

GROUP 42

BODY

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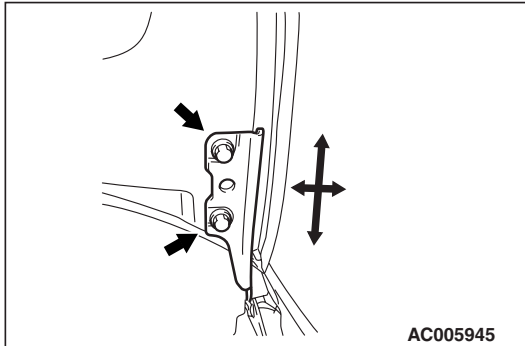
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HOOD

ON-VEHICLE SERVICE

ADJUSTMENT OF CLEARANCE AROUND HOOD

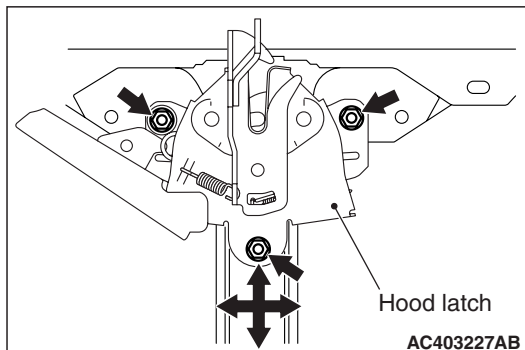
M1421007200129



ADJUSTMENT OF ALIGNMENT OF HOOD STEPPED PORTION AND HOOD STRIKER

M1421007300223

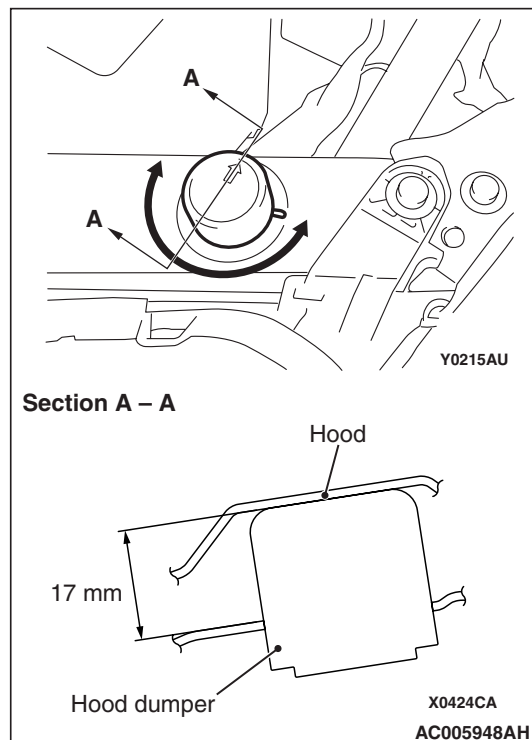
1. Remove the front bumper assembly (Refer to GROUP 51, Front bumper assembly P.51-2).
2. Remove the hood latch cover.



3. Loosen the hood latch mounting bolts but do not remove them. Then move the hood latch up/down and left/right to align the hood level and adjust the hood striker engagement.
4. After the adjustment, tighten the hood latch mounting bolts to 9.0 ± 2.0 N·m.
5. Install the hood latch cover.
6. Install the front bumper assembly (Refer to GROUP 51, Front bumper assembly P.51-2).

ADJUSTMENT OF HOOD HEIGHT

M1421007400242



Rotate the hood dumper by using arrow mark on the hood dumper as a guide to adjust the hood height. If the hood dumper is rotated just one turn, the hood height changes by approximately 3 mm.

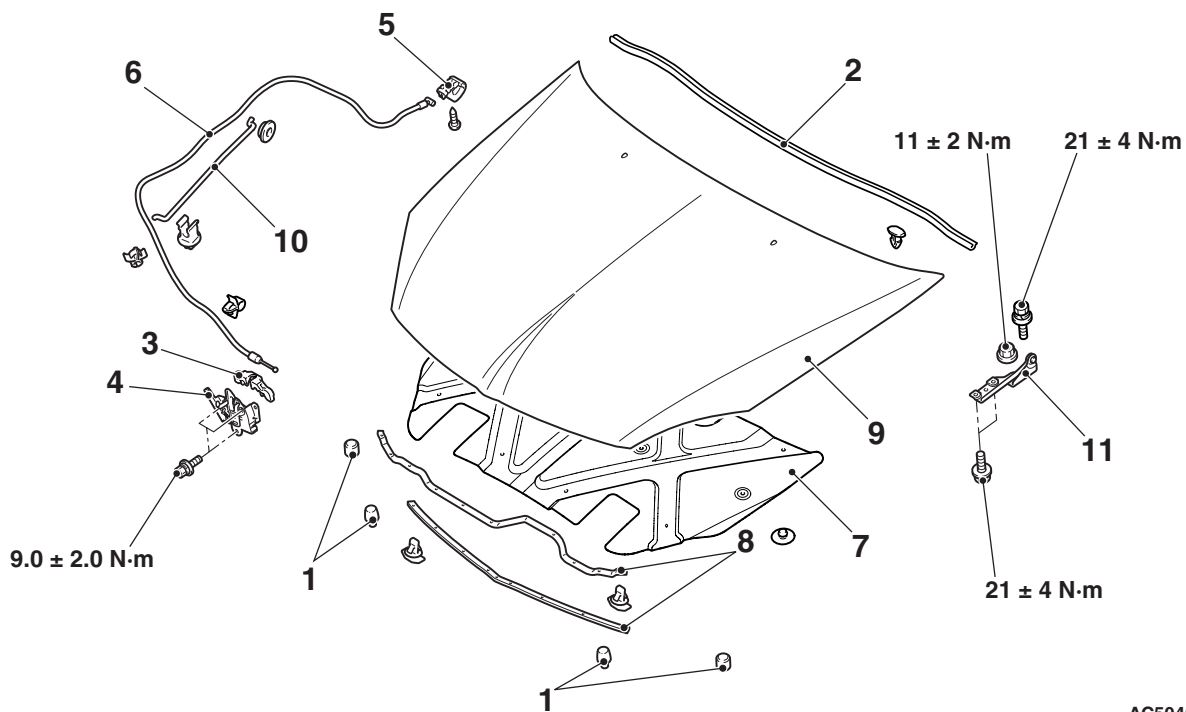
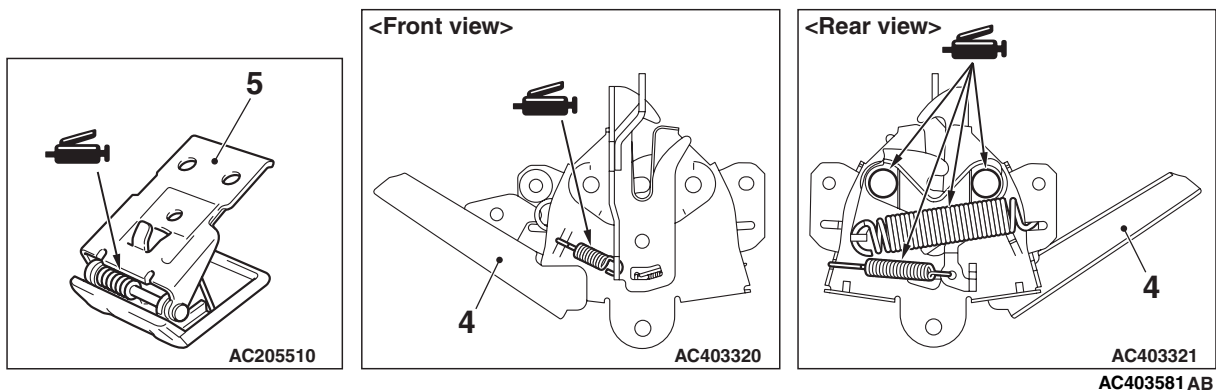
HOOD

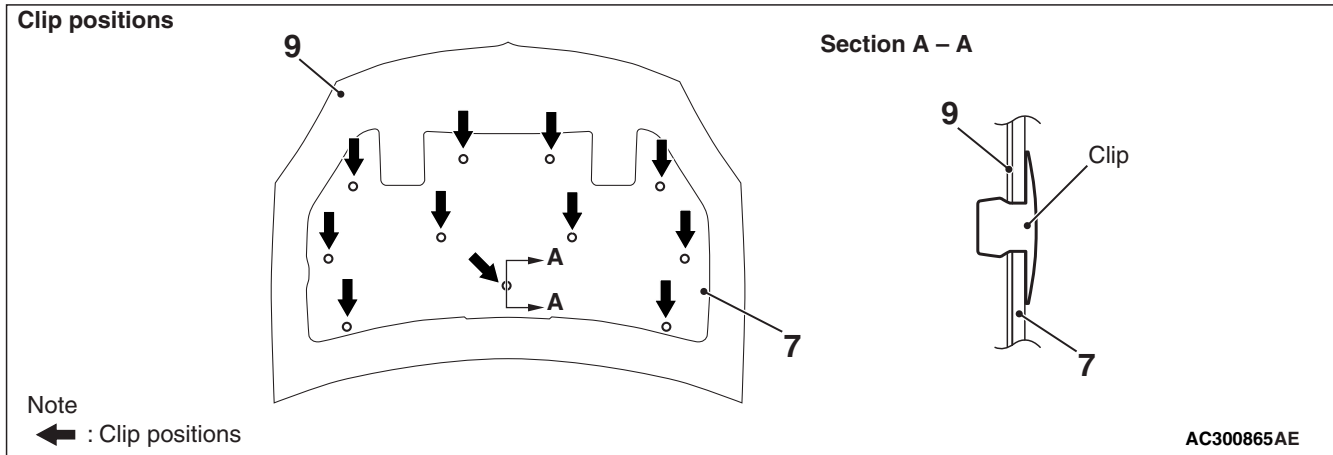
REMOVAL AND INSTALLATION

M1421001600806

Post-installation Operation

- Adjustment of Clearance Around Hood (Refer to P.42-3.)
- Adjustment of Alignment of Hood Stepped Portion and Hood Striker (Refer to P.42-3.)
- Adjustment of Hood Height (Refer to P.42-3.)





Removal

1. Hood dumper
 2. Hood weatherstrip
- Hood latch and hood lock release cable removal steps**
- Front bumper assembly (Refer to GROUP 51 [P.51-2.](#))
3. Hood latch cover
 4. Hood latch
 5. Hood lock release handle
 6. Hood lock release cable

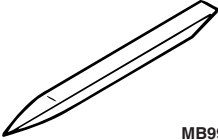
Hood and hood hinge removal steps

7. Hood insulator
8. Hood weatherstrip
- Washer hose (Refer to GROUP 51 [P.51-23.](#))
9. Hood
10. Hood support rod
11. Hood hinge

FENDER

SPECIAL TOOL

M1421000600256

Tool	Number	Name	Use
 MB990784	MB990784	Ornament remover	Side turn-signal lamp removal

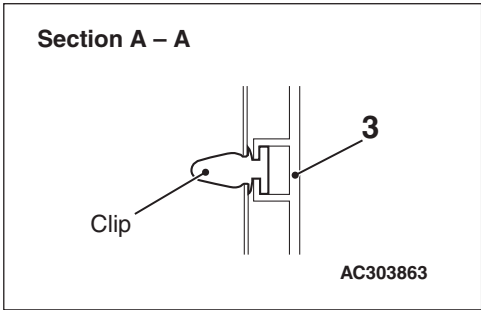
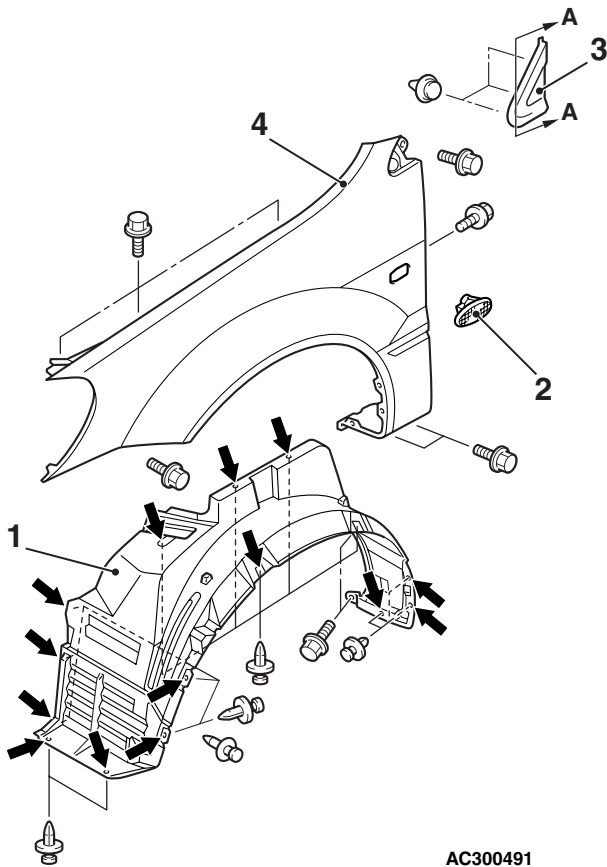
FENDER

REMOVAL AND INSTALLATION

M1421001900636

Pre-removal and Post-installation Operation

- Front Bumper Removal and Installation (Refer to GROUP 51 P.51-2.)
- Front Deck Garnish Removal and Installation (Refer to GROUP 51, Windshield Wiper and Washer P.51-23.)
- Side Air Dam Removal and Installation <Vehicles with side air dam> (Refer to GROUP 51 P.51-12.)



Note
← : Clip positions

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Removal steps

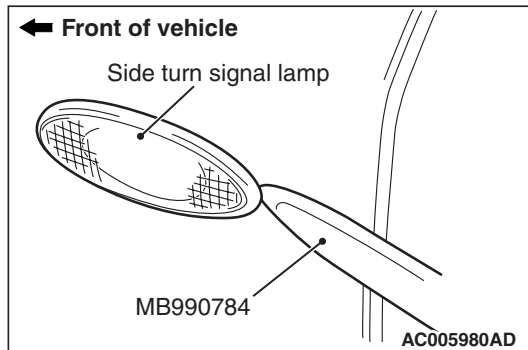
- <<A>> >>A<<
1. Splash shield
 2. Side turn-signal lamp

Removal steps (Continued)

3. Delta outer garnish
4. Fender

REMOVAL SERVICE POINT

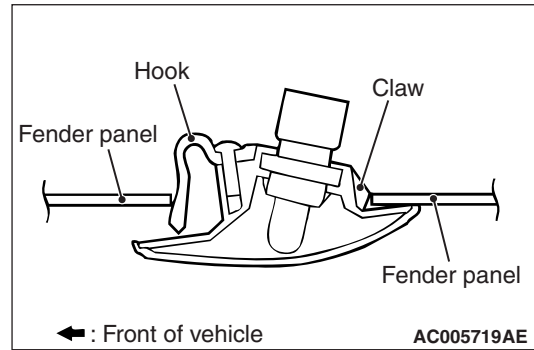
<<A>> SIDE TURN-SIGNAL LAMP REMOVAL



Use special tool ornament remover (MB990784) to prize out the tab from the fender, and remove the side turn-signal lamp.

INSTALLATION SERVICE POINT

>>A<< SIDE TURN-SIGNAL LAMP INSTALLATION



Engage the claw with the fender panel, and install the side turn-signal lamp.

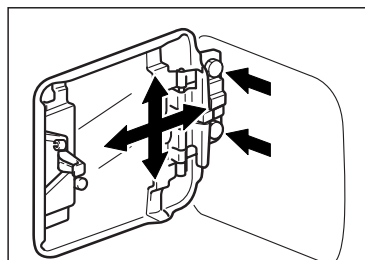
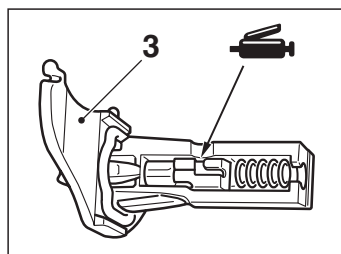
FUEL FILLER LID

REMOVAL AND INSTALLATION

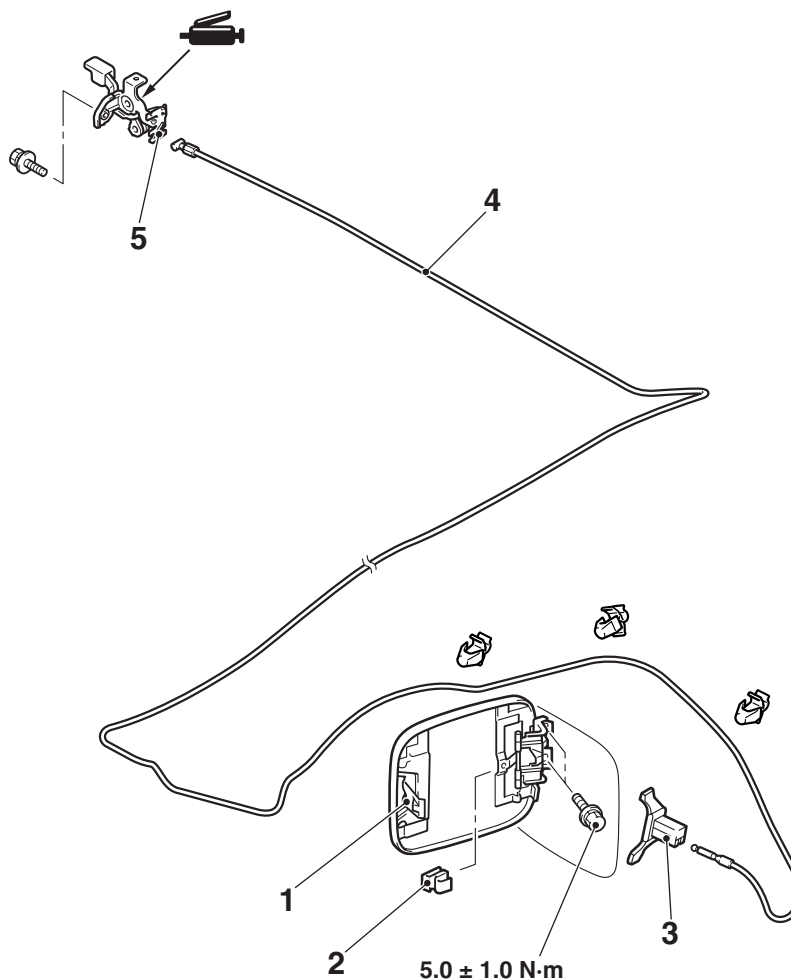
M1421002500448

Pre-removal and Post-installation Operation

- Rear Seat Removal and Installation (Refer to GROUP 52A P.52A-25.)
- Front Scuff Plate (Driver's Side), Rear Scuff Plate (Passenger's Side), Centre Pillar Lower Trim (Driver's Side), Quarter Lower Trim (Passenger's Side) Removal and Installation (Refer to GROUP 52A, Trims P.52A-11.)



Fuel filler lid height and clearance adjustment



AC403226 AB

Removal steps

1. Fuel filler lid panel assembly
2. Clip
3. Fuel filler lid hook assembly

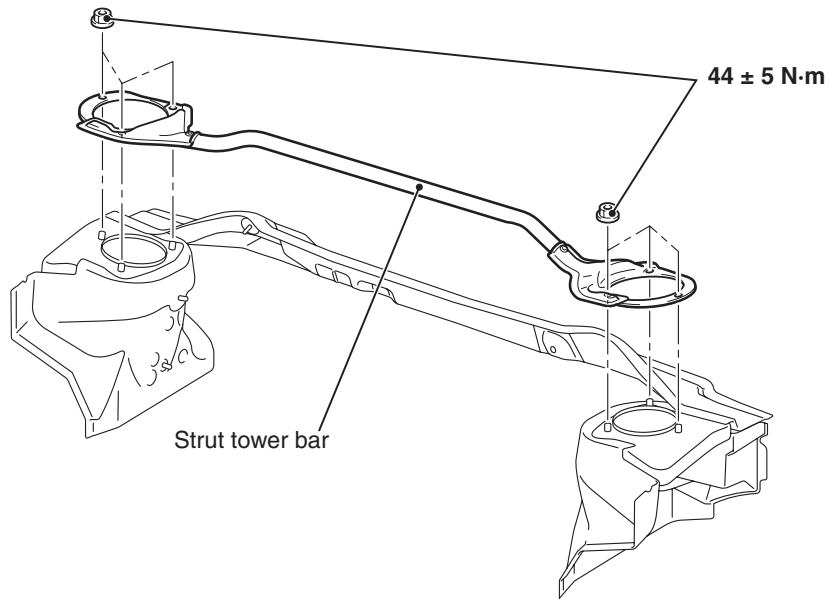
Removal steps (Continued)

4. Fuel filler lid lock release cable
5. Fuel filler lid lock release handle

STRUT TOWER BAR <VR-X>

REMOVAL AND INSTALLATION

M1421005600091



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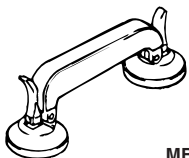
WINDOW GLASS**ADHESIVE**

M1422000500188

Item	Specified adhesive
Windshield	3M ATD Part No.8609 Super Fast Urethane Auto Glass Sealant or equivalent 3M ATD Part No.8608 Super Fast Urethane Primer or equivalent
Quarter window glass	
Tailgate window glass	

SPECIAL TOOL

M1422000600408

Tool	Number	Name	Use
 MB990480	MB990480	Glass holder	Removal and installation of window glass

WINDOW REPAIR

M1422005600049

The windshield, quarter window glass and tailgate window glass are attached by an urethane-base adhesive to the window frame. This adhesive provides improved glass holding and sealing, and also gives body openings a greater structural strength.

ITEMS

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

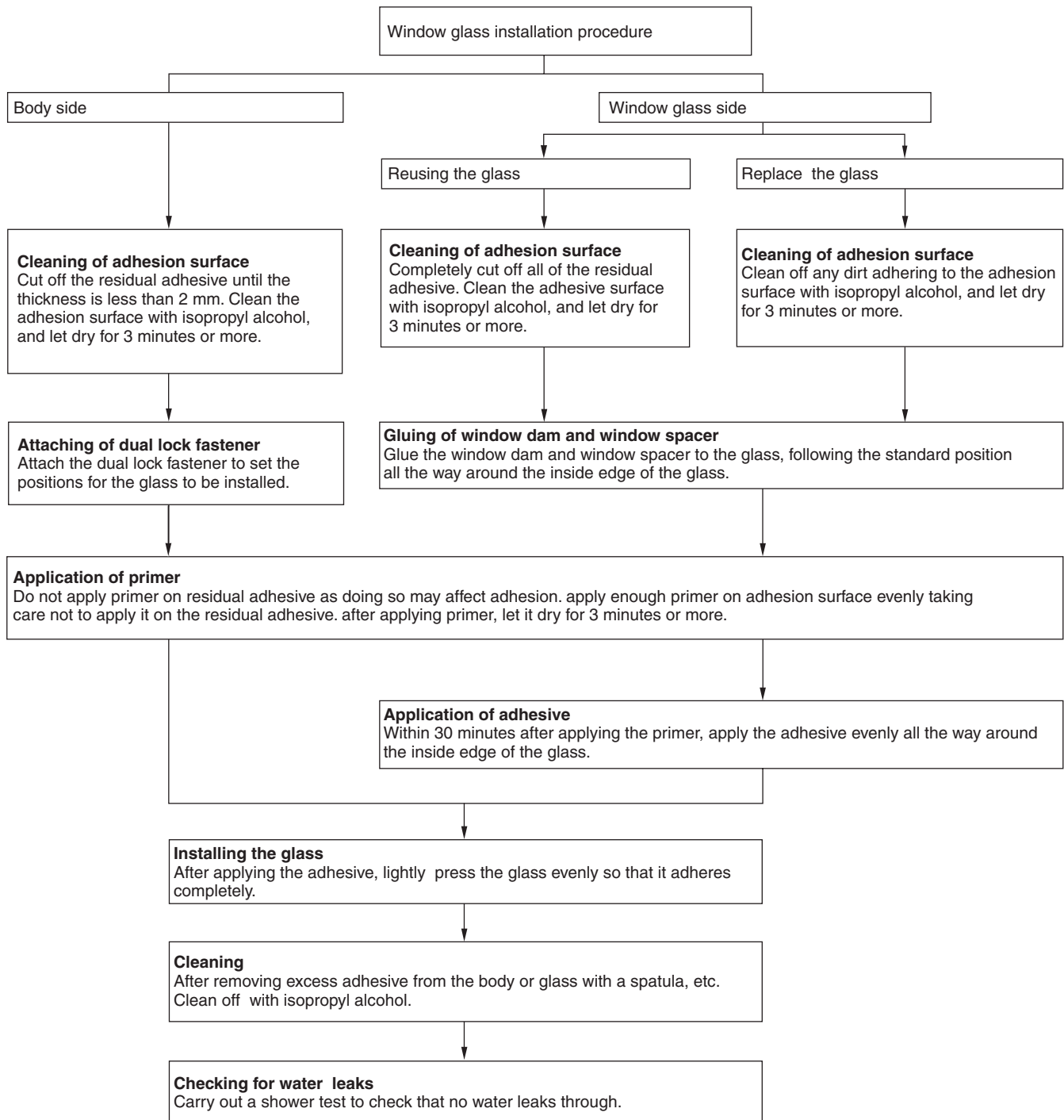
BODY PINCH-WELD FLANGE SERVICING

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

WINDOW GLASS INSTALLATION

CAUTION

Do not apply the primer on the remaining adhesive as the adhesive strength may be weakened.



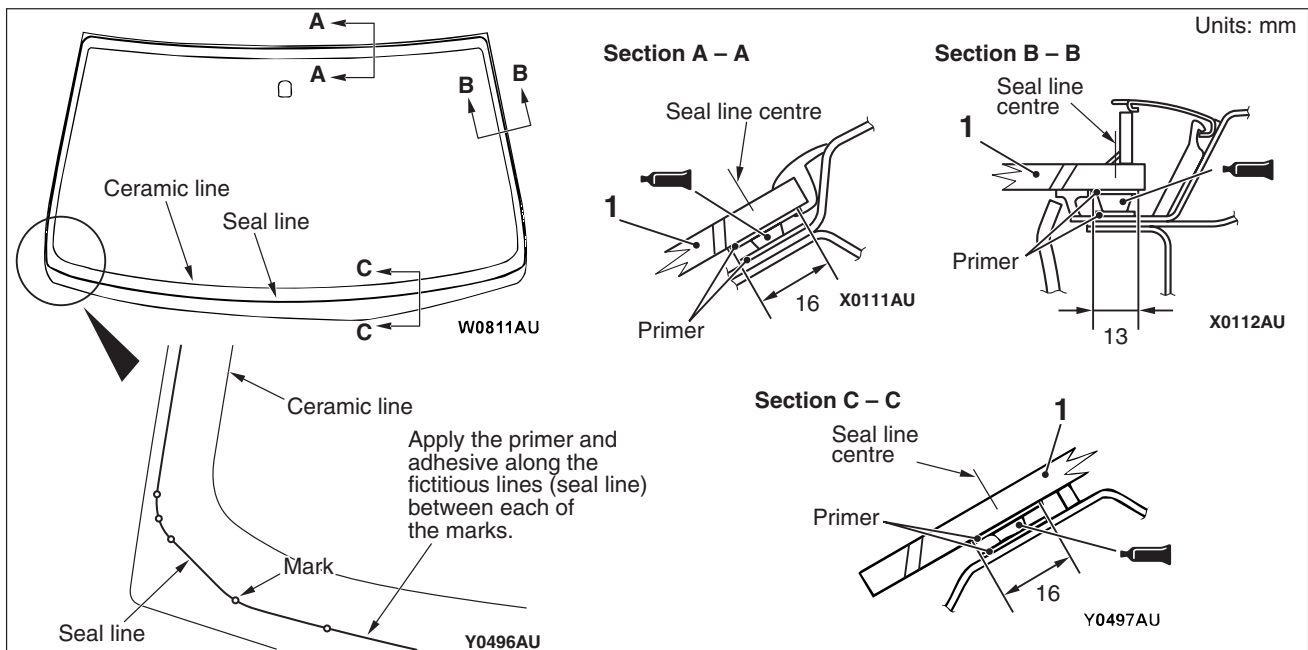
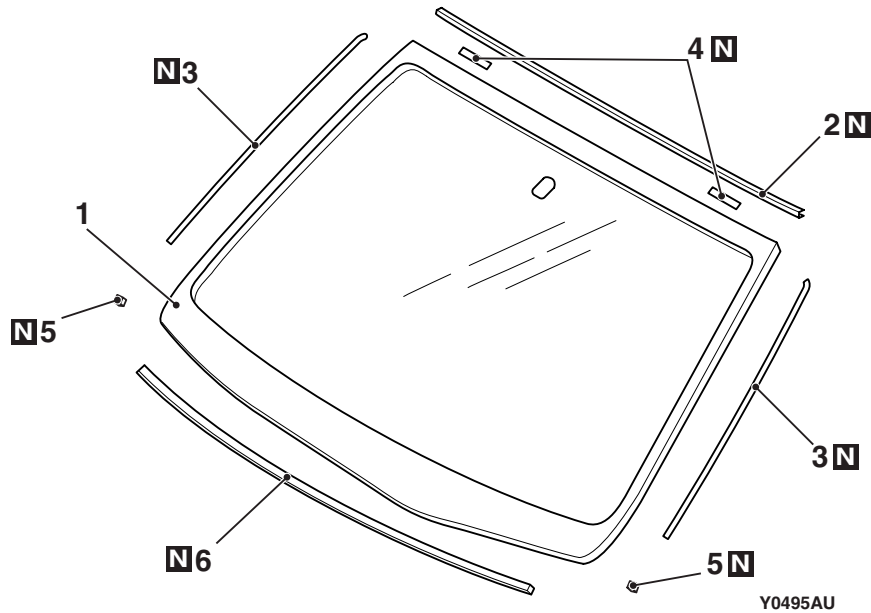
WINDSHIELD

REMOVAL AND INSTALLATION

M1422001000562

Pre-removal and Post-installation Operation

- Front Deck Garnish Removal and Installation (Refer to GROUP 51, Windshield Wiper and Washer P.51-23.)
- Inside Rear View Mirror Removal and Installation (Refer to GROUP 52A P.52A-21.)
- Front Pillar Trim Removal and Installation (Refer to GROUP 52A P.52A-11.)
- Headlining Removal and Installation (Refer to GROUP 52A P.52A-20.)



Adhesive: 3M ATD Part No. 8609 Super Fast Urethane Auto Glass Sealant or equivalent and 3M ATD Part No. 8608 Super Fast Urethane Primer or equivalent

Removal steps

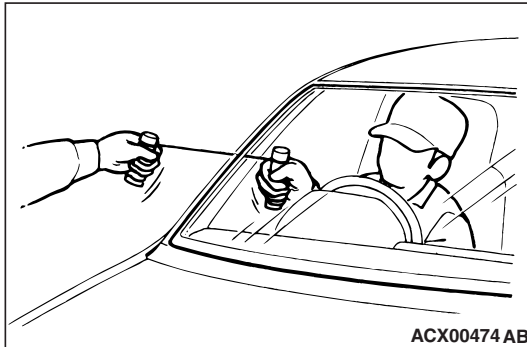
- Roof drip moulding (Refer to GROUP 51, Moulding P.51-10.)

- <<A>> >>B<< 1. Windshield
 >>A<< 2. Windshield moulding
 >>A<< 3. Window dam
 >>A<< 4. Glass stopper
 >>A<< 5. Spacer
 >>A<< 6. Windshield spacer

REMOVAL SERVICE POINT

<<A>> WINDSHIELD REMOVAL

1. To protect the body (paint surface), apply cloth tape to all body areas around the installed windshield.
2. Make mating marks on the windshield and body.

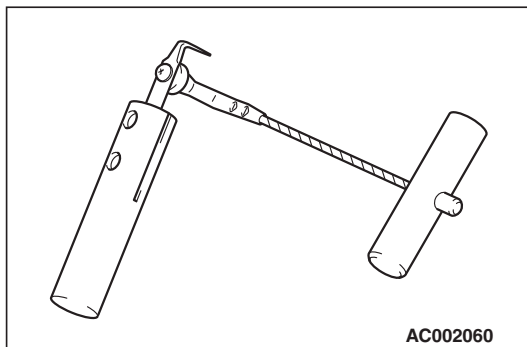


3. Using piano wire.
 - (1) Using a sharp-point drill, make a hole in the windshield adhesive.
 - (2) Pass the piano wire from the inside of the vehicle through the hole.

⚠ CAUTION

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

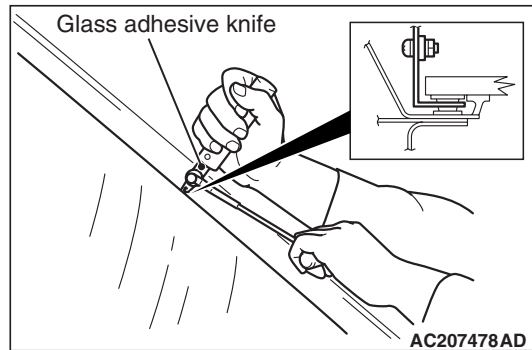
- (3) Pull the piano wire alternately from the inside and outside along the windshield to cut the adhesive.



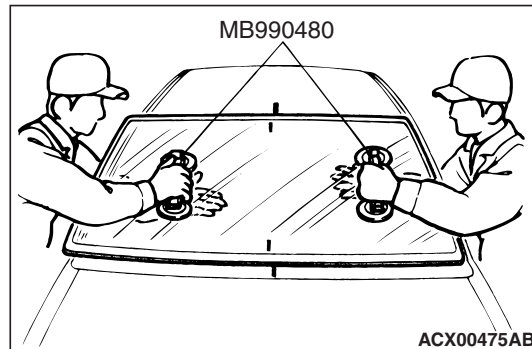
4. Using glass adhesive knife.

⚠ CAUTION

Inserting the glass adhesive knife too deeply into windshield adhesive may damage windshield.

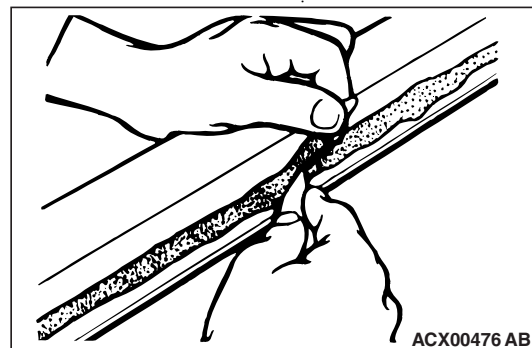


- (1) Keep glass adhesive knife at right angles with the windshield edge, and put the blade at windshield edge and surface. Then cut away adhesive along the windshield edge.



5. Use special tool glass holder (MB990480) to remove the windshield.

⚠ CAUTION



Be careful not to remove more adhesive than is necessary.

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

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

⚠ CAUTION

Allow the cleaned area to dry for at least three minutes. Do not touch any surface that has been cleaned.

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

INSTALLATION SERVICE POINTS

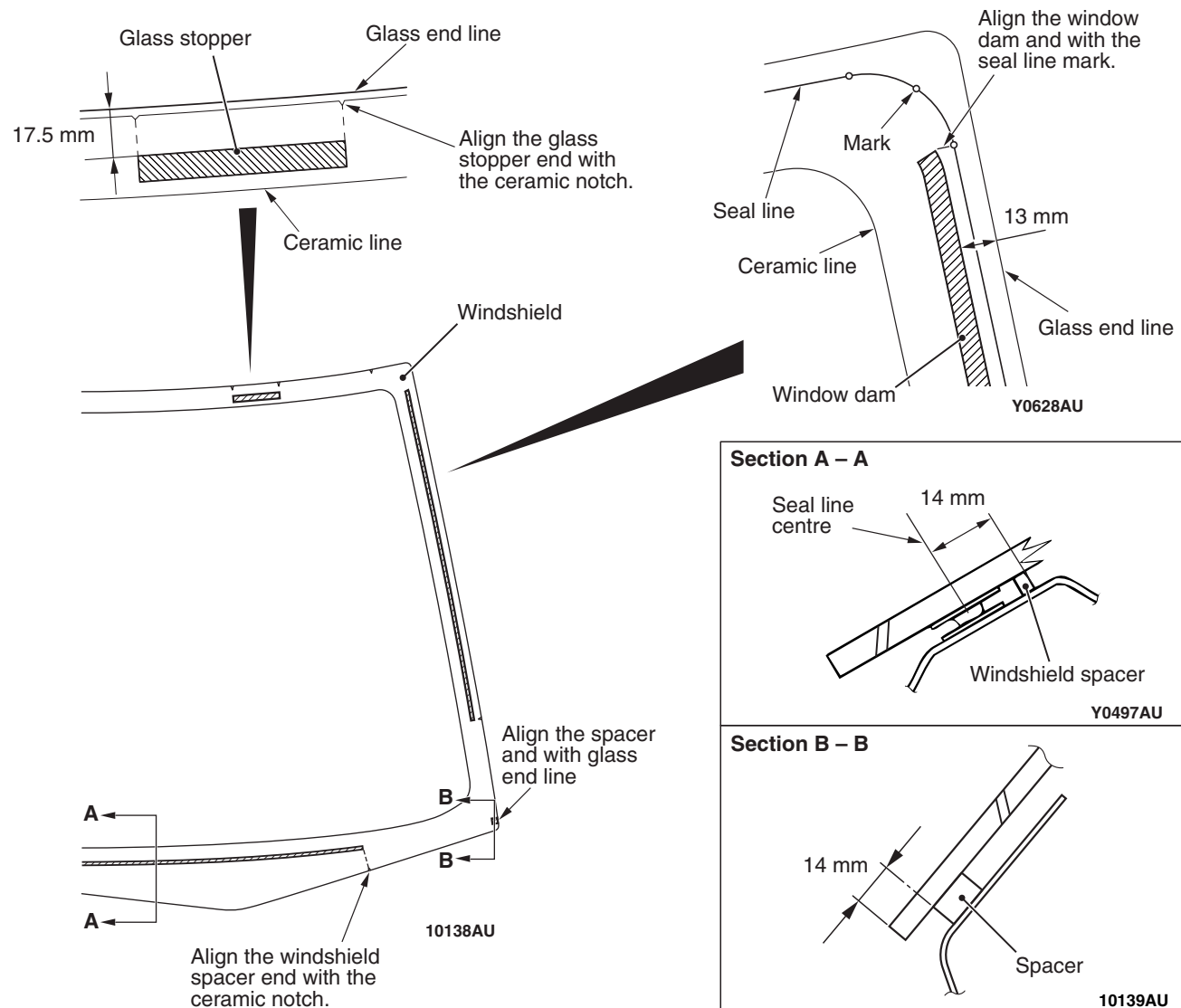
>>A<< WINDSHIELD SPACER/SPACER/GLASS STOPPER/WIN- DOW DAM/WINDSHIELD MOULDING INSTALLATION

⚠ CAUTION

Leave the degreased parts for 3 or more minutes to dry well, before starting on the next step. Do not touch the degreased parts.

1. Use isopropyl alcohol to degrease the inside and outside of the windshield and the body flanges.

Glass stopper, spacer, windshield spacer and window dam installation position



AC006029AB

2. The inner side of the windshield is curved, therefore, make a point to assemble the glass stopper and windshield spacer without any lifting and assemble in the position shown in the Figure of the instructions.

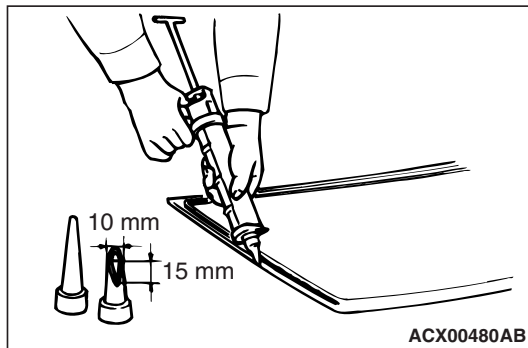
3. Install the windshield moulding.

>>B<<WINDSHIELD INSTALLATION

1. When replacing the windshield, temporarily set the windshield against the body, and place a mating mark on the windshield and body.

CAUTION

- The primer strengthens the adhesive, so be sure to apply it evenly around the entire circumference. However, a too thick application will weaken the adhesive.
 - Do not touch the coated surface.
 - Do not apply the primer on the remaining adhesive because of weakening the adhesive.
2. Soak a sponge in the primer, and apply evenly to the windshield in the specified places. If the adhesive does not remain on the body flange surface because of the panel replacement on the body side, apply evenly to the body side in the specified places.
 3. Allow the windshield to dry for at least three minutes after applying primer.



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

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

5. Align the mating marks on the windshield and the body, and lightly press the windshield evenly so that it adheres completely.
6. Use a spatula or similar tool to remove any excessive adhesive. Clean the surface with isopropyl alcohol. Avoid moving the vehicle until the adhesive sets.
7. Bond the windshield to the body, and install the roof drip moulding quickly before the adhesive cures. (Refer to GROUP51, Moulding [P.51-10](#).)

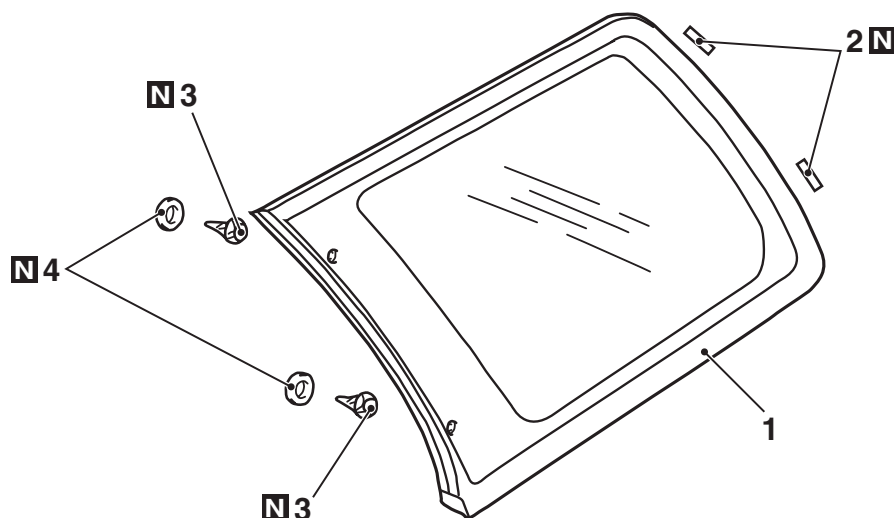
CAUTION

- Do not move the vehicle unless absolutely necessary.
 - When testing for water leakage, do not pinch the end of the hose to spray the water.
8. Wait 30 minutes or more, and then test for water leakage.

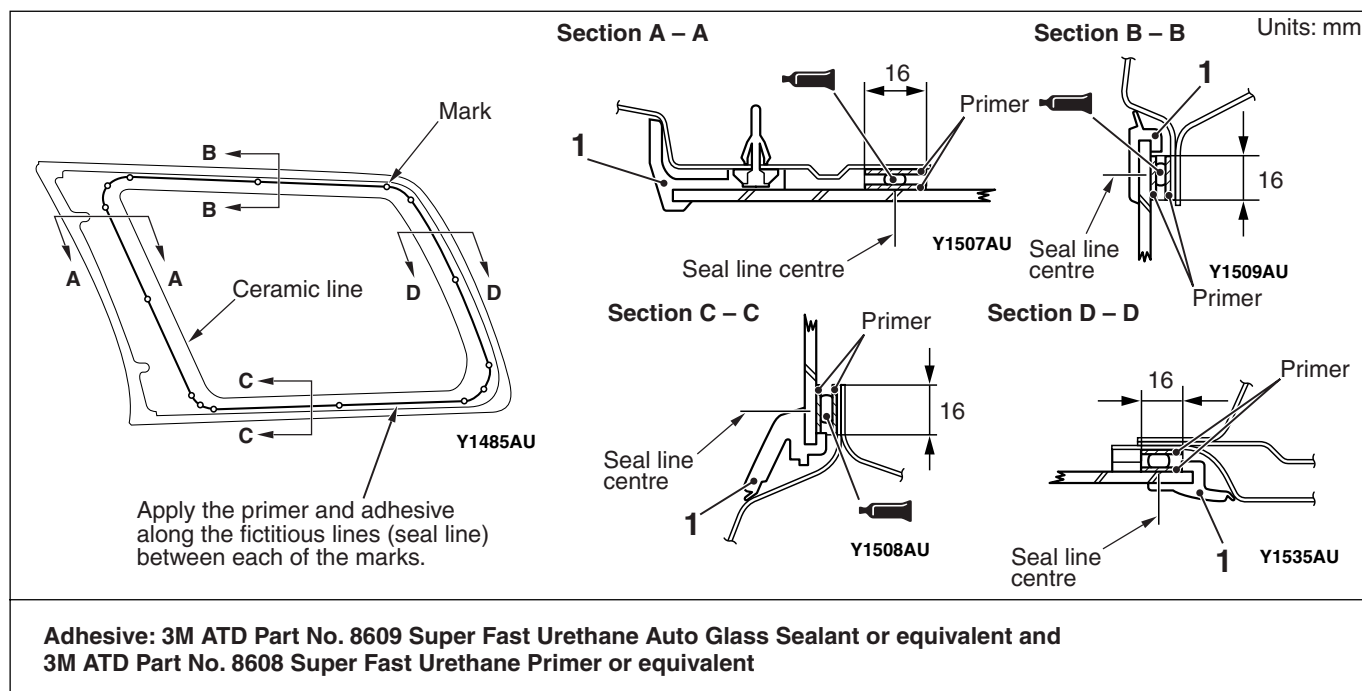
REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Quarter Trim Upper Removal and Installation (Refer to GROUP 52A [P.52A-11](#)).



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AC304784 AB

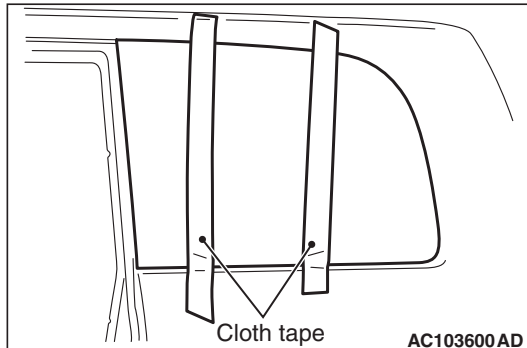
Removal steps (Continued)

- <<A>> >>B<< 1. Quarter window glass assembly
>>A<< 2. Dual lock fastener

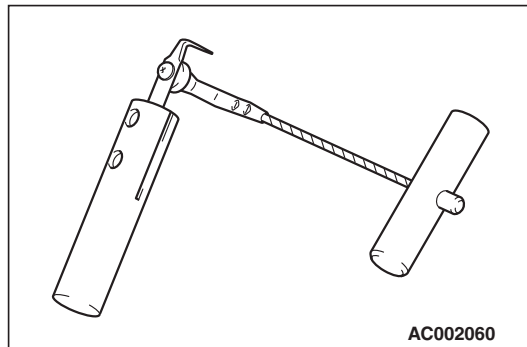
- >>**A**<< 3. Clip
>>**A**<< 4. Gasket

REMOVAL SERVICE POINT

<<A>> QUARTER WINDOW GLASS REMOVAL

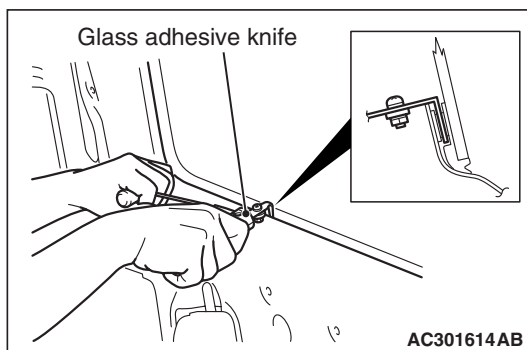


1. Apply cloth tape to protect the quarter window glass.



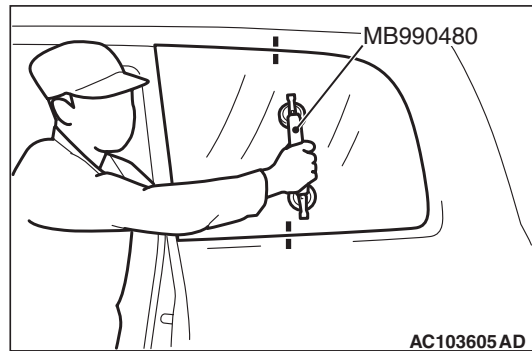
2. Use glass adhesive knife to cut away adhesive.

CAUTION



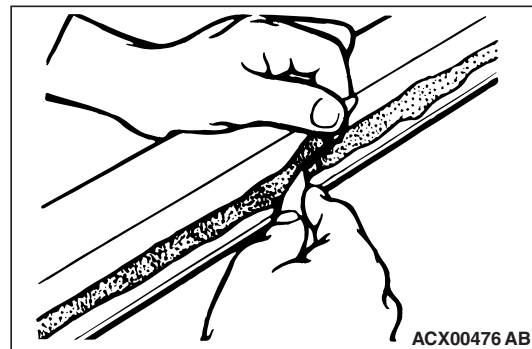
Inserting the adhesive knife too deeply into windshield adhesive may damage quarter window glass.

3. Keep the glass adhesive knife at right angles with body flange (from inside the vehicle), and put the blade at body flange. Then cut away adhesive along the body flange.



4. Make mating marks on the quarter window glass and body.
5. Use special tool glass holder (MB990480) to remove the quarter window glass.

CAUTION



- Be careful not to remove more adhesive than is necessary.
 - 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.
6. Use a knife to cut away the remaining adhesive so that the thickness is within 2 mm around the entire circumference of the body flange.
 7. Finish the flange surfaces so that they are smooth.

CAUTION

Allow the cleaned area to dry for at least three minutes. Do not touch any surface that has been cleaned.

8. When reusing the quarter window glass, remove the adhesive still adhering to the quarter window glass, and clean with isopropyl alcohol.
9. Clean the body side in the same way.

INSTALLATION SERVICE POINTS

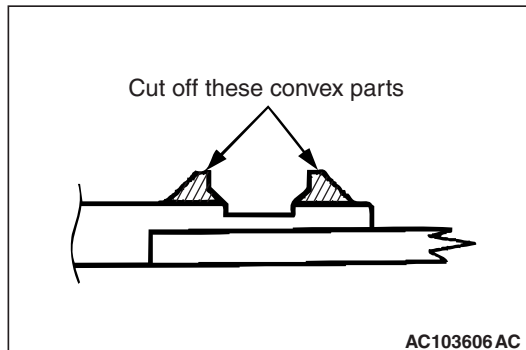
>>A<< GASKET/CLIP/DUAL LOCK FASTENER INSTALLATION

1. Carry out the following procedure to re-install quarter window glass.

CAUTION

Do not forget gasket.

- (1) Fit clips into body.



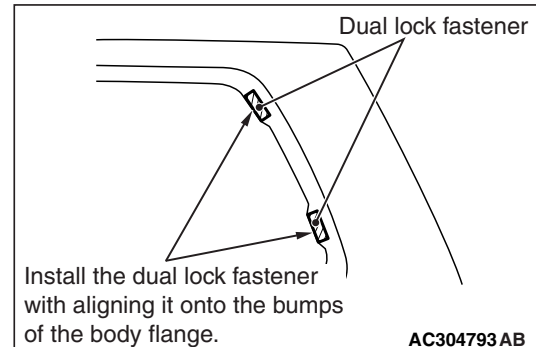
- (2) Cut away clip fitting convex on quarter window glass.

NOTE: Convex gets broken when quarter window glass is removed.

CAUTION

Leave the degreased parts for 3 or more minutes to dry well, before starting on the next step. Do not touch the degreased parts.

2. Use isopropyl alcohol to degrease the inside and outside of the quarter window glass and the body flanges.



3. Assemble the dual lock fastener according to the standard location of the body flange.
4. Assemble the dual lock fastener to the quarter window glass relative to the body flange dual lock fastener.

>>B<< QUARTER WINDOW GLASS
ASSEMBLY INSTALLATION

Remove the quarter window glass using the same procedure as for the windshield removal (Refer to [P.42-12](#)).

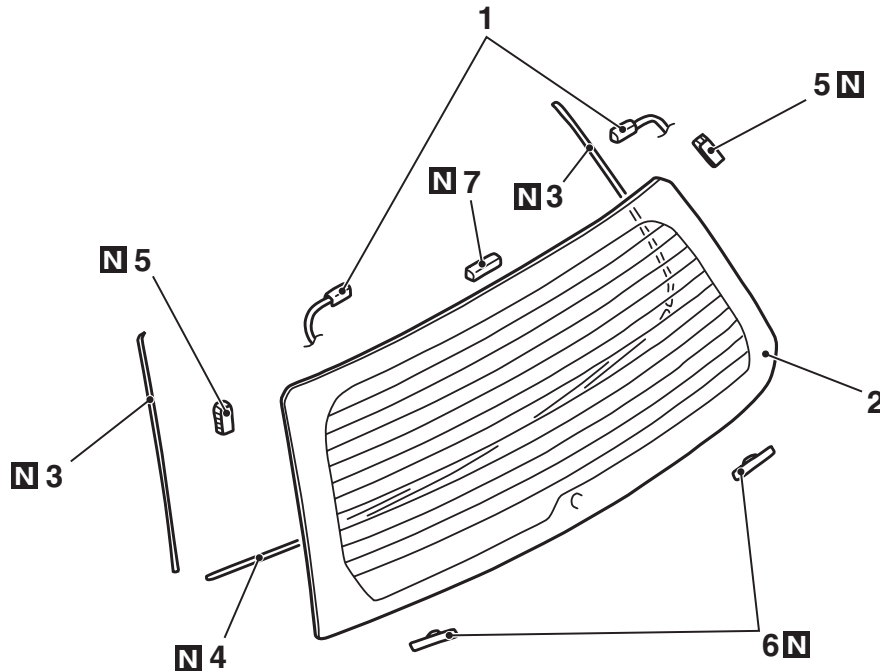
TAILGATE WINDOW GLASS

REMOVAL AND INSTALLATION

M1422003700415

Pre-removal and Post-installation Operation

- Tailgate Trim Removal and Installation (Refer to GROUP 52A [P.52A-18](#)).
- Tailgate Spoiler Assembly Removal and Installation (Refer to GROUP 51 [P.51-19](#)).
- Rear Wiper Arm Assembly Removal and Installation (Refer to GROUP 51 [P.51-29](#)).



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Apply the primer and adhesive along the fictitious lines (seal line) between each of the marks.

Section A – A

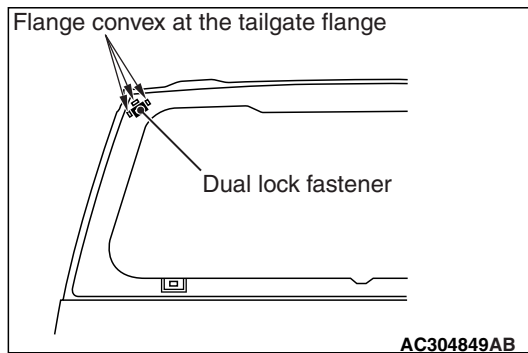
Section B – B

Section C – C

Units: mm

Adhesive: 3M ATD Part No. 8609 Super Fast Urethane Auto Glass Sealant or equivalent and 3M ATD Part No. 8608 Super Fast Urethane Primer or equivalent

AC304812 AB



>>B<< TAILGATE WINDOW GLASS INSTALLATION

Install the tailgate window glass in the same way as for the windshield installation (Refer to [P.42-12](#)).

3. Assemble the dual lock fastener according to the standard location of the tailgate flange.
4. Assemble the dual lock fastener to the quarter window glass relative to the tailgate flange dual lock fastener.

DOOR

SERVICE SPECIFICATIONS

M1423000300217

Item		Standard value
Power window operation current (Power supply voltage 14.5 ± 0.5 V, at 25°C) A		5 ± 1
Door outside handle play mm	Front door	2.3
	Rear door	0 – 3.3 (target value: 1.3)
Door inside handle play mm	Front door	9.6
	Rear door	4.6 – 13.2 (target value: 9)

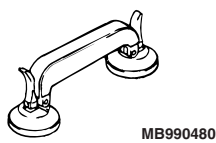
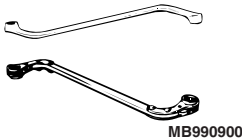
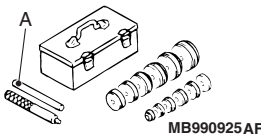
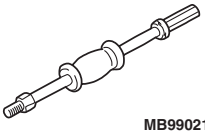

SEALANT


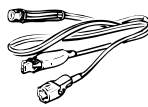
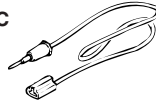

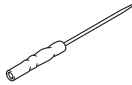
M1423000500095

Item	Specified sealant
Door waterproof film	3M ATD Part No.8633 or equivalent

SPECIAL TOOLS

M1423000600638

Tool	Number	Name	Use
 MB990480	MB990480	Window glass holder	Removal of power window regulator assembly
 MB990900	MB990900 or MB991164	Door hinge adjusting wrench	Door alignment
 MB990925 AF	MB990925 A: MB990939	Bearing and oil seal installer set A: Brass bar	Door striker adjustment
 MB990211	MB990211	Sliding hammer	
 MB990241 AE	MB990241 A: MB990243	Axle shaft puller A: Body puller	

Tool	Number	Name	Use
    MB991223AZ	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Test harness B: LED harness C: LED harness adapter D: Probe	Terminal voltage measurement A: For checking connector pin contact pressure B: For checking power supply circuit C: For checking power supply circuit D: For connecting a locally sourced tester
 MB992006	MB992006	Extra fine probe	Continuity check and voltage measurement at harness wire or connector

TROUBLESHOOTING

M1423000700442

The door system is controlled by the Smart Wiring System (SWS). For troubleshooting, refer to GROUP 54B, Troubleshooting P.54B-32 or GROUP 54C, Troubleshooting P.54C-17..

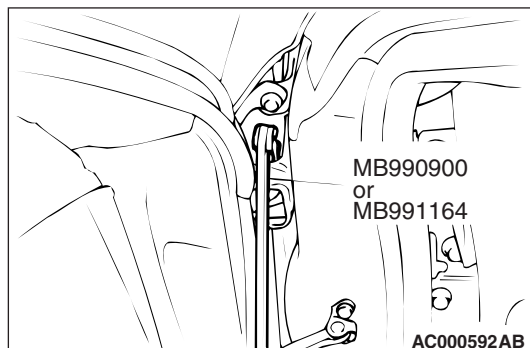
ON-VEHICLE SERVICE

DOOR FIT ADJUSTMENT

M1423001100410

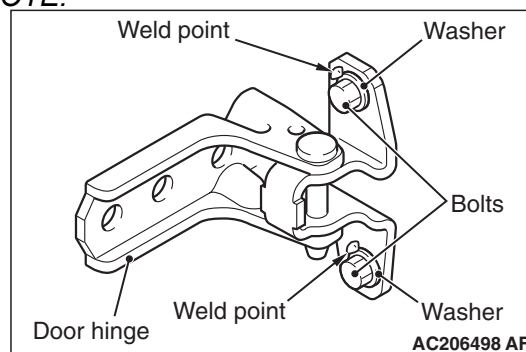
CAUTION

- Attach protection tape to the fender and door edges where the hinge is installed.
- Do not rotate special tool door adjusting wrench (MB991164) with a torque of over 98 N·m



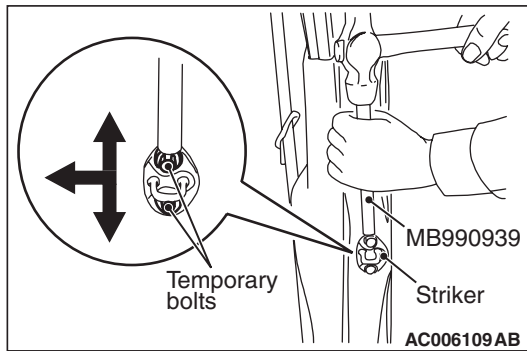
1. Use the special tool door adjusting Wrench (MB990900 or MB991164) to loosen the hinge mounting bolts on the body side, and then adjust the clearance around the door so that it is uniform on all sides.
2. If a door is not flush with its surrounding panels, loosen the door-side door hinge mounting bolts and obtain the flushness by moving the door.

NOTE:

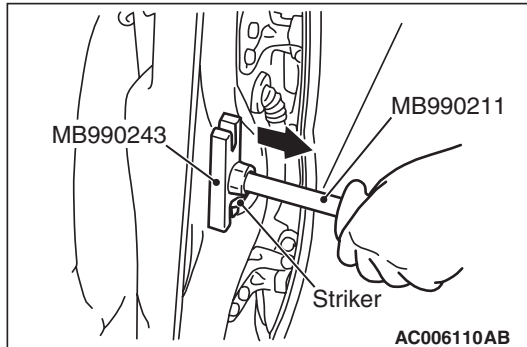


If the door hinge mounting bolt washers are welded, grind off the welding according to the procedure below beforehand.

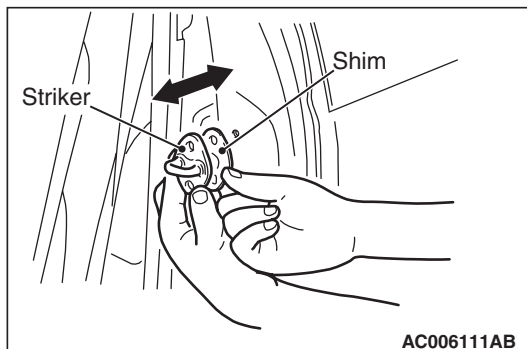
1. Remove the door hinge (Refer to P.42-27).
 2. Use a chisel or grinder to release the door hinge mounting bolt washers, which are welded to the door hinge.
 3. On completion, paint the affected area with a suitable touch-in brush to prevent corrosion.
 4. Install the door hinge (Refer to P.42-27).
3. When the door is stiff to lock and unlock



- (1) Adjustment by using the striker (toward the inside of the vehicle and vertical direction)
Install temporary bolts instead of the striker mounting bolts, and use special tool brass bar (MB990939) and a hammer to tap the bolt to the desired direction.



- (2) Adjustment by using the striker (toward the outside of the vehicle)
Use special tools slide hammer (MB990211) and body puller (MB990243) to pull the striker toward the outside of the vehicle.



- (3) Adjustment by using shims (forward and rearward)

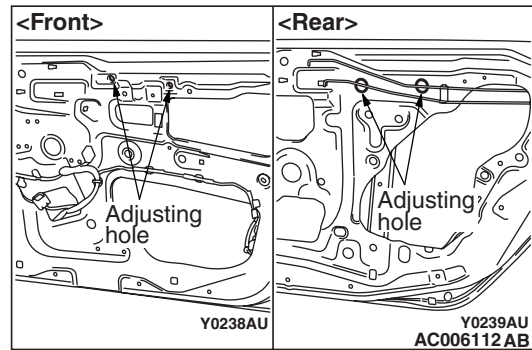
Increase or decrease the number of shims so that the striker engages with the door latch properly.

DOOR WINDOW GLASS ADJUSTMENT

M1423001000480

Check that the door glass moves while contacting the door glass channel when it is raised and lowered fully. If not, adjust the door window according to the following procedures.

1. Remove the door trim assembly (Refer to GROUP 52A P.52A-14).
2. Remove the waterproof film (Refer to P.42-36).
3. Loosen the door glass mounting screw via the adjusting hole with the door window glass fully closed, then lower the window glass a little.



4. Fully close the door window glass again and tighten the door glass mounting screw firmly via the adjusting hole.

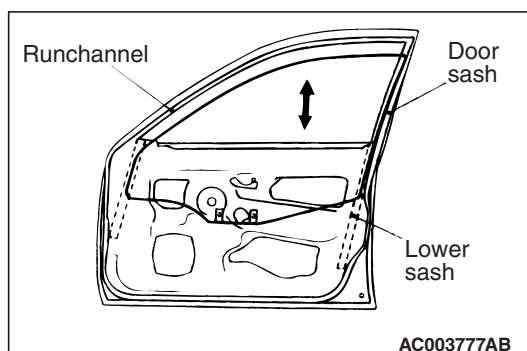
GLASS SLIDING MECHANISM CHECK AND ADJUSTMENT

M1429000900239

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

1. Remove the door trim assembly (Refer to GROUP 52A P.52A-14).
2. Remove the waterproof film (Refer to P.42-36).
3. Remove the window regulator assembly from the door window glass, and then raise and lower the door window glass by hand to check the operation force.

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



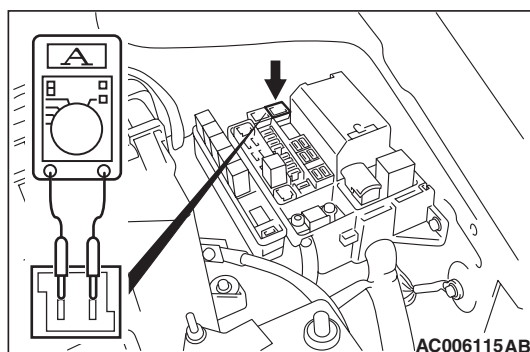
4. If the door window glass does not move up and down smoothly, check or repair the following points.
 - Check the installation condition of the runchannel.
 - Repair any twisting in the door sash.
 - Check the installation condition of the lower sash or the centre sash.

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

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

POWER WINDOW OPERATING CURRENT CHECK

M1429001100399



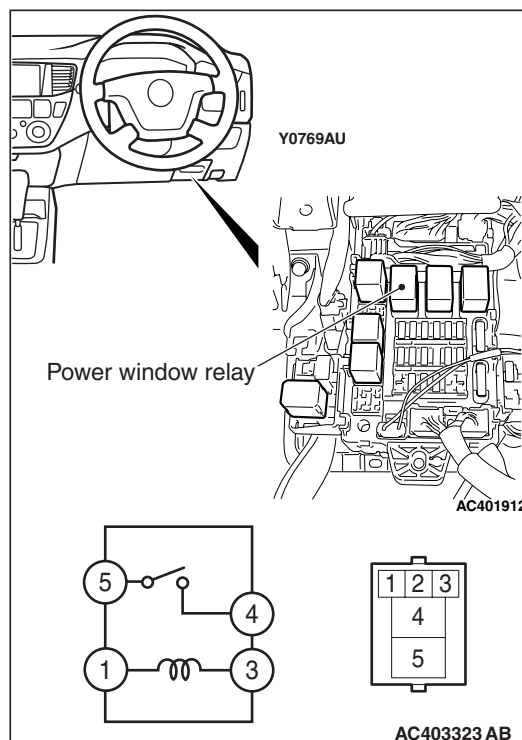
1. Remove the power window fuse and connect an ammeter as shown in the illustration.
2. When the power window switch is pressed to the "UP" position, a large amount of current flows at the time the window starts to close and when it is fully closed, so measure the operation current in the interval between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

Standard value (A): $5 \pm 1A$ (Power supply voltage $14.5 \pm 0.5V$, $25^\circ C$)

3. If the operation current is outside the standard value, refer to [P.42-24](#).

POWER WINDOW RELAY CHECK

M1429001800309



Battery voltage	Tester connection	Specified condition
Not applied	4 -5	Open circuit
<ul style="list-style-type: none"> • Connect terminal No. 3 and the negative battery terminal. • Connect terminal No. 1 and the positive battery terminal. 	4 -5	Less than 2 ohms

POWER WINDOW CHECK

M1429004400399

Check the system as described below. If the system does not work, carry out troubleshooting. Refer to GROUP 54B, Troubleshooting [P.54B-32](#) or GROUP 54C, Troubleshooting [P.54C-17](#).

- Operate the power window switch of each seat to check that the power window works.
- Turn on the power window lock switch of the power window main switch, and operate the front passenger's and rear power window sub switches to check that the power windows do not work.

- Turn on the power window lock switch of the power window main switch, and operate the power window main switch to check that each power window operates.

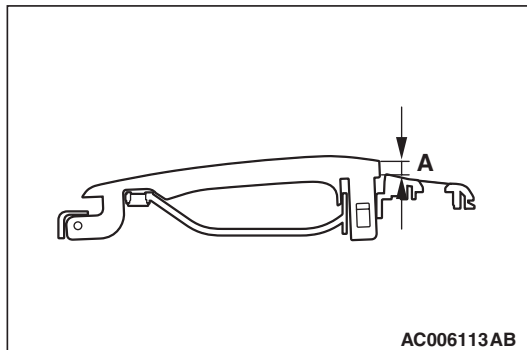
CENTRAL DOOR LOCKING SYSTEM INSPECTION

M1427001100360

Check that the central door locking system works by operating the key cylinders (driver's and passenger's door) and the inside lock knob (driver's door). Carry out troubleshooting if the system does not activate. Refer to GROUP 54B, Troubleshooting [P.54B-32](#) or GROUP 54C, Troubleshooting [P.54C-17](#).

DOOR OUTSIDE HANDLE PLAY CHECK

M1423001600415



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

Standard value (A):

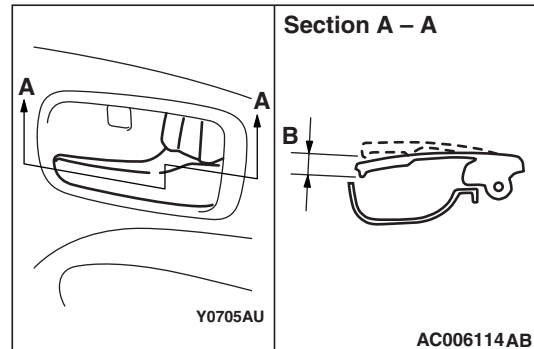
Front door: 2.3 mm

Rear door: 0 – 3.3 mm (target value: 1.3 mm)

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

DOOR INSIDE HANDLE PLAY ADJUSTMENT

M1423001500463



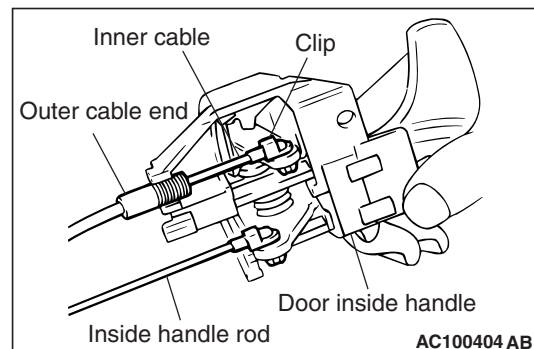
1. Check that the door inside handle play is within the standard value range.

Standard value (B):

Front door: 9.6 mm

Rear door: 4.6 – 13.2 mm (target value: 9 mm)

2. If the door inside handle play is outside the standard value range.
3. Remove the door trim assembly (Refer to GROUP 52A [P.52A-14](#)).
4. Remove the waterproof film (Refer to [P.42-36](#)).



5. Adjust the door inside handle play with the outer cable end connecting the door inside handle and inside lock cable.

DOOR ASSEMBLY

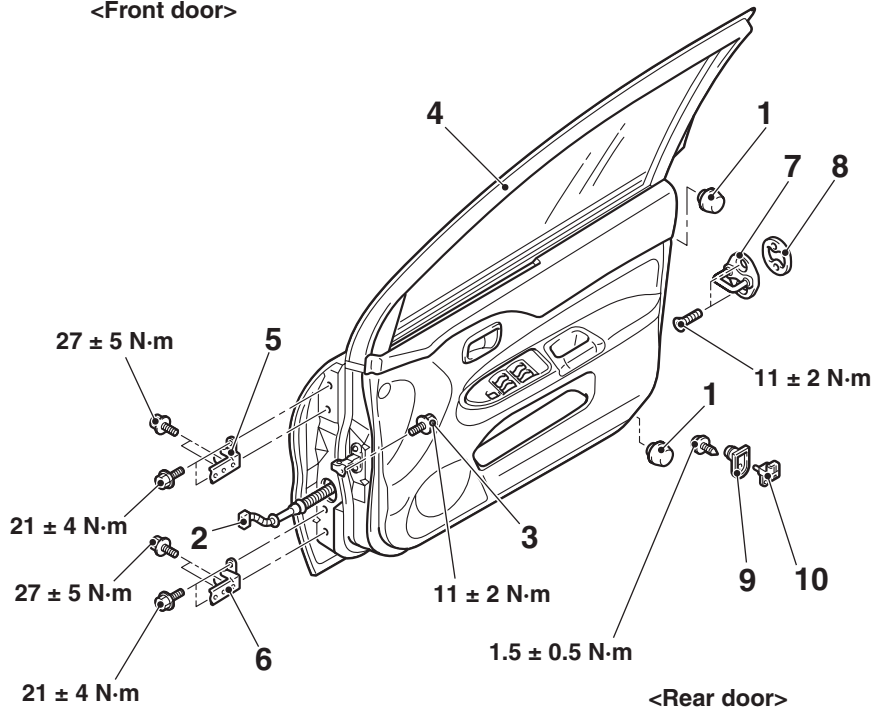
REMOVAL AND INSTALLATION

M1423002200410

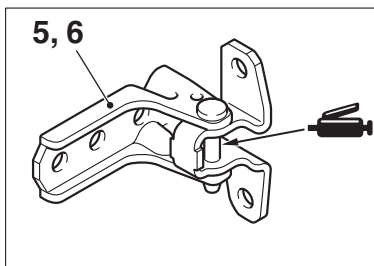
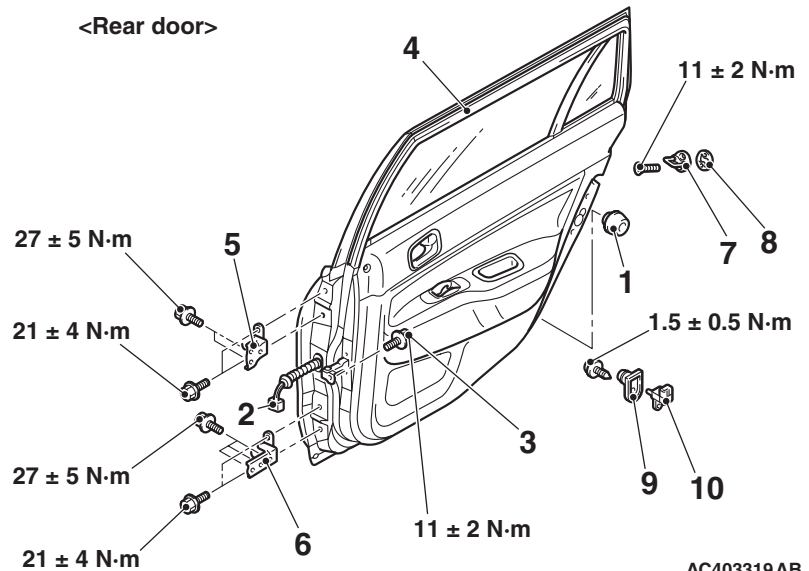
Post-installation Operation

- Door Fit Adjustment (Refer to P.42-23.)

<Front door>



<Rear door>



Removal

- Damper
- Door assembly removal steps
- Harness connector
- Door check connecting bolt
- Door upper hinge
- Door lower hinge

Striker removal steps

>>A<<

- Striker

- Striker shim

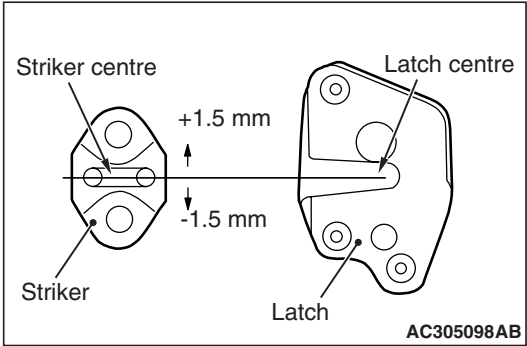
Door switch removal steps

- Door switch cap

- Door switch

AC403319AB

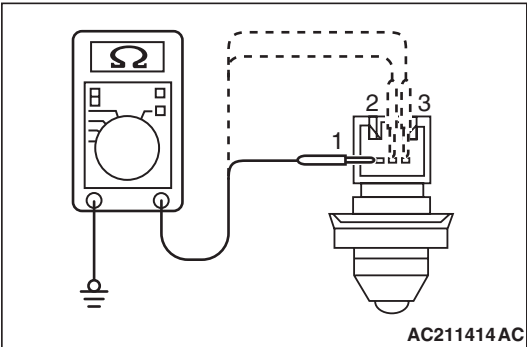
INSTALLATION SERVICE POINT
>>A<< STRIKER INSTALLATION



Align the centre of the striker and latch within ± 1.5 mm, and install.

INSPECTION
DOOR SWITCH CHECK

M1423006000452



Switch position	Tester connection	Specified condition
Released (ON)	1 –switch body, 2 –switch body, 3 –switch body	Less than 2 ohms
Depressed (OFF)	1 –switch body, 2 –switch body, 3 –switch body	Open circuit

DOOR GLASS AND REGULATOR

REMOVAL AND INSTALLATION

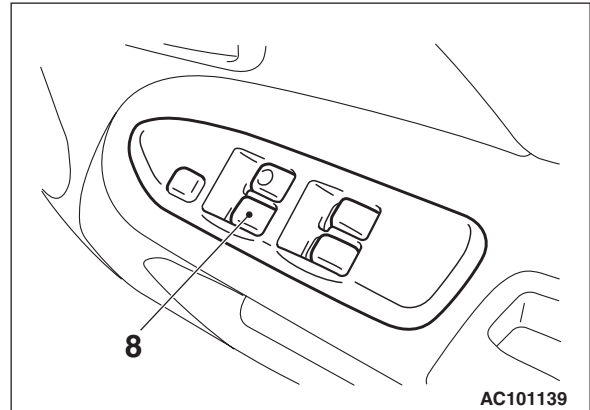
M1429001300605

Pre-removal Operation

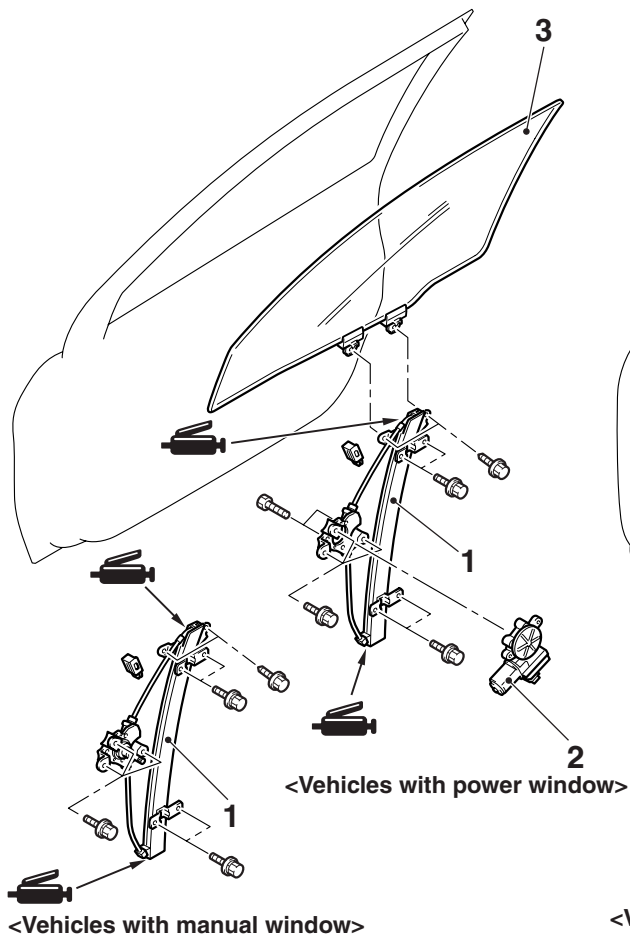
- Door Trim Removal (Refer to GROUP 52A P.52A-14.)
- Waterproof Film Removal (Refer to P.42-36.)

Post-installation Operation

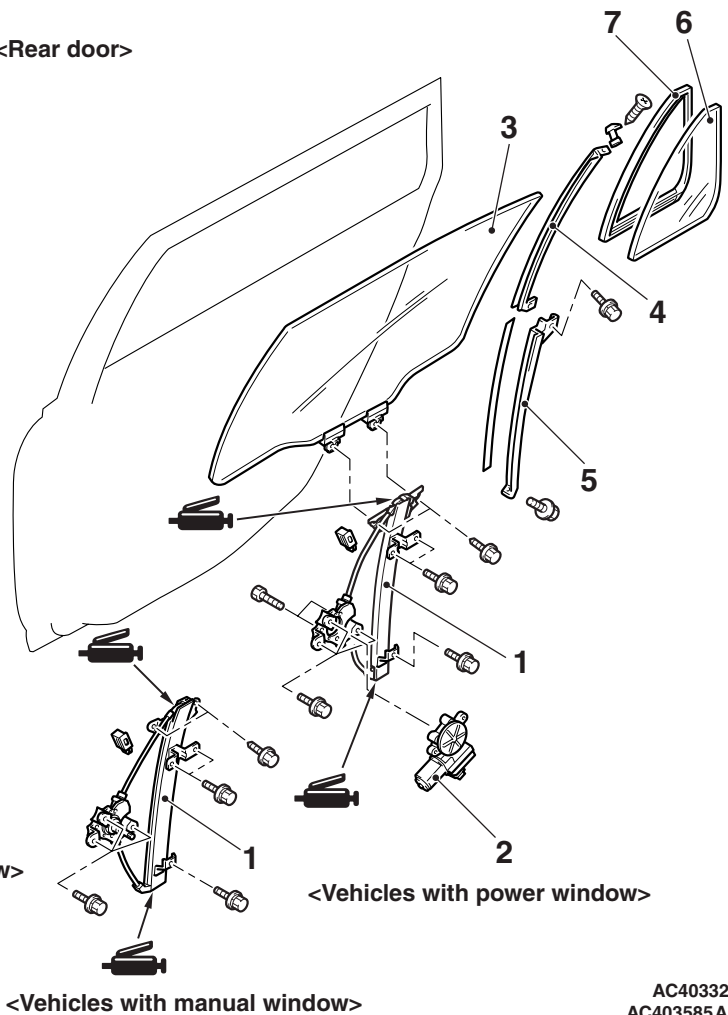
- Door Window Glass Adjustment (Refer to P.42-24.)
- Waterproof Film Installation (Refer to P.42-36.)
- Door Trim Installation (Refer to GROUP 52A P.52A-14.)



<Front door>



<Rear door>



AC403324
AC403585 AB

Door window regulator assembly removal steps

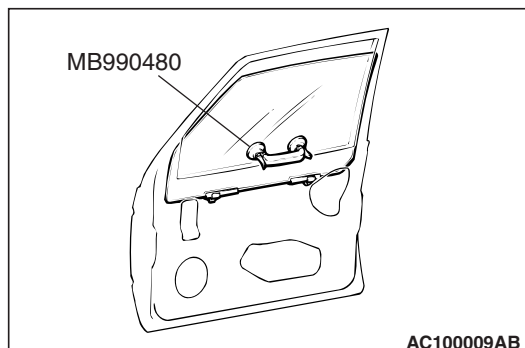
- <<A>> >>A<<
1. Window regulator assembly
 2. Power window motor assembly
- Door window glass removal steps**
- Window glass runchannel (Refer to P.42-36.)
3. Door window glass
- Stationary window glass removal steps**
- Window glass runchannel (Refer to P.42-36.)
 - Door beltline inner weatherstrip (Refer to P.42-36.)
- <>
3. Door window glass
 4. Centre sash upper
 5. Centre sash lower
 6. Stationary window glass
 7. Stationary window weatherstrip
- Power window switch removal**
8. Power window main switch <driver's side>, power window sub switch <passenger's side and rear door's side> (Refer to GROUP 52A, Door Trim P.52A-14.)

REMOVAL SERVICE POINTS**<<A>> WINDOW REGULATOR ASSEMBLY REMOVAL**

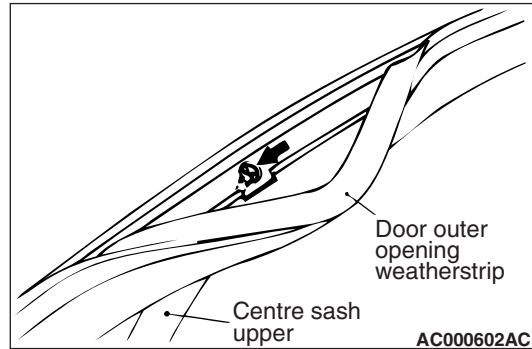
1. Remove the door window glass installation bolts.

⚠ CAUTION

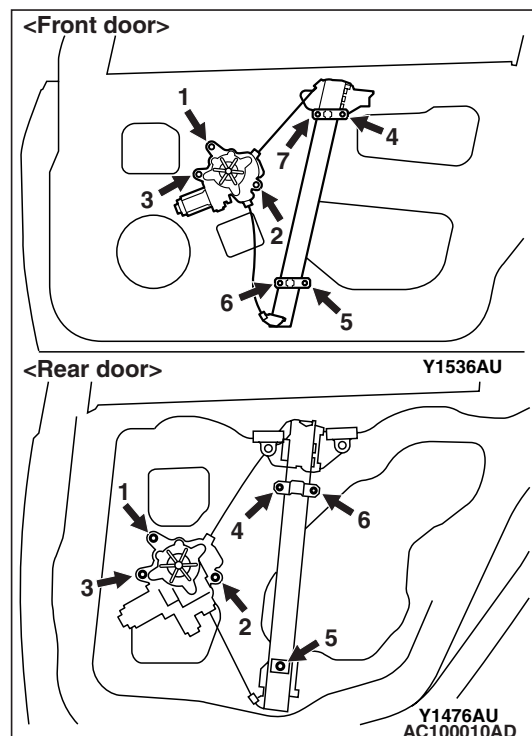
If film or others are adhered to the door window glass, attach special tool window glass holder (MB990480) to the outside of the glass to prevent the film from peeling off.



2. Lift the door window glass, and attach special tool window glass holder (MB990480) to the glass as shown to prevent the glass from falling.
3. Remove the window regulator assembly.

<> CENTRE SASH UPPER REMOVAL

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

INSTALLATION SERVICE POINTS**>>A<< WINDOW REGULATOR ASSEMBLY INSTALLATION**

When installing the window regulator assembly, tighten the bolts to the specified torque in the order shown.

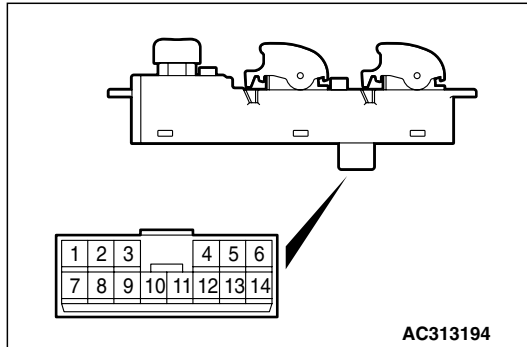
INSPECTION

M1429001400464

POWER WINDOW SWITCH CONTINUITY CHECK

Remove the power window switch (Refer to GROUP 52A, Door Trim P.52A-14).

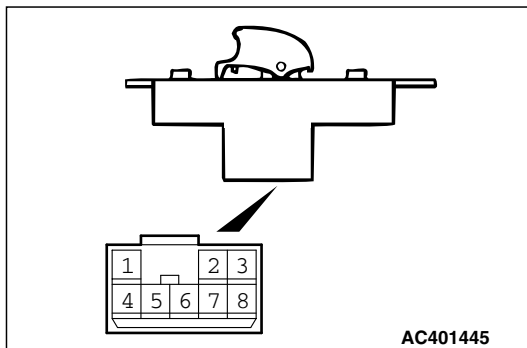
<POWER WINDOW MAIN SWITCH>



Switch position		Tester connection	Specified condition
FRONT (LH)	UP	2 -9*, 7 -10	Less than 2 ohms
	OFF	2 -7*, 2 -9*	
	DOWN	2 -7*, 9 -10	
FRONT (RH)	UP	2 -14, 10 -12	
	OFF	2 -12, 2 -14	
	DOWN	2 -12, 10 -14	
REAR (LH)	UP	1 -10, 2 -3*	
	OFF	1* -2, 2 -3*	
	DOWN	1* -2, 3 -10	
REAR (RH)	UP	2 -6*, 4 -10	
	OFF	2 -4*, 2 -6*	
	DOWN	2 -4*, 6 -10	

NOTE: *: Set the window lock switch to UNLOCK position.

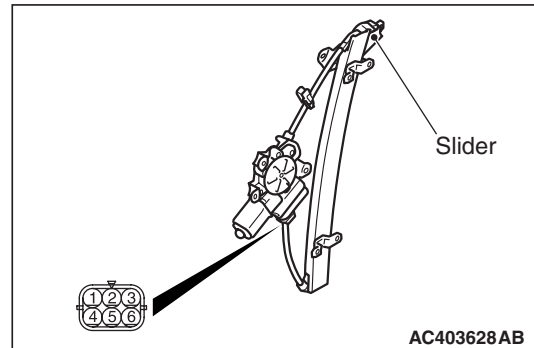
<POWER WINDOW SUB SWITCH>



Switch position	Tester connection	Specified condition
UP	4 -5, 6 -7	Less than 2 ohms
OFF	4 -5, 7 -8	
DOWN	4 -6, 7 -8	

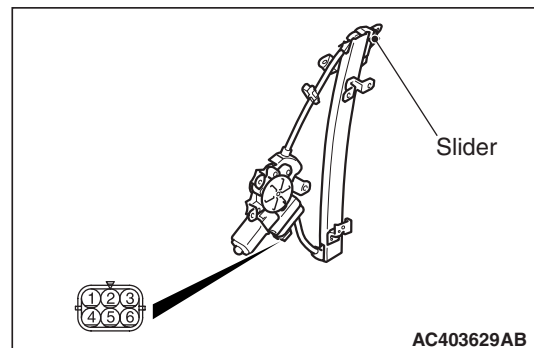
POWER WINDOW MOTOR CONTINUITY CHECK

<FRONT DOOR>



Tester connection	Slider position
<ul style="list-style-type: none"> Connect terminal No. 1 and the negative battery terminal. Connect terminal No. 4 and the positive battery terminal. 	UP
<ul style="list-style-type: none"> Connect terminal No. 4 and the negative battery terminal. Connect terminal No. 1 and the positive battery terminal. 	DOWN

<REAR DOOR>



Tester connection	Slider position
<ul style="list-style-type: none">• Connect terminal No. 1 and the negative battery terminal.• Connect terminal No. 4 and the positive battery terminal.	UP
<ul style="list-style-type: none">• Connect terminal No. 4 and the negative battery terminal.• Connect terminal No. 1 and the positive battery terminal.	DOWN

POWER WINDOW MOTOR CHECK

1. Connect a battery directly to the motor terminals and check that the motor runs smoothly.
2. Check that the motor runs in the opposite direction when the battery is connected with the polarity reversed.
3. If defect is found, replace the window regulator as an assembly.

DOOR HANDLE AND LATCH

REMOVAL AND INSTALLATION

M1423004600607

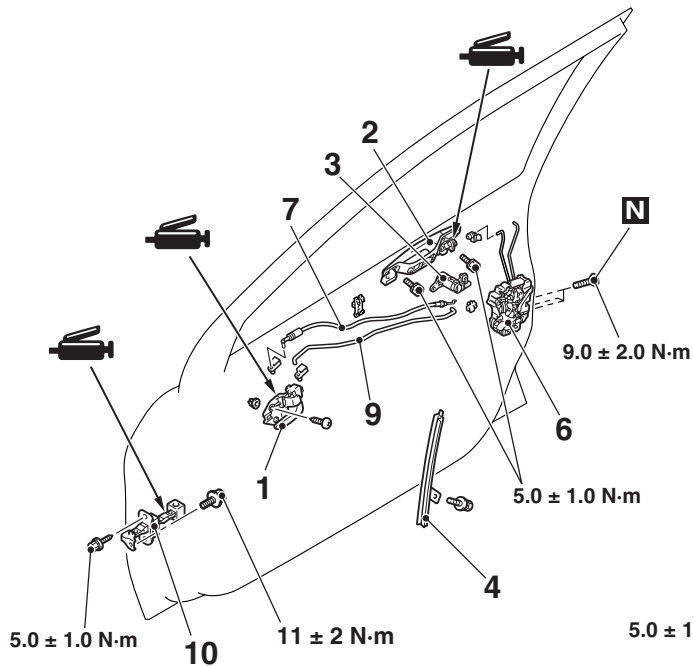
Pre-removal Operation

- Door Trim Removal (Refer to GROUP 52A P.52A-14.)

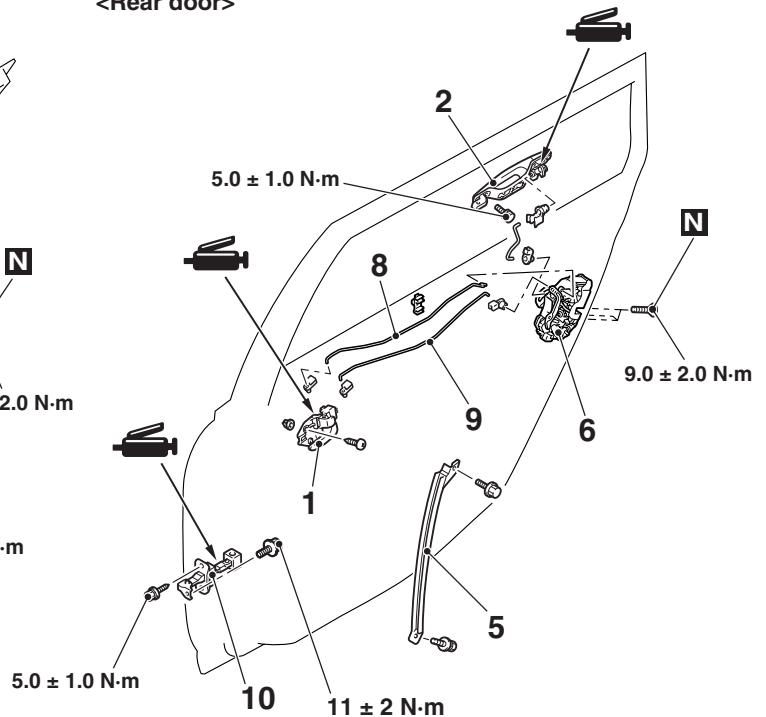
Post-installation Operation

- Door Inside Handle Play Check (Refer to P.42-26.)
- Door Outside Handle Play Check (Refer to P.42-26.)
- Door Trim Installation (Refer to GROUP 52A P.52A-14.)

<Front door>



<Rear door>



AC305110AC

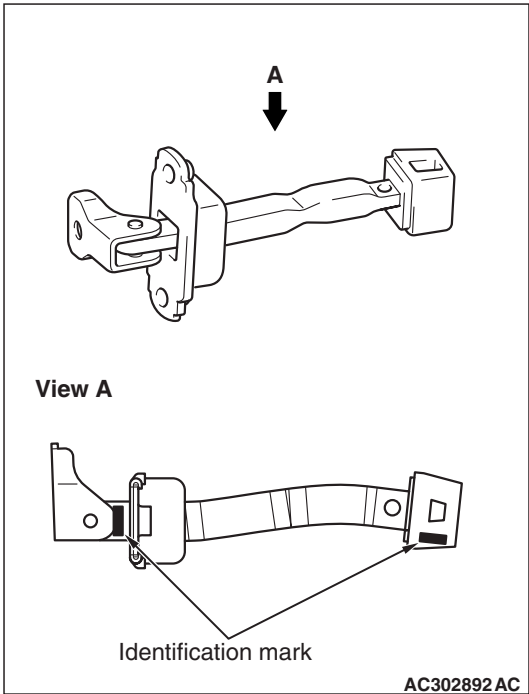
Door handle and door latch assembly removal steps

- >>C<< 1. Door inside handle
- Waterproof film (Refer to P.42-36.)
2. Door outside handle
3. Door lock key cylinder
- >>B<< 4. Rear lower sash <Front door>
5. Centre sash lower <Rear door>
6. Door latch assembly

Door handle and door latch assembly removal steps

7. Inside lock cable <Front door>
8. Inside lock rod <Rear door>
9. Inside handle rod
- Door check removal steps
- Waterproof film (Refer to P.42-36.)
- >>A<< 10. Door check

INSTALLATION SERVICE POINTS
>>A<< DOOR CHECK INSTALLATION



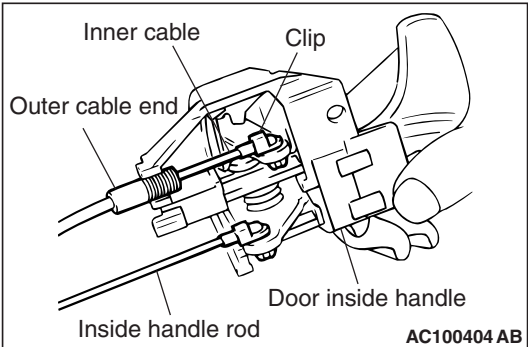
Install the door check so that the identification mark faces upwards.

Item		Identification mark
Front Door	Left door	39L
	Right door	39R
Rear Door	Left door	40L
	Right door	40R

>>B<< REAR LOWER SASH
INSTALLATION <FRONT DOOR>

Securely insert the rear lower sash into the window rear sash (door).

>>C<< DOOR INSIDE HANDLE
INSTALLATION

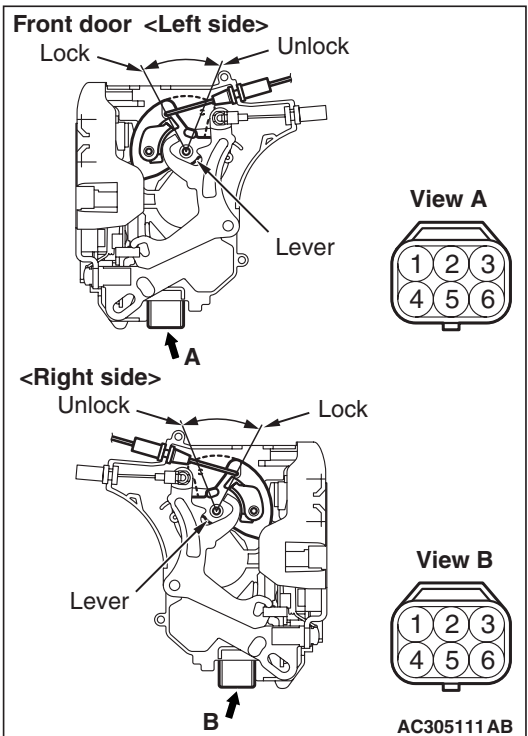


1. Install the inside lock cable to the door inside handle as follows:
 - (1) Install the inner cable end in the inside lock cable to the clip in the door inside handle.
 - (2) Turn the inside lock knob to the door lock position.
 - (3) Install the outer cable end to the door inside handle securely.
 - (4) Install the clip to the inner cable.
2. Install the inside handle rod to the door inside handle.
3. Install the door inside handle to the door.

INSPECTION

M1423004700790

FRONT DOOR LOCK ACTUATOR CHECK



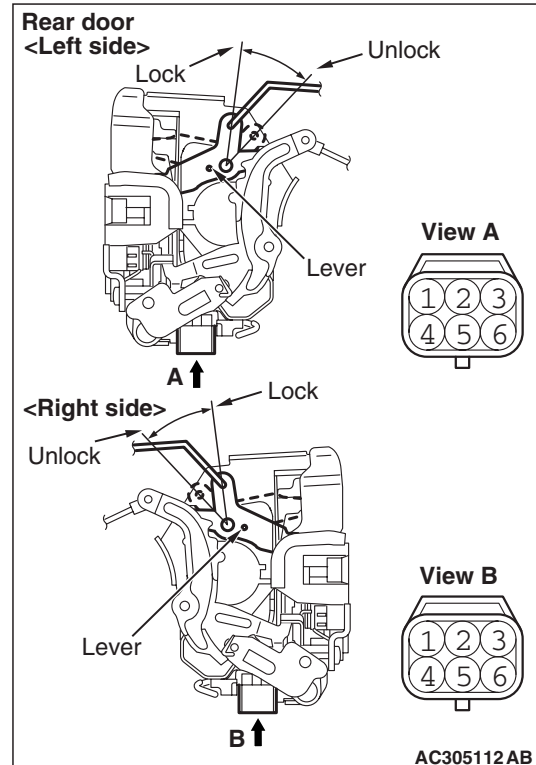
ACTUATOR OPERATION CHECK

Lever position	Battery connection	Lever operation
At the "LOCK" position	<ul style="list-style-type: none"> Connect terminal No. 4 and the negative battery terminal. Connect terminal No. 6 and the positive battery terminal. 	The lever moves from the "LOCK" position to the "UNLOCK" position.
At the "UNLOCK" position	<ul style="list-style-type: none"> Connect terminal No. 6 and the negative battery terminal. Connect terminal No. 4 and the positive battery terminal. 	The lever moves from the "UNLOCK" position to the "LOCK" position.

ACTUATOR SWITCH CHECK <DRIVER'S SIDE>

Lever position	Tester connection	Specified condition
At the "LOCK" position	1 - 3	Less than 2 ohms
At the "UNLOCK" position	2 - 3	Less than 2 ohms

REAR DOOR LOCK ACTUATOR CHECK



ACTUATOR OPERATION CHECK

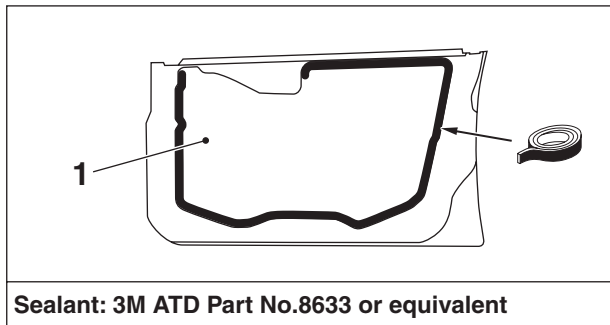
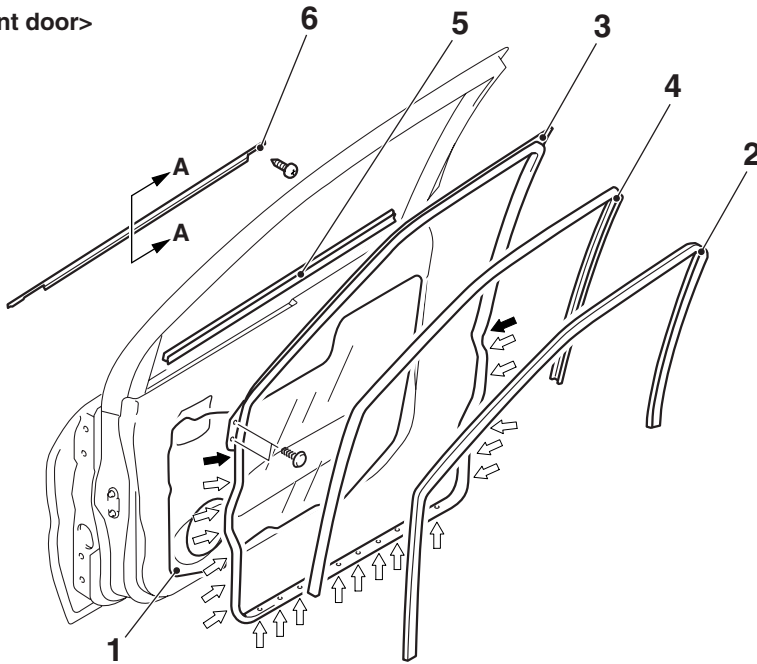
Lever position	Battery connection	Lever operation
At the "LOCK" position	<ul style="list-style-type: none"> Connect terminal No. 4 and the negative battery terminal. Connect terminal No. 6 and the positive battery terminal. 	The lever moves from the "LOCK" position to the "UNLOCK" position.
At the "UNLOCK" position	<ul style="list-style-type: none"> Connect terminal No. 6 and the negative battery terminal. Connect terminal No. 4 and the positive battery terminal. 	The lever moves from the "UNLOCK" position to the "LOCK" position.

WINDOW GLASS RUNCHANNEL AND DOOR OPENING WEATHERSTRIP

REMOVAL AND INSTALLATION

M1423003100632

<Front door>



Sealant: 3M ATD Part No.8633 or equivalent

Waterproof film removal steps

- Front door trim and speaker (Refer to GROUP 52A [P.52A-14.](#))

1. Waterproof film

Door inner opening weatherstrip removal steps

- Scuff plate, centre pillar lower trim and cowl side trim (Refer to GROUP 52A, Trims [P.52A-11.](#))

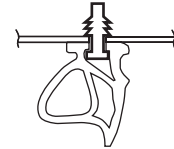
2. Door inner opening weatherstrip (Body side)

Door outer opening weatherstrip removal steps

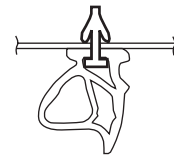
- Front door check mounting bolt (Door side) (Refer to [P.42-27.](#))

<<A>> >>A<< 3. Door outer opening weatherstrip

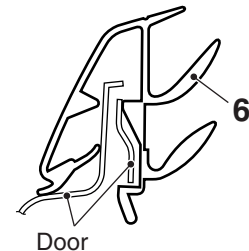
←: Sectional view of clip position



←: Sectional view of clip position



Section A – A



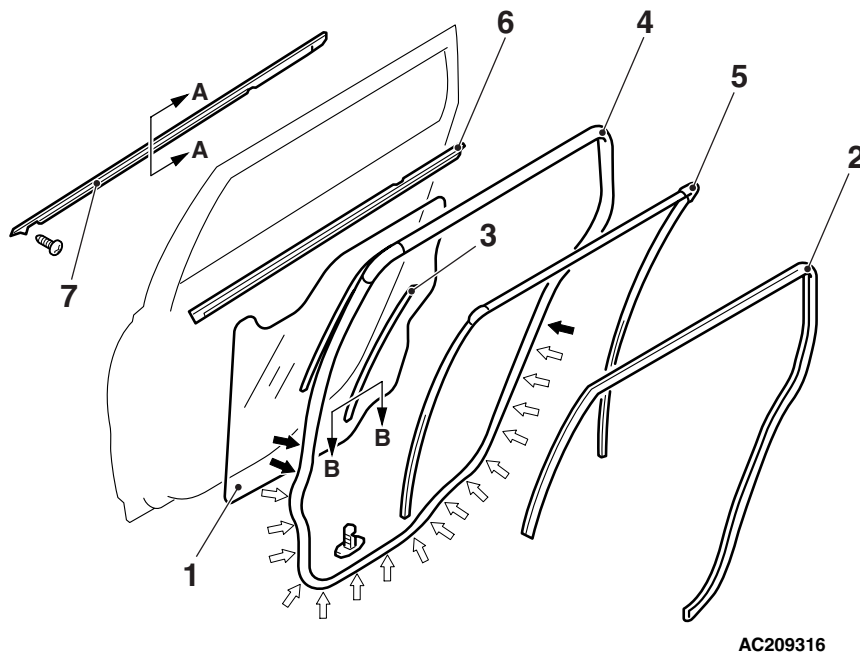
Door

AC304409AC

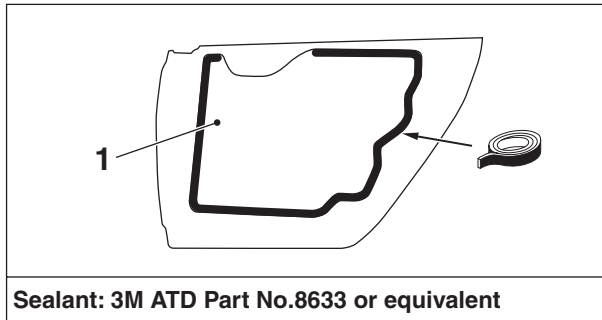
Door window glass runchannel removal

4. Door window glass runchannel
- Door beltline inner weatherstrip removal steps**
 - Front door trim (Refer to GROUP 52A [P.52A-14.](#))
5. Door beltline inner weatherstrip
- Door beltline moulding removal steps**
 - Door mirror assembly (Refer to GROUP 51 [P.51-34.](#))
 - Door window glass (Refer to [P.42-29.](#))
6. Door beltline moulding

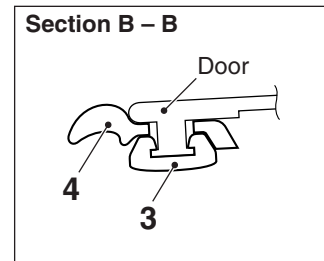
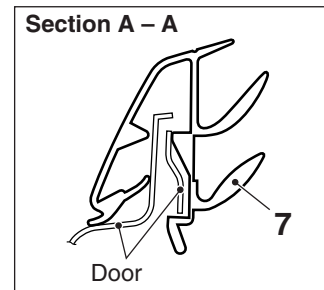
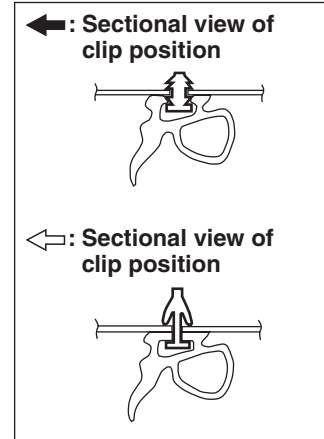
<Rear door>



AC209316



Sealant: 3M ATD Part No.8633 or equivalent



AC403325 AB

Waterproof film removal steps

- Rear door trim (Refer to GROUP 52A [P.52A-14.](#))

1. Waterproof film

Door inner opening weatherstrip removal steps

- Scuff plate and centre pillar lower trim (Refer to GROUP 52A, Trims [P.52A-11.](#))

2. Door inner opening weatherstrip (Body side)

Door outer opening weatherstrip removal steps

- Rear door check mounting bolt (Door side) (Refer to [P.42-27.](#))

3. Retainer weatherstrip

4. Door outer opening weatherstrip

Door window glass runchannel removal

5. Door window glass runchannel

Door beltline inner weatherstrip removal steps

- Rear door trim (Refer to GROUP 52A, [P.52A-14.](#))

- Centre sash upper (Refer to [P.42-29.](#))

6. Door beltline inner weatherstrip

Door beltline moulding removal steps

- Door window glass (Refer to [P.42-29.](#))

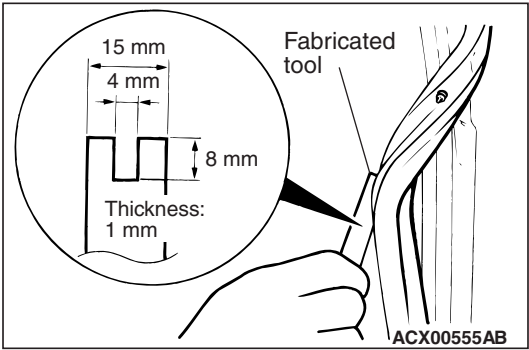
- Stationary glass (Refer to [P.42-29.](#))

7. Door beltline moulding

<<A>>

>>A<<

REMOVAL SERVICE POINT
<<A>> DOOR OUTER OPENING WEATH-
ERSTRIP REMOVAL



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

INSTALLATION SERVICE POINT
>>A<< DOOR OUTER OPENING WEATH-
ERSTRIP INSTALLATION

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

Applicable side	Identification colour
Right door	Pink
Left door	Natural (White)

TAILGATE

SERVICE SPECIFICATIONS

M1421000300288

Item	Standard value
Tailgate handle play (mm)	2.3 –5.9



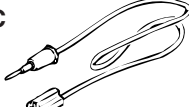
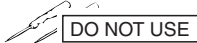
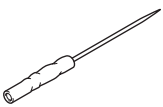
SEALANTS

M1424000500098

Item	Specified sealant
Tailgate waterproof film	3M ATD Part No.8633 or equivalent
Tailgate hinge	3M ATD Part No.8531 Heavy drip check sealer, 3M ATD Part No.8646 Automotive joint and seam sealer or equivalent

SPECIAL TOOL

M1424000600396

Tool	Number	Name	Use
<p>A</p>  <p>B</p>  <p>C</p>  <p>D</p>  <p style="text-align: center;">MB991223AZ</p>	<p>MB991223</p> <p>A: MB991219</p> <p>B: MB991220</p> <p>C: MB991221</p> <p>D: MB991222</p>	<p>Harness set</p> <p>A: Test harness</p> <p>B: LED harness</p> <p>C: LED harness adapter</p> <p>D: Probe</p>	<p>Terminal voltage measurement</p> <p>A: For checking connector pin contact pressure</p> <p>B: For checking power supply circuit</p> <p>C: For checking power supply circuit</p> <p>D: For connecting a locally sourced tester</p>
 <p style="text-align: center;">MB992006</p>	MB992006	Extra fine probe	Continuity check and voltage measurement at harness wire or connector

TROUBLESHOOTING

M1424000700304

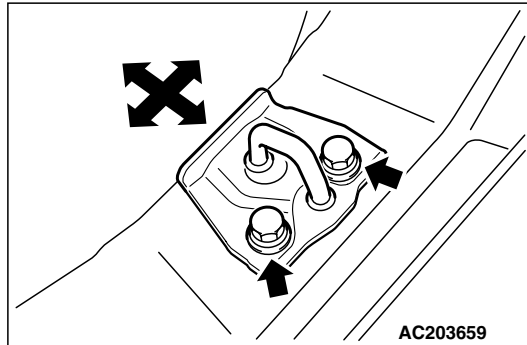
The tailgate system is controlled by the Smart Wiring System (SWS). For troubleshooting, refer to GROUP 54B, Troubleshooting [P.54B-32](#) or GROUP 54C, Troubleshooting [P.54C-17](#).

ON-VEHICLE SERVICE

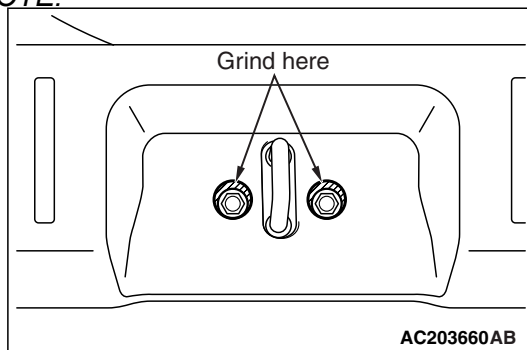
TAILGATE FIT ADJUSTMENT

M1424000900137

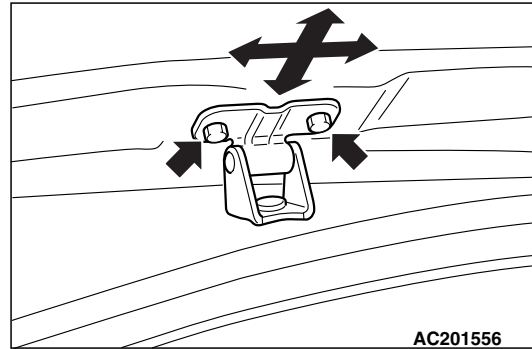
1. If the striker and latch mesh badly, replace the striker and striker installation bolts with replacement parts (striker: MR523105, striker installation bolt: MU000474).



2. Move the replaced striker forward and backward or to the left and right to adjust, after bolt the striker temporarily.
3. After adjusting, tighten the bolts to the specified torque [$24 \pm 4 \text{ N} \cdot \text{m}$].

NOTE:

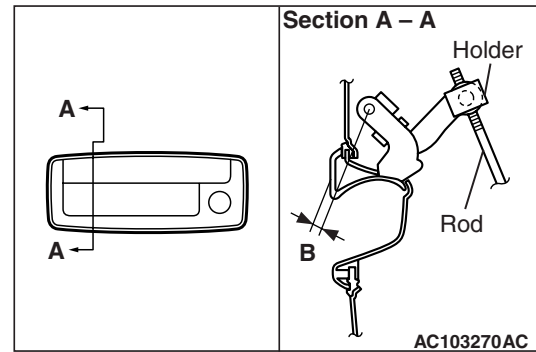
When the bolt head interferes with the rear end trim, rasp the interference area with a round file.



4. If uneven clearance is present between tailgate and body, reposition the hinge to adjust the clearance.

TAILGATE HANDLE PLAY CHECK

M1424002400224



1. Check the tailgate handle play.
Standard value (B): 2.3 – 5.9 mm
2. If it deviates from the standard value, remove the lower tailgate trim (Refer to GROUP 52A [P.52A-18](#)) and waterproof film (Refer to [P.42-41](#)).
3. Remove the holder from the tailgate handle and adjust according to the tailgate latch rod and tailgate handle connection position.

TAILGATE

REMOVAL AND INSTALLATION

M1424001100372

CAUTION

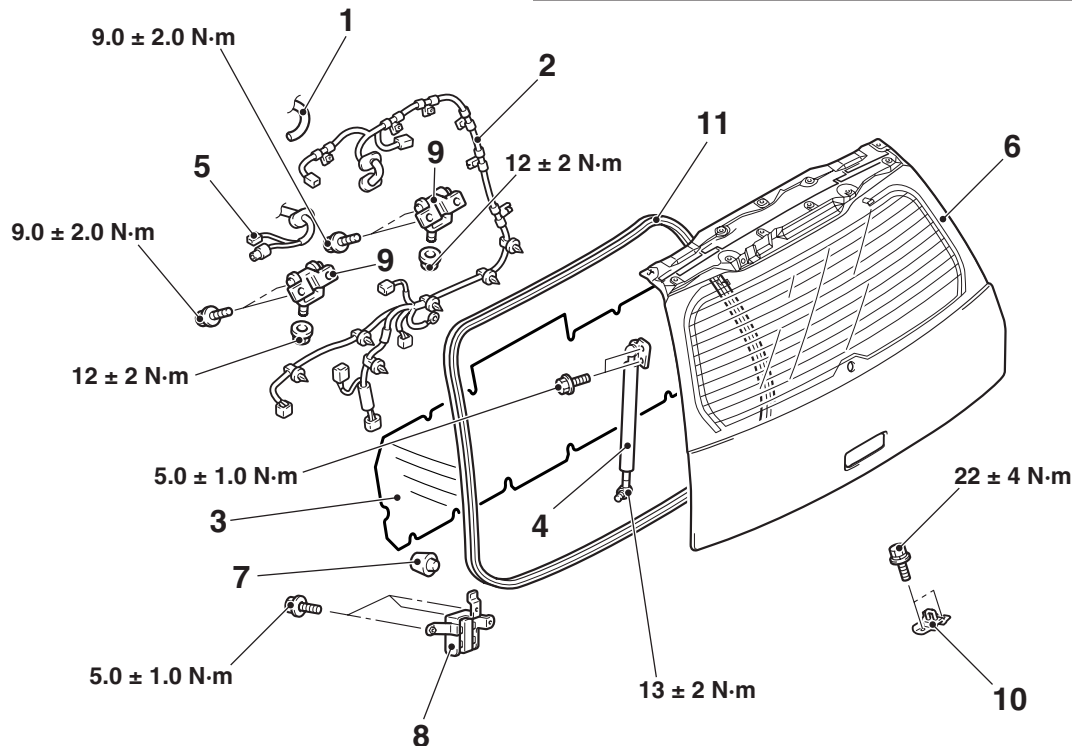
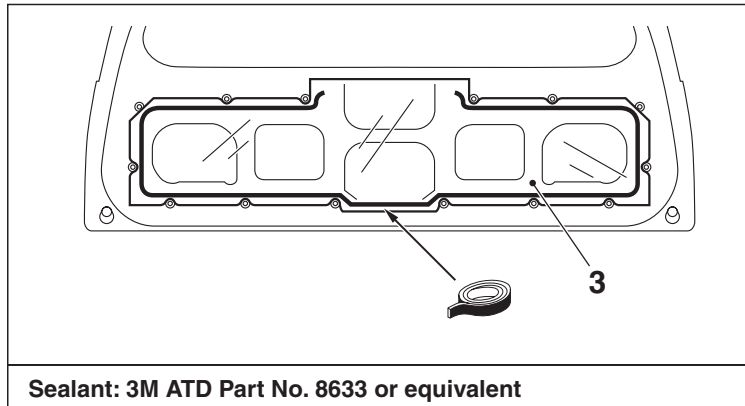
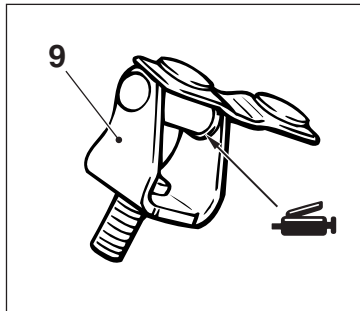
- Do not disassemble or throw the tailgate gas spring into fire.
- Punch a hole in the gas spring before disposal to release the gas inside.
- Ensure the tailgate gas spring piston rod does not come into contact with foreign material.

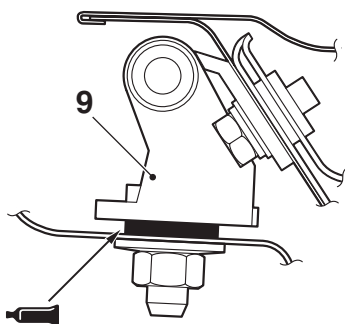
Pre-removal Operation

- Tailgate Spoiler Assembly Removal (Refer to GROUP 51 P.51-19).
- Tailgate Trim Assembly Removal (Refer to GROUP 52A P.52A-18).
- Rear Wiper Motor Removal (Refer to GROUP 51 P.51-29).

Post-installation Operation

- Tailgate Fit Adjustment (Refer to P.42-40).
- Rear Wiper Motor Installation (Refer to GROUP 51 P.51-29).
- Tailgate Trim Assembly Installation (Refer to GROUP 52A P.52A-18).
- Tailgate Spoiler Assembly Installation (Refer to GROUP 51 P.51-19).





Adhesive: 3M ATD Part No.8531 Heavy drip check sealer, 3M ATD Part No.8646 Automotive joint and seam sealer or equivalent

AC305322AC

Tailgate assembly removal steps

1. Rear washer hose
2. Tailgate wiring harness
3. Waterproof film
4. Tailgate gas spring
5. Antenna feeder cable
6. Tailgate assembly
7. Dumper
8. Dynamic damper
- Headlining (Refer to GROUP 52A, P.52A-20.)
9. Tailgate hinge

Striker removal steps

- Rear end trim (Refer to GROUP 52A, P.52A-11.)

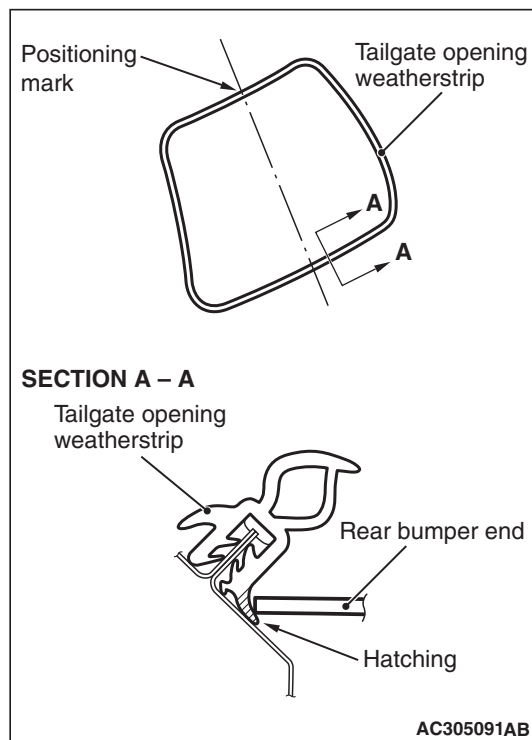
>>B<< 10. Striker

Tailgate opening weatherstrip removal

4. Tailgate gas spring
- >>A<< 11. Tailgate opening weatherstrip

INSTALLATION SERVICE POINT

>>A<< TAILGATE OPENING WEATHER-STRIP INSTALLATION

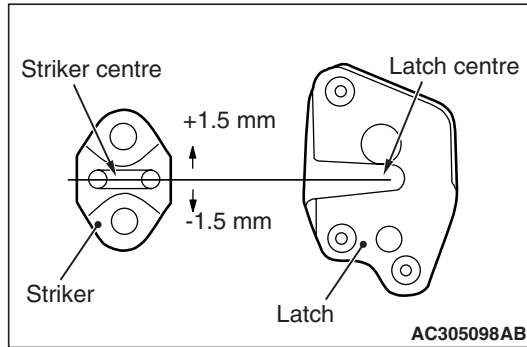


AC305091AB

Assemble so the tailgate opening weatherstrip marking is at the centre of the body.

>>B<< STRIKER INSTALLATION

Assemble so the distance between the centre of the striker and centre of the latch is ± 1.5 mm or less.



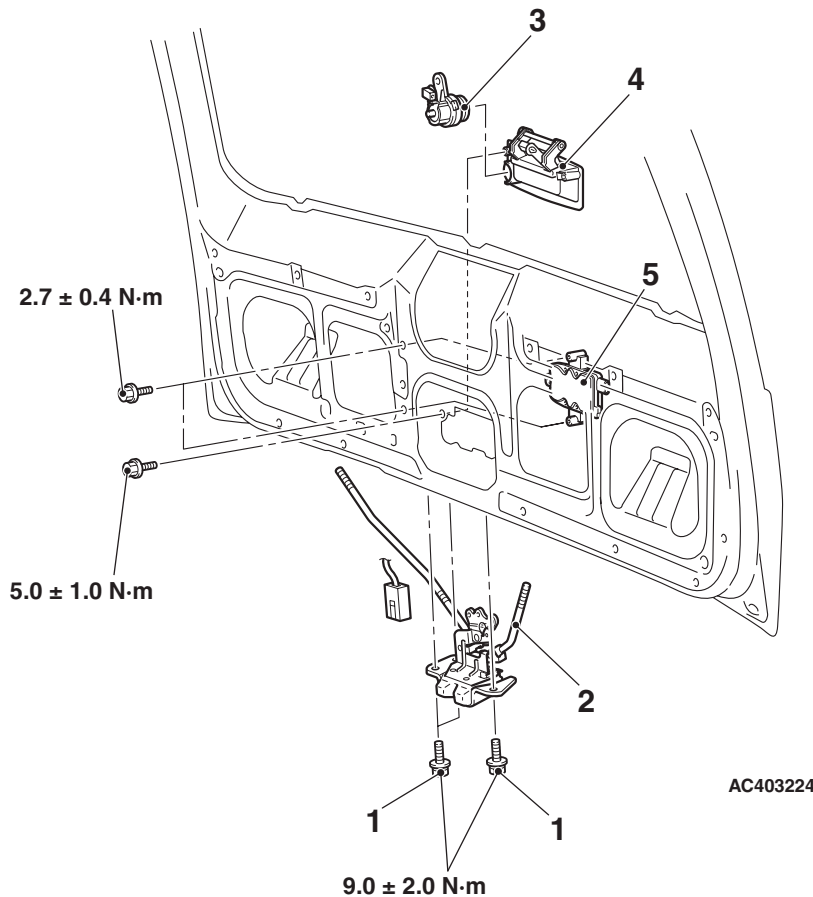
TAILGATE HANDLE AND LATCH

REMOVAL AND INSTALLATION

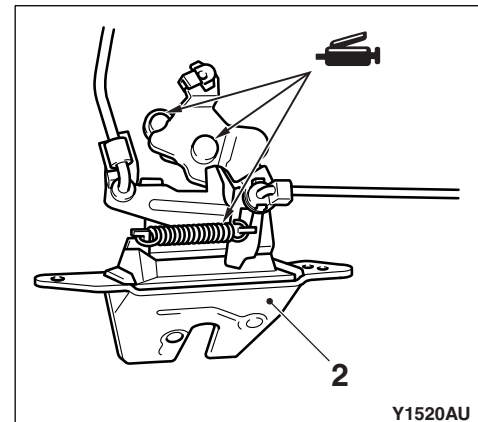
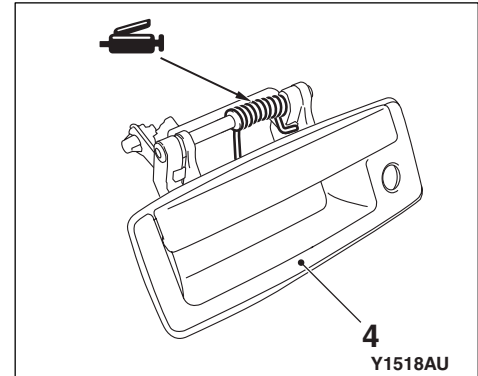
M1424001700385

Pre-removal Operation

- Tailgate Handle Play Check (Refer to P.42-40).

**Tailgate handle and lock key cylinder removal steps**

- Lower tailgate trim (Refer to GROUP 52A P.52A-18.)
- Waterproof film (Refer to P.42-41.)
- 1. Bolt (earth)
- 2. Tailgate latch assembly
- 3. Tailgate lock key cylinder
- 4. Tailgate handle



AC403582AB

Tailgate latch removal steps

- Lower tailgate trim (Refer to GROUP 52A P.52A-18.)
- Waterproof film (Refer to P.42-41.)

1. Bolt (earth)
2. Tailgate latch assembly

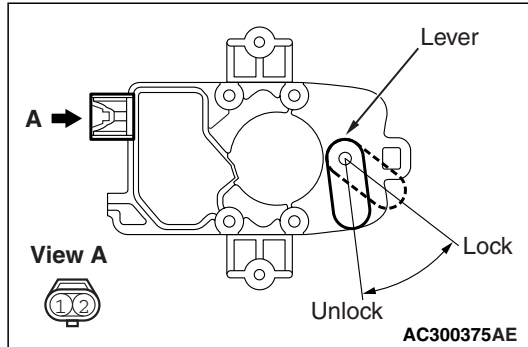
Tailgate lock actuator removal steps

- Lower tailgate trim (Refer to GROUP 52A P.52A-18.)
- Waterproof film (Refer to P.42-41.)
- 5. Tailgate lock actuator

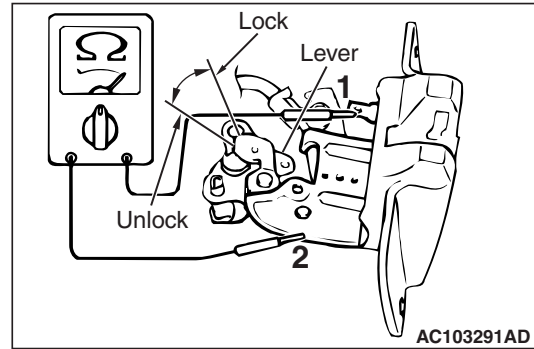
INSPECTION

TAILGATE LOCK ACTUATOR CHECK

M1424001200205



TAILGATE LATCH CHECK



Lever position	Battery connection	Lever operation
At the "LOCK" position	<ul style="list-style-type: none"> Connect terminal No.1 and the negative battery terminal. Connect terminal No.2 and the positive battery terminal. 	The lever moves from the "LOCK" position to the "UNLOCK" position.
At the "UNLOCK" position	<ul style="list-style-type: none"> Connect terminal No.2 and the negative battery terminal. Connect terminal No.1 and the positive battery terminal. 	The lever moves from the "UNLOCK" position to the "LOCK" position.

Lever position	Tester connection	Specified condition
At the "LOCK" position	1 -2 (Earth)	Open circuit
At the "UNLOCK" position	1 -2 (Earth)	Less than 2 ohms

KEYLESS ENTRY SYSTEM

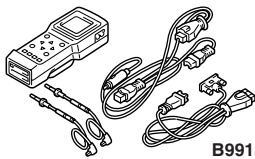
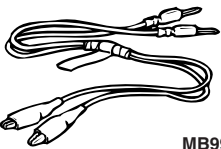
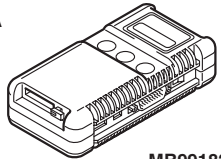
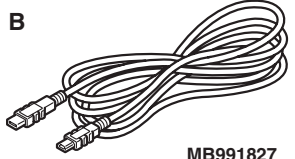

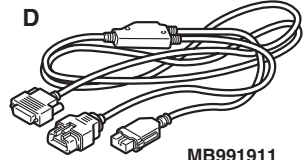
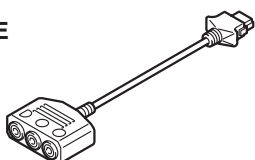
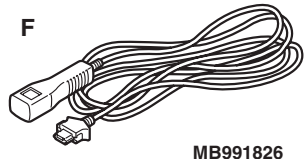
SERVICE SPECIFICATIONS

M1428000300104

Item	Standard value
Voltage of transmitter battery V	2.5 –3.2

SPECIAL TOOLS

M1428000600581

Tool	Number	Name	Use
 B991502	MB991502	M.U.T.-II sub-assembly	Encrypted code registration
 MB991529	MB991529	Diagnosis code check harness	
<p>A</p>  MB991824	MB991955 A: MB991824 B: MB991827 C: MB991910 D: MB991911 E: MB991825 F: MB991826	M.U.T.-III sub-assembly A: Vehicle communication interface (V.C.I.) B: M.U.T.-III USB cable C: M.U.T.-III main harness A (Vehicles with CAN communication system) D: M.U.T.-III main harness B (Vehicles without CAN communication system) E: M.U.T.-III measurement adapter F: M.U.T.-III trigger harness	Encrypted code registration <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> ⚠ CAUTION </div> M.U.T.-III main harness B (MB991911) should be used. M.U.T.-III main harness A should not be used for this vehicle.
<p>B</p>  MB991827			
<p>C</p>  MB991910			
<p>D</p>  MB991911			
<p>E</p>  MB991825			
<p>F</p>  MB991826 MB991955			

TROUBLESHOOTING

M1428000700470

The keyless entry system is controlled by the Smart

Wiring System (SWS). For troubleshooting, refer to GROUP 54B, Troubleshooting [P.54B-32](#) or GROUP 54C, Troubleshooting [P.54C-17](#)..

ON-VEHICLE SERVICE

KEYLESS ENTRY SYSTEM CHECK

M1428001400223

Check the system as described below. If the system does not work, carry out troubleshooting. Refer to GROUP 54B, Troubleshooting P.54B-32 or GROUP 54C, Troubleshooting P.54C-17.

- Operate the transmitter to check that the doors and tailgate can be locked and unlocked.
- Operate the transmitter to check that the answerback function works in response to doors and tailgate locking/unlocking.

NOTE: The adjustment function allows you to change the answerback setting as follows. Prior to that check, confirm which setting is activated.

- The hazard warning lamp flash twice when locked and once when unlocked. The room lamp flashes twice when locked and illuminates for 15 seconds when unlocked.
- The hazard warning lamp do not flash when locked and flash once when unlocked. The room lamp flashes twice when locked and illuminates for 15 seconds when unlocked.
- The hazard warning lamp flash twice when locked and do not flash when unlocked. The room lamp flashes twice when locked and illuminates for 15 seconds when unlocked.
- The hazard warning lamp do not flash when both locked and unlocked. The room lamp flashes twice when locked and illuminates for 15 seconds when unlocked.

KEYLESS ENTRY SYSTEM TIMER LOCK FUNCTION INSPECTION

M1428004000279

Push the transmitter unlock button and check to see that the doors and tailgate lock within 30 seconds. If it doesn't, then execute troubleshooting remedies. Refer to GROUP 54B, Troubleshooting P.54B-32 or GROUP 54C, Troubleshooting P.54C-17.

ENABLING/DISABLING THE ANSWERBACK FUNCTION

M1428003200452

If the keyless entry system locks or unlocks the doors, the room lamp flashes or illuminates, the hazard warning lamp flashes (hazard answerback function). The hazard answerback function can be enabled or disabled according to the following procedure:

ENABLING/DISABLING THE HAZARD ANSWERBACK FUNCTION

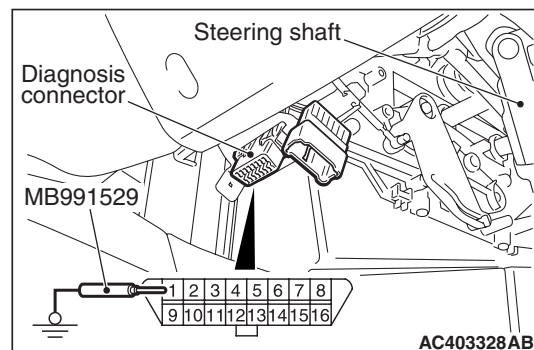
The hazard answerback function can be enabled or disabled by one of the two following procedures.

<WHEN USING THE TRANSMITTER AFTER DIAGNOSIS CONNECTOR (1) IS EARTHED>

1. Enter the hazard answerback customize mode by performing one of the following steps. If the ETACS-ECU enters the customize mode, its buzzer will sound once.
 - (1) Turn the ignition switch to "LOCK"(OFF) position.
 - (2) Turn off the hazard warning lamp switch.

CAUTION

Before connecting or disconnecting the earth, turn the ignition switch to the "LOCK" (OFF) position.



- (3) Connect the diagnosis connector to the special tool diagnosis code check harness (MB991529).
 - (4) Close the driver's side door.
 - (5) Keep the windshield washer switch on for at least ten seconds. Then the ETACS-ECU buzzer will sound once.
2. If the transmitter "LOCK" button is pushed consecutively twice (within two seconds), the ETACS-ECU buzzer will sound, indicating that the hazard answerback function can be enabled or disabled when the doors are locked.
 - **Enable the hazard answerback function when the doors are locked: The ETACS-ECU buzzer will sound once.**
 - **Disable the hazard answerback function when the doors are locked: The ETACS-ECU buzzer will sound twice.**

3. If the transmitter "UNLOCK" button is pushed consecutively twice (within two seconds), the ETACS-ECU buzzer will sound, indicating that the hazard answerback function can be enabled or disabled when the doors are unlocked.

- **Enable the hazard answerback function when the doors are unlocked: The ETACS-ECU buzzer will sound once.**
- **Disable the hazard answerback function when the doors are unlocked: The ETACS-ECU buzzer will sound twice.**

4. Exit the hazard answerback customize mode by observing one of the following steps.

- (1) Disconnect diagnosis connector terminal (1) from the earth.
- (2) Turn the ignition switch to position other than "LOCK"(OFF), or remove the ignition key.
- (3) Open the driver's side door.
- (4) Any other warning buzzer output occurs.

NOTE: If any operation is not done for at least three minutes after the ETACS-ECU has entered the customize mode, the hazard answerback customize mode will be cancelled automatically.

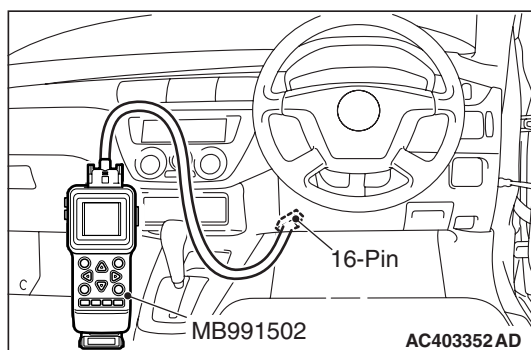
<WHEN THE TRANSMITTER IS USED AFTER CONNECTING M.U.T.-II TO THE DIAGNOSIS CONNECTOR>

1. Enter the hazard answerback customize mode by performing one of the following steps. If the ETACS-ECU enters the customize mode, its buzzer will sound once.

- (1) Turn the ignition switch to "LOCK"(OFF) position.
- (2) Turn off the hazard warning lamp switch.

⚠ CAUTION

Before connecting or disconnecting the M.U.T.-II, turn the ignition switch to the "LOCK" (OFF) position.



- (3) Connect the M.U.T.-II to the diagnosis connector.

- (4) Close the driver's side door.
- (5) Keep the windshield washer switch on for at least ten seconds. Then the ETACS-ECU buzzer will sound once.

2. If the transmitter "LOCK" button is pushed consecutively twice (within two seconds), the ETACS-ECU buzzer will sound, indicating that the hazard answerback function can be enabled or disabled when the doors are locked.

- **Enable the hazard answerback function when the doors are locked: The ETACS-ECU buzzer will sound once.**
- **Disable the hazard answerback function when the doors are locked: The ETACS-ECU buzzer will sound twice.**

3. If the transmitter "UNLOCK" button is pushed consecutively twice (within two seconds), the ETACS-ECU buzzer will sound, indicating that the hazard answerback function can be enabled or disabled when the doors are unlocked.

- **Enable the hazard answerback function when the doors are unlocked: The ETACS-ECU buzzer will sound once.**
- **Disable the hazard answerback function when the doors are unlocked: The ETACS-ECU buzzer will sound twice.**

4. Exit the hazard answerback customize mode by observing one of the following steps.

- (1) Disconnect M.U.T.-II from the diagnosis connector.
- (2) Turn the ignition switch to position other than "LOCK"(OFF), or remove the ignition key.
- (3) Open the driver's side door.
- (4) Any other warning buzzer output occurs.

NOTE: If any operation is not done for at least three minutes after the ETACS-ECU has entered the customize mode, the hazard answerback customize mode will be cancelled automatically.

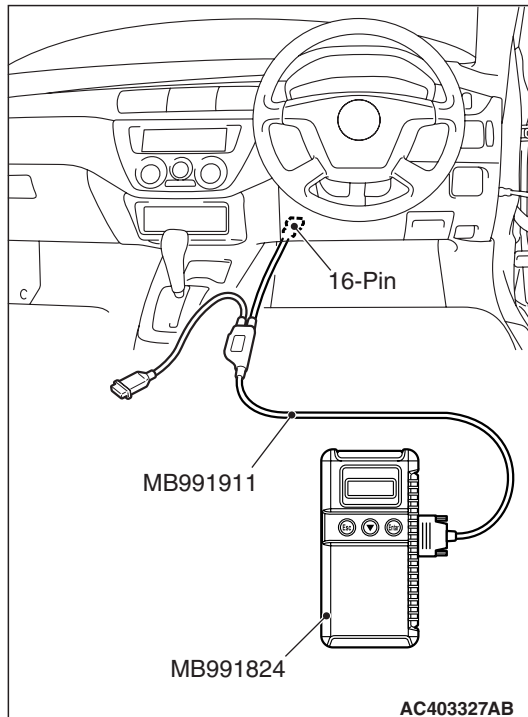
<WHEN THE TRANSMITTER IS USED AFTER CONNECTING SPECIAL TOOL V. C. I. (MB991824) TO THE DIAGNOSIS CONNECTOR>

1. Enter the hazard answerback customize mode by performing one of the following steps. If the ETACS-ECU enters the customize mode, its buzzer will sound once.

- (1) Turn the ignition switch to "LOCK"(OFF) position.
- (2) Turn off the hazard warning lamp switch.

CAUTION

Before connecting or disconnecting the V. C. I., turn the ignition switch to the "LOCK" (OFF) position.



- (3) Connect the V. C. I. to the diagnosis connector.
 - (4) Turn the V.C.I. power switch to the "ON" position.
 - (5) Close the driver's side door.
 - (6) Keep the windshield washer switch on for at least ten seconds. Then the ETACS-ECU buzzer will sound once.
2. If the transmitter "LOCK" button is pushed consecutively twice (within two seconds), the ETACS-ECU buzzer will sound, indicating that the hazard answerback function can be enabled or disabled when the doors are locked.
- **Enable the hazard answerback function when the doors are locked: The ETACS-ECU buzzer will sound once.**
 - **Disable the hazard answerback function when the doors are locked: The ETACS-ECU buzzer will sound twice.**

3. If the transmitter "UNLOCK" button is pushed consecutively twice (within two seconds), the ETACS-ECU buzzer will sound, indicating that the hazard answerback function can be enabled or disabled when the doors are unlocked.

- **Enable the hazard answerback function when the doors are unlocked: The ETACS-ECU buzzer will sound once.**
- **Disable the hazard answerback function when the doors are unlocked: The ETACS-ECU buzzer will sound twice.**

4. Exit the hazard answerback customize mode by observing one of the following steps.
 - (1) Disconnect V. C. I. from the diagnosis connector.
 - (2) Turn the ignition switch to position other than "LOCK"(OFF), or remove the ignition key.
 - (3) Open the driver's side door.
 - (4) Any other warning buzzer output occurs.

NOTE: If any operation is not done for at least three minutes after the ETACS-ECU has entered the customize mode, the hazard answerback customize mode will be cancelled automatically.

HOW TO REGISTER SECRET CODE

M1428001000678

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

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

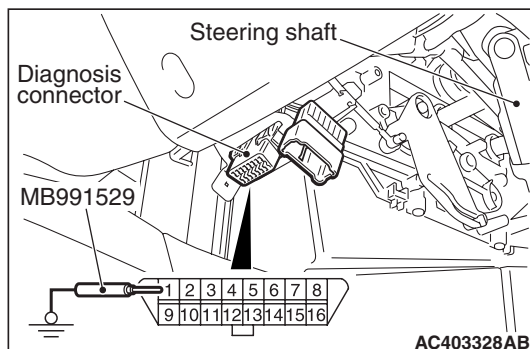
A maximum of four different codes can be stored in the EEPROM memory (four different transmitters can be used). When the code for the first transmitter is registered, the previously registered codes for all transmitters are cleared. Therefore, if you are using four transmitters or are adding more transmitters,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

WHEN THE SPECIAL TOOL DIAGNOSIS CODE CHECK HARNESS (MB991529) IS USED

1. Check that the doors lock normally when the key is used.
2. Insert the ignition key.

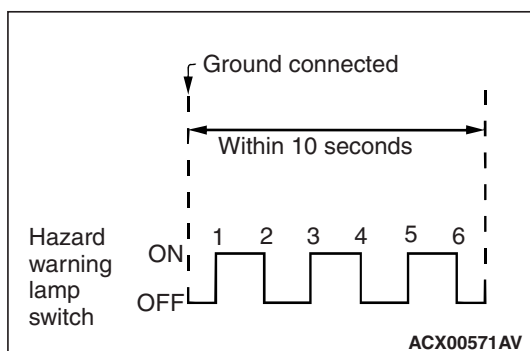
⚠ CAUTION

Before connecting or disconnecting the earth, turn the ignition switch to the "LOCK" (OFF) position.



3. Connect the diagnosis connector to the special tool diagnosis code check harness (MB991529).

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



4. Press the hazard warning lamp switch six times within 10 seconds.

NOTE: Once the process is completed six times, then it will operate with all doors and tailgate lock and unlock operations once and then go to the save mode.

NOTE: The hazard warning lamp switch is turned on and off alternately whenever it is pushed.

5. Press the transmitter button, and then press it two times within 10 seconds of the first press. This will register the code.
6. Once the program is saved, it will operate once with the all doors and tailgate lock and unlock operations.
7. If you are using two or more transmitters or have added a second transmitter, the next transmitter should be registered within one minute after registering the code for the previous transmitter. The registration procedure is common for all the transmitter.

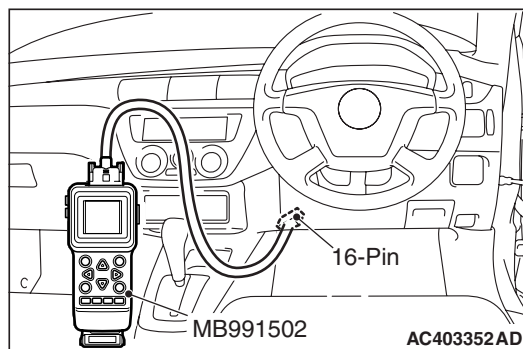
8. Registration mode will be cancelled under the following conditions:
 - When the secret code for four transmitters has been registered;
 - When passing one minute after finishing the registration of all transmitters;
 - When the diagnosis connector is disconnected from earth;
 - When the key is removed from the key cylinder;
9. After the registration is completed, remove the ignition key and close all the doors, and then check that the keyless entry system operates normally.

WHEN THE M.U.T.-II IS USED

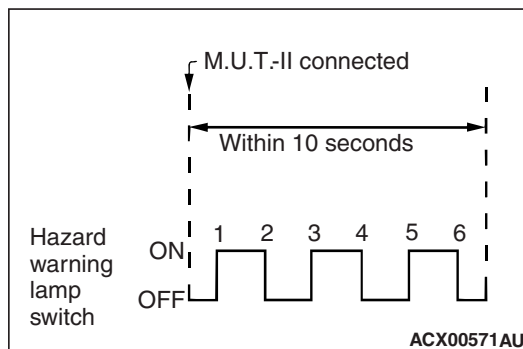
1. Check that the doors lock normally when the key is used.
2. Insert the ignition key.

⚠ CAUTION

Before connecting or disconnecting the M.U.T.-II, turn the ignition switch to the "LOCK" (OFF) position.



3. Connect the M.U.T.-II to the diagnosis connector.



4. Press the hazard warning switch six times within 10 seconds.

NOTE: Once the process is completed six times, then it will operate with all doors and tailgate lock and unlock operations once and then go to the save mode.

NOTE: The hazard warning lamp switch is turned on and off alternately whenever it is pushed.

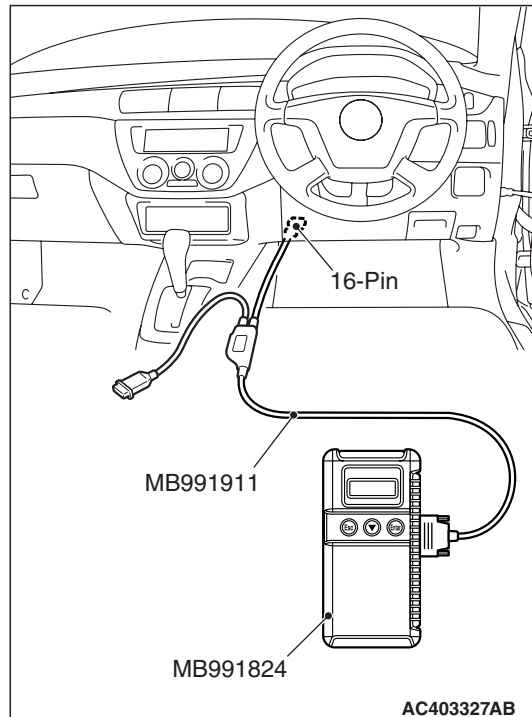
5. Press the transmitter button, and then press it two times within 10 seconds of the first press. This will register the code.
6. Once the program is saved, it will operate once with the all doors and tailgate lock and unlock operations.
7. If you are using two or more transmitters or have added a second transmitter, the next transmitter should be registered within one minute after registering the code for the previous transmitter. The registration procedure is common for all the transmitter.
8. Registration mode will be cancelled under the following conditions:
 - When the secret code for four transmitters has been registered;
 - When passing one minute after finishing the registration of all transmitters;
 - When the M.U.T.-II is disconnected from the diagnosis connector;
 - When the key is removed from the key cylinder;
9. After the registration is completed, remove the ignition key and close all the doors, and then check that the keyless entry system operates normally.

WHEN THE SPECIAL TOOL V. C. I. (MB991824) IS USED

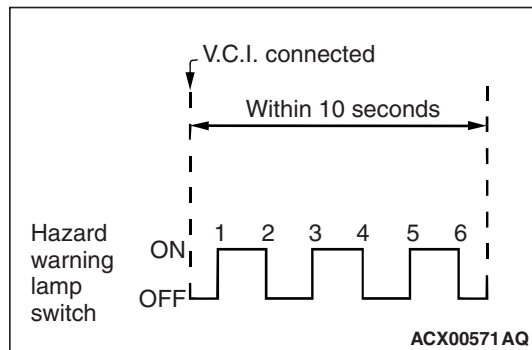
1. Check that the doors lock normally when the key is used.
2. Insert the ignition key.

CAUTION

Before connecting or disconnecting the V. C. I., turn the ignition switch to the "LOCK" (OFF) position.



3. Connect the V. C. I. to the diagnosis connector.



4. Press the hazard warning lamp switch six times within 10 seconds.

NOTE: Once the process is completed six times, then it will operate with all doors and tailgate lock and unlock operations once and then go to the save mode.

NOTE: The hazard warning lamp switch is turned on and off alternately whenever it is pushed.

5. Press the transmitter button, and then press it two times within 10 seconds of the first press. This will register the code.
6. Once the program is saved, it will operate once with the all doors and tailgate lock and unlock operations.

7. If you are using two or more transmitters or have added a second transmitter, the next transmitter should be registered within one minute after registering the code for the previous transmitter. The registration procedure is common for all the transmitter.
8. Registration mode will be cancelled under the following conditions:
 - When the secret code for four transmitters has been registered;
 - When passing one minute after finishing the registration of all transmitters;
 - When the V.C.I. is disconnected from the diagnosis connector;
 - When the key is removed from the key cylinder;
9. After the registration is completed, remove the ignition key and close all the doors, and then check that the keyless entry system operates normally.

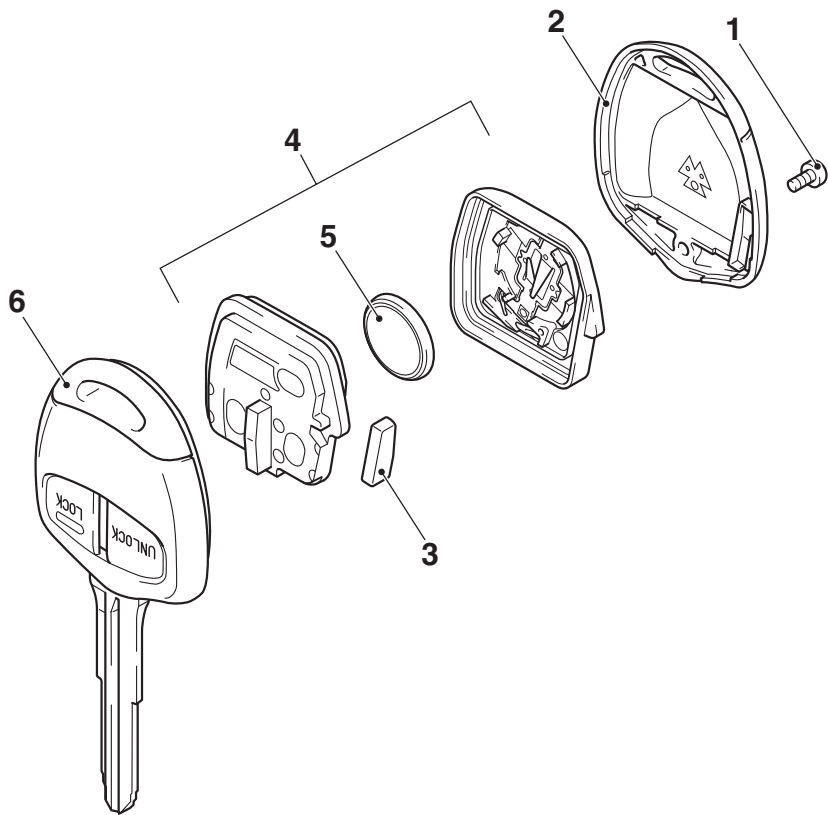
TRANSMITTER

DISASSEMBLY AND REASSEMBLY

M1428002800235

Post-reassembly operation

- Transmitter operation check



AC310838 AF

Disassembly steps

- 1. Screw
- 2. Upper cover
- 3. Transponder
- 4. Transmitter assembly
- 5. Battery
- 6. Master key

<<A>> >>A<<

DISASSEMBLY SERVICE POINT

<<A>> BATTERY REMOVAL

 CAUTION

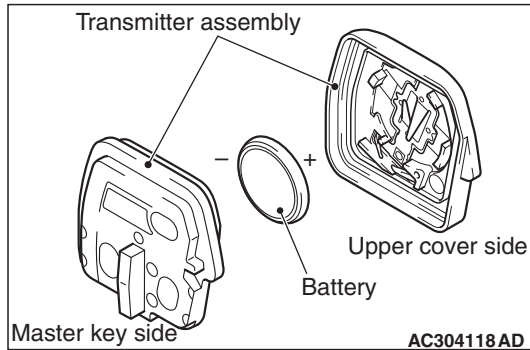
Do not allow water or dust to enter the inside of the transmitter assembly when it is open. Also, do not touch the precision electronic device.

REASSEMBLY SERVICE POINT

>>A<< BATTERY INSTALLATION

CAUTION

Do not allow water or dust to enter the inside of the transmitter assembly when it is open. Also, do not touch the precision electronic device.



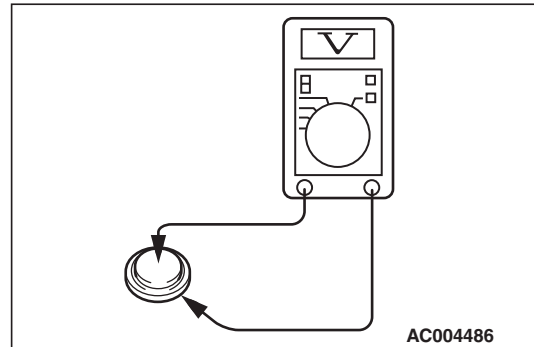
Install a new battery to the transmitter assembly with its (+) side facing towards the upper cover side.

Battery required for replacement: Coin type battery CR1616

INSPECTION

M1428003800067

TRANSMITTER BATTERY CHECK



Measure the voltage of the battery. If the voltage of the battery is not within the standard value, replace the battery.

Standard value: 2.5 –3.2 V

SUNROOF ASSEMBLY**SERVICE SPECIFICATIONS**

M1426000300119

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


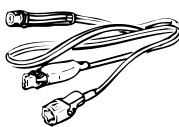
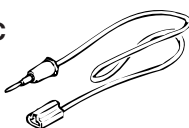
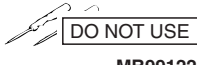
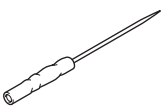
SEALANT

M1426000500094

Item	Specified sealant
Rear drip	3M ATD Part No.8531 or equivalent

SPECIAL TOOL

M1426000600314

Tool	Number	Name	Use
<p>A</p>  <p>B</p>  <p>C</p>  <p>D</p>  <p>MB991223AZ</p>	<p>MB991223</p> <p>A: MB991219</p> <p>B: MB991220</p> <p>C: MB991221</p> <p>D: MB991222</p>	<p>Harness set</p> <p>A: Test harness</p> <p>B: LED harness</p> <p>C: LED harness adapter</p> <p>D: Probe</p>	<p>Terminal voltage measurement</p> <p>A: For checking connector pin contact pressure</p> <p>B: For checking power supply circuit</p> <p>C: For checking power supply circuit</p> <p>D: For connecting a locally sourced tester</p>
 <p>MB992006</p>	MB992006	Extra fine probe	Continuity check and voltage measurement at harness wire or connector

TROUBLESHOOTING

M1426000700407

The sunroof system is controlled by the Smart Wiring System (SWS). For troubleshooting, refer to GROUP 54B, Troubleshooting [P.54B-32](#) or GROUP 54C, Troubleshooting [P.54C-17](#).

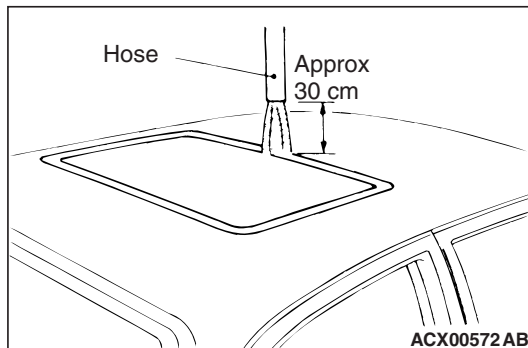
ON-VEHICLE SERVICE

WATER TEST

M1426000900359

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

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

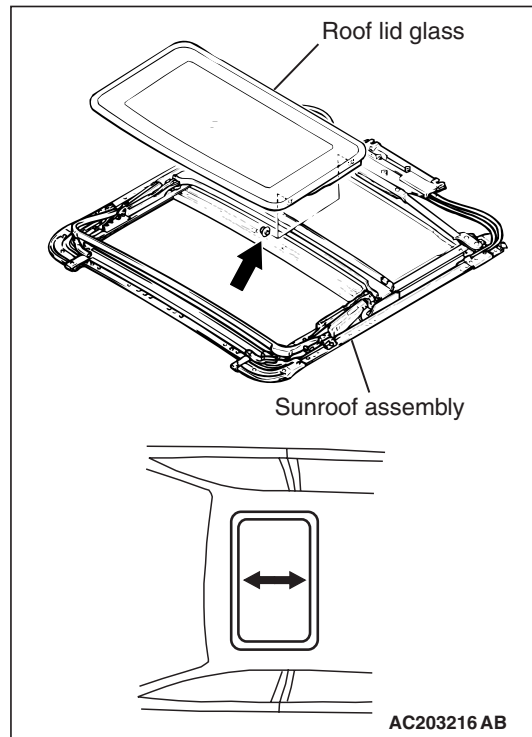


3. Hold the end of the hose approximately 30 cm above the roof and let the water run onto the weatherstrip for 5 minutes or more.
4. Check if any water leaks can be found in the room while watering. Even though there are any water leaks around the roof lid glass, it can be acceptable as long as water is caught in the drip area.

SUNROOF FIT ADJUSTMENT

M1426001000360

1. Fully close the roof lid glass.
2. Fully open the sunshade.



3. Loosen the screws fixing the roof lid glass assembly, move the roof lid glass assembly along the long hole of the drive cable assembly, adjust the height of the roof lid glass, and check that the space between the roof lid glass and body is consistent along the whole circumference.
4. After adjusting, check that the sunroof operates smoothly.

SUNROOF CHECK

M1426004700227

Check to see that the sunroof operates by pressing the sunroof switch. Execute troubleshooting remedies if operations malfunction (Refer to GROUP 54B, Troubleshooting [P.54B-32](#) or GROUP 54C, Troubleshooting [P.54C-17](#)).

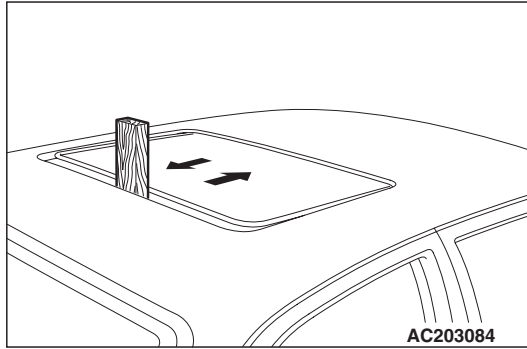
SUNROOF TIMER FUNCTION CHECK

M1426004300144

Keep the door closed, turn OFF the ignition switch and check to see if the sunroof operates for 30 seconds after that. If operations malfunction then execute troubleshooting remedies (Refer to GROUP 54B, Troubleshooting [P.54B-32](#) or GROUP 54C, Troubleshooting [P.54C-17](#)).

SUNROOF SAFETY FUNCTION CHECK

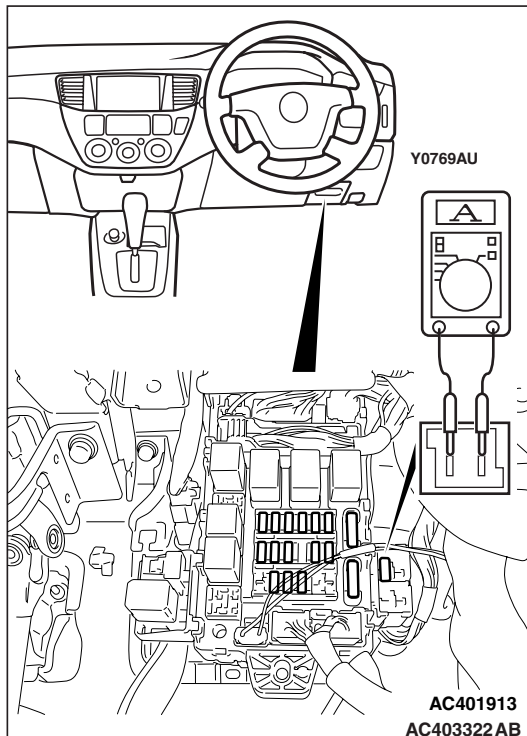
M1426004400237



1. Close the roof lid glass by applying an approximately 10mm thickness wood chip placed in a right angle with the roof lid glass.
2. Check to see if the roof lid glass opens after the motor turns when the roof lid glass catches the wooden chip (Refer to GROUP 54B, Troubleshooting P.54B-32 or GROUP 54C, Troubleshooting P.54C-17).

ROOF LID GLASS OPERATION CURRENT CHECK

M1426003200241



1. Remove the fuse of the sunroof then connect the circuit tester as shown in the figure.
2. Turn ON the sunroof switch then measure the operating current of the intermediary segment when operations is starting, the sunroof is fully closed, the sunroof is fully opened and the sunroof is tilted fully up.

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

3. Check the following areas if the operating current of the roof lid glass exceeds the standard value.
 - Sunroof assembly assembling state, deformation and biting of any foreign substances.
 - Drive cable fastening.
 - Tilting of roof lid glass.

SUNROOF INITIALIZED ADJUSTMENT

M1426004600219

1. Assemble the roof lid glass assembly and sunroof motor assembly on the sunroof assembly.
2. Connect the sunroof motor assembly connector and sunroof switch connector to the wiring harness connector on the vehicle side.
3. Fully open the roof lid glass by pressing the sunroof switch then fully close the sunroof by repeating to press the close switch.
4. Continuously press the close switch for a minimum of 3 seconds from the fully closed state.
5. Press the open switch to fully open the sunroof then press the close switch to fully close the sunroof.

NOTE: Do not stop the sunroof before the sunroof is fully opened or fully closed in Step 5, above. If the fully open or close operation is interrupted/stopped then start over from Step 3.

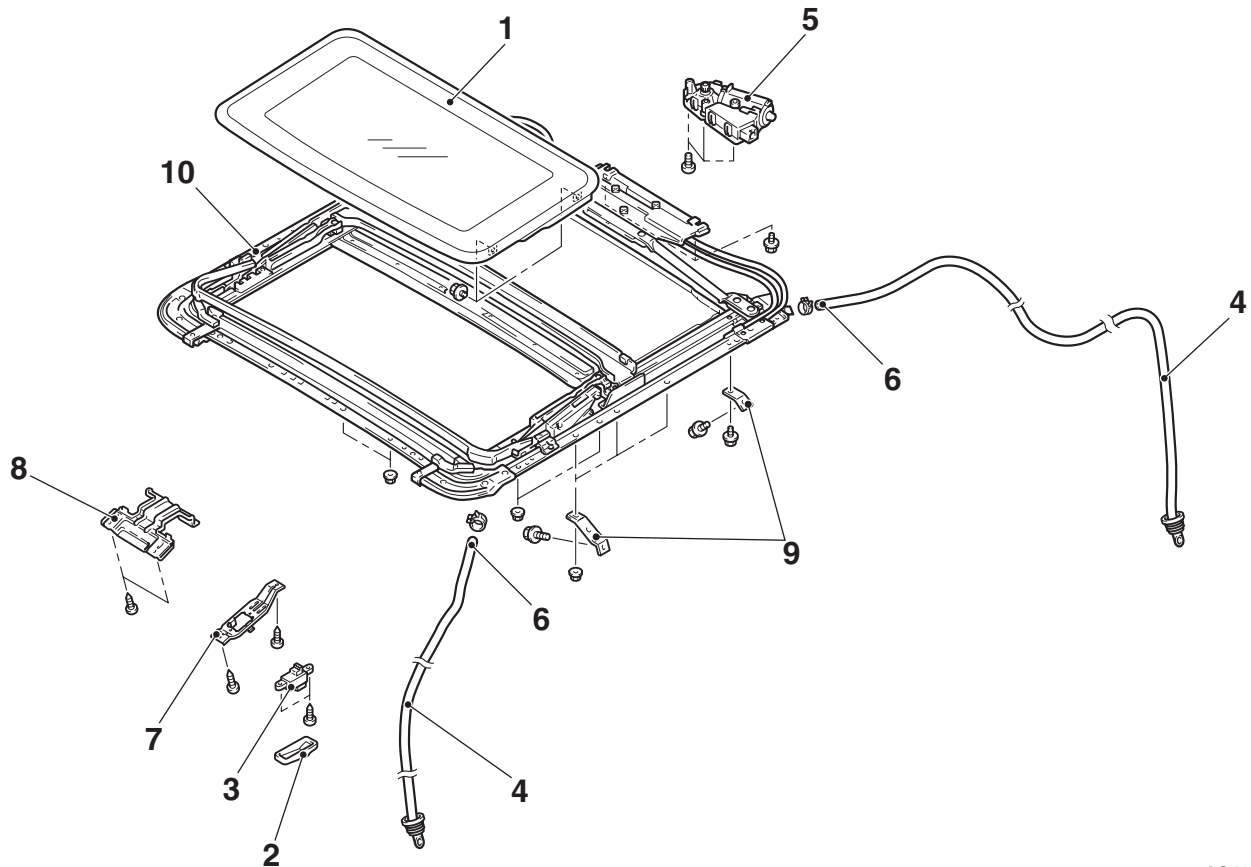
SUNROOF ASSEMBLY

REMOVAL AND INSTALLATION

M1426001200494

Post-installation Operation <Roof lid glass assembly, Sunroof assembly>

- Sunroof Water Test (Refer to [P.42-57.](#))
- Sunroof Fit Adjustment (Refer to [P.42-57.](#))
- Sunroof Initialising Adjustment (Refer to [P.42-58.](#))



AC403223AB

Roof lid glass assembly removal

1. Roof lid glass assembly

Sunroof switch removal steps

2. Sunroof switch cover
3. Sunroof switch

Drain pipe removal steps

- Splash shield <Front side> (Refer to [P.42-6.](#))
- Headlining (Refer to GROUP 52A [P.52A-20.](#))

<<A>> >>A<< 4. Drain pipe

Sunroof motor assembly removal steps

- Headlining (Refer to GROUP 52A [P.52A-20.](#))

5. Sunroof motor assembly

Sunroof assembly removal steps

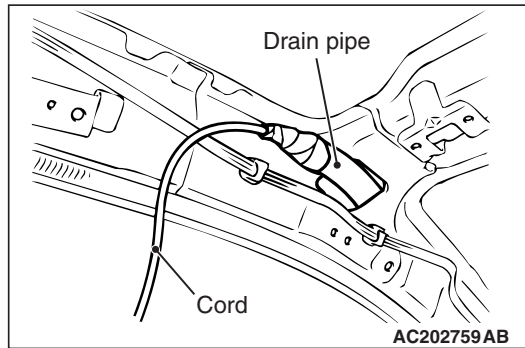
- Headlining (Refer to GROUP 52A [P.52A-20.](#))

6. Drain pipe connection
7. Sunroof switch bracket
8. Room lamp bracket
9. Set bracket
10. Sunroof assembly

<>

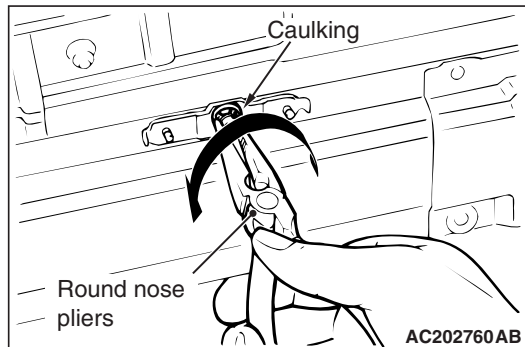
REMOVAL SERVICE POINTS

<<A>> DRAIN PIPE REMOVAL



Tie a cord to the end of the drain pipe, and wind tape around it so that there is no unevenness. Then pull the drain pipe out to the wheel house side.

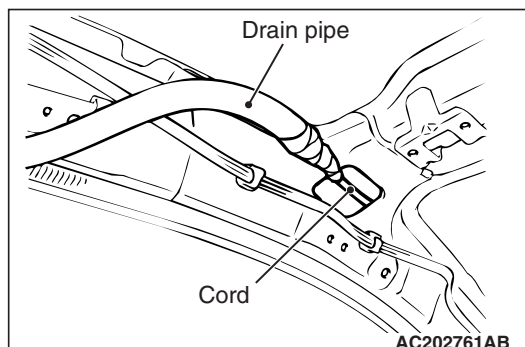
<> SUNROOF ASSEMBLY REMOVAL



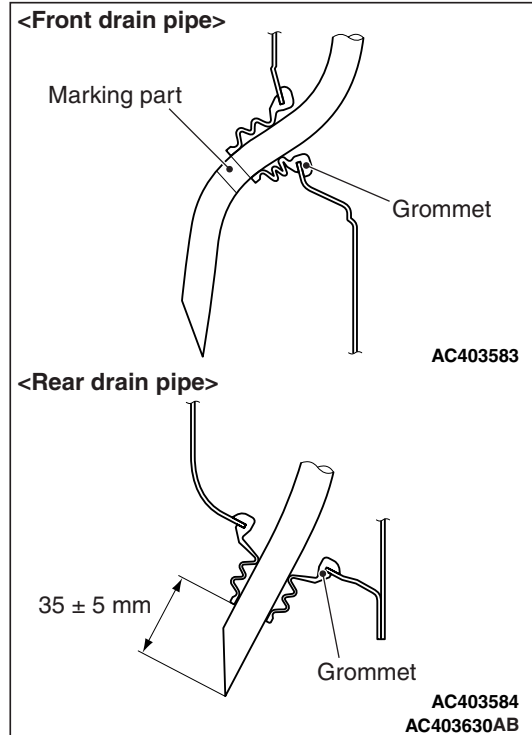
Using round nose pliers or the like, turn the caulking the way shown in the illustration and then remove the sunroof assembly.

INSTALLATION SERVICE POINT

>>A<< DRAIN PIPE INSTALLATION



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

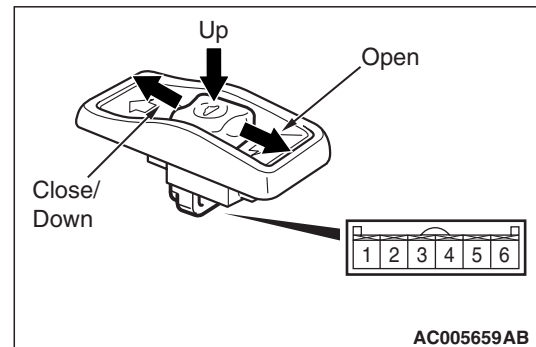


3. Install the grommet, and then position the drain pipe so that it protrudes from the grommet as shown in the illustration.

INSPECTION

M1421007600707

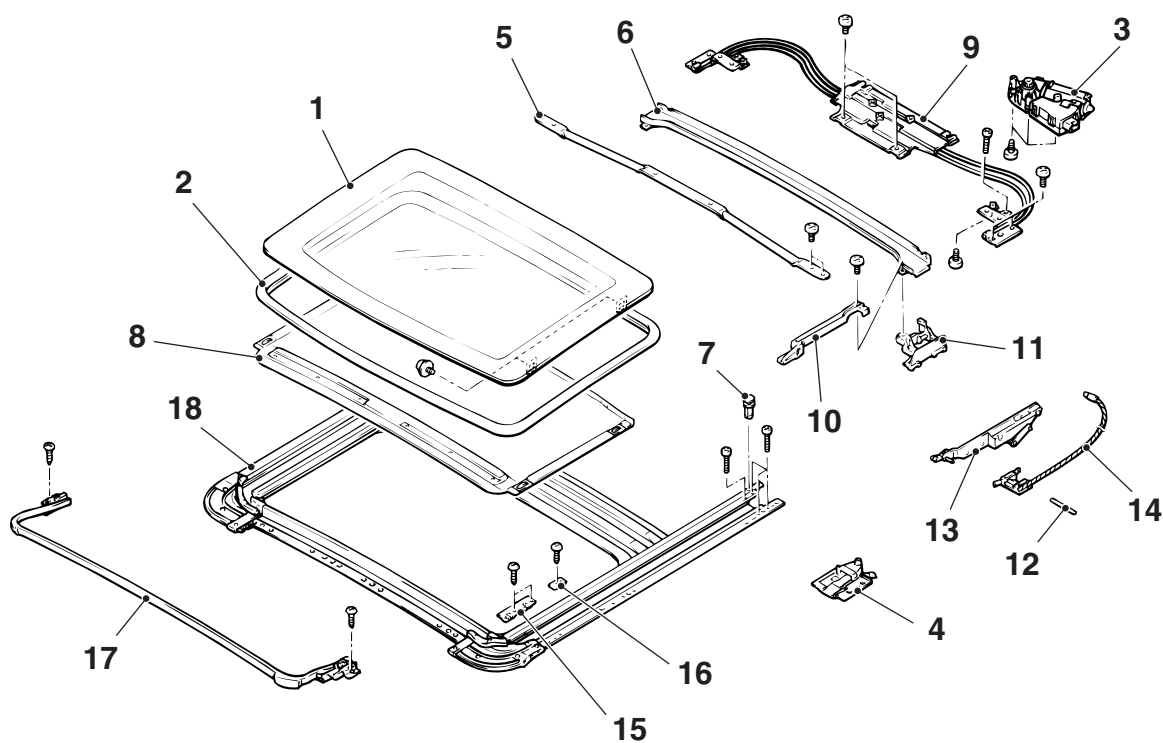
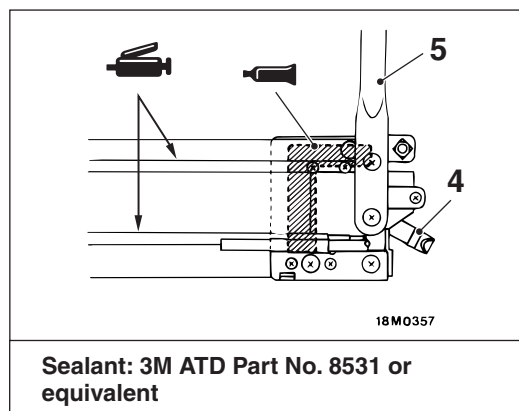
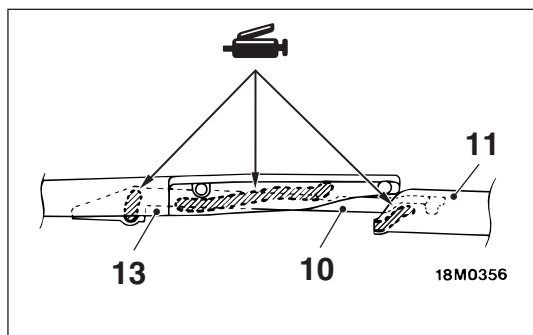
SUNROOF SWITCH CONTINUITY CHECK



Switch position	Tester connection	Specified condition
Open	4 - 5	Less than 2 ohms
OFF	3 - 4, 4 - 5, 4 - 6	Open circuit
Tilt up	3 - 4	Less than 2 ohms
Slide closed, Tilt down	4 - 6	Less than 2 ohms

DISASSEMBLY AND REASSEMBLY

M1426001400357



Disassembly steps

1. Roof lid glass assembly
2. Weatherstrip
3. Sunroof motor assembly
4. Rear drip
5. Frame
6. Drip rail assembly
7. Clip <left side only>
8. Sun shade assembly
9. Drive unit assembly

Disassembly steps (Continued)

10. Drip link
11. Drip shoe assembly
12. Shaft
13. Lifter assembly
14. Cable assembly
15. Set plate
16. Rear set plate
17. Deflector assembly
18. Frame assembly

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