

BODY

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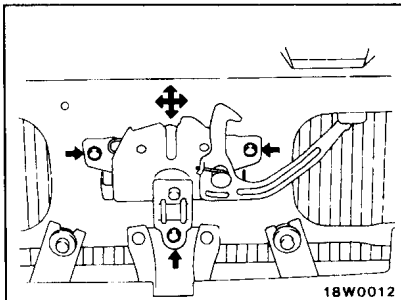
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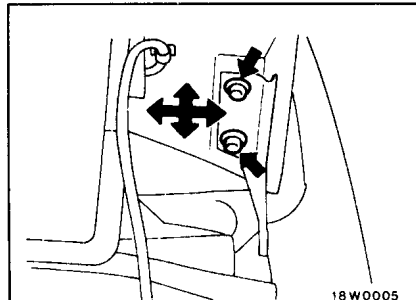
HOOD

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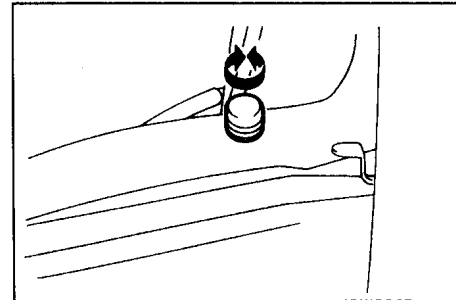
REMOVAL AND INSTALLATION



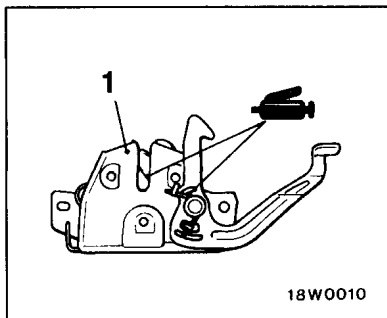
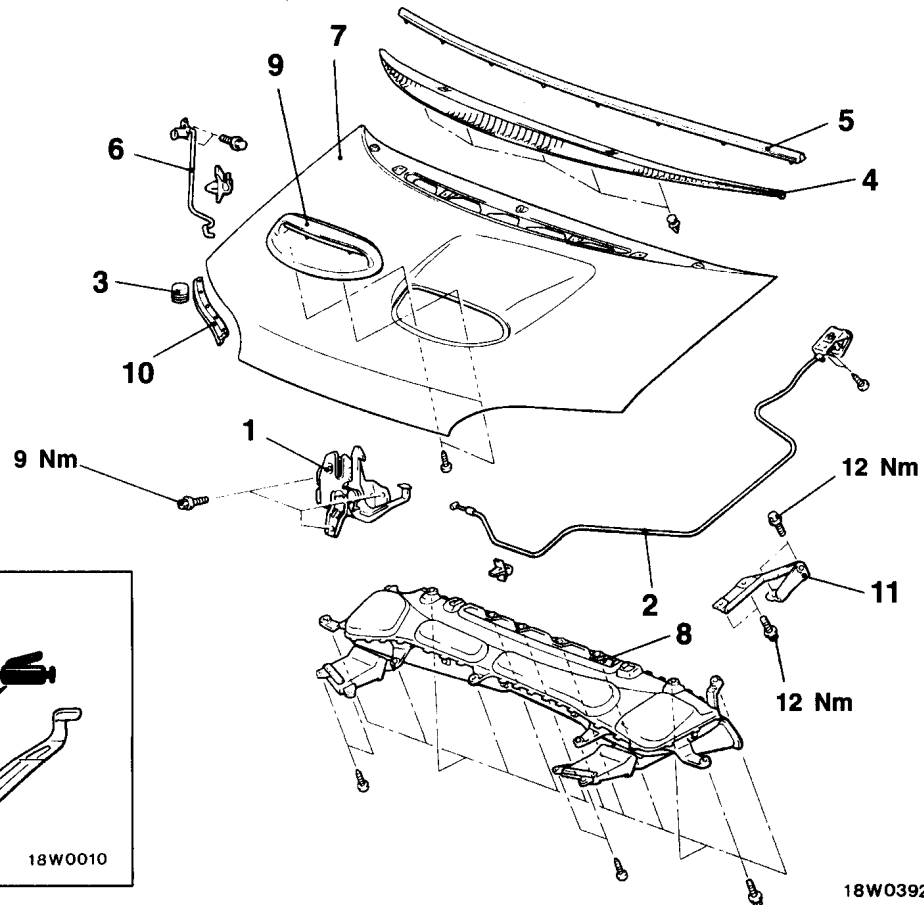
Hood latch and hood striker linkage adjustment



Hood clearance adjustment



Hood height adjustment



1. Hood latch
2. Hood lock release cable
3. Hood bumper
4. Hood end garnish
5. Hood weatherstrip
6. Hood support rod

Hood and Hood hinge removal steps

- Washer hose (Refer to GROUP 51 – Windshield wiper and Washer.)
- 7. Hood
- 8. Air intake duct assembly
- 9. Hood air intake garnish <Vehicles with turbocharger and inter-cooler>
- 10. Hood front weatherstrip
- 11. Hood hinge

FENDER
SEALANT

120000431

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

SPECIAL TOOL

120000432

Tool	Number	Name	Use
	MB990784	Ornament remover	Removal of delta window glass garnish

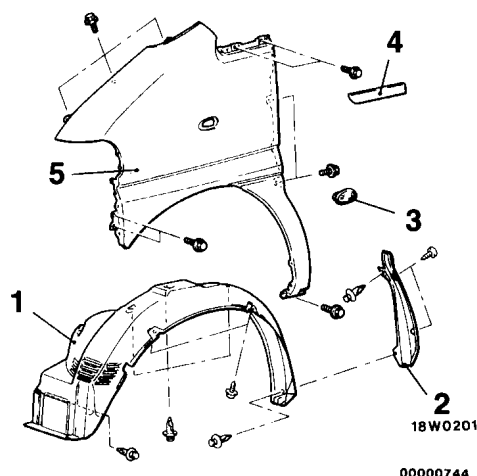
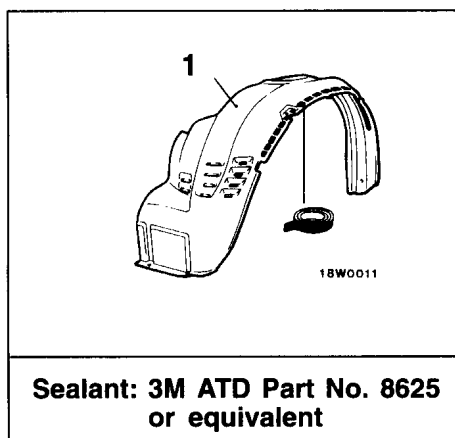
FENDER

120000433

REMOVAL AND INSTALLATION

Pre-removal and Post-Installation Operation

- Front Turn-Signal Lamp (Refer to GROUP 54 – Front Turn-signal Lamp.)
- Radiator Grille (Refer to GROUP 51 – Grilles, Garnishes and Mouldings.)
- Front Bumper (Refer to GROUP 51 – Front Bumper.)



Removal steps

1. Splash shield
2. Front pillar cover
3. Side turn-signal lamp
4. Delta window glass garnish
5. Fender



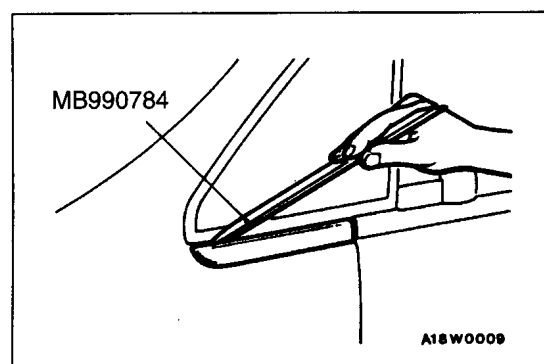
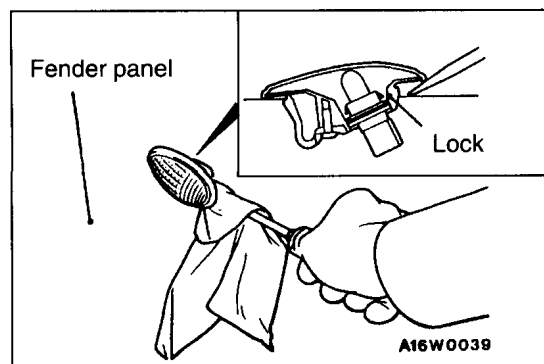
REMOVAL SERVICE POINTS

◀A▶ SIDE TURN SIGNAL LAMP REMOVAL

Use a flat-tipped (–) screwdriver or similar tool to unhook the lock from the fender panel, and then remove the side turn signal lamp.

◀B▶ DELTA WINDOW GLASS GARNISH REMOVAL

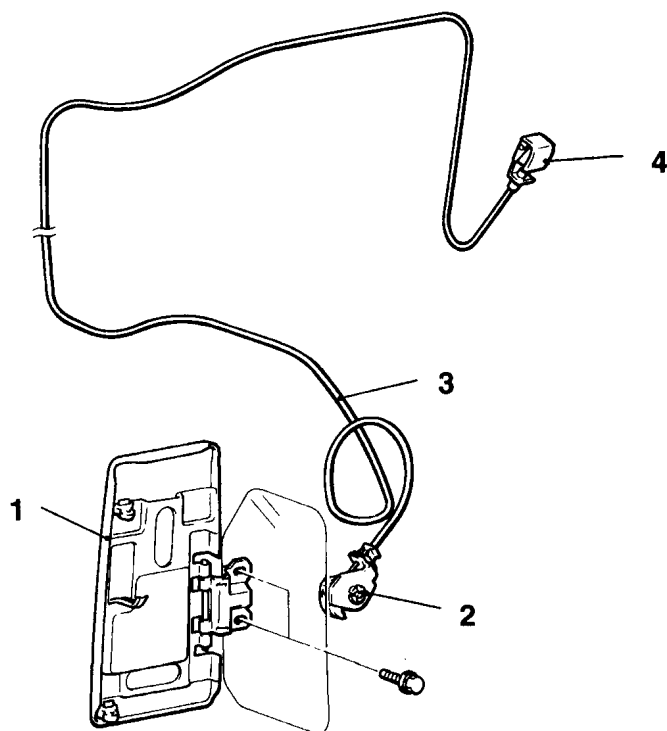
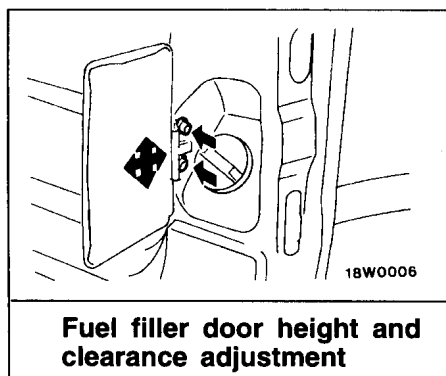
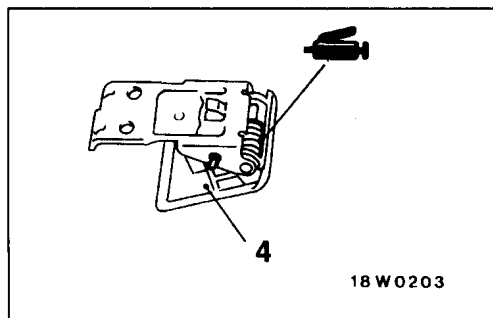
Use the special tool to lever out the garnish.



FUEL FILLER DOOR

120000434

REMOVAL AND INSTALLATION



18W0344

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Removal steps

1. Fuel filler door assembly
2. Fuel filler door lock hook assembly
3. Fuel lid release cable
4. Fuel lid lock release handle

WINDOW GLASS

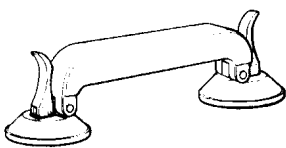
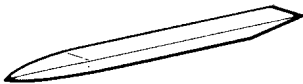
120000435

ADHESIVES

Items	Specified adhesives
Windshield	3M ATD Part No. 8609 Super Fast Urethane Auto Glass Sealants or equivalent
Delta window glass	
Tailgate window glass	
Roof window glass	
Windshield molding	Both-sided tape (6 mm wide and 0.125 mm thick)
Roof window molding	

SPECIAL TOOLS

120000436

Tool	Number	Name	Use
	MB990480	Glass holder	<ul style="list-style-type: none"> Removal and installation of windshield Removal and installation of quarter window glass Removal and installation of tailgate window glass
	MB990784	Ornament remover	<ul style="list-style-type: none"> Removal of delta window glass garnish Removal of opening trim

WINDOW REPAIR

120000437

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

- Windshield
- Delta window glass
- Tailgate window glass
- Roof 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
Dam	Available as service part
Anti-rust solvent (or Tectyl 506T....Valvoline Oil Company)	For rust prevention
Isopropyl alcohol	For grease removal from bonded surface
Piano wire	Dia.×length: (0.6 mm×1m For cutting adhesive)
Adhesive gun	For pressing-out adhesive

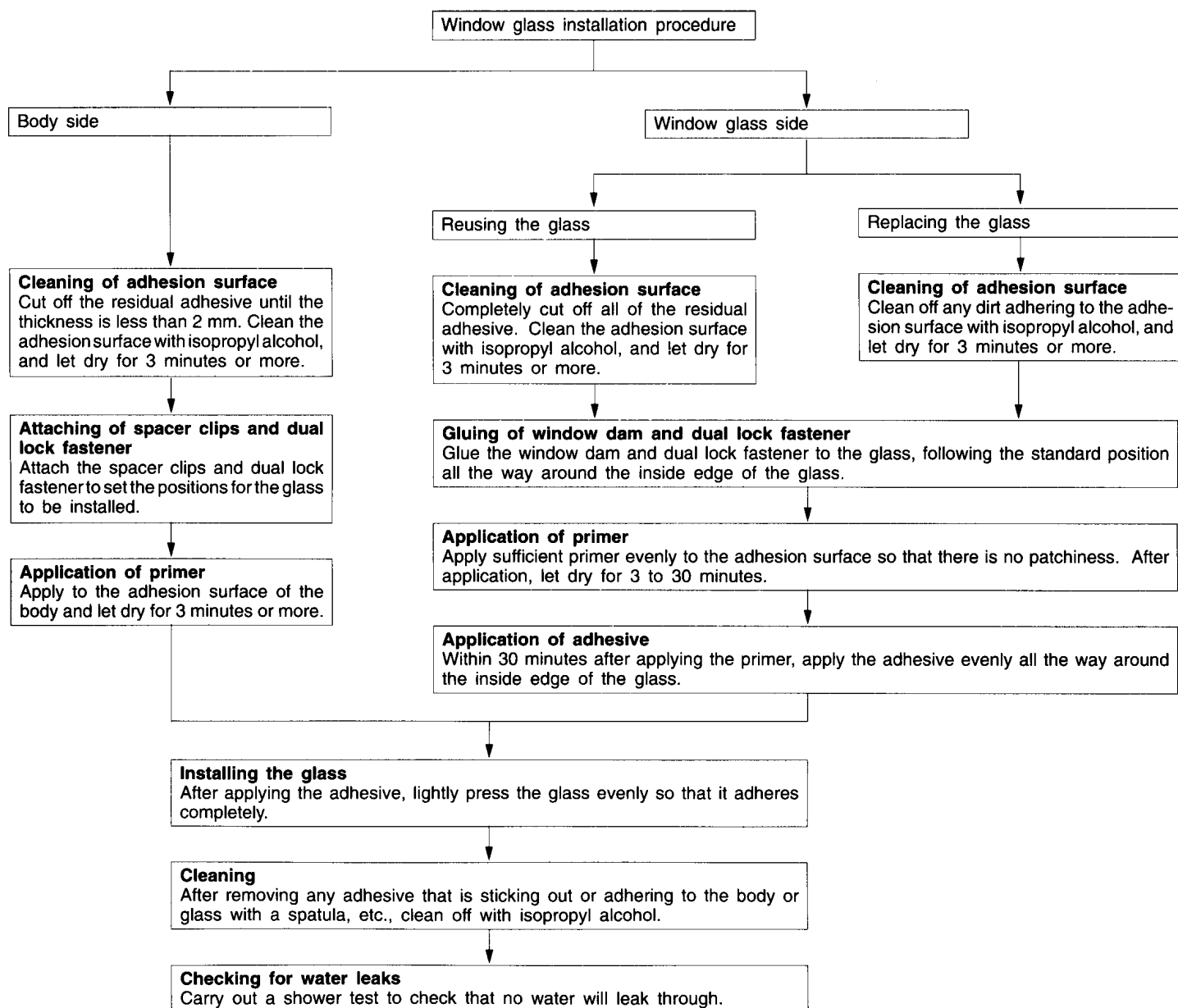
HANDLING OF AUTO WINDOW SEALER

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

BODY PINCH-WELD FLANGE SERVICING

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

WORKING PROCESS

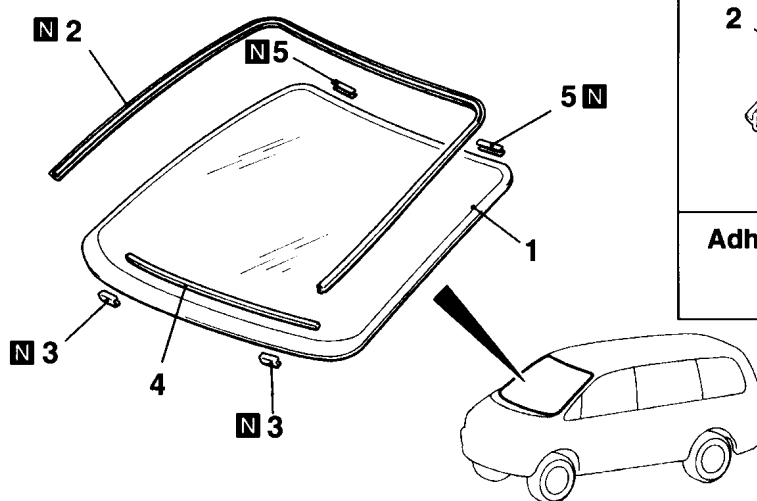
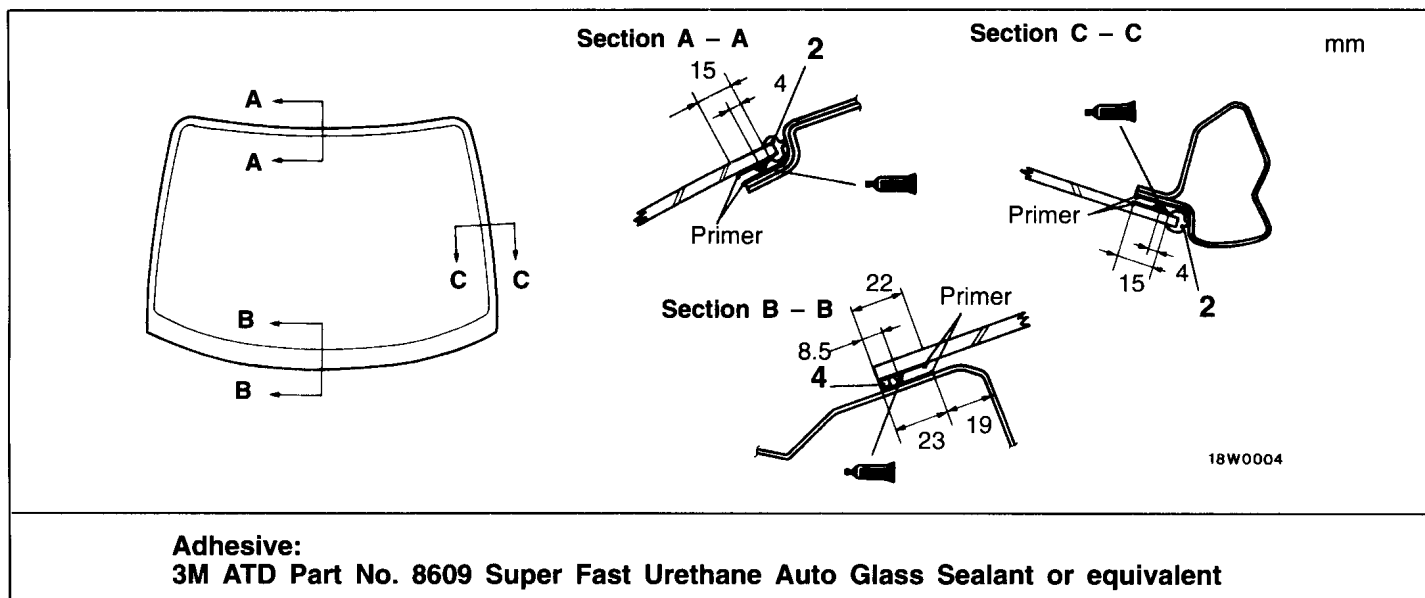


WINDSHIELD

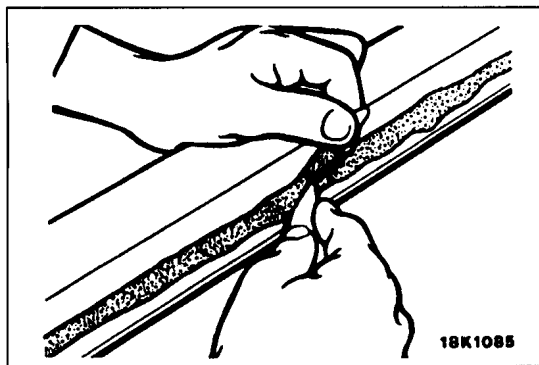
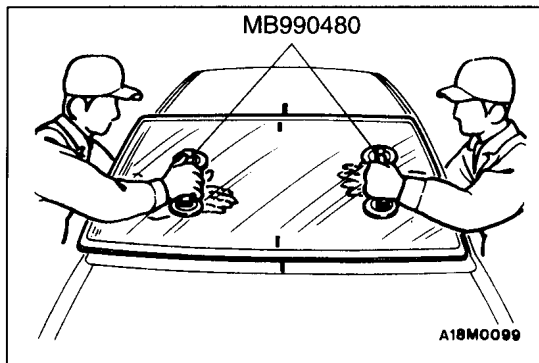
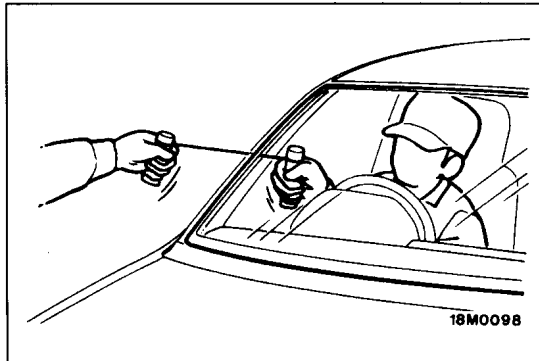
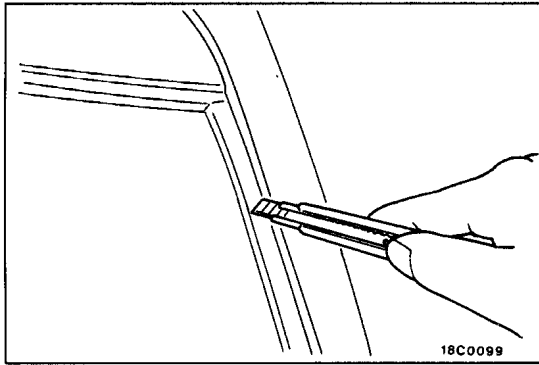
REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Front Deck Garnish (Refer to GROUP 51 – Grilles, Garnishes and Mouldings.)
- Front Pillar Trim (Refer to GROUP 52A – Trims.)
- Headlining (Refer to GROUP 52A – Headlining.)

**Removal steps**

- ◀A▶ ▶A▶ 1. Windshield
- ▶A▶ ▶A▶ 2. Windshield moulding
- ▶A▶ ▶A▶ 3. Windshield protector
- ▶A▶ ▶A▶ 4. Window spacer
- ▶A▶ ▶A▶ 5. Dual lock fastener



REMOVAL SERVICE POINT

◀A▶ WINDSHIELD REMOVAL

1. In order to protect the body (paint surface), apply cloth tape to all body areas around the installed windshield glass.
2. Cut the moulding with a cutter knife.

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

Caution

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

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

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

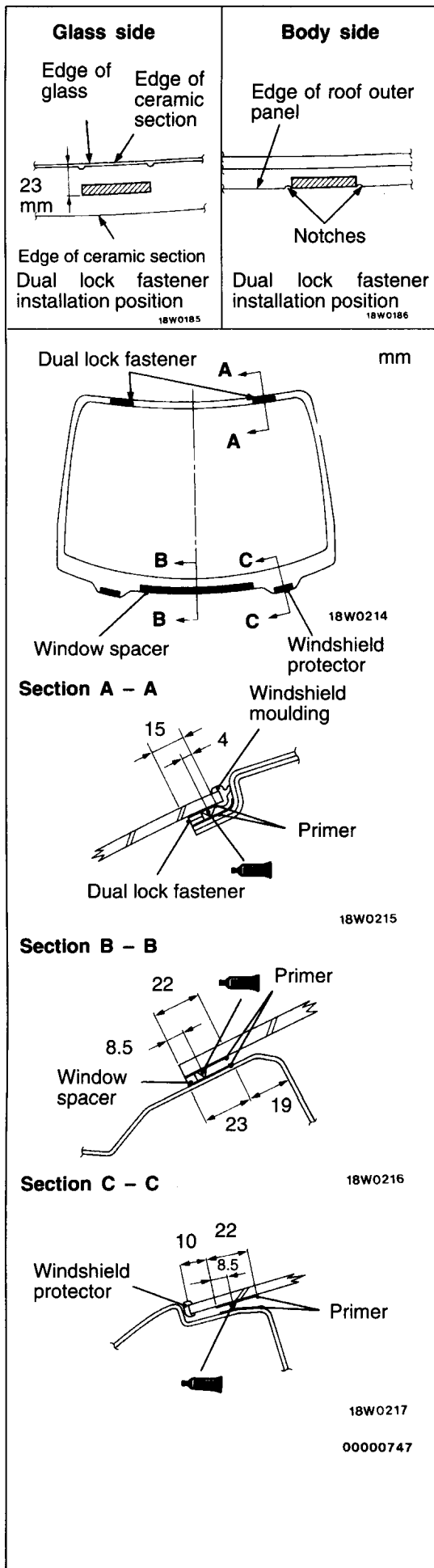
Caution

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

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

Caution

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



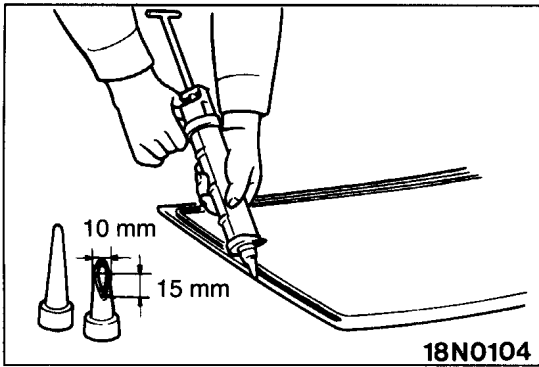
INSTALLATION SERVICE POINT

►A◄ DUAL LOCK FASTENER/WINDOW SPACER/WINDSHIELD PROTECTOR/WINDSHIELD INSTALLATION

1. When replacing the glass, temporarily set the glass against the body, and place a mating mark on the glass and body.
2. Use unleaded petrol to degrease the inside and outside of the windshield glass and the body flanges.
3. Soak a sponge in the primer, and apply evenly to the glass and the body in the places shown in the illustration.
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. Also, a too thick application will weaken the adhesive.**
- (2) **Do not touch the coated surface.**
5. Install the dual lock fasteners, windshield protectors and window spacer in the positions shown in the illustration. Check that there are no bends or unevenness.
6. Align dual lock fasteners on the body flange with those on the windshield, and then attach them to the body flange.



7. 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.

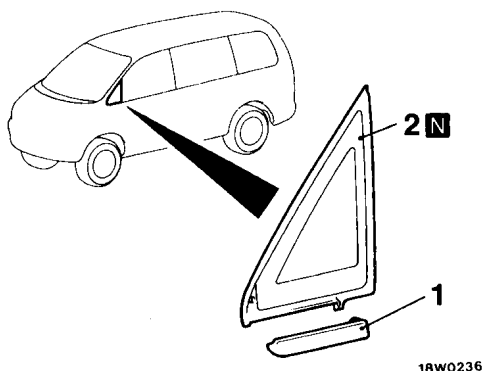
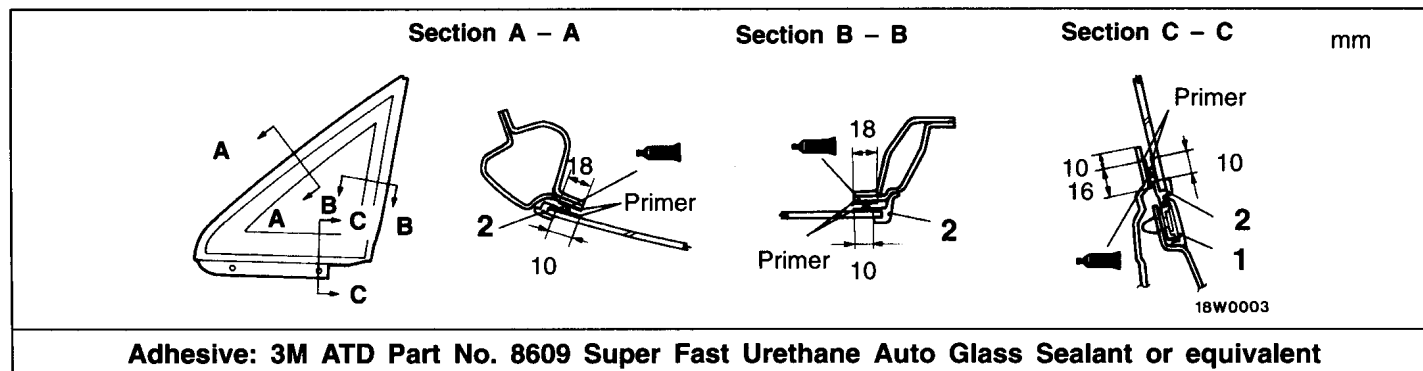
8. Align the mating marks on the glass and the body, and lightly press the windshield glass evenly so that it adheres completely.
9. Use a spatula or the like to remove any excessive adhesive. Then clean the surface with unleaded petrol. Try not to move the vehicle until the adhesive sets.
10. Wait 30 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.

DELTA WINDOW GLASS REMOVAL AND INSTALLATION

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Removal steps

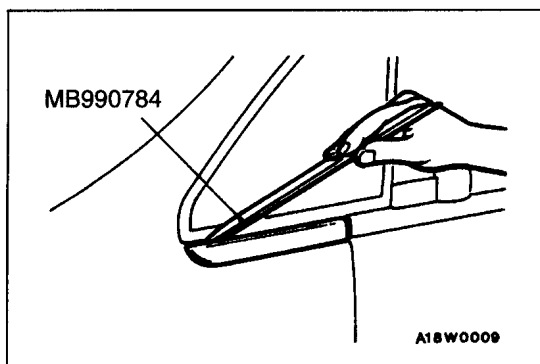


1. Delta window glass garnish
2. Delta window glass assembly

REMOVAL SERVICE POINTS

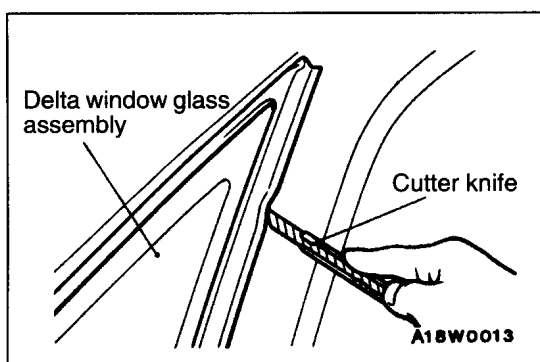
◀A▶ DELTA WINDOW GLASS GARNISH REMOVAL

Use the special tool to lever out the garnish.



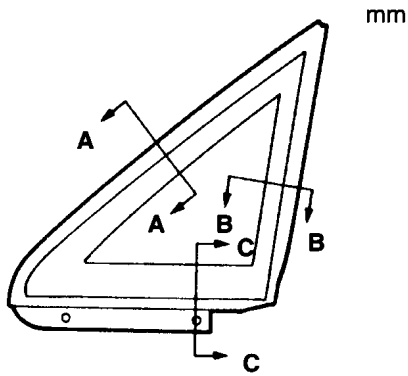
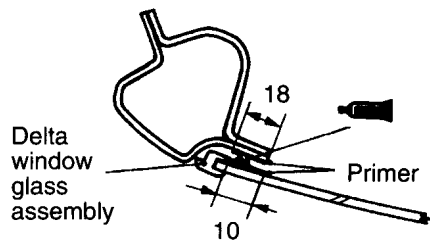
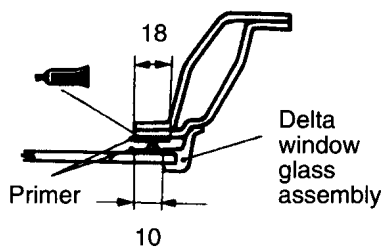
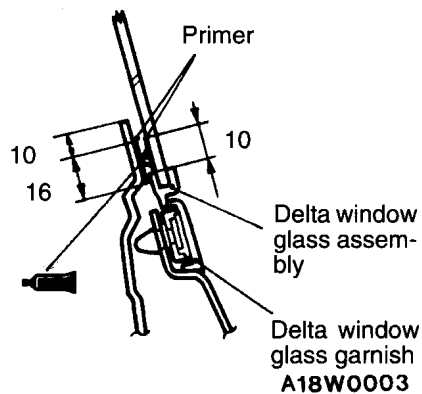
◀B▶ DELTA WINDOW GLASS ASSEMBLY REMOVAL

Use a knife to cut the adhesive, and then remove the delta window glass assembly.



INSTALLATION SERVICE POINT**►A◄ DELTA WINDOW GLASS ASSEMBLY INSTALLATION**

Apply primer and adhesive in the places shown in the illustration, and then install the delta window glass by the same procedure as for the windshield glass. (Refer to P.42-10.)

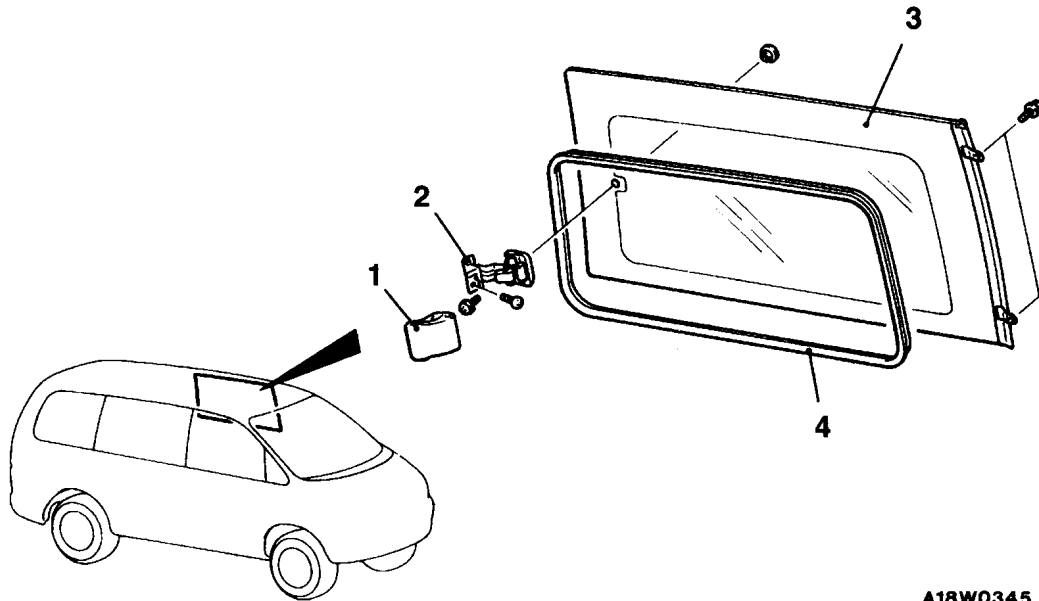
**Section A – A****Section B – B****Section C – C**

REAR WINDOW GLASS

120000440

REMOVAL AND INSTALLATION**<SWING-OUT WINDOW>****Pre-removal and Post-installation Operation**

- Beltline Trim Removal and Installation
(Refer to GROUP 52A – Trims.)

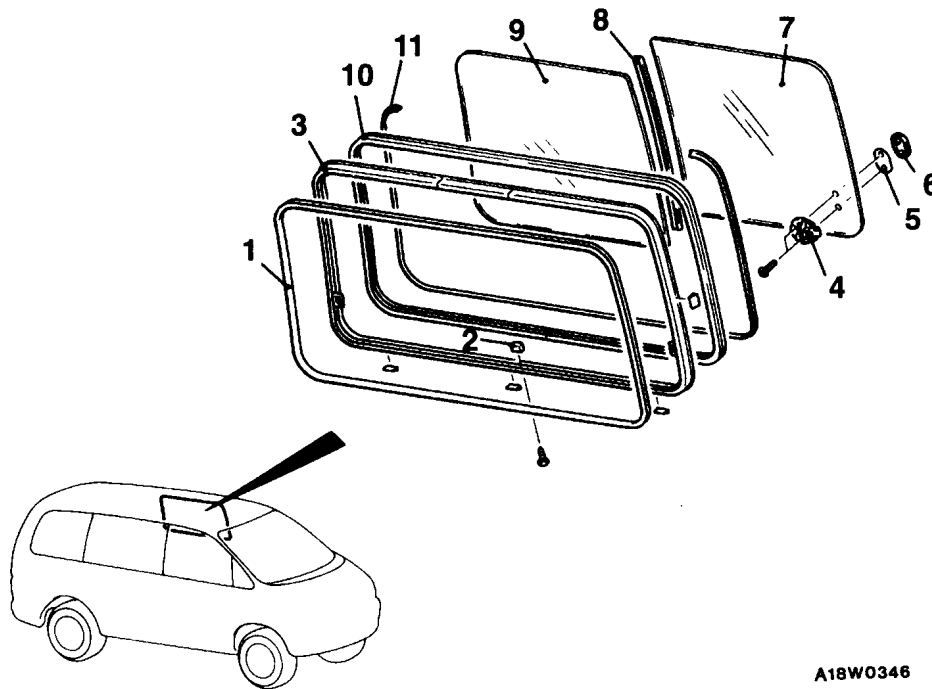


A18W0345

Removal steps

1. Link cover
2. Rear window link assembly
3. Rear side window glass
4. Rear side window weatherstrip

<SLIDE TYPE>



A18W0346

Removal steps

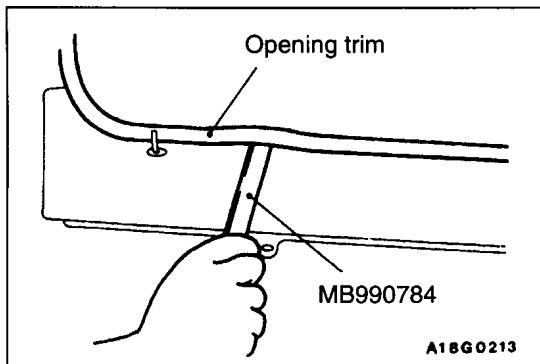
◀A▶

1. Opening trim
2. Glass stopper
3. Rear side window frame assembly
4. Side glass lock assembly
5. Packing
6. Connector

◀B▶

◀B▶

7. Rear side window glass (A)
8. Centre seal
9. Rear side window glass (B)
10. Rear window runchannel
11. Protector

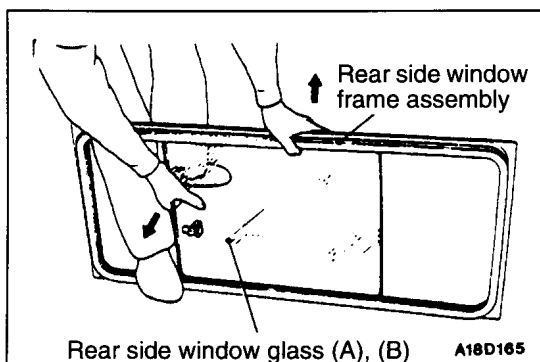


A18G0213

REMOVAL SERVICE POINTS

◀A▶ OPENING TRIM REMOVAL

Use the special tool to remove the opening trim.



Rear side window glass (A), (B)

A18D165

◀B▶ REAR SIDE WINDOW GLASS (A), (B) REMOVAL

Move the glass to the centre of the frame assembly, and pull the top and bottom of the frame assembly at the middle to remove the glass.

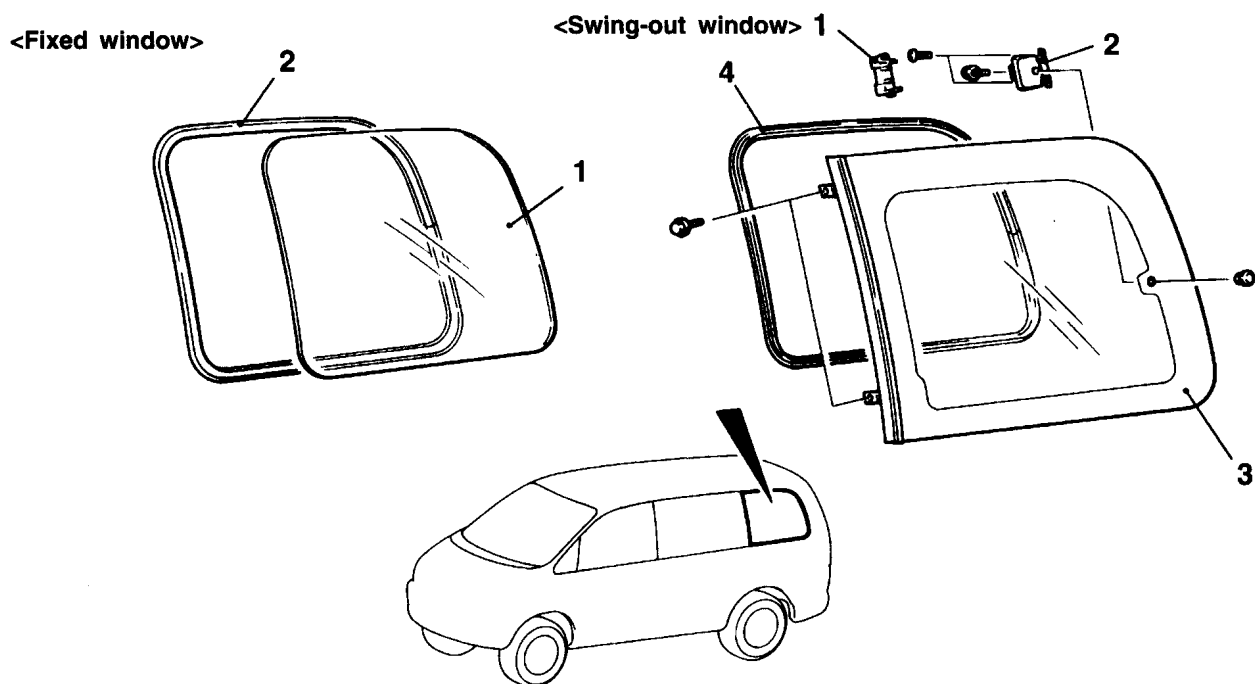
QUARTER WINDOW GLASS

120000441

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Quarter Trim Removal and Installation
(Refer to GROUP 52A – Trims.)



A18W0347

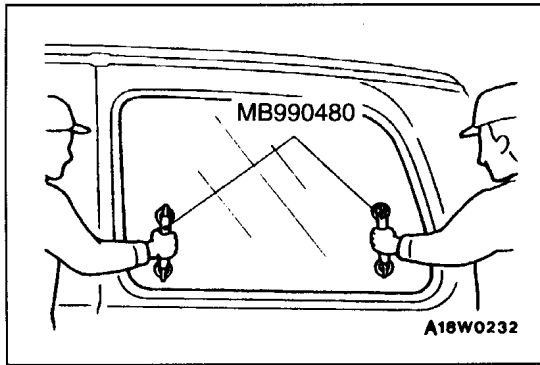
Removal steps <Fixed window>



1. Quarter window glass
2. Quarter window weatherstrip

<Swing-out window>

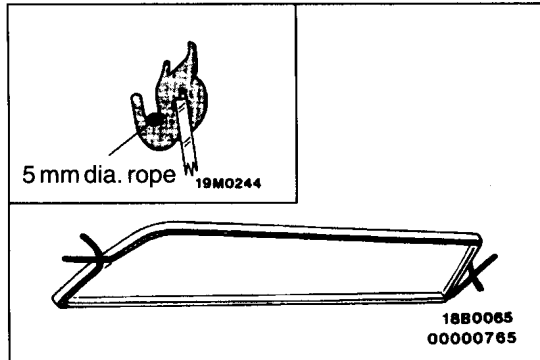
1. Lever
2. Link
3. Quarter window glass
4. Quarter window weatherstrip



REMOVAL SERVICE POINT

◀A▶ QUARTER WINDOW GLASS/QUARTER WINDOW WEATHERSTRIP REMOVAL

1. Affix the special tools to the glass, and then remove the glass with the weatherstrip.
2. Remove the weatherstrip from the glass.



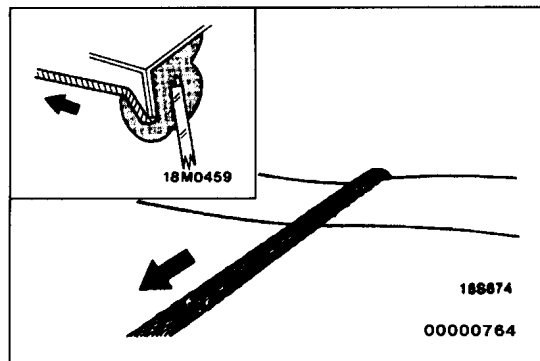
INSTALLATION SERVICE POINT

▶A◀ QUARTER WINDOW WEATHERSTRIP/QUARTER WINDOW GLASS REMOVAL

1. Repair any deformation in the body flange if necessary.
2. Attach the weatherstrip to the glass.
3. Insert a rope into the weatherstrip groove.

NOTE

Place the rope so that it overlaps at both ends as shown in the illustration.



4. Affix the special tools to the glass in the same way as removing it. Place the ends of the rope into the vehicle at this time.
5. While pressing the glass outside the vehicle, simultaneously pull the rope gently at an angle perpendicular to the glass. Fit the lip of the weatherstrip into the body flange.
6. Tap the glass repeatedly until it fits firmly into the body flange.

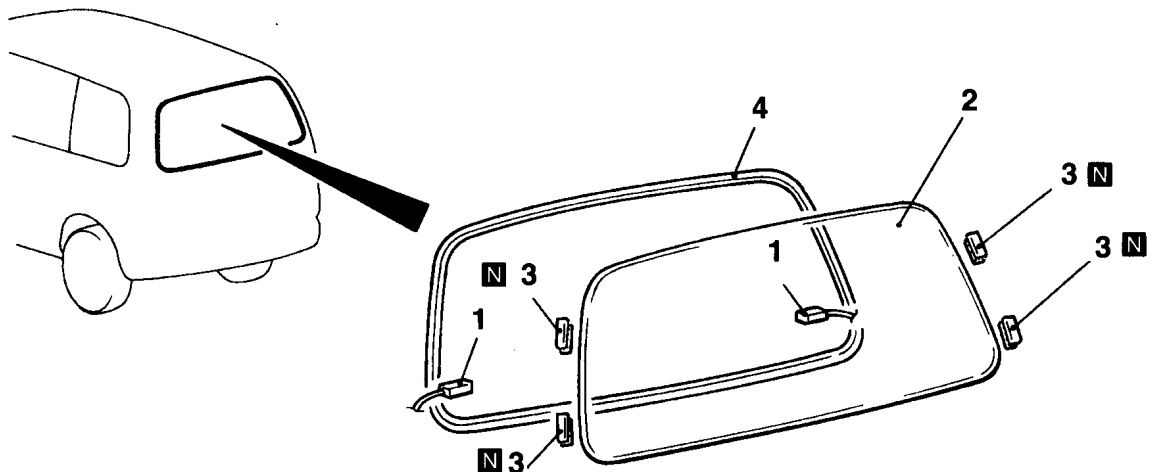
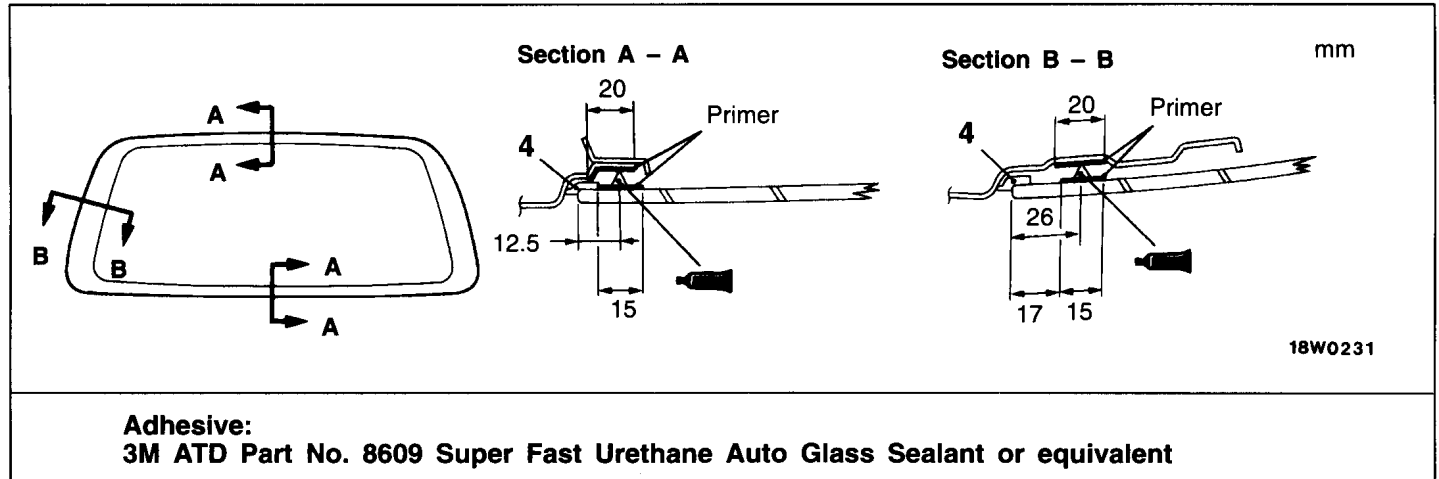
TAILGATE WINDOW GLASS

120000442

REMOVAL AND INSTALLATION

Pre-removal and Post-Installation Operation

- Rear Wiper Blade and Arm Assembly Removal and Installation (Refer to GROUP 51 – Rear Wiper and Washer.)
- High Mounted Stop Lamp Removal and Installation (Refer to GROUP 54 – High Mounted Stop Lamp.)



00000749

Removal steps

- ◀A▶
- ▶A▶
- ▶A▶
- ▶A▶
1. Harness connector
 2. Tailgate window glass
 3. Dual lock fastener
 4. Window dam

REMOVAL SERVICE POINT

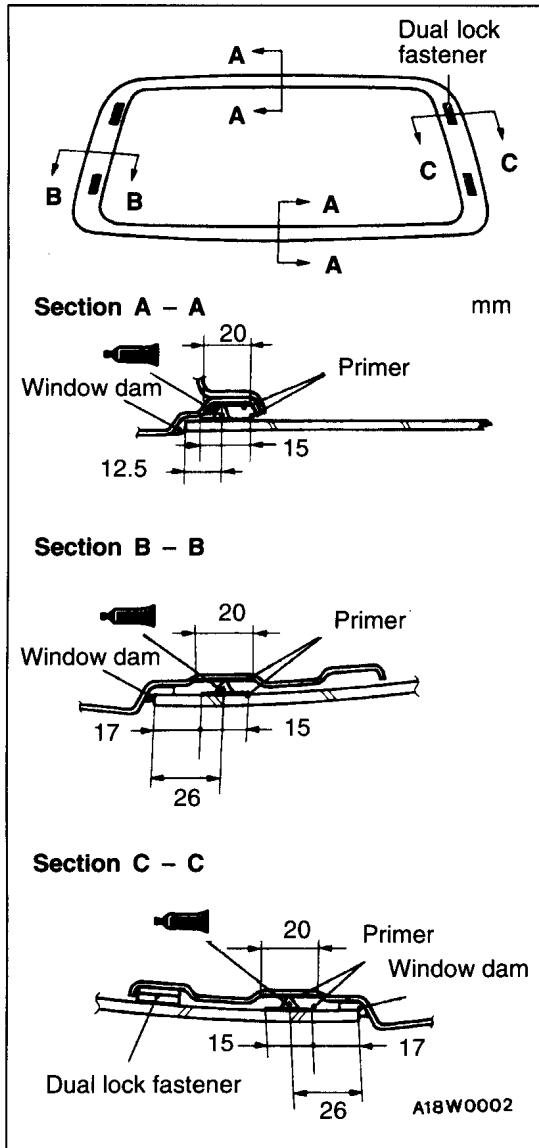
◀A▶ TAILGATE WINDOW GLASS REMOVAL

Remove the tailgate window glass by the same procedure as for the windshield. (Refer to P.42-10.)

INSTALLATION SERVICE POINT

▶A◀ WINDOW DAM/DUAL LOCK FASTENER/TAILGATE WINDOW GLASS INSTALLATION

- (1) Use unleaded petrol to degrease the glass and body where the window dam and dual lock fasteners are to be attached. Then install them.
- (2) Apply primer and adhesive in the places shown in the illustration, and then install the tailgate window glass by the same procedure as for the windshield glass. (Refer to P.42-10.)



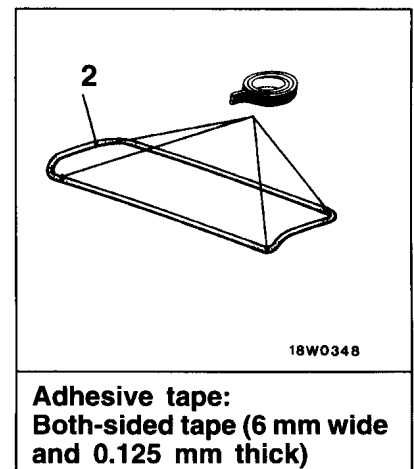
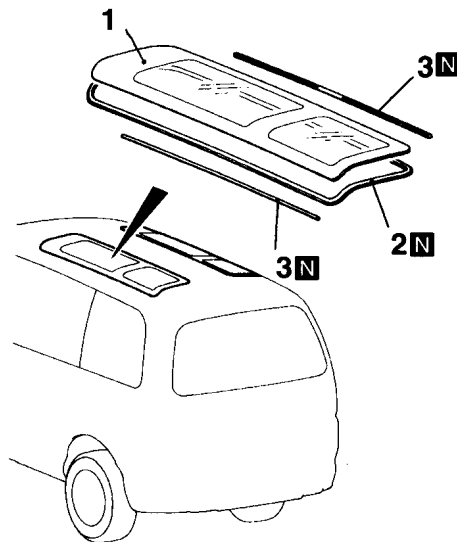
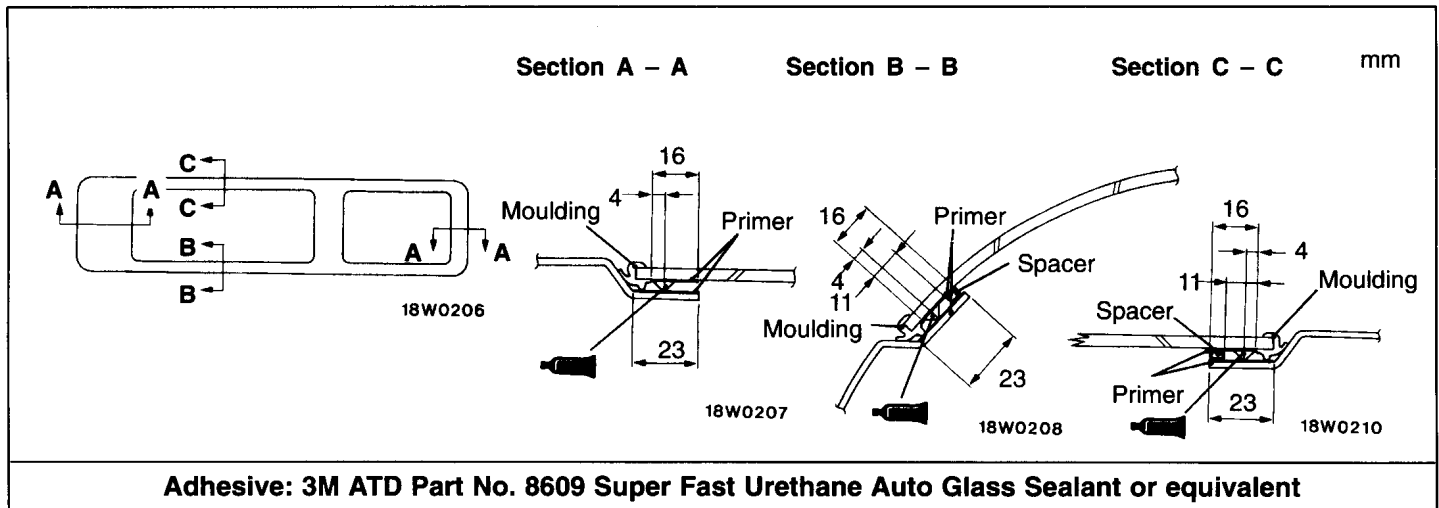
ROOF WINDOW GLASS

120002229

REMOVAL AND INSTALLATION

Pre-removal and Post-Installation Operation

- Headlining Removal and Installation
(Refer to GROUP 52A – Headlining.)
- Roof Duct Removal and Installation
(Refer to GROUP 55 – Roof Duct.)
- Crystal Lite Roof Sunshade Removal and Installation
(Refer to P.42-87.)



Removal steps

- ◀A▶ ▶B▶
1. Roof window glass
 2. Roof window moulding
 - ▶A▶ 3. Window spacer

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

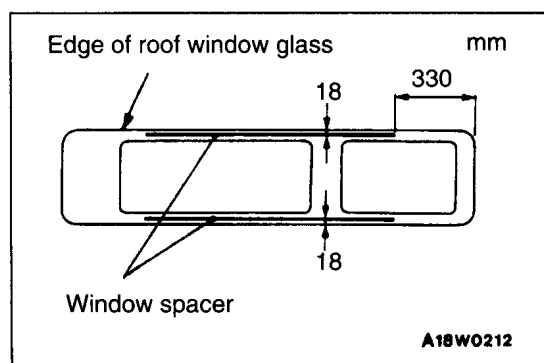
Remove the tailgate window glass by the same procedure as for the windshield. (Refer to P.42-10.)

INSTALLATION SERVICE POINTS**▶A◀ WINDOW SPACER INSTALLATION**

Use unleaded petrol to degrease the glass and body where the window spacers are to be attached. Then install them.

▶B◀ ROOF WINDOW GLASS INSTALLATION

Apply primer and adhesive, and then install the roof window glass by the same procedure as for the windshield glass. (Refer to P.42-10.)



FRONT DOOR

120000444

SERVICE SPECIFICATIONS

Items		Standard value
Door outside handle play mm		6–13
Power window operation current A		8 or less (at 20°C)
Door inside handle play mm		0–14
Glass pad and glass holder installation position mm	Distance (A) between glass holder and rear edge of glass	80.5–82.0
	Distance (B) between glass holders	573.5–576.5


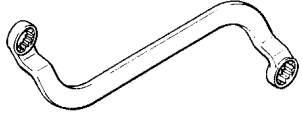
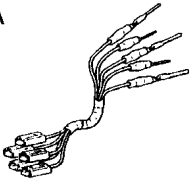



SEALANT

120000445

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

SPECIAL TOOLS

120000446

Tool	Number	Name	Use
	MB990784	Ornament remover	Removal of front door trim
	MB990834	Door adjusting wrench	Adjustment of door fit
<p>A </p> <p>B </p> <p>C </p> <p>D </p>	<p>MB991223</p> <p>A: MB991219</p> <p>B: MB991220</p> <p>C: MB991221</p> <p>D: MB991222</p>	<p>Harness set</p> <p>A: Test harness</p> <p>B: LED harness</p> <p>C: LED harness adapter</p> <p>D: Probe</p>	<p>Measurement of terminal voltage</p> <p>A: Connector pin contact pressure inspection</p> <p>B, C: Power circuit inspection</p> <p>D: Commercial tester connection</p>

TROUBLESHOOTING

120002230

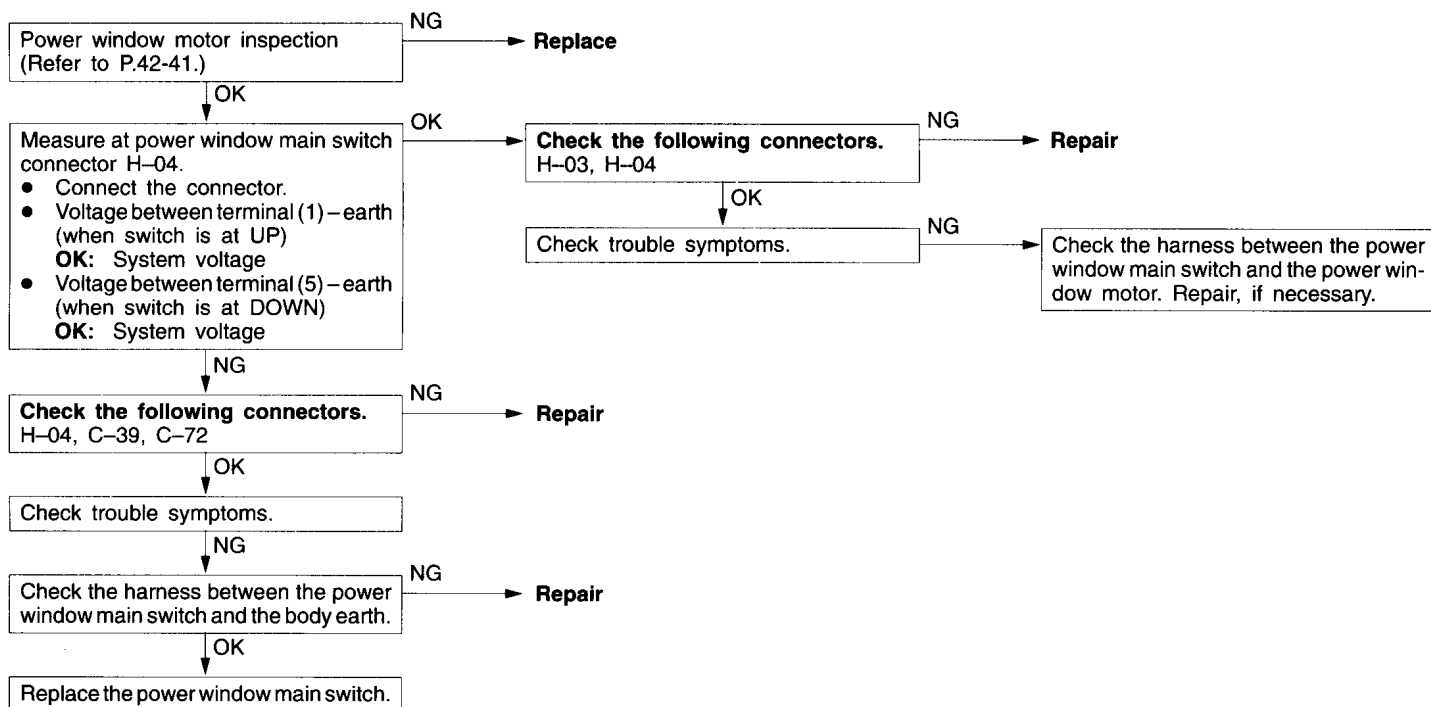
INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom		Inspection procedure	Reference page
Power windows	Driver's power window cannot be operated by the power window main switch.	1	P.42-26
	Passenger's power window cannot be operated by the power window main switch (however, it can be operated by the sub-switch).	2	P.42-27
	Passenger's power window cannot be operated by the power window sub-switch (however, it can be operated by the main switch).	3	P.42-27
	Passenger's power window cannot be operated by the power window sub-switch, nor can it be operated by the power window main switch.	4	P.42-28
	When the glass is raised, it then lowers automatically.	5	P.42-29
	The glass is not lowered when something is jammed in the window.	6	P.42-29
	When the glass is fully raised, it then lowers automatically.	7	P.42-30
Door locking mechanism	Doors do not lock or unlock when the door key switch is turned.	8	P.42-31
	None of the door lock functions operate.	9	P.42-32
	Some doors do not lock or unlock.	10	P.42-33

INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

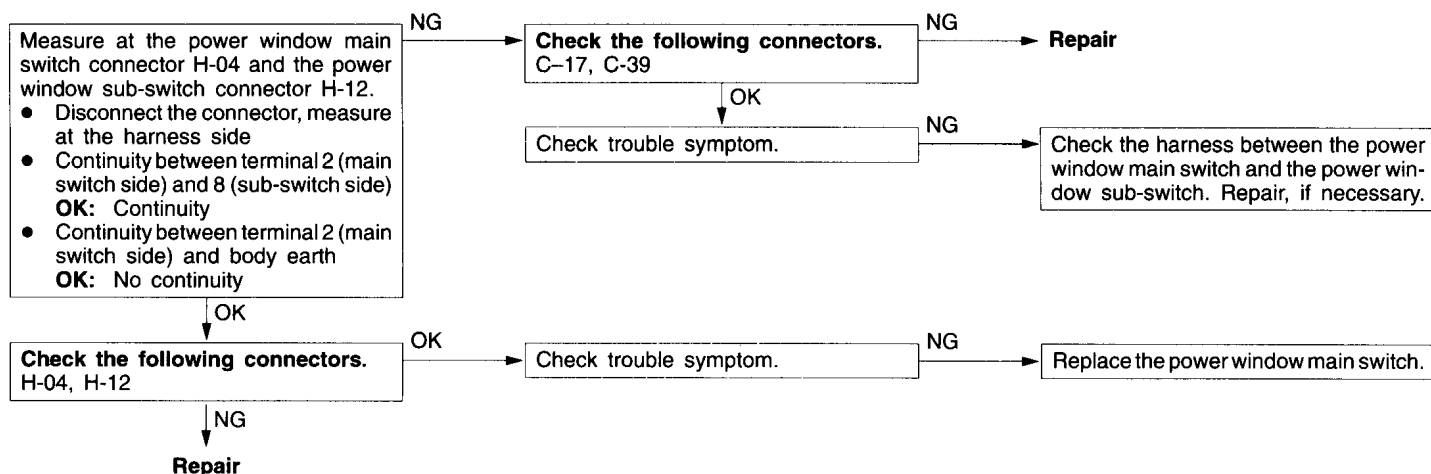
Inspection Procedure 1

Driver's power window cannot be operated by the power window main switch.	Probable cause
[Comment] One of the following items may be defective. Earth circuit in the power window main switch Power supply circuit for driving the power window motor Control circuit in the power window main switch.	<ul style="list-style-type: none"> • Malfunction of power window motor • Malfunction of power window main switch • Malfunction of wiring harness or connector



Inspection Procedure 2

Passenger's power window cannot be operated by the power window main switch (however, it can be operated by the sub-switch).	Probable cause
[Comment] The power window main switch may be defective or there may be either short circuit or open circuit in the communication line.	<ul style="list-style-type: none"> • Malfunction of power window main switch • Malfunction of wiring harness or connector



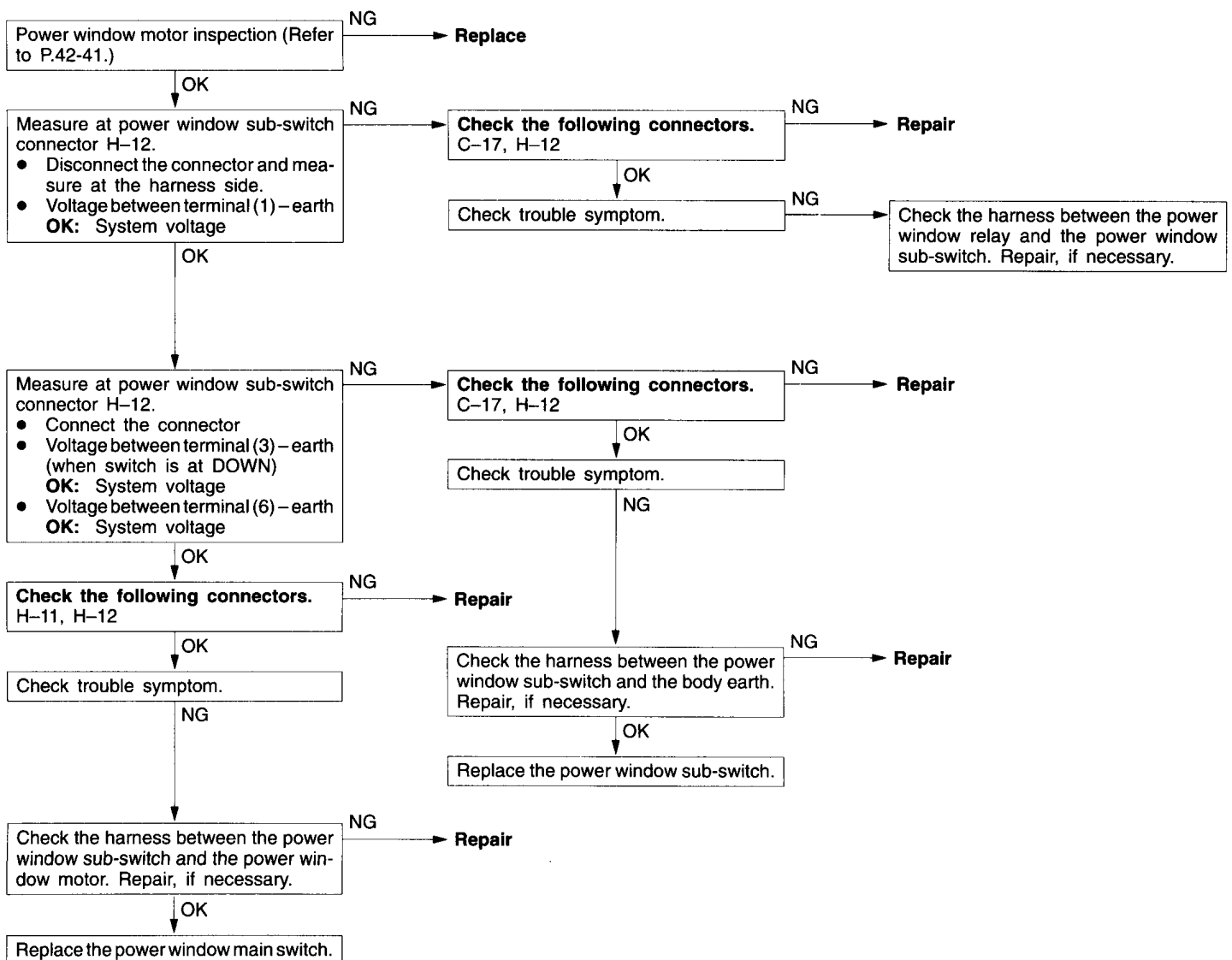
Inspection Procedure 3

Passenger's power window cannot be operated by the power window sub-switch. (however, it can be operated by the main switch)	Probable cause
[Comment] The power window sub-switch may be defective.	<ul style="list-style-type: none"> • Malfunction of power window sub-switch

Replace the power window sub-switch.

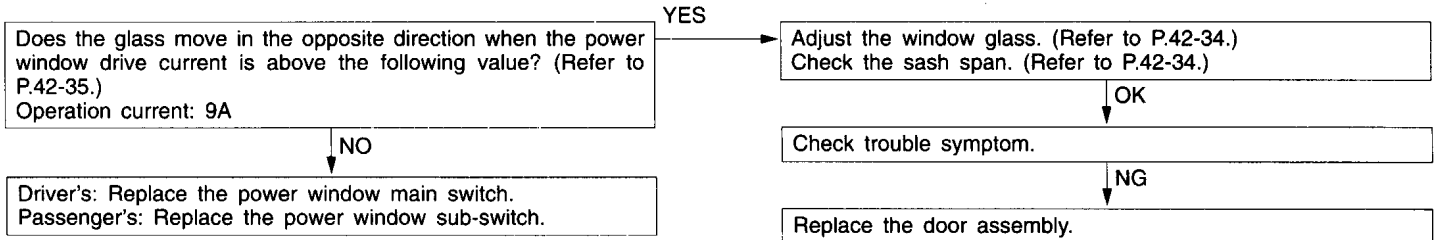
Inspection Procedure 4

Passenger's power window cannot be operated by the power window sub-switch, nor can it be operated by the power window main switch.	Probable cause
<p>[Comment]</p> <p>One of the following items may be defective.</p> <p>Power supply circuit or earth circuit for the power window sub-switch</p> <p>Power supply circuit for the power window motor</p> <p>Power window main switch due to a malfunction of the lock switch</p> <p>Power window sub-switch.</p>	<ul style="list-style-type: none"> • Malfunction of power window main switch • Malfunction of power window sub-switch • Malfunction of power window motor • Malfunction of wiring harness or connector



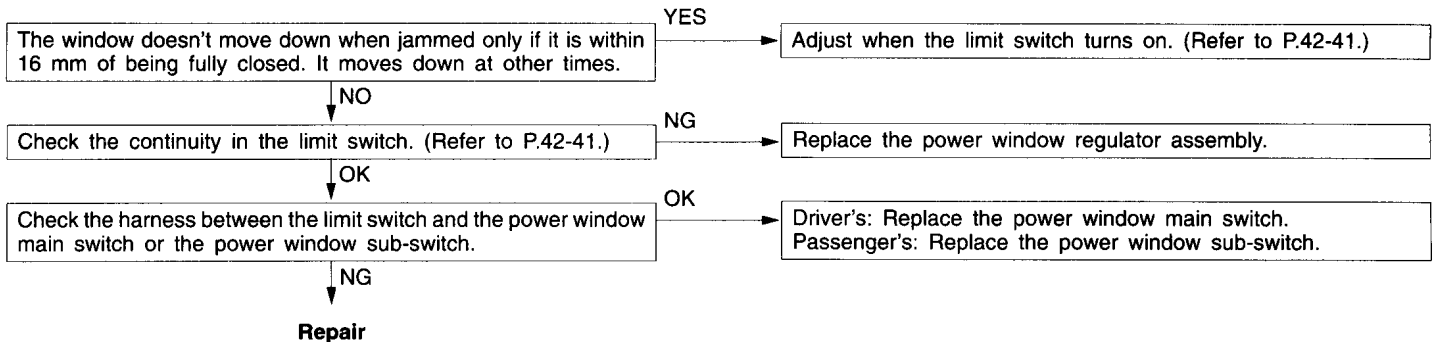
Inspection Procedure 5

When the glass is raised, it then lowers automatically.	Probable cause
<p>[Comment] The sliding resistance is too large when the glass rises. So it is misjudged that something is jammed in the window, and the window is lowered automatically.</p>	<ul style="list-style-type: none"> Window glass maladjustment Incorrect installation or fitting of glass slider Malfunction of power window main switch or power window sub-switch



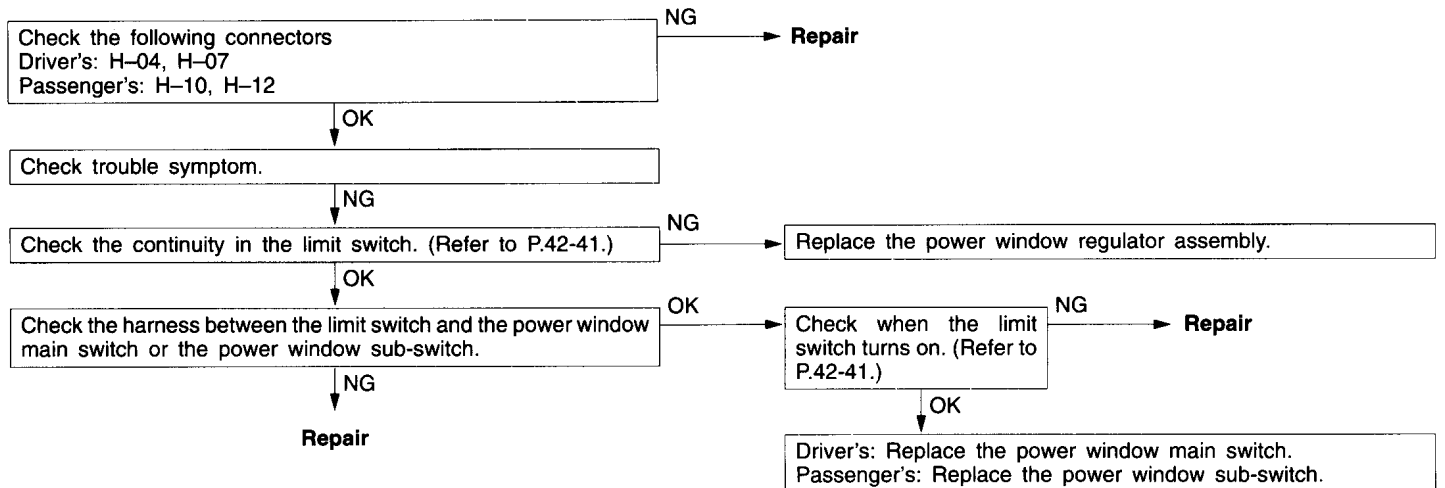
Inspection Procedure 6

The glass is not lowered when something is jammed in the window.	Probable cause
<p>[Comment] The safety mechanism does not work under the following conditions, and the window will not be lowered when something becomes jammed in it.</p> <ul style="list-style-type: none"> If the limit switch is always off. If there is an open circuit in the harness between the limit switch and the power window main switch or the power window sub-switch. If the limit switch turns off before the set value is reached. If the window is within 16 mm of being fully closed (standard setting to prevent the window from being lowered) 	<ul style="list-style-type: none"> Malfunction of limit switch Malfunction of harness Incorrect limit switch operation position Malfunction of power window main switch or power window sub-switch



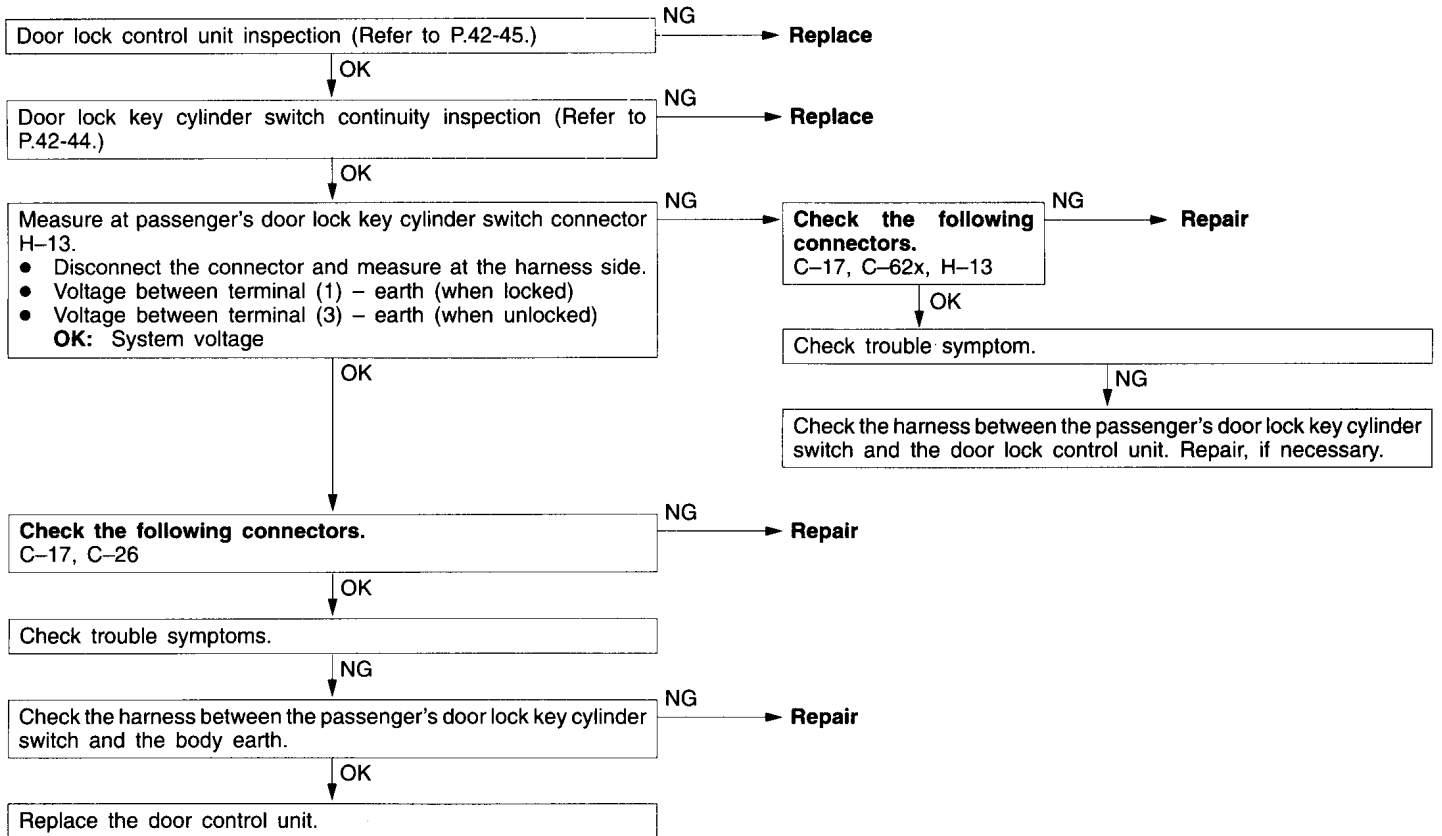
Inspection Procedure 7

When the glass is fully raised, it then lowers automatically.	Probable cause
<p>[Comment] When the window is within 16 mm before being fully closed, the window will not be lowered. Therefore, a defective limit switch or a short-circuit in a harness may be present.</p>	<ul style="list-style-type: none"> • Malfunction of limit switch • Incorrect limit switch operation position • Malfunction of wiring harness or connector



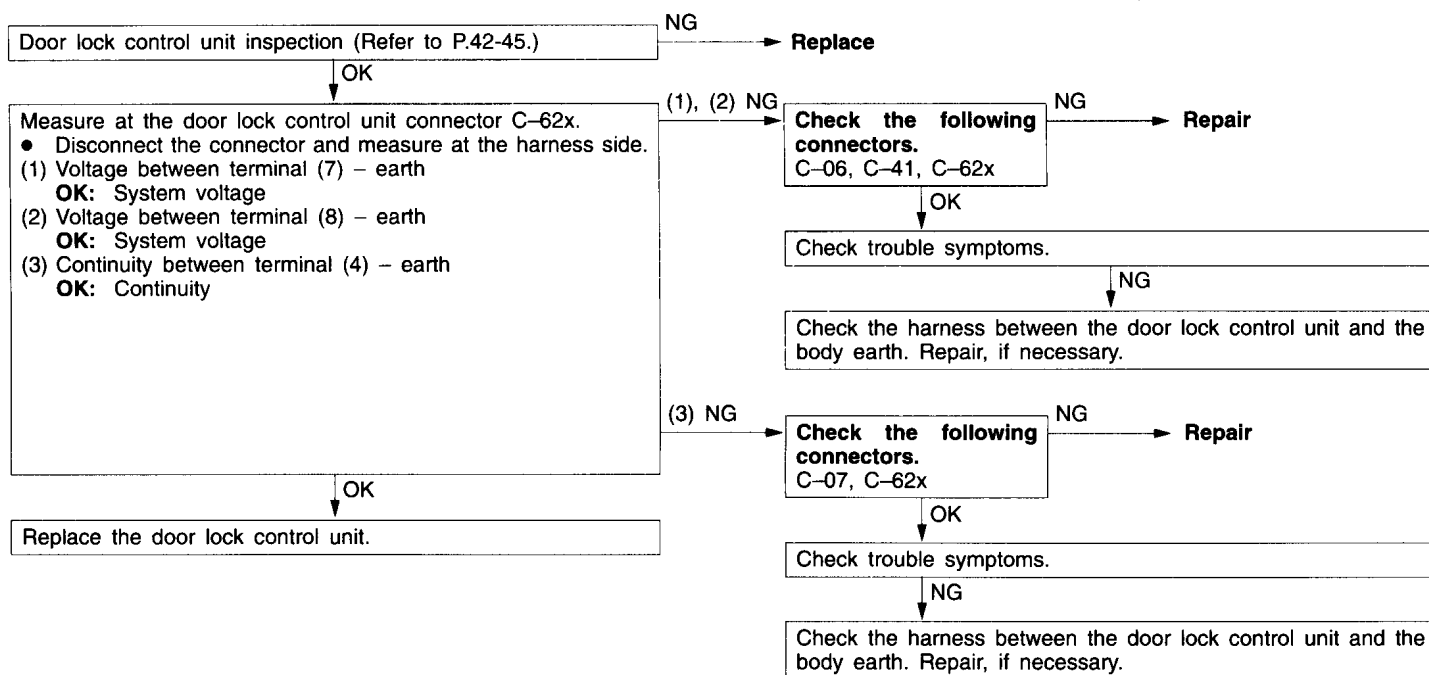
Inspection Procedure 8

Doors do not lock or unlock when the door key switch is turned.	Probable cause
<p>[Comment] The door lock control unit or the door key switch may be defective. A harness or connector may be defective.</p>	<ul style="list-style-type: none"> • Malfunction of door key switch • Malfunction of door lock control unit • Malfunction of wiring harness or connector



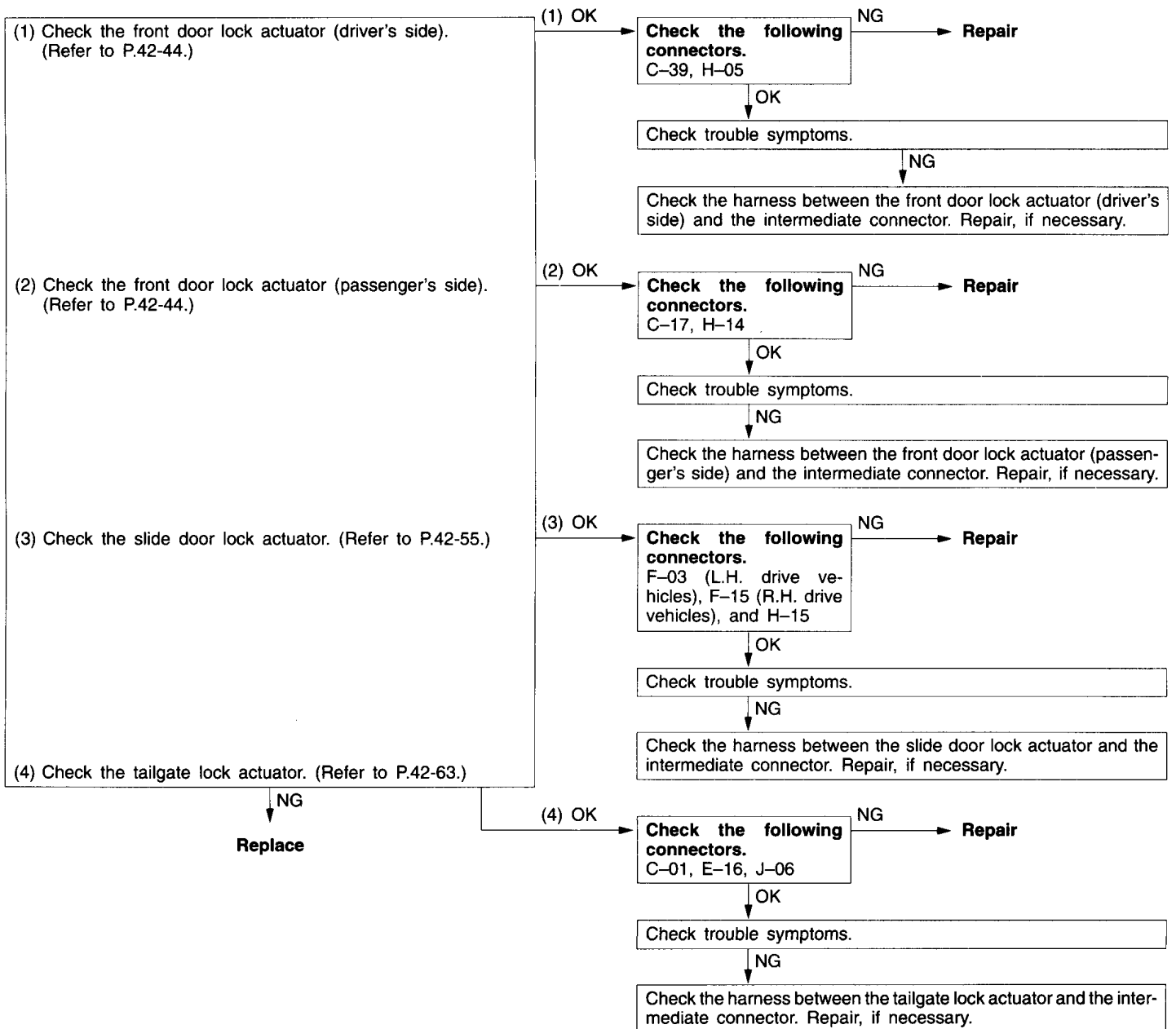
Inspection Procedure 9

None of the door lock functions operate.	Probable cause
[Comment] Power circuit system or earth circuit system of the door lock control unit may be defective.	<ul style="list-style-type: none"> • Malfunction of door lock control unit • Malfunction of wiring harness or connector



Inspection Procedure 10

Some doors do not lock or unlock.	Probable cause
[Comment] The door lock actuator, a harness or connector may be defective.	<ul style="list-style-type: none"> • Malfunction of door lock actuator • Malfunction of wiring harness or connector



SERVICE ADJUSTMENT PROCEDURES

120000448

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. Then align the door.
3. If the striker and latch do not mesh properly, adjust the position of the striker.

DOOR WINDOW GLASS ADJUSTMENT

120002096

Check that the window glass moves smoothly and touches the glass runchannel firmly when it is fully raised and fully lowered. If the window glass doesn't move properly, adjust by the following procedure.

- (1) Remove the door trim and waterproof film. (Refer to P.42-38.)
- (2) Raise the window glass, loosen the channel guide mounting bolts and adjust the vertical tilt of the glass.

SASH SPAN INSPECTION

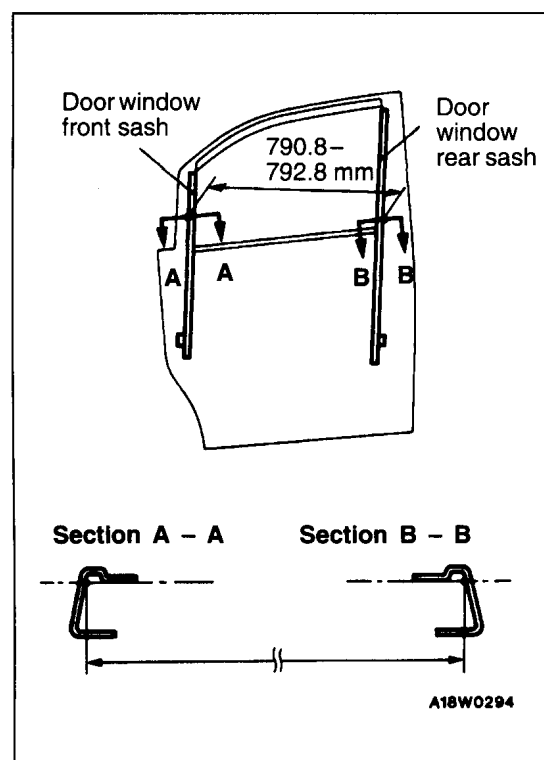
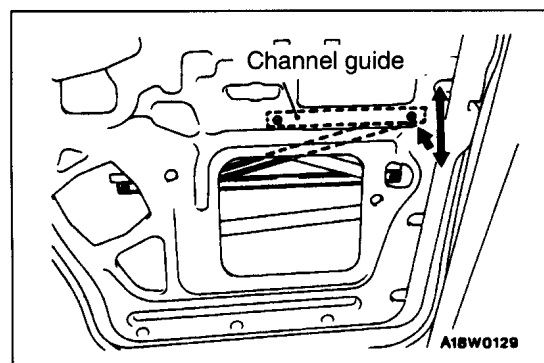
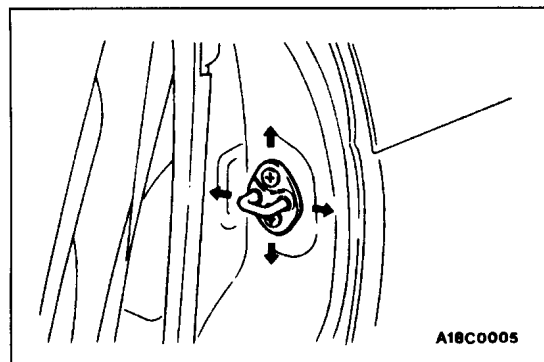
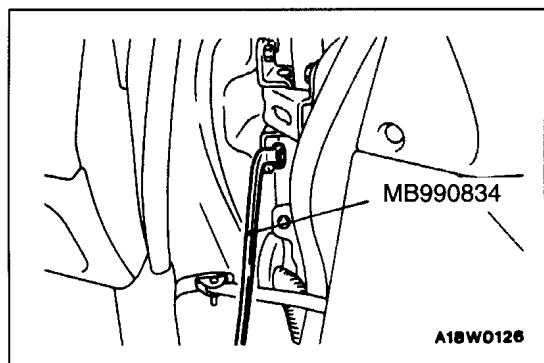
120002097

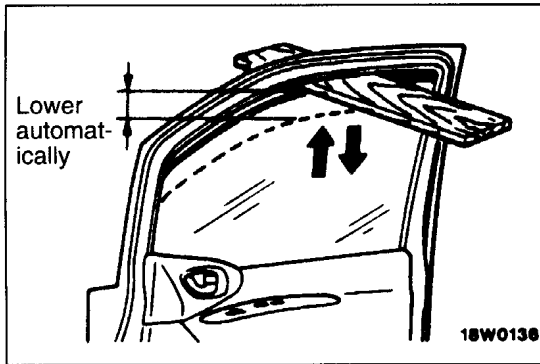
If the window glass automatically starts moving downwards at the wrong time while it is being raised, check the sash span.

- (1) Remove the door trim and waterproof film. (Refer to P.42-38.)
- (2) Remove the runchannel and measure the shortest distance between the front and rear sashes. If the distance is not within the standard value, replace the door assembly.

NOTE

The sash span cannot be adjusted.

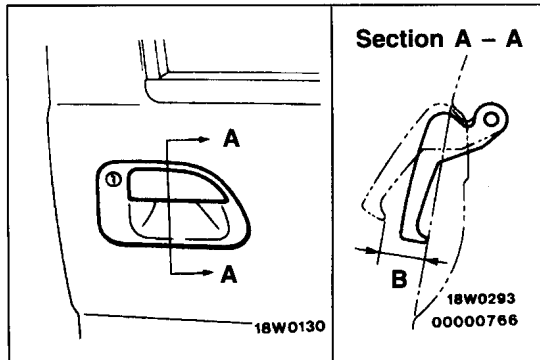




POWER WINDOW SAFETY MECHANISM INSPECTION

120002098

1. Place a wooden board with a thickness of approximately 20 mm as shown in the illustration, and then raise the window glass.
2. Check that the window lowers automatically when the window clamps the wooden board. If this doesn't happen, refer to "Troubleshooting" (P.42-29).



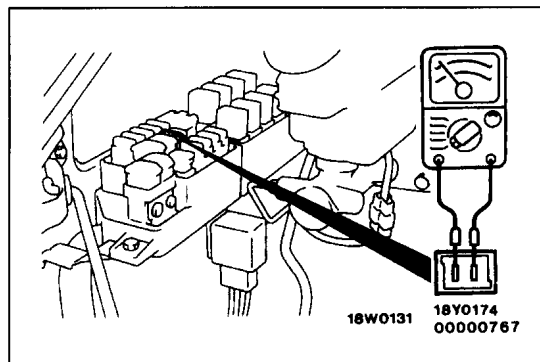
DOOR OUTSIDE HANDLE PLAY INSPECTION

120002099

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

Standard value (B): 6–13 mm

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

120002100

1. Remove the fuse for the power window and connect an ammeter as shown in the illustration.
2. A larger current flows when the window starts or finishes rising. So measure the operation current in the interval between these two points.

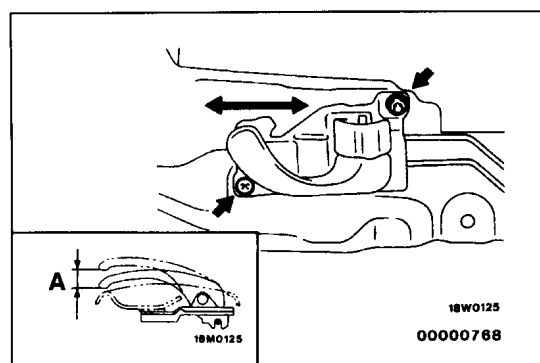
Standard value: 8 A or less (at 20°C)

3. If the operation current is not within the standard value, refer to "Troubleshooting" (P.42-29).

CIRCUIT BREAKER (INCORPORATED IN THE POWER WINDOW MOTOR) INSPECTION

120002101

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



DOOR INSIDE HANDLE PLAY INSPECTION AND ADJUSTMENT

120002102

1. Check the door inside handle play.

Standard value (A): 0–14 mm

2. If the play is not within the standard value range, remove the door trim (refer to P.42-38) and loosen the inside handle mounting screws.
3. Move the inside handle back and forth to adjust the play.

FRONT DOOR ASSEMBLY

120000449

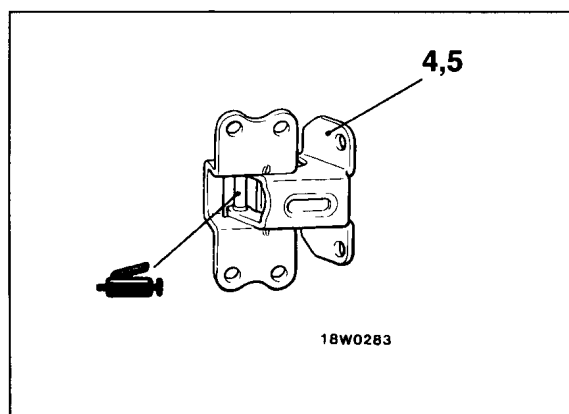
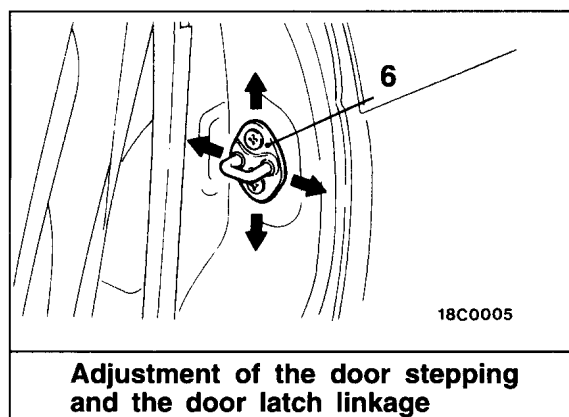
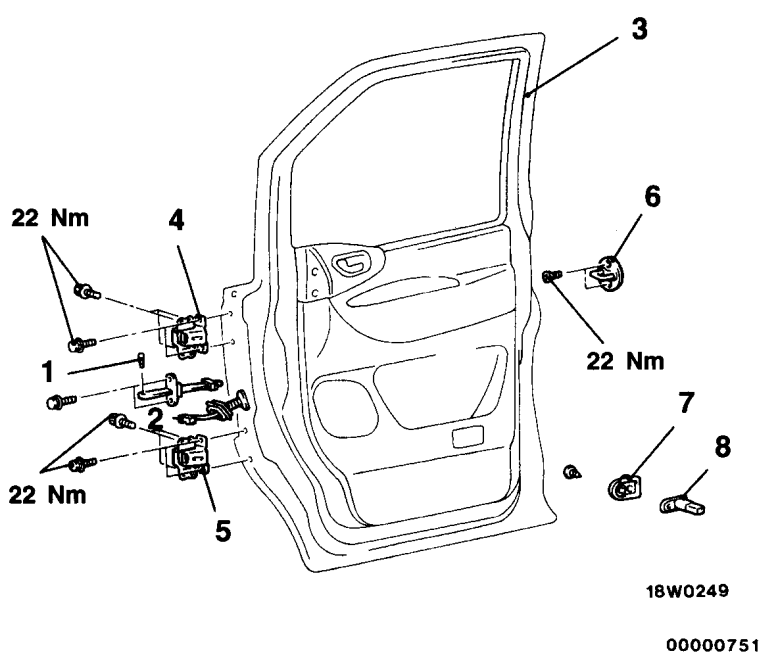
REMOVAL AND INSTALLATION

Pre-removal Operation

- Cowl Side Trim Removal
(Refer to GROUP 52A – Trims.)

Post-installation Operation

- Cowl Side Trim Installation
(Refer to GROUP 52A – Trims.)
- Door Adjustment (Refer to P.42-34.)

**Front door assembly removal steps**

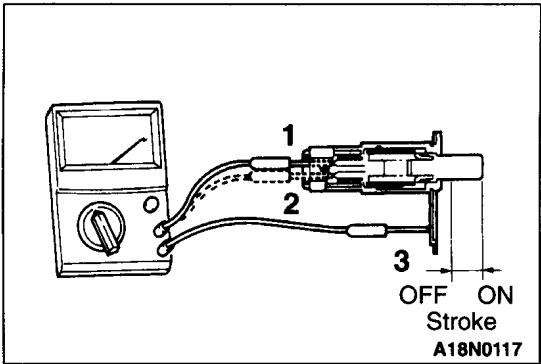
1. Spring pin
2. Harness connector
3. Front door assembly
4. Front door upper hinge
5. Front door lower hinge

Striker removal

6. Striker

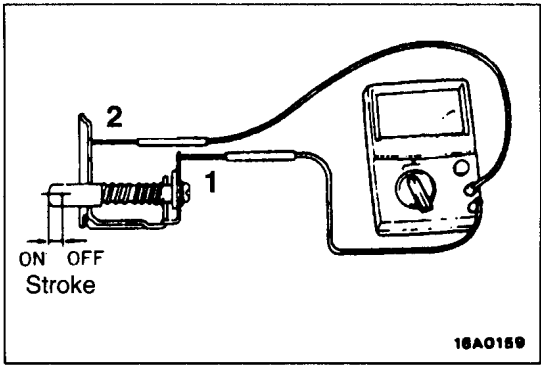
Door switch removal steps

7. Door switch cap
8. Door switch



INSPECTION
DOOR SWITCH CONTINUITY INSPECTION
Driver's door switch

Switch position	Terminal No.		
	1	2	3
Open (ON)			
Depressed (OFF)			



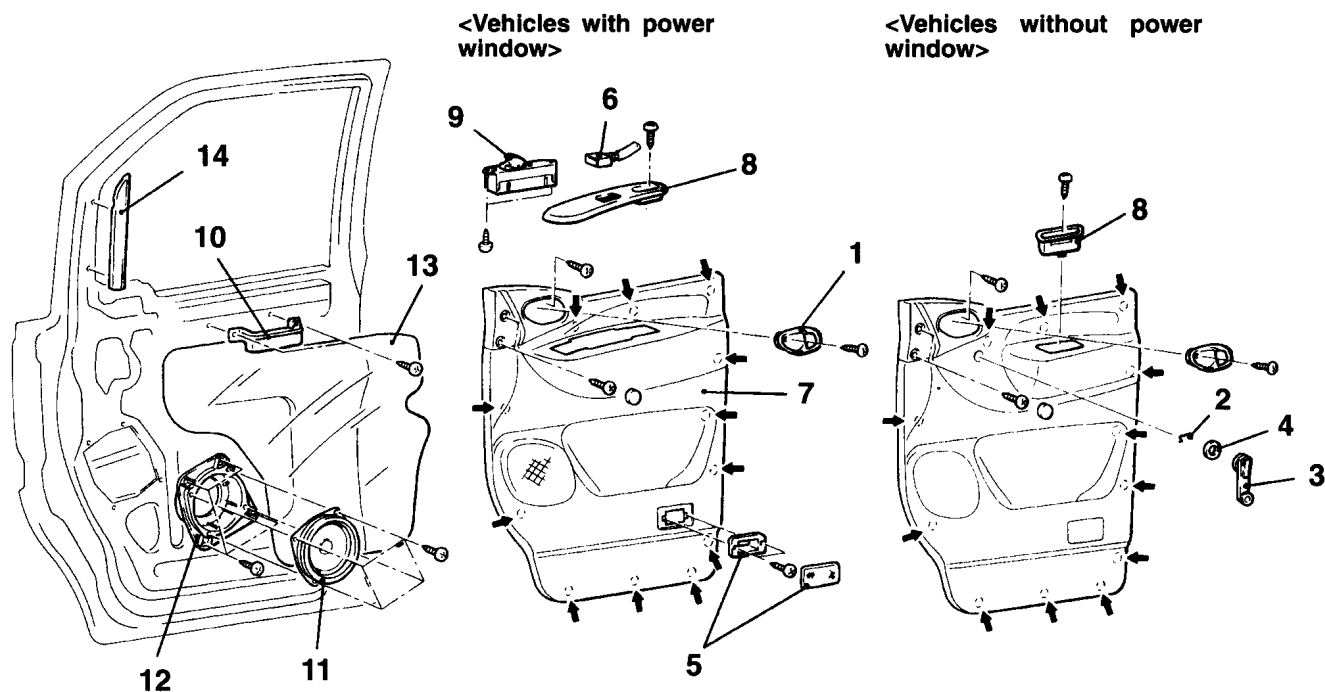
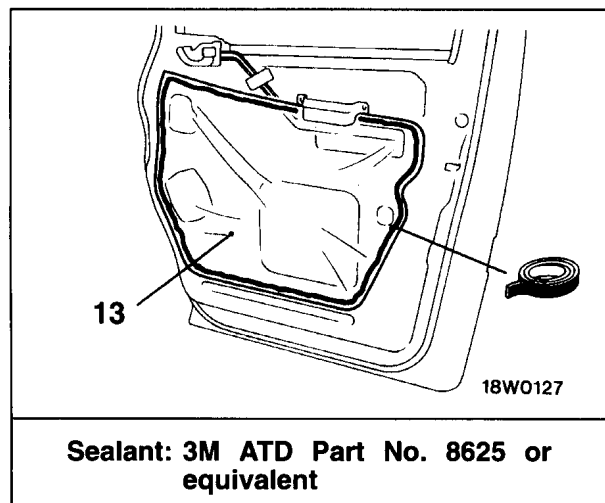
Passenger's door switch

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

FRONT DOOR TRIM AND WATERPROOF FILM

120000450

REMOVAL AND INSTALLATION



18W0378

00000752

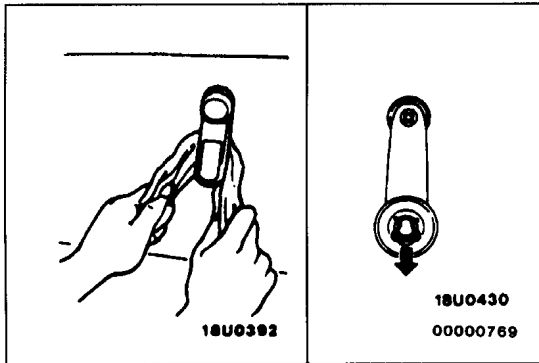
Removal steps

1. Door inside handle cover
2. Clip
3. Regulator handle
4. Escutcheon
5. Door courtesy lamp
6. Harness connector
7. Front door trim

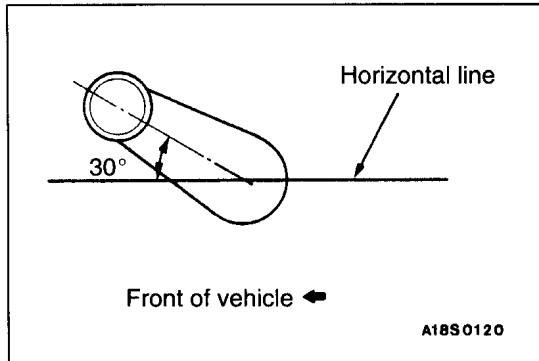
8. Pull handle box
9. Power window switch
10. Pull handle bracket
11. Speaker
12. Speaker cover
13. Waterproof film
14. Sash trim

NOTE

The ◀ mark indicates the resin clip position.

**REMOVAL SERVICE POINT****◀A▶ CLIP REMOVAL**

Remove the clip by using a rag, and then remove the regulator handle.

**INSTALLATION SERVICE POINT****▶A◀ REGULATOR HANDLE INSTALLATION**

1. Install the escutcheon and the clip to the regulator handle.
2. Fully close the window glass, and install the regulator handle so that it faces as shown in the illustration.

DOOR GLASS AND REGULATOR

120000451

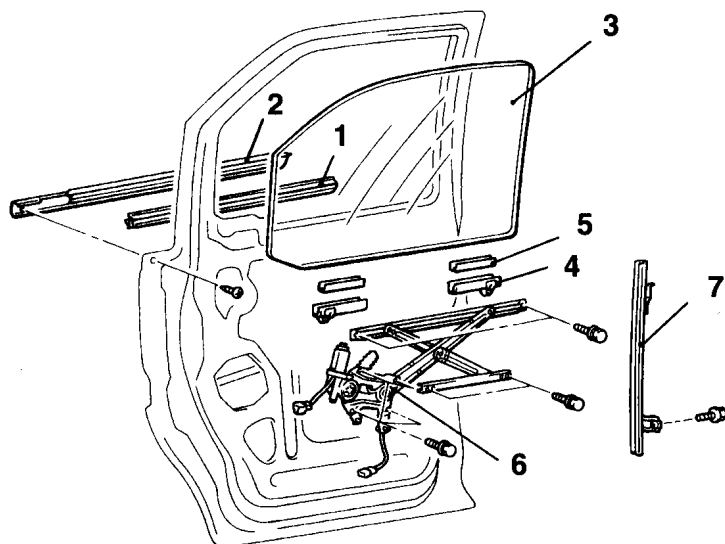
REMOVAL AND INSTALLATION

Pre-removal Operation

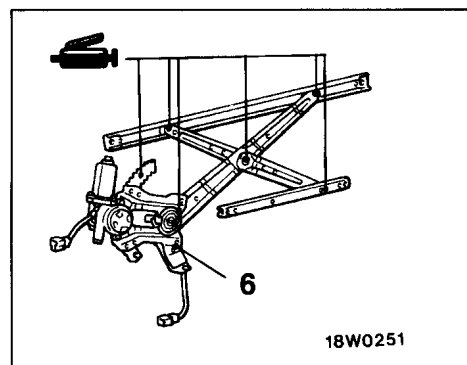
- Front Door Trim and Waterproof Film Removal (Refer to P.42-38.)

Post-installation Operation

- Front Door Window Glass Adjustment (Refer to P.42-34.)
- Front Door Trim and Waterproof Film Installation (Refer to P.42-38.)



18W0248



18W0251

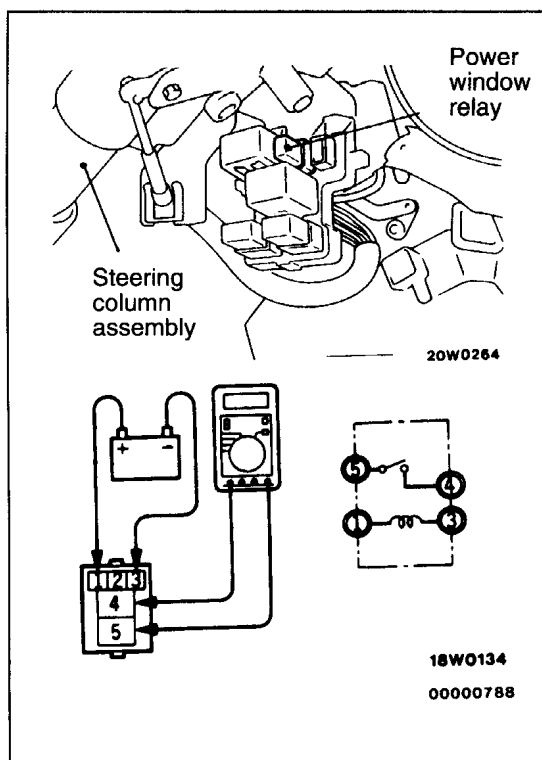
00000753

Removal steps

1. Front door beltline inner weatherstrip
2. Front door beltline outer weatherstrip
- ▶B◀ 3. Front door window glass
4. Glass holder
5. Glass pad
6. Window regulator assembly
- ▶A◀ 7. Rear lower sash

INSPECTION**POWER WINDOW RELAY CONTINUITY INSPECTION**

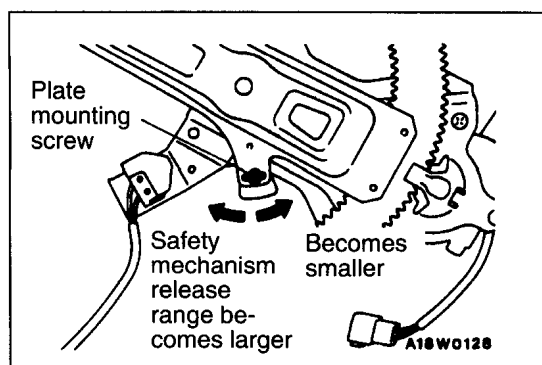
System voltage	Terminal No.			
	1	3	4	5
Not applied	○	○		
Applied	⊕	---	○	○

**POWER WINDOW MOTOR INSPECTION**

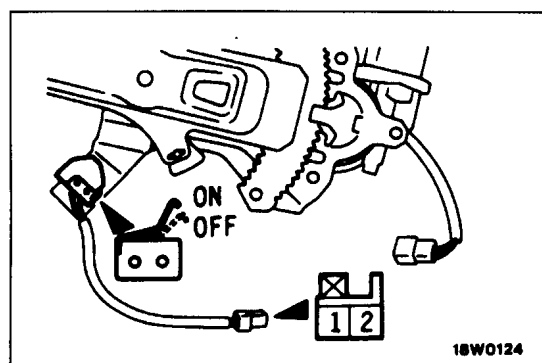
1. Connect a battery directly to the motor terminals and check that the motor runs smoothly.
2. Check that the motor runs in the opposite direction when the battery is connected with the polarity reversed.
3. Replace the window regulator assembly if necessary.

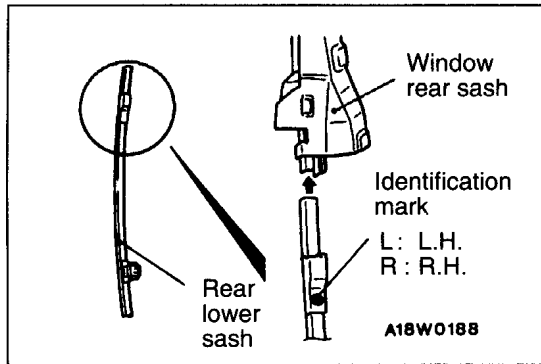
LIMIT SWITCH OPERATION POSITION ADJUSTMENT

Loosen the plate mounting screw and move the plate to the left or right to adjust where the limit switch starts working (safety mechanism stops working).

**LIMIT SWITCH CONTINUITY INSPECTION**

Switch position	Terminal No.	
	1	2
ON	○	○
OFF		

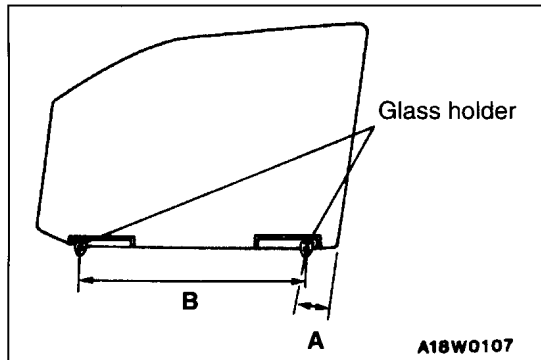




INSTALLATION SERVICE POINTS

►A◄ REAR LOWER SASH INSTALLATION

1. Check the identification mark on the rear lower sash.
2. Insert the rear lower sash into the window rear sash.



►B◄ FRONT DOOR WINDOW GLASS INSTALLATION

Install the glass pad and the glass holders to the window glass as shown in the illustration.

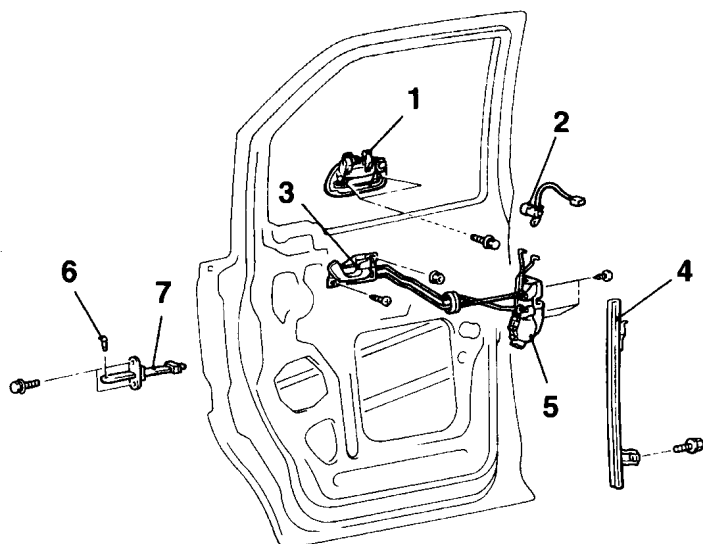
Standard valve: (A) 80.5–82.0mm
(B) 573.5–576.5mm

FRONT DOOR HANDLE AND LATCH

REMOVAL AND INSTALLATION

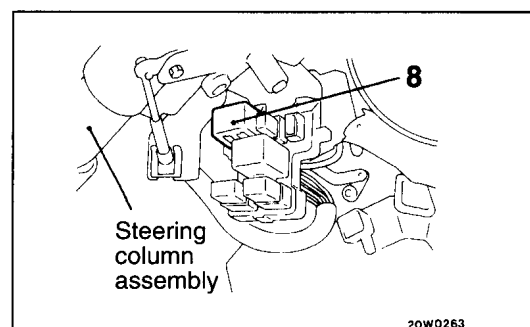
Post-installation Operation

- Door Outside Handle Play Inspection
(Refer to P.42-35.)
- Door Inside Handle Play Inspection and Adjustment
(Refer to P.42-35.)

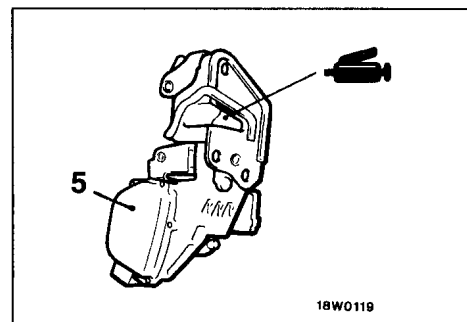
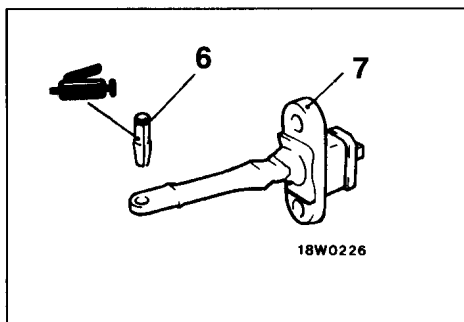
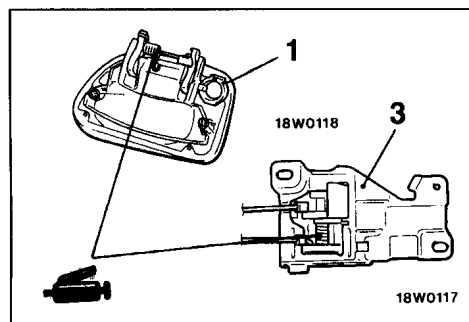


18W0250

00000754



20W0263



Front door outside handle and lock key cylinder removal

- Front door trim and waterproof film
(Refer to P.42-38.)
- 1. Front door outside handle
- 2. Front door lock key cylinder

Front door inside handle and front door latch removal

- Front door trim and waterproof film
(Refer to P.42-38.)
- 3. Front door inside handle
- 4. Rear lower sash
- 5. Front door latch assembly

▶B◀

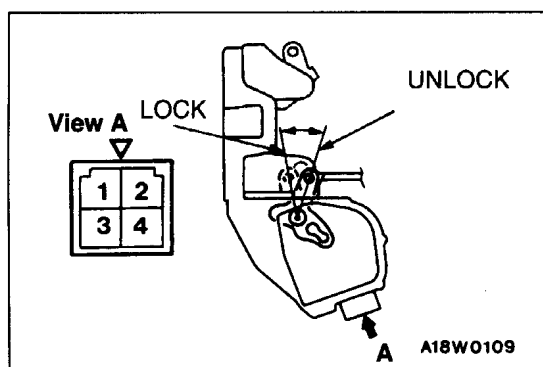
Door check removal

- Front door trim and waterproof film
(Refer to P.42-38.)
- 6. Spring pin
- 7. Door check

▶A◀

Door lock control unit removal

- 8. Door lock control unit

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

<Driver's side>

L.H. drive vehicles

Lock position	Terminal No.				Rod movement
	1	2	3	4	
LOCK			⊕ -	- ⊖	LOCK→UNLOCK
UNLOCK			⊖ -	- ⊕	UNLOCK→LOCK
LOCK					
UNLOCK	○	○			

R.H. drive vehicles

Lock position	Terminal No.				Rod movement
	1	2	3	4	
LOCK			⊖ -	- ⊕	LOCK→UNLOCK
UNLOCK			⊕ -	- ⊖	UNLOCK→LOCK
LOCK					
UNLOCK	○	○			

<Passenger's side>

L.H. drive vehicles

Lock position	Terminal No.		Rod movement
	3	4	
LOCK	⊖ - - -	⊕	LOCK→UNLOCK
UNLOCK	⊕ - - -	⊖	UNLOCK→LOCK

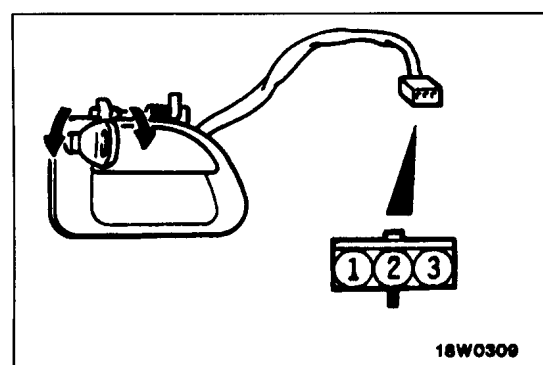
R.H. drive vehicles

Lock position	Terminal No.		Rod movement
	3	4	
LOCK	⊕ - - -	⊖	LOCK→UNLOCK
UNLOCK	⊖ - - -	⊕	UNLOCK→LOCK

FRONT DOOR LOCK KEY CYLINDER SWITCH CONTINUITY INSPECTION

<L.H. drive vehicles – Passenger's side>

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



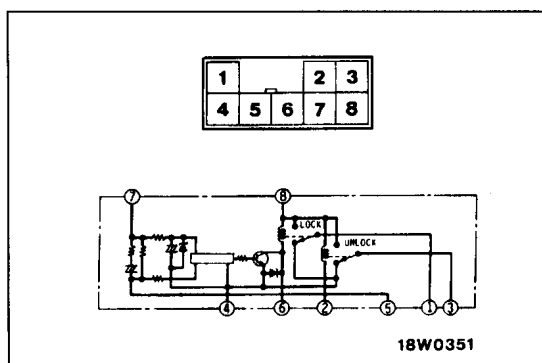
<R.H. drive vehicles – Passenger's side>

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

DOOR LOCK CONTROL UNIT INSPECTION

1. Apply system voltage to terminals (7) and (8), and connect terminal (4) to earth.
2. Measure the voltage under the following conditions.

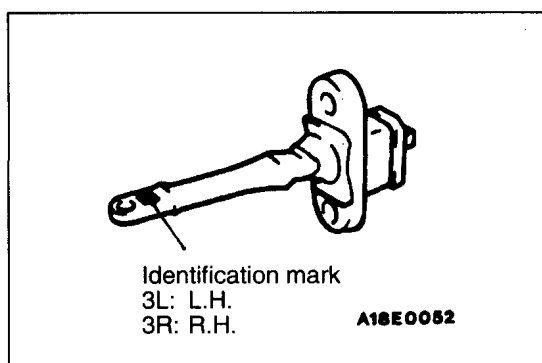
Measurement conditions	Terminal No.	
	1	2
Terminal (6) earthed	System voltage	0V
Terminal (2) earthed	0V	System voltage
Terminal (5) earthed	0V	System voltage



INSTALLATION SERVICE POINTS

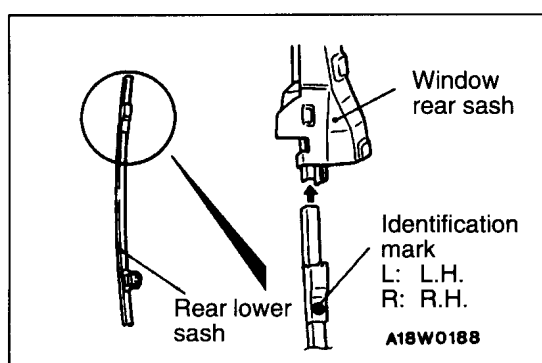
►A◀ DOOR CHECK INSTALLATION

Install the door check so that the identification mark is facing upwards.



►B◀ REAR LOWER SASH INSTALLATION

1. Check the identification mark on the rear lower sash.
2. Insert the rear lower sash into the window rear sash.



FRONT DOOR RUNCHANNEL

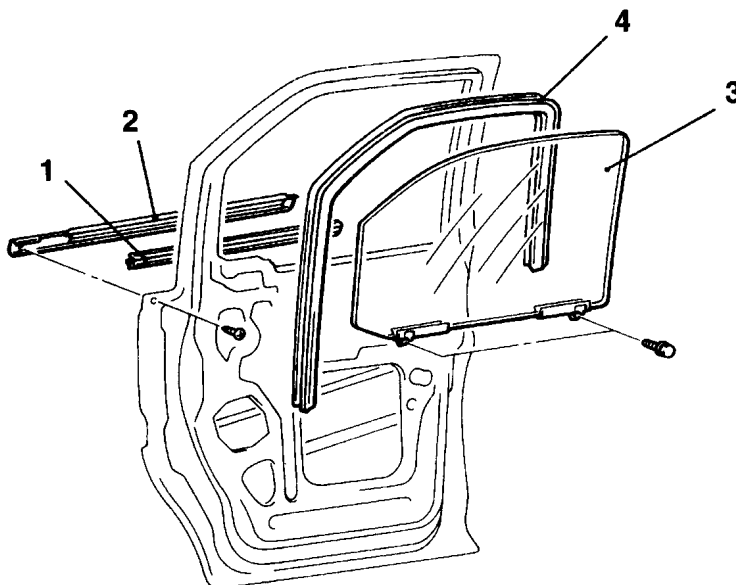
120000453

REMOVAL AND INSTALLATION**Pre-removal Operation**

- Front Door Trim and Waterproof Film Removal (Refer to P.42-38.)

Post-installation Operation

- Door Window Glass Adjustment (Refer to P.42-34.)
- Front Door Trim and Waterproof Film Installation (Refer to P.42-38.)



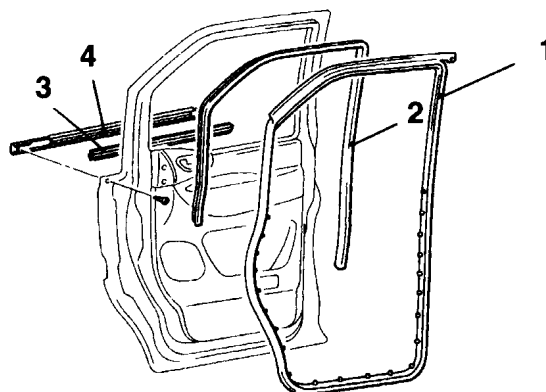
A18W0246

Removal steps

1. Front door beltline inner weatherstrip
2. Front door beltline outer weatherstrip
3. Front door window glass
4. Front door window runchannel

FRONT DOOR WEATHERSTRIP REMOVAL AND INSTALLATION

120002231



A18W0247

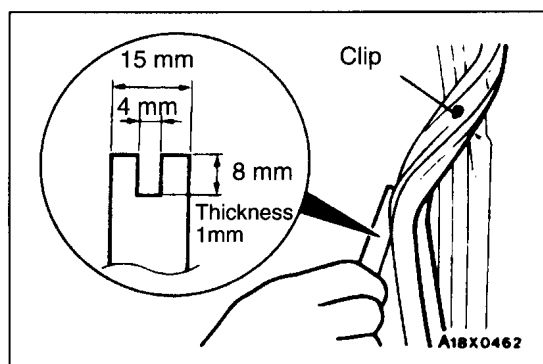
Removal steps

- ◀A▶ ▶B▶ 1. Front door opening outer weatherstrip
▶A▶ 2. Front door opening inner weatherstrip
3. Front door beltline inner weatherstrip
4. Front door beltline outer weatherstrip

REMOVAL SERVICE POINT

◀A▶ FRONT DOOR OPENING OUTER WEATHERSTRIP REMOVAL

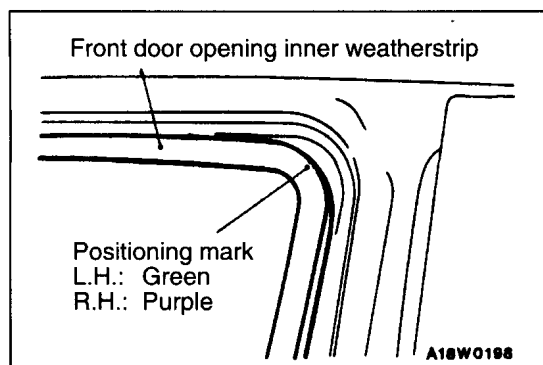
Make a tool as shown in the illustration to remove the door opening weatherstrip.



INSTALLATION SERVICE POINTS

▶A▶ FRONT DOOR OPENING INNER WEATHERSTRIP INSTALLATION

Check the identification colours at left and right, and then install the weatherstrip so that the positioning marks are aligned.



▶B▶ FRONT DOOR OPENING OUTER WEATHERSTRIP INSTALLATION

The left and right ends of the weatherstrip can be identified by the colours of the clips.

Item	Identification colour
L.H.	White
R.H.	Brown

SLIDE DOOR

120000455

SERVICE SPECIFICATIONS

Items	Standard value
Door outside handle play mm	3–6
Door inside handle play mm	4–9

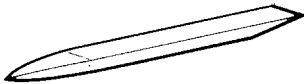
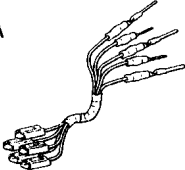



SEALANT

120000456

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

SPECIAL TOOLS

120000457

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

TROUBLESHOOTING

120000458

INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Reference page
Door lock mechanism does not operate.	P.42-25.

SERVICE ADJUSTMENT PROCEDURES

120000459

DOOR FIT ADJUSTMENT

1. If the striker and latch do not mesh properly, move the striker up and down and to the left and right.
2. Check the positioning of stopper (A) when the door is closed. If it is incorrect, move the stopper (A) up and down and to the left and right.
3. If the clearance between the door and the vehicle body is not even or if the door and body are not flush when the door is closed, adjust by the following procedure.

Vertical adjustment

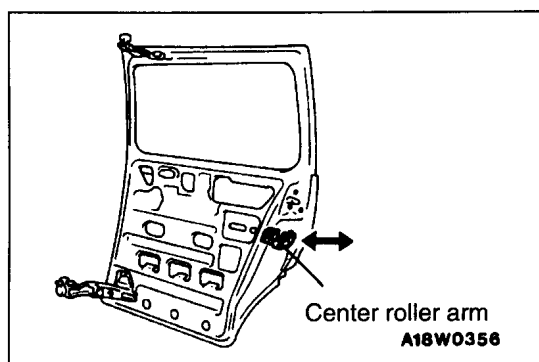
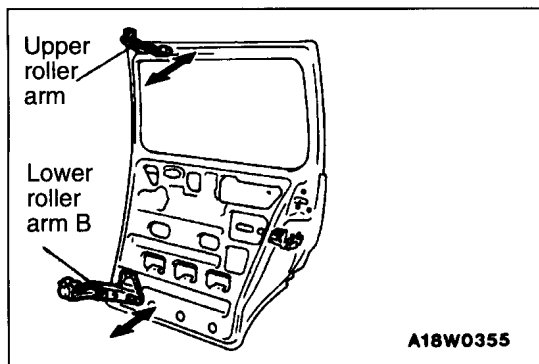
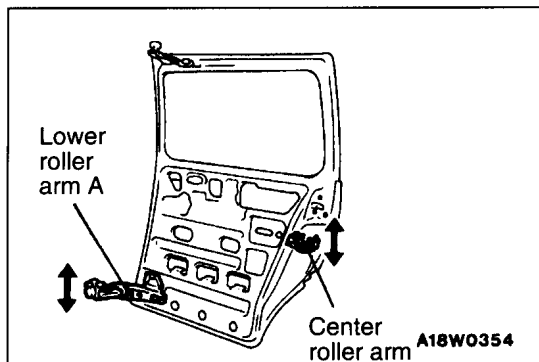
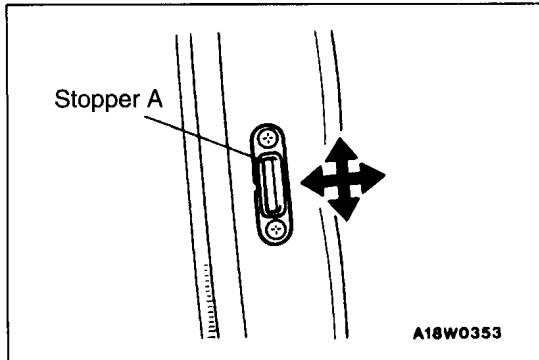
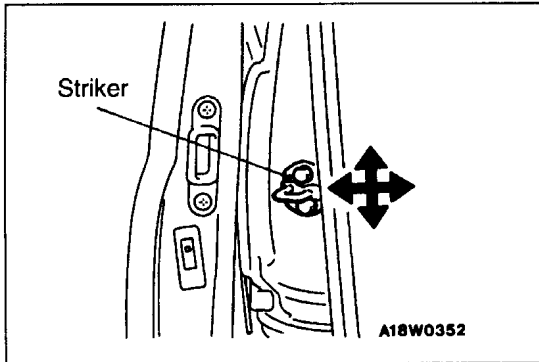
- (1) Remove the slide door trim and the weatherproof film. (Refer to P.42-53.)
- (2) Loosen the center roller arm and lower roller arm A mounting bolts and move the center roller arm and lower roller arm A up or down.

Lateral adjustment

Loosen the upper roller arm and lower roller arm B mounting bolts and move the upper roller arm and lower roller arm B to the left or right.

Forward/back adjustment

- (1) Remove the slide door trim and the weatherproof film. (Refer to P.42-53.)
- (2) Loosen the center roller arm mounting bolt and move the center roller arm forward or back.



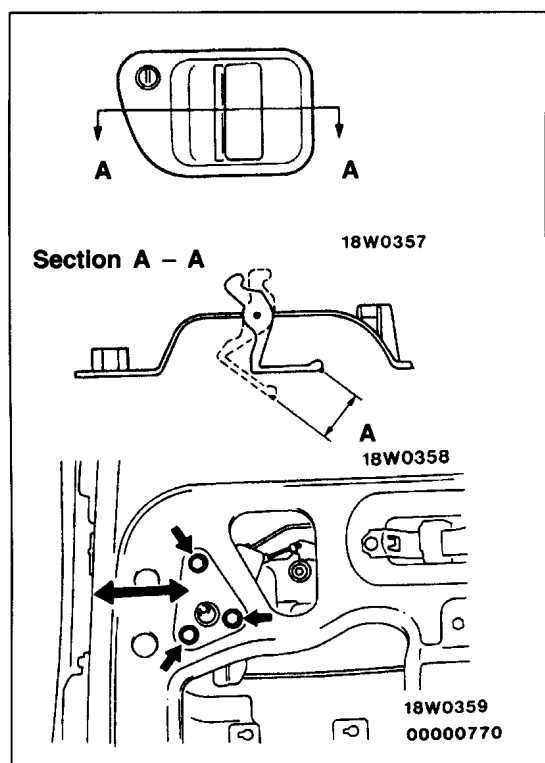
DOOR OUTSIDE HANDLE PLAY INSPECTION AND ADJUSTMENT

120002103

Standard value (A): 3–6 mm

If the play is not within the standard value, adjust by the following procedure.

- (1) Remove the slide door trim and the waterproof film. (Refer to P.42-53.)
- (2) Loosen the slide door link assembly mounting bolt and move the slide door link assembly forward or back.



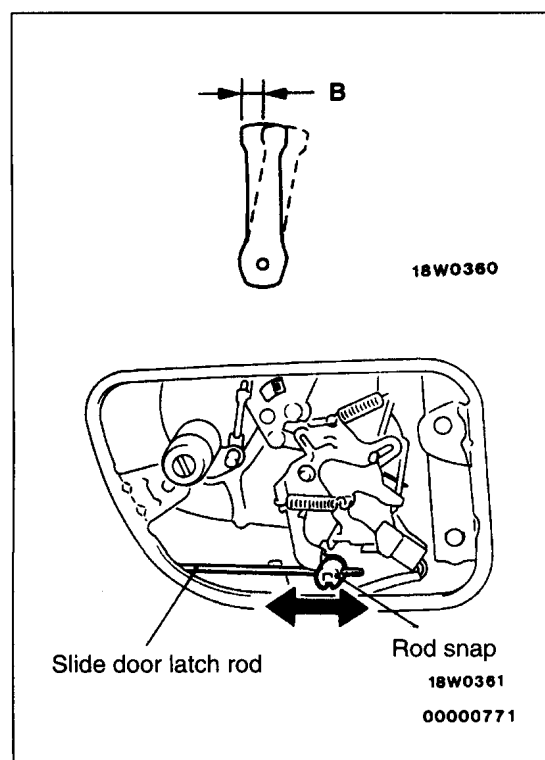
DOOR INSIDE HANDLE PLAY INSPECTION AND ADJUSTMENT

120002104

Standard value (B): 4–9 mm

If the play is not within the standard value, adjust by the following procedure.

- (1) Remove the slide door trim and the waterproof film. (Refer to P.42-53.)
- (2) Remove the slide door outside handle.
- (3) Move the slide door latch rod forward or back.



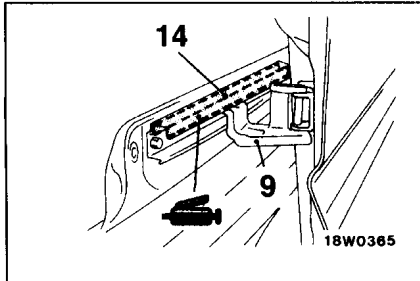
SLIDE DOOR ASSEMBLY

120000460

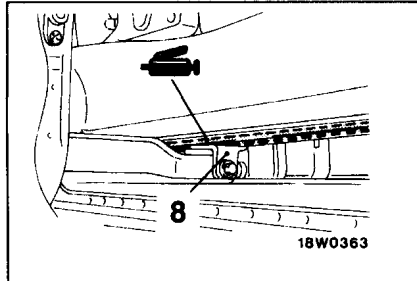
REMOVAL AND INSTALLATION

Post-installation Operation

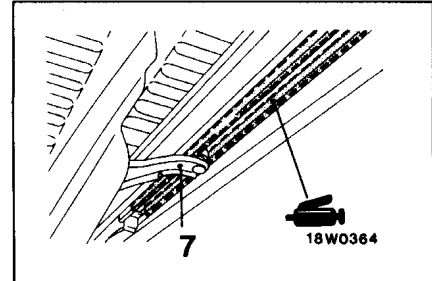
- Door Adjustment (Refer to P.42-49.)



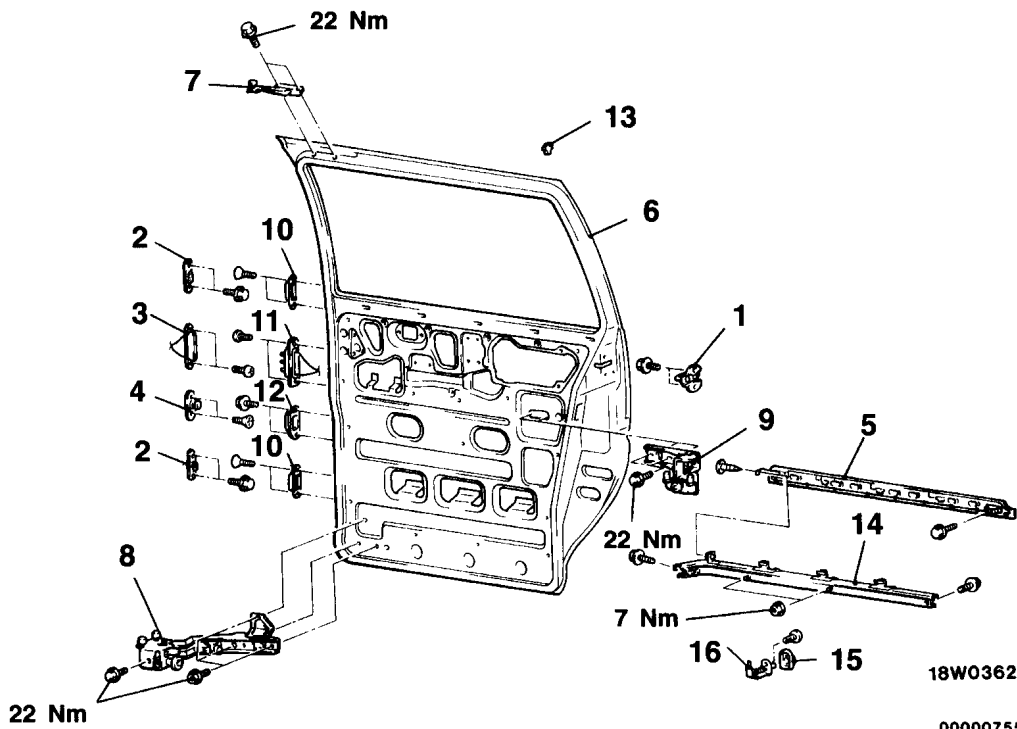
Sliding surface between center roller arm and center rail



Sliding surface between body and roller



Sliding surface between body and roller



- ▶A◀ 1. Striker
- ▶A◀ 2. Stopper (A)
- ▶A◀ 3. Contact switch (A)
- ▶A◀ 4. Slide door front hook

Slide door assembly removal steps

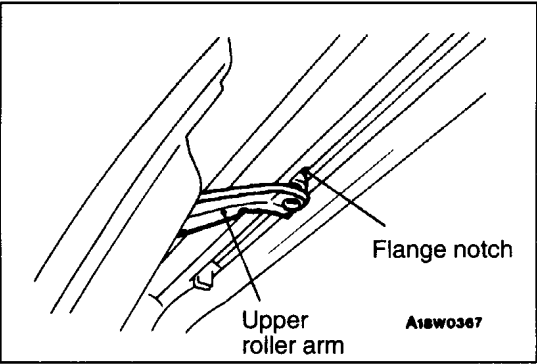
◀A▶

- 5. Slide door center rail cover
- 6. Slide door assembly
- 7. Upper roller arm
- 8. Lower roller arm
- 9. Center roller arm
- ▶A◀ 10. Stopper (B)

- Slide door trim (Refer to P.42-53.)
- 11. Contact switch (B)
- 12. Slide door front catch
- 13. Open upper stopper
- 14. Slide door center rail

Door switch removal steps

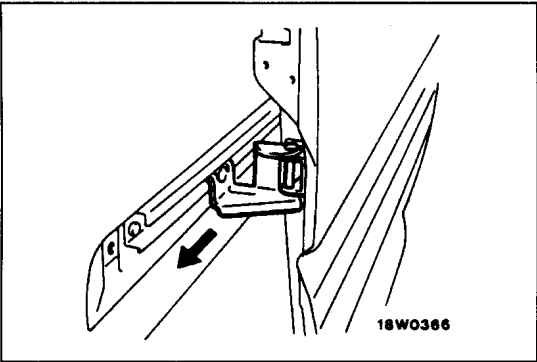
- 15. Door switch cap
- 16. Door switch



REMOVAL SERVICE POINT

◀A▶ SLIDE DOOR ASSEMBLY REMOVAL

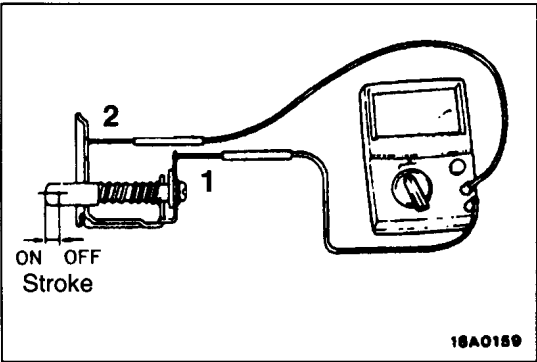
1. Remove the upper roller arm from the flange notch at the rear edge of the upper rail.
2. Move the slide door assembly to the rear, and then remove the center roller arm from the center rail.



INSPECTION

DOOR SWITCH CONTINUITY INSPECTION

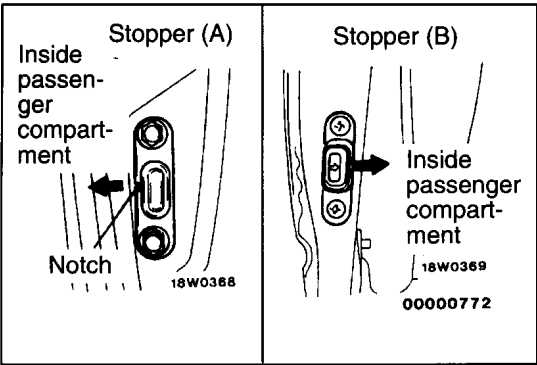
Switch position	Terminal No.	
	1	2
Open (ON)		
Depressed (OFF)		



INSTALLATION SERVICE POINT

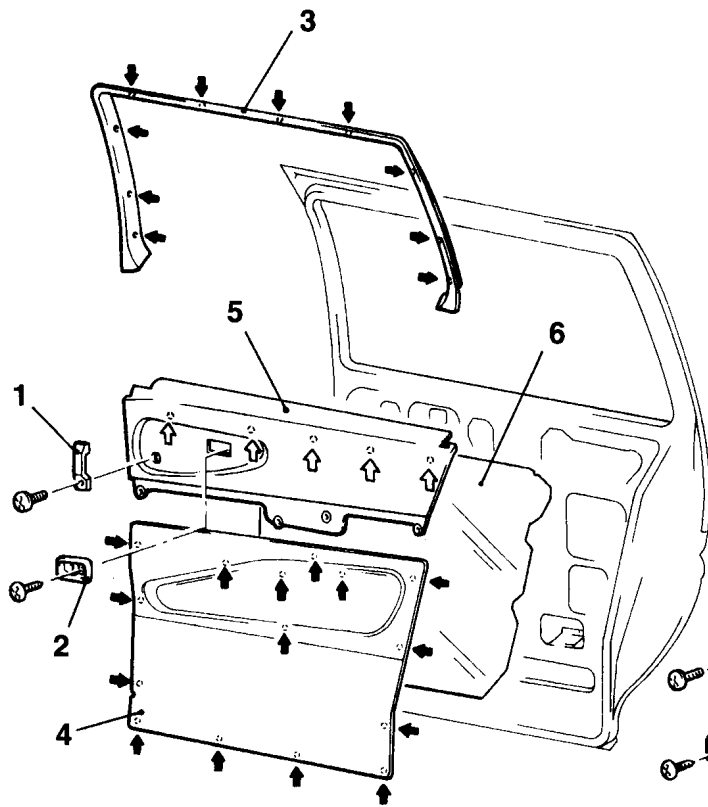
▶A◀ STOPPER (B), (A) INSTALLATION

Install stopper (A) and stopper (B) so that the notch and arrow respectively face inside the passenger compartment.

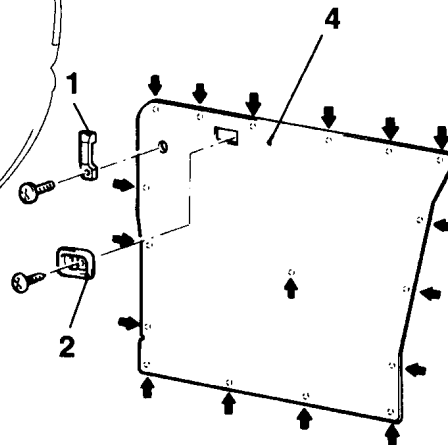
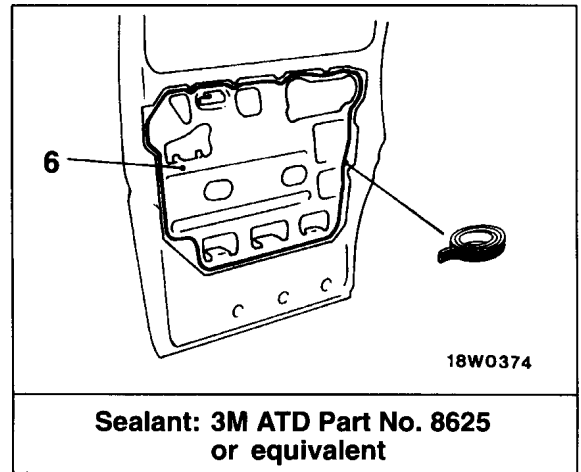


SLIDE DOOR TRIM AND WATERPROOF FILM REMOVAL AND INSTALLATION

120000461



<Full-trim type>





<Partial-trim type>

18W0371

00000756

NOTE

- (1) The  mark indicates the resin clip position.
(2) The  mark indicates the sheet metal clip position.

Removal steps

1. Slide door inside handle
2. Inside lock cover
3. Slide door sash trim
4. Slide door trim
5. Slide door upper trim
6. Waterproof film

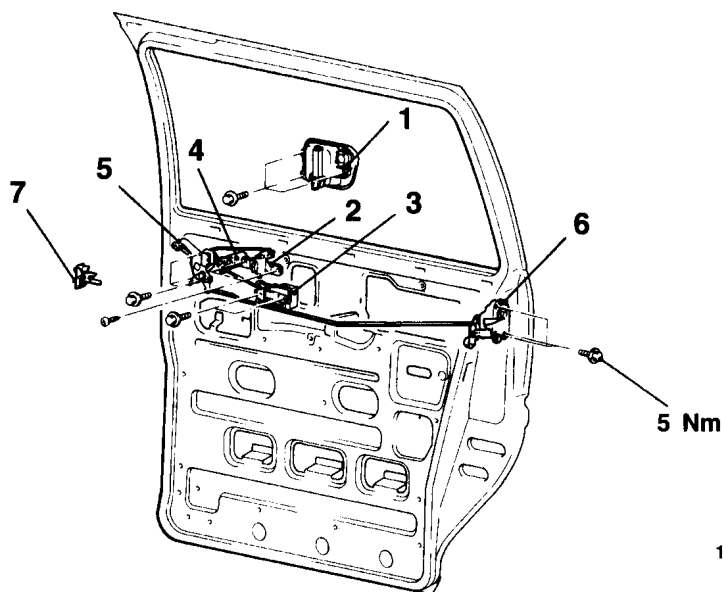
SLIDE DOOR HANDLE AND LATCH

120000462

REMOVAL AND INSTALLATION

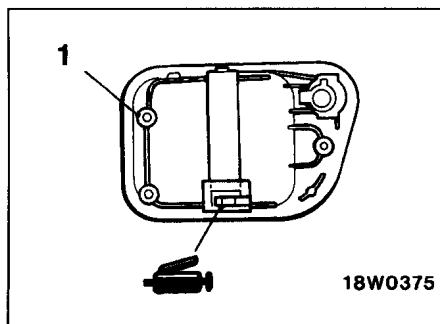
Post-Installation Operation

- Door Outside Handle Play Inspection and Adjustment (Refer to P.42-50.)
- Door Inside Handle Play Inspection and Adjustment (Refer to P.42-50.)

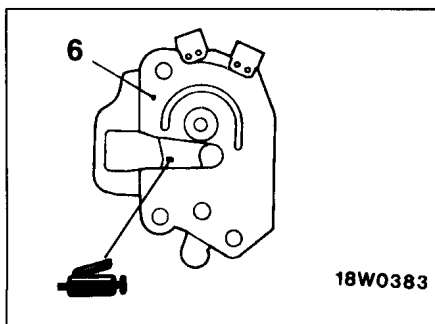


18W0388

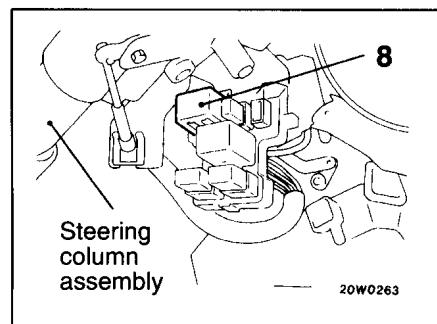
00000757



18W0375



18W0383



20W0263

Slide door outside handle removal steps

- Slide door inside handle, slide door trim, waterproof film (Refer to P.42-53.)
1. Slide door outside handle

Slide door latch removal steps

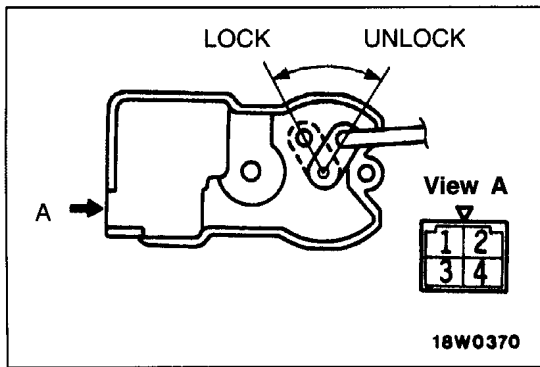
- Slide door inside handle, slide door trim, waterproof film (Refer to P.42-53.)
2. Inside lock knob
 3. Slide door lock actuator
 4. Slide door lock key cylinder



5. Slide door link assembly
6. Slide door latch assembly
7. Slide door child protection

Door lock control unit removal

8. Door lock control unit

**INSPECTION****SLIDE DOOR LOCK ACTUATOR INSPECTION**

<L.H. drive vehicles>

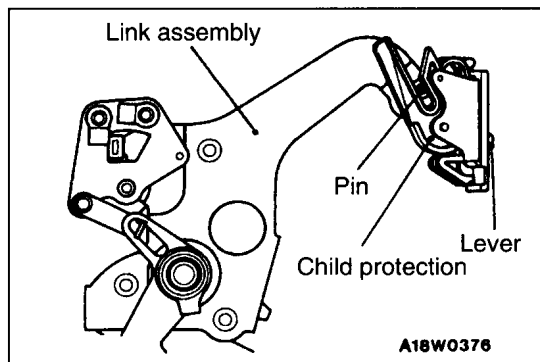
Lock position	Terminal No.				Rod movement
	1	2	3	4	
LOCK	⊖	----	⊕		LOCK→UNLOCK
UNLOCK	⊕	----	⊖		UNLOCK→LOCK

<R.H. drive vehicles>

Lock position	Terminal No.				Rod movement
	1	2	3	4	
LOCK	⊕	----	⊖		LOCK→UNLOCK
UNLOCK	⊖	----	⊕		UNLOCK→LOCK

DOOR LOCK CONTROL UNIT INSPECTION

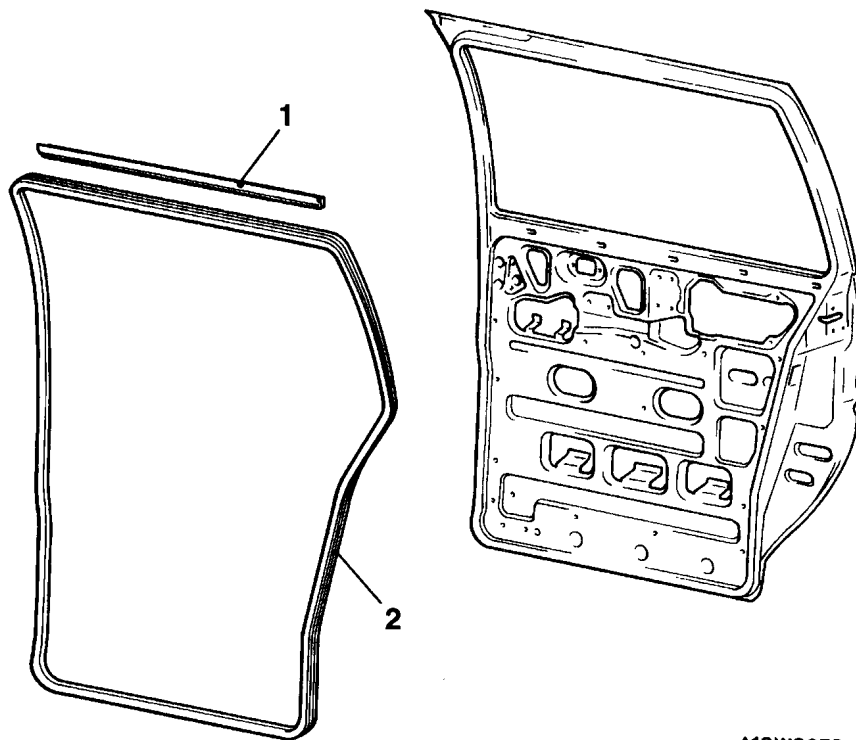
(Refer to P.42-45.)

**INSTALLATION SERVICE POINT****▶A◀ SLIDE DOOR CHILD PROTECTION INSTALLATION**

1. Lock the child protection lock lever.
2. Insert the link assembly pin into the child protection lock lever, and then install the child protection lock to the door.

SLIDE DOOR WEATHERSTRIP REMOVAL AND INSTALLATION

120000463



A18W0373

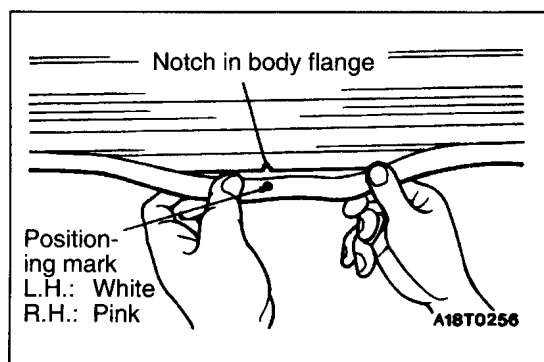
Removal steps

- A◄
1. Slide door opening outer weatherstrip
 2. Slide door opening upper weatherstrip

INSTALLATION SERVICE POINT

►A◄ SLIDE DOOR OPENING OUTER WEATHERSTRIP INSTALLATION

Check the identification colours at left and right . Then align the weatherstrip positioning mark with the notch in the body flange to install the weatherstrip.



TAILGATE

120000464

SERVICE SPECIFICATION

Items	Standard value
Tailgate handle play mm	2–3


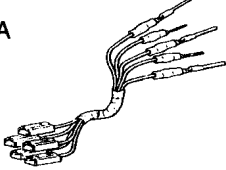



SEALANT

120000465

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

SPECIAL TOOLS

120000466

Tool	Number	Name	Use
	MB990784	Ornament remover	Removal of the tailgate trim
<div>A </div> <div>B </div> <div>C </div> <div>D </div>	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, C: Power circuit inspection D: Commercial tester connection

TROUBLESHOOTING

120000467

INSPECTION CHART FOR TROUBLE SYMPTOMS

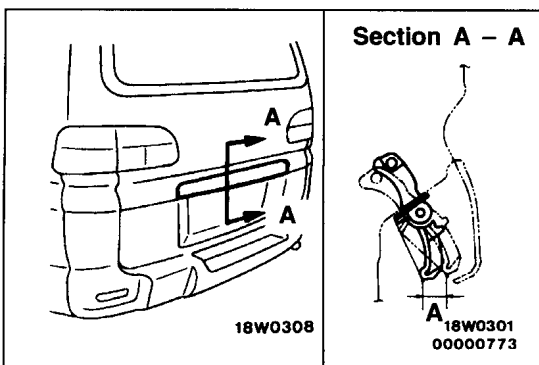
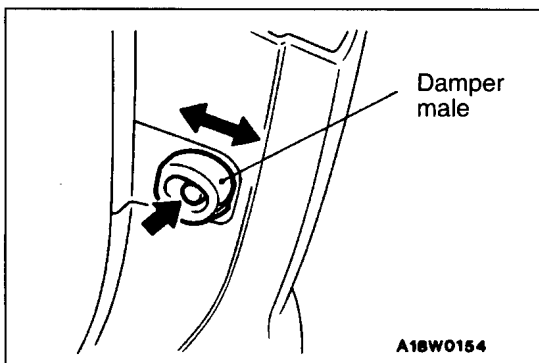
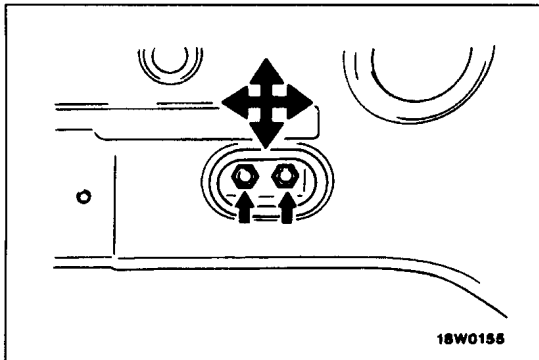
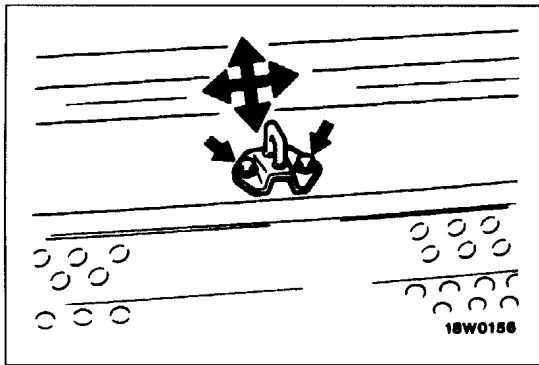
Trouble symptom	Reference page
Door lock mechanism does not operate.	P.42-25

SERVICE ADJUSTMENT PROCEDURES

120000468

TAILGATE FIT ADJUSTMENT

1. If the striker and latch do not mesh properly, move the striker up and down and to the left and right.
2. If the clearance around the tailgate is not even when the tailgate is closed, move the tailgate hinge forward and back or to the left and right.
3. Check the fitting of the damper male when the tailgate is closed. If the position is not correct, move the damper male forward and back.



TAILGATE HANDLE PLAY INSPECTION

120002105

1. Check the tailgate handle play.
Standard value (A): 2–3 mm
2. If the play is not within the standard value range, check and replace the tailgate handle or the tailgate latch assembly.

TAILGATE ASSEMBLY

120002521

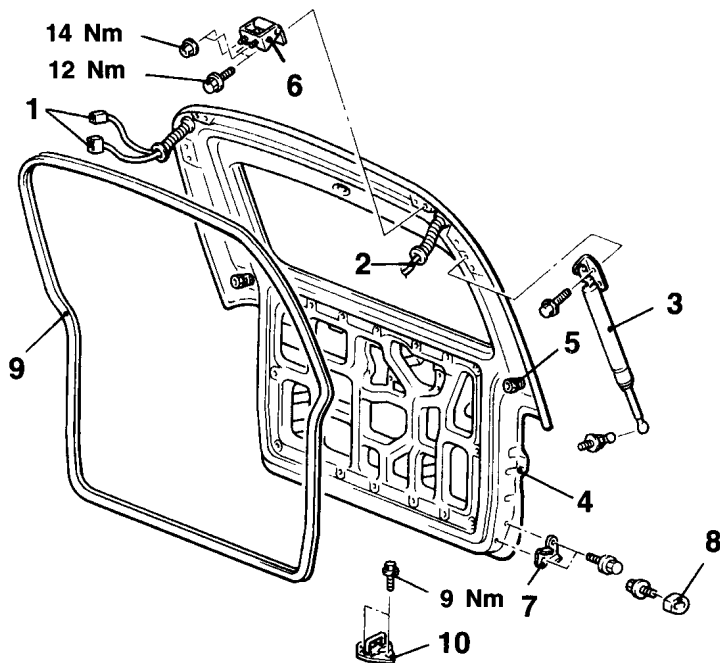
REMOVAL AND INSTALLATION

Pre-removal Operation

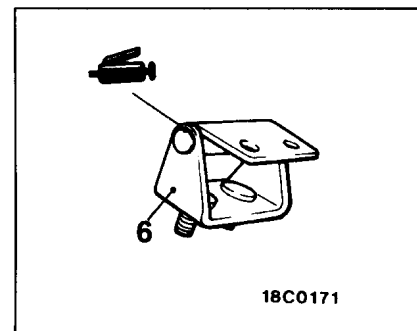
- Rear Headlining Removal
(Refer to GROUP 52A – Headlining.)

Post-installation Operation

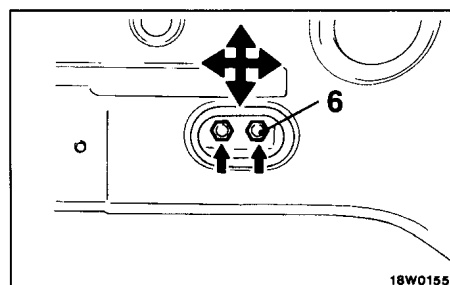
- Rear Headlining Installation
(Refer to GROUP 52A – Headlining.)
- Tailgate Fit Adjustment (Refer to P.42-58.)



18W0243

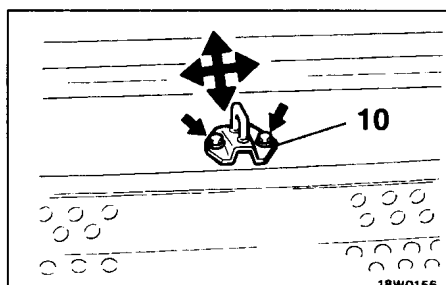


18C0171



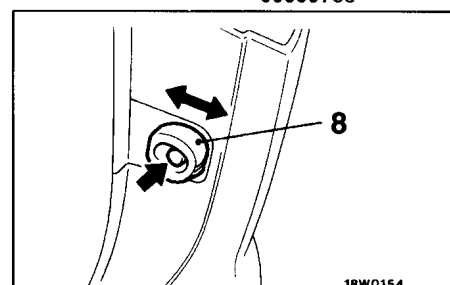
18W0155

Tailgate clearance adjustment



18W0156

Tailgate height and tailgate striker meshing adjustment



18W0154

Tailgate fit adjustment

Removal steps

1. Harness connector
2. Rear window washer tube connection
3. Tailgate gas spring
4. Tailgate assembly
5. Tailgate bumper
6. Tailgate hinge
7. Damper female

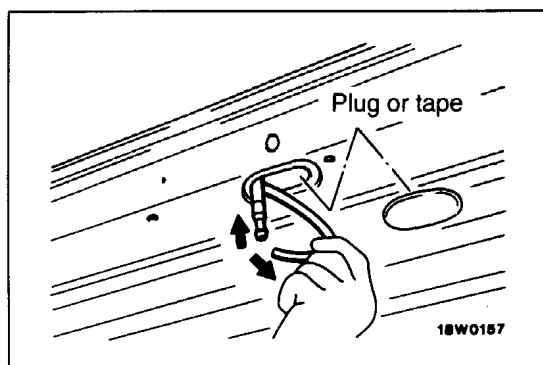
8. Damper male
9. Tailgate opening weatherstrip

Striker removal

10. Striker

Caution

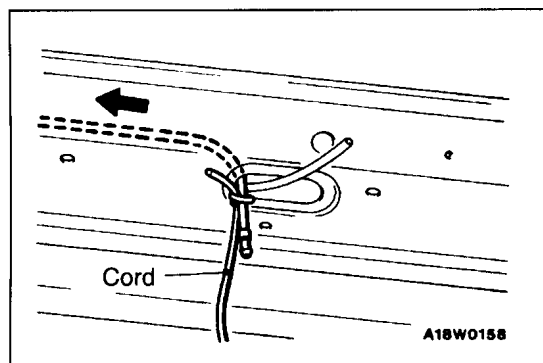
1. Do not disassemble or throw the tailgate gas spring into fire.
2. Punch a hole in the gas spring before disposal to release the gas inside.



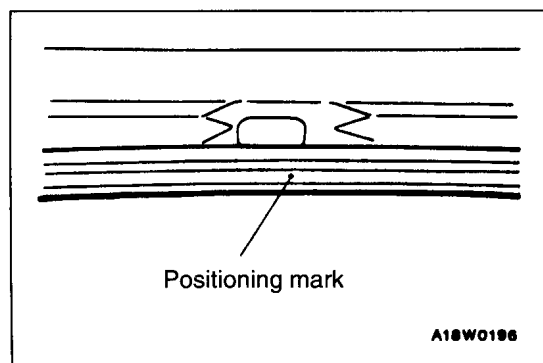
REMOVAL SERVICE POINT

◀A▶ REAR WINDOW WASHER TUBE DISCONNECTION

1. Pull the rear window washer tube through the access hole in the middle of the tailgate, and then disconnect the tube.



2. If reusing the tailgate, tie a cord to the end of the rear window washer tube for reinstallation. Then remove the rear window washer tube while letting the cord pass and stay inside the tailgate.



INSTALLATION SERVICE POINT

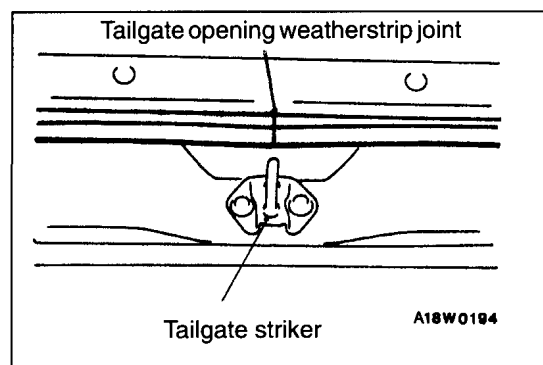
▶A◀ TAILGATE OPENING WEATHERSTRIP INSTALLATION

Check the identification colour, and then align the positioning mark with the top centre of the tailgate to install the weatherstrip.

Item	Identification colour
For high roof	Pink
For standard roof	White

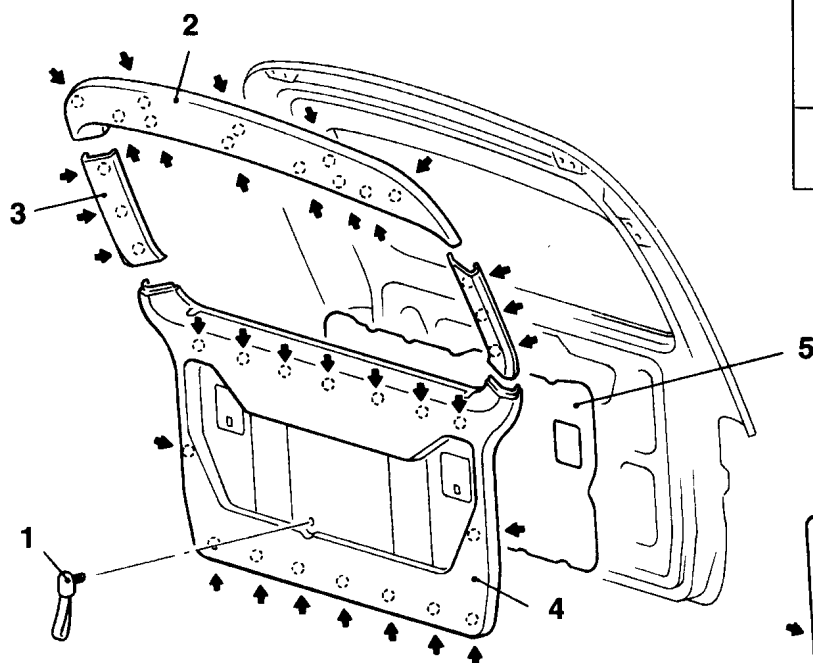
NOTE

Check that the joint of the tailgate opening weatherstrip is centred.


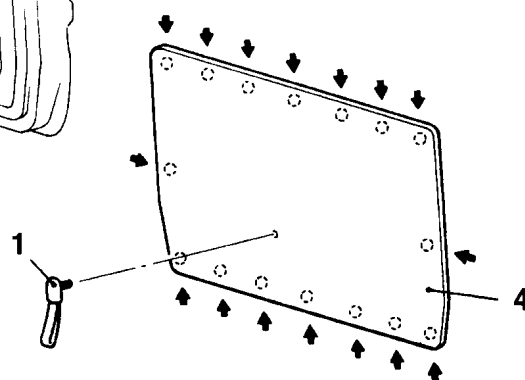
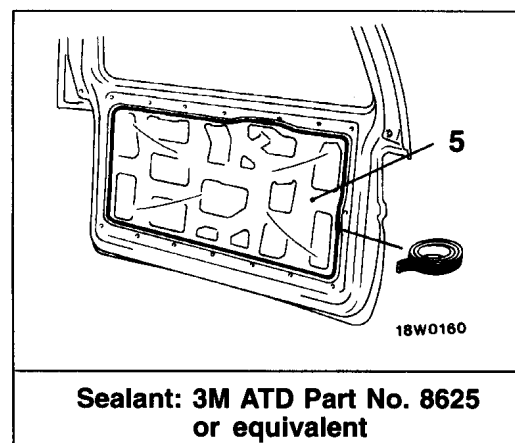


TAILGATE TRIM AND WATERPROOF FILM REMOVAL AND INSTALLATION

120000470



<Full-trim type>

NOTEThe  mark indicates the resin clip position.

<Partial-trim type>

18W0244

00000759

Removal steps

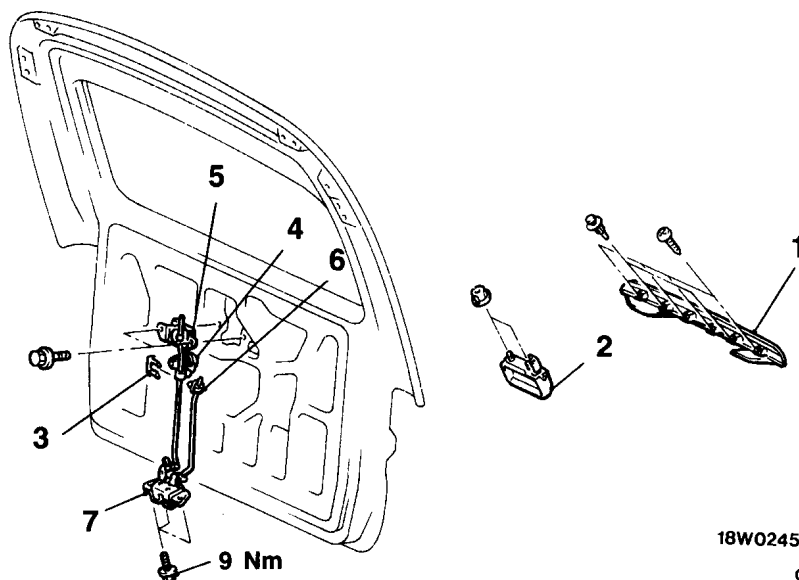
1. Pull down strap assembly
2. Tailgate upper trim
3. Tailgate upper side trim
4. Tailgate lower trim
5. Waterproof film

TAILGATE HANDLE AND LATCH REMOVAL AND INSTALLATION

120000471

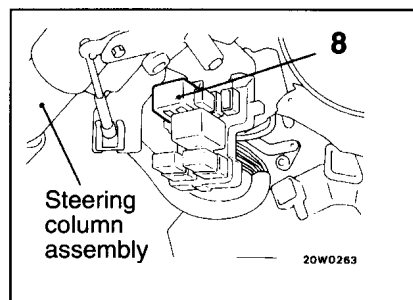
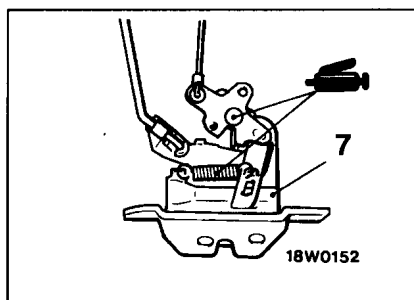
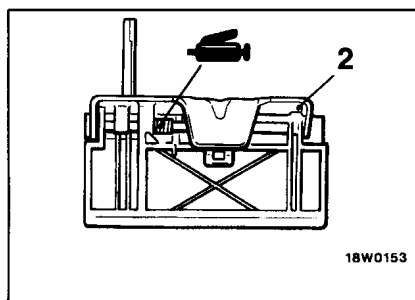
Post-installation Operation

- Tailgate Handle Play Inspection (Refer to P.42-58.)



18W0245

00000760


Tailgate handle and latch and lock key cylinder removal

- Tailgate trim and waterproof film (Refer to P.42-61.)
- 1. Tailgate garnish
- 2. Tailgate handle
- 3. Cylinder lock retainer
- 4. Tailgate lock key cylinder

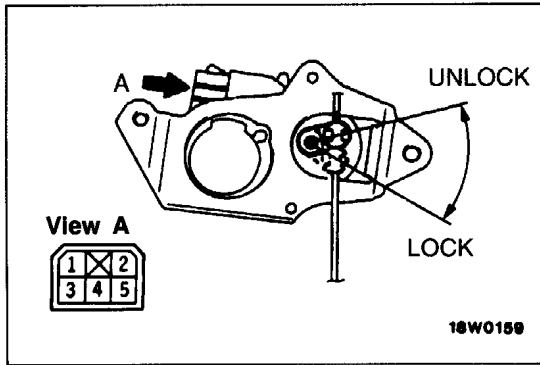
Tailgate latch removal

- Tailgate trim and waterproof film (Refer to P.42-61.)
- 5. Tailgate lock actuator

- 6. Holder
- 7. Tailgate latch assembly

Door lock control unit removal

- 8. Door lock control unit



INSPECTION

TAILGATE LOCK ACTUATOR INSPECTION

Lock position	Terminal No.				Rod movement
	1	2	3	4	
LOCK	⊕ -	- ⊖			LOCK→UNLOCK
UNLOCK	⊖ -	- ⊕			UNLOCK→LOCK

DOOR LOCK CONTROL UNIT INSPECTION

(Refer to P.42-45.)

FRONT SUNROOF

120000472

SERVICE SPECIFICATIONS

Items	Standard value
Roof lid glass sliding resistance N	108 or less
Sunroof motor clutch slippage force N	29–59

TROUBLESHOOTING

120000473

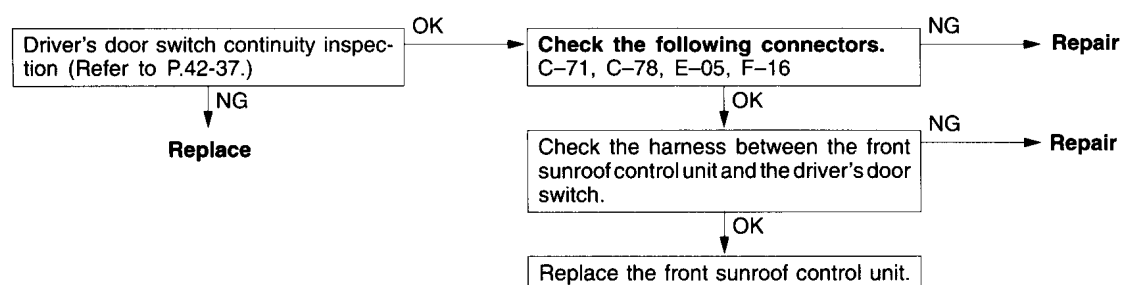
INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Inspection procedure	Reference page
Front sunroof does not operate within 30 seconds after driver's door is opened.	1	P.42-64
Front sunroof does not operate at all.	2	P.42-64

INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

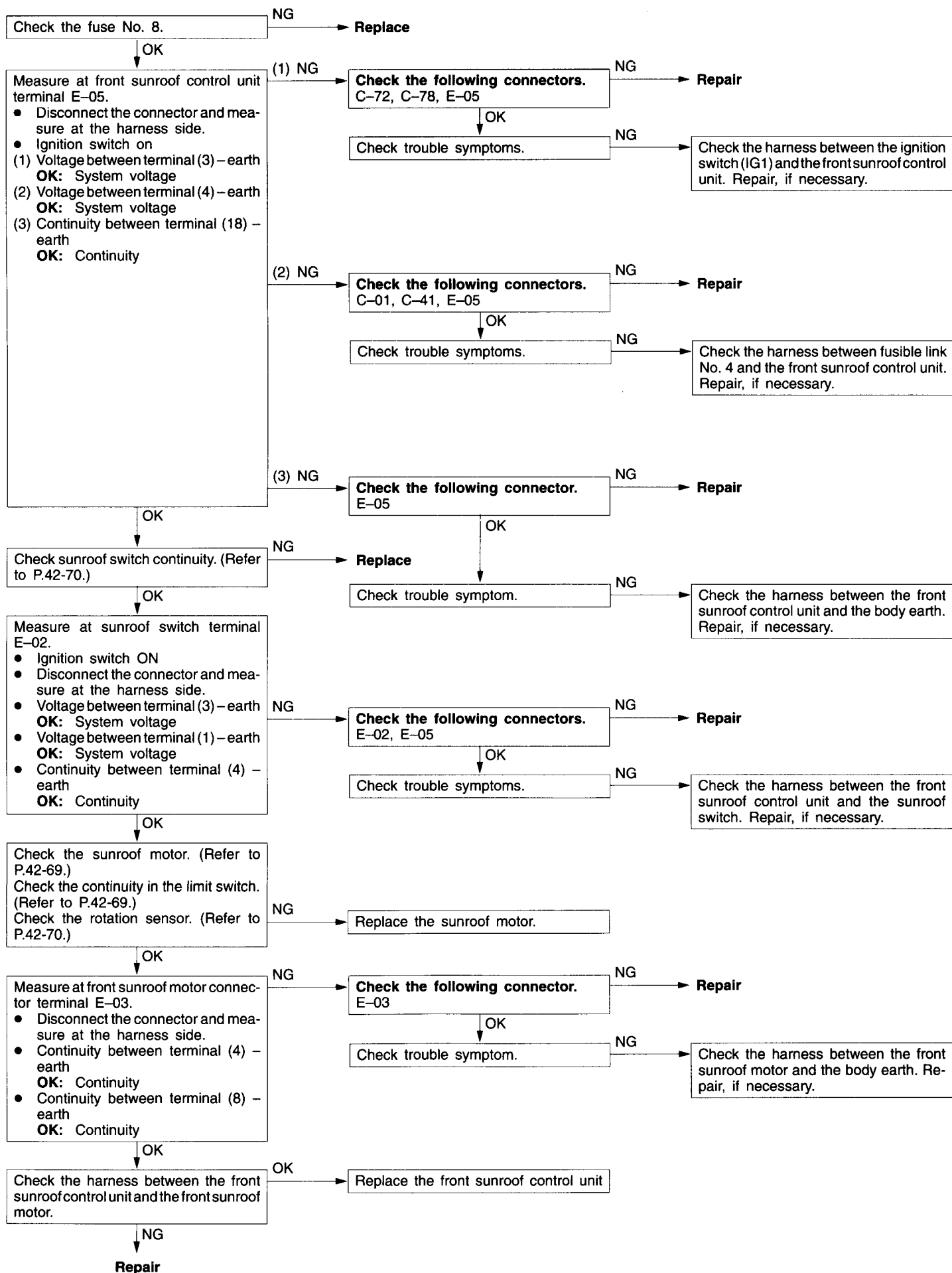
Inspection Procedure 1

Front sunroof does not operate within 30 seconds after driver's door is opened.	Probable cause
<p>[Comment] After the driver's door is opened within 30 seconds after the ignition switch is turned off, the sunroof can still be operated for a further 30 seconds. If it is impossible, the driver's door switch or the front sunroof control unit may be defective.</p>	<ul style="list-style-type: none"> • Malfunction of door switch (driver's side) • Malfunction of front sunroof control unit • Malfunction of wiring harness or connector



Inspection Procedure 2

Front sunroof does not operate at all.	Probable cause
<p>[Comment] One of the following items may be defective. Sunroof switch Front sunroof motor Front sunroof control unit Power supply circuit (including the fuse)</p>	<ul style="list-style-type: none"> • Malfunction of sunroof switch • Malfunction of front sunroof motor • Malfunction of front sunroof control unit • Malfunction of wiring harness or connector



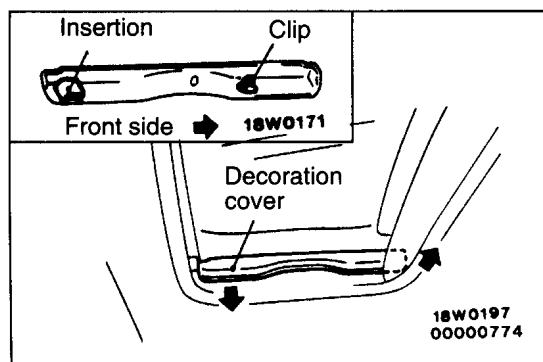
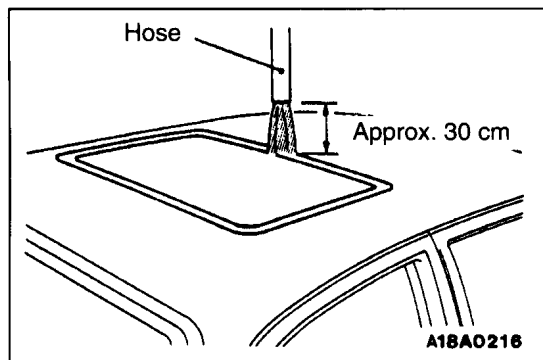
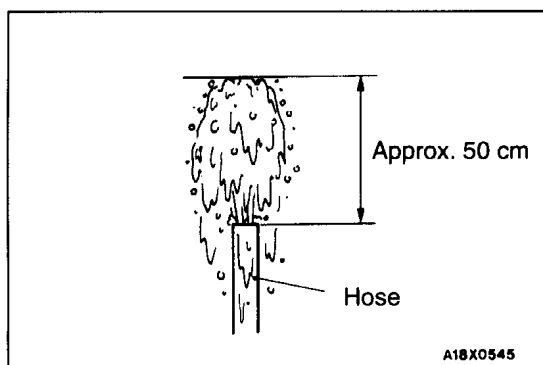
SERVICE ADJUSTMENT PROCEDURES

120000474

SUNROOF LEAKAGE INSPECTION

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 about 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.

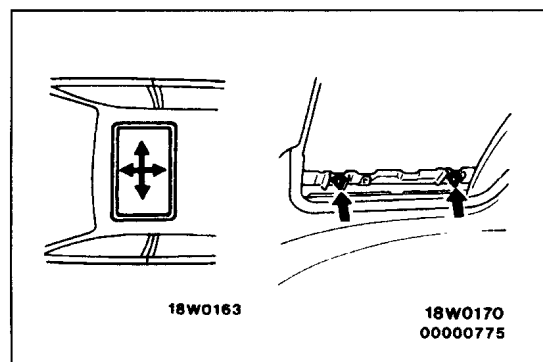


SUNROOF FIT ADJUSTMENT

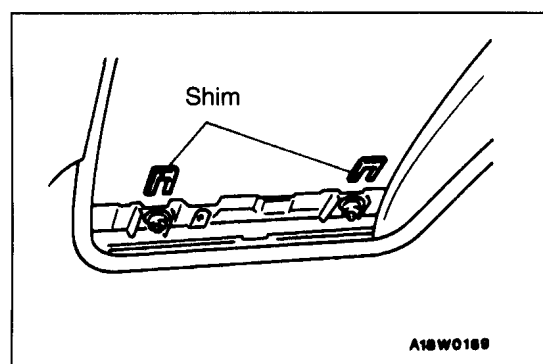
1. Fully close the roof lid glass.
2. Fully open the sunshade.
3. Lower the front edge of the decoration cover and then pull the rear edge into the passenger compartment to remove the decoration cover.
4. Loosen the four roof lid glass assembly mounting nuts to adjust the roof lid glass assembly forward and back or to the left and right.

NOTE

If impossible by the above step, adjust the sunroof motor by tilting up the sunroof fully. (Refer to P.42-70.)



5. To adjust the height of the roof lid glass, loosen the four roof lid glass assembly mounting nuts. Then change the shims between the roof lid glass assembly and the lifter.
6. Check that the sunroof operates smoothly.



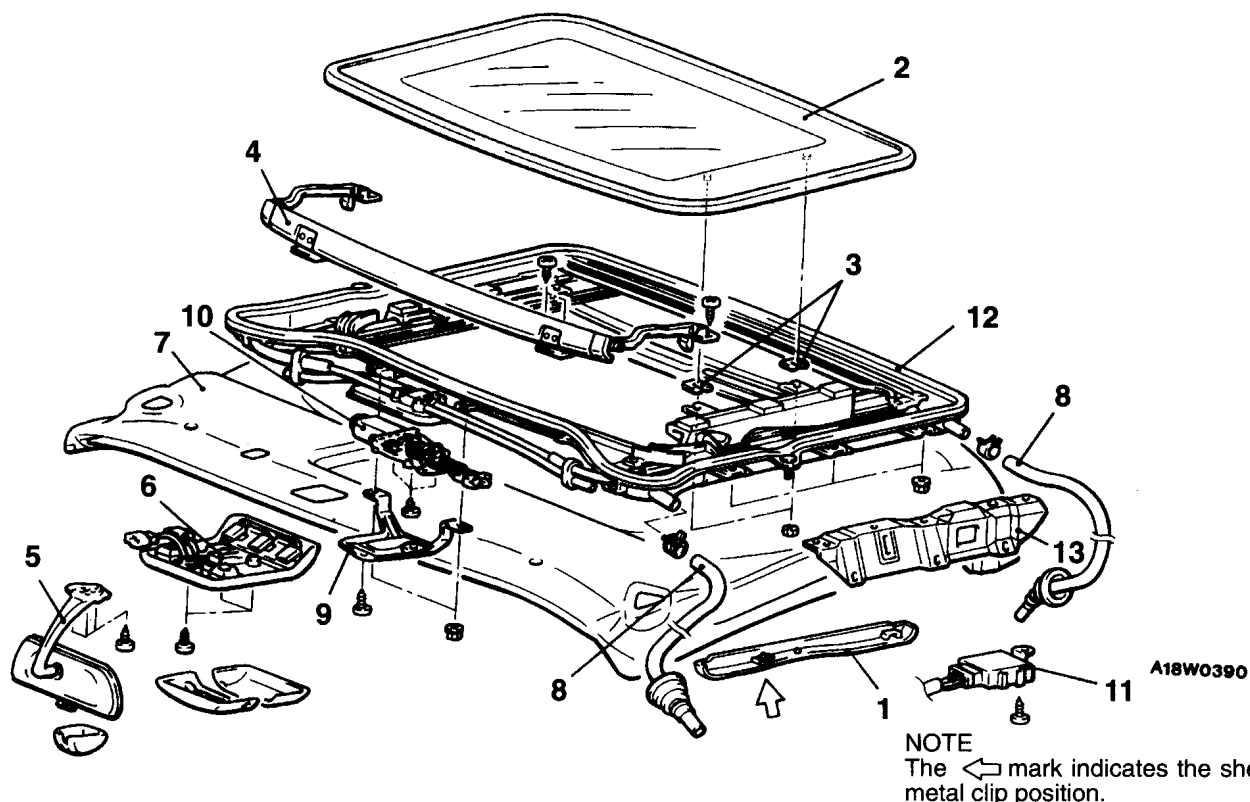
FRONT SUNROOF

REMOVAL AND INSTALLATION

Post-Installation Operation

<Roof Lid Glass Assembly and Front Sunroof Assembly>

- Sunroof water Test (Refer to P.42-66.)
- Sunroof Fit Adjustment (Refer to P.42-66.)

**Roof lid glass assembly removal steps**

1. Decoration cover
2. Roof lid glass assembly
3. Shim

Deflector removal steps

4. Deflector

Front sunroof switch and room lamp assembly removal steps

5. Room mirror
6. Front sunroof switch and room lamp assembly

Drain hose removal steps

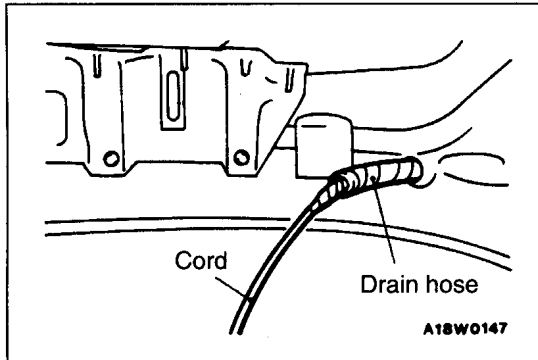
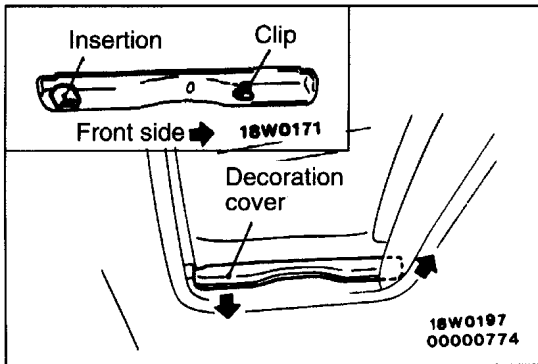
7. Front headlining (Refer to GROUP 52A – Headlining.)
8. Drain hose

Front sunroof motor and front sunroof control unit removal steps

7. Front headlining (Refer to GROUP 52A – Headlining.)
9. Room lamp bracket
10. Front sunroof motor
11. Front sunroof control unit

Front sunroof assembly removal steps

7. Front headlining (Refer to GROUP 52A – Headlining.)
8. Drain hose connection
9. Room lamp bracket
12. Front sunroof assembly
13. Set bracket



REMOVAL SERVICE POINTS

◀A▶ DECORATION COVER REMOVAL

Lower the front edge of the decoration cover and then pull the rear edge into the passenger compartment to remove the decoration cover.

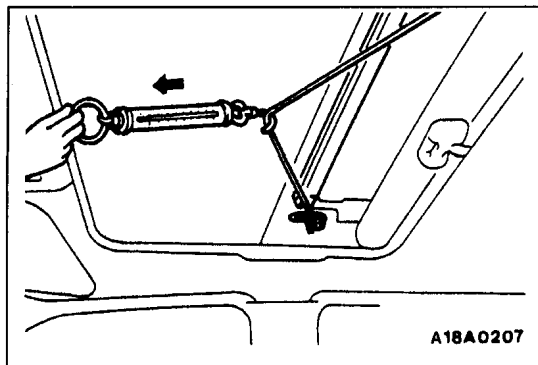
◀B▶ DRAIN HOSE REMOVAL

1. Remove the fender. (Refer to P.42-5.)
2. Remove the grommet, 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.

◀C▶ FRONT SUNROOF MOTOR REMOVAL

Caution

Always tilt up the roof lid glass fully before removing the sunroof motor. Otherwise, the sunroof will not operate properly after reinstalling the motor.



INSPECTION

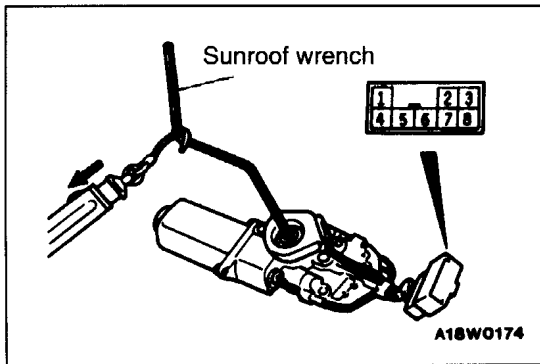
SLIDING RESISTANCE OF ROOF LID GLASS CHECK

Remove the sunroof motor, and then check the sliding resistance of the roof lid glass by the following procedure.

- (1) Remove the front headlining. (Refer to GROUP 52A - Headlining.)
- (2) Remove the decoration cover.
- (3) Loosen the roof lid glass front mounting nuts and tie a rope to them.
- (4) Tilt up the roof lid glass fully and then remove the sunroof motor.
- (5) Use a spring balance to measure the sliding resistance of the roof lid glass.

Standard value: 108 N or less

- (6) If the sliding resistance of the roof lid glass is higher than the standard value, check the following.
Sunroof assembly installation, warping or jamming by foreign materials
Drive cable connection
Tilt of roof lid glass
- (7) Tilt up the roof lid glass fully, and set the sunroof motor to the specified position, and then install the sunroof motor. (Refer to P.42-70.)



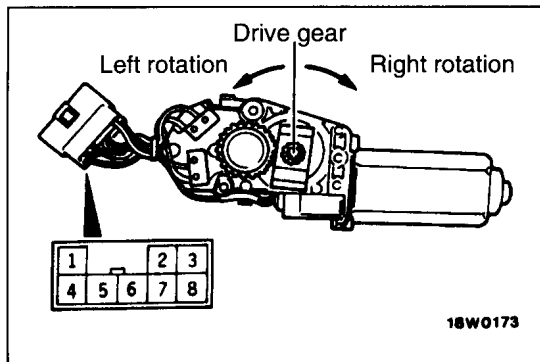
SLIDING FORCE OF SUNROOF MOTOR'S CLUTCH CHECK

1. Insert the sunroof wrench of the on-board tools into the hexagonal hole in the motor drive shaft, and hook a spring balance as shown in the illustration.
2. Apply battery voltage between terminals (1) and (2) of the sunroof motor connector to operate the motor.
3. Measure the load on the spring balance at the point where the rotation torque of the motor matches the spring force of the spring balance.

Standard value: 29–59 N

Caution

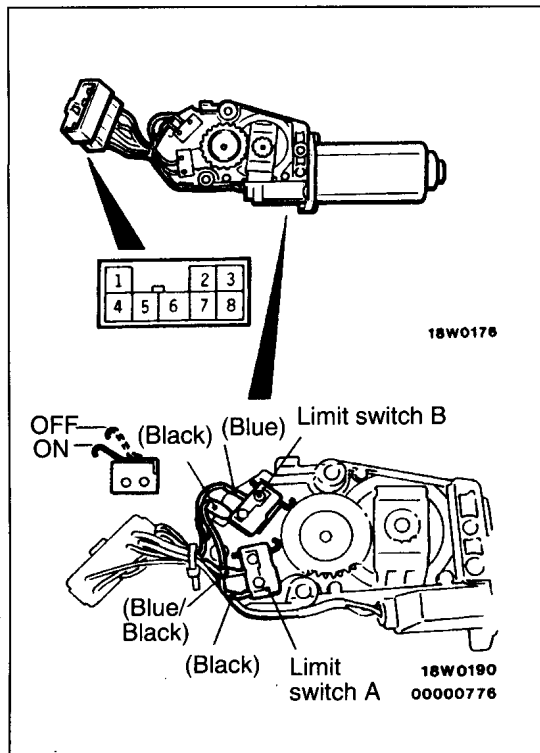
1. The spring balance should be kept a right angle to the sunroof wrench.
2. If a wrench other than that in the on-board tools is used, the value for the clutch sliding force will be different, so only the on-board tool should be used.
4. If the clutch sliding force is outside the standard value, turn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



SUNROOF MOTOR CHECK

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

Battery connection terminal		Drive gear rotation direction
1	2	
⊖	⊕	Left
⊕	⊖	Right

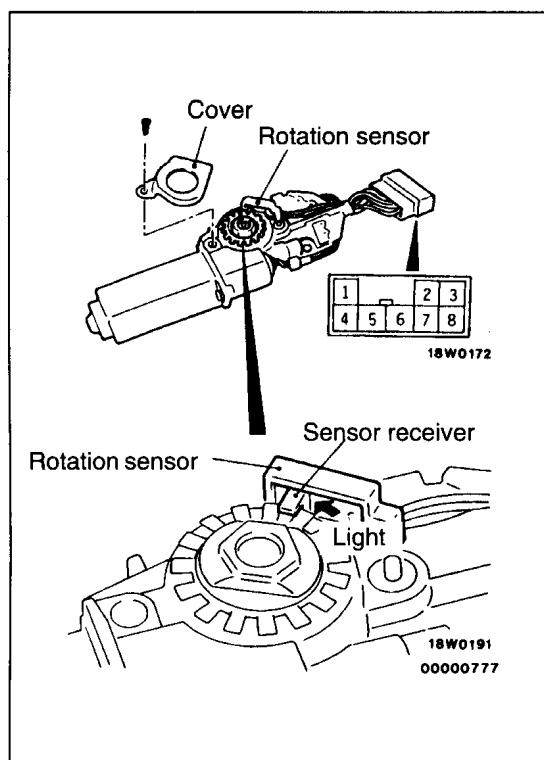


LIMIT SWITCH CONTINUITY CHECK

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

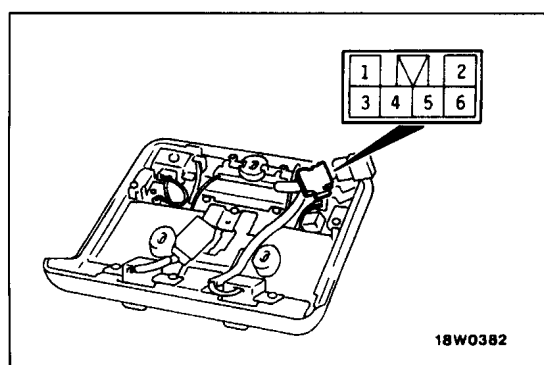
Switch		Terminal No.		
		4	5	6
Limit switch A	ON	○	○	○
	OFF			
Limit switch B	ON	○	○	
	OFF			

2. Check the identification colours. Then install the limit switches as shown in the illustration.



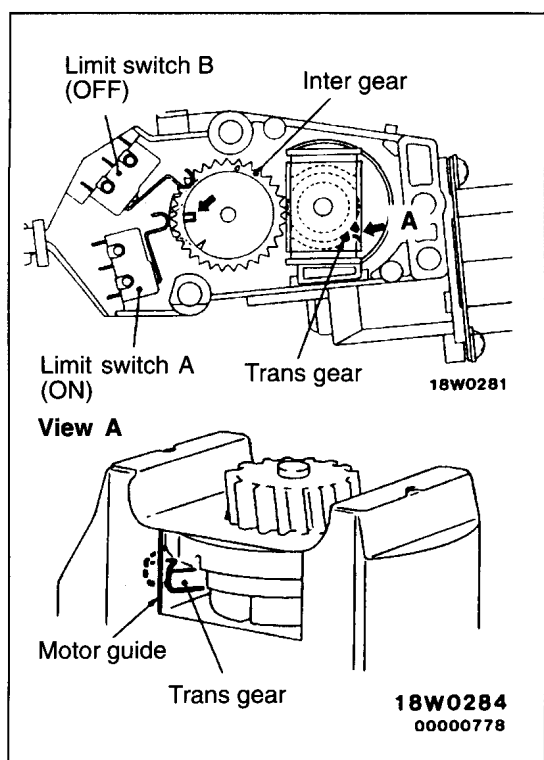
ROTATION SENSOR INSPECTION

1. When connecting an ohmmeter negative probe to terminal (3) and the positive probe to terminal (8), there should be continuity. When the probes are reversed, there should be no continuity.
2. Remove the cover, and then check that there is no continuity when connecting the negative probe to terminal (7) and the positive probe to terminal (8). Also check that there is continuity when the probes are connected to the same terminals and light is shined onto the sensor receiver.



SUNROOF SWITCH CONTINUITY INSPECTION

Switch position	Terminal No.		
	1	3	4
Open		○	○
Close	○		○

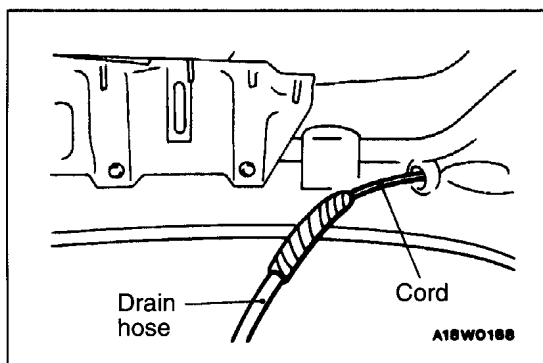


INSTALLATION SERVICE POINTS

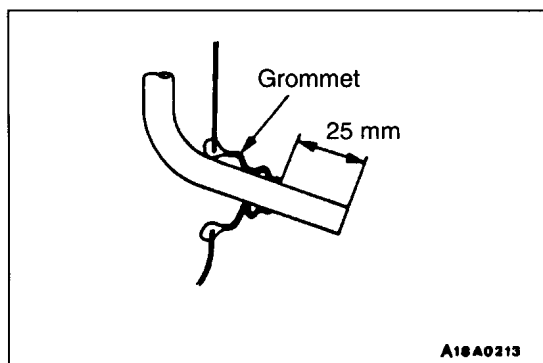
►A◄ FRONT SUNROOF MOTOR INSTALLATION

Use the sunroof wrench to set the sunroof motor to the full tilt-up position by the following procedure.

- (1) Align the pawl of the inter gear with the on position of limit switch (A).
- (2) Align the groove of the trans gear with the corner of the motor guide.

**►B◄ DRAIN HOSE INSTALLATION**

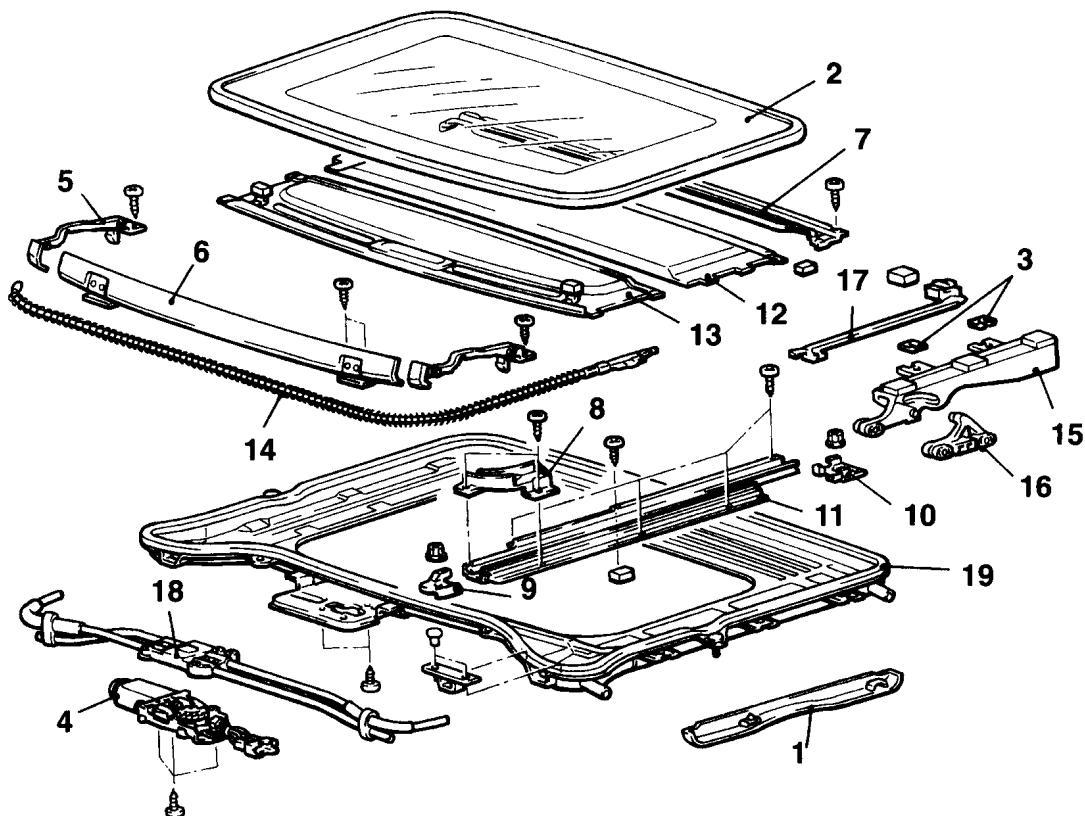
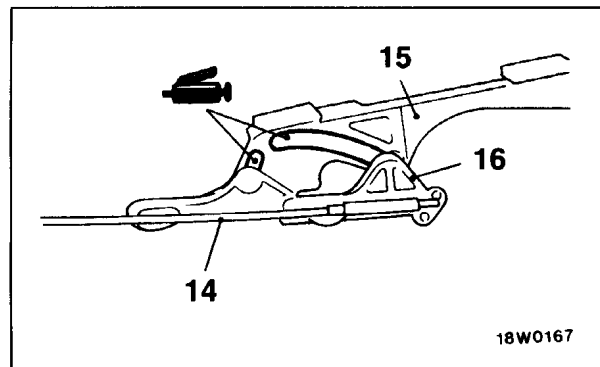
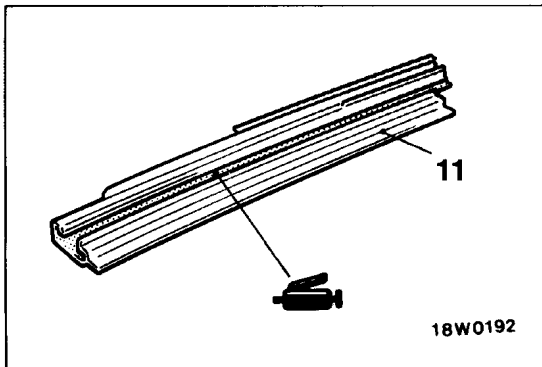
1. Tie the end of the drain hose to the cord that stays in the tailgate, and wind plastic tape around the tie until it is smooth.
2. Pull the cord to pull in the drain hose.



3. Install the grommet and let the drain hose extend as shown in the illustration.
4. Install the fender. (Refer to P.42-5.)

DISASSEMBLY AND REASSEMBLY

120002116



18W0298

00000761

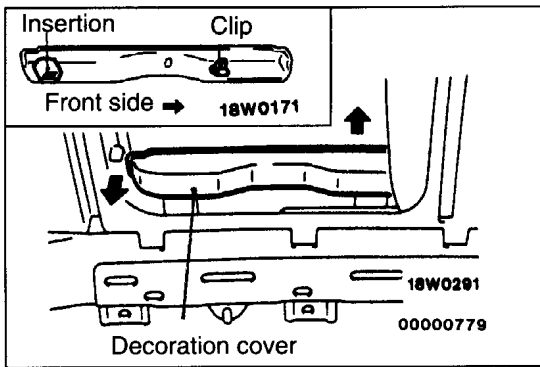
Disassembly steps

◀A▶

1. Decoration cover
2. Roof lid glass assembly
3. Shim
4. Front sunroof motor
5. Deflector link assembly
6. Deflector assembly
7. Drip rail
8. Front drip
9. Front holder

◀B▶ ▶A▶

10. Rear holder
11. Rail assembly
12. Sunshade (B)
13. Sunshade (A)
14. Drive cable
15. Lifter assembly
16. Slider assembly
17. Timing rear assembly
18. Drive unit assembly
19. Frame assembly



DISASSEMBLY SERVICE POINTS

◀A▶ DECORATION COVER REMOVAL

Lower the front edge of the decoration cover and then pull the rear edge into the passenger compartment to remove the decoration cover.

◀B▶ FRONT SUNROOF MOTOR REMOVAL

Caution

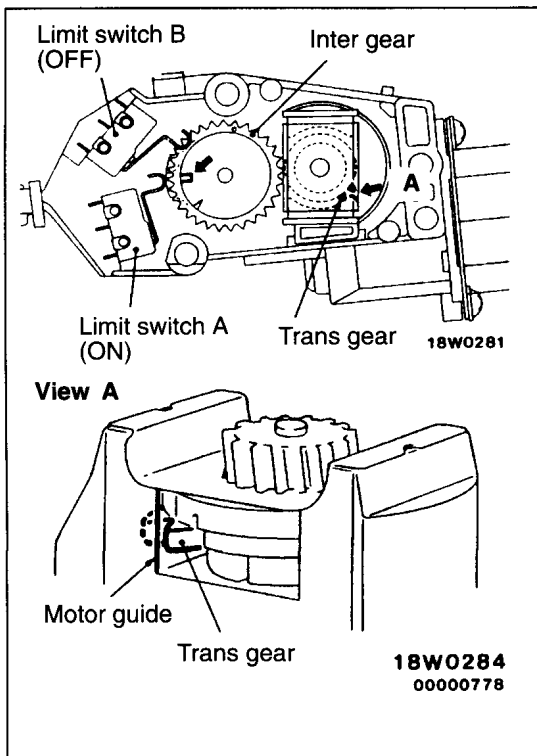
Always tilt up the roof lid glass fully before removing the sunroof motor. Otherwise, the sunroof will not operate properly after reinstalling the motor.

REASSEMBLY SERVICE POINT

▶A◀ FRONT SUNROOF MOTOR INSTALLATION

Use the sunroof wrench to set the sunroof motor to the full tilt-up position by the following procedure.

- (1) Align the pawl of the inter gear with the position of limit switch (A).
- (2) Align the groove of the trans gear with the corner of the motor guide.



REAR SUNROOF

120000476

SERVICE SPECIFICATIONS

Items	Standard value
Roof lid glass sliding resistance N	216 or less
Sunroof motor clutch sliding force N	29–59

TROUBLESHOOTING

120000477

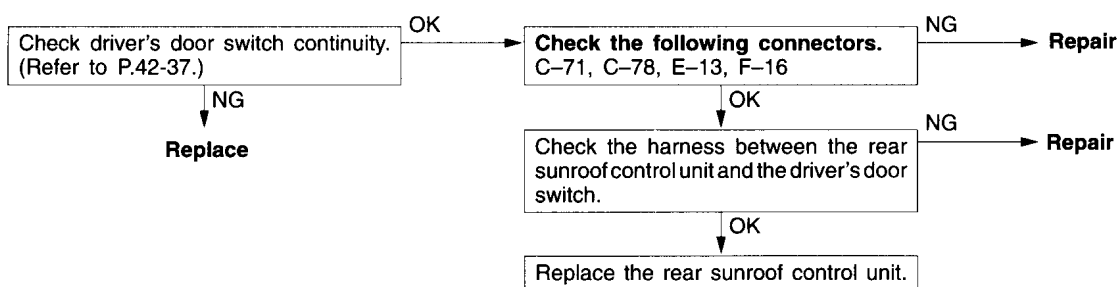
INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Inspection procedure	Reference page
Rear sunroof does not operate within 30 seconds after driver's door is opened.	1	P.42-74
Rear sunroof cannot be operated by either the sunroof switch for front seat or for rear seat.	2	P.42-74
Rear sunroof cannot be operated by the sunroof switch (for front seat). (However, it can be operated by the sunroof switch (for rear seat).)	3	P.42-76
Rear sunroof cannot be operated by the sunroof switch (for rear seat). (However, it can be operated by the sunroof switch (for front seat).)	4	P.42-76

INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

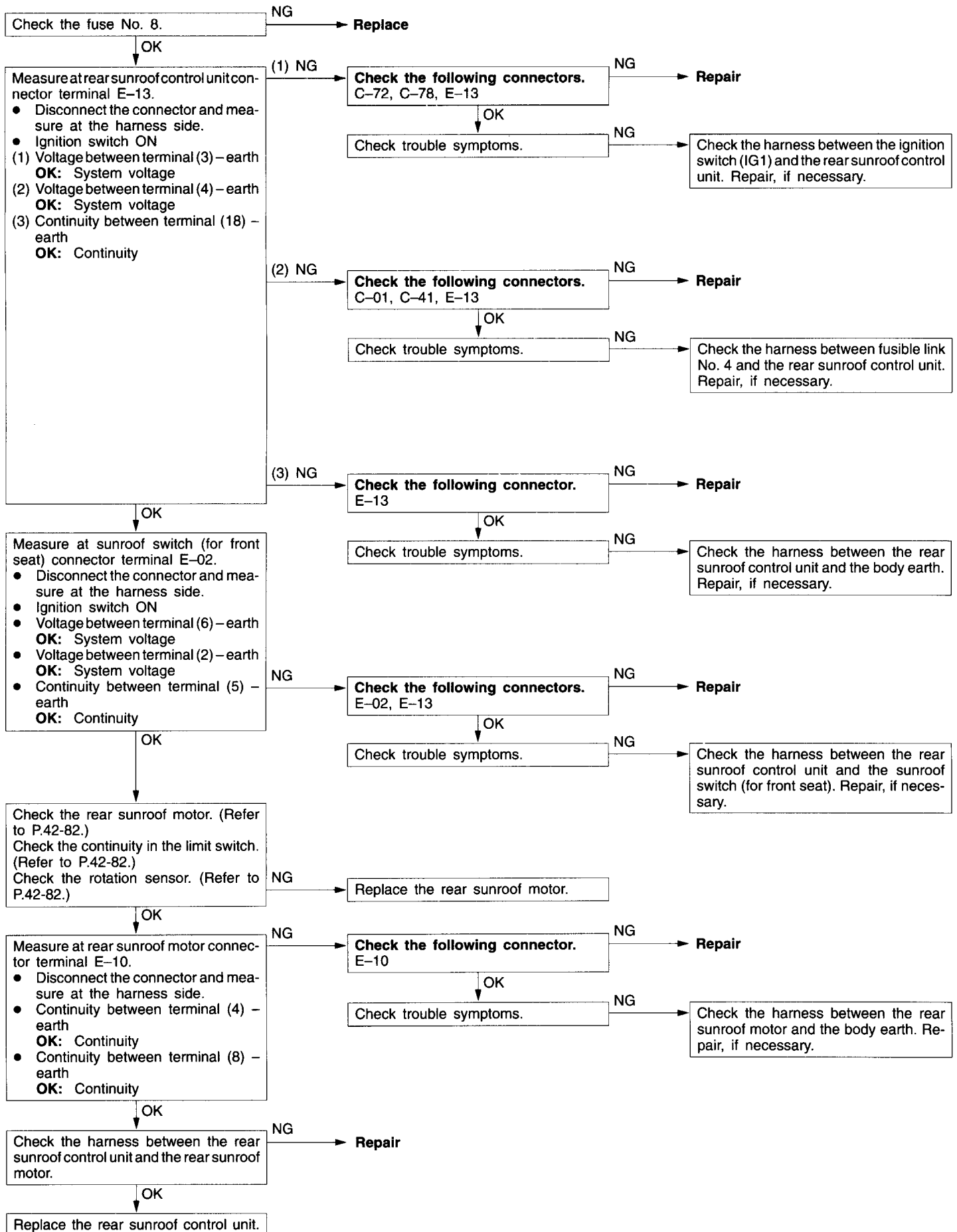
Inspection Procedure 1

Rear sunroof does not operate within 30 seconds after driver's door is opened.	Probable cause
<p>[Comment] After the driver's door is opened within 30 seconds after the ignition switch is turned off, the sunroof can still be operated for a further 30 seconds. If it is impossible, the driver's door switch or the rear sunroof control unit may be defective.</p>	<ul style="list-style-type: none"> • Malfunction of driver's door switch • Malfunction of rear sunroof control unit • Malfunction of wiring harness or connector



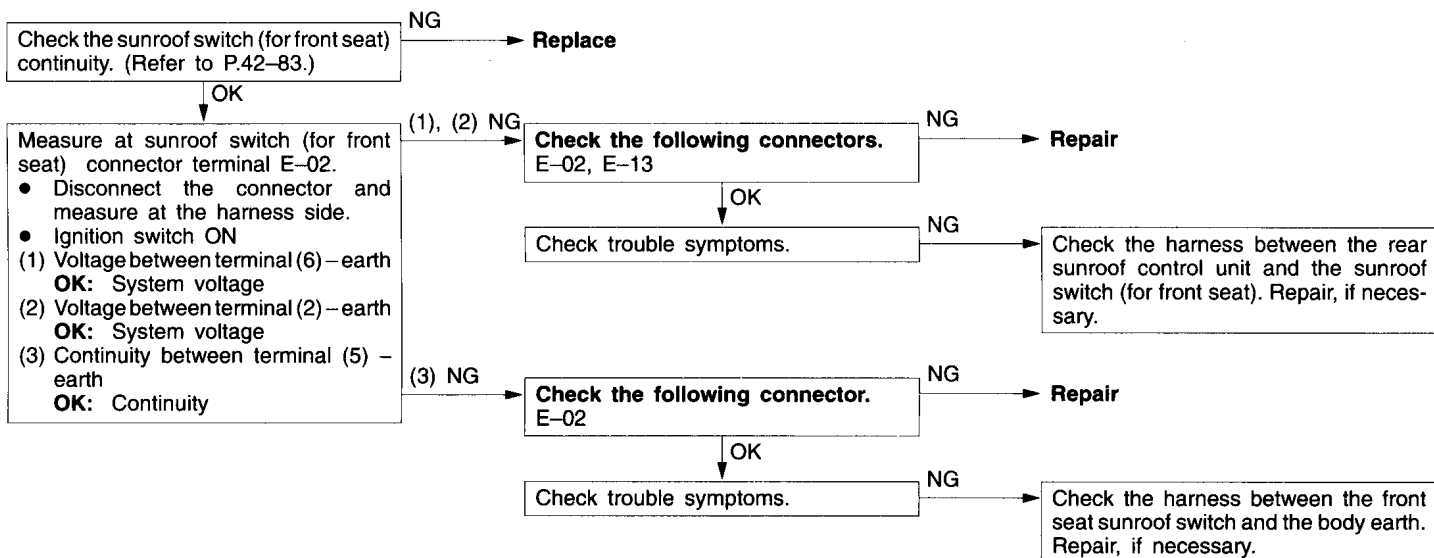
Inspection Procedure 2

Rear sunroof cannot be operated by either the sunroof switch for front seat or for rear seat.	Probable cause
<p>[Comment] One of the following items may be defective. Rear sunroof motor Rear sunroof control unit Power supply circuit (including the fuse)</p>	<ul style="list-style-type: none"> • Malfunction of rear sunroof motor • Malfunction of rear sunroof control unit • Malfunction of wiring harness or connector



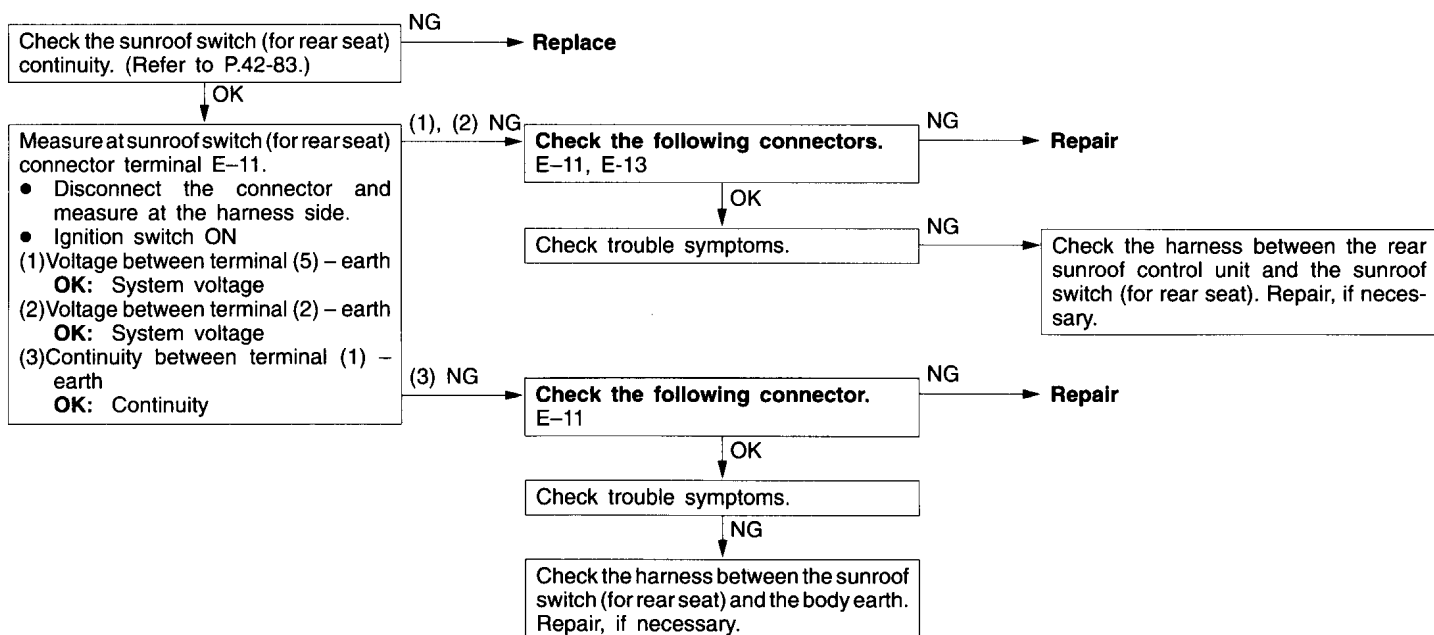
Inspection Procedure 3

Rear sunroof cannot be operated by the sunroof switch (for front seat). (However, it can be operated by the sunroof switch (for rear seat).)	Probable cause
[Comment] The sunroof switch (for front seat) or related harnesses may be defective.	<ul style="list-style-type: none"> • Malfunction of sunroof switch (for front seat) • Malfunction of wiring harness or connector



Inspection Procedure 4

Rear sunroof cannot be operated by the sunroof switch (for rear seat). (However, it can be operated by the sunroof switch (for front seat).)	Probable cause
[Comment] The sunroof switch (for rear seat) or related harnesses may be defective.	<ul style="list-style-type: none"> • Malfunction of sunroof switch (for rear seat) • Malfunction of wiring harness or connector



SERVICE ADJUSTMENT PROCEDURES

120000478

SUNROOF LEAKAGE INSPECTION

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 about 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

120002107

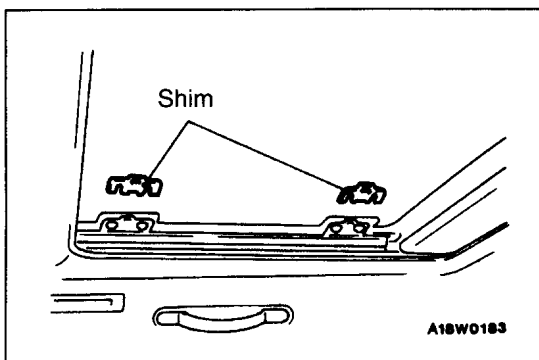
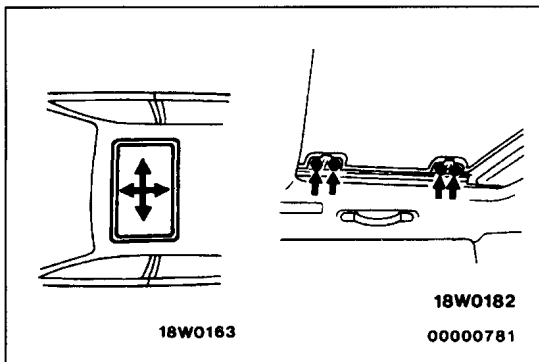
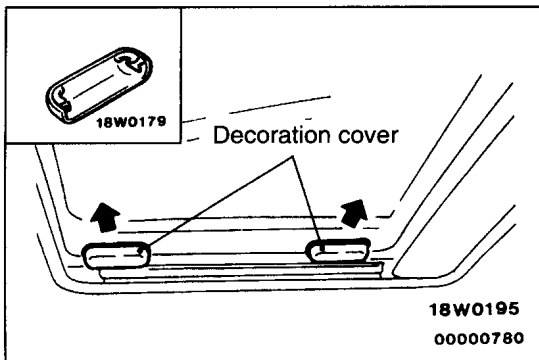
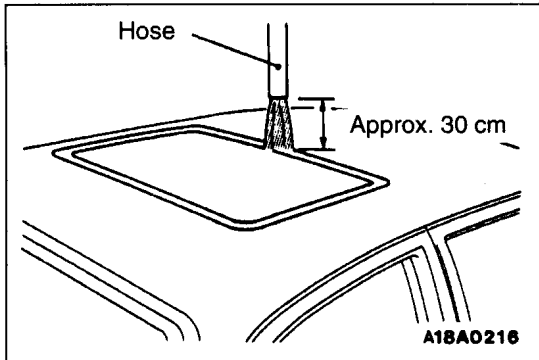
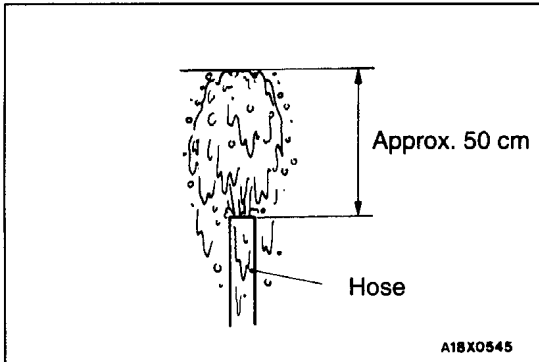
1. Fully close the roof lid glass.
2. Fully open the sunshade.
3. Remove the decoration cover by pulling it into the passenger compartment.

4. Loosen the eight roof lid glass assembly mounting nuts and move the roof lid glass assembly forward and back or to the left and right.

NOTE

If impossible by the above step, adjust the sunroof motor by closing the sunroof fully. (Refer to P.42-83.)

5. To adjust the height of the roof lid glass, loosen the eight roof lid glass assembly mounting nuts. Then change the shims between the roof lid glass assembly and the slider assembly.
6. Check that the sunroof operates smoothly.



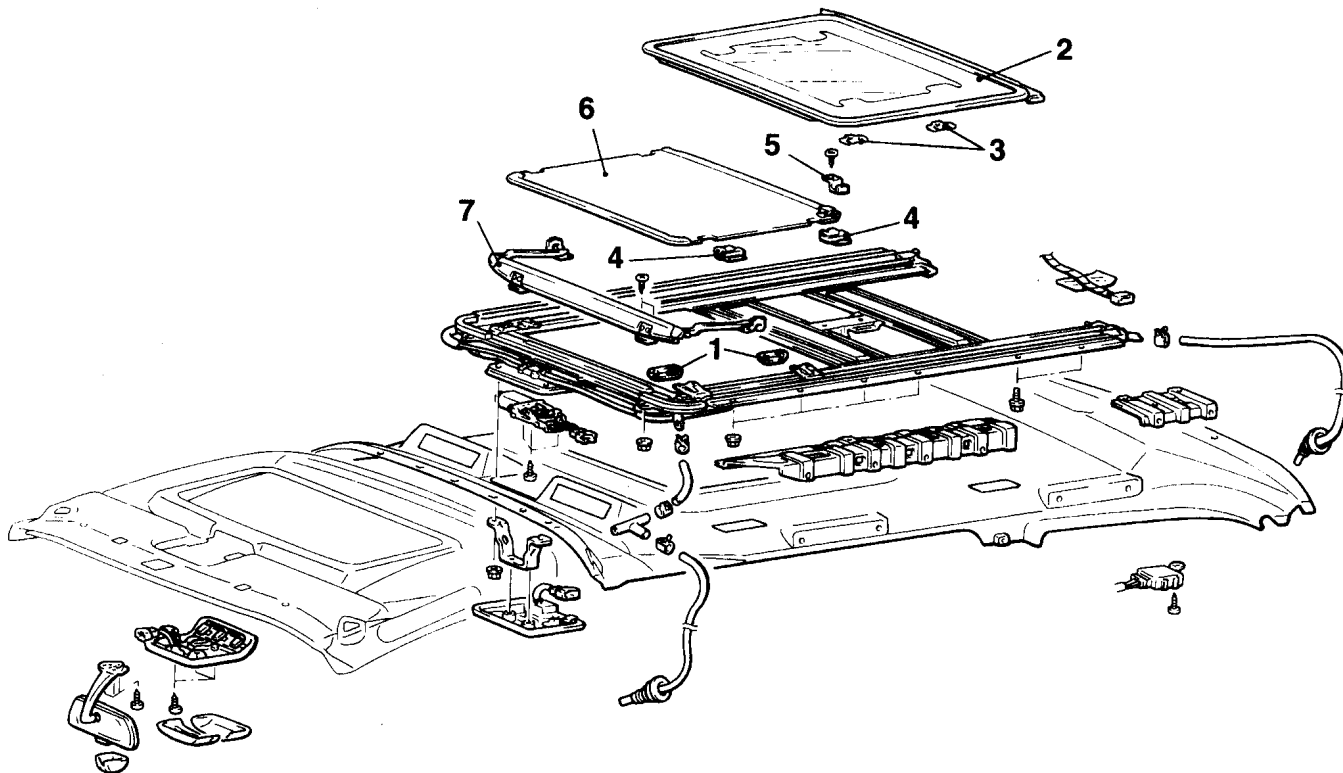
REAR SUNROOF

120002232

REMOVAL AND INSTALLATION

Post-Installation Operation

- Sunroof Water Test (Refer to P.42-77.)
- Sunroof Fit Adjustment (Refer to P.42-77.)



A18W0393

Roof lid glass assembly and sunshade removal steps

◀A▶

1. Decoration cover
2. Roof lid glass assembly
3. Shim

◀B▶

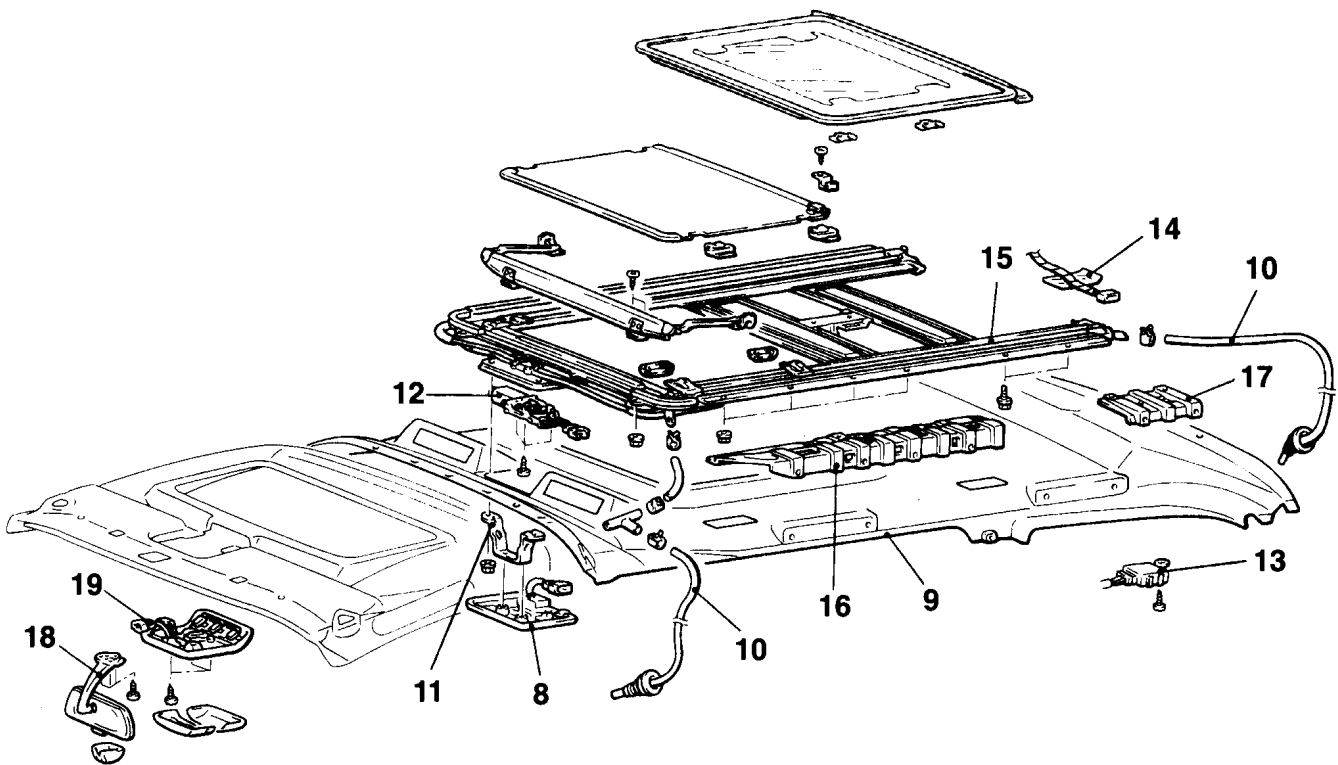
4. Sunshade shoe cover
5. Sunshade holder

◀C▶

6. Sunshade assembly

Deflector removal

7. Deflector



B18W0393

Rear sunroof switch removal steps

- 8. Rear sunroof switch assembly
- 18. Room mirror
- 19. Rear sunroof switch and room lamp assembly

Drain hose removal steps

- 8. Rear sunroof switch assembly
- 9. Rear headlining
(Refer to GROUP 52A – Headlining.)
- 10. Drain hose

◀D▶ ▶B▶

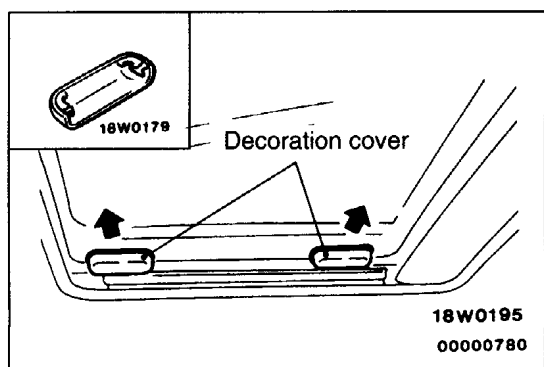
Rear sunroof motor and rear sunroof control unit removal steps

- 8. Rear sunroof switch assembly
- 9. Rear headlining
(Refer to GROUP 52A – Headlining.)
- 11. Rear sunroof switch bracket
- 12. Rear sunroof motor
- 13. Rear sunroof control unit

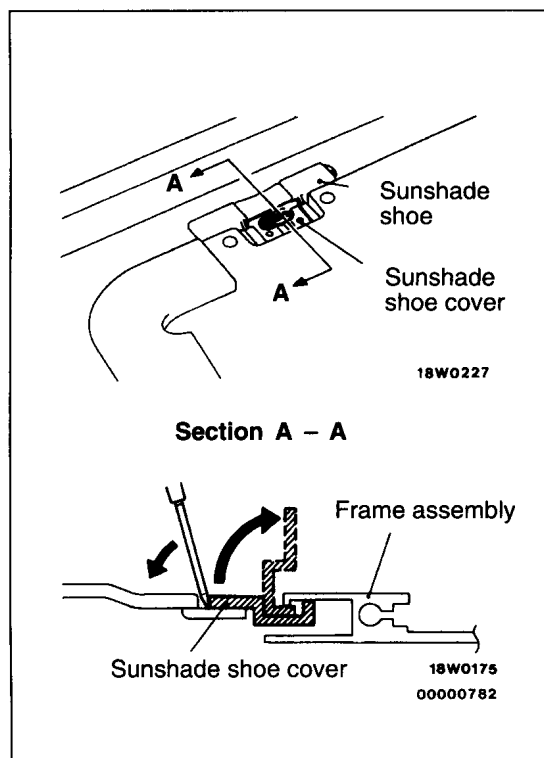
◀E▶ ▶A▶

Rear sunroof assembly removal steps

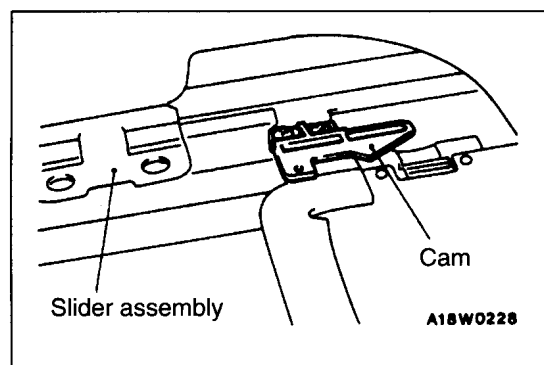
- 8. Rear sunroof switch assembly
- 9. Rear headlining
(Refer to GROUP 52A – Headlining.)
- 10. Drain hose connection
- 11. Rear sunroof switch bracket
- 14. Harness attaching tape
• Roof duct
(Refer to GROUP 55 – Roof duct.)
- 15. Rear sunroof assembly
- 16. Set bracket, front
- 17. Set bracket, rear

**REMOVAL SERVICE POINTS****◀A▶ DECORATION COVER REMOVAL**

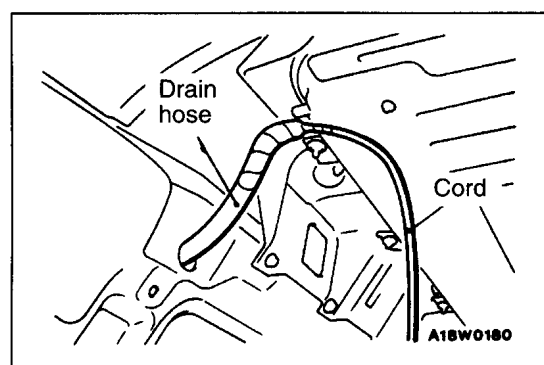
Remove the decoration cover by pulling it into the passenger compartment.

**◀B▶ SUNSHADE SHOE COVER REMOVAL**

Use a flat-tipped screwdriver to remove the four sunshade shoe covers.

**◀C▶ SUNSHADE ASSEMBLY REMOVAL**

1. Remove the cam from the slider assembly.
2. Move the only slider assembly to the fully-open position.
3. Remove the sunshade assembly from the roof opening.

**◀D▶ DRAIN HOSE REMOVAL**

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

◀E▶ REAR 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.

INSPECTION**SLIDING RESISTANCE OF ROOF LID GLASS CHECK**

Remove the sunroof motor, and then check the sliding resistance of the roof lid glass by the following procedure.

- (1) Remove the rear headlining. (Refer to GROUP 52A – Headlining.)
- (2) Remove the decoration cover. (Refer to P.42-80.)
- (3) Loosen the roof lid glass front mounting nuts and tie a rope to them.
- (4) Close the roof lid glass fully and then remove the sunroof motor.
- (5) Use a spring balance to measure the sliding resistance of the roof lid glass.

Standard value: 216 N or less

- (6) If the sliding resistance of the roof lid glass is higher than the standard value, check the following.
Sunroof assembly installation, warping or jamming by foreign materials
Drive cable stuck
Tilt of roof lid glass
- (7) Close the roof lid glass fully, and set the sunroof motor to the specified position, and then install the sunroof motor. (Refer to P.42-83.)

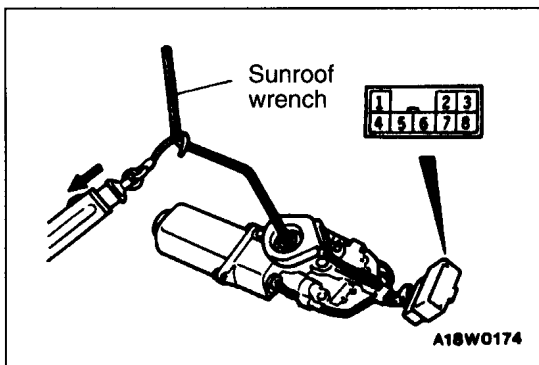
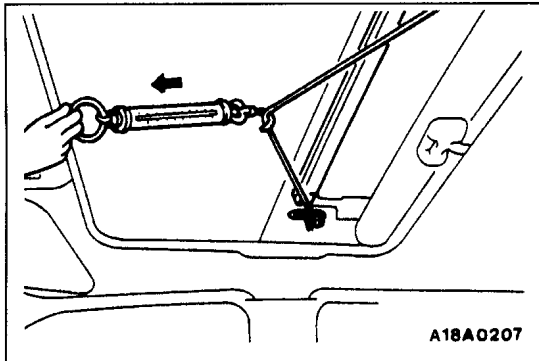
SLIDING FORCE OF SUNROOF MOTOR'S CLUTCH CHECK

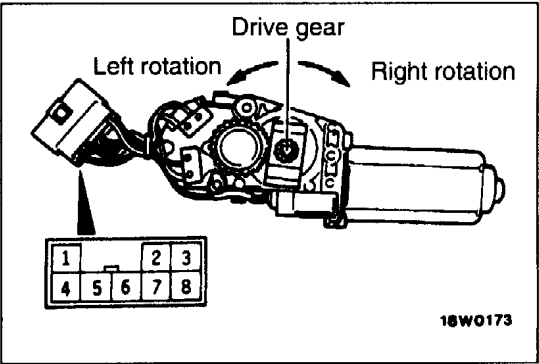
1. Insert the sunroof wrench of the on-board tools into the hexagonal hole in the motor drive shaft, and hook a spring balance as shown in the illustration.
2. Apply battery voltage between terminals (1) and (2) of the sunroof motor connector to operate the motor.
3. Measure the load on the spring balance at the point where the rotation torque of the motor matches the spring force of the spring balance.

Standard value: 29–59 N

Caution

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





SUNROOF MOTOR CHECK

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

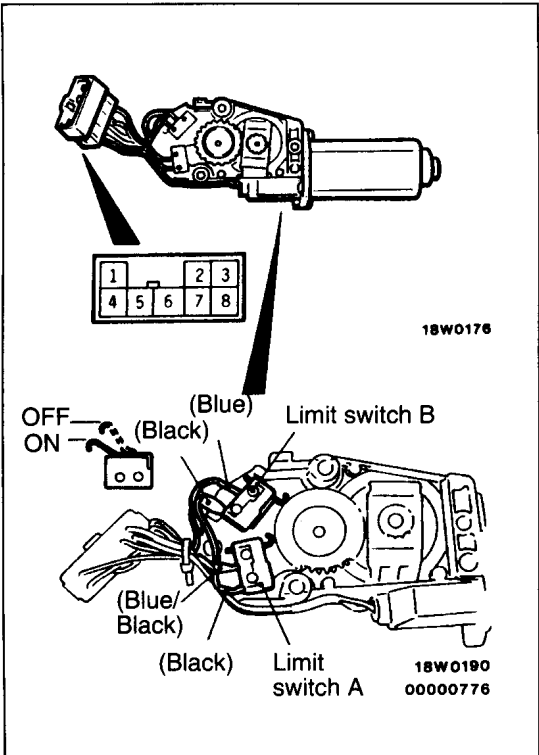
Battery connection terminal		Drive gear rotation direction
1	2	
⊖	⊕	Left
⊕	⊖	Right

LIMIT SWITCH CONTINUITY INSPECTION

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

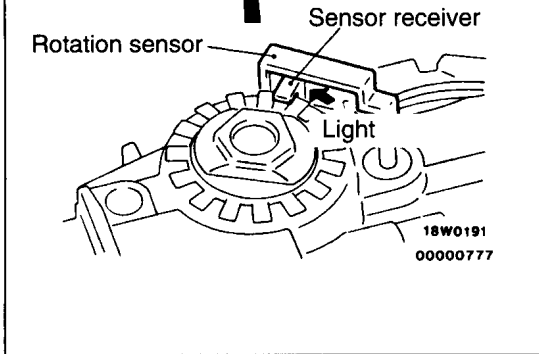
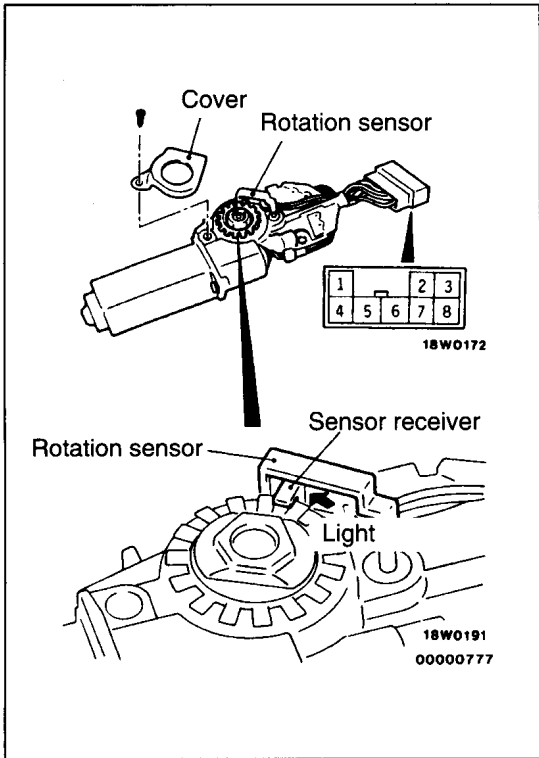
Switch		Terminal No.		
		4	5	6
Limit switch A	ON	○	—	○
	OFF			
Limit switch B	ON	○	○	
	OFF			

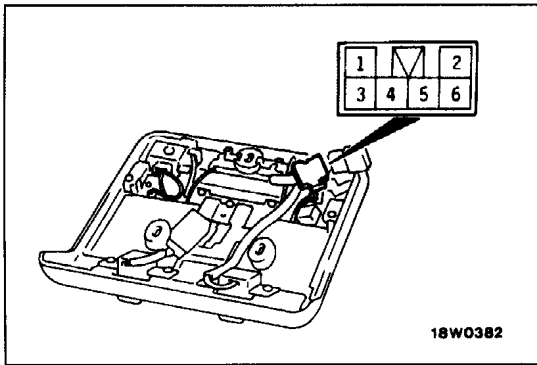
2. Check the identification colours . Then install the limit switches as shown in the illustration.



ROTATION SENSOR INSPECTION

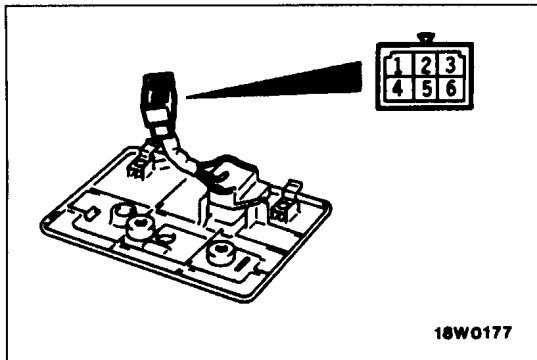
1. When connecting an ohmmeter negative probe to terminal (3) and the positive probe to terminal (8), there should be continuity. When the probes are reversed, there should be no continuity.
2. Remove the cover, and then check that there is no continuity when connecting the negative probe to terminal (7) and the positive probe to terminal (8). Also check that there is continuity when the probes are connected to the same terminals and light is shined onto the sensor receiver.





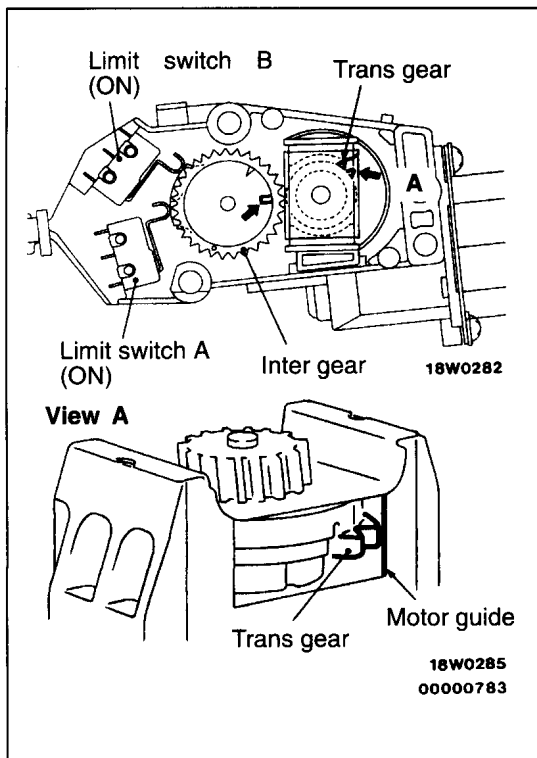
SUNROOF SWITCH CONTINUITY INSPECTION (For front seat)

Switch position	Terminal No.		
	2	5	6
Open		○	○
Close	○		○



(For rear seat)

Switch position	Terminal No.		
	1	2	5
Open	○		○
Close	○	○	

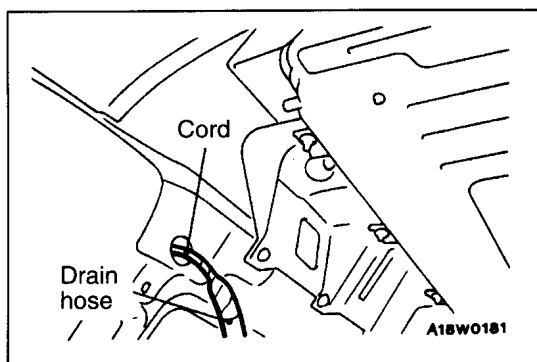


INSTALLATION SERVICE POINTS

►A◄ REAR SUNROOF MOTOR INSTALLATION

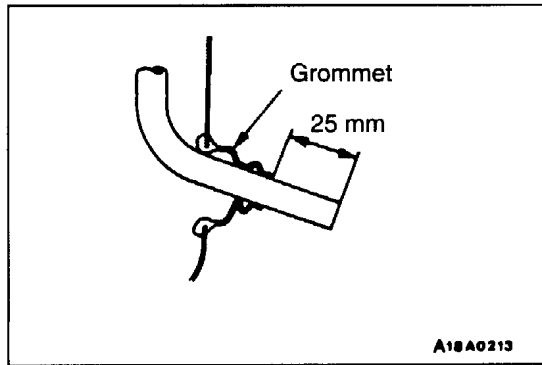
Use the sunroof wrench to set the sunroof motor to the fully-open position by the following procedure.

- (1) Set the inter gear so that the pawl is on the side of the trans gear.
- (2) Align the teeth of the trans gear with the corner of the motor guide.



►B◄ DRAIN HOSE INSTALLATION

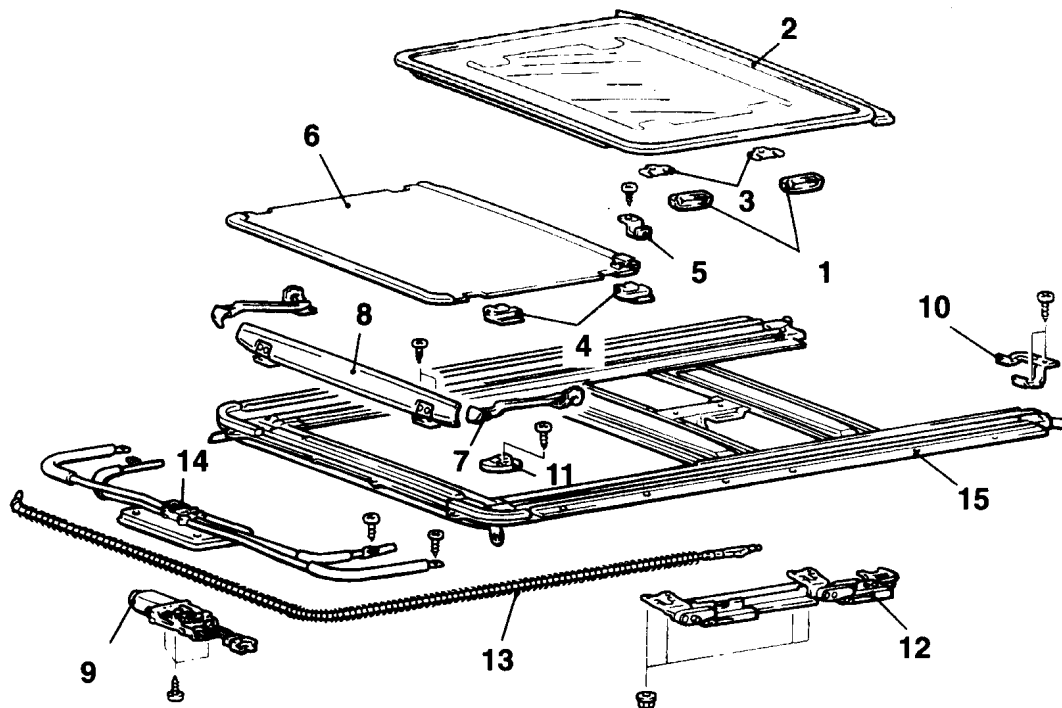
1. Tie the end of the drain hose to the cord that stays in the tailgate, and wind plastic tape around the tie until it is smooth.
2. Pull the cord to pull in the drain hose.



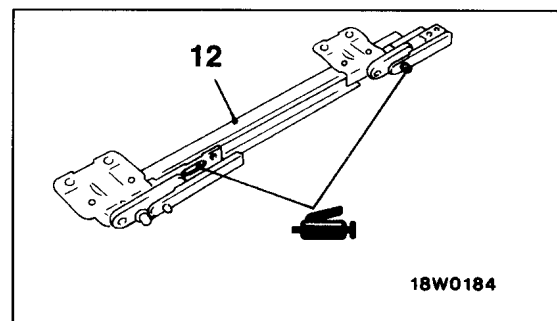
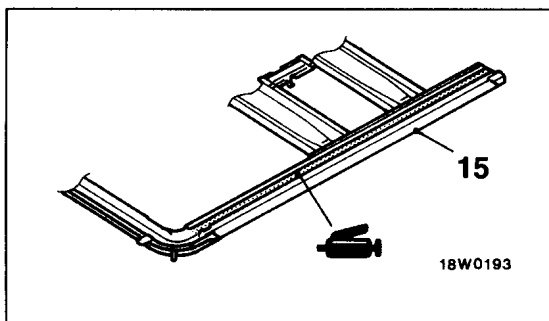
3. Install the grommet and let the drain hose extend as shown in the illustration.

DISASSEMBLY AND REASSEMBLY

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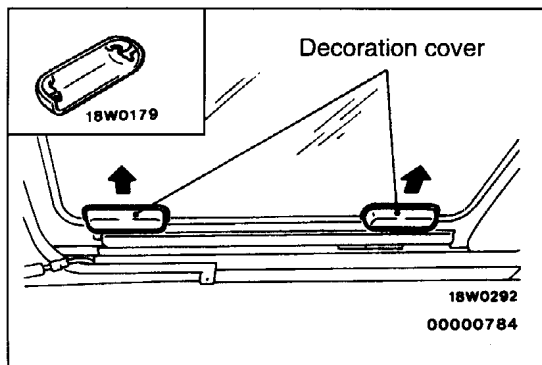
Disassembly steps

◀A▶

1. Decoration cover
2. Roof lid glass assembly
3. Shim
4. Sunshade shoe cover
5. Sunshade holder shoe
6. Sunshade assembly
7. Deflector link assembly
8. Deflector assembly

◀B▶ ▶A◀

9. Rear sunroof motor
10. Rear holder
11. Front holder
12. Slider assembly
13. Drive cable
14. Drive unit assembly
15. Frame assembly

**DISASSEMBLY SERVICE POINTS****◀A▶ DECORATION COVER REMOVAL**

Remove the decoration cover by pulling it into the passenger compartment.

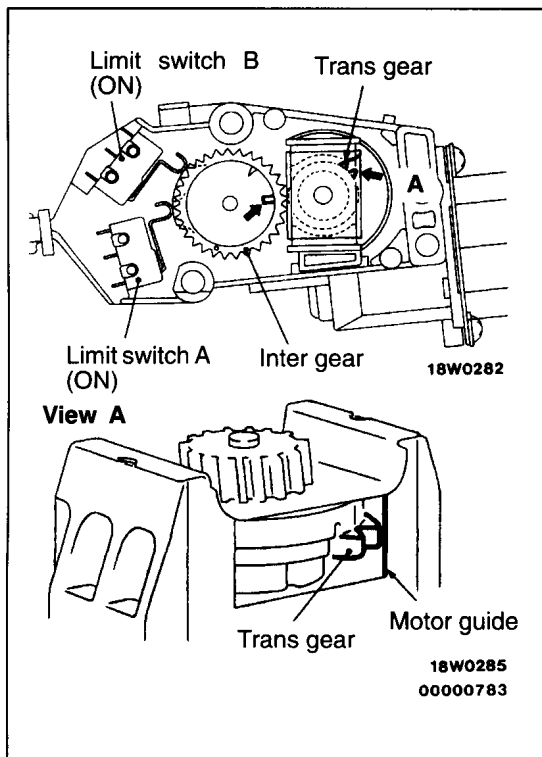
◀B▶ REAR SUNROOF MOTOR REMOVAL**Caution**

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.

REASSEMBLY SERVICE POINT**▶A◀ REAR SUNROOF MOTOR INSTALLATION**

Use the sunroof wrench to set the sunroof motor to the fully-closed position by the following procedure.

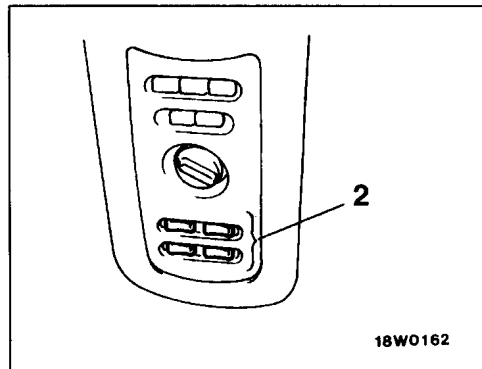
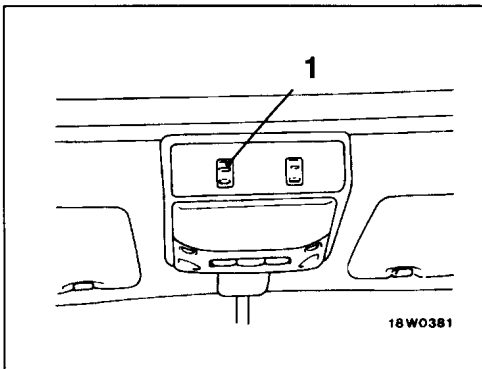
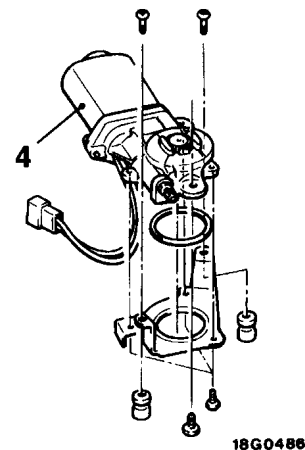
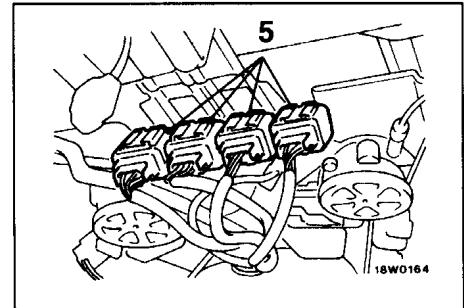
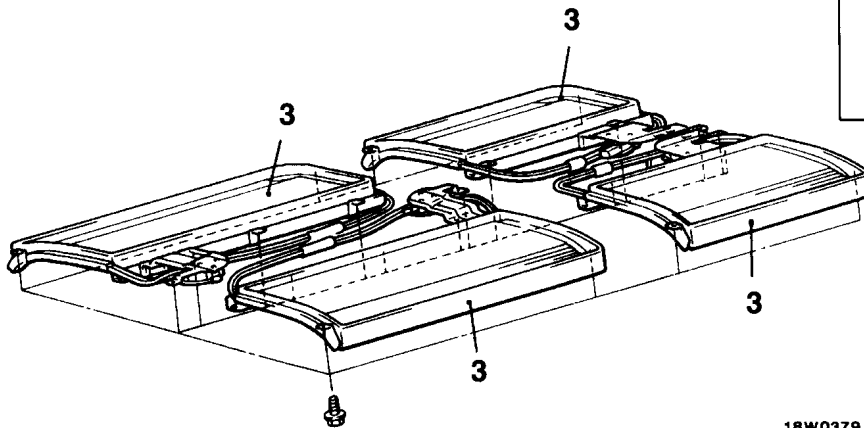
- (1) Set the inter gear so that the pawl is on the side of the trans gear.
- (2) Align the teeth of the trans gear with the corner of the motor guide.



CRYSTAL LITE ROOF SUNSHADE

120002233

REMOVAL AND INSTALLATION



1. Sunshade switch and room lamp assembly (For front seat)
2. Sunshade switch and room lamp assembly (For rear seat)

Sunshade assembly removal steps

- Rear headlining (Refer to GROUP 52A – Headlining.)
- Roof duct (Refer to GROUP 55 – Roof duct.)
- 3. Sunshade assembly

Sunshade motor removal steps

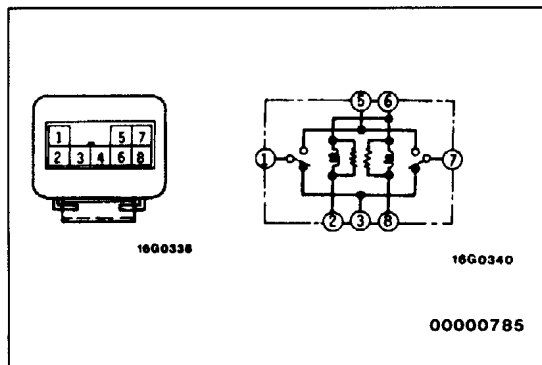
- Rear headlining (Refer to GROUP 52A – Headlining.)
- Roof duct (Refer to GROUP 55 – Roof Duct.)

Sunshade relay removal steps

- Rear headlining (Refer to GROUP 52A – Headlining.)
- 5. Sunshade relay

NOTE

There is no special order in which the sunshade relays need to be installed.

**INSPECTION****SUNSHADE RELAY CONTINUITY INSPECTION**

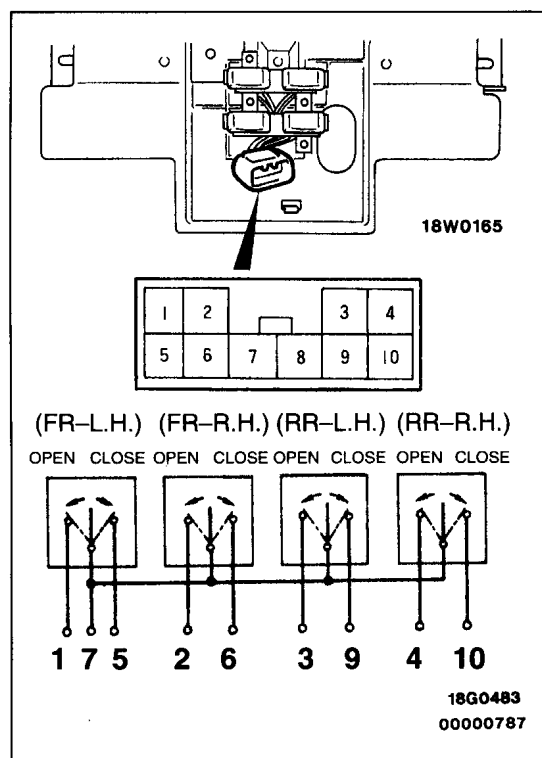
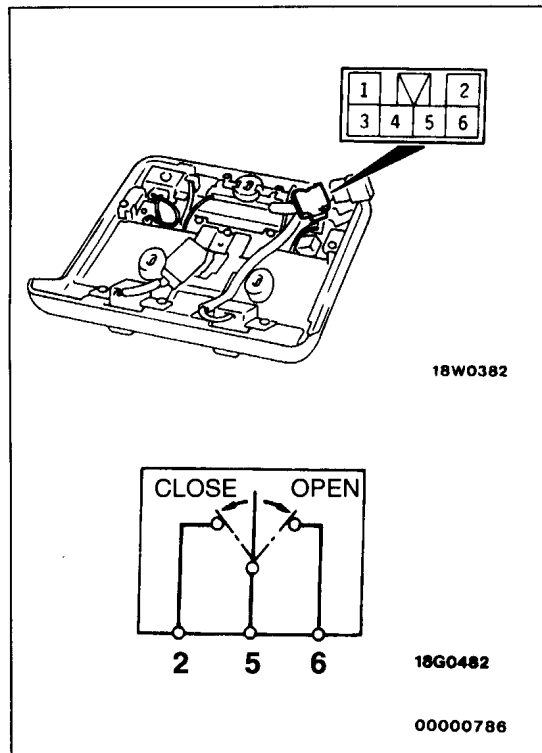
System voltage	Terminal No.						
	1	2	3	5	6	7	8
Not applied	○	○	○		○	○	○
Applied	○	⊖		○	⊕		
				○	⊕	○	⊖

SUNSHADE SWITCH CONTINUITY INSPECTION**(For front seat)**

Switch position	Terminal No.		
	2	5	6
OPEN		○	○
CLOSE	○	○	

(For rear seat)

Switch position		Terminal No.									
		1	2	3	4	5	6	7	8	9	10
OPEN	FR-L.H.	○						○			
	FR-R.H.		○					○			
	RR-L.H.			○				○			
	RR-R.H.				○			○			
OFF											
CLOSE	FR-L.H.					○		○			
	FR-R.H.						○	○			
	RR-L.H.							○		○	
	RR-R.H.							○			○

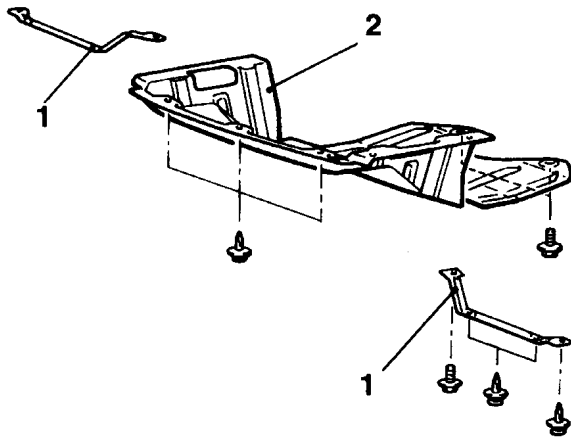


UNDER COVER

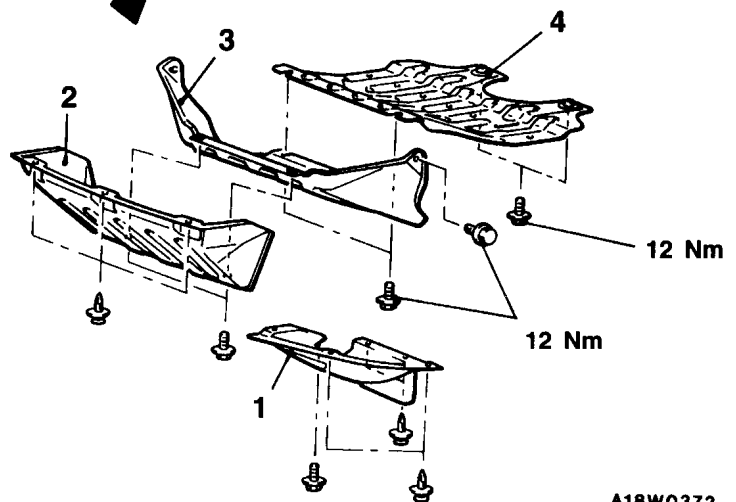
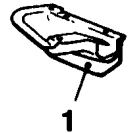
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REMOVAL AND INSTALLATION

<2WD>



<4WD>



A18W0372

Removal steps

<2WD>

1. Under cover plate
2. Under cover panel

<4WD>

1. Under cover side panel
2. Under cover panel
3. Under skid plate
4. Under cover