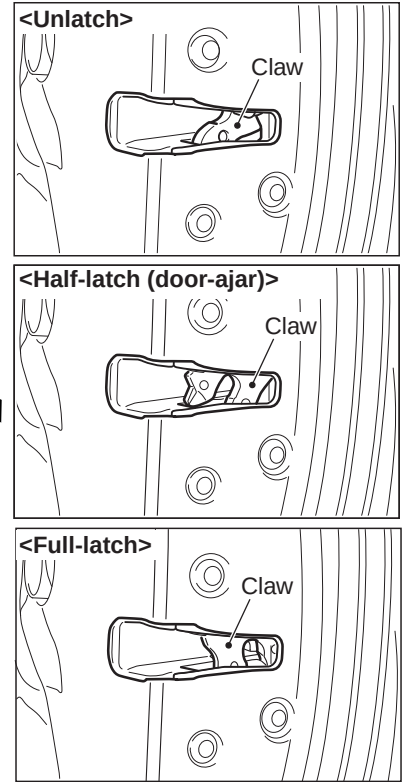
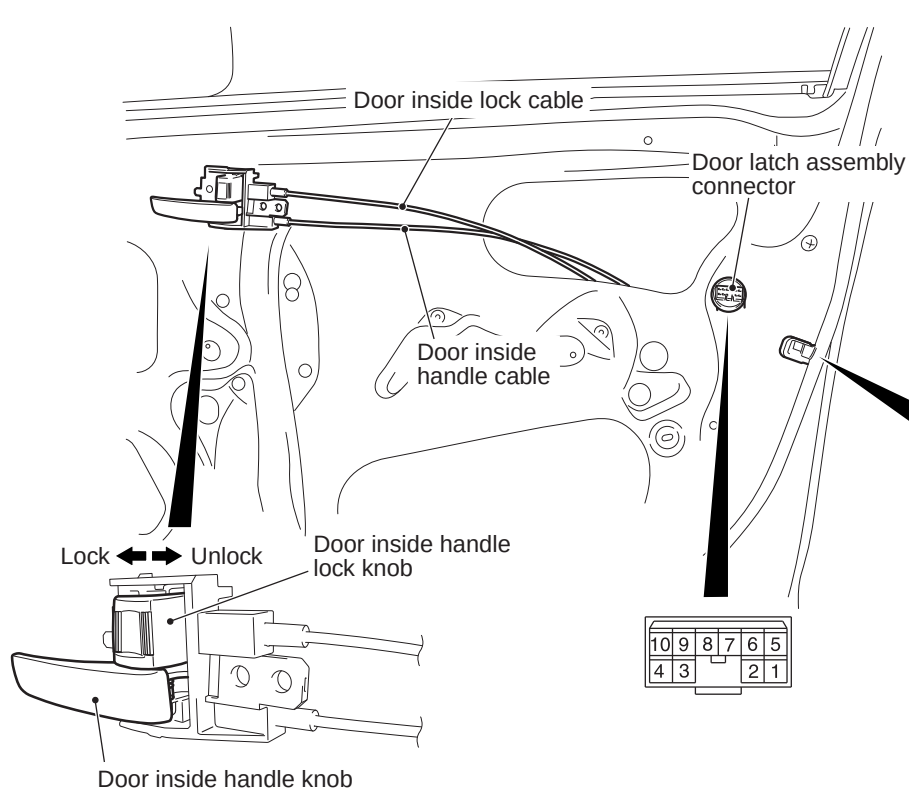
**DOOR LATCH ASSEMBLY INSPECTION**

M1423004701674

Check the door lock actuator operation in the following procedures:

1. Open a door that is supposed to be checked.
2. Remove a door trim assembly (Refer to GROUP 52A – Door Trim [P.52A-11](#)).
3. Use a screwdriver or the like to slide the door latch claw from unlatch to full-latch position (Set the door latch from door-open to door-closed condition).

# DOOR LOCK ACTUATOR



ACB03858AB

**ACTUATOR OPERATION CHECK <FRONT RH AND REAR RH>**

| <b>Claw position</b> | <b>Door inside handle lock knob position</b> | <b>Battery connection</b>                                                                                                                                     | <b>Door inside handle lock knob operation</b> |
|----------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Full-latch           | Lock                                         | <ul style="list-style-type: none"><li>• Connect terminal 4 to negative battery terminal.</li><li>• Connect terminal 3 to positive battery terminal.</li></ul> | Knob moves from "Lock" to "Unlock" position.  |
| Full-latch           | Unlock                                       | <ul style="list-style-type: none"><li>• Connect terminal 4 to positive battery terminal.</li><li>• Connect terminal 3 to negative battery terminal.</li></ul> | Knob moves from "Unlock" to "Lock" position.  |

**ACTUATOR OPERATION CHECK <FRONT LH AND REAR LH>**

| Claw position | Door inside handle lock knob position | Battery connection                                                                                                                                               | Door inside handle lock knob operation       |
|---------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Full-latch    | Lock                                  | <ul style="list-style-type: none"> <li>• Connect terminal 1 to negative battery terminal.</li> <li>• Connect terminal 2 to positive battery terminal.</li> </ul> | Knob moves from "Lock" to "Unlock" position. |
| Full-latch    | Unlock                                | <ul style="list-style-type: none"> <li>• Connect terminal 1 to positive battery terminal.</li> <li>• Connect terminal 2 to negative battery terminal.</li> </ul> | Knob moves from "Unlock" to "Lock" position. |

**ACTUATOR SWITCH CHECK <FRONT RH>**

| Claw position | Door inside handle lock knob position | Tester connection | Specified condition                |
|---------------|---------------------------------------|-------------------|------------------------------------|
| Full-latch    | Lock                                  | 7 – 9             | No continuity                      |
| Full-latch    | Unlock                                | 7 – 9             | Continuity exists (2 ohms or less) |

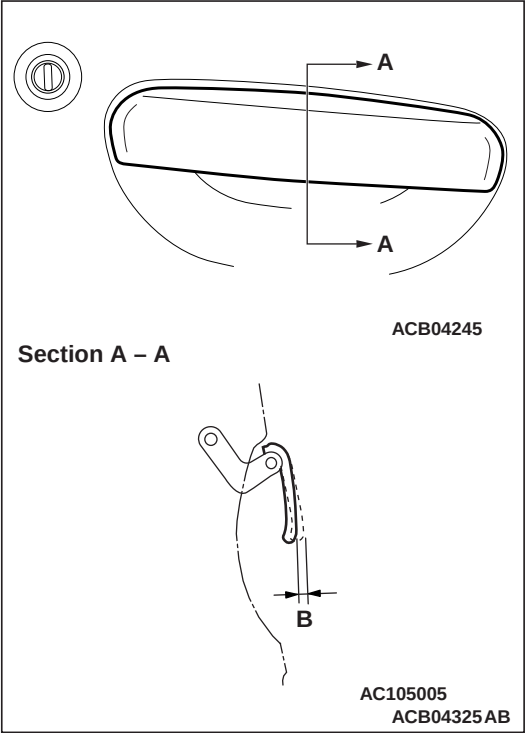
ACTUATOR SWITCH CHECK <FRONT LH: VEHICLES WITH KOS>

| Claw position | Door inside handle lock knob position | Tester connection | Specified condition                |
|---------------|---------------------------------------|-------------------|------------------------------------|
| Full-latch    | Lock                                  | 6 – 8             | No continuity                      |
| Full-latch    | Unlock                                | 6 – 8             | Continuity exists (2 ohms or less) |

DOOR OUTSIDE HANDLE ASSEMBLY PLAY CHECK

M1423001600738

1. Check that the door outside handle assembly play meets the standard value.  
**Standard value (B): 0.2 – 5.4 mm (0.01 – 0.21 in) [Target value: 2.6 mm (0.10 in)]**
2. Check the door outside handle assembly and door latch assembly. Replace them if the play is out of the standard value.



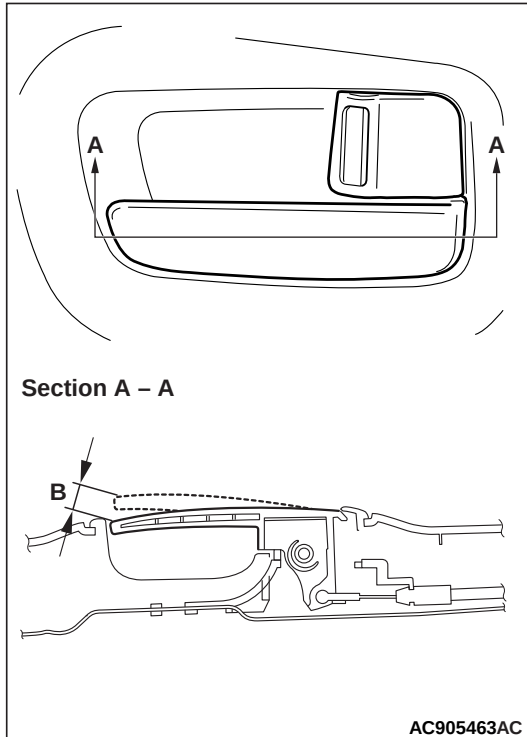
## DOOR INSIDE HANDLE CHECK

### DOOR INSIDE HANDLE KNOB PLAY CHECK

1. Check that the door inside handle knob play meets the standard value.

**Standard value (B): 0.2 – 24.5 mm (0.01 – 0.96 in) [Target value: 17.9 mm (0.70 in)]**

2. Check the door inside handle knob and door latch assembly. Replace them if the play is out of the standard value.

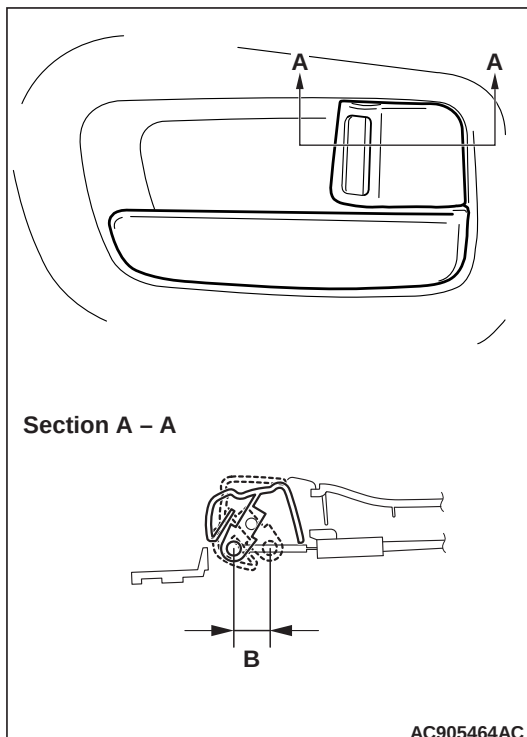


### DOOR INSIDE HANDLE LOCK KNOB STROKE CHECK

1. Remove the door trim assembly (Refer to GROUP 52A – Door Trim [P.52A-11](#)).
2. Check that the stroke of the door inside handle lock knob meets the standard value.

**Standard value (B): 13.5 – 15.5 mm (0.53 – 0.61 in) [Target value: 14.5 mm (0.57 in)]**

3. Check the door inside handle lock knob and door latch assembly. Replace them if the stroke is out of the standard value.



CUSTOMIZATION FUNCTION

M1429007801010

Using the ETACS system of scan tool MB991958, the following functions can be programmed. The programmed information is held even when the battery is disconnected.

| Adjustment item (scan tool MB991958 display) | Adjustment item                                          | Adjusting content (scan tool MB991958 display) | Adjusting content               |
|----------------------------------------------|----------------------------------------------------------|------------------------------------------------|---------------------------------|
| Door unlock (Shift "P" position)             | Adjustment of the auto door unlock (P position) function | Disable                                        | No function (Initial condition) |
|                                              |                                                          | Enable                                         | Always with function            |

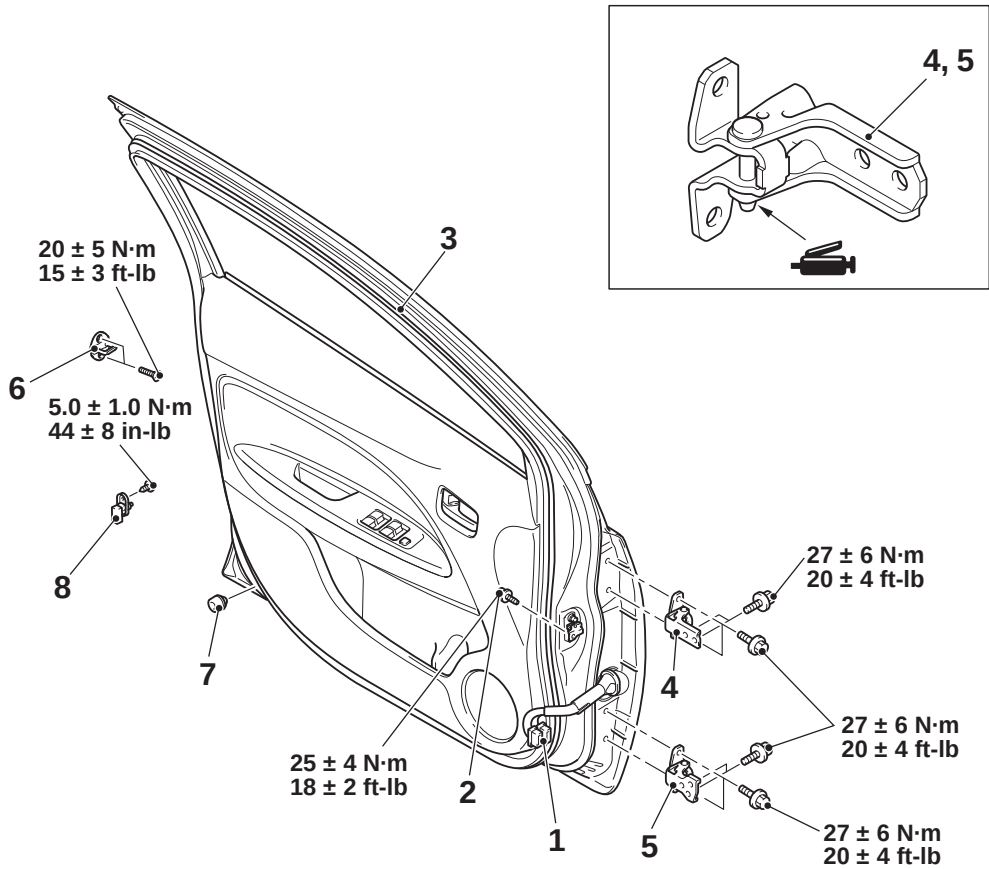
DOOR ASSEMBLY

REMOVAL AND INSTALLATION

M1423002201123

- Post-installation operation
  - Door Adjustment (Refer to P.42A-52).

<Front door>



ACC03298AB

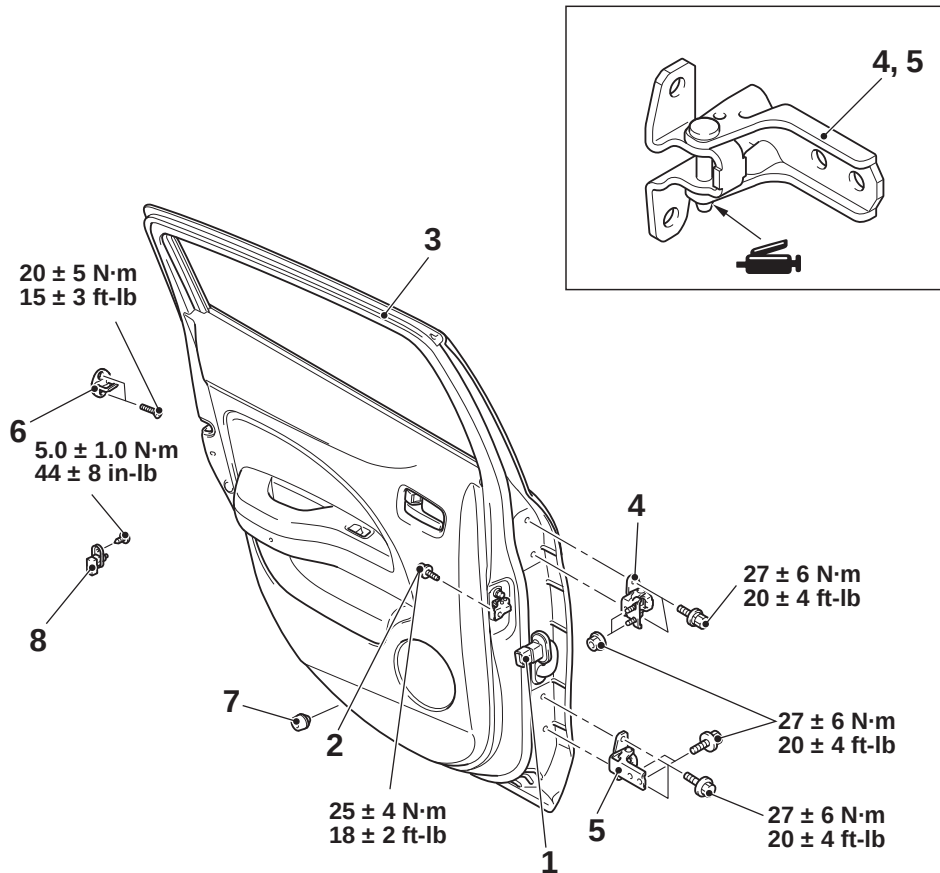
- Front door assembly removal steps**
- Cowl side trim (Refer to GROUP 52A – Interior Trim P.52A-9)
- Wiring harness connector connection

- Front door assembly removal steps (Continued)**
- Door check connecting bolt
  - Front door assembly
- Front door hinge removal steps**
- Front door assembly
- Fender (Refer to P.42A-9)

**Front door hinge removal steps**

- 4 Front door upper hinge  
5 Front door lower hinge  
**Striker removal**  
>>A<< 6 Striker  
**Damper removal**  
7 Damper  
**Door switch removal**  
8 Door switch

<Rear door>



ACC03299AB

**Rear door assembly removal steps**

1. Wiring harness connector connection  
2. Door check connecting bolt  
3. Rear door assembly  
**Rear door hinge removal steps**  
• Center pillar trim (Refer to GROUP 52A – Interior Trim [P.52A-9](#))  
3. Rear door assembly

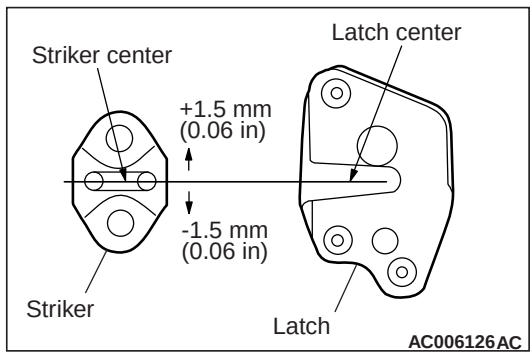
**Rear door hinge removal steps**

4. Rear door upper hinge  
5. Rear door lower hinge  
**Striker removal steps**  
>>A<< 6. Striker  
**Damper removal**  
7. Damper  
**Door switch removal**  
8. Door switch

INSTALLATION SERVICE POINT

>>A<< STRIKER INSTALLATION

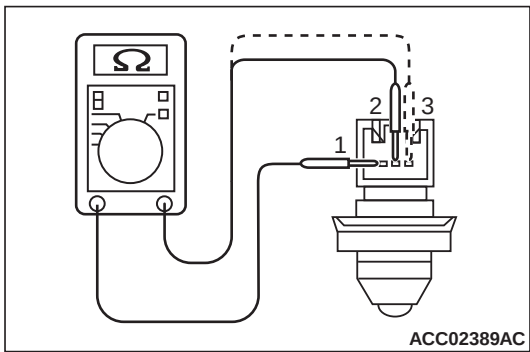
Install the striker so that the striker center does not deviate more than  $\pm 1.5$  mm (0.06 inches) from the latch center.



INSPECTION

M1423006000797

DOOR SWITCH CHECK



| Switch position | Terminal number | Normal value                          |
|-----------------|-----------------|---------------------------------------|
| Release (ON)    | 1 – 2, 1 – 3    | Continuity exists<br>(2 ohms or less) |
| Depressed (OFF) | 1 – 2, 1 – 3    | No continuity                         |

## DOOR GLASS AND REGULATOR REMOVAL AND INSTALLATION

M1429001301705

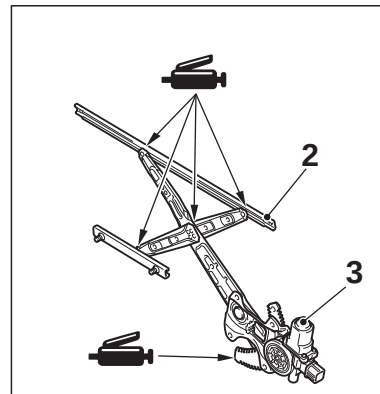
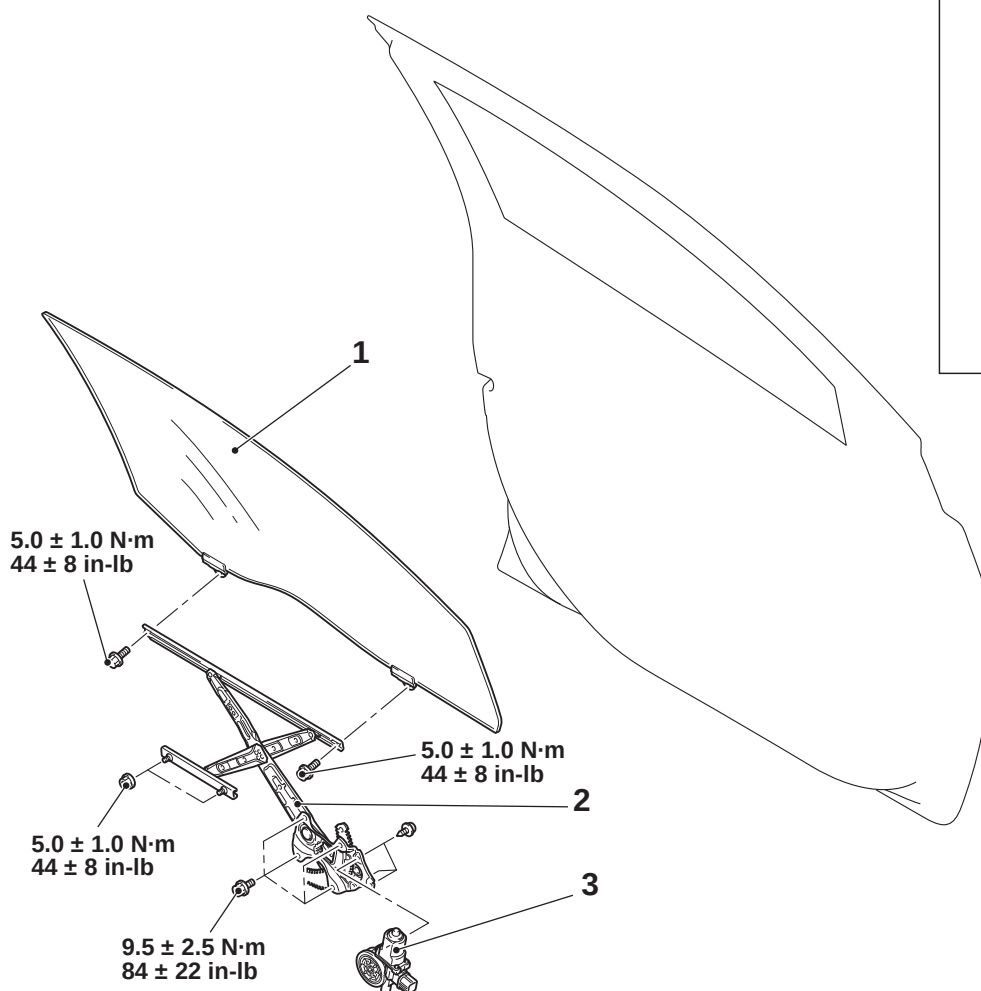
**Pre-removal Operation**

- Door Trim Assembly Removal (Refer to GROUP 52A – Door Trim [P.52A-11](#)).
- Waterproof Film Removal (Refer to [P.42A-77](#)).

**Post-installation Operation**

- Door Window Glass Adjustment (Refer to [P.42A-53](#)).
- Waterproof Film Installation (Refer to [P.42A-77](#)).
- Door Trim Assembly Installation (Refer to GROUP 52A – Door Trim [P.52A-11](#)).
- Learning Procedures of the Power Window Fully Closed Position <Vehicles with safety system> (Refer to [P.42A-57](#)).

&lt;Front door&gt;



ACC03301AB

**Door window glass assembly  
removal**

&lt;&lt;A&gt;&gt;

1. Door window glass assembly

**Power window regulator  
removal steps**

- Door window rear lower sash (Refer to [P.42A-77](#))
- Door window glass runchannel (Refer to [P.42A-77](#))

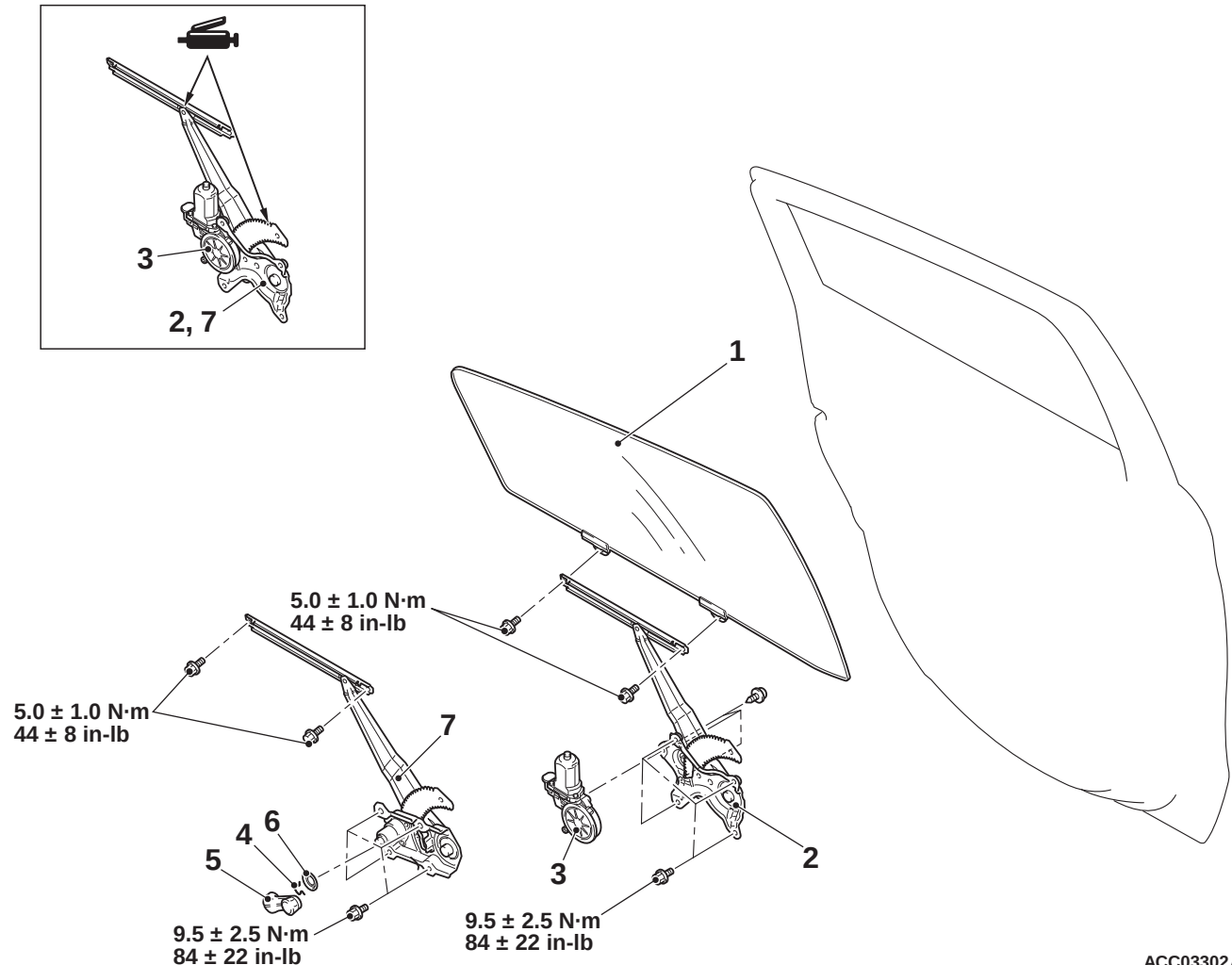
**Power window regulator  
removal steps (Continued)**

&lt;&lt;A&gt;&gt;

2. Power window regulator assembly
3. Power window regulator motor

**NOTE:** For removal and installation of the power window switch, refer to GROUP 52A, Door Trim [P.52A-11](#).

<Rear door>



ACC03302AB

**Door window glass assembly  
removal steps**

- Door window rear lower sash  
(Refer to [P.42A-77](#))
- Door window glass runchannel  
(Refer to [P.42A-77](#))

<<A>>

1. Door window glass assembly

**Power window regulator  
removal steps**

<<A>>

2. Power window regulator assembly
3. Power window regulator motor

**Manual window regulator  
removal steps**

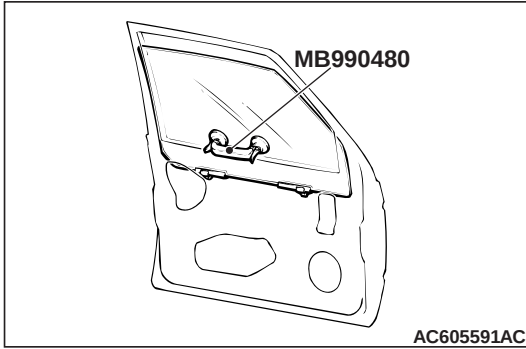
- |       |       |                                        |
|-------|-------|----------------------------------------|
| <<B>> | >>A<< | 4. Clip                                |
|       | >>A<< | 5. Regulator handle                    |
|       | >>A<< | 6. Escutcheon                          |
| <<A>> |       | 7. Manual window regulator<br>assembly |

*NOTE: For removal and installation of the power win-  
dow switch, refer to GROUP 52A, Door trim  
[P.52A-11](#).*

**REMOVAL SERVICE POINT**

**<<A>> DOOR WINDOW GLASS ASSEMBLY/  
POWER WINDOW REGULATOR ASSEMBLY/  
MANUAL WINDOW REGULATOR ASSEMBLY  
REMOVAL**

1. Remove the door window glass mounting bolts.



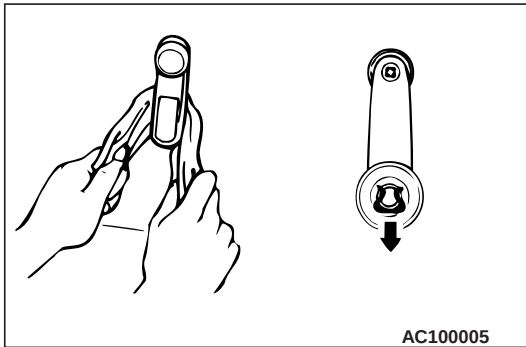
**⚠ CAUTION**

If any film or the like is applied to a door window glass, use the window glass holder (Special tool: MB990480) at the outside of the door glass to prevent the film from peeling off.

2. Lift the door window glass, and attach the special tool MB990480 to the glass as shown to prevent the glass from falling.
3. Remove the power window regulator assembly.

**<<B>> CLIP REMOVAL**

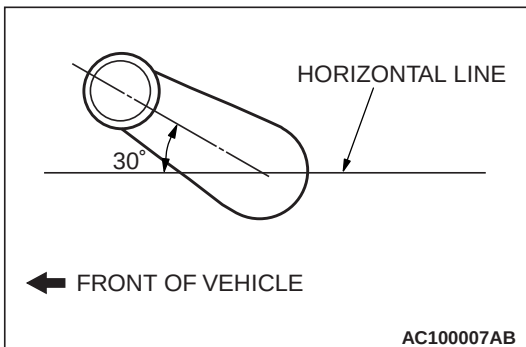
Use cloth to remove the clip as shown in the illustration.



**INSTALLATION SERVICE POINT**

**>>A<< ESCUTCHEON/REGULATOR HANDLE/CLIP INSTALLATION**

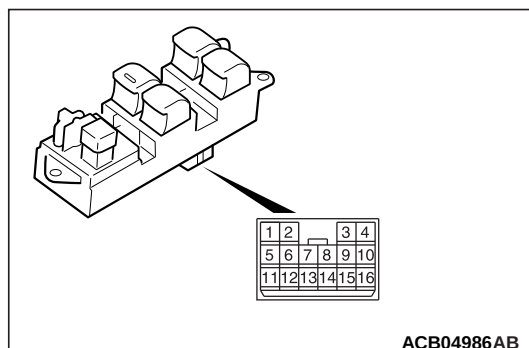
1. Install escutcheon and regulator handle to the clip.
2. Close the door window glass fully, and then install the regulator handle as shown in the illustration.



**INSPECTION**

M1429001401434

**POWER WINDOW MAIN SWITCH CONTINUITY CHECK <Vehicles with safety system>**



## &lt;FRONT PASSENGER'S SWITCH&gt;

| Switch position | Tester connection | Specified condition                |
|-----------------|-------------------|------------------------------------|
| UP              | 1 – 8*, 2 – 10    | Continuity exists (2 ohms or less) |
| OFF             | 1 – 8*, 2 – 8*    |                                    |
| DOWN            | 1 – 10, 2 – 8*    |                                    |

NOTE: \*: Set the window lock switch to UNLOCK position.

## &lt;REAR PASSENGER'S LEFT SWITCH&gt;

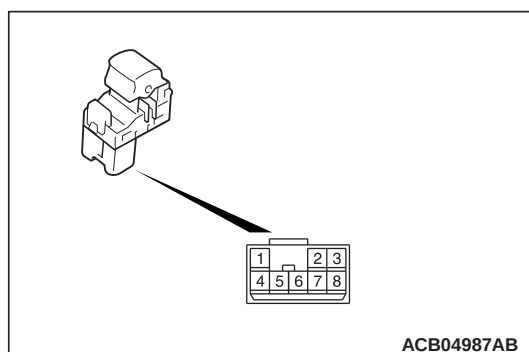
| Switch position | Tester connection | Specified condition                |
|-----------------|-------------------|------------------------------------|
| UP              | 8* – 15, 10 – 16  | Continuity exists (2 ohms or less) |
| OFF             | 8* – 15, 8* – 16  |                                    |
| DOWN            | 8* – 16, 10 – 15  |                                    |

NOTE: \*: Set the window lock switch to UNLOCK position.

## &lt;REAR PASSENGER'S RIGHT SWITCH&gt;

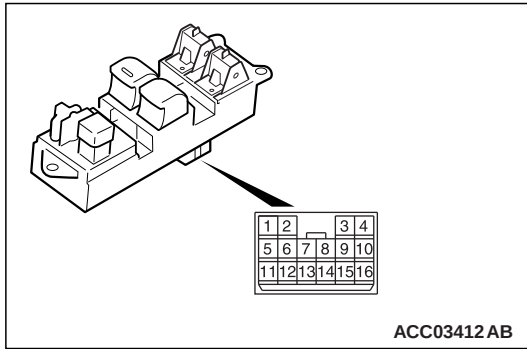
| Switch position | Tester connection | Specified condition                |
|-----------------|-------------------|------------------------------------|
| UP              | 8* – 11, 10 – 12  | Continuity exists (2 ohms or less) |
| OFF             | 8* – 11, 8* – 12  |                                    |
| DOWN            | 8* – 12, 10 – 11  |                                    |

NOTE: \*: Set the window lock switch to UNLOCK position.

**POWER WINDOW SUB SWITCH CONTINUITY CHECK <Vehicles with safety system>**


| Switch position | Tester connection | Specified condition                |
|-----------------|-------------------|------------------------------------|
| UP              | 4 – 5, 6 – 7      | Continuity exists (2 ohms or less) |
| OFF             | 4 – 5, 7 – 8      |                                    |
| DOWN            | 4 – 6, 7 – 8      |                                    |

**POWER WINDOW MAIN SWITCH CONTINUITY CHECK <Vehicles without safety system (Vehicles with driver's side auto down mechanism)>**



<DRIVER'S SWITCH>

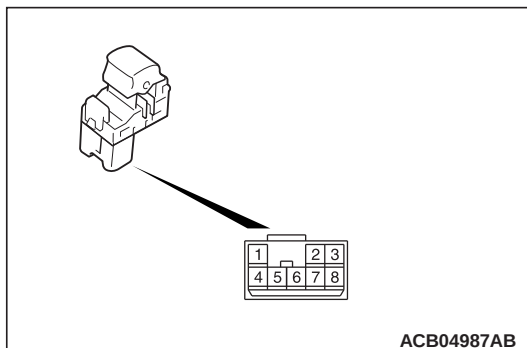
| Switch position | Battery connection                                                                                                                                                            | Tester connection | Specified condition |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------|
| UP              | <ul style="list-style-type: none"> <li>Connect terminal No.8 and the negative battery terminal.</li> <li>Connect terminal No.10 and the positive battery terminal.</li> </ul> | 4 – 8             | 12 V                |
| OFF             |                                                                                                                                                                               | 4 – 8, 3 – 8      | 1 V or less         |
| DOWN            |                                                                                                                                                                               | 3 – 8             | 12 V                |

<FRONT PASSENGER'S SWITCH>

| Switch position | Tester connection | Specified condition                |
|-----------------|-------------------|------------------------------------|
| UP              | 1 – 8*, 2 – 10    | Continuity exists (2 ohms or less) |
| OFF             | 1 – 8*, 2 – 8*    |                                    |
| DOWN            | 1 – 10, 2 – 8*    |                                    |

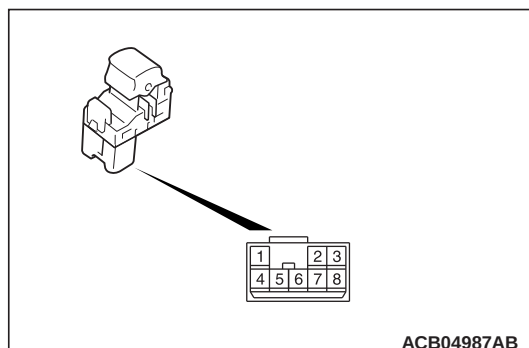
NOTE: \*: Set the window lock switch to UNLOCK position.

**POWER WINDOW SUB SWITCH CONTINUITY CHECK <Vehicles without safety system (Vehicles with driver's side auto down mechanism)>**



| Switch position | Tester connection | Specified condition                |
|-----------------|-------------------|------------------------------------|
| UP              | 4 – 5, 6 – 7      | Continuity exists (2 ohms or less) |
| OFF             | 4 – 5, 7 – 8      |                                    |
| DOWN            | 4 – 6, 7 – 8      |                                    |

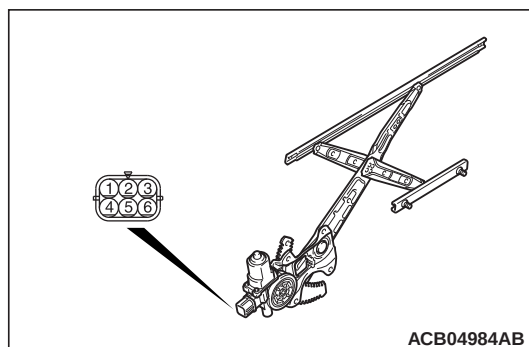
**POWER WINDOW SWITCH CONTINUITY CHECK <Vehicles without safety system (Vehicles without driver's side auto down mechanism)>**



| Switch position | Tester connection | Specified condition                |
|-----------------|-------------------|------------------------------------|
| UP              | 4 – 5, 6 – 7      | Continuity exists (2 ohms or less) |
| OFF             | 4 – 5, 7 – 8      |                                    |
| DOWN            | 4 – 6, 7 – 8      |                                    |

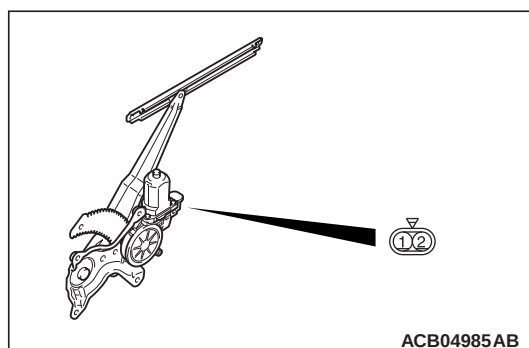
## POWER WINDOW MOTOR CONTINUITY CHECK

1. Connect a battery to the motor terminals and check that the motor runs smoothly.
2. Check that the motor runs in the opposite direction when the battery is connected with the polarity reversed.
3. If a defect is found, replace the power window motor assembly.



### <FRONT DOOR [Vehicles with safety system (passenger's side), Vehicles without safety system]>

| Battery connection                                                                                                                                                               | Slider position |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <ul style="list-style-type: none"> <li>• Connect terminal No. 1 to the negative battery terminal.</li> <li>• Connect terminal No. 4 to the positive battery terminal.</li> </ul> | UP              |
| <ul style="list-style-type: none"> <li>• Connect terminal No. 4 to the negative battery terminal.</li> <li>• Connect terminal No. 1 to the positive battery terminal.</li> </ul> | DOWN            |



### <REAR DOOR>

| Battery connection                                                                                                                                                               | Slider position |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <ul style="list-style-type: none"> <li>• Connect terminal No. 2 to the negative battery terminal.</li> <li>• Connect terminal No. 1 to the positive battery terminal.</li> </ul> | UP              |
| <ul style="list-style-type: none"> <li>• Connect terminal No. 1 to the negative battery terminal.</li> <li>• Connect terminal No. 2 to the positive battery terminal.</li> </ul> | DOWN            |

## DOOR HANDLE AND LATCH REMOVAL AND INSTALLATION

M1423004601923

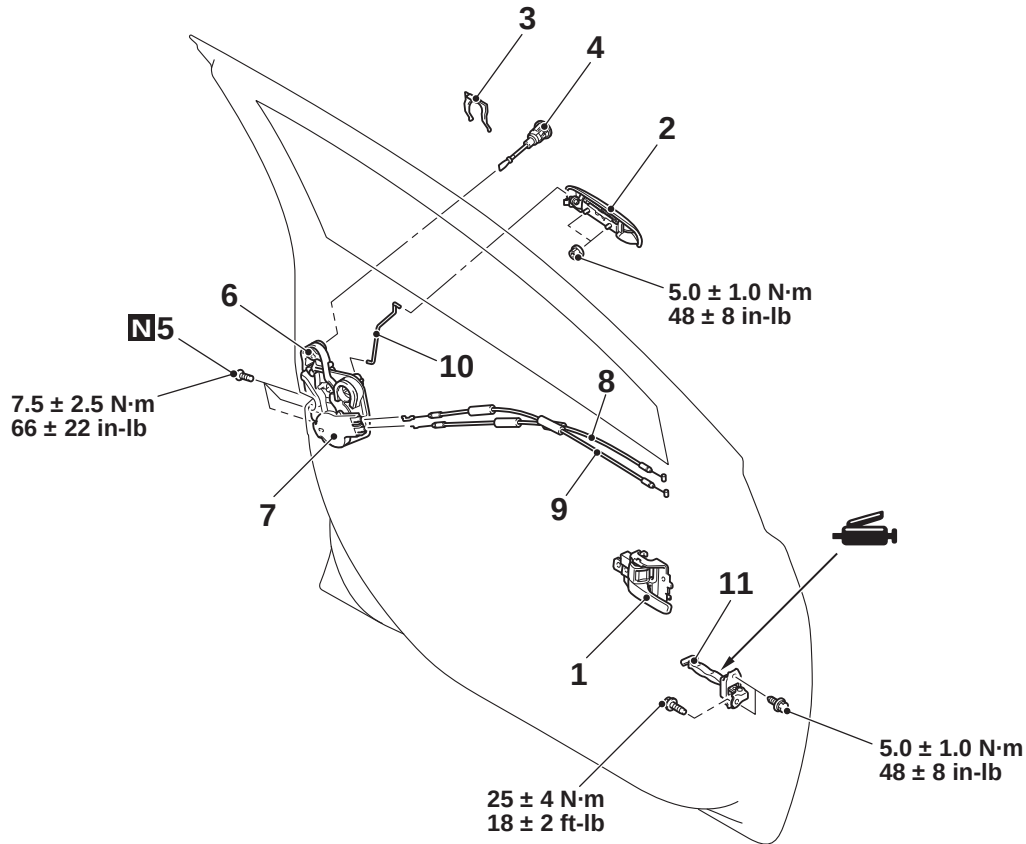
### Pre-removal Operation

- Door trim Assembly Removal (Refer to GROUP 52A – Door Trim [P.52A-11](#)).
- Waterproof Film Removal (Refer to [P.42A-77](#)).

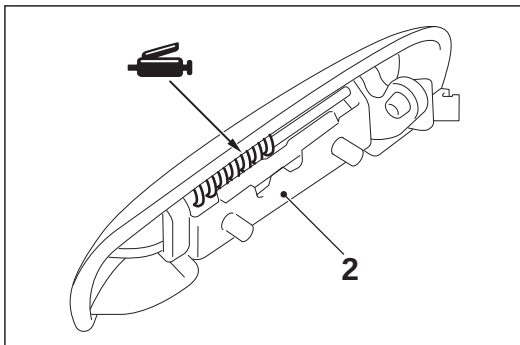
### Post-installation operation

- Door Inside Handle Play Check (Refer to [P.42A-63](#)).
- Door Outside Handle Play Check (Refer to [P.42A-62](#)).
- Waterproof Film Installation (Refer to [P.42A-77](#)).
- Door Trim Assembly Installation (Refer to GROUP 52A – Door Trim [P.52A-11](#).)

<Front door>

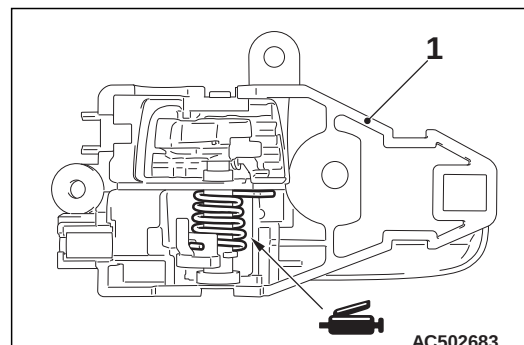


ACC03303AB



### Door inside handle removal

1. Door inside handle (Refer to GROUP 52A – Door Trim [P.52A-11](#))



ACB04907AB

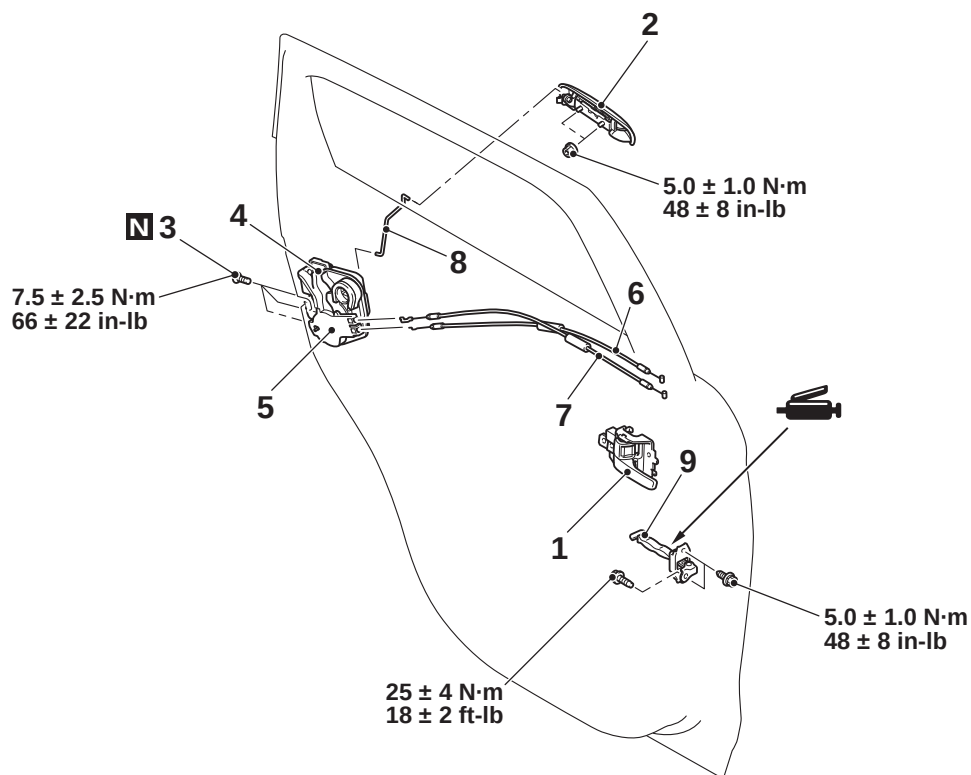
### Door outside handle removal steps

- Front lower sash (Refer to [P.42A-77](#))
- 2. Door outside handle

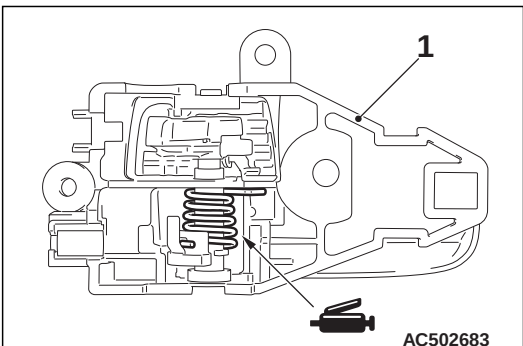
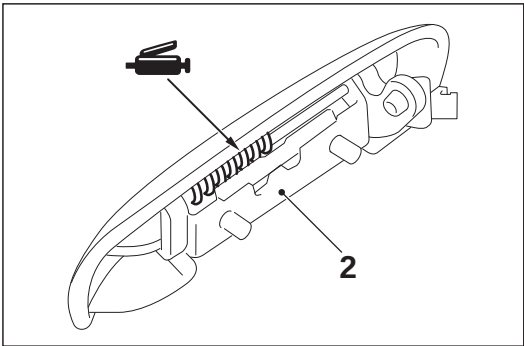
**Door latch assembly removal steps**

1. Door inside handle (Refer to GROUP 52A – Door Trim [P.52A-11](#))
  3. Retainer
  4. Door lock key cylinder <Driver's side (vehicles without keyless operation system), Passenger's side (vehicles with keyless operation system)>
  5. Screw
  - <<A>> 6. Door latch assembly
  - <<A>> 7. Door lock cover
  - >>C<< 8. Door inside lock cable
  - >>C<< 9. Door inside handle cable
  - >>B<< 10. Door outside handle rod
- Door check removal steps**
- Front door speaker (Refer to GROUP 54A – Speaker [P.54A-211](#))
  - >>A<< 11. Door check

&lt;Rear door&gt;



ACC03304 AB



ACB04907AB

- Door inside handle removal**
1. Door inside handle (Refer to GROUP 52A – Door Trim [P.52A-11](#))

**Door outside handle removal steps**

- Rear lower sash (Refer to [P.42A-77](#))
2. Door outside handle

<<A>>

<<A>>

>>C<<

>>C<<

**Door latch assembly removal steps**

1. Door inside handle
8. Screw
4. Door latch assembly
5. Door lock cover
6. Door inside lock cable
7. Door inside handle cable
8. Door outside handle rod

**Door check removal steps**

- Rear door speaker (Refer to GROUP 54A, Speaker [P.54A-211](#))
9. Door check

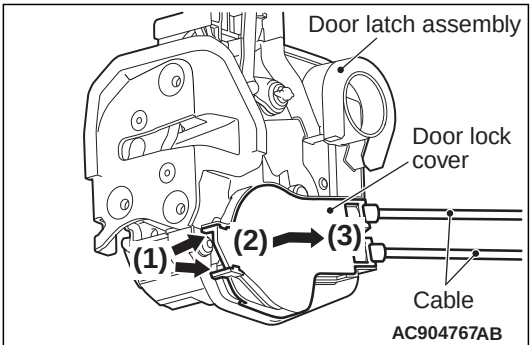
>>A<<

**REMOVAL SERVICE POINT**

**<<A>> DOOR LATCH ASSEMBLY/DOOR LOCK COVER REMOVAL**

Remove the door lock cover in the following procedures:

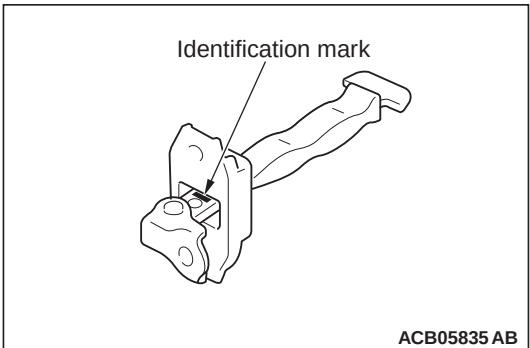
1. Release the upper and lower claws of the door lock cover by using a flat-tipped screwdriver.
2. Pull the cover out a little.
3. With the cover pulled out state, slide it toward cabled side and remove it from the door latch assembly.



**INSTALLATION SERVICE POINTS**

**>>A<< DOOR CHECK INSTALLATION**

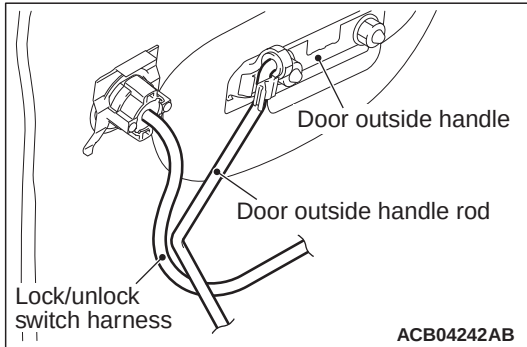
Install the door check with the following identification mark facing upward.



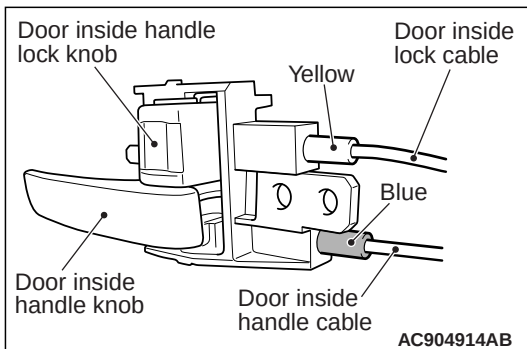
| Application |            | Identification mark |
|-------------|------------|---------------------|
| Front door  | Left door  | FL                  |
|             | Right door | FR                  |
| Rear door   | Left door  | RL                  |
|             | Right door | RR                  |

**>>B<< DOOR OUTSIDE HANDLE ROD  
INSTALLATION <Vehicles with keyless operation  
system>**

Install the door outside handle rod so that it is behind the lock/unlock switch wiring harness as shown.

**>>C<< DOOR INSIDE LOCK CABLE/ DOOR  
INSIDE HANDLE CABLE INSTALLATION**

Connect the door inside lock cable and door inside handle cable to the door inside handle according to the identification color marked on the cables as shown in the illustration.

**INSPECTION**

M1421007600989

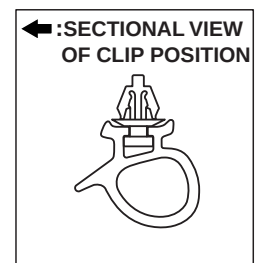
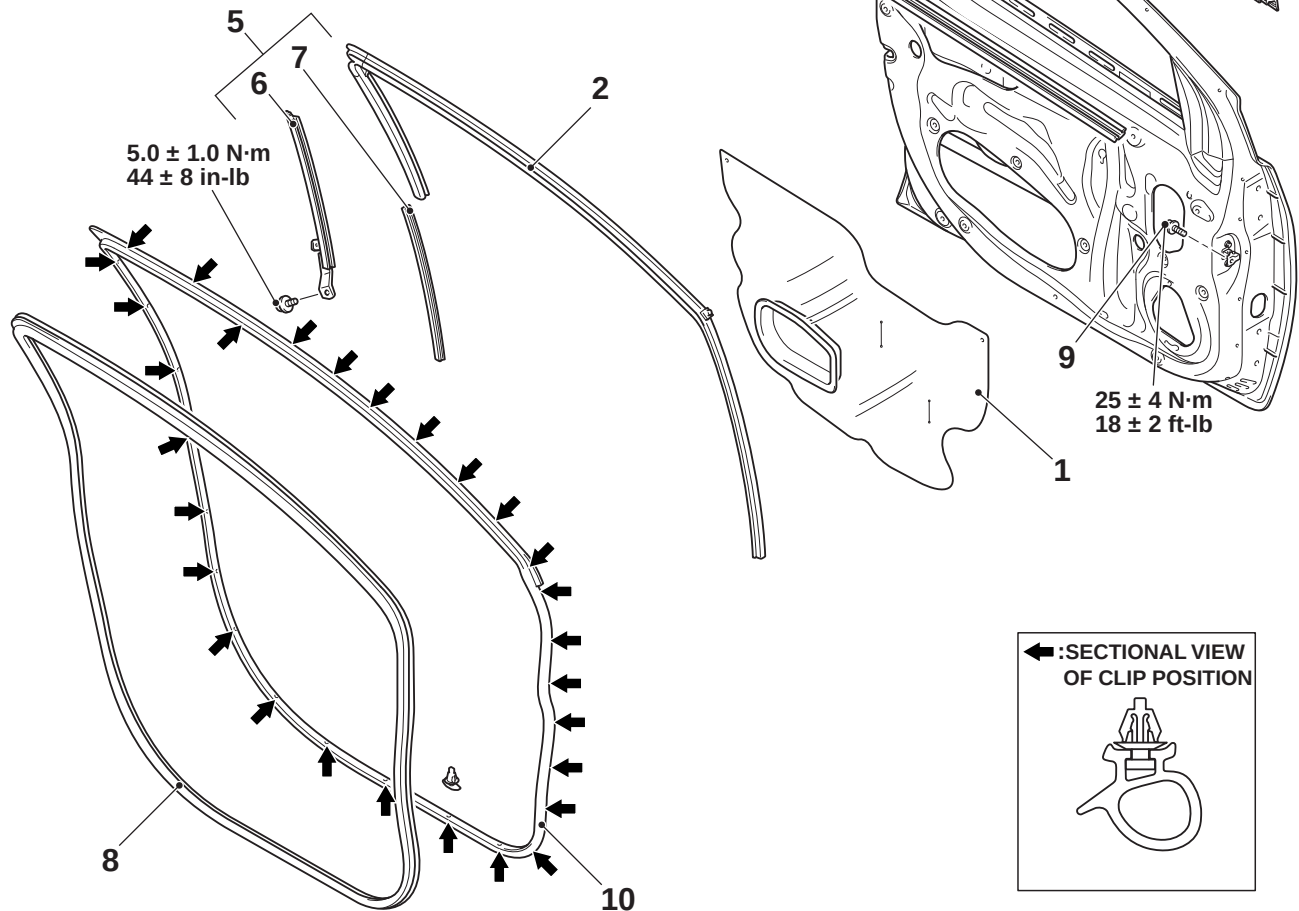
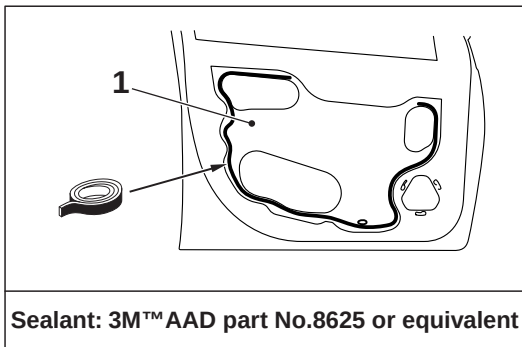
**DOOR LOCK ACTUATOR CHECK**

For the inspection of the door lock actuator, refer to Door Latch Assembly Inspection ([P.42A-58](#)).

# WINDOW GLASS RUNCHANNEL AND DOOR OPENING WEATHERSTRIP REMOVAL AND INSTALLATION

M1423003101925

<Front door>



ACC06792 AB

## Waterproof film removal steps

- Door trim assembly (Refer to GROUP 52A – Door Trim [P.52A-11](#))

>>A<<

## 1. Waterproof film Door window glass runchannel removal steps

- Door trim assembly (Refer to GROUP 52A – Door Trim [P.52A-11](#))
- 2. Door window glass runchannel

## Door beltline weatherstrip inner removal steps

- Door trim assembly (Refer to GROUP 52A – Door Trim [P.52A-11](#))
  - 3. Door beltline weatherstrip inner
- ## Door beltline molding removal steps
- Door mirror assembly (Refer to GROUP 51 – Door Mirror [P.51-68](#))
  - 4. Door beltline molding

**Front lower sash removal steps**

- Door trim assembly (Refer to GROUP 52A – Door Trim P.52A-11)

&gt;&gt;A&lt;&lt;

1. Waterproof film
5. Front lower sash assembly
6. Front lower sash
7. Door window glass runchannel rear

**Door opening weatherstrip inner removal steps**

- Cowl side trim and front scuff plate (Refer to GROUP 52A – Interior Trim P.52A-9)

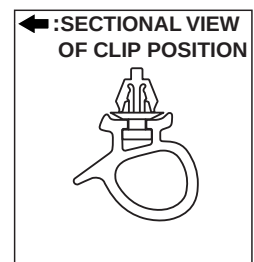
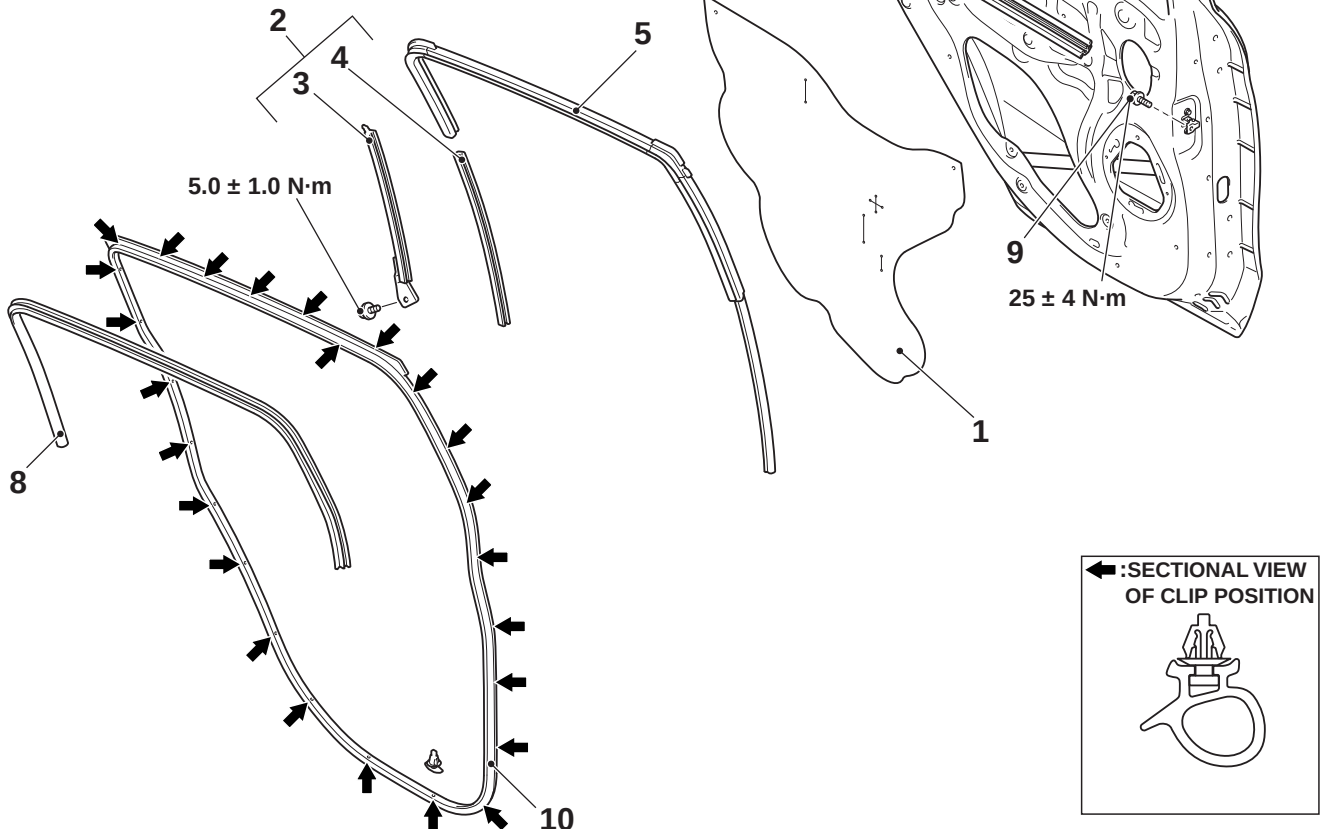
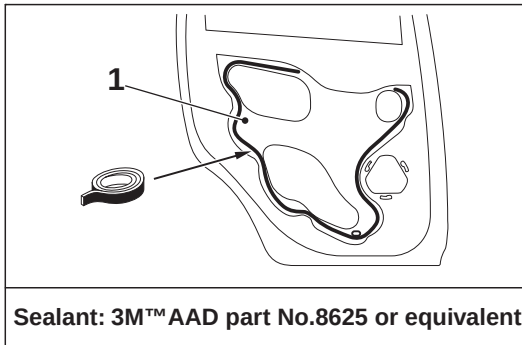
8. Door opening weatherstrip inner

**Door opening weatherstrip outer removal steps**

9. Door check connecting bolt
10. Door opening weatherstrip outer

&lt;&lt;A&gt;&gt;

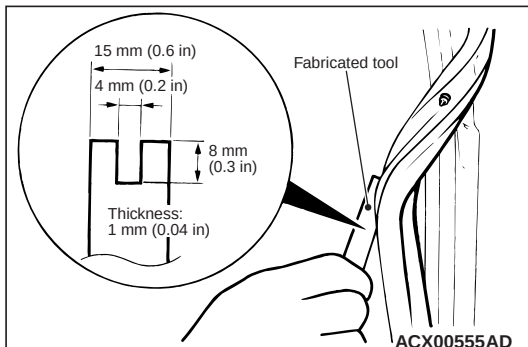
&lt;Rear door&gt;



ACC03306AB

- <<A>>

Make the tool as shown in the figure, and remove the weather-strip from the door panel.



## INSTALLATION SERVICE POINT

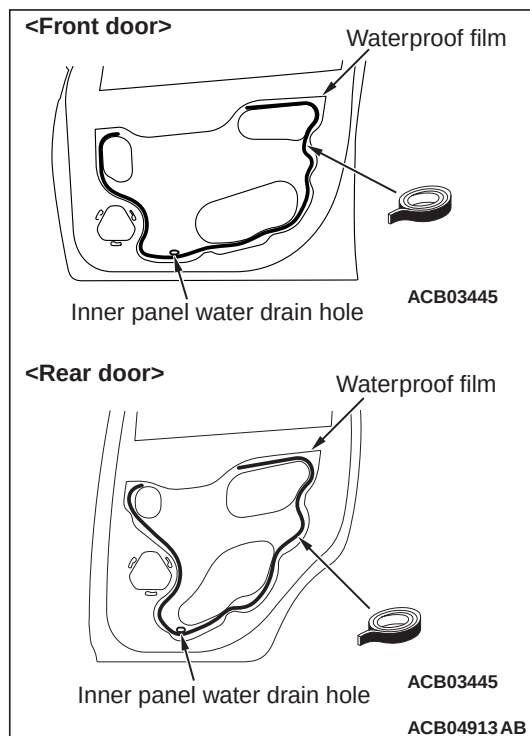
## &gt;&gt;A&lt;&lt; WATERPROOF FILM INSTALLATION

**⚠ CAUTION**

When a waterproof film is applied, guide the butyl rubber tape under the inner panel drain hole.

Apply the specified adhesive to the water-proof film as shown in the figure and stick the film.

**Specified sealant: 3M™ AAD Part No.8625 or equivalent**



## LIFTGATE

## SERVICE SPECIFICATION

M1424000300061

| Item                                 | Standard value                                     |
|--------------------------------------|----------------------------------------------------|
| Liftgate outside handle play mm (in) | 0.2 – 4.5 (0.01 – 0.18) [Target value: 2.3 (0.09)] |

## SEALANT

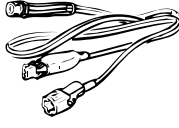
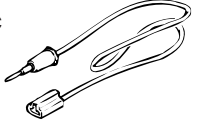
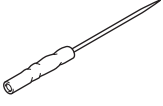
M1424000500203

| Item           | Specified sealant                                                                                                         | Remark      |
|----------------|---------------------------------------------------------------------------------------------------------------------------|-------------|
| Liftgate hinge | 3M™ AAD Part No. 8531 Heavy drip check sealer,<br>3M™ AAD Part No. 8646 Automotive joint and<br>seam sealer or equivalent | Body sealer |

## SPECIAL TOOLS

M1424000600642

| Tool              | Tool number and name                                                   | Supersession                        | Use                            |
|-------------------|------------------------------------------------------------------------|-------------------------------------|--------------------------------|
| <p>MB990925AH</p> | MB990925 Bearing and oil seal installer set<br>a. MB990939 Remover bar | MB990925-01 or General service tool | Adjustment of liftgate striker |

| Tool                                                                                                                                                                                                                                                                                                                                                                                                              | Tool number and name                                                                                                                                       | Supersession          | Use                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>a</p>  <p>b</p>  <p>c</p>  <p>d</p>  <p><b>DO NOT USE</b><br/>MB991223</p> | <p>MB991223 Harness set</p> <p>a. MB991219 Test harness</p> <p>b. MB991220 LED harness</p> <p>c. MB991221 LED harness adapter</p> <p>d. MB991222 Probe</p> | General service tools | <p>Measurement of terminal voltage and resistance</p> <p>a. Connector pin contact pressure inspection</p> <p>b. Power circuit inspection</p> <p>c. Power circuit inspection</p> <p>d. Commercial tester connection</p> |
|  <p>MB992006</p>                                                                                                                                                                                                                                                                                                                 | MB992006 Extra fine probe                                                                                                                                  | -                     | Measurement of terminal voltage and resistance                                                                                                                                                                         |

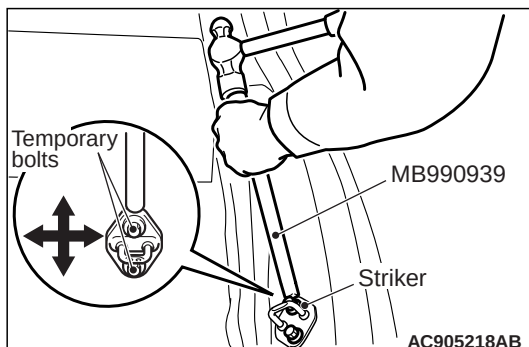
## ON-VEHICLE SERVICE

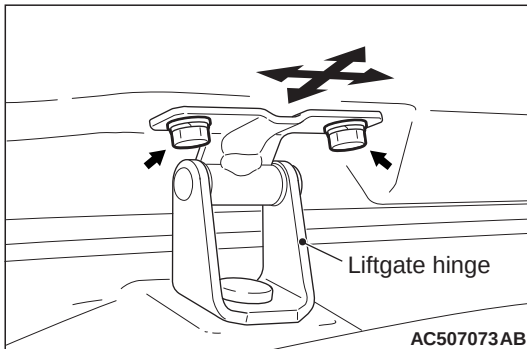
### LIFTGATE ALIGNMENT

M1424000900579

### ADJUSTMENT OF ENGAGEMENT BETWEEN STRIKER AND LATCH

1. Remove the rear end trim (Refer to GROUP 52A – Interior Trims [P.52A-9](#)).
2. Replace the striker mounting screws with temporary bolts, and use the remover bar (special tool: MB990939) and a hammer to tap the temporary bolt to the desired direction.
3. Tighten the striker mounting screws.  
**Tightening torque: 20 ± 5 N·m (15 ± 3 ft-lb)**
4. Install the rear end trim (Refer to GROUP 52A – Interior Trims [P.52A-9](#)).



**ADJUSTMENT OF CLEARANCE BETWEEN  
LIFTGATE AND BODY**

1. Loosen the liftgate hinge mounting bolts to adjust the clearance between the liftgate and body.
2. Tighten the liftgate hinge mounting bolts.

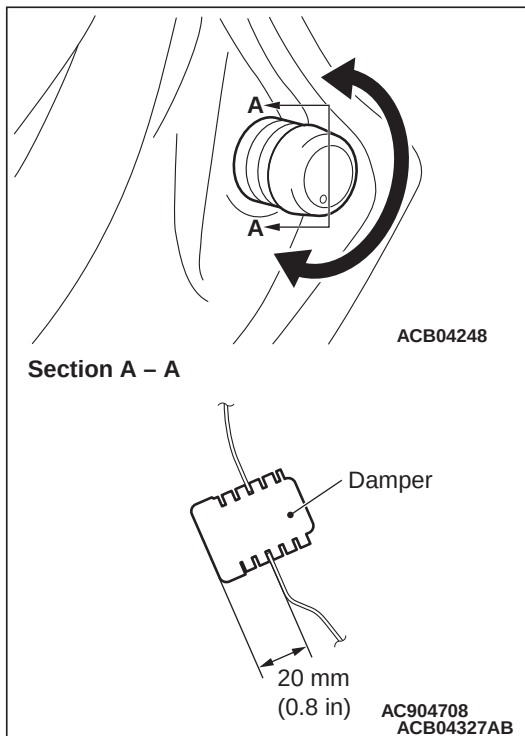
**Tightening torque:  $8.0 \pm 2.0$  N·m ( $71 \pm 17$  in-lb)**

**ADJUSTMENT OF LIFTGATE HEIGHT**

M1424003500451

Rotate the damper by using the arrow mark on the damper as a guide to adjust the liftgate height. The damper height is altered by roughly 3.2 mm (0.13 inches) when it is rotated once.

*NOTE: If a rattling noise is heard due to the vibration of the liftgate when the vehicle is being driven, adjust the damper height until the damper is seated on the vehicle body. The damper should be seated on the vehicle body regardless of a rattling noise.*



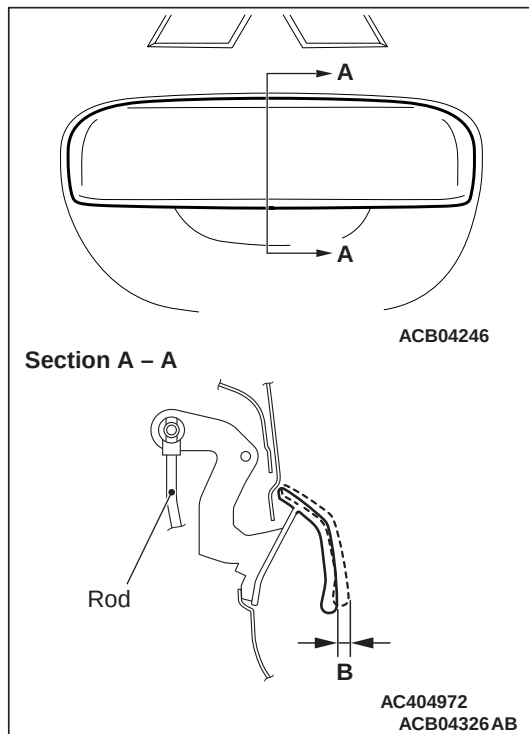
## LIFTGATE OUTSIDE HANDLE PLAY CHECK

M1424002400310

1. Check the liftgate outside handle play.

**Standard value (B): 0.2 – 4.5 mm (0.01 – 0.18 in) [Target value: 2.3 mm (0.09 in)]**

2. If it deviates from the standard value, remove the liftgate trim (Refer to GROUP 52A, Liftgate Trim [P.52A-14](#)).
3. If the liftgate outside handle play is not within the standard value range, check the liftgate outside handle or the liftgate latch assembly. Replace if necessary.



## LIFTGATE

## REMOVAL AND INSTALLATION

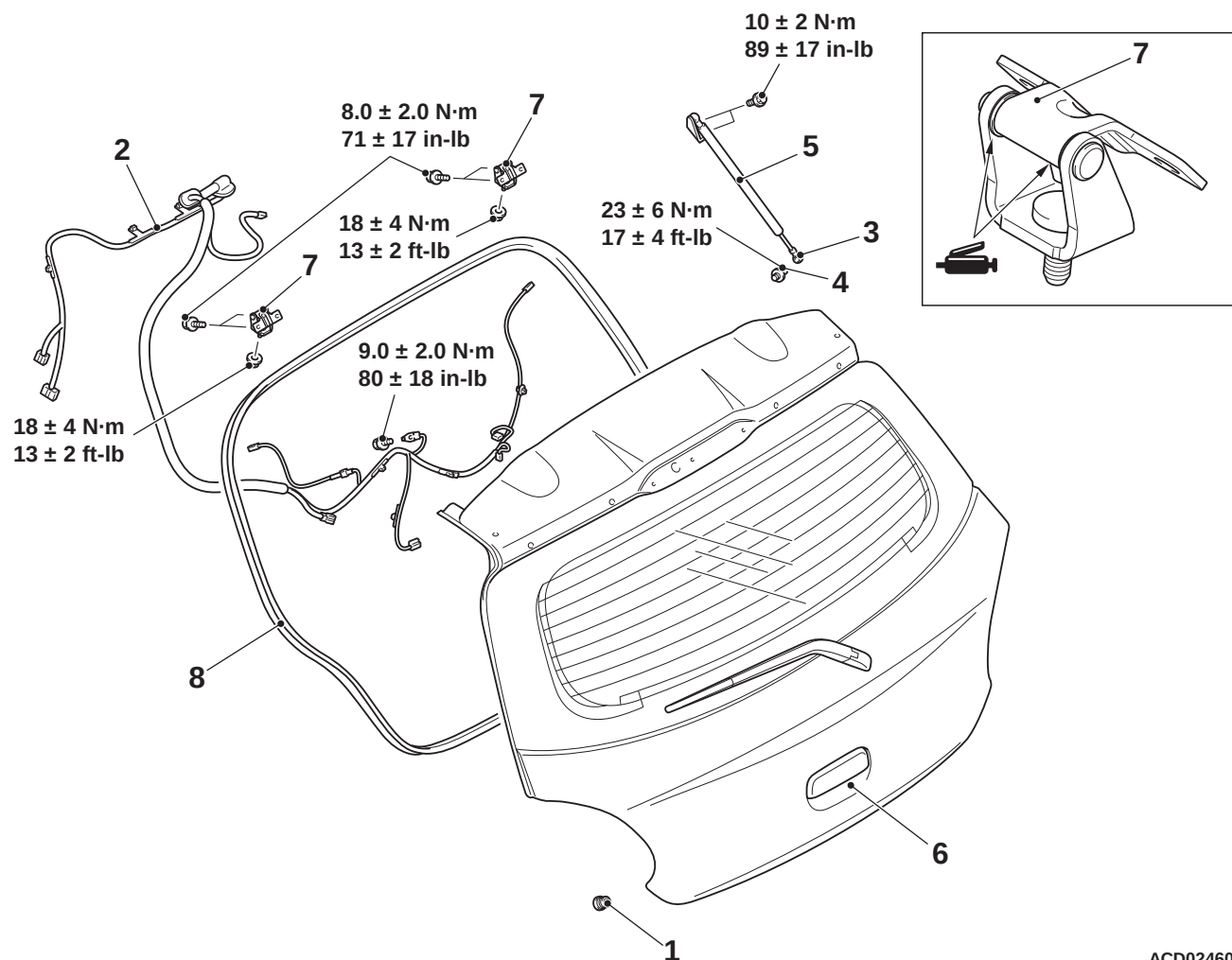
M1424001100952

**Pre-removal operation**

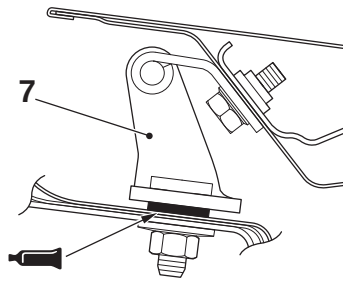
- Liftgate Spoiler Assembly Removal <Vehicles with Liftgate Spoiler> (Refer to GROUP 51 – Liftgate Spoiler [P.51-16](#)).
- Liftgate Trim Removal (Refer to GROUP 52A – Liftgate Trim [P.52A-14](#)).
- Rear Washer Hose Removal (Refer to GROUP 51 – Rear Wiper and Washer [P.51-53](#)).

**Post-installation operation**

- Liftgate Alignment (Refer to [P.42A-81](#)).
- Adjustment of Liftgate Height (Refer to [P.42A-82](#)).
- Rear Washer Hose Installation (Refer to GROUP 51 – Rear Wiper and Washer [P.51-53](#)).
- Liftgate Trim Installation (Refer to GROUP 52A – Liftgate Trim [P.52A-14](#)).
- Liftgate Spoiler Assembly Installation <Vehicles with liftgate spoiler> (Refer to GROUP 51 – Liftgate Spoiler [P.51-16](#)).



ACD02460AD



AC904412

Adhesive: 3M™ AAD Part No.8531 Heavy Drip Check Sealer, 3M™ AAD Part No. 8646 Automotive Joint and Seam Sealer or equivalent

AC904585AE

#### Liftgate assembly removal steps

<<A>> >>C<<  
<<B>>

1. Damper
2. Liftgate harness
3. Liftgate gas spring connection
4. Ball joint
5. Liftgate gas spring assembly
6. Liftgate assembly

#### Liftgate hinge removal steps

- Headlining (Refer to GROUP 52A – Headlining [P.52A-15](#))

>>B<<

7. Liftgate hinge

#### Liftgate opening weatherstrip removal

>>A<<

8. Liftgate opening weatherstrip

## REMOVAL SERVICE POINTS

### <<A>> LIFTGATE HARNES REMOVAL

Follow the steps below as the rear defogger connector cannot be pulled out without removing the liftgate window glass:

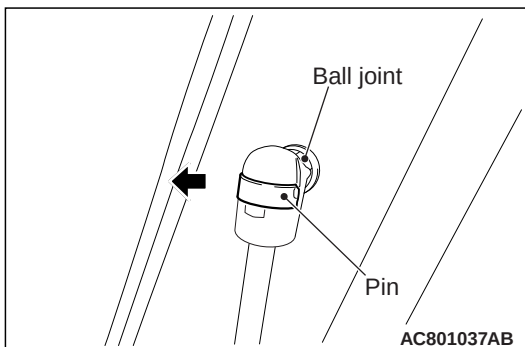
1. Cut the rear defogger wiring harness halfway.
2. Replace the liftgate wiring harness.

### <<B>> LIFTGATE GAS SPRING CONNECTION REMOVAL

#### ⚠ CAUTION

- Do not disassemble or throw the liftgate gas spring assembly into the fire.
- Before disposal, make a hole to remove the gas.
- Make sure that the piston rod should not collect any foreign particles.

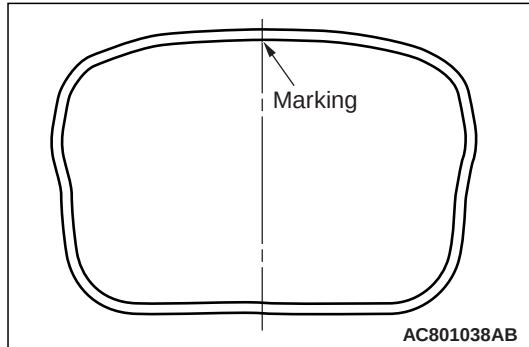
Slide the pin and remove the liftgate gas spring assembly from the ball joint in the direction of the arrow.



## INSTALLATION SERVICE POINTS

>>A<< LIFTGATE OPENING WEATHERSTRIP  
INSTALLATION

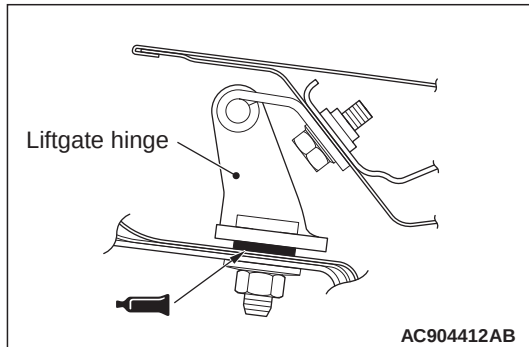
The marking on the liftgate opening weatherstrip should be positioned at the center of the body.



## &gt;&gt;B&lt;&lt; LIFTGATE HINGE INSTALLATION

Apply the specified sealant to the liftgate hinge mounting surface, and install the liftgate hinge.

**Specified Adhesive: 3M™ AAD Part No. 8531 Heavy drip check sealer, 3M™ AAD Part No. 8646 Automotive joint and seam sealer or equivalent**



## &gt;&gt;C&lt;&lt; LIFTGATE HARNES INSTALLATION

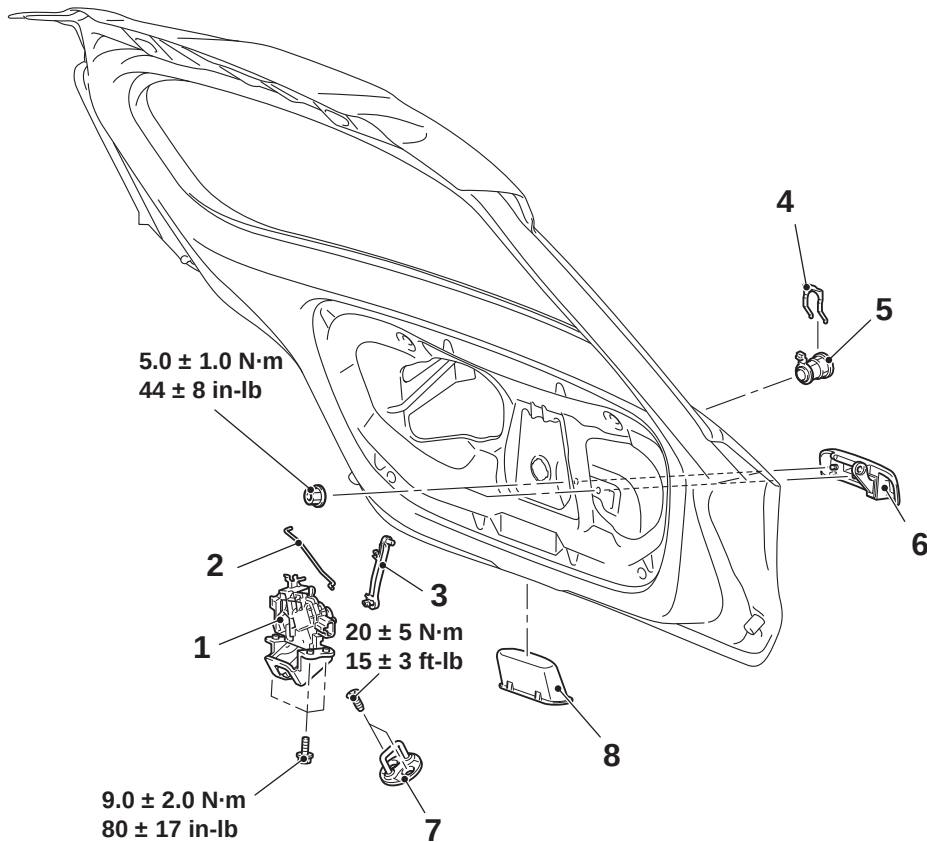
Repair the wiring harness by following the specified procedure.

## LIFTGATE HANDLE AND LATCH REMOVAL AND INSTALLATION

M1424001701054

### Post-installation Operation

- Liftgate Alignment (Refer to [P.42A-81](#)).



ACD02697AB

### Liftgate latch removal steps

- Liftgate trim (Refer to GROUP 52A – Liftgate Trims [P.52A-14](#))
- Rear wiper motor assembly (Refer to GROUP 51 – Rear Wiper and Washer [P.51-53](#))
- 1. Liftgate latch assembly
- 2. Liftgate lock rod
- 3. Liftgate open rod

### Lock key cylinder <Vehicles without keyless entry system> removal steps

- Liftgate trim (Refer to GROUP 52A – Liftgate Trims [P.52A-14](#))
- Rear wiper motor assembly (Refer to GROUP 51 – Rear Wiper and Washer [P.51-53](#))

### Lock key cylinder <Vehicles without keyless entry system> removal steps (Continued)

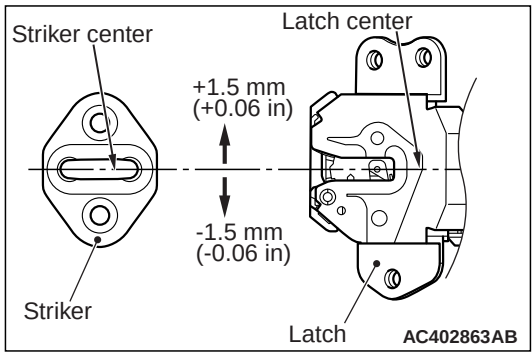
- 4. Retainer
- 5. Lock key cylinder
- Liftgate lock release handle removal steps**
  - Liftgate trim (Refer to GROUP 52A – Liftgate Trims [P.52A-14](#))
  - Rear wiper motor assembly (Refer to GROUP 51 – Rear Wiper and Washer [P.51-53](#))
- 6. Liftgate lock release handle
- Striker removal**
  - 7. Striker
- Pull handle removal**
  - 8. Pull handle

>>A<<

INSTALLATION SERVICE POINT

>>A<< STRIKER INSTALLATION

Install the striker so that the striker center does not deviate more than  $\pm 1.5$  mm (0.06 inches) from the latch center.

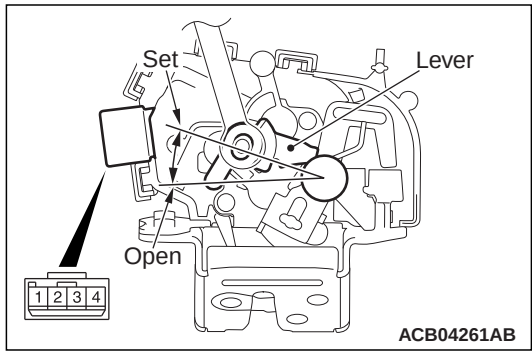


INSPECTION

M1424001200562

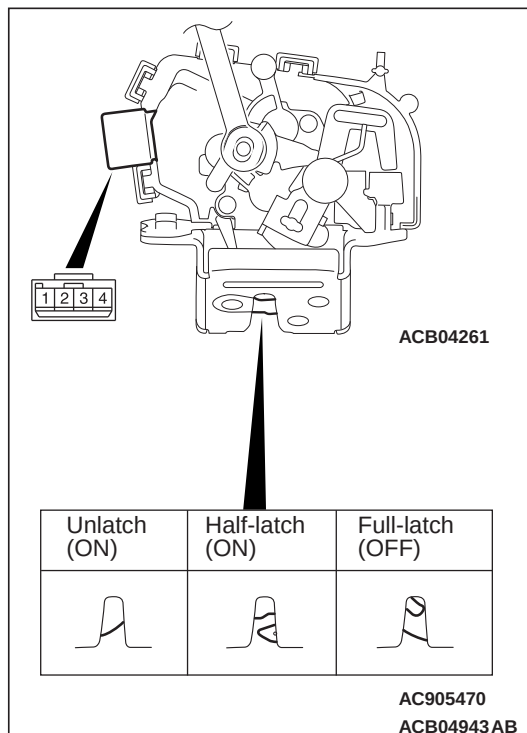
LIFTGATE LOCK ACTUATOR CHECK

ACTUATOR OPERATION CHECK



| Lever position         | Battery connection                                                                                                                                                           | Lever operation                                                 |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| At the "SET" position  | <ul style="list-style-type: none"> <li>Connect terminal No.3 and the negative battery terminal.</li> <li>Connect terminal No.4 and the positive battery terminal.</li> </ul> | The lever moves from the "SET" position to the "OPEN" position. |
| At the "OPEN" position | <ul style="list-style-type: none"> <li>Connect terminal No.4 and the negative battery terminal.</li> <li>Connect terminal No.3 and the positive battery terminal.</li> </ul> | The lever moves from the "OPEN" position to the "SET" position. |

### LIFTGATE LATCH SWITCH CHECK



| Claw position                    | Terminal number | Normal value                          |
|----------------------------------|-----------------|---------------------------------------|
| Unlatch (ON)/<br>Half-latch (ON) | 1 – 2           | Continuity exists<br>(2 ohms or less) |
| Full-latch (OFF)                 | 1 – 2           | No continuity                         |

## KEYLESS ENTRY SYSTEM <Vehicles without Keyless operation system>

### KEYLESS ENTRY SYSTEM DIAGNOSIS

#### DIAGNOSIS TROUBLESHOOTING FLOW

M1428001500093

Refer to GROUP 00, Contents of Troubleshooting [P.00-6](#).

### TROUBLE SYMPTOM CHART

M1428001800317

| Symptom                                                                                                      | Inspection procedure number | Reference page           |
|--------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------|
| Keyless entry system does not work.                                                                          | 1                           | <a href="#">P.42A-90</a> |
| Keyless entry hazard light answerback function or the dome light answerback function does not work normally. | 2                           | <a href="#">P.42A-92</a> |
| The timer lock function does not work after the doors have been unlocked by the keyless entry system.        | 3                           | <a href="#">P.42A-93</a> |
| Power door locks with selective unlocking does not work.                                                     | 4                           | <a href="#">P.42A-94</a> |

---

## SYMPTOM PROCEDURES

---

### Inspection Procedure 1: Keyless entry system does not work.

---

#### CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

#### OPERATION

The lock/unlock signals from the transmitter are received by ETACS-ECU. When ETACS-ECU receives signals from the key reminder switch and all the door switches, ETACS-ECU actuates the keyless entry system.

#### PROBABLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the door switches
- Malfunction of the liftgate switch
- Malfunction of the transmitter
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

#### DIAGNOSIS

---

##### STEP 1. Using scan tool MB991958, DTC check.

Check that ETACS-ECU sets a diagnostic trouble code.

##### Q: Is the diagnostic trouble code set?

**YES** : Refer to GROUP 54A, Diagnostic Trouble Code Chart [P.54A-218](#).

**NO** : Go to Step 2.

---

##### STEP 2. Check the power supply circuit.

When the ignition switch is turned to the "LOCK" (OFF) position, check if the hazard warning light illuminate.

##### Q: Is the check result normal?

**YES** : Go to Step 3.

**NO** : Refer to GROUP 54A, Inspection Procedure A-1 "Check the battery power supply circuit to the ETACS-ECU [P.54A-237](#)."

---

##### STEP 3. Check the operation of the central door locking system.

Check that the central door locking system works normally.

##### Q: Is the check result normal?

**YES** : Go to Step 4.

**NO** : Refer to Trouble symptom chart [P.42A-28](#).

**STEP 4. Using scan tool MB991958, check data list.**

Check for the signals related to the keyless entry system operation.

- Turn the ignition switch to the "LOCK" (OFF) position.
- Remove the ignition key from the ignition key cylinder.
- Close the driver's door.
- Close the front passenger's doors.
- Close the RH-side rear door.
- Close the LH-side rear door.
- Close the liftgate.

| Item No. | Item name                   | Normal condition |
|----------|-----------------------------|------------------|
| 19       | Driver's door switch        | OFF              |
| 20       | Driver's door unlock switch | ON→OFF           |
| 21       | Driver's door lock switch   | OFF→ON           |
| 28       | Steering lock switch        | OFF              |
| 48       | Passenger's door switch     | OFF              |
| 49       | Rear door switch            | OFF              |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**

**YES (Normal conditions are displayed for all the items.)** : Go to Step 5.

**NO (Normal condition is not displayed for item No. 19.)** : Refer to GROUP 54A, Inspection Procedure 5 "The front door switch (driver's side) signal is not received [P.54A-244](#)".

**NO (Normal condition is not displayed for item No. 20, 21.)** : Refer to GROUP 54A, Inspection Procedure 4 "The front door lock actuator (driver's side) signal is not received [P.54A-243](#)".

**NO (Normal condition is not displayed for item No. 28.)** : Refer to GROUP 54A – Inspection Procedure 3: "The key reminder switch signal is not received [P.54A-242](#)".

**NO (Normal condition is not displayed for item No. 48.)** : Refer to GROUP 54A, Inspection Procedure 6 "The front door switch (passenger's side) signal is not received. [P.54A-245](#)".

**NO (Normal condition is not displayed for item No. 49.)** : Refer to GROUP 54A, Inspection Procedure 7 "One of the door switch signals (including the liftgate latch switch) is not received

[P.54A-246](#)".

**STEP 5. Retest the system.**

Check the keyless entry system works normally.

**Q: Is the check result normal?**

**YES** : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO** : Replace the ETACS-ECU.

---

**Inspection Procedure 2: Keyless entry hazard light answerback function or the dome light answerback function does not work normally.**

---

**⚠ CAUTION**

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

**COMMENTS ON TROUBLE SYMPTOM**

If the hazard warning light and the dome light work normally, the ETACS-ECU may be defective.

Alternatively, it is possible that the keyless entry hazard light answerback function was disabled by the customize function.

**PROBABLE CAUSES**

- Defective hazard warning light
- Malfunction of the dome light
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSIS**

---

**STEP 1. Check the operation of the hazard warning light.**

Check that the hazard warning light illuminates normally.

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to GROUP 54A, The hazard warning lights do not illuminate [P.54A-138](#).

---

**STEP 2. Check the operation of the dome light.**

Check that the dome light illuminates normally.

**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Refer to GROUP 54A, The front dome light does not illuminate normally [P.54A-125](#).

---

**STEP 3. Check the operation of the keyless entry system.**

If the keyless entry system is operated, check that the doors can be locked and unlocked normally.

**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Refer to Trouble symptom chart [P.42A-89](#).

---

**STEP 4. Check the customization function.**

Using the customization function, check that the number of flashings of hazard warning light is set to any of the followings other than "LOCK: 0/UNLOCK: 0".

- Lock 1 Unlock 2
- Lock 1 Unlock 0
- Lock 0 Unlock 2
- Lock 2 Unlock 1
- Lock 0 Unlock 1
- Lock 2 Unlock 0

**Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Enable the keyless entry hazard light answerback function by using the customization function (Refer to [P.42A-98](#)).

---

**STEP 5. Retest the system.**

Check that the keyless entry hazard light answerback function or the dome light answerback function works normally.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

**NO :** Replace the ETACS-ECU.

---

**Inspection Procedure 3: The timer lock function does not work after the doors have been unlocked by the keyless entry system.**

---

 **CAUTION**

**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**COMMENT ON TROUBLE SYMPTOM**

If the keyless entry timer lock does not work normally, the input signal circuit(s) to the keyless entry transmitter or the ETACS-ECU may be defective.

**PROBABLE CAUSES**

- Malfunction of the keyless entry transmitter
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSIS**

1. Check the operation of the keyless entry system.
2. Check the customize function.
3. Retest the system.

---

Inspection Procedure 4: Power door locks with selective unlocking does not work.

---

**⚠ CAUTION**

Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

**COMMENT ON TROUBLE SYMPTOM**

If the keyless entry function works normally and only the power door locks with selective unlocking does not work normally, ETACS-ECU may be defective. In addition, it is possible that the function has been disabled by using the customization function.

**PROBABLE CAUSES**

- Malfunction of ETACS-ECU
- Damaged wiring harness and connectors

**DIAGNOSIS**

---

**STEP 1. Check the customization**

**Q: Are the power door locks with selective unlocking enabled by the customization function?**

**YES :** Go to Step 2.

**NO :** Set the power door locks with selective unlocking to "Enabled" by using the customization function. Refer to [P.42A-98](#).

---

**STEP 2. Keyless entry system operation check**

Press the unlock switch of the transmitter and check that only the driver's door is unlocked. Then, press the unlock switch once again within 2 seconds after that to check that the front passenger's door, the rear doors and the liftgate are unlocked.

**Q: Does the keyless entry system work normally?**

**YES :** Go to Step 3.

**NO (Only the driver's door is not unlocked.) :** Replace the ETACS-ECU.

**NO (The driver's door, front passenger's door, rear doors and liftgate are not unlocked.) :** Refer to Inspection Procedure 1: "Keyless entry system does not work [P.42A-90](#)".

---

**STEP 3. Check of the troubles**

Check that the power door locks with selective unlocking works normally.

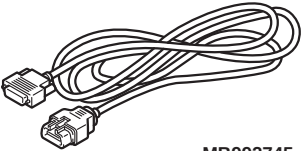
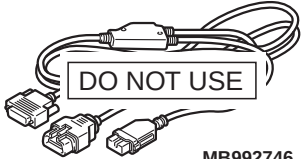
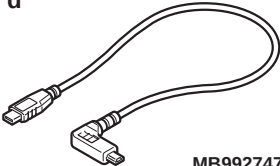
**Q: Is the check result normal?**

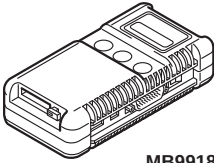
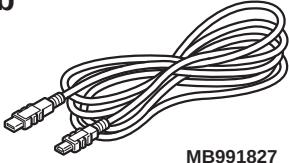
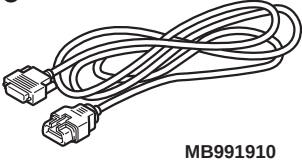
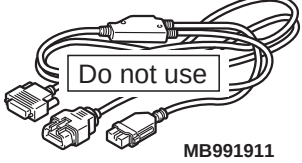
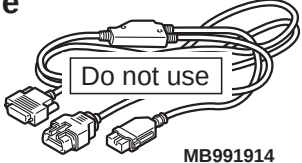
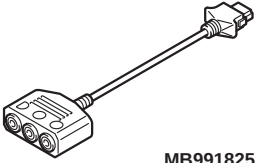
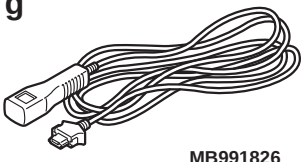
**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

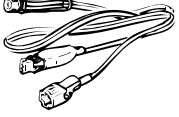
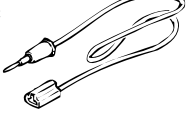
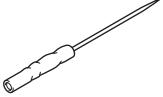
**NO :** Replace ETACS-ECU.

## SPECIAL TOOLS

M1428000600893

| Tool                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Tool number and name                                                                                                                                                                                                                                                                                                                                                    | Supersession | Application                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------|
| <p>a</p>  <p>MB992744</p> <p>b</p>  <p>MB992745</p> <p>c</p>  <p>MB992746</p> <p>d</p>  <p>MB992747</p> <p>e</p>  <p>MB992748<br/>ACB05421AB</p> | <p>a. MB992744<br/>b. MB992745<br/>c. MB992746<br/>d. MB992747<br/>e. MB992748</p> <p>a. Vehicle communication interface-Lite (V.C.I.-Lite)<br/>b. V.C.I.-Lite main harness A (for vehicles with CAN communication)<br/>c. V.C.I.-Lite main harness B (for vehicles without CAN communication)<br/>d. V.C.I.-Lite USB cable short<br/>e. V.C.I.-Lite USB cable long</p> | —            | DTC, service data and actuator test check. |

| Tool                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Tool number and name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Supersession                                                                                                                   | Application                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>a</b></p>  <p>MB991824</p> <p><b>b</b></p>  <p>MB991827</p> <p><b>c</b></p>  <p>MB991910</p> <p><b>d</b></p>  <p>MB991911</p> <p><b>e</b></p>  <p>MB991914</p> <p><b>f</b></p>  <p>MB991825</p> <p><b>g</b></p>  <p>MB991826</p> <p>MB991958</p> | <p>MB991958</p> <p>a: MB991824</p> <p>b: MB991827</p> <p>c: MB991910</p> <p>d: MB991911</p> <p>e: MB991914</p> <p>f: MB991825</p> <p>g: MB991826</p> <p>Scan tool (M.U.T.-III sub assembly)</p> <p>a: Vehicle communication interface (V.C.I.)</p> <p>b: M.U.T.-III USB cable</p> <p>c: M.U.T.-III main harness A (Vehicles with CAN communication system)</p> <p>d: M.U.T.-III main harness B (Vehicles without CAN communication system)</p> <p>e: M.U.T.-III main harness C (for Daimler Chrysler models only)</p> <p>f: M.U.T.-III measurement adapter</p> <p>g: M.U.T.-III trigger harness</p> | <p>MB991824-KIT</p> <p><i>NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.</i></p> | <p><b>⚠ CAUTION</b></p> <p>For vehicles with CAN communication, use M.U.T.-III main harness A to send simulated vehicle speed. If you connect M.U.T.-III main harness B instead, the CAN communication does not function correctly.</p> <p>Encrypted code registration</p> |

| Tool                                                                                                                                                                                                                                                                                                                                                                   | Tool number and name                                                                                                                   | Supersession          | Application                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     <p>DO NOT USE<br/>MB991223</p> | MB991223<br>Harness set<br>a: MB991219 Test harness<br>b: MB991220 LED harness<br>c: MB991221 LED harness adapter<br>d: MB991222 Probe | General service tools | Making voltage and resistance measurement during troubleshooting<br>a: Connector pin contact pressure inspection<br>b: Power circuit inspection<br>c: Power circuit inspection<br>d: Commercial tester connection |
|  <p>MB992006</p>                                                                                                                                                                                                                                                                      | MB992006<br>Extra fine probe                                                                                                           | —                     | Making voltage and resistance measurement during troubleshooting                                                                                                                                                  |

## ON-VEHICLE SERVICE

### KEYLESS ENTRY SYSTEM INSPECTION

M1428001400438

Check the system as described below. If the system does not work, carry out troubleshooting. Refer to [P.42A-89](#).

- Operate the transmitter to check that the doors can be locked and unlocked.
- Operate the transmitter to check when the door locking or unlocking operation is performed that the hazard warning light [lock: flash once, unlock: flash twice (default setting)] and dome light [lock: flash once, unlock: illuminates for 15 seconds (default setting)] answer back operates. Refer to [P.42A-98](#).

**NOTE:**

- The customization function allows you to change the answerback setting as follows. Prior to that check, confirm which setting is activated.
  - The hazard warning light flash once when locked and twice when unlocked (default setting).
  - The hazard warning light flash once when locked and do not flash when unlocked.
  - The hazard warning light do not flash when locked and flash twice when unlocked.
  - The hazard warning light do not flash when both locked and unlocked.

- The hazard warning light flash twice when locked and once when unlocked.
- The hazard warning light flash twice when locked and do not flash when unlocked.
- The hazard warning light do not flash when locked and flash once when unlocked.

## KEYLESS ENTRY SYSTEM TIMER LOCK FUNCTION INSPECTION

M1428004000536

Attempt to unlock the doors by using the transmitter. If the doors are not locked within 30 seconds, carry out troubleshooting. Note that the doors will not be locked if the ignition key is inserted within the 30-second period, one of the doors is opened, or the keyless entry function is triggered. Refer to [P.42A-89](#).

*NOTE: The customize function allows you to change the keyless entry system timer lock period from 30 seconds (initial setting) to 60, 120 or 180 seconds. Prior to the check, confirm which setting is activated. Refer to [P.42A-98](#).*

## HOW TO REGISTER ENCRYPTED CODE

M1428001001217

For the details of key registration procedure, refer to the ID registration procedure manual.

## CUSTOMIZATION FUNCTION

M1428005500244

By operating the scan tool MB991958 ETACS system, the following functions can be customized. The programmed information is held even when the battery is disconnected.

| Adjustment item (scan tool MB991958 display) | Adjustment item                                                           | Adjusting content (scan tool MB991958 display) | Adjusting content                                           |
|----------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------|
| Hazard answer-back                           | Hazard light blink time of keyless entry hazard light answerback function | Lock 0 Unlock 0                                | No function                                                 |
|                                              |                                                                           | Lock 2 Unlock 0                                | LOCK: Flash twice, UNLOCK: No flash                         |
|                                              |                                                                           | Lock 0 Unlock 1                                | LOCK: No flash, UNLOCK: Flash once                          |
|                                              |                                                                           | Lock 2 Unlock 1                                | LOCK: Flash twice, UNLOCK: Flash once                       |
|                                              |                                                                           | Lock 0 Unlock 2                                | LOCK: No flash, UNLOCK: Flash twice                         |
|                                              |                                                                           | Lock 1 Unlock 0                                | LOCK: Flashes once, UNLOCK: No flash                        |
|                                              |                                                                           | Lock 1 Unlock 2                                | LOCK: Flashes once, UNLOCK: Flashes twice (Initial setting) |
| Auto fold mirror                             | Electric folding door mirror automatic unfolding function                 | Open Vehicle SPD                               | Vehicle speed-dependent operation (Initial setting)         |
|                                              |                                                                           | OP/CL IG/PWR SW                                | Electric motor switch linked operation                      |
|                                              |                                                                           | OPN/CLS Keyless                                | Keyless entry linked operation                              |
|                                              |                                                                           | Not Auto                                       | No synchronized operation                                   |

| Adjustment item (scan tool MB991958 display) | Adjustment item                                 | Adjusting content (scan tool MB991958 display) | Adjusting content                                        |
|----------------------------------------------|-------------------------------------------------|------------------------------------------------|----------------------------------------------------------|
| Auto-relock time                             | Timer lock period adjustment                    | 180 sec                                        | 180 seconds                                              |
|                                              |                                                 | 120 sec                                        | 120 seconds                                              |
|                                              |                                                 | 60 sec                                         | 60 seconds                                               |
|                                              |                                                 | 30 sec                                         | 30 seconds (Initial setting)                             |
| Multi mode RKE                               | Multi-mode keyless entry function customization | D-spec                                         | Door mirror fold/unfold operation only (Initial setting) |
|                                              |                                                 | not operate                                    | No function                                              |

## TRANSMITTER

### DISASSEMBLY AND ASSEMBLY

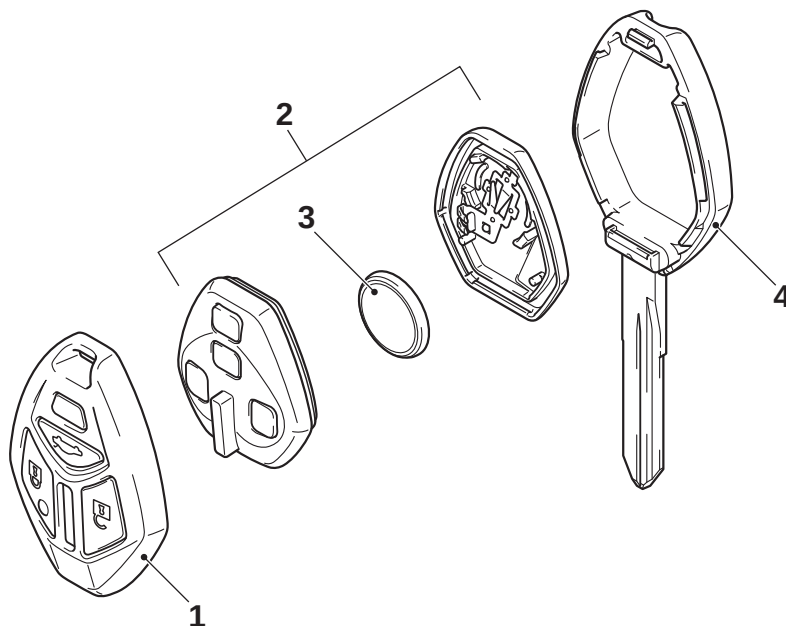
M1428002800525

#### **⚠ WARNING**

***Certain components of this vehicle, such as coin-type lithium battery may contain perchlorate materials. Before deployment and/or disposal of these components, review and comply with all applicable Federal, state and local regulations.***

#### Post-installation operation

- Transmitter operation check



AC405679AC

<<A>>

#### Disassembly steps

1. Upper cover
2. Transmitter assembly

<<B>>

>>A<<

#### Disassembly steps (Continued)

3. Battery
4. Master key

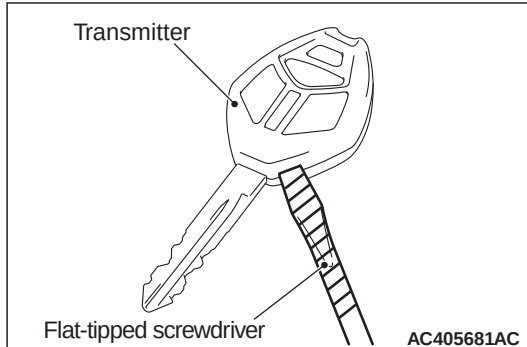
## DISASSEMBLY SERVICE POINTS

## &lt;&lt;A&gt;&gt; UPPER COVER REMOVAL

**⚠ CAUTION**

To prevent damage to the transmitter, wrap a flat-tipped screwdriver with protective tape before prying.

Insert a flat-tipped screwdriver in the area shown, and remove the upper cover by prying it with the screwdriver.

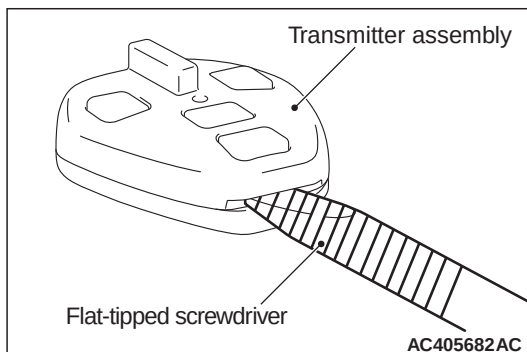


## &lt;&lt;B&gt;&gt; BATTERY REMOVAL

**⚠ CAUTION**

- Do not allow water or dust to enter the inside of the transmitter assembly when it is open. Also, do not touch the precision electronic device.
- To prevent damage to the transmitter assembly, wrap a flat-tipped screwdriver with protective tape before prying.

Insert a flat-tipped screwdriver in the area shown, and remove the battery by prying it with the screwdriver.



## ASSEMBLY SERVICE POINT

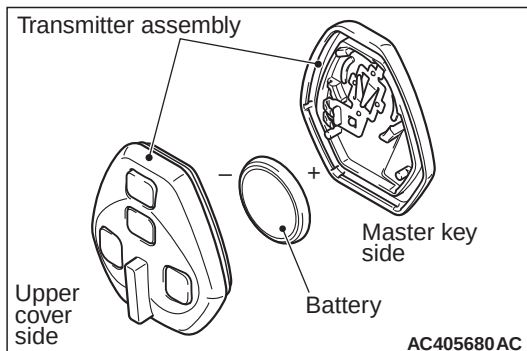
## &gt;&gt;A&lt;&lt; BATTERY INSTALLATION

**⚠ CAUTION**

Do not allow water or dust to enter the inside of the transmitter assembly when it is open. Also, do not touch the precision electronic device.

Install a new battery to the transmitter assembly with its (+) side facing towards the master key side.

**Battery required for replacement: Coin type battery CR1620**



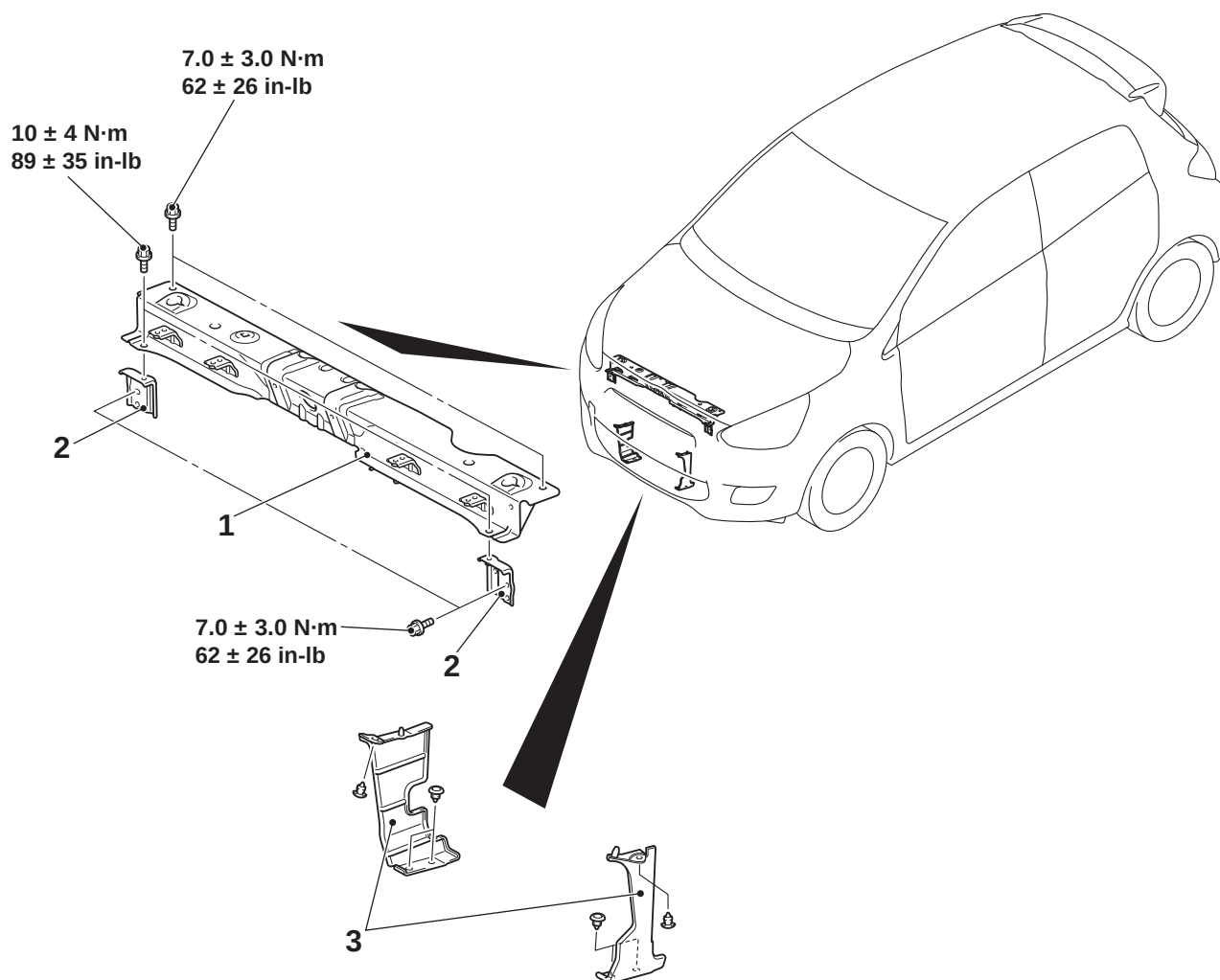
## LOOSE PANEL

### REMOVAL AND INSTALLATION

M1421003101372

#### ⚠ CAUTION

- Disconnect the battery (–) terminal and wait for 60 seconds or more before starting work. Insulate the disconnected (–) terminal by wrapping a tape.
- Handle the front impact sensor with sufficient caution, and do not drop the sensor or allow contact with water, oil, or others. If a dent, crack, deformation and others are discovered, replace it with a new one.



ACD00049AB

#### Headlight support panel upper removal steps

- Front bumper assembly (Refer to GROUP 51 – Front Bumper Assembly and Radiator Griller [P.51-3](#))
- Hood latch, hood lock release cable (front side) and damper (Refer to GROUP 42A – Hood [P.42A-6](#))

#### Headlight support panel upper removal steps (Continued)

- Front impact sensor (Refer to GROUP 52B – Front Impact Sensor [P.52B-226](#))
- 1. Headlight support panel upper
- Headlight assembly (Refer to GROUP 54A – Headlight [P.54A-98](#))
- 2. Headlight support bracket

**Air guide side panel removal**

- Front bumper assembly (Refer to GROUP 51 – Front Bumper Assembly and Radiator Grille [P.51-3](#))
- 3. Air guide side panel