BODY

CONTENTS

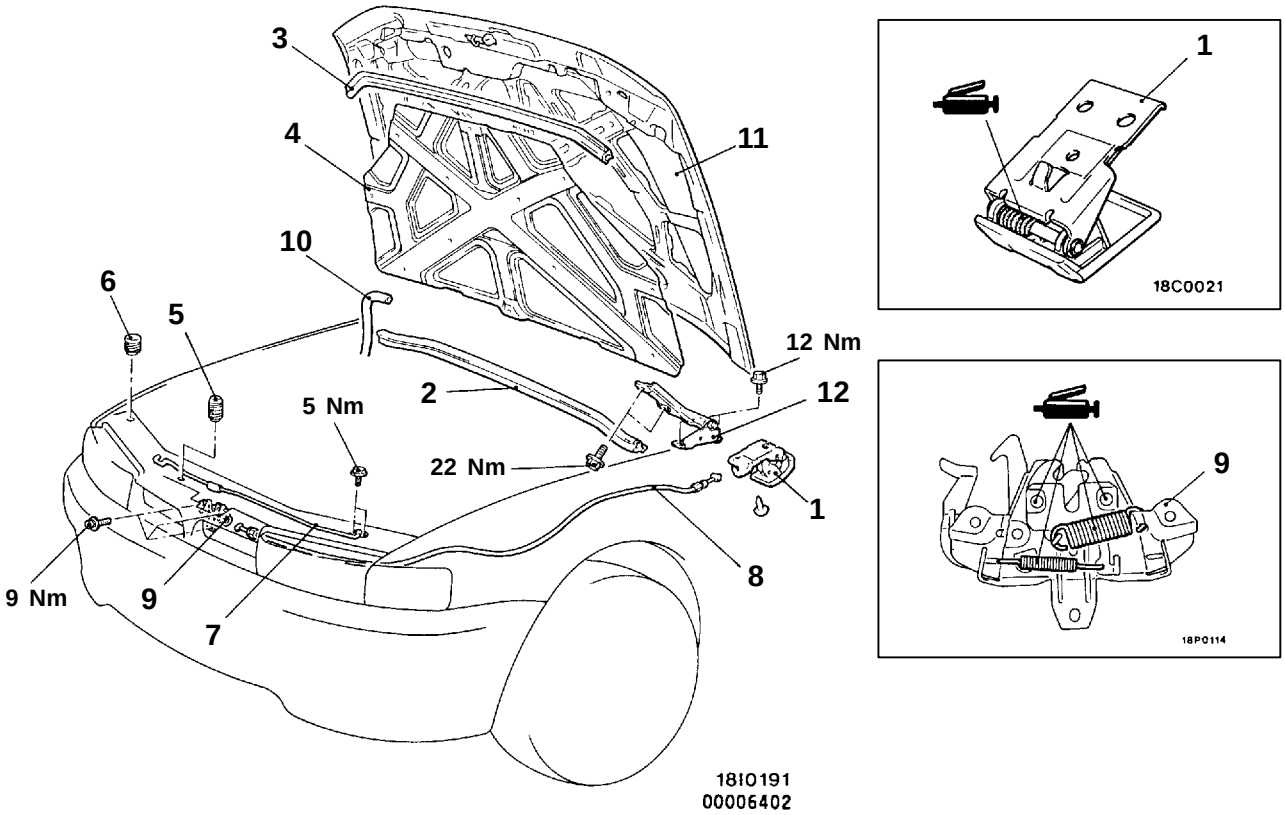
42109000201

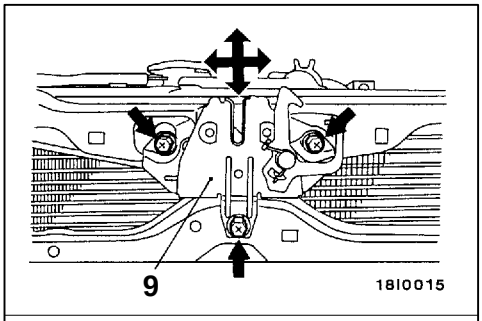
CONTINUED ON NEXT PAGE

HOOD

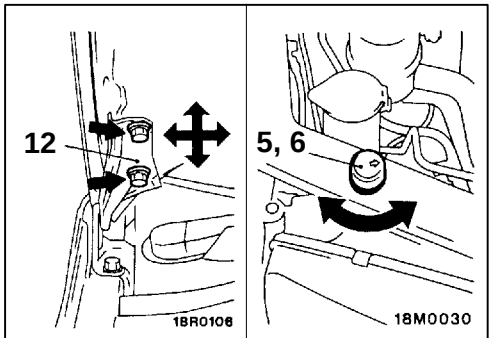
42100160229

REMOVAL AND INSTALLATION





Adjustment of hood step and hood striker linkage



Adjustment of clearance and height around hood

1. Hood lock release handle
2. Hood weatherstrip
3. Front hood weatherstrip
4. Hood insulator
5. ▶A◀ Bumper A
6. ▶A◀ Bumper B
7. Hood support rod

Hood lock release cable removal steps

- Splash shield <Driver's side> (Refer to P.42-6.)

8. Hood lock release cable

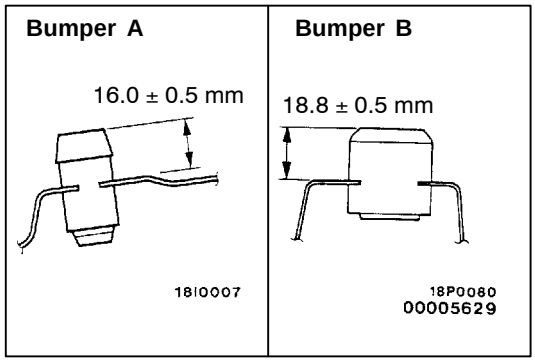
Hood latch removal steps

- Radiator grille (Refer to GROUP 51.)

9. Hood latch

Hood and hood hinge removal steps

10. Washer hose connection
11. Hood
12. Hood hinge



INSTALLATION SERVICE POINT

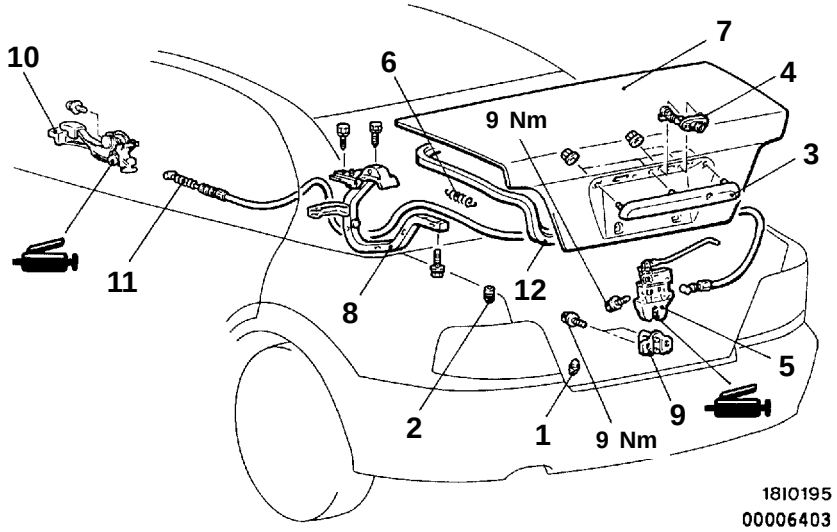
▶A◀ BUMPER B/BUMPER A INSTALLATION

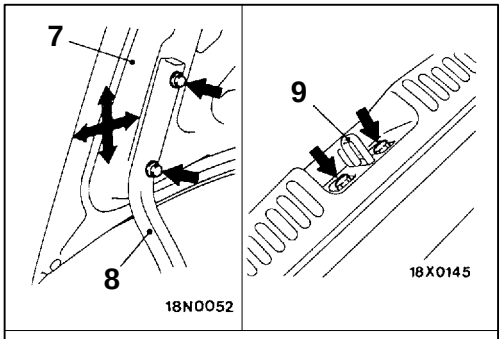
Install the bumpers A and B as shown in the illustration.

TRUNK LID <Sedan>

42100220132

REMOVAL AND INSTALLATION





Adjustment of clearance around trunk lid and trunk lid striker linkage

Trunk lid panel removal steps

▶B◀ 1. Bumper A
▶B◀ 2. Bumper B
- Licence plate lamp
3. Licence plate lamp garnish
4. Trunk lid lock cylinder
5. Trunk lid latch
- Spring cover (Refer to GROUP 52A - Trims.)
6. Trunk lid hinge spring
7. Trunk lid panel

Trunk lid hinge removal steps

- Rear shelf trim (Refer to GROUP 52A - Trims.)
7. Trunk lid panel assembly
8. Trunk lid hinge

Trunk lid latch removal

5. Trunk lid latch

Trunk lid striker removal steps

- Rear end trim (Refer to GROUP 52A - Trims.)
9. Trunk lid striker

Trunk lid release handle and cable removal steps

- Front seat (driver's side) (Refer to GROUP 52A.)
- Rear seat (Refer to GROUP 52A.)
- Front scuff plate (driver's side) (Refer to GROUP 52A.)
- Rear scuff plate (driver's side) (Refer to GROUP 52A.)
- Trunk room side trim (driver's side) (Refer to GROUP 52A.)
5. Trunk lid latch
10. Trunk lid release handle
11. Trunk lid release cable

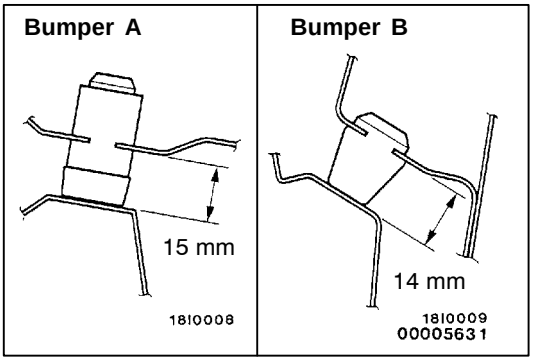
Trunk lid weatherstrip removal

▶A◀ 12. Trunk lid weatherstrip removal

INSTALLATION SERVICE POINTS

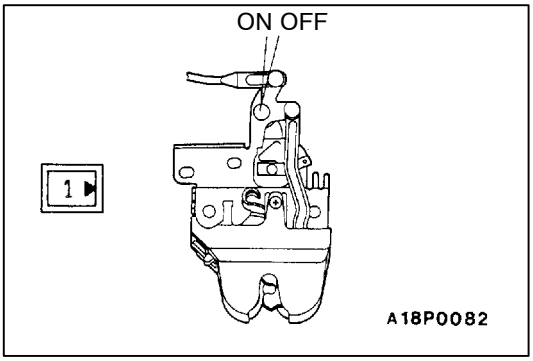
▶A◀ TRUNK LID WEATHER STRIP INSTALLATION

Install the trunk lid weatherstrip so that the marking and the joint are aligned with the body centre line.



▶B◀ BUMPER B/BUMPER A INSTALLATION

Install the bumpers A and B as shown in the illustration.



INSPECTION

42100410034

TRUNK LID LATCH CONTINUITY CHECK

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

FENDER

42100050137

SEALANT

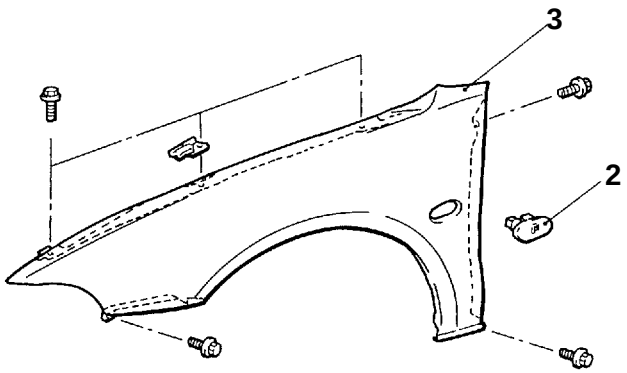
Item	Specified sealant	Remark
Splash shield	3M ATD Part No. 8625 or equivalent	Ribbon sealer
Fender		

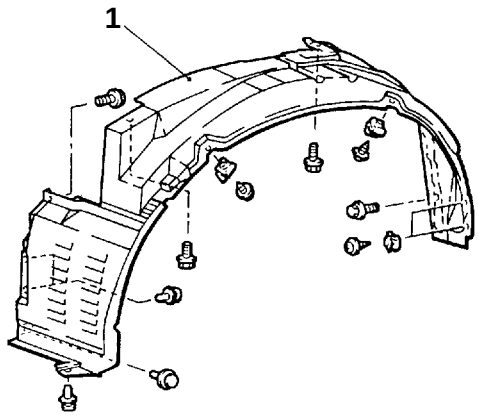
FENDER

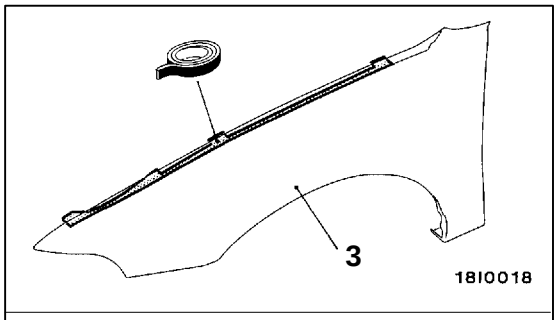
42100190204

REMOVAL AND INSTALLATION

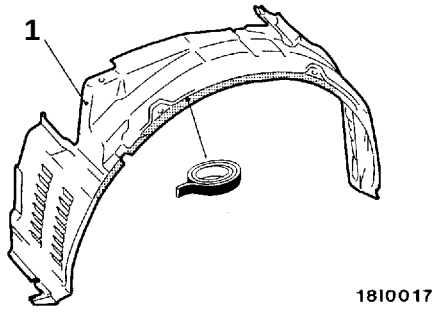
Pre-removal and Post-installation Operation
- Front Bumper Removal and Installation (Refer to GROUP 51.)
- Front Turn-signal Lamp Removal and Installation (Refer to GROUP 54.)
- Side Sill Cover Removal and Installation (Refer to GROUP 51 - Aero Parts.)





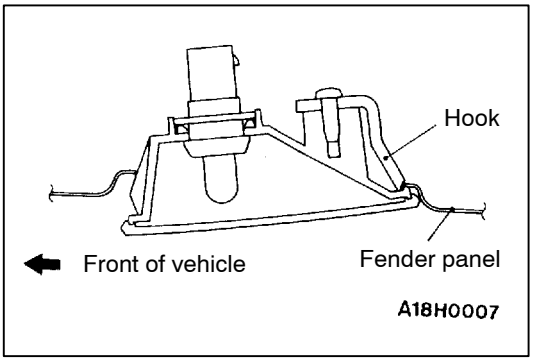


Sealant:
3M ATD Part No. 8625 or equivalent



Sealant:
3M ATD Part No. 8625 or equivalent

Removal steps
1. Splash shield
▶A◀ 2. Side turn signal lamp
3. Fender



INSTALLATION SERVICE POINT

▶A◀ SIDE TURN-SIGNAL LAMP INSTALLATION

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

FUEL FILLER DOOR

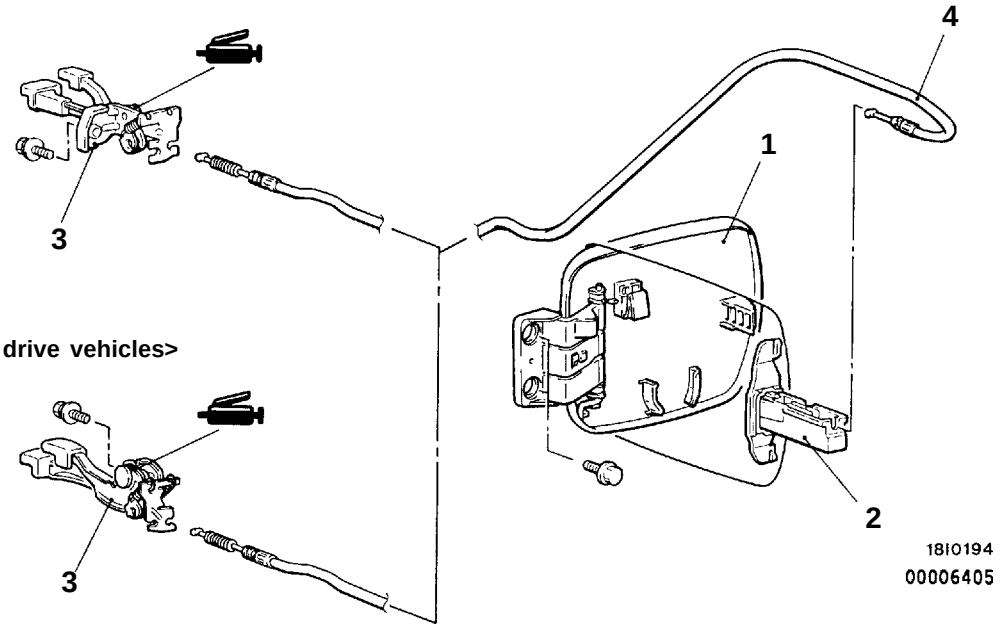
42100250254

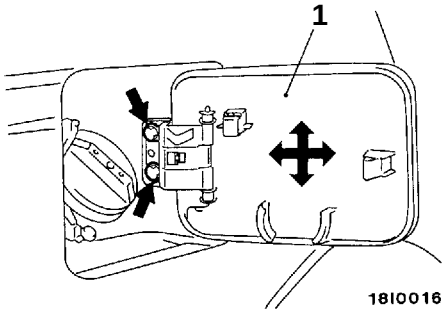
REMOVAL AND INSTALLATION

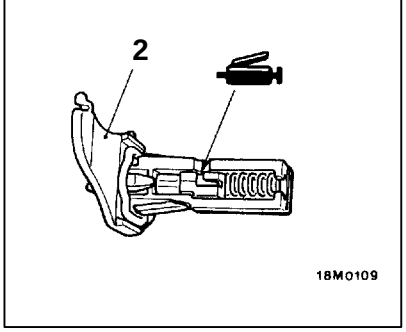
Pre-removal and Post-installation Operation
- Front Seat (driver's side), Rear Seat Removal and Installation (Refer to GROUP 52A.)
- Front Scuff Plate (driver's side), Rear Scuff Plate (driver's side), Center Pillar Lower Trim (driver's side), Trunk Side Trim (driver's side) <Sedan>, Quarter Lower Trim (driver's side) <Wagon> Removal and Installation (Refer to GROUP 52A.)

<R.H. drive vehicles>

<L.H. drive vehicles>







Fuel filler door height and clearance adjustment

Removal steps
1. Fuel filler door pannel assembly
2. Fuel filler door hook assembly
3. Lid lock release handle
4. Fuel filler door lock release cable

WINDOW GLASS

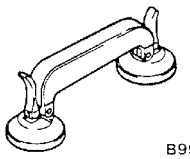
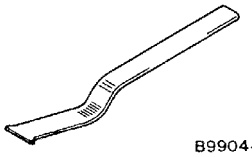
42200050123

ADHESIVES

Items	Specified adhesives
Windshield	3M ATD Part No. 8609 Super Fast Urethane Auto Glass Sealants or equivalent
Quarter window glass	
Tailgate window glass	
Rear window glass	

SPECIAL TOOLS

42200060126

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

WINDOW REPAIR

42200560084

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

- Windshield
- Quarter window glass
- Tailgate window glass
- Rear window glass

ITEMS NEEDED

Name	Remarks
Adhesive	3M ATD Part No. 8609 Super Fast Urethane Auto Glass Sealant or equivalent
Primer	3M ATD Part No. 8608 Super Fast Urethane Primer or equivalent
Spacers	Available as service part
Anti-rust solvent (or Tectyl 506T...Valvoline Oil Company)	For rust prevention
Isopropyl alcohol	For grease removal from bonded surface
Steel piano wire	Dia. × length...0.6mm × 1m For cutting adhesive
Adhesive gun	For pressing-out adhesive

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

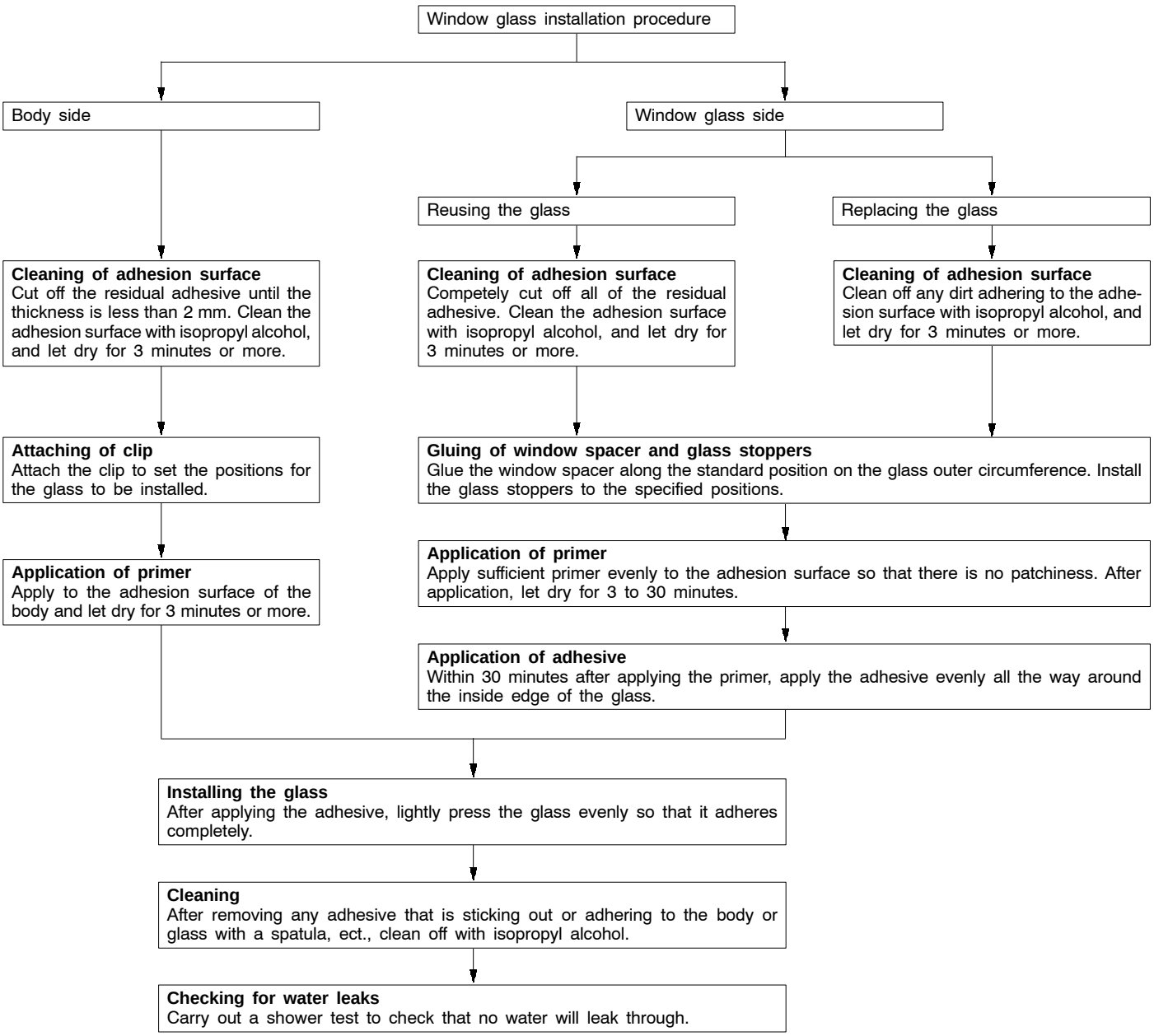
HANDLING OF AUTO WINDOW SEALER

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

BODY PINCH-WELD FLANGE SERVICING.

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

WORKING PROCESS

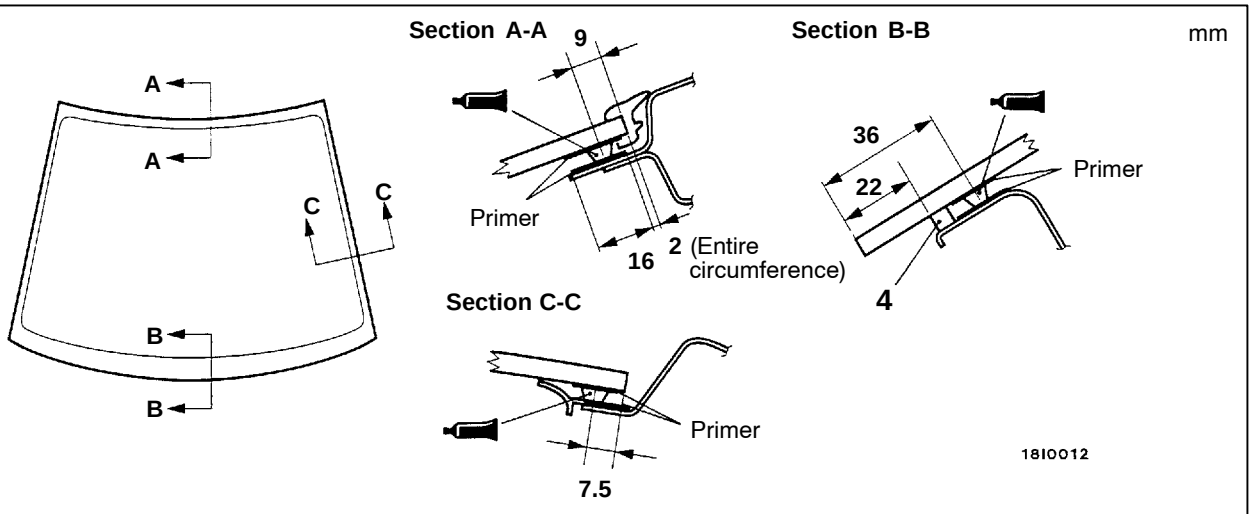


WINDSHIELD

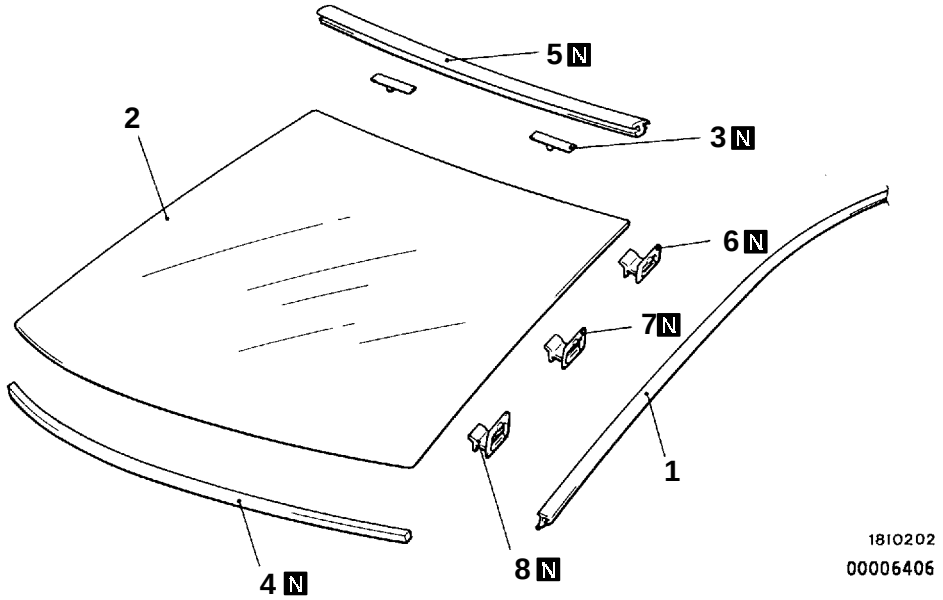
42200100255

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation
- Front Pillar Trim Removal and Installation (Refer to GROUP 52A.)
- Headlining Removal and Installation



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



Removal steps

◀A▶ 1. Roof drip moulding
- Front deck garnish (Refer to GROUP 51 - Windshield Wiper and Washer.)

◀B▶ ▶A◀ 2. Windshield

▶A◀ 3. Glass stopper

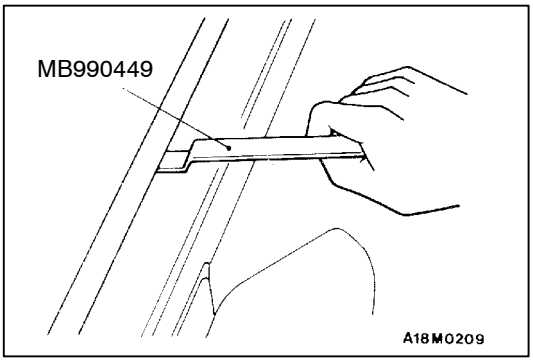
▶A◀ 4. Window spacer

▶A◀ 5. Windshield upper moulding

6. Drip moulding clip A

7. Drip moulding clip B

8. Drip moulding clip C

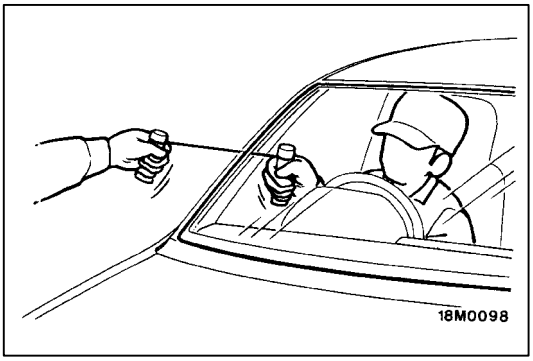


REMOVAL SERVICE POINTS

◀A▶ ROOF DRIP MOULDING REMOVAL

Use the special tool to lever out the moulding.

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

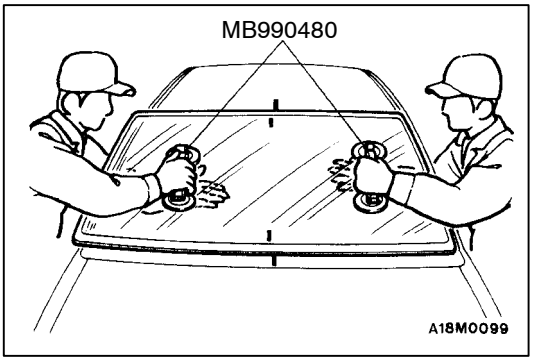


◀B▶ WINDSHIELD REMOVAL

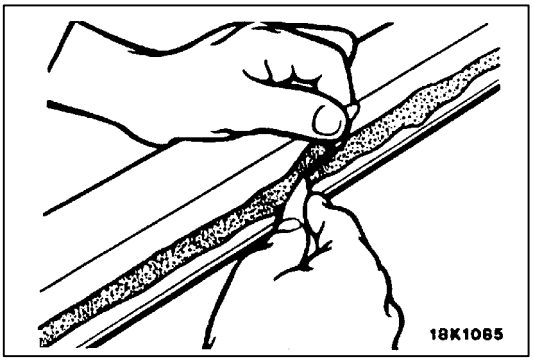
1. In order to protect the body (paint surface), apply cloth tape to all body areas around the installed windshield.
2. Using a sharp-point drill, make hole in the windshield adhesive.
3. Pass the piano wire from the inside of the vehicle through the hole.
4. Pull the piano wire alternately from the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

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

5. Make mating marks on the windshield and body.



6. Use the special tool to remove the windshield.



7. Use a knife to cut away the remaining adhesive so that the thickness is within 2 mm around the entire circumference of the body flange.

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

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

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

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

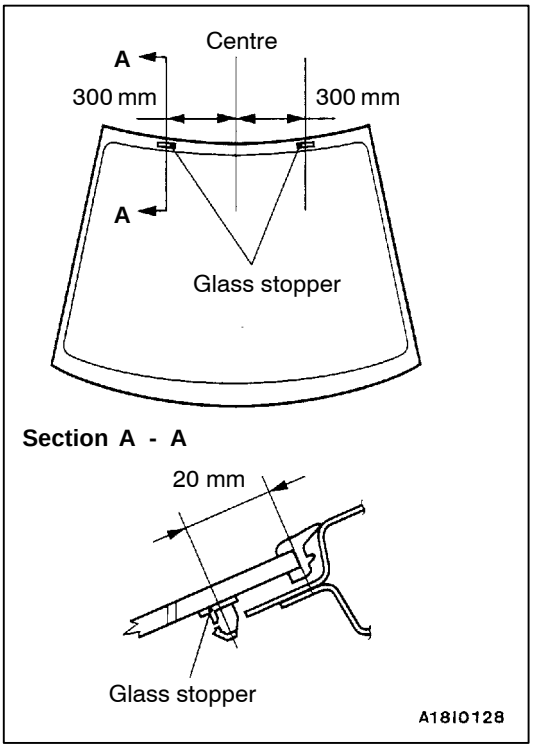
INSTALLATION SERVICE POINTS

▶A◀ WINDSHIELD UPPER MOULDING/WINDOW SPACER/GLASS STOPPER/WINDSHIELD INSTALLATION

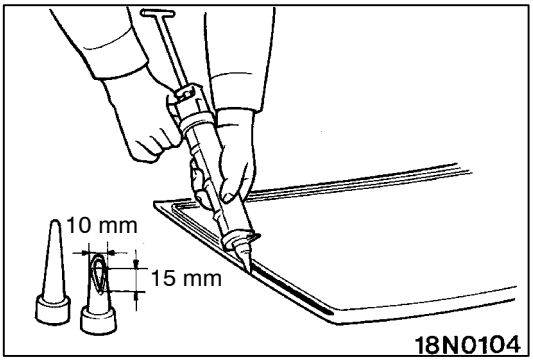
1. When replacing the windshield, temporarily set the windshield against the body, and place a mating mark on the windshield and body.
2. Use isopropyl alcohol to degrease the inside and outside of the windshield and the body flanges.
3. Soak a sponge in the primer, and apply evenly to the windshield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

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

5. Install the windshield upper moulding to the windshield.
6. Place the window spacer to the windshield so that it inclines toward the windshield and its right and left clearances are equal. Then install the spacer firmly so that it is not adrift.



7. Install the glass stopper to the shown dimension.



8. Fill a sealant gun with adhesive. Then apply the adhesive evenly around the windshield within 30 minutes after applying the primer.

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

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

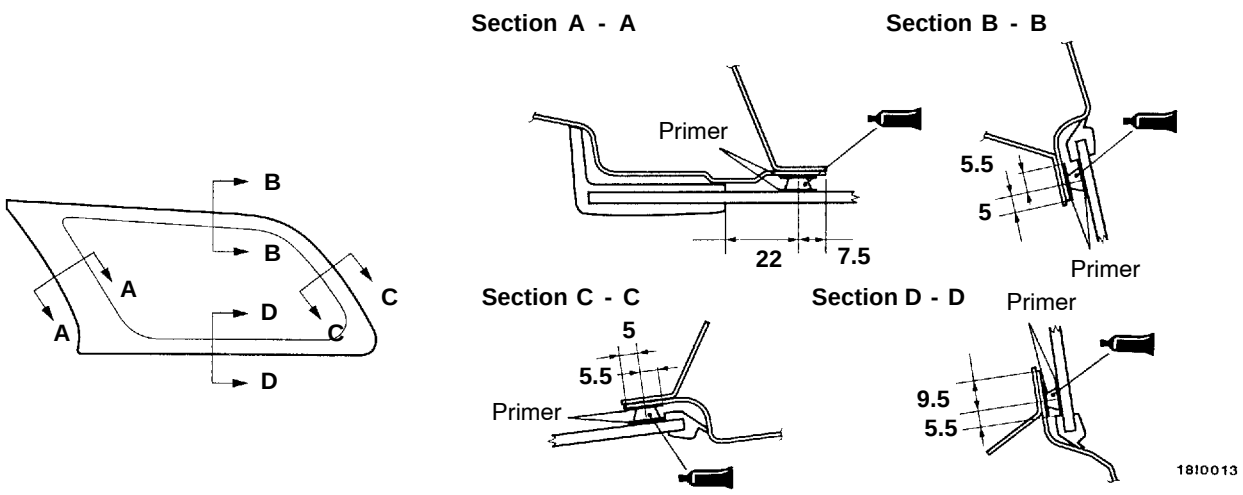
    Caution
    (1) Do not move the vehicle unless absolutely necessary.
    (2) When testing for water leakage, do not pinch the end of the hose to spray the water.

QUARTER WINDOW GLASS <Wagon>

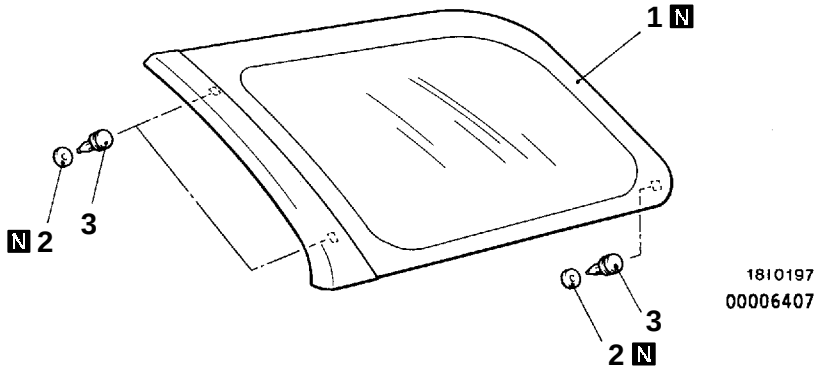
42200250127

REMOVAL AND INSTALLATION

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



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



Removal steps

◀A▶ ▶A◀ 1. Quarter window glass
2. Packing
3. Clip

REMOVAL SERVICE POINT

◀A▶ QUARTER WINDOW GLASS REMOVAL

Remove the quarter window glass in the same manner as for the windshield, except the clips (Refer to P.42-11.)

INSTALLATION SERVICE POINT

▶A◀ QUARTER WINDOW GLASS INSTALLATION

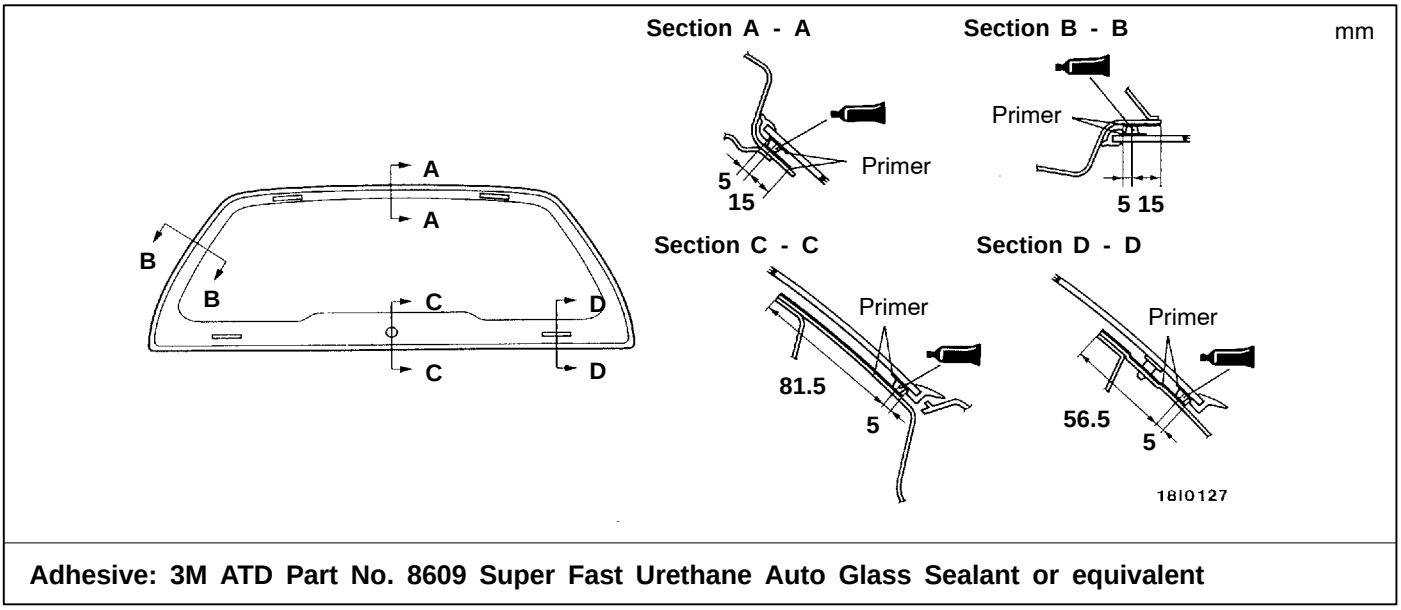
Install the quarter window glass in the same manner as for the windshield, except the clips (Refer to P.42-11.)

TAILGATE WINDOW GLASS

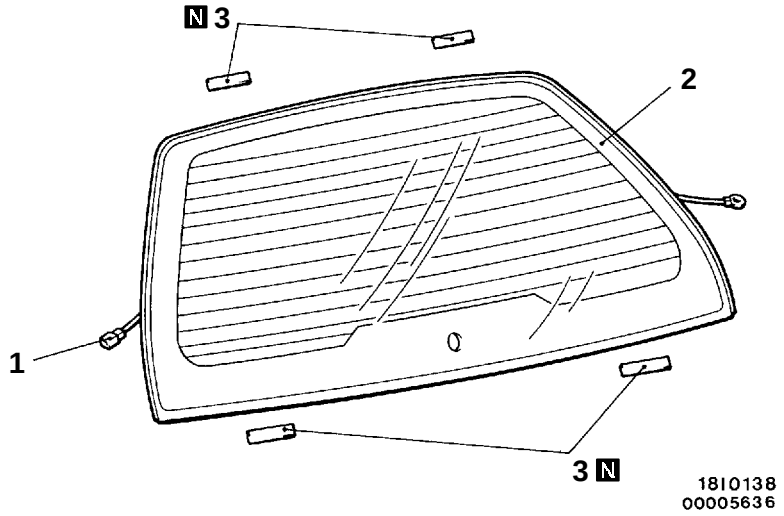
42200370144

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation
- Side Tailgate Trim, Lower Tailgate Trim and Cover Removal and Installation (Refer to P.42-49.)
- Rear Wiper Removal and Installation (Refer to GROUP 51.)



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



Removal steps

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

REMOVAL SERVICE POINT

◀A▶ TAILGATE WINDOW GLASS REMOVAL

Remove the tailgate window glass in the same manner as for the windshield, except the glass stopper (Refer to P.42-11).

INSTALLATION SERVICE POINT

▶A◀ TAILGATE WINDOW GLASS INSTALLATION

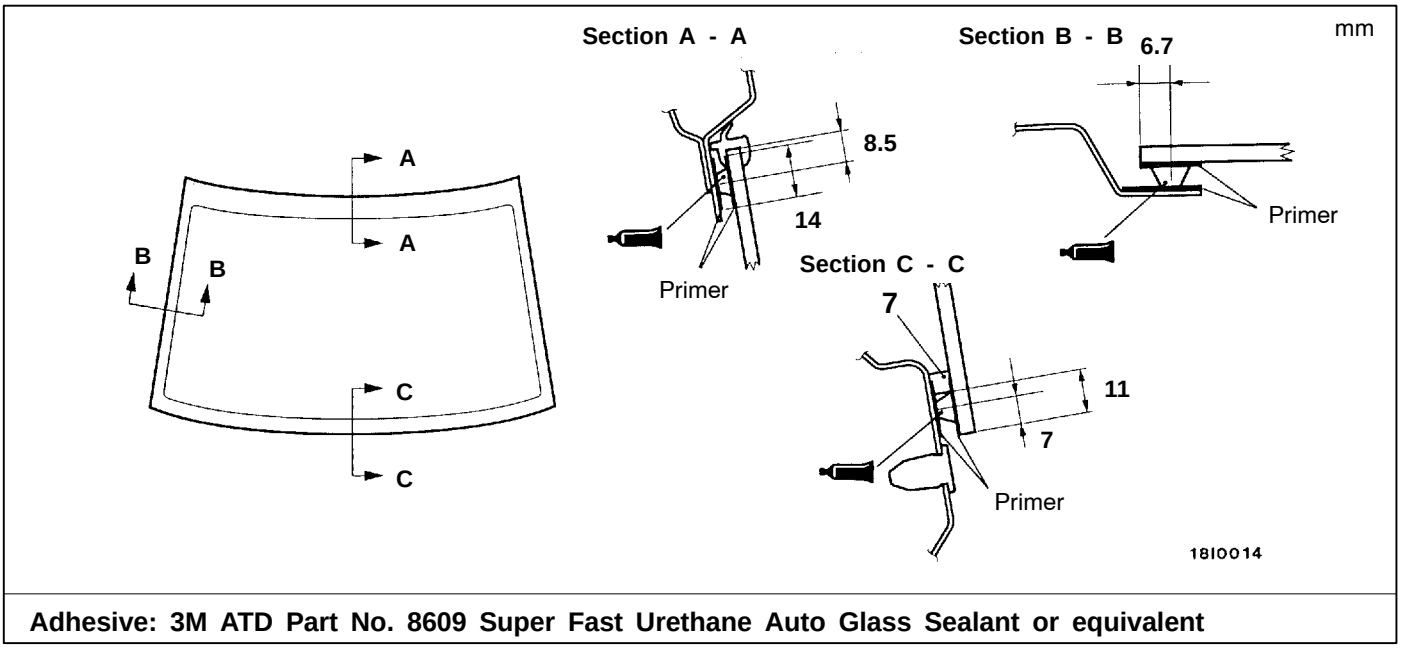
Install the tailgate window glass in the same manner as for the windshield, except the glass stopper (Refer to P.42-11).

REAR WINDOW GLASS <Sedan>

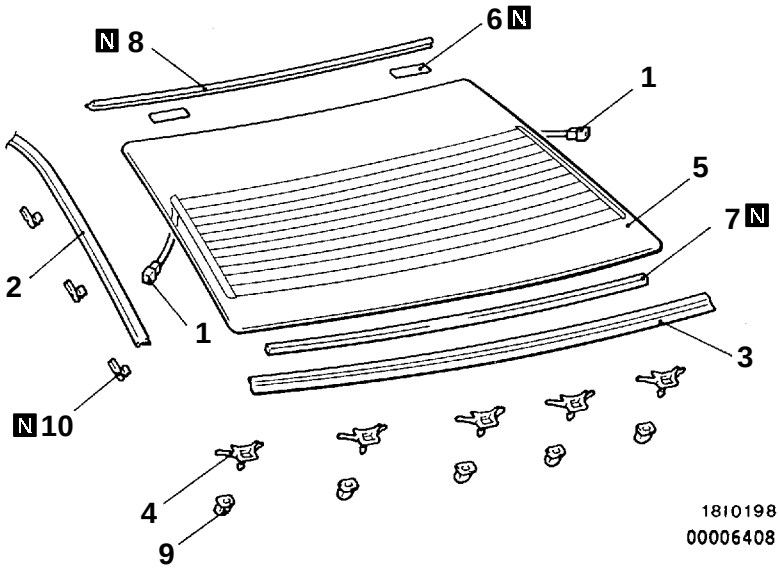
42200160123

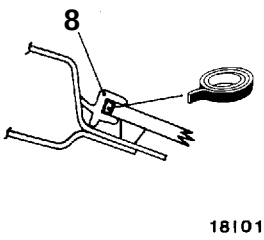
REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation
- Rear Wiper Motor Removal and Installation (Refer to GROUP 51.)
- High Mounted Stop Lamp Removal and Installation (Refer to GROUP 54.)
- Rear Pillar Trim Removal and Installation (Refer to GROUP 52A.)
- Headlining Removal and Installation



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

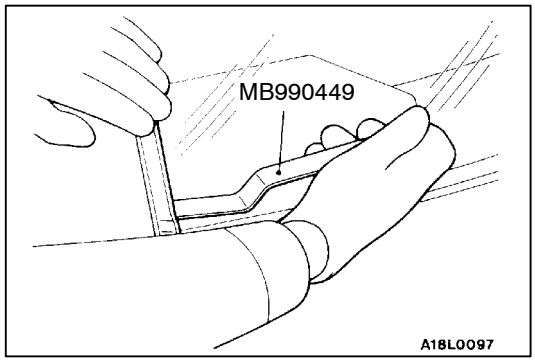




Adhesive tape:
double-sided tape [6 mm width and 0.125 mm thickness]

Removal steps

1. Harness connector
◀A▶ 2. Roof drip moulding
◀A▶ 3. Rear window lower moulding
4. Rear window moulding clip
◀B▶ ▶A◀ 5. Rear window glass
▶A◀ 6. Glass stopper
▶A◀ 7. Window spacer
▶A◀ 8. Rear window upper moulding
9. Clip grommet A
10. Rear drip moulding clip



REMOVAL SERVICE POINTS

◀A▶ ROOF DRIP MOULDING/ REAR WINDOW LOWER MOULDING REMOVAL

Use the special tool to lever out the moulding.

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

◀B▶ REAR WINDOW GLASS REMOVAL

Remove the rear window glass by the same procedure as for the windshield. (Refer to P.42-11.)

INSTALLATION SERVICE POINT

▶A◀ REAR WINDOW UPPER MOULDING/WINDOW SPACER/GLASS STOPPER/REAR WINDOW GLASS INSTALLATION

Install the rear window glass in the same manner as for the windshield (Refer to P.42-11).

DOOR

42300030137

SERVICE SPECIFICATIONS

Items		Standard value
Door outside handle play mm	Front	3.7 or more
	Rear	2.4 or more
Power window operating current A		5 ± 1 (for 14 - 15 V power supply at 25°C)
Door inside handle play mm		5.3 or more

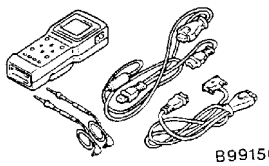
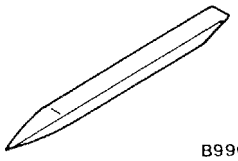
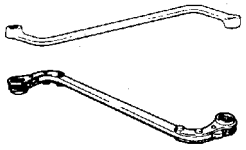
SEALANT

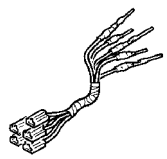
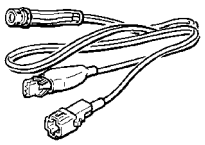
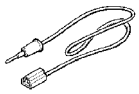
42300050065

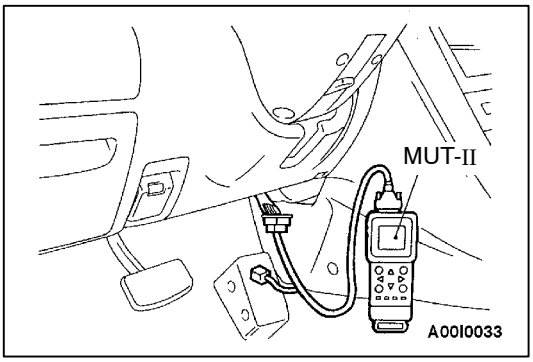
Item	Specified sealant	Remark
Waterproof film	3M ATD Part No. 8625 or equivalent	Ribbon sealer

SPECIAL TOOLS

42300060105

Tool	Number	Name	Use
 B991502	MB991502	MUT-II sub assembly	ETACS-ECU input signal checking
 B990784	MB990784	Ornament remover	Removal of door trim
 00003936	MB990900 or MB991164	Door adjusting wrench	Adjustment of door fit

Tool	Number	Name	Use
A  B  C  D  C991223	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Test harness B: LED harness C: LED harness adapter D: probe	Measurement of terminal voltage A: Connector pin contact pressure inspection B: Power circuit inspection C: Power circuit inspection D: Commercial tester connection



TROUBLESHOOTING

42300070160

DIAGNOSIS FUNCTION

INPUT SIGNAL INSPECTION POINTS <VEHICLES WITH ETACS-ECU>

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

INSPECTION CHART FOR TROUBLE SYMPTOMS

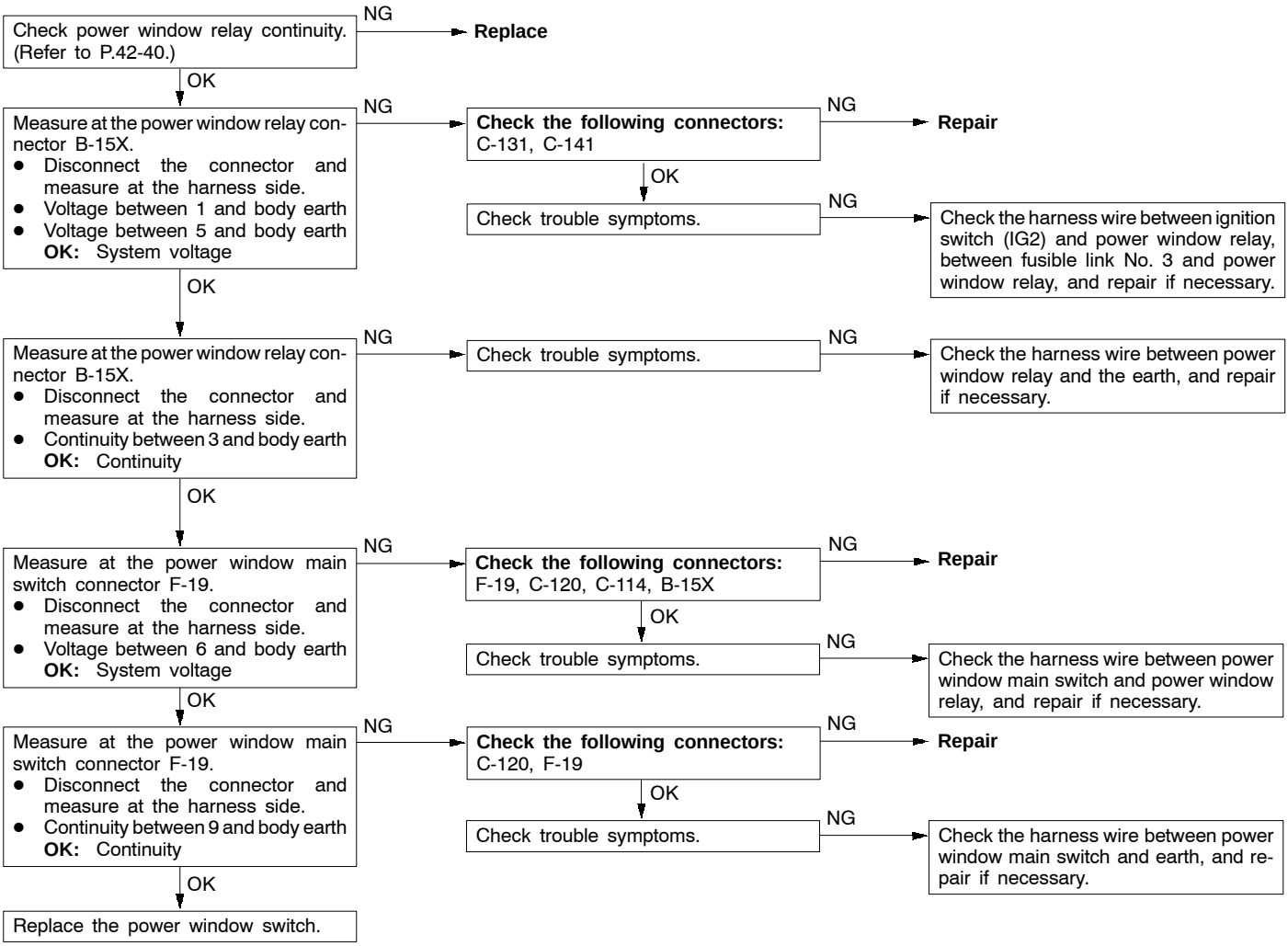
42300700021

Trouble symptom		Inspection procedure	Reference page
Power windows	The power windows cannot be operated by any of the power window switches.	1	42-22
	Driver's side power window cannot be operated by the power window main switch.	2	42-24
	Passenger's side and rear power windows cannot be operated by the power window main switch. (However, they can be operated by the power window sub-switches.)	3	42-25
	When the glass is raised, it then lowers automatically.	4	42-25
	The glass is not lowered when something is jammed in the window.	5	42-25
	When the glass is fully raised, it then lowers automatically.	6	42-26
Door locking mechanism	None of the door lock functions operate.	7	42-26
	None of the doors lock or unlock when the driver's side inside door locking knob is operated (including by means of the door key).	8	42-27
	Some doors do not lock or unlock.	9	42-27

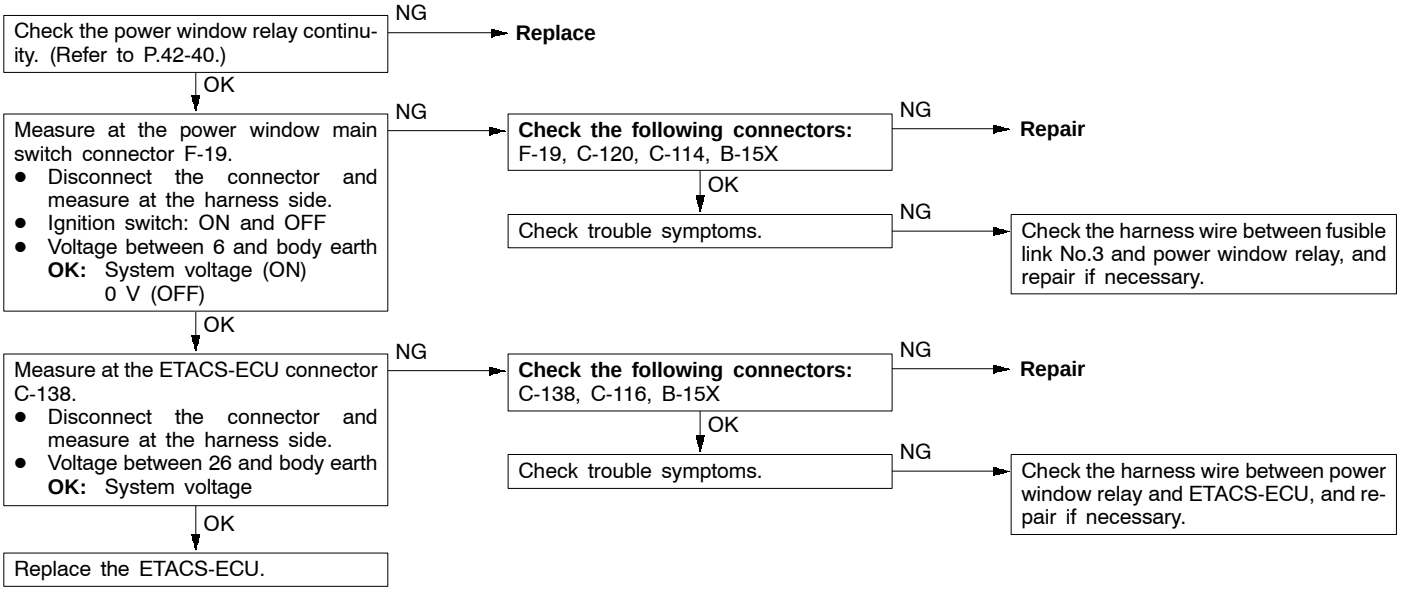
INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

Inspection Procedure 1

The power windows cannot be operated by any of the power window switches. <Vehicles without ETACS>	Probable cause
The cause may be a malfunction of the power window relay and of the power window relay drive circuit.	• Malfunction of power window relay • Malfunction of wiring harness or connector

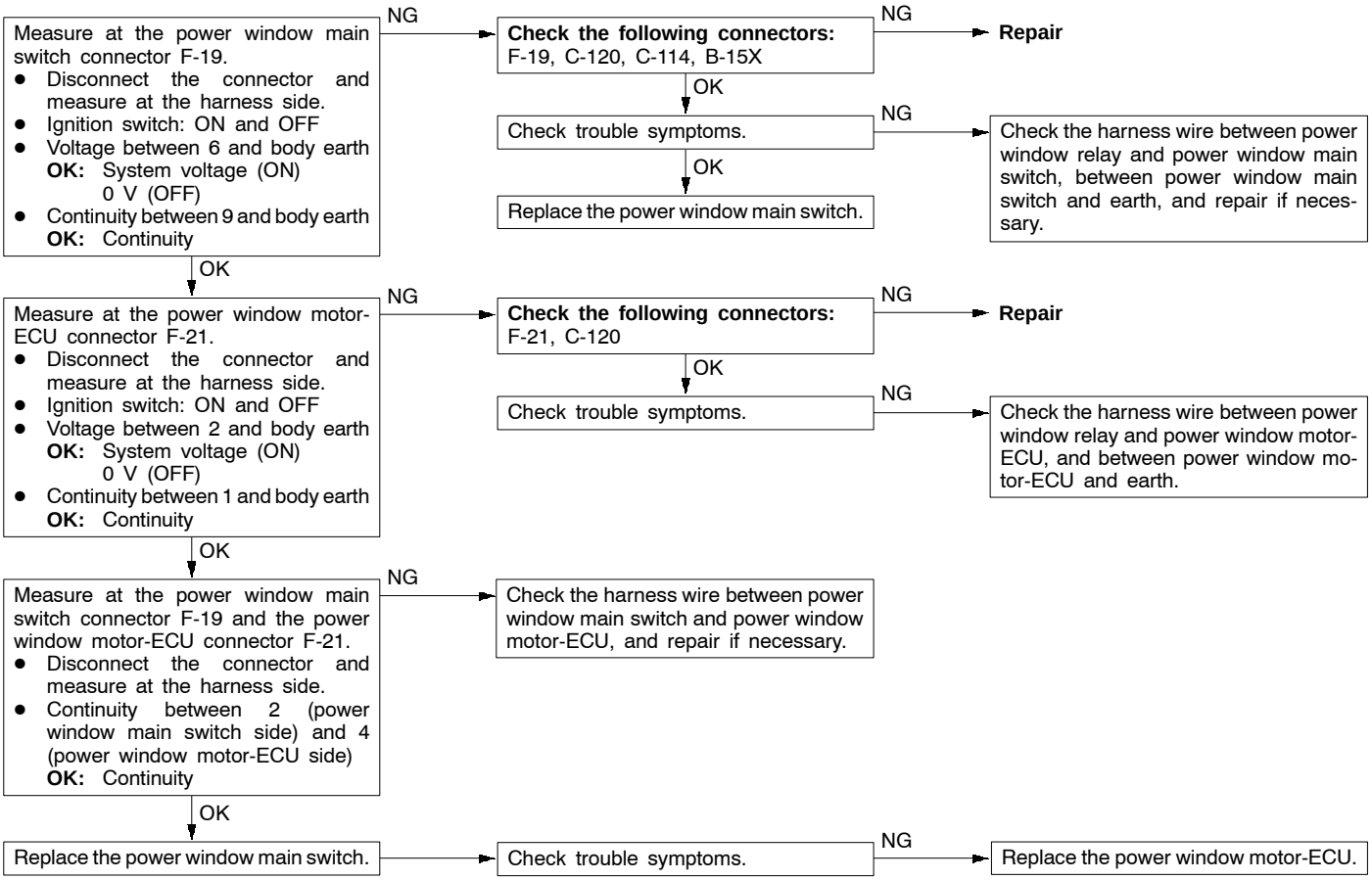


The power windows cannot be operated by any of the power window switches. <Vehicles with ETACS>	Probable cause
The cause may be a malfunction of the power window relay, power window relay drive circuit and of the ETACS-ECU.	• Malfunction of power window relay • Malfunction of ETACS-ECU • Malfunction of wiring harness or connector



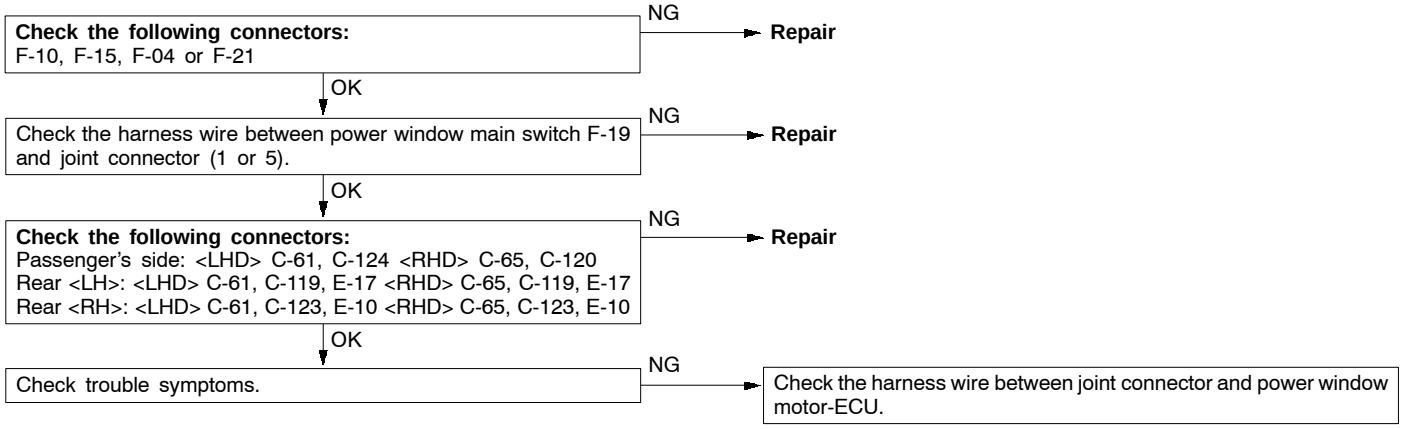
Inspection Procedure 2

Driver's side power window cannot be operated by the power window main switch.	Probable cause
The cause may be a malfunction of power window main switch, power window motor-ECU, or open circuit or short circuit in the communication line between power window main switch and power window motor-ECU.	• Malfunction of power window main switch • Malfunction of power window motor-ECU • Malfunction of wiring harness or connector



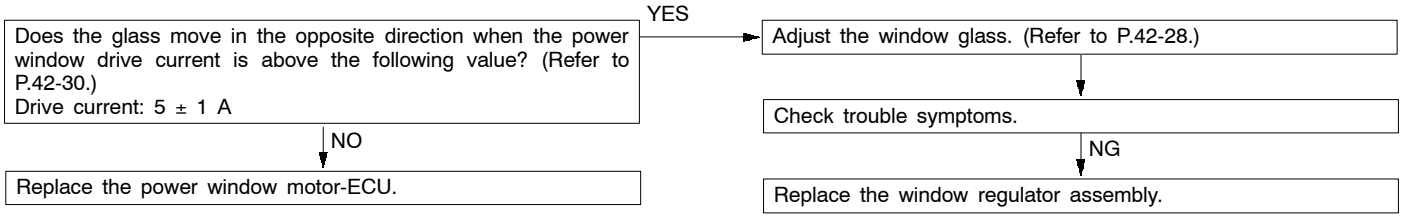
Inspection Procedure 3

Passenger's side and rear power windows cannot be operated by the power window main switch. (However, they can be operated by the power window sub-switches.)	Probable cause
The cause may be open circuit or short circuit in the communication line between power window main switch, passenger's side power window motor-ECU and rear power window motor-ECU.	• Malfunction of wiring harness or connector



Inspection Procedure 4

When the glass is raised, it then lowers automatically.	Probable cause
If the sliding resistance is too large when the glass is being raised, it is judged that something is jammed in the window, and the window is lowered by approximately 150 mm.	• Incorrect window glass adjustment • Glass slider is incorrectly installed or warped



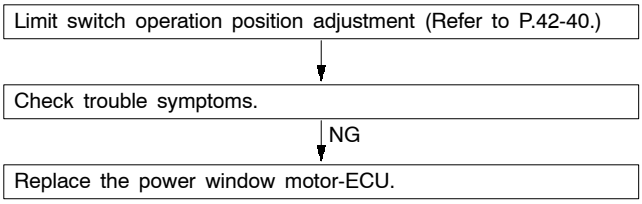
Inspection Procedure 5

The glass is not lowered when something is jammed in the window.	Probable cause
The cause may be a malfunction of the revolution detection sensor in the power window motor-ECU.	• Malfunction of power window motor-ECU

Replace the power window motor-ECU.

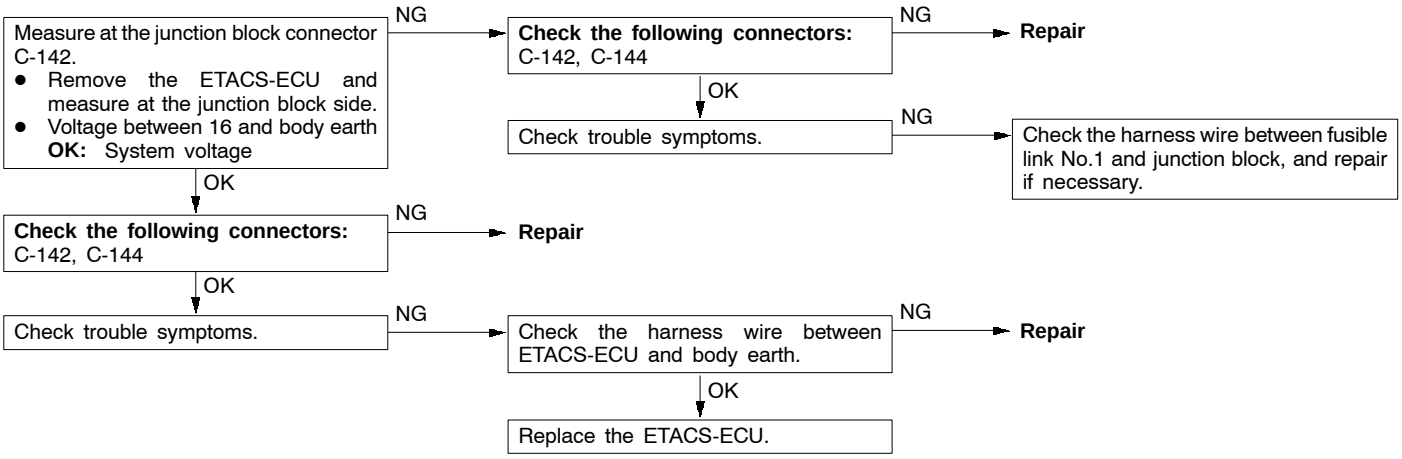
Inspection Procedure 6

When the glass is fully raised, it then lowers automatically.	Probable cause
When the window is within 15 mm of being fully closed, the limit switch turns off to prevent the window from being lowered. However, the above problem can occur if there is a malfunction of the limit switch in the power window motor-ECU.	• Malfunction of the power window motor-ECU



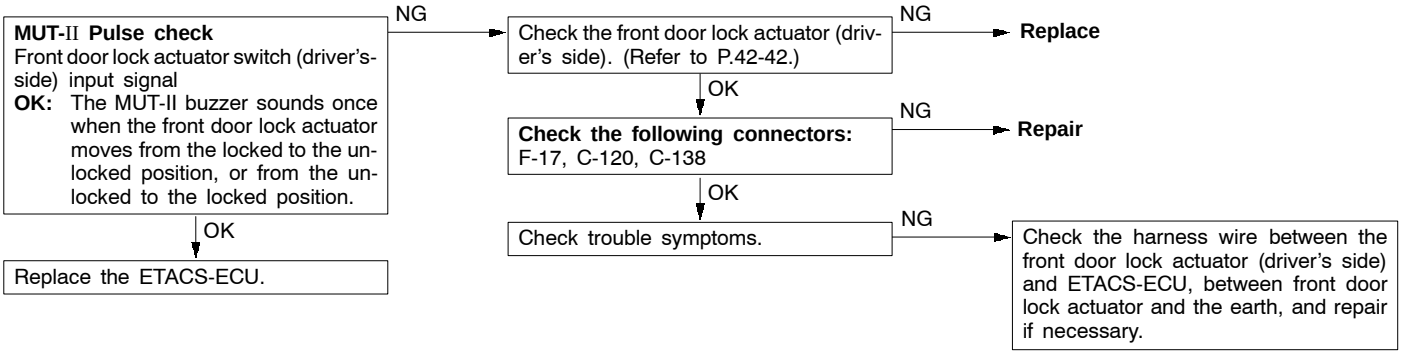
Inspection Procedure 7

None of the door lock functions operate.	Probable cause
The cause may be a malfunction of the ETACS-ECU power supply circuit system or of the earth circuit system.	• Malfunction of ETACS-ECU • Malfunction of wiring harness or connector



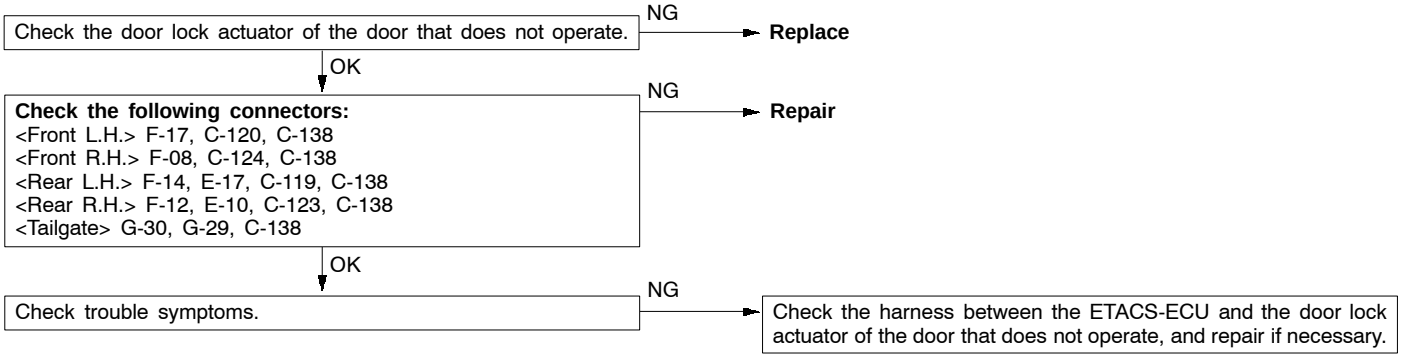
Inspection Procedure 8

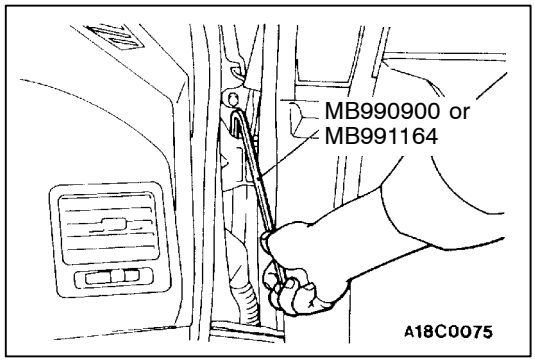
None of the doors lock or unlock when the driver's-side inside door locking knob is operated (including by means of the door key).	Probable cause
The cause may be a malfunction of the door lock actuator switch, the ETACS-ECU or of a wiring harness or connector.	• Malfunction of front door lock actuator (driver's side) • Malfunction of ETACS-ECU • Malfunction of wiring harness or connector



Inspection Procedure 9

Some doors do not lock or unlock.	Probable cause
The cause may be a malfunction of the door lock actuator or tailgate lock actuator or of a wiring harness or connector.	• Malfunction of door lock actuator • Malfunction of tailgate lock actuator • Malfunction of wiring harness or connector



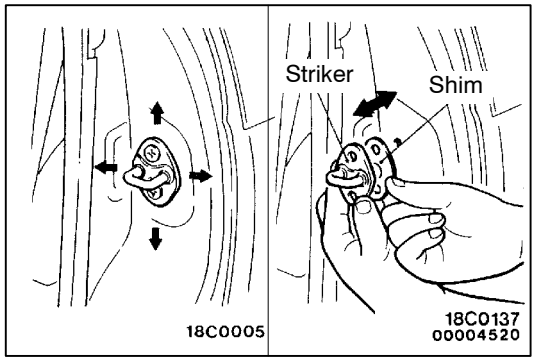


ON-VEHICLE SERVICE 42300090128

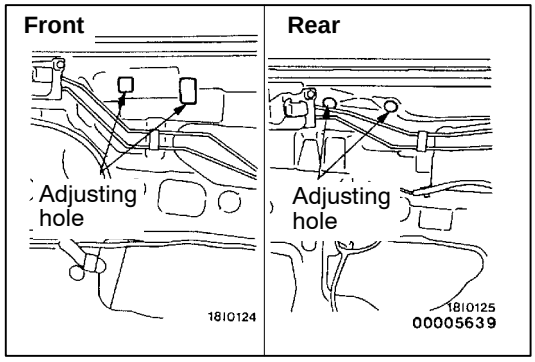
DOOR FIT ADJUSTMENT

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.

Caution
Do not load more than 98 Nm on the special tool (MB991164).



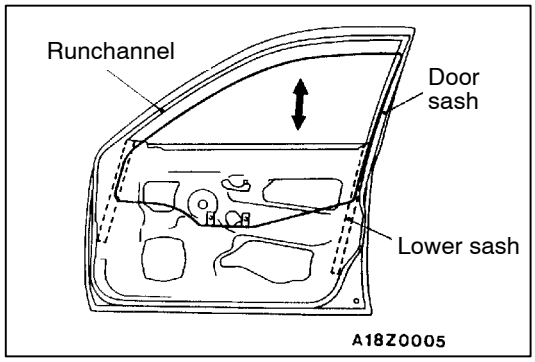
3. If the door opening and closing is heavy, adjust the meshing of the striker and the door latch (in the longitudinal direction) by adding shims to the striker and by moving the striker up and down or to the left and right.



DOOR WINDOW GLASS ADJUSTMENT 42300100227

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

1. Remove the door trim and the waterproof film. (Refer to P.42-33.)
2. Loosen the mounting screw through the adjusting hole with the door window glass fully closed, and lower the door window glass slightly.
3. Close the door window glass fully again, and tighten the door glass mounting screw securely through the adjusting hole.



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

42900190062

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

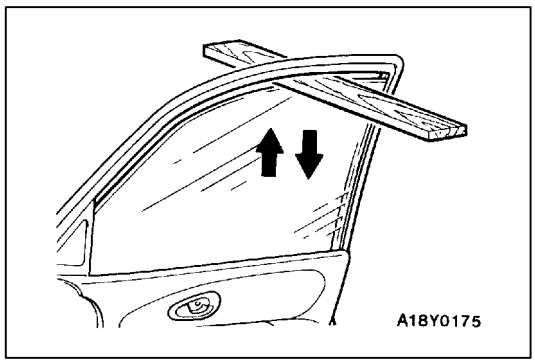
1. Remove the door trim and waterproof film. (Refer to P.42-33.)
2. Remove the window regulator assembly from the door window glass, and then raise and lower the door window glass by hand to check the operation force.

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

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

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

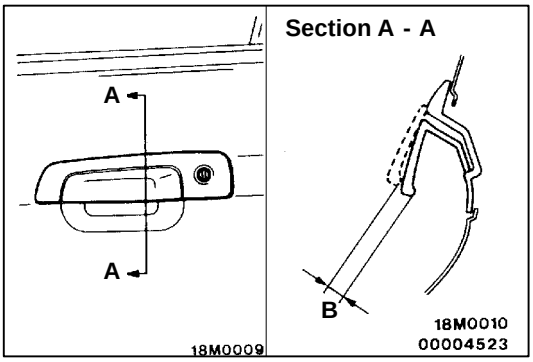
4. If repair or adjustment is not possible, replace the door assembly.



POWER WINDOW SAFETY MECHANISM CHECK

42900100065

1. Place a wooden board with a thickness of approximately 10 mm as shown in the illustration, and then raise the window glass.
2. Check that the window lowers by a distance of approximately 150 mm when the window clamps the wooden board. If this doesn't happen, refer to "Troubleshooting" (P.42-25).

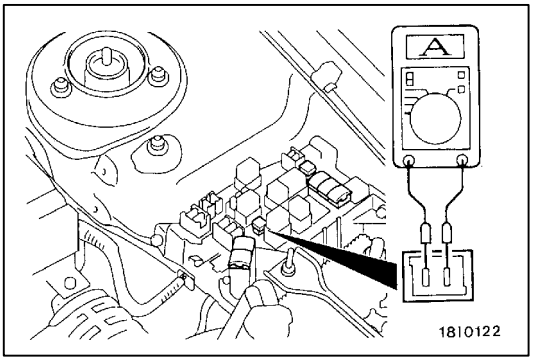


DOOR OUTSIDE HANDLE PLAY CHECK 42300160126

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

   Standard value (B):
   Front door: 3.7 mm or more
   Rear door: 2.4 mm or more

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



POWER WINDOW OPERATION CURRENT INSPECTION 42900110051

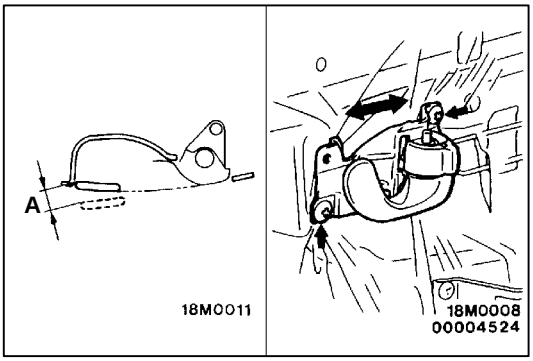
1. Remove the power window fuse and connect a circuit analyser as shown in the illustration.
2. When the power window switch is pressed to the UP position, a large amount of current flows at the time the window starts to close and when it is fully closed, so measure the operation current in the interval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

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

3. If the operation current is outside the standard value, refer to “Troubleshooting” (P.42-25).

CIRCUIT BREAKER (INCORPORATED IN THE POWER WINDOW MOTOR) INSPECTION 42900170080

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 power window glass starts to move downwards within 60 seconds.



DOOR INSIDE HANDLE PLAY CHECK AND ADJUSTMENT 42300150208

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

   Standard value (A): 5.3 mm or more

2. If the door inside handle play is outside the standard value range, remove the door trim. (Refer to P.42-33.)
3. Loosen the inside handle mounting screws, and then move the inside handle back and forth to adjust the play.

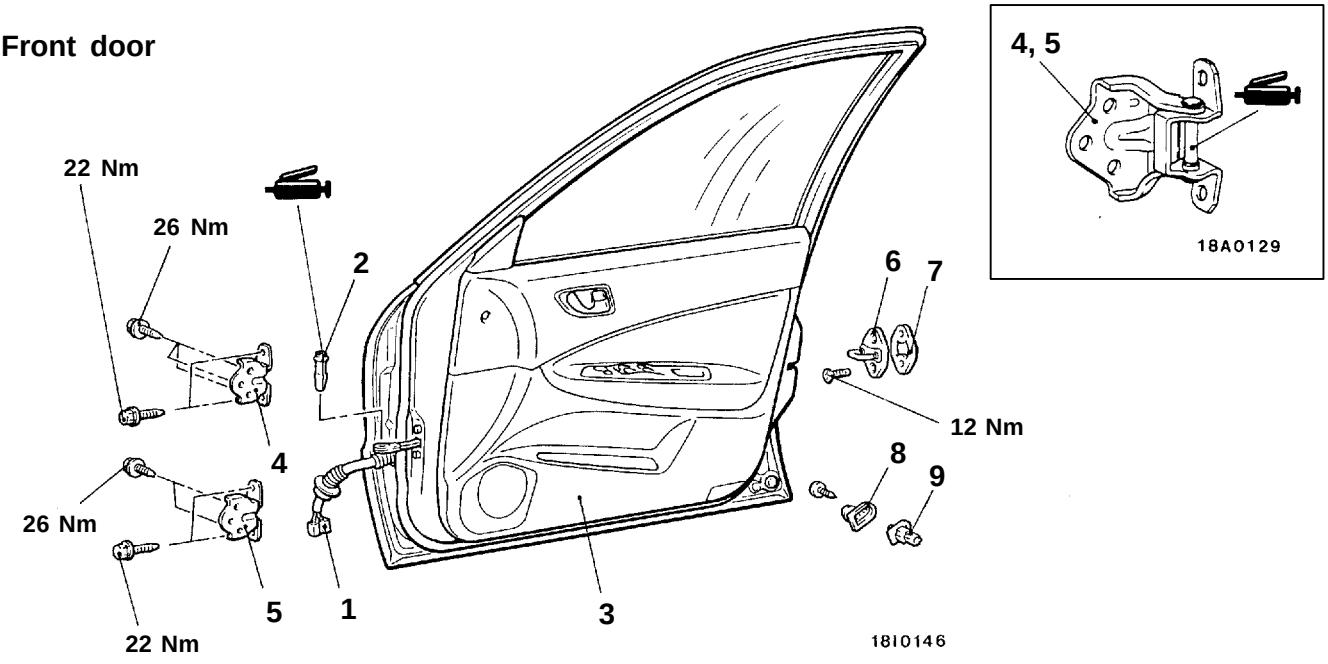
DOOR ASSEMBLY

42300220237

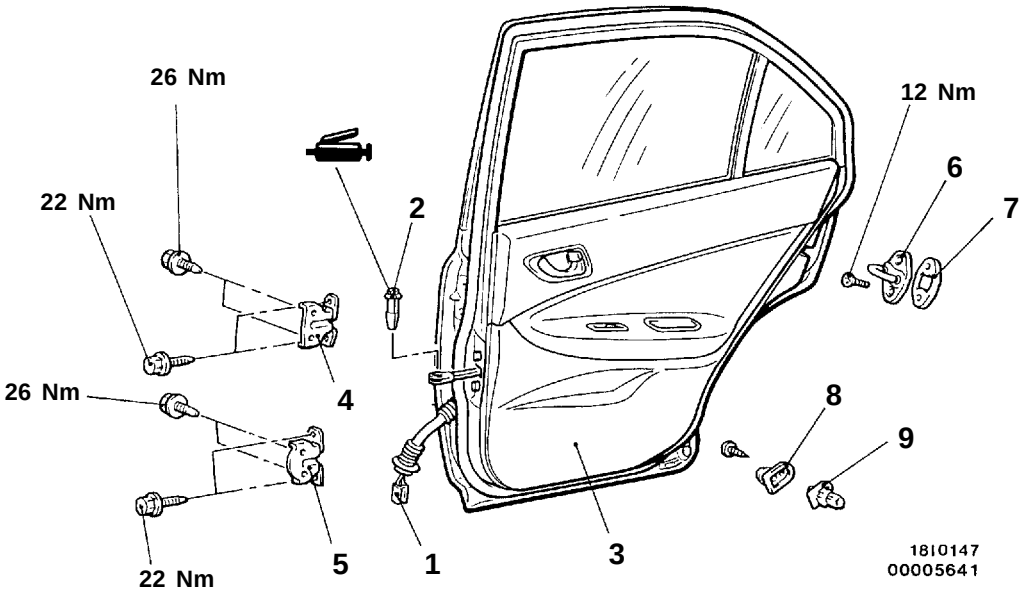
REMOVAL AND INSTALLATION

Post-installation Operation
Door Adjustment (Refer to P.42-28.)

Front door



Rear door



Door assembly removal steps

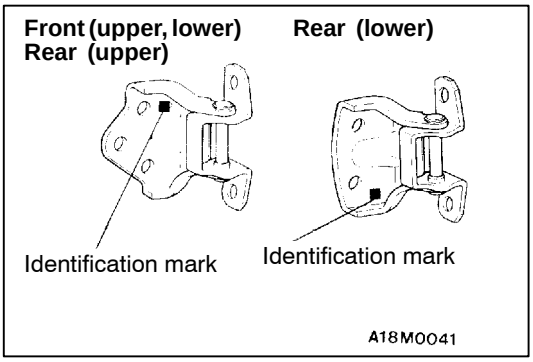
1. Harness connector
2. Spring pin
3. Door assembly
▶A◀ 4. Door upper hinge
▶A◀ 5. Door lower hinge

Striker removal steps

6. Striker
7. Striker shim

Door switch removal steps

8. Door switch cap
9. Door switch

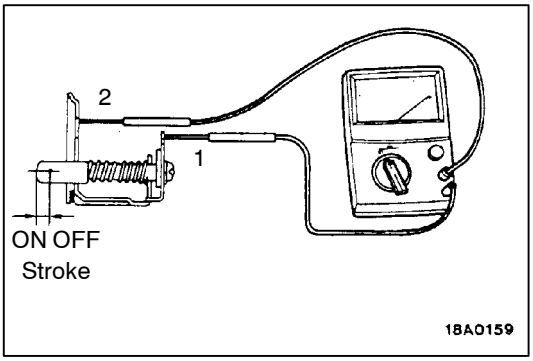


INSTALLATION SERVICE POINT

▶A◀ DOOR LOWER HINGE/DOOR UPPER HINGE INSTALLATION

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

Applicable location		Identification mark
Front left side door	Upper hinge	V
	Lower hinge	U
Front right side door	Upper hinge	U
	Lower hinge	V
Rear left side door	Upper hinge	M2
	Lower hinge	O2
Rear right side door	Upper hinge	N2
	Lower hinge	P2



INSPECTION

42300600093

DOOR SWITCH CONTINUITY CHECK

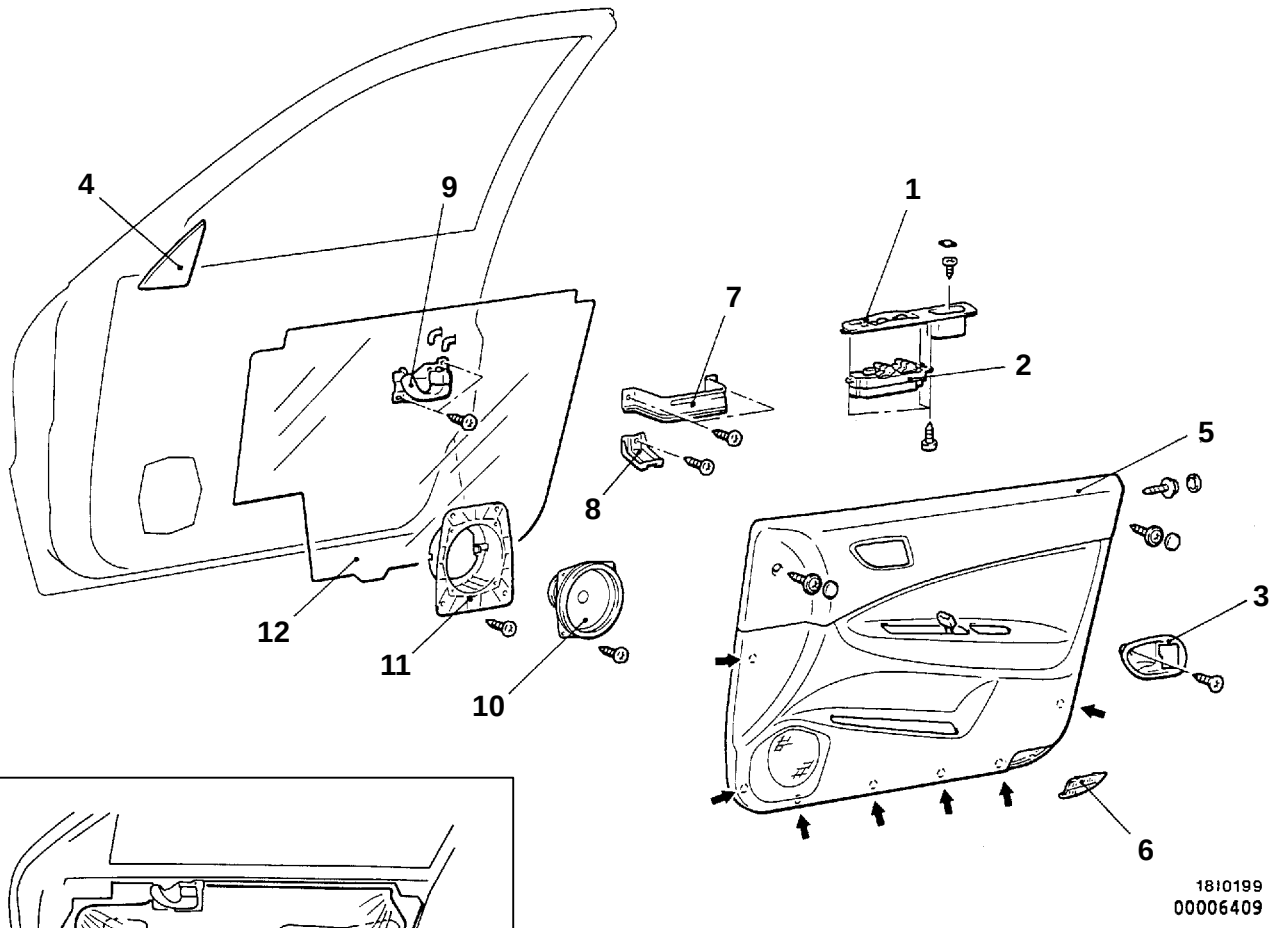
Switch position	Terminal No.	
	1	2
Open (ON)	○	○
Depressed (OFF)		

DOOR TRIM AND WATERPROOF FILM

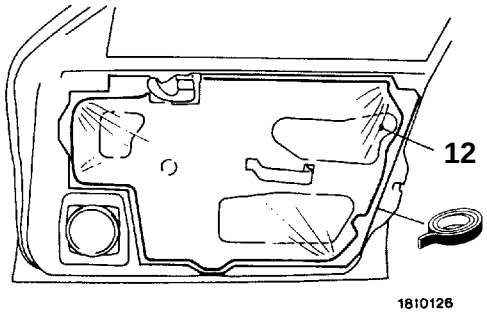
42300430210

REMOVAL AND INSTALLATION

Front door



NOTE
◀ : Resin clip position

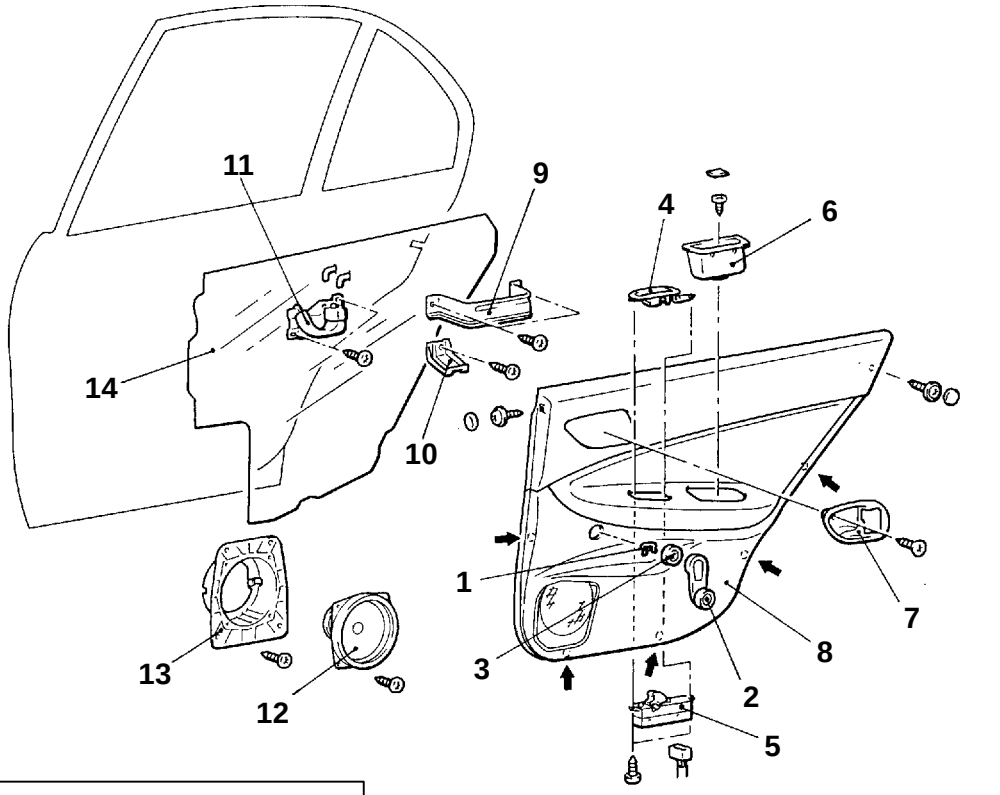


Sealant:
3M ATD Part. No. 8625 or equivalent

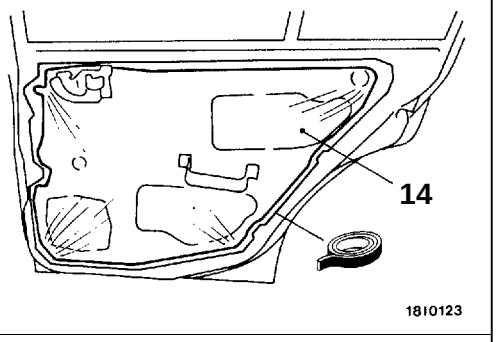
Removal steps

1. Power window switch panel
2. Power window switch
3. Inside handle cover
4. Inner delta cover or tweeter cover
5. Door trim
6. Cover
7. Pull handle bracket A
8. Pull handle bracket B
9. Door inside handle
10. Speaker
11. Speaker cover
12. Waterproof film

Rear door



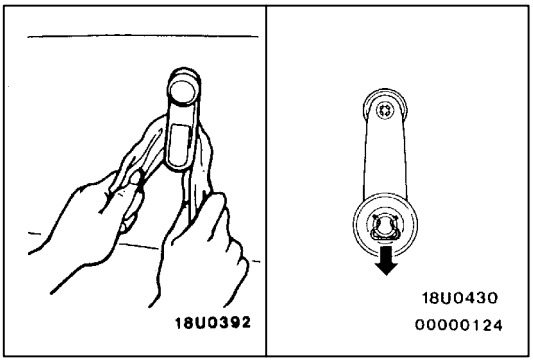
NOTE
⬅ : Resin clip position



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

Removal steps

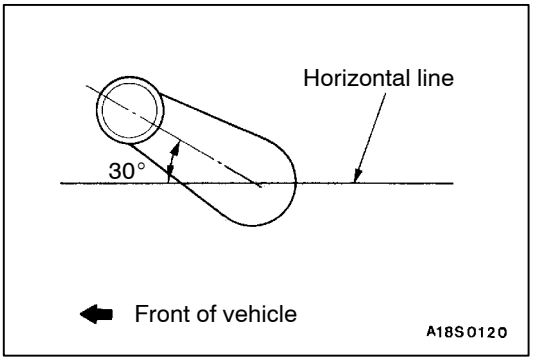
◀A▶ ▶A◀ 1. Clip
<Vehicles without power windows>
▶A◀ 2. Regulator handle
<Vehicles without power windows>
▶A◀ 3. Escutcheon
<Vehicles without power windows>
4. Power window switch panel
<Vehicles with power windows>
5. Power window switch
<Vehicles with power windows>
6. Pull handle box
7. Inside handle cover
8. Door trim
9. Pull handle bracket A
10. Pull handle bracket B
11. Door inside handle
12. Speaker
13. Speaker cover
14. Waterproof film



REMOVAL SERVICE POINT

◀A▶ CLIP REMOVAL

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



INSTALLATION SERVICE POINT

▶A◀ ESCUTCHEON/REGULATOR HANDLE/CLIP INSTALLATION

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

DOOR GLASS AND REGULATOR

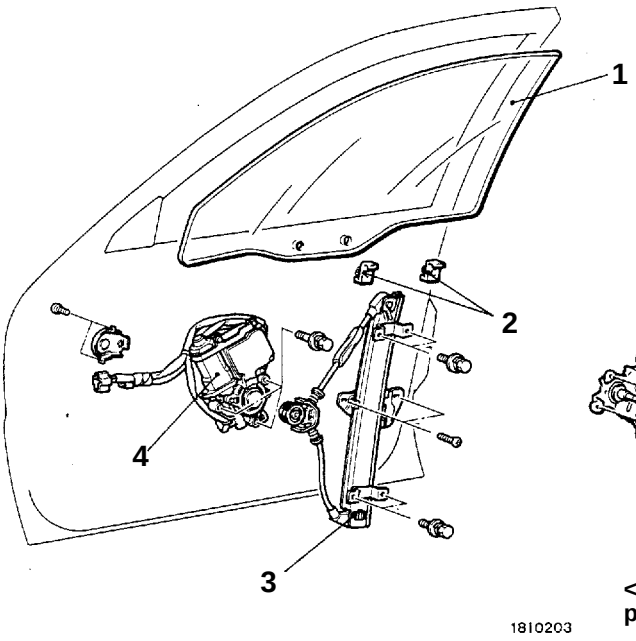
42900130231

REMOVAL AND INSTALLATION

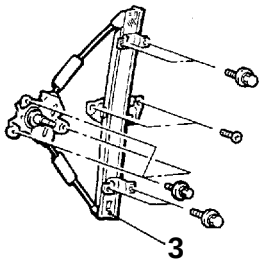
Pre-removal Operation
- Door Trim and Waterproof Film Removal (Refer to P.42-33.)
- Door Beltline Inner Weatherstrip Removal (Refer to P.42-44.)

Post-installation Operation
- Door Window Glass Adjustment (Refer to P.42-28.)
- Door Beltline Inner Weatherstrip Installation (Refer to P.42-44.)
- Door Trim and Waterproof Film Installation (Refer to P.42-33.)

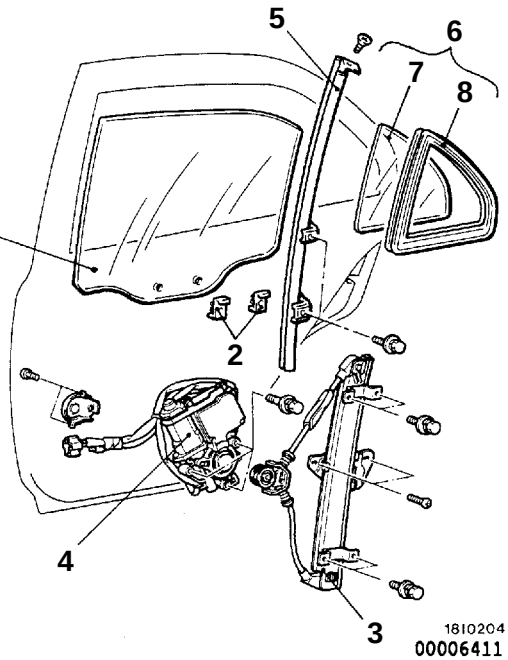
Front door



Rear door



<Vehicles without power windows>



<Vehicles with power windows>

Front window regulator assembly removal steps

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

Rear window regulator assembly removal steps

- Window glass runchannel (Refer to P.42-44.)

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

Stationary window glass removal steps

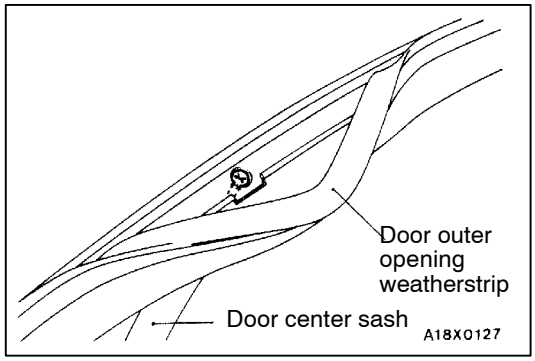
- Window glass runchannel (Refer to P.42-44.)

1. Door window glass
◀B▶ 5. Door center sash
6. Stationary window glass and weatherstrip assembly
7. Stationary window glass
8. Stationary window weatherstrip

REMOVAL SERVICE POINTS

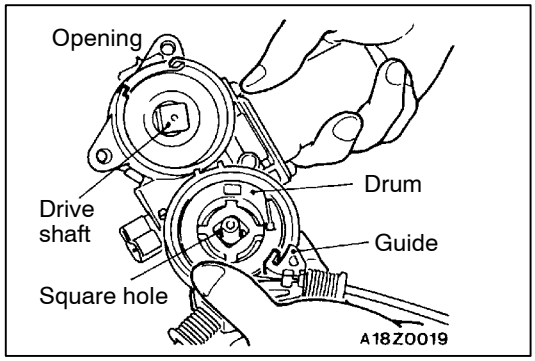
◀A▶ POWER WINDOW MOTOR ASSEMBLY

Caution
Be careful when handling the power window motor assembly, as the force of the spring may cause the wires to pull out of the drum.



◀B▶ DOOR CENTER SASH REMOVAL

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

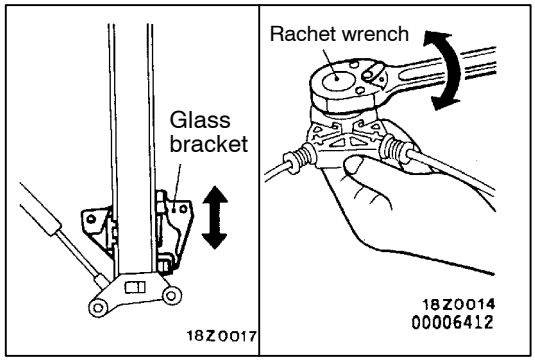


INSTALLATION SERVICE POINTS

▶A◀ POWER WINDOW MOTOR ASSEMBLY/WINDOW REGULATOR ASSEMBLY

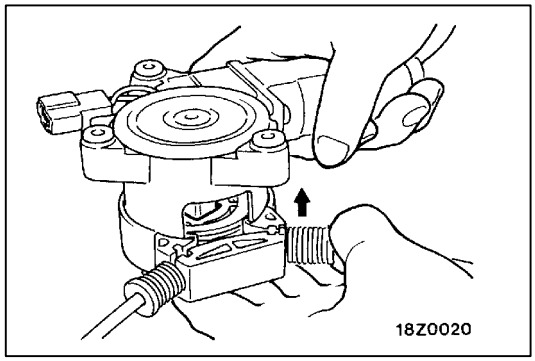
POWER WINDOW MOTOR ASSEMBLY AND WINDOW REGULATOR ASSEMBLY INSTALLATION PROCEDURE

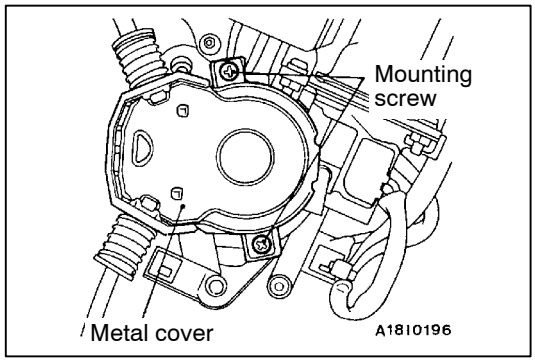
1. Align the power window motor drive shaft and the square hole in the drum while using the guide and the opening in the motor housing as a reference for the installation position.



NOTE
(1) Align the square hole with the drive shaft by sliding the glass bracket (glass mounting section) or by turning the drum using a ratchet wrench (with a socket diameter of 12.7 mm).
(2) Support the drum and the guide with your hand while turning the drum, otherwise the wires may pull out of the drum.
(3) If the wires pull out of the drum, re-insert them by following the drum and regulator wire installation procedure.

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

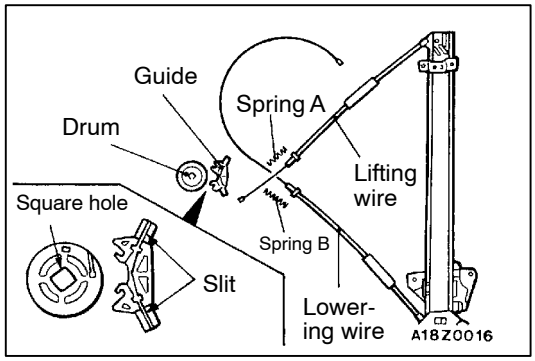




3. Install the metal cover securely to the housing.

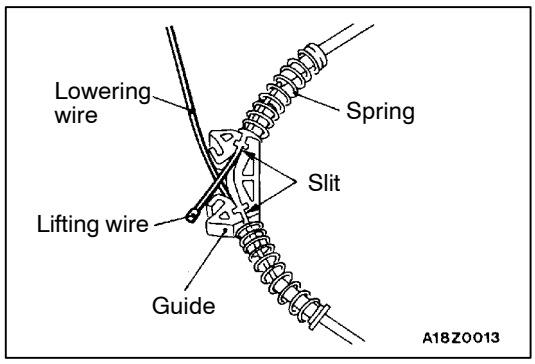
Caution
Make sure that the metal cover is installed securely and does not move, in order to stop the drum from vibrating. If the drum vibrates, the glass may not slide up and down smoothly, or it may fall down.

4. Apply battery voltage to the power window motor, and check that the glass bracket moves smoothly.

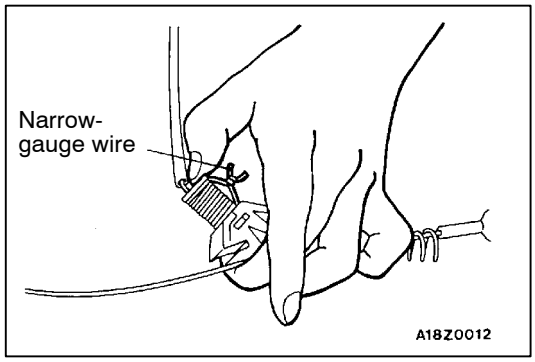


DRUM AND REGULATOR WIRE INSTALLATION PROCEDURE

1. Place the drum, guide and regulator on a work bench as shown in the illustration.
   (1) Place the drum so that the square hole is facing upward.
   (2) Place the guide so that the slits are facing upward.
   (3) Place the regulator so that the glass bracket is facing downward. Position the glass bracket so that glass is in the fully-open position.

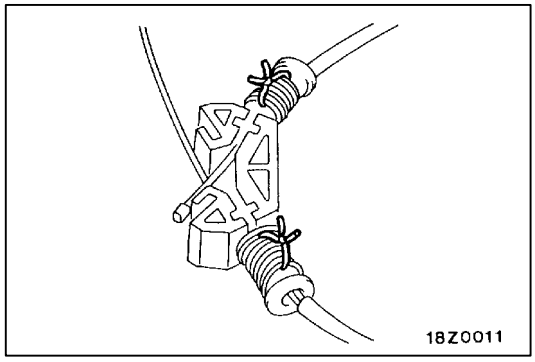


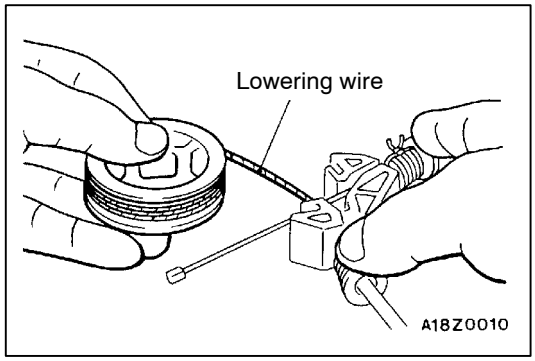
2. Pass the springs over the wires, and then install the lowering wire to the guide first, followed by the lifting wire. (The lifting wire should be on top of the lowering wire.)



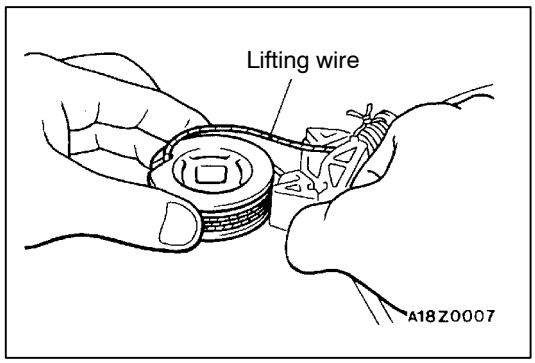
3. Use some narrow-gauge wire (approx. 0.5 mm diameter) to compress the springs.

   NOTE
   Tie the narrow-gauge wires to the slits in the guide.

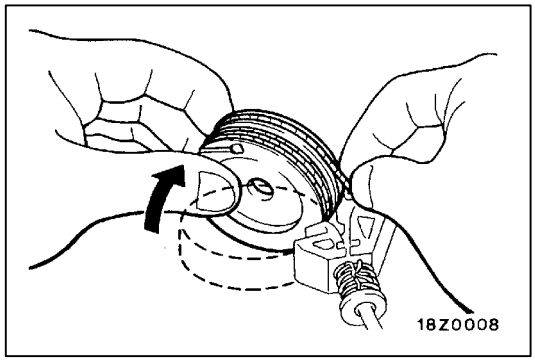




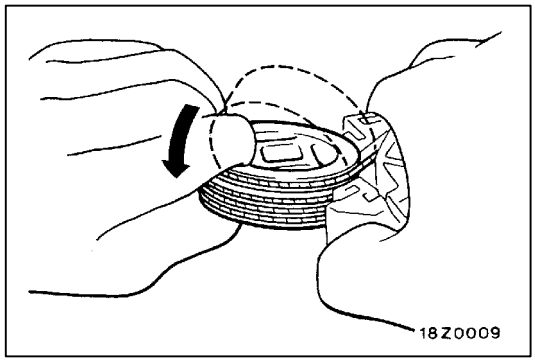
4. Insert the end of the lowering wire into the wire hole at the bottom of the drum, and then wrap the wire securely around the groove of the drum from the bottom so that there is no slackness in the wire.



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



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



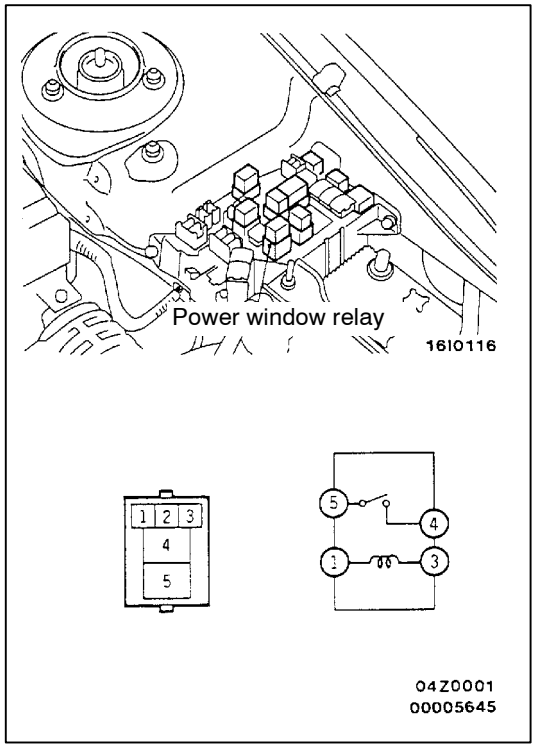
(3) Return the drum to its original position while holding the wires to make sure that they do not pull out.

6. After installing the power window motor assembly to the window regulator assembly, cut and remove the wires which are compressing the springs.

▶B◀ DOOR WINDOW GRASS INSTALLATION

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

NOTE
Fully raising the door window glass will set the door limit switch to the correct position.



INSPECTION

42900180106

POWER WINDOW RELAY CONTINUITY CHECK

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

DOOR HANDLE AND LATCH

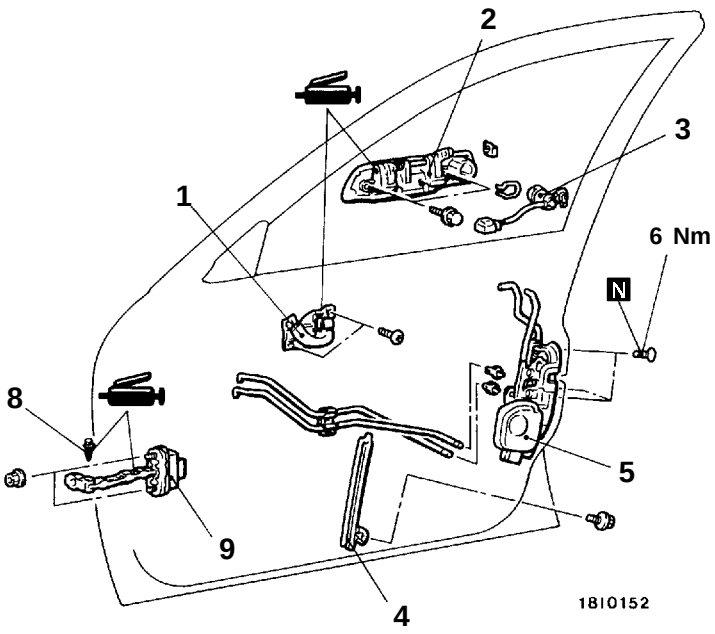
42300460219

REMOVAL AND INSTALLATION

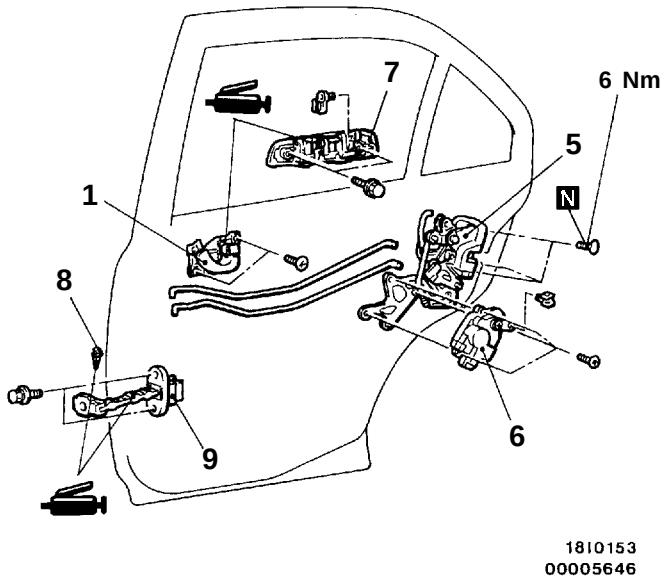
Pre-removal Operation
- Door Trim Removal (Refer to P.42-33.)

Post-installation Operation
- Door Inside Handle Play Check (Refer to P.42-30.)
- Door Outside Handle Play Check (Refer to P.42-30.)
- Door Trim Installation (Refer to P.42-33.)

Front door



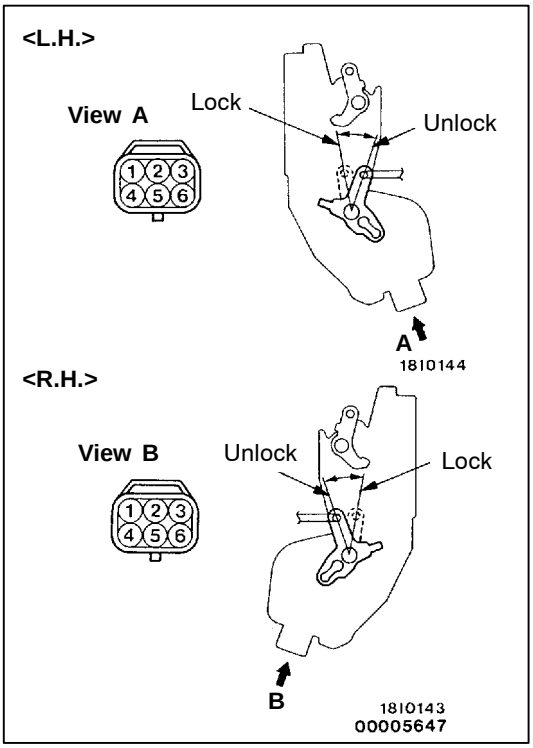
Rear door



Front door handle and door latch assembly removal steps
1. Door inside handle
- Waterproof film (Refer to P.42-33.)
2. Door outside handle
3. Door lock key cylinder
4. Rear lower sash
5. Door latch assembly

Rear door handle and door latch assembly removal steps
1. Door inside handle
- Waterproof film (Refer to P.42-33.)
- Door center sash (Refer to P.42-36.)
5. Door latch assembly
6. Door lock actuator
7. Door outside handle

Door check removal steps
1. Door inside handle
- Waterproof film (Refer to P.42-33.)
8. Spring pin
9. Door check



INSPECTION

FRONT DOOR LOCK ACTUATOR CHECK 42300610102

L.H. drive vehicles

<Driver's side>

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

<Passenger's side>

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

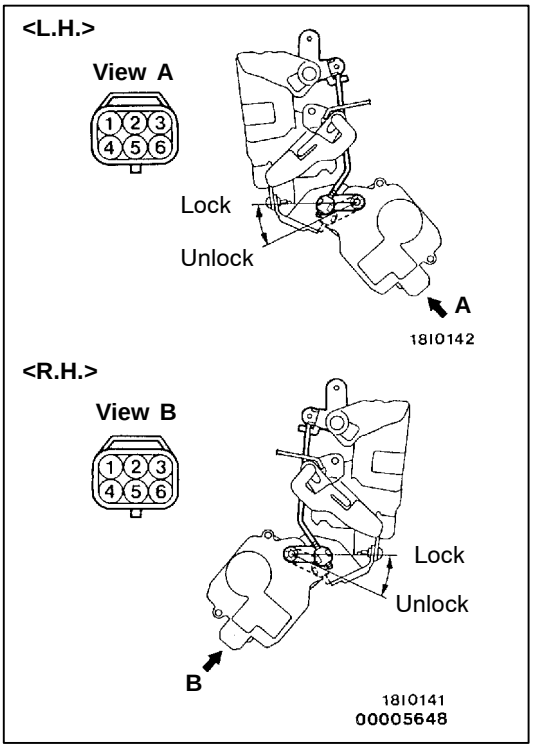
R.H. drive vehicles

<Driver's side>

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

<Passenger's side>

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



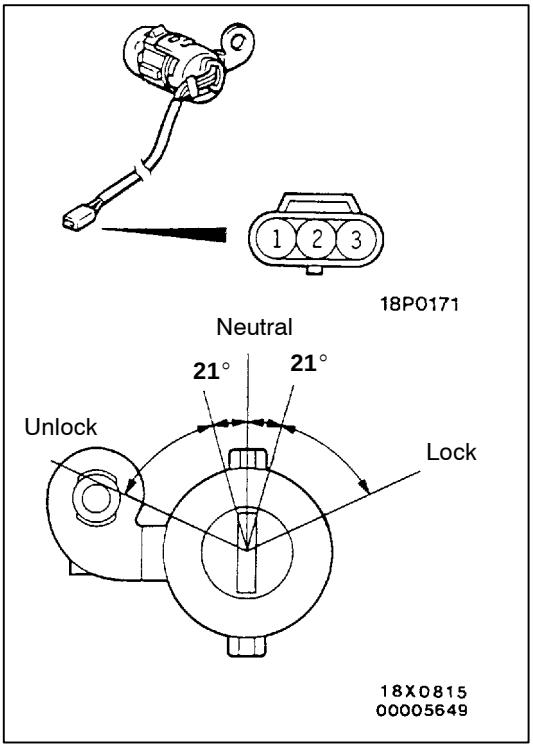
REAR DOOR LOCK ACTUATOR CHECK 42300620082

<L.H.>

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

<R.H.>

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



DOOR LOCK KEY CYLINDER SWITCH CHECK 42300630122

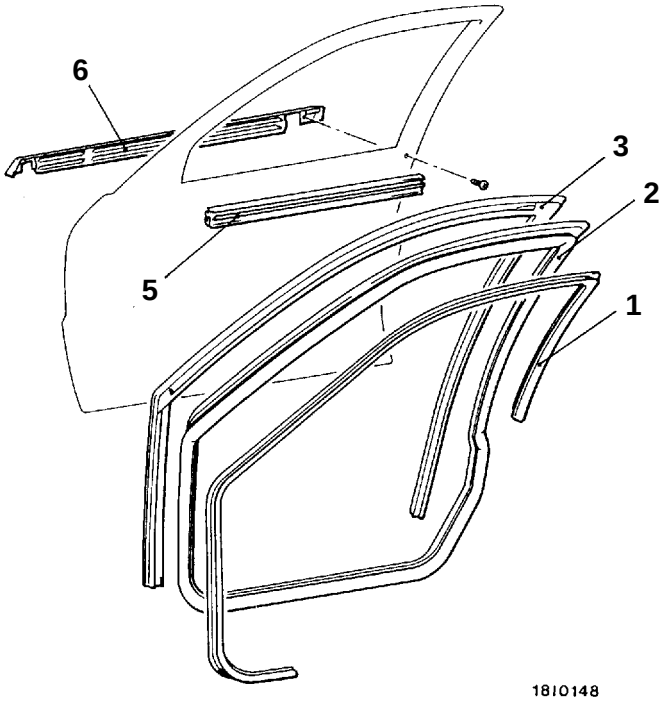
Switch position	Terminal No.		
	1	2	3
LOCK	○	○	
NEUTRAL (OFF)			
UNLOCK		○	○

WINDOW GLASS RUNCHANNEL AND DOOR OPENING WEATHERSTRIP

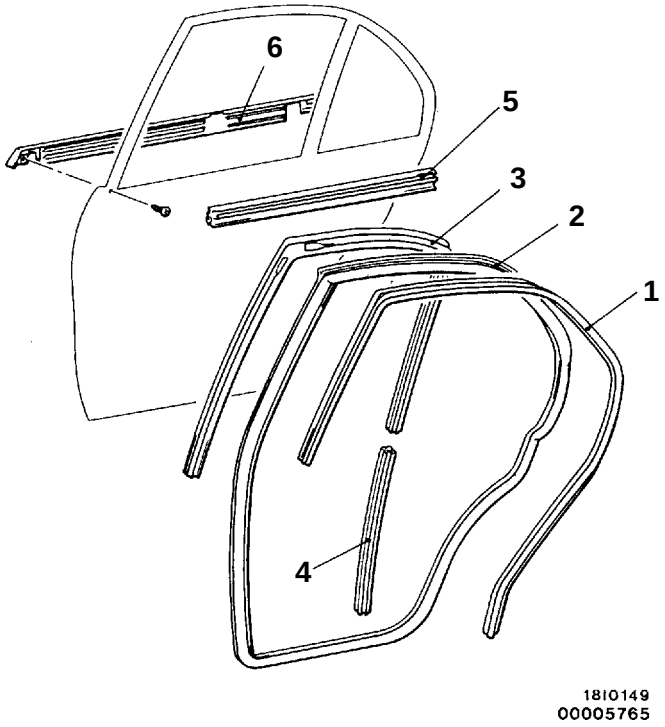
42300310187

REMOVAL AND INSTALLATION

Front door



Rear door



Door inner opening weatherstrip removal steps

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

1. Door inner opening weatherstrip

Door outer opening weatherstrip removal

◀A▶ ▶A◀ 2. Door outer opening weatherstrip

Door window glass runchannel removal steps

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

Door beltline inner weatherstrip removal steps

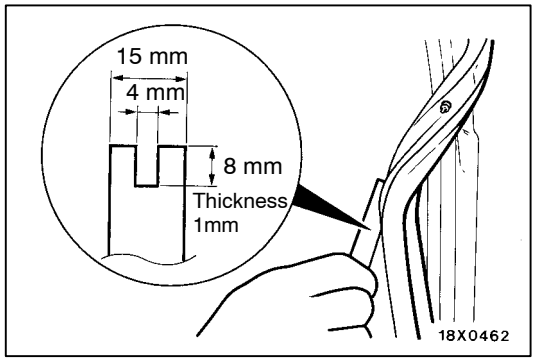
- Door trim (Refer to P.42-33.)

5. Door beltline inner weatherstrip

Door beltline moulding removal steps

- Door mirror (Refer to GROUP 51.)

6. Door beltline moulding



REMOVAL SERVICE POINT

◀A▶ DOOR OUTER OPENING WEATHERSTRIP REMOVAL

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

INSTALLATION SERVICE POINT

▶A◀ DOOR OUTER OPENING WEATHERSTRIP INSTALLATION

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

Item		Identification colour
Front door	Left	White
	Right	Brown
Rear door	Left	Yellow
	Right	Blue

TAILGATE <Wagon>

42400030017

SERVICE SPECIFICATION

Item	Standard value
Tailgate handle free play mm	1.5 - 5.5

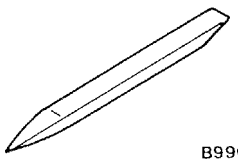
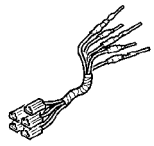
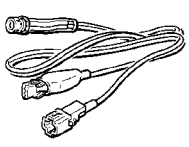
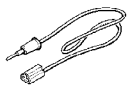
SEALANT

42400050044

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

SPECIAL TOOLS

42400060030

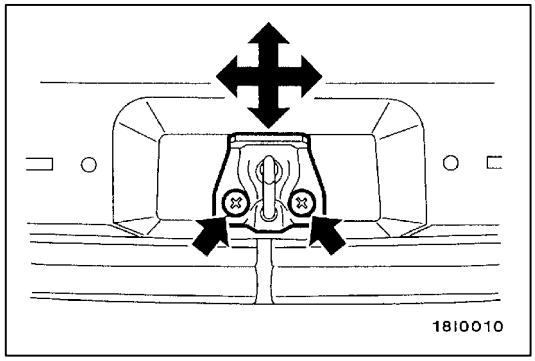
Tool	Number	Name	Use
 B990784	MB990784	Ornament remover	Removal of the tailgate trim
A  B  C  D  C991223	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Test harness B: LED harness C: LED harness adapter D: probe	Measurement of terminal voltage A: Connector pin contact pressure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

TROUBLESHOOTING

42400070088

INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Reference page
Door lock mechanism does operate.	42-26.

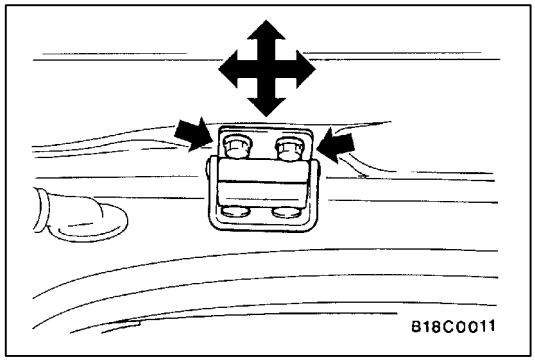


ON-VEHICLE SERVICE

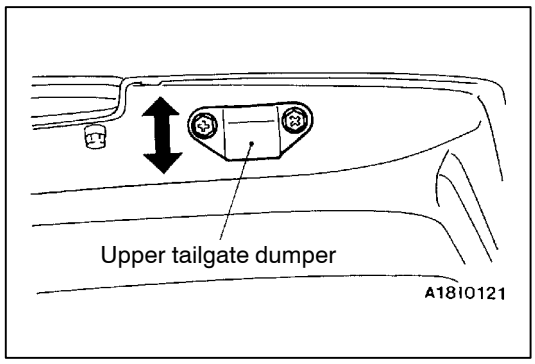
42400090039

TAILGATE FIT ADJUSTMENT

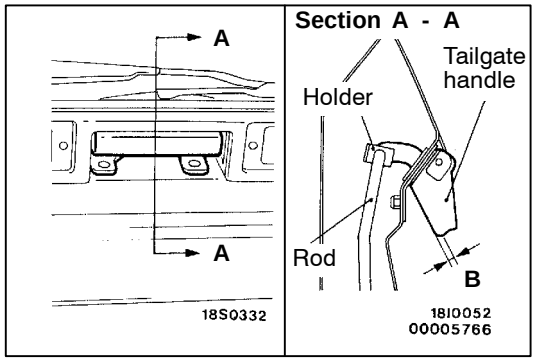
1. If the striker and the latch do not mesh properly, move the striker forward or back or to the left or right to adjust.



2. If the clearance all the way around the tailgate is not uniform when the tailgate is closed, adjust by moving the tailgate hinges forward or back or to the left or right until the clearance is uniform.



3. Check the contact between the upper tailgate damper and the lower tailgate damper when the tailgate is closed. If they do not contact properly, adjust by moving the upper tailgate damper in the direction of the arrows.



TAILGATE HANDLE PLAY CHECK

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

   Standard value (B): 1.5 - 5.5 mm

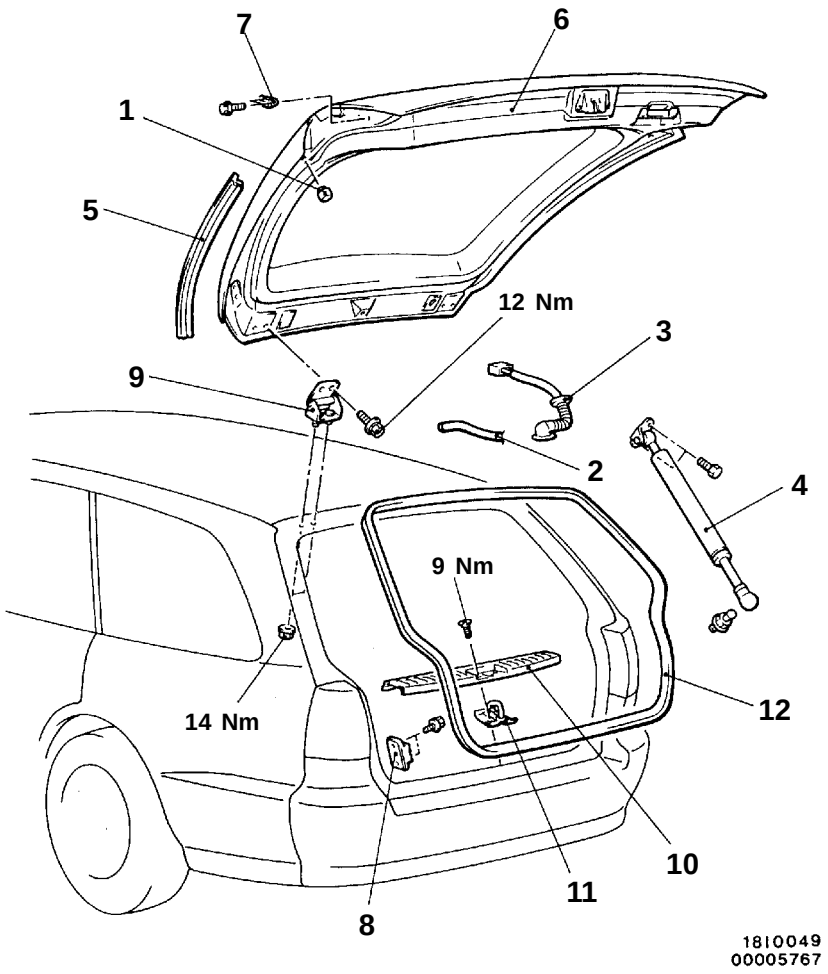
2. If the play is outside the standard value range, open the tailgate handle holder and adjust the contact condition between the tailgate latch rod and the tailgate handle.

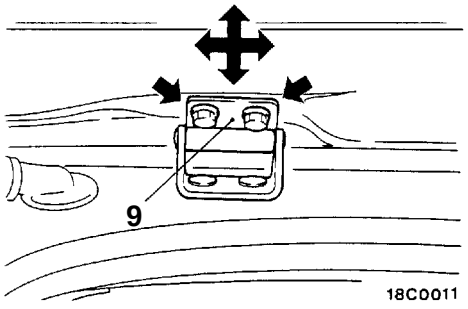
TAILGATE ASSEMBLY

42400110124

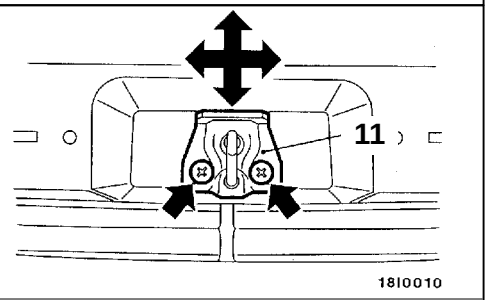
REMOVAL AND INSTALLATION

Post-installation Operation
<Tailgate assembly>
- Tailgate fit adjustment (Refer to P.42-46.)

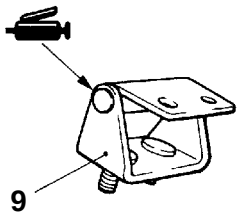




Adjustment of clearance around tailgate



Adjustment of tailgate step and tailgate striker linkage



Tailgate assembly removal steps
- High-mounted stop lamp (Refer to GROUP 54.)

1. Bumper
2. Washer hose
3. Harness connector

◀A▶ 4. Tailgate gas spring

5. Tailgate side weatherstrip
6. Tailgate assembly
7. Upper tailgate dumper
8. Lower tailgate dumper

Tailgate striker removal steps

10. Rear end trim
11. Tailgate striker

Tailgate opening weatherstrip removal steps

10. Rear end trim

▶A◀ 12. Tailgate opening weatherstrip

Tailgate hinge removal steps

2. Washer hose
3. Harness connector

◀A▶ 4. Tailgate gas spring

6. Tailgate assembly
- Headlining

9. Tailgate hinge

REMOVAL SERVICE POINT

◀A▶ TAILGATE GAS SPRING REMOVAL

Caution

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

INSTALLATION SERVICE POINT

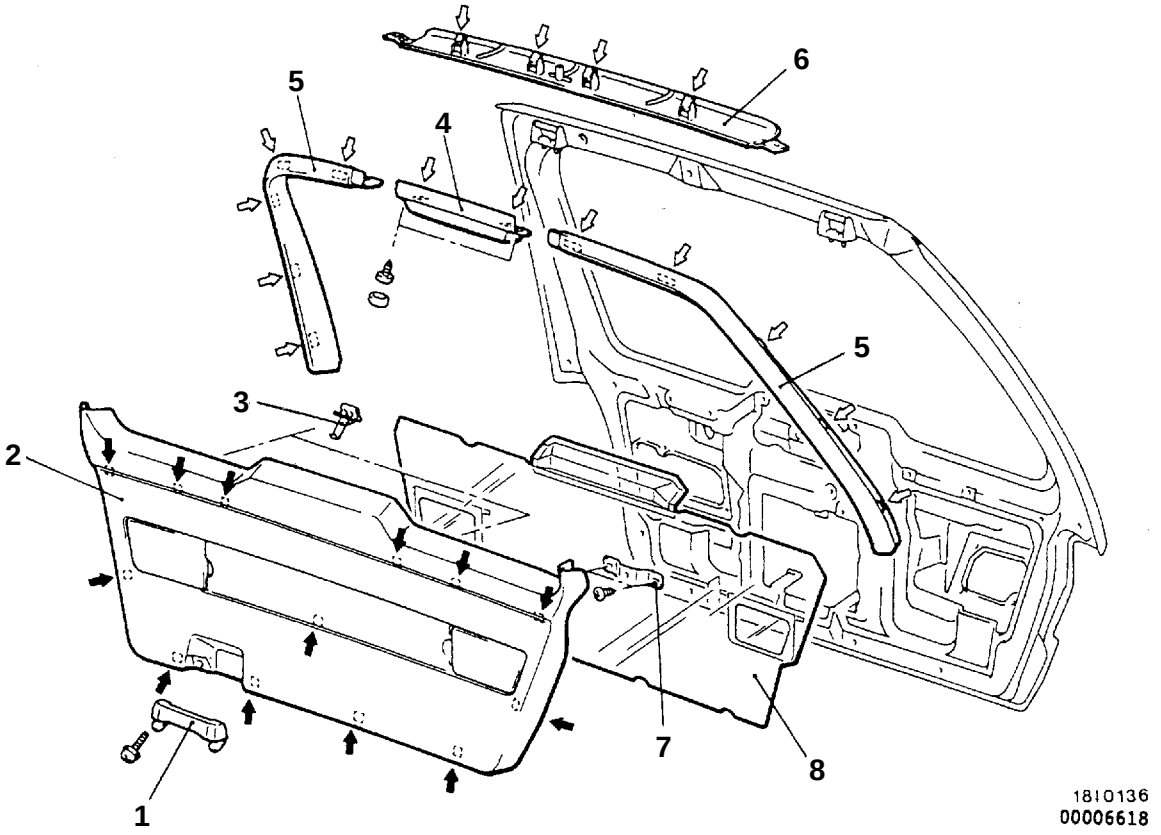
▶A◀ TAILGATE OPENING WEATHERSTRIP INSTALLATION

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

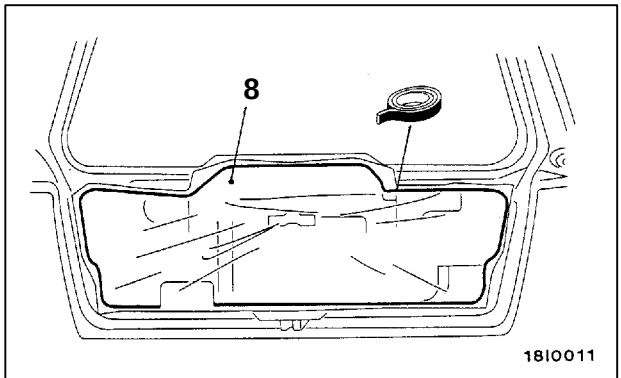
TAILGATE TRIM AND WATERPROOF FILM

42400140048

REMOVAL AND INSTALLATION



NOTE
: Resin clip position
: Sheet metal clip position



Sealant: 3M ATD Part No.8625 or equivalent

Removal steps

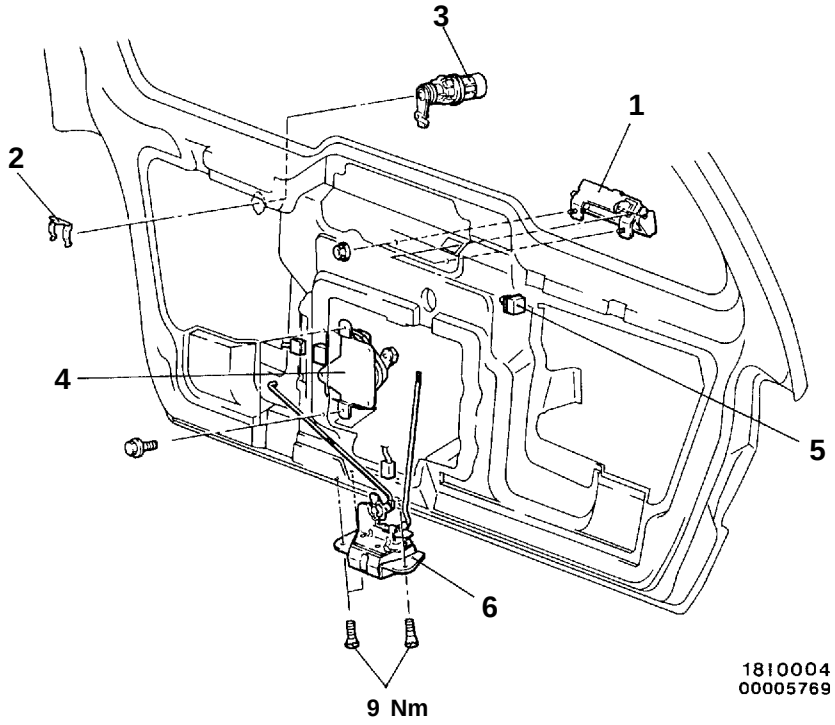
1. Tailgate grip
2. Lower tailgate trim
3. Tailgate clip
4. Cover
5. Side tailgate trim
6. Rear roof rail trim
7. Tailgate trim bracket
8. Waterproof film

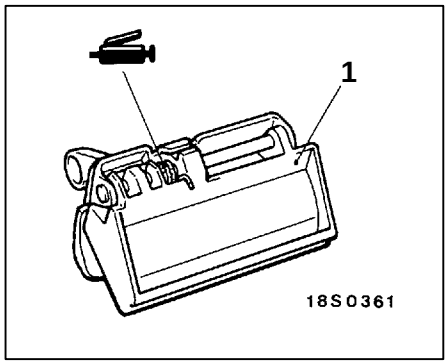
TAILGATE HANDLE AND LATCH

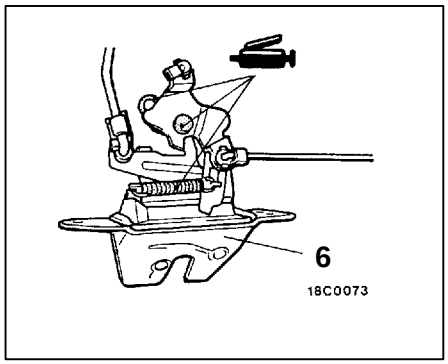
42400170054

REMOVAL AND INSTALLATION

Post-installation Operation
- Tailgate Handle Free Play Check (Refer to P.42-46.)





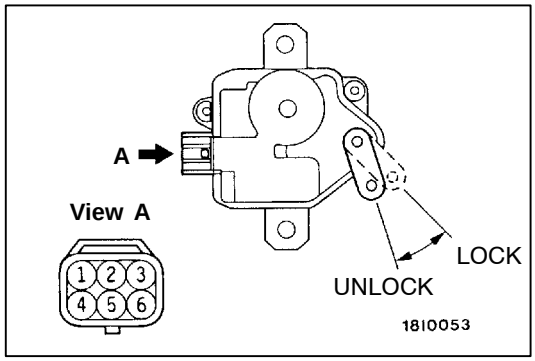


Tail handle and lock key cylinder removal steps
- Tailgate trim and waterproof film (Refer to P.42-49.)
- Tailgate garnish

1. Tailgate handle
2. Cylinder lock retainer
3. Tailgate lock key cylinder

Tailgate latch removal steps
- Tailgate trim and waterproof film (Refer to P.42-49.)
- Tailgate garnish

4. Tailgate lock actuator
5. Holder
6. Tailgate latch assembly



INSPECTION

42400180033

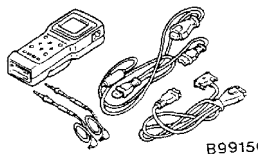
TAILGATE LOCK ACTUATOR CHECK

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

KEYLESS ENTRY SYSTEM

42800060032

SPECIAL TOOL

Tool	Number	Name	Use
 B991502	MB991502	MUT-II sub assembly	Recording secret codes

TROUBLESHOOTING

42800180035

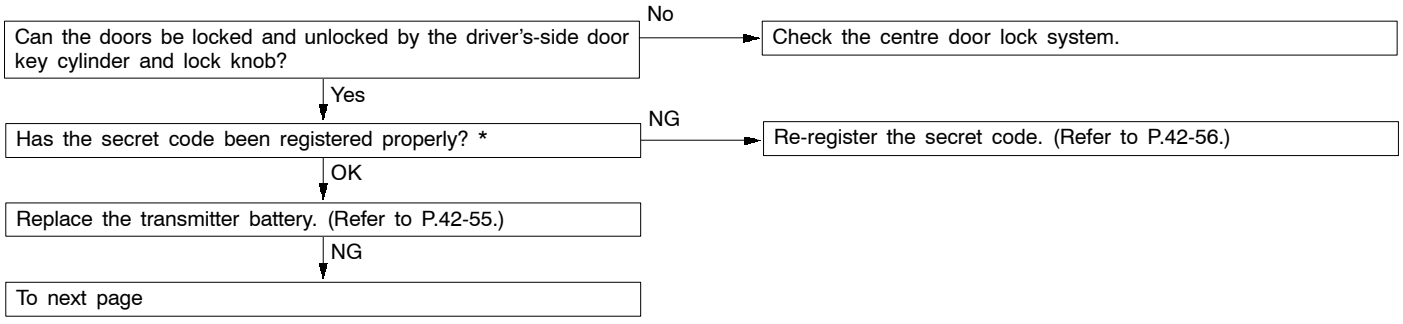
INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Inspection procedure No.	Reference page
None of the doors can be locked or unlocked using the transmitter.	1	42-51
All of the doors can be locked and unlocked using the transmitter, but the room lamp does not flash or illuminate. (However, the room lamp operates normally when the doors are opened and closed.)	2	42-53
Secret codes cannot be registered.	3	42-53

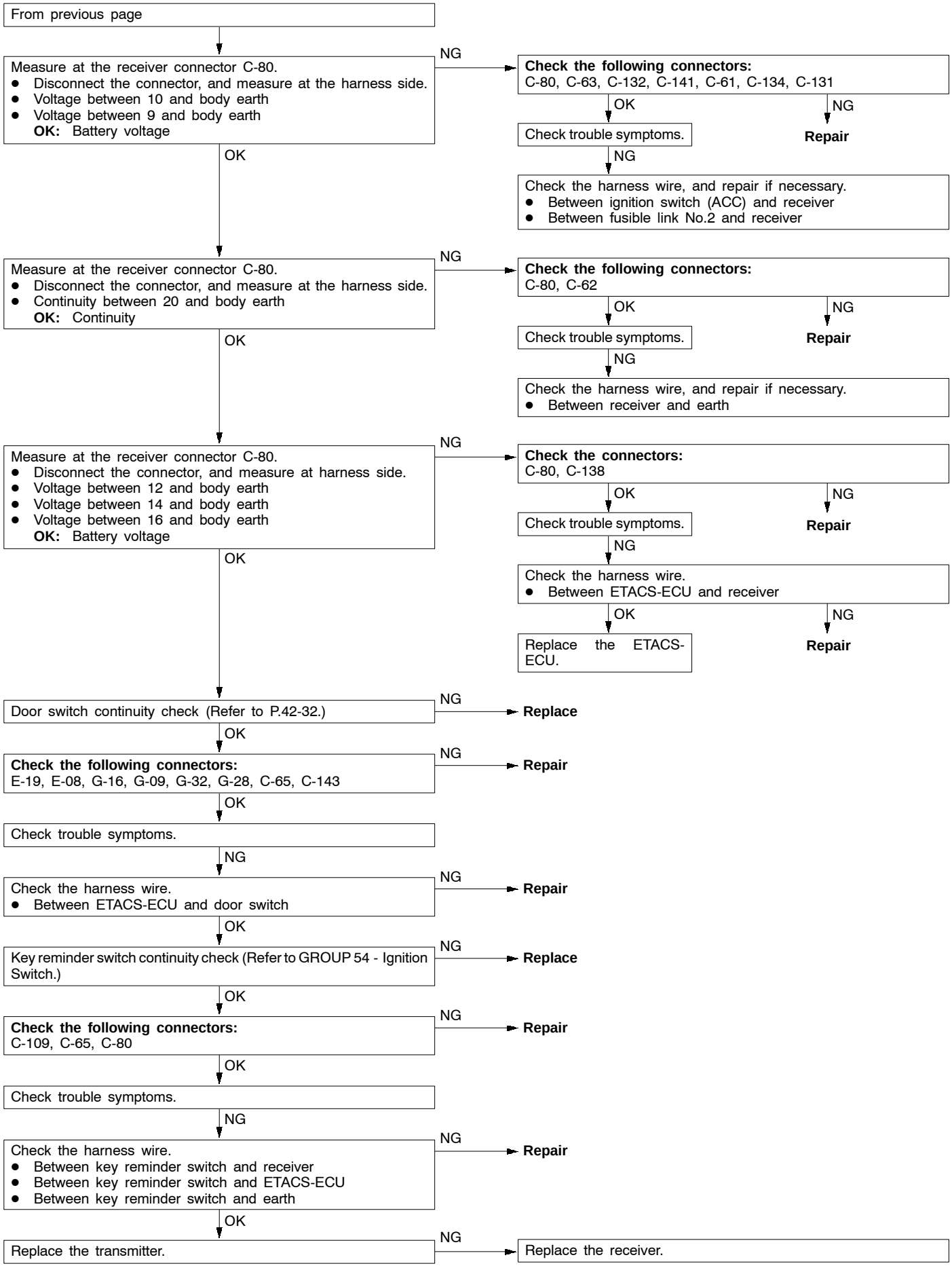
INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

INSPECTION PROCEDURE 1

None of the doors can be locked or unlocked using the transmitter.	**Probable cause**
The cause may be a malfunction of the transmitter, a malfunction of the receiver or the lock and unlock signals are not being input to the ETACS-ECU.	• Malfunction of transmitter • Malfunction of receiver • Malfunction of ETACS-ECU • Malfunction of wiring harness or connector • Malfunction of key reminder switch • Malfunction of door switch

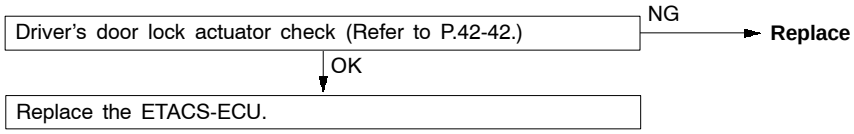


NOTE
*: This should be done if a transmitter or receiver has been replaced, and if a secret code has not been registered properly.


From previous page
Measure at the receiver connector C-80.
● Disconnect the connector, and measure at the harness side.
● Voltage between 10 and body earth
● Voltage between 9 and body earth
OK: Battery voltage
NG
Check the following connectors:
C-80, C-63, C-132, C-141, C-61, C-134, C-131
OK
NG
Repair
Check trouble symptoms.
NG
Check the harness wire, and repair if necessary.
● Between ignition switch (ACC) and receiver
● Between fusible link No.2 and receiver
OK
Measure at the receiver connector C-80.
● Disconnect the connector, and measure at the harness side.
● Continuity between 20 and body earth
OK: Continuity
NG
Check the following connectors:
C-80, C-62
OK
NG
Repair
Check trouble symptoms.
NG
Check the harness wire, and repair if necessary.
● Between receiver and earth
OK
Measure at the receiver connector C-80.
● Disconnect the connector, and measure at harness side.
● Voltage between 12 and body earth
● Voltage between 14 and body earth
● Voltage between 16 and body earth
OK: Battery voltage
NG
Check the connectors:
C-80, C-138
OK
NG
Repair
Check trouble symptoms.
NG
Check the harness wire.
● Between ETACS-ECU and receiver
OK
NG
Repair
Replace the ETACS-ECU.
OK
Door switch continuity check (Refer to P.42-32.)
NG
Replace
OK
Check the following connectors:
E-19, E-08, G-16, G-09, G-32, G-28, C-65, C-143
NG
Repair
OK
Check trouble symptoms.
NG
Check the harness wire.
● Between ETACS-ECU and door switch
NG
Repair
OK
Key reminder switch continuity check (Refer to GROUP 54 - Ignition Switch.)
NG
Replace
OK
Check the following connectors:
C-109, C-65, C-80
NG
Repair
OK
Check trouble symptoms.
NG
Check the harness wire.
● Between key reminder switch and receiver
● Between key reminder switch and ETACS-ECU
● Between key reminder switch and earth
NG
Repair
OK
Replace the transmitter.
NG
Replace the receiver.

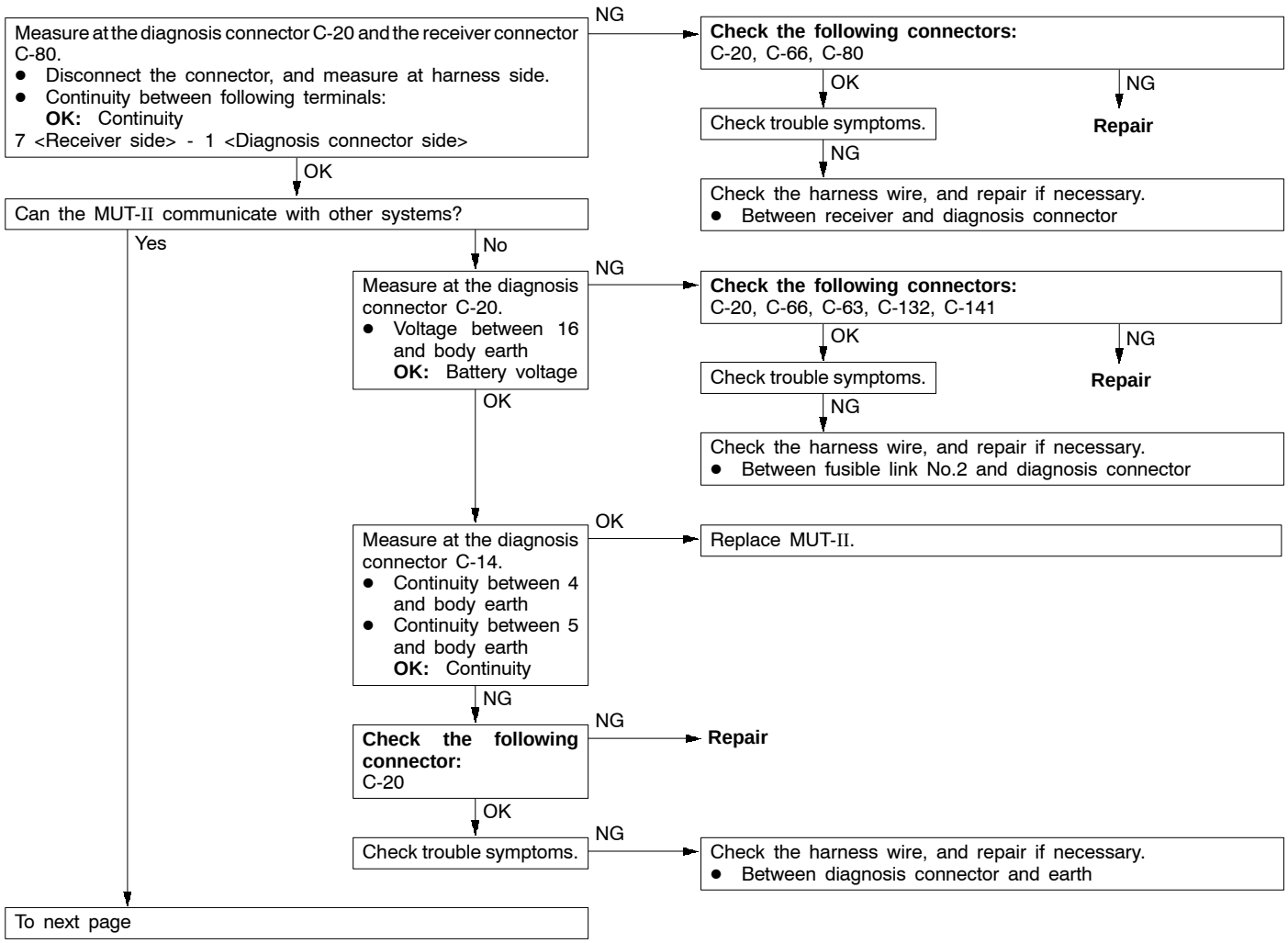
INSPECTION PROCEDURE 2

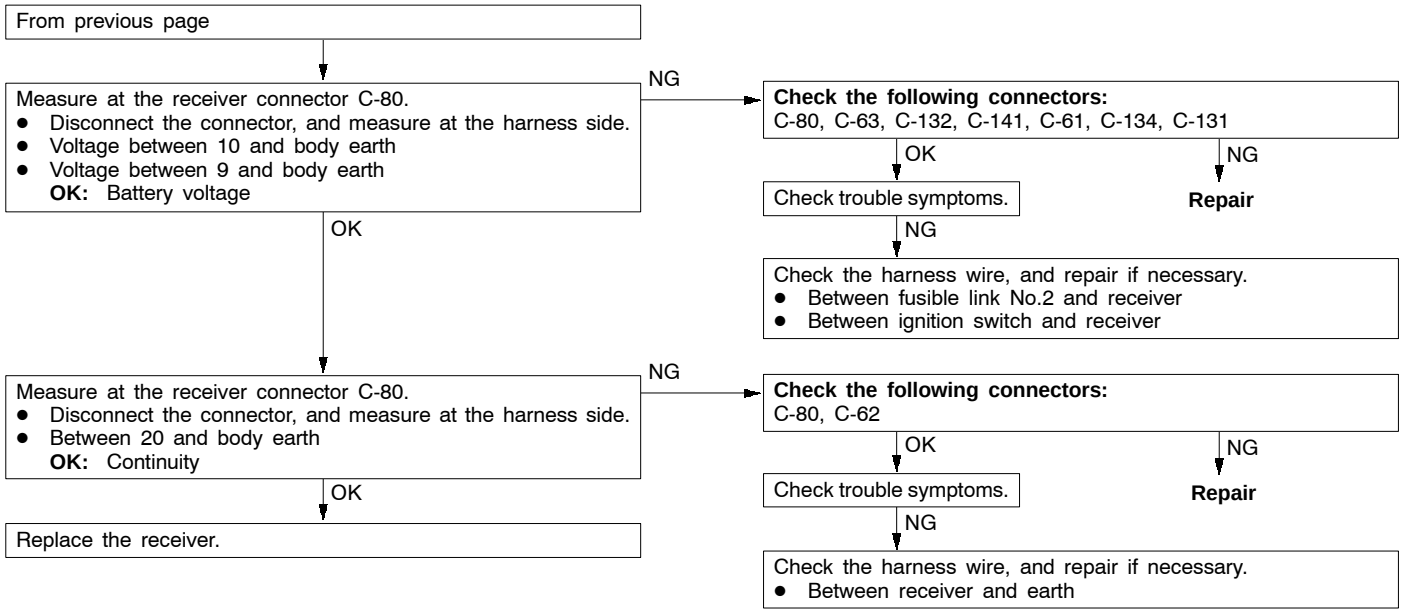
All of the doors can be locked and unlocked using the transmitter, but the room lamp does not flash or illuminate. (However, the room lamp operates normally when the doors are opened and closed.)	Probable cause
If the room lamp operates normally when the doors are opened and closed, the cause of the problem may be a malfunction of the ETACS-ECU or a malfunction of the driver's-side door lock actuator.	• Malfunction of ETACS-ECU • Malfunction of driver's door lock actuator • Malfunction of connector or wiring harness



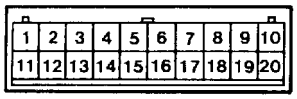
INSPECTION PROCEDURE 3

Secret codes cannot be registered.	Probable cause
The cause may be a malfunction of the diagnosis connector, a malfunction of the power supply or earth circuit of the receiver, a malfunction of the ETACS-ECU or a malfunction of the diagnosis output circuit.	• Malfunction of receiver • Malfunction of MUT-II • Malfunction of connector or wiring harness • Malfunction of ETACS-ECU





INSPECTION OF RECEIVER TERMINAL VOLTAGE

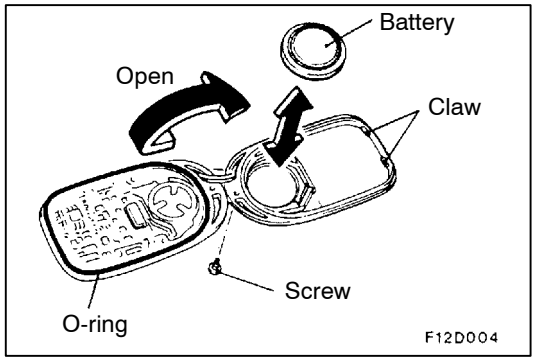


18W0311

Terminal	Signal name	Conditions		Terminal voltage
2	Door switch	Room lamp switch: OFF or ON	One or more doors are open (Door switch: ON)	0 V
			All doors are closed (Door switch: OFF)	5 V and pulse output*
		Room lamp switch: DOOR	One or more doors are open (Door switch: ON)	0 V
			All doors are closed (Door switch: OFF)	Battery voltage
6	Door lock actuator switch (driver's side)	LOCK		5 V and pulse output*
		UNLOCK		0 V
7	Diagnosis changeover input	When MUT-II is connected		0 V
		When MUT-II is disconnected (Ignition switch: ACC or OFF)		5 V and pulse output*
8	Key reminder switch	OFF (When ignition key is inserted)		5 V and pulse output*
		ON (When ignition key is removed)		0 V
9	Ignition switch	Ignition switch: ACC or ON		Battery voltage
		Ignition switch: OFF		0 V

Terminal	Signal name	Conditions		Terminal voltage
10	Receiver power supply	At all times		Battery voltage
11	Room lamp output	All doors are closed (Door switch: OFF)	Room lamp switch: OFF or ON	0 V
			Room lamp switch: DOOR	Battery voltage
12	Door lock output	When door lock control unit outputs signal, or door lock switch: LOCK		0 V
		Other than above		Battery voltage
14	Door unlock output	When door lock control unit outputs signal, or door lock switch or door lock key cylinder: UNLOCK		0 V
		Other than above		Battery voltage
16	Driver identification signal output (Vehicles with theft-alarm system)	When keyless entry system is operating (When transmitter switch is pressed)		5 V and pulse output (fluctuation pulse)
		When keyless entry system is not operating (When transmitter switch is not pressed)		5 V and pulse output (constant pulse)
20	Earth	At all times		0 V

NOTE
Values marked with * should be measured using an oscilloscope. (The value will alternate between 0 V and 0.03 V if a circuit tester is used.)



ON-VEHICLE SERVICE

42800090079

HOW TO REPLACE A BATTERY OF THE TRANSMITTER

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

   Battery required for replacement:
   Coin type battery CR2032
3. Insert the claw first, and with care not to displace the O-ring, assemble the transmitter.
4. Check to see if the keyless entry system operates.

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

SECRET CODE REGISTRATION METHOD

42800100109

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

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

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

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

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

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

3. Within 10 seconds after connecting the MUT-II, turn the ignition switch to ACC ON for 1 second and then to OFF for 1 second; repeat this procedure three times.

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

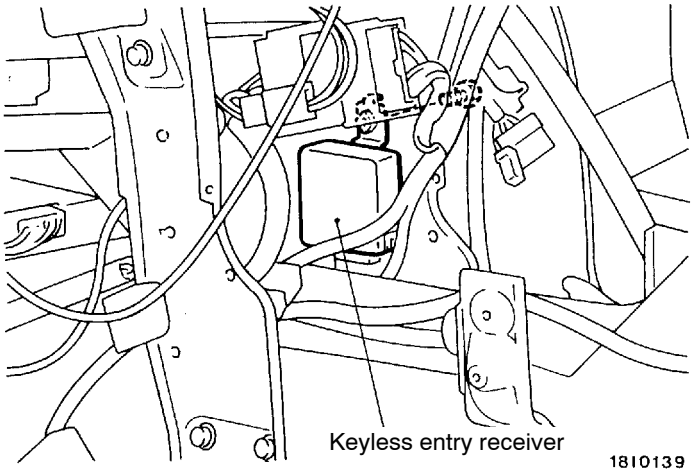
4. Press the transmitter switch, and then press it two times within 10 seconds of the first press. This will register the code.
5. After registration is completed, the doors will be automatically locked and unlocked once.
6. If you are using two transmitters or have added a second transmitter, the same registration procedure should be carried out for the second transmitter, and it should be carried out within one minute after registration of the code for the first transmitter has been completed. After the second registration is completed, the doors will be automatically locked and unlocked once.
7. Registration mode will be cancelled under the following conditions.
   - When the secret codes for two transmitters have been registered;
   - When 1 minute has passed after registration mode started;
   - If the MUT-II is disconnected (the earth connection is broken);
   - If the ignition switch is turned to ON;
   - If any of the doors are opened;

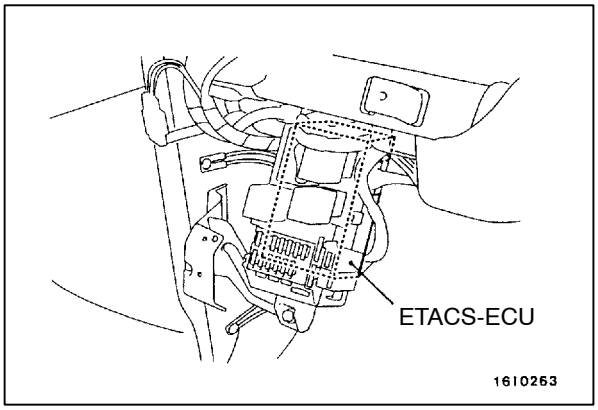
KEYLESS ENTRY SYSTEM

42800130153

REMOVAL AND INSTALLATION

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





SUNROOF

42600030068

SERVICE SPECIFICATION

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

SPECIAL TOOL

42600060043

Tool	Number	Name	Use
A B C D C991223	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Test harness B: LED harness C: LED harness adapter D: Probe	Measurement of terminal voltage A: Connector pin contact pressure inspection B: Power circuit inspection C: Power circuit inspection D: Commercial tester connection

TROUBLESHOOTING

42600200070

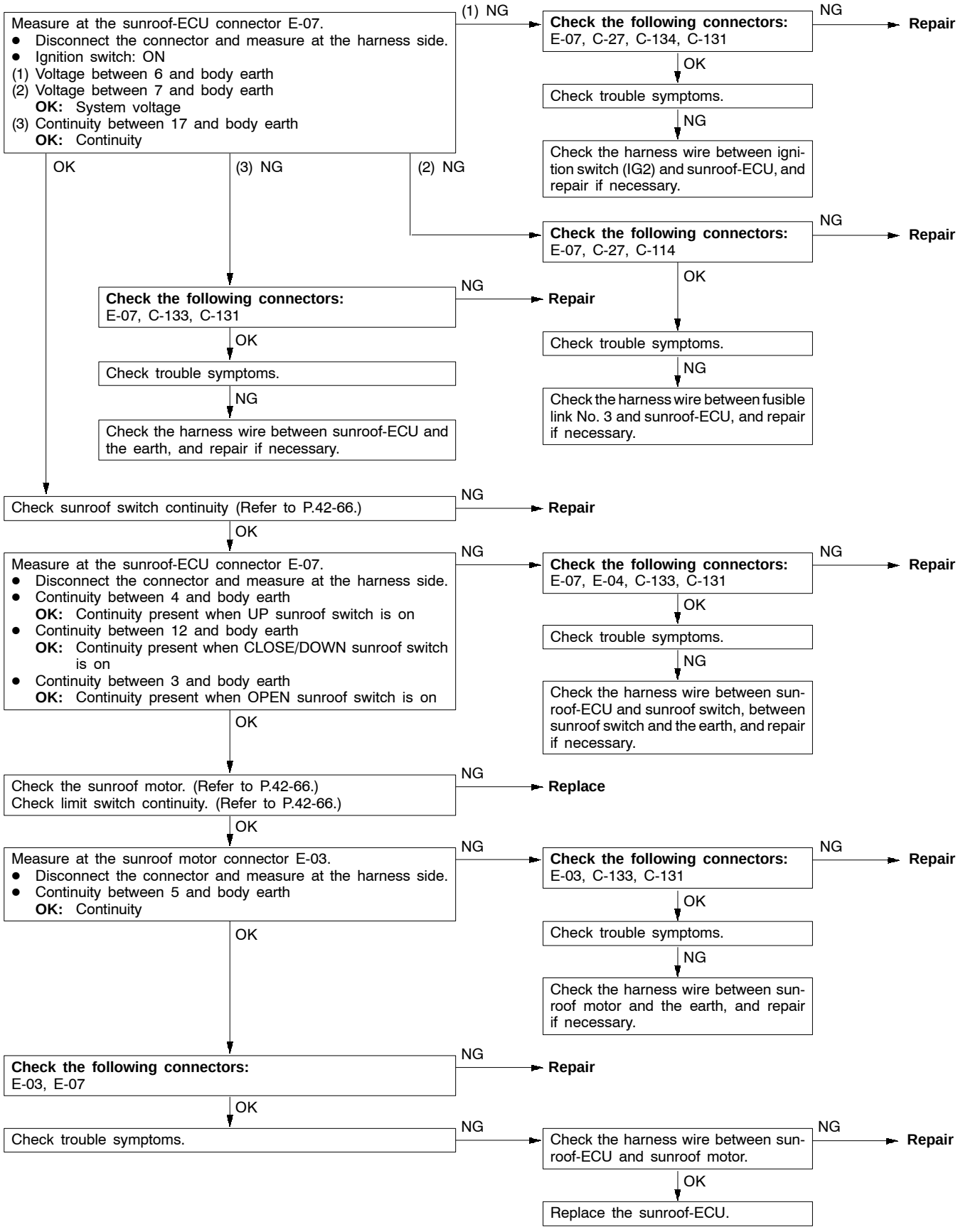
INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Inspection procedure	Reference page
The sunroof does not operate when the ignition switch is turned to ON.	1	42-58
The motor does not reverse its direction when a load of 140 N or more is applied while the sunroof is closing.	2	42-60
The timer does not operate for 30 seconds after the ignition switch is turned to OFF.	3	42-60
Opening or closing of the sunroof is possible immediately after turning the ignition switch to OFF, but the timer function does not operate continuously for another 30 seconds if the driver's side door is opened within 30 seconds.	4	42-60

INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

Inspection Procedure 1

The sunroof does not operate when the ignition switch is turned to ON.	**Probable cause**
One of the following items may be defective. ● Sunroof switch ● Sunroof motor ● Sunroof-ECU ● Power supply circuit ● Earth circuit	● Malfunction of sunroof switch ● Malfunction of sunroof motor ● Malfunction of sunroof-ECU ● Malfunction of wiring harness or connector


Measure at the sunroof-ECU connector E-07.
● Disconnect the connector and measure at the harness side.
● Ignition switch: ON
(1) Voltage between 6 and body earth
(2) Voltage between 7 and body earth
OK: System voltage
(3) Continuity between 17 and body earth
OK: Continuity
(1) NG
Check the following connectors:
E-07, C-27, C-134, C-131
NG
Repair
OK
Check trouble symptoms.
NG
Check the harness wire between ignition switch (IG2) and sunroof-ECU, and repair if necessary.
OK
(3) NG
(2) NG
Check the following connectors:
E-07, C-27, C-114
NG
Repair
OK
Check trouble symptoms.
NG
Check the harness wire between fusible link No. 3 and sunroof-ECU, and repair if necessary.
Check the following connectors:
E-07, C-133, C-131
NG
Repair
OK
Check trouble symptoms.
NG
Check the harness wire between sunroof-ECU and the earth, and repair if necessary.
Check sunroof switch continuity (Refer to P.42-66.)
NG
Repair
OK
Measure at the sunroof-ECU connector E-07.
● Disconnect the connector and measure at the harness side.
● Continuity between 4 and body earth
OK: Continuity present when UP sunroof switch is on
● Continuity between 12 and body earth
OK: Continuity present when CLOSE/DOWN sunroof switch is on
● Continuity between 3 and body earth
OK: Continuity present when OPEN sunroof switch is on
NG
Check the following connectors:
E-07, E-04, C-133, C-131
NG
Repair
OK
Check trouble symptoms.
NG
Check the harness wire between sunroof-ECU and sunroof switch, between sunroof switch and the earth, and repair if necessary.
OK
Check the sunroof motor. (Refer to P.42-66.)
Check limit switch continuity. (Refer to P.42-66.)
NG
Replace
OK
Measure at the sunroof motor connector E-03.
● Disconnect the connector and measure at the harness side.
● Continuity between 5 and body earth
OK: Continuity
NG
Check the following connectors:
E-03, C-133, C-131
NG
Repair
OK
Check trouble symptoms.
NG
Check the harness wire between sunroof motor and the earth, and repair if necessary.
OK
Check the following connectors:
E-03, E-07
NG
Repair
OK
Check trouble symptoms.
NG
Check the harness wire between sunroof-ECU and sunroof motor.
NG
Repair
OK
Replace the sunroof-ECU.

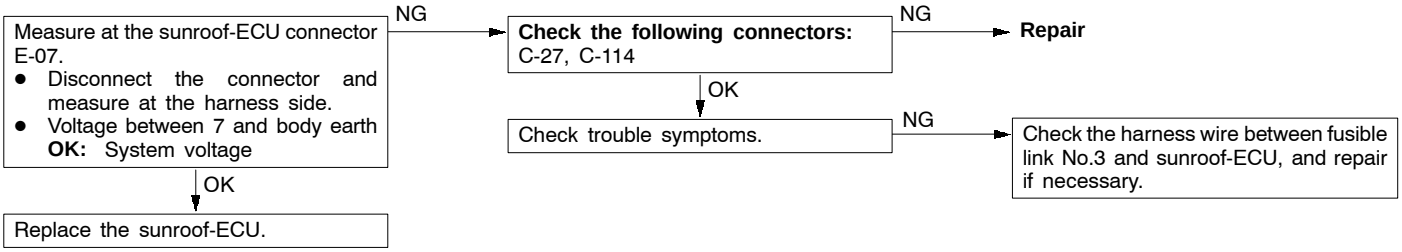
Inspection Procedure 2

The motor does not reverse its direction when a load of 140 N or more is applied while the sunroof is closing.	Probable cause
The sunroof-ECU monitors the load conditions from the amount of current flowing to the motor. If more than the constant amount of current is flowing, the direction of motor operation is reversed to prevent jamming. If the motor does not reverse direction even when an excessive load is being applied, the cause may be a malfunction of the sunroof-ECU.	• Malfunction of sunroof-ECU

Replace the sunroof-ECU.

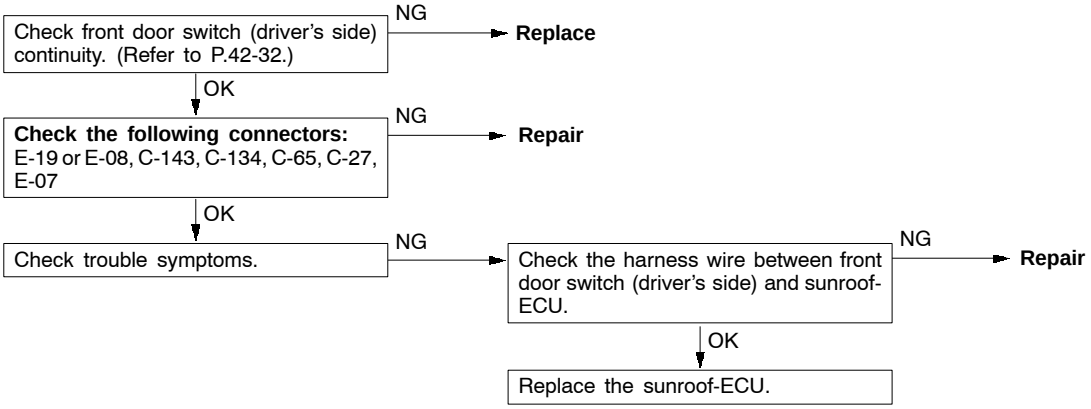
Inspection Procedure 3

The timer does not operate for 30 seconds after the ignition switch is turned to OFF.	Probable cause
The sunroof-ECU has a timer function which operates for 30 seconds after the ignition switch is turned to OFF. If the timer does not operate, the cause may be a malfunction of the sunroof-ECU or of the wiring harness or connector.	• Malfunction of sunroof-ECU • Malfunction of wiring harness or connector

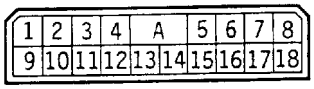


Inspection Procedure 4

Opening or closing of the sunroof is possible immediately after turning the ignition switch to OFF, but the timer function does not operate continuously for another 30 seconds if the driver's side door is opened within 30 seconds.	Probable cause
The operation period for the sunroof timer is extended when an on signal is output from the driver's-side door switch. Because of this, if the timer operation period is not extended, the cause may be a malfunction of the door switch input circuit.	• Malfunction of the front door switch (driver's side) • Malfunction of sunroof-ECU • Malfunction of wiring harness or connector

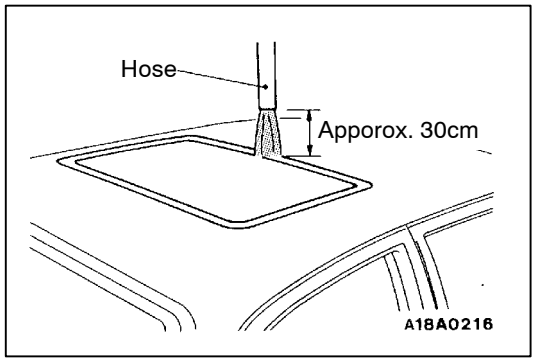


TERMINAL VOLTAGE CHART



18P0142

Terminal No.	Check Item	Check Condition		Normal Condition
1	Sensor power supply	Ignition switch: ON		Battery voltage
2	Sensor 1	When motor is operating		Battery voltage (pulse)
3	Sunroof switch (open input)	Sunroof switch (open position)	ON	0 V
			OFF	Battery voltage
4	Sunroof switch (up input)	Sunroof switch (up position)	ON	0 V
			OFF	Battery voltage
6	Timer operation power supply	Ignition switch: ON		Battery voltage
7	ECU power supply	Always		Battery voltage
8	Motor output	While sunroof is closing or moving up		Battery voltage
		Other than the above		0 V
9	Sensor earth	Always		0 V
10	Sensor 2	When motor is operating		Battery voltage (pulse)
12	Sunroof switch (close or down) input	Sunroof switch (close position or down position)	ON	0 V
			OFF	Battery voltage
14	Limit switch input	From tilt up condition to fully-closed condition		Battery voltage
		From fully-closed condition to fully-open condition		0 V
16	Door switch input	Driver's door switch	ON	0 V
			OFF	Battery voltage
17	Earth	Always		0 V
18	Motor output	While sunroof is opening or moving down		Battery voltage
		Other than the above		0 V



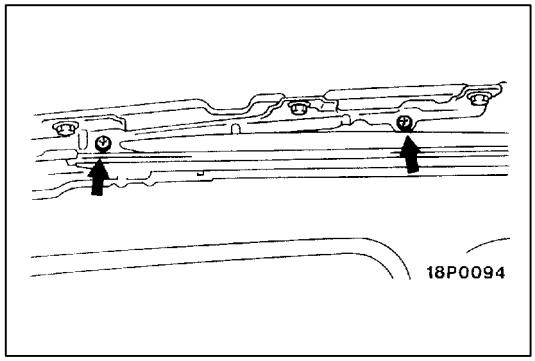
ON-VEHICLE SERVICE

42600090127

WATER TEST

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

1. Fully close the roof lid glass.
2. Adjust the water pressure so that water comes out of the hose to a height of approximately 50 cm when the hose is held vertically facing upwards.
3. Hold the end of the hose approximatery 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

42600100110

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

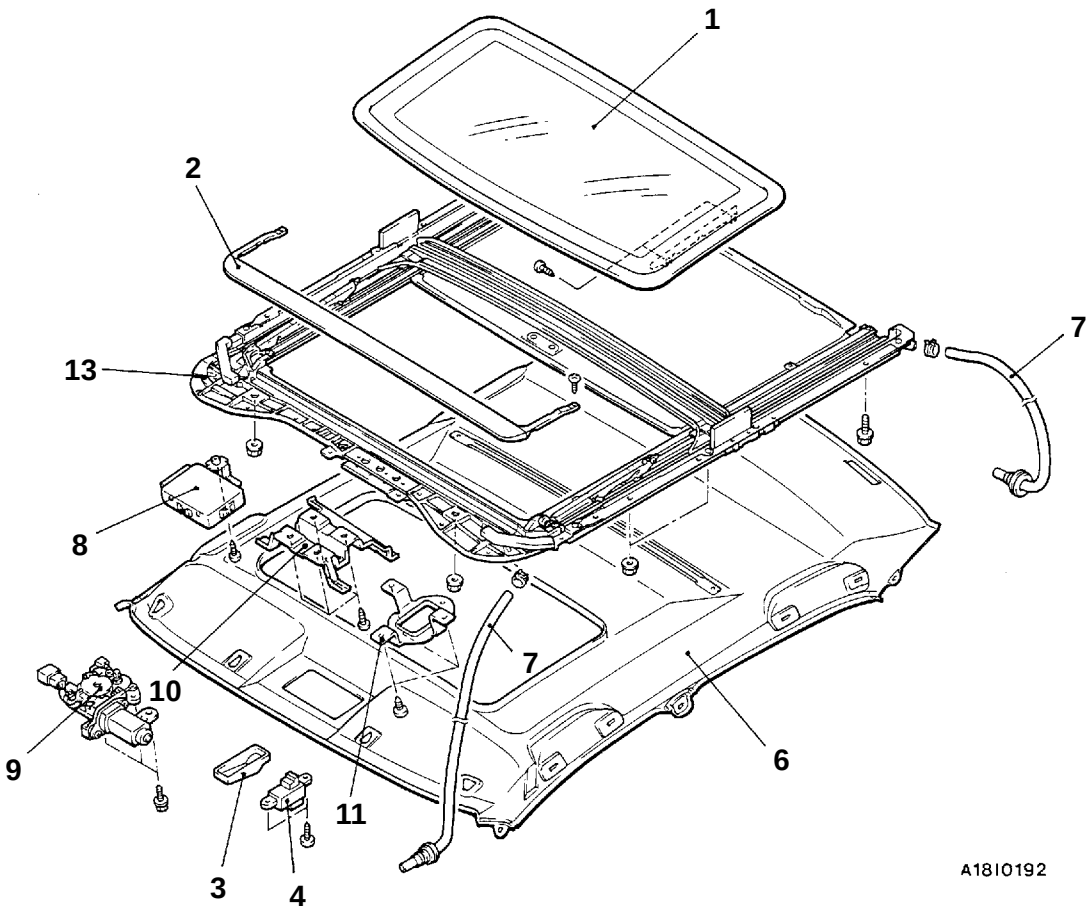
SUNROOF

42600120239

REMOVAL AND INSTALLATION

Post-installation Operation
<Roof lid glass assembly, Sunroof assembly>
(1) Sunroof Water Test (Refer to P.42-62.)
(2) Sunroof Fit Adjustment (Refer to P.42-62.)

<Sedan>



1. Roof lid glass assembly
2. Roof wind deflector panel

Sunroof switch removal steps

3. Sunroof switch cover
4. Sunroof switch

Drain hose removal steps

- Splash shield (Front drain hose)

6. Headlining
◀A▶ ▶B◀ 7. Drain hose

Sunroof-ECU removal steps

6. Headlining
8. Sunroof-ECU

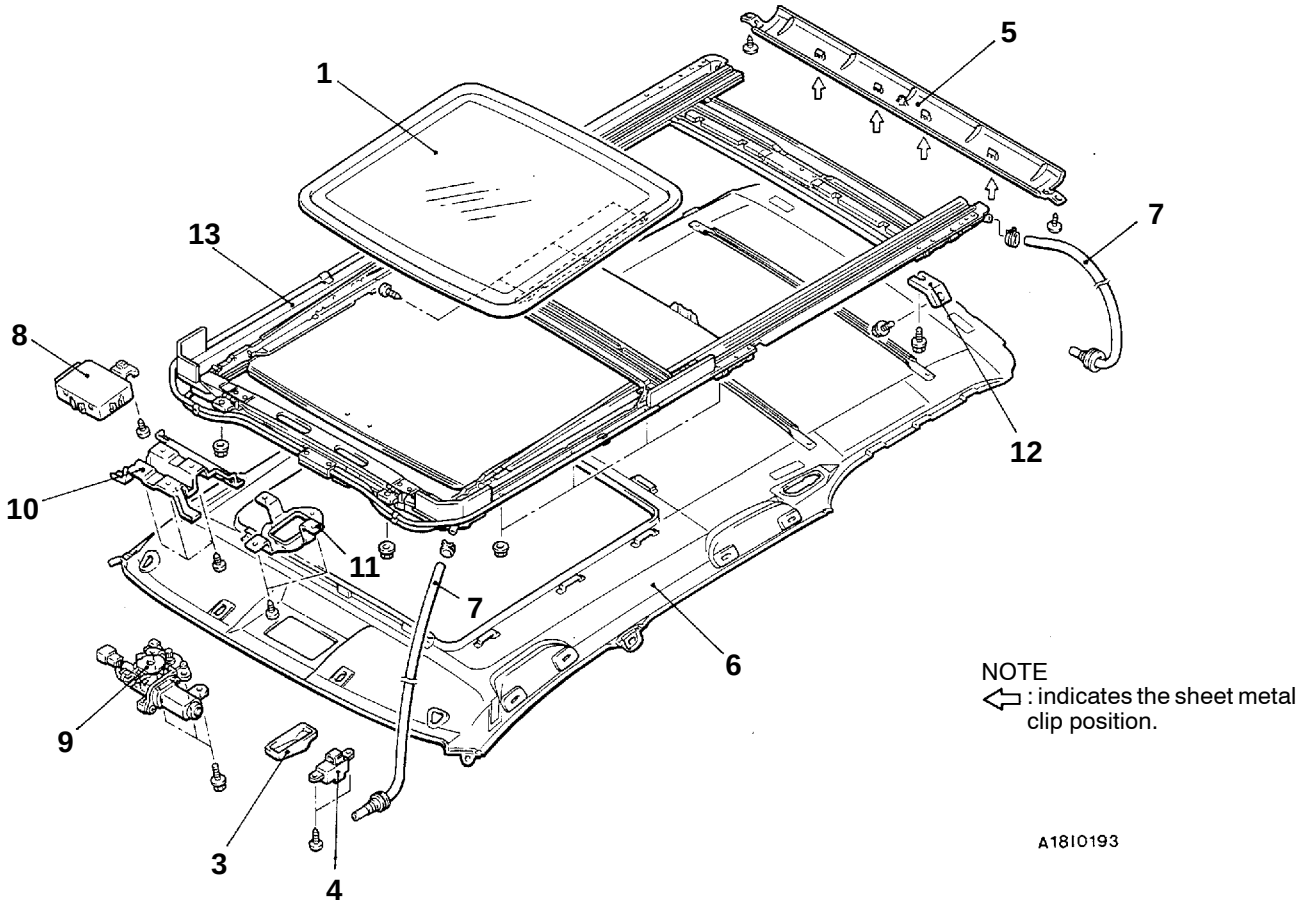
Sunroof motor removal steps

6. Headlining
◀B▶ ▶A◀ 9. Sunroof motor

Sunroof assembly removal steps

6. Headlining
7. Drain hose connection
10. Room lamp bracket
11. Sunroof switch bracket
13. Sunroof assembly

<Wagon>



1. Roof lid glass assembly

Sunroof switch removal steps

3. Sunroof switch cover
4. Sunroof switch

Drain hose removal steps

- Splash shield (Front drain hose)

5. Rear roof rail trim
6. Headlining

◀A▶ ▶B◀ 7. Drain hose

Sunroof-ECU removal steps

5. Rear roof rail trim
6. Headlining
8. Sunroof-ECU

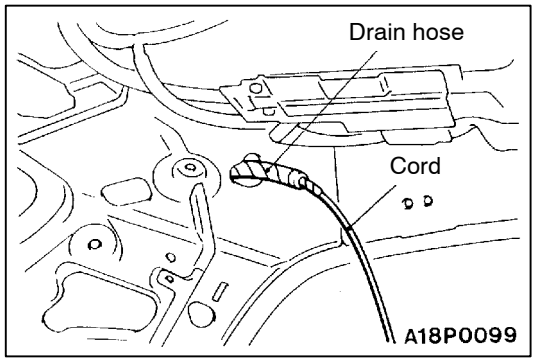
Sunroof motor removal steps

5. Rear roof rail trim
6. Headlining

◀B▶ ▶A◀ 9. Sunroof motor

Sunroof assembly removal steps

5. Rear roof rail trim
6. Headlining
7. Drain hose connection
10. Room lamp bracket
11. Sunroof switch bracket
12. Set bracket
13. Sunroof assembly



REMOVAL SERVICE POINTS

◀A▶ DRAIN HOSE REMOVAL

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

◀B▶ SUNROOF MOTOR REMOVAL

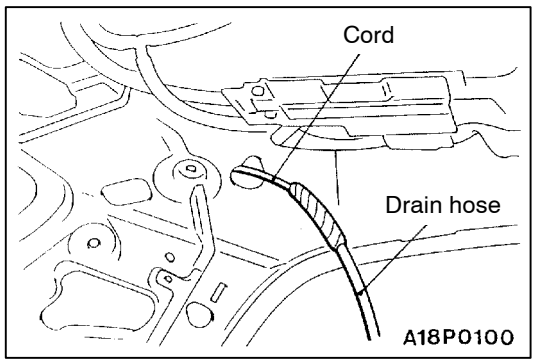
Caution
Always close the roof lid glass fully before removing the sunroof motor. If the fully-closed positions of the roof lid glass and the sunroof motor are not the same, the sunroof will not operate properly.

INSTALLATION SERVICE POINTS

▶A◀ SUNROOF MOTOR INSTALLATION

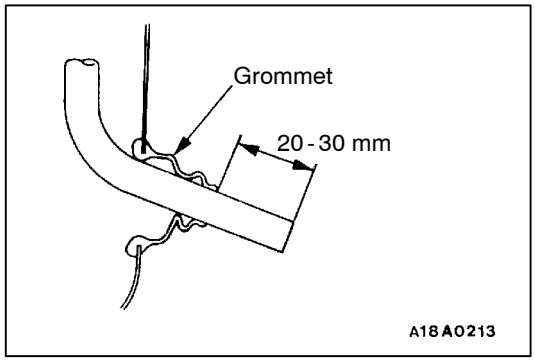
If the fully-closed position of the sunroof motor is incorrect, set the motor to the fully-closed position by the procedure given below before installing the motor.

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

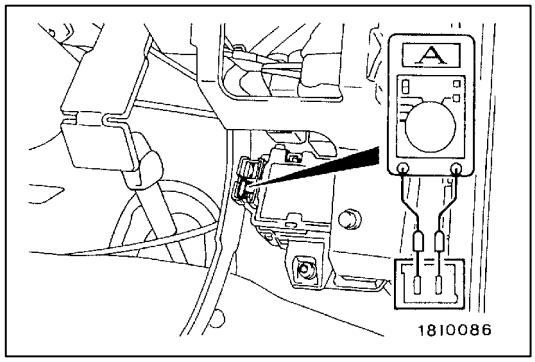


▶B◀ DRAIN HOSE INSTALLATION

1. Tie the cord that was used during removal to the end of the drain hose, and wind tape around it so that there is no unevenness.
2. Pull the cord to pull through the drain hose



3. Make the protrusion from the drain hose grommet as shown in the illustration.



INSPECTION

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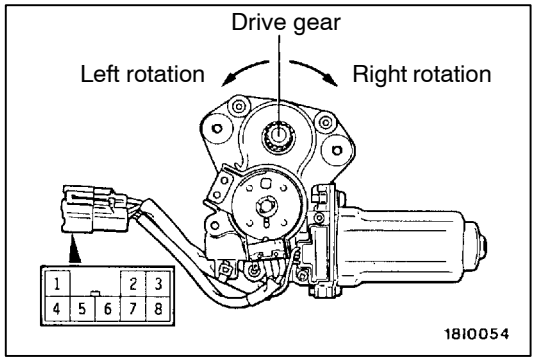
ROOF LID GLASS OPERATION CURRENT CHECK

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

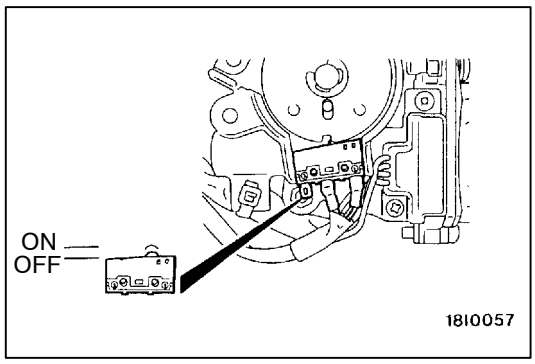
   Standard value: 7 A or less (at 20°C)
3. If the operation current is outside the standard value, check the following points.
   - Installation condition, warping or jamming of sunroof assembly
   - Sticking of drive cable
   - Tilt of roof lid glass



SUNROOF MOTOR CHECK

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

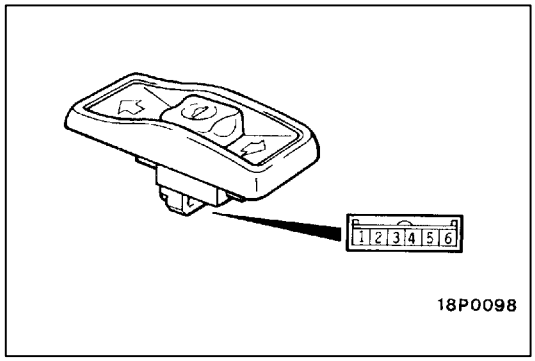
Battery connection terminal		Drive gear rotation direction
1	4	
⊖	⊕	Right
⊕	⊖	Left



LIMIT SWITCH CONTINUITY CHECK

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

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



SUNROOF SWITCH CONTINUITY CHECK

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

DISASSEMBLY AND REASSEMBLY

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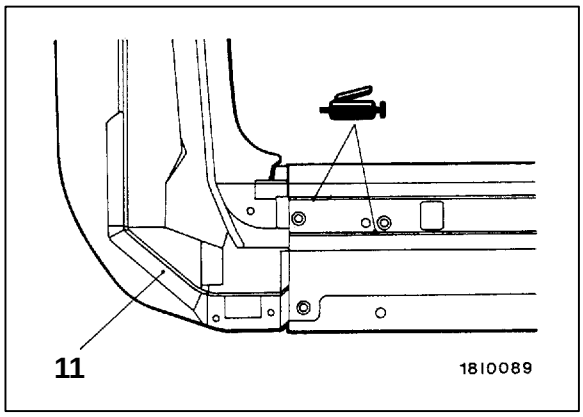
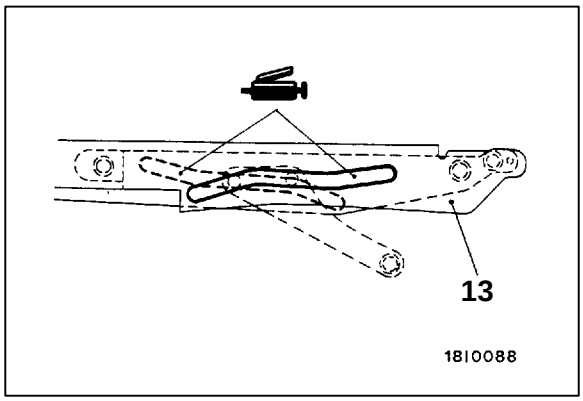
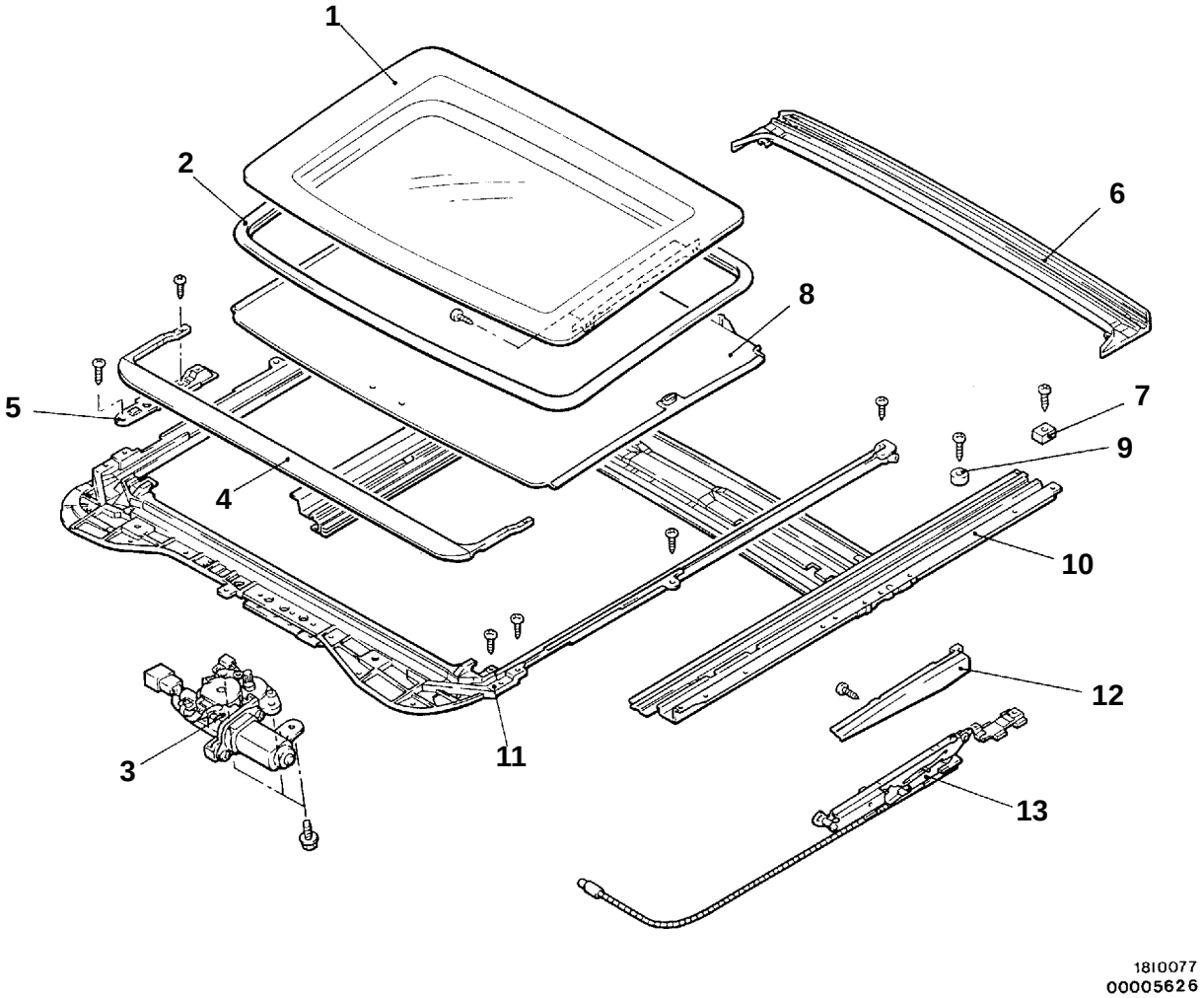
<Sedan>



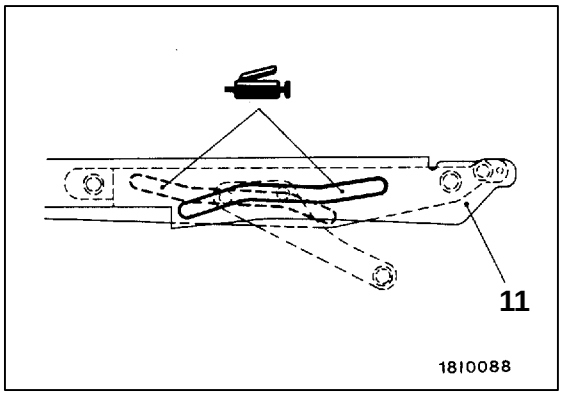


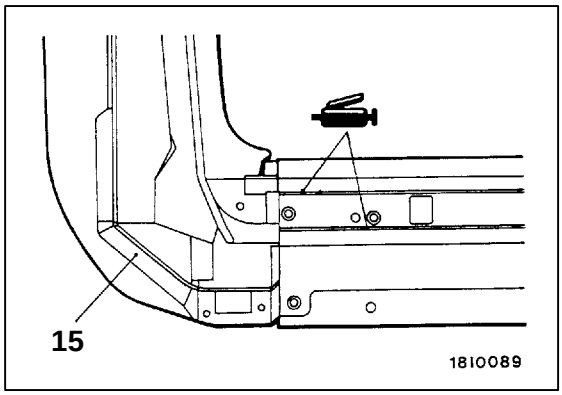


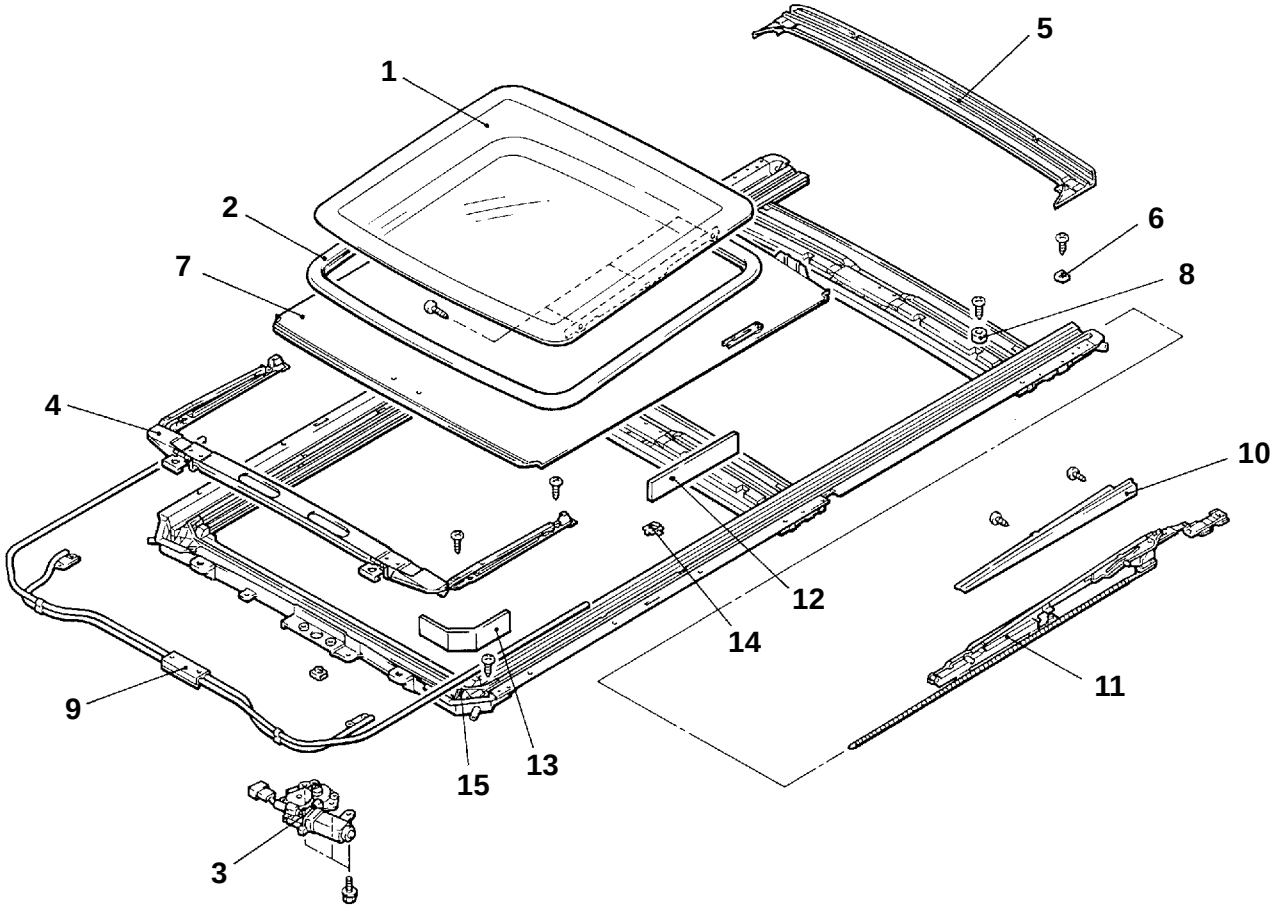
Disassembly steps

1. Roof lid glass assembly
2. Weatherstrip
3. Sunroof motor
4. Roof wind deflector panel
5. Guide block
6. Roof drip channel
7. Panel stopper
8. Sunshade assembly
9. Guide rail stopper
10. Rail sub assembly
11. Housing sub assembly
12. Side deflector
13. Drive cable assembly

<Wagon>







Disassembly steps

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