

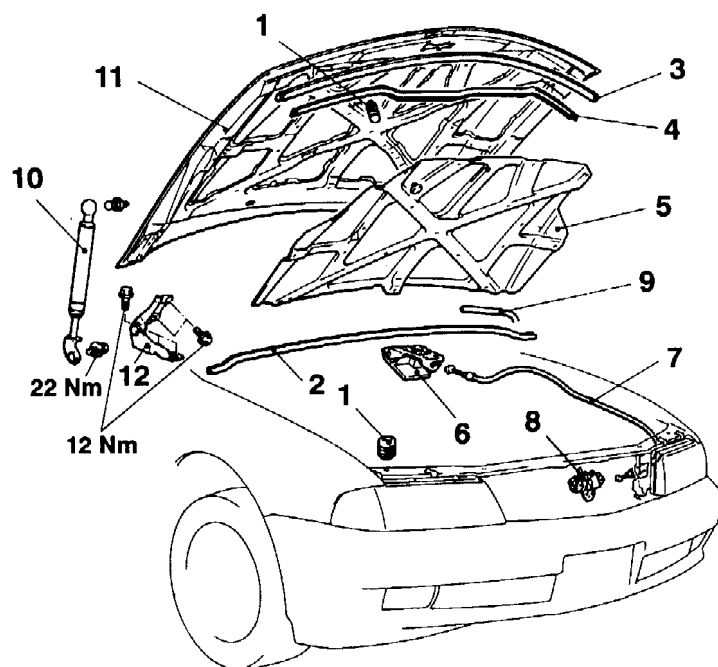
# BODY

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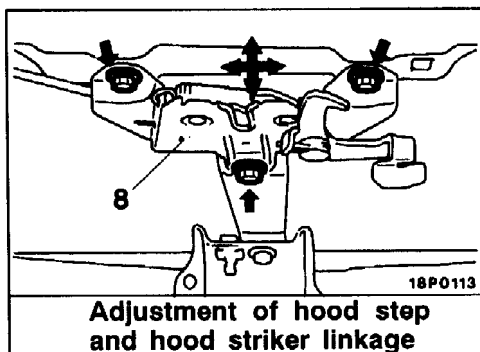
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# HOOD

## REMOVAL AND INSTALLATION

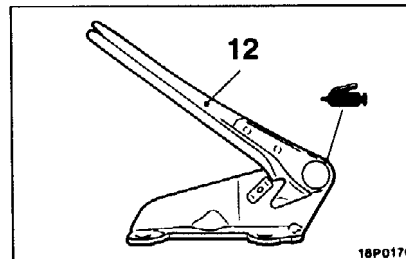


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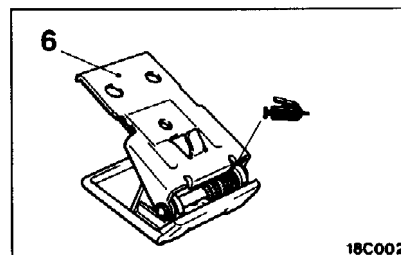


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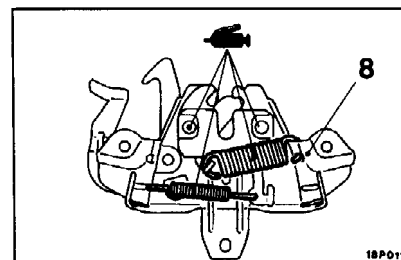
**Adjustment of hood step and hood striker linkage**



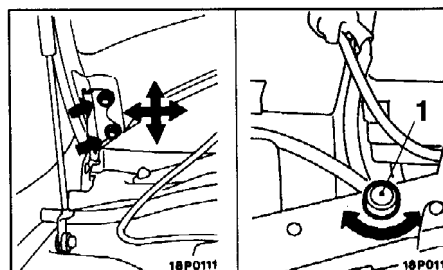
18P0170



18C0021



18P0114



**Adjustment of clearance around hood and height**

18AE011N



1. Bumper
2. Hood weatherstrip
3. Hood front weatherstrip
4. Hood weatherstrip
5. Hood silencer
6. Lock release handle

### Hood lock release cable removal steps

- Splash shield (Refer P.42-8)
- 7. Hood lock release cable

### Hood latch removal steps

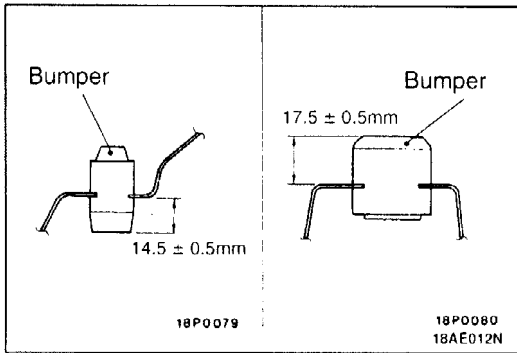
- Radiator grille (Refer Group 51-Grille)
- 8. Hood latch

### Hood and hinges removal steps

9. Washer tube connection
10. Hood gas spring
11. Hood
12. Hood hinge

### Caution:

1. Do not disassemble or dispose of the hood gas spring in a fire.
2. Before disposing of the hood gas spring, punch a hole to release the gas.

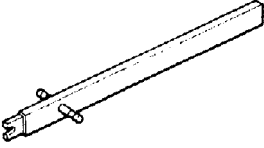


**INSTALLATION SERVICE POINT**

**►A◄ BUMPER INSTALLATION**

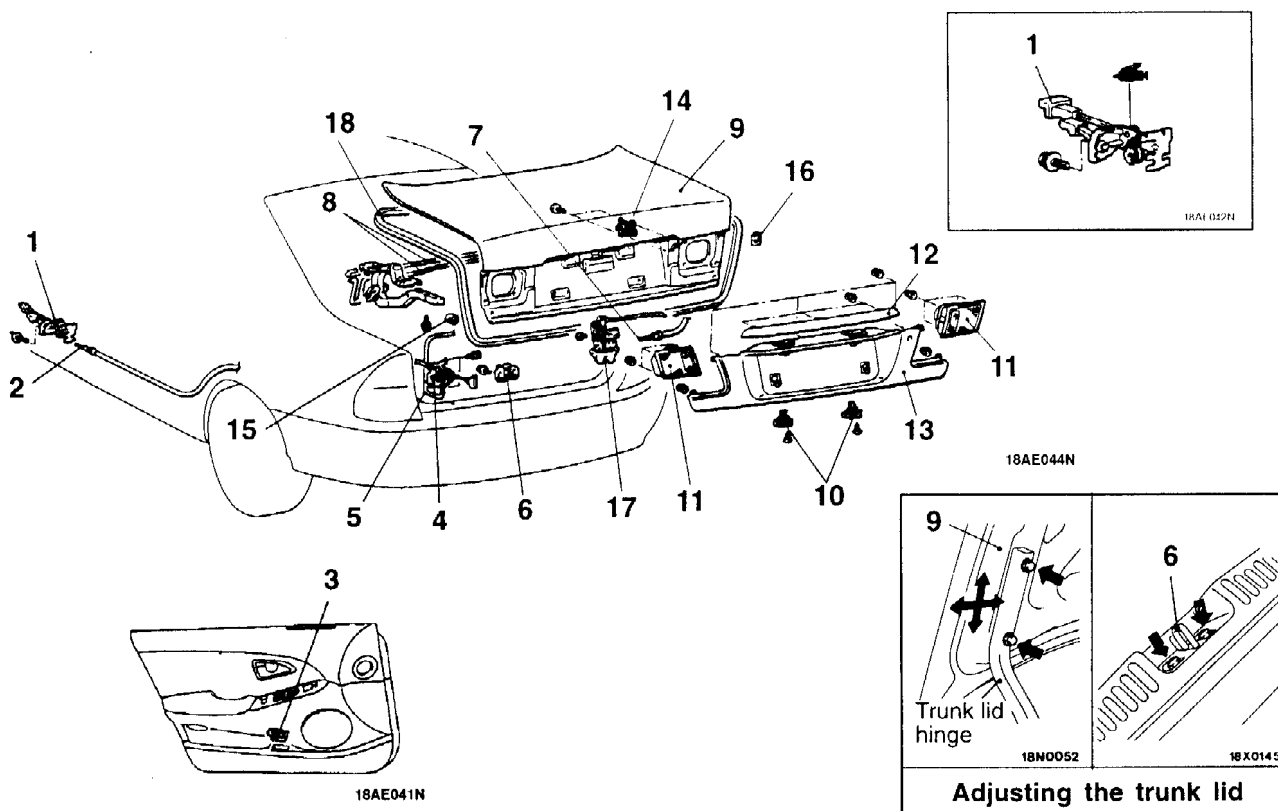
Install the bumper as shown in the diagram.

**TRUNK LID****SPECIAL TOOLS**

Tool	Number	Name	Use
	MB991244	Torsion bar remover and installer	Removal and installation of trunk lid torsion bar

# TRUNK LID

## REMOVAL AND INSTALLATION



18AE045N

### Trunk lid release cable and lid lock release handle (wire-type opener) removal steps

- Front seat (driver side) (Refer Group 52A)
- Rear seat (Refer Group 52A)
- Front scuff plate (LH) (Refer Group 52A-Trim)
- centre pillar lower trim A (LH) (Refer Group 52A)
- Rear scuff plate (LH) (Refer Group 52A-Trim)
- Trunk rear trim cover (Refer Group 52A)
- Trunk rear centre trim (Refer Group 52A)
- Trunk rear side trim (LH) (Refer Group 52A)
- Trunk side trim (LH) (Refer Group 52A)
- 1. Lid lock release handle
- 2. Trunk lid release cable

### Electric trunk lid release cable removal steps

- Trunk rear side trim (LH) (Refer Group 52A)
- Trunk lid trim (Refer Group 52A)
- 3. Trunk lid and fuel filler door opening switch

- 4. Trunk lid and fuel filler door opener actuator
- 5. Trunk lid release cable

### Trunk lid striker removal steps

- Trunk rear trim cover (Refer Group 52A)
- 6. Trunk lid striker

### Trunk lid removal steps

- Trunk lid trim (Refer Group 52A)
- Rear lid harness connection
- 7. Trunk lid release cable connection
- 8. Trunk lid torsion bar
- 9. Trunk lid panel assembly
- 10. Licence plate lamp
- 11. Rear lid lamp
- 12. Rear panel upper garnish
- 13. Rear panel lower garnish
- 14. Trunk lid lock cylinder
- 15. Bumper
- 16. Bumper

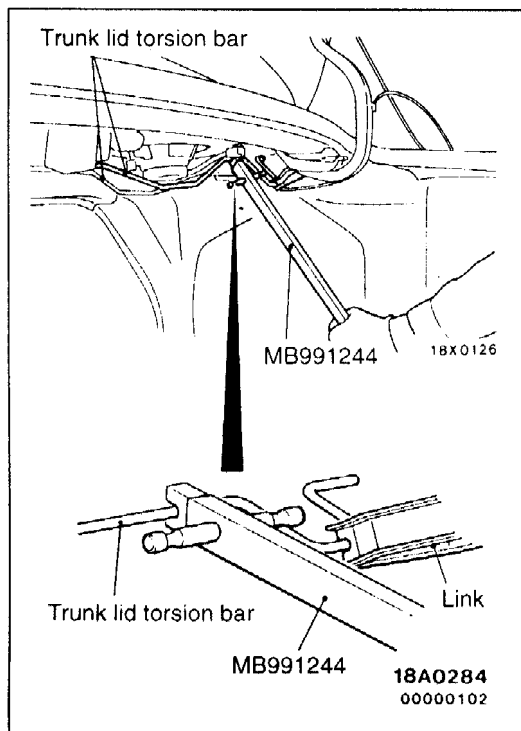
### Trunk lid latch removal steps

- Trunk lid trim (Refer Group 52A)
- 17. Trunk lid latch assembly

### Trunk lid weatherstrip removal

- ▶A◀ 18. Trunk lid weatherstrip





## REMOVAL SERVICE POINT

### ◀A▶ TRUNK LID TORSION BAR REMOVAL

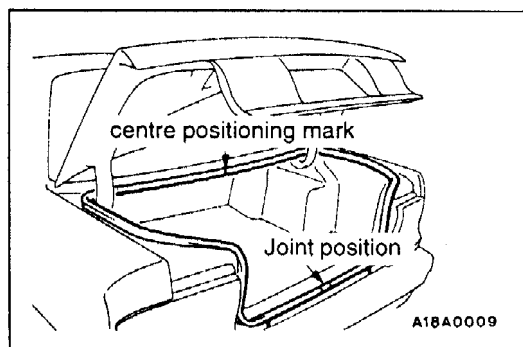
1. Disconnect the body harness and the harness connector of the rear shelf lower panel.
2. Attach the special tool to the link side of the torsion bar as shown in the figure, and push downwards to remove the torsion bar from the link.

#### NOTE

When removing the torsion bars, the left and right torsion bars cross at the centre, so the bar that is towards you at the crossed section should be removed first.

#### Caution

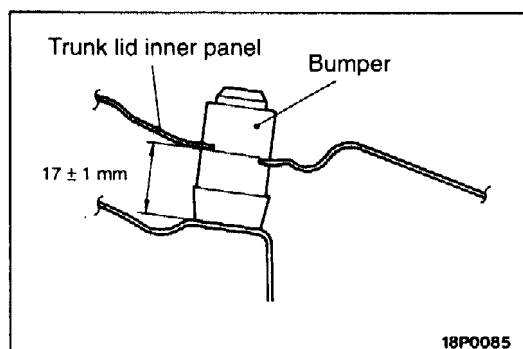
Be sure to attach the special tool properly, as the body or parts could be damaged when the torsion is removed from the special tool.



## INSTALLATION SERVICE POINTS

### ▶A◀ TRUNK LID WEATHERSTRIP INSTALLATION

Install the trunk lid weatherstrip so that the marked part is at the position shown in the illustration.



### ▶B◀ BUMPER INSTALLATION

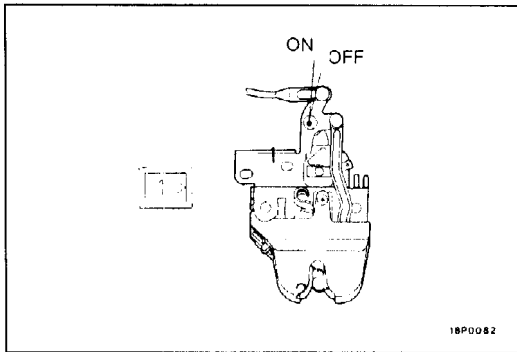
Install the bumper as shown in the figure.

### ▶C◀ TRUNK LID TORSION BAR INSTALLATION

1. Insert the end of the torsion bar through the link side mounting hole.
2. Attach the special tool as described previously. Refer to – Trunk Lid Torsion Bar Removal.

#### Caution

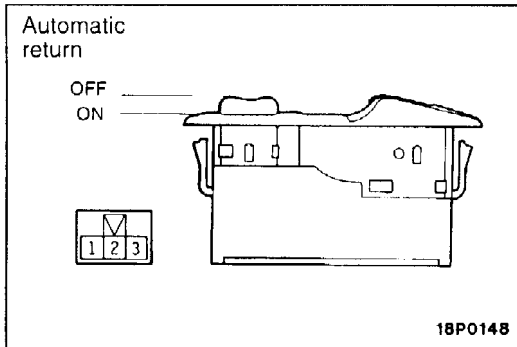
Be sure to attach the special tool properly, as the body or parts could be damaged when the torsion bar is removed from the special tool.



**INSPECTION**

**TRUNK LID LATCH SWITCH CONTINUITY CHECK**

Switch position	Terminal No.	
	1	Body earth
ON (Latch open)	○	○
OFF (Latch shut)		



**TRUNK LID AND FUEL FILLER DOOR OPENER ACTUATOR**

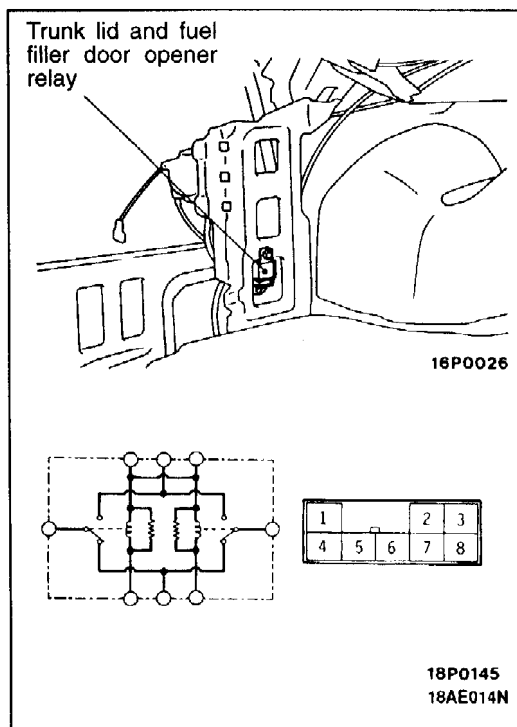
1. Connect a battery directly to the actuator terminals and check that the motor rotates smoothly.
2. Check that the motor rotates in the reverse direction when the polarity of the battery is reversed.

**TRUNK LID AND FUEL FILLER DOOR OPENER SWITCH CONTINUITY CHECK**

Switch position	Terminal No.	
	1	2
OFF	○	○
ON		

**NOTE**

See the Fuel Filler Door section for section for instructions on checking the fuel filler door side.



**TRUNK LID AND FUEL FILLER DOOR OPENER RELAY CONTINUITY CHECK**

Battery Voltage	Terminal No.					
	1	2	3	4	5	7
Continuity no voltage	○		○		○	
Continuity with voltage	○	○		⊖		⊕

**NOTE**

See the Fuel Filler Door section for section for instructions on checking the fuel filler door side.

# FENDER

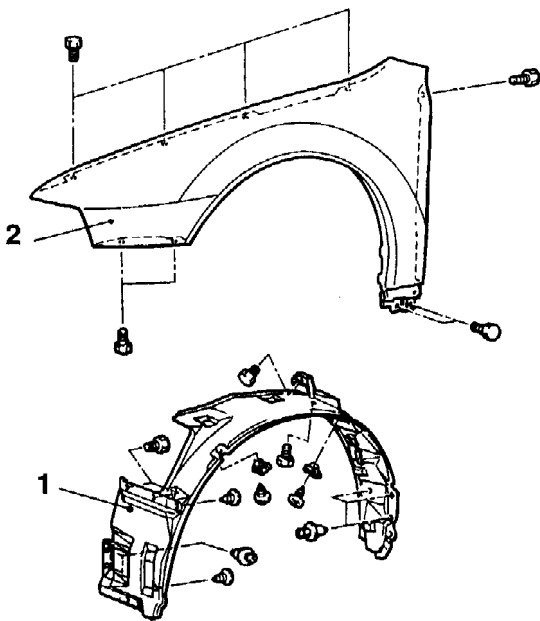
## SEALANT

Items	Specified sealant
Fender to body panel	3M ATD Part No. 8625 or equivalent
Splash shield to fender	3M ATD Part No. 8625 or equivalent

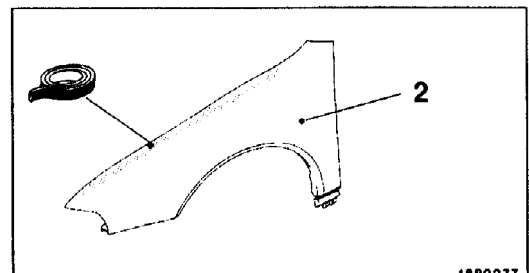
# FENDER

## REMOVAL AND INSTALLATION

- Pre-removal and Post-Installation Operation**
- Front Bumper Removal and Installation (Refer to GROUP 51 – Front Bumper)
  - Front Side Air Dam Removal and Installation (Refer to GROUP 51 – Aero Parts)

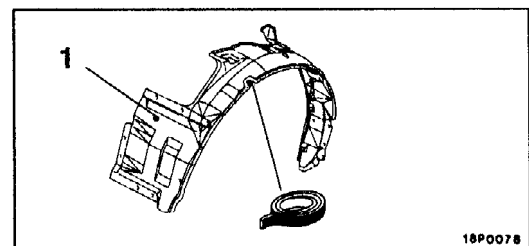


18P0087



18P0077

**Sealant:**  
3M ATD Part No. 8625 or equivalent



18P0078

**Sealant:**  
3M ATD Part No. 8625 or equivalent

18AE013N

**Removal steps**

1. Splash shield
2. Fender



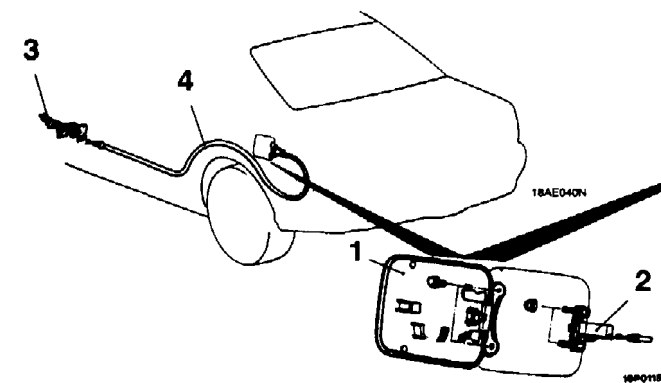
# FUEL FILLER DOOR

## REMOVAL AND INSTALLATION

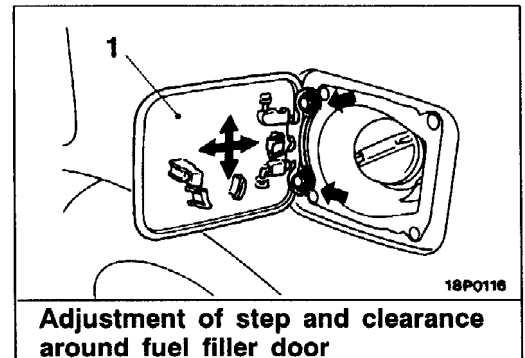
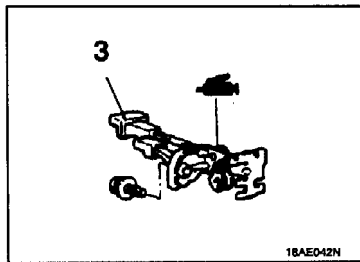
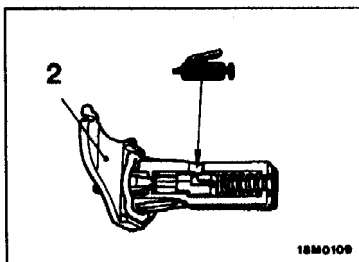
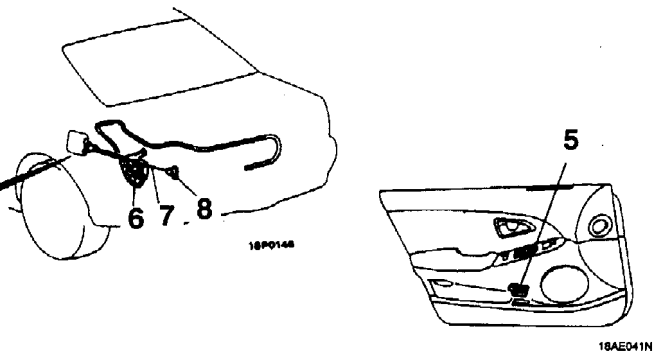
### Pre-removal and Post-Installation Operation

- Front Seat (driver's side) Removal and Installation (Refer to 52A–Front Seat)  
Rear Seat Removal and Installation (Refer to GROUP 52A–Rear Seat)
- centre Pillar Lower Trim (driver's side), Front Scuff Plate (driver's side), Rear Scuff Plate (driver's side), Trunk Side Trim, Rear End Trim Cover, Trunk Rear Trim Removal and Installation (Refer to GROUP 52A–Trim)

### <Wire-type opener>



### <Electric opener>



18AE043N

### Removal steps

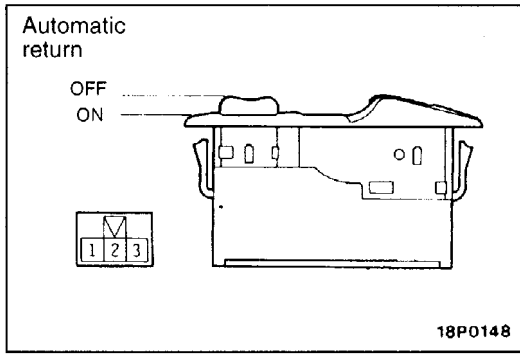
#### <Wire type opener>

1. Fuel filler door panel
2. Fuel filler door hook
3. Lid lock release handle
4. Fuel filler door lock release cable

### Electric Removal steps

#### <Electric opener>

1. Fuel filler door panel
2. Fuel filler door hook
5. Trunk and fuel filler door opener switch
6. Trunk and fuel filler door opener actuator
7. Fuel filler door lock release cable
8. Emergency lever



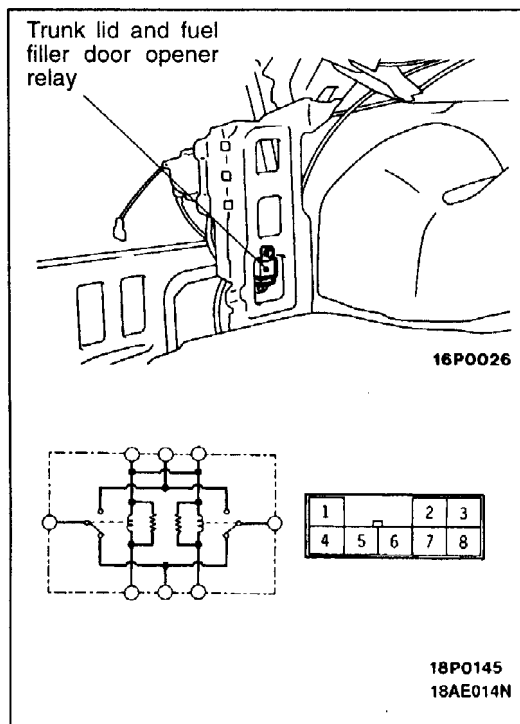
**INSPECTION**

**TRUNK LID AND FUEL FILLER DOOR OPENER SWITCH CONTINUITY CHECK**

Switch position	Terminal No.	
	2	3
OFF		
ON	○ — ○	○ — ○

**NOTE**

See the Trunk Lid section for instructions on checking the trunk lid side.



**TRUNK LID AND FUEL FILLER DOOR OPENER RELAY CONTINUITY CHECK**

Battery Voltage	Terminal No.					
	1	2	3	5	7	8
Continuity no voltage	○ — ○		○ — ○	○ — ○		
Continuity with voltage		○ — ○	○ — ○		⊕ — ⊖	⊖ — ⊕

**NOTE**

See the Trunk Lid section for instructions on checking the trunk lid side.

**TRUNK LID AND FUEL FILLER DOOR OPENER ACTUATOR CHECK**


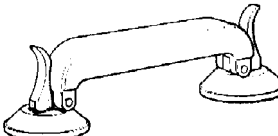
Refer to P.42-7

# WINDSHIELD AND WINDOW GLASS

## SEALANT AND ADHESIVE

Items	Specified sealant and adhesive
Windshield, Rear window glass	3M ATD Parts No. 8609 Super Fast Urethane and 3M ATD Parts No. 8608 Super Fast Urethane Primer or equivalent

## SPECIAL TOOLS

Tool	Number	Name	Use
	MB990784	Ornament remover	Removal of switch, trim, etc.
	MB990480	Glass holder	Removal and installation of window glass

## WINDOW GLASS

### GENERAL

The windshield and rear window glass are attached by an urethane-base adhesive to the window frame. This adhesive not only provides improved glass holding and sealing, but also permits use of body openings having a greater structural strength.

### ITEMS NEEDED

Name	Remarks
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
Anti-rust solvent (or Tectyl 506T – Valvoline Oil Company)	For rust prevention
Isopropyl alcohol	For grease removal from bonded surface
Steel piano wire	Dia. x length – 0.6mm x 1mm For cutting adhesive
Adhesive gun	For pressing-out adhesive

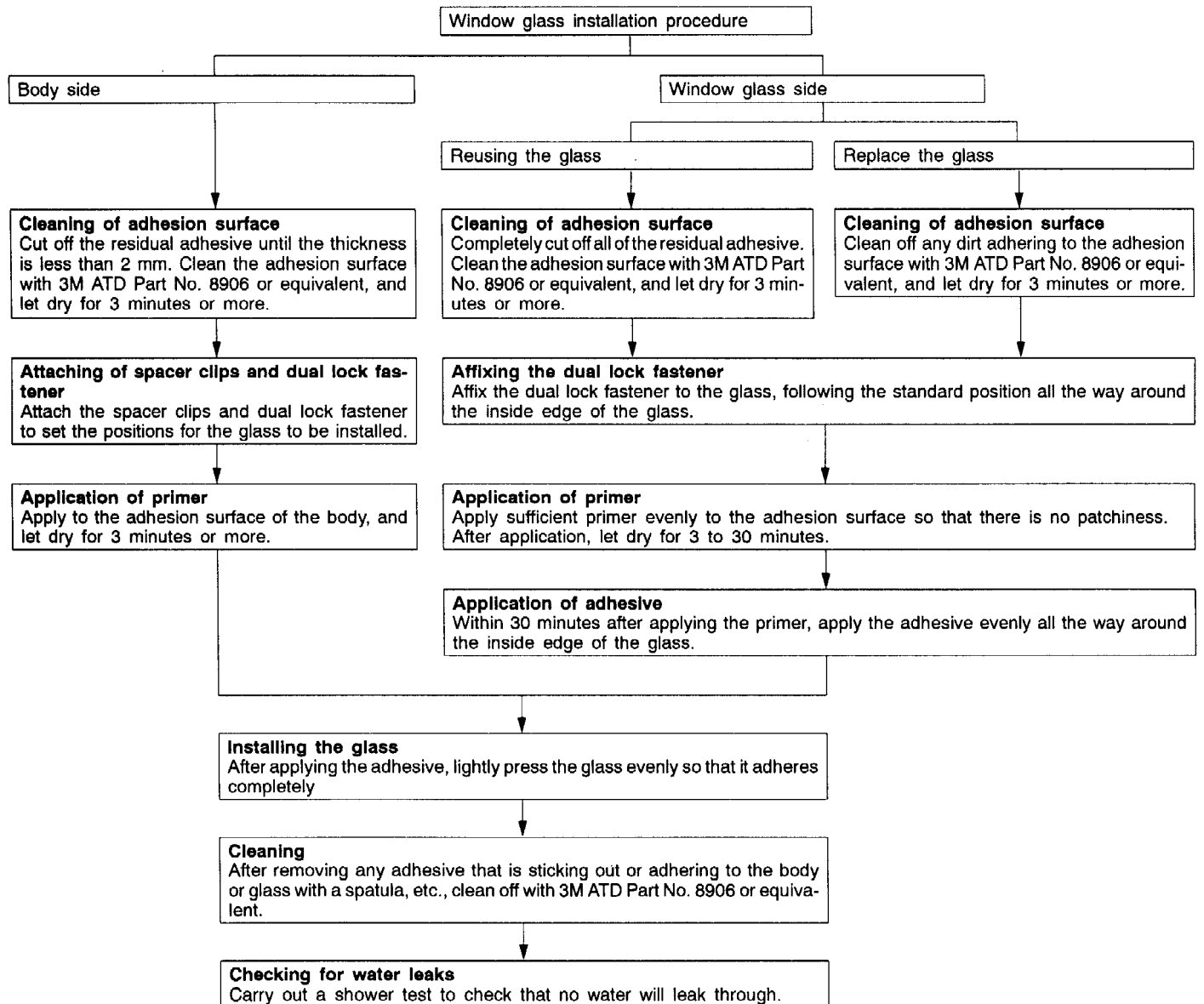
### HANDLING OF AUTO WINDOW SEALER

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.

WORKING PROCESS

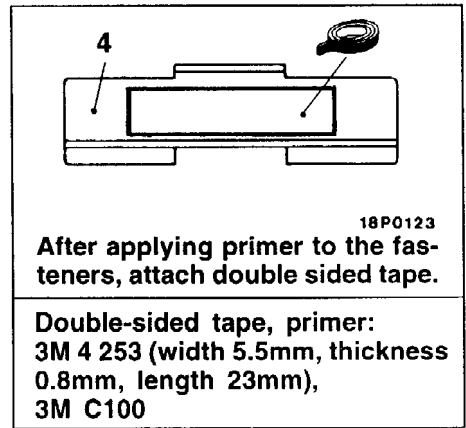
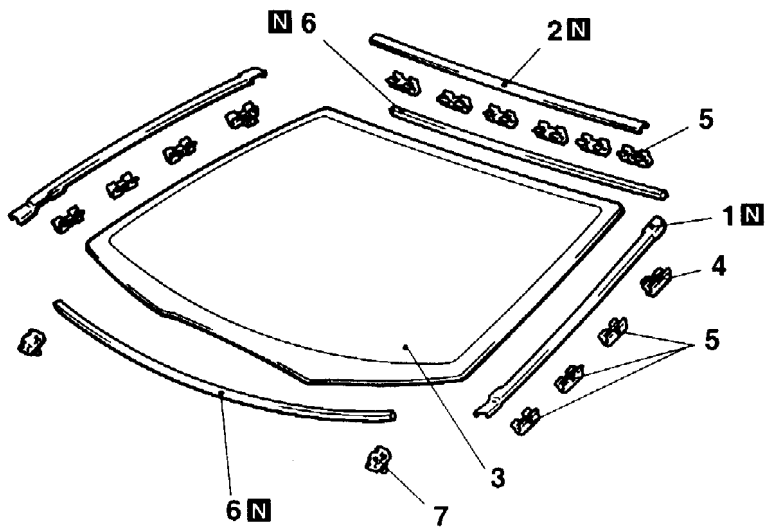
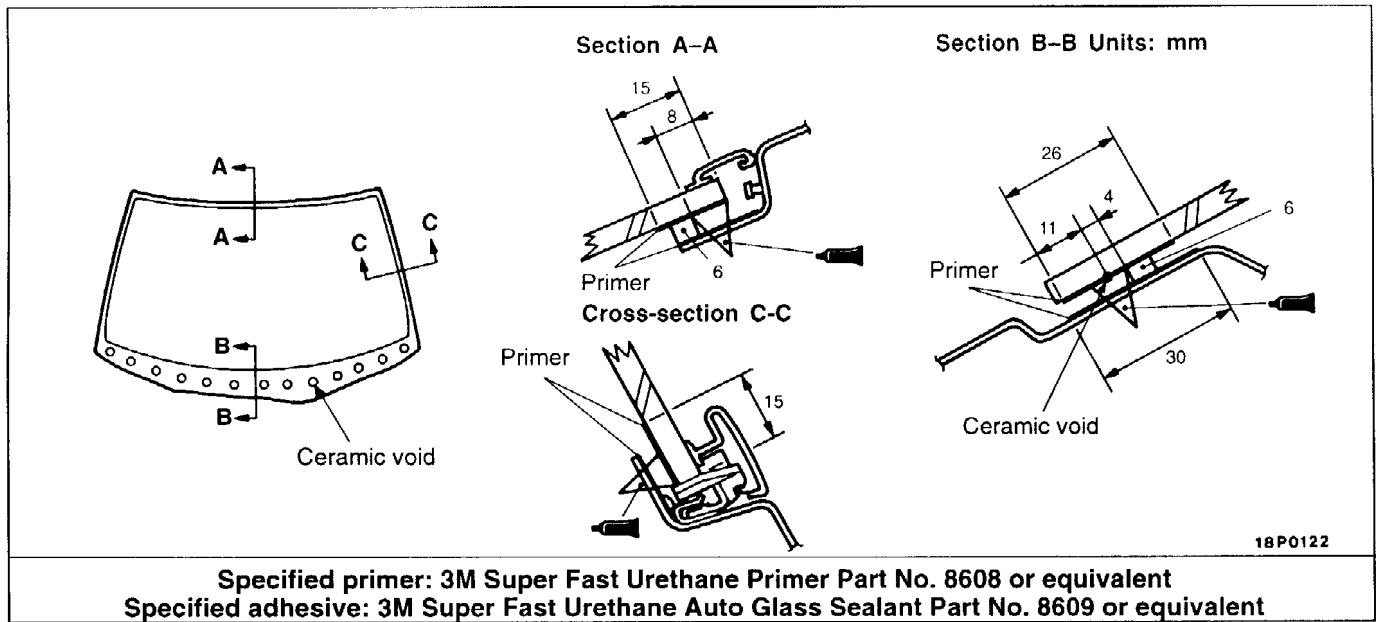


# WINDSHIELD

## REMOVAL AND INSTALLATION

**Pre-removal and Post-installation Operation  
Removal and Installation**

- Front Deck Garnish (Refer to GROUP 51–Grille and Garnishes)
- Front Pillar Trim (Refer to GROUP 52A–Trims)
- Headlining (Refer to GROUP 52A–Headlining)



**Removal steps**

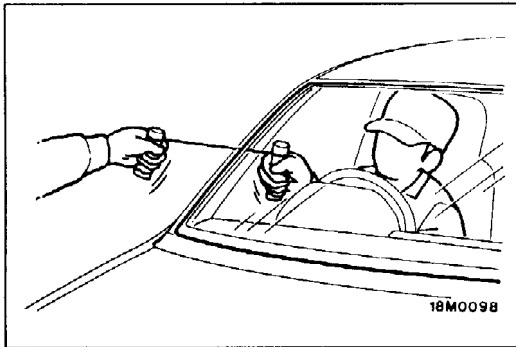
- ◀A▶ 1. Windshield side moulding
- ▶A▶▶A▶▶A▶▶A▶▶ 2. Windshield upper moulding
- ▶A▶▶A▶▶A▶▶A▶▶ 3. Windshield
- ▶A▶▶A▶▶A▶▶A▶▶ 4. Windshield moulding fastener

- ▶A▶▶A▶▶ 5. Windshield moulding clip
- ▶A▶▶A▶▶ 6. Window spacer
- ▶A▶▶A▶▶ 7. Windshield spacer

**REMOVAL SERVICE POINT**

**◀A▶ WINDSHIELD REMOVAL**

1. In order to protect the body (paint surface), apply cloth tape to all body areas around the installed windshield glass.
2. Remove the windshield side and upper mouldings.

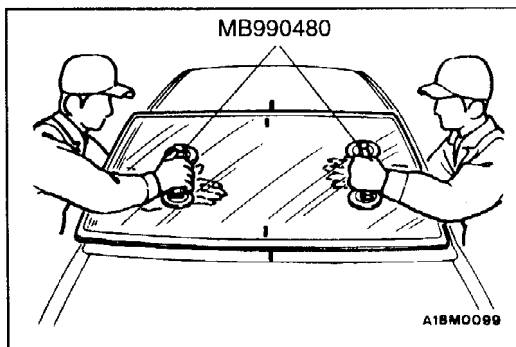


3. Using a sharp-point drill, make hole in the windshield glass adhesive.
4. Pass the piano wire from the inside of the vehicle through the hole.
5. Pull the piano wire alternately from the inside and outside along the windshield glass to cut the adhesive.

**Caution**

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

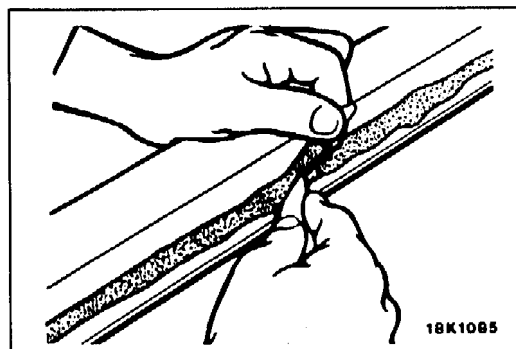
6. If the glass is to be reused make mating marks on the windshield glass and body.
7. Use the special tool to remove the windshield glass.



8. Use a knife to cut away the remaining adhesive so that the thickness is within 2 mm around the entire circumference of the body flange.
9. Finish the flange surfaces so that they are smooth.

**Caution**

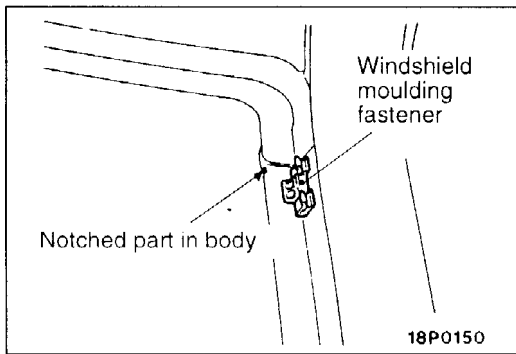
1. Be careful not to remove more adhesive than is necessary.
2. Be careful also not damage the paintwork on the body surface with the knife. If the paintwork is damaged, repair the damaged area with repair paint or anti-rust agent.



10. When reusing the glass, remove the adhesive still adhering to the glass, and clean with isopropyl alcohol.
11. Clean the body side in the same way.

**Caution**

**Let the cleaned places stand for 3 minutes or more, and carry out the next procedures after they have dried. Also, do not touch any surface that has been cleaned.**



## INSTALLATION SERVICE POINTS

### ▶ A ◀ WINDOW SPACER/WINDSHIELD MOULDING CLIP/WINDSHIELD MOULDING FASTENER

1. When replacing a windshield, temporarily fit the windshield to the body and make matchmarks on the body and windshield.
2. Degrease the inner perimeter of the windshield and the flange on the body side with isopropyl alcohol.
3. Soak a sponge in primer, and apply uniformly to the specified locations on the entire perimeter of the windshield and the body.
4. Allow to dry for 3-30 min after applying primer.

#### Specified primer:

**3M ATD Part No. 8608 Super Fast Urethane Primer or equivalent.**

#### Caution

1. **The primer strengthens the adhesive strength, so be sure to apply it evenly around the entire circumference. But, a too thick application will cause lowering of the adhesive strength.**
2. **Do not touch the coated surface.**
5. If there are any bends or lifts on the inside of the windshield, install the window spacers so that the clearance on the right and left are uniform.
6. Match the edge of the windshield moulding fastener to the notch on the body and bond.
7. Fit the windshield moulding clip into the clip stud.

#### Caution

**If heat is applied with an infra-red lamp to shorten the setting time, keep the surface temperature of the adhesive below 60°C.**

8. Fill a sealant gun with adhesive within 30 min of applying primer, and apply uniformly to the entire perimeter of the windshield.

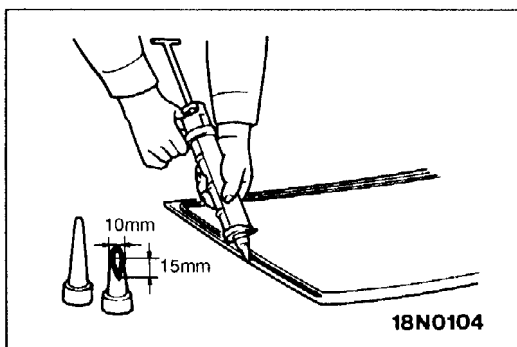
#### NOTE

Cutting a V-shape in the tip of the sealant gun nozzle will facilitate application.

9. After applying the adhesive, match up marks on the glass and the body.
10. After removing any adhesive that is sticking out or adhering to the body or glass with a spatula, etc., clean off with isopropyl alcohol.
11. After completion of this operation (after installing the glass), place it somewhere where it will not be disturbed, until the adhesive sets.
12. After attaching the windshield glass to the body, let it stand for 30 minutes or more, and then test for water leakage.

#### Caution

1. **If moving the vehicle, it should be done gently.**
2. **When testing for water leakage, do not pinch the end of the hose to spray the water.**



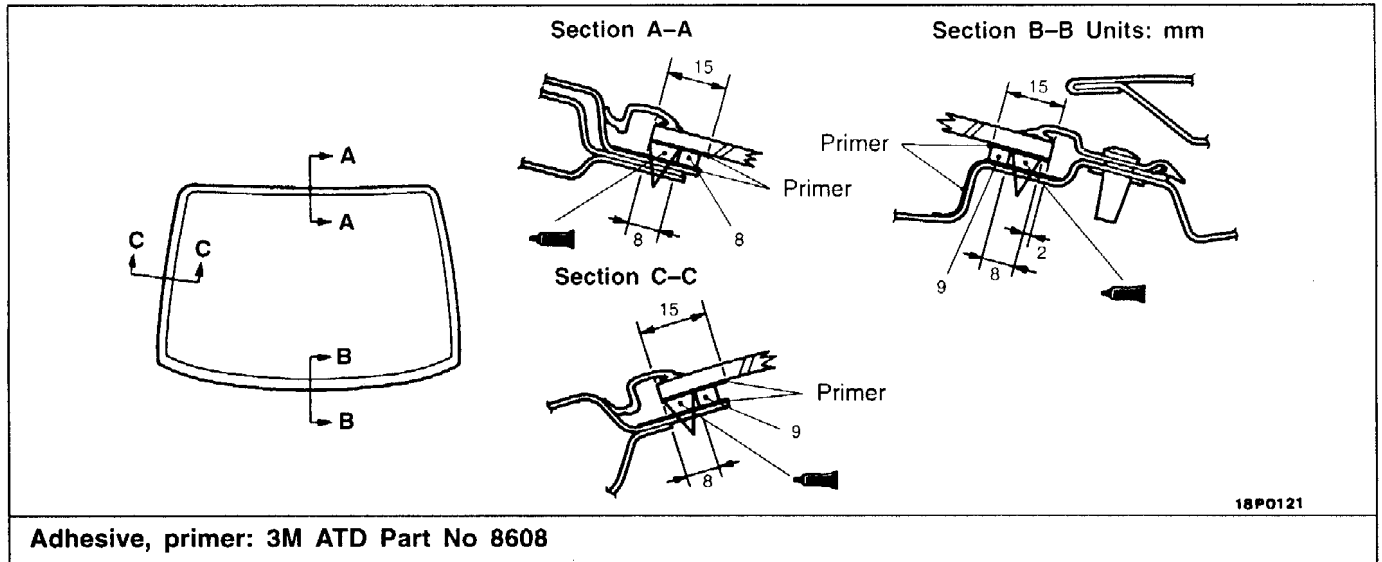


# REAR WINDOW GLASS

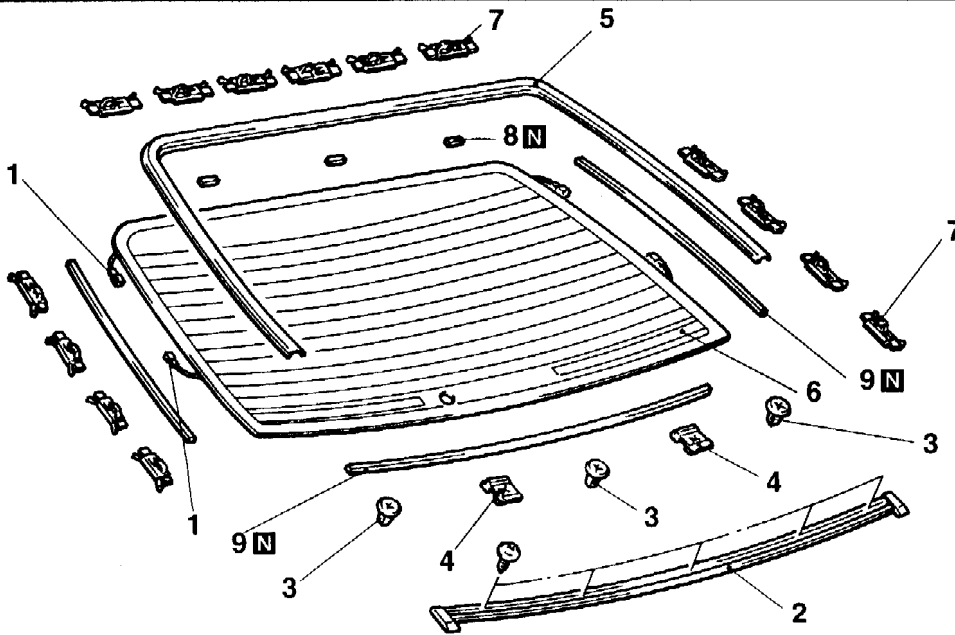
## REMOVAL AND INSTALLATION

**Pre-removal and Post-installation Operation  
Removal and Installation**

- Trunk Lid (Refer to P.42-5)
- Rear shelf trim (Refer to GROUP 52A-Trims)
- Rear Pillar Trim (Refer to GROUP 52A-Trims)
- Headlining (Refer to GROUP 52A-Headlining)



Adhesive, primer: 3M ATD Part No 8608



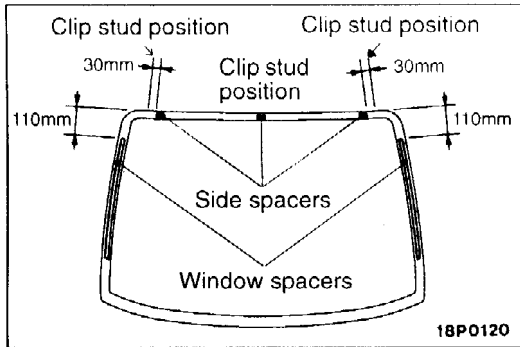
**Removal steps**

1. Harness connector
2. Rear window lower moulding
3. Screw grommet
4. Rear window glass spacer
5. Rear window upper moulding

- |     |     |                              |
|-----|-----|------------------------------|
| ◀A▶ | ▶A▶ | 6. Rear window glass         |
| ▶A▶ | ▶A▶ | 7. Rear window moulding clip |
| ▶A▶ | ▶A▶ | 8. Side spacer               |
| ▶A▶ | ▶A▶ | 9. Window spacer             |

**REMOVAL SERVICE POINT****◀A▶ REAR WINDOW GLASS REMOVAL**

Remove the window glass by the same procedure as for the windshield. (Refer to P.42-14)

**INSTALLATION SERVICE POINT****▶A◀ WINDOW SPACER/SIDE SPACERS/REAR WINDOW MOULDING CLIPS/REAR WINDOW GLASS INSTALLATION**

Install using the same procedure as for the windshield. (Refer to P.42-14)

**NOTE**

Install so that the window spacer at the lower side of the glass provides the same space on the right and left, and correctly install in the illustrated positions, the window spacers on the right and left, and the side spacers (bonded to the body side) at the top of the glass.

## DOOR

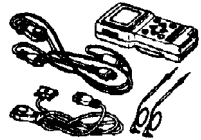


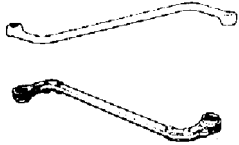
### SERVICE SPECIFICATIONS

Items		Standard value
Inside handle play mm	Front door	2.1–10.8
	Rear door	4.1–12.7
Outside handle play mm	Front door	1.7–6.0
	Rear door	1.9–5.8

### SEALANT

Items	Specified sealant
Waterproof film	3M ATD Part No. 8625 or equivalent

### SPECIAL TOOLS

Tool	Number	Name	Use
	MB991502	MUT-II Sub-assembly	Checking the power window and door lock (SWS Diagnosis displayed using the MUT-II)
	MB991529	Diagnostic trouble code check harness	Checking using the SWS Simplified Fault Diagnosis Mode
	MB990784	Ornament remover	Removal of switch, trim, etc
	MB990900 or MB991164	Door adjusting wrench	Adjustment of door fit

## TROUBLESHOOTING

### STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.

#### DIAGNOSIS FUNCTION

#### DIAGNOSIS CODES CHECK

Read a diagnosis code by the MUT-II or high beam indicator lamp.

(Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.)

**ERASING DIAGNOSIS CODES**

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.

**SWS SIMPLIFIED FAULT DIAGNOSTIC MODE**

The following tests can be performed using the SWS Simplified Fault Diagnosis Mode:

- SWS ECU specification
- Switch input signals for each ECU
- Diagnosis code output

Refer to Group 54 – SWS for details of the SWS Simplified Fault Diagnosis Mode.

**SWS DIAGNOSIS CODE CLASSIFICATION TABLE**

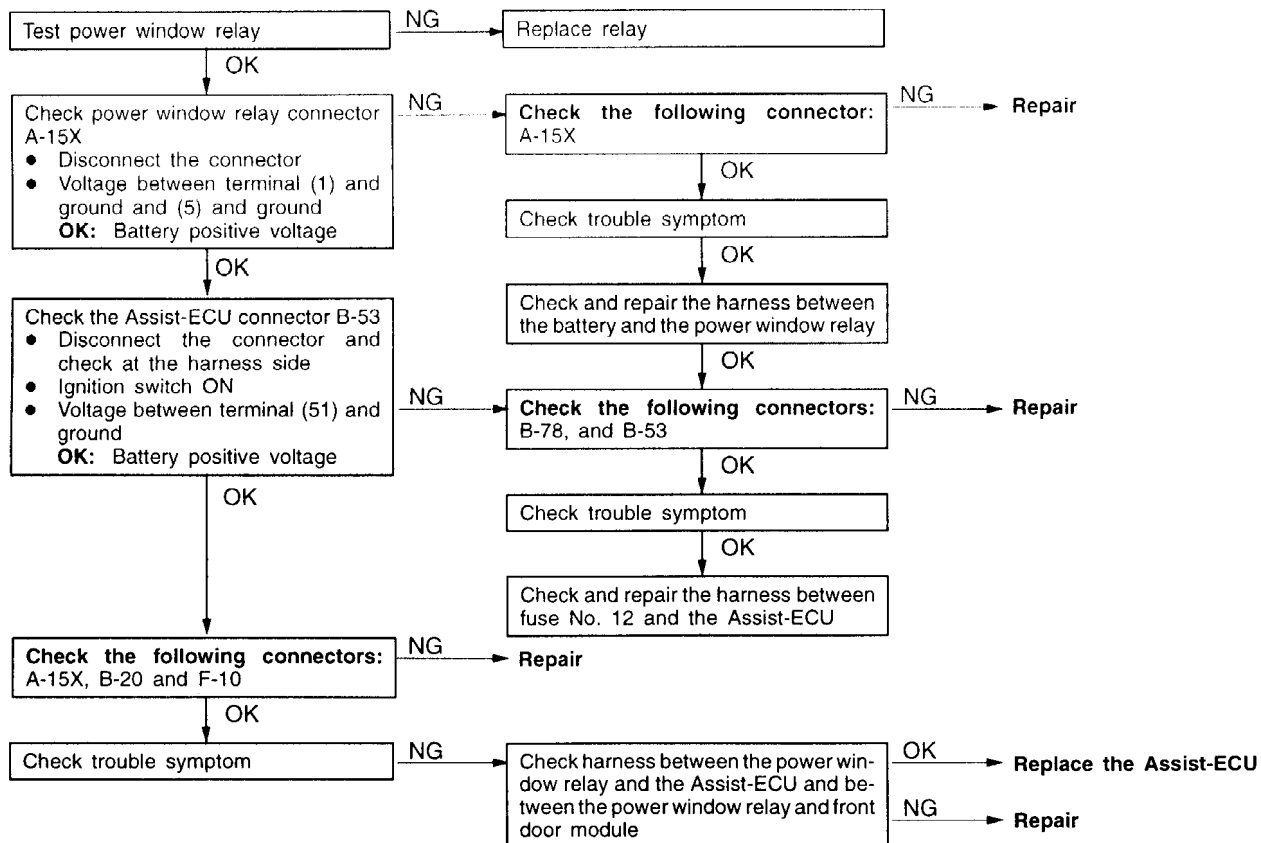
Refer to Group 54–SWS.

**INSPECTION CHART FOR TROUBLE SYMPTOMS****POWER WINDOW**

Trouble symptom	Inspection procedure No.	Reference page
Communication with MUT-II is not possible.	Refer to Group 54-SWS	
Switching to SWS simplified diagnostic mode is not possible.		
Power windows do not operate with any power window switch.	1	42-21
The driver's power window does not operate with the main power window switch (in driver's door module).	2	42-22
Passenger power window does not operate from the sub-switch.	3	42-23
The rear left power window does not operate from the sub-switch.	4	42-24
The rear right power window does not operate from the sub-switch.	5	42-25
The passenger power window does not operate with the main power window switch (however, it does operate from the sub-switch).	6	42-26
The rear left power window does not operate with the main power window switch (however, it does operate from the sub-switch).	7	42-27
The rear right power window does not operate with the main power window switch (however, it does operate from the sub-switch).	8	42-28
The passenger and rear power windows operate even when the power window lock switch is ON.	9	42-29

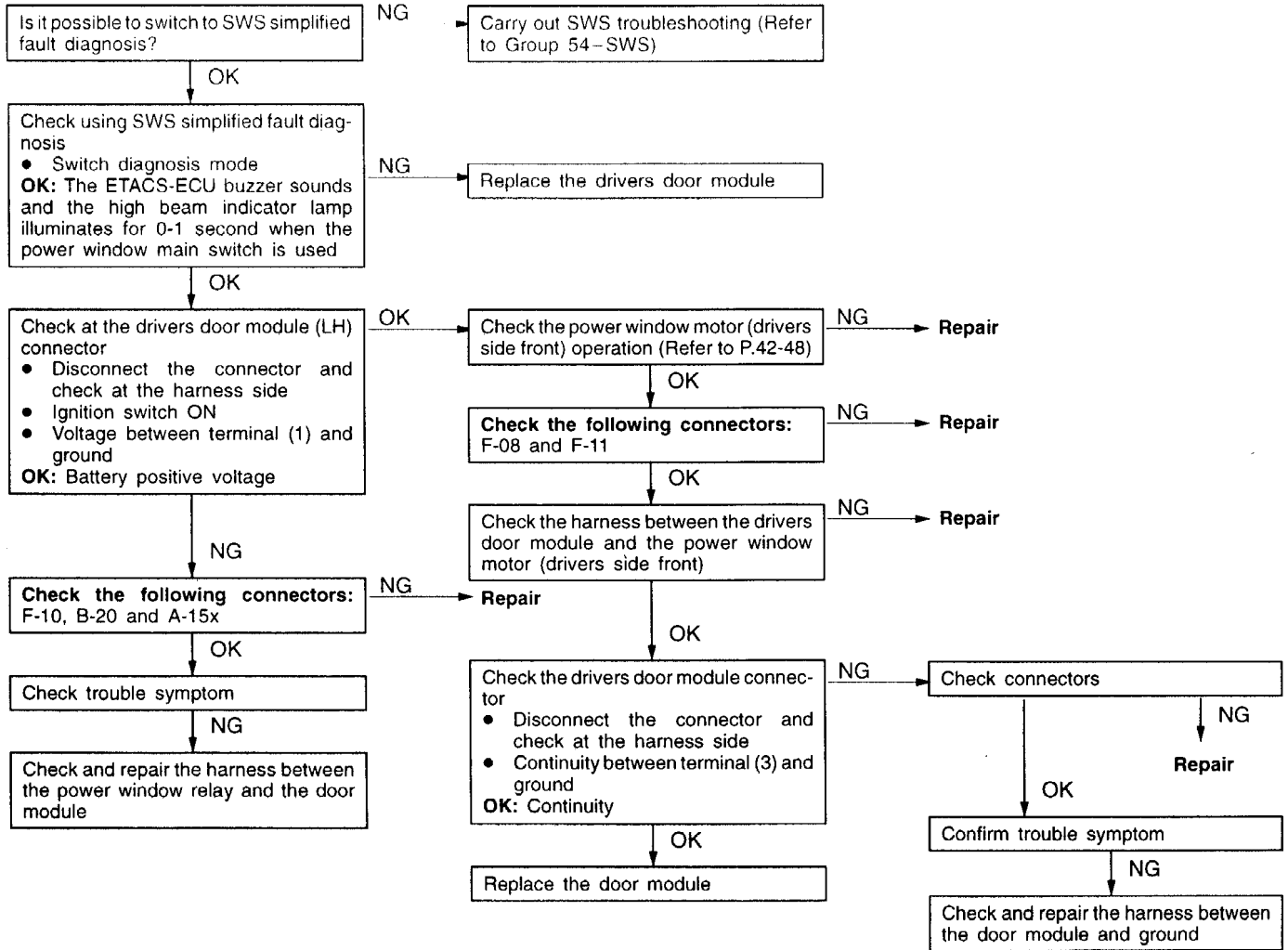
**INSPECTION PROCEDURE 1**

Power windows do not operate with any power window switch	Probable cause
The power window relay or the power window relay circuit may be defective or the Assist-ECU IG1 power circuit may be defective	<ul style="list-style-type: none"> <li>● Defective power window relay</li> <li>● Defective Assist-ECU</li> <li>● Defective harness or connector</li> </ul>



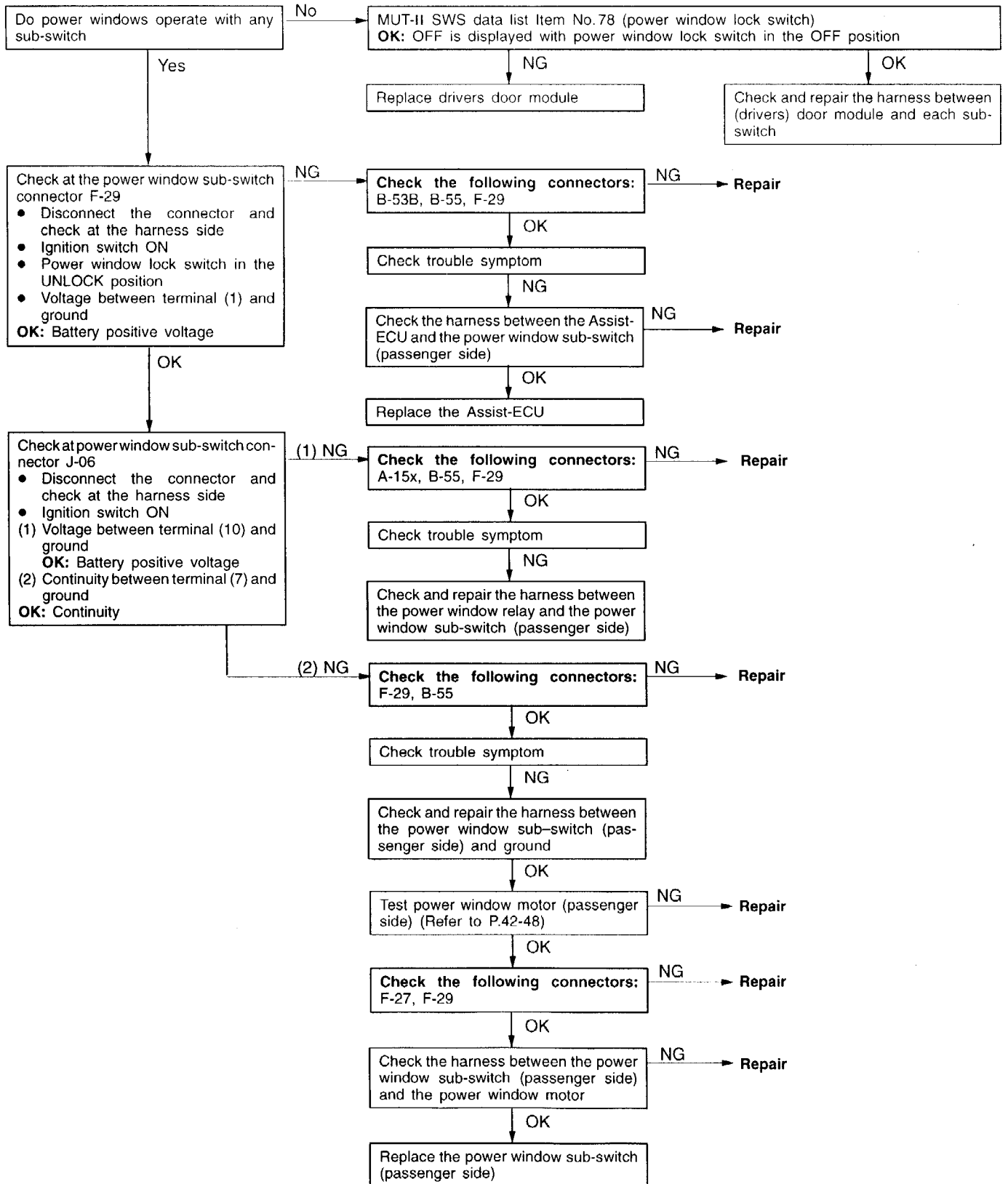
**INSPECTION PROCEDURE 2**

<p><b>The drivers power window does not operate with the main power window switch (in the driver's door module)</b></p>	<p><b>Probable cause</b></p> <ul style="list-style-type: none"> <li>• Defective power window main switch</li> <li>• Defective driver's door module</li> <li>• Defective power window motor</li> <li>• Defective harness or connector</li> </ul>
<p>The main power switch in the driver's door module is defective or the power window relay has been installed incorrectly.</p>	



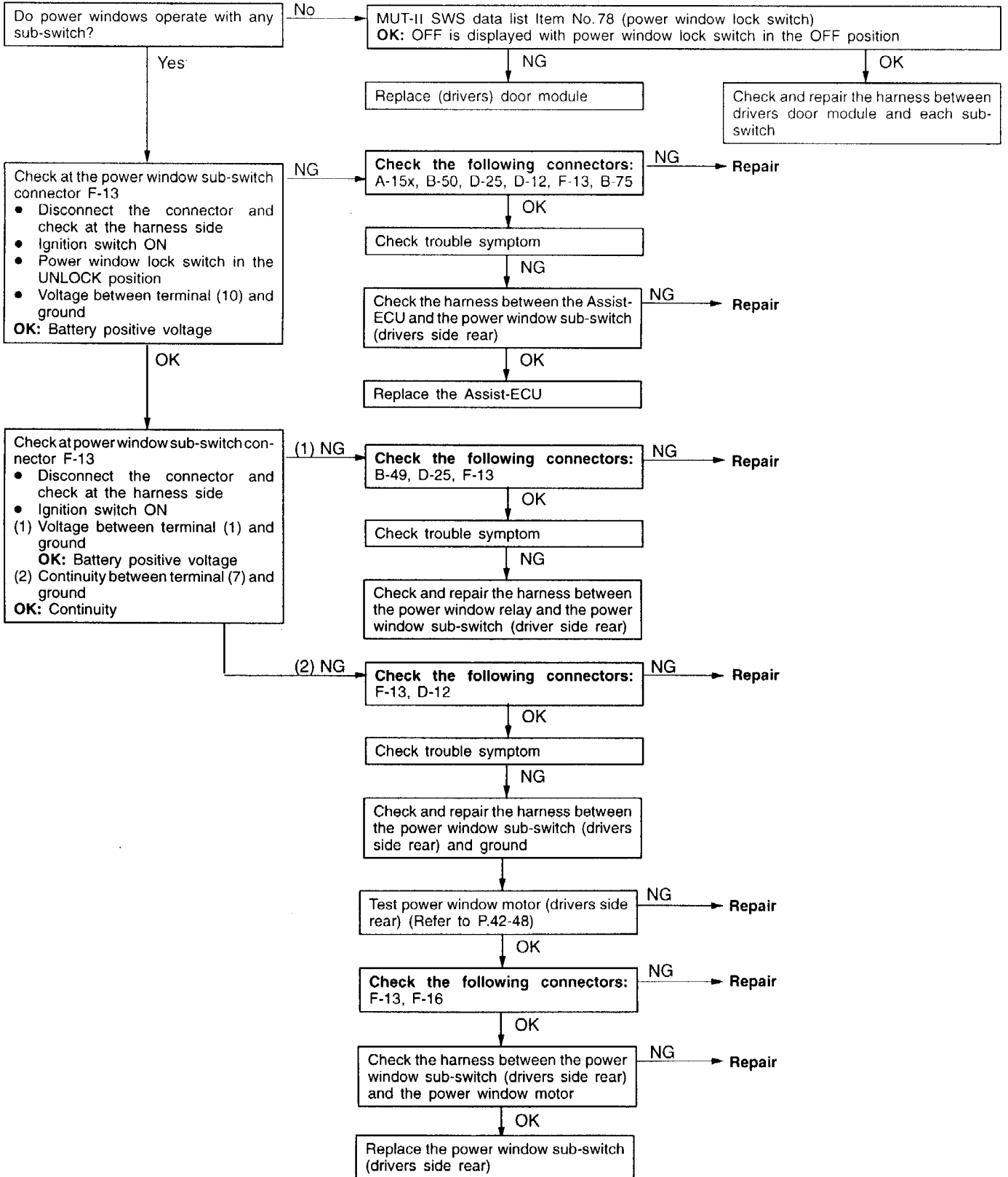
**INSPECTION PROCEDURE 3**

Passenger power window does not operate from the sub-switch	Probable cause
The sub-switch or the relay in the power window switch may be defective	<ul style="list-style-type: none"> <li>● Defective sub-switch</li> <li>● Defective Assist-ECU</li> <li>● Defective harness or connector</li> </ul>



**INSPECTION PROCEDURE 4**

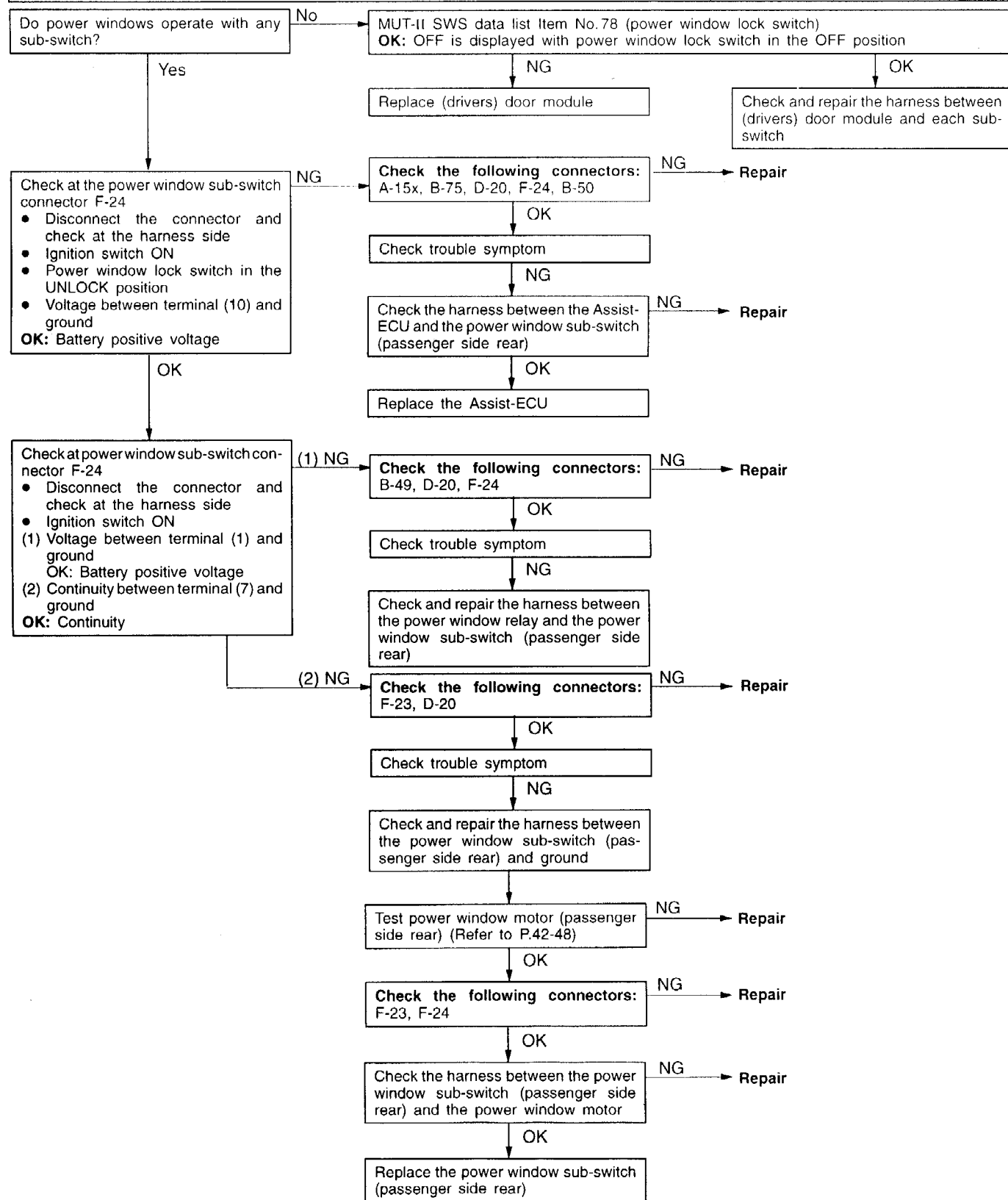
Rear left power window does not operate from the sub-switch	Probable cause
The sub-switch or the relay in the sub-switch power window switch may be defective	<ul style="list-style-type: none"> <li>● Defective sub-switch</li> <li>● Defective Assist-ECU</li> <li>● Defective harness or connector</li> </ul>





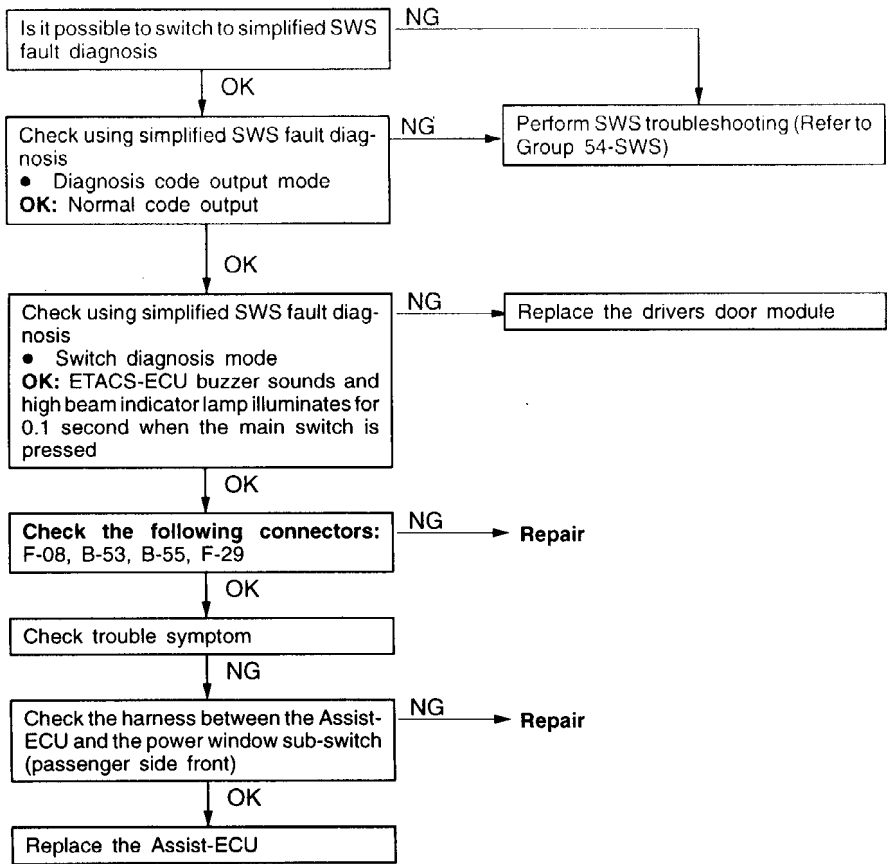
**INSPECTION PROCEDURE 5**

Rear right power window does not operate from the sub-switch	Probable cause
The sub-switch or the relay in the sub-switch power window switch may be defective	<ul style="list-style-type: none"> <li>● Defective sub-switch</li> <li>● Defective Assist-ECU</li> <li>● Defective harness or connector</li> </ul>



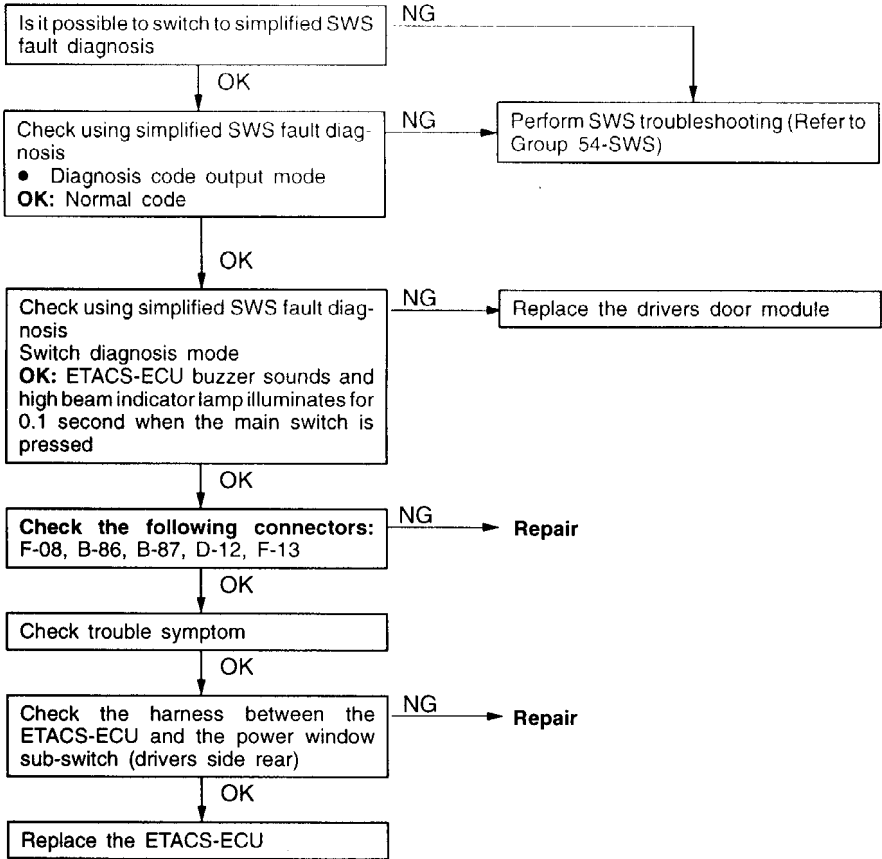
**INSPECTION PROCEDURE 6**

<p><b>The passenger power window does not operate with the main power window switch (however, it does operate with the sub-switch)</b></p>	<p><b>Probable cause</b></p>
<p>The harness between the Assist-ECU and the power window sub-switch (FR), the Assist-ECU or the door module which includes the main power window switch may be defective</p>	<ul style="list-style-type: none"> <li>● Defective door module (LH)</li> <li>● Defective Assist-ECU</li> <li>● Defective harness or connector</li> </ul>



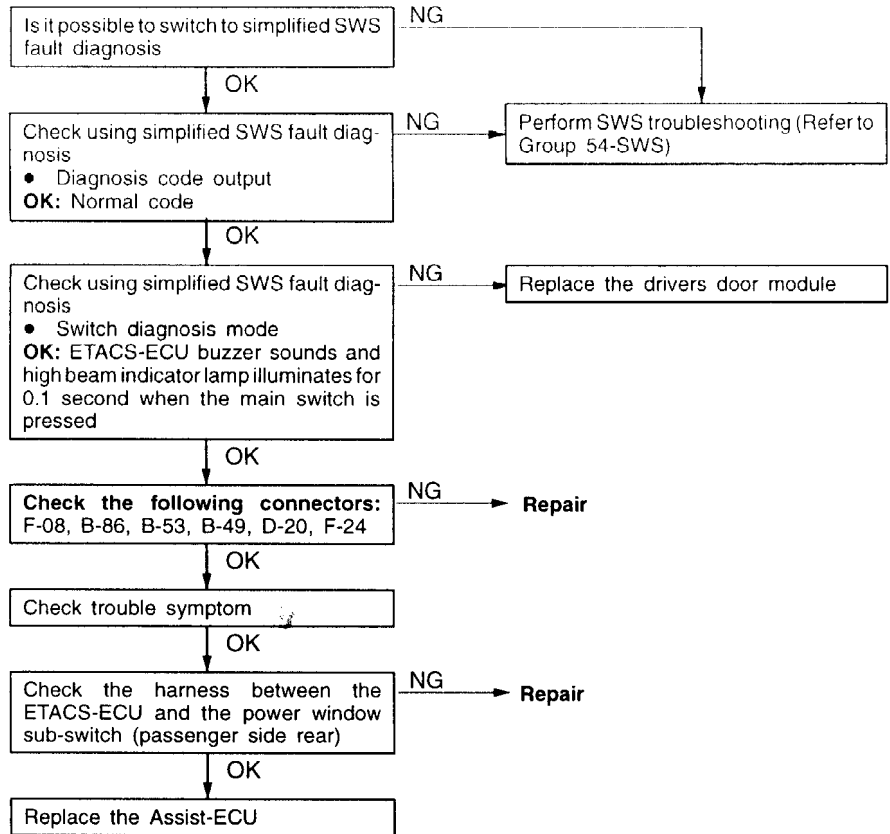
**INSPECTION PROCEDURE 7**

<p><b>The rear left power window does not operate with the main switch (however, it does operate with the sub-switch)</b></p>	<p><b>Probable cause</b></p>
<p>The harness between the ETACS-ECU and the power window sub-switch, the Assist-ECU or the door module which incorporates the main power window switch may be defective</p>	<ul style="list-style-type: none"> <li>• Defective drivers door module</li> <li>• Defective Assist-ECU</li> <li>• Defective harness or connector</li> </ul>



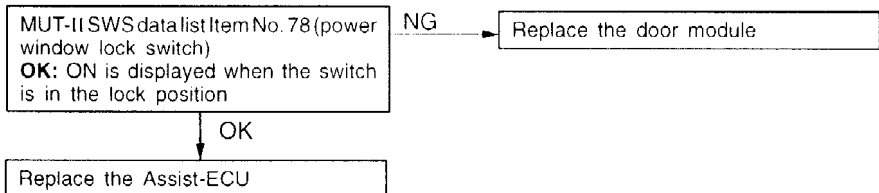
**INSPECTION PROCEDURE 8**

<p><b>The rear right power window does not operate with the power window main switch (however, it does operate with the sub-switch)</b></p>	<p><b>Probable cause</b></p>
<p>The harness between the Assist-ECU and the power window sub-switch, the Assist-ECU or the door module that incorporates the main power window switch may be defective</p>	<ul style="list-style-type: none"> <li>• Defective drivers door module</li> <li>• Defective Assist-ECU</li> <li>• Defective harness or connector</li> </ul>



**INSPECTION PROCEDURE 9**

<p><b>The passenger and rear power windows operate even when the lock switch is ON</b></p>	<p><b>Probable cause</b></p>
<p>The door module which incorporates the lock switch or the Assist-ECU, which receives the lock signal and executes control, may be defective.</p>	<ul style="list-style-type: none"> <li>• Defective door lock activator</li> <li>• Defective harness or connector</li> </ul>



## CENTRAL DOOR LOCKING SYSTEM

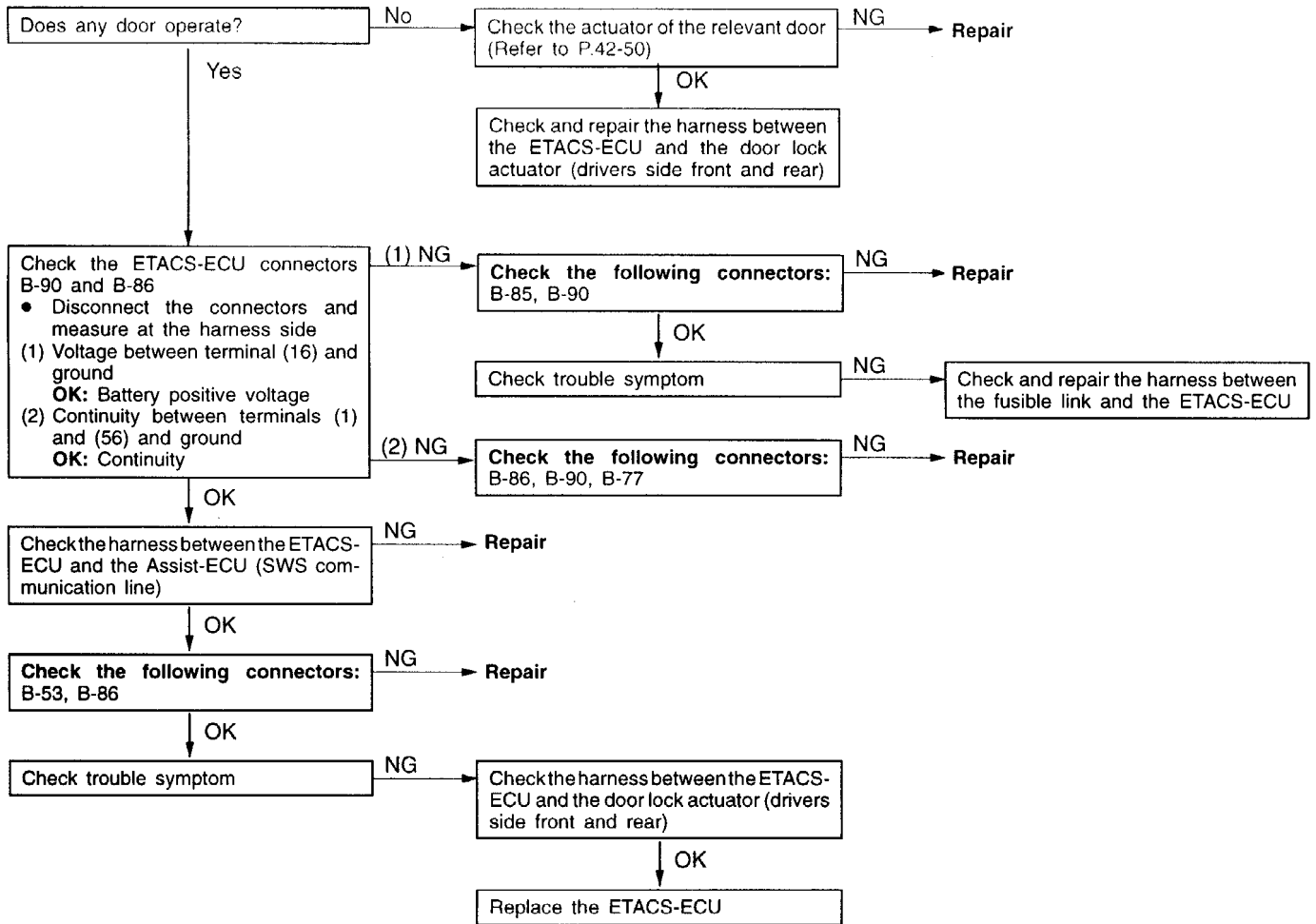
### INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Inspection procedure no.	Reference page
Communication with MUT-II is not possible	Refer to Group 54-SWS	
Switching to SWS simplified diagnostic mode is not possible		
None of the doors lock or unlock with any of the passenger or driver's door locking switches, the door keys, or with the inside locking knob (driver's door only).	1	42-31
No door can be locked or unlocked with the door key on the driver's side (however, doors can be locked or unlocked with the passenger door key).	2	42-32
No door can be locked or unlocked with the inside locking knob on the drivers side (however, doors can be locked or unlocked with the key).	3	42-33
No door can be locked or unlocked by pressing the central backing switch (lock or unlock) on the driver's door module (however, doors can be locked or unlocked with the inside locking knob or the keys).	4	42-33
No door can be locked or unlocked with the door key on the passenger side (however, the doors can be locked or unlocked with the driver's key).	5	42-34
No door can be locked or unlocked by pressing the central locking switch (lock or unlock) on the passenger door (however, doors can be locked or unlocked with the passenger key).	6	42-35
When the key is in the ignition and the driver's door is open, the driver's door can be locked if the inside lock knob is pressed.	7	42-36

# INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

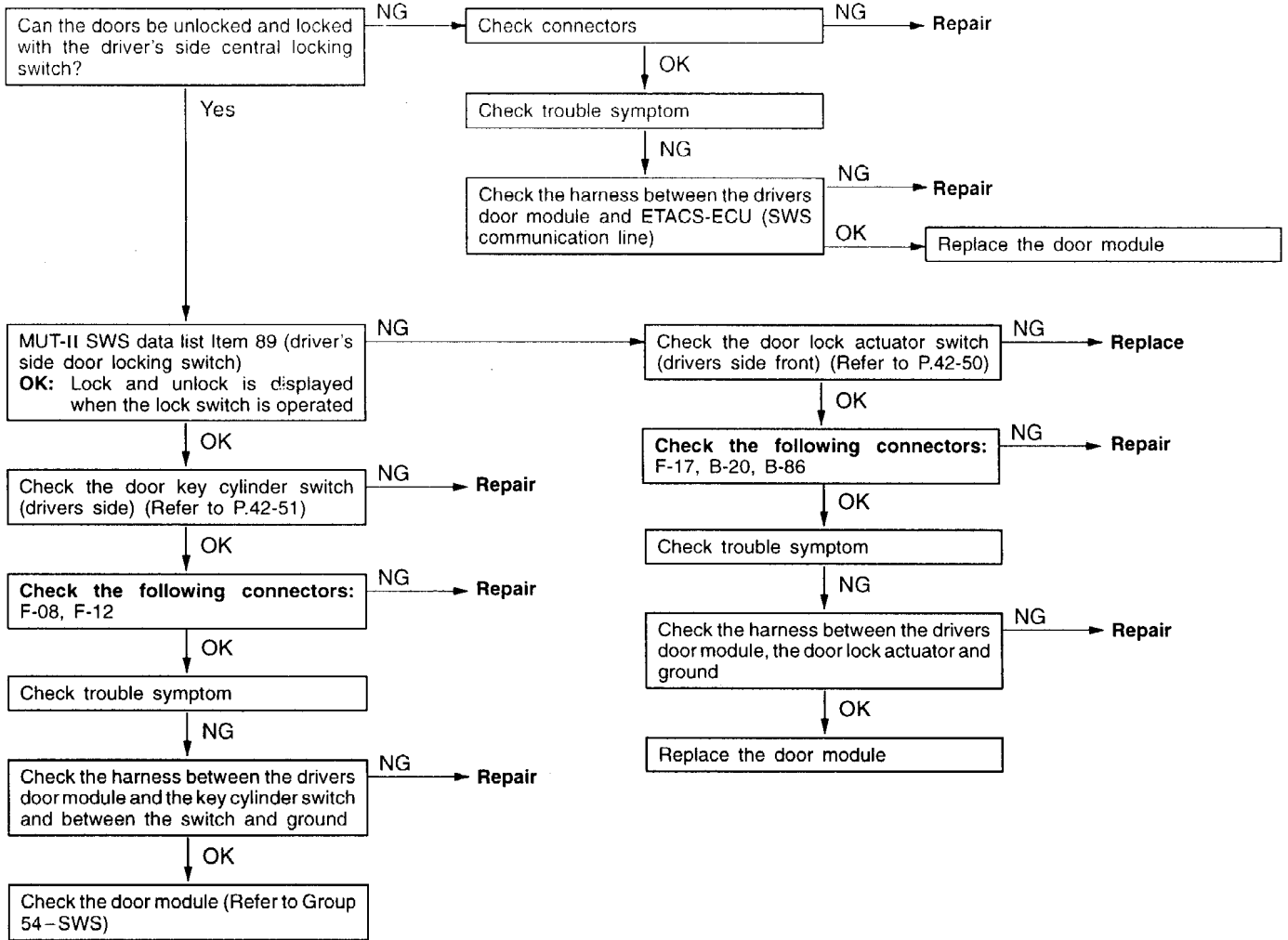
## INSPECTION PROCEDURE 1

<p><b>None of the doors lock or unlock with any of the passenger or driver's central locking switch, the door keys, or the inside locking knob (driver's door).</b></p>	<p><b>Probable cause</b></p>
<p>When none of the doors operate, the ETACS-ECU power or ground circuit, or the ETACS-ECU may be defective. If only some doors do not operate, the door lock actuator or driving circuit may be defective.</p>	<ul style="list-style-type: none"> <li>• Defective door lock actuator</li> <li>• Defective harness or connector</li> </ul>



**INSPECTION PROCEDURE 2**

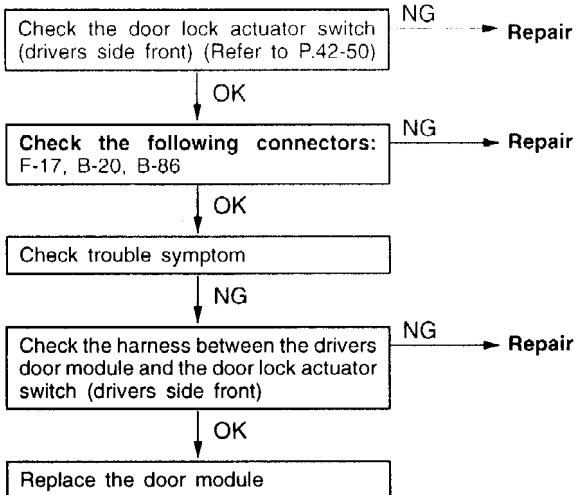
<p><b>No door can be locked or unlocked with the key from the driver's side (however doors can be locked or unlocked with the passenger key).</b></p>	<p><b>Probable cause</b></p>
<p>The input circuit of the door key cylinder switch may be defective. If doors cannot be locked or unlocked with the inside lock knob or the central locking switch on the driver's side the SWS communication line between the door module and the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>• Defective door key cylinder switch</li> <li>• Defective drivers door module</li> <li>• Defective harness or connector</li> </ul>





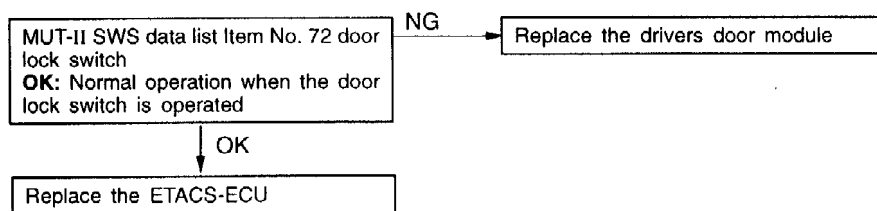
**INSPECTION PROCEDURE 3**

<p><b>No door can be locked or unlocked with the inside locking knob on the driver's side (however, doors can be locked or unlocked with the key)</b></p>	<p><b>Probable cause</b></p>
<p>The input circuit of the drivers door module or door lock actuator switch (drivers side front) may be defective.</p>	<ul style="list-style-type: none"> <li>• Defective door key cylinder switch</li> <li>• Defective drivers door module</li> <li>• Defective harness or connector</li> </ul>



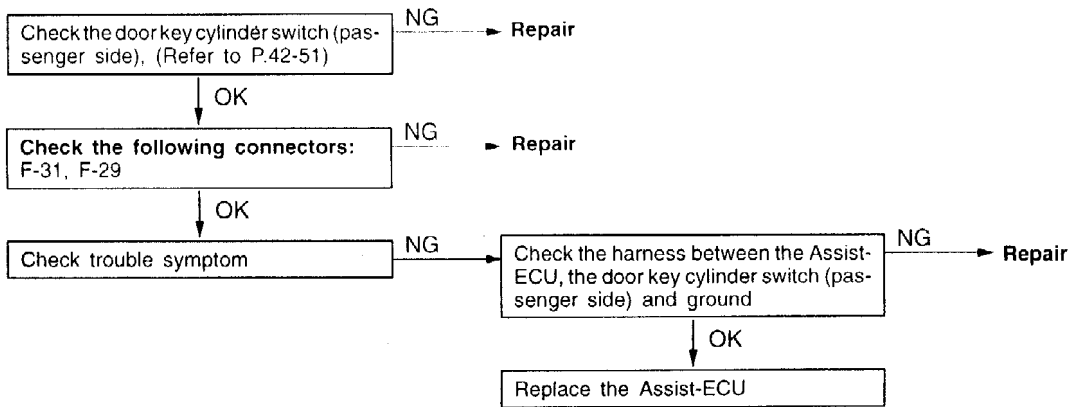
**INSPECTION PROCEDURE 4**

<p><b>No door can be locked or unlocked using the central locking switch on the door module (doors can be locked or unlocked with the key or inside lock knob).</b></p>	<p><b>Probable cause</b></p>
<p>The drivers door module may be defective.</p>	<ul style="list-style-type: none"> <li>• Defective drivers door module</li> <li>• Defective harness or connector</li> </ul>



**INSPECTION PROCEDURE 5**

<p><b>No door can be locked or unlocked with the key on the passenger side (however, doors can be locked or unlocked with the driver's key)</b></p>	<p><b>Probable cause</b></p>
<p>The door key cylinder switch (passengerside) input circuit to the Assist-ECU or the SWS communication line between the ETACS-ECU and Assist-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>• Defective door key cylinder switch</li> <li>• Defective Assist-ECU</li> <li>• Defective harness or connector</li> </ul>



**NOTE**

If, after completing this procedure, the doors still cannot be locked or unlocked with the passenger door key switch, carry out Inspection Procedure No. 6 (Refer to P.42-35)

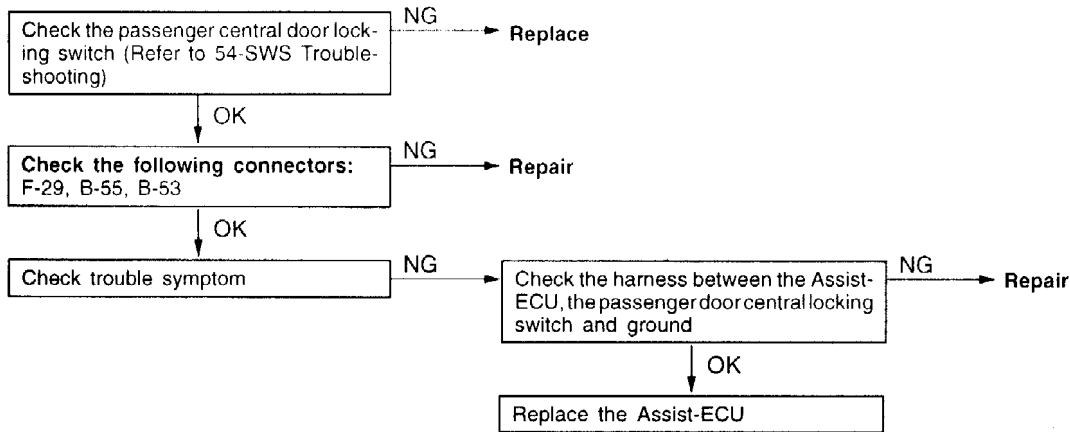
**INSPECTION PROCEDURE 6**

**No door can be locked or unlocked by pressing the central locking switch (lock or unlock) on the passenger door (however, doors can be locked or unlocked using the passenger key)**

**Probable cause**

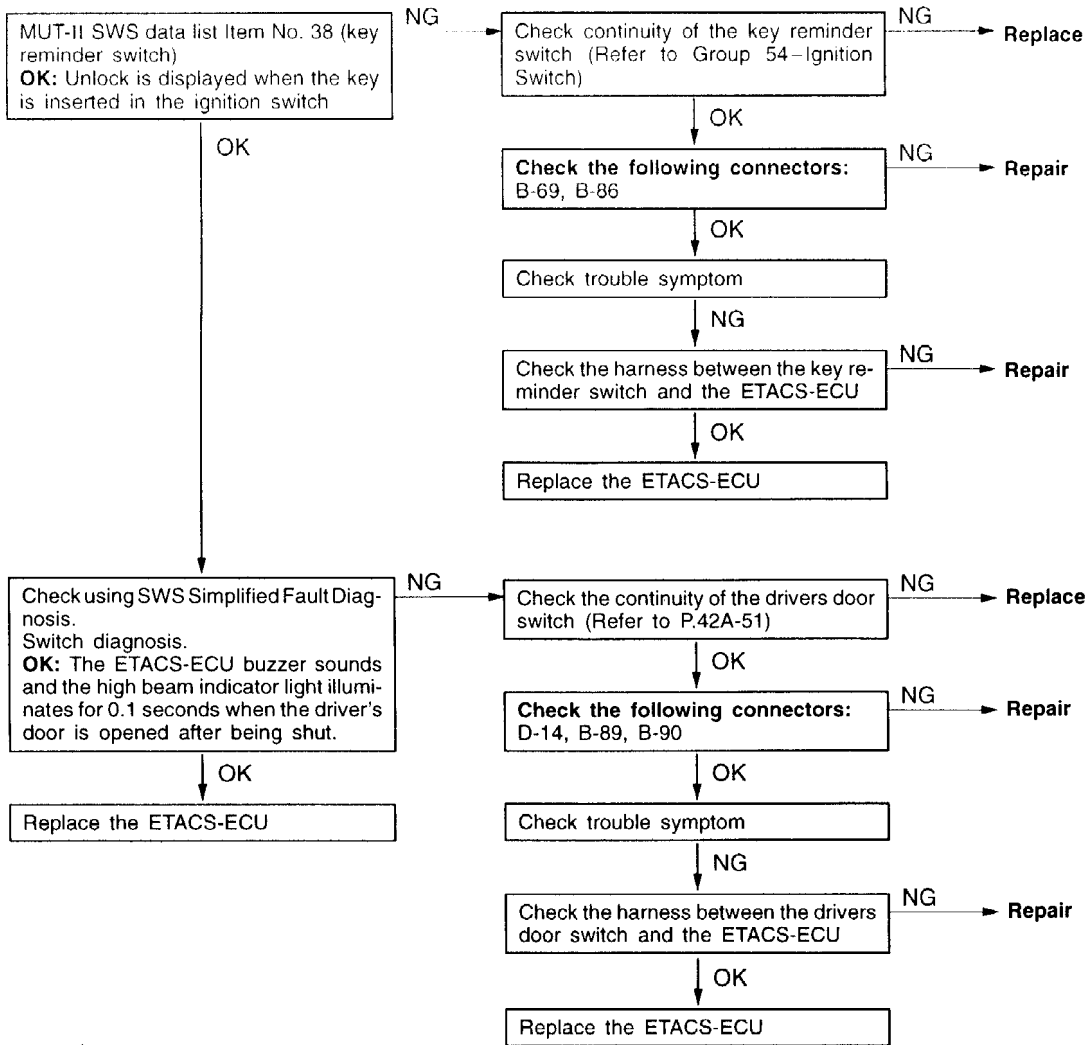
The central locking switch input to the Assist-ECU may be defective.

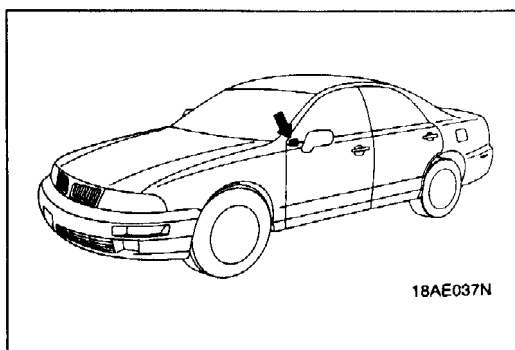
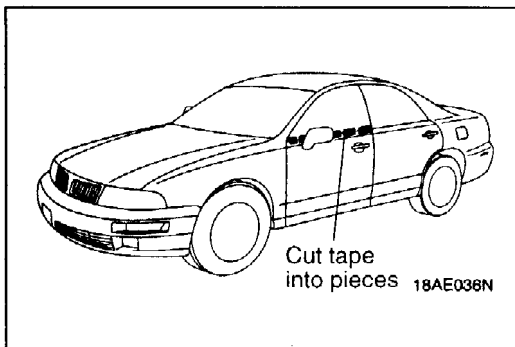
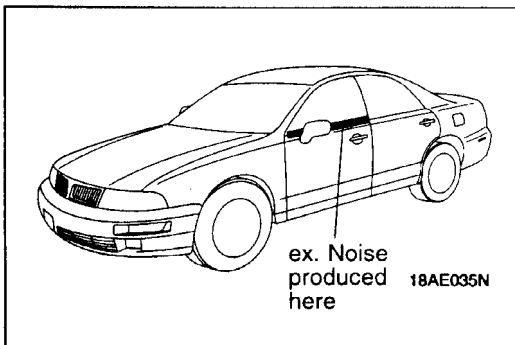
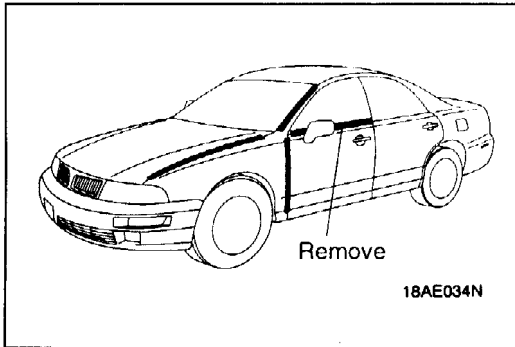
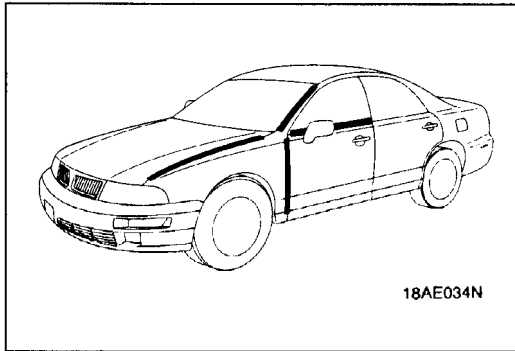
- Defective central locking switch
- Defective Assist-ECU



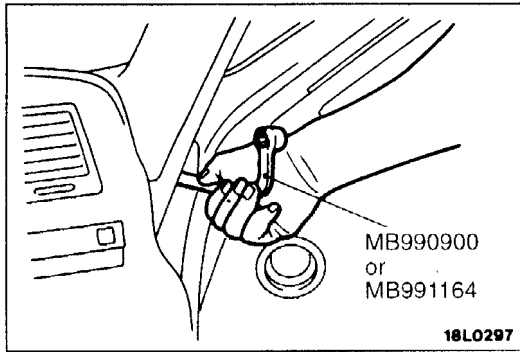
**INSPECTION PROCEDURE 7**

When the key is in the ignition and the driver's door is open, the driver's door will lock when the inside locking knob is pressed	Probable cause
When the system is operating normally, the driver's door cannot be locked under these conditions. The key reminder switch or driver's door switch may be defective.	<ul style="list-style-type: none"> <li>• Defective key reminder switch</li> <li>• Defective driver's door switch</li> <li>• Defective ETACS-ECU</li> <li>• Defective harness or connector</li> </ul>



**HOW TO LOCATE WIND NOISES**

1. Attach cloth tape to every place which might conceivably be the source of wind noise, such as panel seams, projections, moulding seams, glass and body seams, etc.
2. Then make a road test in order to determine that the places not covered by tape are not sources of wind noise.
3. Then remove the strips of tape one by one, making a road test after each is removed, until a wind noise source is discovered.
4. When such a place is found, cover it again and continue with the procedure so as to determine if there are any other noise source.
5. If no others are found, the last remaining tape is the only source.
6. Cut the remaining piece of tape into smaller pieces, attach it again as it was before, and then remove the pieces one by one in the same way so as to narrow down the source.
7. Check to confirm that wind noise occurs when the last remaining tape is removed, and that noise does not occur when it is re-attached.
8. When the source(s) of the wind noise is finally located, attach butyl tape, body sealer or similar material to obstruct this source as much as possible.



## ON-VEHICLE SERVICE

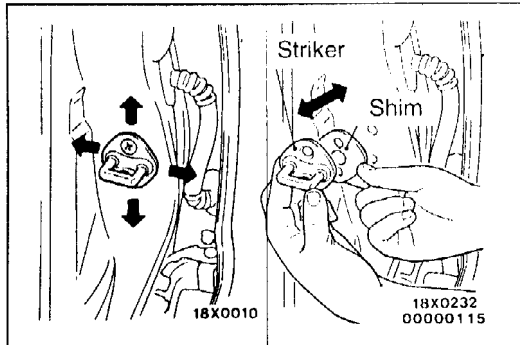
### DOOR FIT ADJUSTMENT

1. Use the special tool to loosen the hinge mounting bolts on the body side, and then adjust the clearance around the door so that it is uniform on all sides.
2. When there is a stepped section in the door and body, use the special tool to loosen the door hinge mounting bolt on the door side and adjust the door fit.

#### Caution

Attach protection tape to the fender edges where the hinge is installed.

3. If the door opening or closing is stiff, adjust the engagement of the striker and the door latch using the shim, while moving the striker up and down, or left and right.



### DOOR GLASS ADJUSTMENT

#### CHECKING THE DOOR WINDOW GLASS SETTINGS

##### FRONT

1. Place masking tape on the edge of the door glass in the positions as shown in the illustration.
2. Mark the tape from the catch lip as in sections A-A and B-B and measure from the edge of the door glass to the mark on the tape with the door open. This will give dimensions "D" and "E" (glass intrusion).

#### Standard value:

(D)  $2.4 \pm 1.0$  mm

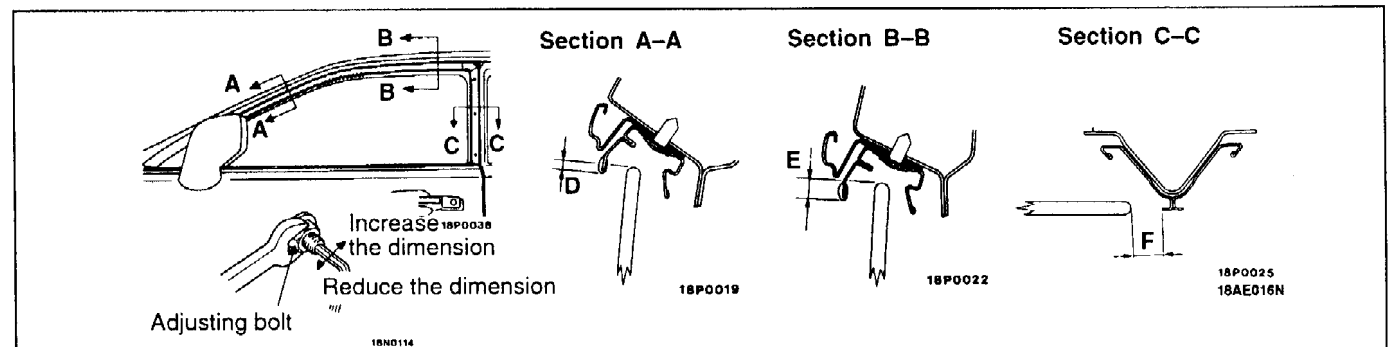
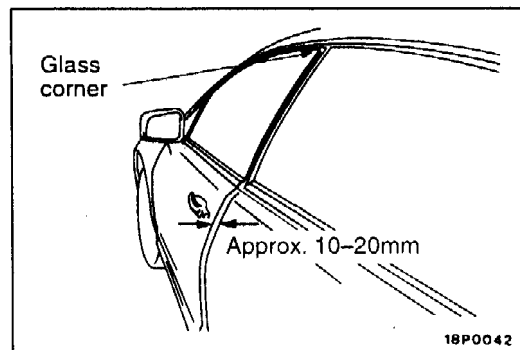
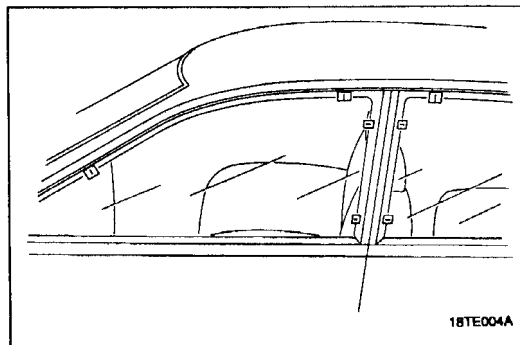
(E)  $3.4 \pm 1.0$  mm

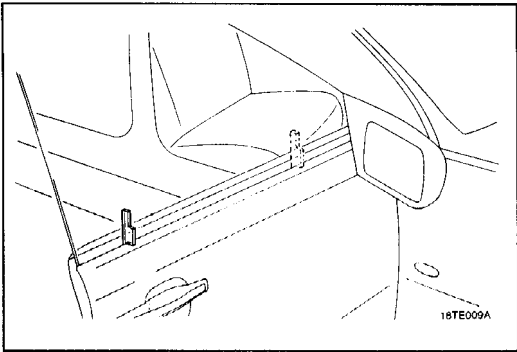
3. Mark the tape on the "B" pillar 100 mm from the top and 100 mm from the bottom. Measure from "B" pillar to the edge of the glass in both positions. This will give section C-C Measurement "F" (glass margin).

Standard value:  $12.7 \pm 1.0$  mm (parallel within 1.5 mm)

4. With the glass fully raised, close the door until the rear corner of the door glass just contacts the door seal and measure the distance between the rear edge of the opened door panel and the adjacent panel (rear door) at a line through the centre of the door handle ("soft touch").

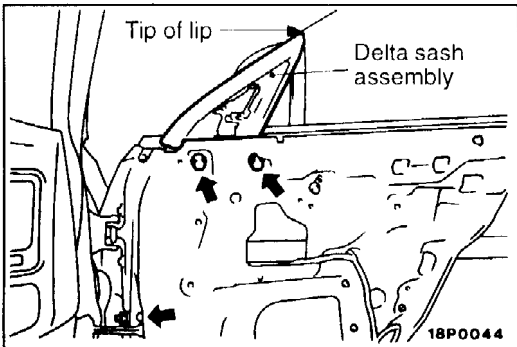
Standard value: 10 – 20 mm





- If the door glass operation is slow or the door glass rattles, remove the belt line moulding and check the door glass stabiliser setting using a suitable gauge.

**Standard value: 11.0 ± 0.5 mm**

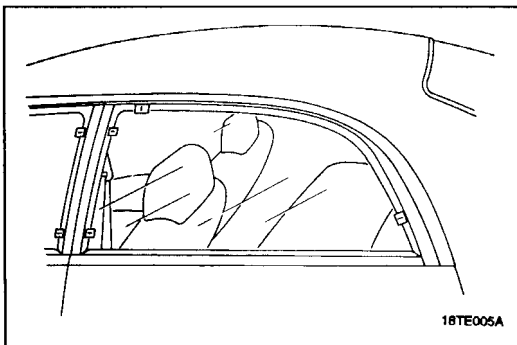


- Check the top delta setting position.

**Standard value: 0.5 mm**

**NOTE**

If all dimensions are in specification the customer concern is probably caused by a condition other than door glass settings.



**REAR**

- Place masking tape on the edge of the door glass in the positions as shown in the illustration.
- Mark the tape from the catch lip on the top front piece of tape at section J–J.  
Measure from the edge of the door glass to mark on the tape. This gives dimension “N” (glass intrusion).
- Mark the tape on the “B” pillar 100 mm up and 100 mm down. Measure from “B” pillar to the edge of the glass in both positions. This will give section I–I dimension “M” (glass margin).

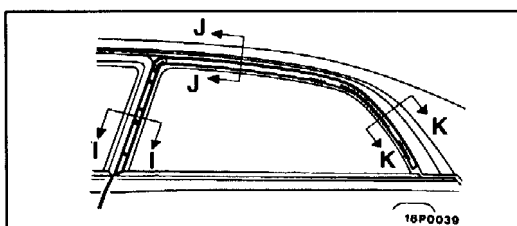
- Measure the distance between the rear edge of the glass and the “C” pillar moulding at section K–K. This will give dimension “P”.

**Standard value:**

(M) 12.7 ± 1.0 mm (parallel within 1.5 mm)

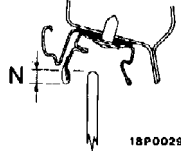
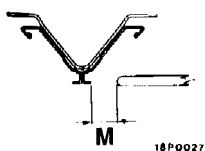
(N) 3.4 ± 1.0 mm

(P) 4.2 ± 1.0 mm

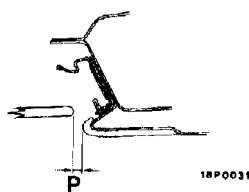


Section I–I

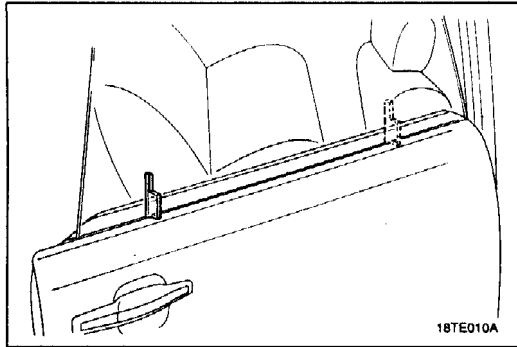
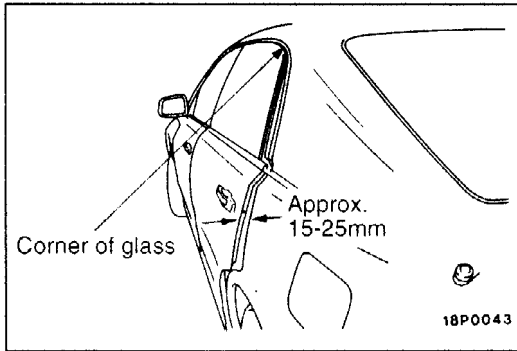
Section J–J



Section K–K



18AE017N



5. With the glass fully raised, close the door until the rear corner of the door glass just contacts the door seal and measure the distance between the rear edge of the opened door panel and the adjacent panel (rear fender) at a line through the centre of the door handle ("soft touch")

**Standard value: 15–25 mm**

6. If door glass operation is slow or the door glass rattles, remove the belt line moulding and check the door glass stabiliser settings.

**Standard value:**

**Front stabiliser  $11.0 \pm 0.5$  mm**

**Rear stabiliser  $12 \pm 0.5$  mm**

**NOTE**

If all dimensions are in specification, the customer concern is probably caused by a condition other than door glass settings.

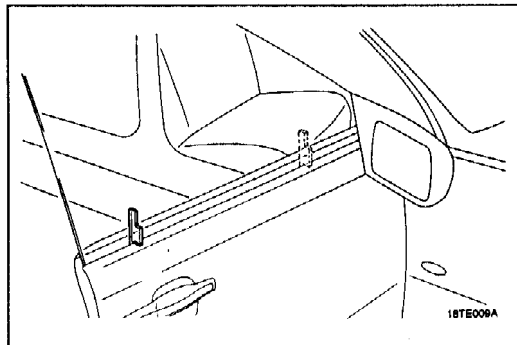
## DOOR GLASS ADJUSTMENTS

**NOTE**

Do not attempt door glass adjustment unless glass settings have been confirmed as being incorrect.

### FRONT

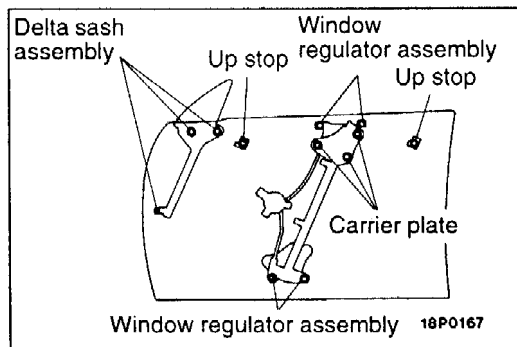
1. Remove the door trim, waterproof film (refer P.42-46) and belt line moulding.



2. Check and adjust the door glass stabiliser settings then re-install the belt line moulding.
3. Loosen the mounting bolts and nuts for up stops, delta sash, carrier plate, and regulator (bottom).

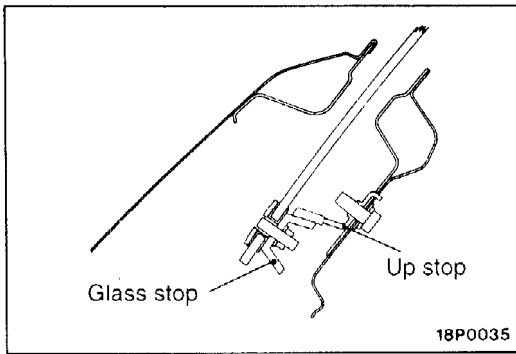
**NOTE**

Mark the position of all bolts and nuts before loosening so that they can be returned to the original position if necessary.



4. With the window up, close door carefully.
5. Hold the door glass with both hands, (one hand through the rear window) push the glass towards the glass catch to achieve the glass position specification in the glass catch (glass intrusion) and the "B" pillar glass margin (refer P.42-38).





6. If the specification is achieved, keep the door closed and from the inside of the vehicle push the up stops to the glass and tighten. Tighten the carrier plate bolts.
7. Open the door and tighten the regulator bottom bolts.
8. Recheck and confirm all dimensions.

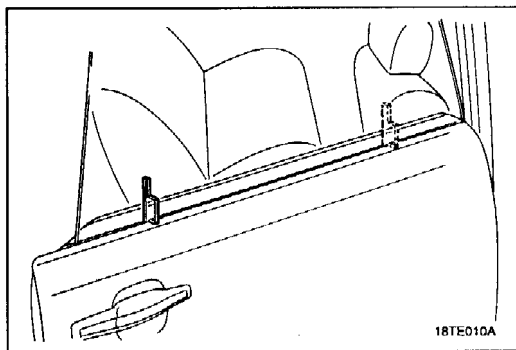
9. Recheck the glass intrusion, "soft touch" and glass margin. Alter glass intrusion by moving the up stops. Alter "soft touch" by adjusting the regulator mounting studs.

**Caution**

**Always turn each stud or bolt the same amount.**

If margin is incorrect, repeat steps 3–9.

10. With the glass fully raised, press the delta onto the glass so that the delta setting is the standard value (refer P.42-40).
11. Perform a leak test to confirm that water does not leak into the interior.
12. Install the waterproof film and door trim (refer P.42-46).

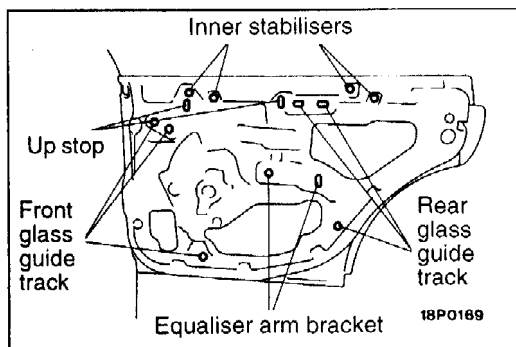


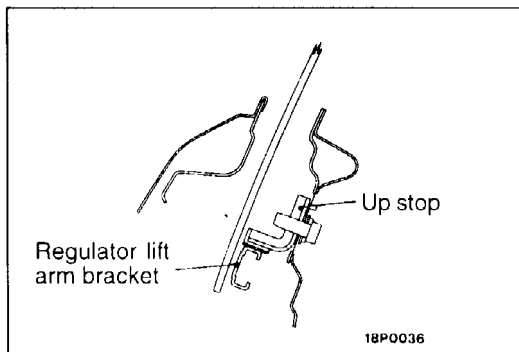
**REAR DOOR**

**NOTE**

Do not attempt door glass adjustment unless glass settings have been confirmed as incorrect.

1. Remove the door trim, waterproof film, (refer P.42-46) and belt line moulding.
2. Fully raise the door glass and check and adjust the door glass stabiliser settings using a suitable gauge then re-install the belt line moulding.
3. Loosen the mounting studs and nuts for the front glass guide track, rear glass guide track, up stops and equaliser arm bracket.
4. Move the door glass backwards and forwards by moving the rear glass guide track and at the same time tilt the glass by moving the equaliser arm bracket to set the glass margin, "C" pillar gap and door glass intrusion then tighten the equaliser arm bracket and guide track lower studs.





5. Hold the up stops against the regulator lift arm and tighten.
6. Verify the "soft touch" setting and if necessary adjust by turning the glass track upper studs.

#### Caution

**Always turn each adjustment stud the same amount and ensure that the amount of stud protrusion is equal.**

7. Lower and raise the door glass and verify that all dimensions are correct.  
Alter glass intrusion by moving the up stops.  
Alter "soft touch" by adjusting the regulator guide track upper stops.  
If glass margin or "C" pillar gap is incorrect repeat steps 3-7.
8. Perform a leak test to confirm that water does not leak into the interior.
9. Install the waterproof film and door trim.

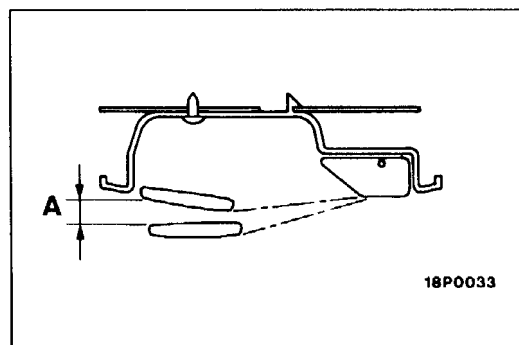
#### INSIDE HANDLE PLAY ADJUSTMENT

1. Remove the door trim and waterproof film. (Refer to P.42-46)
2. Move the door inside handle installation position back and forth to adjust so that the inside handle play allowance agrees with the standard value.

#### Standard value (A):

Front; 2.1 – 10.8 mm

Rear; 4.1 – 12.7 mm



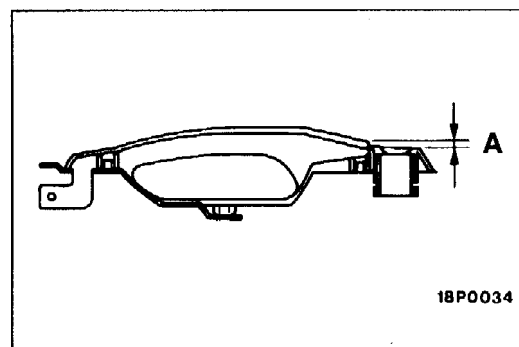
#### OUTSIDE HANDLE PLAY CHECK

If the door outside handle play does not conform to the standard value, check the door outside handle or door latch assembly, and replace if necessary.

#### Standard value (A):

Front; 1.7 – 6.0 mm

Rear; 1.9 – 5.8 mm



#### CIRCUIT BREAKER (INCORPORATED IN THE POWER WINDOW MOTOR) INSPECTION

1. Lift the UP switch to fully close the window glass, and continue to lift the switch for 40 seconds.
2. At the moment that the UP switch is released, press the DOWN switch. The circuit breaker can be considered good if at this time the door window glass begins to open within 60 seconds.

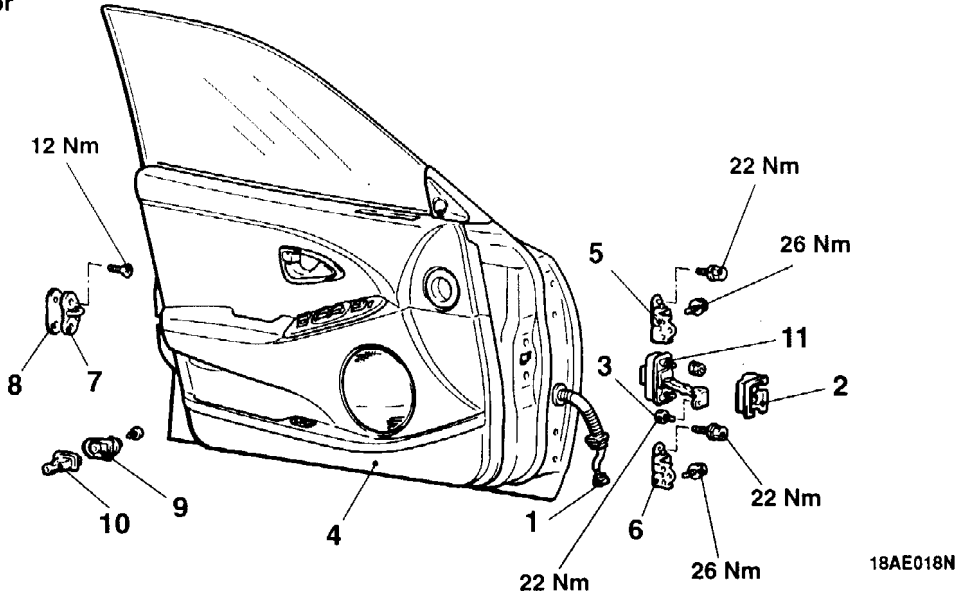
# DOOR ASSEMBLY

## REMOVAL AND INSTALLATION

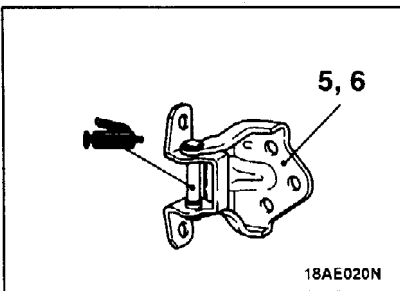
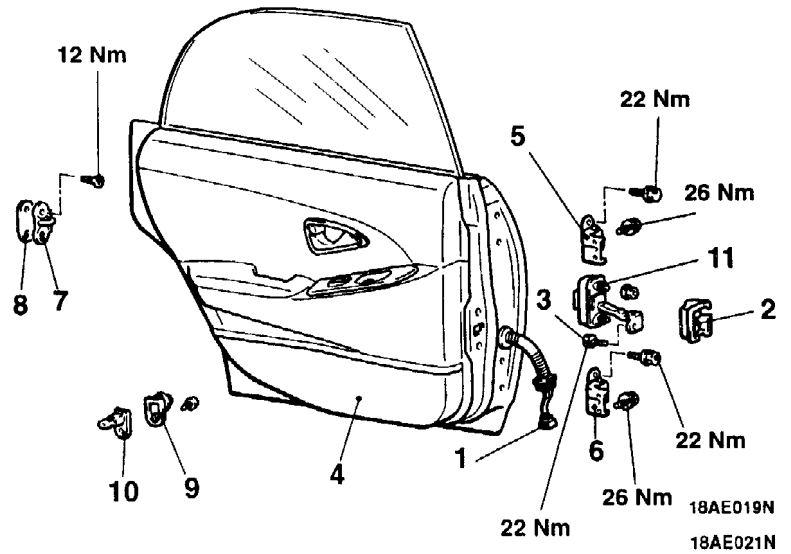
**Door Post-installation Operation**

- Door Adjustment (Refer to P.42-38.)

Front door



Rear door



**Door assembly removal steps**

1. Harness connector
2. Door check cover
3. Bolt
4. Door assembly
5. Door upper hinge
6. Door lower hinge



**Door check removal steps**

- Door trim and waterproof film (Refer to P.42-47.)
- 2. Door check cover
- 7. Door check

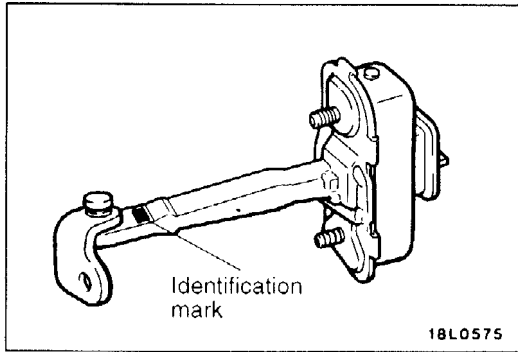


**Striker removal steps**

8. Striker
9. Striker shim

**Door switch removal steps**

10. Door switch cap
11. Door switch

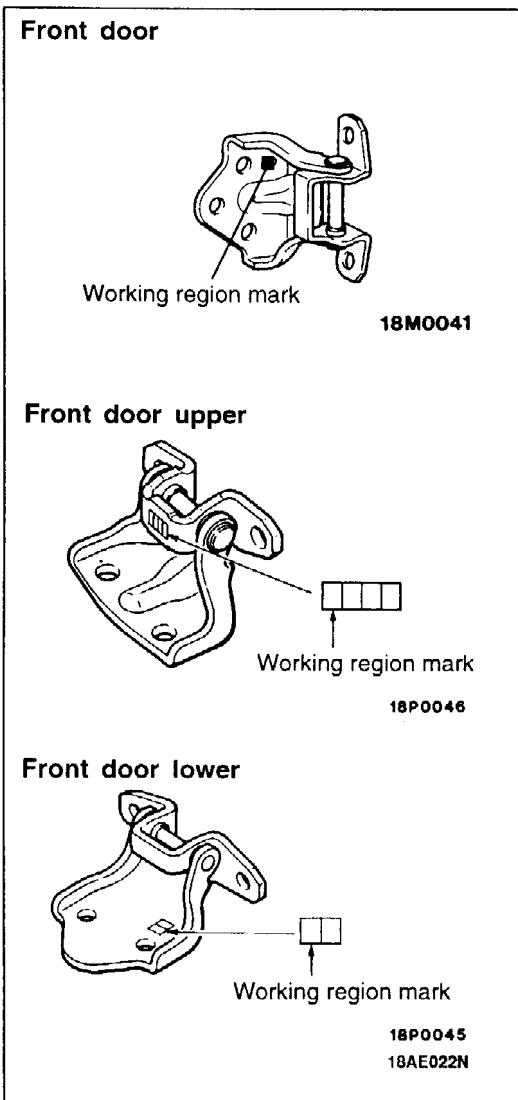


**INSTALLATION SERVICE POINTS**

**►A◄ DOOR CHECK INSTALLATION**

Install the door check so that the identification mark faces upwards.

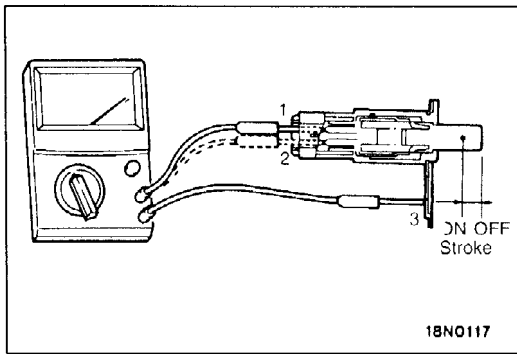
Applicable location		Identification mark
RH	Front door	1R
	Rear door	2R
LH	Front door	1L
	Rear door	2L



**►B◄ DOOR LOWER HINGE/ DOOR UPPER HINGE INSTALLATION**

The door hinges differ according to where they are used, so check the identification mark before installation.

Applicable location		Identification mark
Front left door	Upper hinge	V
	Lower hinge	U
Front right door	Upper hinge	U
	Lower hinge	V
Rear left door	Upper hinge	1
	Lower hinge	02
Rear right door	Upper hinge	2
	Lower hinge	P2



**INSPECTION**

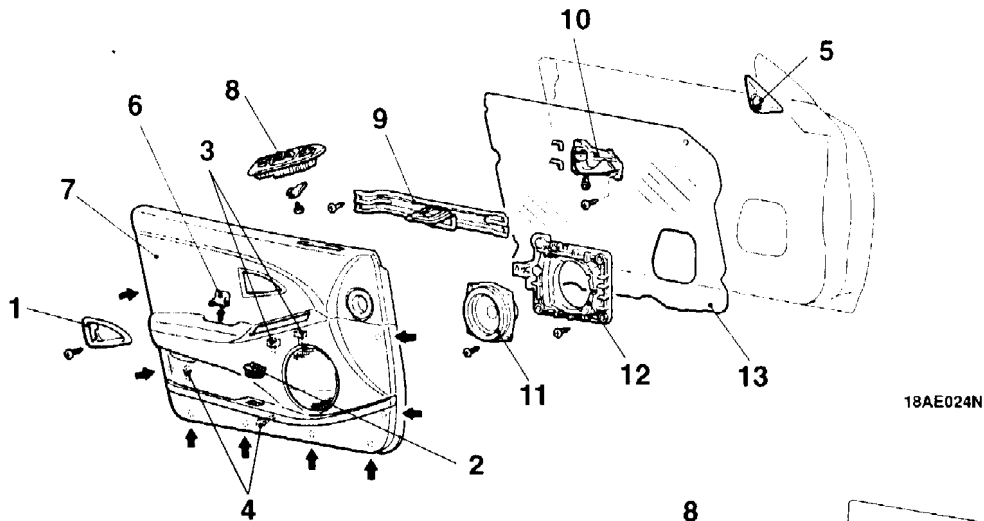
**DOOR SWITCH CONTINUITY CHECK**

Driver's door switch and passenger's door switch

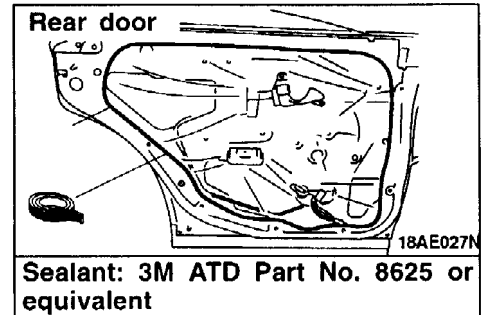
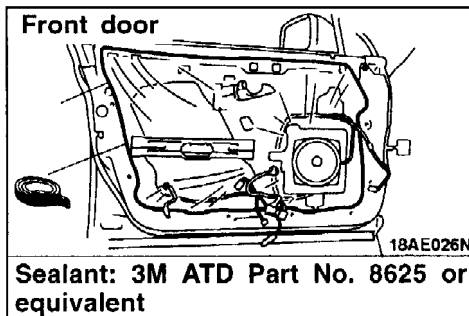
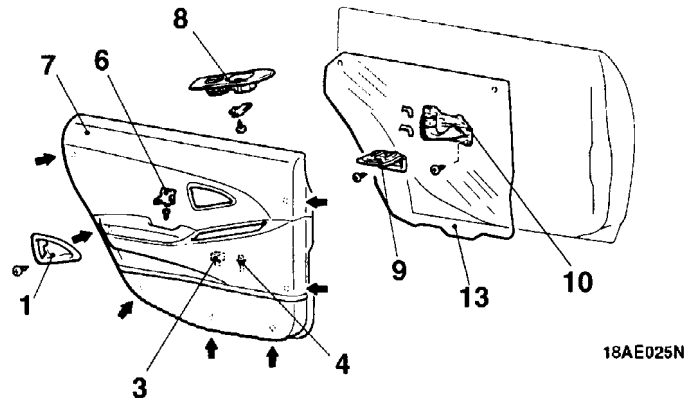
Switch position	1	2	3
Open (ON)	○ —	○ —	○ —
Depressed (OFF)			

## DOOR TRIM AND WATERPROOF FILM REMOVAL AND INSTALLATION

### Front door



### Rear door



18AE028N

### Removal steps

1. Inside handle cover
2. Trunk lid and fuel filler door opener switch (vehicles fitted with electric trunk lid and fuel filler door opener)
3. Harness connector
4. Harness
5. Inner delta cover or tweeter cover
6. Cap

7. Door trim
8. Driver side door module or power window sub-switch
9. Pull handle bracket
10. Door inside handle
11. Speaker
12. Speaker cover
13. Waterproof film

# DOOR GLASS AND REGULATOR

## REMOVAL AND INSTALLATION

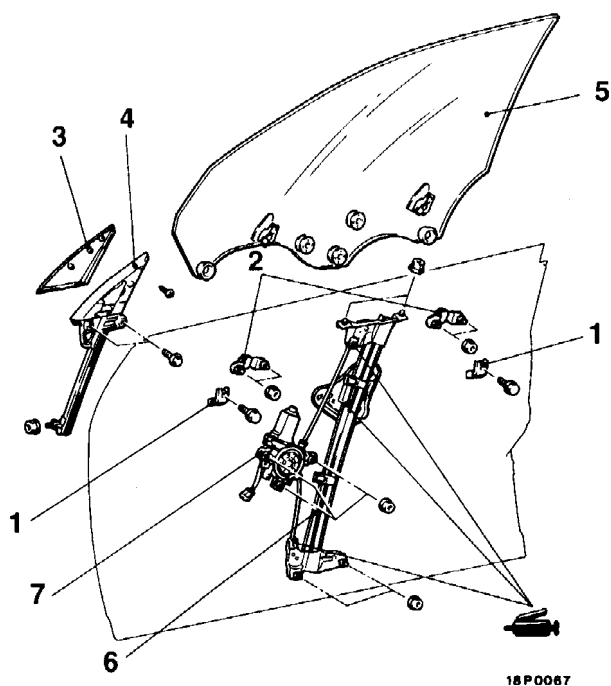
### Pre-removal Operation

- Door Trim and Waterproof Film Removal (Refer to P.42-46.)
- Door Belt Line Moulding, Removal (Refer to P.42-52)

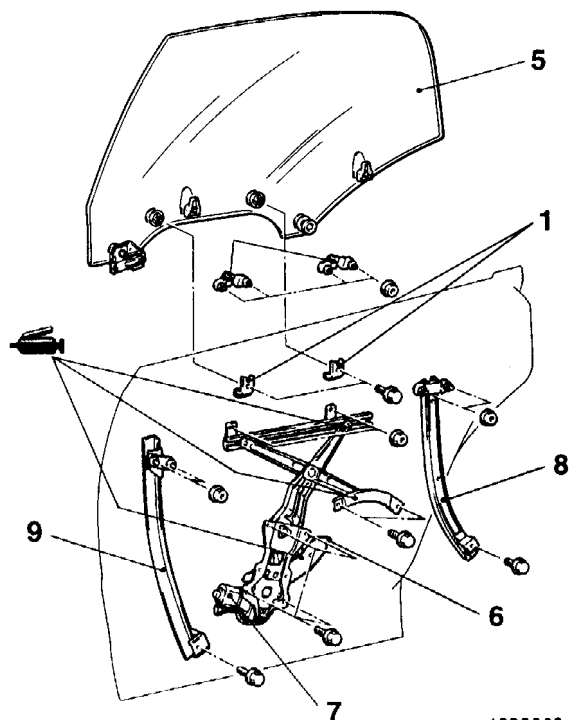
### Post-installation Operation

- Door Window Glass Adjustment (Refer to P.42-39)
- Door Trim and Waterproof Film Installation (Refer to P.42-46)
- Door Belt Line Moulding, Installation (Refer to P.42-52)

Front door



Rear door

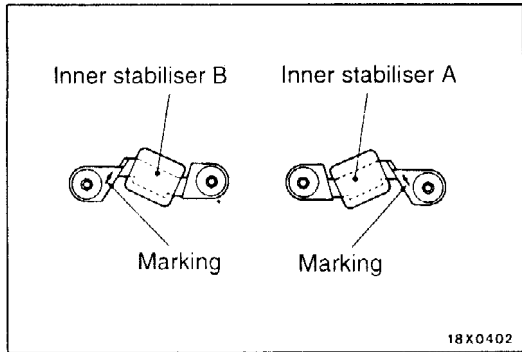


### Front window regulator assembly removal steps

- ▶◀
1. Up stop
  2. Inner stabiliser A (left front door)  
Inner stabiliser B (right front door)
  3. Outer delta cover
  4. Delta sash assembly
  5. Door window glass
  6. Window regulator assembly
  7. Power window motor

### Rear window regulator assembly removal steps

- ▶◀
1. Up stop
  2. Inner stabiliser A (right rear door)  
Inner stabiliser B (left rear door)
  5. Door window glass
  6. Window regulator assembly
  7. Power window motor
  8. Rear glass guide track
  9. Front glass guide track



**INSTALLATION SERVICE POINTS**

**▶A◀ INNER STABILISER A AND INNER STABILISER B INSTALLATION**

1. Confirm the difference between inner stabilisers A and B using the identification marks.

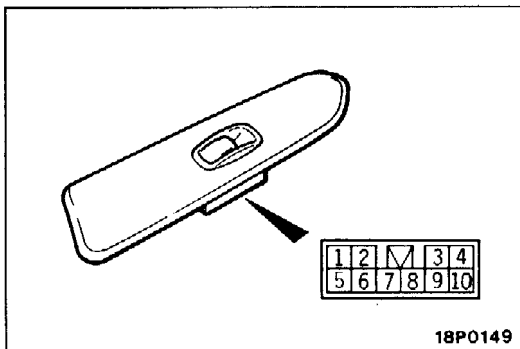
Applicable location		Identifying Colour
Inner stabiliser A	Left door front Right door rear	Yellow
Inner stabiliser B	Right door front Left door rear	Gray

2. Install each inner stabiliser so the arrow symbol points upwards.

**INSPECTION**

**POWER WINDOW MOTOR**

1. Check if the slider moves smoothly when the battery is directly connected to the motor terminals.
2. Check if the slider moves in the opposite direction when the battery is connected with the polarities reversed.



**POWER WINDOW SWITCH CONTINUITY CHECK**

**Main switch (Driver side door module)**

Refer to Group 54–SWS Troubleshooting

**Sub Switch**

Terminal Number	Switch position			
	Up	OFF		Down
		Not Live	Live	
2		○		⊖
4		○		○
5		○	⊖	
6	○	○		○
7	○	○	⊕	⊕
9			○	
10			○	○



# DOOR HANDLE AND LATCH

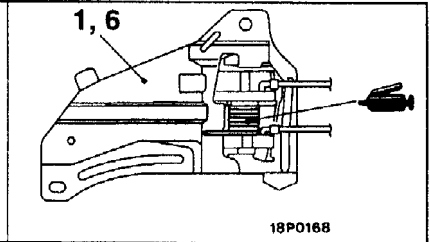
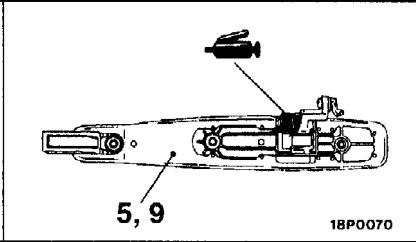
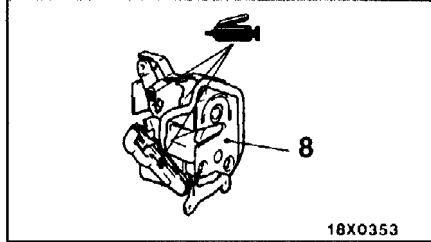
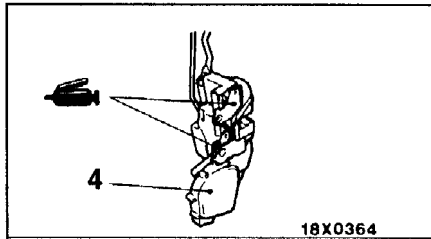
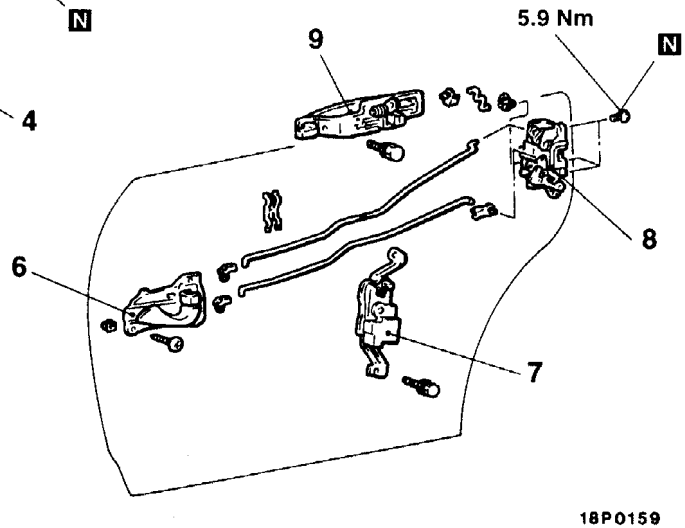
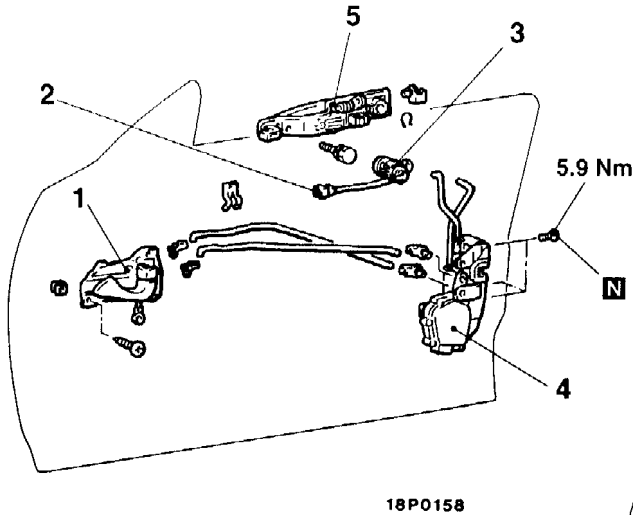
## REMOVAL AND INSTALLATION

**Pre-removal Operation**

- Door Trim Removal (Refer to P.42-46.)

**Post-installation Operation**

- Inside Handle Play Adjustment (Refer to P.42-42.)
- Door Trim Installation (Refer to P.42-46.)



18AE030N

**Front door inside handle removal steps**

1. Front door inside handle

**Front door outside handle and door latch assembly removal steps**

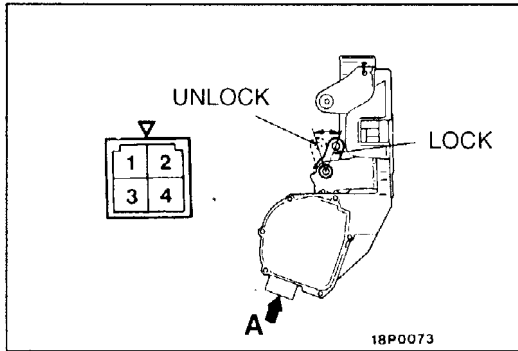
1. Front door inside handle
- Waterproof film (Refer to P.42-46.)
2. Harness connector
3. Door lock key cylinder
4. Front door latch assembly
5. Front door outside handle

**Rear door inside handle removal steps**

6. Rear door inside handle

**Rear door outside handle and door latch assembly removal steps**

6. Rear door inside handle
- Waterproof film (Refer to P.42-46.)
7. Rear door lock actuator
8. Rear door latch assembly
9. Rear door outside handle

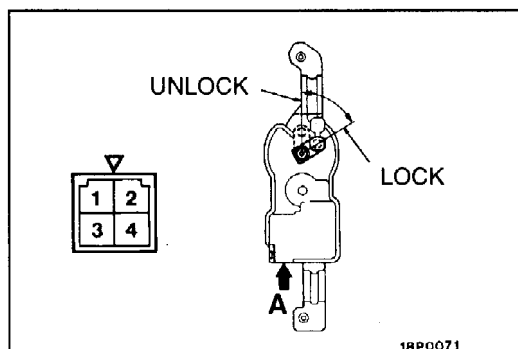
**INSPECTION****FRONT DOOR LOCK ACTUATOR CHECK**

&lt;L.H.&gt;

1. After setting the rod to the LOCK position, apply battery voltage to terminal 3 and check if the rod moves as far as the UNLOCK position when terminal 4 is grounded.
2. After setting the rod to the UNLOCK position and applying battery voltage to terminal 4, check if the rod moves as far as the LOCK position when terminal 3 is grounded.
3. When the rod is set to the UNLOCK position, check if there is continuity between terminal 1 and terminal 2, and when the rod is set to the LOCK position, check that there is no continuity.

&lt;R.H.&gt;

1. After setting the rod to the LOCK position, apply battery voltage to terminal 4 and check if the rod moves as far as the UNLOCK position when terminal 3 is grounded.
2. After setting the rod to the UNLOCK position and applying battery voltage to terminal 3, check if the rod moves as far as the LOCK position when terminal 4 is grounded.
3. When the rod is set to the UNLOCK position, check if there is continuity between terminal 2 and terminal 1, and when the rod is set to the LOCK position, check that there is no continuity.

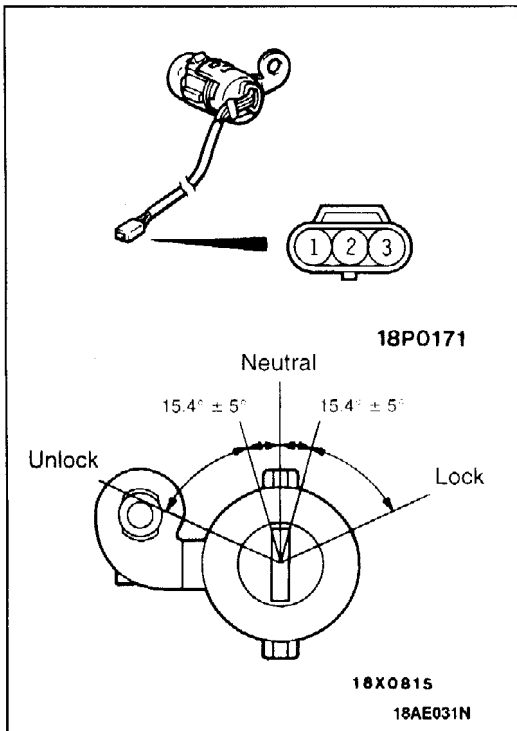
**REAR DOOR LOCK ACTUATOR CHECK**

&lt;L.H.&gt;

1. After setting the rod to the LOCK position, apply battery voltage to terminal 1 and check if the rod moves to the UNLOCK position when terminal 3 is grounded.
2. After setting the rod to the UNLOCK position and applying battery voltage to terminal 3, check if the rod moves to the LOCK position when terminal 1 is grounded.

&lt;R.H.&gt;

1. After setting the rod to the LOCK position and applying battery voltage to terminal 3, check if the rod moves to the UNLOCK position when terminal 1 grounded.
2. After setting the rod to the UNLOCK position and applying battery voltage to terminal 1, check if the rod moves to the LOCK position when terminal 3 is grounded.



**DOOR LOCK KEY CYLINDER SWITCH CONTINUITY CHECK**

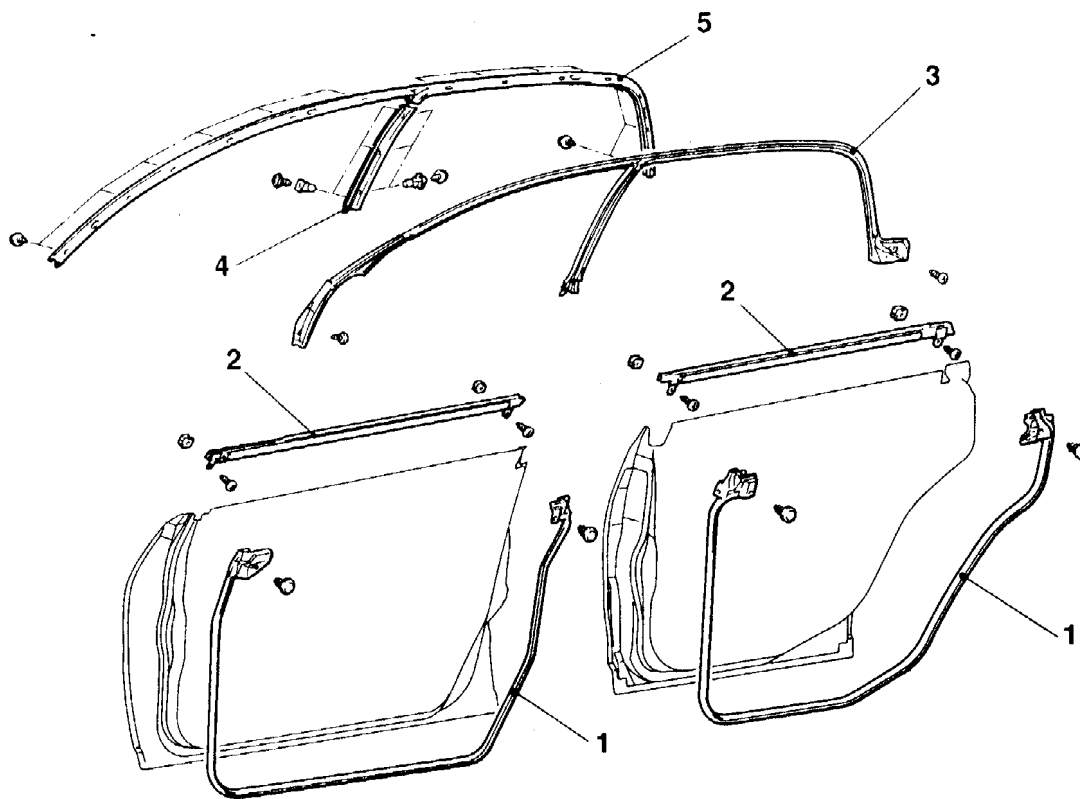
Switch position	Terminal No.		
	1	2	3
LOCK	○	○	
Neutral (OFF)			
UNLOCK		○	○

**CENTRAL DOOR LOCK SWITCH CHECK**

Refer to Group 54–SWS Troubleshooting.

# DOOR BELT LINE MOULDING AND DOOR OPENING WEATHERSTRIP

## REMOVAL AND INSTALLATION



18P0068

### Door outer opening weatherstrip removal steps

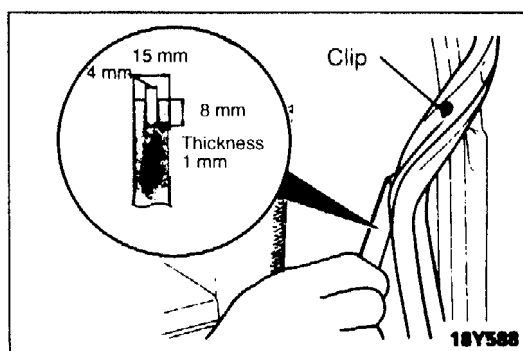
- Door trim (Refer to P.42-46)
- 1. Door outer opening weatherstrip

### Beltline moulding removal steps

1. Door outer opening weatherstrip
2. Beltline moulding

### Dripline weatherstrip removal steps

3. Dripline weatherstrip
4. Centre pillar holder
5. Door weatherstrip holder



## REMOVAL SERVICE POINT

### ◀A▶ DOOR OUTER OPENING WEATHERSTRIP REMOVAL

Make a tool as shown in the illustration to remove the door opening weatherstrip.

## INSTALLATION SERVICE POINT

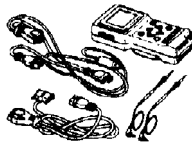
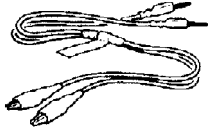
### ▶A◀ DOOR OUTER OPENING WEATHERSTRIP INSTALLATION

The clip colour identifies the left and right weatherstrips, so be sure to use the colours so as to install correctly.

Applicable side	Identification colour
Left door	White
Right door	Yellow

## KEYLESS ENTRY SYSTEM

### SPECIAL TOOLS

Tool	Number	Name	Use
	MB991502	MUT-II	Checking the keyless entry system (SWS Diagnosis displayed using the Scan tool)
	MB991529	Check harness	Checking using the SWS Simplified Check Diagnosis Mode

## TROUBLESHOOTING

### STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Refer to GROUP 00 – How to use Troubleshooting/Inspection Service Points.

#### DIAGNOSIS FUNCTION

##### DIAGNOSIS CODES CHECK

Read a diagnosis code by the MUT-II or high beam indicator lamp.

(Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.

##### ERASING DIAGNOSIS CODES

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.

#### SWS SIMPLIFIED FAULT DIAGNOSIS MODE

The following tests can be performed using the SWS Simplified Fault Diagnosis Mode:

- SWS-ECU specification
- Switch input signals for each ECU
- Diagnosis code output

Refer to Group 54–SWS for details of the SWS Simplified Fault Diagnosis Mode.

#### SWS DIAGNOSIS CODE CLASSIFICATION TABLE

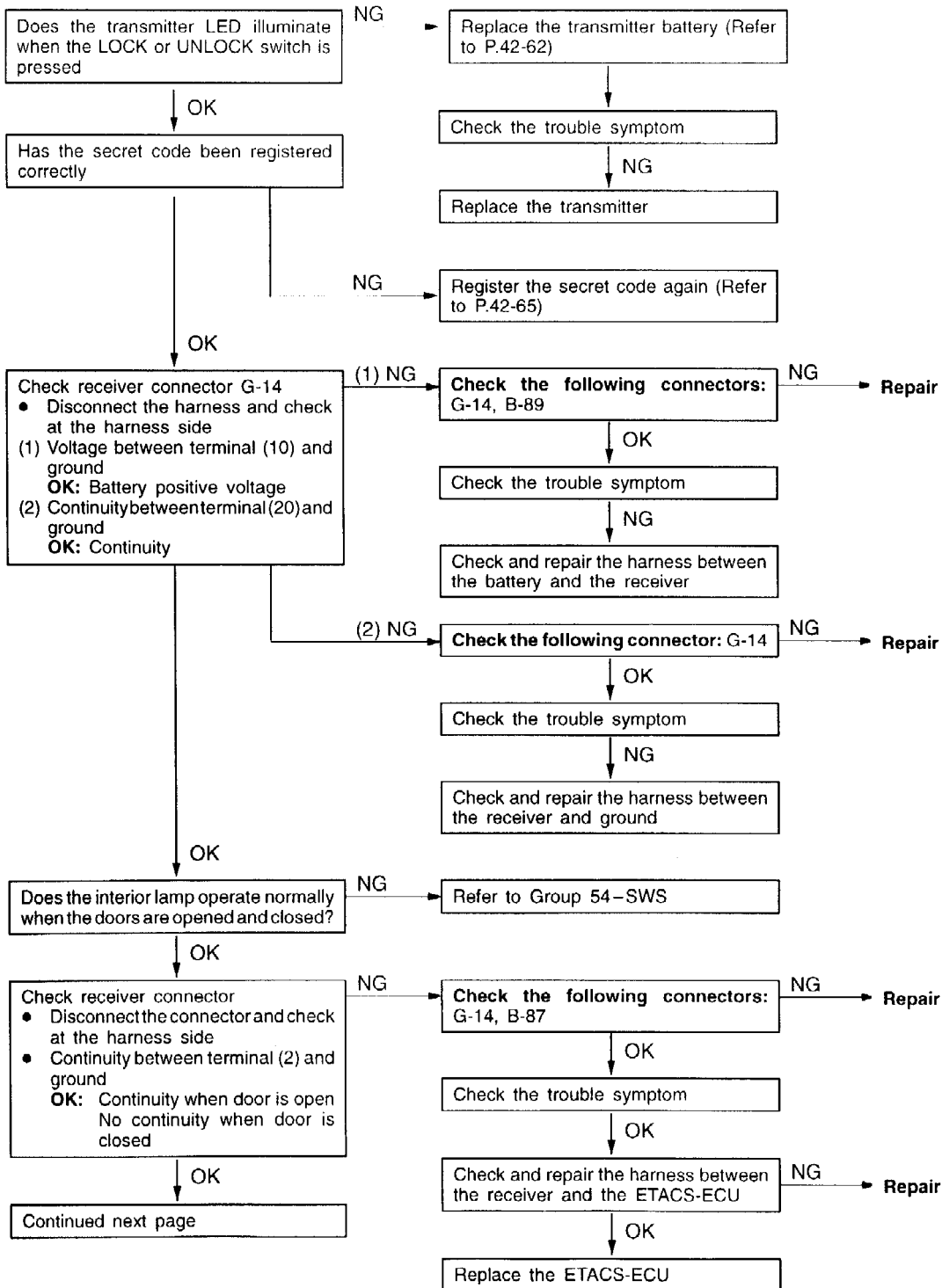
Refer to Group 54–SWS.

## INSPECTION CHART FOR TROUBLE SYMPTOMS

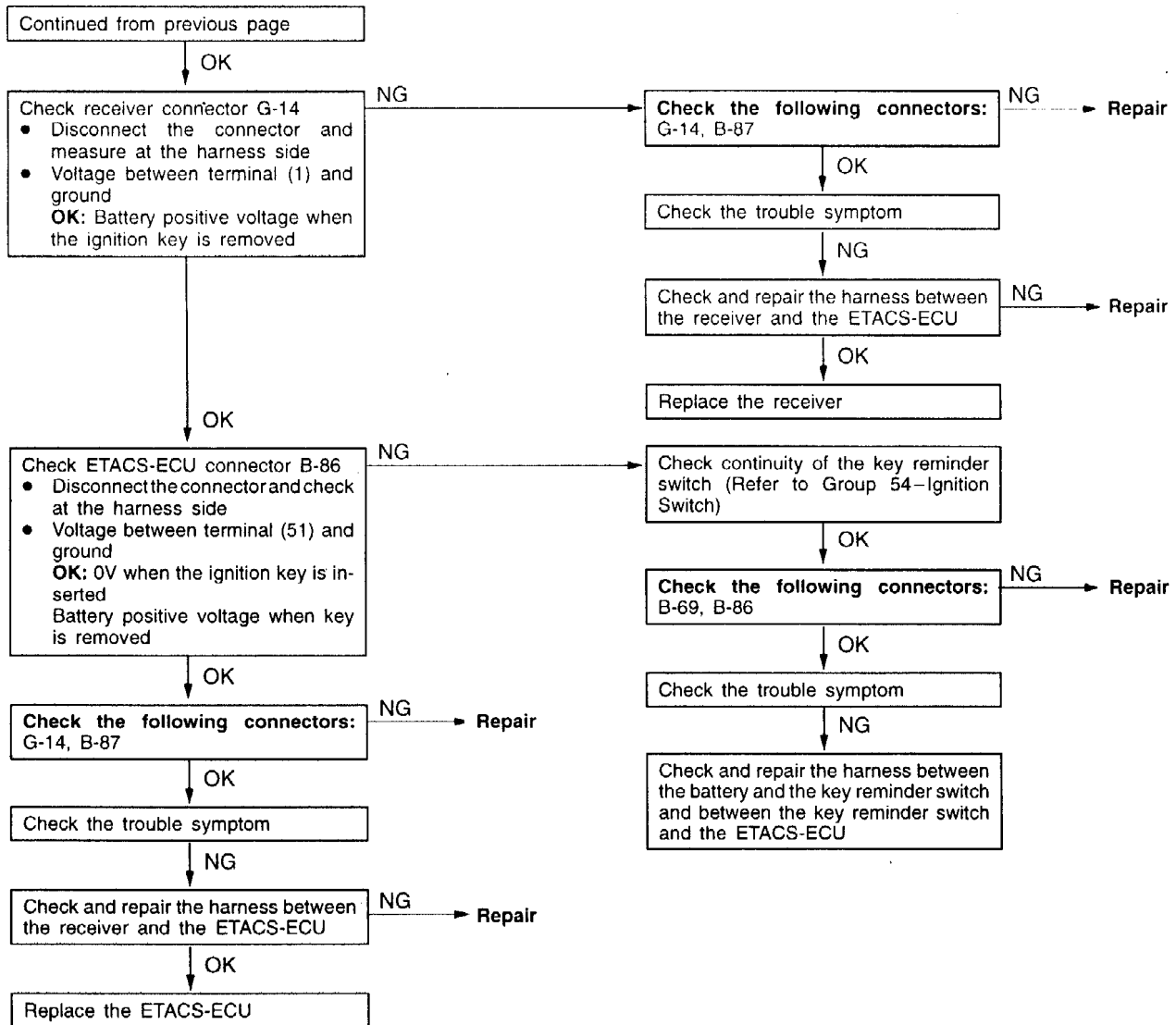
Trouble symptom	Inspection procedure no.	Reference page
Communication with MUT-II is not possible.	Refer Group 54–SWS	
Switching to SWS simplified diagnostic mode is not possible		
No door can be locked or unlocked with the transmitter (central locking system operates normally)	1	42-55
No door can be locked with the transmitter (central locking system locking function operates normally)	2	42-57
No door can be unlocked with the transmitter (central locking system unlocking function operates normally)	3	42-58
The trunk lid cannot be unlocked with the transmitter	4	42-58
The interior light either flashes or does not illuminate when the doors are either locked or unlocked with the transmitter (the light functions normally when doors are opened or closed)	5	42-59
The transmitter secret code cannot be registered	6	42-60

**INSPECTION PROCEDURE 1**

<p><b>No door can be locked or unlocked with the transmitter (central locking system operates normally)</b></p>	<p><b>Probable cause</b></p> <ul style="list-style-type: none"> <li>• Defective transmitter</li> <li>• Defective receiver</li> <li>• Defective harness or connector</li> </ul>
<p>The transmitter, receiver, receiver power or ground circuit, key reminder switch or a door switch may be defective.</p>	



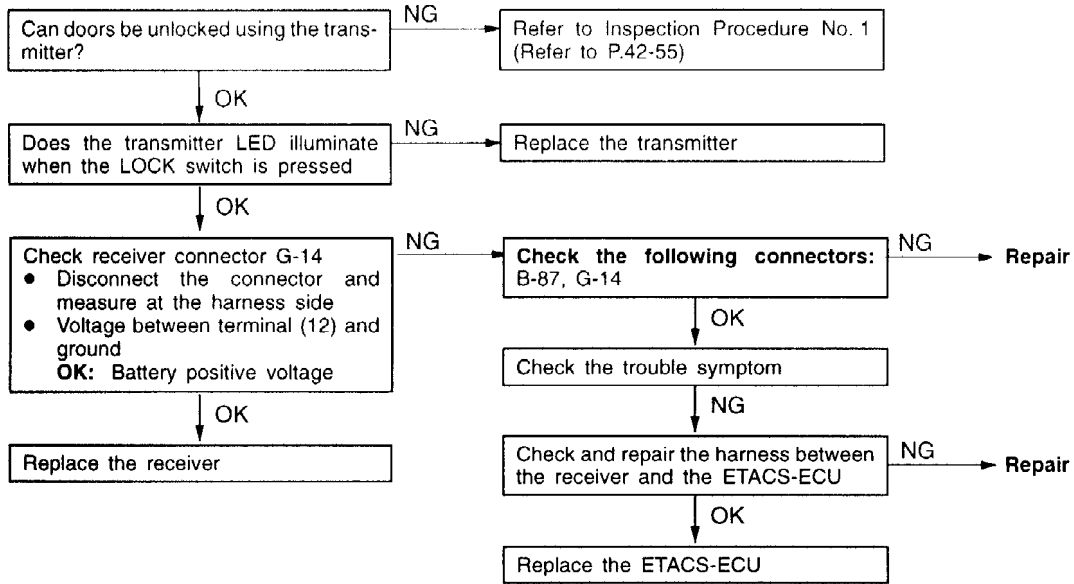
INSPECTION PROCEDURE 1 (continued)





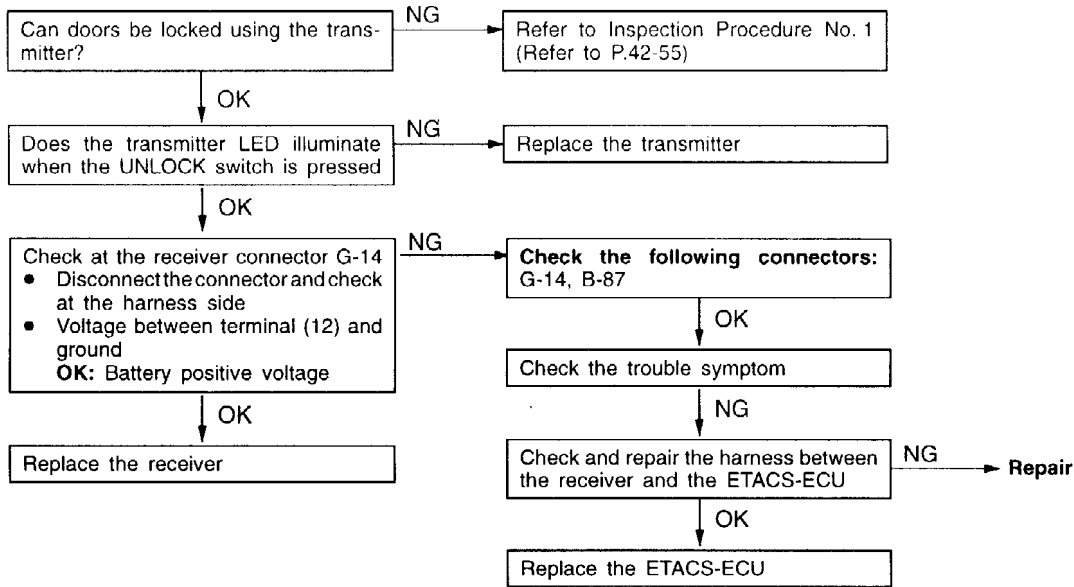
**INSPECTION PROCEDURE 2**

No door can be locked with the transmitter (central locking system operates normally)	Probable cause
The transmitter receiver or ETACS-ECU or the harness between the ETACS-ECU and receiver may be defective	<ul style="list-style-type: none"> <li>• Defective transmitter</li> <li>• Defective receiver</li> <li>• Defective ETACS-ECU</li> <li>• Defective harness or connector</li> </ul>



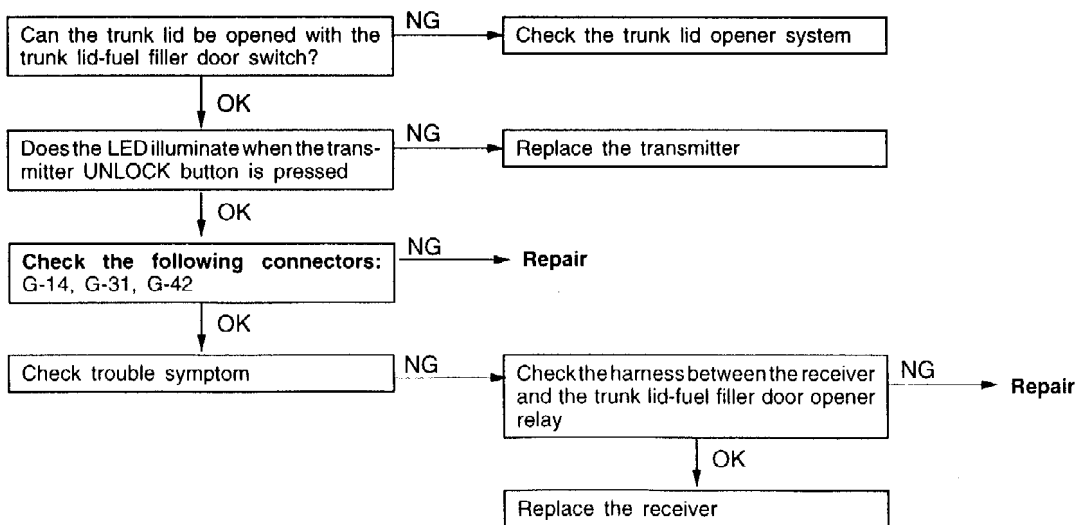
**INSPECTION PROCEDURE 3**

<p><b>No door can be unlocked with the transmitter (central locking system operates normally)</b></p>	<p><b>Probable cause</b></p>
<p>The transmitter, receiver ETACS-ECU or the harness between the receiver and ETACS-ECU may be defective</p>	<ul style="list-style-type: none"> <li>• Defective transmitter</li> <li>• Defective receiver</li> <li>• Defective ETACS-ECU</li> <li>• Defective harness or connector</li> </ul>



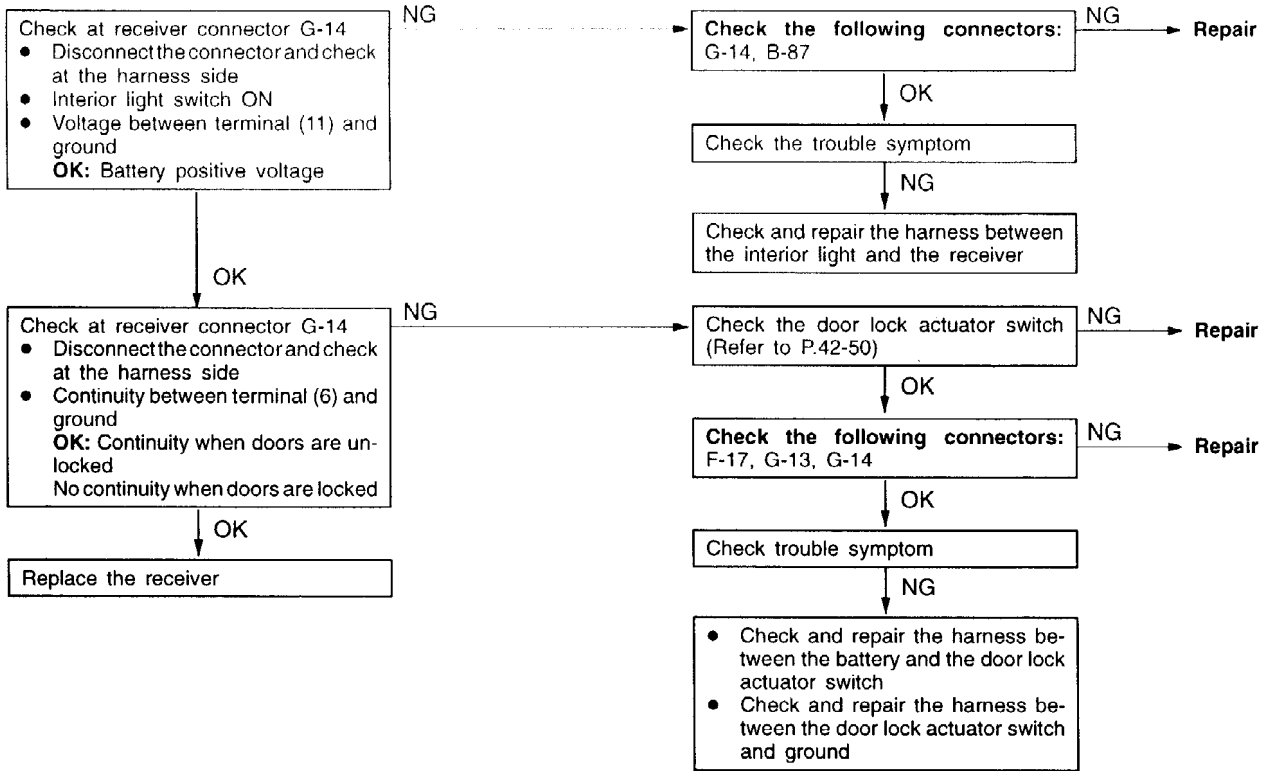
**INSPECTION PROCEDURE 4**

<p><b>The trunk lid cannot be unlocked with the transmitter</b></p>	<p><b>Probable cause</b></p>
<p>The transmitter, receiver or the harness between the receiver and trunk lid-fuel filler door opener relay may be defective</p>	<ul style="list-style-type: none"> <li>• Defective receiver</li> <li>• Defective transmitter</li> <li>• Defective harness or connector</li> </ul>



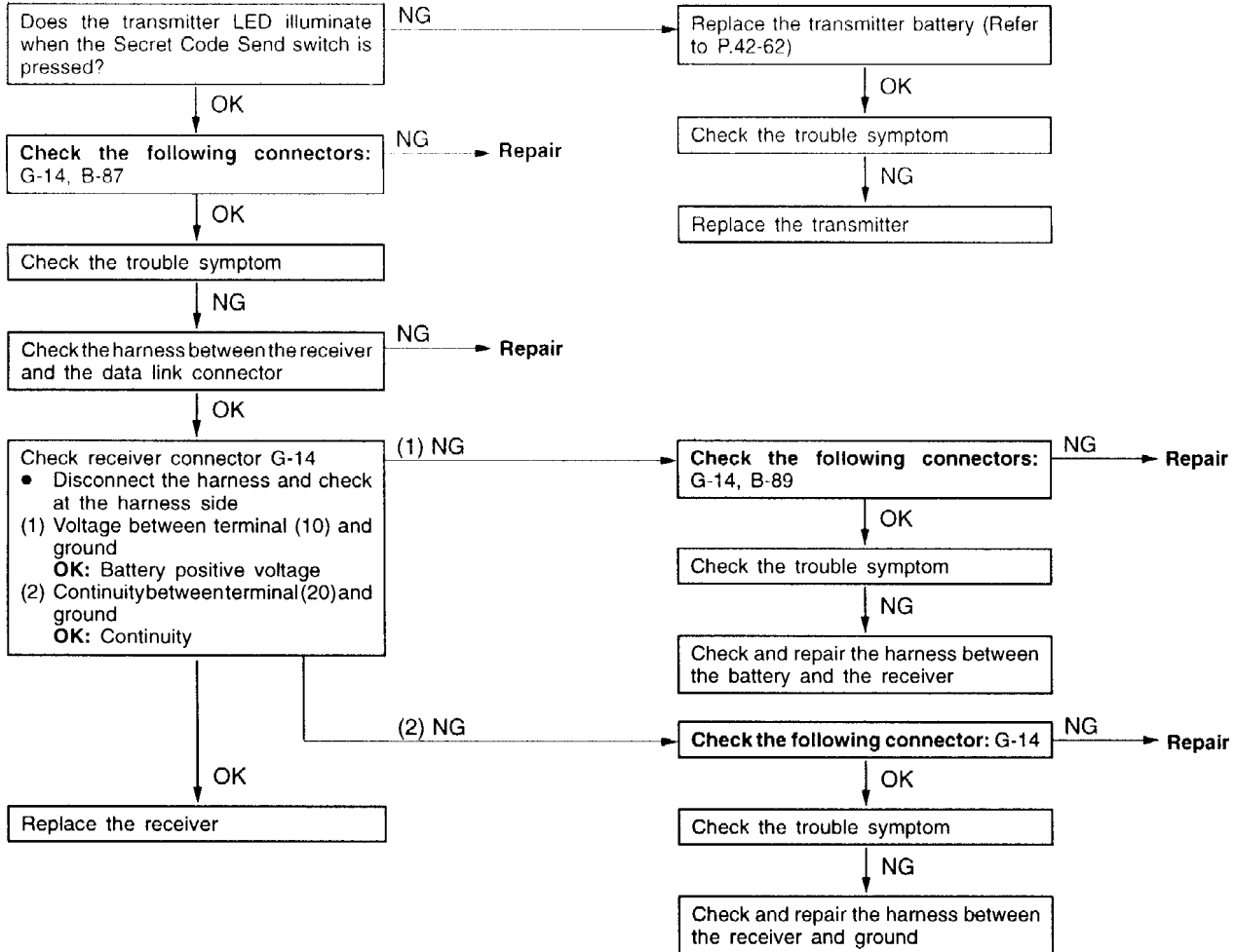
**INSPECTION PROCEDURE 5**

The interior light either flashes or does not illuminate when all doors are locked or unlocked with the transmitter (the interior light operates normally when the doors are opened or closed)	Probable cause
The door lock actuator switch input circuit to the receiver, the interior light drive circuit or the receiver may be defective	<ul style="list-style-type: none"> <li>• Defective transmitter</li> <li>• Defective receiver</li> <li>• Defective harness or connector</li> </ul>

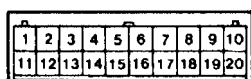


**INSPECTION PROCEDURE 6**

The transmitter secret code cannot be registered	Probable cause
The transmitter, receiver or the harness between the receiver and the data link connector may be defective	<ul style="list-style-type: none"> <li>● Defective transmitter</li> <li>● Defective receiver</li> <li>● Defective harness or connector</li> </ul>



CHECKING THE RECEIVER TERMINALS



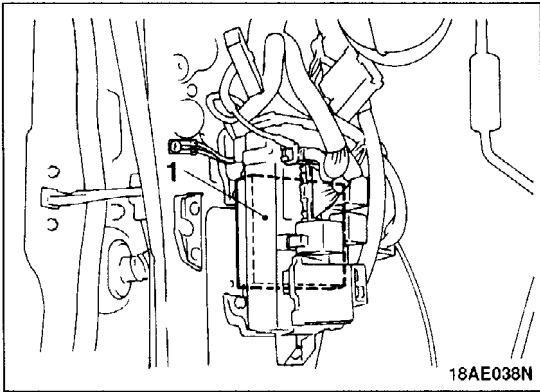
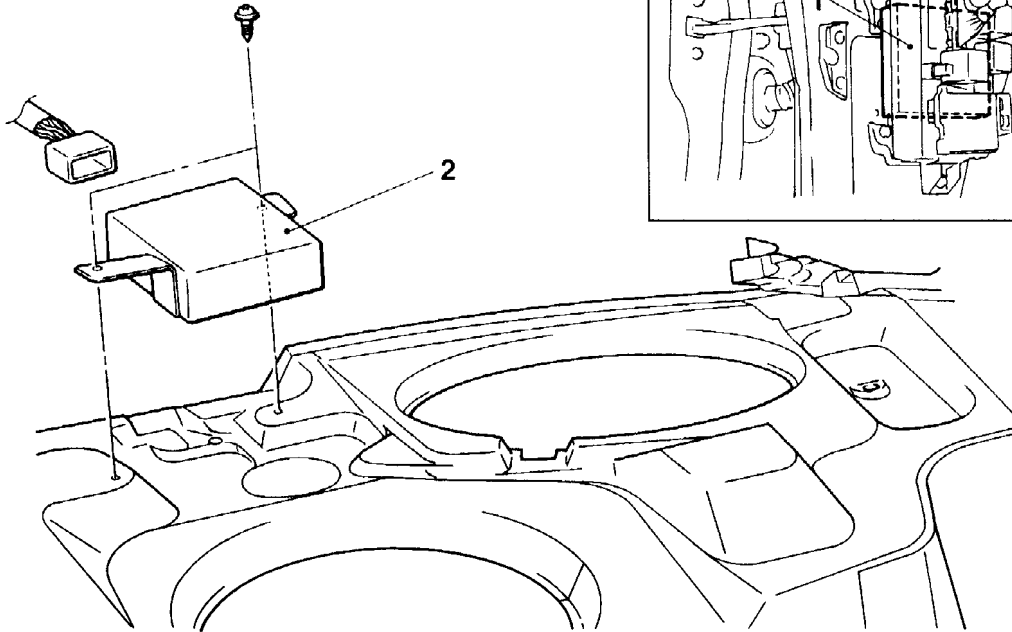
18W0311

Terminal	Signal Name	Conditions	Terminal Voltage
1	Key reminder	Ignition Key inserted	Battery positive voltage
		Ignition Key removed	0V
2	Door switch	Either door open (door switch: ON)	0V
		All doors closed (door switch: OFF)	Battery positive voltage
6	Door lock actuator switch (driver side)	LOCK	5V (Pulse output*)
		UNLOCK	0V
7	Diagnostic selection	When scan tool is connected	0V
		When scan tool is not connected	Battery positive voltage
9	Ignition switch	Ignition switch: ACC or ON	Battery positive voltage
		Ignition switch: OFF	0V
10	Receiver power supply	Full time	Battery positive voltage
11	Room lamp output	Either door open (door switch: ON)	0V
		All doors closed (door switch: OFF)	Battery positive voltage
12	Door lock output	When operating	0V
		When not operating	Battery positive voltage
13	Door unlock output (all doors)	When operating	0V
		When not operating	Battery positive voltage
14	Door unlock output (driver side)	When operating	0V
		When not operating	Battery positive voltage
16	Driver identification signal output	When operating	5V (Pulse output*)
		When not operating	5V
18	Trunk lid and fuel filler door opener relay output	When operating	0V
		When not operating	Battery positive voltage
20	Ground	Full time	0V

NOTE

\*: Measure with an oscilloscope. However, if measuring with a tester, around 0~0.03V is repeatedly displayed.

REMOVAL AND INSTALLATION



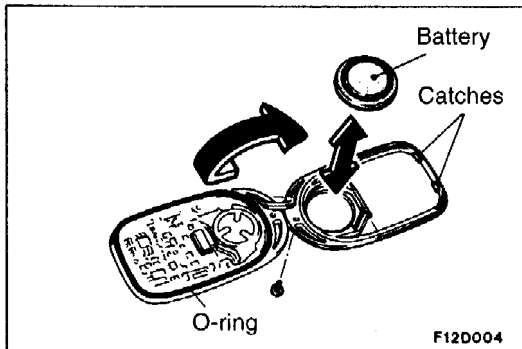
18P0086  
18AE039N

**ETACS-ECU removal steps**

1. ETACS-ECU

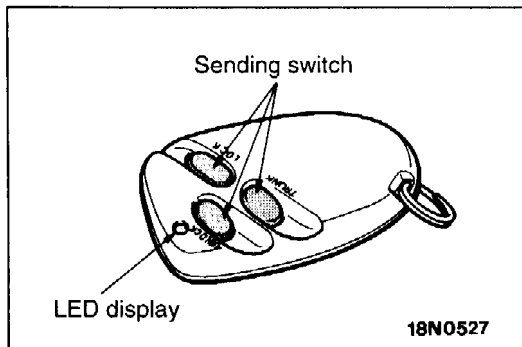
**Receiver removal steps**

- Rear shelf trim (see Group 52A)
2. Receiver



**REPLACING THE BATTERY**

1. Undo the mounting screw and remove the battery from the transmitter.
2. Insert a new battery with the + side down.  
**Replacement battery: Lithium battery CR2032**
3. Push together the catches of the battery cover, and take care not to twist or displace the O-ring.



**Caution:**

**Be careful not to deform the battery electrodes when replacing, ensure that water and dirt do not enter, and that you do not directly touch the printed circuit board.**

4. Press the send switch on the transmitter and confirm that the LED display lights up.

## TRANSMITTER CODE REGISTRATION METHOD

Each transmitter has its own stored secret code. When replacing the transmitter and receiver, or when it is concluded that a system malfunction is caused by a transmitter code registration fault, the code must be registered in the receiver EEPROM.

Since only two different codes can be stored in the EEPROM memory space, when the registration procedure below is repeated twice, the old code can no longer be used. Registration of the code should be performed after confirming with the key that the door lock function is operative.

1. Connect the MUT-II to the diagnosis connector.

### NOTE

The No. 1 terminal of the diagnosis connector is in the grounded state at this time, and the unit is ready for code registration.

### Caution

**Ensure that the ignition switch is in the OFF position when connecting and disconnecting the MUT-II.**

2. Close all doors.
3. Turn the ignition switch to the ACC position, then return to the OFF position.

### NOTE

The door lock will lock and unlock to confirm that the registration mode is enabled.

4. Press the "Lock" or "Unlock" switch on the first transmitter to be registered once, then press twice more within 10 seconds and the code is registered.
5. After completing registration, the door locks will lock and unlock once.
6. If there are two transmitters, register the first, then register the second using the same procedure within one minute. After completing the second registration, the door locks will lock and unlock once.

### NOTE

The registration mode is cancelled under the following conditions.

- When registration of the two transmitter codes is complete
  - When 1 min has elapsed after setting registration mode
  - When the MUT-II connection is disconnected (ground released)
  - When the ignition switch is turned ON
  - When any door is opened
7. Disconnect the MUT-II and confirm that the transmitter(s) function(s) correctly.





**SUNROOF****SERVICE SPECIFICATIONS**

Items	Specifications
Roof lid operating current A	9 or less (at 20°C)
Slipping force of sunroof motor clutch N	47–62

**SEALANT**

Items	Specified sealant
Rail cover assembly	3M ATD Part No. 8531 or 3M ATD Part No. 8646 or equivalent

**SPECIAL TOOLS**

Tool	Number	Name	Use
<p><b>A</b></p>  <p>MB991219</p>	<p>MB991223  A: MB991219  B: MB991220  C: MB991221  D: MB991222</p>	<p>Harness set  A: Test harness  B: LED harness  C: LED harness adaptor  D: Probe</p>	<p>Measurement of terminal voltage  A: Connector pin contact pressure inspection  B, C: Power circuit inspection  D: Commercial tester connection</p>
<p><b>B</b></p>  <p>MB991220</p>			
<p><b>C</b></p>  <p>MB991221</p>			
<p><b>D</b></p>  <p>MB991222  MB991223</p>			



**TROUBLESHOOTING**

**INSPECTION CHART FOR TROUBLE SYMPTOMS**

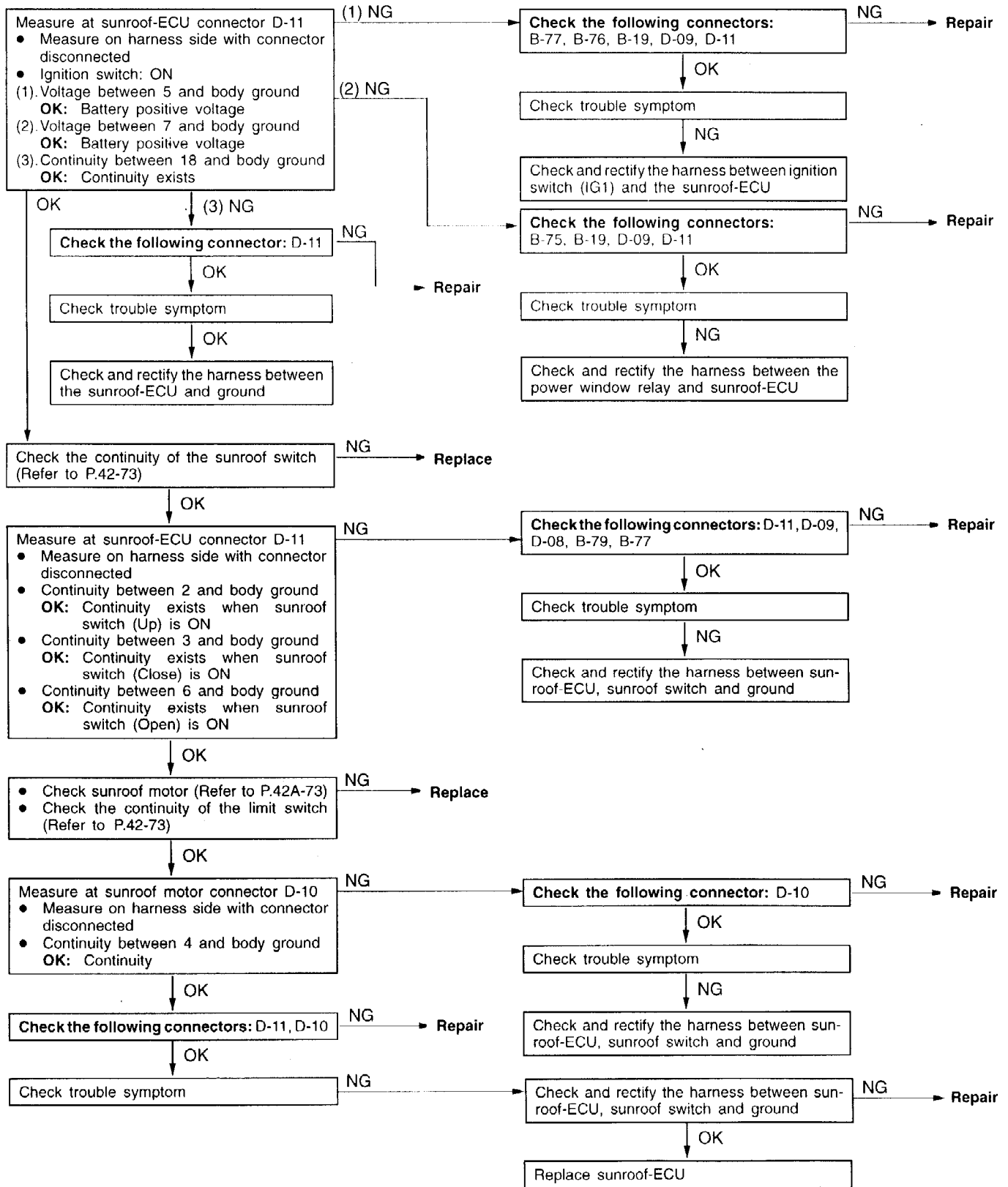
Trouble symptom	Inspection procedure no.	Page reference
Sunroof does not operate with ignition ON	1	42-65
When the sunroof is closing, the motor does not reverse when a load of 140N or more is applied.	2	42-67
The timer does not operate for 30 seconds after the ignition is switched off (power window timer operates normally)	3	42-67

**INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS**

**INSPECTION PROCEDURE 1**

<b>The sunroof does not operate with the ignition switch ON</b>	<b>Probable cause</b>
Possible causes include faults in the sunroof switch, sunroof motor or sunroof-ECU power supply circuit, or ground circuit.	<ul style="list-style-type: none"> <li>● Sunroof switch fault</li> <li>● Sunroof motor fault</li> <li>● Harness or connector fault</li> <li>● Sunroof-ECU fault</li> </ul>

**Continued next page:**



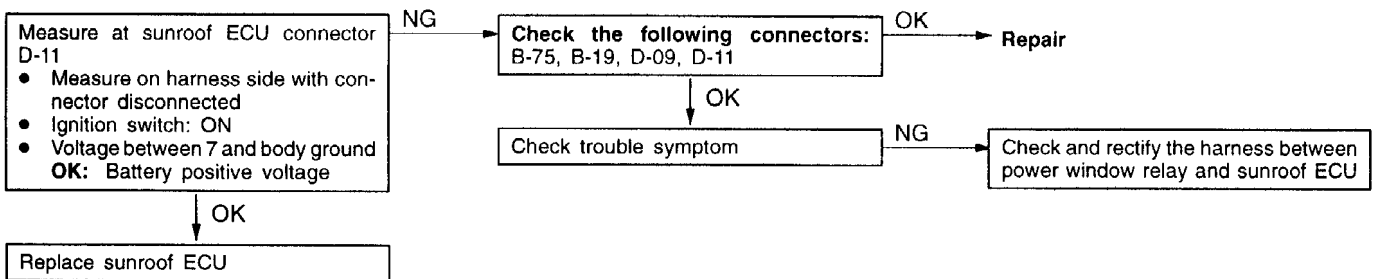
**INSPECTION PROCEDURE 2**

<p><b>The motor does not reverse when a load of at least 140N (14.3kgf) is applied to the sunroof when closing</b></p>	<p><b>Probable cause</b></p>
<p>The sunroof ECU monitors the load status from the current flowing in the motor, and if the load exceeds a preset level, reverses the motor to prevent fingers etc. being trapped. If the motor doesn't reverse when the load is excessive, the cause is probably a fault in the sunroof ECU.</p>	<ul style="list-style-type: none"> <li>• Sunroof ECU fault</li> </ul>

Replace sunroof ECU

**INSPECTION PROCEDURE 3**

<p><b>The timer does not operate for 30 sec after the ignition switch is turned OFF (However, the power window is timer-operable)</b></p>	<p><b>Probable cause</b></p>
<p>The sunroof ECU has a timer function for the 30 sec after the ignition switch is turned OFF. In addition, power is supplied from the power window relay while the timer is operating. If the timer does not operate therefore, possible causes include a sunroof ECU fault or a fault in the connector harness between the power window relay and the sunroof ECU.</p>	<ul style="list-style-type: none"> <li>• Harness or connector fault</li> <li>• Sunroof ECU fault</li> </ul>

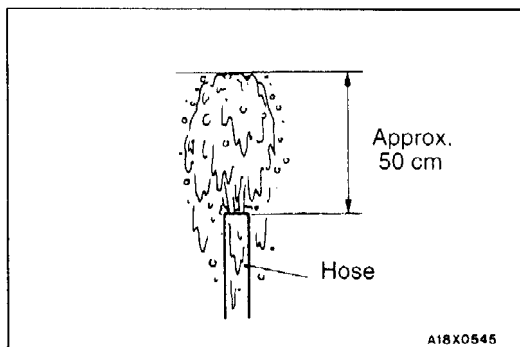


## CHECKING THE SUNROOF ECU TERMINALS

1	2	3	4	A	5	6	7	8	
9	10	11	12	13	14	15	16	17	18

18P0142

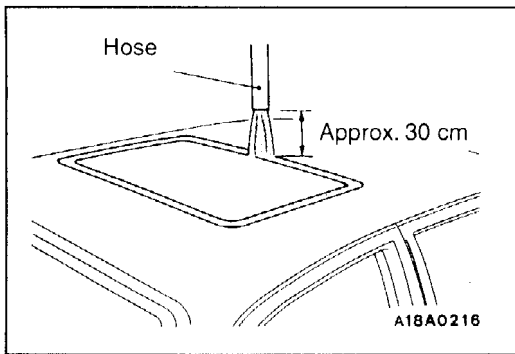
Terminal	Check Item	Conditions		Terminal Voltage
1	Door switch input	Driver side door switch	ON	0V
			OFF	Battery positive voltage
2	Sunroof switch (up) input	Sunroof switch (up)	ON	0V
			OFF	Battery positive voltage
3	Sunroof switch (close, down) input	Sunroof switch (close, down)	ON	0V
			OFF	Battery positive voltage
4	Sunroof switch (open) input	Sunroof switch (open)	ON	0V
			OFF	Battery positive voltage
5	ECU power supply	Ignition switch: ON		Battery positive voltage
6	Motor output (when opening)	During sunroof opening, down operations		Battery positive voltage
		Other than the above		0V
7	Timer operation power supply	Power window relay: Power window relay: ON		Battery positive voltage
8	Motor output (when closing)	During sunroof closing and up operations		Battery positive voltage
		Other than the above		0V
9	Limit switch 3 input	When sunroof tilting up and fully open		0V
		Other than the above		Battery positive voltage
10	Limit switch 1 input	When sunroof tilting up		Battery positive voltage
		When sunroof is fully closed and fully open		0V
		When sunroof is sliding to close		0V→Battery positive voltage→0V
12	Limit switch 2 input	When sunroof tilting up, fully closed		Battery positive voltage
		Other than the above		0V
13, 18	Earth	At all times		0V



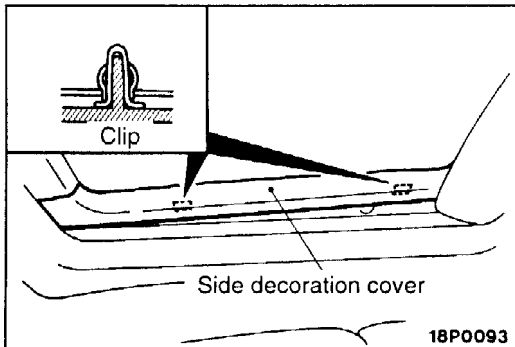
## ON-VEHICLE SERVICE

## WATER TEST

1. Close roof lid tightly.
2. Hold hose upward and adjust water fountain to about 50 cm high.



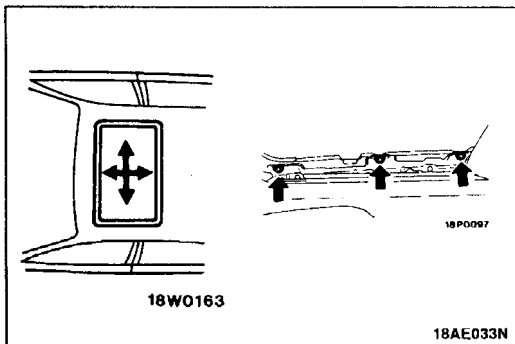
3. Pour water over the roof from about 30 cm above roof for more than 5 minutes.
4. While pouring water, check for leak around roof lid.
5. In the event of leakage, check drain pipe, weatherstrip contact and others.



**SUNROOF FIT ADJUSTMENT**

**FORWARD, BACKWARD AND SIDEWAYS ADJUSTMENT OF THE SUNROOF GLASS**

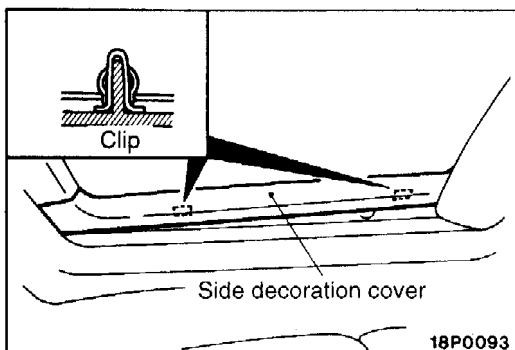
1. Fully close the roof lid glass.
2. Fully open the sun shade.
3. Remove the decoration cover.



4. Loosen the 6 roof lid glass mounting nuts and adjust the glass forward, backward or sideways.

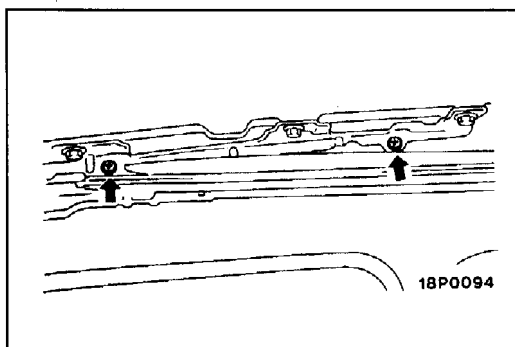
**NOTE**

If the adjustment cannot be made by loosening the mounting nuts, the roof lid glass or the motor have not been fully closed, so they should be adjusted to the fully closed positions.



**HEIGHT ADJUSTMENT OF THE ROOF LID GLASS AND THE ROOF**

1. Fully close the roof lid glass.
2. Fully open the sun shade.
3. Remove the decoration cover.



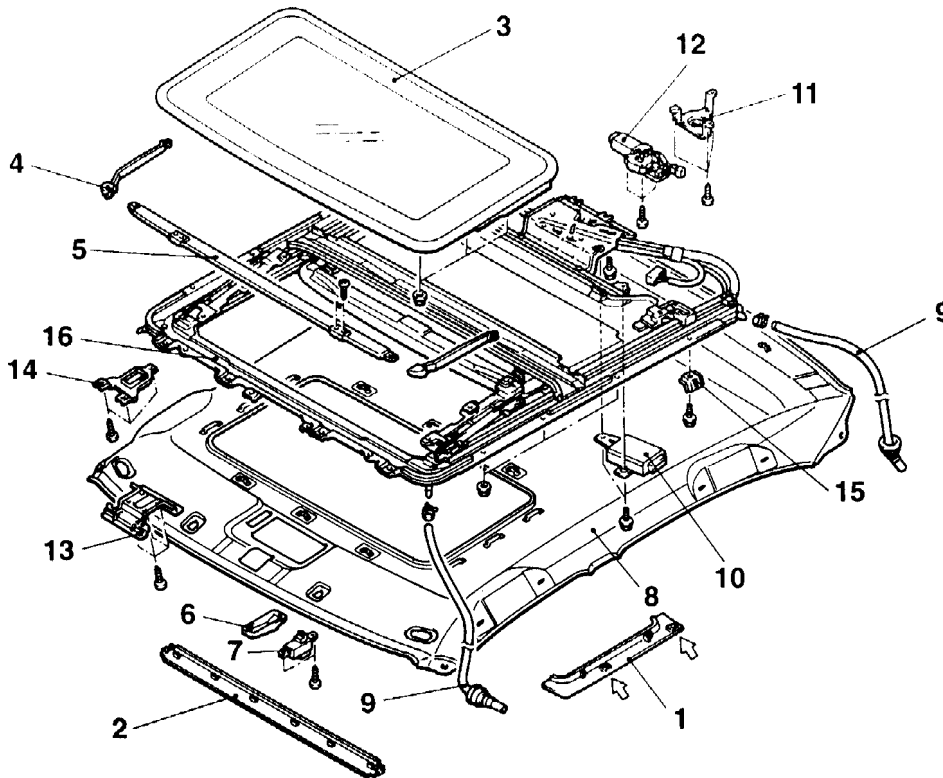
4. Loosen the four guide (A) assembly mounting screws and move the roof lid glass assembly along the grooves in the guide (A) assembly.
5. After adjustment, confirm that the sunroof operates smoothly.

# SUNROOF

## REMOVAL AND INSTALLATION

### Post-installation Operation

- Sunroof Fit Adjustment (Refer to P.42-69.)
- Water Test.(Refer to P.42-68.)



18P0104

### NOTE

↔: Indicates the clip positions



#### Roof lid glass removal steps

1. Side decoration cover
2. Front decoration cover
3. Roof lid glass assembly

#### Deflector removal steps

4. Deflector link assembly
5. Deflector

#### Sunroof motor and sunroof control unit removal steps

6. Sunroof switch cover
7. Sunroof switch
8. Headlining (Refer to GROUP 52A – Headlining.)
10. Sunroof-ECU
11. Headlining bracket
12. Sunroof motor



#### Sunroof assembly removal steps

6. Sunroof switch cover

7. Sunroof switch

8. Headlining (Refer to GROUP 52A – Headlining.)

9. Drain hose connection

13. Sunroof switch bracket

15. Set bracket

16. Sunroof assembly

#### Drain hose removal steps

- Splash shield <Front drain hose> (Refer to P.42-8.)
- Trunk side trim <Rear drain hose> (Refer to GROUP 52A – Trims)

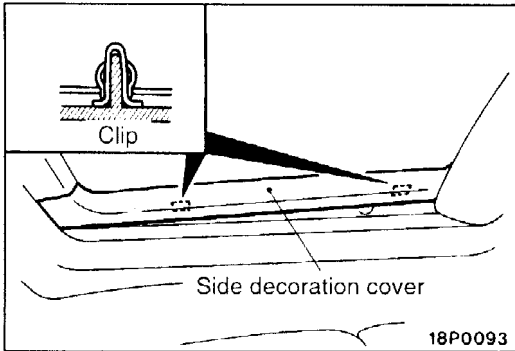
6. Sunroof switch cover

7. Sunroof switch cover

8. Headlining (Refer to GROUP 52A – Headlining.)

9. Drain hose





**REMOVAL SERVICE POINTS**

**◀A▶ SIDE DECORATION COVER REMOVAL**

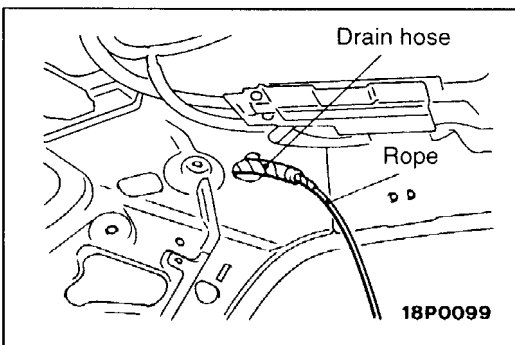
There are clips in the positions shown in the illustration, so be careful of them while pushing the decoration cover downwards with your hand to remove it.

**◀B▶ SUNROOF MOTOR REMOVAL**

**Caution**

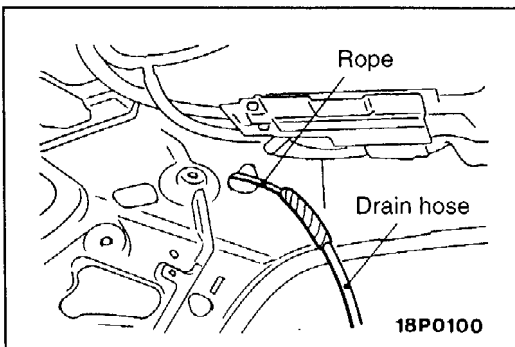
When removing the sunroof motor, always be sure to fully close the roof lid glass.

If the roof lid glass and the sunroof motor are not both in the fully-closed positions, the sunroof will not operate properly.



**◀C▶ DRAIN HOSE REMOVAL**

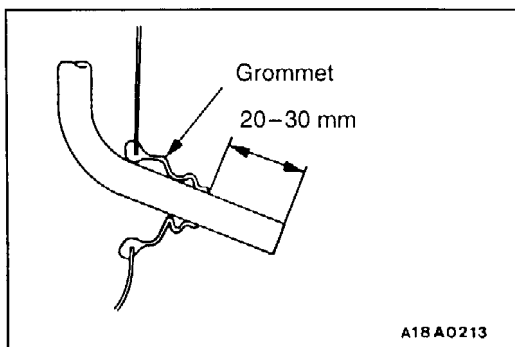
Remove the grommet. Tie a cord to the end of the drain hose, wind tape around it so that there is no unevenness, and pull the drain hose out into the wheel house.



**INSTALLATION SERVICE POINTS**

**▶A◀ DRAIN HOSE INSTALLATION**

1. Tie the cord that was used during removal to the end of the drain hose, and wind tape around it so that there is no unevenness.
2. Pull the cord to pull through the drain hose
3. Make the protrusion from the drain hose grommet as shown in the illustration.



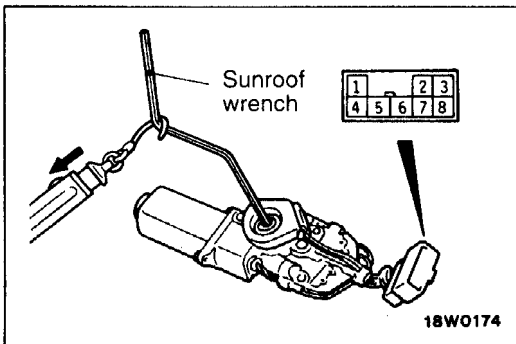
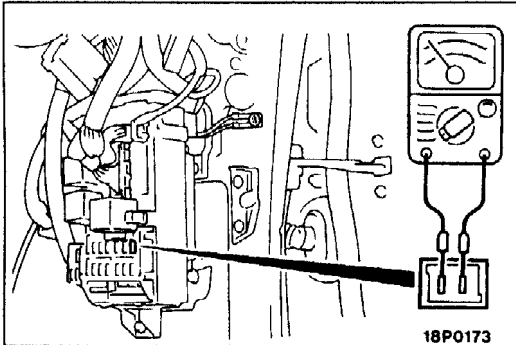
**INSPECTION**

**ROOF LID GLASS OPERATING CURRENT CHECK**

1. Remove the sunroof fuse, and connect a circuit tester as illustrated.
2. Turn the sunroof switch ON, and measure the current at an intermediate point, excluding the following times: start-up, fully closed, fully open, fully tilted up.

**Standard value: 9A or below (at 20°C)**

3. If the roof lid glass operating current exceeds specification check for the following.
  - (1) The fitting of the sunroof assembly, any deformation or entrapped foreign objects
  - (2) Sticking of the drive cable
  - (3) Tilted roof lid glass



**SLIDING FORCE OF SUNROOF MOTOR'S CLUTCH CHECK**

Inspect the sliding force of the clutch by the following procedure.

1. Place the sunroof wrench from the on-board tools into the hexagonal socket of the sunroof motor drive shaft, and set a spring scale in a position 100 mm from the drive shaft.
2. Connect the battery to sunroof motor connector terminals 1 and 2 to rotate the sunroof motor.
3. Measure the spring scale reading when the rotating force of the sunroof motor equals the spring force of the spring balance.

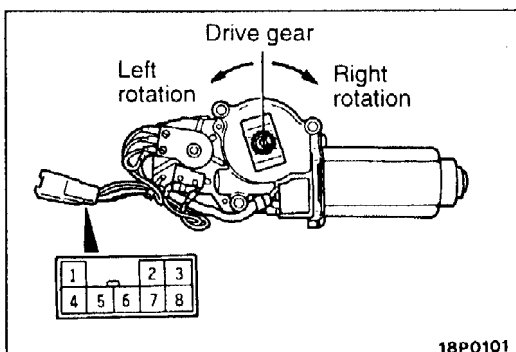
**Standard value: 47–62 N (4.8–6.3 kgf)**

**Caution**

- (1) The spring scale should be kept a right angle to the sunroof wrench.
  - (2) If a wrench other than that in the on-board tools is used, the value for the clutch sliding force will be different, so only the on-board tool should be used.
4. If the clutch sliding force is outside the standard value, replace the motor.

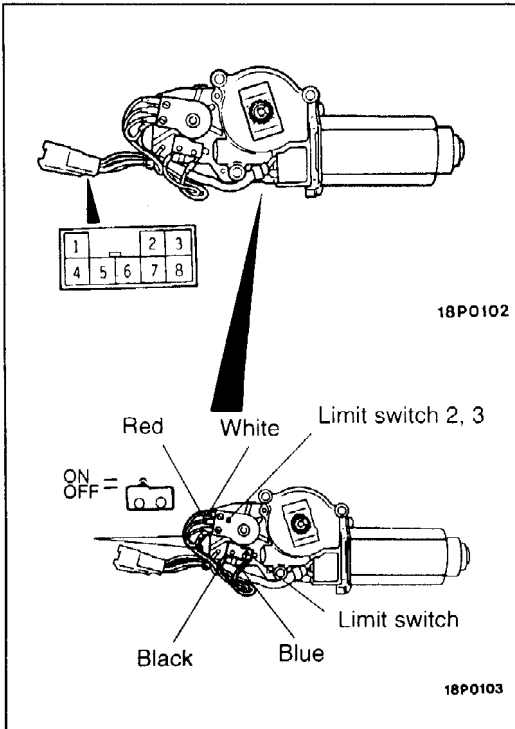
**SUNROOF MOTOR OPERATION CHECK**

Check the direction of rotation of the drive gear when the battery is connected to the connector.



Terminal 1	Terminal 2	Drive gear rotation direction
-	+	Right
+	-	Left



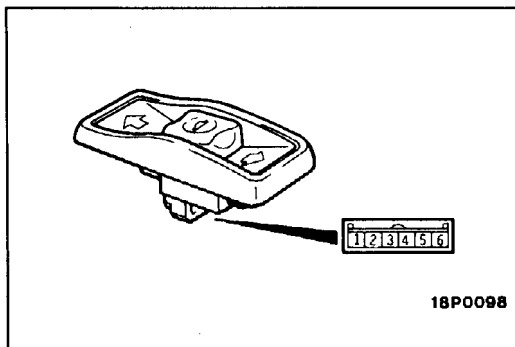


**LIMIT SWITCH CONTINUITY CHECK**

1. Remove the limit switch from the sunroof motor; then operate the limit switch and check for continuity between the terminals.

Switch		Terminal No.			
		3	5	6	7
Limit switch 1	ON	○—○			
	OFF				
Limit switch 2	ON	○	—	○	
	OFF				
Limit switch 3	ON	○	—	—	○
	OFF				

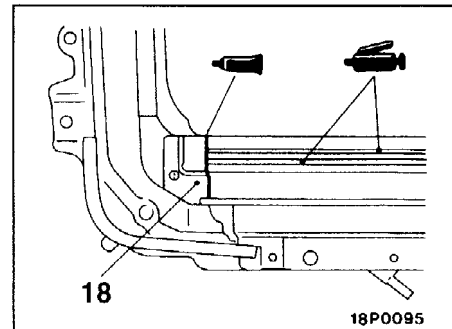
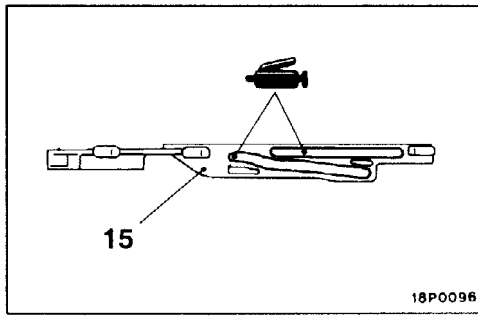
2. When installing the limit switch, check the wire colours for the limit switches, and install so that the position and direction are as shown in the illustration.



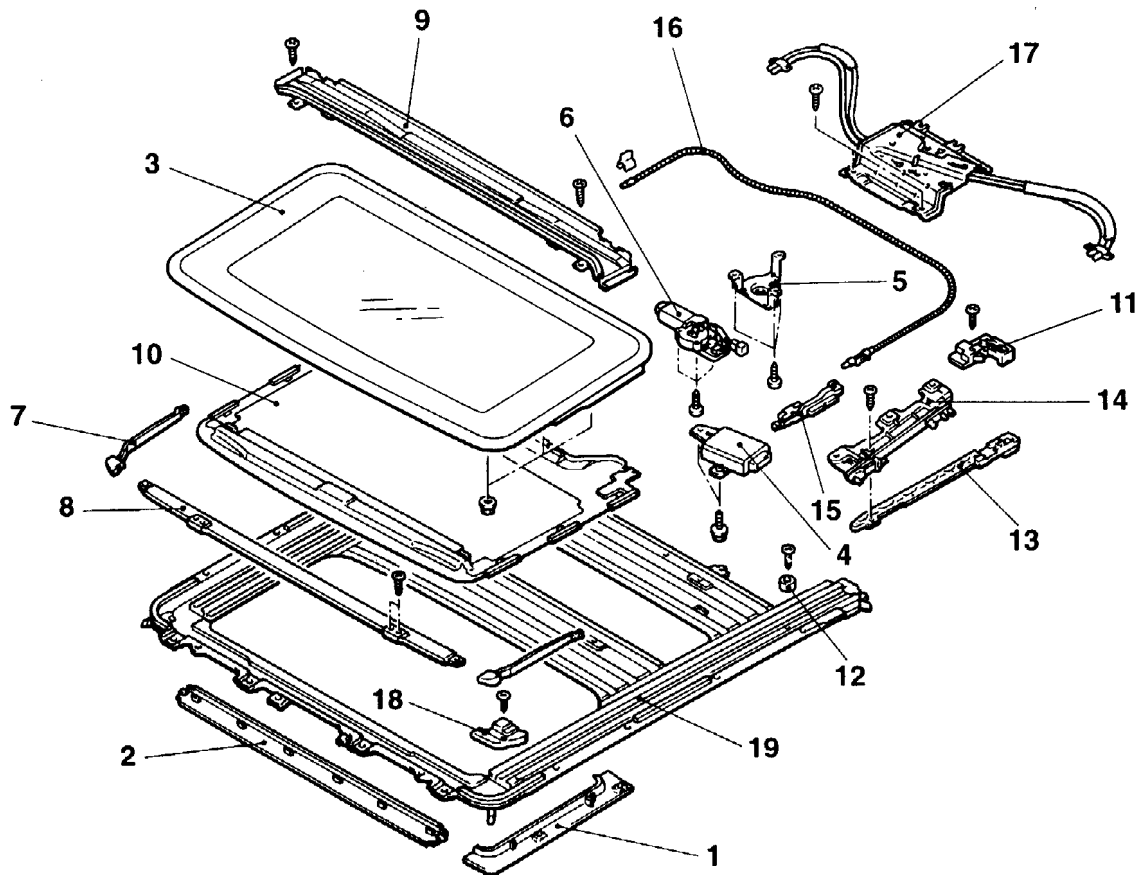
**SUNROOF SWITCH CONTINUITY CHECK**

Switch Position	Terminal No.			
	4	5	6	7
Open		○—○	○	
OFF				
Up	○	—	○	
Close, Down		○	—	○

## DISASSEMBLY AND REASSEMBLY



Sealant:  
3M ATD Part No. 8531 or 3M ATD  
Part No.8646, or equivalent



18P0105

18AE032N

**Deflector removal steps**

1. Side decoration cover (See P.42-70)
2. Front decoration cover
3. Roof lid glass assembly
4. Sunroof-ECU
5. Head lining bracket
6. Sunroof motor (See P.42-70)
7. Deflector link assembly
8. Deflector assembly
9. Drip rail assembly
10. Sun shade assembly
11. Sun shade slider assembly
12. Cushion (B) assembly
13. Decoration link
14. Guide (A) assembly
15. Slider sub-assembly
16. Cable assembly
17. Drive unit assembly
18. Rail cover assembly
19. Frame assembly