

BODY

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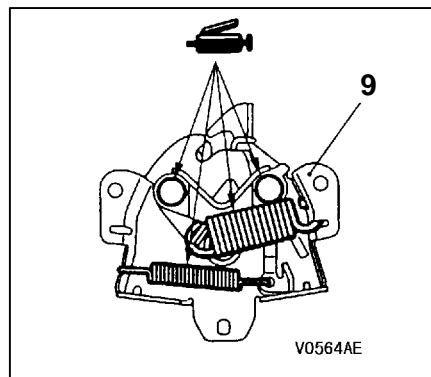
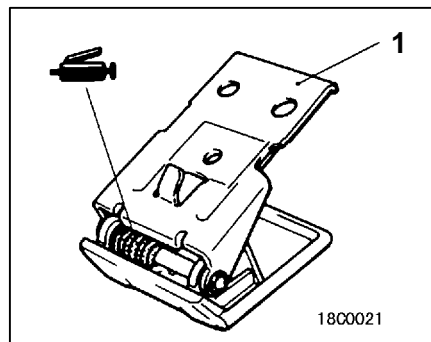
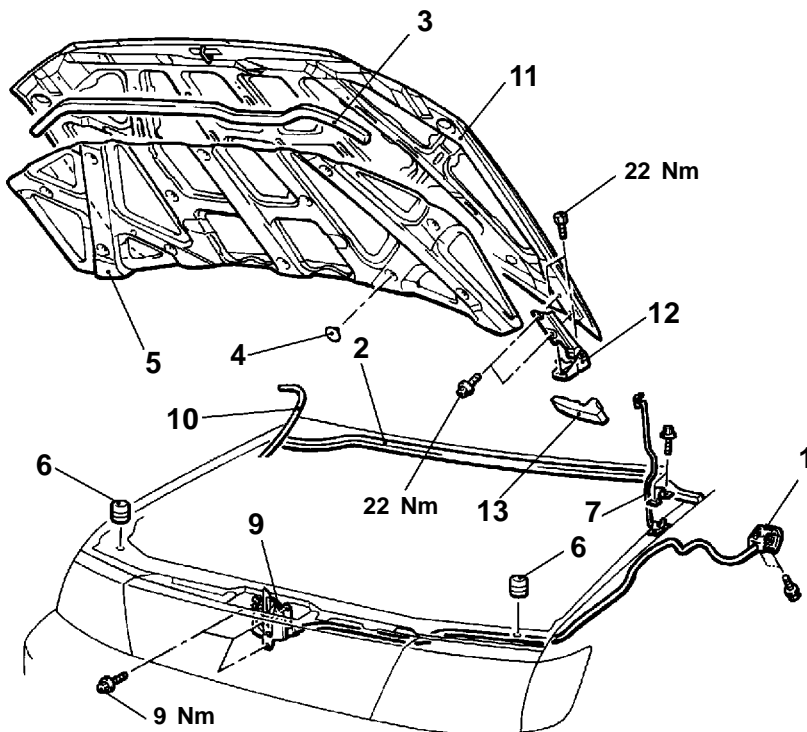
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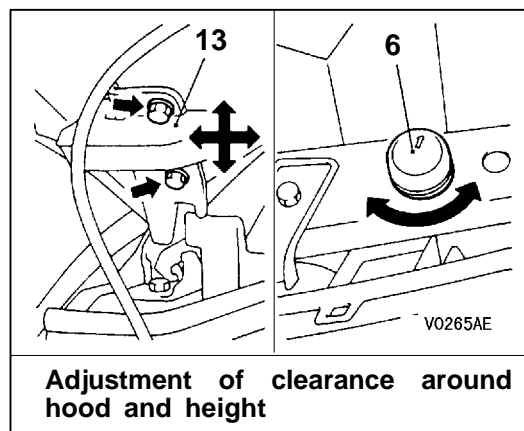
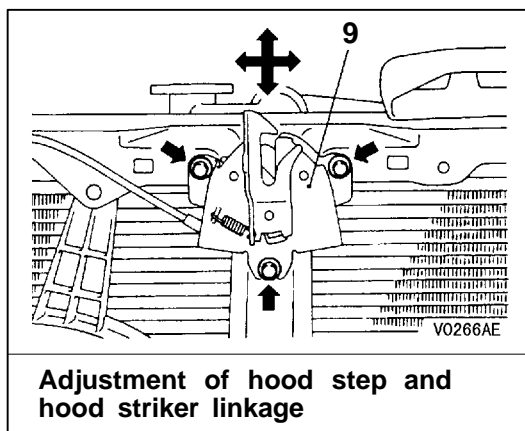
HOOD

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REMOVAL AND INSTALLATION



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- 1. Hood lock release handle
- 2. Hood weatherstrip
- 3. Front hood weatherstrip
- 4. Clip
- 5. Hood insulator
- 6. Bumper
- 7. Hood support rod

Hood lock release cable removal steps

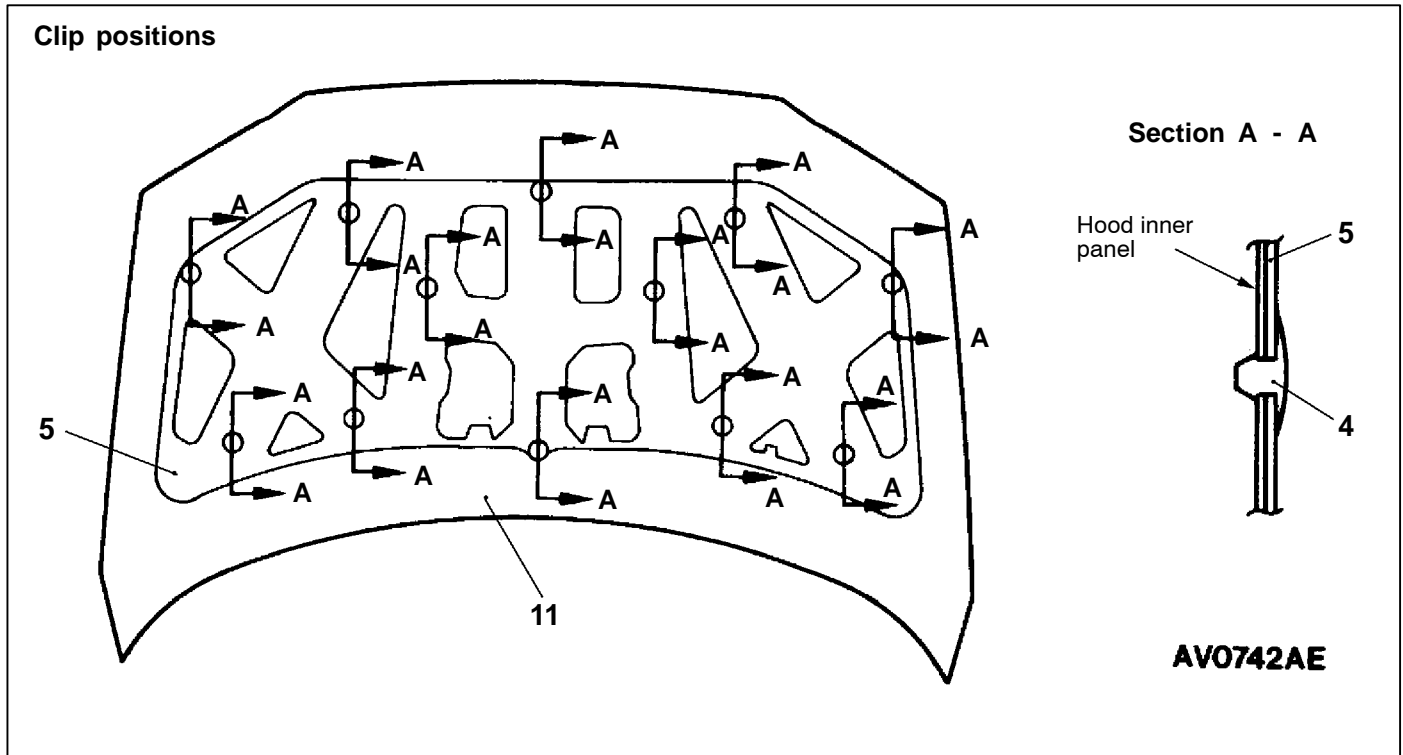
- 8. Hood lock release cable

Hood latch removal steps

- Radiator grille (Refer to GROUP 51.)
- 9. Hood latch

Hood and hood hinge removal steps

- 10. Washer hose connection
- 11. Hood
- 12. Hood hinge
- 13. Hood side weatherstrip



**FENDER
SEALANT**

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Item	Specified sealant	Remark
Splash shield	3M ATD Part No. 8625 or equivalent	Ribbon sealer
Fender		

FENDER

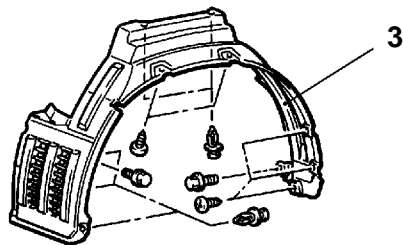
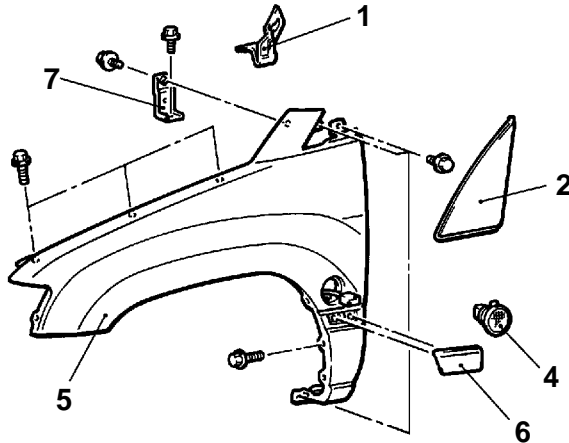
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REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

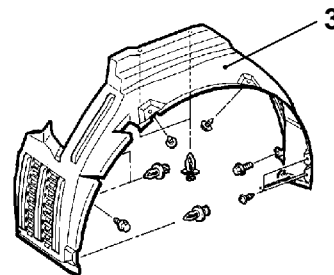
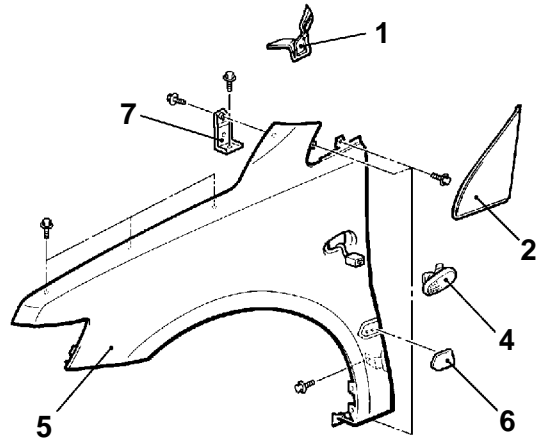
- Front Bumper Removal and Installation (Refer to GROUP 51.)
- Headlamp Removal and Installation (Refer to GROUP 54.)
- Side Sill Cover Removal and Installation (Refer to GROUP 51 - Aero Parts.)
- Hood Removal and Installation (Refer to P.42-3.)

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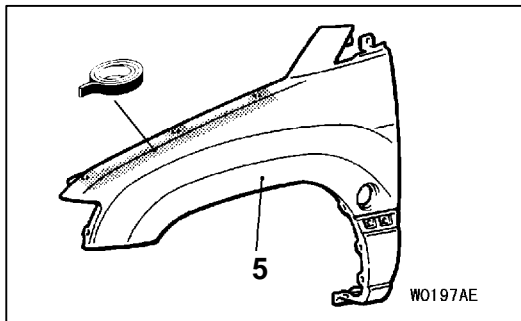


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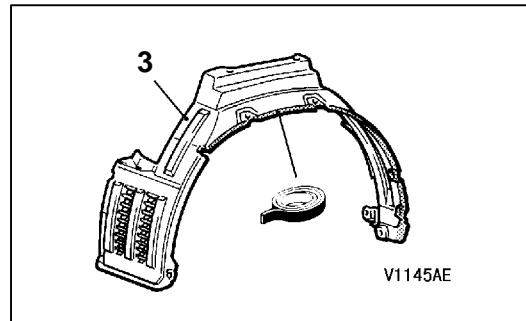


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Sealant:
3M ATD Part No. 8625 or
equivalent



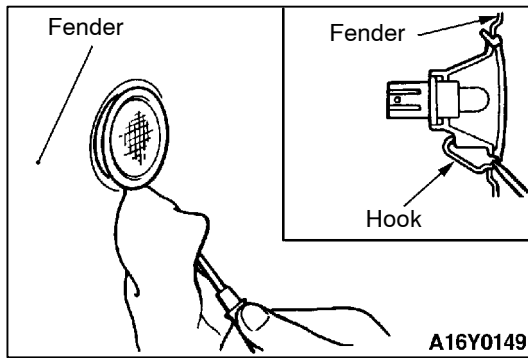
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Sealant:
3M ATD Part No. 8625 or
equivalent

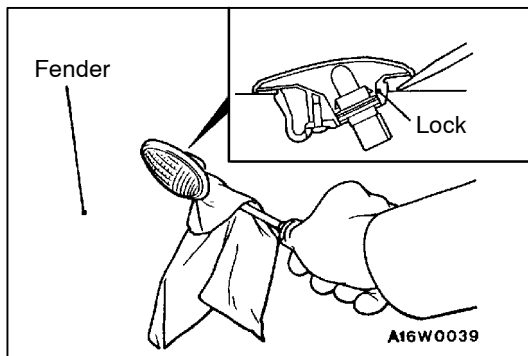
Removal steps

1. Front fender cover
2. Delta garnish (Refer to GROUP 51 - Garnish.)
3. Splash shield
4. Side turn signal lamp
5. Fender
6. Side moulting (Refer to GROUP 51 - Mouldings.)
7. Fender bracket

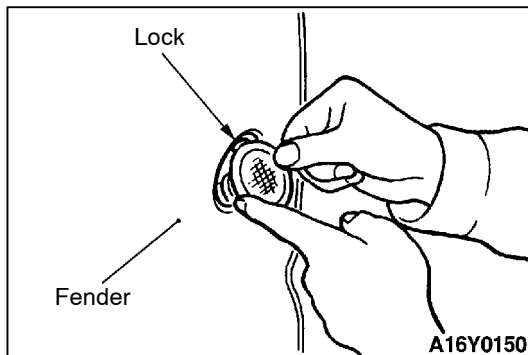


**REMOVAL SERVICE POINT****◀A▶ SIDE TURN SIGNAL LAMP REMOVAL****<SPACE RUNNER>**

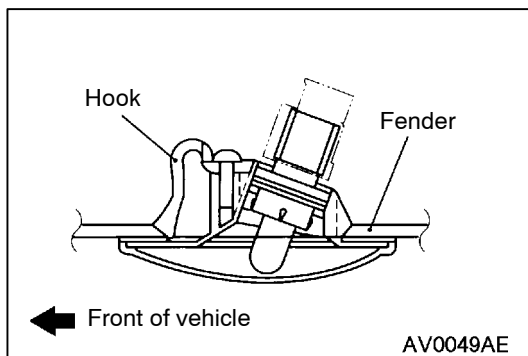
Use a flat-tipped screwdriver to disengage the hook from the fender, and then remove the side turn signal lamp.

**<SPACE WAGON>**

Use a flat-tipped screwdriver to disengage the lock from the fender, and then remove the side turn signal lamp.

**INSTALLATION SERVICE POINT****▶A◀ SIDE TURN SIGNAL LAMP INSTALLATION****<SPACE RUNNER>**

1. Put the lock in fender.
2. Push the side turn signal lamp toward the fender until the hook is caught in fender.

**<SPACE WAGON>**

Insert the hook into the fender panel, and then install the side turn signal lamp.

FUEL FILLER DOOR

42100250346

REMOVAL AND INSTALLATION

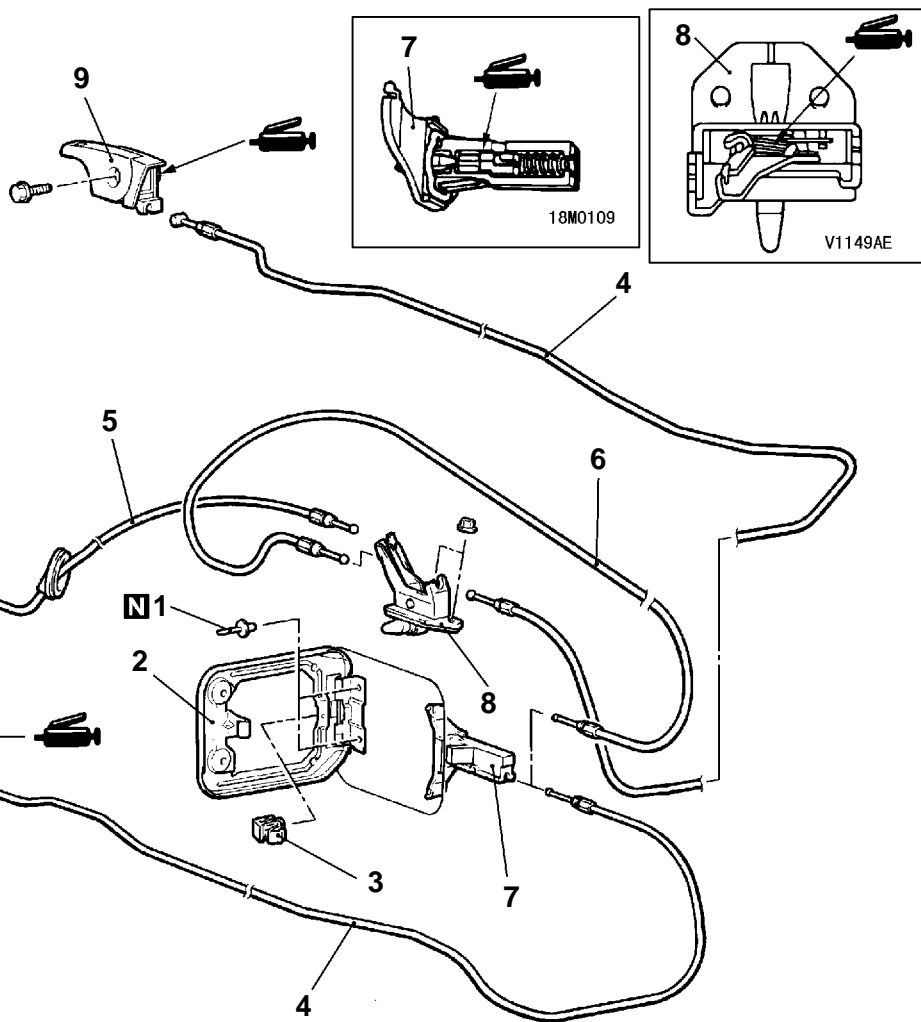
Pre-removal and Post-installation Operation

- Front Seat (driver's side), Rear Seat Removal and Installation (Refer to GROUP 52A.)
- Front Scuff Plate (driver's side), Rear Scuff Plate (driver's side), Center Pillar Lower Trim (driver's side),

Quarter Lower Trim (driver's side) Removal and Installation (Refer to GROUP 52A.)

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<R.H. drive vehicles>



<L.H. drive vehicles>

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Removal steps

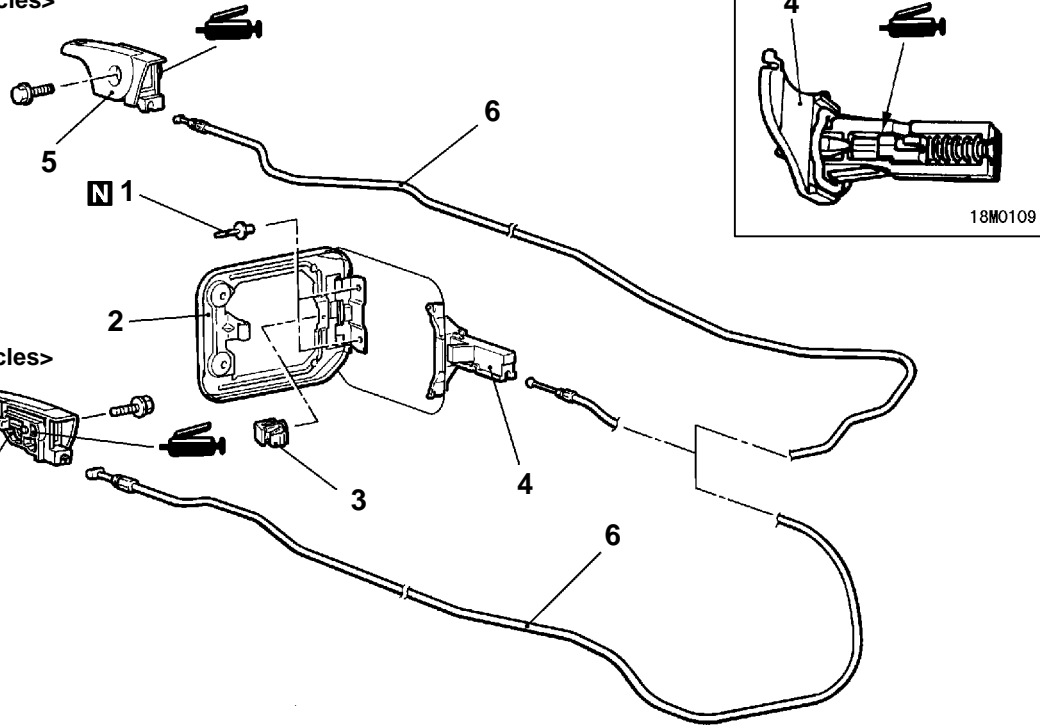


1. Rivet
2. Fuel filler door panel assembly
3. Clip
4. Fuel filler door lock release cable
5. Fuel filler door safety cable
6. Fuel filler door lock release cable

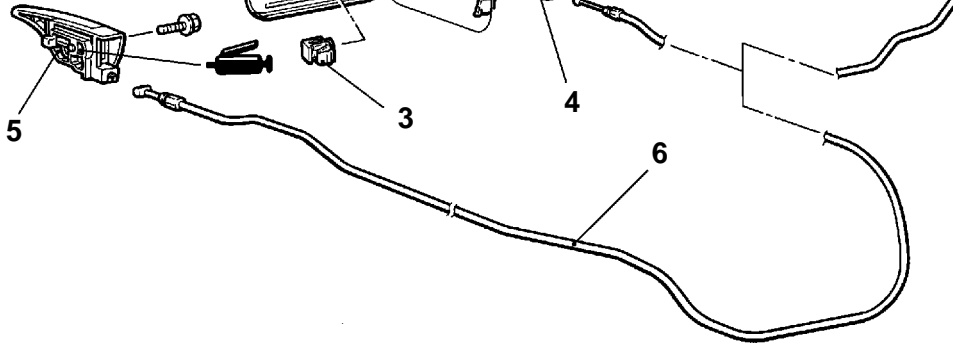
7. Fuel filler door hook assembly
8. Fuel filler door safety lever assembly
9. Fuel filler door lock release handle
10. Fuel filler door safety stopper assembly

<SPACE WAGON>

<R.H. drive vehicles>

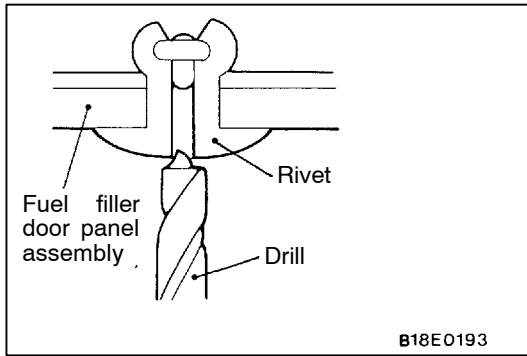


<L.H. drive vehicles>

W0195AE
00009404**Removal steps**

1. Rivet
2. Fuel filler door panel assembly
3. Clip

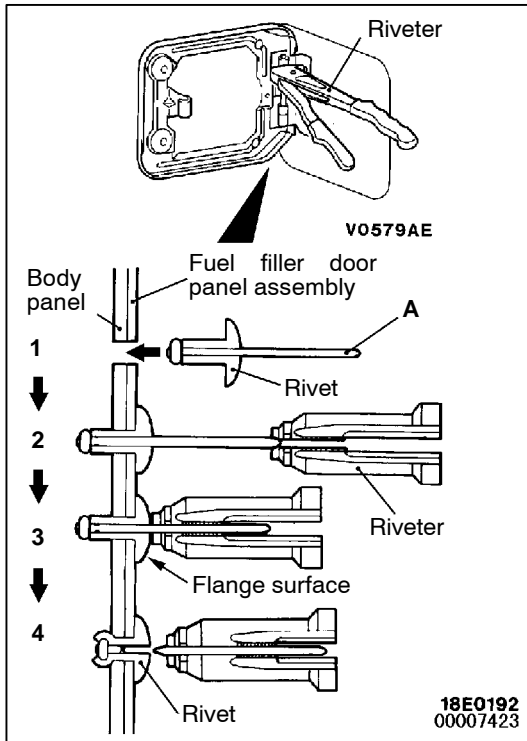
4. Fuel filler door hook assembly
5. Lid lock release handle
6. Fuel filler door lock release cable



REMOVAL SERVICE POINT

◀A▶ RIVET REMOVAL

Use a drill (Ø4.0 - 5.5 mm) to break the rivet by drilling a hole, and then remove the rivet.



INSTALLATION SERVICE POINT

▶A◀ RIVET INSTALLATION

Use a riveter shown to install the rivet by the following procedure:

1. Insert the rivet into the body panel and fuel filler door panel assembly.
2. Insert "A" of the rivet into the riveter.
3. Pressing the flange surface of the rivet with the riveter, move the handle of the riveter.
4. The thinnest point of "A" is cut and the rivet is held in the position.

WINDOW GLASS

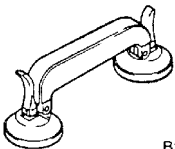
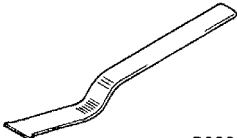
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ADHESIVE

Items	Specified adhesive
Windshield	3M ATD Part No. 8609 Super Fast Urethane Auto Glass Sealant or equivalent
Quarter window glass	
Slide door window glass	
Tailgate window glass	

SPECIAL TOOLS

42200060164

Tool	Number	Name	Use
 B990480	MB990480	Glass holder	Removal and installation of windshield
 B990449	MB990449	Window moulding remover	Removal of roof drip moulding

WINDOW REPAIR

42200560114

The following glass sections are installed by means of a liquid urethane adhesive method.

- Windshield
- Quarter window glass
- Slide door window glass
- Tailgate window glass

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. × length...0.6mm × 1m For cutting adhesive
Adhesive gun	For pressing-out adhesive

NOTE

The TEROSON 127.37V auto window sealer kit can also be used. If using the TEROSON 127.37V auto window sealer kit, follow the instructions in the manual included with the kit.

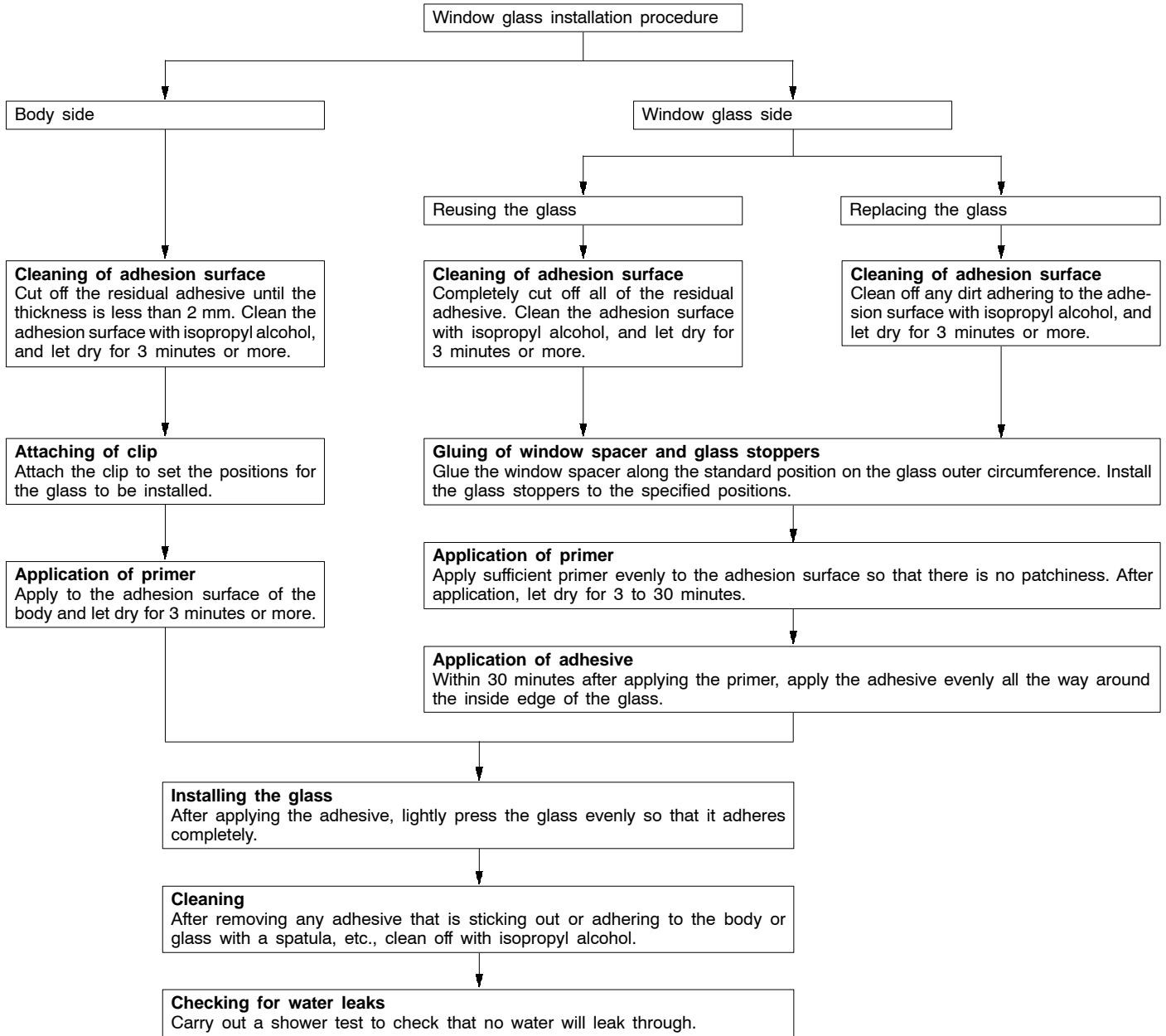
HANDLING OF AUTO WINDOW SEALER

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



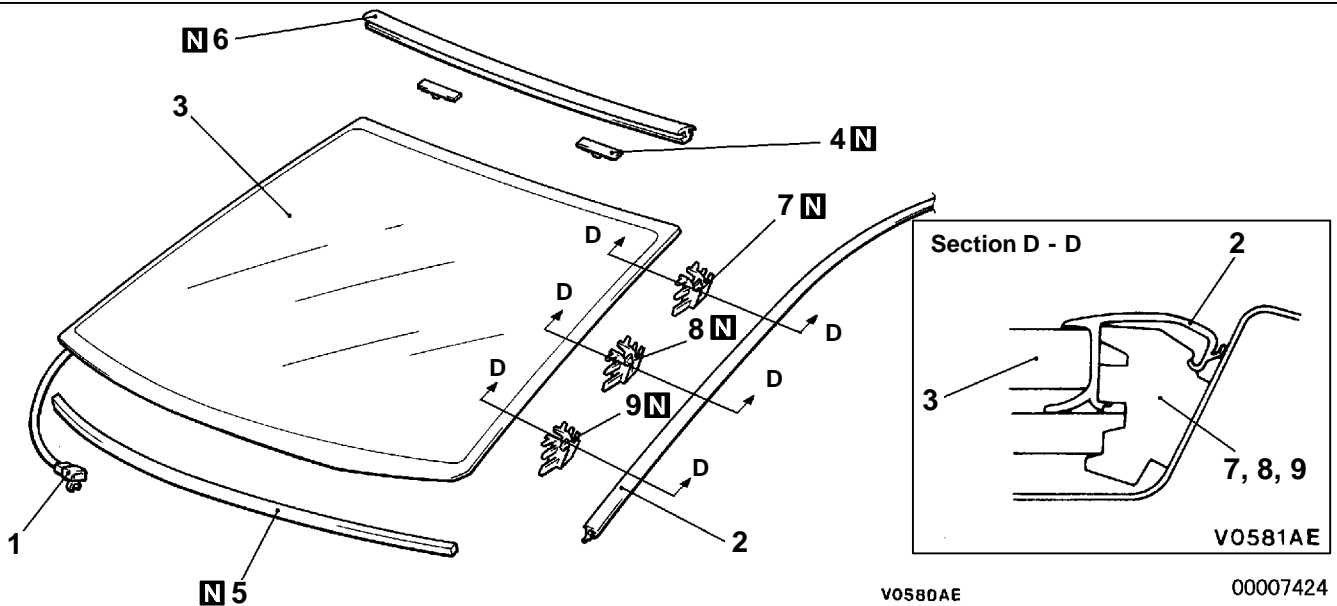
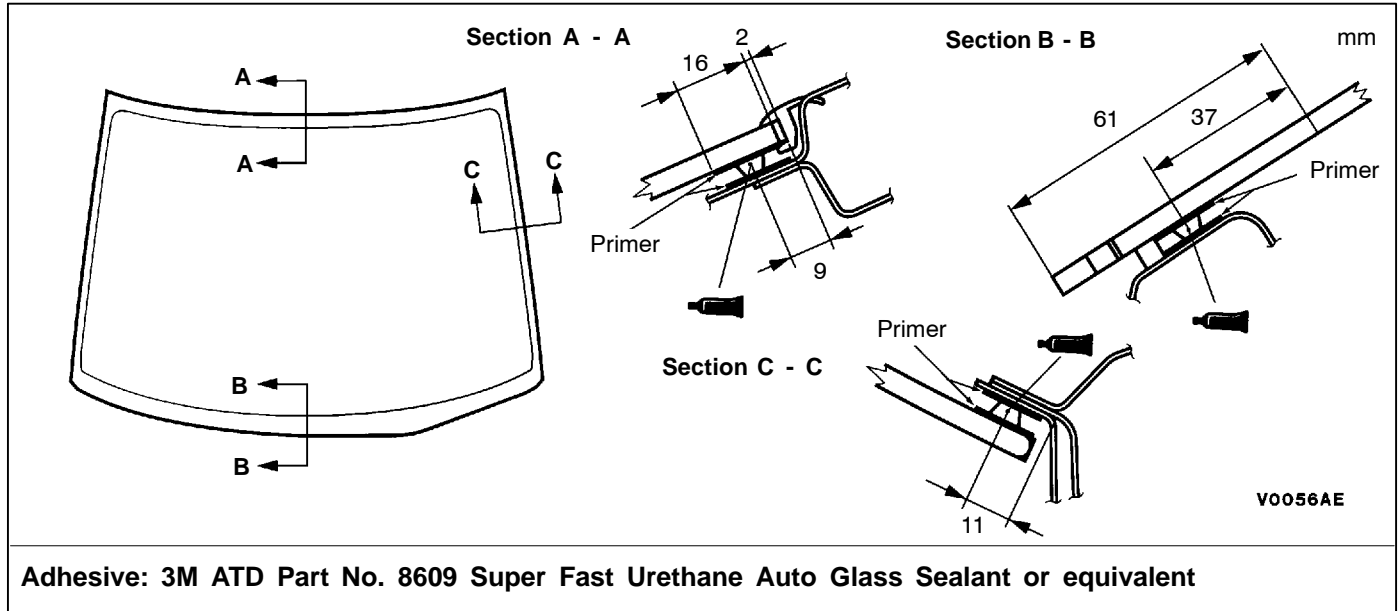
WINDSHIELD

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REMOVAL AND INSTALLATION

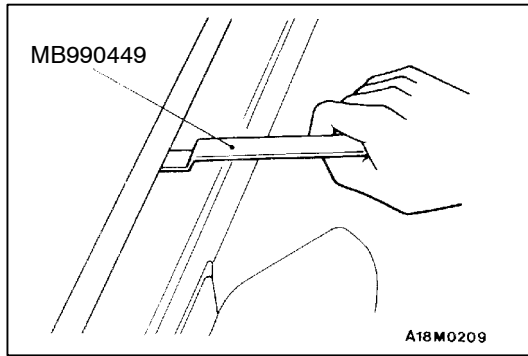
Pre-removal and Post-installation Operation

- Front Pillar Trim Removal and Installation (Refer to GROUP 52A.)
- Headlining Removal and Installation



Removal steps

- ◀A▶
1. Wiper deicer <Vehicle for cold climate region>
 2. Roof drip moulding (Refer to GROUP 51 - Moulding.)
 - Front deck garnish (Refer to GROUP 51 - Windshield Wiper and Washer.)
- ◀B▶ ▶A▶
3. Windshield
 4. Glass stopper
 5. Window spacer
 6. Windshield upper moulding
 7. Drip moulding clip A
 8. Drip moulding clip B
 9. Drip moulding clip C



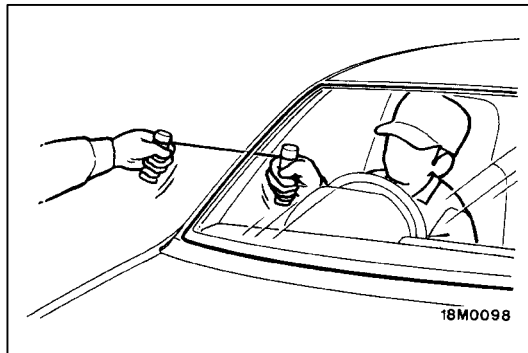
REMOVAL SERVICE POINTS

◀A▶ ROOF DRIP MOULDING REMOVAL

Use the special tool to lever out the moulding.

Caution

If the moulding has become warped, it should not be reused.

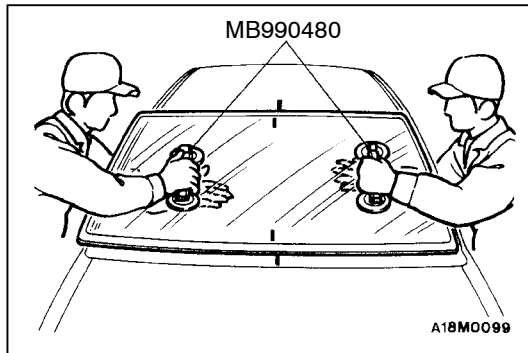


◀B▶ WINDSHIELD REMOVAL

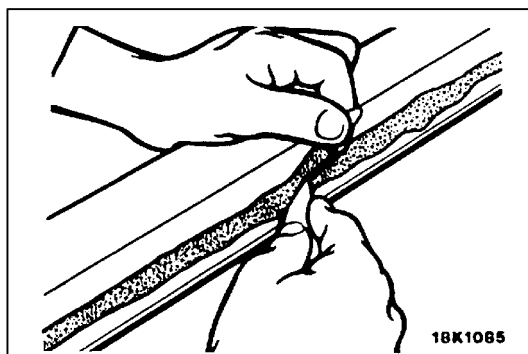
1. In order to protect the body (paint surface), apply cloth tape to all body areas around the installed windshield.
2. Using a sharp-point drill, make hole in the windshield adhesive.
3. Pass the piano wire from the inside of the vehicle through the hole.
4. Pull the piano wire alternately from the inside and outside along the windshield to cut the adhesive.

Caution

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



5. Make mating marks on the windshield and body.
6. Use the special tool to remove the windshield.



7. 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.
8. Finish the flange surfaces so that they are smooth.

Caution

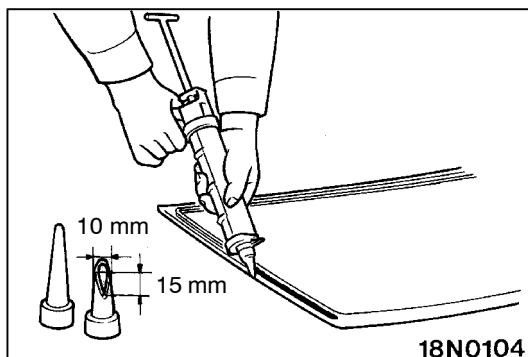
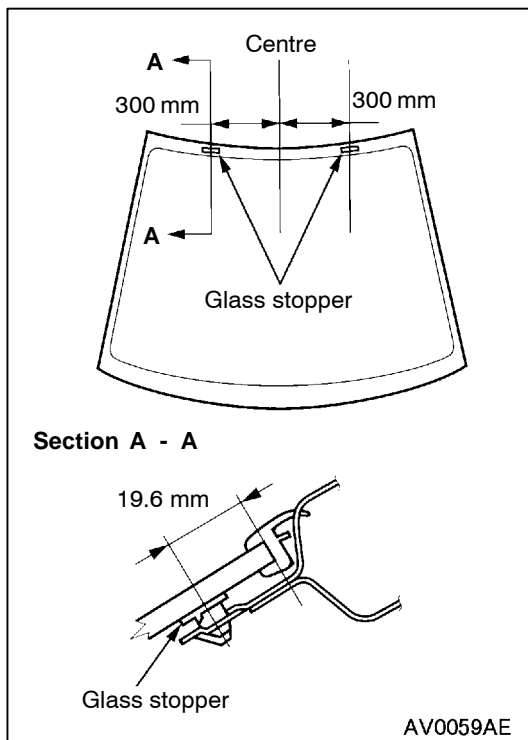
(1) Be careful not to remove more adhesive than is necessary.

(2) Be careful also not to damage the paintwork on the body surface with the knife. If the paintwork is damaged, repair the damaged area with repair paint or anti-rust agent.

9. When reusing the windshield, remove the adhesive still adhering to the windshield, and clean with isopropyl alcohol.
10. 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◄ WINDSHIELD UPPER MOULDING/WINDOW SPACER/GLASS STOPPER/WINDSHIELD INSTALLATION

1. When replacing the windshield, temporarily set the windshield against the body, and place a mating mark on the windshield and body.
2. Use isopropyl alcohol to degrease the inside and outside of the windshield and the body flanges.
3. Soak a sponge in the primer, and apply evenly to the windshield and the body in the specified places.
4. Apply the primer, and then let it dry for 3 to 30 minutes.

Caution

- (1) **The primer strengthens the adhesive, so be sure to apply it evenly around the entire circumference. However, a too thick application will weaken the adhesive.**
- (2) **Do not touch the coated surface.**

5. Install the windshield upper moulding to the windshield.
6. Place the window spacer to the windshield so that it inclines toward the windshield and its right and left clearances are equal. Then install the spacer firmly so that it is not adrift.
7. Install the glass stopper to the shown dimension.
8. Fill a sealant gun with adhesive. Then apply the adhesive evenly around the windshield within 30 minutes after applying the primer.

NOTE

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

9. After applying the adhesive, align the mating marks on the windshield and the body, and then press the windshield gently to seat it.
10. Use a spatula or the like to remove any excessive adhesive. Then clean the surface with isopropyl alcohol. Install the roof drip moulding before the adhesive hardens.
11. Try not to move the vehicle until the adhesive sets. Wait 30 minutes or more, and then test for water leakage.

Caution

- (1) **Do not move the vehicle unless absolutely necessary.**
- (2) **When testing for water leakage, do not pinch the end of the hose to spray the water.**

QUARTER WINDOW GLASS

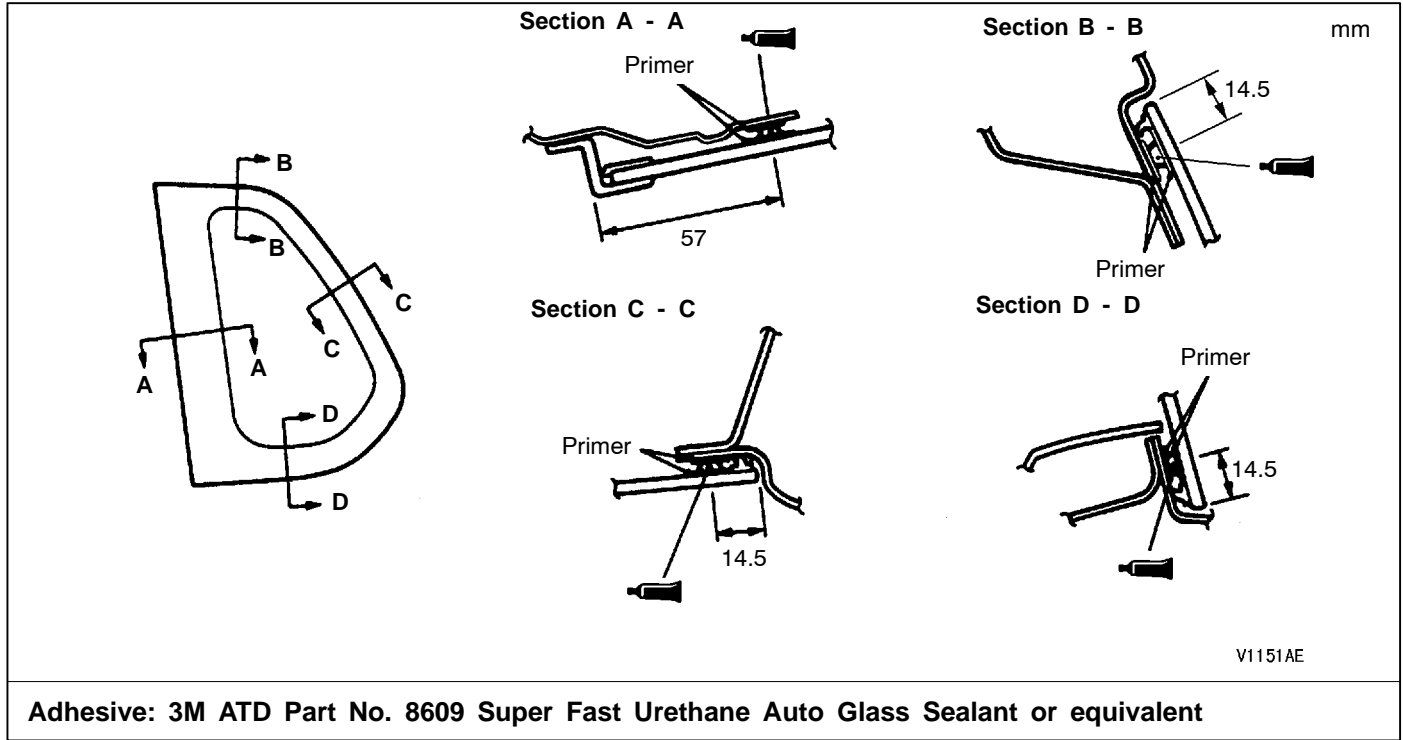
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REMOVAL AND INSTALLATION

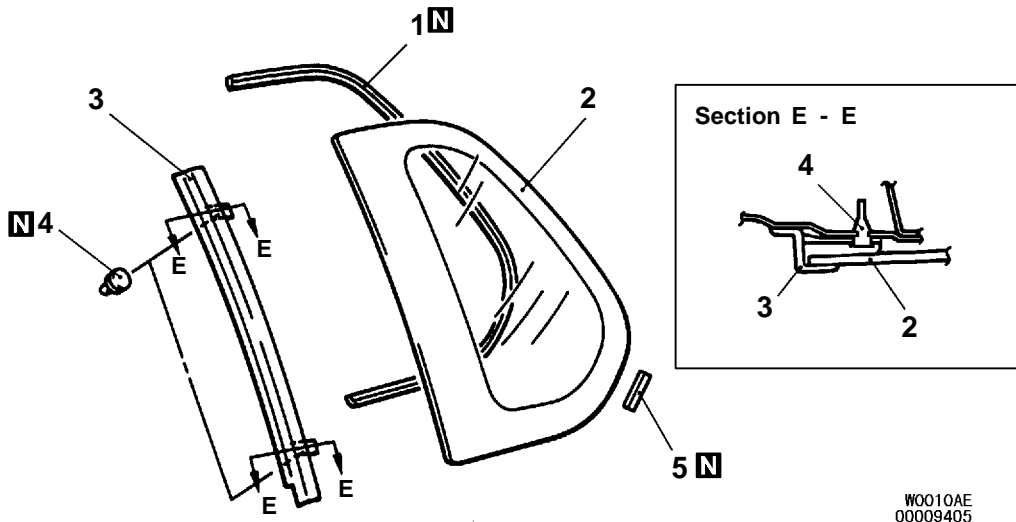
<SPACE RUNNER>

Pre-removal and Post-installation Operation

- Quarter Upper Trim Removal and Installation (Refer to GROUP 52A.)
- Headlining Removal and Installation



Adhesive: 3M ATD Part No. 8609 Super Fast Urethane Auto Glass Sealant or equivalent



Removal steps

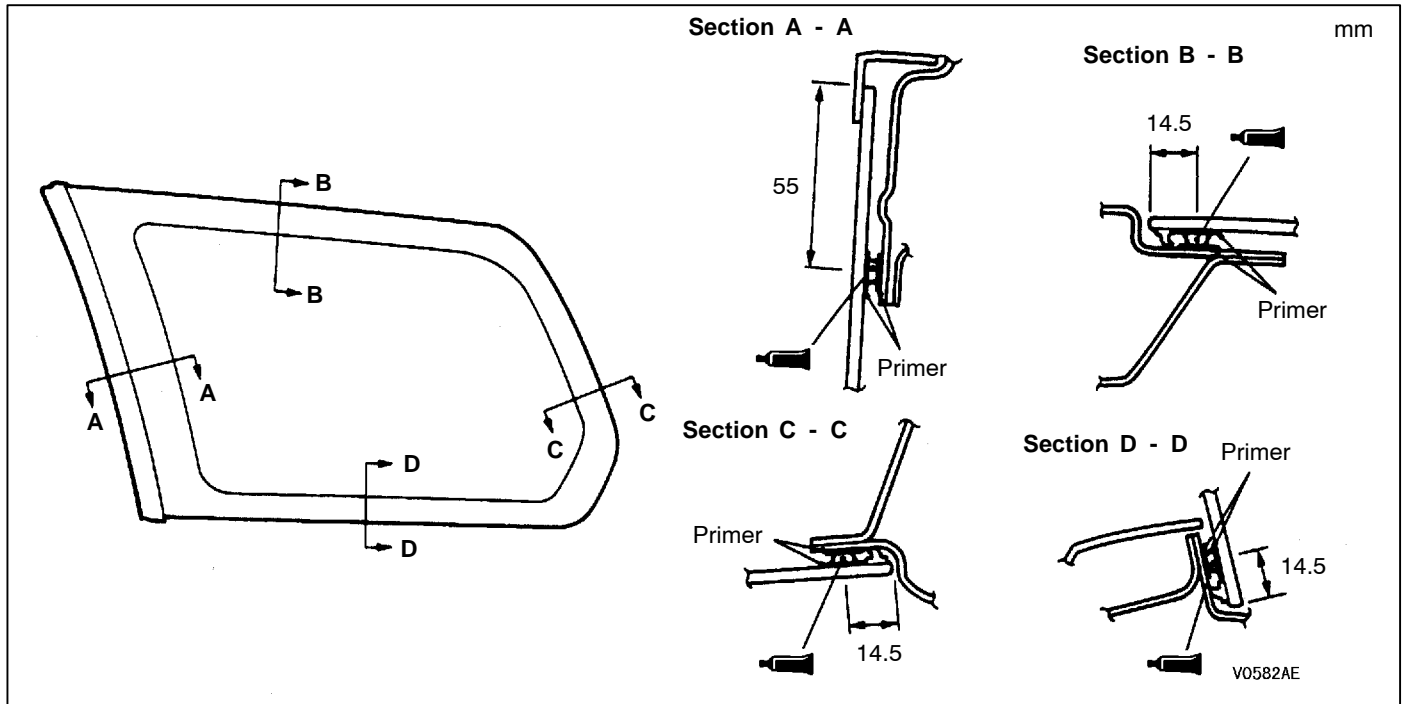
- ◀A▶ 1. Quarter window dam
- ◀A▶ 2. Quarter window glass
- ◀A▶ 3. Quarter window garnish

- ▶A◀ 4. Clip A
- ▶A◀ 5. Spacer

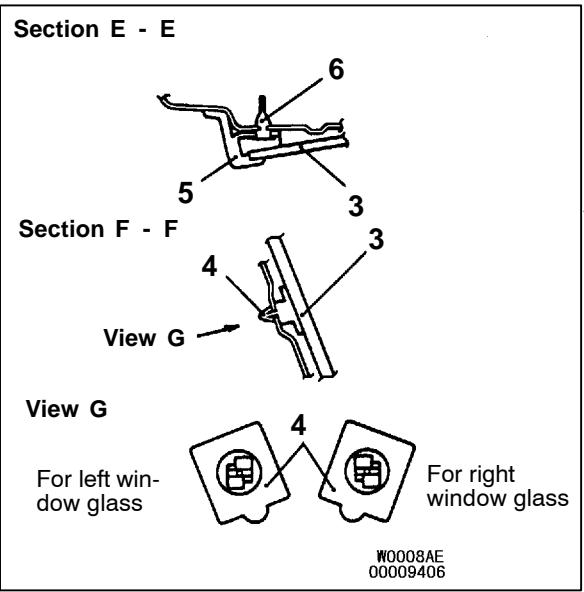
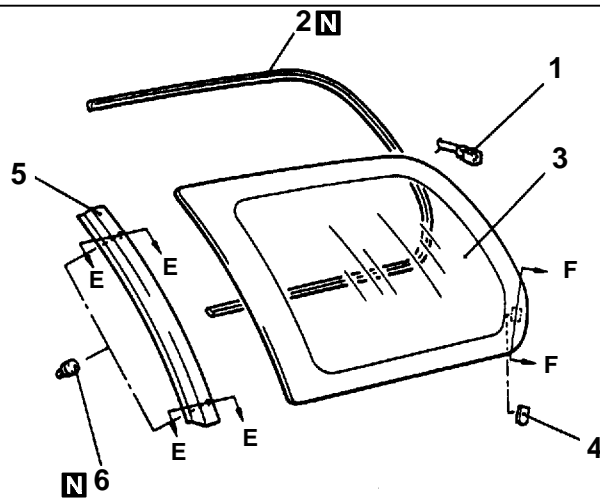
<SPACE WAGON>

Pre-removal and Post-installation Operation

- Quarter Upper Trim, Retractor Trim and Belt Line Trim Removal and Installation (Refer to GROUP 52A.)
- Headlining Removal and Installation



Adhesive: 3M ATD Part No. 8609 Super Fast Urethane Auto Glass Sealant or equivalent

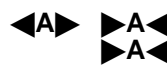


Removal steps

1. Harness connector
2. Quarter window dam
3. Quarter window glass



4. Clip B
5. Quarter window garnish
6. Clip A



REMOVAL SERVICE POINT**◀A▶ QUARTER WINDOW DAM/QUARTER WINDOW GLASS/QUARTER WINDOW GARNISH REMOVAL****<SPACE RUNNER>**

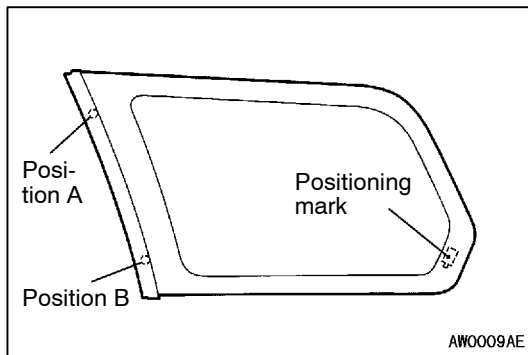
Removal procedure is same as for the windshield except for the service points mentioned below. (Refer to P.42-14.)

- (1) Break a clip A to remove it.
- (2) If the quarter window glass or quarter window garnish is re-used, make the positioning mark on it before removing in order to re-install it correctly.

<SPACE WAGON>

Removal procedure is same as for the windshield except for the service points mentioned below. (Refer to P.42-14.)

- (1) Break the clip A to remove it.
- (2) Use pliers to pinch the clip B behind the quarter window garnish to remove it.
- (3) If the quarter window glass or quarter window garnish is re-used, make the positioning mark on it before removing in order to re-install it correctly.

**INSTALLATION SERVICE POINT****▶A◀ QUARTER WINDOW GARNISH/CLIP A/QUARTER WINDOW GLASS/QUARTER WINDOW DAM INSTALLATION**

Installation procedure is same as for the windshield except for the service points mentioned below. (Refer to P.42-14.) If the quarter window glass or quarter window garnish is re-used, install it by the following procedure:

1. If the quarter window garnish is re-used, cut away the remaining clips at positions A and B, and clean up the clip surface .

NOTE

If the quarter window garnish is re-used, you made the positioning mark, therefore you may eliminate the clips.

2. If the quarter window glass is re-used and the clip B had been broken, make the positioning mark as shown in the illustration before eliminating the clip B, in order to install new clip B correctly.
3. If the quarter window glass is re-used, eliminate the clip B which was broken, and then attach new clip B at the marked position by using the double-sided tape. Clips B for left window glass and right window glass differ in shape, therefore confirm its shape before attaching.
4. Assemble the quarter window glass and quarter window garnish temporarily, and note their contact surfaces.

5. Disassemble the quarter window glass and quarter window garnish, and degrease that contact surfaces in the same manner as for the windshield. Apply primer and adhesive to the contact surfaces, and then assemble them.
6. If the quarter window garnish is re-used, apply a butyl tape to the clip fixing bosses on the quarter window garnish at positions A and B, in order to prevent the noise.
7. If the quarter window garnish is re-used, apply an adhesive tape to the clip holes on the body panel at positions A and B, in order to prevent water from penetrating.
8. Install the quarter window glass and quarter window garnish to the body, and use a gummed tape, etc. to fix them until the adhesive hardens.

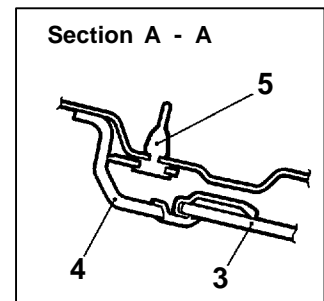
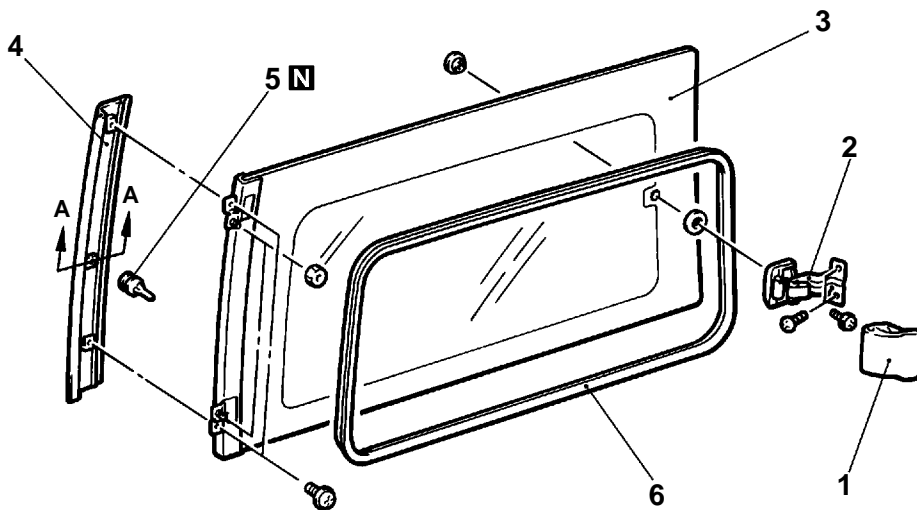
SIDE WINDOW GLASS <SPACE RUNNER>

42200250196

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Quarter Upper Trim Removal and Installation (Refer to GROUP 52A.)
- Headlining Removal and Installation



AV1153AE

Removal steps

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Link cover 2. Side window link assembly 3. Side window glass | <ol style="list-style-type: none"> 4. Side window glass moulding 5. Clip 6. Side window weatherstrip |
|---|---|

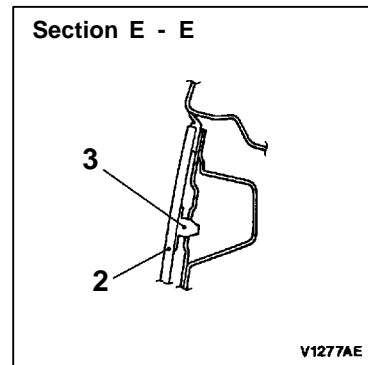
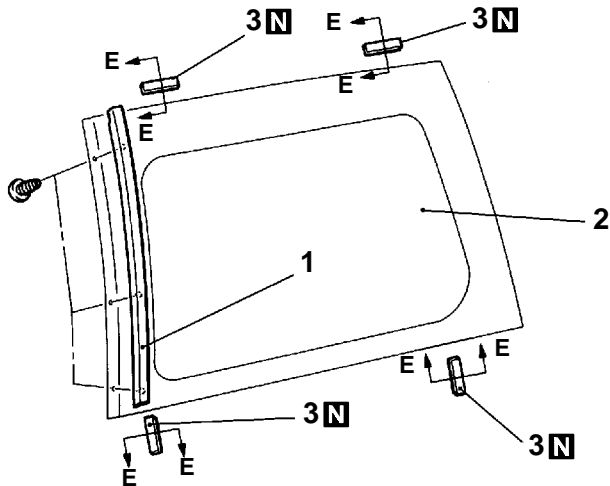
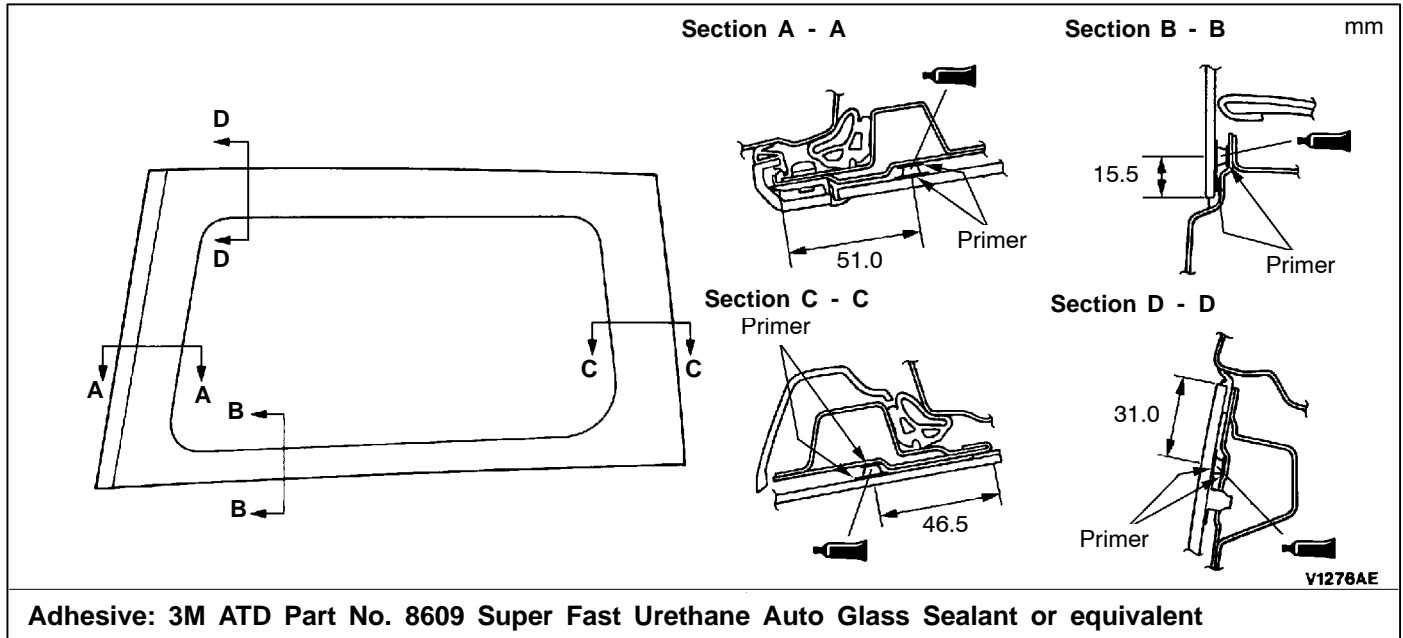
SLIDE DOOR WINDOW GLASS <SPACE RUNNER>

42200250196

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Slide Door Sash Trim Removal and Installation (Refer to P.42-59.)
- Slide Door Upper Trim Removal and Installation (Refer to P.42-59.)



00007702

Removal steps

- ◀A▶ ▶A▶
1. Slide door window garnish
 2. Slide door window glass assembly

3. Glass stopper

REMOVAL SERVICE POINT**◀A▶ SLIDE DOOR WINDOW GLASS ASSEMBLY
REMOVAL**

Remove the slide door window glass assembly in the same manner as for the windshield, except the glass stopper. (Refer to P.42-14.)

INSTALLATION SERVICE POINT**▶A◀ SLIDE DOOR WINDOW GLASS ASSEMBLY
INSTALLATION**

Install the slide door window glass assembly in the same manner as for the windshield, except the glass stopper. (Refer to P.42-15.)

TAILGATE WINDOW GLASS

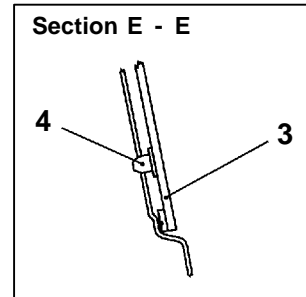
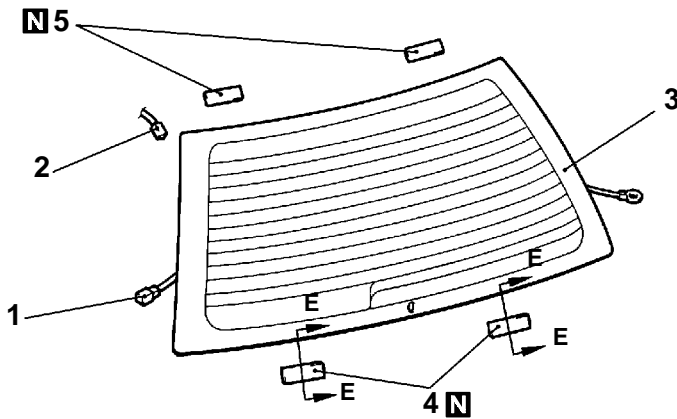
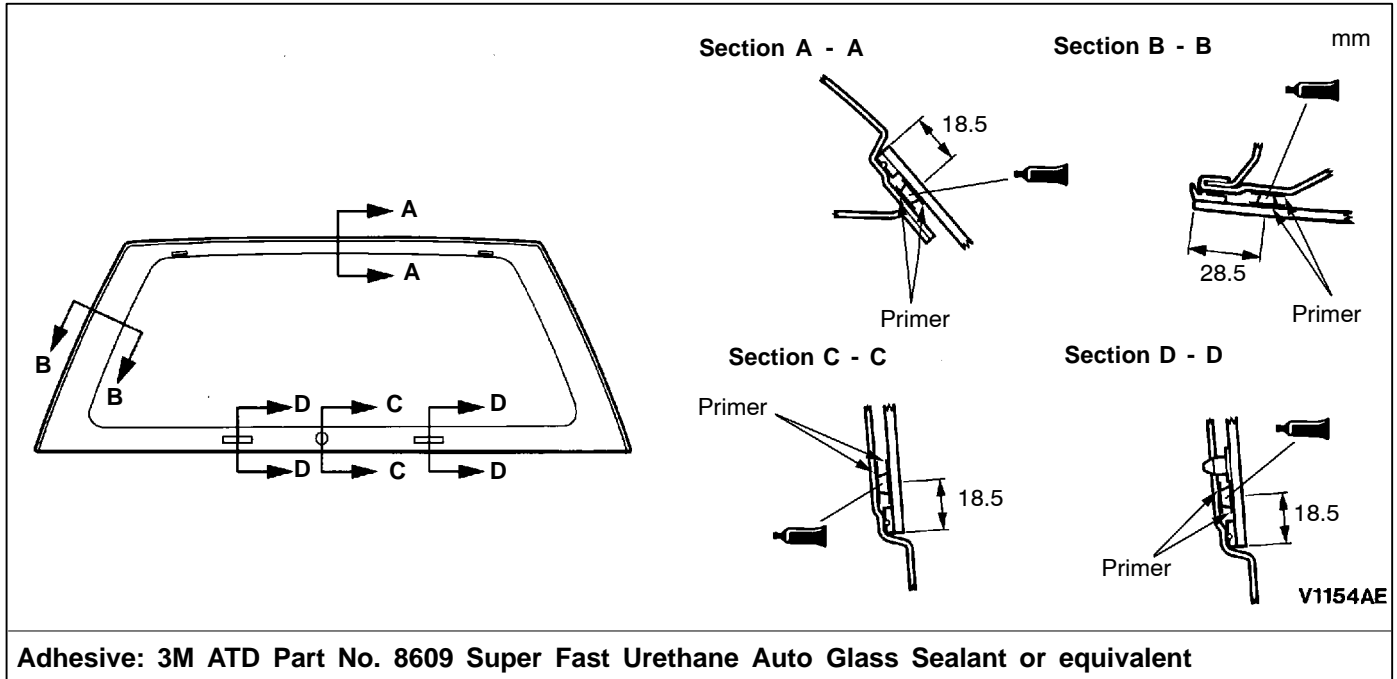
42200370243

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Side Tailgate Trim, Lower Tailgate Trim Removal and Installation (Refer to P.42-67.)
- Rear Wiper Removal and Installation (Refer to GROUP 51.)

<SPACE RUNNER>



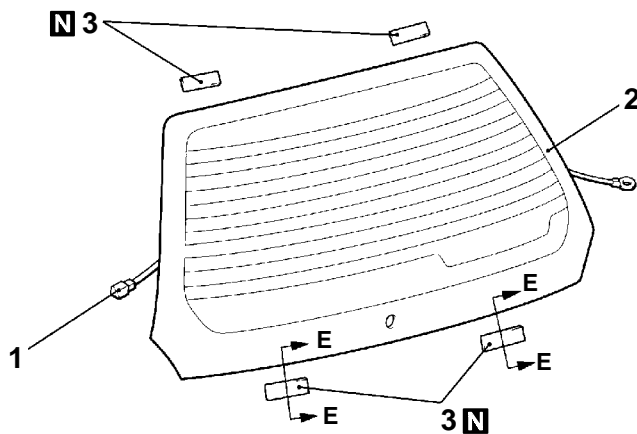
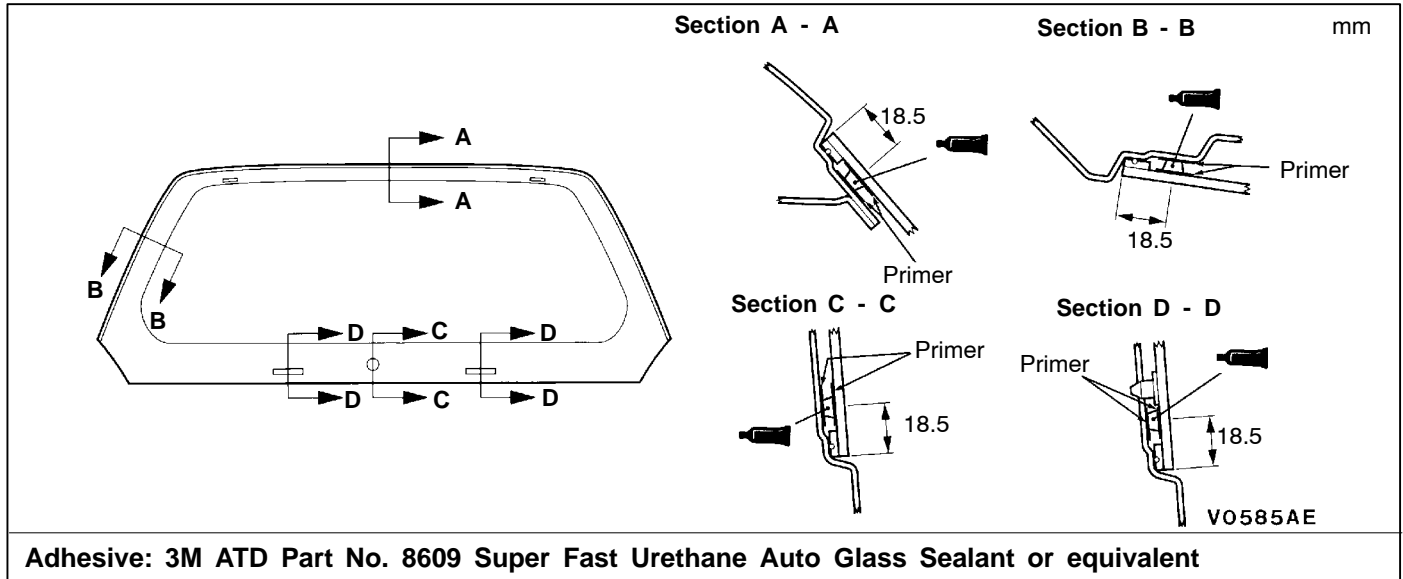
V1155AE
00007628

Removal steps

1. Harness connector
2. Harness connector <Vehicles with diversity antenna>

- ◀A▶ ▶A▶
3. Tailgate window glass
 4. Glass stopper
 5. Dual-lock fastener

<SPACE WAGON>



Removal steps

- ◀A▶ ▶A◀
1. Harness connector
 2. Tailgate window glass
 3. Glass stopper

REMOVAL SERVICE POINT

◀A▶ TAILGATE WINDOW GLASS REMOVAL

Remove the tailgate window glass in the same manner as for the windshield, except the glass stopper. (Refer to P.42-14.)

INSTALLATION SERVICE POINT

▶A◀ TAILGATE WINDOW GLASS INSTALLATION

Install the tailgate window glass in the same manner as for the windshield, except the glass stopper. (Refer to P.42-15.)

DOOR

42300030168

SERVICE SPECIFICATIONS

Items		Standard value
Door outside handle play mm	Front	<SPACE RUNNER> 2.1 or more <SPACE WAGON> 1.9 or more
	Rear	2.4 or more
Power window operating current A		5 ± 1 (for 14- 15 V power supply at 25°C)
Door inside handle play mm		5.3 or more

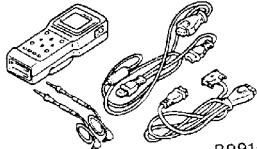
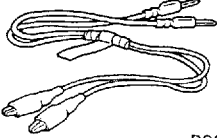
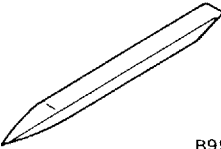
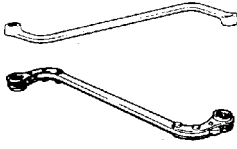
SEALANT

42300050065

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

SPECIAL TOOLS

42300060143

Tool	Number	Name	Use
 B991502	MB991502	MUT-II sub assembly	ETACS-ECU input signal checking
 B991529	MB991529	Diagnosis code check harness	ETACS-ECU input signal checking when voltmeter is used
 B990784	MB990784	Ornament remover	Removal of door trim
 00003936	MB990900 or MB991164	Door adjusting wrench	Adjustment of door fit

TROUBLESHOOTING

42300070238

DIAGNOSIS FUNCTION**INPUT SIGNAL INSPECTION POINTS <VEHICLES WITH ETACS-ECU>**

1. Connect the MUT-II to the diagnosis connector. (Refer to GROUP 00 - How to Use Troubleshooting/Inspection Service Points.)
2. If buzzer of the MUT-II sounds once when door lock actuator switch is operated (LOCK/UNLOCK), the ETACS-ECU input signal for that switch circuit system is normal.

INSPECTION CHART FOR TROUBLE SYMPTOMS

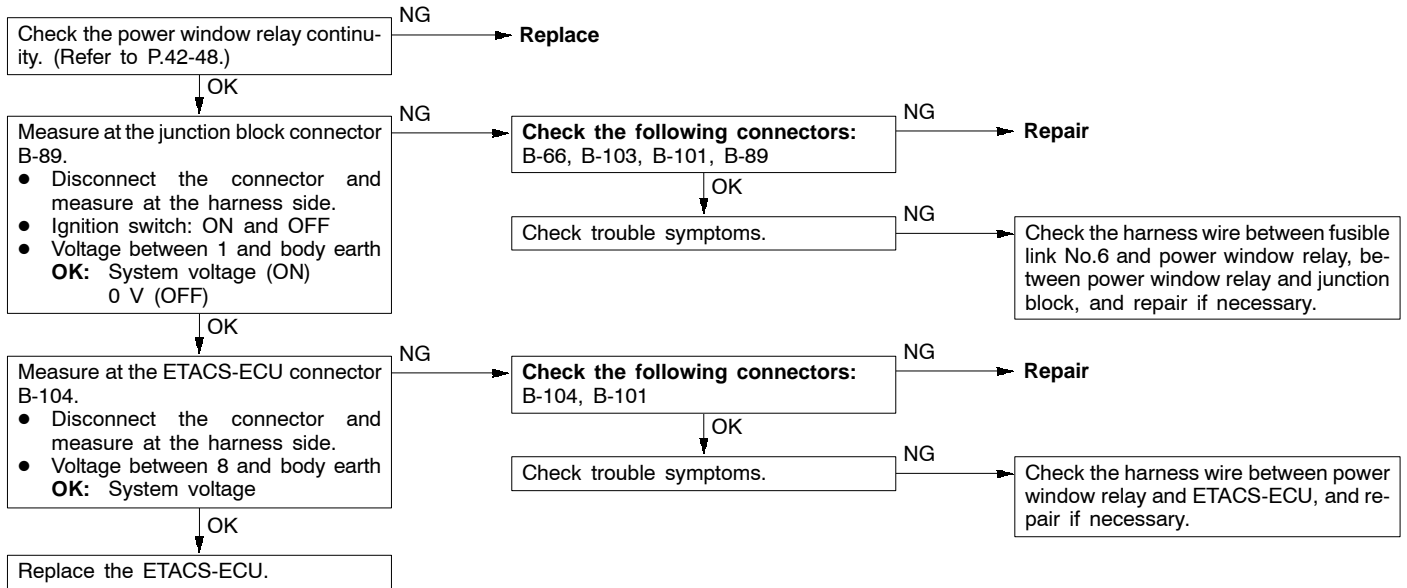
42300700083

Trouble symptom		Inspection procedure	Reference page
Power windows	The power windows cannot be operated by any of the power window switches.	1	42-26
	Driver's side power window cannot be operated by the power window main switch.	2	42-27
	Passenger's side power window cannot be operated by the power window main switch. (However, it can be operated by the power window sub-switch.)	3	42-28
	When the glass is raised, it then lowers automatically.	4	42-28
	The glass is not lowered when something is jammed in the window.	5	42-28
	When the glass is fully raised, it then lowers automatically.	6	42-29
Door locking mechanism	None of the door lock functions operate. (Keyless entry system does not operate also.)	7	42-29
	None of the doors lock or unlock when the driver's side inside door locking knob is operated (including by means of the door key). (However, keyless entry system operates.)	8	42-30
	Some doors do not lock or unlock.	9	42-30

INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

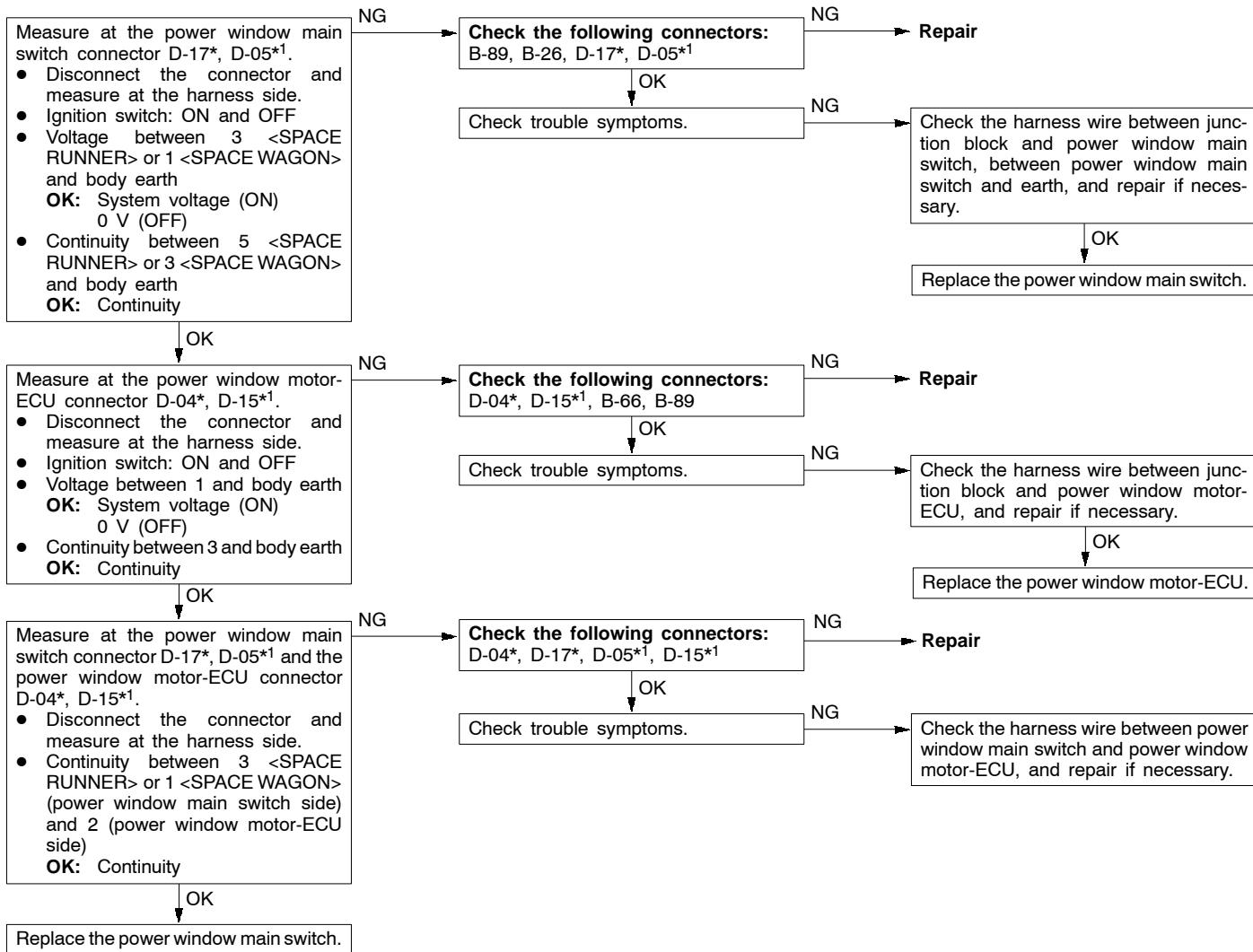
Inspection Procedure 1

<p>The power windows cannot be operated by any of the power window switches.</p>	<p>Probable cause</p>
<p>The cause may be a malfunction of the power window relay, power window relay drive circuit and of the ETACS-ECU.</p>	<ul style="list-style-type: none"> ● Malfunction of power window relay ● Malfunction of ETACS-ECU ● Malfunction of wiring harness or connector



Inspection Procedure 2

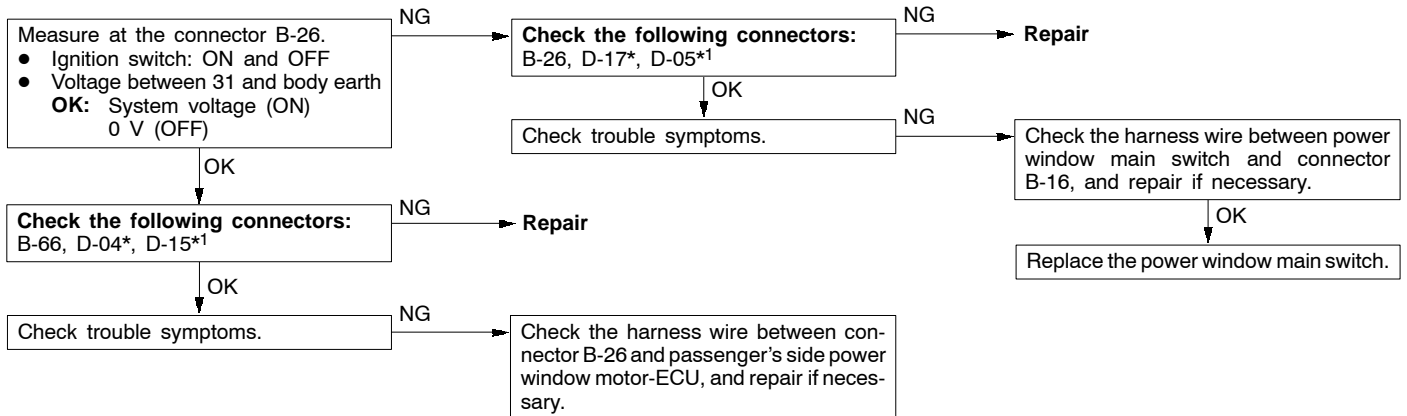
Driver's side power window cannot be operated by the power window main switch.	Probable cause
The cause may be a malfunction of power window main switch, power window motor-ECU, or open circuit or short circuit in the communication line between power window main switch and power window motor-ECU.	<ul style="list-style-type: none"> ● Malfunction of power window main switch ● Malfunction of power window motor-ECU ● Malfunction of wiring harness or connector



*: L.H. drive vehicles
*1: R.H. drive vehicles

Inspection Procedure 3

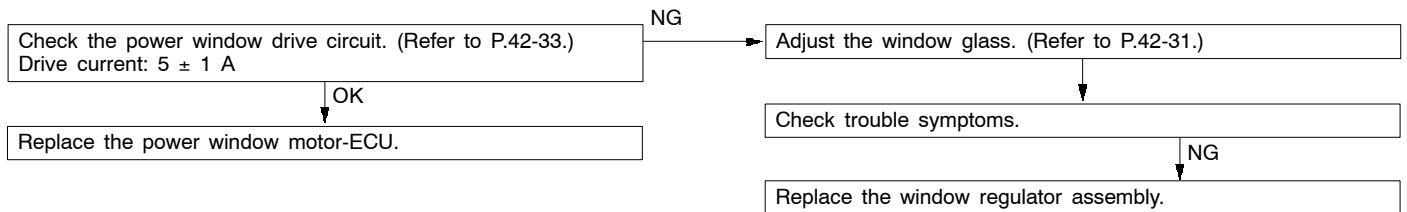
<p>Passenger's side power window cannot be operated by the power window main switch. (However, it can be operated by the power window sub-switch.)</p>	<p>Probable cause</p>
<p>The cause may be open circuit or short circuit in the communication line between power window main switch and passenger's side power window motor-ECU, or a malfunction of power window main switch.</p>	<ul style="list-style-type: none"> ● Malfunction of wiring harness or connector ● Malfunction of power window main switch



*: L.H. drive vehicles
*1: R.H. drive vehicles

Inspection Procedure 4

<p>When the glass is raised, it then lowers automatically.</p>	<p>Probable cause</p>
<p>If the sliding resistance is too large when the glass is being raised, it is judged that something is jammed in the window, and the window is lowered by approximately 150 mm.</p>	<ul style="list-style-type: none"> ● Incorrect window glass adjustment ● Glass slider is incorrectly installed or warped



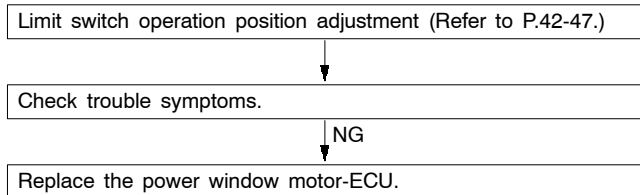
Inspection Procedure 5

<p>The glass is not lowered when something is jammed in the window.</p>	<p>Probable cause</p>
<p>The cause may be a malfunction of the revolution detection sensor in the power window motor-ECU.</p>	<ul style="list-style-type: none"> ● Malfunction of power window motor-ECU

Replace the power window motor-ECU.

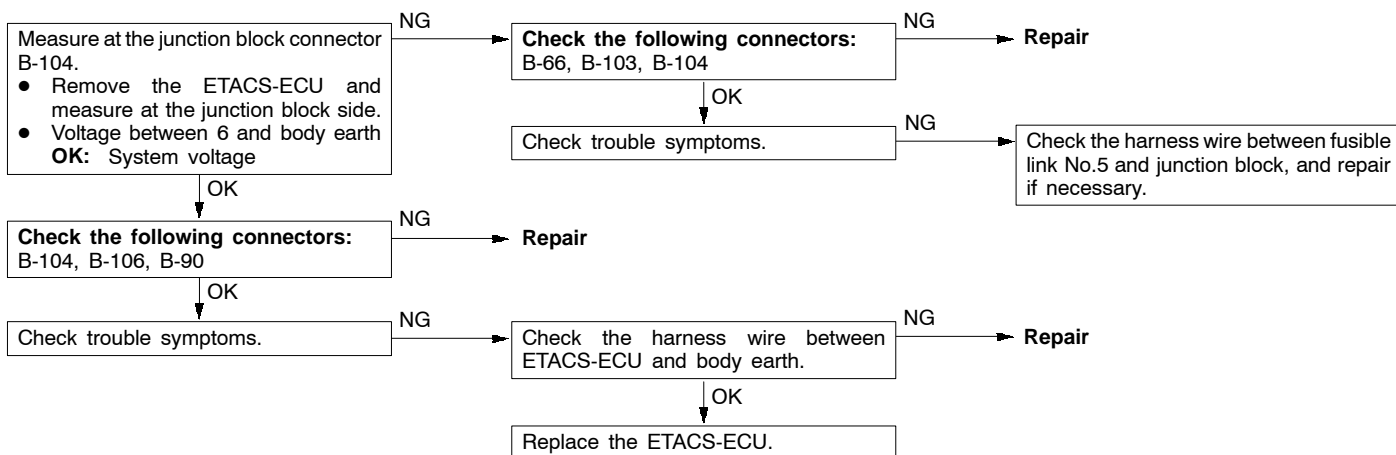
Inspection Procedure 6

When the glass is fully raised, it then lowers automatically.	Probable cause
When the window is within 15 mm of being fully closed, the limit switch turns off to prevent the window from being lowered. However, the above problem can occur if there is a malfunction of the limit switch in the power window motor-ECU.	<ul style="list-style-type: none"> Malfunction of the power window motor-ECU



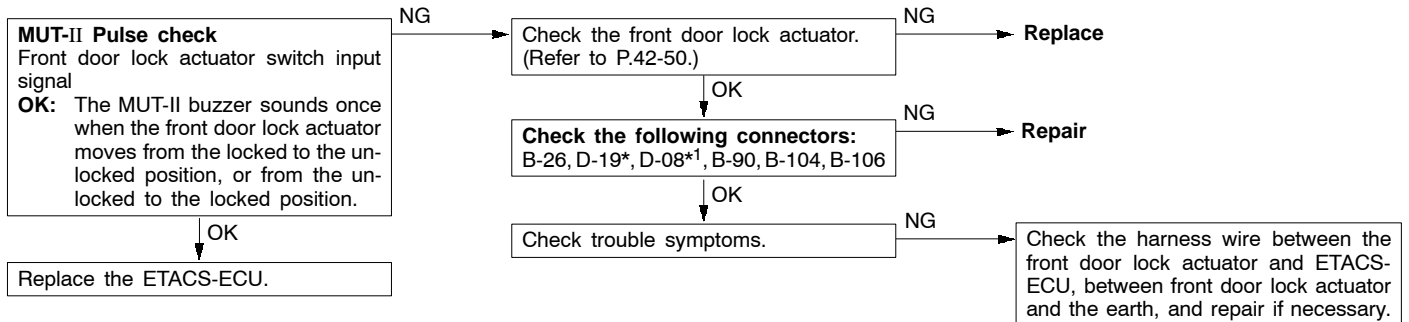
Inspection Procedure 7

None of the door lock functions operate. (Keyless entry system does not operate also.)	Probable cause
The cause may be a malfunction of the ETACS-ECU power supply circuit system or of the earth circuit system.	<ul style="list-style-type: none"> Malfunction of ETACS-ECU Malfunction of wiring harness or connector



Inspection Procedure 8

None of the doors lock or unlock when the driver's-side inside door locking knob is operated (including by means of the door key). (However, keyless entry system operates.)	Probable cause
The cause may be a malfunction of the door lock actuator switch, the ETACS-ECU or of a wiring harness or connector.	<ul style="list-style-type: none"> ● Malfunction of front door lock actuator ● Malfunction of ETACS-ECU ● Malfunction of wiring harness or connector

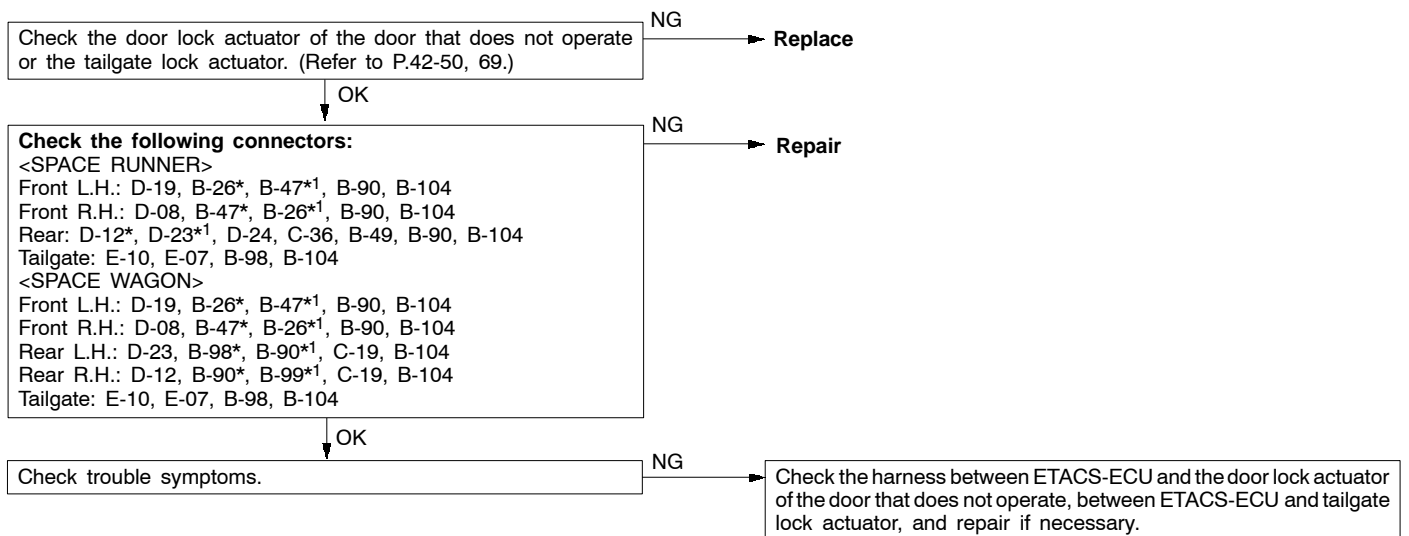


*: L.H. drive vehicles

*1: R.H. drive vehicles

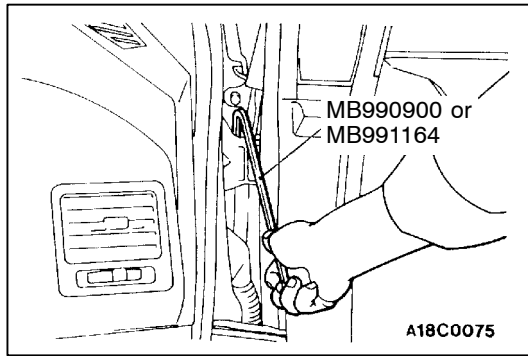
Inspection Procedure 9

Some doors do not lock or unlock.	Probable cause
The cause may be a malfunction of the door lock actuator or tailgate lock actuator or of a wiring harness or connector.	<ul style="list-style-type: none"> ● Malfunction of door lock actuator ● Malfunction of tailgate lock actuator ● Malfunction of wiring harness or connector



*: L.H. drive vehicles

*1: R.H. drive vehicles



ON-VEHICLE SERVICE

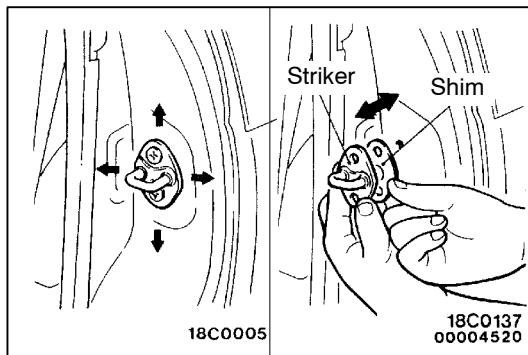
42300090166

DOOR FIT ADJUSTMENT

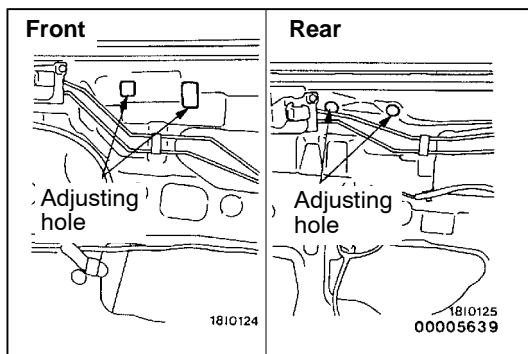
1. If the clearance between the door and the vehicle body is uneven, affix protective tape to the fender around the hinge and to the edge of the door. Then use the special tool to loosen the door hinge mounting bolts on the body, and adjust the clearance around the door so that it becomes even.
2. If the door and the body are not flush with each other, use the special tool to loosen the door hinge mounting bolts on the door. Then align the door.

Caution

Do not load more than 98 Nm on the special tool.



3. If the door opening and closing is heavy, adjust the meshing of the striker and the door latch (in the longitudinal direction) by adding shims to the striker and by moving the striker up and down or to the left and right.

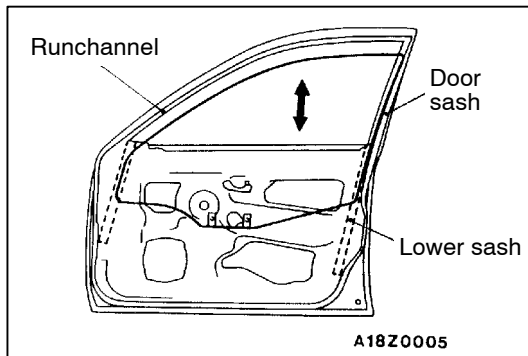


DOOR WINDOW GLASS ADJUSTMENT

42300100302

Check that the door glass moves securely along the door glass runchannel when the window glass is fully raised and fully lowered. If the glass does not move correctly, adjust by the following procedure.

1. Remove the door trim and the waterproof film. (Refer to P.42-37, 38, 39.)
2. Loosen the door glass mounting screw through the adjusting hole with the door window glass fully closed, and lower the door window glass slightly.
3. Close the door window glass fully again, and tighten the door glass mounting screw securely through the adjusting hole.



ADJUSTMENT AND REPLACEMENT WHEN THERE IS A MALFUNCTION OF THE POWER WINDOWS

42900190109

If the window glass automatically starts moving downwards at the wrong time while it is being raised, carry out the following adjustment or replacement procedures.

1. Remove the door trim and waterproof film. (Refer to P.42-37, 38, 39.)
2. Remove the window regulator assembly from the door window glass, and then raise and lower the door window glass by hand to check the operation force.

NOTE

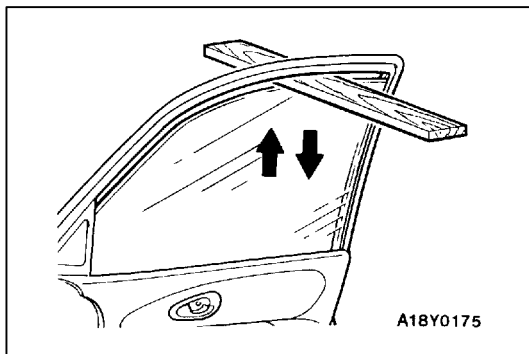
Insert a cushion or similar object to prevent damage to the glass if it should happen to fall down.

3. If the door window glass does not move up and down smoothly, check or repair the following points.
 - Check the installation condition of the runchannel.
 - Repair the twisting in the door sash.
 - Check the installation condition of the lower sash or the center sash.

NOTE

The lower sash cannot normally be adjusted, but it may be possible to adjust the sash span slightly within the range allowed by manufacturing tolerances by pushing the lower sash outwards while re-installing it.

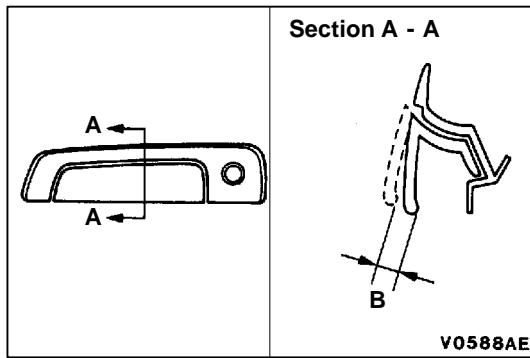
4. If repair or adjustment is not possible, replace the door assembly.



POWER WINDOW SAFETY MECHANISM CHECK

42900100102

1. Place a wooden board with a thickness of approximately 10 mm as shown in the illustration, and then raise the window glass.
2. Check that the window lowers by a distance of approximately 150 mm when the window clamps the wooden board. If this doesn't happen, refer to "Troubleshooting" (P.42-29).

**DOOR OUTSIDE HANDLE PLAY CHECK** 42300160164

1. Check that the door outside handle play is within the standard value range.

Standard value (B):

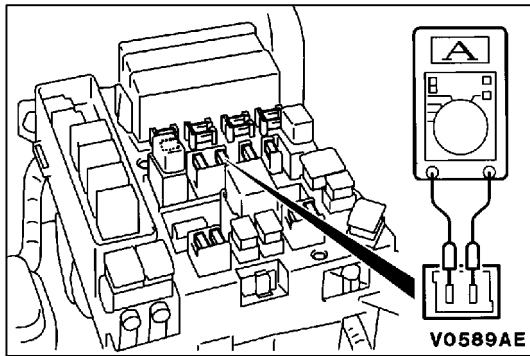
Front door:

<SPACE RUNNER> 2.1 mm or more

<SPACE WAGON> 1.9 mm or more

Rear door: 2.4 mm or more

2. If the door outside handle play is not within the standard value range, check the door outside handle or the door latch assembly. Replace, if necessary.

**POWER WINDOW OPERATION CURRENT INSPECTION**

42900110105

1. Remove the power window fuse and connect a circuit analyser as shown in the illustration.
2. When the power window switch is pulled to close the window, a large amount of current flows at the time the window starts to close and when it is fully closed, so measure the operation current in the interval between these two points.

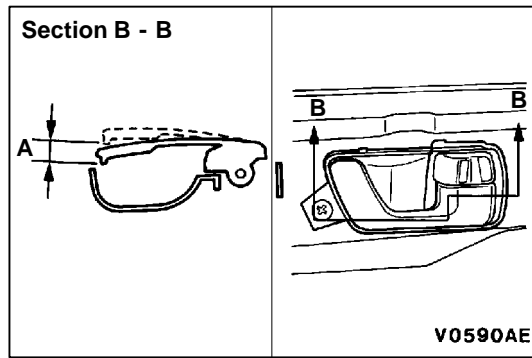
Standard value:

5 ± 1 A (for 14 - 15 V power supply voltage at 25°C)

3. If the operation current is outside the standard value, refer to "Troubleshooting" (P.42-29).

CIRCUIT BREAKER (INCORPORATED IN THE POWER WINDOW MOTOR) INSPECTION 42900170134

1. Pull the power window switch to fully close the window glass, and keep pulling the switch for a further 10 seconds.
2. Release the power window switch and immediately press it to open the window. The condition of the circuit breaker is good if the power window glass starts to move downwards within 60 seconds.



DOOR INSIDE HANDLE PLAY CHECK AND ADJUSTMENT

42300150260

1. Check that the door inside handle play is within the standard value range.

Standard value (A): 5.3 mm or more

2. If the door inside handle play is outside the standard value range, remove the door trim. (Refer to P.42-37, 38, 39.)
3. <Front door>
Disengage the rod from the clip on the inside handle, and re-engage it to the clip to adjust the play.
<Rear door>
Loosen the inside handle mounting screws, and then move the inside handle back and forth to adjust the play.

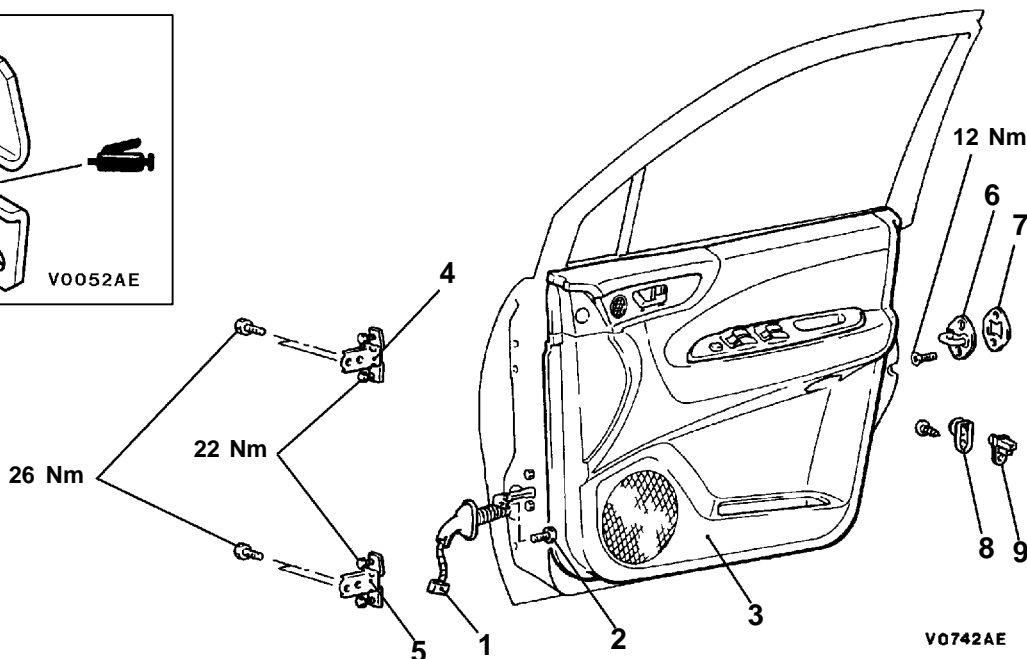
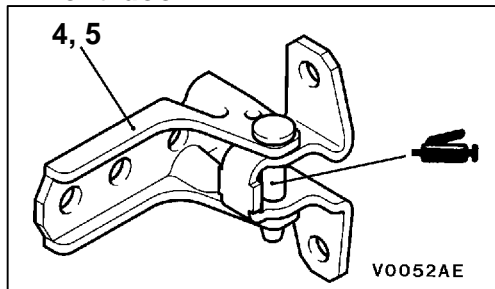
DOOR ASSEMBLY

42300220299

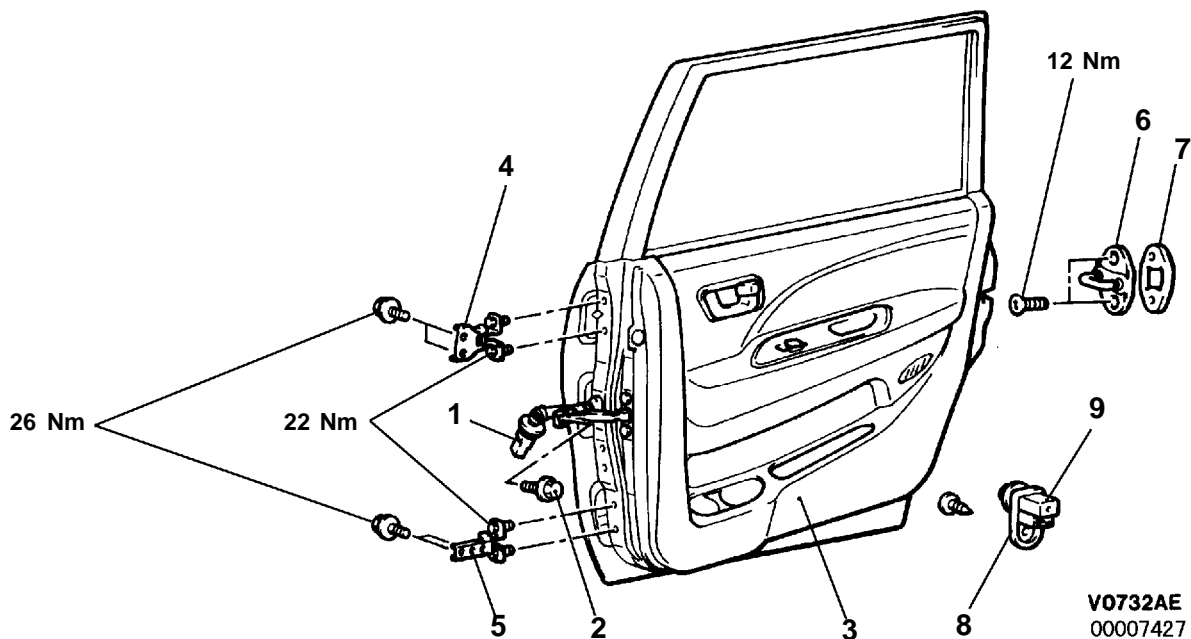
REMOVAL AND INSTALLATION

Post-installation Operation
 Door Adjustment (Refer to P.42-31.)

Front door



Rear door <SPACE WAGON>



Door assembly removal steps

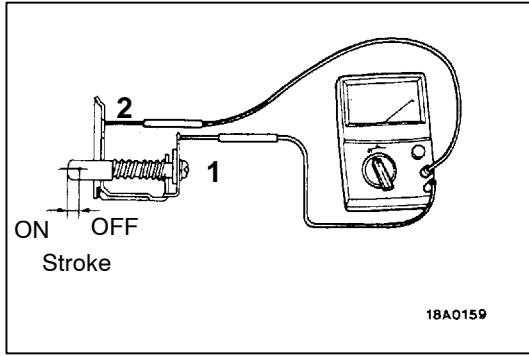
1. Harness connector
2. Door check connecting bolt
3. Door assembly
4. Door upper hinge
5. Door lower hinge

Striker removal steps

6. Striker
7. Striker shim

Door switch removal steps

8. Door switch cap
9. Door switch



INSPECTION

42300600093

DOOR SWITCH CONTINUITY CHECK

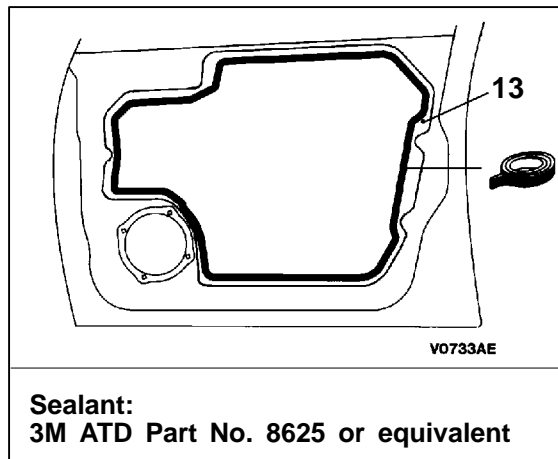
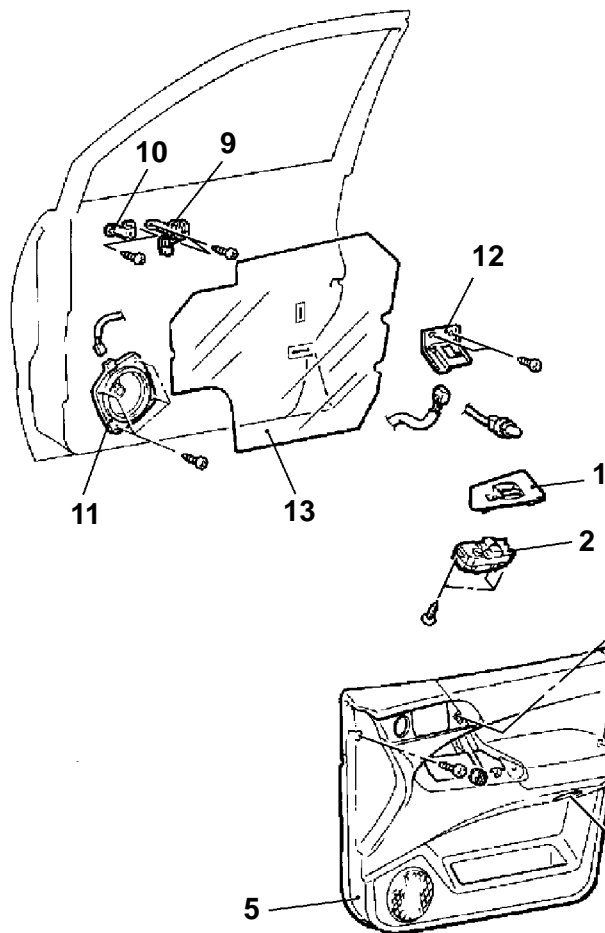
Switch position	Terminal No.	
	1	2
Open (ON)	○	○
Depressed (OFF)		

DOOR TRIM AND WATERPROOF FILM

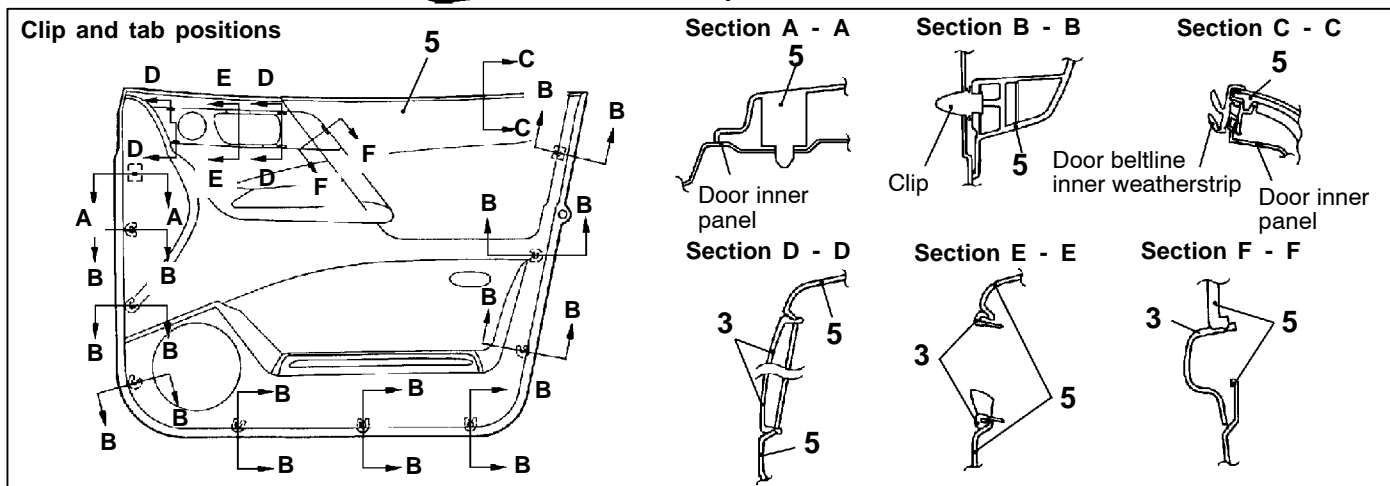
42300430272

REMOVAL AND INSTALLATION

Front door <SPACE RUNNER>



V1278AE
00007704



Removal steps



1. Power window switch panel



2. Power window switch

3. Inside handle cover

4. Door lamp lens

5. Door trim

6. Front door grip

7. Power window switch cover

8. Grip bracket

9. Tweeter

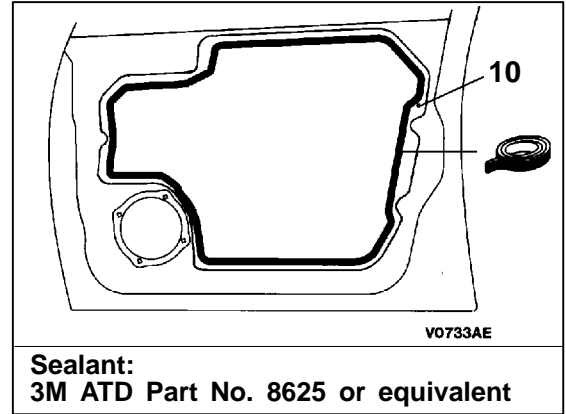
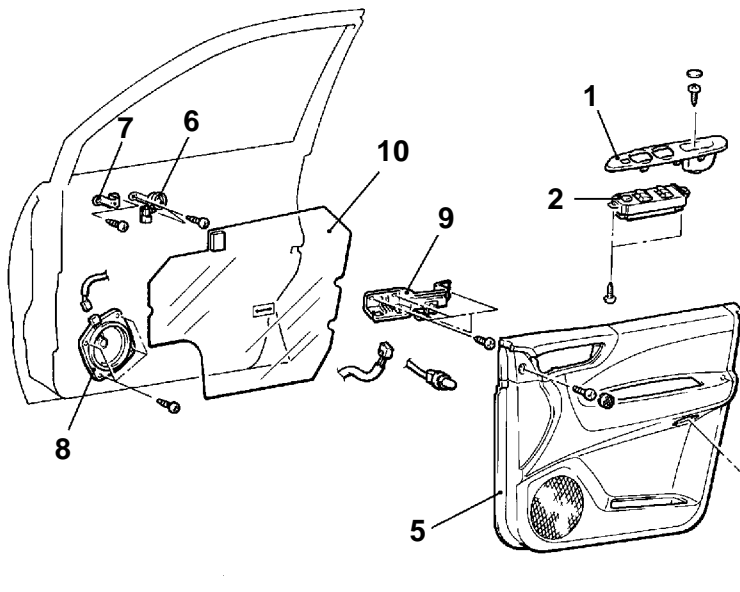
10. Door trim bracket

11. Speaker

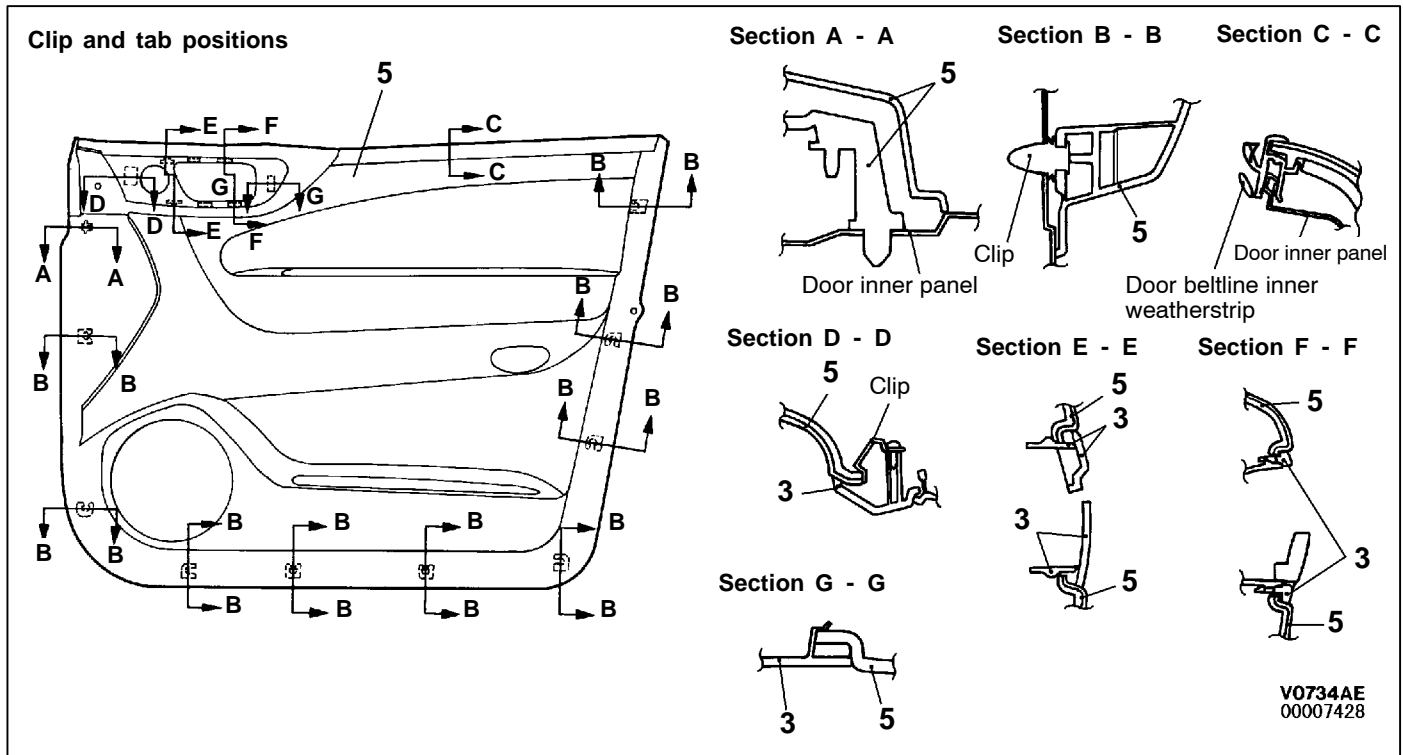
12. Power window switch bracket

13. Waterproof film

Front door <SPACE WAGON>



V0260AE



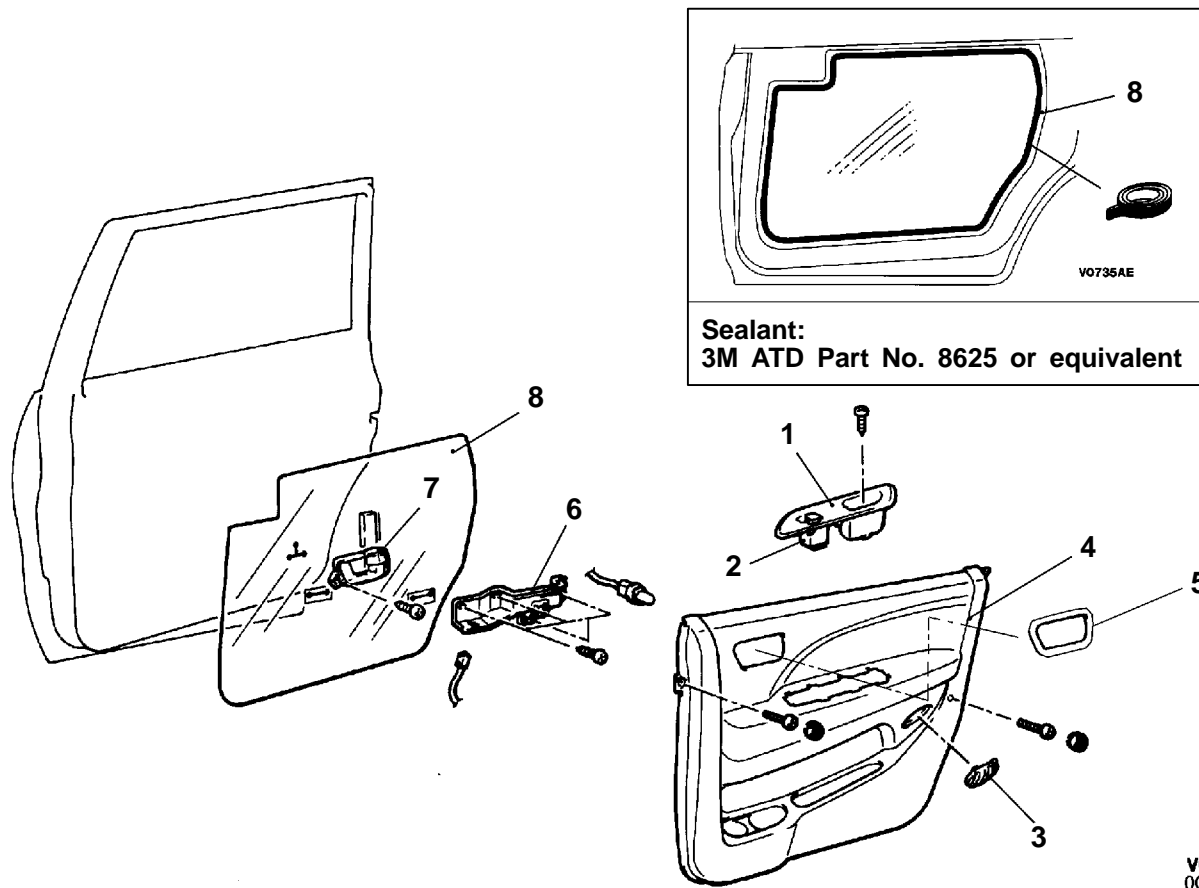
Removal steps



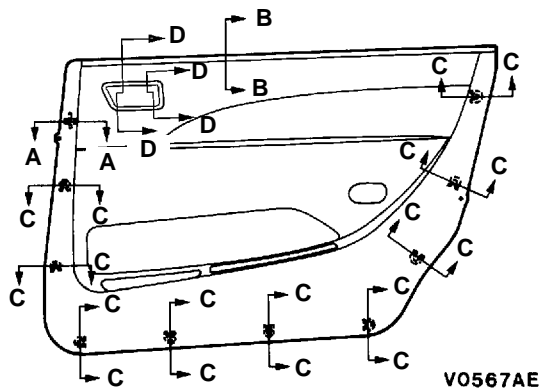
- 1. Power window switch panel
- 2. Power window switch
- 3. Inside handle cover
- 4. Door lamp lens
- 5. Door trim

- 6. Tweeter
- 7. Door trim bracket
- 8. Speaker
- 9. Power window switch bracket
- 10. Waterproof film

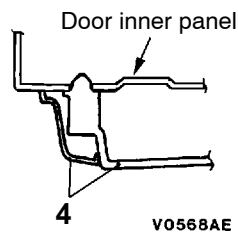
Rear door <SPACE WAGON>



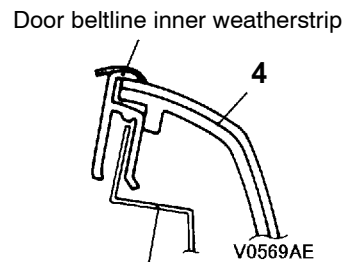
Clip and tab positions



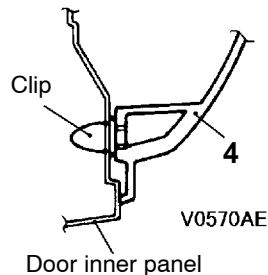
Section A - A



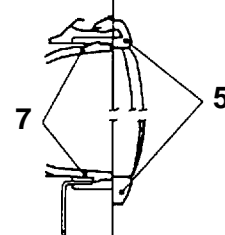
Section B - B



Section C - C



Section D - D



Removal steps

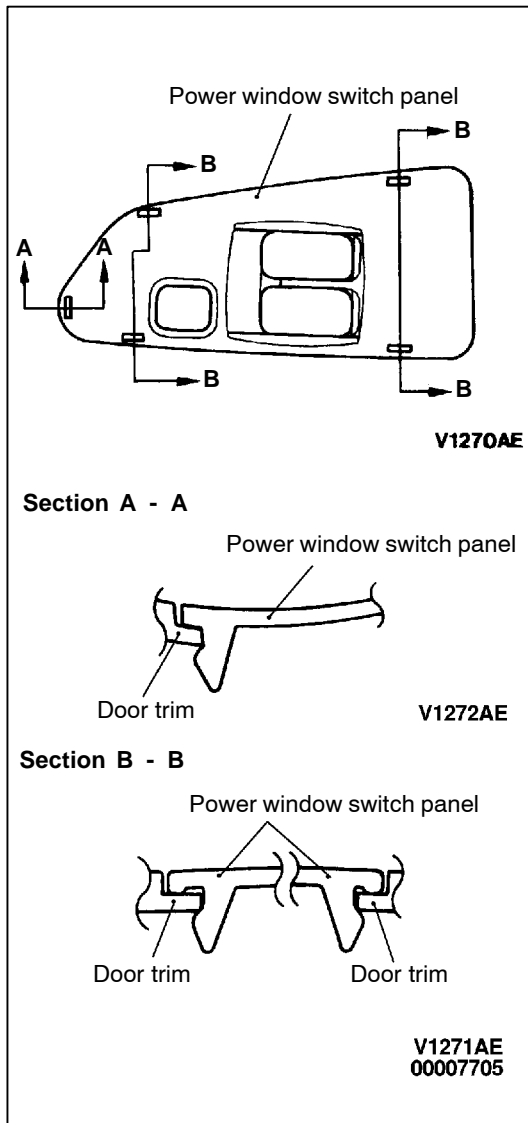


1. Power window switch panel
2. Power window switch



3. Door lamp lens
4. Door trim
5. Inside handle cover

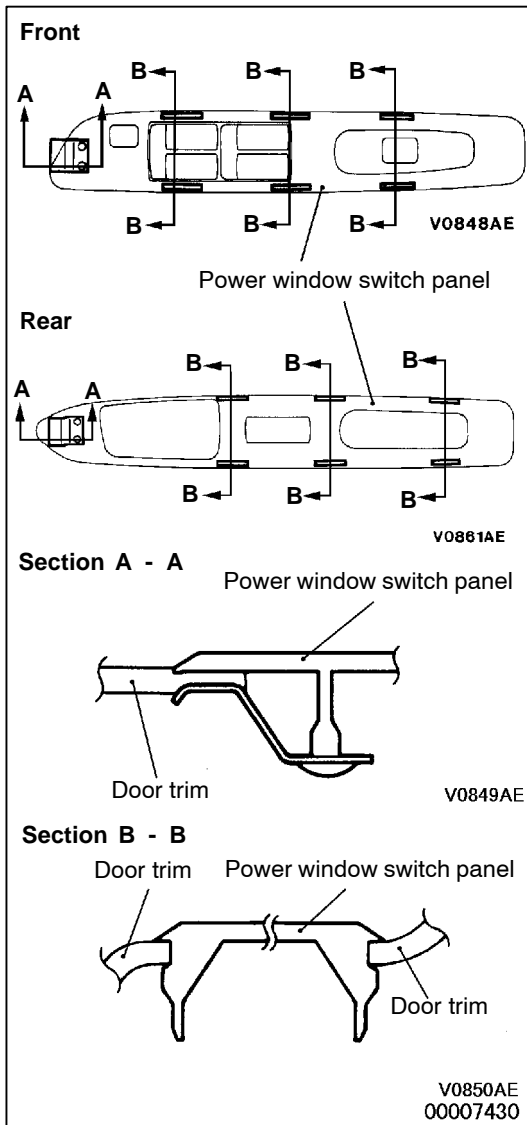
6. Power window switch bracket
7. Door inside handle (Refer to P.42-49.)
8. Waterproof film



REMOVAL SERVICE POINT

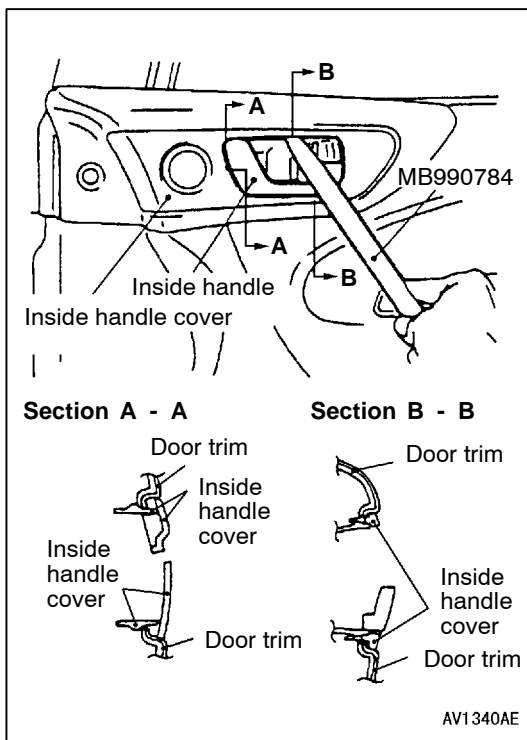
◀A▶ POWER WINDOW SWITCH PANEL REMOVAL <SPACE RUNNER>

Use the special tool to pry up the rear end of the power window switch panel to remove it.



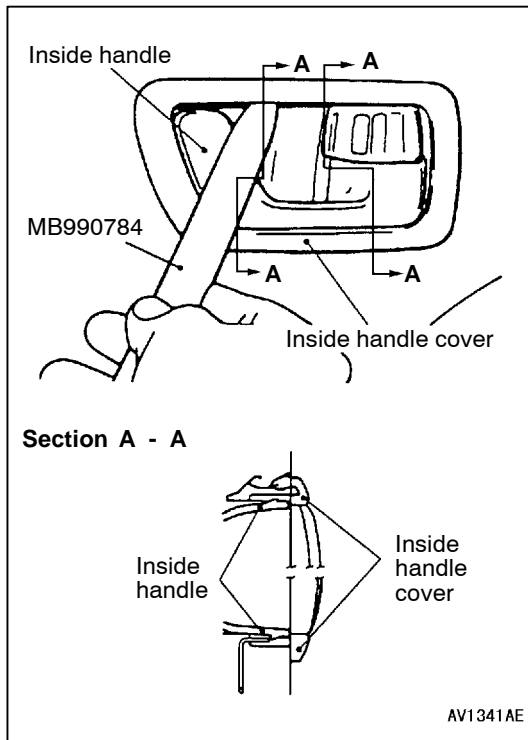
<SPACE WAGON>

Use the special tool to pry up the rear end of the power window switch panel to remove it.



◀B▶ INSIDE HANDLE COVER REMOVAL

1. Insert the special tool between the inside handle upper end and the inside handle cover, and pry off the inside handle cover from the upper tabs of the inside handle.
2. Insert the special tool between the inside handle lower end and the inside handle cover, and pry off the inside handle cover from the lower tabs of the inside handle.
3. Use the special tool to pry up the front end of the inside handle cover to remove it.

**◀C▶ DOOR TRIM/INSIDE HANDLE COVER REMOVAL
<SPACE WAGON>**

1. Insert the special tool between the inside handle upper end and the inside handle cover, and pry off the inside handle cover from the upper tabs of the inside handle.
2. Insert the special tool between the inside handle lower end and the inside handle cover, and pry off the inside handle cover from the lower tabs of the inside handle.
3. Remove the door trim.
4. Remove the inside handle cover from the door trim.

DOOR GLASS AND REGULATOR

42900130378

REMOVAL AND INSTALLATION

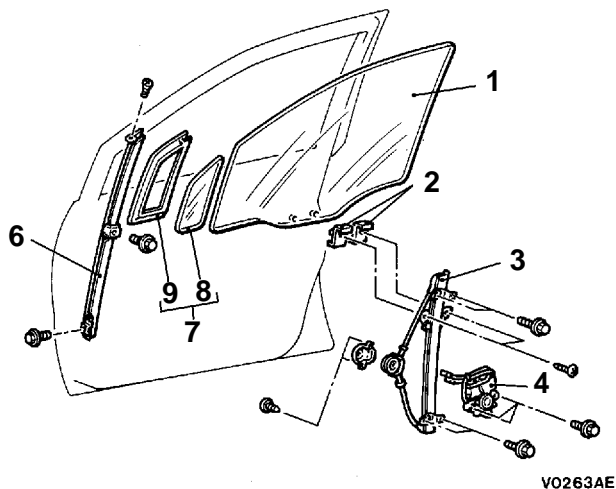
Pre-removal Operation

Door Trim and Waterproof Film Removal (Refer to P.42-37, 38, 39.)

Post-installation Operation

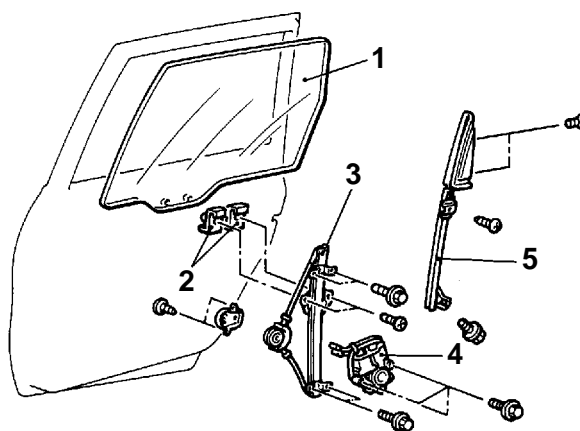
- Door Window Glass Adjustment (Refer to P.42-31.)
- Door Trim and Waterproof Film Installation (Refer to P.42-37, 38, 39.)

Front door



V0263AE

Rear door <SPACE WAGON>



V0264AE
00007431

Front window regulator assembly removal steps

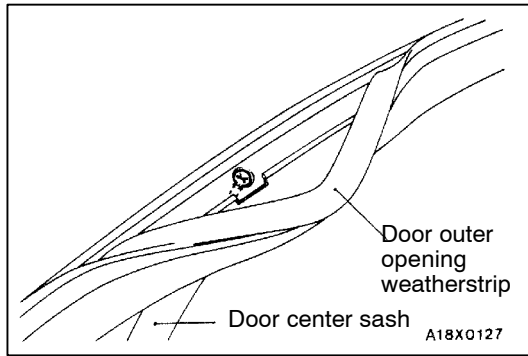
- ▶B◀ 1. Door window glass
- ▶A◀ 2. Door window glass holder
- ▶A◀ 3. Window regulator assembly
- ▶A◀ 4. Power window motor

Rear window regulator assembly removal steps

- Window glass runchannel (Refer to P.42-51.)
- ▶B◀ 1. Door window glass
- ▶A◀ 2. Door window glass holder
- ▶A◀ 3. Window regulator assembly
- ▶A◀ 4. Power window motor
- ▶A◀ 5. Delta sash assembly

Stationary window glass removal steps

- Window glass runchannel (Refer to P.42-51.)
- ▶A◀ ▶A◀ 1. Door window glass
- ▶A◀ 6. Door center sash
- ▶A◀ 7. Stationary window glass and weatherstrip assembly
- ▶A◀ 8. Stationary window glass
- ▶A◀ 9. Stationary window weatherstrip



REMOVAL SERVICE POINTS

◀A▶ DOOR CENTER SASH REMOVAL

1. Remove the door outer opening weatherstrip from the door center sash only.
2. Remove the door center sash mounting screws, and then remove the door center sash from the door panel.

INSTALLATION SERVICE POINTS

▶A◀ POWER WINDOW MOTOR/WINDOW REGULATOR ASSEMBLY INSTALLATION

POWER WINDOW MOTOR AND WINDOW REGULATOR ASSEMBLY INSTALLATION PROCEDURE

1. Connect the power window motor to the body-side harness connector, and then turn on the ignition switch.
2. Continue to pull the power window switch until the power window motor stops.

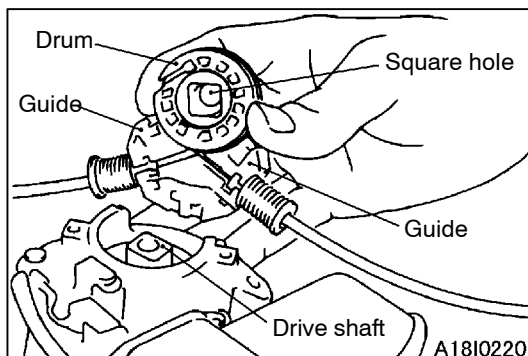
NOTE

Power window motor stops automatically and the limit switch incorporated in the power window motor will be reset.

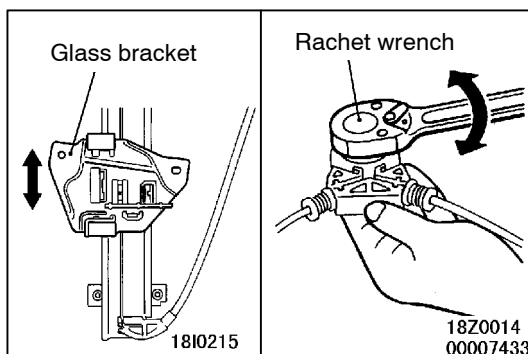
Caution

Do not operate the power window motor until the glass installation is finished.

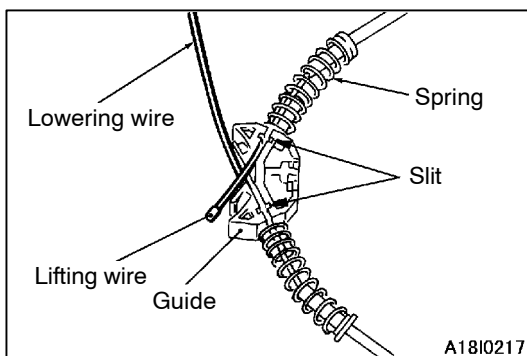
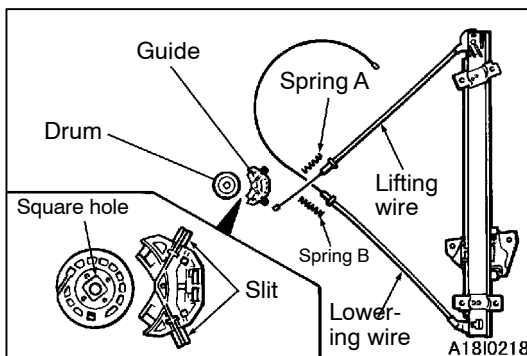
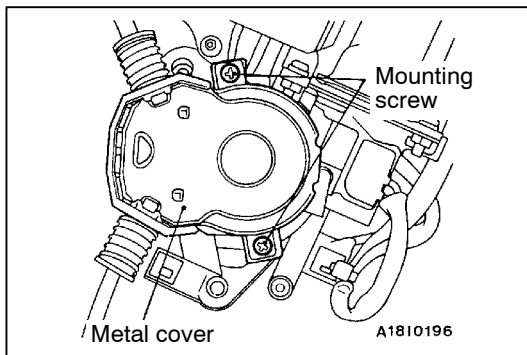
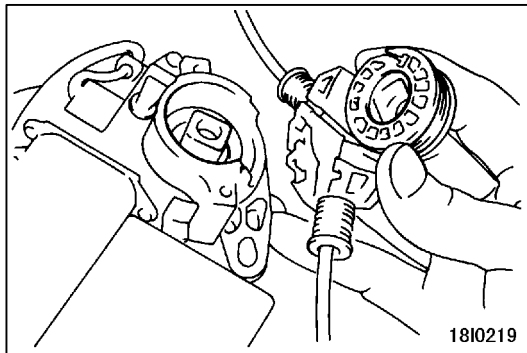
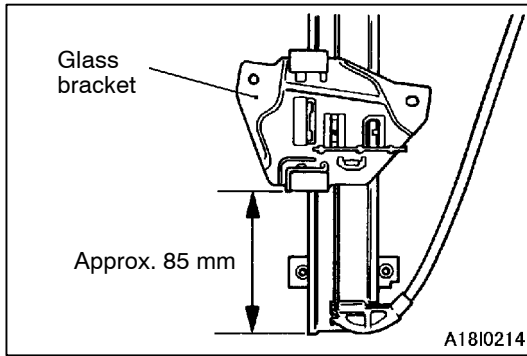
3. Turn off the ignition switch, and then remove the power window motor from the body-side harness connector.



4. Align the power window motor drive shaft and the square hole in the drum by the following procedure, while using the guide and the opening in the motor housing as a reference for the installation position.



- (1) Align the square hole with the drive shaft by sliding the glass bracket (glass mounting section) or by turning the drum using a ratchet wrench (with a socket diameter of 12.7 mm).



- (2) Turn the drum to position the glass bracket as shown in the illustration. Support the drum and the guide with your hand while turning the drum, otherwise the wires may pull out of the drum.
- (3) If the wires pull out of the drum, re-insert them by following the drum and regulator wire installation procedure.

5. Align the guide and the opening of the motor housing, and slide the guide into the motor housing while holding the guide and drum.

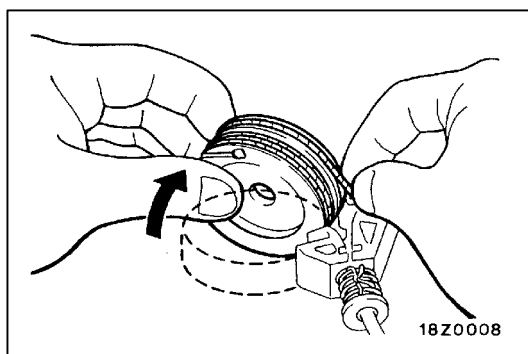
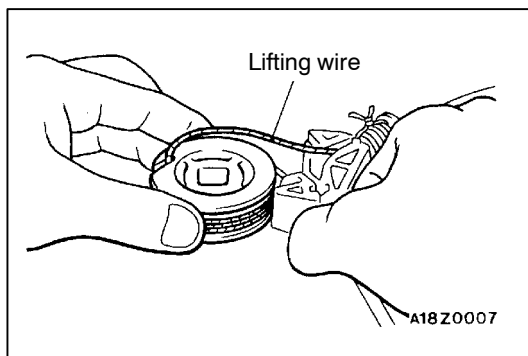
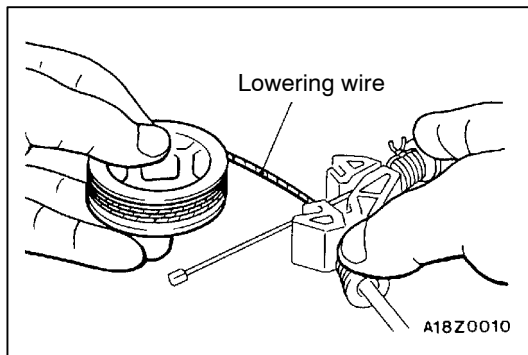
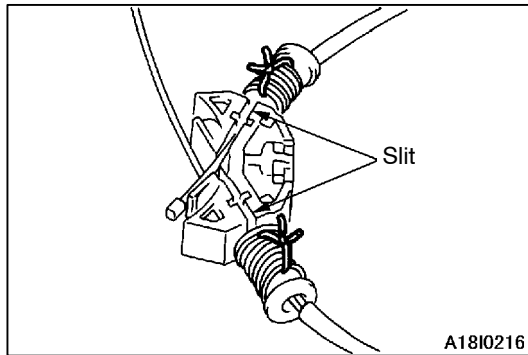
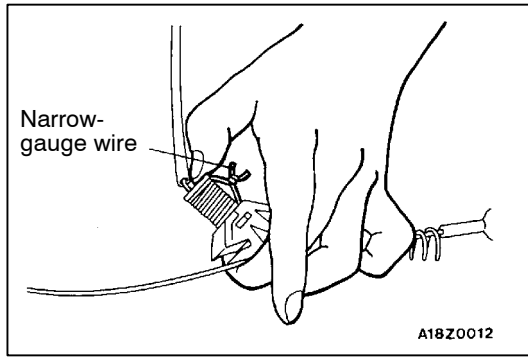
6. Install the metal cover securely to the housing.

Caution

Make sure that the metal cover is installed securely and does not move, in order to stop the drum from vibrating. If the drum vibrates, the glass may not slide up and down smoothly, or it may fall down.

DRUM AND REGULATOR WIRE INSTALLATION PROCEDURE

1. Place the drum, guide and regulator on a work bench as shown in the illustration.
 - (1) Place the drum so that the square hole is facing upward.
 - (2) Place the guide so that the slits are facing upward.
 - (3) Place the regulator so that the glass bracket is facing downward. Position the glass bracket so that glass is in the fully-open position.
2. Pass the springs over the wires, and then install the lowering wire to the guide first, followed by the lifting wire. (The lifting wire should be on top of the lowering wire.)

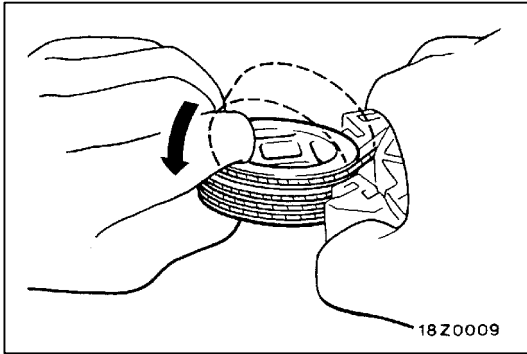


3. Use some narrow-gauge wire (approx. 0.5 mm diameter) to compress the springs, and then tie the narrow-gauge wires to the slits in the guide.

4. Insert the end of the lowering wire into the wire hole at the bottom of the drum, and then wrap the wire securely around the groove of the drum from the bottom so that there is no slackness in the wire.

5. Install the lifting wire to the drum as follows:
 - (1) Insert the end of the lifting wire into the wire hole at the top of the drum.

- (2) Raise the front of the drum until the drum is vertical, and then position the lifting wire in the groove of the drum.



- (3) Return the drum to its original position while holding the wires to make sure that they do not pull out.
6. After installing the power window motor assembly to the window regulator assembly, cut and remove the wires which are compressing the springs.

OPERATION CHECK

1. Install the window glass to the window regulator assembly.

Caution

- (1) **Do not operate the window regulator assembly before installing the window glass, otherwise the limit switch will be set.**
- (2) **Window glass safety mechanism does not operate when the window glass is closed fully at first time.**
2. Close the window glass completely.

NOTE

Closing the window glass completely will finish the adjustment of the limit switch.

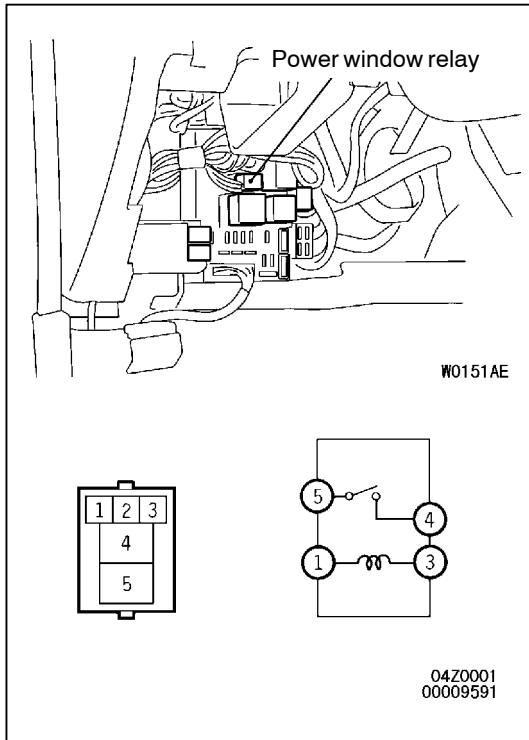
3. Check that the limit switch operates correctly.

►B◀ DOOR WINDOW GRASS INSTALLATION

1. Provisionally secure the door window glass to the window regulator assembly.
2. After raising the door window glass as far as it will go, fully secure the door window glass to the window regulator assembly.

INSPECTION

POWER WINDOW RELAY CONTINUITY CHECK



Battery voltage	Terminal No.			
	1	3	4	5
Not applied	○	○		
Applied	⊕	⊖	○	○

DOOR HANDLE AND LATCH

42300460318

REMOVAL AND INSTALLATION

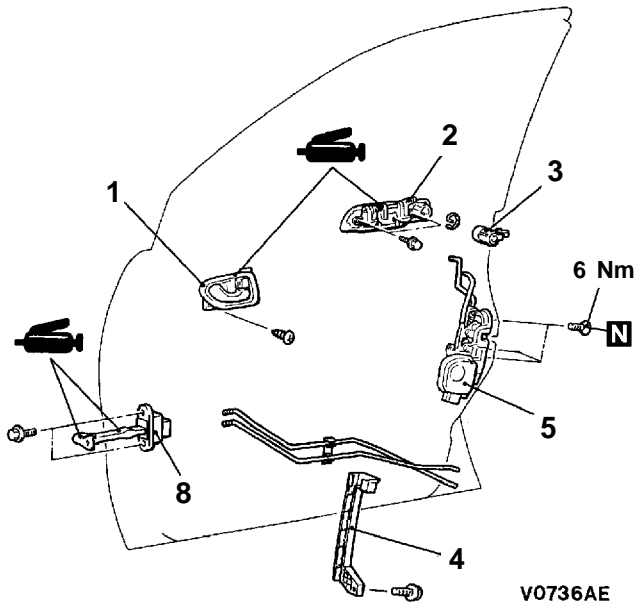
Pre-removal Operation

Door Trim Removal (Refer to P.42-37, 38, 39.)

Post-installation Operation

- Door Inside Handle Play Check (Refer to P.42-34.)
- Door Outside Handle Play Check (Refer to P.42-33.)
- Door Trim Installation (Refer to P.42-37, 38, 39.)

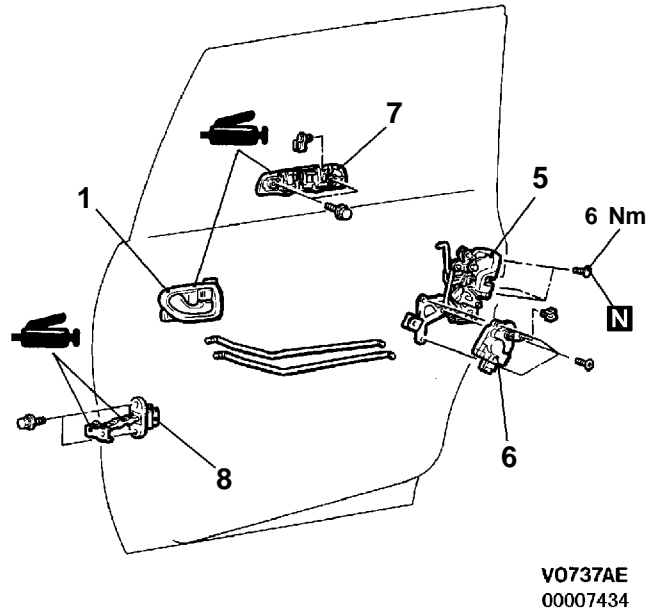
Front door



Front door handle and door latch assembly removal steps

1. Door inside handle
 - Waterproof film (Refer to P.42-37, 38, 39.)
2. Door outside handle
3. Door lock key cylinder assembly
4. Rear lower sash
5. Door latch assembly

Rear door <SPACE WAGON>

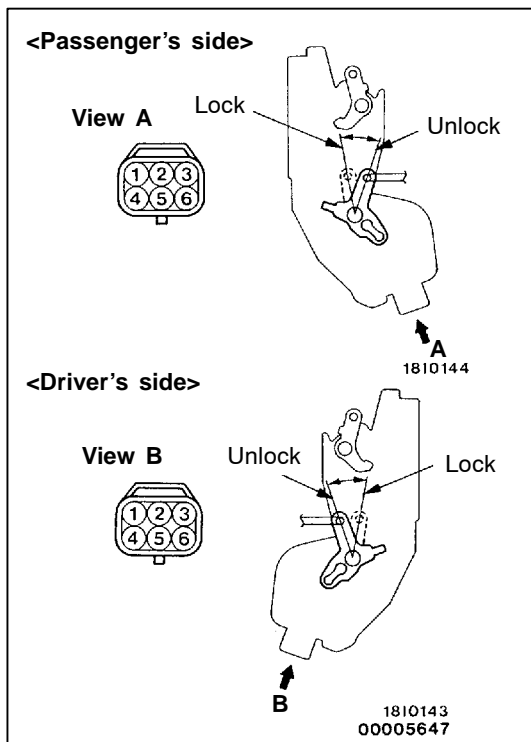


Rear door handle and door latch assembly removal steps

1. Door inside handle
 - Waterproof film (Refer to P.42-37, 38, 39.)
- Door center sash (Refer to P.42-43.)
5. Door latch assembly
6. Door lock actuator
7. Door outside handle

Door check removal

- Waterproof film (Refer to P.42-37, 38, 39.)
- 8. Door check



INSPECTION

FRONT DOOR LOCK ACTUATOR CHECK

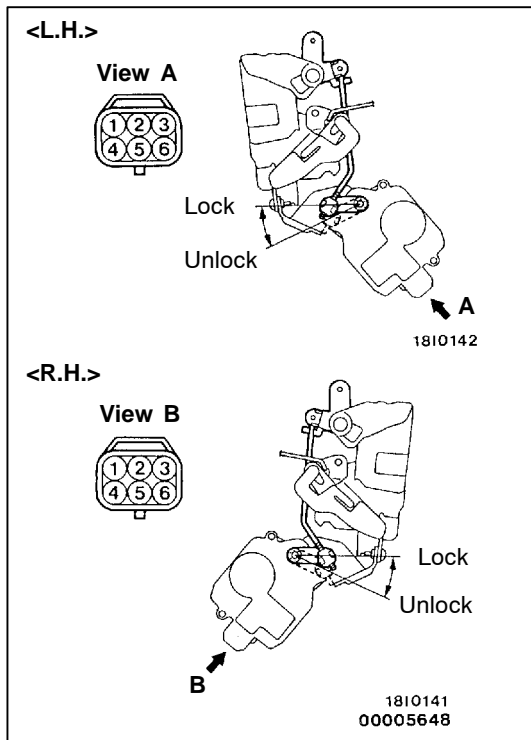
42300610140

<Passenger's side>

Rod position	Terminal No.		Rod operation
	4	6	
LOCK	⊖	⊕	LOCK position → UNLOCK position
UNLOCK	⊕	⊖	UNLOCK position → LOCK position

<Driver's side>

Rod position	Terminal No.					Rod operation
	1	2	3	4	6	
LOCK				⊖	⊕	LOCK position → UNLOCK position
UNLOCK				⊕	⊖	UNLOCK position → LOCK position
LOCK	○		○			
UNLOCK		○	○			



REAR DOOR LOCK ACTUATOR CHECK

42300620129

<L.H.>

Rod position	Terminal No.		Rod operation
	2	3	
LOCK	⊕	⊖	LOCK position → UNLOCK position
UNLOCK	⊖	⊕	UNLOCK position → LOCK position

<R.H.>

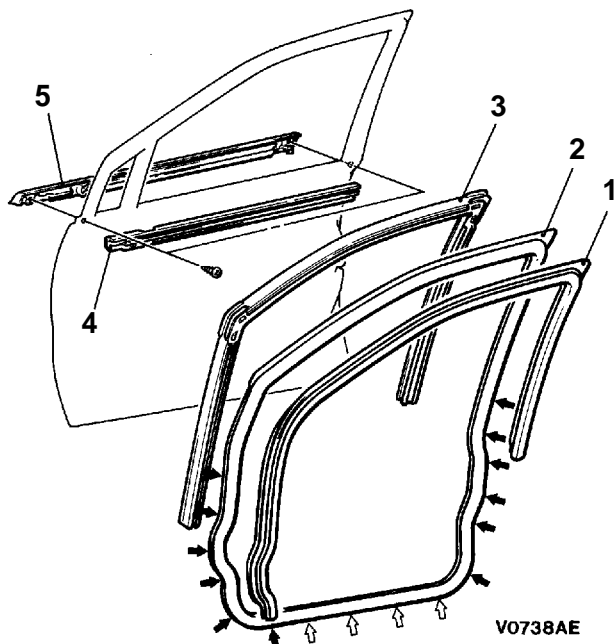
Rod position	Terminal No.		Rod operation
	2	3	
LOCK	⊖	⊕	LOCK position → UNLOCK position
UNLOCK	⊕	⊖	UNLOCK position → LOCK position

WINDOW GLASS RUNCHANNEL AND DOOR OPENING WEATHERSTRIP

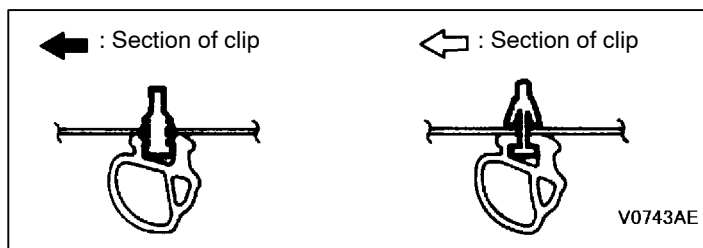
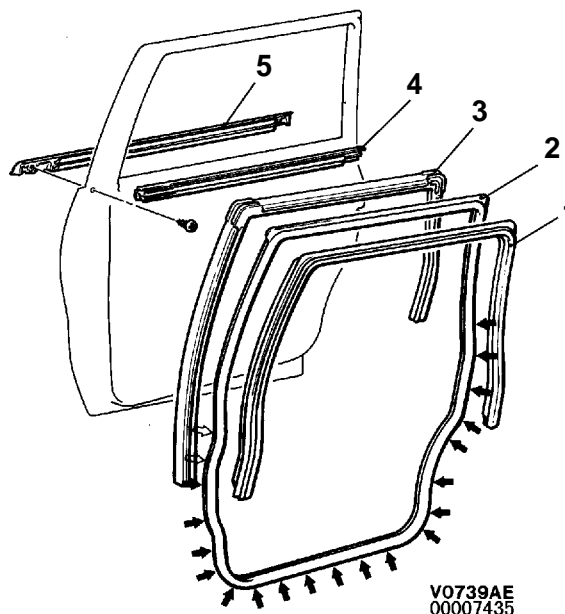
42300310248

REMOVAL AND INSTALLATION

Front door



Rear door <SPACE WAGON>



Door inner opening weatherstrip removal steps

- Scuff plate (Refer to GROUP 52A.)
 - Cowl side trim <Front door> (Refer to GROUP 52A.)
 - Center pillar lower trim (Refer to GROUP 52A.)
1. Door inner opening weatherstrip

Door outer opening weatherstrip removal

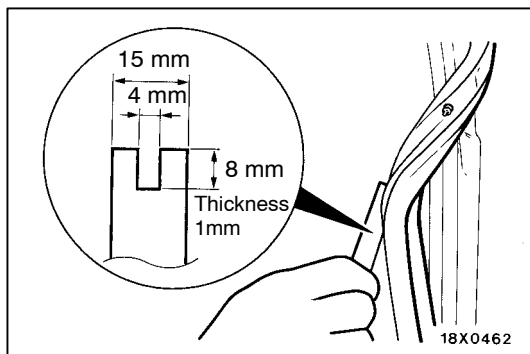
2. Door outer opening weatherstrip

Door window glass runchannel removal steps

3. Door window glass runchannel
4. Door window glass lower runchannel <Rear door>

Door beltline moulding removal steps

- Outside rear view mirror (Refer to GROUP 51.)
- 5. Door beltline moulding



REMOVAL SERVICE POINT

◀A▶ DOOR OUTER OPENING WEATHERSTRIP REMOVAL

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

SLIDE DOOR <SPACE RUNNER>**SERVICE SPECIFICATIONS**

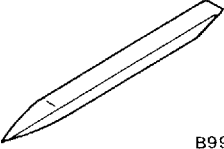
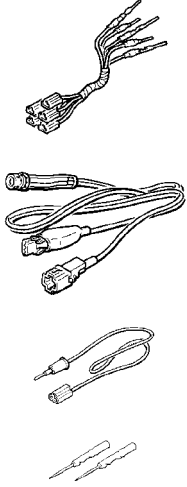
Item	Standard value
Door outside handle play mm	10.5 ± 1.5
Door inside handle play mm	14.2 ± 1.5

SEALANT

Item	Specified sealant	Remark
Waterproof film	3M ATD Part No. 8625 or equivalent	Ribbon sealer

SPECIAL TOOLS

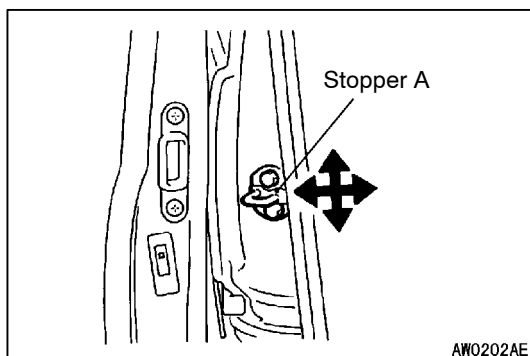
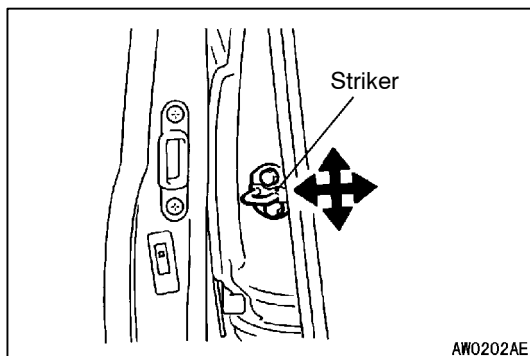
42400060030

Tool	Number	Name	Use
 <p>B990784</p>	MB990784	Ornament remover	Removal of the slide door trim
<p>A</p>  <p>B</p> <p>C</p> <p>D</p> <p>C991223</p>	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Test harness B: LED harness C: LED harness adapter D: probe	Measurement of terminal voltage A: Connector pin contact pressure inspection B: Power circuit inspection C: Power circuit inspection D: Commercial tester connection

ON-VEHICLE SERVICE

DOOR FIT ADJUSTMENT

1. If the striker is not properly engaged with the latch, adjust the door fit by moving the striker horizontally and vertically.

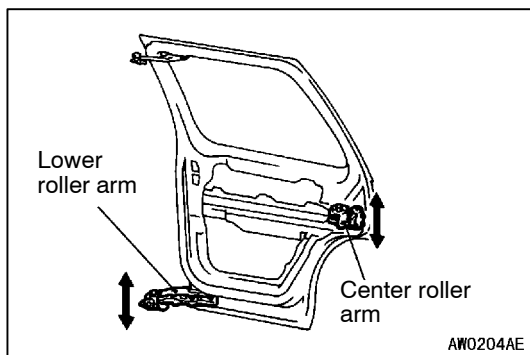


2. Check if the stopper touches the vehicle body properly when the door is closed. If there is a problem, move the stopper A horizontally and vertically to adjust.

3. Close the slide door. If the slide door is not flush with the vehicle body or there is excessive or uneven clearance between the door and body edges, follow the steps below:

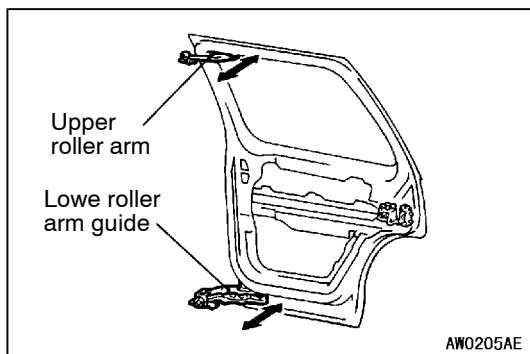
Vertical adjustment

- (1) Remove the slide door trim and waterproof film (Refer to P.42-59.)
- (2) Loosen the center roller arm and the lower roller arm mounting bolts, and then move the center lower arm and the lower roller arm up and down to adjust.



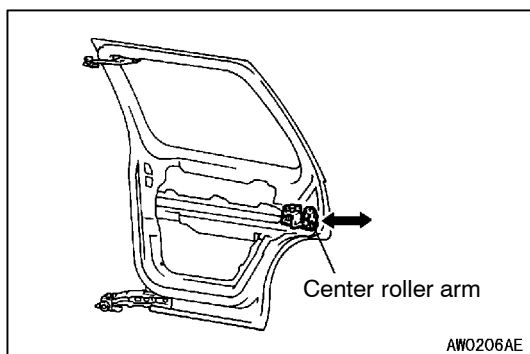
Inward and outward adjustment

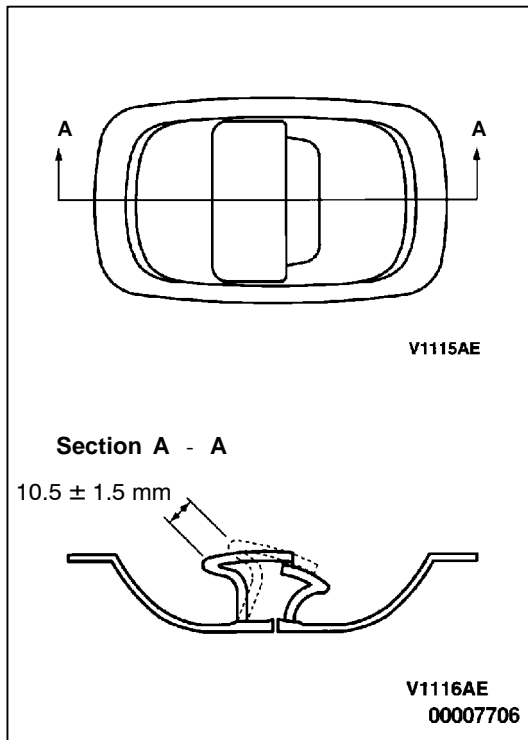
- (1) Loosen the upper roller arm and the lower roller arm guide mounting bolts, and then move the upper roller arm the lower roller arm guide inward and outward to adjust.



Forward and backward adjustment

- (1) Remove the slide door trim and waterproof film (Refer to P.42-59.)
- (2) Loosen the center roller arm mounting bolts, and then insert shim(s) between the center roller arm and the vehicle body to adjust.



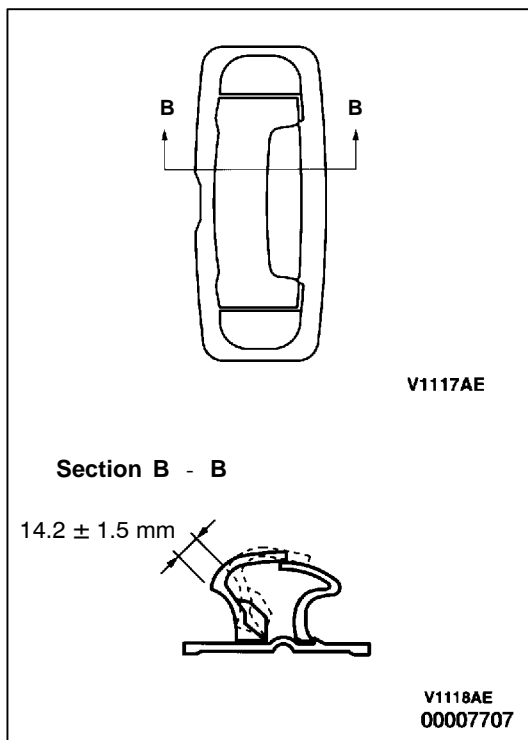


DOOR OUTSIDE HANDLE PLAY CHECK AND ADJUSTMENT

Standard value (A): 10.5 ± 1.5 mm

If the shown distance is outside the standard value, adjust the door outside handle play according to the following steps:

1. Remove the slide door trim and waterproof film (Refer to P.42-59.)
2. Using the clip securing the outside handle to the rod, adjust the door outside handle play.



DOOR INSIDE HANDLE PLAY CHECK AND ADJUSTMENT

Standard value (A): 14.2 ± 1.5 mm

If the shown distance is outside the standard value, adjust the door outside handle play according to the following steps:

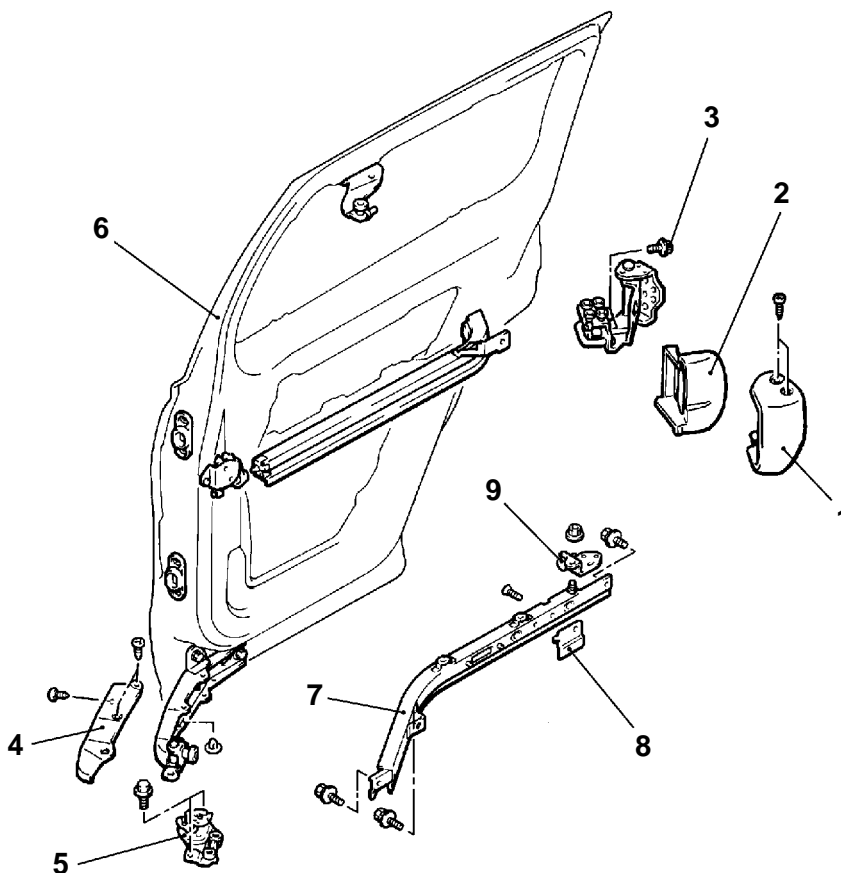
1. Remove the slide door trim and waterproof film (Refer to P.42-59.)
2. Using the clip securing the inside handle to the rod, adjust the door inside handle play.

SLIDE DOOR ASSEMBLY

REMOVAL AND INSTALLATION

Post-installation Operation

Slide door fit adjustment (Refer to P.42-53.)



AW0207AE

Slide door removal steps

- Sash trim, front (Refer to P.42-59.)
- Sash trim, rear (Refer to P.42-59.)
- Trim, upper (Refer to P.42-59.)
- 1. Center roller arm cover A
- 2. Center roller arm cover B
- 3. Center roller arm safety bolt
- Lower roller arm guide and cable (Refer to P.42-57.)
- 4. Lower roller arm cover
- 5. Lower roller arm guide
- Slide door rail cover (Refer to GROUP 52A.)
- 6. Slide door assembly

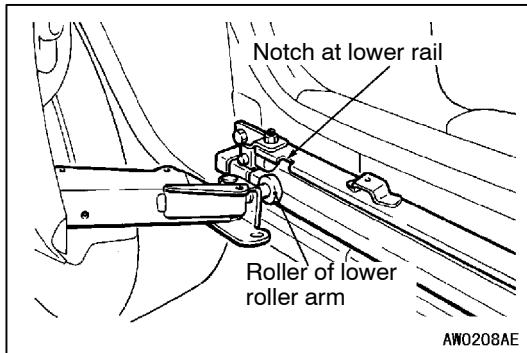
Lower rail removal steps

- Slide door rail cover (Refer to GROUP 52A.)
- 6. Side door assembly
- Fuel filler door safety cable connection (Refer to P.42-7.)
- 7. Lower rail
- 8. Lower arm slider
- 9. Lower stopper



REMOVAL SERVICE POINT**◀A▶ LOWER ROLLER ARM COVER/LOWER ROLLER ARM GUIDE REMOVAL**

Open the slide door, and then hold the door by operating the fully closed locking mechanism. Then remove the lower roller arm cover and the lower roller arm guide.

**◀B▶ SLIDE DOOR REMOVAL**

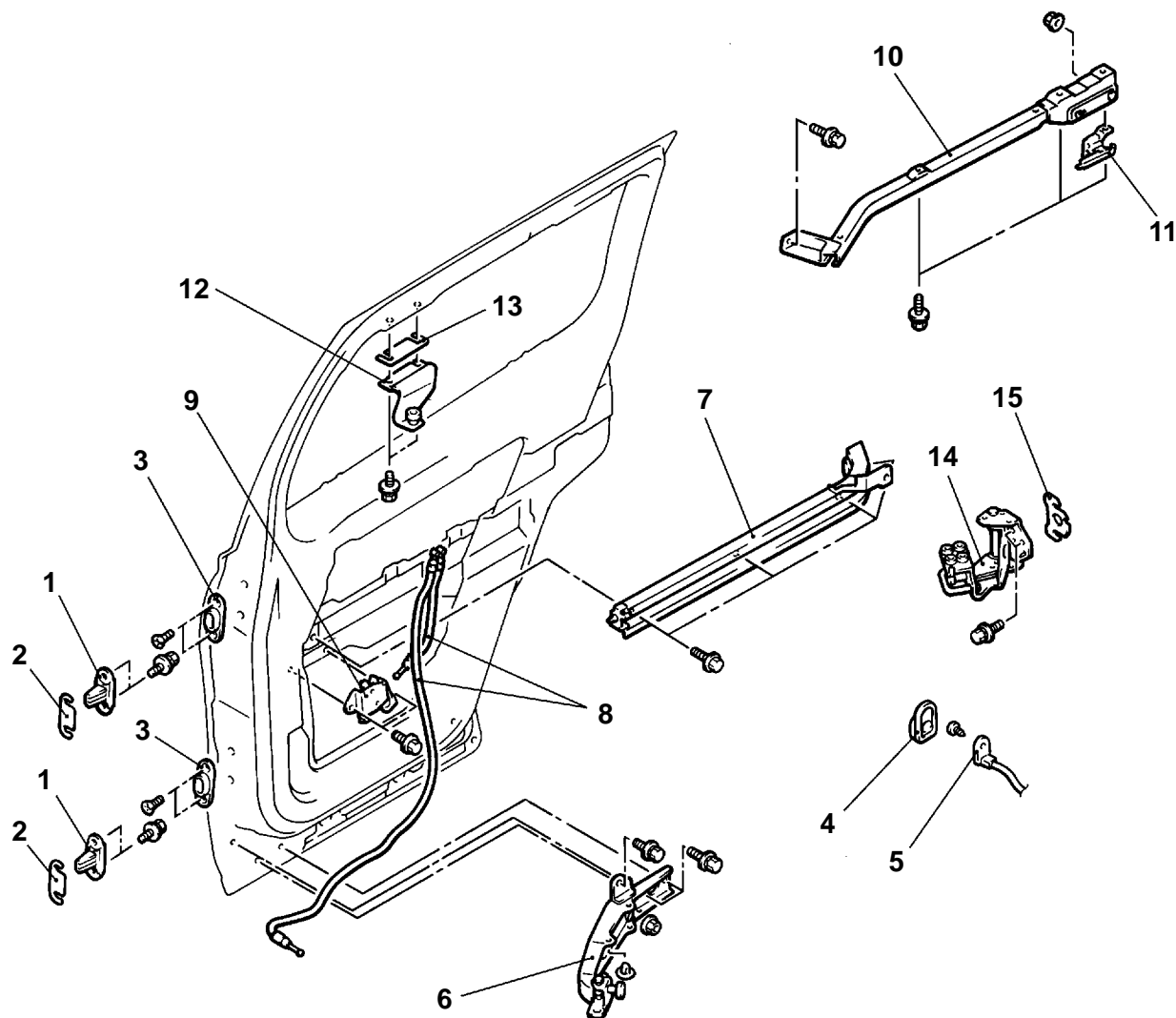
Remove the slide door assembly according to the steps below:

1. Slide the door rearwards, and then disengage the upper roller arm roller and the center roller arm roller from the rear end of the rail.
2. Hold the door by hand, disengage the lower roller arm roller from the lower rail notch, and then remove the door.

Caution

Be careful not to damage the vehicle body or trims when removing the slide door.

DISASSEMBLY AND REASSEMBLY



AW0209AE

- ▶A◀ 1. Stopper (A)
- 2. Shim
- ▶A◀ 3. Stopper (B)
- 4. Door switch cap
- 5. Door switch
- 6. Lower roller arm

Slide door check disassembly steps

- 7. Center rail
- 8. Door check cable
- 9. Slide door check

Upper rail disassembly steps

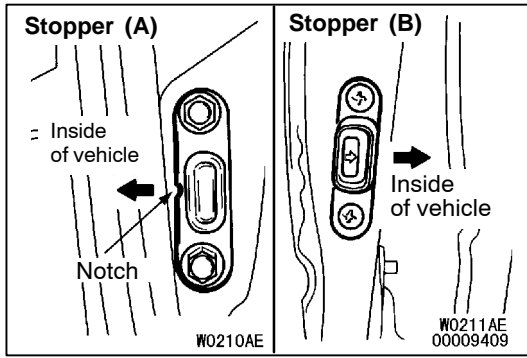
- 10. Upper rail
- 11. Upper stopper

Upper roller arm disassembly steps

- 12. Upper roller arm
- 13. Upper roller arm shim

Center roller arm disassembly steps

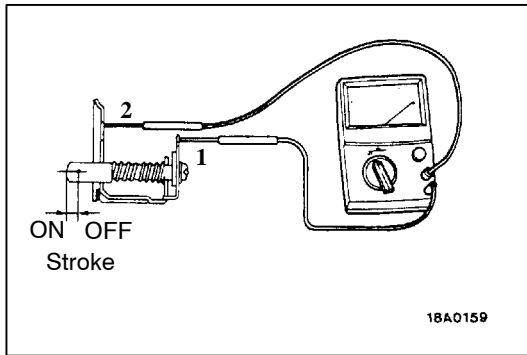
- 14. Center roller arm
- 15. Center roller arm shim



INSTALLATION SERVICE POINT

▶A◀ STOPPER (B), (A) INSTALLATION

The notch on stopper (A) and the arrow mark on stopper (B) should face the inside of the vehicle.



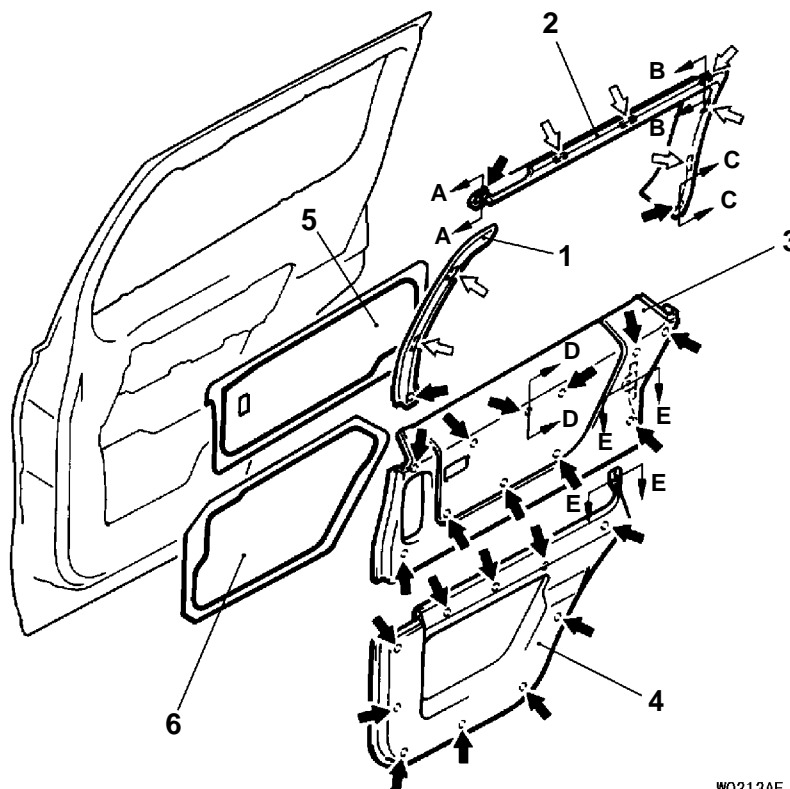
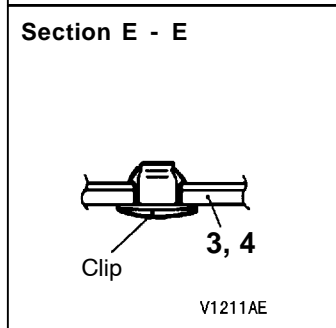
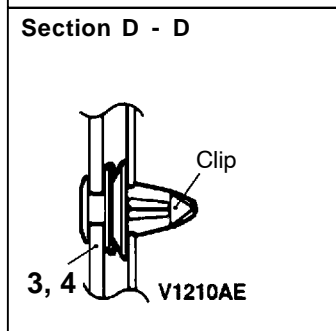
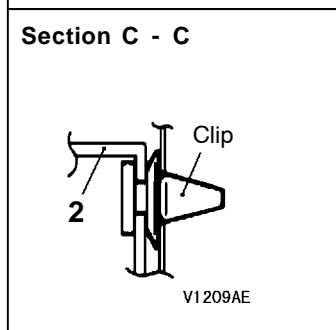
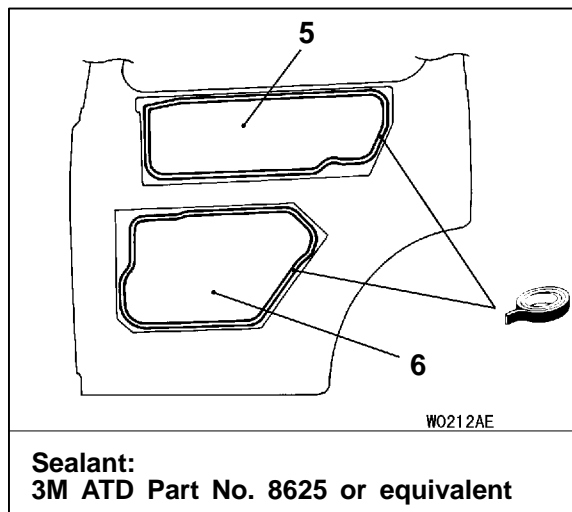
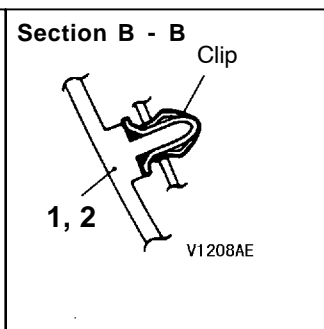
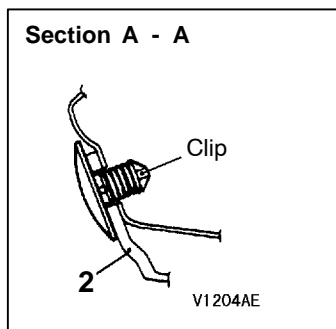
INSPECTION

DOOR SWITCH CONTINUITY CHECK

Switch position	Terminal number	
	1	2
Released (ON)	○	○
Depressed (OFF)		

SLIDE DOOR TRIM AND WATERPROOF FILM

REMOVAL AND INSTALLATION



W0213AE
00009410

NOTE

←: Plastic clips

⬅: Metal clips

Removal steps

1. Sash trim, front
2. Sash trim, rear
3. Trim, upper

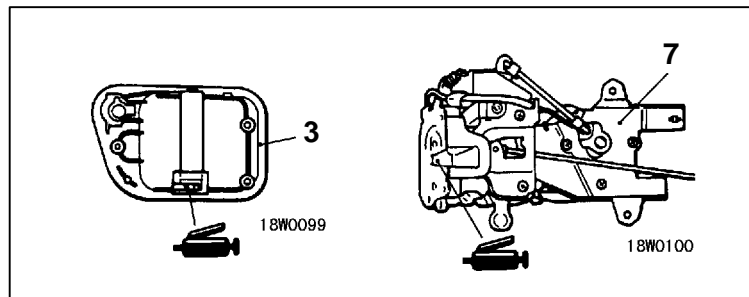
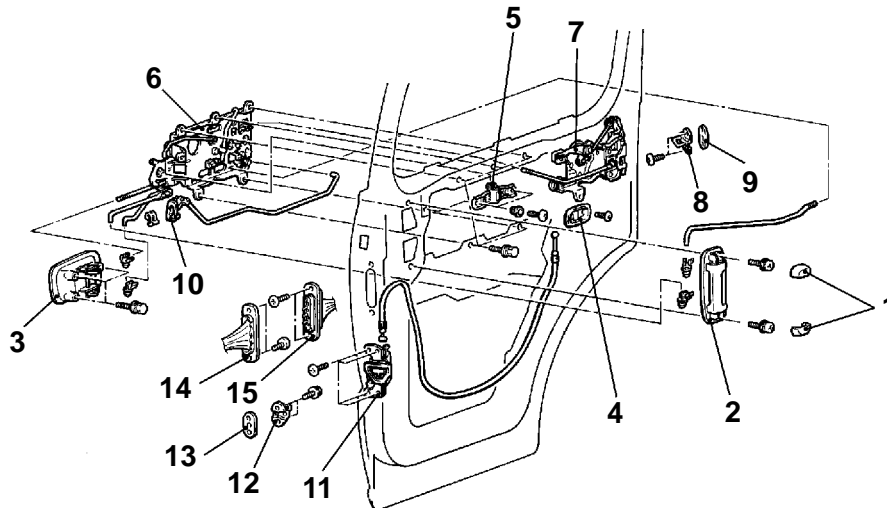
4. Trim, lower
5. Waterproof film, upper
6. Waterproof film, lower

SLIDE DOOR HANDLE AND LATCH

REMOVAL AND INSTALLATION

Post-installation operation

- Door outside handle play check and adjustment (Refer to P.42-54.)
- Door inside handle play check and adjustment (Refer to P.42-54.)



Slide door inside handle removal steps

- Slide door trim, upper (Refer to P.42-59.)
1. Slide door inside handle cover
 2. Slide door inside handle

Slide door outside handle removal steps

- Slide door trim, upper (Refer to P.42-59.)
1. Slide door inside handle cover
 2. Slide door inside handle
- Waterproof film, upper (Refer to P.42-59.)
3. Slide door outside handle

Slide door latch removal steps

- Slide door trim, upper and slide door trim, lower (Refer to P.42-59.)
1. Slide door inside handle cover
 2. Slide door inside handle

- Waterproof film, upper (Refer to P.42-59.)
4. Inside lock knob cover
 5. Inside lock knob
 6. Slide door lock link assembly
 - Waterproof film, lower (Refer to P.42-59.)
 7. Slide door latch assembly
 8. Striker
 9. Shim
- ▶A◀
10. Slide door child protection
 11. Sub latch assembly
 12. Striker
 13. Shim

Contact switch removal steps

14. Contact switch (A)
 - Slide door trim upper, slide door trim lower, waterproof film lower (Refer to P.42-59.)
15. Contact switch (B)

INSTALLATION SERVICE POINTS

▶A◀ SLIDE DOOR CHILD PROTECTION INSTALLATION

1. Move the child protection lever to "LOCK" position.
2. Hook the rod to the lever securely, and then install the child protection to the door.

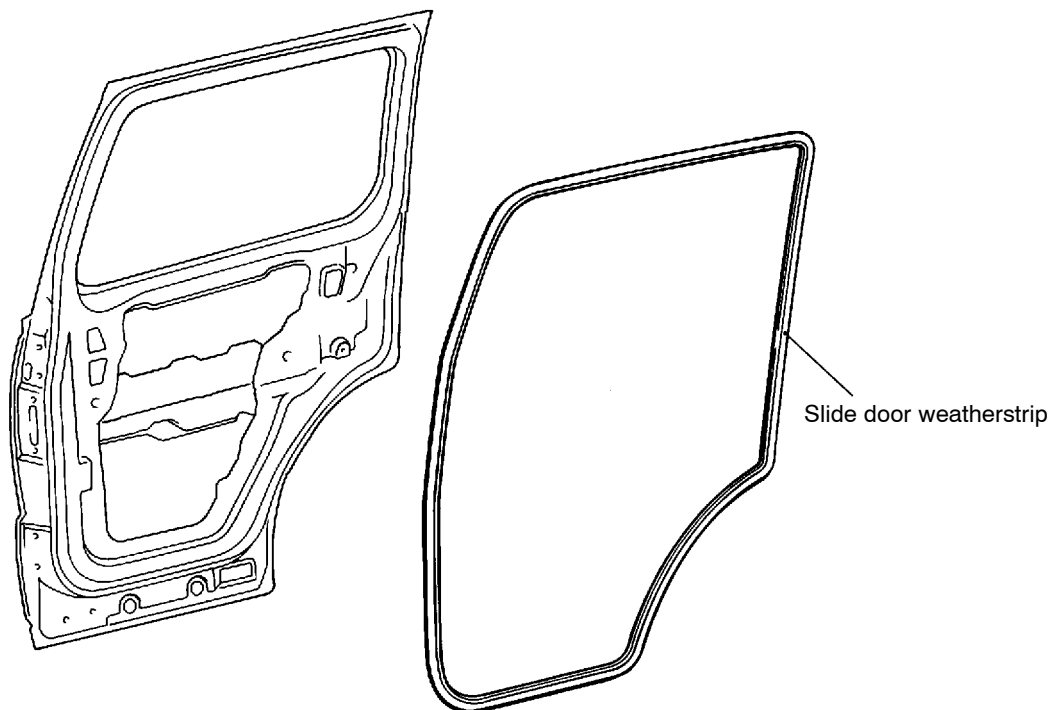
INSPECTION

Lock position	Terminal number		Rod position
	2	3	
LOCK	⊖	⊕	LOCK position to UNLOCK position
UNLOCK	⊕	⊖	UNLOCK position to LOCK position

SLIDE DOOR WEATHERSTRIP

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation
 Lower roller arm guide removal and installation (Refer to P.42-55.)



AW0215AE

TAILGATE

42400030031

SERVICE SPECIFICATION

Item	Standard value
Tailgate handle free play mm	1.5 - 5.5

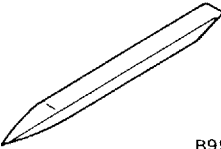
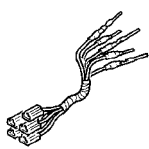
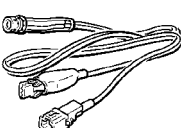
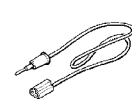

SEALANT

42400050044

Item	Specified sealant	Remark
Waterproof film	3M ATD Part No. 8625 or equivalent	Ribbon sealer

SPECIAL TOOLS

42400060030

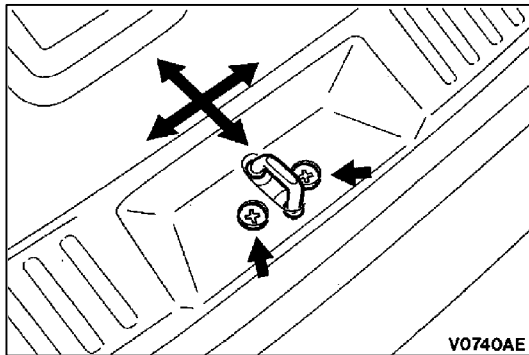
Tool	Number	Name	Use
 B990784	MB990784	Ornament remover	Removal of the tailgate trim
<p>A</p>  <p>B</p>  <p>C</p>  <p>D</p>  C991223	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Test harness B: LED harness C: LED harness adapter D: probe	Measurement of terminal voltage A: Connector pin contact pressure inspection B: Power circuit inspection C: Power circuit inspection D: Commercial tester connection

TROUBLESHOOTING

42400070118

INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Reference page
Door lock mechanism does operate.	42-50

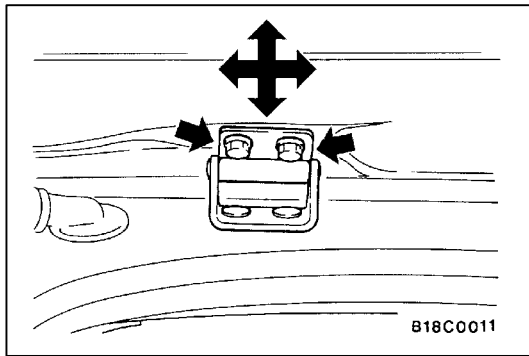


ON-VEHICLE SERVICE

42400090060

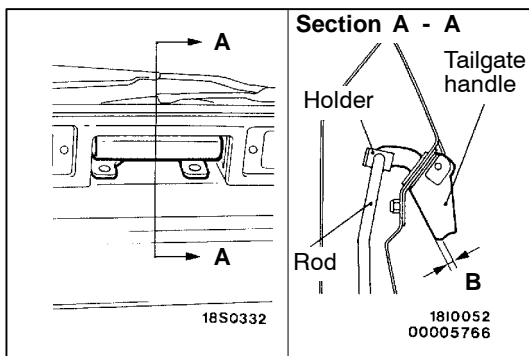
TAILGATE FIT ADJUSTMENT

1. If the striker and the latch do not mesh properly, move the striker forward or back or to the left or right to adjust.
2. If the clearance all the way around the tailgate is not uniform when the tailgate is closed, adjust by moving the tailgate hinges forward or back or to the left or right until the clearance is uniform.



TAILGATE HANDLE FREE PLAY CHECK

1. Check that the tailgate handle free play is within the standard value range.
Standard value (B): 1.5 - 5.5 mm
2. If the free play is outside the standard value range, open the tailgate handle holder and adjust the contact condition between the tailgate latch rod and the tailgate handle.

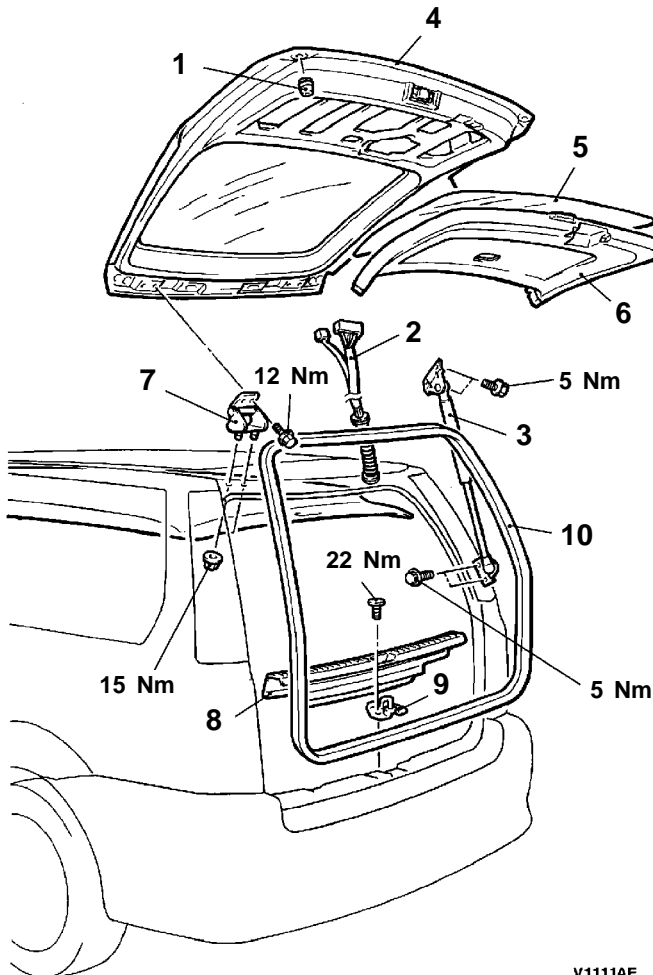


TAILGATE ASSEMBLY

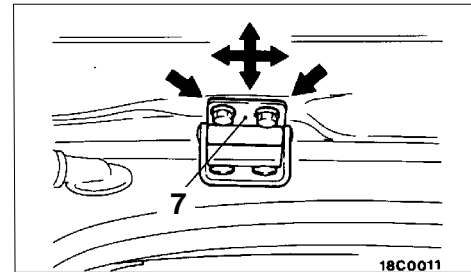
REMOVAL AND INSTALLATION

Post-installation Operation
Tailgate fit adjustment (Refer to P.42-63.)

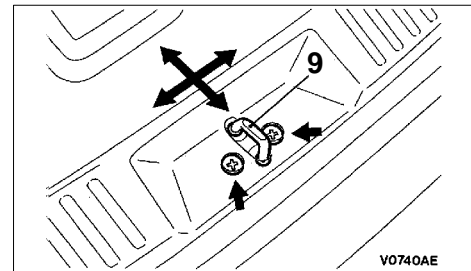
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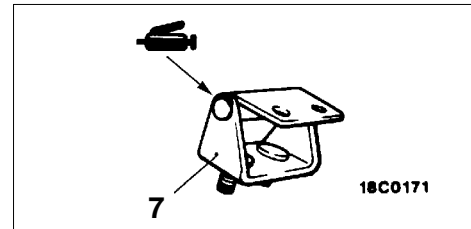
V1111AE
00007661



Adjustment of clearance around tailgate



Adjustment of tailgate step and tailgate striker linkage



Tailgate assembly removal steps

- High-mounted stop lamp (Refer to GROUP 54.)
- 1. Bumper
- 2. Harness connector
- 3. Tailgate gas spring
- 4. Tailgate assembly
- 5. Waterproof film
- 6. Lower tailgate trim (Refer to P.42-67, 68.)

Tailgate striker removal steps

- 8. Rear end trim
- 9. Tailgate striker

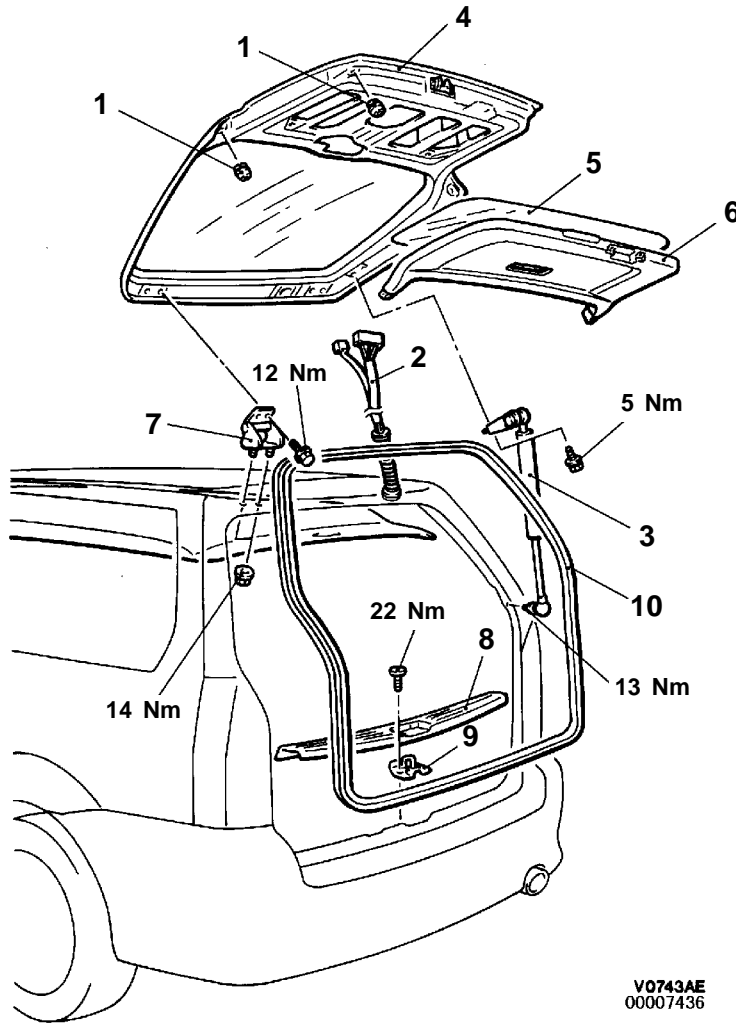
Tailgate opening weatherstrip removal

- 8. Rear end trim
- ▶A◀ 10. Tailgate opening weatherstrip

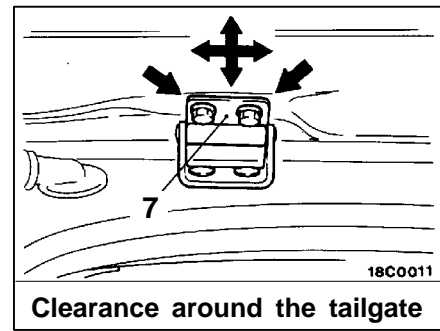
Tailgate hinge removal steps

- Washer tube connection (Refer to GROUP 54.)
- 2. Harness connector
- 3. Tailgate gas spring
- 4. Tailgate assembly
- Headlining
- 7. Tailgate hinge

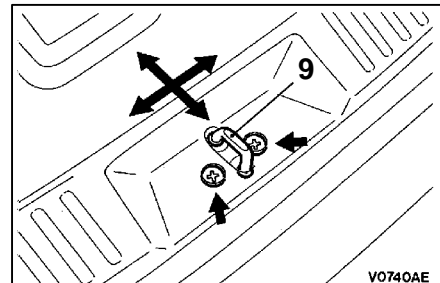
<SPACE WAGON>



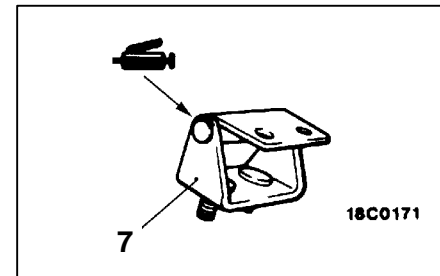
V0743AE
00007436



Clearance around the tailgate



Adjustment of tailgate step and tailgate striker linkage



Tailgate assembly removal steps

- High-mounted stop lamp (Refer to GROUP 54.)
- 1. Bumper
- 2. Harness connector
- 3. Tailgate gas spring
- 4. Tailgate assembly
- 5. Waterproof film
- 6. Lower tailgate trim (Refer to P.42-67, 68.)

Tailgate striker removal steps

- 8. Rear end trim
- 9. Tailgate striker



Tailgate opening weatherstrip removal

- 8. Rear end trim
- 10. Tailgate opening weatherstrip

Tailgate hinge removal steps

- Washer tube connection (Refer to GROUP 54.)
- 2. Harness connector
- 3. Tailgate gas spring
- 4. Tailgate assembly
- Headlining
- 7. Tailgate hinge



REMOVAL SERVICE POINT**◀A▶ TAILGATE GAS SPRING REMOVAL****Caution**

1. Never try to disassemble the tailgate gas spring or burn it.
2. Always bore a hole in the tailgate gas spring to release the interior gas before the gas spring is discarded.

INSTALLATION SERVICE POINT**▶A◀ TAILGATE OPENING WEATHERSTRIP
INSTALLATION**

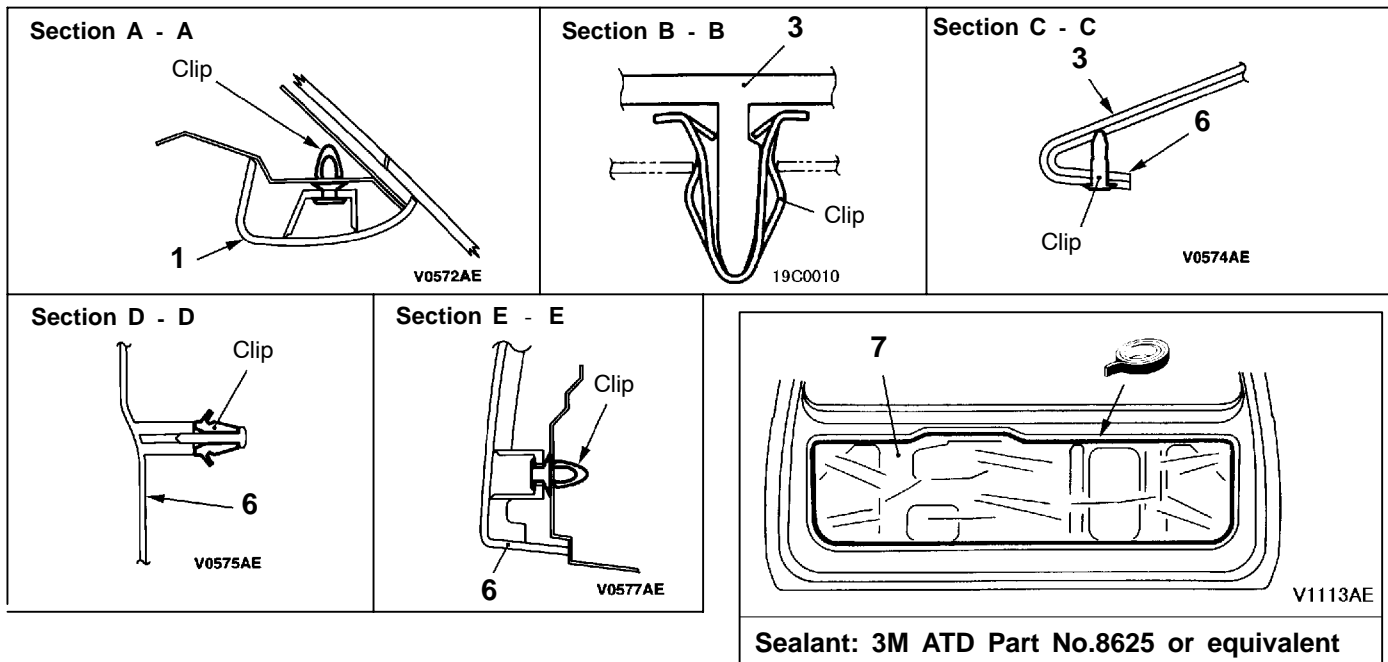
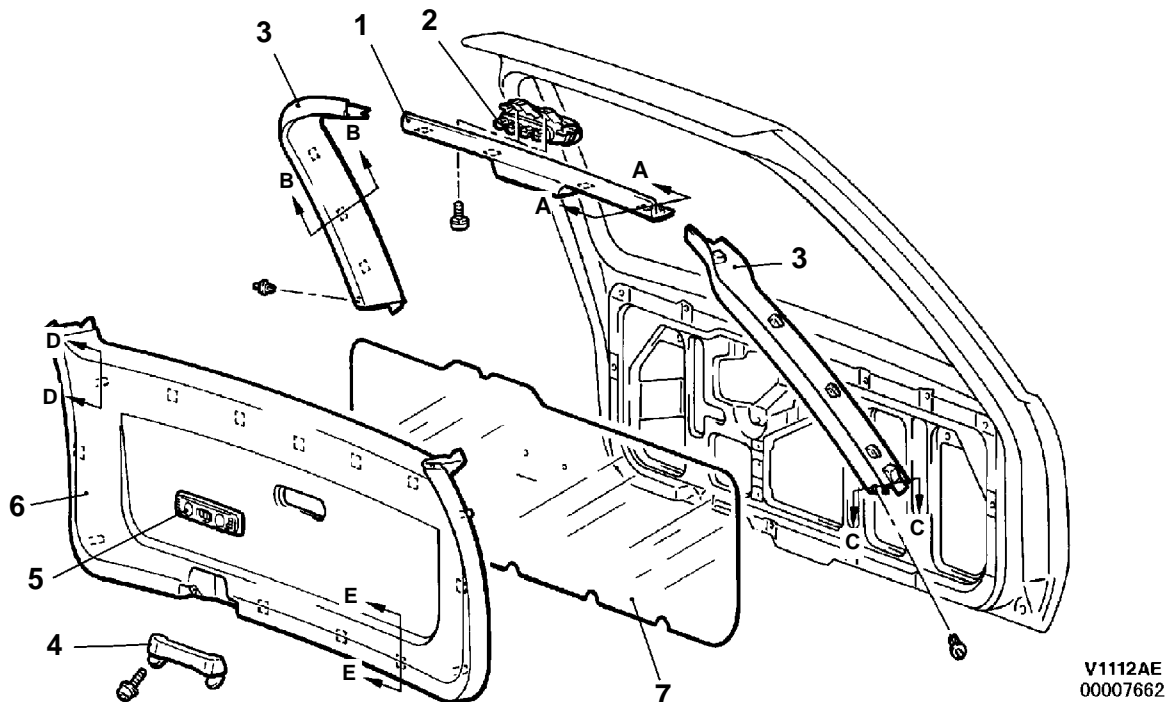
Install the tailgate opening weatherstrip so that the joint is at the centre of the body.

TAILGATE TRIM AND WATERPROOF FILM

42400110079

REMOVAL AND INSTALLATION

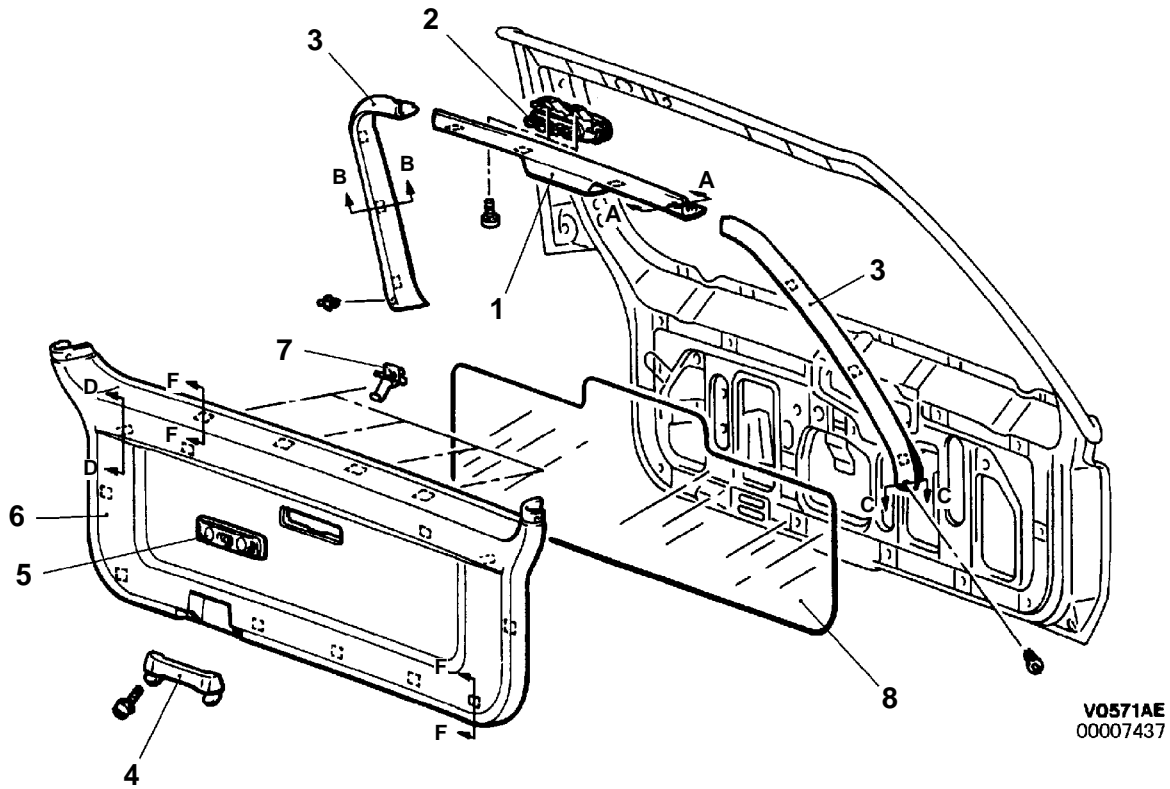
<SPACE RUNNER>



Removal steps

- | | |
|---------------------------|------------------------|
| 1. Upper tailgate trim | 5. Tailgate lamp lens |
| 2. High-mounted stop lamp | 6. Lower tailgate trim |
| 3. Side tailgate trim | 7. Waterproof film |
| 4. Tailgate grip | |

<SPACE WAGON>



V0571AE
00007437

<p>Section A - A</p> <p>Clip</p> <p>1</p> <p>V0572AE</p>	<p>Section B - B</p> <p>3</p> <p>Clip</p> <p>V0573AE</p>	<p>Section C - C</p> <p>3</p> <p>6</p> <p>Clip</p> <p>V0574AE</p>	<p>Section D - D</p> <p>Clip</p> <p>6</p> <p>V0575AE</p>
<p>Section E - E</p> <p>6</p> <p>7</p> <p>V0576AE</p>	<p>Section F - F</p> <p>Clip</p> <p>6</p> <p>V0577AE</p>	<p>8</p> <p>V0262AE</p>	
<p>Sealant: 3M ATD Part No. 8625 or equivalent</p>			

Removal steps

1. Upper tailgate trim
2. High-mounted stop lamp
3. Side tailgate trim
4. Tailgate grip

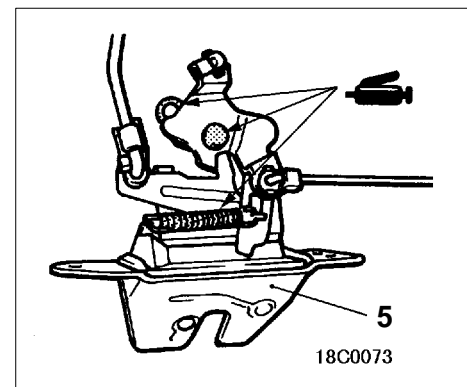
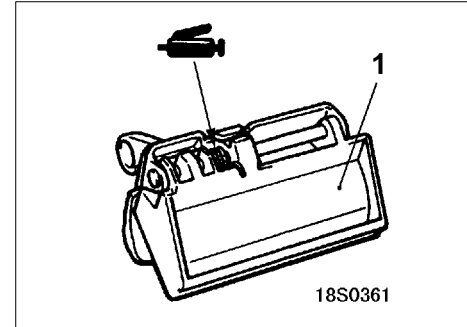
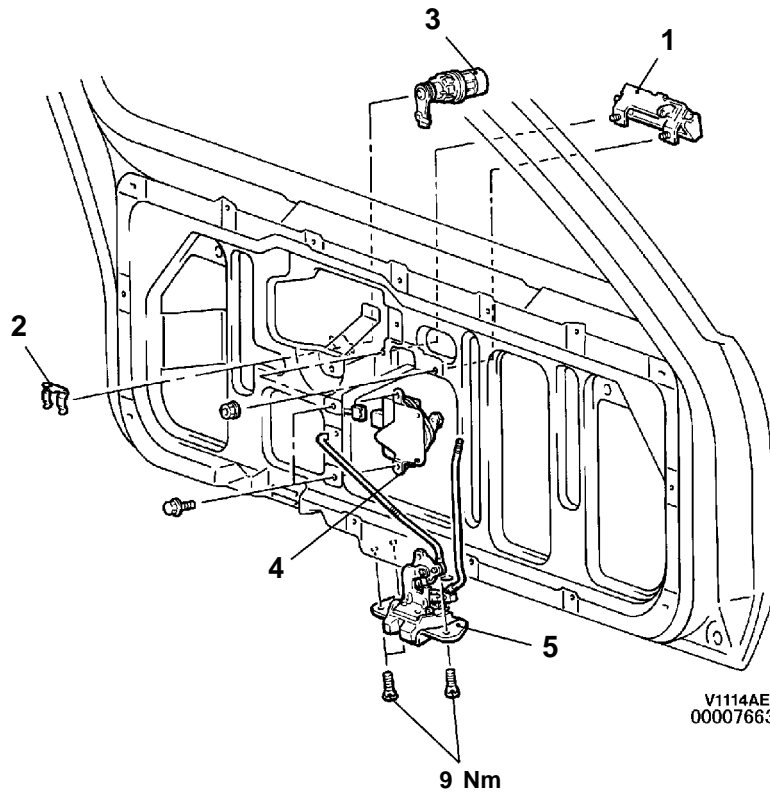
5. Tailgate lamp lense
6. Lower tailgate trim
7. Tailgate clip
8. Waterproof film

TAILGATE HANDLE AND LATCH

42400170054

REMOVAL AND INSTALLATION

Post-installation Operation
Tailgate Handle Free Play Check (Refer to P.42-63.)

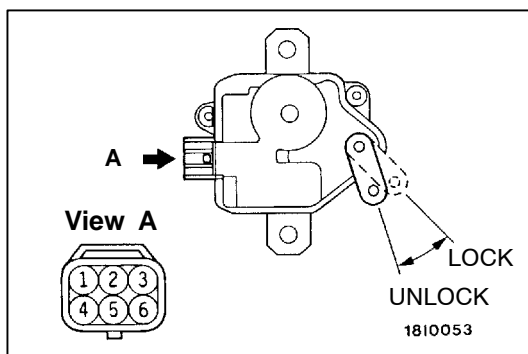


Tailgate handle and lock key cylinder removal steps

- Tailgate trim and waterproof film (Refer to P.42-67, 68.)
- Tailgate garnish
- 1. Tailgate handle
- 2. Cylinder lock retainer
- 3. Tailgate lock key cylinder

Tailgate latch removal steps

- Tailgate trim and waterproof film (Refer to P.42-67, 68.)
- Tailgate garnish
- 4. Tailgate lock actuator
- 5. Tailgate latch assembly



INSPECTION

42400180033

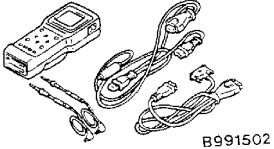
TAILGATE LOCK ACTUATOR CHECK

Rod position	Terminal No.		Rod operation
	1	2	
LOCK	⊕	⊖	LOCK position → UNLOCK position
UNLOCK	⊖	⊕	UNLOCK position

KEYLESS ENTRY SYSTEM

42800060032

SPECIAL TOOL

Tool	Number	Name	Use
	MB991502	MUT-II sub assembly	Recording secret codes

TROUBLESHOOTING

42800180073

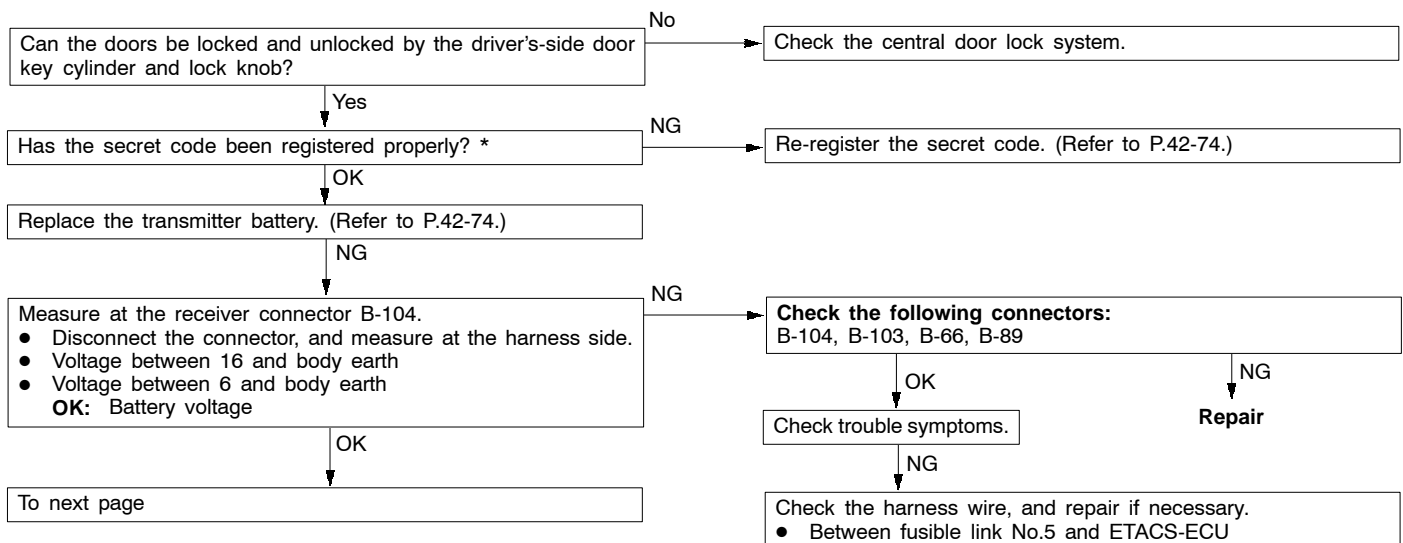
INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Inspection procedure No.	Reference page
None of the doors can be locked or unlocked using the transmitter.	1	42-70
All of the doors can be locked and unlocked using the transmitter, but the room lamp or turn-signal lamp does not flash or illuminate. (However, the room lamp operates normally when the doors are opened and closed.)	2	42-72
Secret codes cannot be registered.	3	42-73

INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

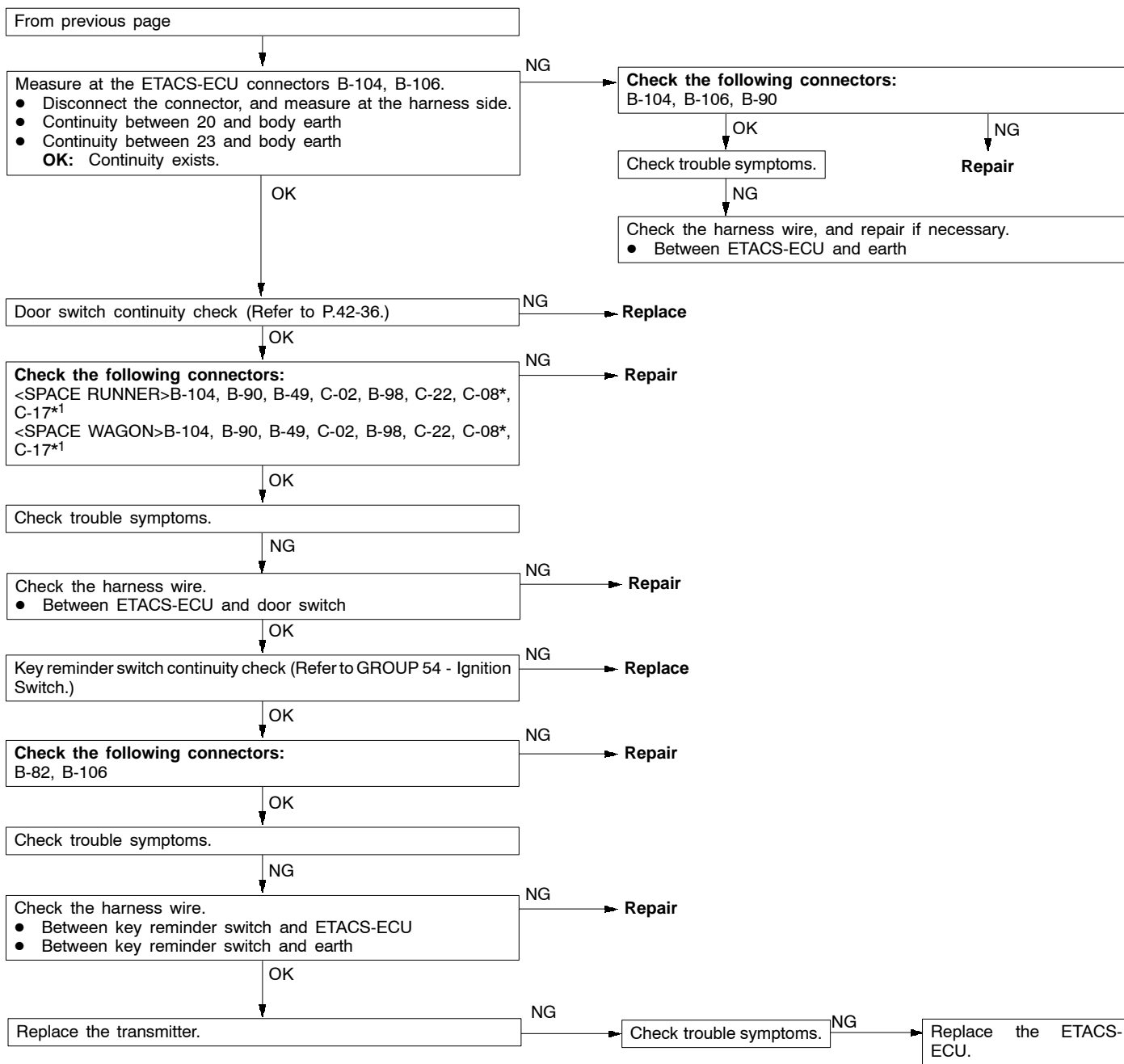
INSPECTION PROCEDURE 1

None of the doors can be locked or unlocked using the transmitter.	Probable cause
The cause may be a malfunction of the transmitter, a malfunction of the receiver or the lock and unlock signals are not being sent to the ETACS-ECU.	<ul style="list-style-type: none"> ● Malfunction of transmitter ● Malfunction of ETACS-ECU ● Malfunction of wiring harness or connector ● Malfunction of key reminder switch ● Malfunction of door switch



NOTE

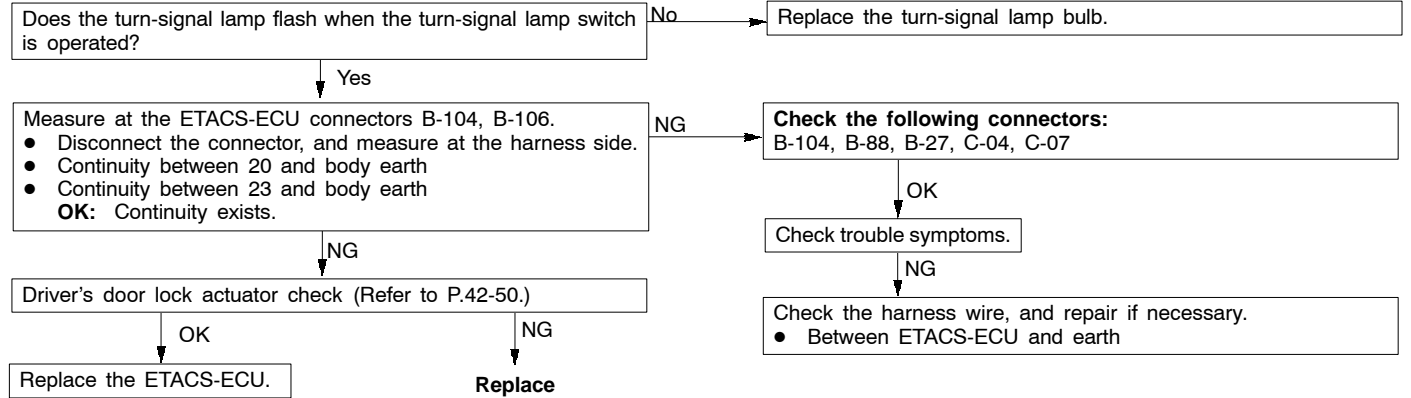
*: This should be done if a transmitter or receiver has been replaced, and if a secret code has not been registered properly.



*: L.H. drive vehicles
*1: R.H. drive vehicles

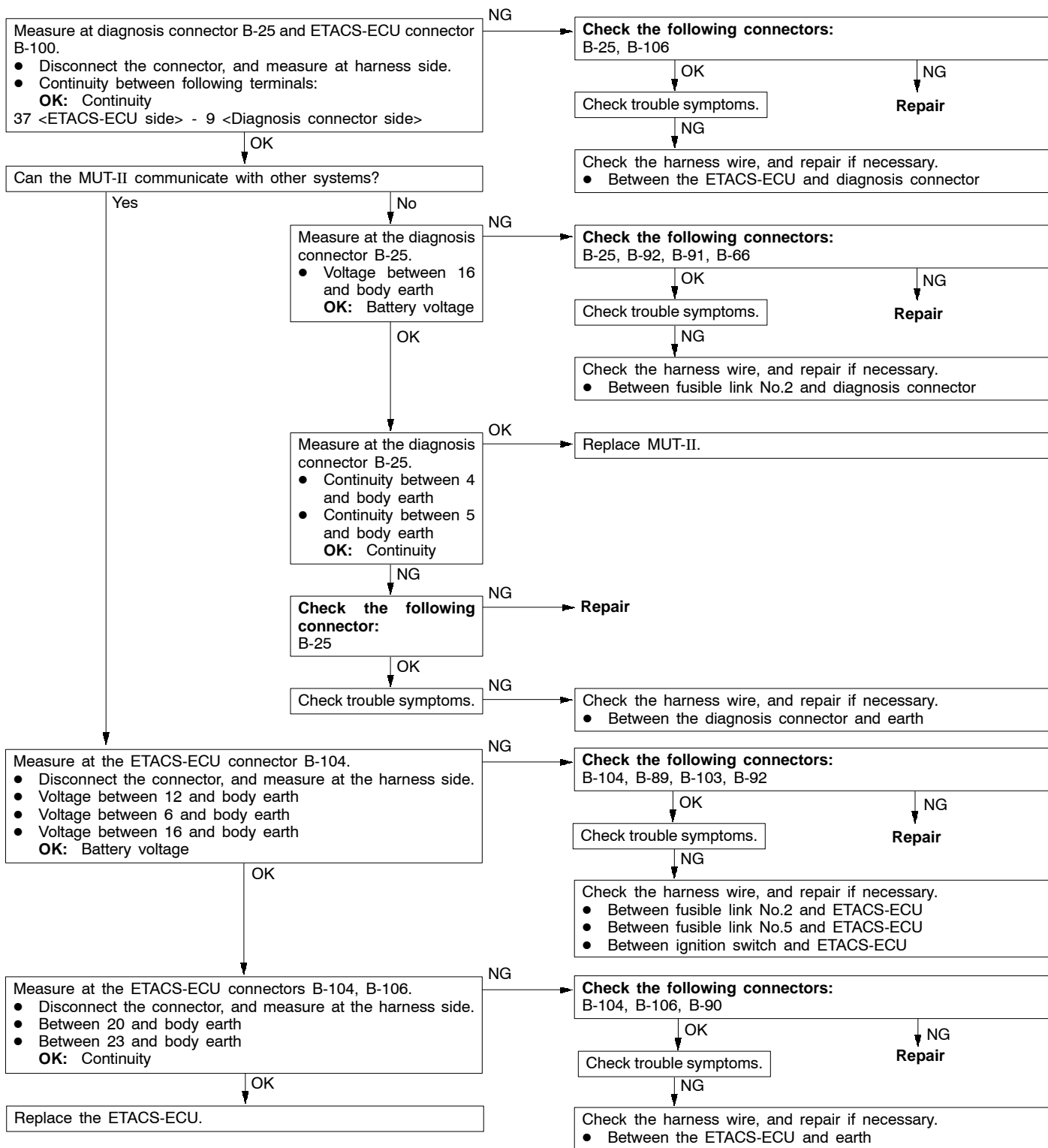
INSPECTION PROCEDURE 2

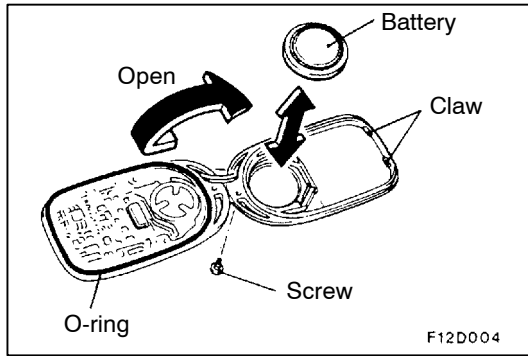
<p>All of the doors can be locked and unlocked using the transmitter, but the room lamp or turn-signal lamp does not flash or illuminate. (However, the room lamp operates normally when the doors are opened and closed.)</p>	<p>Probable cause</p>
<p>If the room lamp operates normally when the doors are opened and closed, the cause of the problem may be burnt turn-signal lamp bulb, a malfunction of the ETACS-ECU or a malfunction of the driver's-side door lock actuator.</p>	<ul style="list-style-type: none"> ● Malfunction of ETACS-ECU ● Malfunction of driver's door lock actuator ● Burnt turn-signal lamp bulb ● Malfunction of connector or wiring harness



INSPECTION PROCEDURE 3

Secret codes cannot be registered.	Probable cause
The cause may be a malfunction of the diagnosis connector, a malfunction of the ETACS-ECU or a malfunction of the diagnosis output circuit.	<ul style="list-style-type: none"> ● Malfunction of MUT-II ● Malfunction of connector or wiring harness ● Malfunction of ETACS-ECU





ON-VEHICLE SERVICE

42800090079

HOW TO REPLACE A BATTERY OF THE TRANSMITTER

1. Remove the set screw to remove the battery from the transmitter.
2. Install a battery with its (+) side face-down.

Battery required for replacement: Coin type battery CR2032

3. Insert the claw first, and with care not to displace the O-ring, assemble the transmitter.
4. Check to see if the keyless entry system operates.

NOTE

- (1) Do not let water or dust stick to the inside of the transmitter when it is open. Also, do not touch the precision electronic device.
- (2) If the O-ring is displaced during the assembly of the transmitter, water or dust penetrates in it causing trouble.

SECRET CODE REGISTRATION METHOD

42800100109

Each individual secret code is registered inside the transmitter, and so it is necessary to register these codes with the EEPROM inside the ETACS-ECU in the following cases.

- When either the transmitter or ETACS-ECU is replaced;
- If a second transmitter is to be used;
- If it appears that a problem is occurring because of faulty registration of a code.

A maximum of four different codes can be stored in the memory area of the EEPROM (four different transmitters can be used). When the code for the first transmitter is registered, the previously-registered codes for four transmitters are cleared. Therefore, if you are using more than two transmitters or are adding a second transmitter, the codes for all the transmitters must be registered at the same time.

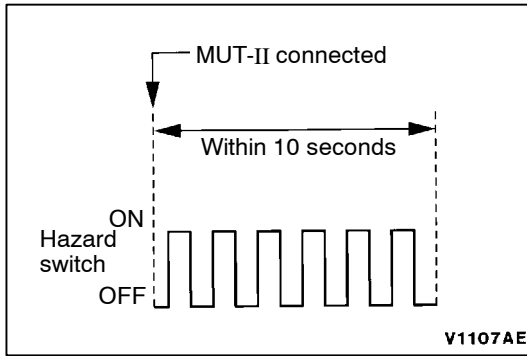
1. Check that the doors lock normally when the key is used.
2. Connect the MUT-II to the diagnosis connector.

NOTE

This will connect terminal (1) of the diagnosis connector to earth, and the system will be in secret code registration standby mode.

Caution

Always turn the ignition switch to OFF before connecting and disconnecting the MUT-II.



3. Within 10 seconds after connecting the MUT-II, press the hazard switch six times.

NOTE

The doors will lock and unlock once at this time and the system will switch to registration mode.

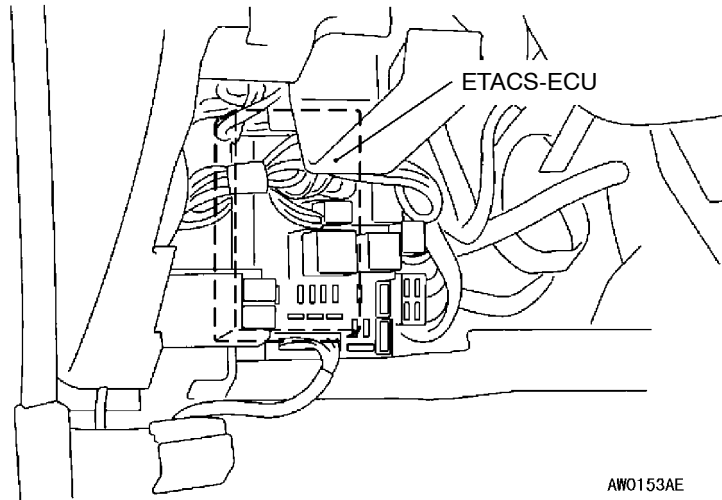
4. Press the lock switch or unlock switch of the transmitter switch, and then press it two times within 10 seconds of the first press. This will register the code.
5. After registration is completed, the doors will be automatically locked and unlocked once.
6. If you are using more than two transmitters or have added a second transmitter, the same registration procedure should be carried out for the remaining transmitters, and it should be carried out within one minute after registration of the code for the first transmitter has been completed. The registration procedure are all the same for all transmitters.
7. Registration mode will be terminated under the following conditions.
 - When the secret codes for four transmitters have been registered;
 - When one minute has passed after registration mode started;
 - If the MUT-II is disconnected (earth is released);
 - If the ignition switch is turned to ON;
8. After registration mode has been completed, carry out the followings to make sure that the keyless entry system operates.
 - Pull the ignition key out.
 - Close the all windows.

KEYLESS ENTRY SYSTEM

42800130221

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation
Side Cover Removal and Installation (Refer to GROUP
52A - Instrument Panel.)



AW0153AE

SUNROOF

42600060082

SERVICE SPECIFICATION

Items	Standard value
Roof lid glass operating current A (at 20°C)	7 or less

TROUBLESHOOTING

42600200131

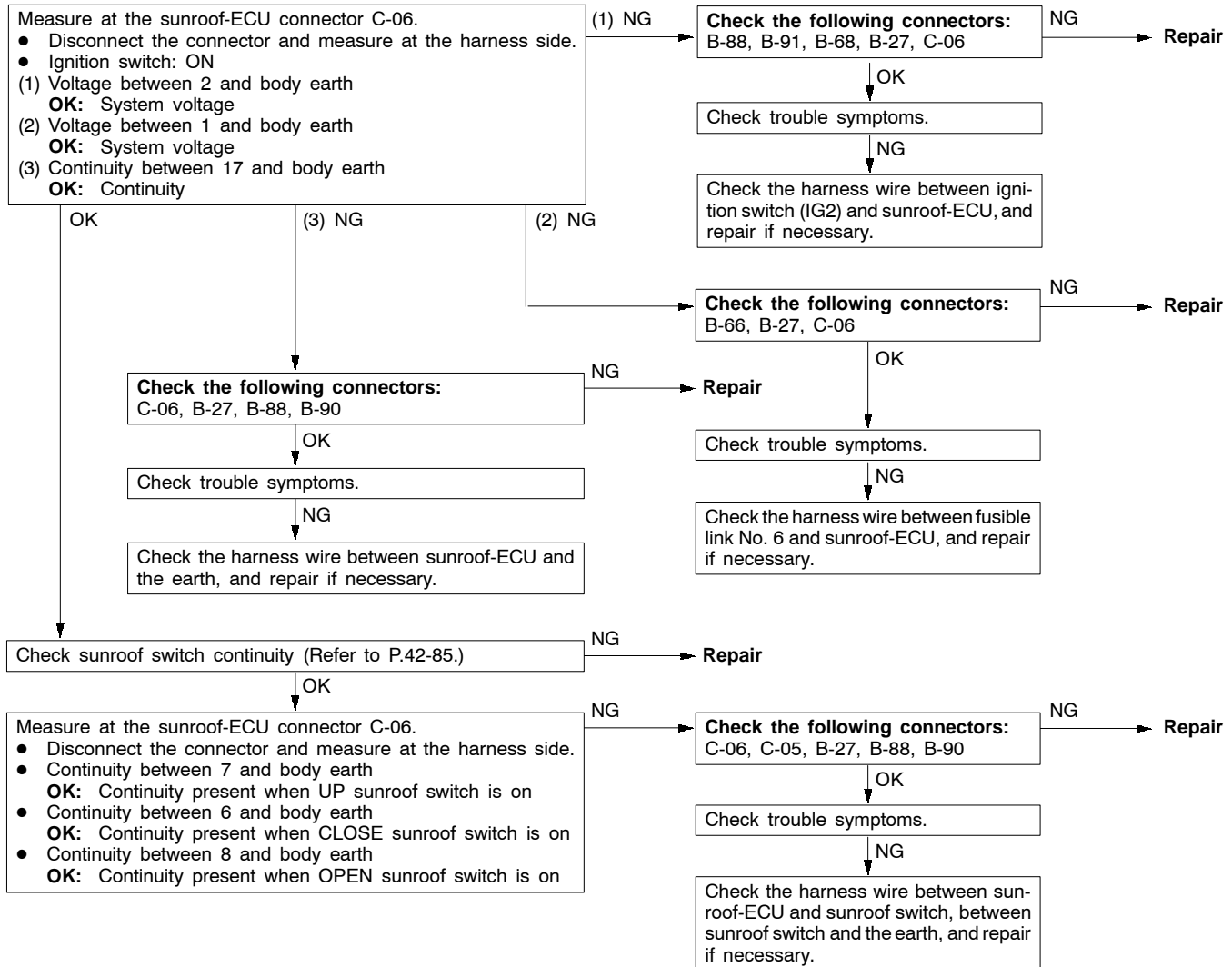
INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Inspection procedure	Reference page
The sunroof does not operate when the ignition switch is turned to ON.	1	42-78
The motor does not reverse its direction when a load of 140 N or more is applied while the sunroof is closing.	2	42-79
The timer does not operate for 30 seconds after the ignition switch is turned to OFF.	3	42-79
Opening or closing of the sunroof is possible immediately after turning the ignition switch to OFF, but the timer function does not operate continuously for another 30 seconds if the driver's side door is opened within 30 seconds.	4	42-80

INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

Inspection Procedure 1

The sunroof does not operate when the ignition switch is turned to ON.	Probable cause
One of the following items may be defective. <ul style="list-style-type: none"> ● Sunroof switch ● Sunroof motor ● Sunroof-ECU ● Power supply circuit ● Earth circuit 	<ul style="list-style-type: none"> ● Malfunction of sunroof switch ● Malfunction of sunroof motor ● Malfunction of sunroof-ECU ● Malfunction of wiring harness or connector



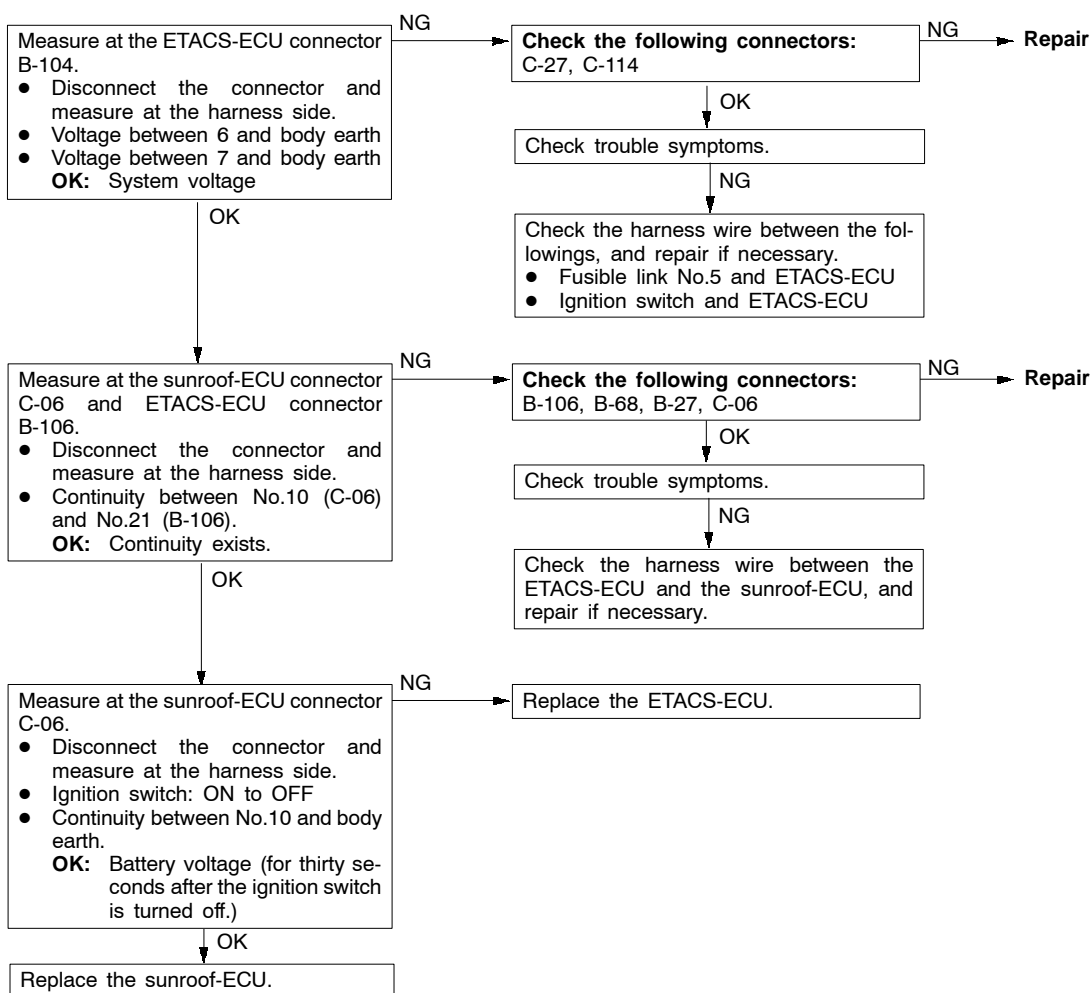
Inspection Procedure 2

The motor does not reverse its direction when a load of 140 N or more is applied while the sunroof is closing.	Probable cause
The sunroof-ECU monitors the load conditions from the amount of current flowing to the motor. If more than the constant amount of current is flowing, the direction of motor operation is reversed to prevent jamming. If the motor does not reverse direction even when an excessive load is being applied, the cause may be a malfunction of the sunroof-ECU.	<ul style="list-style-type: none"> • Malfunction of sunroof-ECU

Replace the sunroof-ECU.

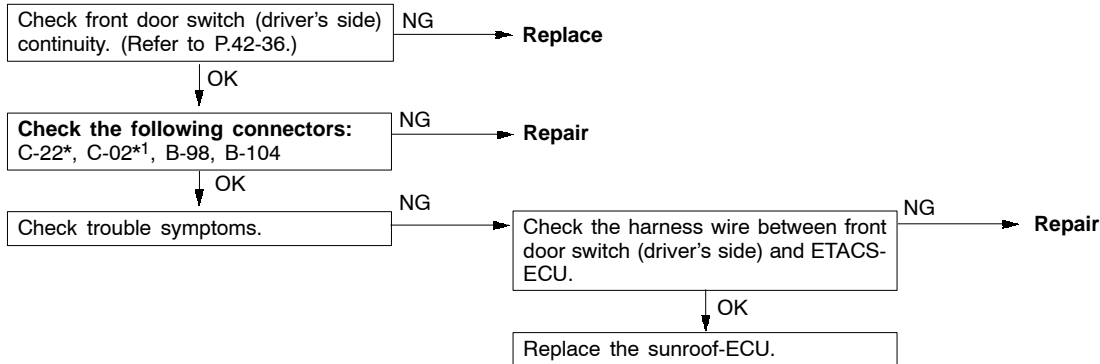
Inspection Procedure 3

The timer does not operate for 30 seconds after the ignition switch is turned to OFF.	Probable cause
The sunroof-ECU has a timer function which operates for 30 seconds after the ignition switch is turned to OFF. If the timer does not operate, the cause may be a malfunction of the sunroof-ECU or of the wiring harness or connector.	<ul style="list-style-type: none"> • Malfunction of sunroof-ECU • Malfunction of wiring harness or connector • Malfunction of the ETACS-ECU



Inspection Procedure 4

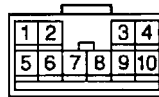
Opening or closing of the sunroof is possible immediately after turning the ignition switch to OFF, but the timer function does not operate continuously for another 30 seconds if the driver's side door is opened within 30 seconds.	Probable cause
The operation period for the sunroof timer is extended when an on signal is output from the driver's-side door switch. Because of this, if the timer operation period is not extended, the cause may be a malfunction of the door switch input circuit.	<ul style="list-style-type: none"> ● Malfunction of the front door switch (driver's side) ● Malfunction of sunroof-ECU ● Malfunction of wiring harness or connector



*: L.H. drive vehicles

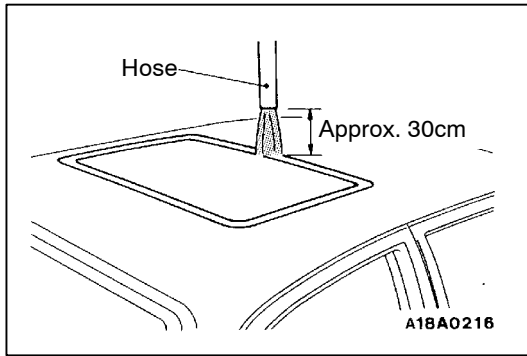
*1: R.H. drive vehicles

TERMINAL VOLTAGE CHART



V1334AE

Terminal No.	Check Item	Check Condition	Normal Condition
1	ECU power supply	Always	Battery voltage
2	Sensor power supply	Ignition switch: ON	Battery voltage
5	Earth	Always	0 V
6	Sunroof switch (CLOSE, DOWN input)	Sunroof switch (close position or down position)	ON 0 V
			OFF Battery voltage
7	Sunroof switch (UP input)	Sunroof switch (up position)	ON 0 V
			OFF Battery voltage
8	Sunroof switch (OPEN input)	Sunroof switch (open position)	ON 0 V
			OFF Battery voltage



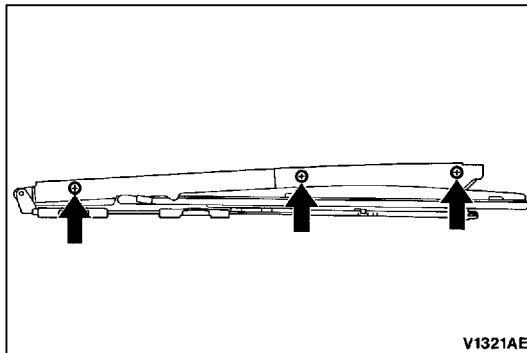
ON-VEHICLE SERVICE

42600090127

WATER TEST

Check if there are any leaks in the sunroof by the following procedure.

1. Fully close the roof lid glass.
2. Adjust the water pressure so that water comes out of the hose to a height of approximately 50 cm when the hose is held vertically facing upwards.
3. Hold the end of the hose approximately 30 cm above the roof and let the water run onto the weatherstrip for 5 minutes or more.
4. While doing this, check if any water leaks through into the passenger compartment from around the roof lid glass.



SUNROOF FIT ADJUSTMENT

42600100172

1. Fully close the roof lid glass.
2. Fully open the sunshade.
3. Loosen the roof lid glass assembly mounting screws (four for sedans or six for wagons), and then slide the roof lid glass assembly along the slot in the drive cable assembly to adjust the height of the roof lid glass.
4. After adjustment, check to be sure that the sunroof operates smoothly.

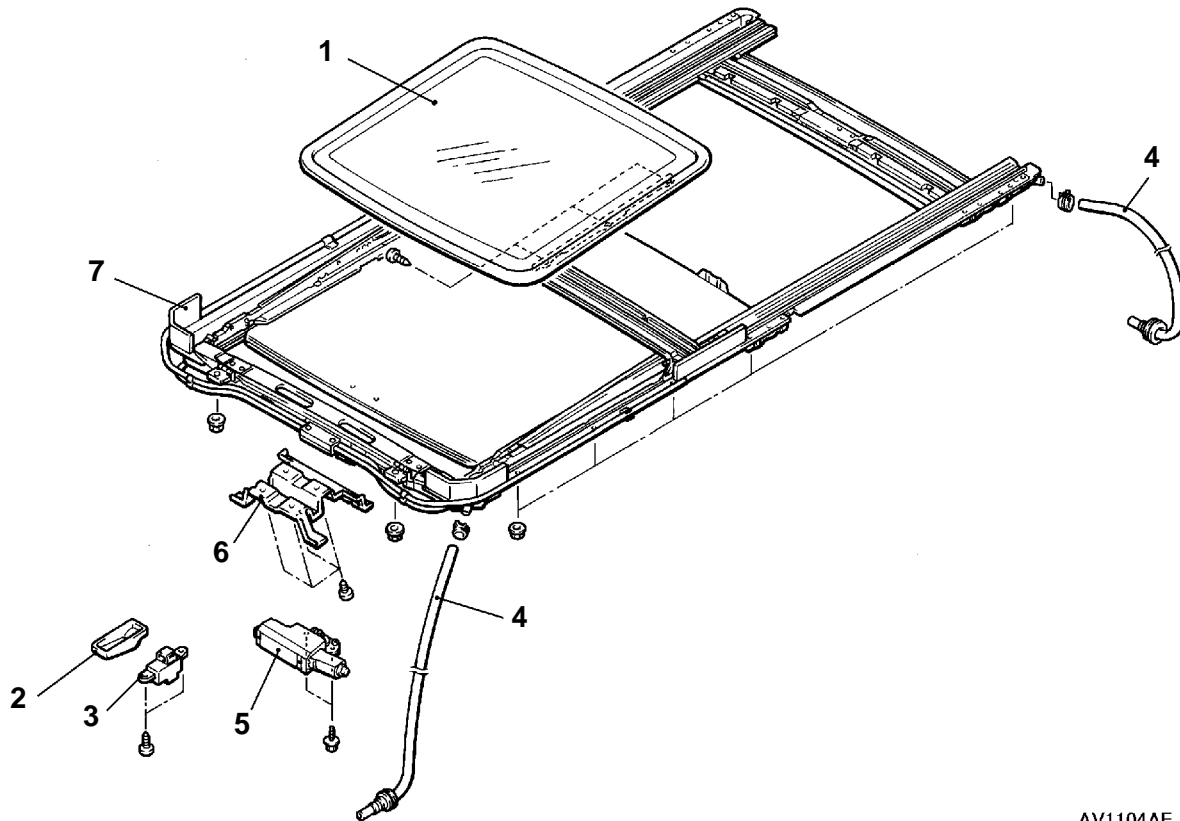
SUNROOF

42600120321

REMOVAL AND INSTALLATION

Post-installation Operation

- Sunroof Water Test (Refer to P.42-81.)
- Sunroof Fit Adjustment (Refer to P.42-81.)



AV1104AE

1. Roof lid glass assembly

Sunroof switch removal steps

- 2. Sunroof switch cover
- 3. Sunroof switch

Drain hose removal steps

- Splash shield (Front drain hose)
- Headlining
- 4. Drain hose



Sunroof motor removal steps

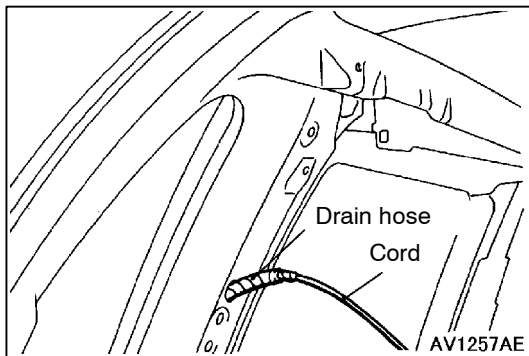
- Headlining
- 5. Sunroof motor



Sunroof assembly removal steps

- Headlining
- 4. Drain hose connection
- 6. Room lamp bracket
- 7. Sunroof assembly





REMOVAL SERVICE POINTS

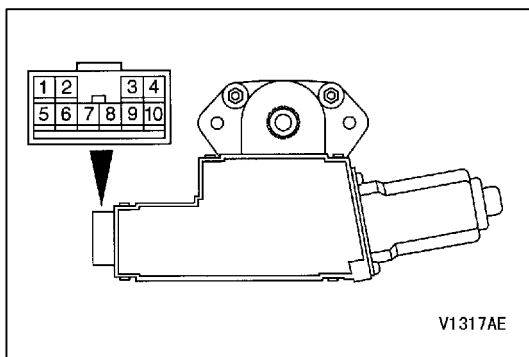
◀A▶ DRAIN HOSE REMOVAL

Tie a cord to the end of the drain hose, and wind tape around the tie until it is smooth. Then pull the drain hose out from the passenger compartment.

◀B▶ SUNROOF MOTOR REMOVAL

Caution

Always close the roof lid glass fully before removing the sunroof motor. If the fully-closed positions of the roof lid glass and the sunroof motor are not the same, the sunroof will not operate properly.

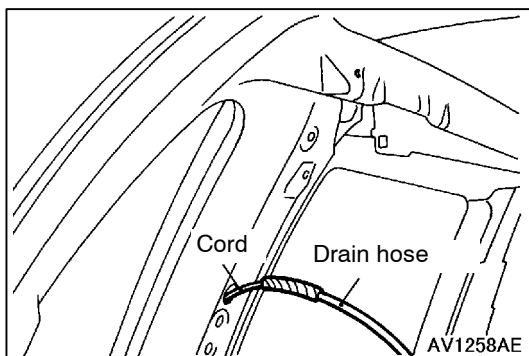


INSTALLATION SERVICE POINTS

▶A◀ SUNROOF MOTOR INSTALLATION

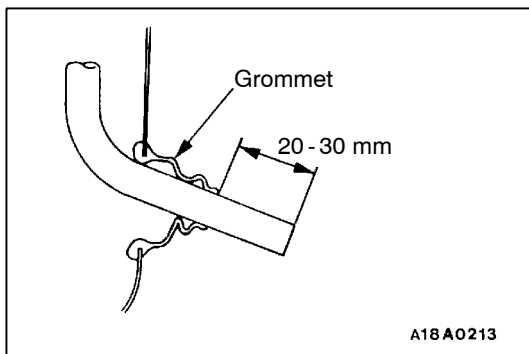
If the fully-closed position of the sunroof motor is incorrect, set the motor to the fully-closed position by the procedure given below before installing the motor.

1. Connect a circuit analyser between terminals (5) and (6) of the motor connector.
2. Operate the motor until the position is reached at which continuity switches from on to off or from off to on, and then install the motor.

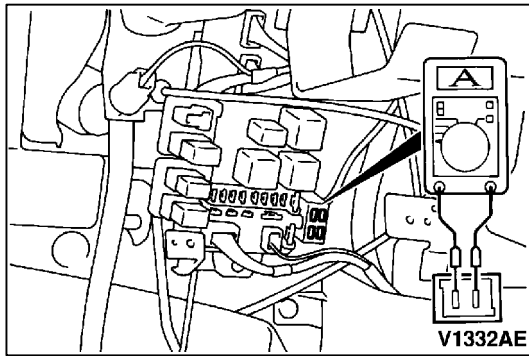


▶B◀ DRAIN HOSE INSTALLATION

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

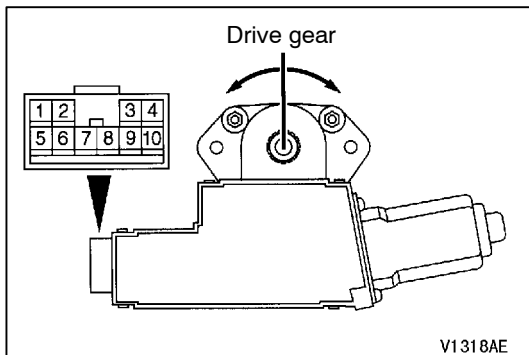
42600130140

ROOF LID GLASS OPERATION CURRENT CHECK

1. Remove the sunroof fuse and connect a circuit analyser as shown in the illustration.
2. Press the sunroof switch to the ON position, and then measure the operation current in the intervals between the points when the sunroof starts to operate, when it is fully open, when it is fully closed and when it is fully tilted up.

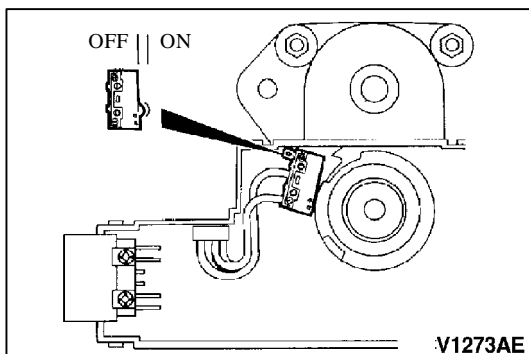
Standard value: 7 A or less (at 20°C)

3. If the operation current is outside the standard value, check the following points.
 - Installation condition, warping or jamming of sunroof assembly
 - Sticking of drive cable
 - Tilt of roof lid glass



SUNROOF MOTOR CHECK

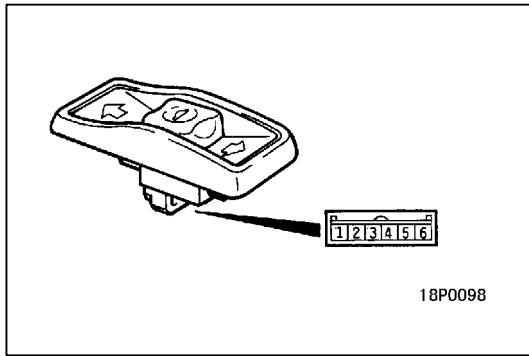
When battery voltage is applied to the No.6 terminal of the connector and the No.8 terminal is earthed, the drive gear should rotate. Then, when the terminal polarity is reversed, the drive gear should rotate in the opposite direction.



LIMIT SWITCH CONTINUITY CHECK

Remove the limit switch from the sunroof motor, and then check the operation of the limit switch.

Switch		Terminal No.	
		5	6
Limit switch	ON	○ — ○	○ — ○
	OFF		

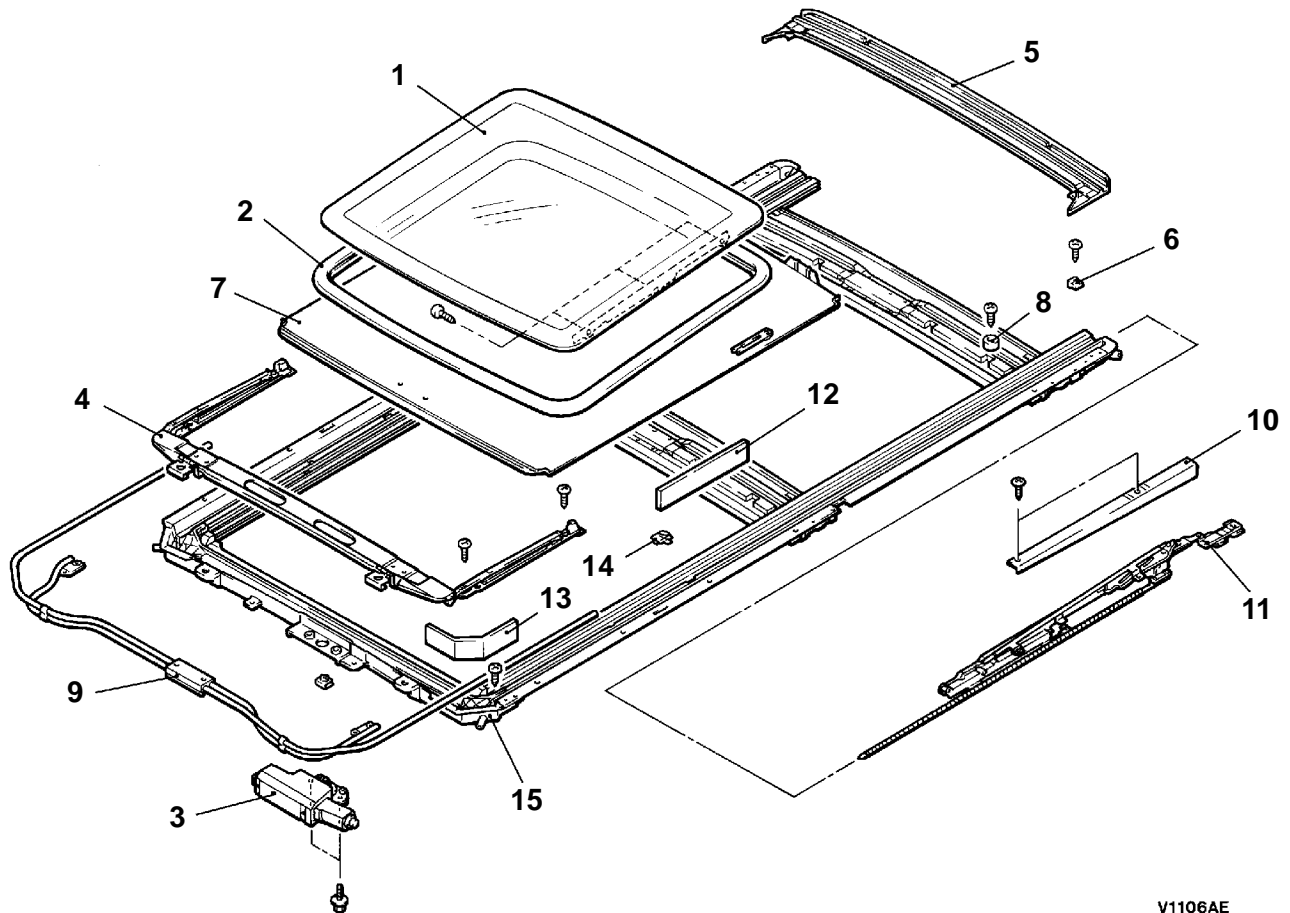
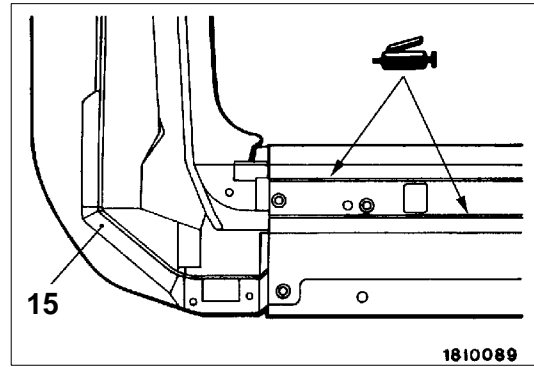
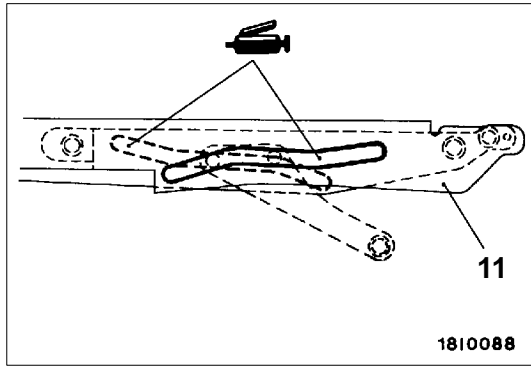


SUNROOF SWITCH CONTINUITY CHECK

Switch position	Terminal No.			
	3	4	5	6
Slide open			○ — ○	○ — ○
Off				
Tilt up	○ —			○ —
Slide close, Tilt down		○ —		○ —

DISASSEMBLY AND REASSEMBLY

42600140105

V1106AE
00007623**Disassembly steps**

- | | |
|------------------------------|-----------------------------|
| 1. Roof lid glass assembly | 9. Cable guide casing |
| 2. Weatherstrip | 10. Side deflector |
| 3. Sunroof motor | 11. Drive cable assembly |
| 4. Roof wind deflector panel | 12. Seal |
| 5. Roof drip channel | 13. Seal |
| 6. Panel stopper | 14. Clamp |
| 7. Sunshade assembly | 15. Guide rail sub assembly |
| 8. Guide rail stopper | |