

BODY

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E42AA--

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WARNINGS REGARDING SERVICING OF SUPPLEMENTAL RESTRAINT SYSTEM (SRS) EQUIPPED VEHICLES

WARNING!

- (1) **Improper service or maintenance of any component of the SRS, or any SRS-related component, can lead to personal injury or death to service personnel (from inadvertent firing of the air bag) or to the driver and passenger (from rendering the SRS inoperative).**
- (2) **Service or maintenance of any SRS component or SRS-related component must be performed only at an authorized MITSUBISHI dealer.**
- (3) **MITSUBISHI dealer personnel must thoroughly review this manual, and especially its GROUP 52B – Supplemental Restraint System (SRS), before beginning any service or maintenance of any component of the SRS or any SRS-related component.**

NOTE

The SRS includes the following components: impact sensors, SRS diagnosis unit, SRS warning lamp, air bag module, clock spring, and interconnecting wiring. Other SRS-related components (that may have to be removed/installed in connection with SRS service or maintenance) are indicated in the table of contents by an asterisk (*).

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SPECIFICATIONS

GENERAL SPECIFICATIONS

E42CA--

Items	Specifications
Hood Type	Rear hinged (gas spring type), front opening type
Front door Construction Regulator system Locking system	Front-hinged, sash construction Wire type Pin-fork type
Rear door Construction Regulator system Locking system	Front-hinged, sash construction Wire type Pin-fork type
Trunk lid Hinge	Single-arm type (Torsion bar type)
Glass installation method Windshield glass Quarter window glass Rear window glass	Adhesive type Adhesive type Adhesive type
Glass thickness Windshield glass Rear window glass Front door glass Rear door glass Quarter window glass Sunroof glass	mm (in.) 5.3 (0.21) mm (in.) 4.0 (0.16) mm (in.) 3.5 (0.14) mm (in.) 3.5 (0.14) mm (in.) 3.5 (0.14) mm (in.) 5.0 (0.20)
Sunroof motor Type Speed at no load Speed at load At 1 Nm (0.1 kgm, 0.72 ft.lbs.) Bound current Turning direction	DC ferrite (with built-in circuit breaker) r/min 140 or more r/min 120–160 A 35 or less Both clockwise and anti-clockwise
Power window motor Type Revolutions under no load Revolutions under load At 1 Nm (0.1 kgm, 0.72 ft.lbs.) At 2 Nm (0.2 kgm, 1.45 ft.lbs.) Bound current Direction of rotation	Permanent magnet type (built-in circuit breaker) r/min 80 (75*) or more r/min 65–95 50–80 A 34 or less Clockwise and anti-clockwise

NOTE

*: Rear door power window motor (LH)

Items	Specifications	
Power window relay		
Maximum contact current	A	22
Rated coil current	A	0.135–0.215
Voltage drop between terminals (At 12V and the rated load current)	V	0.2 or less
Front door lock actuator		
Bound current (at 12V)	A	2.5–4.5
Operating voltage range	V	9–15
*Tripping time (at 12V)	Second	5–30
Rear door lock actuator		
Bound current (at 12V)	A	2.5–4.5
Operating voltage range	V	9–15
*Tripping time (at 12V)	Second	5–30

NOTE

*Tripping time is the time consumed until current reaches 0.5 A after power connection.

SERVICE SPECIFICATIONS

E42CB--

Items	Standard Value
Sunroof sliding resistance	N (kg, lbs.) 120 (12, 26)
Slipping force of sunroof motor clutch	N (kg, lbs.) 40–50 (4.0–5.0, 8.8–11)

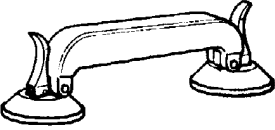

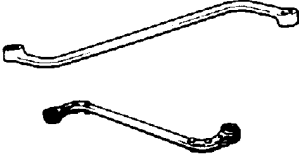
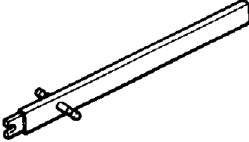
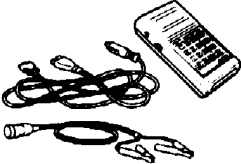

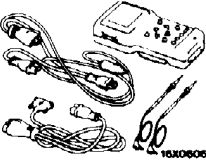


SEALANT AND ADHESIVE

E42CE--

Items	Specified sealant and adhesive	Remarks
Trunk lid weatherstrip	3M ATD Part No. 8001, 8011 or equivalent	Drying adhesive
Fender to body panel Fender to front fender insulator Front fender insulator to body Splash shield to fender Waterproof film	3M ATD Part No. 8625 or equivalent	Ribbon sealer
Windshield glass Rear window glass	3M Super Fast Urethan Auto Glass sealant Part No. 8609 or equivalent	–
	3M Super Fast Urethan Primer Part No. 8608 or equivalent	–
Quarter window glass	3M ATD Part No. 8513 or equivalent	Drying sealant
	3M ATD Part No. 8509 or equivalent	Non-drying sealant

SPECIAL TOOLS

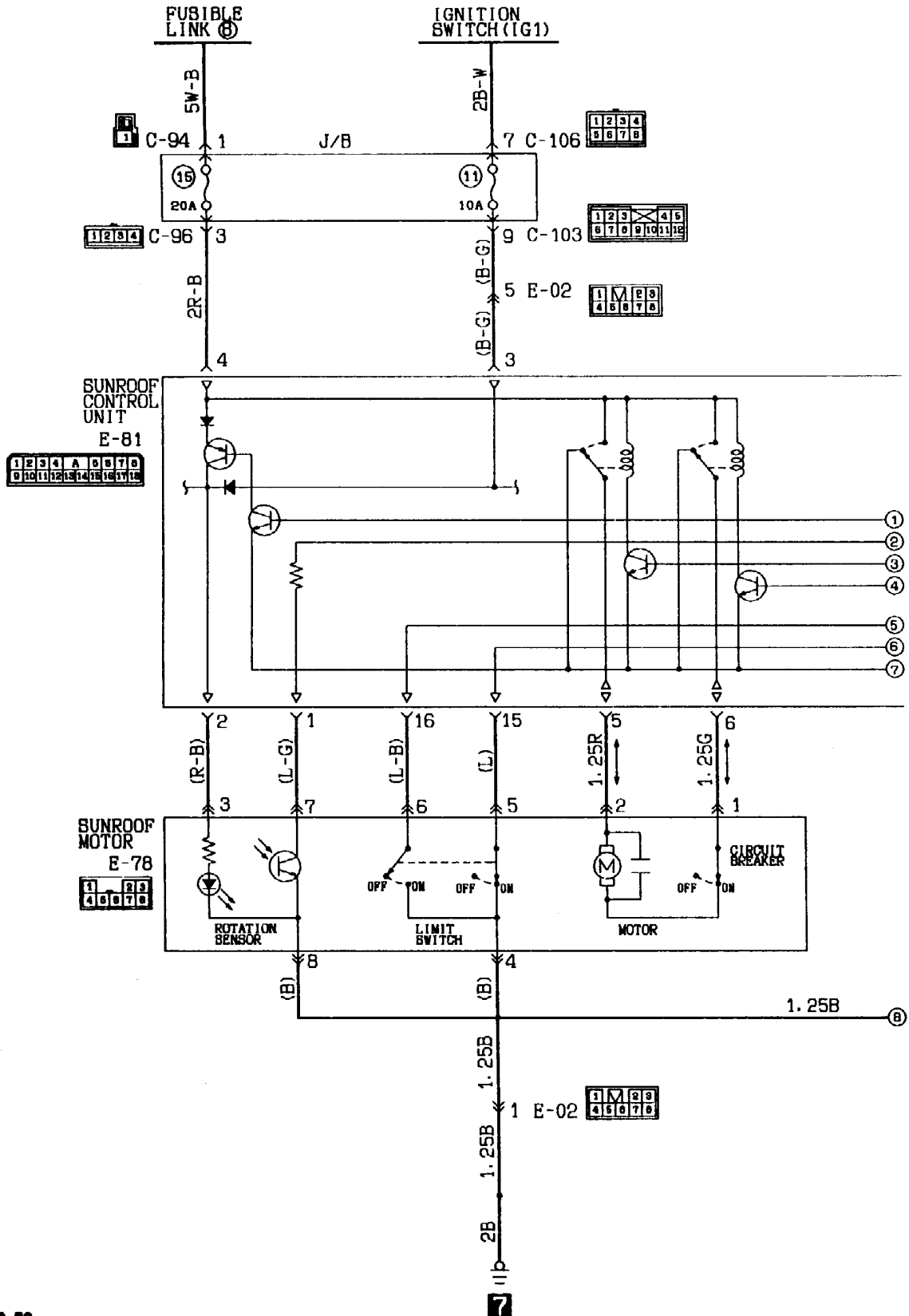
E42DA--

Tool	Number	Name	Use
	MB990480	Glass holder	Removal and installation of windshield
	MB990449	Window moulding remover	Removal of the window moulding
	MB990900 or MB991164	Door adjusting wrench	Adjustment of door fit
	MB991244	Torsion bar remover and installer	Removal and installation of trunk lid torsion bar
	MB991341	Multi-use tester sub-assembly	Up to 1993 models ETACS input check
		ROM Pack (For the number, refer to GROUP 00 - Precautions Before Service.)	
	MB991502	MUT-II	All models ETACS input check
 16X0607		ROM pack	
	MB990784	Ornament remover	Removal of the window moulding and interior parts

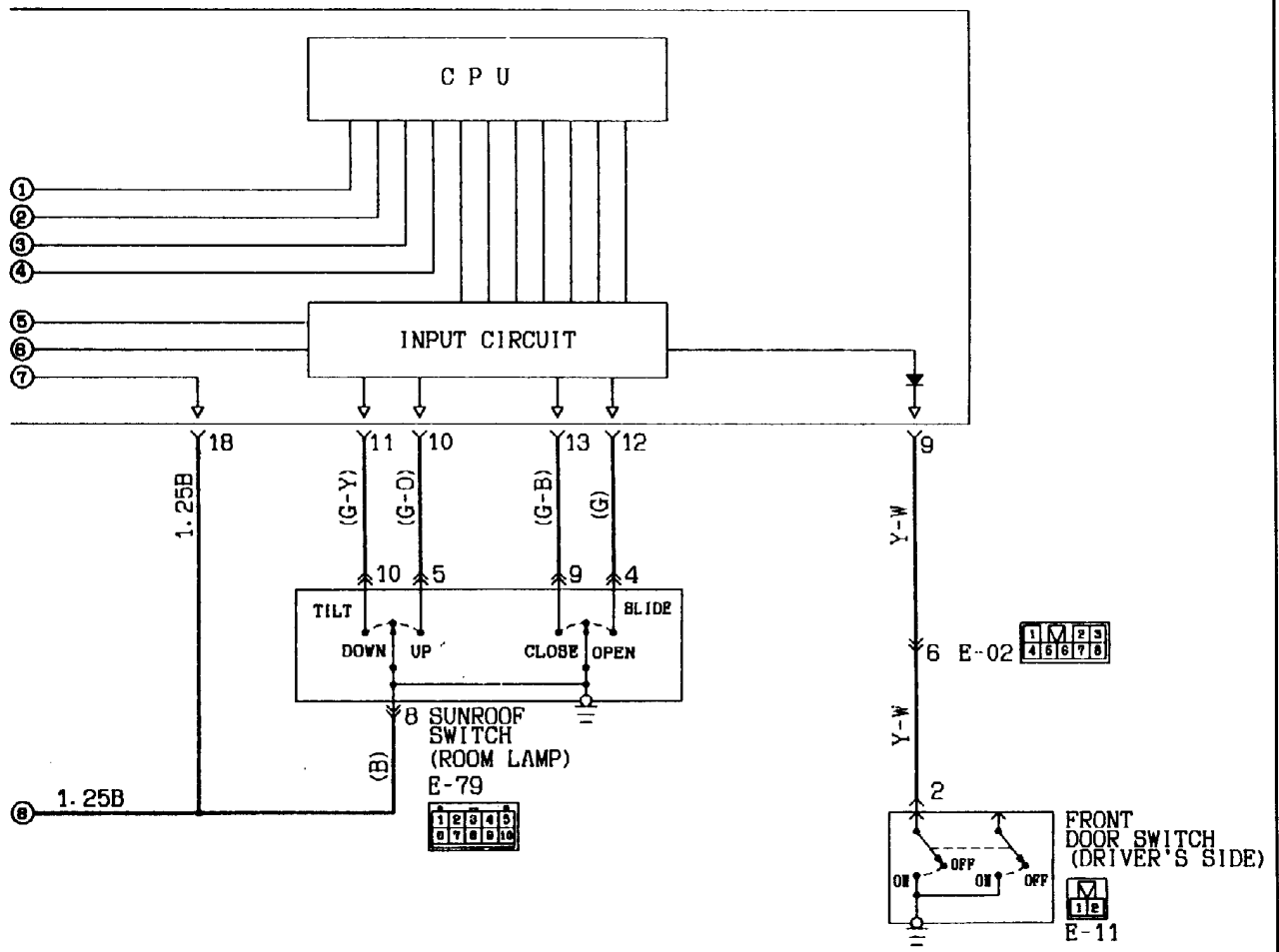
TROUBLESHOOTING <SUNROOF>

E42EE-

SUNROOF CIRCUIT DIAGRAM



KX35-AC-J1510-EC



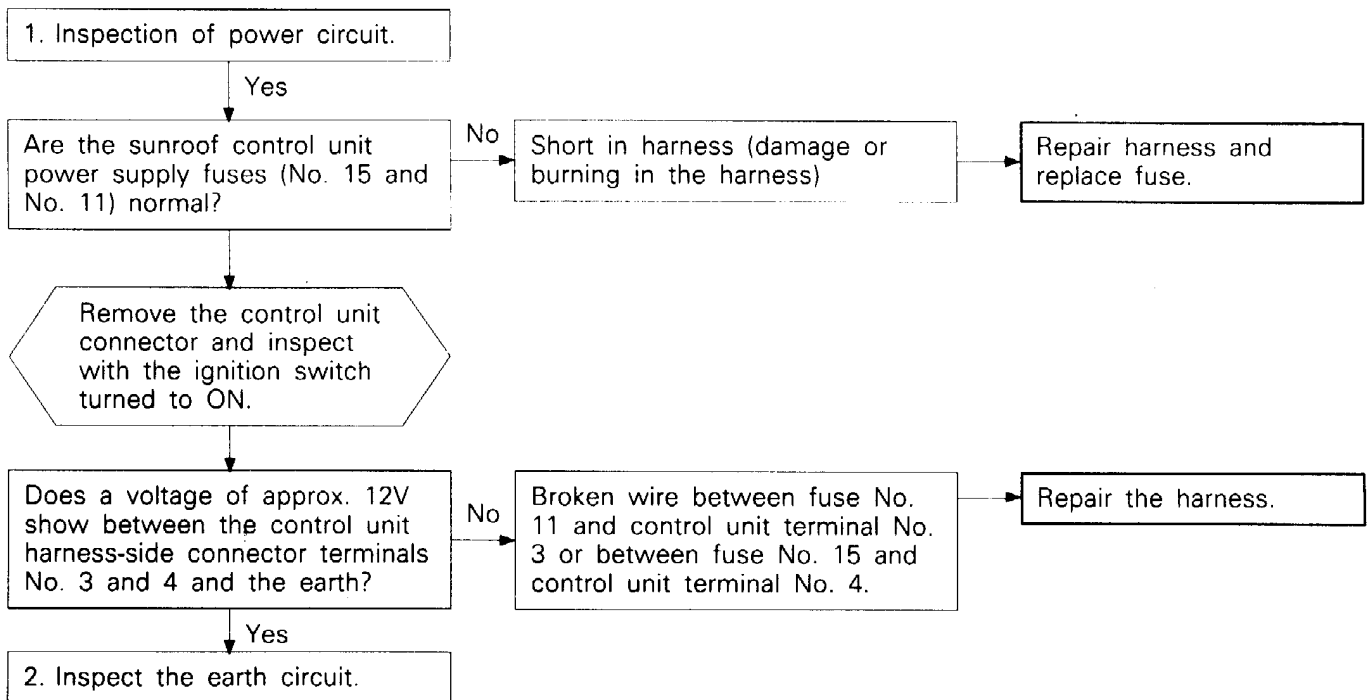
Wire colour code
 B:Black L:Light green G:Green L:Blue W:White Y:Yellow Sb:Sky blue
 Br:Brown O:Orange Gr:Gray R:Red P:Pink V:Violet

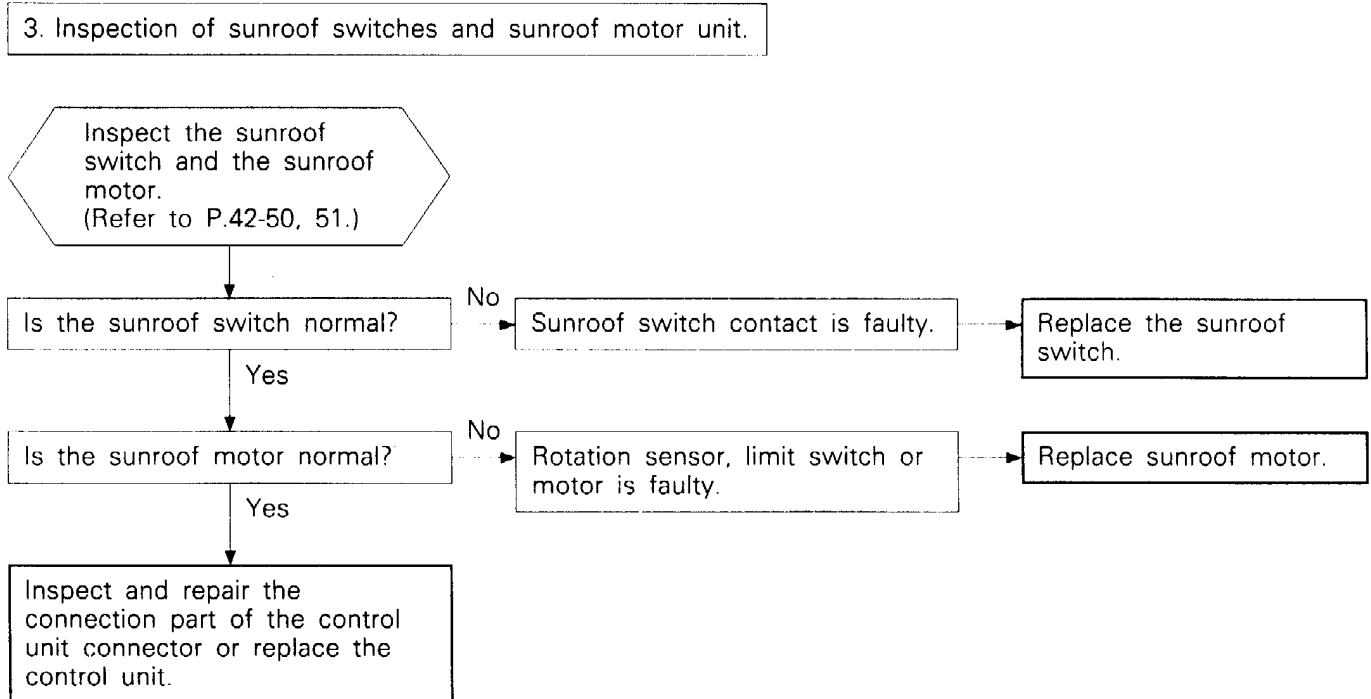
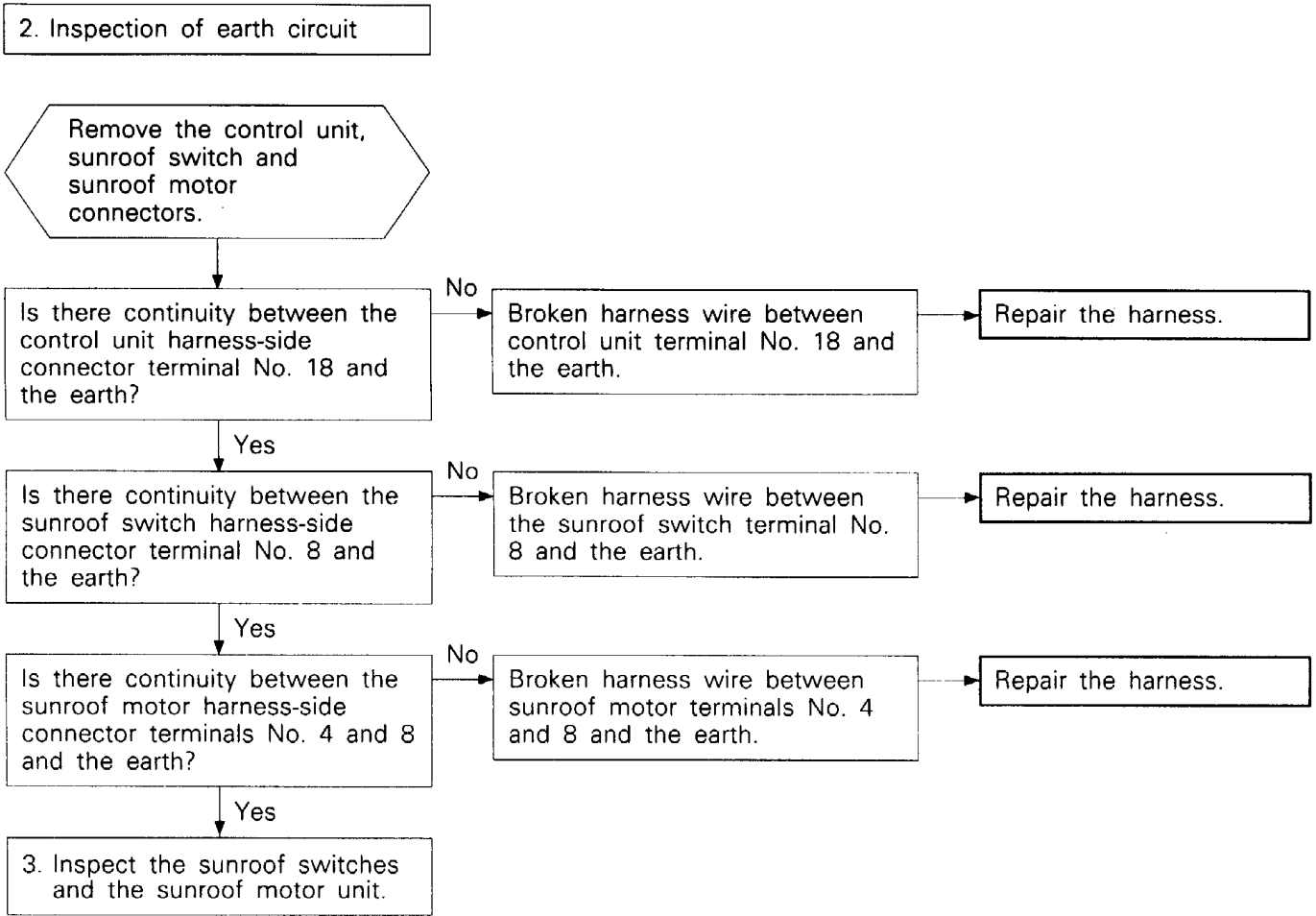
SUNROOF QUICK REFERENCE TABLE

Trouble symptom	Probable cause	Remedy
When ignition switch is turned to ON, sunroof does not operate.	<ul style="list-style-type: none"> ● Broken wire in sunroof control unit circuit or in each harness. ● Sunroof switch is faulty. ● Sunroof motor is faulty. ● Sunroof control unit is faulty. 	Inspect according to Flow Chart A (P.42-7).
When closing sunroof, motor does not reverse when a load of 270 Nm (27 kgm, 195 ft.lbs.) or more is applied.	<ul style="list-style-type: none"> ● Sunroof control unit is faulty. 	Replace sunroof control unit.
Sunroof will not close fully.	<ul style="list-style-type: none"> ● Limit switch contact is faulty. 	Replace sunroof motor.
When sunroof switch is pressed, motor operates for 0.2 seconds and then stops.	<ul style="list-style-type: none"> ● Lock plate is damaged. 	Replace sunroof motor.
Opening or closing of the sunroof is possible immediately after turning the ignition switch to OFF, but even if the driver's side door is opened within 30 seconds, the timer function does not operate continuously for another 30 seconds.	<ul style="list-style-type: none"> ● Broken wire in input circuit in driver's side door switch. ● Driver's side door switch is faulty. ● Sunroof control unit is faulty. 	Inspect according to Flow Chart B (P.42-9).
After turning the ignition switch to OFF, sunroof operation is possible even after timer operation period has elapsed.	<ul style="list-style-type: none"> ● Sunroof control unit is faulty. 	Replace sunroof control unit.
After turning the ignition switch to OFF, the timer does not operate.	<ul style="list-style-type: none"> ● Sunroof control unit is faulty. 	Replace sunroof motor.

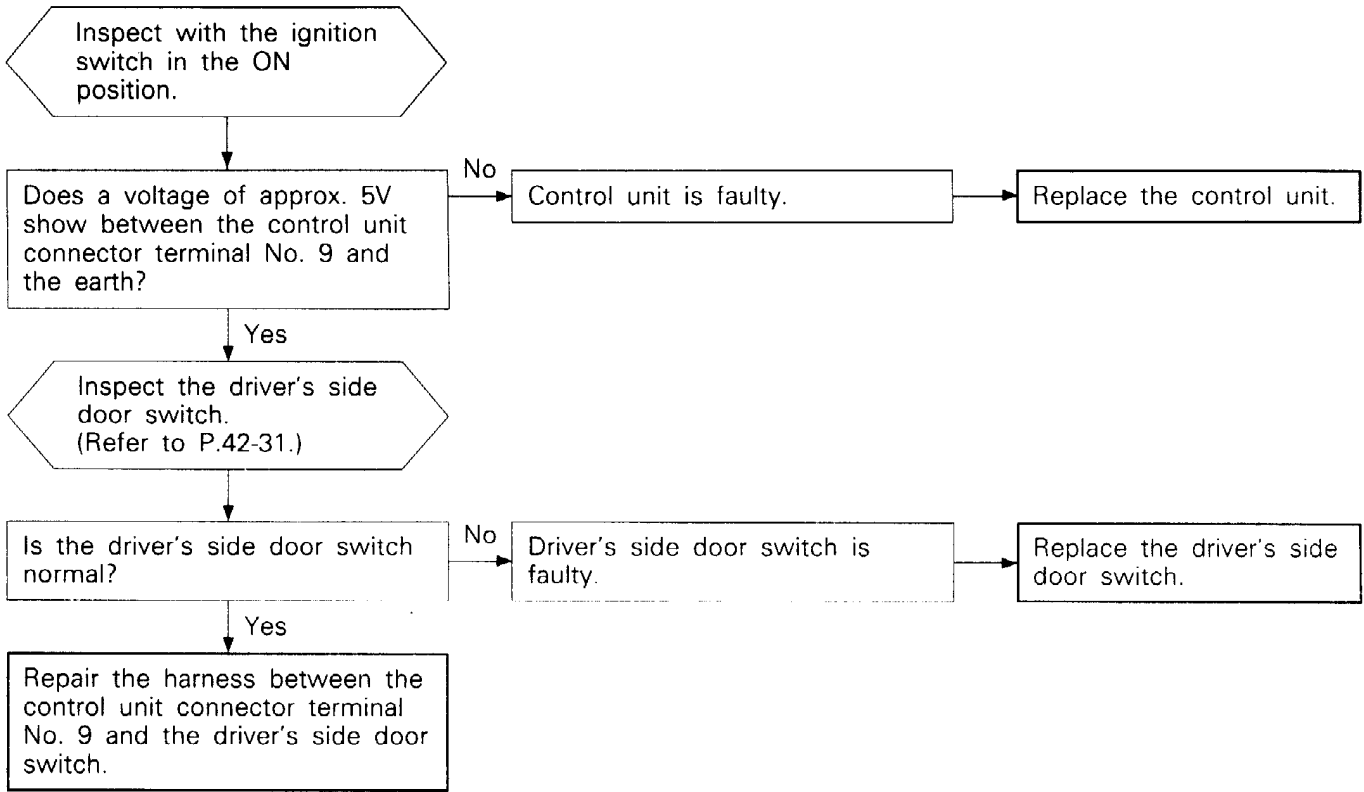
TROUBLE SYMPTOM INSPECTION CHART

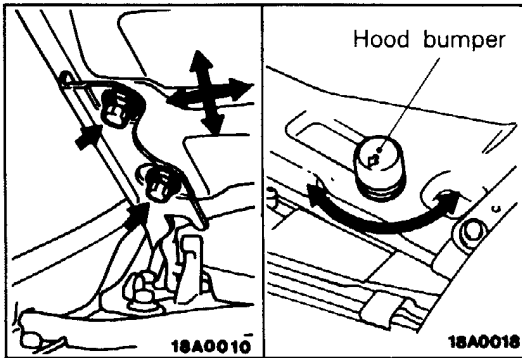
A When ignition switch is turned to ON, sunroof does not operate.





B Opening or closing of the sunroof is possible immediately after turning the ignition switch to OFF, but even if the driver's side door is opened within 30 seconds, the timer function does not operate continuously for another 30 seconds.

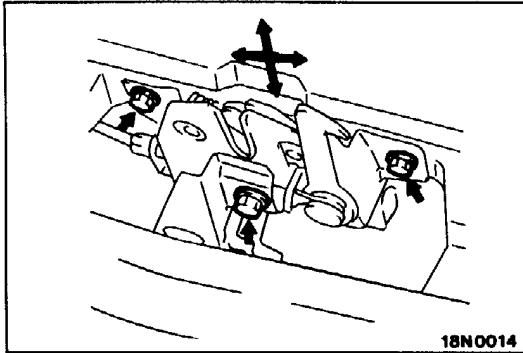




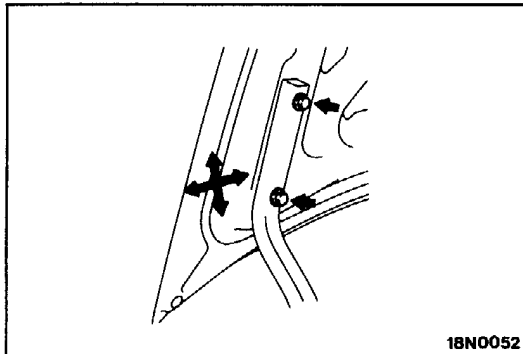
SERVICE ADJUSTMENT PROCEDURES E42FBAB

HOOD ALIGNMENT ADJUSTMENT

1. Adjust the longitudinal and lateral positions of the hood by utilizing the oblong holes in the hinge.
2. Turn the hood bumpers either left or right to adjust the height of the hood.

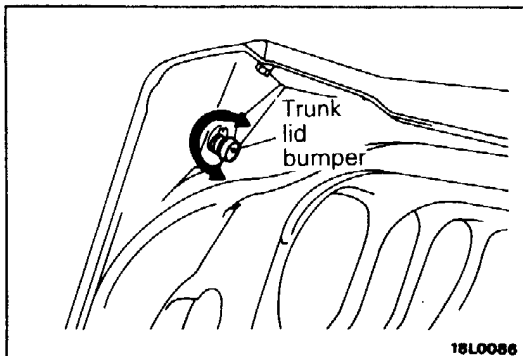


3. Loosen the hood latch mounting bolts.
4. Adjust the alignment of the hood striker and the hood latch by adjusting the horizontal and vertical position of the latch and the height of the hood.

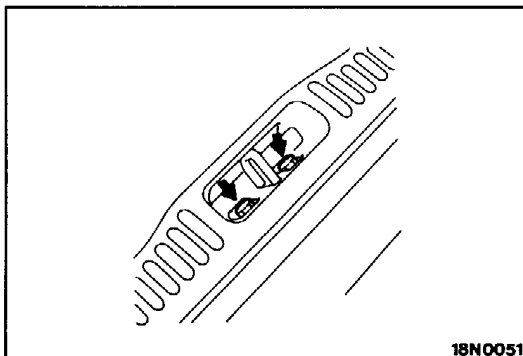


TRUNK LID ADJUSTMENT E42FPAA

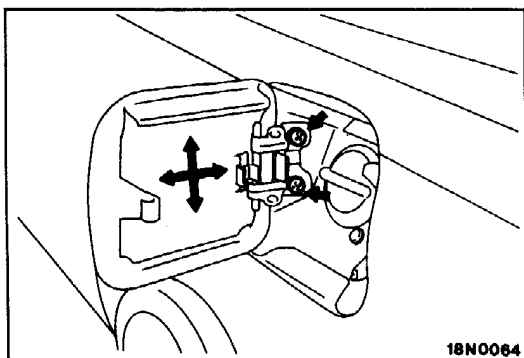
1. Loosen the trunk lid mounting bolts, adjust the trunk lid by moving it so that the clearance is equal on all sides.



2. Turn the trunk lid bumpers either left or right to adjust the height of the trunk lid.



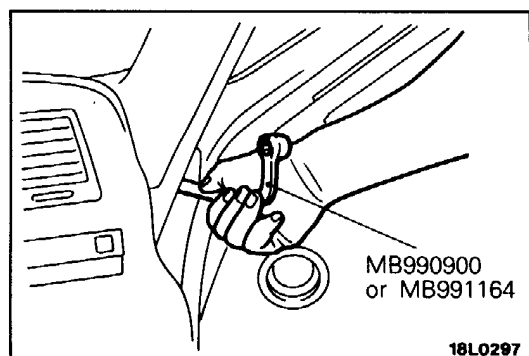
3. Loosen the trunk lid striker mounting bolts, and then adjust the alignment of the latch and striker by adjusting the horizontal and vertical positioning of the striker.



FUEL FILLER DOOR ADJUSTMENT

E42FCAF

Loosen the fuel filler door mounting screw and adjust the fuel filler door so that the clearance around the fuel filler door is even without any height differences.



DOOR FIT ADJUSTMENT

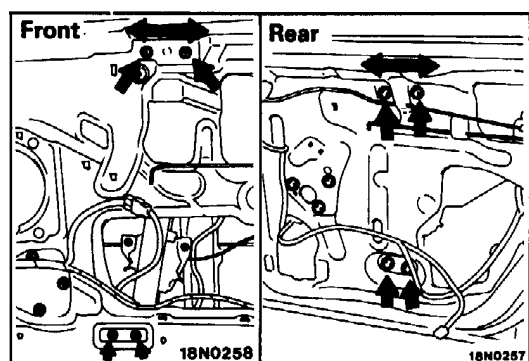
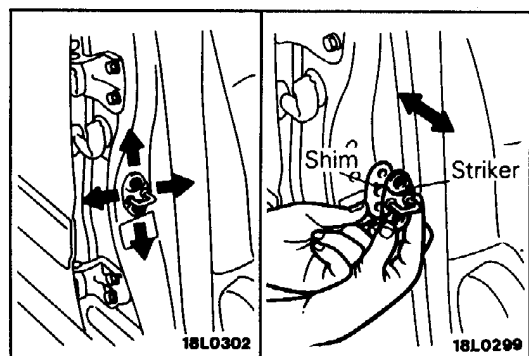
E42FDAG

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

Caution

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

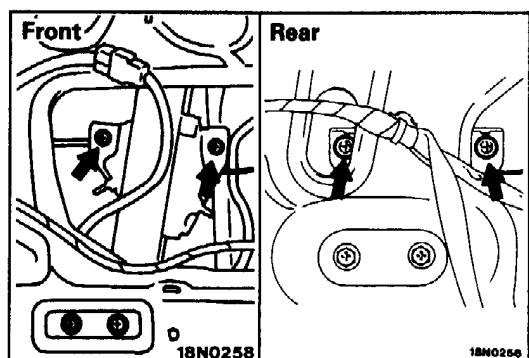
3. If the door opening and closing is stiff, adjust the linking of the striker and the door latch using the shim, while moving the striker up and down, or left and right.



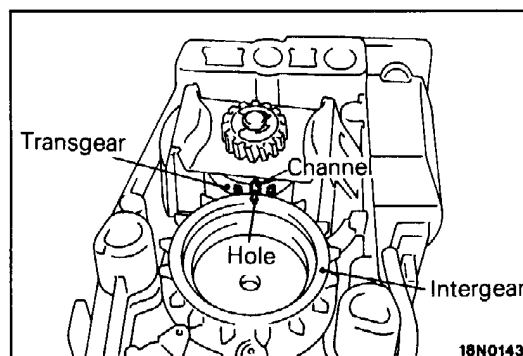
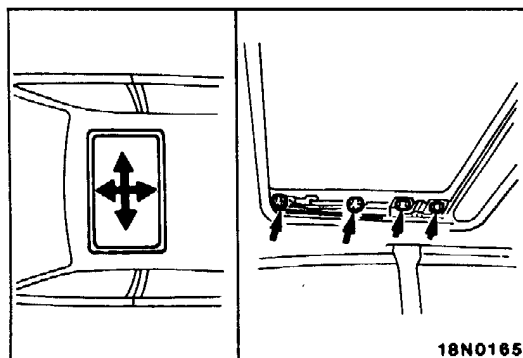
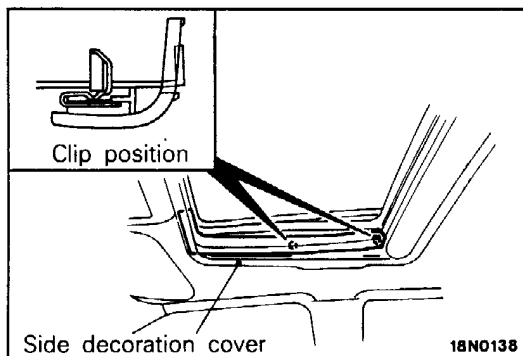
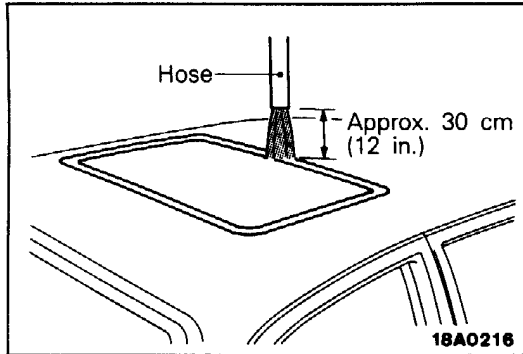
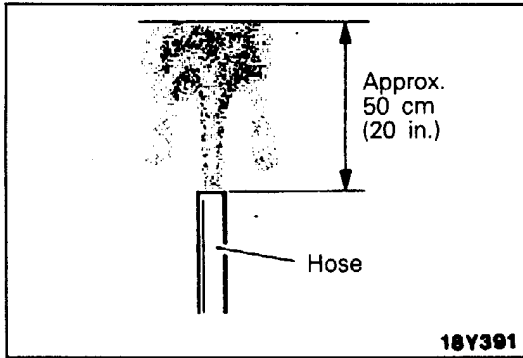
DOOR GLASS ADJUSTMENT

E42FEAH

1. Remove the door trim and waterproof film. (Refer to P.42-33.)
2. Loosen the installation bolt of the window regulator assembly; then move the upper installation back and forth and adjust the tilted angle of the glass.



3. Lower the door window glass to the position of the access hole.
4. Loosen the door glass installation screw, and adjust the forward/backward position of the glass.



WATER TEST

E42FOAA

1. Close roof lid tightly.
2. Hold hose upward and adjust water fountain to about 50 cm (20 in.) high.
3. Pour water over the roof from about 30 cm (12 in.) above roof for more than 5 minutes.
4. While pouring water, check for leak around roof lid.
5. In the event of leakage, check drain pipe, weatherstrip contact and others.

SUNROOF FIT ADJUSTMENT

E42FSAC

FORWARD, BACKWARD AND SIDEWAYS ADJUSTMENT OF THE SUNROOF GLASS

1. Fully close the sunroof glass.
2. Fully open the sun shade.
3. Remove the side decoration cover.

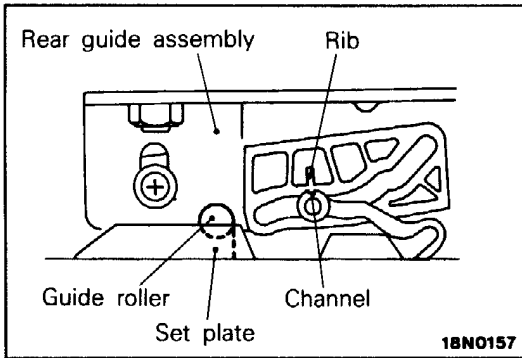
4. Loosen the 8 sunroof glass mounting nuts and adjust the glass forward, backward or sideways.

NOTE

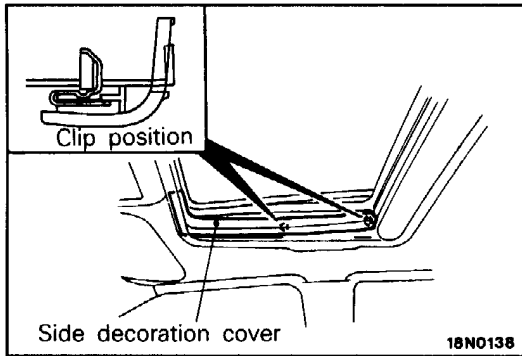
If the adjustment cannot be made by loosening the mounting nuts, the sunroof glass or the motor have not been fully closed, so they should be adjusted to the fully closed positions.

ADJUSTING SO THAT THE ROOF AND THE SUNROOF GLASS ARE PARALLEL, AND THE GLASS IS FULLY CLOSED

1. Remove the motor.
2. Align the hole of the motor internal gear with the channel in the transgear. (Motor in fully closed position.)

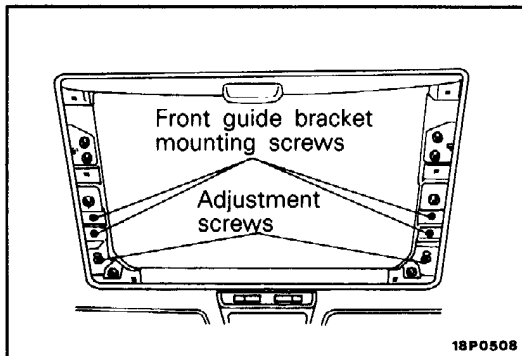


3. When the set plate and guide roller are aligned as shown in the diagram, adjust the rib of the rear guide assembly so it is aligned with the channel of the tilt cam. (Sunroof glass in fully closed position.)

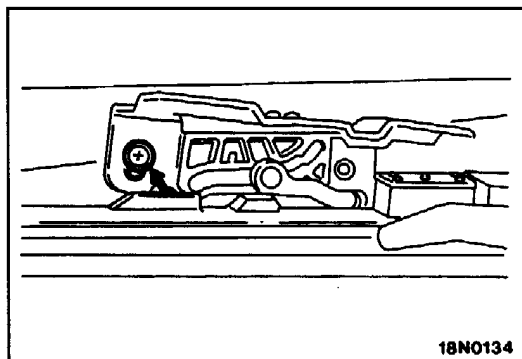


ADJUSTING THE HEIGHT OF THE SUNROOF GLASS AND THE ROOF

1. Fully close the sunroof glass.
2. Fully open the sun shade.
3. Remove the side decoration cover.



4. Loosen the front guide bracket mounting screws, and turn the adjustment screws to adjust the height.

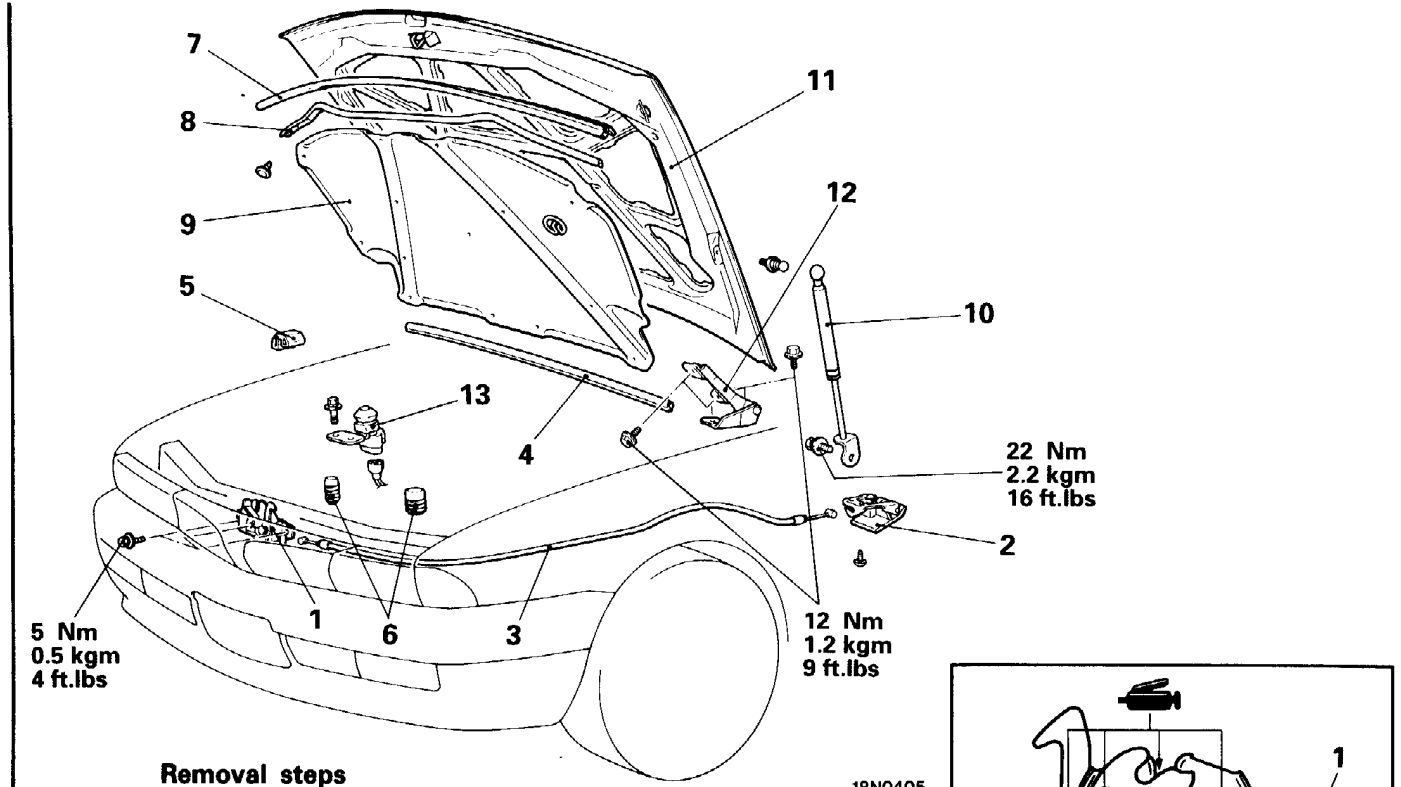


5. Loosen the rear guide assembly adjustment screws to adjust the height.

6. After adjustment, check that the sunroof operates smoothly.

HOOD

REMOVAL AND INSTALLATION



Removal steps

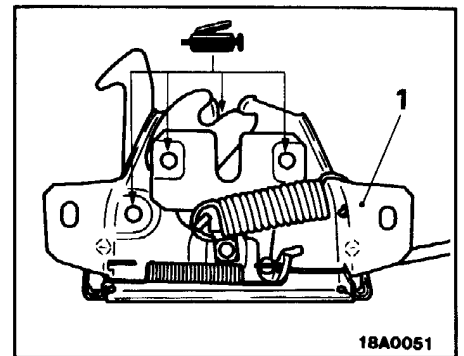
1. Hood latch
2. Hood lock release handle
3. Hood lock release cable
4. Hood weatherstrip
5. Damper
6. Bumper
7. Hood front weatherstrip
8. Air conditioner hood weatherstrip
9. Hood heat protector
10. Hood gas spring
13. Hood switch

Hood and hinge removal steps

- Washer tube
(Refer to GROUP 51 – Windshield wiper and washer.)
 - Air inlet grille
(Refer to GROUP 51 – Grille.)
10. Hood gas spring
 11. Hood
 12. Hinge

<Vehicles with theft-alarm system>

18N0405



18A0051

Post-installation Operation

- Hood Alignment Adjustment
(Refer to P.42-10.)

Caution

1. Do not disassemble the hood gas spring or throw it into fire.
2. When disposing of the hood gas spring, drill a hole to let the gas escape.

INSPECTION

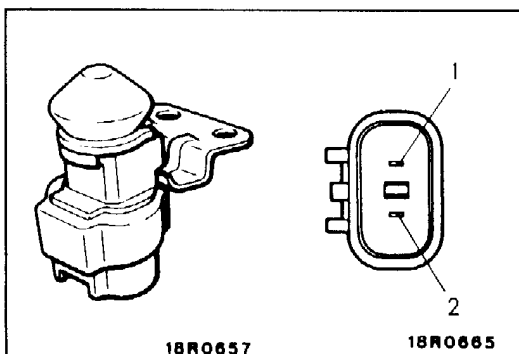
HOOD SWITCH (VEHICLES WITH THEFT-ALARM SYSTEM)

- (1) Disconnect the hood switch connector.
- (2) Check the continuity between the terminal.

Terminal	1	2
Hood switch unpressed	○	○
Hood switch depressed		

NOTE

○—○ indicates that there is continuity between the terminals.



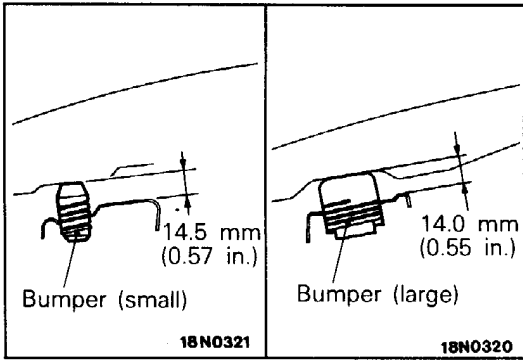
18R0657

18R0665

SERVICE POINTS OF INSTALLATION

6. INSTALLATION OF BUMPER

Install the bumper as shown in the diagram.



42-14-2

NOTES

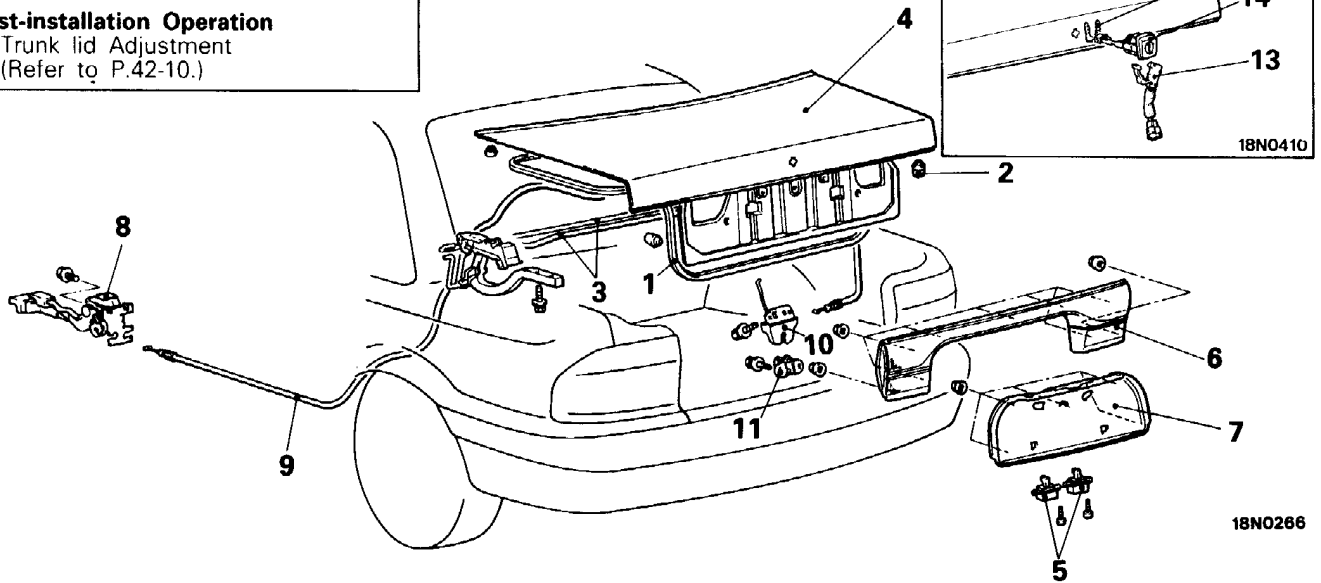
TRUNK LID

REMOVAL AND INSTALLATION

E42IAAFa

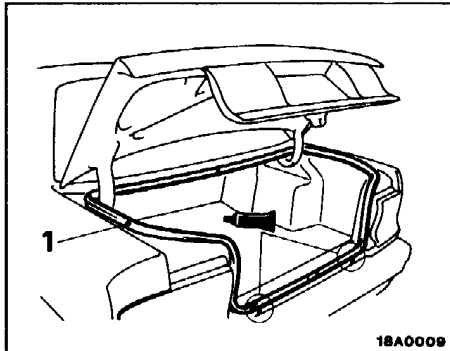
Post-installation Operation

- Trunk lid Adjustment
(Refer to P.42-10.)

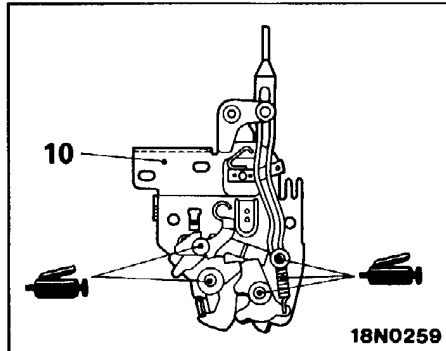


18N0410

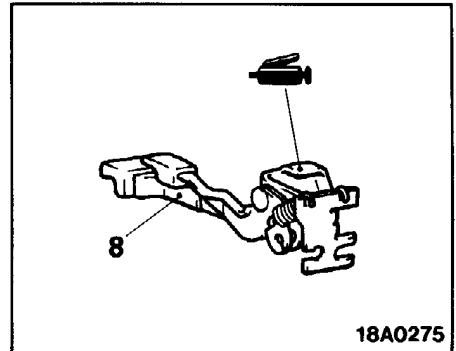
18N0266



18A0009



18N0259



18A0275

Adhesive:
3M ATD Part No. 8001 or 3M
ATD Part No. 8011, or
equivalent

Removal steps

- Trunk lid trim (Refer to GROUP 52 – Trims.)
- Rear lid harness connection
- ◆◆ 1. Trunk lid weatherstrip
- ◆◆ 2. Bumper
- ◆◆ 3. Trunk lid torsion bar
- ◆◆ 4. Trunk lid panel
- ◆◆ 5. License plate lamp
- ◆◆ 6. Rear lid lamp
- ◆◆ 7. Rear panel garnish

Trunk lid lock release handle and cable removal steps

- Front seat (driver's side) } (Refer to GROUP 52 – Seat.)
- Rear seat }
- Front scuff plate (driver's side) } (Refer to GROUP 52 – Trims.)
- Rear scuff plate (driver's side) }
- Trunk rear trim cover }
- Trunk lid trim }
- 8. Trunk lid lock release handle
- 9. Trunk lid lock release cable

Trunk lid latch removal steps

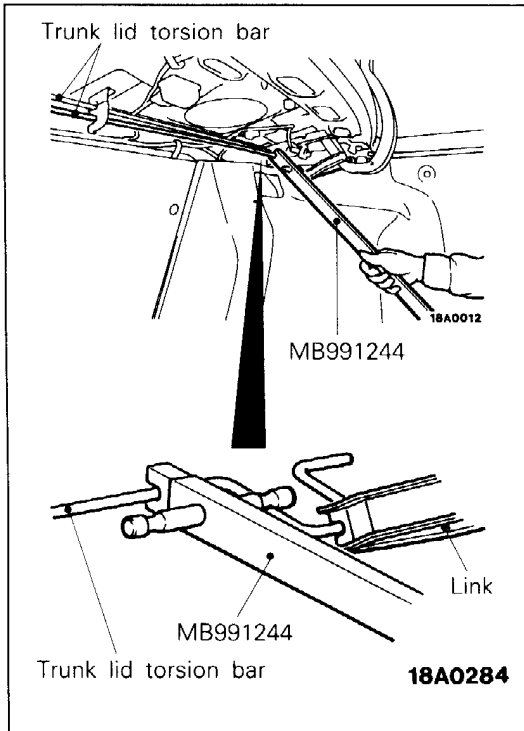
- Trunk lid trim (Refer to GROUP 52 – Trims.)
- 10. Trunk lid latch

Trunk lid striker removal steps

- Trunk lid trim cover (Refer to GROUP 52 – Trims.)
- 10. Trunk lid striker

Trunk lid lock cylinder removal steps

- Trunk lid trim (Refer to GROUP 52 – Trims.)
- Refer lid harness connection
- 1. Trunk lid weatherstrip
- 2. Bumper
- 3. Trunk lid torsion bar
- 12. Retainer
- 13. Trunk lid lock cylinder switch
<Vehicles with theft-alarm system>
- 14. Trunk lid lock cylinder



SERVICE POINTS OF REMOVAL

3. REMOVAL OF TRUNK LID TORSION BAR

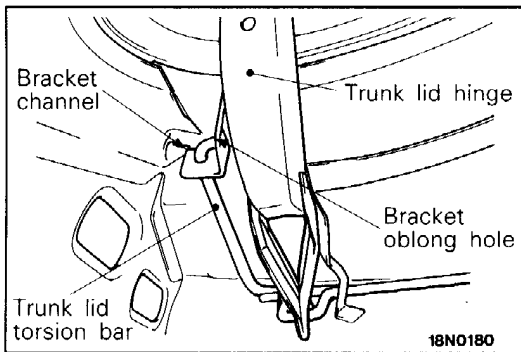
- (1) Disconnect the body harness and the harness connector of the rear shelf lower panel.
- (2) Attach the special tool to the link side of the torsion bar as shown in the figure, and push downwards to remove the torsion bar from the link.

NOTE

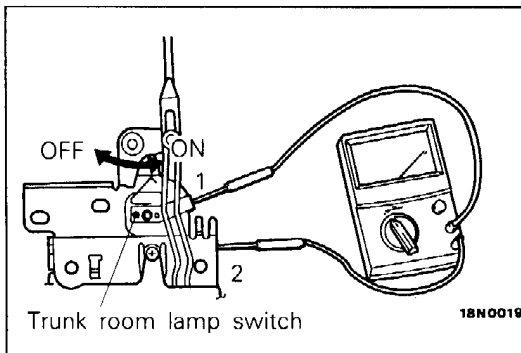
When removing the torsion bars, the left and right torsion bars cross at the centre, so the bar that is towards you at the crossed section should be removed first.

Caution

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



- (3) Raise the bracket end of the torsion bar and remove it from the bracket channel. Then, pull it from outside the vehicle to remove from the bracket oblong hole.
- (4) Remove the torsion bar by pulling from the link side hole to the outside of the vehicle.
- (5) Remove the other torsion bar using the same procedure.



INSPECTION

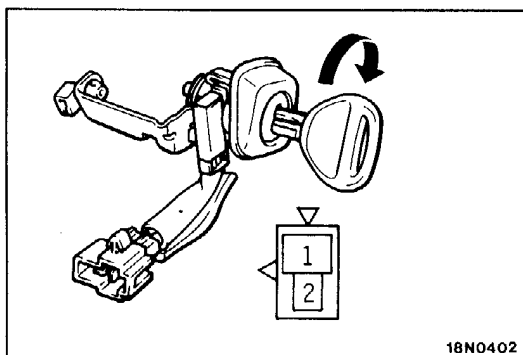
TRUNK ROOM LAMP SWITCH (INCLUDING LATCH)

Open and shut the trunk lid latch to operate the trunk room lamp switch, and check the continuity between the terminals.

Terminal	1	2
Switch position	1	2
ON (Latch open)	○—○	○—○
OFF (Latch shut)		

NOTE

○—○ indicates that there is continuity between the terminals.



TRUNK LID LOCK CYLINDER SWITCH <VEHICLES THEFT-ALARM SYSTEM>

- (1) Turn the key and unlock the lock cylinder.
- (2) Check for continuity between the terminals.

	Terminal	1	2
Key position			
Neutral (OFF)			
UNLOCK (ON)		○—○	

NOTE

○—○ indicates that there is continuity between the terminals.

SERVICE POINTS OF INSTALLATION

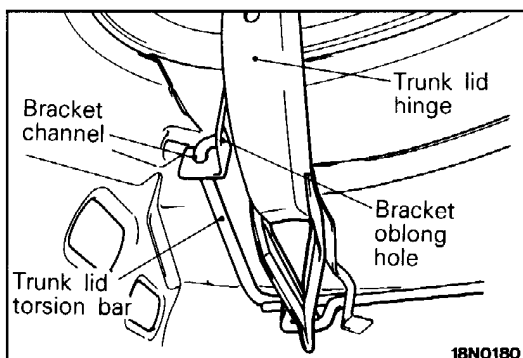
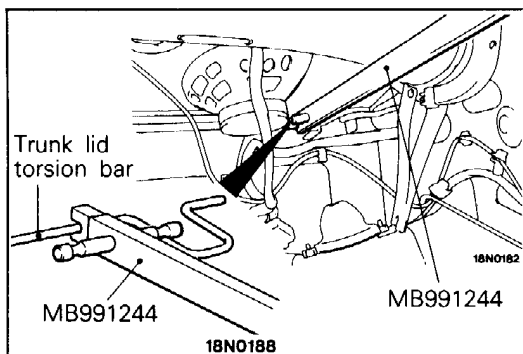
3. INSTALLATION OF TRUNK LID TORSION BAR

- (1) Insert the end of the torsion bar through the link side mounting hole.
- (2) Attach the special tool as shown in the figure.

Caution

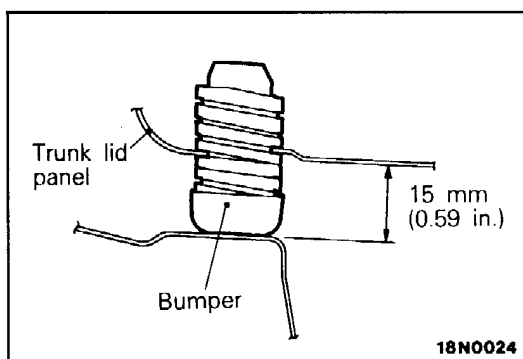
Be sure to attach the special tool properly, as the body or parts could be damaged when the torsion bar is removed from the special tool.

- (3) Raise the torsion bar at the bracket end, insert it through the bracket oblong hole, and attach securely to the bracket channel.
- (4) Push the special tool downwards to set the torsion bar against the link.
- (5) Install the other torsion bar using the same procedure.
- (6) Attach the body harness and the harness connector of the rear shelf lower panel.



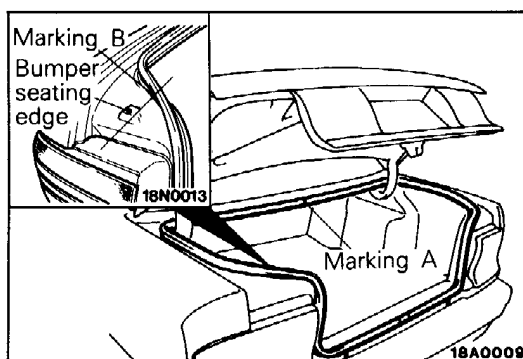
2. INSTALLATION OF BUMPER

Install the bumper as shown in the figure.



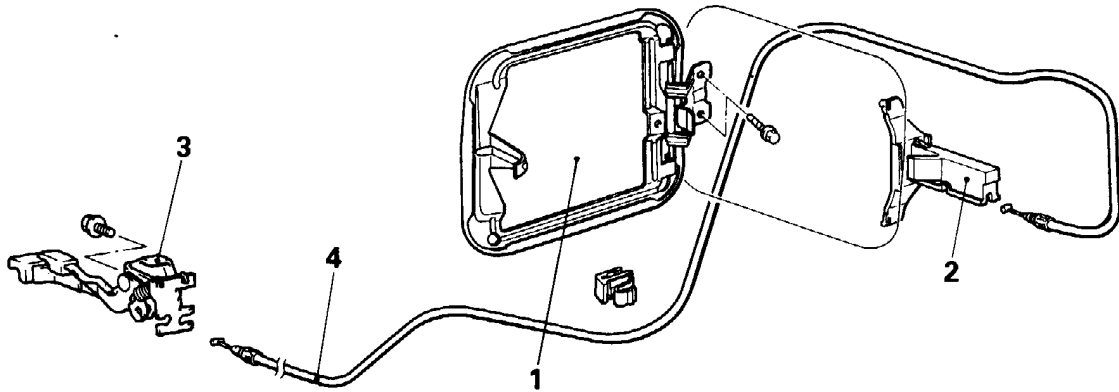
1. INSTALLATION OF TRUNK LID WEATHERSTRIP

Match the marking A section of the trunk lid weatherstrip with the moulding installation hole, and the marking B section with the bumper seating edge to install.

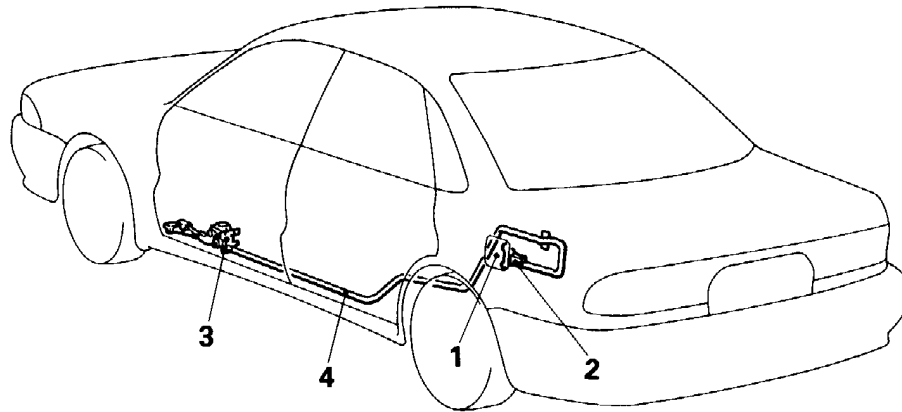


FUEL TANK FILLER DOOR REMOVAL AND INSTALLATION

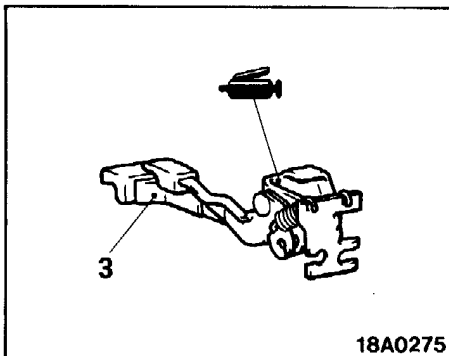
E42JBAL



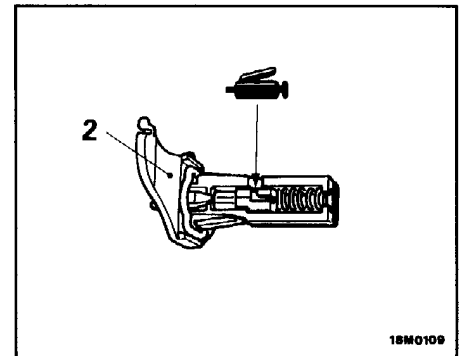
18N0264



18N0263



18A0275



18M0109

Pre-removal and Post-installation Operation

- Removal and Installation of Front Seat (driver's side), Rear Seat (Refer to GROUP 52 – Seat.)
- Removal and Installation of Front Scuff Plate (driver's side), Rear Scuff Plate (driver's side), Trunk Side Trim, Trunk Rear Trim Cover, Trunk Rear Trim (Refer to GROUP 52 – Trims.)

Adjustment

- Fuel Filler Door Adjustment (Refer to P.42-11.)

Removal steps

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

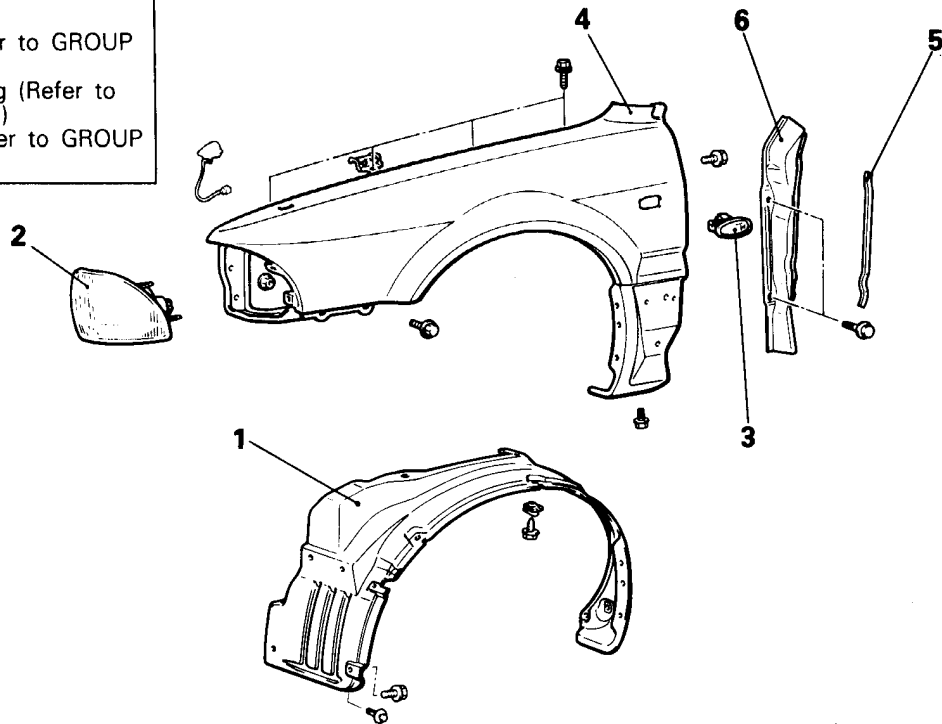
FENDER

REMOVAL AND INSTALLATION

CAUTION: SRS
 When removing and installing the front fender panel from vehicles equipped with SRS, do not let it bump against the front impact sensor.

Pre-removal and Post-installation Operation
Removal and Installation

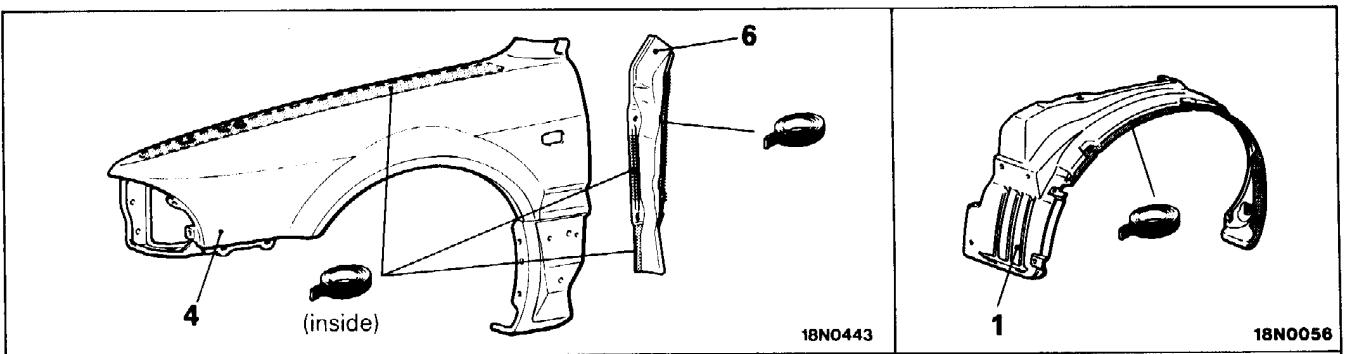
- Front Mud Guard (Refer to GROUP 51 – Mud Guard.)
- Side Protector Moulding (Refer to GROUP 51 – Moulding.)
- Front Side Airdam (Refer to GROUP 51 – Aero Parts.)



18N0444

Removal steps

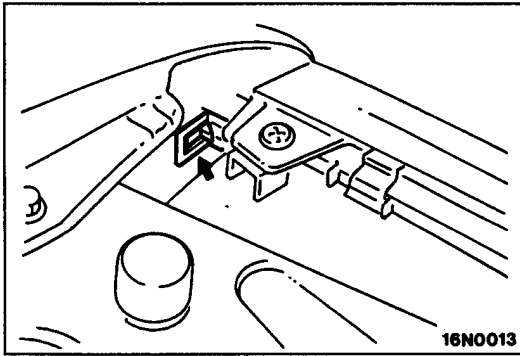
- ↔ 1. Splash shield
- ↔ 2. Front turn signal lamp
 - Front bumper (Refer to GROUP 51 – Front Bumper.)
- ↔ 3. Side turn signal lamp
- ↔ 4. Front fender panel
- 5. Sealer
- 6. Front fender insulator



18N0443

18N0056

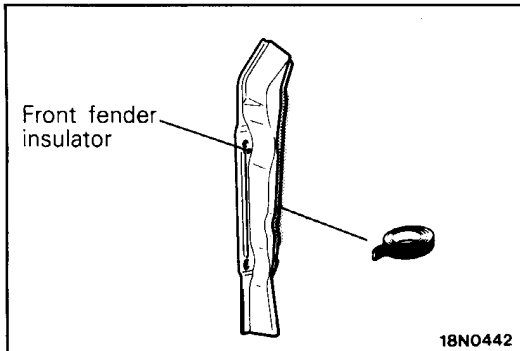
Sealant:
3M ATD Part No. 8625 or equivalent



SERVICE POINTS OF REMOVAL

2. REMOVAL OF FRONT TURN SIGNAL LAMP

Remove the front turn signal lamp set hook, and remove the front turn signal lamp by pulling it towards the front of the vehicle.



SERVICE POINTS OF INSTALLATION

4. INSTALLATION OF FRONT FENDER PANEL

According to the condition of the sealer, apply specified sealant to the sealer part of the front fender insulator or to the part of the sealer that hasn't been removed.

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

Caution

Because the places from which old adhesive has been removed have not been coated, apply the specified sealant so that the non-coated parts are not exposed.

WINDSHIELD GLASS

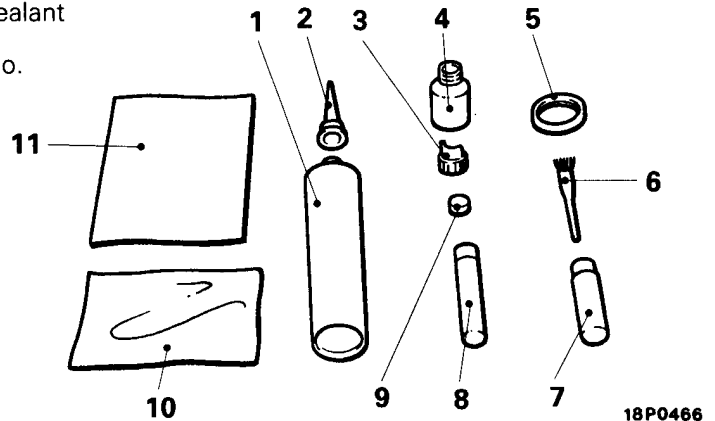
E42LABM

WINDSHIELD REPAIR

- Adhesive: 3M Super Fast Urethan Auto Glass Sealant
Part No. 8609 or equivalent
- Primer: 3M Super Fast Urethan Primer Part No.
8608 or equivalent

- Auto Window Sealer Kit
TEROSON-127, 37V

- | | |
|-------------------------|------------------------|
| 1. Sealer | 10. Gauge |
| 2. Nozzle | 11. Instruction manual |
| 3. Primer container | |
| 4. Primer container cap | |
| 5. Piano wire | |
| 6. Brush | |
| 7. Cleaner | |
| 8. Primer | |
| 9. Filter | |



18P0466

NOTE

When using TEROSON-127, 37V, follow the instructions of the manual included in the kit.

Additional material required

Spacers	Available as service part
Dam	Available as service part
Anti-rust solvent (or Tectyl 506T....Valvoline Oil Company)	For rust prevention
Isopropyl alcohol	For grease removal from bonded surface
Steel piano wire	Dia. x length....0.6 mm x 1 m (0.024 in. x 3 ft.)
	For cutting adhesive
Adhesive gun	For pressing-out adhesive

HANDLING OF AUTO WINDOW SEALER

Keep the sealant in a cool place, not exposed to the direct rays of the sun.

Do not place any heavy article on the sealant nor press it, otherwise it will become deformed.

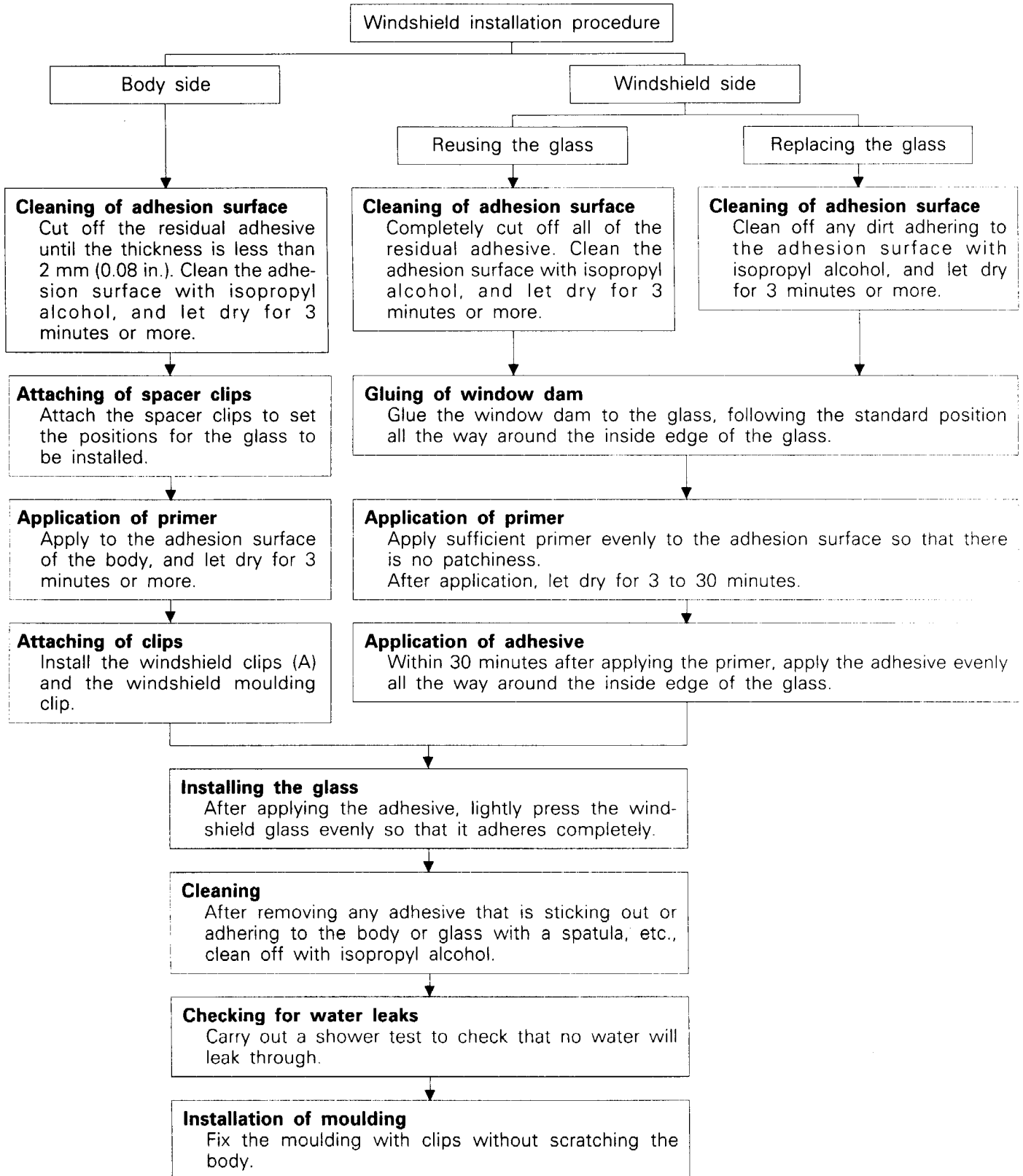
Avoid storing the sealant for more than 6 months, because it will lose its sealing effect.

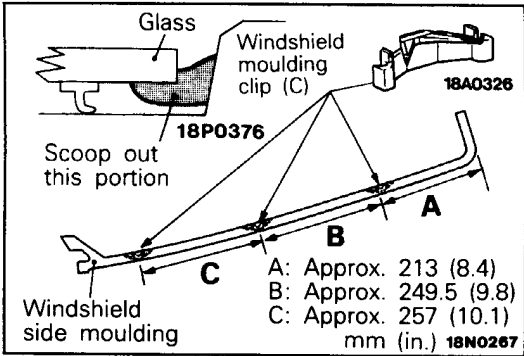
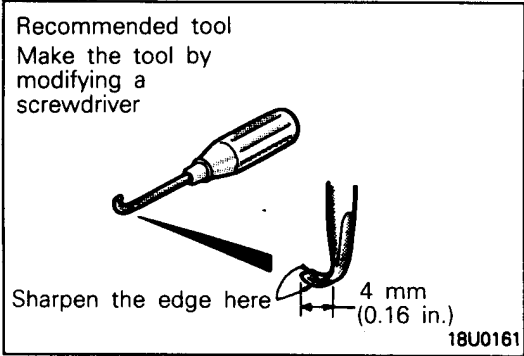
BODY PINCH-WELD FLANGE SERVICING

Before servicing the body pinch-weld flange, remove old adhesive completely.

If the flange requires painting, bake it after painting is completed.

WORKING PROCESS





REPLACEMENT OF MOULDING (WITH CLIP ATTACHED)

1. Remove the mouldings.
2. To cut the existing adhesive, make a tool such as the one shown.
3. Using the recommended tool, scoop out the old adhesive material at the clip installation, then apply the specified adhesive and install the moulding.

Specified adhesive: 3M Super Fast Urethan Auto Glass Sealant Part No. 8609 or equivalent

Caution

Be careful not to damage the glass and body.

REMOVAL AND INSTALLATION <VEHICLES BUILT UP TO OCTOBER, 1992>

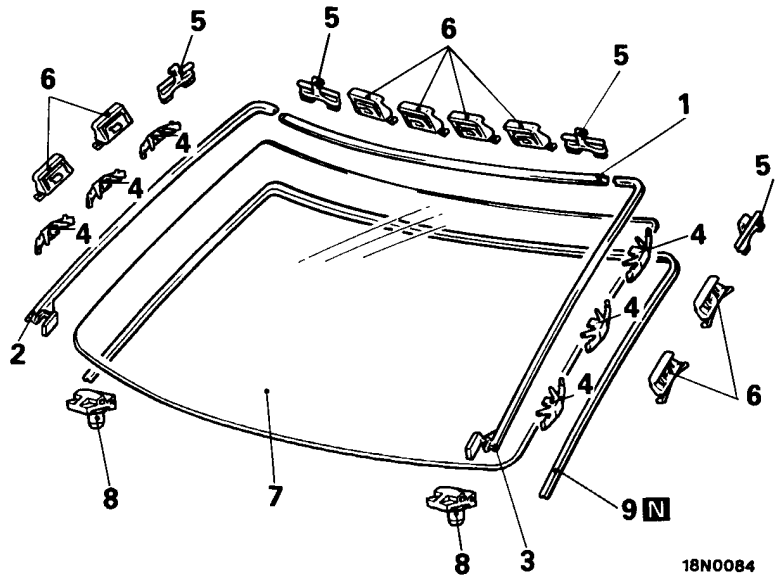
Pre-removal and Post-installation Operation

Removal and Installation

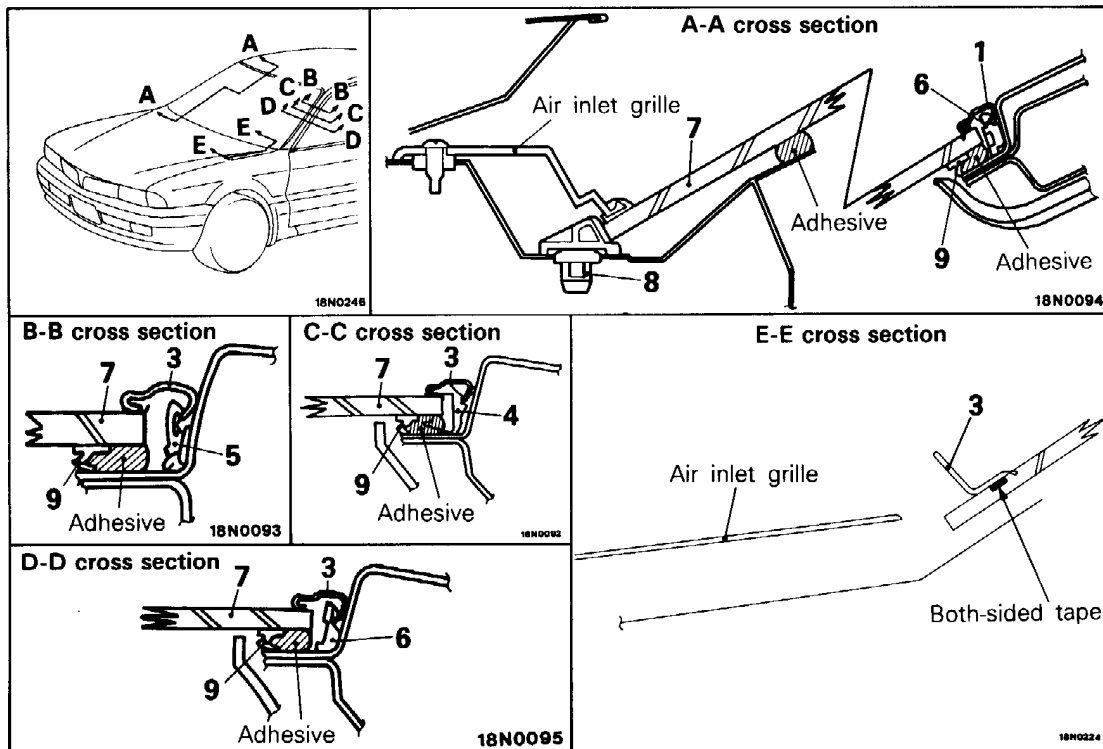
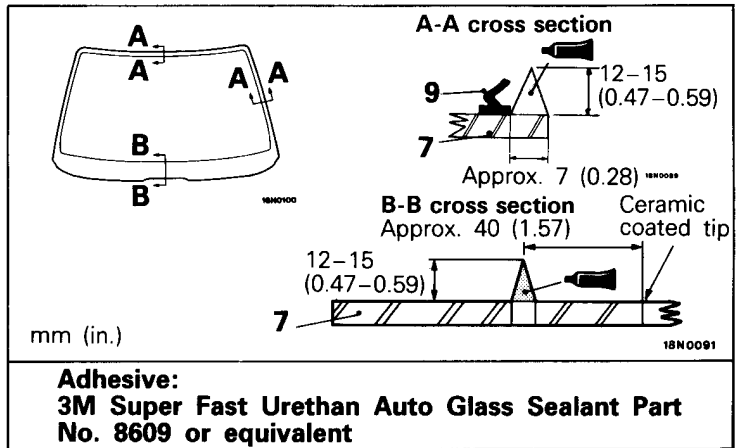
- Wiper Arm (Refer to GROUP 51 – Windshield Wiper and Washer.)
- Air Inlet Grille (Refer to GROUP 51 – Grille.)
- Headlining (Refer to GROUP 52 – Headlining.)
- Front Pillar Trim (Refer to GROUP 52 – Trims.)
- Inside Rear View Mirror (Refer to GROUP 52 – Inside Rear View Mirror.)

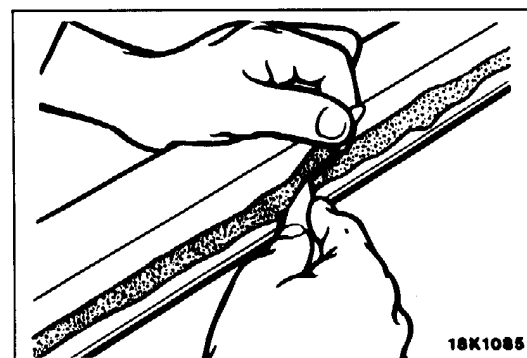
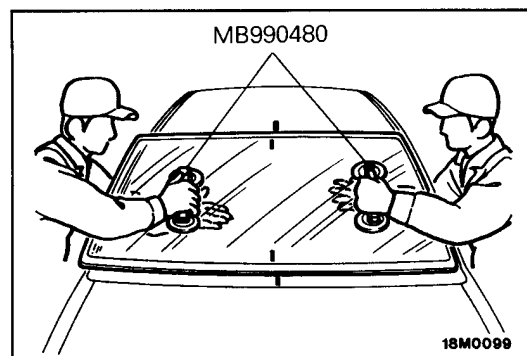
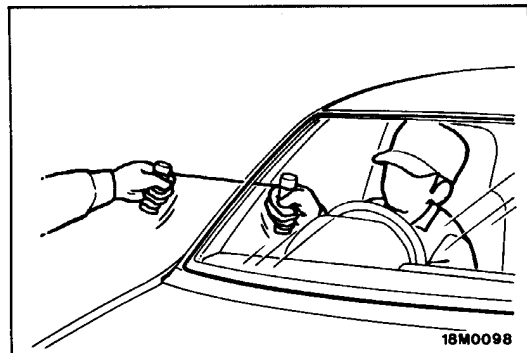
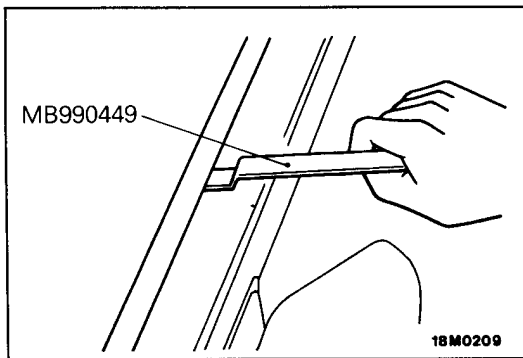
Removal steps

- ◄◄ 1. Windshield upper moulding
- ◄◄ ◄◄ 2. Windshield side moulding (RH)
- ◄◄ ◄◄ 3. Windshield side moulding (LH)
- ◄◄ ◄◄ 4. Windshield moulding clip (C)
- ◄◄ ◄◄ 5. Windshield moulding clip (A)
- ◄◄ ◄◄ 6. Windshield moulding clip
- ◄◄ ◄◄ 7. Windshield glass
- ◄◄ ◄◄ 8. Spacer clip
- ◄◄ ◄◄ 9. Window dam



18N0084





SERVICE POINTS OF REMOVAL

1./2./3. REMOVAL OF EACH MOULDING

Remove by using the special tool to lever out each moulding.

Caution

Mouldings that become warped should not be re-used.

7. REMOVAL OF WINDSHIELD GLASS

- (1) In order to protect the body (paint surface), apply cloth tape to all body areas around the installed windshield glass.
- (2) Using a sharp-point drill, make hole in the windshield glass 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 glass to cut the adhesive.

Caution

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

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

- (7) Use a knife to cut away the remaining adhesive so that the thickness is within 2 mm (0.08 in.) around the entire circumference of the body flange.
- (8) Finish the flange surfaces so that they are smooth.

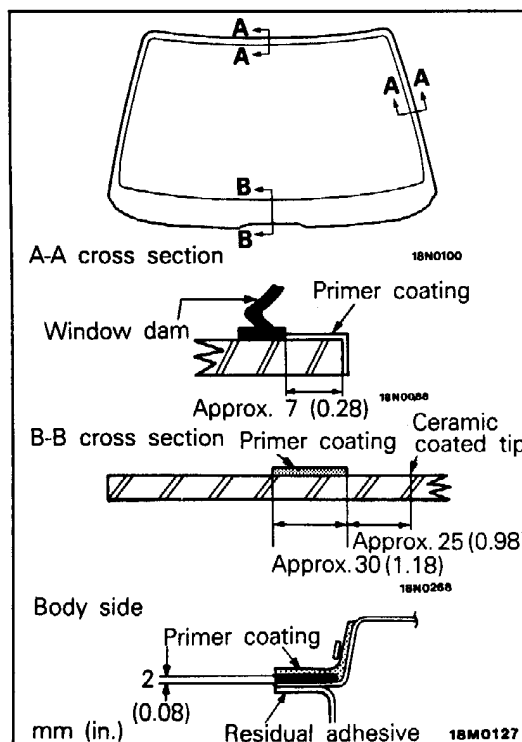
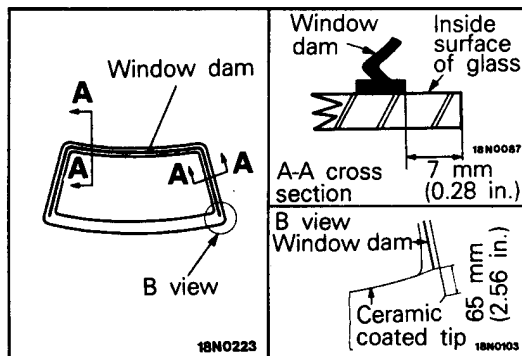
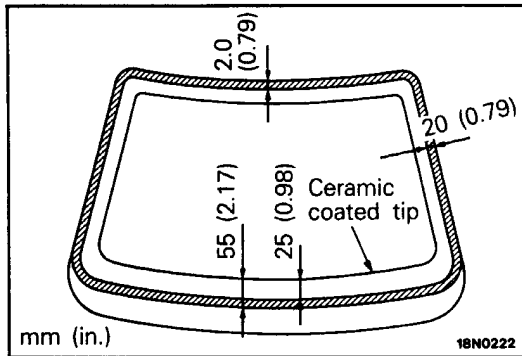
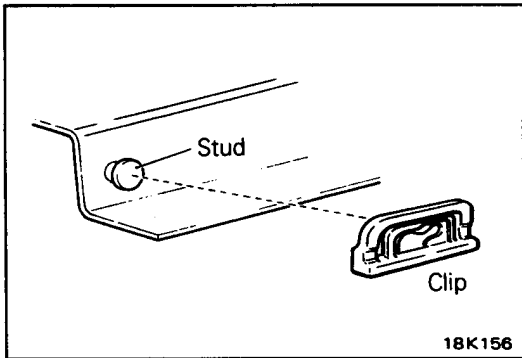
Caution

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 glass, remove the adhesive and the chips of window spacer still adhering to the glass, 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.



INSPECTION

- Check the body flange for deformation.
- Check the window moulding clips and studs for damage.

NOTE

If the T-studs are broken, use a drill to make holes in the T-studs 3 mm (0.12 in.) in diameter, fill the holes with adhesive, and then use screws to mount the window moulding clips.

Caution

After installing the clip, apply antirust solvent to the screw head to protect them from rust.

SERVICE POINTS OF INSTALLATION

9. INSTALLATION OF WINDOW DAM

- (1) Wipe the windshield glass section in the figure with isopropyl alcohol to clean it and to remove all grease, etc.

- (2) Glue the window dam correctly to the inside of the windshield glass so that it has no bends or raised sections.

8. INSTALLATION OF SPACER CLIP/7. WINDSHIELD GLASS/6. WINDSHIELD MOULDING CLIP/5. WINDSHIELD MOULDING CLIP (A)

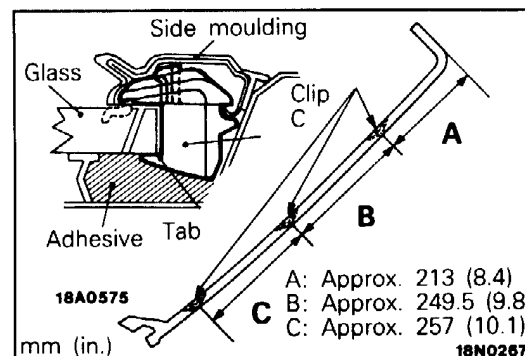
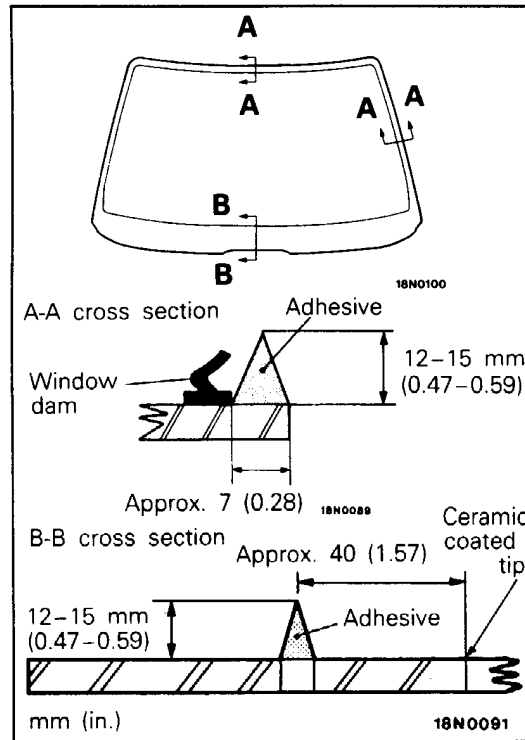
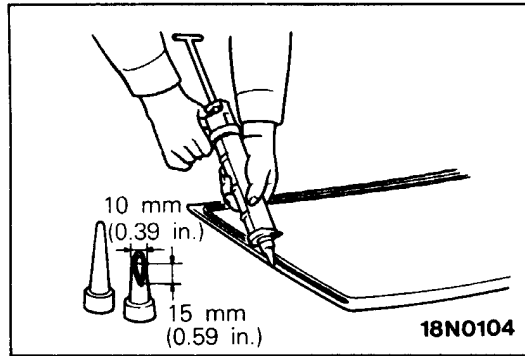
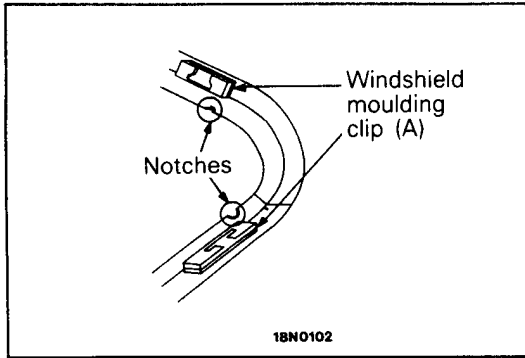
- (1) When replacing the glass, temporarily set the glass against the body, and mark the glass and body where they match.
- (2) Soak a sponge in the primer, and apply evenly to the glass and the body in the places shown in the figure.

Specified primer: 3M Super Fast Urethan Primer Part No. 8608 or equivalent

Caution

1. The primer strengthens the adhesive strength, so be sure to apply it evenly around the entire circumference. But, a too thick application will cause lowering of the adhesive strength.
2. Do not touch the coated surface.

- (3) After applying the primer, let it dry for 3 to 30 minutes.
- (4) Attach the spacer clip.



- (5) Glue the windshield moulding clips so that the clips' ends match the notches on the body, as shown in the figure.
- (6) Set the windshield mounting clip studs into the windshield mounting clips.

- (7) Within 30 minutes after applying the primer, fill the sealant gun with adhesive and apply the adhesive evenly around the entire circumference of the windshield.

Specified adhesive: 3M Super Fast Urethan Auto Glass Sealant Part No. 8609 or equivalent

NOTE

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

- (8) After applying the adhesive, match up the marks on the glass and the body.
- (9) After removing any adhesive that is sticking out or adhering to the body or glass with a spatula, etc., clean off with isopropyl alcohol.

After completion of this operation (after installing the glass), place it somewhere where it will not be disturbed, until the adhesive sets.

Caution

If heat is applied with an infra-red lamp to shorten the setting time, keep the surface temperature of the adhesive below 100°C (212°F).

- (10) After attaching the windshield glass to the body, let it stand for 30 minutes or more, and then test for water leakage.

Caution

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

3./2. INSTALLATION OF WINDSHIELD SIDE MOULDING

Install the moulding before the glass's adhesive hardens. For the side moulding, install moulding clip C at the position indicated in the illustration, installing securely so that the claw of clip C catches at the lower edge of the glass.

REMOVAL AND INSTALLATION <VEHICLES BUILT FROM NOVEMBER, 1992>

Pre-removal and Post-installation Operation

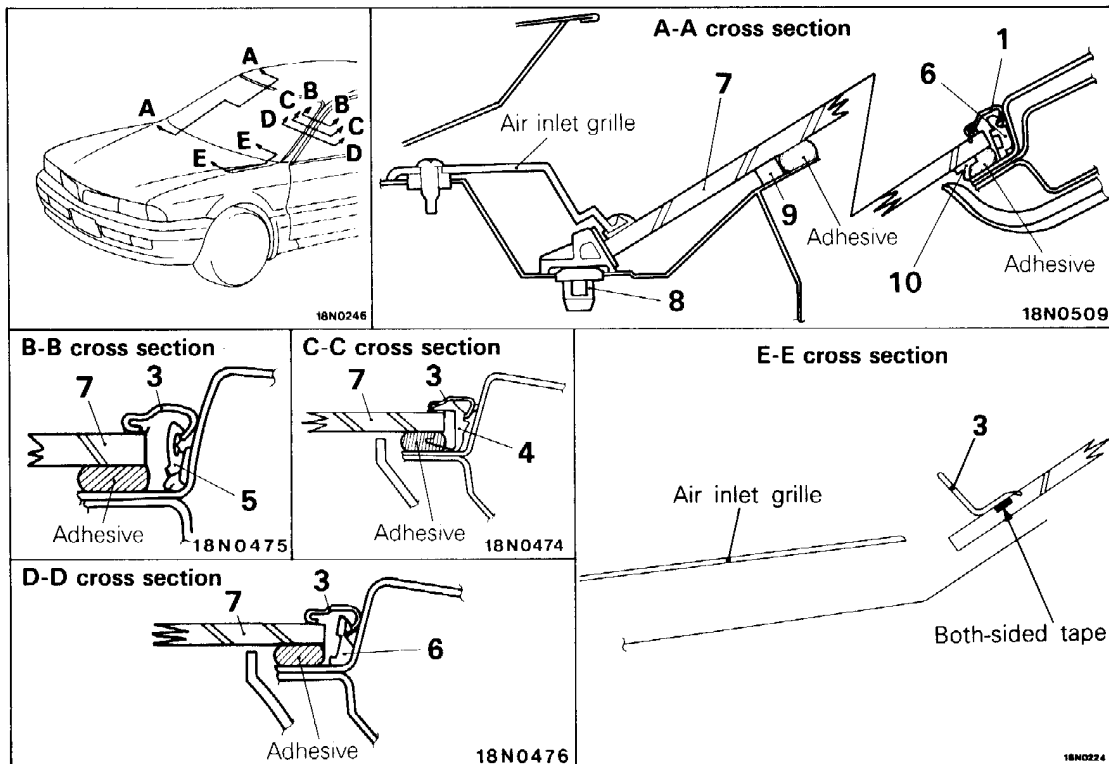
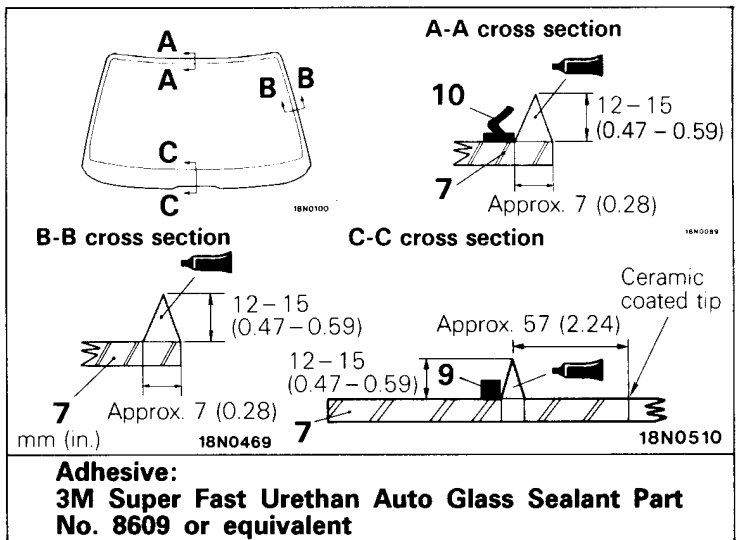
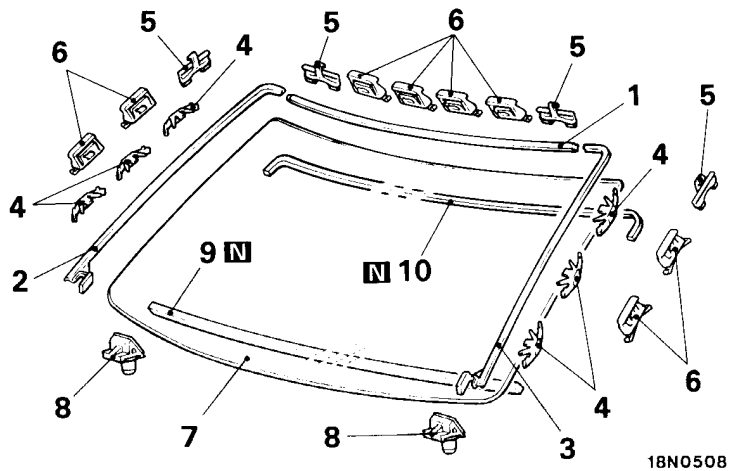
Removal and Installation

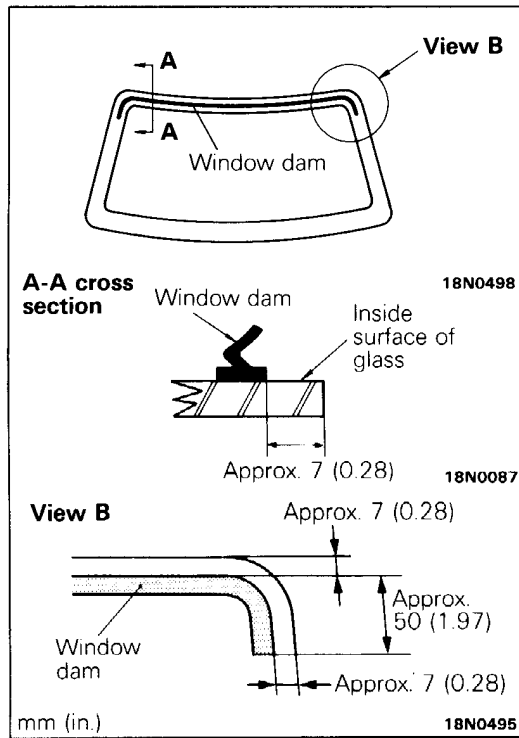
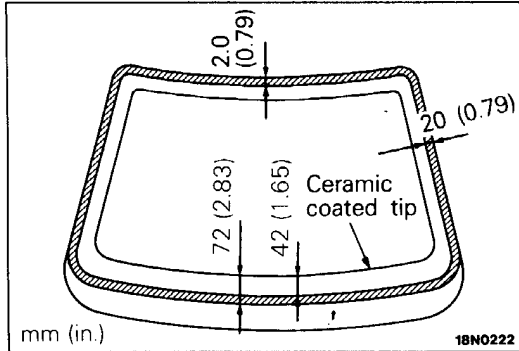
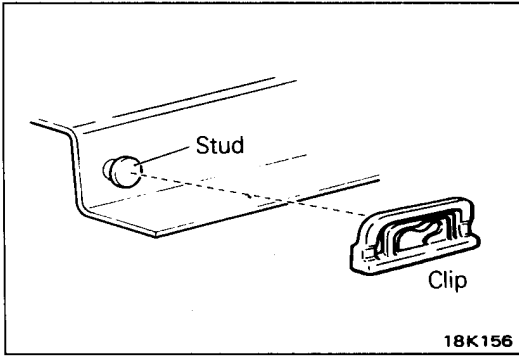
- Wiper Arm (Refer to GROUP 51 – Windshield Wiper and Washer.)
- Air Inlet-Grille (Refer to GROUP 51 – Grille.)
- Headlining (Refer to GROUP 52 – Headlining.)
- Front Pillar Trim (Refer to GROUP 52 – Trims.)
- Inside Rear View Mirror (Refer to GROUP 52 – Inside Rear View Mirror.)

Removal steps

- ◄◄ 1. Windshield upper moulding
- ◄◄ ◄◄ 2. Windshield side moulding (RH)
- ◄◄ ◄◄ 3. Windshield side moulding (LH)
- ◄◄ ◄◄ 4. Windshield moulding clip (C)
- ◄◄ ◄◄ 5. Windshield moulding clip (A)
- ◄◄ ◄◄ 6. Windshield moulding clip
- ◄◄ ◄◄ 7. Windshield glass
- ◄◄ ◄◄ 8. Spacer clip
- ◄◄ ◄◄ 9. Window spacer
- ◄◄ ◄◄ 10. Window dam

NOTE
Refer to P.42-24 for "Service Points of Removal."





INSPECTION

- Check the body flange for deformation.
- Check the window moulding clips and studs for damage.

NOTE

If the T-studs are broken, use a drill to make holes in the T-studs 3 mm (0.12 in.) in diameter, fill the holes with adhesive, and then use screws to mount the window moulding clips.

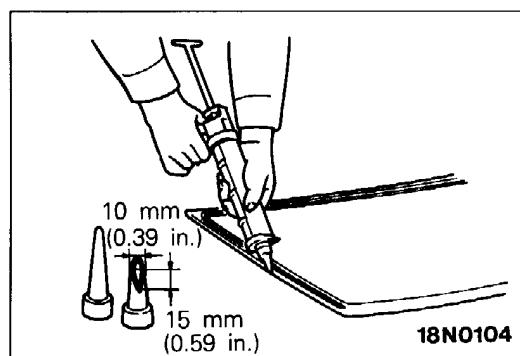
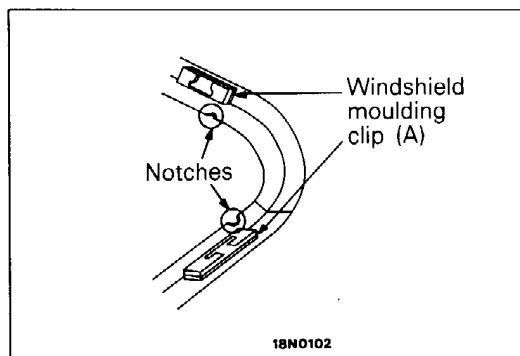
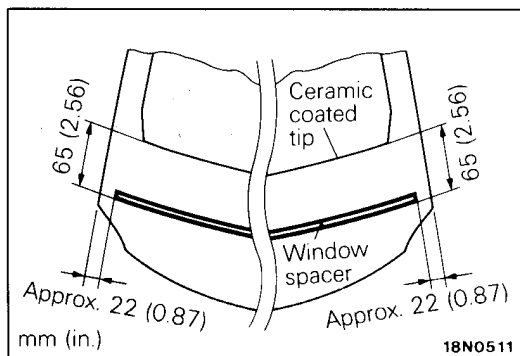
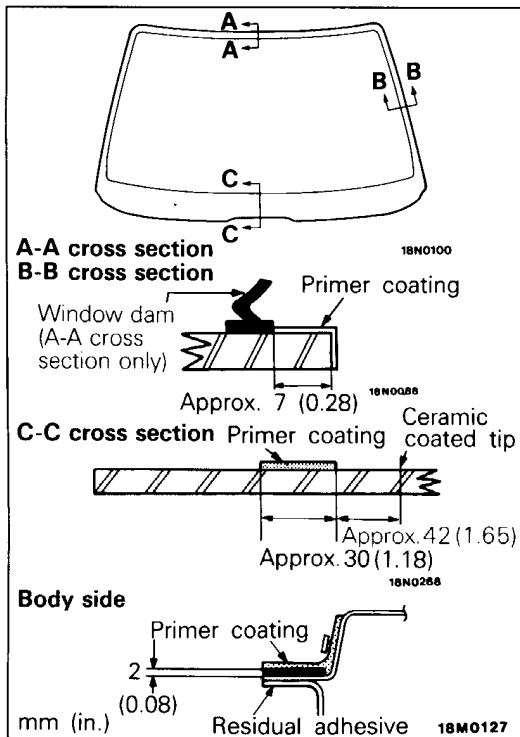
Caution

After installing the clip, apply antirust solvent to the screw head to protect them from rust.

SERVICE POINTS OF INSTALLATION

10. INSTALLATION OF WINDOW DAM

- (1) Wipe the windshield glass section in the figure with isopropyl alcohol to clean it and to remove all grease, etc.
- (2) Glue the window dam correctly to the inside of the windshield glass so that it has no bends or raised sections.



9. INSTALLATION OF WINDOW SPACER/8. SPACER CLIP/7. WINDSHIELD GLASS/6. WINDSHIELD Moulding CLIP/5. WINDSHIELD Moulding CLIP (A)

- (1) When replacing the glass, temporarily set the glass against the body, and mark the glass and body where they match.
- (2) Soak a sponge in the primer, and apply evenly to the glass and the body in the places shown in the figure.

Specified primer: 3M Super Fast Urethan Primer Part No. 8608 or equivalent

Caution

1. The primer strengthens the adhesive strength, so be sure to apply it evenly around the entire circumference. But, a too thick application will cause lowering of the adhesive strength.
2. Do not touch the coated surface.

- (3) After applying the primer, let it dry for 3 to 30 minutes.

- (4) Glue the window spacer correctly as shown in the figure to the inside of the windshield glass so that it has no bends or raised sections.
- (5) Attach the spacer clip.

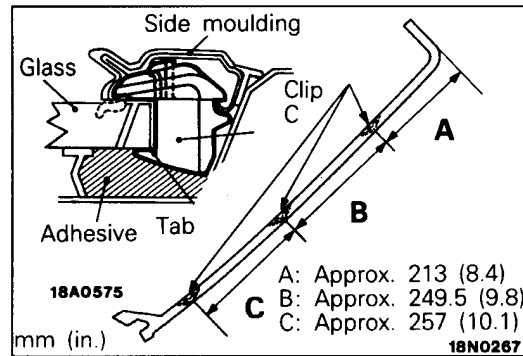
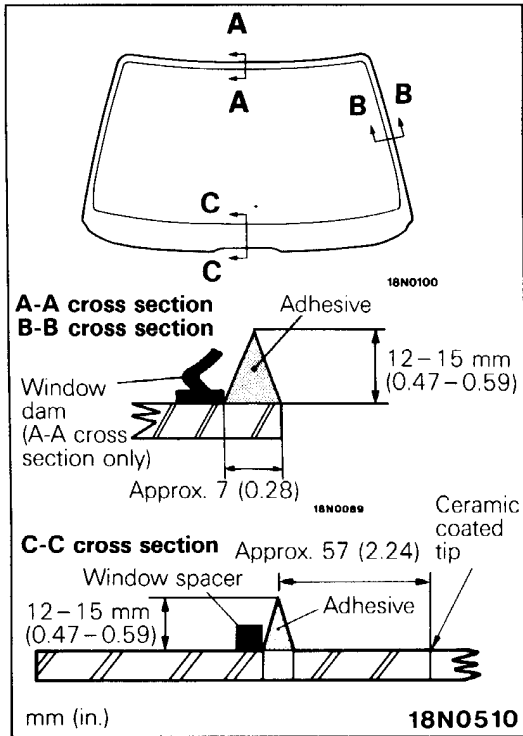
- (6) Glue the windshield moulding clips (A) so that the clips' ends match the notches on the body, as shown in the figure.
- (7) Set the windshield mounting clip studs into the windshield mounting clips.

- (8) Within 30 minutes after applying the primer, fill the sealant gun with adhesive and apply the adhesive evenly around the entire circumference of the windshield.

Specified adhesive: 3M Super Fast Urethan Auto Glass Sealant Part No. 8609 or equivalent

NOTE

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



- (9) After applying the adhesive, match up the marks on the glass and the body.
- (10) After removing any adhesive that is sticking out or adhering to the body or glass with a spatula, etc., clean off with isopropyl alcohol.
 After completion of this operation (after installing the glass), place it somewhere there it will not be disturbed, until the adhesive sets.

Caution

If heat is applied with an infra-red lamp to shorten the setting time, keep the surface temperature of the adhesive below 100°C (212°F).

- (11) After attaching the windshield glass to the body, let it stand for 30 minutes or more, and then test for water leakage.

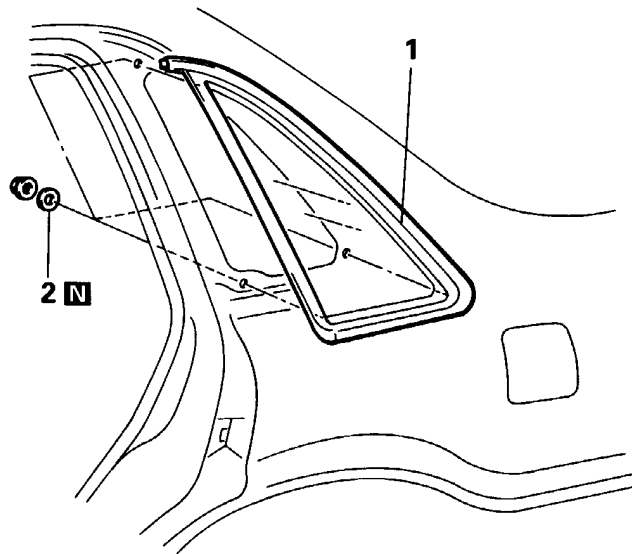
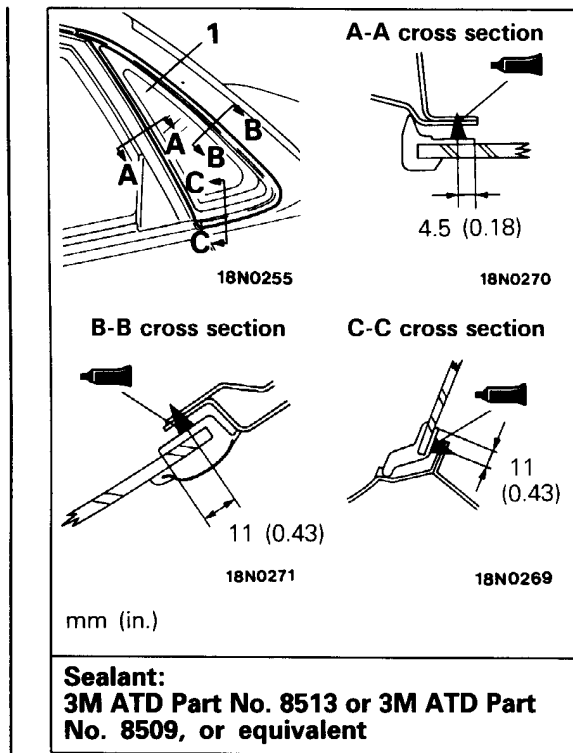
Caution

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

3./2. INSTALLATION OF WINDSHIELD SIDE MOULDING

Install the moulding before the glass's adhesive hardens. For the side moulding, install moulding clip C at the position indicated in the illustration, installing securely so that the claw of clip C catches at the lower edge of the glass.

**QUARTER WINDOW GLASS
REMOVAL AND INSTALLATION**



18N0272

Pre-removal and Post-installation Operation

- Removal and Installation of Rear Pillar Trim (Refer to GROUP 52 – Trims.)

Removal steps

- ◄◄ ◄◄
1. Quarter window moulding and glass assembly
 2. Packing

SERVICE POINTS OF REMOVAL

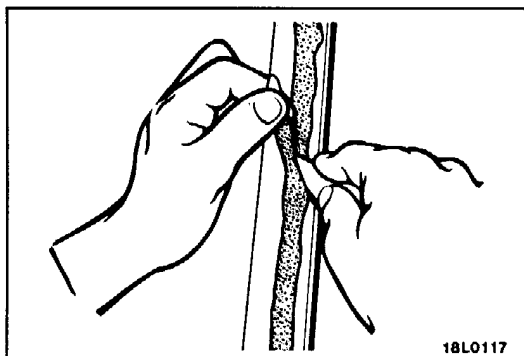
1. REMOVAL OF QUARTER WINDOW MOULDING AND GLASS ASSEMBLY

- (1) Remove the quarter window moulding and glass assembly mounting nuts.
- (2) While warming the adhesive section, slowly remove the quarter window moulding and glass assembly by firmly pushing the quarter window glass from the inside of the vehicle to the outside.

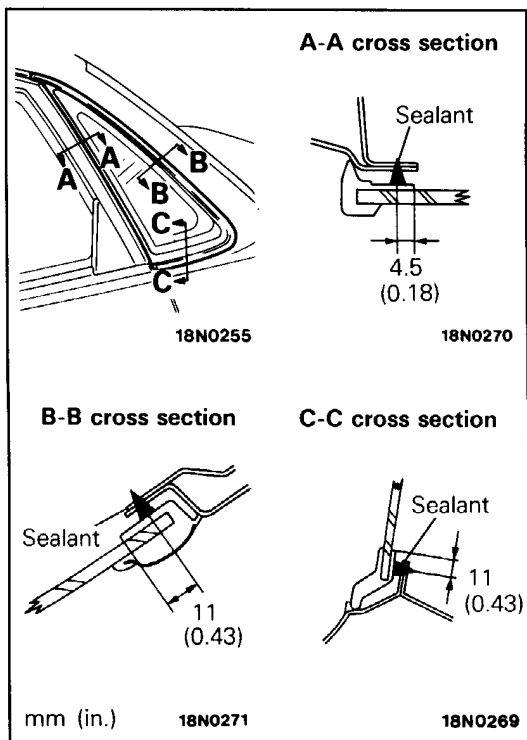
- (3) Remove any adhesive still sticking to the body flange with a knife, etc.

Caution

Do not damage the coating surface of the body. If the coating surface is damaged, repair paint or anti-corrosion agent should be applied to the scratched portion.



18L0117



SERVICE POINTS OF INSTALLATION

1. INSTALLATION OF QUARTER WINDOW MOULDING AND GLASS ASSEMBLY

- (1) Apply the specified sealant around the entire circumference of the glass as shown in the figure, and attach to the body.

Specified sealant: 3M ATD Part No. 8513 or 3M ATD Part No. 8509, or equivalent

- (2) Tighten the quarter window moulding and glass assembly mounting nuts.
- (3) After removing any adhesive that is sticking out from the moulding or adhering to the glass or body with a spatula, etc., clean off with isopropyl alcohol.
- (4) Carry out a test for water leakage.

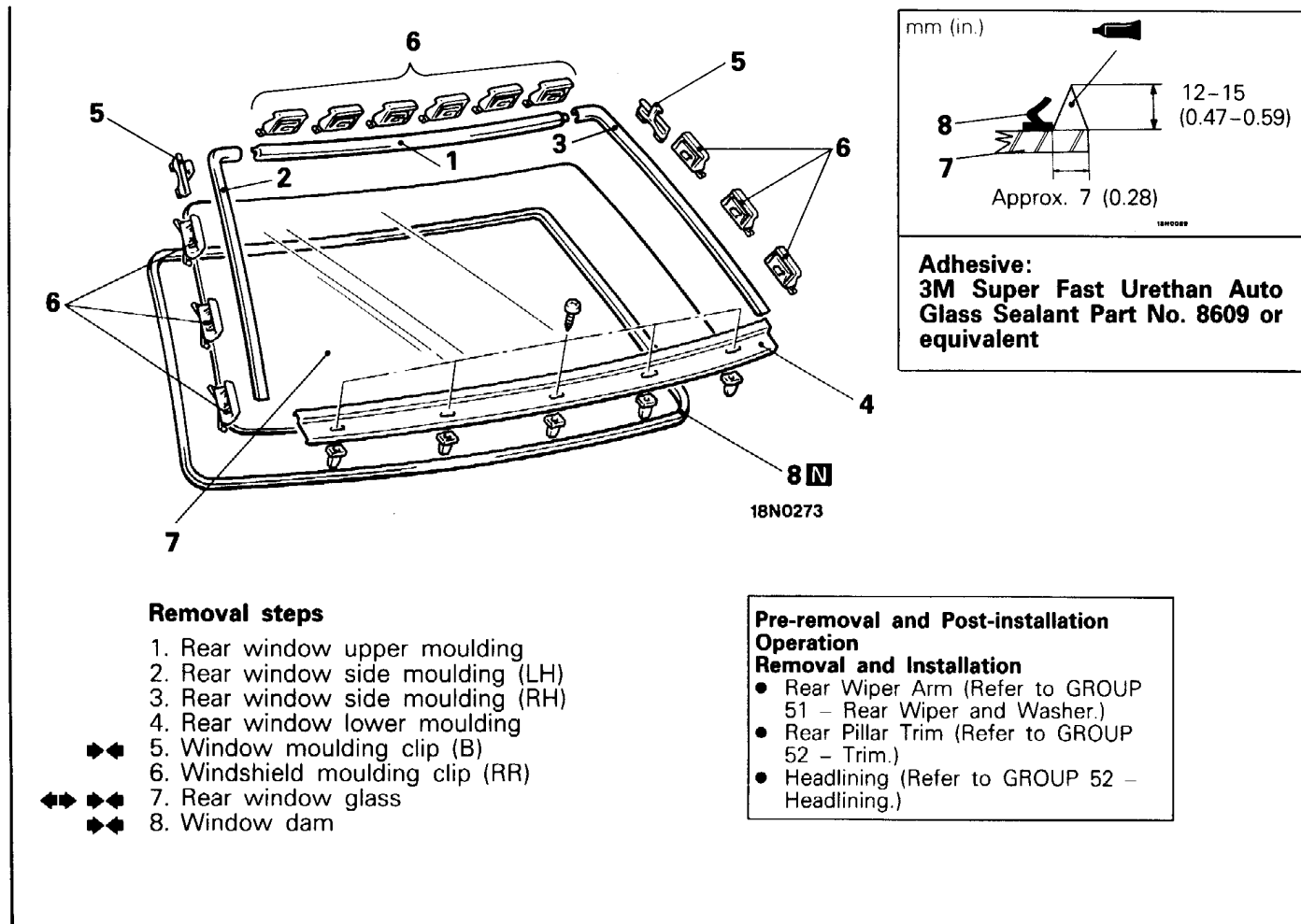
Caution

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

REAR WINDOW GLASS

E42LDAF

REMOVAL AND INSTALLATION <VEHICLES BUILT UP TO OCTOBER, 1992>



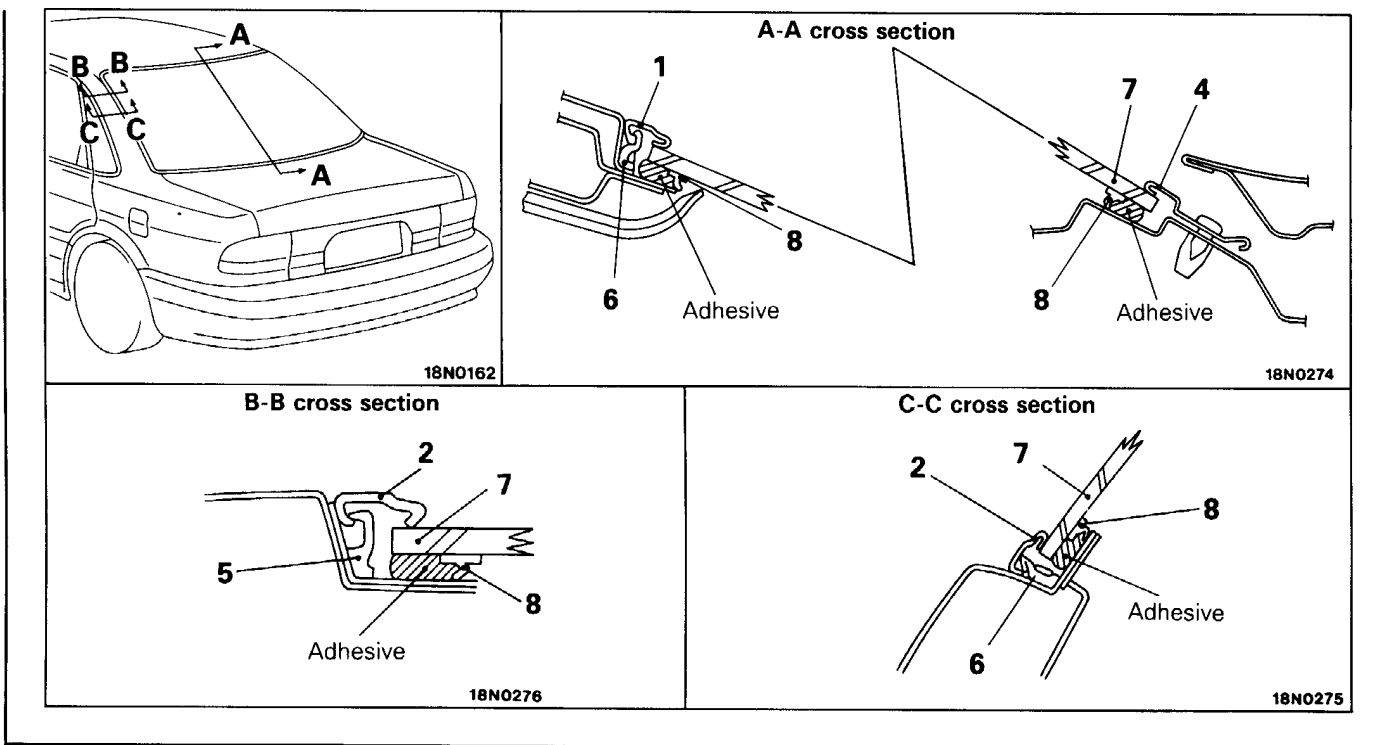
Removal steps

1. Rear window upper moulding
2. Rear window side moulding (LH)
3. Rear window side moulding (RH)
4. Rear window lower moulding
5. Window moulding clip (B)
6. Windshield moulding clip (RR)
7. Rear window glass
8. Window dam

Pre-removal and Post-installation Operation

Removal and Installation

- Rear Wiper Arm (Refer to GROUP 51 – Rear Wiper and Washer.)
- Rear Pillar Trim (Refer to GROUP 52 – Trim.)
- Headlining (Refer to GROUP 52 – Headlining.)



SERVICE POINTS OF REMOVAL

7. REMOVAL OF REAR WINDOW GLASS

Remove in the same way as for the windshield glass.
(Refer to P. 42-24.)

SERVICE POINTS OF INSTALLATION

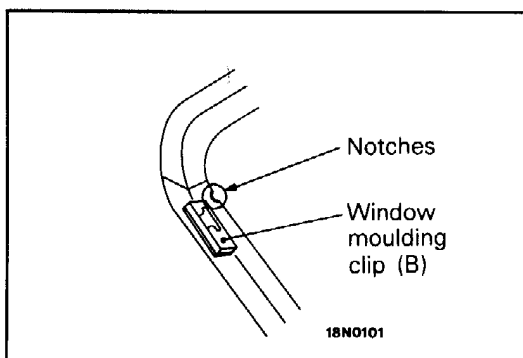
8. INSTALLATION OF WINDOW DAM

Attach all the way around in the same way as for the windshield glass.
(Refer to P. 42-25.)

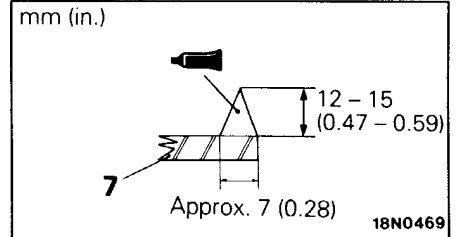
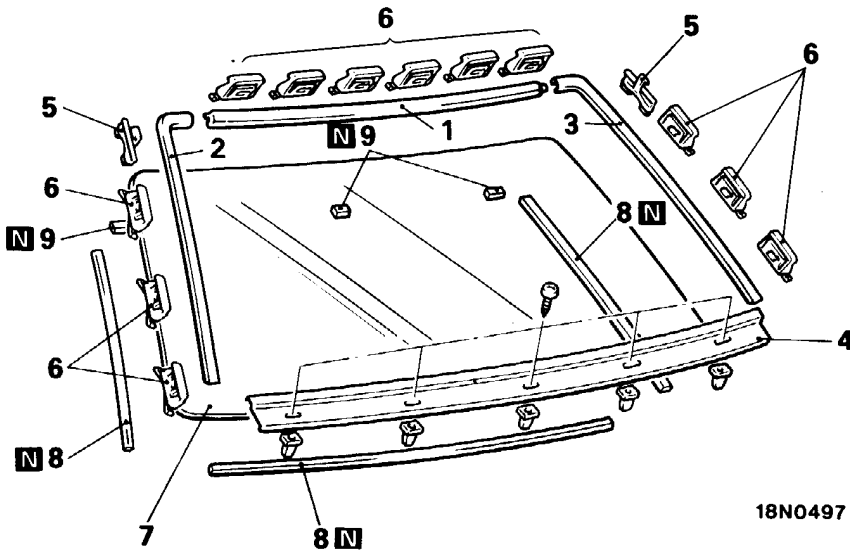
7. INSTALLATION OF REAR WINDOW GLASS/5. WINDOW MOULDING CLIP (B)

(1) Install in the same way as for the windshield glass.
(Refer to P.42-25.)

(2) Glue the window moulding clip (B) so that the end of the clip matches the notch on the body, as shown in the figure.



REMOVAL AND INSTALLATION <VEHICLES BUILT FROM NOVEMBER, 1992>



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

18N0497

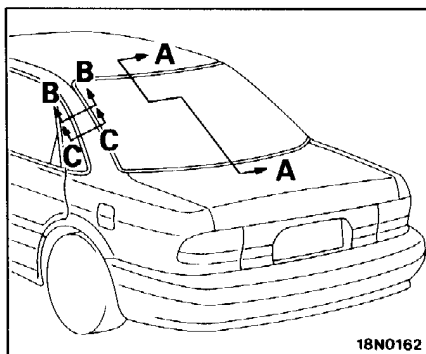
**Pre-removal and Post-installation
 Operation**

Removal and Installation

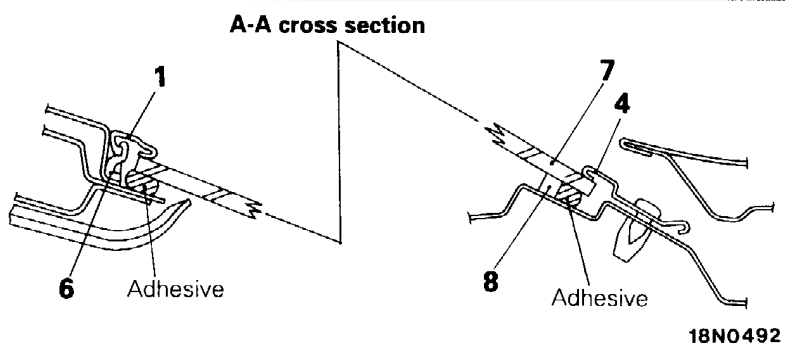
- Rear Wiper Arm
 (Refer to GROUP 51 – Rear Wiper and Washer.)
- Rear Pillar Trim
 (Refer to GROUP 52 – Trim.)
- Headlining
 (Refer to GROUP 52 – Headlining.)

Removal steps

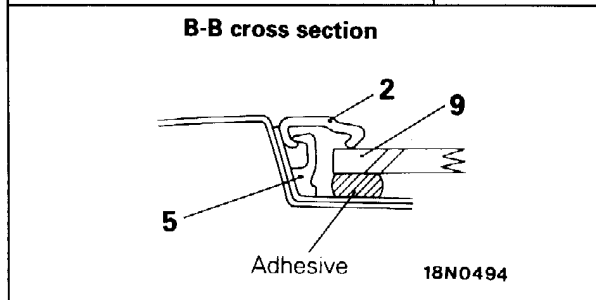
1. Rear window upper moulding
2. Rear window side moulding (LH)
3. Rear window side moulding (RH)
4. Rear window lower moulding
5. Window moulding clip (B)
6. Windshield moulding clip (RR)
7. Rear window glass
8. Window spacer
9. Side spacer



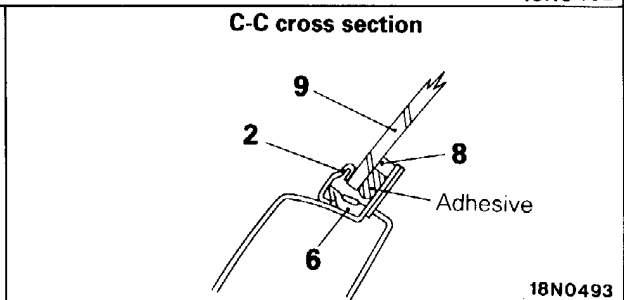
18N0162



18N0492



18N0494

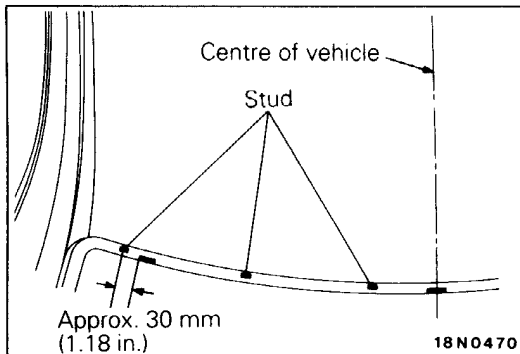


18N0493

SERVICE POINTS OF REMOVAL

7. REMOVAL OF REAR WINDOW GLASS

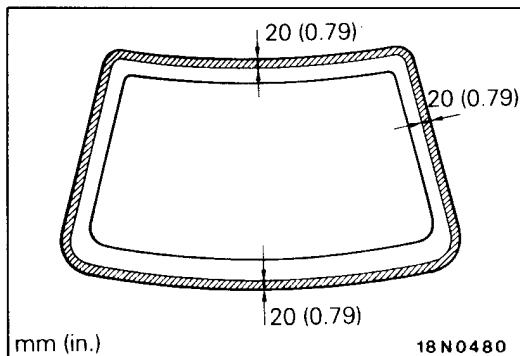
Remove in the same way as for the windshield glass. (Refer to P.42-24.)



SERVICE POINTS OF INSTALLATION

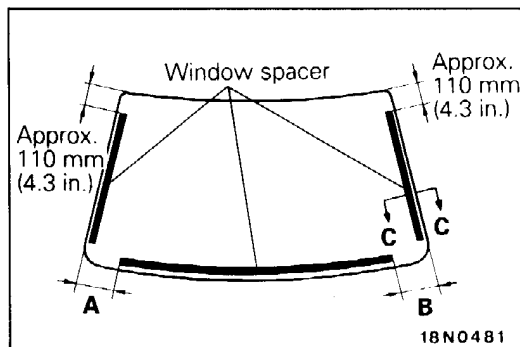
9. INSTALLATION OF SIDE SPACER

Install the side spacers to the body in the places shown in the illustration.



8. INSTALLATION OF WINDOW SPACER

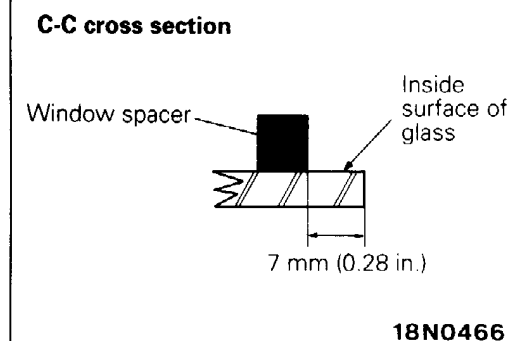
(1) Wipe the rear window glass section in the figure with isopropyl alcohol to clean it and to remove all grease, etc.

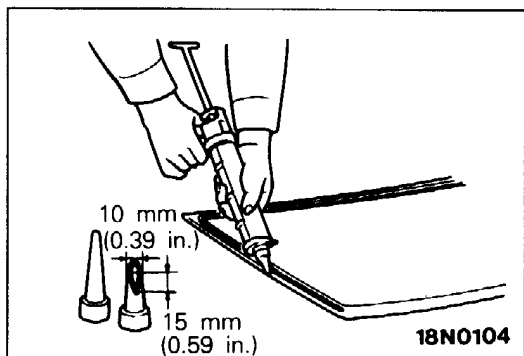
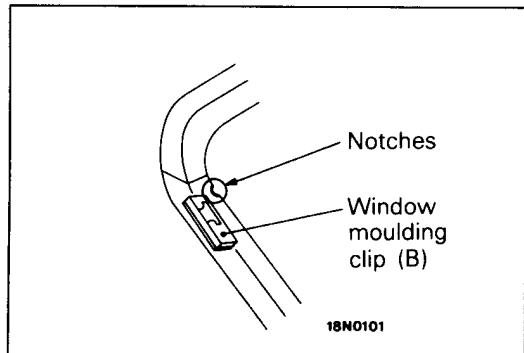
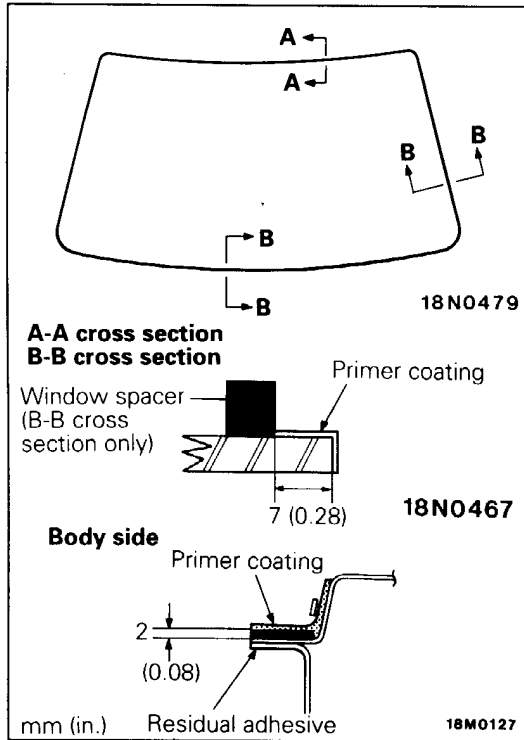


(2) Glue the window spacer correctly to the inside of the windshield glass so that it has no bends or raised sections.

NOTE

Install the window spacer at the lower side of the glass so that the dimensions A and B are equal.





7. INSTALLATION OF REAR WINDOW GLASS 5. WINDOW Moulding CLIP (B)

- (1) When replacing the glass, temporarily set the glass against the body, and mark the glass and body where they match.
- (2) Soak a sponge in the primer, and apply evenly to the glass and the body in the places shown in the figure.

Specified primer: 3M Super Fast Urethan Primer Part No. 8608 or equivalent

Caution

1. The primer strengthens the adhesive strength, so be sure to apply it evenly around the entire circumference. But, a too thick application will cause lowering of the adhesive strength.
 2. Do not touch the coated surface.
- (3) After applying the primer, let it dry for 3 to 30 minutes.

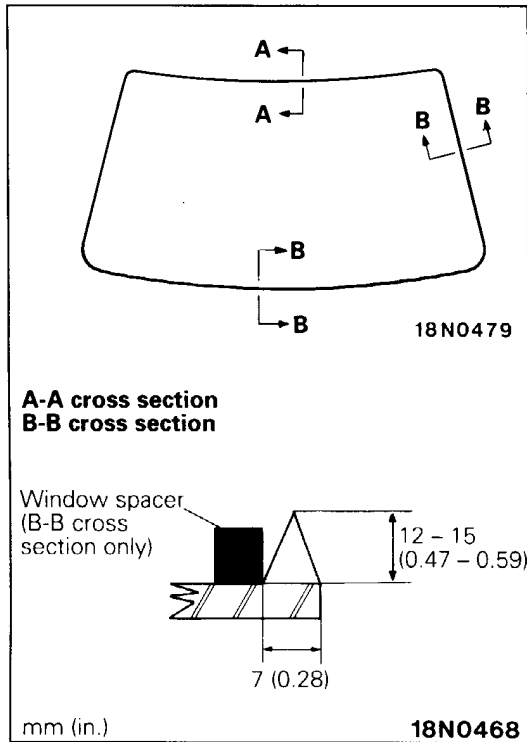
- (4) Glue the window moulding clip (B) so that the end of the clip matches the notch on the body, as shown in the figure.

- (5) Within 30 minutes after applying the primer, fill the sealant gun with adhesive and apply the adhesive evenly around the entire circumference of the windshield.

Specified adhesive: 3M Super Fast Urethan Auto Glass Sealant Part No. 8609 or equivalent

NOTE

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



- (6) After applying the adhesive, match up the marks on the glass and the body.
- (7) After removing any adhesive that is sticking out or adhering to the body or glass with a spatula, etc., clean off with isopropyl alcohol.

After completion of this operation (after installing the glass), place it somewhere it will not be disturbed, until the adhesive sets.

Caution

If heat is applied with an infra-red lamp to shorten the setting time, keep the surface temperature of the adhesive below 100°C (212°F).

- (8) After attaching the windshield glass to the body, let it stand for 30 minutes or more, and then test for water leakage.

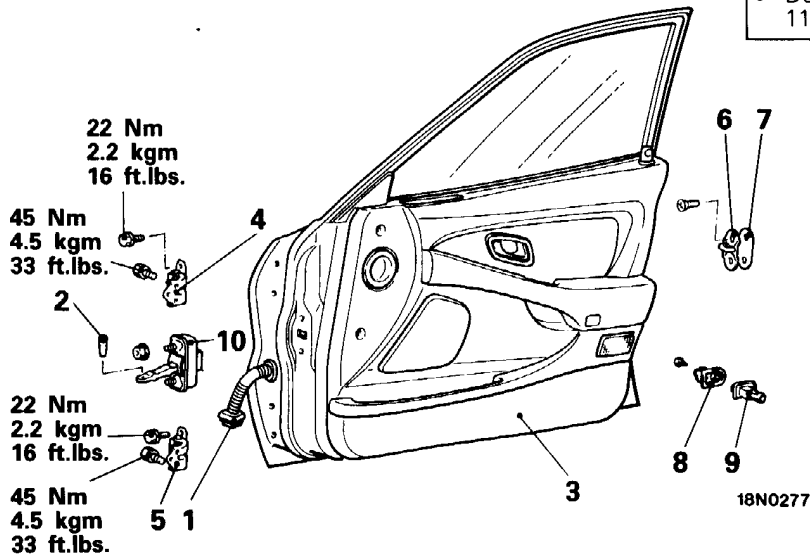
Caution

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

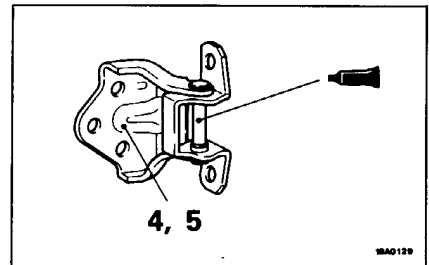
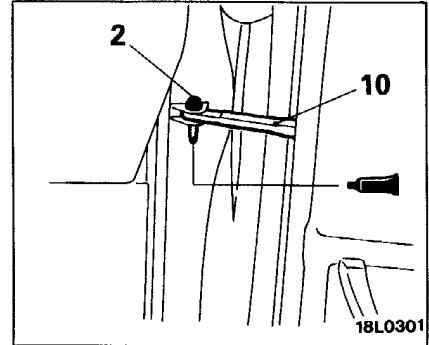
DOOR ASSEMBLY

REMOVAL AND INSTALLATION

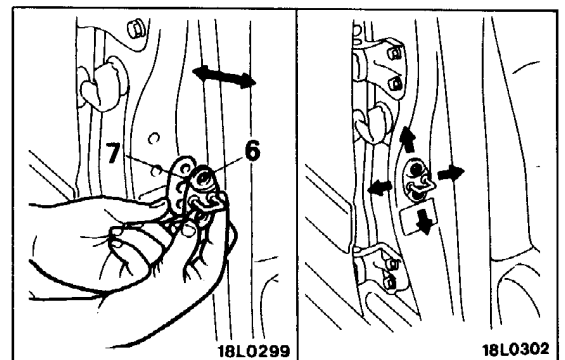
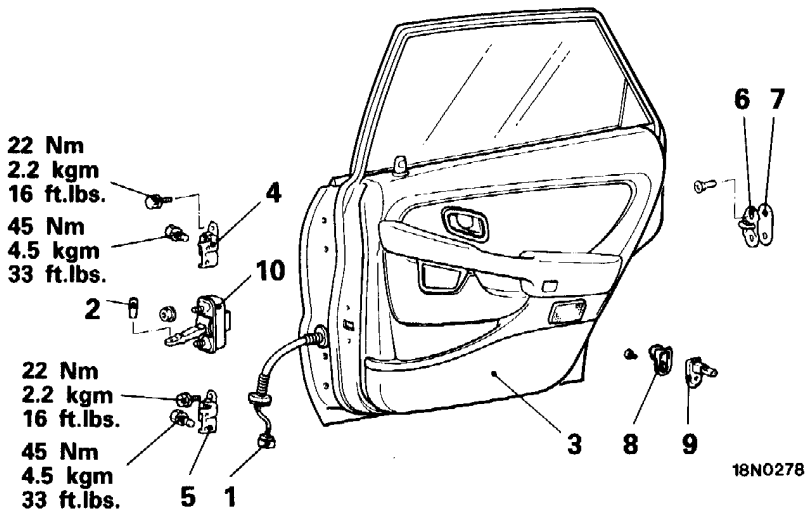
<Front door>



Post-installation Operation
 ● Door Adjustment (Refer to P. 42-11.)



<Rear door>



Adjustment of the door stepping and the door latch linkage

Door assembly removal steps

1. Door harness connector
2. Spring pin
3. Door Assembly
4. Door upper hinge
5. Door lower hinge

Striker removal steps

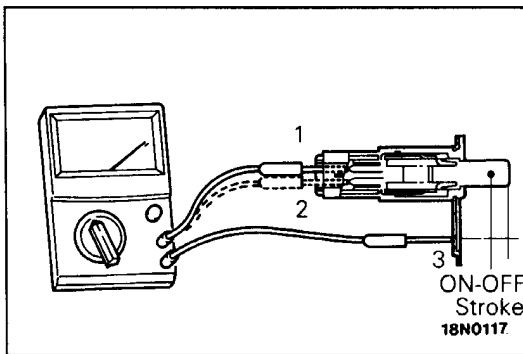
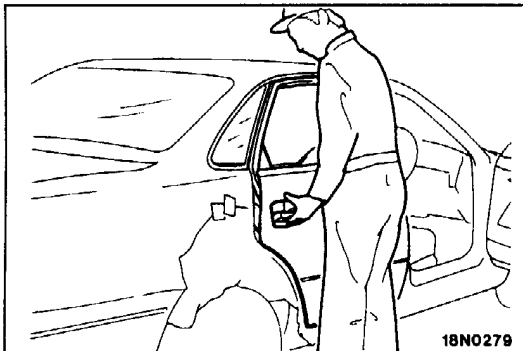
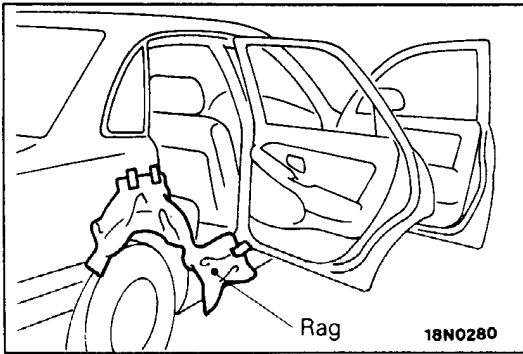
6. Striker
7. Striker shim

Door switch removal steps

8. Door switch cap
9. Door switch

Door check strap removal steps

- Door trim
- Waterproof film } (Refer to P. 42-33.)
- 2. Spring pin
- 10. Door check strap



SERVICE POINTS OF REMOVAL

3. REMOVAL OF DOOR ASSEMBLY <REAR DOOR>

(1) Attach a rag to the rear door body panel to prevent scratches, lower the rear door window as far as possible, and close the rear door.

(2) Remove the rear door hinge mounting bolt, pull the outer handle to open the latch, and remove the rear door.

INSPECTION

DOOR SWITCH

Operate the switch, and check the continuity between the terminals.

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

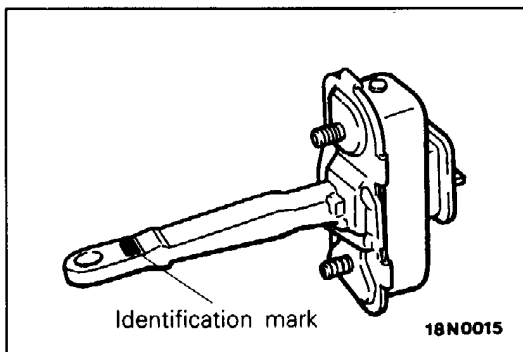
NOTE

○—○ indicates there is continuity between the terminals.

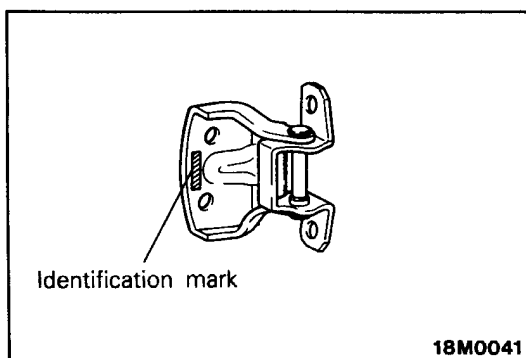
SERVICE POINTS OF INSTALLATION

10. INSTALLATION OF DOOR CHECK STRAP

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



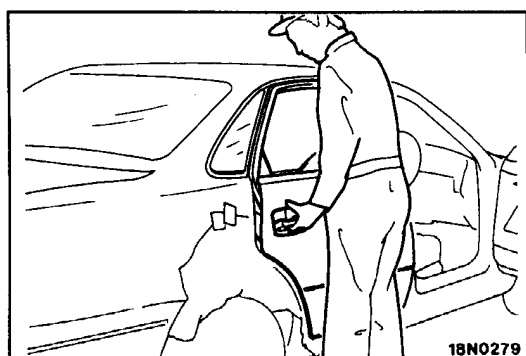
Applicable location		Identification mark
RH	Front door	UR
	Rear door	VR
LH	Front door	UL
	Rear door	VL



5. INSTALLATION OF DOOR LOWER HIGNE <REAR DOOR>/4. DOOR UPPER HINGE <REAR DOOR>

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

Applicable location		Identification mark
Right side	Upper hinge	H1
	Lower hinge	Z
Left side	Upper hinge	G1
	Lower hinge	Y

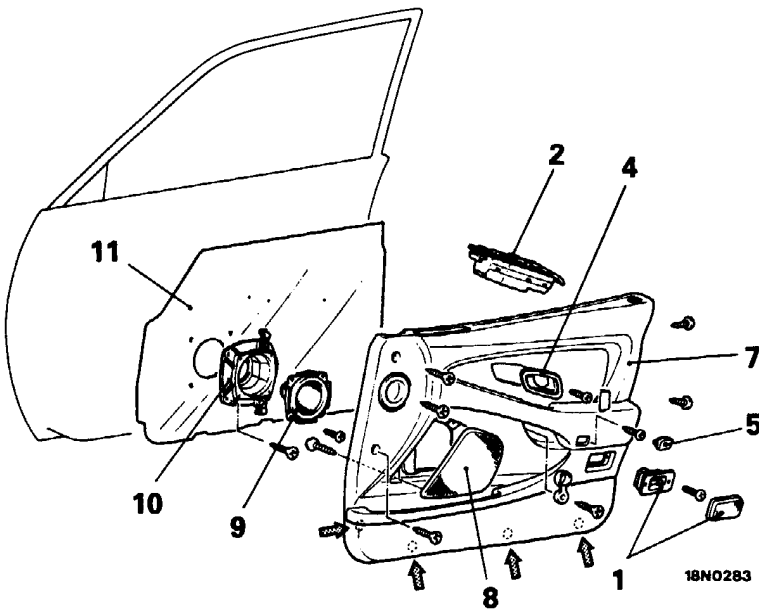


3. INSTALLATION OF DOOR ASSEMBLY <REAR DOOR>

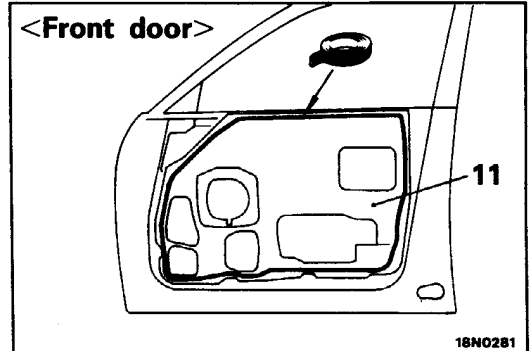
- (1) Install the rear door, and close the rear door latch.
- (2) Install the rear door hinge mounting bolt.
- (3) Open the rear door and remove the rag attached to the body panel.

**DOOR TRIM AND WATERPROOF FILM
REMOVAL AND INSTALLATION**

<Front door>

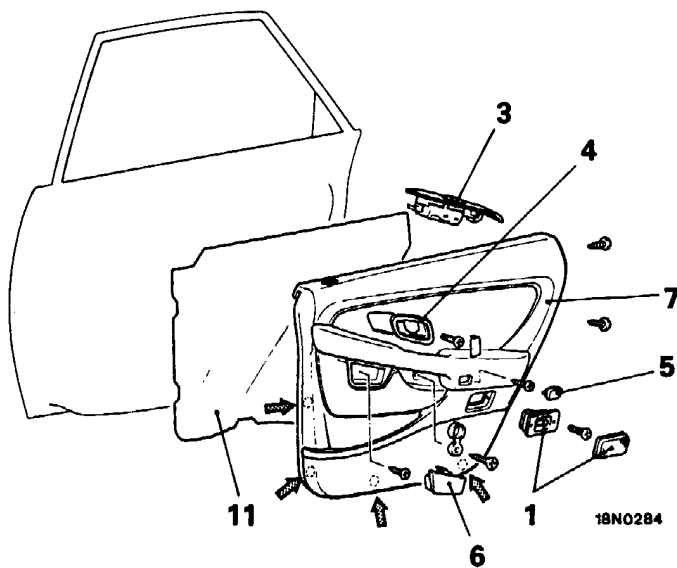


<Front door>

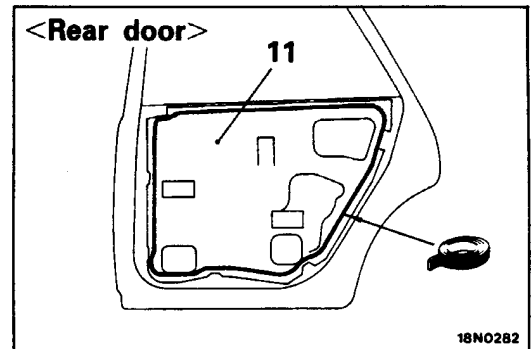


Sealant:
3M ATD Part No. 8625 or equivalent

<Rear door>



<Rear door>



Sealant:
3M ATD Part No. 8625 or equivalent

Removal steps

1. Door lamp
2. Front door control unit
3. Rear power window unit
4. Inside handle
5. Cap
6. Ashtray
7. Door trim
8. Speaker garnish
9. Speaker
10. Speaker cover
11. Waterproof film

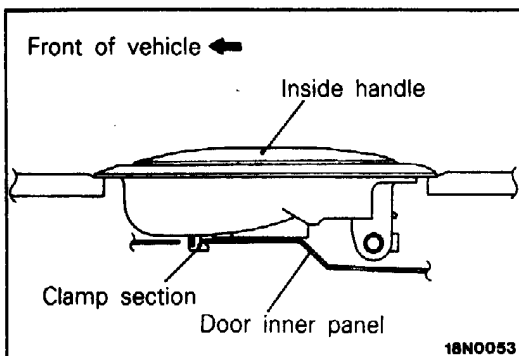
NOTE

↔ : indicates the clip positions.

SERVICE POINTS OF REMOVAL

4. REMOVAL OF INSIDE HANDLE

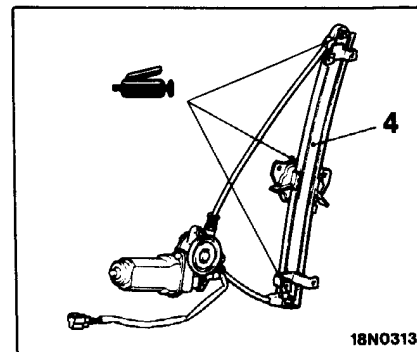
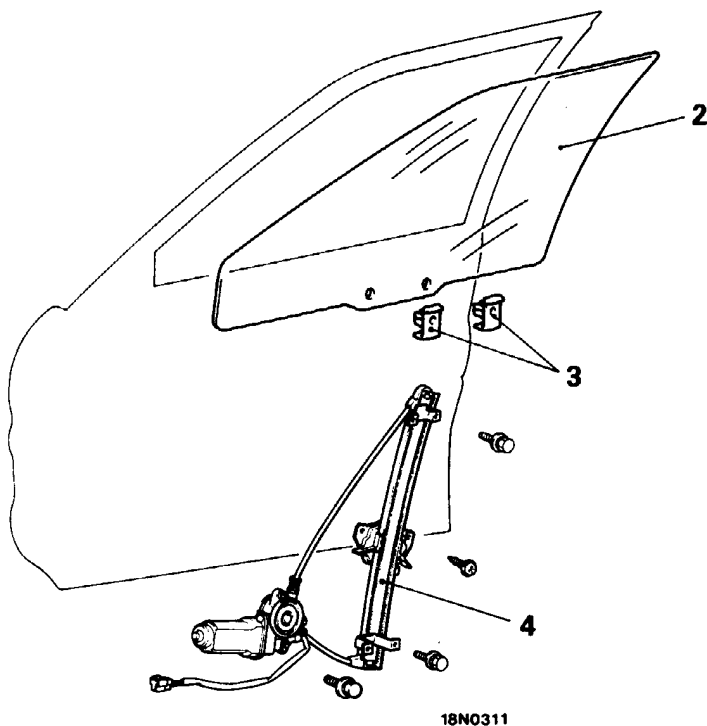
Remove the inside handle mounting screw and remove the handle by pushing it towards the front of the vehicle to remove the clamp section from the door inner panel.



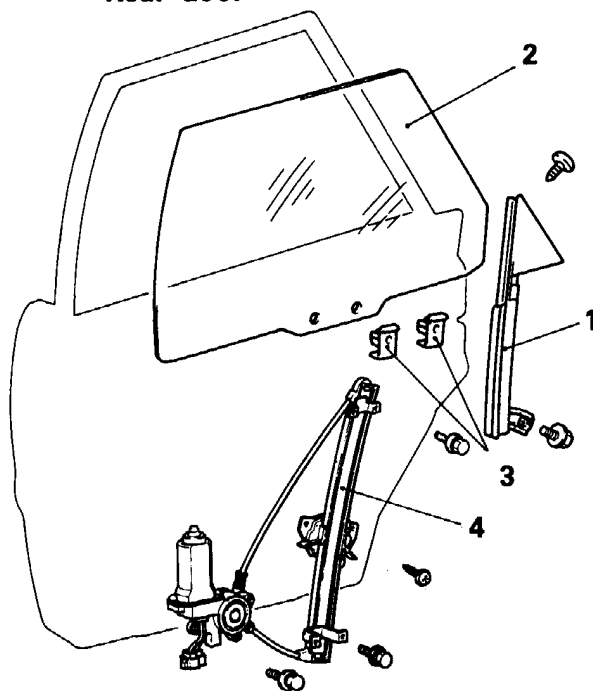
DOOR GLASS AND REGULATOR

REMOVAL AND INSTALLATION

<Front door>



<Rear door>



18N0312

Pre-removal Operation

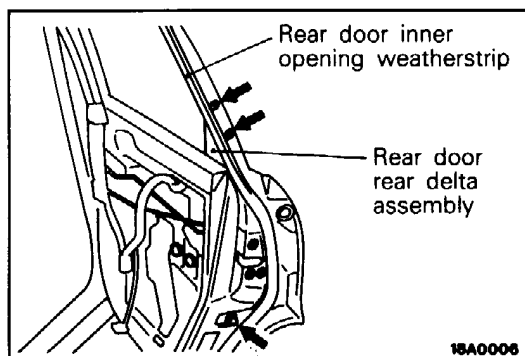
- Removal of Door Trim and Water-proof Film (Refer to P.42-33.)

Post-installation Operation

- Door Window Glass Adjustment (Refer to P.42-11.)
- Installation of Door Trim and Water-proof Film (Refer to P.42-33.)

Removal steps

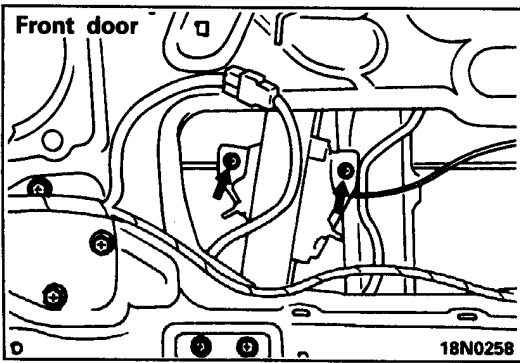
- ↔ 1. Rear door rear delta assembly
- ↔ 2. Door window glass
- ↔ 3. Door glass holder
- ↔ 4. Window regulator assembly



18A0006

SERVICE POINTS OF REMOVAL**1. REMOVAL OF REAR DOOR REAR DELTA ASSEMBLY**

- (1) Remove the rear door inner opening weatherstrip (only at the rear door lower sash part).
- (2) Remove the rear door lower sash installation screw; then remove the sash from the rear door panel.

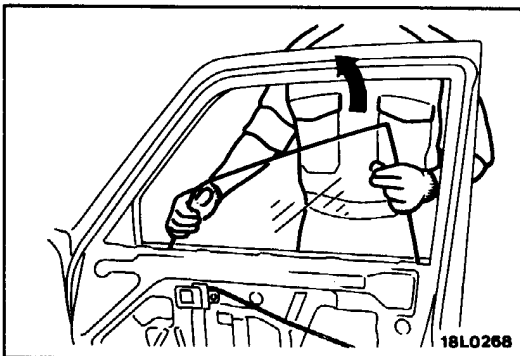
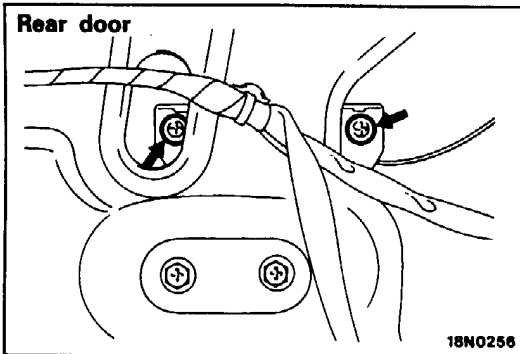


2. REMOVAL OF DOOR WINDOW GLASS

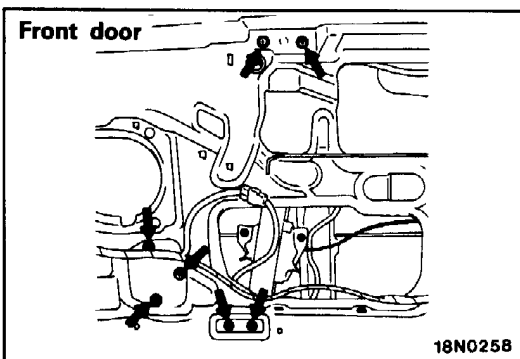
- (1) Lower the door window glass as far as the service hole.
- (2) Remove the glass mounting screw from the rear door window regulator assembly.

NOTE

When removing the glass mounting screw, hold the door window glass so that it doesn't fall.

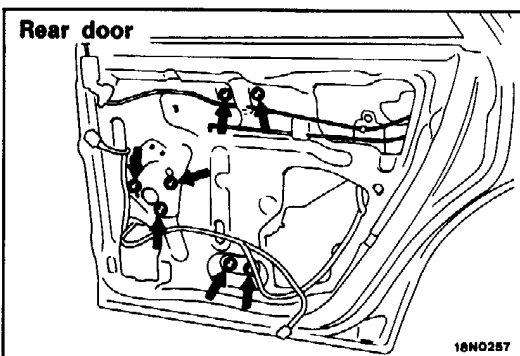


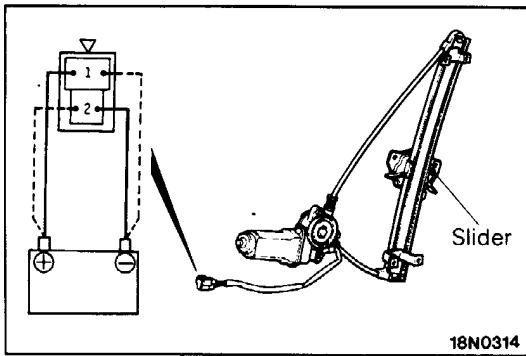
- (3) Lift up the door window glass to remove it from the door assembly.



4. REMOVAL OF WINDOW REGULATOR ASSEMBLY

Remove the regulator mounting bolt, and remove the regulator from the door panel service hole.





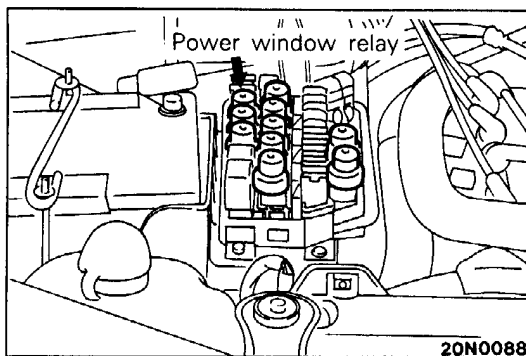
INSPECTION

POWER WINDOW MOTOR

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

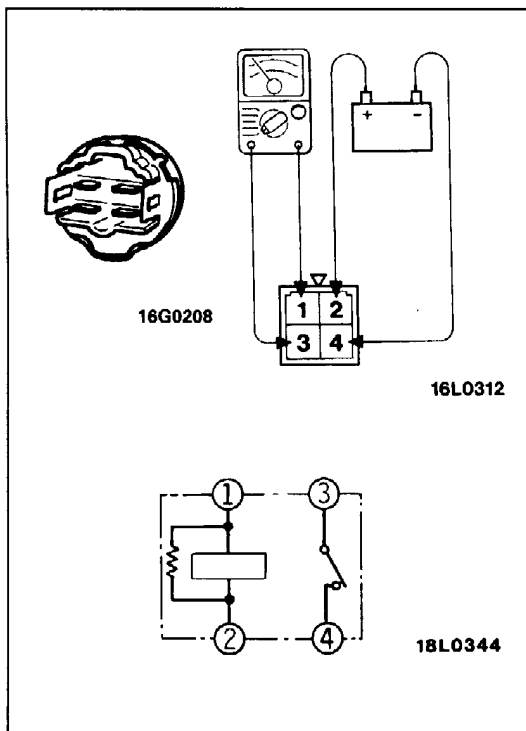
CIRCUIT BREAKER (INCORPORATED IN THE POWER WINDOW MOTOR)

- (1) Press the UP switch to fully close the window glass, and continue to press the switch for 10 seconds.
- (2) At the moment that the UP switch is released, press the DOWN switch. The circuit breaker can be considered good if at this time the door window glass begins to open within 60 seconds.



POWER WINDOW RELAY

- (1) Remove the power window relay from the engine room relay box.



- (2) Apply battery voltage to terminal 2, and check for continuity when terminal 4 is earthed.

Terminal	1	2	3	4
Battery voltage				
Continuity no voltage		○	—	○
Continuity with voltage	○	—	○	

NOTE

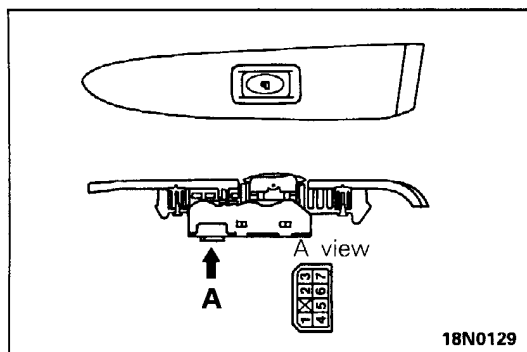
○—○ indicates that there is continuity between the terminals.

FRONT DOOR CONTROL UNIT

For inspection of the front door control unit, refer to the troubleshooting heading in Group 54 – Multiple Transmission systems.

REAR POWER WINDOW UNIT

Operate the switch and check continuity between the terminals.

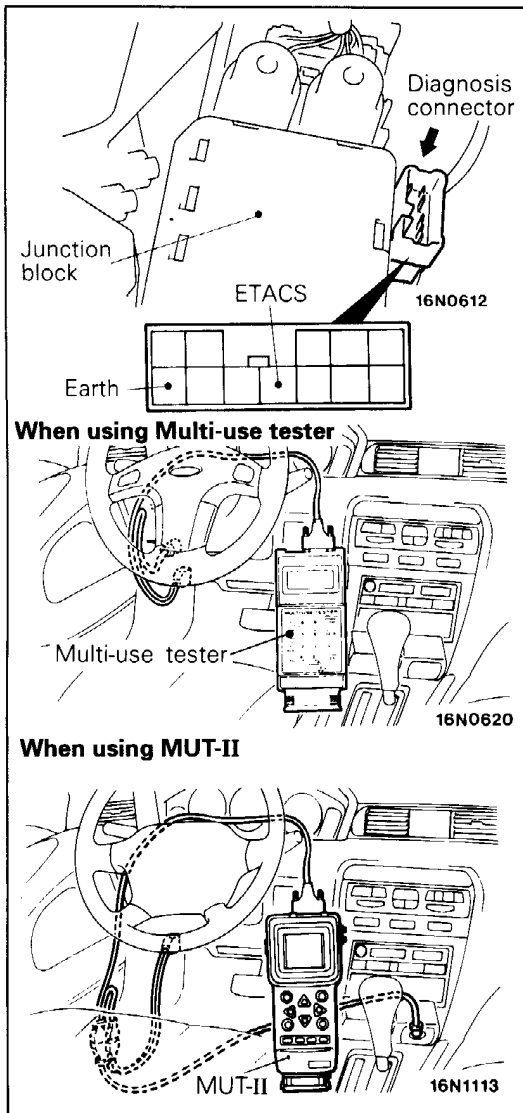


Terminal \ Switch position	UP	OFF		DOWN
		No continuity	Continuity	
1			○ ○	
2	○	○	⊕ ○	○
3	○	○	○	○
4	○	○	○	○
5	○	○	○	○
6	○	○	⊖ ⊖	○
7	○	○	⊕	○

NOTE
 (1) ○—○ indicates that there is continuity between the terminals.
 (2) ⊕—⊖ indicates connection of battery voltage.

42-36-2

NOTES



DOOR HANDLE AND LATCH

TROUBLESHOOTING GUIDE (KEY REMINDER SYSTEM)

INPUT CHECK

Using the multi-use tester <Up to 1993 models> or MUT-II <All models>, check whether or not the input signals from each switch are being input to the electronic control unit.

- (1) Connect the multi-use tester or MUT-II to the diagnosis connector. (located at the right or left side of the junction block).

Caution

Connection and disconnection of the multi-use tester or MUT-II should always be made with the ignition switch in the OFF position.

- (2) Check to be sure that the buzzer of the multi-use tester or MUT-II sounds one time, when each switch noted below is operated.

If the buzzer sounds, the input signals are being input to the electronic control unit, so that switch can be considered to be functioning normally;

If there is a malfunction, there is an abnormality in the switch or in the switch input circuit, so they should be inspected.

- Driver door switch
- Key reminder switch (When ignition key is removed or inserted)
- Vehicle speed sensor

NOTE

When carrying out an inspection of the key reminder switch, connect the accessory battery harness so that the power for the multi-use tester or MUT-II comes directly from the battery.

TROUBLESHOOTING QUICK-REFERENCE TABLE

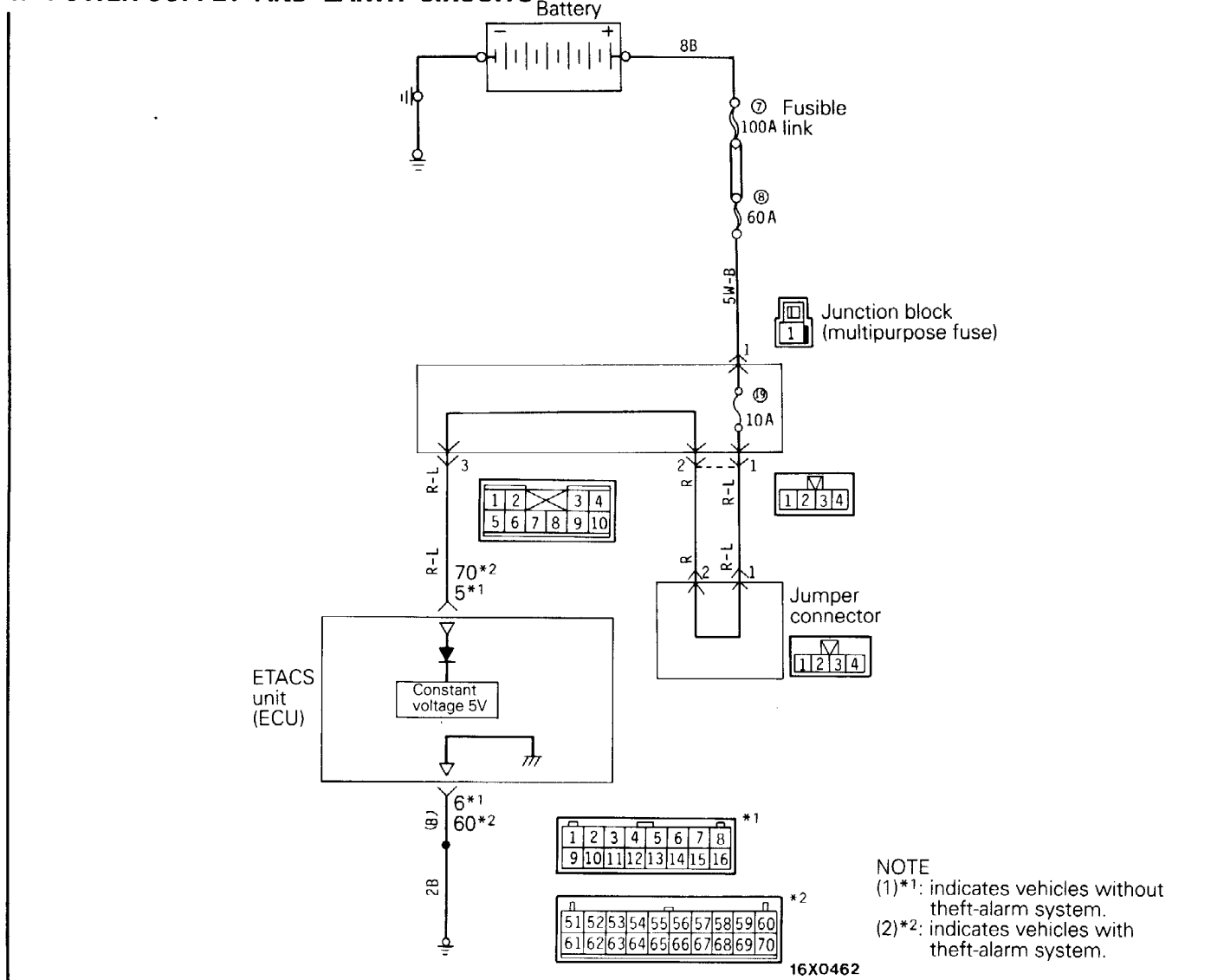
Problem	Probable cause	Check method	Remedy
When doing the following operations, unlock does not occur even if the driver's side door lock knob is pressed. <ul style="list-style-type: none"> ● Inserting the key into the ignition switch (key reminder switch is OFF). ● Driver's side door is open (driver's side door switch is ON). 	Power circuit or earth circuit wire is broken	Check by using circuit and individual part check No. 1 (P.42-39).	Repair the wiring harness.
	Short in key reminder switch input circuit	If the result of an input check shows a malfunction, check by using circuit and individual part check No. 2 (P.42-40).	Repair the harness or replace the key reminder switch.
	Short in key reminder switch		
	Driver's side door switch input circuit wire is broken	If the result of an input check shows a malfunction, check by using circuit and individual part check No. 3 (P.42-41).	Repair the harness or replace the driver's side door switch.
	Driver's side door switch wire is broken		
	Short in vehicle speed sensor input circuit	If the result of an input check is defective, check by using circuit and individual part check No. 4 (P.42-42).	Repair the harness or replace the vehicle speed sensor.
	Malfunction of the electronic control unit	–	Replace the electronic control unit.

NOTE

- (1) For the door lock relay, refer to Troubleshooting for the door control unit (GROUP 54 – Multiple Transmission System).
- (2) ECU (electronic control unit) denotes the ETACS unit.

CHECKING INDIVIDUAL PART AND CIRCUIT

1. POWER-SUPPLY AND EARTH CIRCUITS



Description of operation

The battery supplies a stabilized 5V power supply to the electronic control unit, via the constant-voltage circuit and terminal ⑤ *1, ⑦⑩ *2 directly connected to the battery.

If there is an abnormal condition of the power-supply circuit, door locking functions also will not operate.

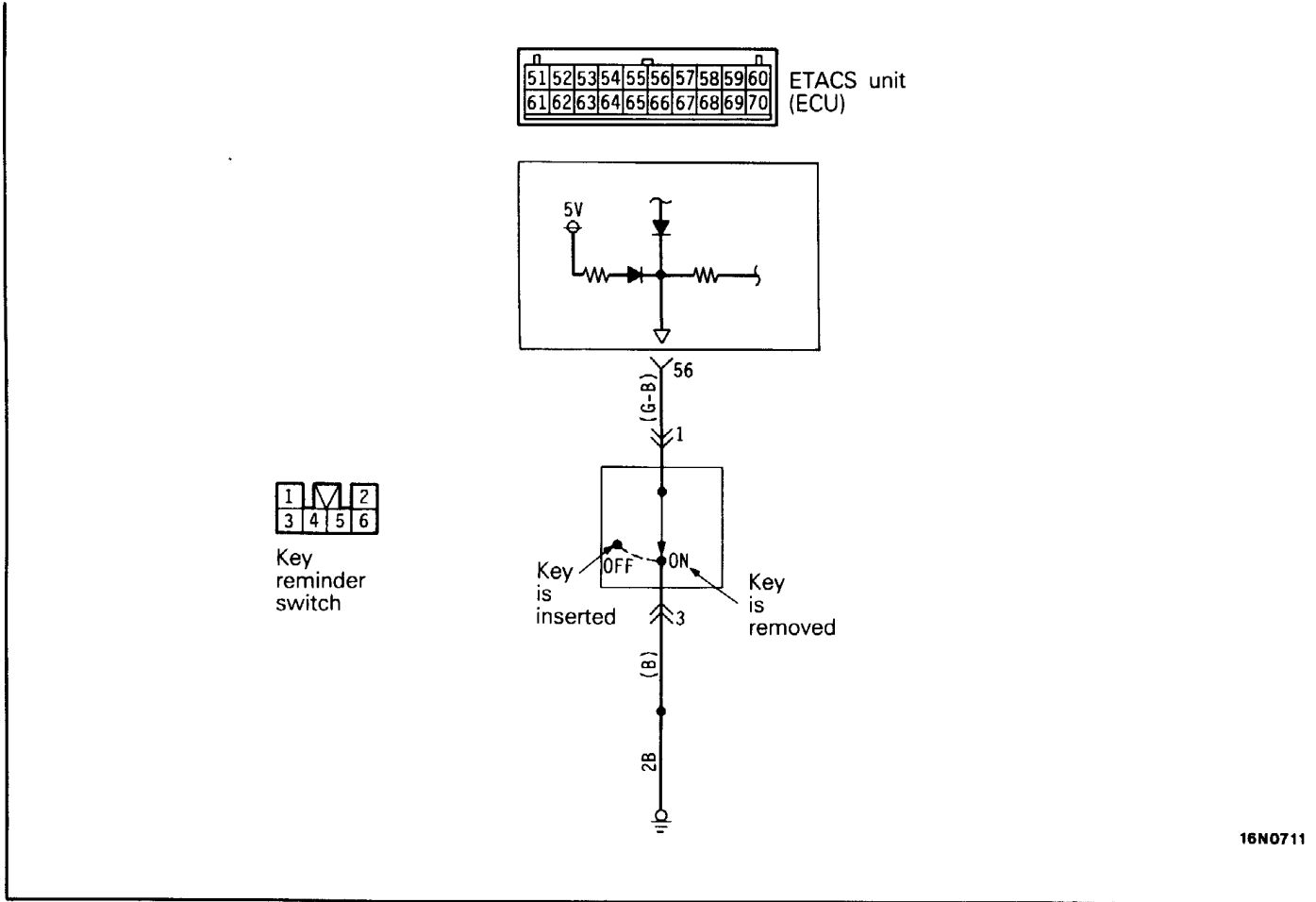
Electronic control unit voltage (connection status of the electronic control unit connector)

ECU terminal No.	Signal	Condition	Terminal voltage
5*1 70*2	Electronic control unit power supply	At all times	System voltage

Checking the earth circuit (Disconnect the connector and check the wiring harness side.)

Terminal No.	Connected to/ measured part	Measurement	Tester connection	Check conditions	Standard
6*1 60*2	Electronic control unit earth	Continuity	6-earth*1 60-earth*2	At all times	Continuity

2. KEY REMINDER SWITCH INPUT CIRCUIT



16N0711

Description of operation

When the key is left in the ignition key cylinder, the key reminder switch turns OFF and sends an H signal to the ECU, and when the key is removed, the switch turns ON and sends an L signal to the ECU.

Electronic control unit terminal voltage

(Connection status of the electronic control unit connector)

ECU terminal No.	Signal	Condition	Terminal voltage
56	Key reminder switch signal	Key is removed	0V
		Key is inserted	5V

Key reminder switch circuit check

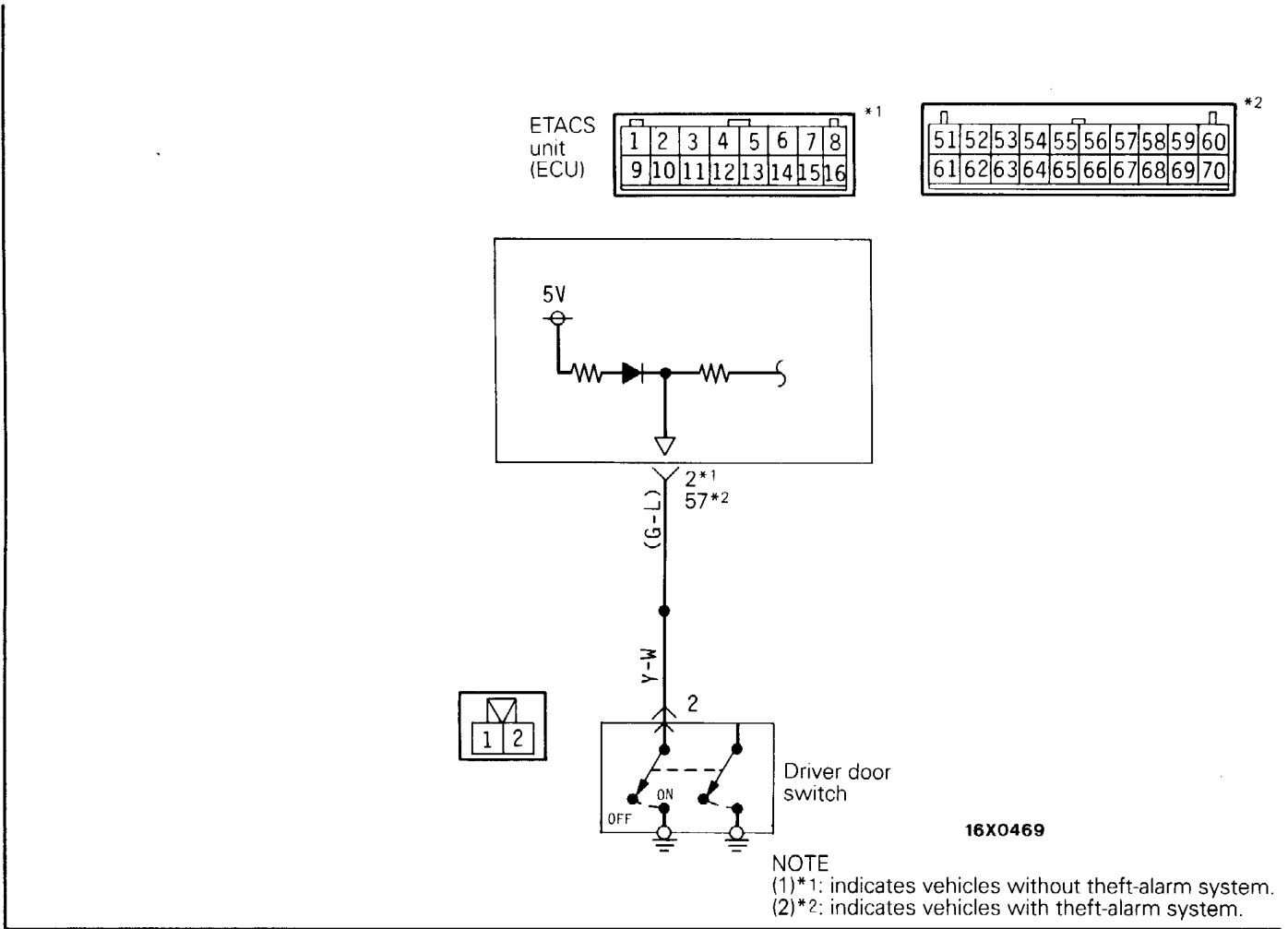
(Disconnect the connector of the electronic control unit and check the wiring harness side.)

ECU terminal No.	Connection end or measurement part	Measurement	Tester connection	Condition	Standard
56	Key reminder switch	Continuity	56-earth	Key is removed	Contiunity
				Key is inserted	No contiunity

Checking the individual part

Key reminder switch...Refer to GROUP 54 – Ignition Switch.

3. DRIVER DOOR SWITCH INPUT CIRCUIT



Description of operation

When the front door is closed (the door switch is switched OFF), HIGH-level signals are sent to the electronic control unit; when the driver door is opened (the door switch is switched ON), LOW-level signals are sent to the electronic control unit.

Electronic control unit terminal voltage (connection status of the electronic control unit connector)

ECU Terminal No.	Signal	Condition		Terminal voltage
2*1 57*2	Driver door switch signal	Driver door	Open	0V
			Closed	5V

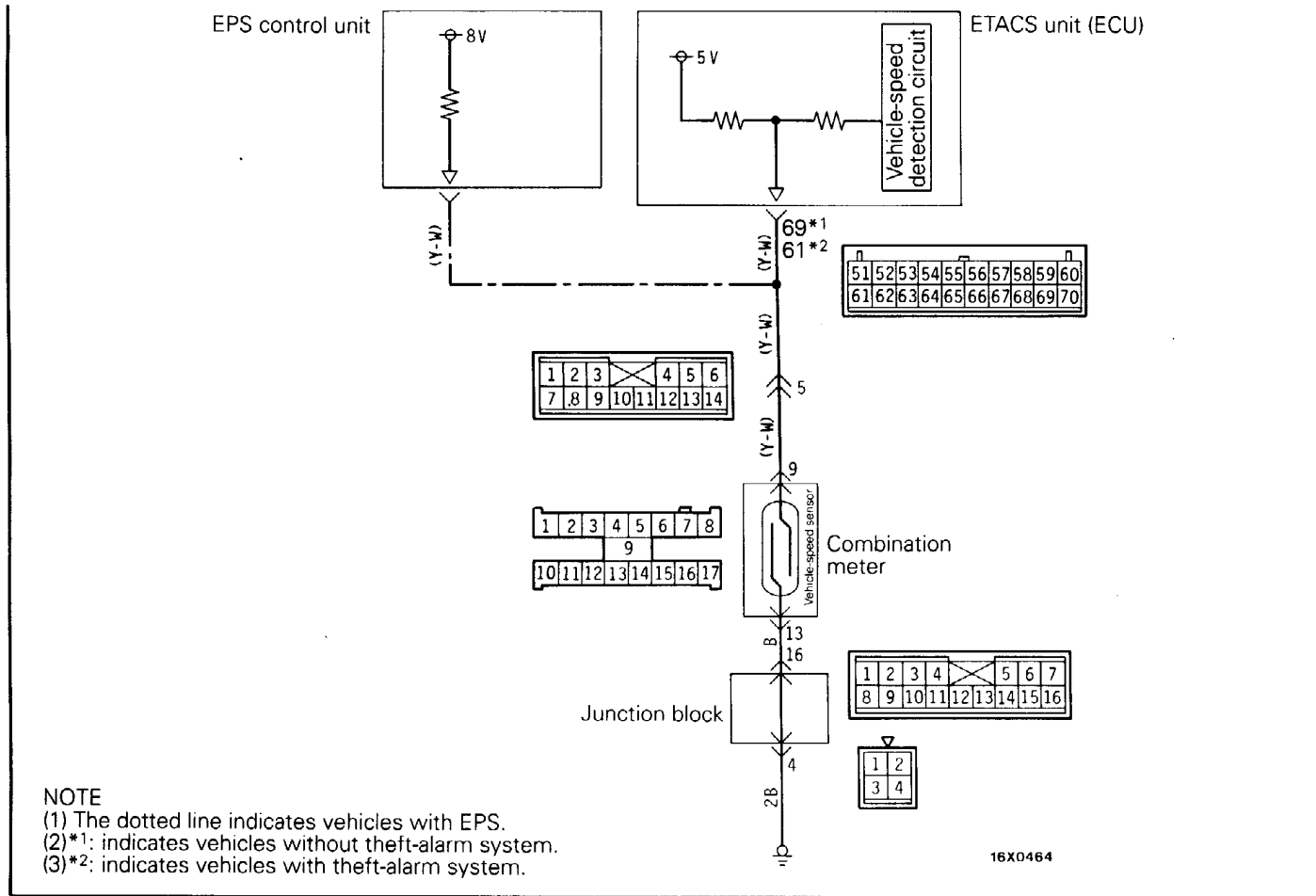
Checking the driver door switch circuit (Disconnect the connector of the electronic control unit and check the wiring harness side.)

ECU terminal No.	Connected to/ measured part	Measurement	Tester connection	Check conditions		Standard
2*1 57*2	Driver door switch	Continuity	2-earth*1 57-earth*2	Driver door	Closed	No continuity
					Open	Continuity

Checking the individual part

Door switch...Refer to P. 42-31.

4. VEHICLE-SPEED SENSOR INPUT CIRCUIT



Operation Description

The vehicle-speed sensor is the reed-switch type of sensor; it outputs four pulse signals for each rotation of the transmission's output gear (speedometer cable) and inputs those pulses to the vehicle-speed detection circuit of the electronic control unit.

Electronic Control Unit Terminal Voltage (Connection Status of Electronic Control Unit Connector)

ECU terminal No.	Signal	Status	Terminal voltage	
69*1 61*2	Vehicle-speed sensor signal	Vehicle-speed sensor	When ON	
			When OFF	Vehicles without EPS
				Vehicles with EPS

NOTE

The * mark indicates that pull-up power of 8V is supplied from the EPS control unit.

Checking the Vehicle-speed Sensor Circuit (Disconnect the Connector of Electronic Control Unit and Check at the Wiring Harness Side.)

ECU terminal No.	Connected to/ measured component	Measurement	Tester connection	Check condition	Standard
69*1 61*2	Vehicle-speed sensor	Resistance	69-earth*1 61-earth*2	(1)Jack up the front end. (2)Rotate the tyres in the forward direction.	Repeats "Continuity" ↑ ↓ No continuity"

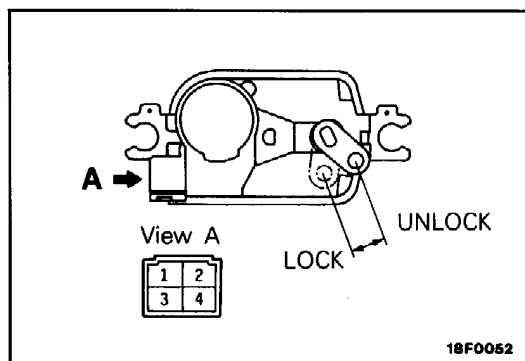
Checking Individual Part

Vehicle-speed sensor: Refer to GROUP 54 – Meters and Gauges.

REMOVAL AND INSTALLATION <FRONT DOOR>

Removal steps

- Door trim
- Waterproof film } (Refer to P.42-33.)
- 1. Inside lock knob
- 2. Door outside handle
- 3. Ring
- 4. Door lock key cylinder
- 5. Door key switch
- 6. Spacer
- 7. Front door latch assembly
- 8. Front door lock actuator

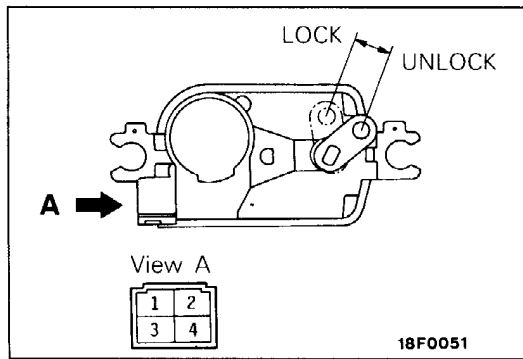


INSPECTION

FRONT DOOR ACTUATOR <VEHICLES WITHOUT THEFT-ALARM SYSTEM>

<L.H.>

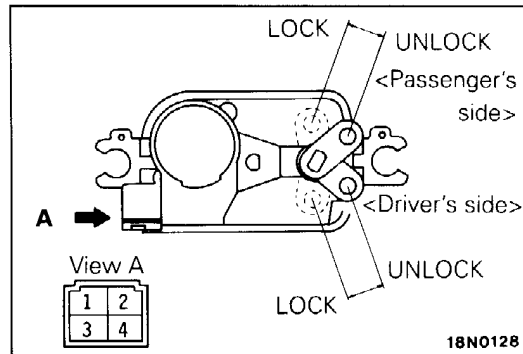
- (1) After setting the rod to the LOCK position, apply the battery voltage to terminal ① and check if the rod moves to the UNLOCK position when terminal ③ is earthed.
- (2) After setting the rod to the UNLOCK position and applying battery voltage to terminal ③, check if the rod moves to the LOCK position when terminal ① is earthed.
- (3) For left-hand drive vehicles, when the actuator rod is set to the UNLOCK position, check if there is continuity between terminal ② and terminal ④, and when the rod is set to the LOCK position, check if there is no continuity.

**<R.H.>**

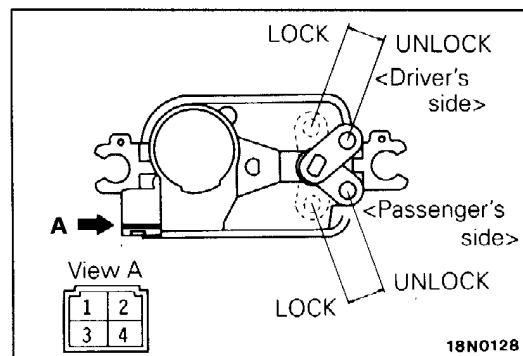
- (1) After setting the rod to the LOCK position and applying battery voltage to terminal ③, check if the rod moves to the UNLOCK position when terminal ① is earthed.
- (2) After setting the rod to the UNLOCK position and applying battery voltage to terminal ①, check if the rod moves to the LOCK position when terminal ③ is earthed.
- (3) For right-hand drive vehicles, when the actuator rod is set to the UNLOCK position, check if there is continuity between terminal ② and terminal ④, and when the rod is set to the LOCK position, check if there is no continuity.

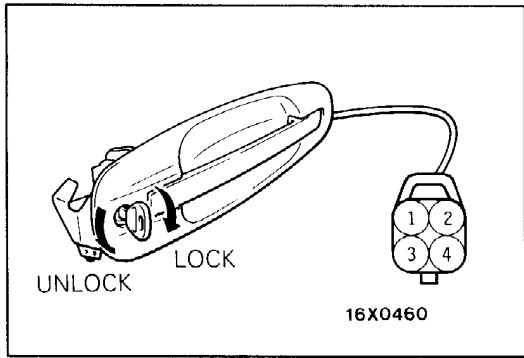
FRONT DOOR LOCK ACTUATOR <VEHICLES WITH THEFT-ALARM SYSTEM>**<L.H.>**

- (1) After setting the rod to the LOCK position, apply battery voltage to terminal ① (driver's side actuator) or terminal ③ (passenger's side actuator) and check if the rod moves as far as the UNLOCK position when terminal ③ (driver's side actuator) or terminal ① (passenger's side actuator) is earthed.
- (2) After setting the rod to the UNLOCK position and applying battery voltage to terminal ③ (driver's side actuator) or terminal ① (passenger's side actuator), check if the rod moves as far as the LOCK position when terminal ① (driver's side actuator) or terminal ③ (passenger's side actuator) is earthed.
- (3) For left-hand drive vehicles, when the actuator rod is set to the UNLOCK position, check if there is continuity between terminal ② and terminal ④, and when the rod is set to the LOCK position, check if there is no continuity.

**<R.H.>**

- (1) After setting the rod to the LOCK position, apply battery voltage to terminal ③ (driver's side actuator) or terminal ① (passenger's side actuator) and check if the rod moves as far as the UNLOCK position when terminal ① (driver's side actuator) or terminal ③ (passenger's side actuator) is earthed.
- (2) After setting the rod to the UNLOCK position and applying battery voltage to terminal ① (driver's side actuator) or terminal ③ (passenger's side actuator), check if the rod moves as far as the LOCK position when terminal ③ (driver's side actuator) or terminal ① (passenger's side actuator) is earthed.
- (3) For right-hand drive vehicles, when the actuator rod is set to the UNLOCK position, check if there is continuity between terminal ② and terminal ④, and when the rod is set to the LOCK position, check if there is no continuity.





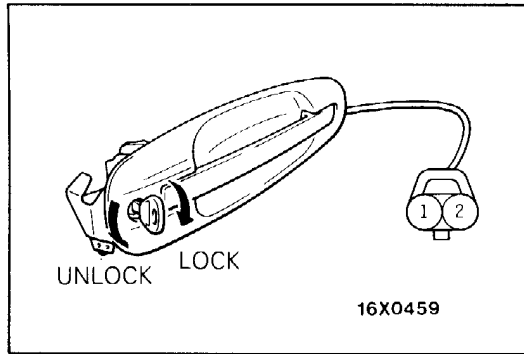
DOOR KEY SWITCH <Passenger's side>

Check for continuity between the terminals when the door key is turned.

Key position \ Terminal	1	2	3	4
LOCK			○—○	
Neutral				
UNLOCK	○	○		

NOTE

○—○ indicates that there is continuity between the terminals.



DOOR KEY SWITCH <VEHICLES WITH THEFT-ALARM SYSTEM (Driver's side)>

Check for continuity between the terminals when door key is turned.

Key position \ Terminal	1	2
LOCK	○—○	
Neutral		
UNLOCK	○—○	

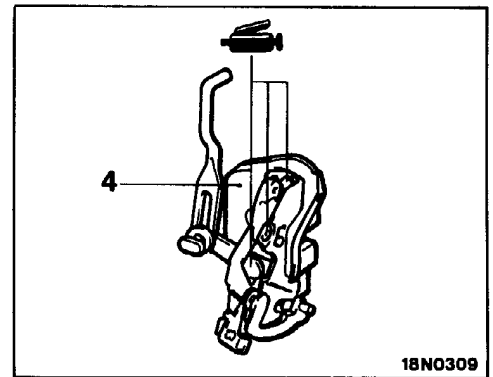
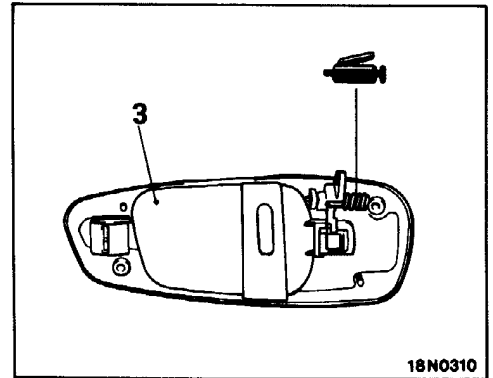
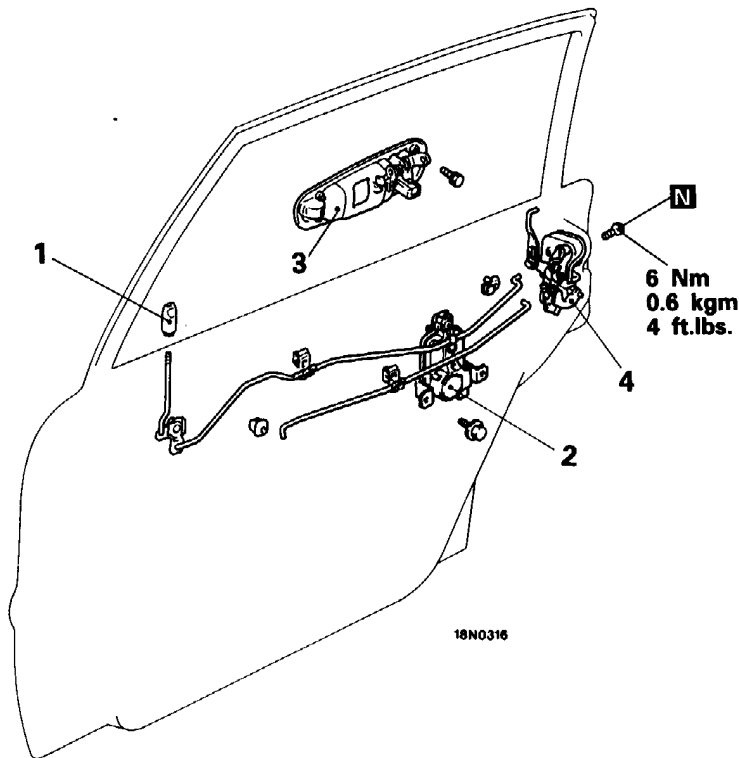
NOTE

○—○ indicates that there is continuity between the terminals.

42-44-2

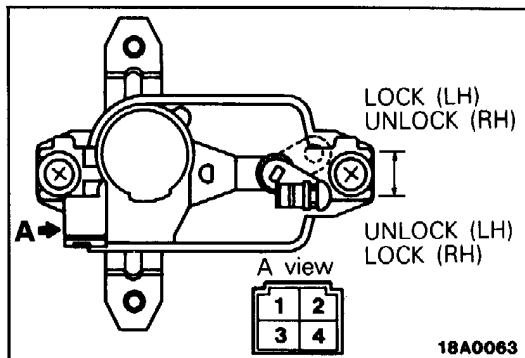
NOTES

REMOVAL AND INSTALLATION <REAR DOOR>



Removal steps

- Door trim
- Waterproof film } (Refer to P.42-33.)
- 1. Inside lock knob
- 2. Rear door lock actuator
- Door window glass (Refer to P.42-34.)
- 3. Door outside handle
- 4. Rear door latch assembly



INSPECTION

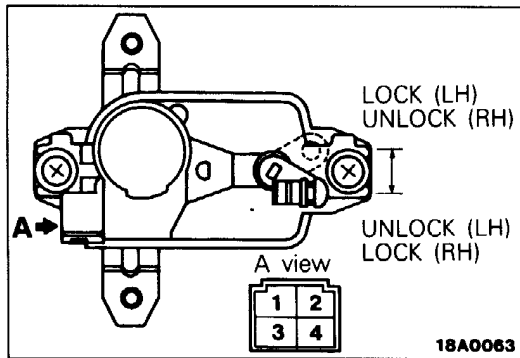
REAR DOOR LOCK ACTUATOR <VEHICLES WITHOUT THEFT-ALARM SYSTEM>

<L.H.>

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

<R.H.>

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



REAR DOOR LOCK ACTUATOR <VEHICLES WITH THEFT-ALARM SYSTEM>

<L.H.>

- (1) After setting the rod to the LOCK position and applying battery voltage to terminal ③, check if the rod moves to the UNLOCK position when terminal ① is earthed.
- (2) After setting the rod to the UNLOCK position and applying battery voltage to terminal ①, check if the rod moves to the LOCK position when terminal ③ is earthed.
- (3) For left-hand drive vehicles, when the actuator rod is set to the UNLOCK position, check if there is continuity between terminal ② and terminal ④, and when the rod is set to the LOCK position, check if there is no continuity.

<R.H.>

- (1) After setting the rod to the LOCK position and applying battery voltage to terminal ①, check if the rod moves to the UNLOCK position when terminal ③ is earthed.
- (2) After setting the rod to the UNLOCK position and applying battery voltage to terminal ③, check if the rod moves to the LOCK position when terminal ① is earthed.
- (3) For right-hand drive vehicles, when the actuator rod is set to the UNLOCK position, check if there is continuity between terminal ② and terminal ④, and when the rod is set to the LOCK position, check if there is no continuity.

NOTES

DOOR RUNCHANNEL

REMOVAL AND INSTALLATION

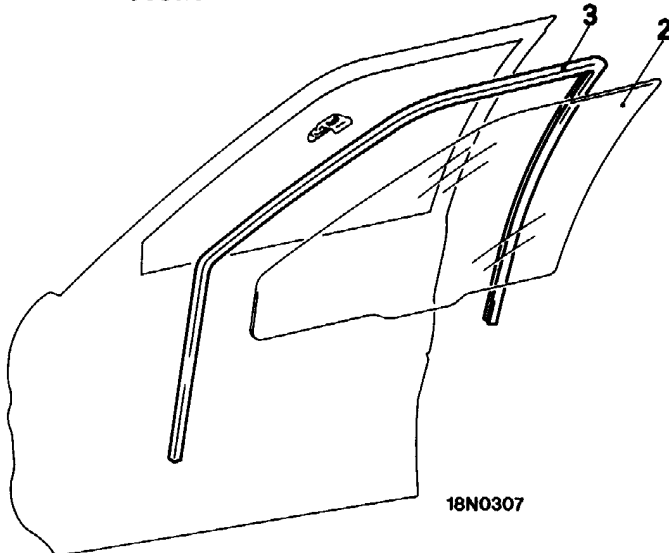
Pre-removal Operation

- Removal of Door Trim and Waterproof Film (Refer to P.42-33.)

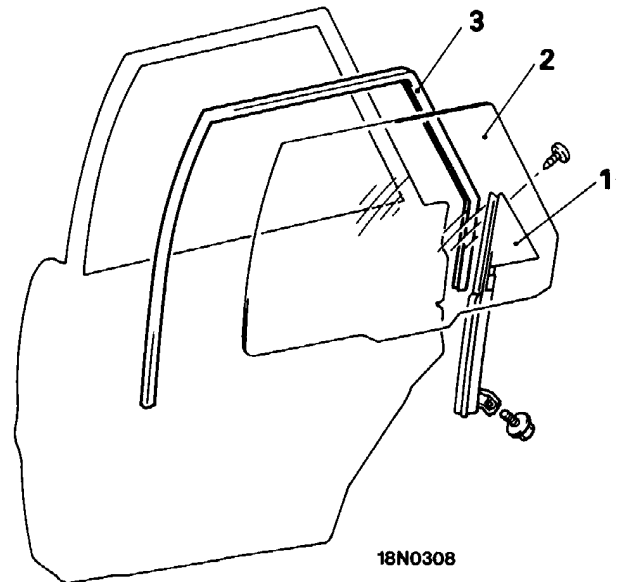
Post-installation Operation

- Door Window Glass Adjustment (Refer to P.42-11.)
- Installation of Door Trim and Waterproof Film (Refer to P.42-33.)

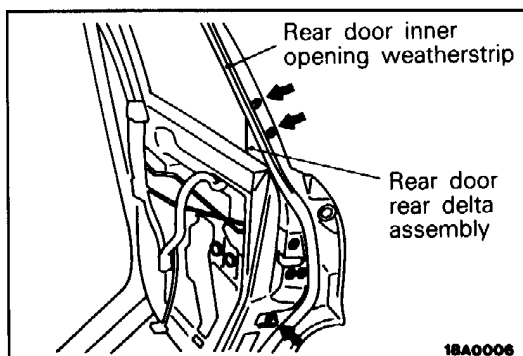
<Front door>



<Rear door>

**Removal steps**

- ⇔ 1. Rear door rear delta assembly
- ⇔ 2. Door window glass (Refer to P. 42-34.)
- ⇔ 3. Door runchannel

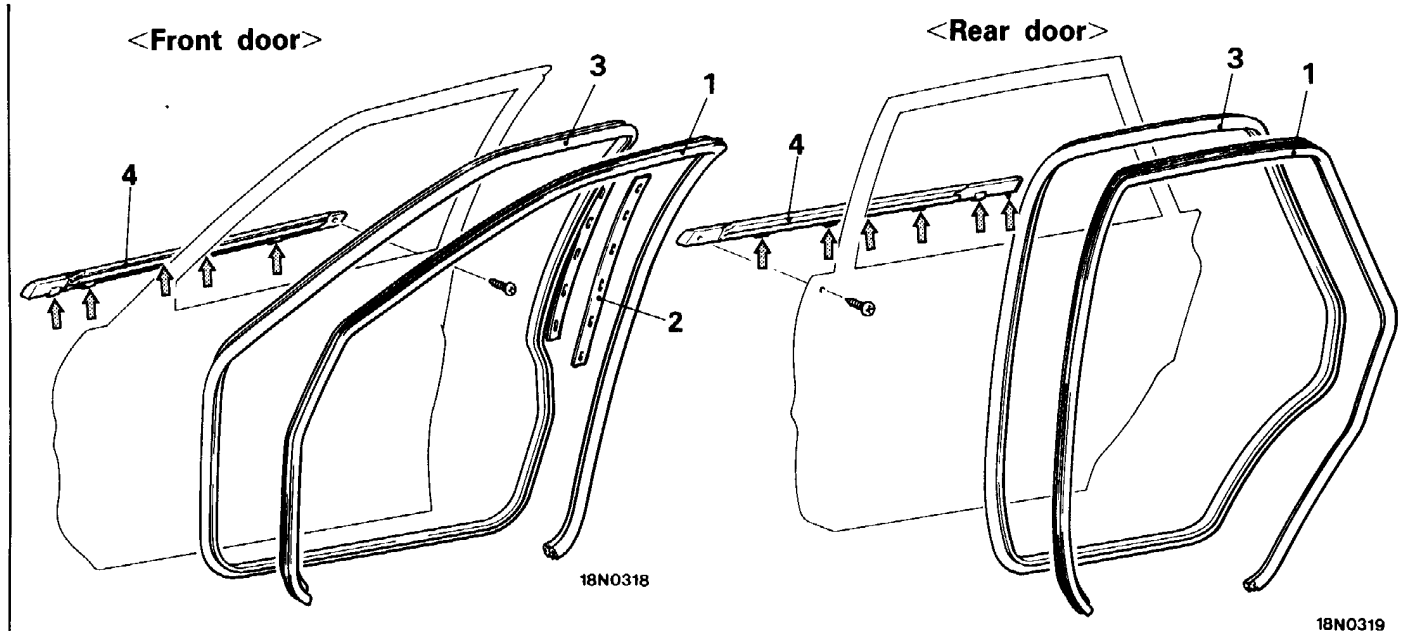
**SERVICE POINTS OF REMOVAL****1. REMOVAL OF REAR DOOR REAR DELTA ASSEMBLY**

- (1) Remove the rear door inner opening weatherstrip (only at the rear door lower sash part).
- (2) Remove the rear door lower sash installation screw; then remove the sash from the rear door panel.

DOOR MOULDING AND DRIP LINE WEATHERSTRIP

E42MHAG

REMOVAL AND INSTALLATION



Door inner opening weatherstrip removal steps

- Scuff plate
 - Cowl side trim
 - Center pillar lower trim
 - Rear wheel house trim
- } (Refer to GROUP 52 Trims.)
1. Door inner opening weatherstrip

Door outer opening weatherstrip removal steps

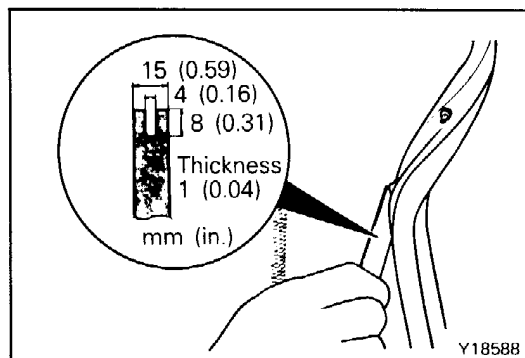
2. Weatherstrip retainer
3. Door outer opening weatherstrip

Belt line moulding removal steps

- Door mirror (Refer to GROUP 51 – Outside Mirror.)
- 4. Belt line moulding

NOTE

⇒ : Indicates the clip positions.



SERVICE POINTS OF REMOVAL

3. REMOVAL OF DOOR OUTER OPENING WEATHERSTRIP

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

SERVICE POINTS OF INSTALLATION

3. INSTALLATION OF DOOR OUTER OPENING WEATHERSTRIP

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

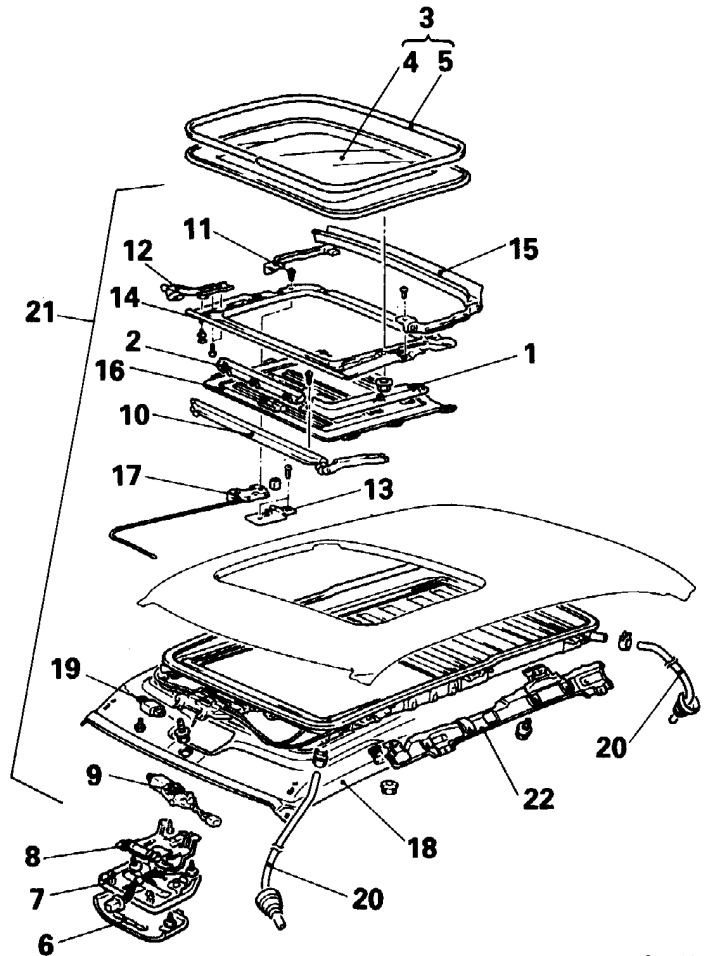
Identification colour	Applicable side
Yellow	Left door
Light blue	Right door

SUNROOF

REMOVAL AND INSTALLATION

Post-installation Operation

- Sunroof Fit Adjustment (Refer to P.42-12.)
- Water Test (Refer to P.42-12)



18N0237

Sunroof glass removal steps

1. Side decoration cover
2. Front decoration cover
3. Glass assembly
4. Glass
5. Weatherstrip

Motor removal steps

- ◄◄ 6. Room lamp switch cover
- ◄◄ 7. Room lamp assembly
- ◄◄ ◄◄ 8. Room lamp bracket
- ◄◄ ◄◄ 9. Motor

Rear guide assembly removal steps

1. Side decoration cover
2. Front decoration cover
3. Glass assembly
- ◄◄ 6. Room lamp switch cover
- ◄◄ 7. Room lamp assembly
- ◄◄ ◄◄ 8. Room lamp bracket
- ◄◄ ◄◄ 9. Motor
10. Deflector
11. Lid lower panel attachment screw
12. Front guide bracket
13. Set plate
14. Lid lower panel
15. Drip rail assembly
16. Sun shade
- ◄◄ 17. Rear guide assembly

Control unit removal steps

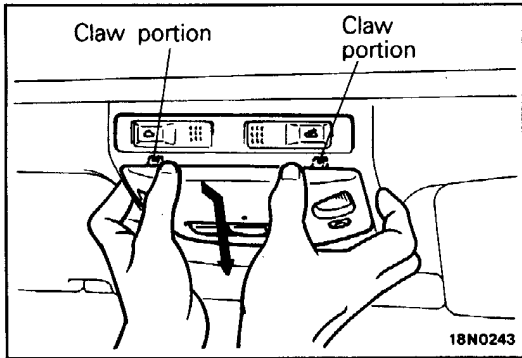
- Sun visor } (Refer to GROUP 52
- Assist grip } – Headlining.)
- Front pillar trim (Refer to GROUP 52 – Trims.)
- ◄◄ 6. Room lamp switch cover
- ◄◄ 7. Room lamp assembly
- ◄◄ 18. Headlining
- ◄◄ 19. Control unit

Drain hose removal steps

- Headlining (Refer to GROUP 52 – Headlining.)
- Splash shield
- ◄◄ ◄◄ 20. Drain hose

Sunroof assembly removal steps

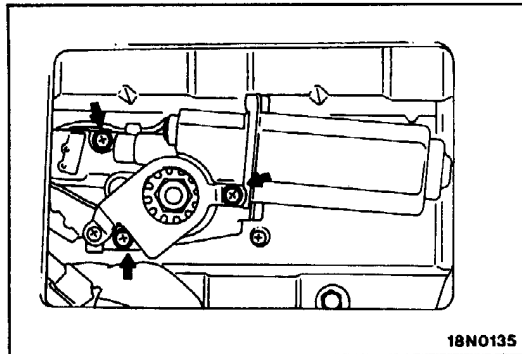
1. Side decoration cover
2. Front decoration cover
3. Glass assembly
- Headlining (Refer to GROUP 52 – Headlining.)
- ◄◄ ◄◄ 20. Connection for drain hose
- ◄◄ ◄◄ 21. Sunroof assembly
- ◄◄ ◄◄ 22. Set bracket



SERVICE POINTS OF REMOVAL

6. REMOVAL OF ROOM LAMP SWITCH COVER

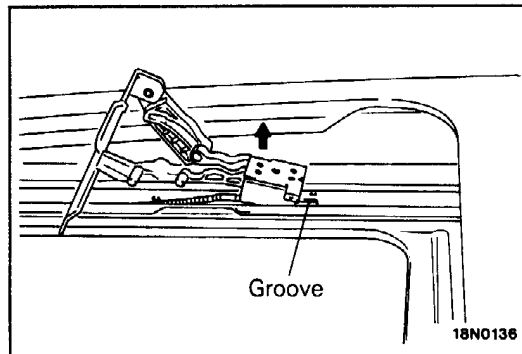
Remove the room lamp switch cover by pressing the claw portion and pulling it downwards.



9. REMOVAL OF MOTOR

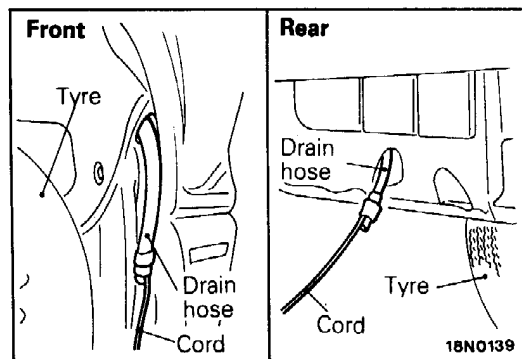
Caution

When removing the motor, the glass and the rear guide assembly should always be in the fully closed position. If there is a discrepancy between the glass position and the motor in fully closed position, the sun roof will not operate correctly.



17. REMOVAL OF REAR GUIDE ASSEMBLY

Remove the rear guide assembly by lifting up the front portion to clear the guide rail groove.

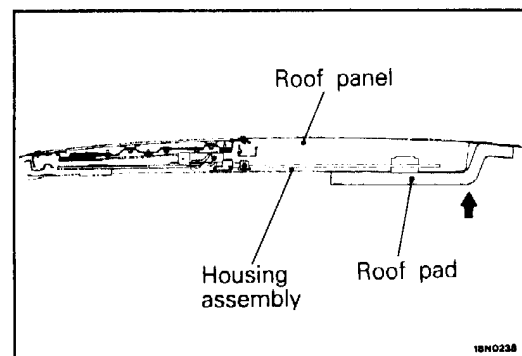


18. REMOVAL OF HEADLINING

Lower the front portion of the headlining as far as it will go to remove the control unit.

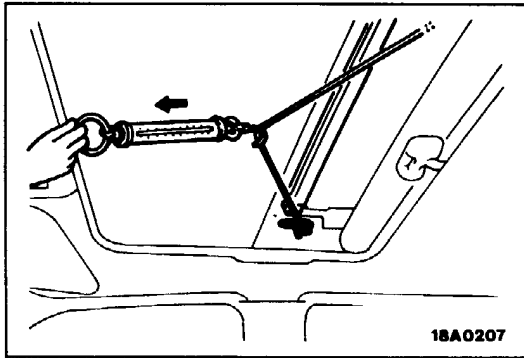
20. REMOVAL OF DRAIN HOSE

Tie a cord to the end of the drain hose and wrap it with tape so that there are no protrusions, and then pull the drain hose into the body compartment.



21. REMOVAL OF SUNROOF ASSEMBLY

When removing the sun roof assembly, first separate the housing portion from the roof by cutting the roof pad that joins them at the point of the arrow as shown in the figure, and then remove the assembly.



INSPECTION

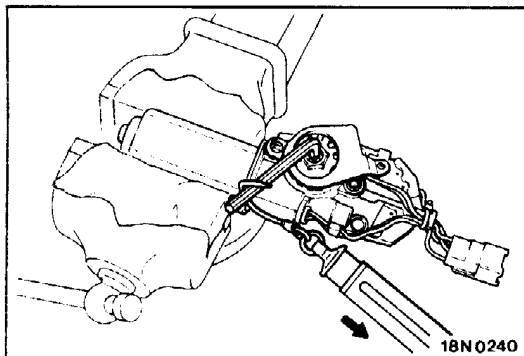
CHECKING THE SLIDING RESISTANCE OF THE GLASS

Check the sliding resistance of the glass by following the procedures below.

- (1) Remove the side decoration cover.
- (2) Loosen the nut at the front end of the glass installation, and then tie with a cord.
- (3) Remove the motor after opening the glass.
- (4) Using a spring scale, measure the sliding resistance of the glass.

Standard value: 120 N (12 kg, 26 lbs.) or less

- (5) If the sliding resistance of the glass exceeds the standard value, check the following.
 - (1) Check the installed condition of the sunroof assembly, and check for deformation, or clogging due to foreign material.
 - (2) Check for sticking of the drive cable.
 - (3) Check for an offset position of the glass.
- (6) When installing the motor, install the glass and the motor in the fully closed position. (Refer to P.42-52.)



CHECKING THE SLIDING FORCE OF THE MOTOR'S CLUTCH

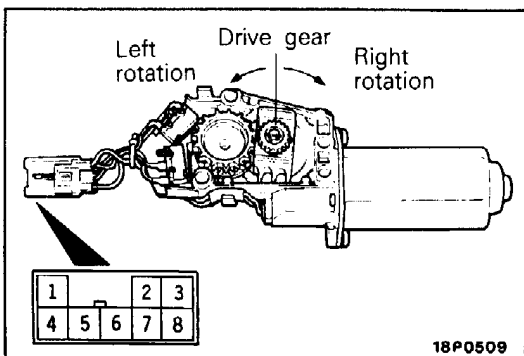
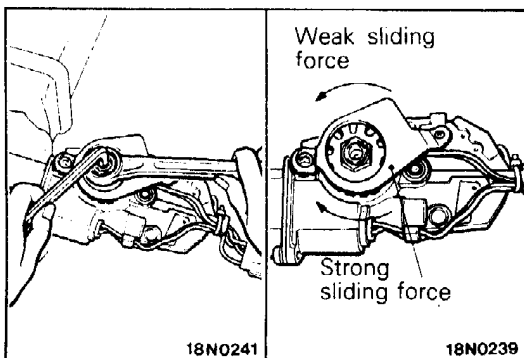
- (1) Insert one end of an allen wrench (provided in the tool bag) into the motor gear hole and hook a spring scale to the other end, and measure the force when the clutch starts to slip (when the allen wrench begins to turn).

Standard value: 40–50 N (4.0–5.0 kg, 9–11 lbs.)

Caution

Pull the spring scale in a direction at right angles to the wrench. Note that if a wrench other than the one provided in the tool bag is used, the measured value may not coincide with the standard value.

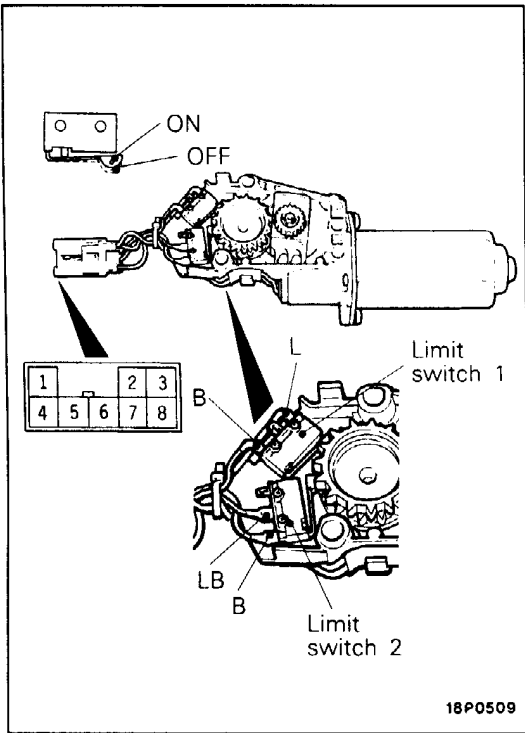
- (2) If the sliding force of the motor's clutch is not within the standard value range, adjust by turning the adjusting nut of the motor.



CHECKING THE MOTOR

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

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



CHECKING THE LIMIT SWITCH

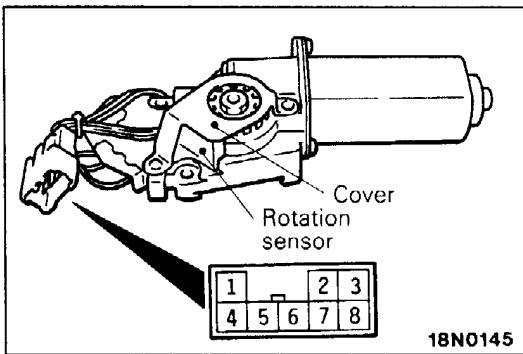
(1) Remove the limit switch from the motor; then operate the limit switch and check for continuity between the terminals.

Switch		Terminal		
		4	5	6
Limit switch 1	ON			
	OFF	○—○	○—○	
Limit switch 2	ON	○—○		○—○
	OFF			

NOTE

○—○ indicates that there is continuity between the terminals.

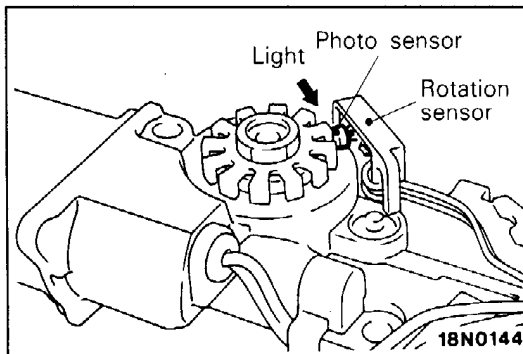
(2) When installing the limit switch, install so that installation positions 1 and 2 and the inner and outer sides are as indicated in the illustration.



CHECKING THE ROTATION SENSOR

(1) Check that there is continuity when the (-) testing probe is connected to terminal ③, and the (+) testing probe is connected to terminal ⑧. Also, check that there is no continuity when the (+) testing probe is connected to terminal ③, and the (-) testing probe is connected to terminal ⑧.

(2) Remove the cover, and check that there is no continuity when the (-) testing probe is connected to terminal ⑦, and the (+) testing probe is connected to terminal ⑧. Also, with the testing probes in the same position, check that there is continuity when light is hitting the photo sensor.



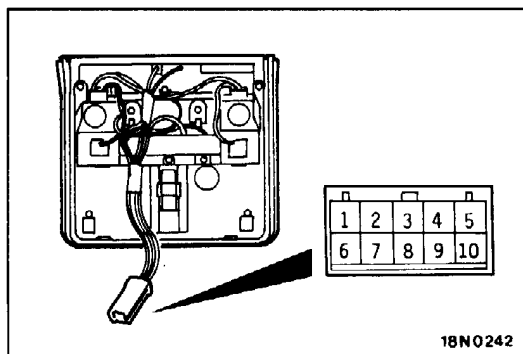
CHECKING THE SUNROOF SWITCH

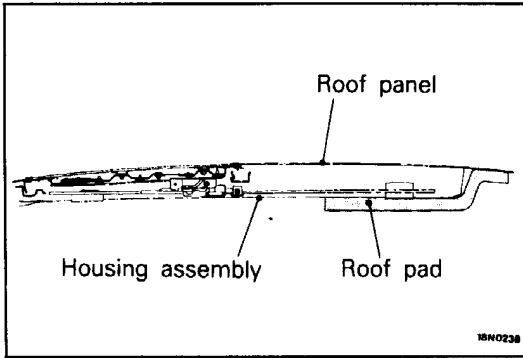
Operate the switch and check for continuity between the terminals.

Switch		Terminal				
		4	5	8	9	10
Slide switch	Open	○—○		○—○		
	Close			○—○	○—○	
Tilt switch	Up		○—○	○—○		
	Down			○—○		○—○

NOTE

○—○ indicates that there is continuity between the terminals.

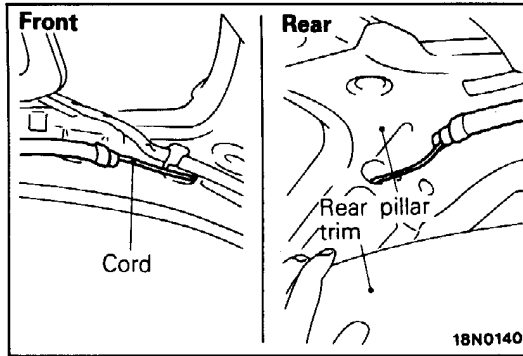




SERVICE POINTS OF INSTALLATION

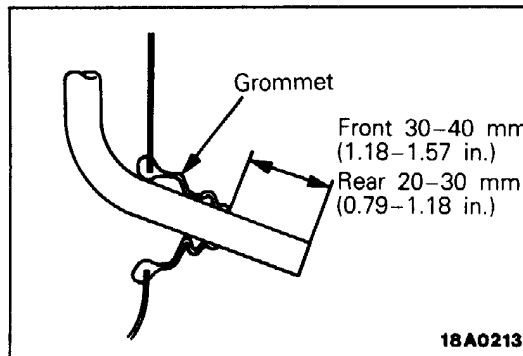
21. INSTALLATION OF SUNROOF ASSEMBLY

When fitting the sunroof assembly, the cut roof pad can be re-used. Furthermore, when changing over an old sunroof assembly for a new one, cut the accessory pad and attach to the housing only.

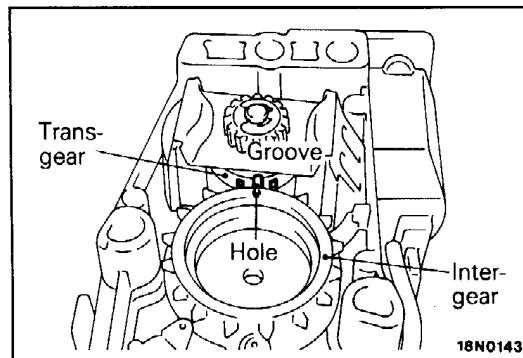


20. INSTALLATION OF DRAIN HOSE

- (1) Tie on the cord that was used when pulling out the end of the drain hose, and wrap tape around it so that there are no projections.
- (2) Pull the cord to pull through the drain hose.



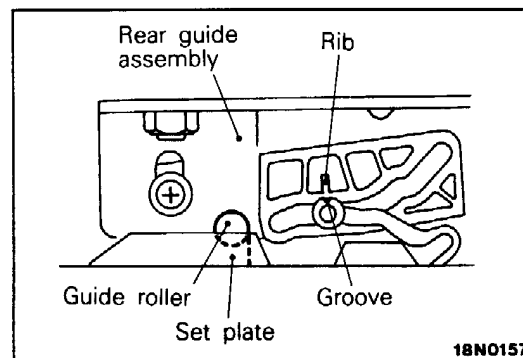
- (3) Make the protrusion from the drain hose grommet as shown in the diagram.



9. INSTALLATION OF MOTOR

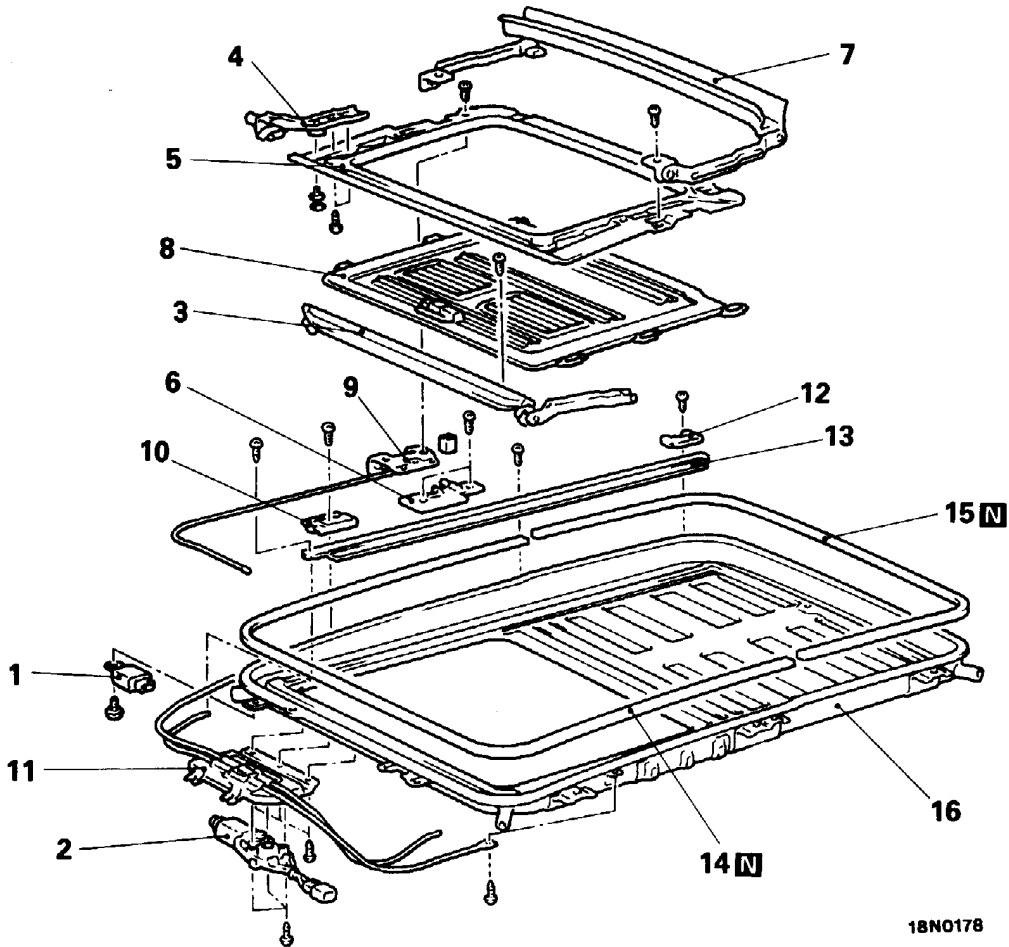
Use the following procedure to adjust the motor and the glass so they are in the fully closed position before installing the motor.

- (1) Align the hole of the motor intergear with the groove in the transgear (motor in fully closed position).
- (2) When fitting the set plate and the guide roller together as in the diagram, adjust the rib of the rear guide assembly so that it fits into the groove on the tilt cam (glass in fully closed position).
- (3) Install the motor.



SUNROOF ASSEMBLY

DISASSEMBLY AND REASSEMBLY



18N0178

Disassembly steps

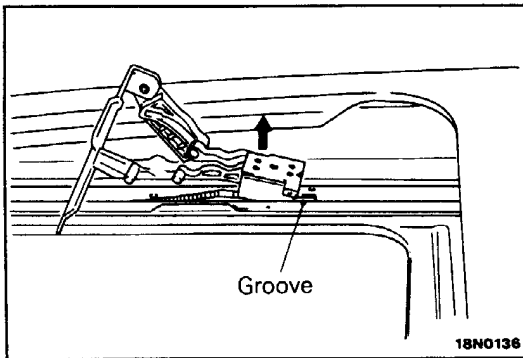
- | | | |
|------------------------|--|--|
| <p>◄◄ ◄◄</p> <p>◄◄</p> | <ol style="list-style-type: none"> 1. Control unit 2. Motor 3. Deflector 4. Front guide bracket 5. Lid lower panel 6. Set plate 7. Drip rail assembly 8. Sun shade 9. Rear guide assembly | <ol style="list-style-type: none"> 10. Guide rail cover 11. Tube assembly 12. Stopper 13. Guide rail assembly 14. Front seal tape 15. Rear seal tape 16. Housing assembly |
|------------------------|--|--|

SERVICE POINTS OF DISASSEMBLY

2. REMOVAL OF MOTOR

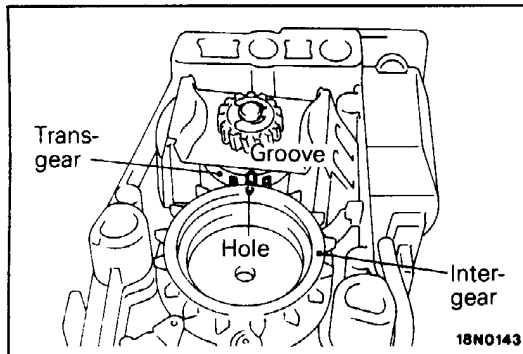
Caution

When removing the motor, the rear guide assembly should always be in the fully closed position. If there is a discrepancy between the glass position and the motor in fully closed position, the sunroof will not operate correctly.



9. REMOVAL OF REAR GUIDE ASSEMBLY

Remove the rear guide assembly by lifting up the front portion to clear the guide rail groove.



SERVICE POINTS OF REASSEMBLY

2. INSTALLATION OF MOTOR

Use the following procedure to adjust the motor and the glass so they are in the fully closed position before installing the motor.

- (1) Align the hole of the motor intergear with the groove in the transgear (motor in fully closed position).
- (2) When fitting the set plate and the guide roller together as in the diagram, adjust the rib of the rear guide assembly so that it fits into the groove on the tilt cam (glass in fully closed position).
- (3) Install the motor.

