

GROUP 42

BODY

CONTENTS

HOOD	42-3	SPECIAL TOOL	42-12
HOOD DIAGNOSIS	42-3	WINDSHIELD	42-13
INTRODUCTION TO HOOD DIAGNOSIS	42-3	REMOVAL AND INSTALLATION.....	42-13
HOOD DIAGNOSTIC TROUBLESHOOTING		QUARTER WINDOW GLASS	42-16
STRATEGY	42-3	REMOVAL AND INSTALLATION.....	42-16
SYMPTOM CHART	42-3	BACK DOOR WINDOW GLASS ..	42-18
SYMPTOM PROCEDURES	42-3	REMOVAL AND INSTALLATION.....	42-18
HOOD	42-5	DOOR	42-20
REMOVAL AND INSTALLATION	42-5	GENERAL DESCRIPTION	42-20
INSPECTION.....	42-7	CENTRAL DOOR LOCKING	
FENDER	42-7	SYSTEM DIAGNOSIS	42-20
REMOVAL AND INSTALLATION .	42-7	POWER WINDOW DIAGNOSIS ...	42-20
FUEL FILLER LID	42-8	DOOR DIAGNOSIS	42-20
REMOVAL AND INSTALLATION .	42-8	INTRODUCTION TO GLASS AND DOOR	
WINDOW GLASS	42-10	DIAGNOSIS	42-20
GENERAL DESCRIPTION	42-10	GLASS AND DOOR DIAGNOSTIC	
WINDOW GLASS DIAGNOSIS ...	42-12	TROUBLESHOOTING STRATEGY....	42-20
INTRODUCTION TO WINDOW GLASS		SYMPTOM CHART	42-21
DIAGNOSIS.....	42-12	SYMPTOM PROCEDURES	42-21
WINDOW GLASS DIAGNOSTIC		HOW TO LOCATE WIND NOISES .	42-24
TROUBLESHOOTING STRATEGY ...	42-12	SPECIAL TOOLS	42-25
SYMPTOM CHART	42-12		
SYMPTOM PROCEDURES	42-12		

Continued on next page

ON-VEHICLE SERVICE	42-26	BACK DOOR TRIM AND WATERPROOF FILM	42-53
DOOR FIT ADJUSTMENT	42-26	REMOVAL AND INSTALLATION	42-53
DOOR WINDOW GLASS ADJUSTMENT	42-28	BACK DOOR HANDLE AND LATCH	42-54
DOOR INSIDE HANDLE PLAY CHECK AND ADJUSTMENT	42-29	REMOVAL AND INSTALLATION	42-54
DOOR OUTSIDE HANDLE PLAY CHECK	42-29	INSPECTION	42-55
CIRCUIT BREAKER (INCORPORATED IN THE POWER WINDOW MOTOR) INSPECTION	42-29	KEYLESS ENTRY SYSTEM ..	42-55
DOOR ASSEMBLY	42-30	GENERAL DESCRIPTION	42-55
REMOVAL AND INSTALLATION	42-30	KEYLESS ENTRY SYSTEM DIAGNOSIS	42-55
INSPECTION	42-31	SPECIAL TOOLS	42-56
DOOR TRIM AND WATERPROOF FILM	42-32	ON-VEHICLE SERVICE	42-57
REMOVAL AND INSTALLATION	42-32	HOW TO REPLACE THE TRANSMITTER BATTERY	42-57
INSPECTION	42-37	ENABLING/DISABLING THE ANSWERBACK FUNCTION	42-57
DOOR GLASS AND REGULATOR	42-38	HOW TO REGISTER SECRET CODE ..	42-59
REMOVAL AND INSTALLATION	42-38	SUNROOF ASSEMBLY	42-62
INSPECTION	42-40	GENERAL DESCRIPTION	42-62
DOOR HANDLE AND LATCH	42-41	SUNROOF DIAGNOSIS	42-62
REMOVAL AND INSTALLATION	42-41	SPECIAL TOOL	42-62
INSPECTION	42-43	ON-VEHICLE SERVICE	42-63
WINDOW GLASS RUNCHANNEL AND DOOR OPENING WEATHERSTRIP	42-45	WATER TEST	42-63
REMOVAL AND INSTALLATION	42-45	SUNROOF FIT ADJUSTMENT	42-63
BACK DOOR ASSEMBLY	42-49	OPERATION CHECK	42-63
BACK DOOR DIAGNOSIS	42-49	SUNROOF ASSEMBLY	42-66
INTRODUCTION TO BACK DOOR DIAGNOSIS	42-49	REMOVAL AND INSTALLATION	42-66
BACK DOOR DIAGNOSTIC TROUBLESHOOTING STRATEGY ...	42-49	INSPECTION	42-69
SYMPTOM CHART	42-49	DISASSEMBLY AND ASSEMBLY	42-70
SYMPTOM PROCEDURES	42-49	SPECIFICATIONS	42-73
SPECIAL TOOL	42-50	FASTENER TIGHTENING SPECIFICATIONS	42-73
ON-VEHICLE SERVICE	42-50	SERVICE SPECIFICATIONS	42-73
BACK DOOR FIT ADJUSTMENT	42-50	SEALANTS	42-74
BACK DOOR HANDLE PLAY CHECK ..	42-51	COMPONENT IDENTIFICATION ..	42-74
BACK DOOR ASSEMBLY	42-51		
REMOVAL AND INSTALLATION	42-51		
INSPECTION	42-52		

HOOD

HOOD DIAGNOSIS

INTRODUCTION TO HOOD DIAGNOSIS

M1421005800040

Wind noise at the hood may be caused by improper hood adjustment.

HOOD DIAGNOSTIC TROUBLESHOOTING STRATEGY

M1421005900036

Use these steps to plan your diagnostic strategy. If you follow them carefully, you will be sure that you have exhausted most of the possible ways to find a hood fault.

1. Gather information from the customer.

2. Verify that the condition described by the customer exists.
3. Find the malfunction by following the Symptom Chart.
4. Verify malfunction is eliminated.

SYMPTOM CHART

M1421006000337

SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Difficult locking and unlocking	1	P.42-3
Uneven body clearance	2	P.42-4
Uneven height	3	P.42-4

SYMPTOM PROCEDURES

INSPECTION PROCEDURE 1: Difficult Locking and Unlocking

DIAGNOSIS

STEP 1. Check the release cable routing condition.

Q: Is the release cable routing condition good?

YES : Go to Step 2.

NO : Repair the release cable, then go to Step 4.

STEP 2. Check the engagement of the hood latch and hood striker.

Q: Are the hood latch and hood striker engaged correctly?

YES : Go to Step 3.

NO : Adjust the hood latch (Refer to P.42-5).
Then go to Step 4.

STEP 3. Check for proper lubrication of release cable.

Q: Is the release cable properly lubricated?

YES : Go to Step 4.

NO : Lubricate, then go to Step 4.

STEP 4. Retest the system.

Q: Does the hood lock operate easily?

YES : The procedure is complete.

NO : Return to Step 1.

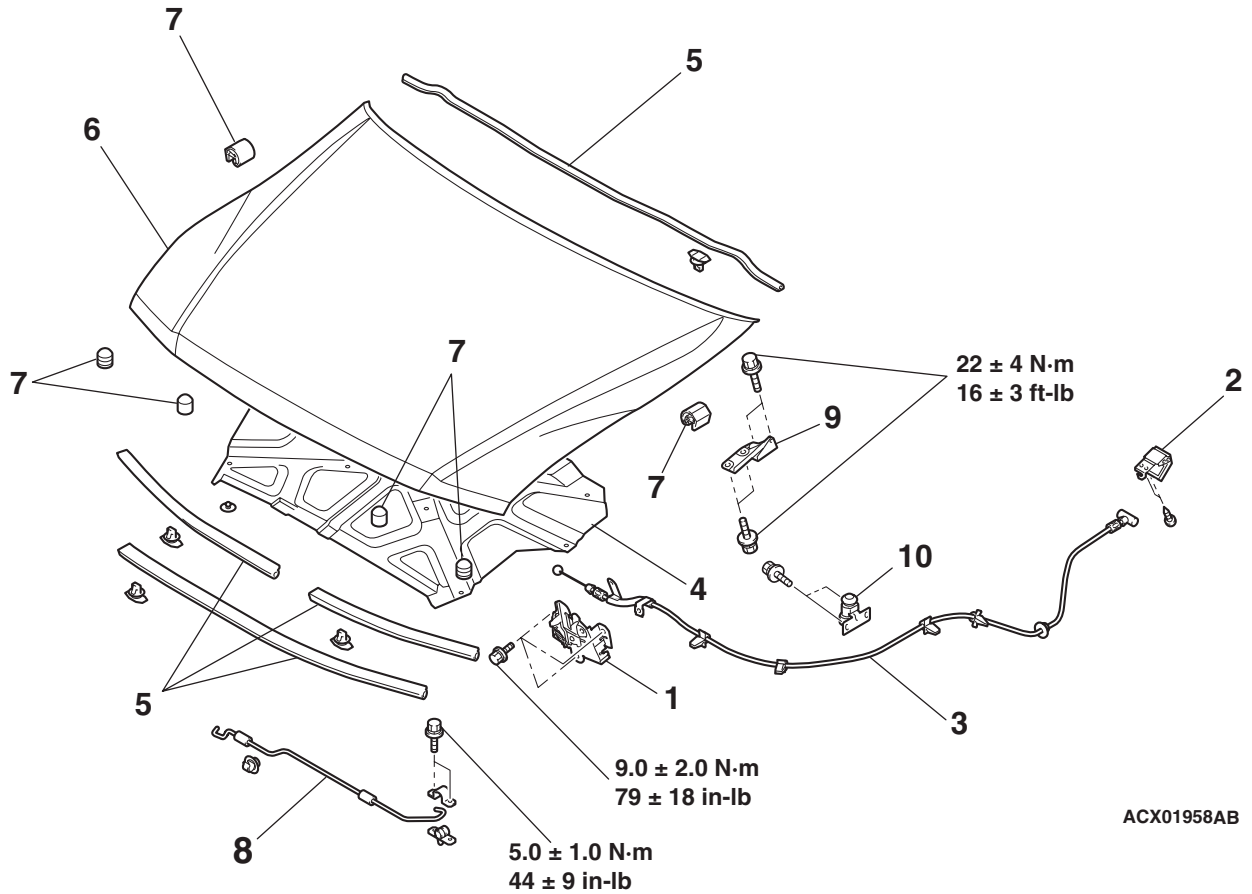
INSPECTION PROCEDURE 2: Uneven Body Clearance

DIAGNOSIS**STEP 1. Check the hood installation condition.****Q: Is the hood installation in good condition?****YES :** Go to Step 2.**NO :** Adjust the hood (Refer to [P.42-5](#)). Then go to Step 2 .**STEP 2. Retest the system.****Q: Is the clearance with the body even?****YES :** The procedure is complete.**NO :** Return to Step 1.**INSPECTION PROCEDURE 3: Uneven Height**

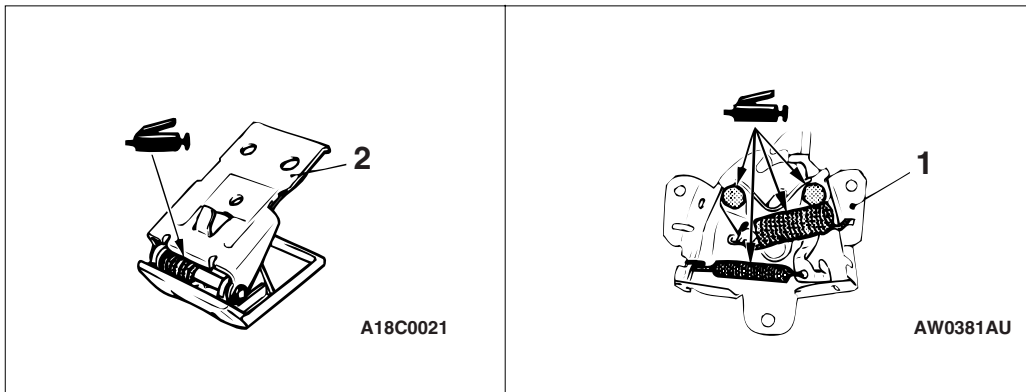
DIAGNOSIS**STEP 1. Check the hood bumper height.****Q: Is the hood bumper height proper?****YES :** Go to Step 2.**NO :** Adjust the hood bumper (Refer to [P.42-5](#)). Then go to Step2.**STEP 2. Retest the system.****Q: Are the hood and body height even?****YES :** The procedure is complete.**NO :** Return to Step 1.

**HOOD
REMOVAL AND INSTALLATION**

M1421001600226



ACX01958AB



HOOD LATCH REMOVAL STEPS

- RADIATOR GRILL (REFER TO GROUP 51 – FRONT BUMPER P.51-3.)

1. HOOD LATCH

**HOOD LOCK RELEASE CABLE
REMOVAL STEPS**

- 2. HOOD LOCK RELEASE HANDLE
- 3. HOOD LOCK RELEASE CABLE

**HOOD AND HOOD HINGE
REMOVAL STEPS**

- 4. HOOD INSULATOR
- 5. HOOD WEATHERSTRIP

**HOOD AND HOOD HINGE
REMOVAL STEPS (Continued)**

- WASHER HOSE (REFER TO GROUP 51 – WINDSHIELD WIPER AND WASHER P.51-23.)

6. HOOD

7. BUMPER A

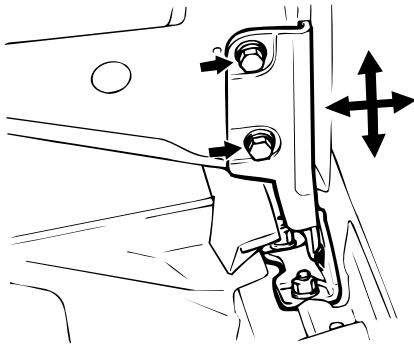
8. HOOD SUPPORT ROD

- FRONT DECK GARNISH (REFER TO GROUP 51 – WINDSHIELD WIPER AND WASHER P.51-23.)

9. HOOD HINGE

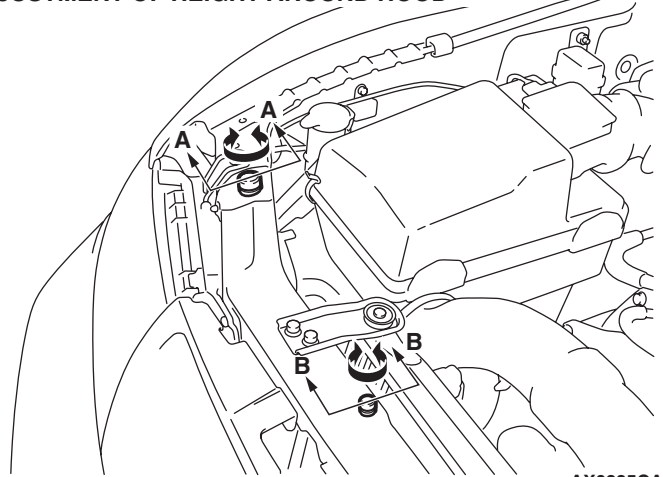
10. HOOD SWITCH

ADJUSTMENT OF CLEARANCE AROUND HOOD



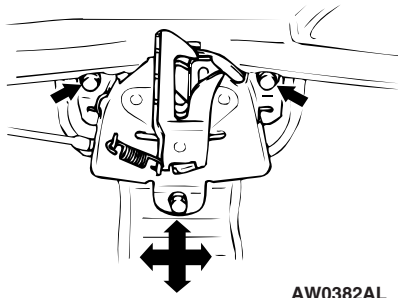
ACX00459

ADJUSTMENT OF HEIGHT AROUND HOOD



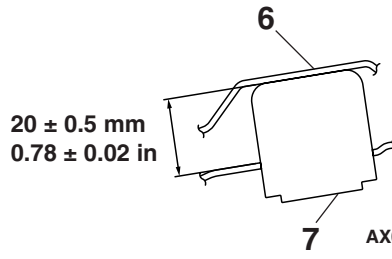
AX0385CA

ADJUSTMENT OF HOOD AND HOOD STRIKER ENGAGEMENT



AW0382AL

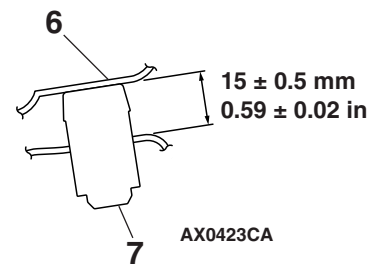
SECTION A - A



$20 \pm 0.5 \text{ mm}$
 $0.78 \pm 0.02 \text{ in}$

AX0424CA

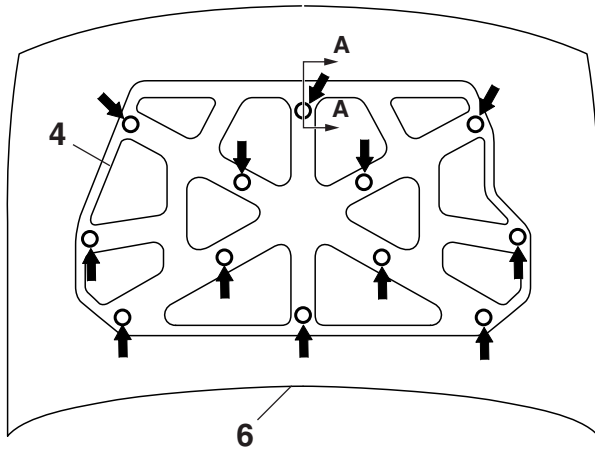
SECTION B - B



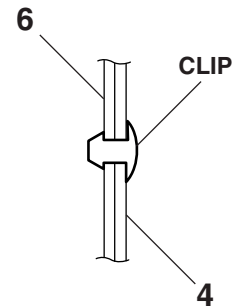
$15 \pm 0.5 \text{ mm}$
 $0.59 \pm 0.02 \text{ in}$

AX0423CA

CLIP POSITIONS



SECTION A - A



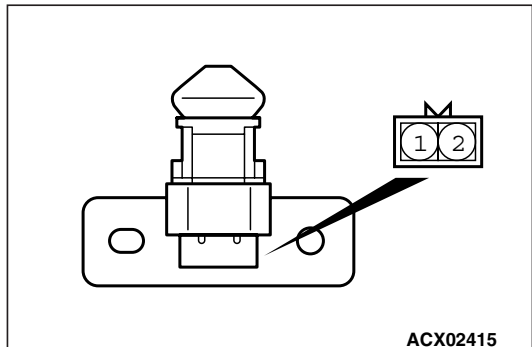
← : CLIP POSITION

AC203663AB

INSPECTION

M1421001700182

HOOD SWITCH CONTINUITY CHECK <VEHICLES WITH THEFT-ALARM SYSTEM>



SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Hood switch unpressed	1 - 2	Less than 2 ohms
Hood switch depressed		Open circuit

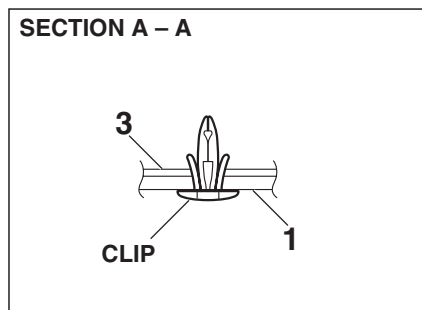
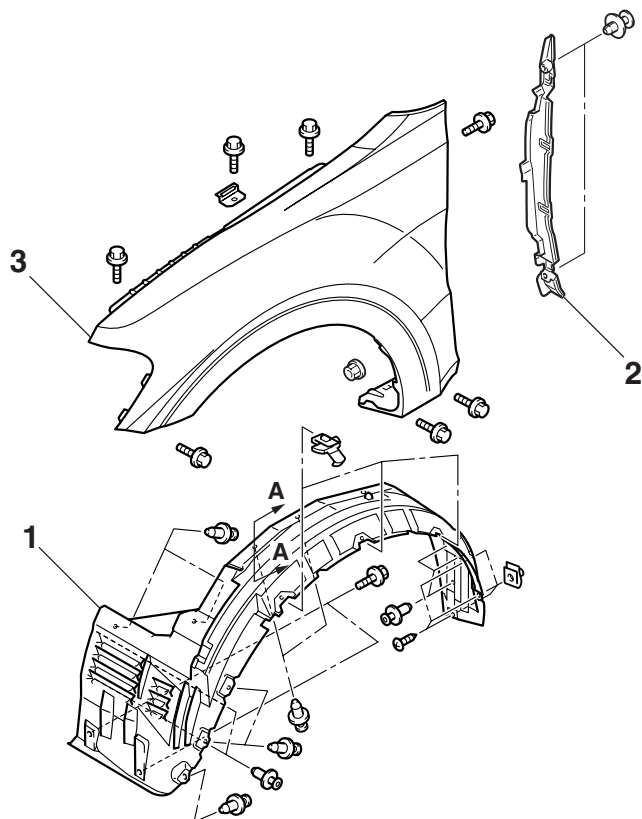
FENDER

REMOVAL AND INSTALLATION

M1421001900722

Pre-removal and Post-installation Operation

- Front Bumper Removal and Installation (Refer to GROUP 51, Front Bumper P.51-3.)
- Front Mud Guard Removal and Installation (Refer to GROUP 51, Front Mud Guard P.51-17.)
- Front Wheel Cut Molding Removal and Installation (Refer to GROUP 51, Front Wheel Cut Molding P.51-10.)



AC500083AB

REMOVAL STEPS

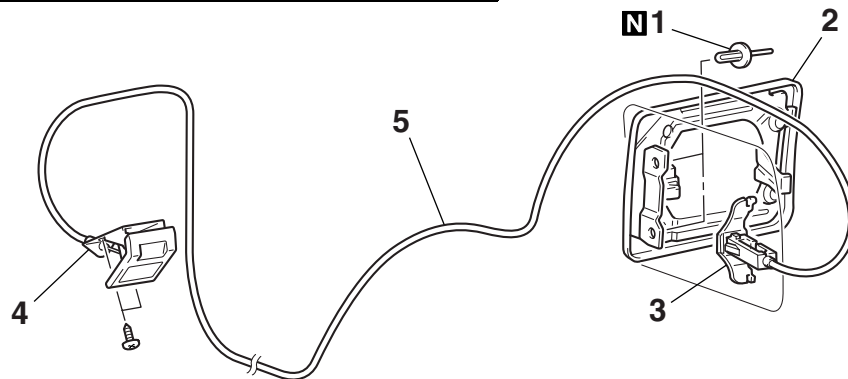
1. SPLASH SHIELD
 - FRONT DOOR ASSEMBLY (REFER TO [P.42-30.](#))
2. FENDER REAR PROTECTOR
3. FENDER

FUEL FILLER LID**REMOVAL AND INSTALLATION**

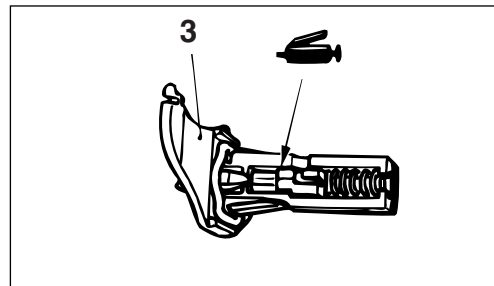
M1421002500318

Pre-removal and Post-installation Operation

- Quarter Trim Lower Removal and Installation (Refer to GROUP 52A, Trims [P.52A-8.](#))
- Center Pillar Trim Lower Removal and Installation (Refer to GROUP 52A, Trims [P.52A-8.](#))



X0181CA



AC101963AB

<<A>> >>A<<

REMOVAL STEPS

1. RIVET
2. FUEL FILLER LID ASSEMBLY
3. FUEL FILLER LID HOOK ASSEMBLY
4. FUEL FILLER LID LOCK RELEASE HANDLE

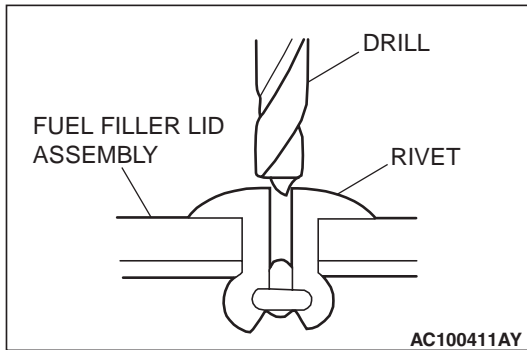
REMOVAL STEPS (Continued)

- INSTRUMENT LOWER PANEL (REFER TO GROUP 52A – INSTRUMENT PANEL [P.52A-3.](#))
- 5. FUEL FILLER LID LOCK RELEASE CABLE

REMOVAL SERVICE POINT

<<A>> RIVET REMOVAL

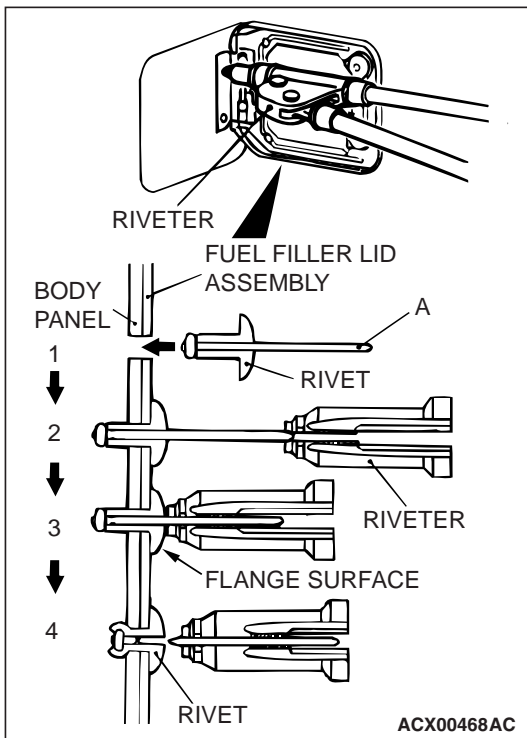
Use a drill [$\phi 6.5 - 7.5$ mm ($\phi 0.25 - 0.29$ inch)] to break the rivet by drilling a hole, and remove the rivet.



INSTALLATION SERVICE POINT

>>A<< RIVET INSTALLATION

1. Insert the rivet [$\phi 6.4$ mm ($\phi 0.25$ inch)] into the body panel and fuel filler lid assembly.
2. Insert the "A" side of the rivet into the riveter.
3. Pressing the flange surface of the rivet, move the handle of the riveter.
4. The thinnest point of "A" is cut and the rivet is held in the position.



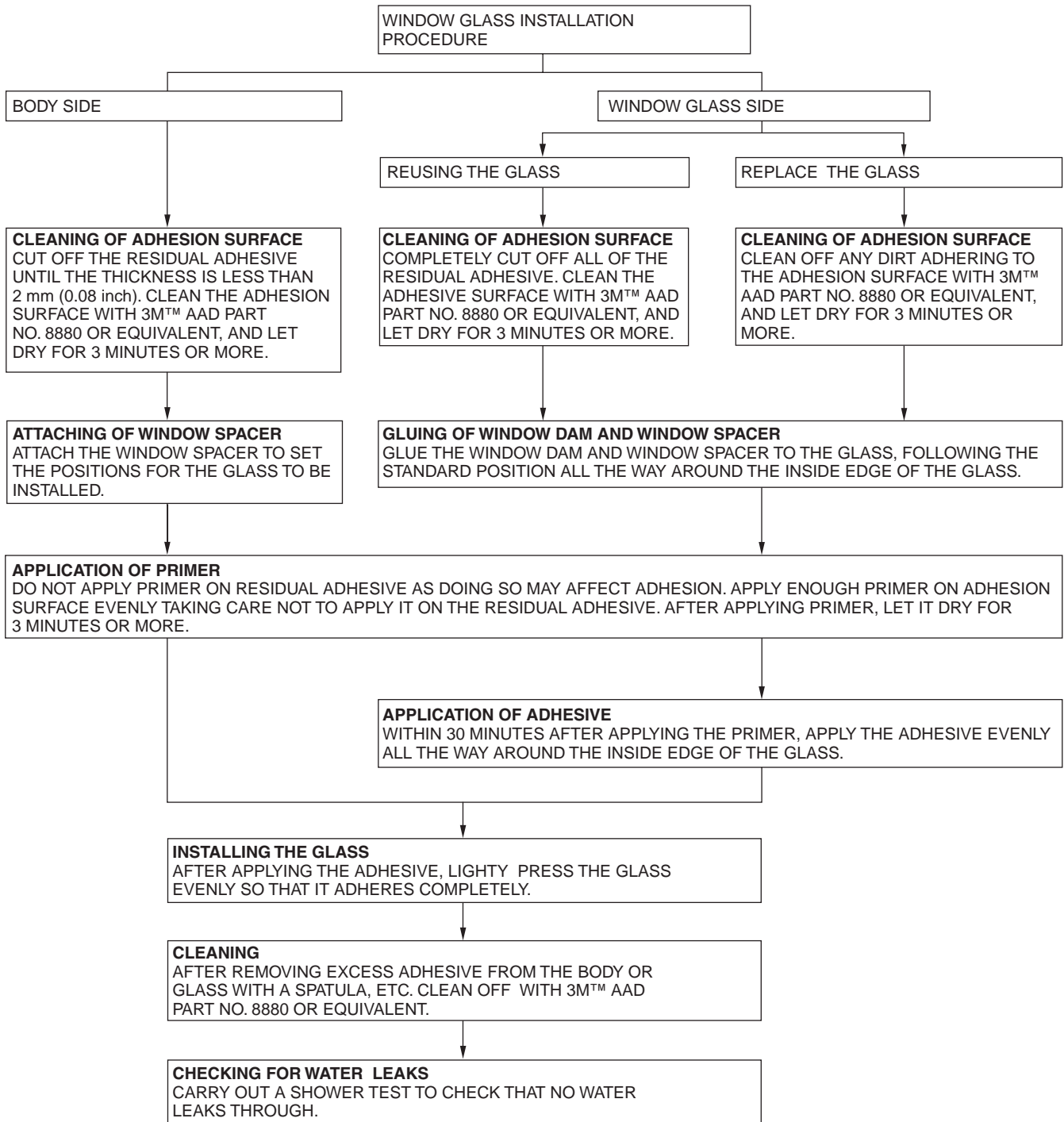
WINDOW GLASS**GENERAL DESCRIPTION**

M1422000100425

The windshield, quarter window glass and back door window glass are attached by urethane-base adhesive to the window frame. This adhesive provides improved glass holding and sealing, and also permits use of body openings having a greater structural strength.

ITEM	APPLICATION	QUANTITY
Wire (dia × length)	For cutting adhesive	Five pieces of wire 0.6 mm × 1 m (0.02 in × 3.3 ft)
Sealant gun	For adhesive application	One
Wiping shop towels	–	As required
Sealer	For prevention of water leaks and gathering after adhesive application	As required
3M™ AAD Part No. 8880 or equivalent	For cleaning	As required
Glass holder MB990480	For holding window glass	Two
Window molding remover MB990449	For roof drip molding removal	One

WINDOW GLASS INSTALLATION



AC306636AF

WINDOW GLASS DIAGNOSIS**INTRODUCTION TO WINDOW GLASS DIAGNOSIS**

M1422006700221

If water leaks from the windshield, the quarter window glass, the back door glass, or the seal or body flange may be faulty.

WINDOW GLASS DIAGNOSTIC TROUBLESHOOTING STRATEGY

M1422006800046

Use these steps to plan your diagnostic strategy. If you follow them carefully, you will be sure that you have exhausted most of the possible ways to find a window glass fault.

1. Gather information from the customer.

2. Verify that the condition described by the customer exists.

3. Find the malfunction by following the Symptom Chart.

4. Verify malfunction is eliminated.

SYMPTOM CHART

M1422006900311

SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Water leak through windshield	1	P.42-12
Water leak through quarter window glass		
Water leak through back door window glass		

SYMPTOM PROCEDURES**INSPECTION PROCEDURE 1: Water Leak through Windshield/Water Leak through Quarter Window Glass/Water Leak through Back Door Window Glass****DIAGNOSIS****STEP 1. Check if the seal is faulty.**

Q: Is the seal faulty?

YES : Repair the seal, then go to Step 3.

NO : Go to Step 2.

STEP 2. Check if the body flange is deformed.

Q: Is the body flange deformed?

YES : Repair or replace the body flange, then go to Step 3.

NO : Go to Step 3.

STEP 3. Retest the system.

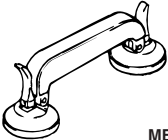
Q: Is any water leaking?

YES : Return to Step 1.

NO : This diagnosis complete.

SPECIAL TOOL

M142200600323

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
 MB990480	MB990480 Glass holder	General service tool	Removal and installation of window glass

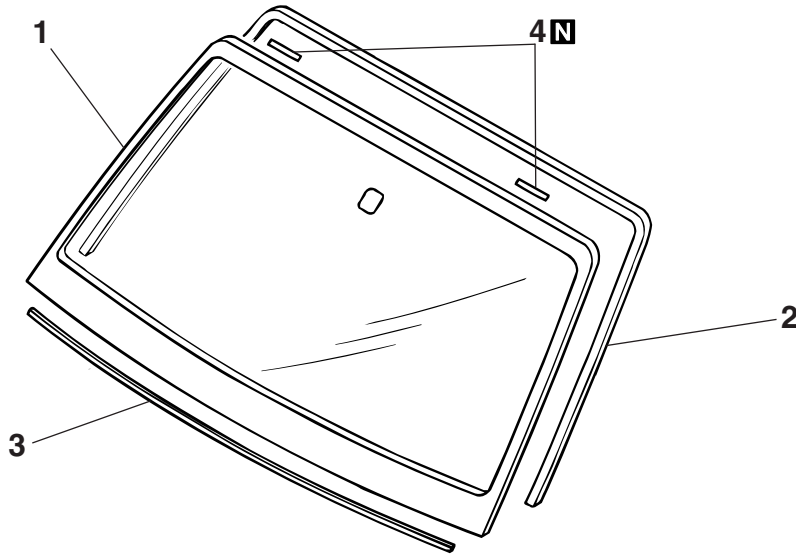
WINDSHIELD

REMOVAL AND INSTALLATION

M1422001000391

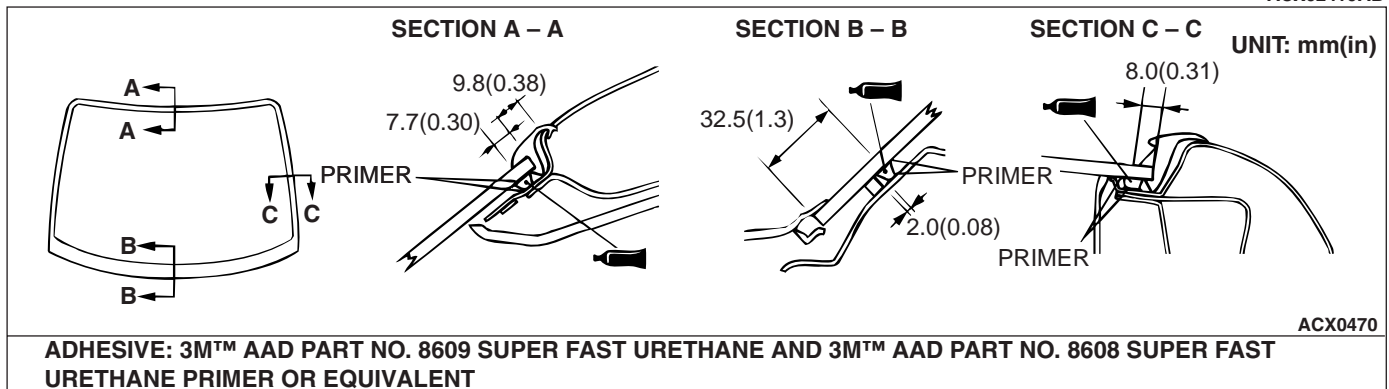
Pre-removal and Post-installation Operation

- Front Deck Garnish Removal and Installation (Refer to GROUP 51, Windshield Wiper and Washer P.51-23.)
- Front Pillar Trim Removal and Installation (Refer to GROUP 52A, Trims P.52A-8.)
- Headlining Removal and Installation (Refer to GROUP 52A, Headlining P.52A-10.)



ACX00469

ACX02416AB



ACX0470

REMOVAL STEPS

- <<A>> >>B<< 1. WINDSHIELD
 >>A<< 2. WINDSHIELD MOLDING
 >>A<< 3. WINDOW SPACER
 >>A<< 4. GLASS STOPPER

Required Special Tool:

- MB990480: Glass Holder

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. Using a sharp-point drill, make a hole in the windshield adhesive.
3. 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.

4. Pull the piano wire alternately from the inside and outside along the windshield to cut the adhesive.
5. Make mating marks on the windshield and body.

6. Use special tool MB990480 to remove the windshield.

⚠ CAUTION

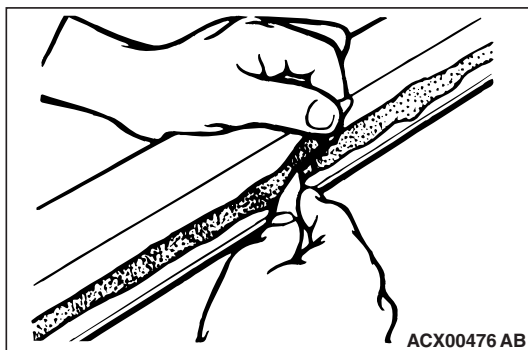
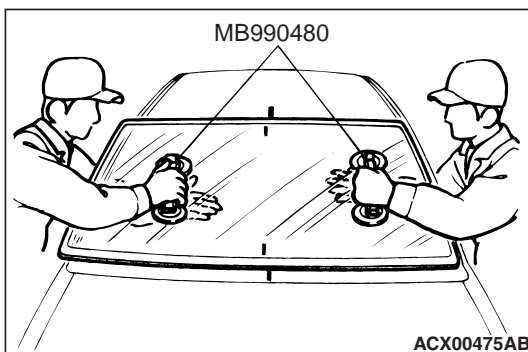
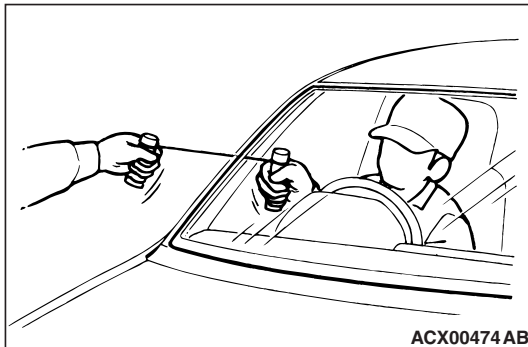
- Be careful not to remove more adhesive than is necessary.
- Be careful also not to damage the paintwork on the body surface with the knife. If the paintwork is damaged, repair the damaged area with repair paint or anti-rust agent.

7. Use a knife to cut away the remaining adhesive so that the thickness is within 2 mm (0.08 inch) around the entire circumference of the body flange.
8. 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.

9. When reusing the windshield, remove the adhesive still adhering to the windshield, and clean with 3M™ AAD Part number 8880 or equivalent.
10. Clean the body side in the same way.



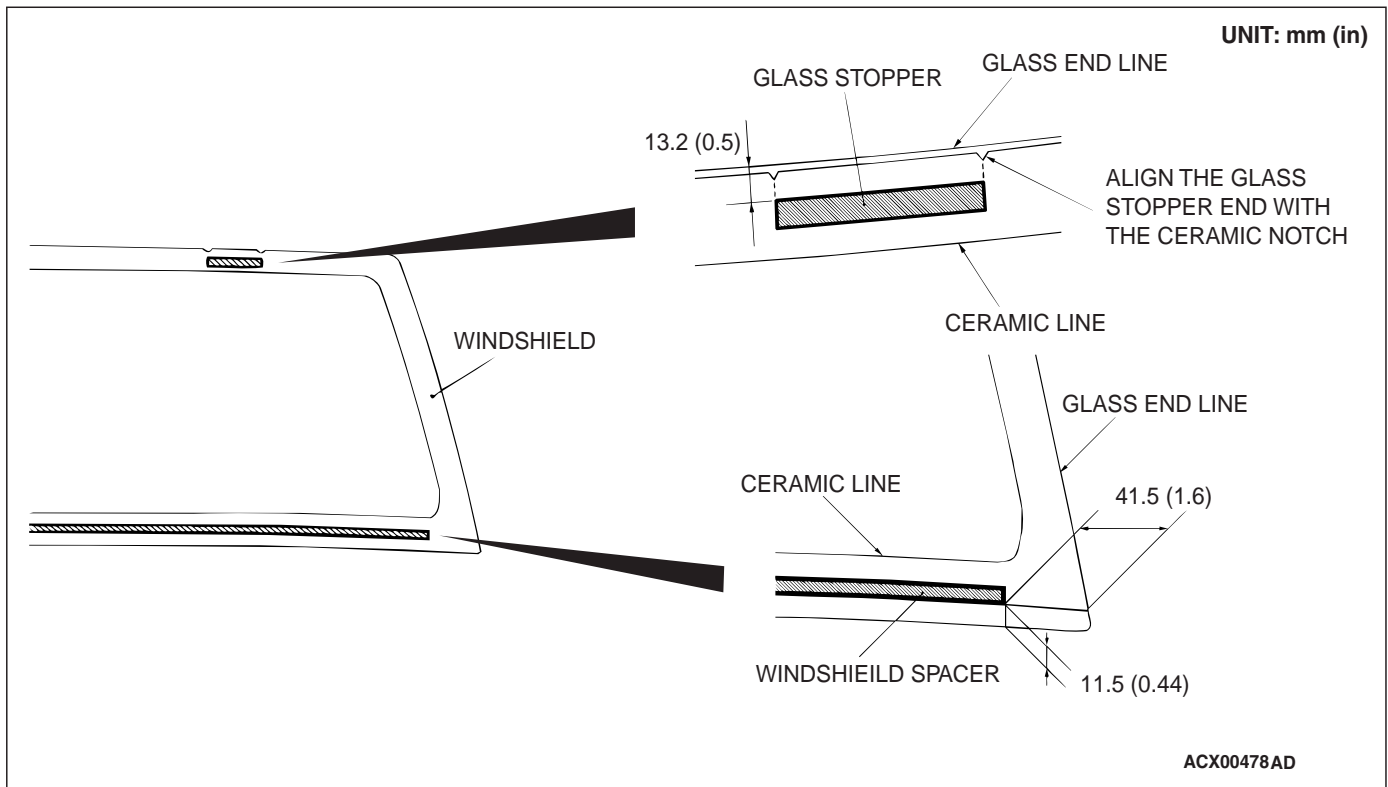
INSTALLATION SERVICE POINTS

>>A<< GLASS STOPPER/WINDSHIELD SPACER/WINDSHIELD MOLDING INSTALLATION

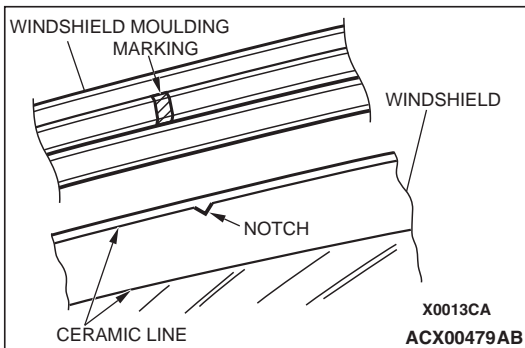
⚠ CAUTION

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 3M™ AAD Part number 8880 or equivalent to degrease the inside and outside of the windshield and the body flanges.



2. Mount the glass stopper and the windshield spacer correctly at the specified position so that there is no bend or rise at the inside of the windshield.
3. Align the mating mark on the windshield molding and the notch on the windshield to mount the windshield molding. Install the windshield molding.

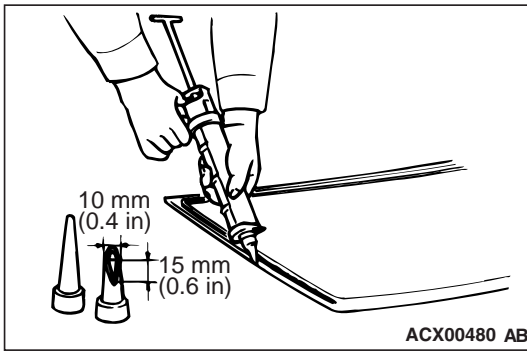


>>B<< WINDSHIELD INSTALLATION

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.
2. Soak a sponge in the primer, and apply evenly to the windshield and the body 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 3M™ AAD Part number 8880 or equivalent. Avoid moving the vehicle until the adhesive sets.

CAUTION

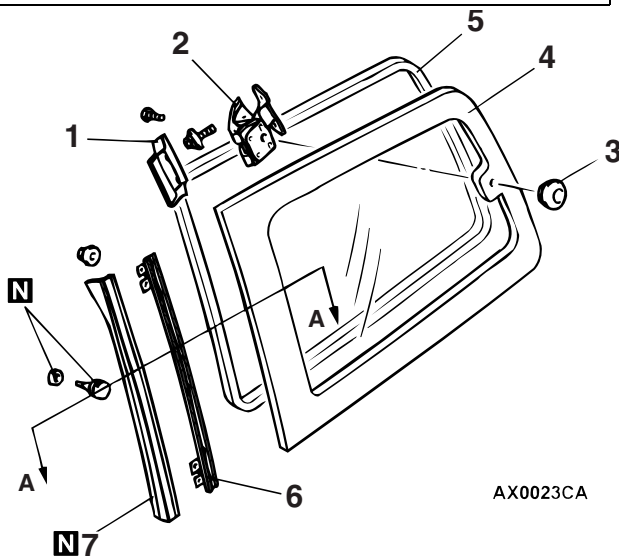
- Do not move the vehicle unless absolutely necessary.
 - When testing for water leakage, do not pinch the end of the hose to spray the water.
7. Wait 30 minutes or more, and then test for water leakage.

**QUARTER WINDOW GLASS
REMOVAL AND INSTALLATION**

M1422002500269

Pre-removal and Post-installation Operation

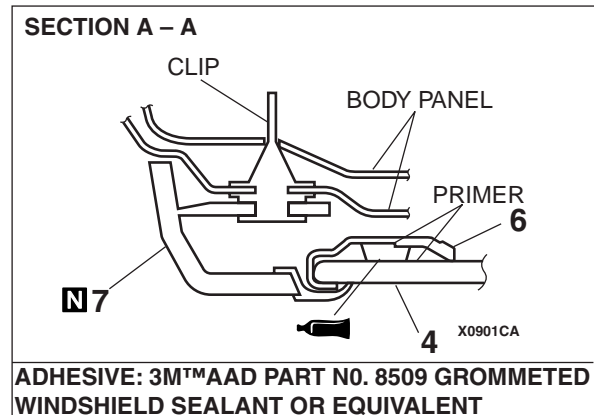
- Quarter Trim Upper Removal and Installation (Refer to GROUP 52A, Trims P.52A-8.)



REMOVAL STEPS

1. LEVER
2. QUARTER WINDOW LINK
3. RUBBER, NUT
4. QUARTER WINDOW GLASS

<<A>> >>A<<



REMOVAL STEPS (Continued)

5. QUARTER WINDOW WEATHERSTRIP
6. QUARTER WINDOW MOLDING
7. QUARTER WINDOW GARNISH

<<A>> >>A<<

REMOVAL SERVICE POINT

<<A>> QUARTER WINDOW GLASS/QUARTER WINDOW MOLDING REMOVAL

Remove the quarter window glass using the same procedure as for windshield removal (Refer to P.42-13).

INSTALLATION SERVICE POINT

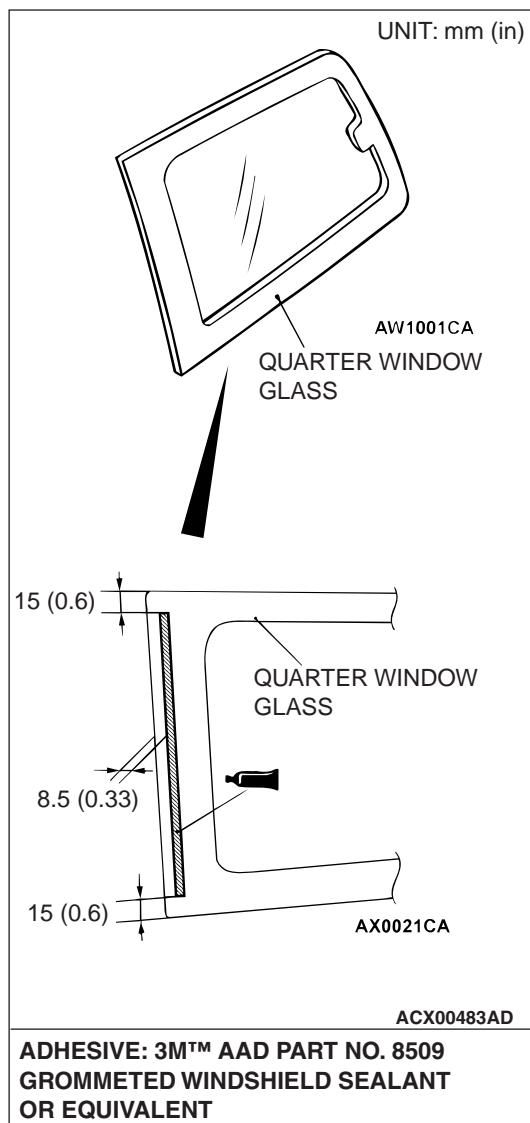
>>A<< QUARTER WINDOW MOLDING/QUARTER WINDOW GLASS INSTALLATION

1. Remove old adhesive remaining at the groove of the quarter window molding and quarter window glass

CAUTION

Allow the degreased portion to dry for at least three minutes before proceeding to the next procedure. Do not touch any surface that has been cleaned.

2. Apply the primer sufficiently on the portion of the quarter window glass to adhere evenly and without blur.
3. After applying the specified sealant on the specified area of the quarter window glass, mount the quarter window molding on the quarter window glass.

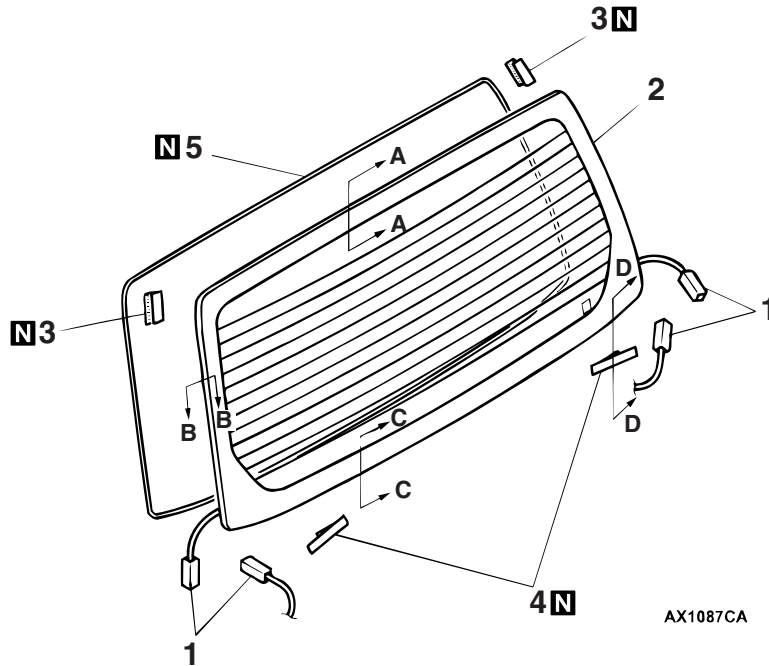


**BACK DOOR WINDOW GLASS
REMOVAL AND INSTALLATION**

M1422001900071

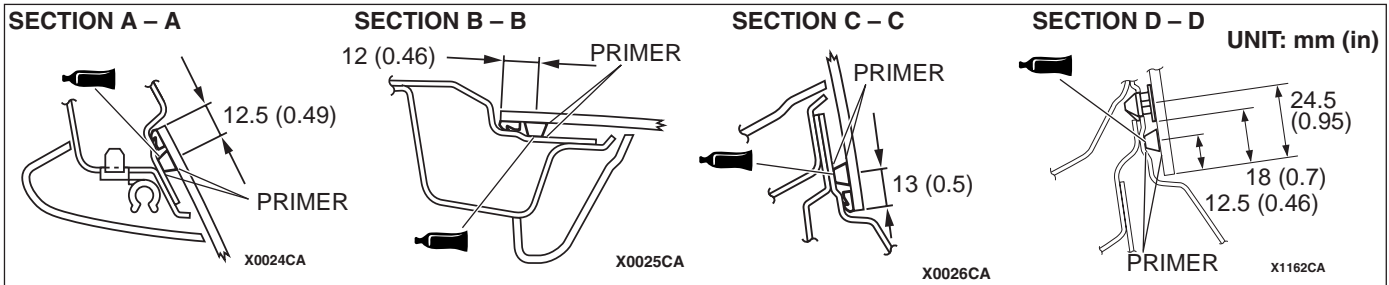
Pre-removal and Post-installation Operation

- Back Door Upper Trim Removal and Installation (Refer to P.42-53.)
- Spare tire Removal and Installation



AX1087CA

ACX00485AC



ADHESIVE: 3M™ AAD PART NO. 8609 AND NO. 8608 OR EQUIVALENT

REMOVAL STEPS

- <<A>> >>A<< 1. HARNESS CONNECTOR
>>A<< 2. BACK DOOR WINDOW GLASS
>>A<< 3. DUAL LOCK FASTENER

REMOVAL STEPS (Continued)

- >>A<< 4. GLASS STOPPER
>>A<< 5. WINDOW DAM

REMOVAL SERVICE POINT

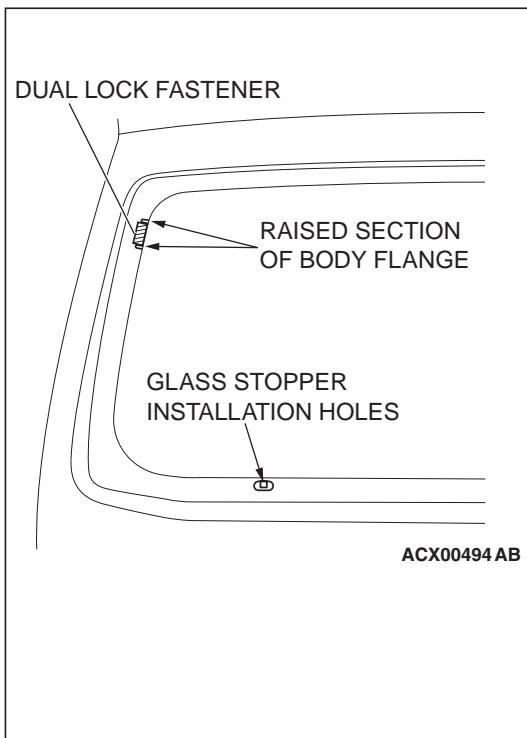
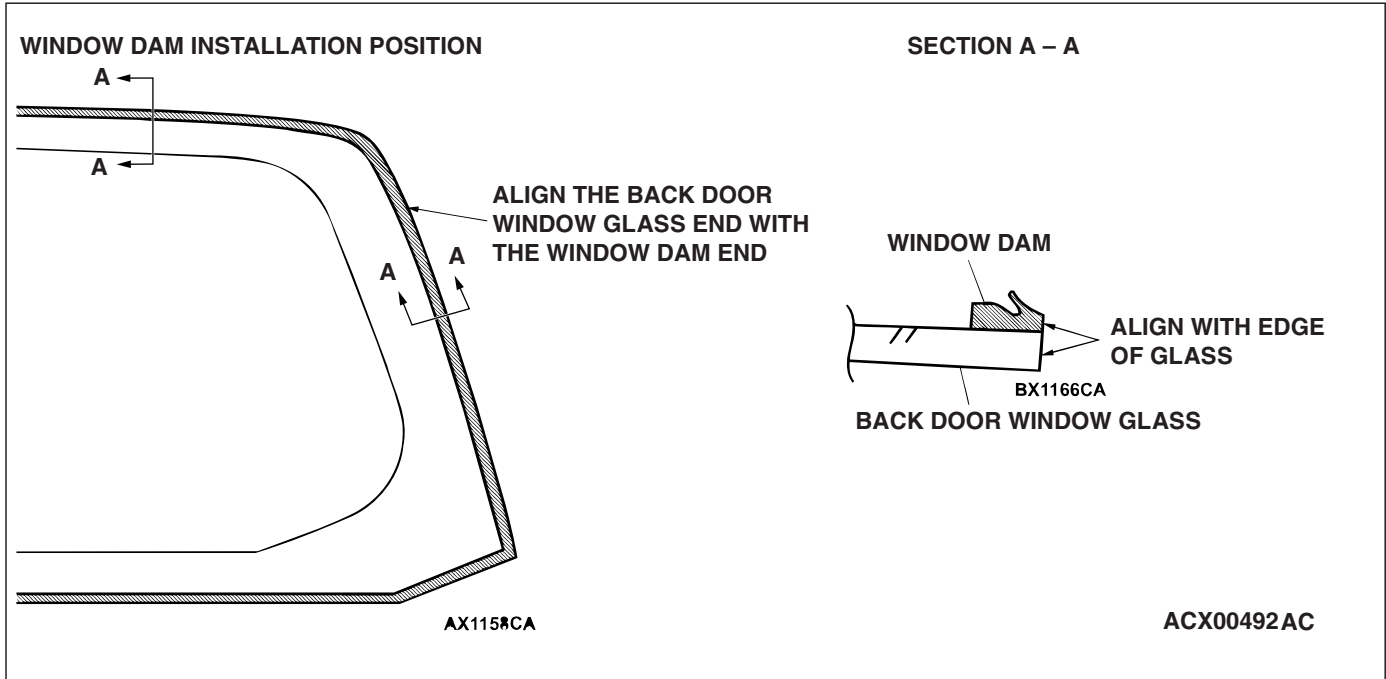
<<A>> BACK DOOR WINDOW GLASS REMOVAL

Remove the back door window glass using the same procedure as for the windshield (Refer to P.42-13).

INSTALLATION SERVICE POINT

>>A<< WINDOW DAM/GLASS STOPPER/DUAL LOCK FASTENER/BACK DOOR WINDOW GLASS INSTALLATION

1. Use 3M™ AAD Part number 8880 or equivalent to degrease the inside and outside edges of the back door window glass and the surface of the body flange.



2. Mount the window dam.
3. Attach the dual lock fastener at the specified position on the body flange.
4. Attach the dual lock fastener and the glass stopper on the back door window glass at the corresponding location to the mounting portion of the dual lock fastener and the glass stopper on the body flange.
5. Apply primer and adhesive (Refer to [P.42-18](#)).
6. Install the glass in the same way as for the windshield (Refer to [P.42-13](#)).

DOOR

GENERAL DESCRIPTION

M1423000100280

OPERATION

CENTRAL DOOR LOCKING SYSTEM

The central door locking system operates the door lock actuator to lock or unlock the doors using the operation of the door lock switch built into the front power window (main or sub) switch or key cylinder built into the front door outside handles. The system has the following operations and features:

- All doors can be locked using the door lock switch built into the front power window (main or sub) switch.
- All doors can be locked or unlocked using the front door (LH or RH) key cylinder key operation.
- You cannot lock an open door if the key is in the ignition switch. The key reminder function automatically unlocks all doors when the door is locked.

POWER WINDOWS

When the power window (main or sub) switch is operated, the door windows will open or close. This system has the following operations and features:

- When the power window main switch lock/unlock switch is locked, the door windows can only be opened or closed by the power window main switch on the driver's door.
- When all doors are closed and the ignition is turned off, the power windows can be operated for 30 seconds from the time the ignition is turned off.
- The power window main switch contains a one-touch down switch that will automatically fully open driver's side door window only.

CENTRAL DOOR LOCKING SYSTEM DIAGNOSIS

M1427000700035

The central door locking system is controlled by the smart wiring system (SWS). For troubleshooting, refer to GROUP 54B, Diagnosis [P.54B-22](#).

POWER WINDOW DIAGNOSIS

M1429000700116

The power window is controlled by the simplified wiring system (SWS). For troubleshooting, refer to GROUP 54B, Diagnosis [P.54B-22](#).

DOOR DIAGNOSIS

M1423000700055

The central door locking system is controlled by the Simplified by the Simplified Wiring System (SWS). Refer to GROUP 54B, Diagnosis [P.54B-22](#) for troubleshooting .

INTRODUCTION TO GLASS AND DOOR DIAGNOSIS

M1423007300058

Glass and door faults include water leaks and improper opening and closing. Causes for these faults can include faults in the glass, weatherstrip, drain hole, waterproof film or door installation.

GLASS AND DOOR DIAGNOSTIC TROUBLESHOOTING STRATEGY

M1423006700042

Use these steps to plan your diagnostic strategy. If you follow them carefully, you will be sure that you have exhausted most of the possible ways to find a glass and door fault.

1. Gather information from the customer.

2. Verify that the condition described by the customer exists.
3. Find the malfunction by following the Symptom Chart.
4. Verify malfunction is eliminated.

SYMPTOM CHART

M1423007000262

SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Water leak through door window glass	1	P.42-21
Door window glass malfunction	2	P.42-21
Water leak through door edge	3	P.42-22
Water leak from door center	4	P.42-22
Door hard to open	5	P.42-22
Door does not open or close completely	6	P.42-23
Uneven gap between body	7	P.42-23
Wind noise around door	8	P.42-23

SYMPTOM PROCEDURES

INSPECTION PROCEDURE 1: Water Leak through Door Window Glass

DIAGNOSIS

STEP 1. Check the door window glass installation.

- Q: Is the door window glass installed correctly?**
YES : Go to Step 2.
NO : Adjust the door window glass (Refer to P.42-26). Then go to Step 3.

STEP 2. Check the clearance at the top of the door window glass.

- Q: Is the clearance at the top of the door window glass correct?**
YES : Go to Step 3.
NO : Adjust the door window glass clearance (Refer to P.42-26). Then go to Step 3.

STEP 3. Retest the system.

- Q: Is any water leaking?**
YES : Return to Step 1.
NO : The procedure is complete.

INSPECTION PROCEDURE 2: Door Window Malfunction

DIAGNOSIS

STEP 1. Check the door window installation condition.

- Q: Is the door window installation condition good?**
YES : Go to Step 2.
NO : Adjust the door window (Refer to P.42-26). Then go to Step 4.

STEP 2. Check the door sash.

- Q: Is the door sash in good condition?**
YES : Go to Step 3.
NO : Repair or replace the door sash, then go to Step 4.

STEP 3. Inspect the window regulator assembly.

- Q: Is the window regulator assembly in good condition?**
YES : Go to Step 4.
NO : Repair or replace the window regulator assembly, then go to Step 4.

STEP 4. Retest the system.**Q: Does the door window operate correctly?****YES :** The procedure is complete.**NO :** Return to Step 1.

INSPECTION PROCEDURE 3: Water Leak through Door Edge

DIAGNOSIS

STEP 1. Check the weatherstrip.**Q: Is the weatherstrip in good condition?****YES :** Go to Step 2.**NO :** Replace the weatherstrip, then go to Step 3.

STEP 2. Check door fit (alignment).**Q: Is the door fit (alignment) correct?****YES :** Go to Step 3.**NO :** Adjust the door fit (alignment) (Refer to [P.42-26](#)). Then go to Step 3.

STEP 3. Retest the system.**Q: Is any water leaking?****YES :** Return to Step 1.**NO :** The procedure is complete.

INSPECTION PROCEDURE 4: Water Leak from Door Center

DIAGNOSIS

STEP 1. Check the drain hole.**Q: Is the drain hole clogged?****YES :** Replace the drain hole, then go to Step 3.**NO :** Go to Step 2.

STEP 2. Check the waterproof film.**Q: Is the waterproof film in good condition?****YES :** Go to Step 3.**NO :** Repair or replace the waterproof film, then go to Step 3.

STEP 3. Retest the system.**Q: Is any water leaking?****YES :** Return to Step 1.**NO :** The procedure is complete.

INSPECTION PROCEDURE 5: Door Hard to Open

DIAGNOSIS

STEP 1. Adjust the latch and striker engagement.**Q: Is the latch and striker engagement adjusted?****YES :** Go to Step 2.**NO :** Adjust the latch and striker engagement (Refer to [P.42-26](#)). Then go to Step 4.

STEP 2. Check for possible lock rod damage.**Q: Is the possible lock rod damaged?****YES :** Repair or replace the possible lock rod, then go to Step 4.**NO :** Go to Step 3.

STEP 3. Check the door handle flexibility
(amount of movement of handle required to open door).

- Q: Is the door handle flexibility good?**
YES : Go to Step 4.
NO : Adjust the door handle flexibility (Refer to [P.42-29](#) and [P.42-29](#)). Then go to Step 4.

STEP 4. Retest the system.

- Q: Does the door open easily?**
YES : The procedure is complete.
NO : Return to Step 1.

INSPECTION PROCEDURE 6: Door does not Open or Close Completely

DIAGNOSIS

STEP 1. Check the door hinge position.

- Q: Is the door hinge position correct?**
YES : Go to Step 2.
NO : Adjust the door hinge position (Refer to [P.42-26](#)). Then go to Step 4.

STEP 2. Check the door.

- Q: Is the door in good condition?**
YES : Go to Step 3.
NO : Repair or replace the door, then go to Step 4.

STEP 3. Check the grease.

- Q: Is the door check or door hinge grease sufficient?**
YES : Go to Step 4.
NO : Apply the grease, then go to Step 4.

STEP 4. Retest the system.

- Q: Does the door open and close correctly?**
YES : The procedure is complete.
NO : Return to Step 1.

INSPECTION PROCEDURE 7: Uneven Gap between Body

DIAGNOSIS

Adjust the door fit (Refer to [P.42-28](#)). Then check that the gap has been improved.

INSPECTION PROCEDURE 8: Wind Noise around Door

DIAGNOSIS

STEP 1. Check the weatherstrip for holding condition.

- Q: Is the weatherstrip installed properly?**
YES : Go to Step 2.
NO : Repair or replace the weatherstrip. Then go to Step 5.

STEP 2. Check the weatherstrip for installation condition.

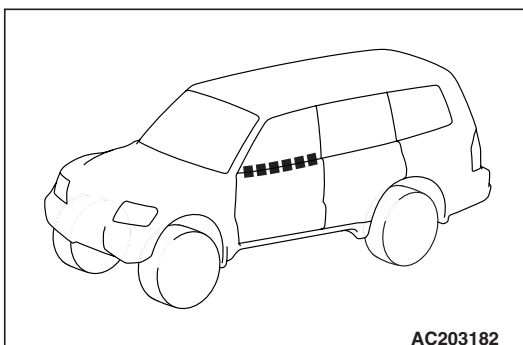
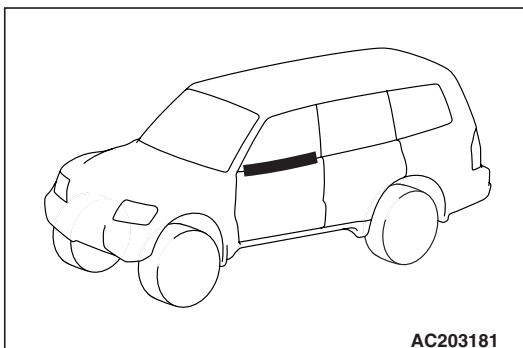
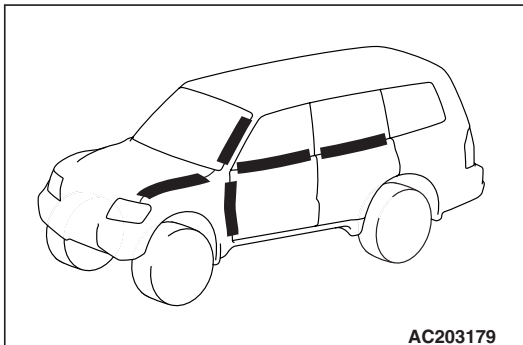
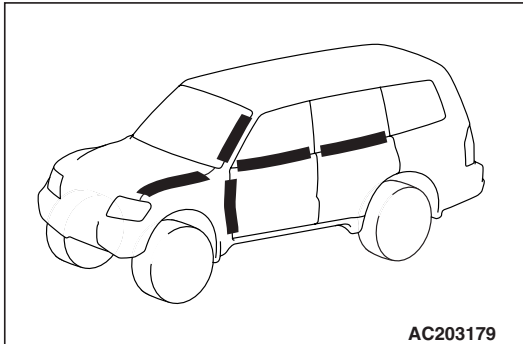
- Q: Is the weatherstrip installed properly?**
YES : Go to Step 3.
NO : Repair or replace the weatherstrip. Then go to Step 5.

STEP 3. Check the clearance.

- Q: Is the clearance between the door glass and the door weatherstrip holder proper?**
YES : Go to Step 4.
NO : Adjust the clearance (Refer to [P.42-28](#)). Then go to Step 5.

STEP 4. Check the door.**Q: Is the door deformed?****YES :** Repair or replace the door. Then go to Step 5.**NO :** Go to Step 5.**STEP 5. Retest the system.****Q: Has the wind noise been improved?****YES :** Return to Step 1.**NO :** This diagnosis complete.**HOW TO LOCATE WIND NOISES**

M1421004200186

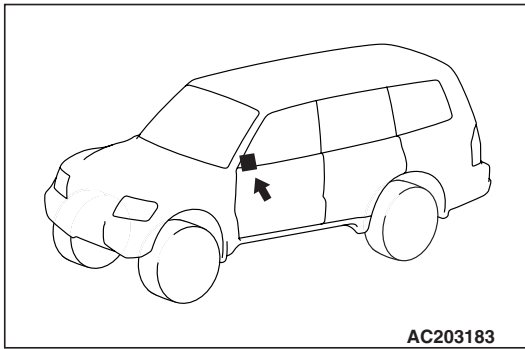


1. Attach cloth tape to every place, such as panel seams, projections, molding seams, glass and body seams, etc. which might conceivably be the source of wind noise.
2. Then make a road test to check that the places not covered by tape are not sources of wind noise.

3. Remove the strips of tape one by one, making a road test after each is removed, until a wind noise source is discovered.

4. When such a place is found, cover it again and repeat the procedure to check if there are any other noise source.
5. If no others are found, the last remaining tape is the only source.

6. Cut the remaining piece of tape into smaller pieces, attach it again as it was before, and then remove the pieces one by one to narrow down the source.


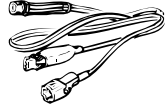
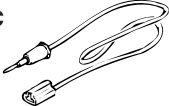
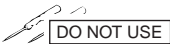

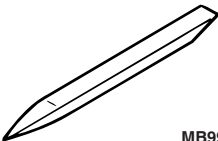


7. Check that wind noise occurs when the last remaining tape is removed, and that noise does not occur when it is re-attached.
8. When the sources of the wind noise is finally located, attach butyl tape, body sealer or similar material to obstruct this source as much as possible.

SPECIAL TOOLS

M1423000600553

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
<p>MB990900</p>	MB990900 or MB991164 Door adjusting wrench	MB990900-01	Adjustment of door fit
<p>A MB990925AD</p>	MB990925 Bearing and oil seal installer set A: MB990939 Remover bar	MB990925-01 or General service tool	Adjustment of door striker
<p>MB990211</p>	MB990211 Slider hammer	MB990211-01	
<p>A MB990241AC</p>	MB990241 Axle shaft puller A: MB990243 Body puller	MB990241-01 or General service tool	

TOOL	TOOL NUMBER AND NAME	SUPERSESION	APPLICATION
<p>A</p>  <p>B</p>  <p>C</p>  <p>D</p>  <p>MB991223AZ</p>	<p>MB991223 Harness set</p> <p>A: MB991219 Test harness</p> <p>B: MB991220 LED harness</p> <p>C: MB991221 LED harness adapter</p> <p>D: MB991222 Probe</p>	General service tools	<p>Making voltage and resistance measurement during troubleshooting</p> <p>A: Connector pin contact pressure inspection</p> <p>B: Power circuit inspection</p> <p>C: Power circuit inspection</p> <p>D: Commercial tester connection</p>
 <p>MB992006</p>	<p>MB992006</p> <p>Extra fine probe</p>	—	<p>Making voltage and resistance measurement during troubleshooting</p>
 <p>MB990784</p>	<p>MB990784 Ornament remover</p>	General service tool	Removal of trim, etc.

ON-VEHICLE SERVICE

DOOR FIT ADJUSTMENT

M1423001100421

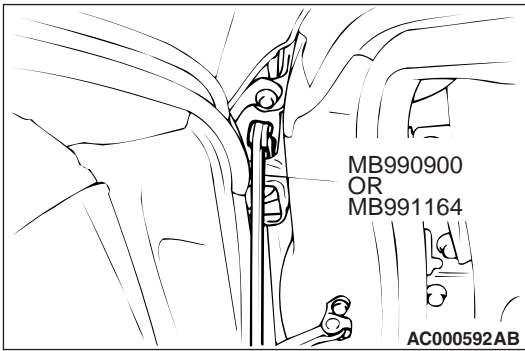
Required Special Tools:

- MB990211: Slide Hammer
- MB990243: Body Puller
- MB990900 or MB991164: Door adjusting Wrench
- MB990939: Brass Bar

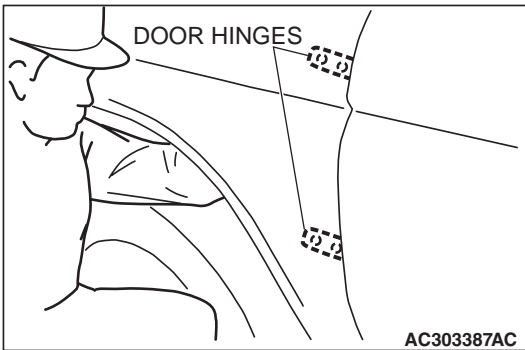
CAUTION

- Attach protection tape to the fender and door edges where the hinge is installed.
- Do not rotate special tool MB991164 with a torque of over 98 N·m (72 ft-lb).

1. When the clearance between the front door and body is uneven



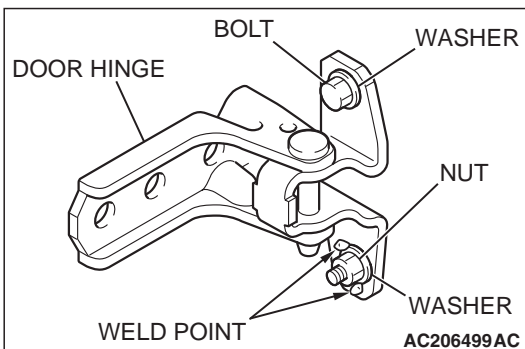
- (1) Loosen the vehicle rear-side each mounting bolt of front door hinge at body side using special tool MB990900 or MB991164.
- (2) Remove the splash shield. (Refer to P.42-7.)



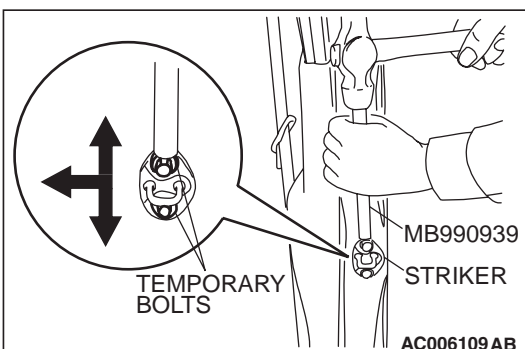
- (3) Loosen the vehicle front-side each mounting bolt of front door hinge at body side.
- (4) Move and adjust the front door so the clearance around the front door is even.

2. When the clearance between the rear door and body is uneven
 - (1) Loosen the body-side rear door hinge mounting bolts.
 - (2) Move and adjust the rear door so the clearance around the rear door is even.
3. If a door is not flush with its surrounding panels, loosen the door-side door hinge mounting bolt, nut and adjust the door as necessary.

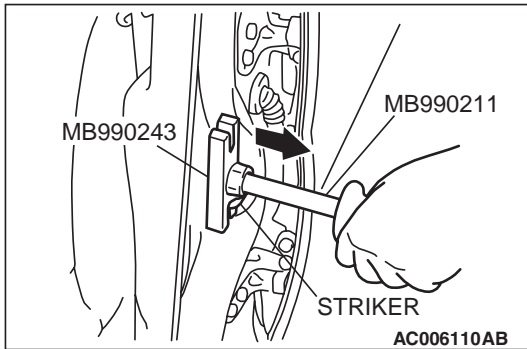
NOTE: If the door hinge mounting nut washer are welded, grind off the welding according to the procedure below beforehand.



1. Remove the door hinge. (Refer P.42-30.)
2. Use a chisel or grinder to release the door hinge mounting nut washer, which is welded to the door hinge.
3. On completion, paint the affected area with touch-up paint to prevent corrosion.
4. Install the door hinge. (Refer P.42-30.)

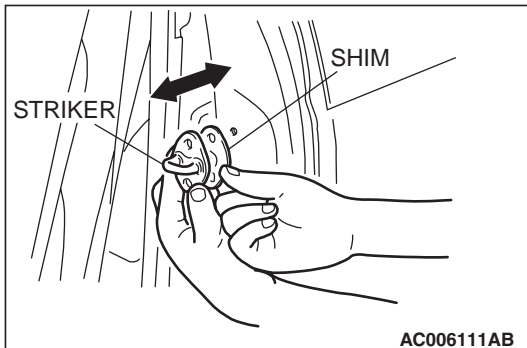


4. If the door is stiff to lock and unlock:
 - (1) Adjustment by using the striker (vertically or toward the inside of the vehicle)
Install an temporary bolts instead of the striker mounting bolt, and use special tool MB990939 and a hammer to tap the bolt in the desired direction.



- (2) Adjustment by using the striker (toward the outside of the vehicle)

Use special tools MB990211 and MB990243 to pull the striker toward the outside of the vehicle.



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

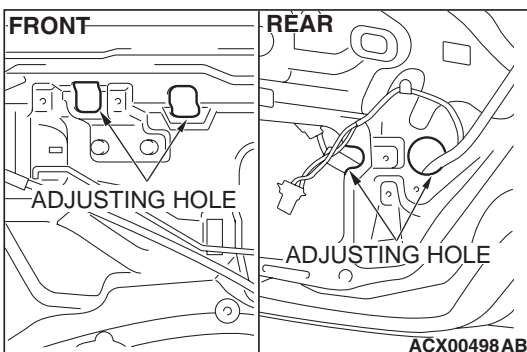
Increase or decrease the number of shims so that the striker engages with the door latch properly.

DOOR WINDOW GLASS ADJUSTMENT

M1423001000220

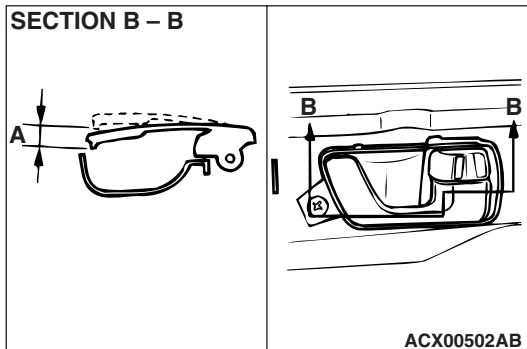
Check that the door glass moves while contacting the door glass channel when it is raised and lowered fully. If not, adjust the door window according to the following procedures.

1. Remove the door trim and waterproof film (Refer to [P.42-32](#)).
2. Loosen the door glass mounting screw via the adjusting hole with the door window glass fully closed, then lower the window glass a little.
3. Fully close the door window glass again and tighten the door glass mounting screw firmly via the adjusting hole.



DOOR INSIDE HANDLE PLAY CHECK AND ADJUSTMENT

M1423001500214



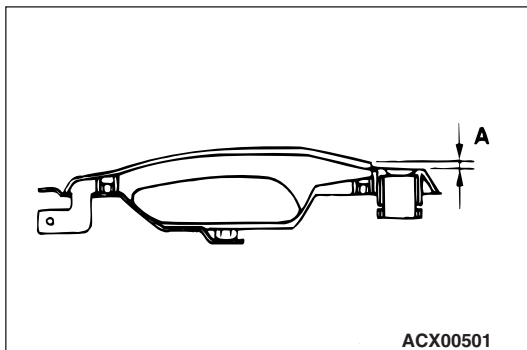
1. Check that the door inside handle play is within the standard value range.

Standard value (A): 5.1 mm (0.20 inch) or more

2. If the door inside handle play is outside the standard value range, remove the door trim (Refer to P.42-32).
3. Loosen the inside handle mounting screws, and then move the inside handle back and forth to adjust the play.

DOOR OUTSIDE HANDLE PLAY CHECK

M1423001600039



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

Standard value (A):

Front: 2.0 mm (0.08 inch) or more

Rear: 1.7 mm (0.07 inch) or more

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

CIRCUIT BREAKER (INCORPORATED IN THE POWER WINDOW MOTOR) INSPECTION

M1429001000024

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

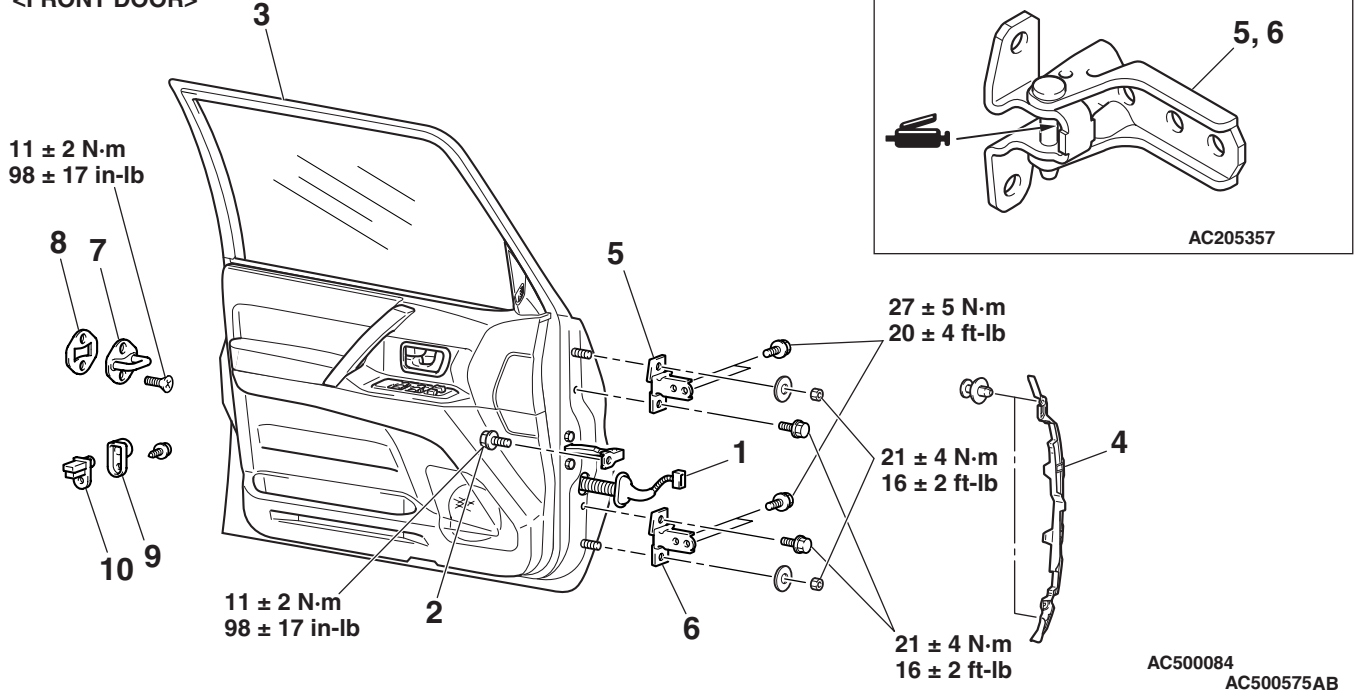
**DOOR ASSEMBLY
REMOVAL AND INSTALLATION**

M1423002200498

Post-installation Operation

- Door Fit Adjustment (Refer to P.42-26).

<FRONT DOOR>



DOOR ASSEMBLY REMOVAL STEPS

1. HARNESS CONNECTOR
2. DOOR CHECK CONNECTING BOLT
3. DOOR ASSEMBLY
4. FENDER REAR PROTECTOR
5. DOOR UPPER HINGE
6. DOOR LOWER HINGE

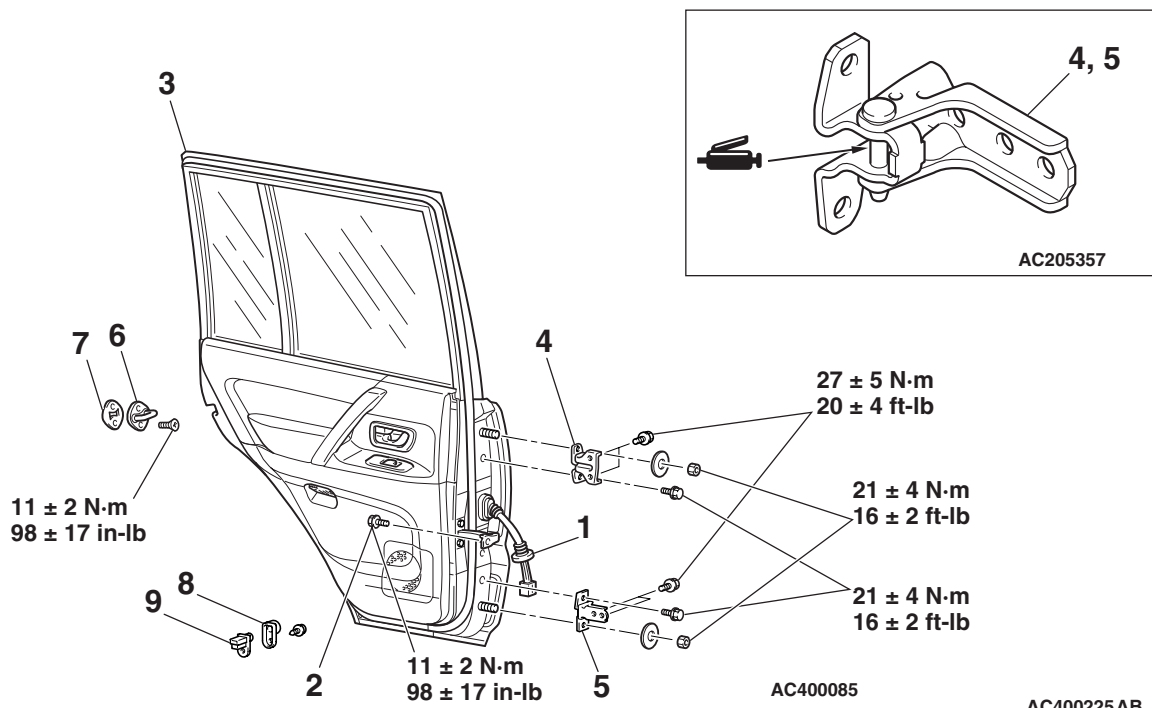
STRIKER REMOVAL STEPS

7. STRIKER
8. STRIKER SHIM

DOOR SWITCH REMOVAL STEPS

9. DOOR SWITCH CAP
10. DOOR SWITCH

<REAR DOOR>



DOOR ASSEMBLY REMOVAL STEPS

1. HARNESS CONNECTOR
2. DOOR CHECK CONNECTING BOLT
3. DOOR ASSEMBLY
4. DOOR UPPER HINGE
5. DOOR LOWER HINGE

STRIKER REMOVAL STEPS

6. STRIKER
7. STRIKER SHIM

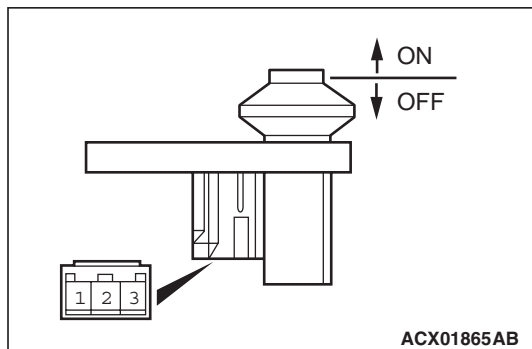
DOOR SWITCH REMOVAL STEPS

8. DOOR SWITCH CAP
9. DOOR SWITCH

INSPECTION

M1421007600343

DOOR SWITCH CONTINUITY CHECK

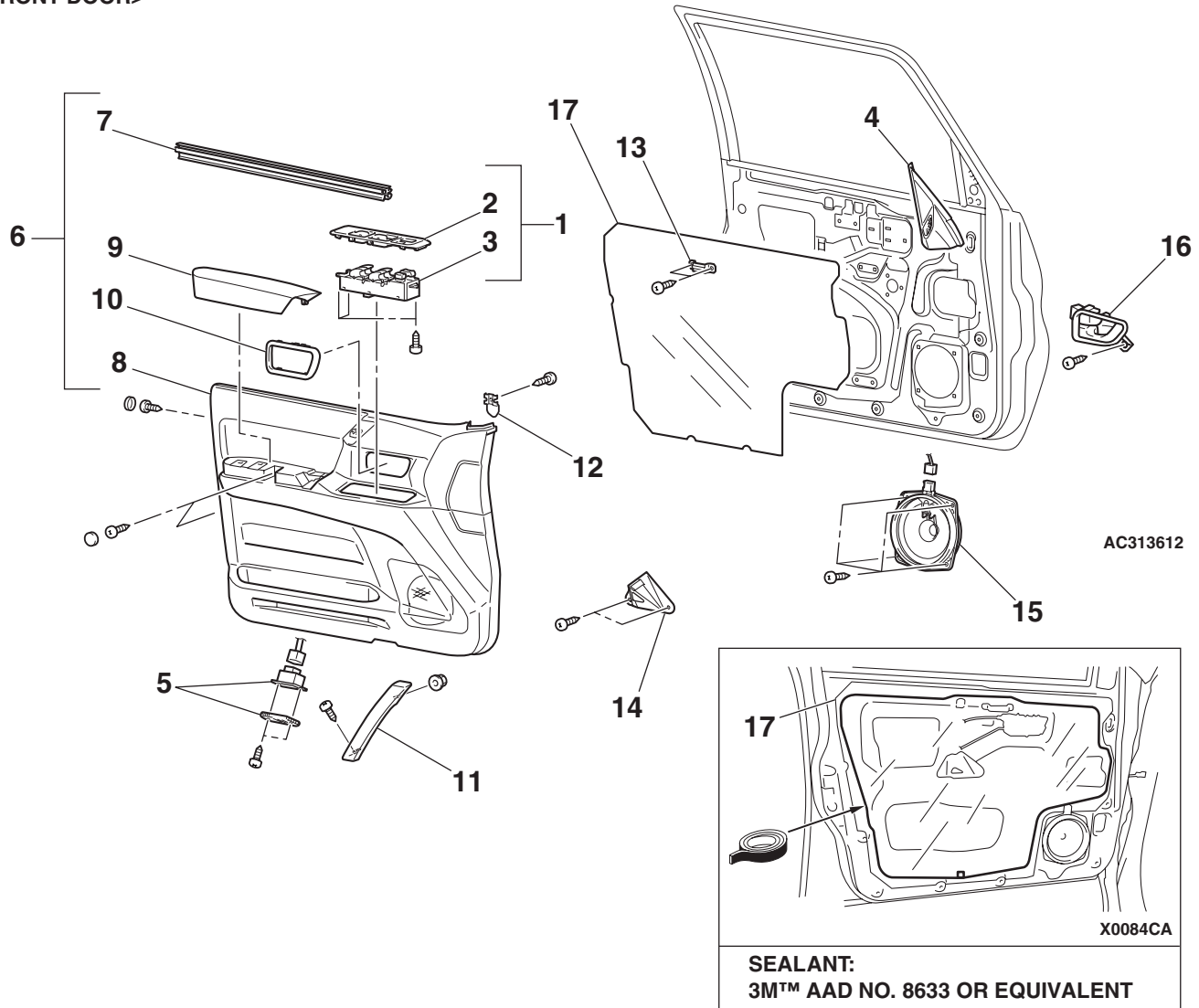


SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released (ON)	1 – switch body, 2 – switch body	Less than 2 ohms
Depressed (OFF)	1 – switch body, 2 – switch body	Open circuit

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

M1423004300275

<FRONT DOOR>



<<A>>

REMOVAL STEPS

1. POWER WINDOW SWITCH AND POWER WINDOW SWITCH PANEL ASSEMBLY
2. POWER WINDOW SWITCH PANEL
3. POWER WINDOW SWITCH
4. DELTA COVER, INNER
5. DOOR LIGHT ASSEMBLY
6. DOOR INSIDE HANDLE COVER AND DOOR TRIM ASSEMBLY
7. DOOR BELT LINE MOLDING ASSEMBLY
8. DOOR TRIM
9. FRONT ARM RESTRAINT COVER

<>

REMOVAL STEPS (Continued)

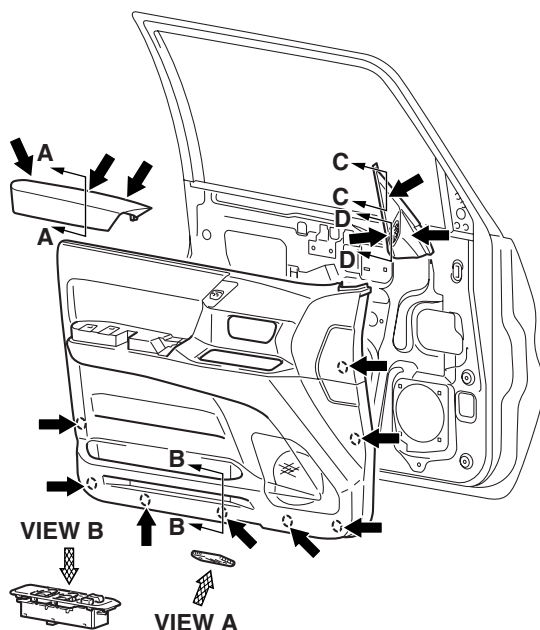
10. DOOR INSIDE HANDLE COVER
11. DOOR GRIP
12. GRIP BRACKET
13. DOOR GRIP UPPER RETAINER
14. DOOR GRIP LOWER BRACKET
15. SPEAKER
16. DOOR INSIDE HANDLE
- >>A<< 17. WATERPROOF FILM

Required Special Tool:

- MB990784: Ornament Remover

CLIP AND CLAW POSITIONS

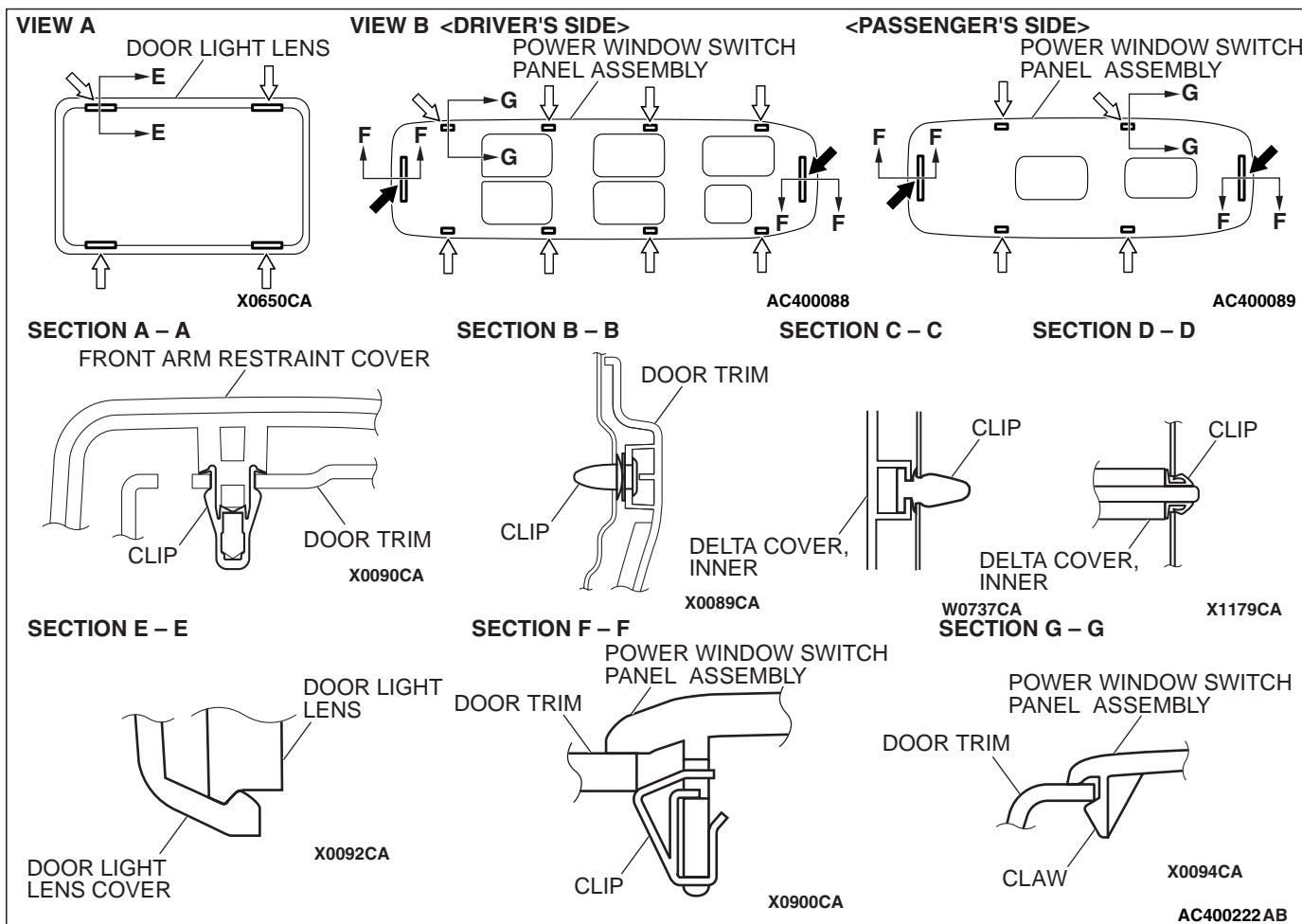
<FRONT DOOR>



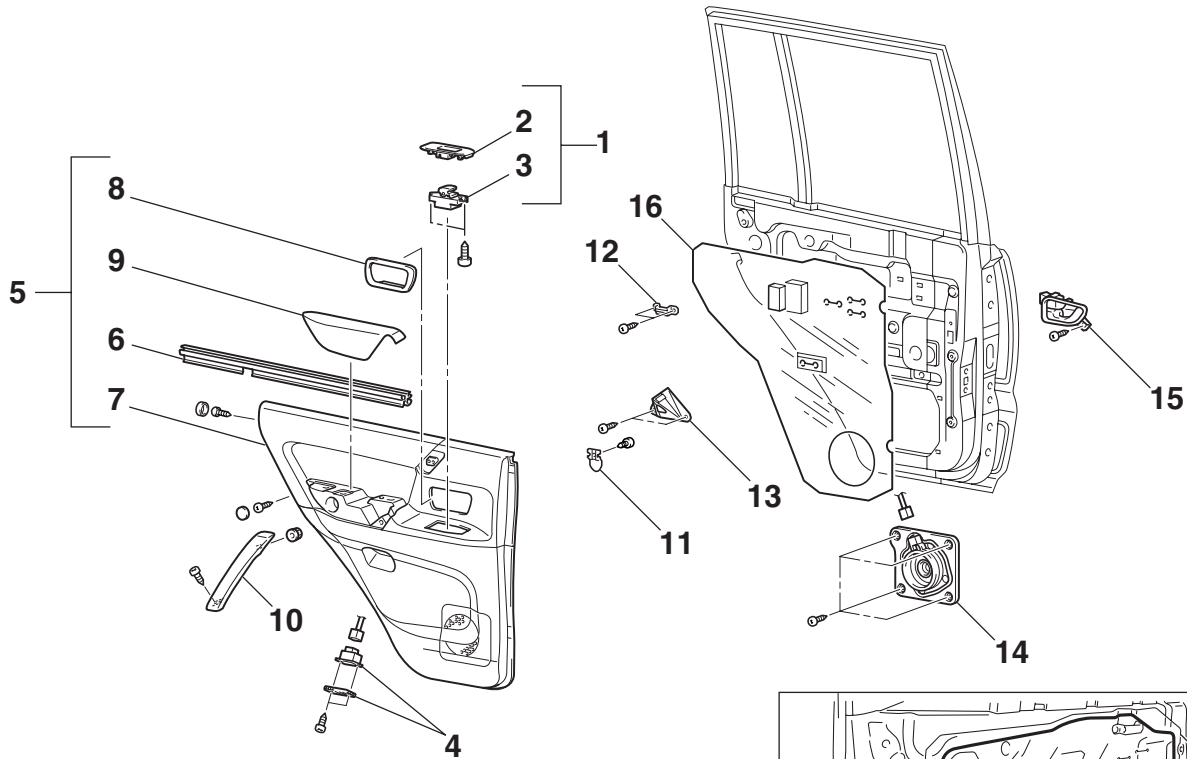
NOTE

- ← : CLIP POSITIONS
- ↔ : CLAW POSITIONS

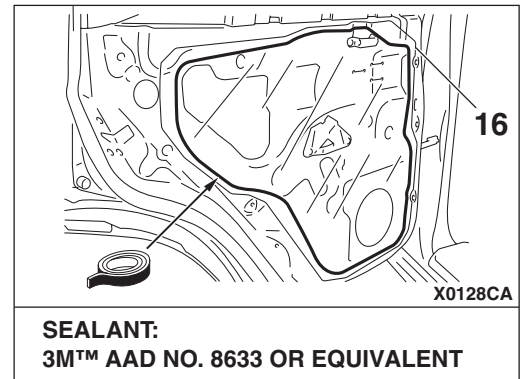
AC313614AB



<REAR DOOR>



AC313613



SEALANT:
3M™ AAD NO. 8633 OR EQUIVALENT

AC400207AB

<<A>>

REMOVAL STEPS

1. POWER WINDOW SWITCH AND POWER WINDOW SWITCH PANEL ASSEMBLY
2. POWER WINDOW SWITCH PANEL
3. POWER WINDOW SWITCH
4. DOOR LIGHT ASSEMBLY
5. DOOR INSIDE HANDLE COVER AND DOOR TRIM ASSEMBLY
6. DOOR BELT LINE MOLDING ASSEMBLY
7. DOOR TRIM
8. DOOR INSIDE HANDLE COVER

<>

REMOVAL STEPS (Continued)

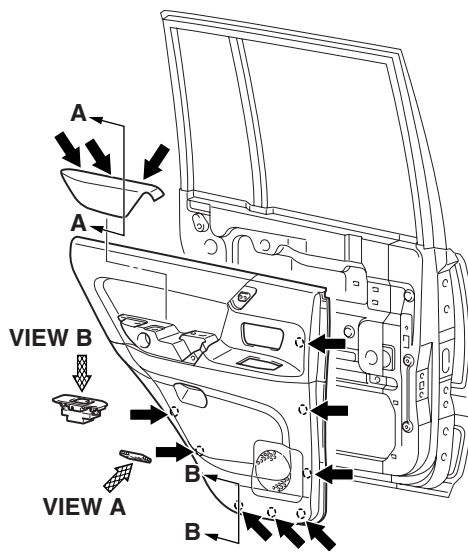
9. DOOR GRIP
10. REAR ARM RESTRAINT COVER
11. DOOR GRIP BRACKET
12. DOOR GRIP UPPER RETAINER
13. DOOR GRIP LOWER BRACKET
14. SPEAKER ASSEMBLY
15. DOOR INSIDE HANDLE
- >>A<< 16. WATERPROOF FILM

Required Special Tool:

- MB990784: Ornament Remover

CLIP AND CLAW POSITIONS

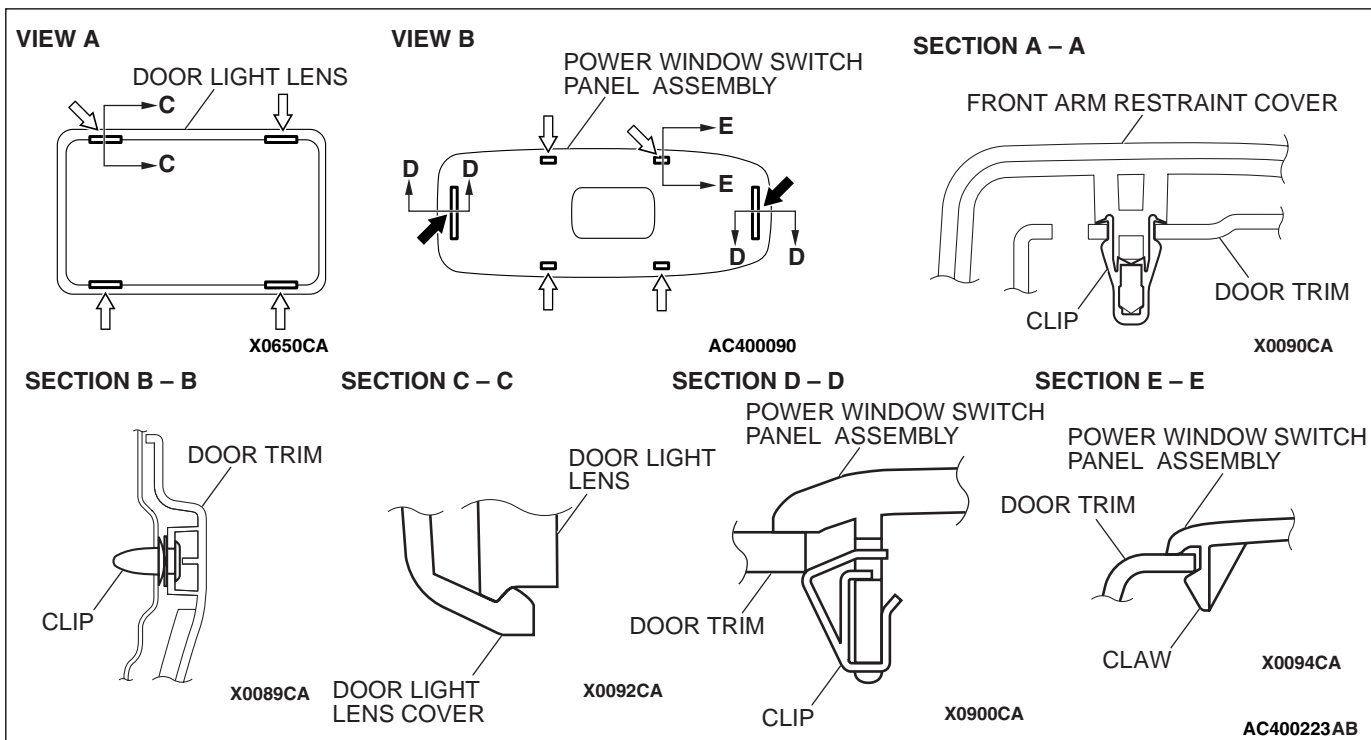
<REAR DOOR>



NOTE

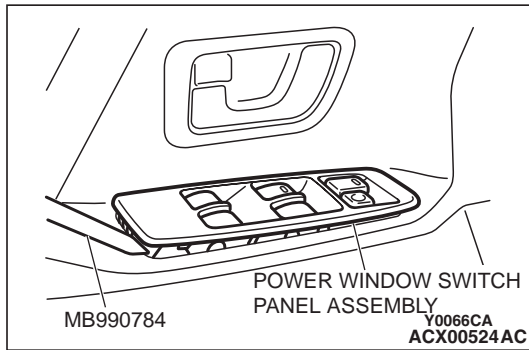
- ← : CLIP POSITIONS
- ⇐ : CLAW POSITIONS

AC400083AB

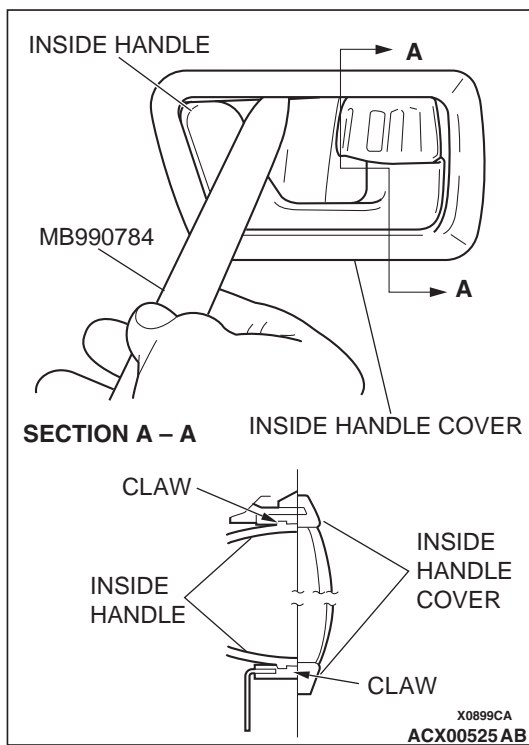


REMOVAL SERVICE POINTS**<<A>> POWER WINDOW SWITCH ASSEMBLY REMOVAL**

There is a clip (driver's side) or a claw (other sides) on the front of the power window switch assembly. Work from the front side using special tool MB990784.

**<> DOOR INSIDE HANDLE COVER REMOVAL**

1. Insert the special tool MB990784 between the inside handle upper part and the inside handle cover, and then disengage the upper claw of the inside handle.
2. Disengage the lower claw of the inside handle in the same manner as for the upper claw.
3. Remove the door trim.
4. Remove the inside handle cover from the door trim.



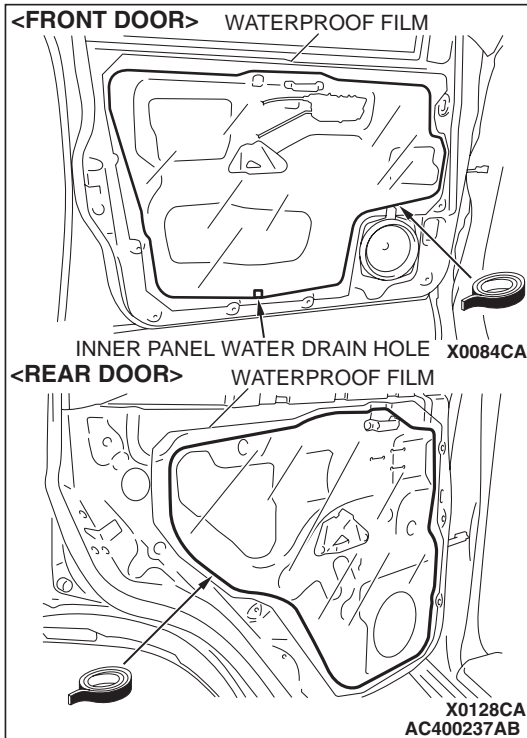
INSTALLATION SERVICE POINT

>>A<< WATERPROOF FILM INSTALLATION

⚠ CAUTION

Be sure to apply the sealant below the inner panel water drain holes so as not to plug them.

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

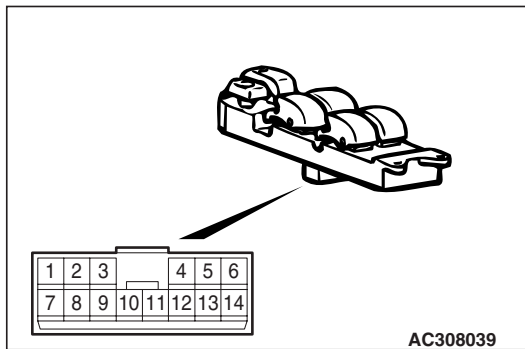


INSPECTION

M1421007600570

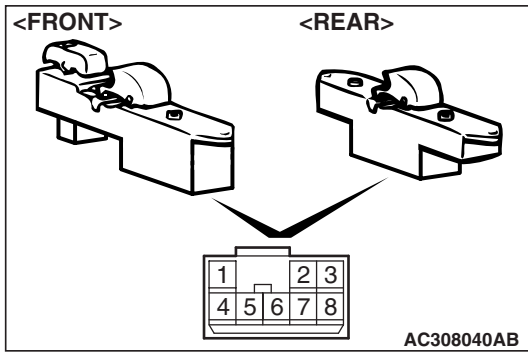
POWER WINDOW SWITCH CONTINUITY CHECK

POWER WINDOW MAIN SWITCH CHECK



SWITCH POSITION		TESTER CONNECTION	SPECIFIED CONDITION
FRONT (LH)	UP	7 - 10, 8 - 9,	Less than 2 ohms
	OFF	7 - 9, 7 - 8, 8 - 9	
	DOWN	9 - 10, 7 - 8	
FRONT (RH)	UP	10 - 12, 8 - 14*	Less than 2 ohms
	OFF	12 - 14, 8 - 12*, 8 - 14*	
	DOWN	10 - 14, 8 - 12*	
REAR (LH)	UP	1 - 10, 3 - 8*	Less than 2 ohms
	OFF	1 - 3, 1 - 8*, 3 - 8*	
	DOWN	3 - 10, 1 - 8*	
REAR (RH)	UP	4 - 10, 6 - 8*	Less than 2 ohms
	OFF	4 - 6, 4 - 8*, 6 - 8*	
	DOWN	6 - 10, 4 - 8*	

NOTE: *: Set switch to UNLOCK position



POWER WINDOW SUB SWITCH CHECK

SWITCH POSITION		TESTER CONNECTION	SPECIFIED CONDITION
Sub switch	UP	4 - 5, 6 - 7	Less than 2 ohms
	OFF	4 - 5, 7 - 8	
	DOWN	4 - 6, 7 - 8	

**DOOR GLASS AND REGULATOR
REMOVAL AND INSTALLATION**

M1429001300360

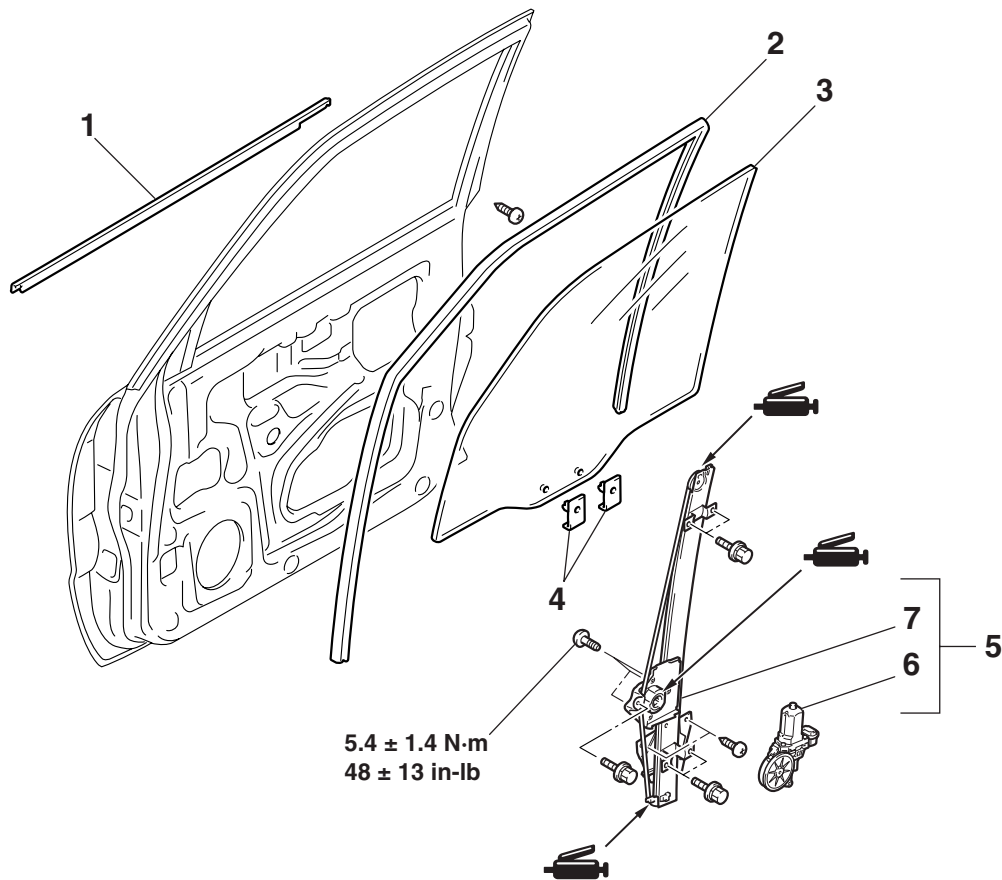
Pre-removal Operation

- Door Trim and Waterproof Film Removal (Refer to P.42-32.)

Post-installation Operation

- Door Window Glass Adjustment (Refer to P.42-28.)
- Door Trim and Waterproof Film Removal (Refer to P.42-32.)

<FRONT DOOR>



AC308863AB

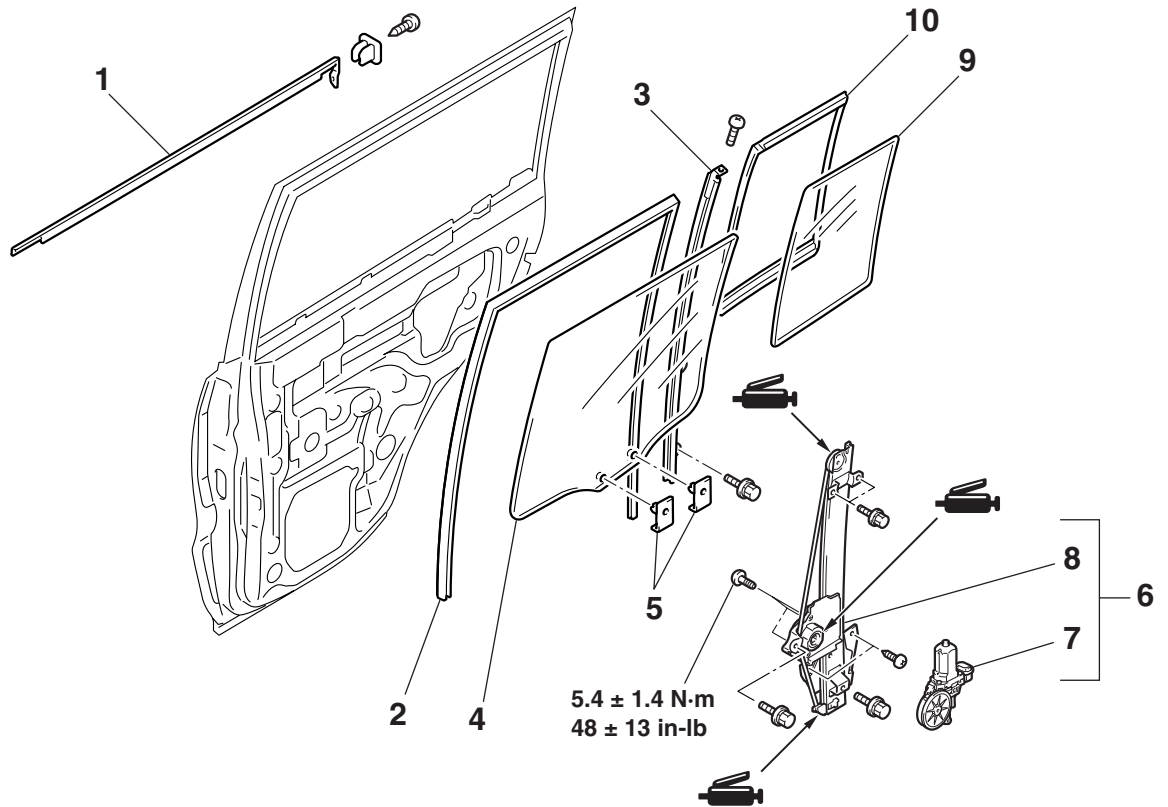
**DOOR WINDOW GLASS REMOVAL
STEPS**

1. DOOR BELT LINE MOLDING ASSEMBLY
2. POWER WINDOW GLASS RUNCHANNEL
3. DOOR WINDOW GLASS
4. GLASS HOLDER

**FRONT WINDOW REGULATOR
ASSEMBLY REMOVAL STEPS**

5. POWER WINDOW REGULATOR AND MOTOR ASSEMBLY
6. POWER WINDOW MOTOR ASSEMBLY
7. POWER WINDOW REGULATOR ASSEMBLY

<REAR DOOR>



AC308864 AB

REMOVAL STEPS

1. DOOR BELTLINE MOLDING ASSEMBLY
2. DOOR WINDOW GLASS RUNCHANNEL
3. DOOR CENTER SASH
4. REAR DOOR WINDOW GLASS
5. DOOR GLASS HOLDER
6. POWER WINDOW REGULATOR AND MOTOR ASSEMBLY

REMOVAL STEPS (Continued)

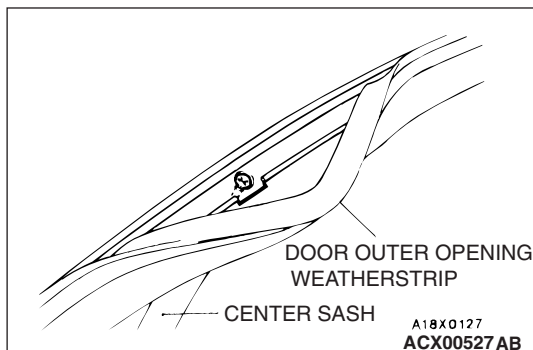
7. POWER WINDOW MOTOR ASSEMBLY
8. POWER WINDOW REGULATOR ASSEMBLY
9. STATIONARY WINDOW GLASS
10. STATIONARY WINDOW WEATHERSTRIP

<<A>>

REMOVAL SERVICE POINT

<<A>> DOOR CENTER SASH REMOVAL

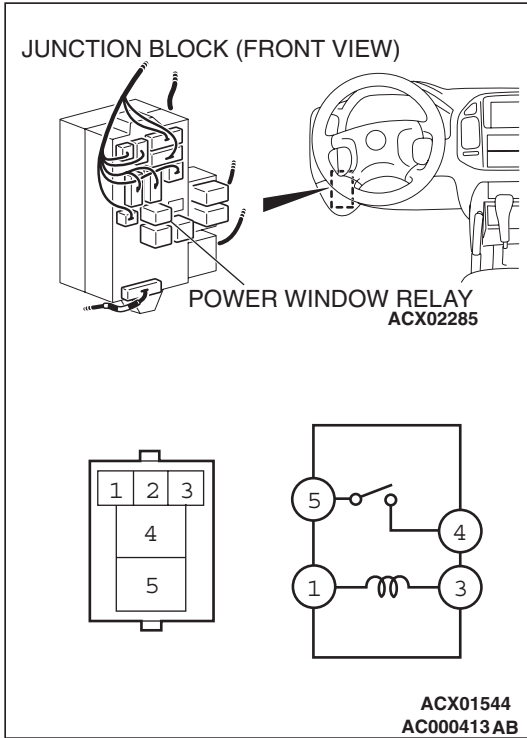
1. Remove the door outer opening weatherstrip from the door center sash section only.
2. Remove the mounting screw for the door center sash, and remove the door center sash from the door panel.



INSPECTION

M1421007600547

POWER WINDOW RELAY CONTINUITY CHECK

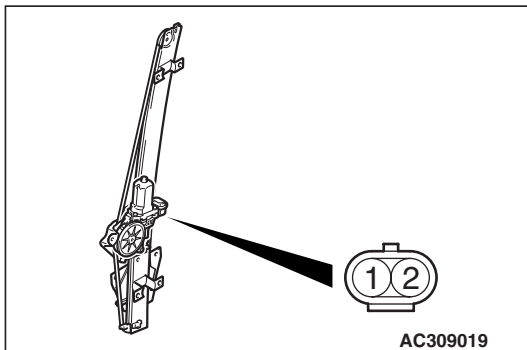


BATTERY CONNECTION	TESTER CONNECTION	SPECIFIED CONDITION
Not applied	4 – 5	Open circuit
<ul style="list-style-type: none"> Connect terminal 1 to the negative battery terminal Connect terminal 3 to the positive battery terminal 	4 – 5	Less than 2 ohms

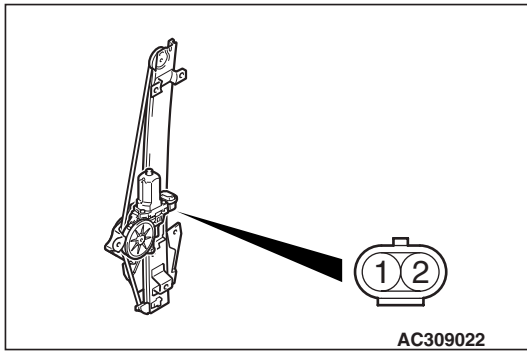
POWER WINDOW MOTOR CHECK

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.

<Front door>



BATTERY CONNECTION	SLIDER 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. 	UP
<ul style="list-style-type: none"> Connect terminal No. 2 and the negative battery terminal. Connect terminal No. 1 and the positive battery terminal. 	DOWN



<Rear door>

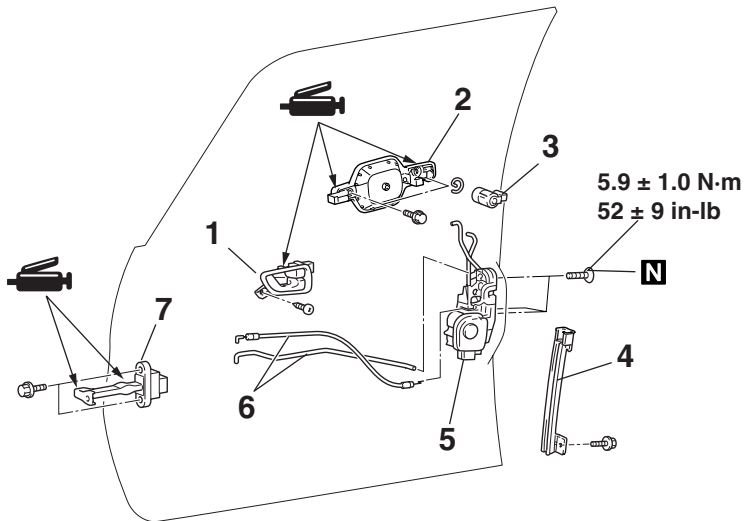
BATTERY CONNECTION	SLIDER POSITION
<ul style="list-style-type: none"> • Connect terminal No. 1 and the negative battery terminal. • Connect terminal No. 2 and the positive battery terminal. 	UP
<ul style="list-style-type: none"> • Connect terminal No. 2 and the negative battery terminal. • Connect terminal No. 1 and the positive battery terminal. 	DOWN

DOOR HANDLE AND LATCH
REMOVAL AND INSTALLATION

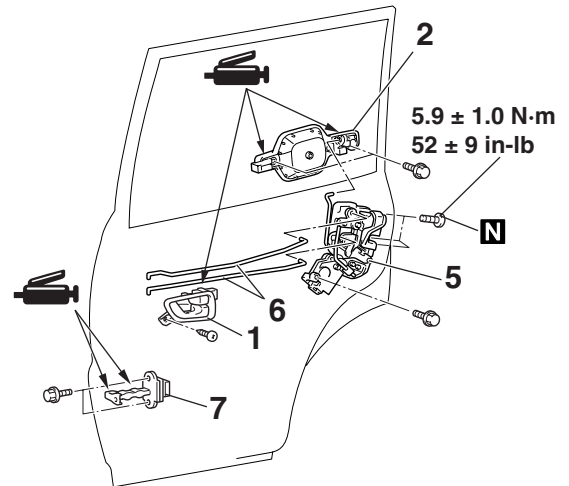
M1423004600243

<p>Pre-removal Operation</p> <ul style="list-style-type: none"> • Door Trim Removal (Refer to P.42-32.) 	<p>Post-installation Operation</p> <ul style="list-style-type: none"> • Door Inside Handle Play Check (Refer to P.42-29.) • Door Outside Handle Play Check (Refer to P.42-29.) • Door Trim Installation (Refer to P.42-32.) • Door Fit Adjustment (Refer to P.42-26.)
---	--

<FRONT DOOR>



<REAR DOOR>



AC204109AB

**DOOR HANDLE AND DOOR LATCH
ASSEMBLY REMOVAL STEPS**

- >>C<<
- DOOR INSIDE HANDLE
 - WATERPROOF FILM (REFER TO P.42-32.)
 - DOOR OUTSIDE HANDLE
 - DOOR LOCK KEY CYLINDER
- >>B<<
- REAR LOWER SASH

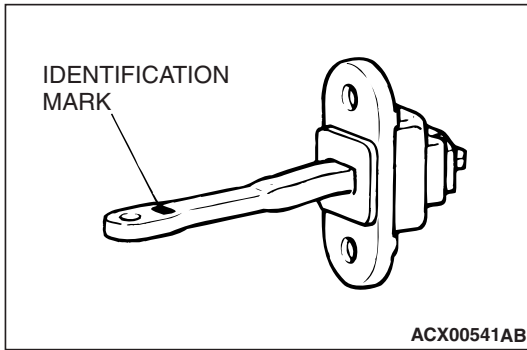
**DOOR HANDLE AND DOOR LATCH
ASSEMBLY REMOVAL STEPS**

- DOOR LATCH ASSEMBLY
 - LINK ASSEMBLY
- DOOR CHECK REMOVAL STEPS**
- WATERPROOF FILM (REFER TO P.42-32.)
- >>A<<
- DOOR CHECK

INSTALLATION SERVICE POINT

>>A<< DOOR CHECK INSTALLATION

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



ITEM		IDENTIFICATION MARK
Front Door	Left door	20L
	Right door	20R
Rear Door	Left door	26L
	Right door	26R

>>B<< REAR LOWER SASH INSTALLATION

Securely insert the rear lower sash into the window rear sash.

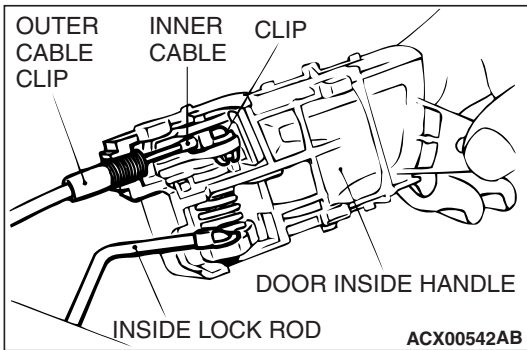
>>C<< DOOR INSIDE HANDLE INSTALLATION

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.

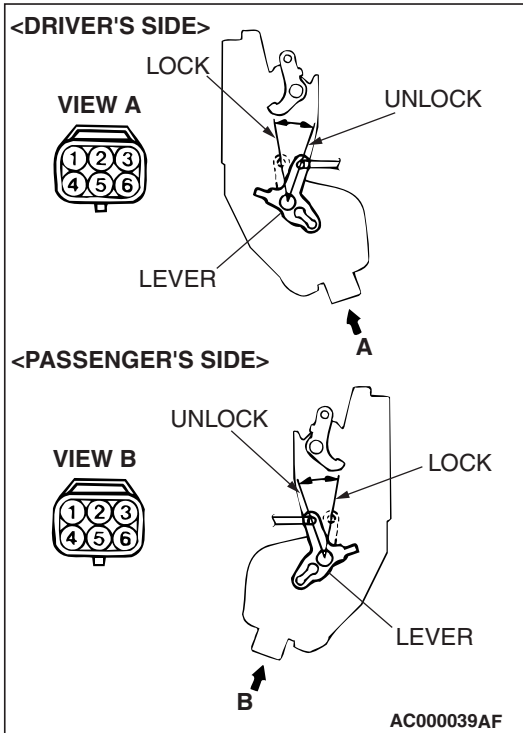


M1421007600581

INSPECTION

FRONT DOOR LOCK ACTUATOR CHECK

Actuator Operation Check <Driver's side>



LEVER POSITION	BATTERY CONNECTION	LEVER OPERATION
At the "LOCK" position	<ul style="list-style-type: none"> Connect terminal 6 to the negative battery terminal Connect terminal 4 to 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 4 to the negative battery terminal Connect terminal 6 to the positive battery terminal 	The lever moves from the "UNLOCK" position to the "LOCK" position.

Actuator Operation Check <Passenger's side>

LEVER POSITION	BATTERY CONNECTION	LEVER OPERATION
At the "LOCK" position	<ul style="list-style-type: none"> Connect terminal 4 to the negative battery terminal Connect terminal 6 to 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 6 to the negative battery terminal Connect terminal 4 to the positive battery terminal 	The lever moves from the "UNLOCK" position to the "LOCK" position.

Actuator Switch Check <Driver's side>

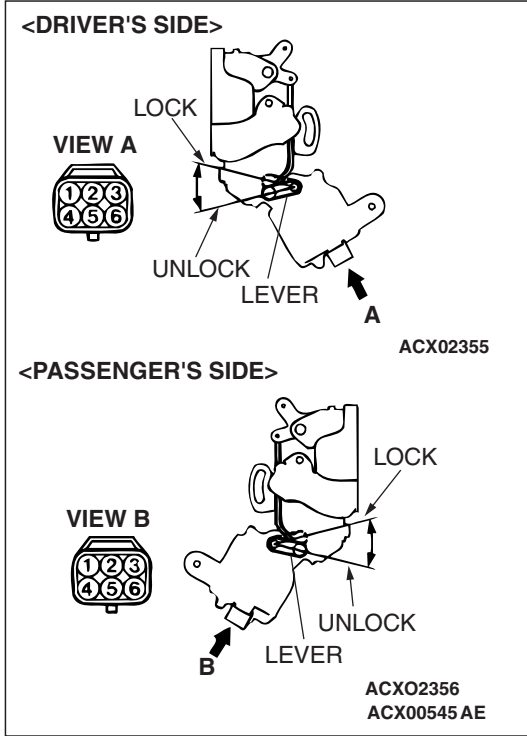
SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	1 - 3	Less than 2 ohms
UNLOCK	1 - 2	

Actuator Switch Check <Passenger's side>

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	2 - 3	Open circuit
UNLOCK	2 - 3	Less than 2 ohms

REAR DOOR LOCK ACTUATOR CHECK

Actuator Operation Check <Driver's side>



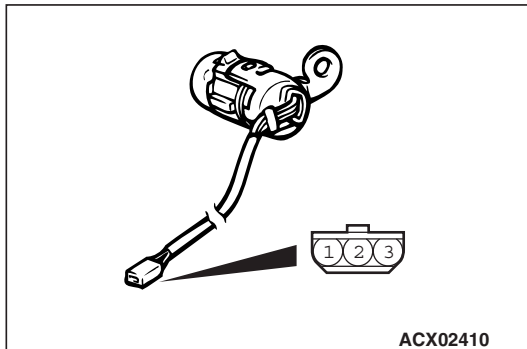
LEVER POSITION	BATTERY CONNECTION	LEVER OPERATION
At the "LOCK" position	<ul style="list-style-type: none"> Connect terminal 3 to the negative battery terminal Connect terminal 2 to the positive battery terminal 	The lever moves from the "LOCK" position to the "UNLOCK" position.
At the "UNLOCK" position	<ul style="list-style-type: none"> Connect terminal 2 to the negative battery terminal Connect terminal 3 to the positive battery terminal 	The lever moves from the "UNLOCK" position to the "LOCK" position.

Actuator Operation Check <Passenger's side>

LEVER POSITION	BATTERY CONNECTION	LEVER OPERATION
At the "LOCK" position	<ul style="list-style-type: none"> Connect terminal 2 to the negative battery terminal Connect terminal 3 to 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 3 to the negative battery terminal Connect terminal 2 to the positive battery terminal 	The lever moves from the "UNLOCK" position to the "LOCK" position.

DOOR LOCK KEY CYLINDER SWITCH CHECK

<Driver's side>



SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	2 - 3	Less than 2 ohms
NEUTRAL (OFF)	1 - 2, 1 - 3, 2 - 3	Open circuit
UNLOCK	1 - 2	Less than 2 ohms

<Passenger's side>

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	1 - 2	Less than 2 ohms
NEUTRAL (OFF)	1 - 2, 1 - 3, 2 - 3	Open circuit
UNLOCK	2 - 3	Less than 2 ohms

CENTRAL DOOR LOCK SWITCH CONTINUITY CHECK

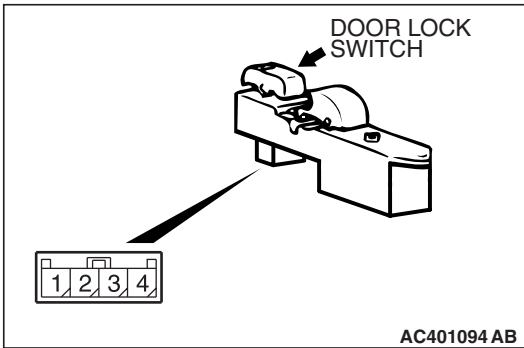
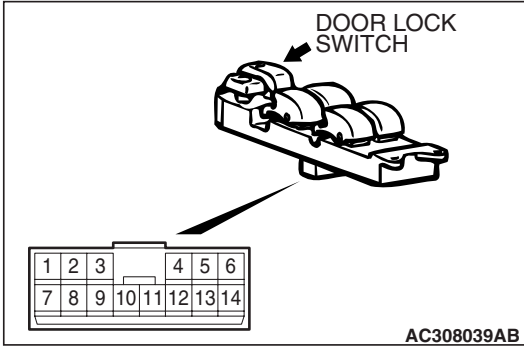
Remove the power window switch (Refer to P.42-32).

<Driver's side>

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	5 - 8	Less than 2 ohms
OFF	5 - 8, 8 - 13, 5 - 13	Open circuit
UNLOCK	8 - 13	Less than 2 ohms

<Passenger's side>

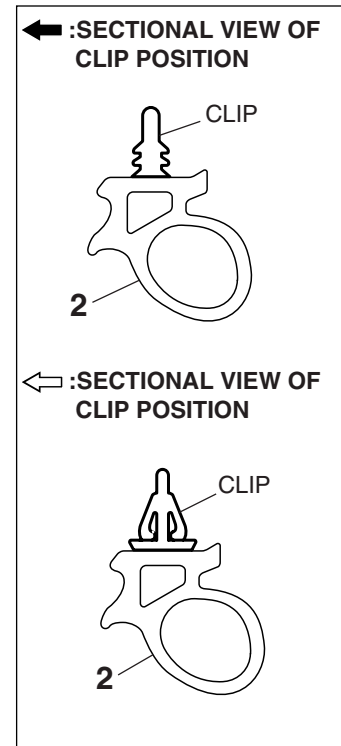
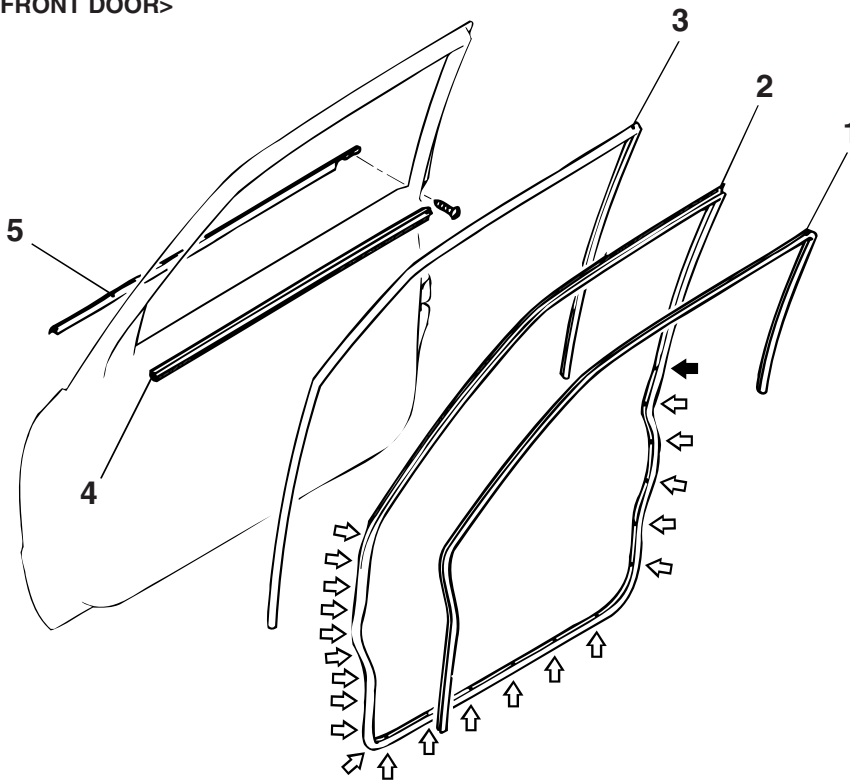
SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	3 - 4	Less than 2 ohms
OFF	2 - 4, 3 - 4, 2 - 3	Open circuit
UNLOCK	2 - 4	Less than 2 ohms



WINDOW GLASS RUNCHANNEL AND DOOR OPENING WEATHERSTRIP REMOVAL AND INSTALLATION

M1423003100353

<FRONT DOOR>



AC203989AC

**DOOR INNER OPENING
WEATHERSTRIP REMOVAL STEPS**

- >>B<<
1. DOOR INNER OPENING WEATHERSTRIP
 - SCUFF PLATE, CENTER PILLAR LOWER TRIM AND COWL SIDE TRIM (REFER TO GROUP 52A, TRIMS P.52A-8.)

**DOOR OUTER OPENING
WEATHERSTRIP REMOVAL**

- FRONT DOOR CHECK MOUNTING BOLT (DOOR SIDE) (REFER TO P.42-30.)

- <<A>>
2. DOOR OUTER OPENING WEATHERSTRIP

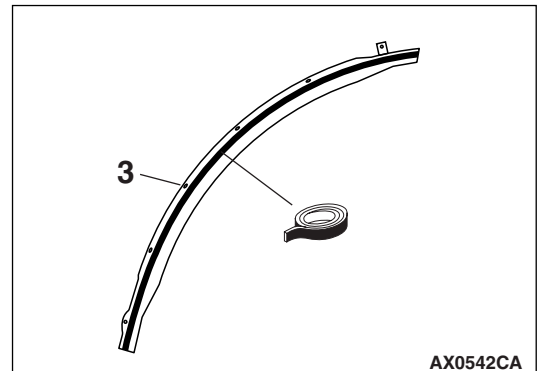
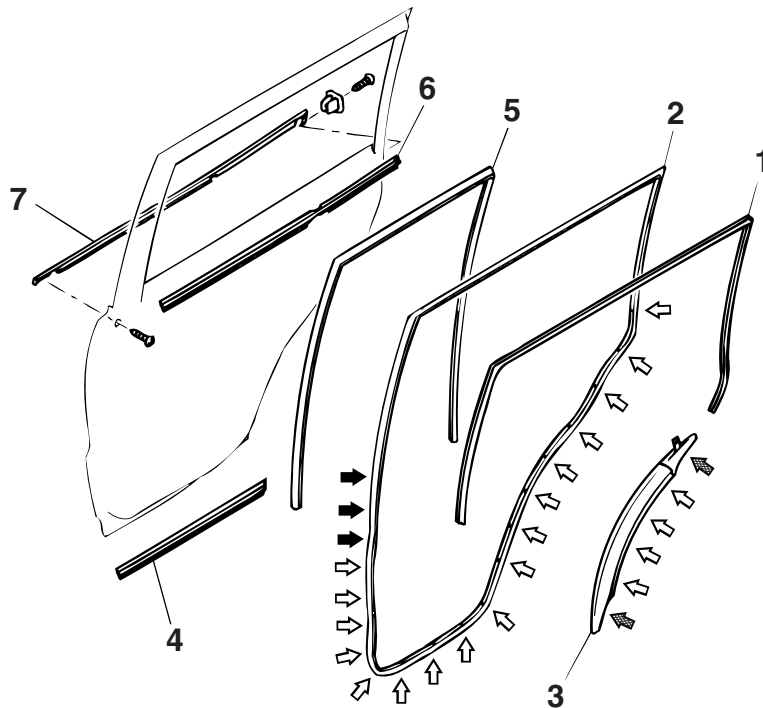
**DOOR WINDOW GLASS
RUNCHANNEL REMOVAL STEPS**

- >>A<<
3. DOOR WINDOW GLASS RUNCHANNEL
 - FRONT DOOR TRIM (REFER TO P.42-32.)
 4. DOOR BELTLINE INNER WEATHERSTRIP

DOOR BELTLINE MOLDING REMOVAL STEPS

5. DOOR BELTLINE MOLDING

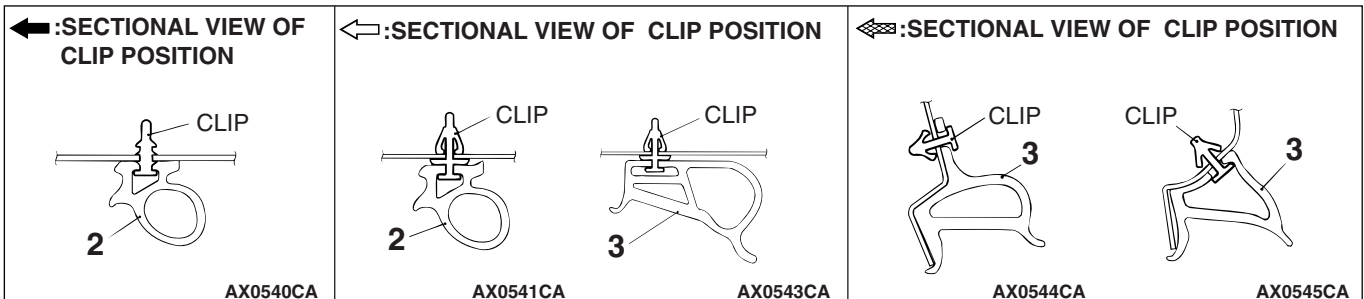
<REAR DOOR>



AX0542CA

ADHESIVE TAPE:
DOUBLE-SIDED TAPE [23 mm (0.9 inch) WIDTH
AND 0.8 mm (0.03 inch) THICKNESS]

AC203990AC



**DOOR INNER OPENING
WEATHERSTRIP REMOVAL STEPS**

- >>B<<
1. DOOR INNER OPENING WEATHERSTRIP
 - CENTER PILLAR LOWER TRIM (REFER TO GROUP 52A, TRIMS P.52A-8.)

**DOOR OUTER OPENING
WEATHERSTRIP REMOVAL**

<<A>>

- REAR DOOR CHECK MOUNTING BOLT (DOOR SIDE) (REFER TO P.42-30.)
2. DOOR OUTER OPENING WEATHERSTRIP

**DOOR OUTER OPENING
WEATHERSTRIP REMOVAL**

3. DOOR OUTER OPENING LOWER WEATHERSTRIP
4. DOOR OUTER OPENING FRONT WEATHERSTRIP

**DOOR WINDOW GLASS
RUNCHANNEL REMOVAL STEPS**

- >>A<<
5. DOOR WINDOW GLASS RUNCHANNEL
 - REAR DOOR TRIM (REFER TO P.42-32.)
 6. DOOR BELTLINE INNER WEATHERSTRIP

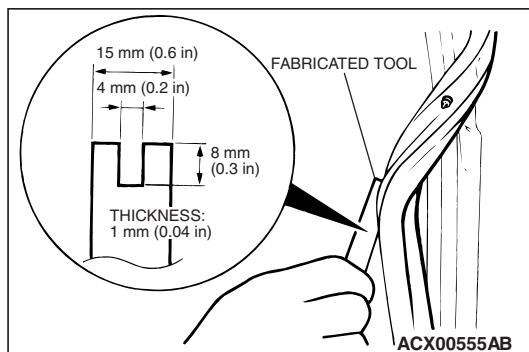
DOOR BELTLINE MOLDING REMOVAL STEPS

7. DOOR BELTLINE MOLDING

REMOVAL SERVICE POINT

**<<A>> DOOR OUTER OPENING WEATHERSTRIP
REMOVAL**

Make a tool as shown and remove the door opening weatherstrip.



INSTALLATION SERVICE POINT

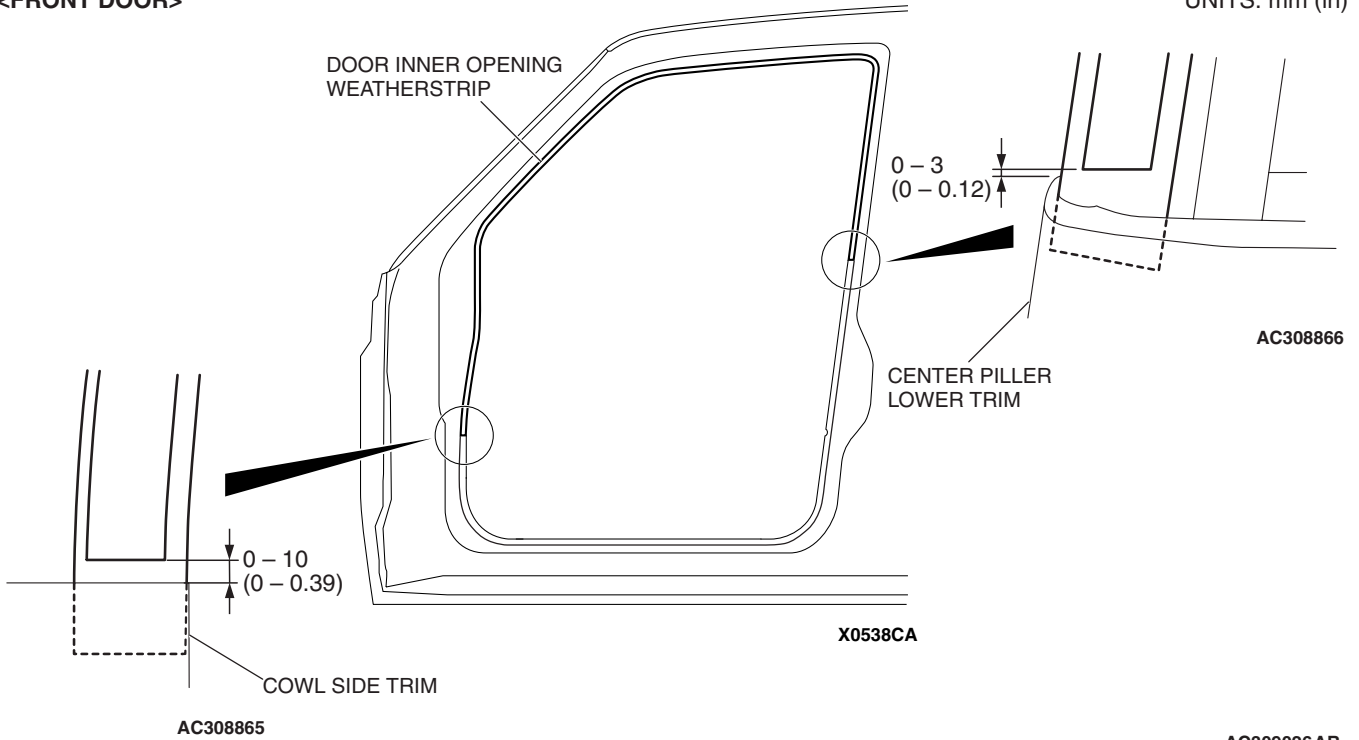
>>A<< MOUNTING OF DOOR WINDOW GLASS CHANNEL

Remove the waterproof film when mounting the door window glass channel.

>>B<< MOUNTING OF DOOR INNER OPENING WEATHER STRIP

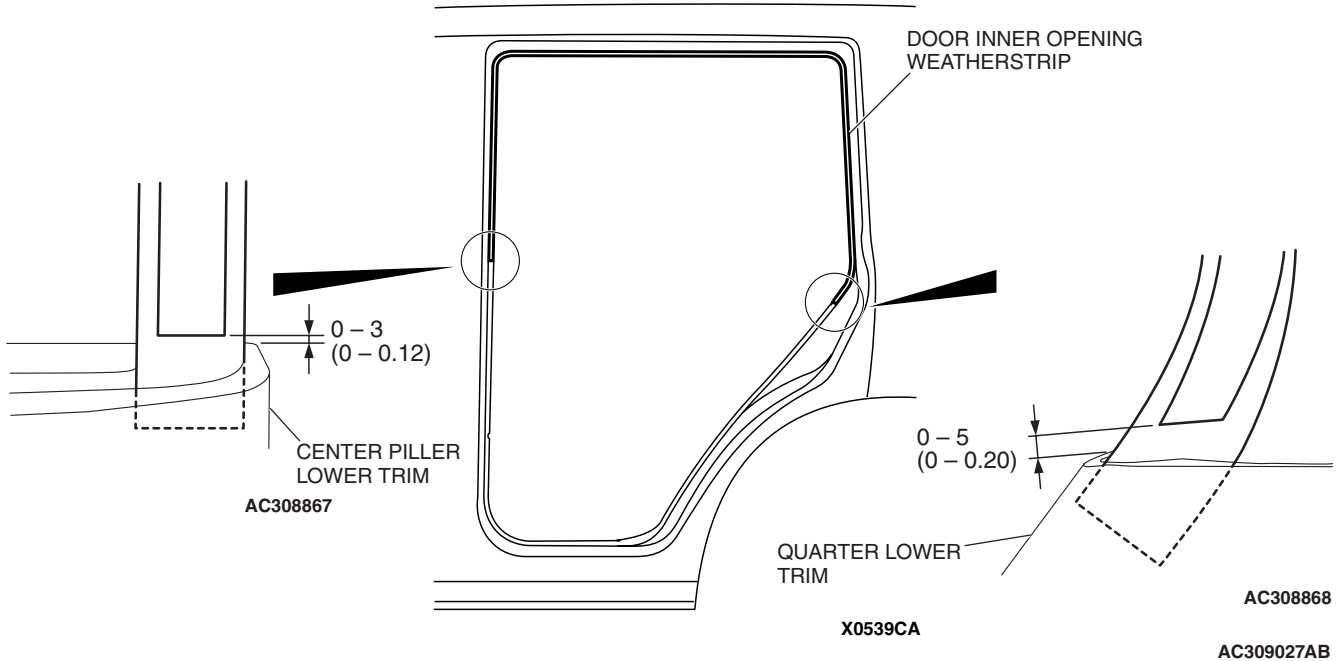
<FRONT DOOR>

UNITS: mm (in)



<REAR DOOR>

UNITS: mm (in)



Mount the door inner opening weather strip to the locations specified below.

BACK DOOR ASSEMBLY

BACK DOOR DIAGNOSIS

INTRODUCTION TO BACK DOOR DIAGNOSIS

M1423007300047

Refer to [P.42-20](#).

BACK DOOR DIAGNOSTIC TROUBLESHOOTING STRATEGY

M1423006700053

Use these steps to plan your diagnostic strategy. If you follow them carefully, you will be sure that you have exhausted most of the possible ways to find a back door fault.

1. Gather information from the customer.

2. Verify that the condition described by the customer exists.
3. Find the malfunction by following the Symptom Chart.
4. Verify malfunction is eliminated.

SYMPTOM CHART

M1423007000273

SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Door hard to open	1	P.42-49
Door does not open or close completely	2	P.42-50
Uneven gap between body	3	P.42-50

SYMPTOM PROCEDURES

INSPECTION PROCEDURE 1: Door Hard to Open

DIAGNOSIS

STEP 1. Adjust the latch and striker engagement.
(Refer to [P.42-50](#).)

Q: Is the latch and striker engagement adjusted?

YES : Go to Step 2.

NO : Adjust the latch and striker engagement (Refer to [P.42-50](#)). Then go to Step 4.

STEP 2. Check for possible lock rod damage.

Q: Is the possible lock rod damaged?

YES : Repair or replace the possible lock rod, then go to Step 4.

NO : Go to Step 3.

STEP 3. Check door handle flexibility (amount of movement of handle required to open door).

Q: Is the door handle flexibility good?

YES : Go to Step 4.

NO : Adjust the door handle flexibility (Refer to [P.42-51](#)). Then go to Step 4.

STEP 4. Retest the system.

Q: Does the door open easily?

YES : The procedure is complete.

NO : Return to Step 1.

INSPECTION PROCEDURE 2: Door does not Open or Close Completely

DIAGNOSIS

STEP 1. Check the door hinge position.

Q: Is the door hinge position correct?

YES : Go to Step 2.

NO : Adjust the door hinge position (Refer to P.42-50). Then go to Step 4.

STEP 2. Check the door.

Q: Is the door in good condition?

YES : Go to Step 3.

NO : Repair or replace the door, then go to Step 4.

STEP 3. Check the grease.

Q: Is the door check or door hinge grease sufficient?

YES : Go to Step 4.

NO : Apply the grease, then go to Step 4.

STEP 4. Retest the system.

Q: Does the door open and close correctly?

YES : The procedure is complete.

NO : Return to Step 1.

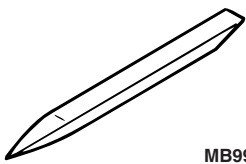
INSPECTION PROCEDURE 3: Uneven Gap between Body

DIAGNOSIS

Adjust the door fit (Refer to P.42-50). Then check that the gap has been improved.

SPECIAL TOOL

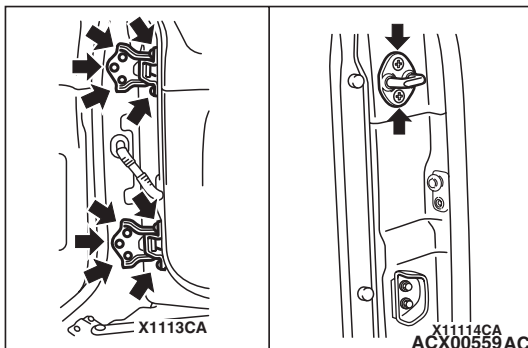
M1423000600252

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
 <p>MB990784</p>	<p>MB990784 Ornament remover</p>	<p>General service tool</p>	<p>Removal of back door trim</p>

ON-VEHICLE SERVICE

BACK DOOR FIT ADJUSTMENT

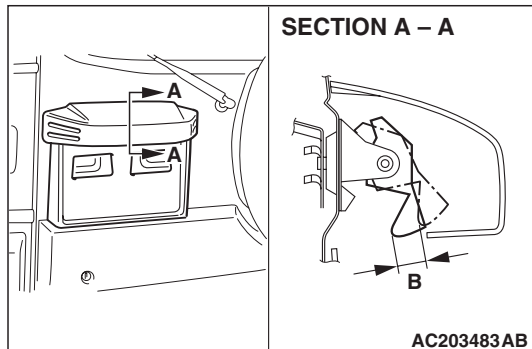
M1423001700025



1. If the striker and latch mesh badly, move the striker forward and backward or right and left to adjust.
2. If uneven clearance is present between back door and body, reposition the hinge and striker and/or change the thickness of shim (change the number of shim) to adjust the clearance.

BACK DOOR HANDLE PLAY CHECK

M1423007600048



1. Check the Back Door handle play.
Standard value (B): 2.3 mm (0.09 inch)
2. If the back door handle play is not within the standard value, check the back door handle and door latch assembly. Replace if necessary.

**BACK DOOR ASSEMBLY
REMOVAL AND INSTALLATION**

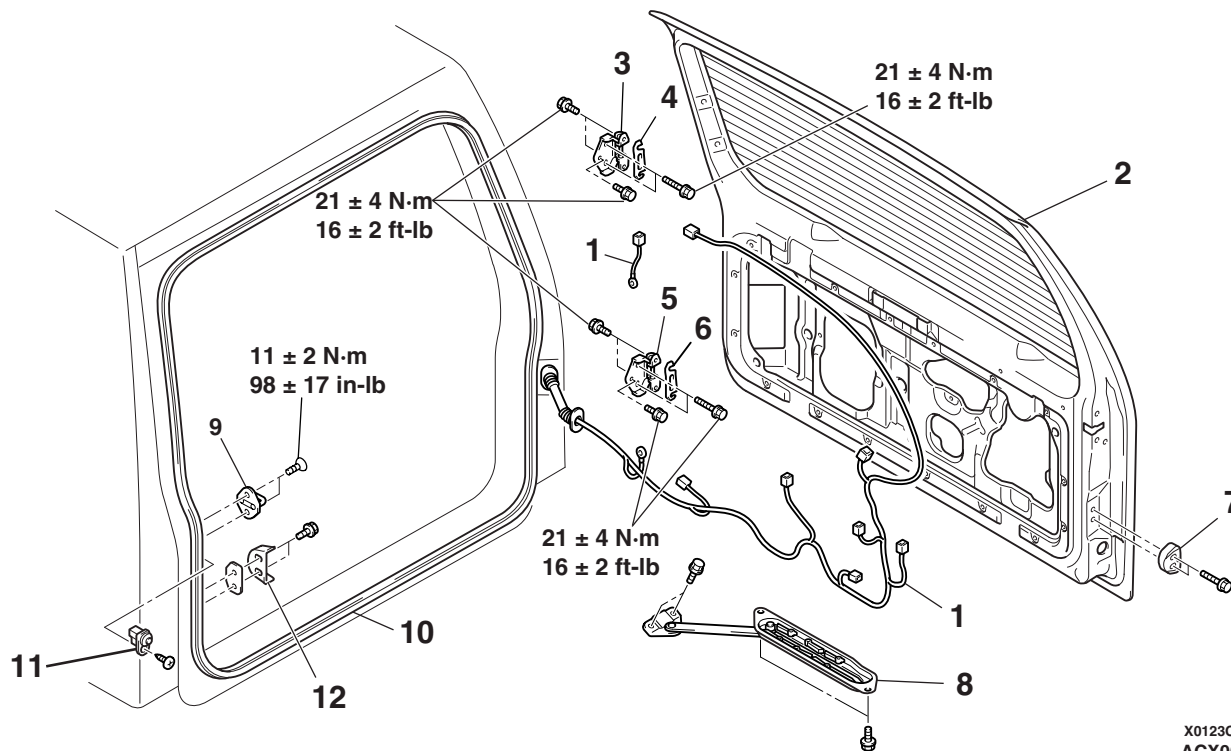
M1423005200055

Pre-removal Operation

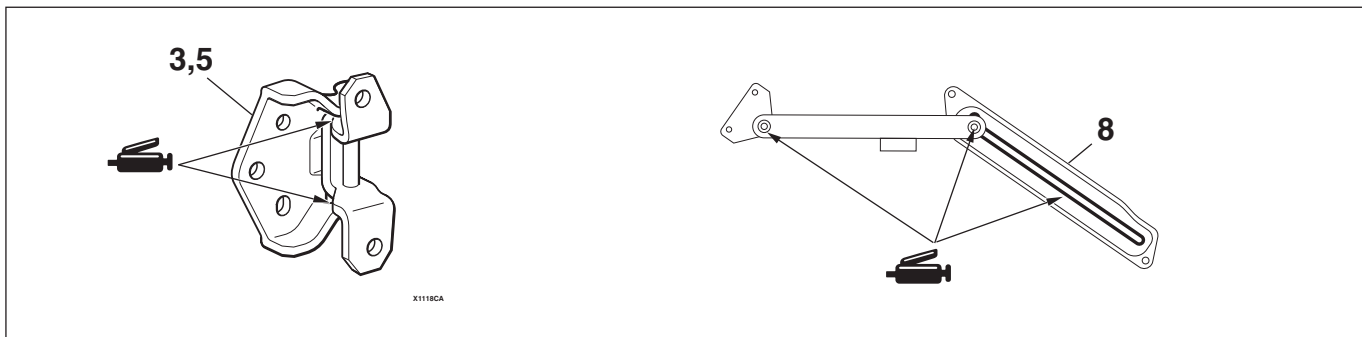
- High-mounted Stop Light Removal (Refer to GROUP 54A, High-mounted Stop Light [P.54A-88.](#))
- Spare Tire Removal

Post-installation Operation

- High-mounted Stop Light Installation (Refer to GROUP 54A, High-mounted Stop Light [P.54A-88.](#))
- Spare Tire Installation
- Back Door Fit Adjustment (Refer to [P.42-50.](#))



X0123CA
ACX00561 AB



REMOVAL STEPS

- BACK DOOR TRIM AND WATERPROOF FILM (Refer to P.42-53.)
- 1. HARNESS CONNECTOR
- 2. BACK DOOR ASSEMBLY
- 3. BACK DOOR UPPER HINGE
- 4. SHIM
- 5. BACK DOOR LOWER HINGE

REMOVAL STEPS (Continued)

- 6. SHIM
- 7. DAMPER MALE
- 8. BACK DOOR STOPPER
- >>B<< 9. STRIKER
- >>A<< 10. BACK DOOR OPENING WEATHERSTRIP
- 11. DOOR SWITCH
- 12. BACK DOOR BUMPER FEMALE

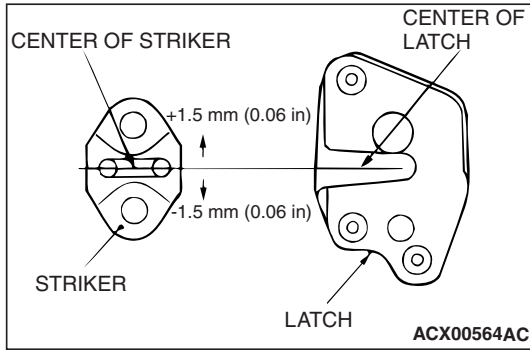
INSTALLATION SERVICE POINTS

>>A<< BACK DOOR OPENING WEATHERSTRIP INSTALLATION

Align the marking section on the back door opening weatherstrip with the center of the body.

>>B<< STRIKER INSTALLATION

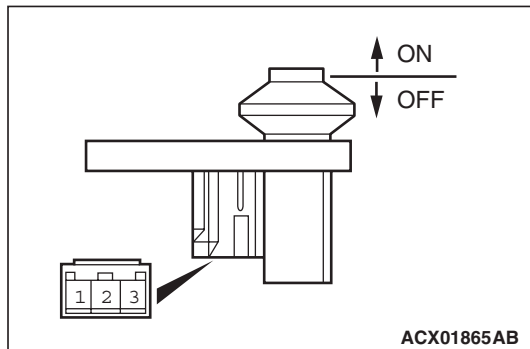
Install the striker so that the striker center does not deviate more than 1.5 mm (0.06 inch) from the latch center.



INSPECTION

M1421007600387

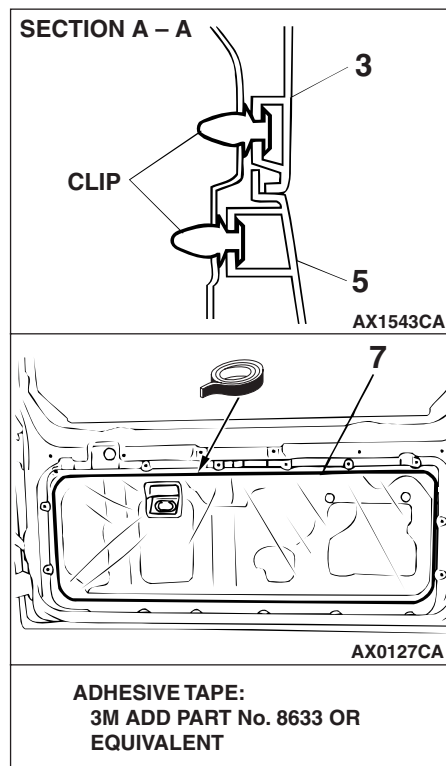
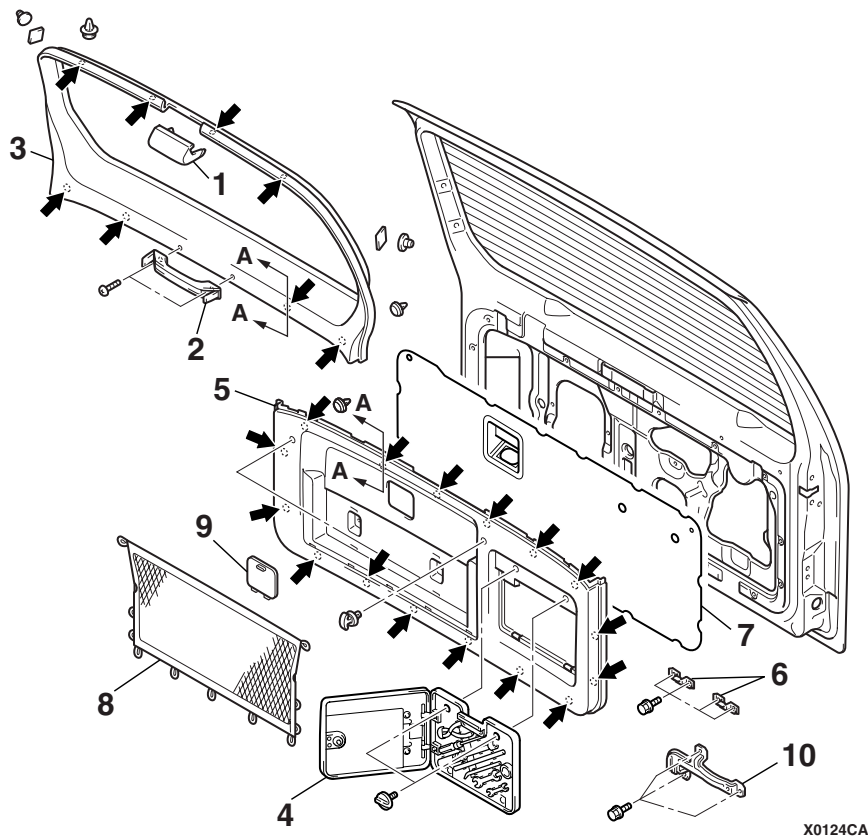
BACK DOOR SWITCH CHECK



SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Open (ON)	1 – switch body, 2 – switch body	Less than 2 ohms
Depressed (OFF)		Open circuit

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

M1423005500056



ADHESIVE TAPE:
3M ADD PART No. 8633 OR
EQUIVALENT

AC204018AC

← : CLIP POSITIONS

**BACK DOOR TRIM REMOVAL
STEPS**

1. HIGH MOUNTED STOPLIGHT COVER
- HIGH-MOUNTED STOP LIGHT (REFER TO GROUP 54A, HIGH-MOUNTED STOP LIGHT P.54A-88.)
- >>A<< 2. DOOR PULL HANDLE
3. BACK DOOR UPPER TRIM

**BACK DOOR TRIM REMOVAL
STEPS (Continued)**

4. TOOL BOX ASSEMBLY
5. BACK DOOR UPPER TRIM (LH)
6. TOOL BOX BRACKET LOWER (RH)
7. WATERPROOF FILM
8. BACK DOOR LID
9. WASHER TANK LID
10. TOOL BOX BRACKET UPPER

INSTALLATION SERVICE POINT

>>A<< DOOR PULL HANDLE INSTALLATION

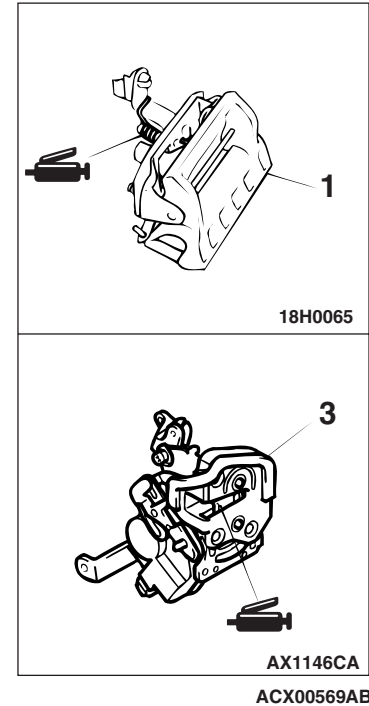
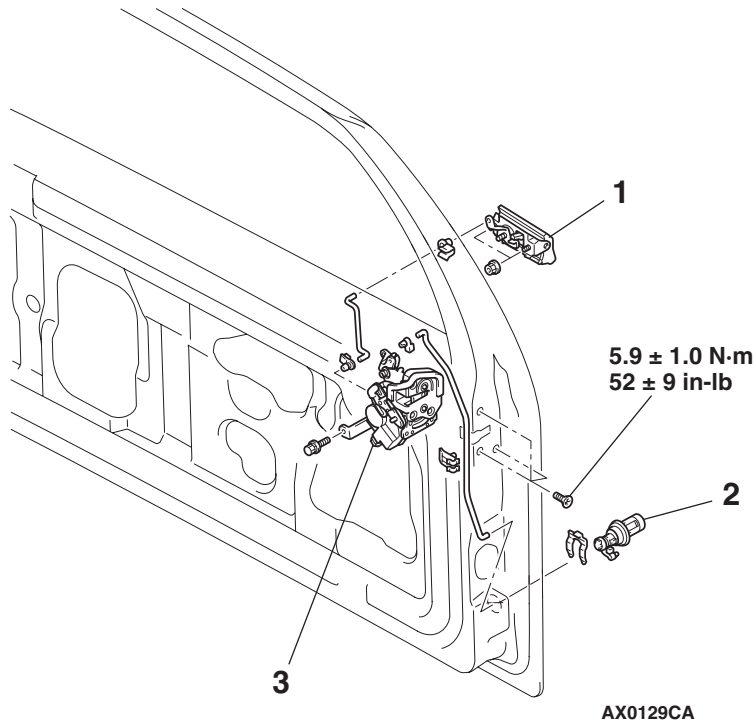
Mount the door pull handle with its arrow mark at the back pointing upward.

BACK DOOR HANDLE AND LATCH REMOVAL AND INSTALLATION

M1423005800068

Post-installation Operation

- Outside Handle Play Inspection (Refer to [P.42-51.](#))



BACK DOOR HANDLE AND LOCK KEY CYLINDER REMOVAL STEPS

- BACK DOOR TRIM AND WATERPROOF FILM
 - BACK DOOR GARNISH (REFER TO GROUP 51, GARNISHES [P.51-15.](#))
1. BACK DOOR HANDLE
 2. BACK DOOR LOCK KEY CYLINDER

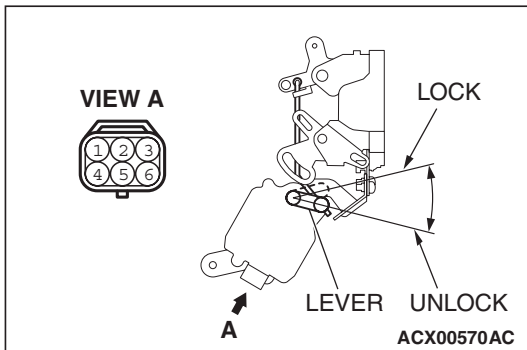
BACK DOOR LATCH REMOVAL STEPS

- BACK DOOR TRIM AND WATERPROOF FILM (REFER TO [P.42-53.](#))
3. BACK DOOR LATCH ASSEMBLY

INSPECTION

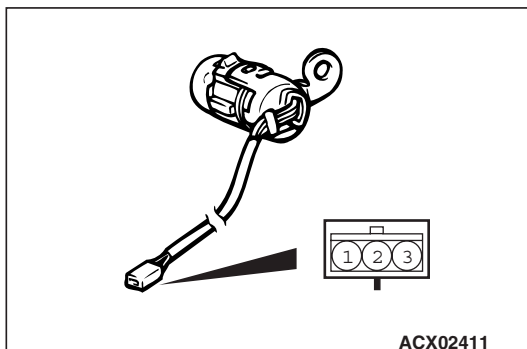
M1421007600536

BACK DOOR LOCK ACTUATOR CHECK



LEVER POSITION	BATTERY CONNECTION	LEVER OPERATION
At the "LOCK" position	<ul style="list-style-type: none"> Connect terminal 2 to the negative battery terminal Connect terminal 3 to 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 3 to the negative battery terminal Connect terminal 2 to the positive battery terminal 	The lever moves from the "UNLOCK" position to the "LOCK" position.

BACK DOOR LOCK KEY CYLINDER SWITCH CHECK



SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	1 – 2	Less than 2 ohms
NEUTRAL (OFF)	1 – 2, 1 – 3, 2 – 3	Open circuit
UNLOCK	2 – 3	Less than 2 ohms

KEYLESS ENTRY SYSTEM

GENERAL DESCRIPTION

M1428000100304

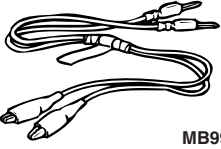
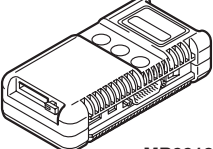
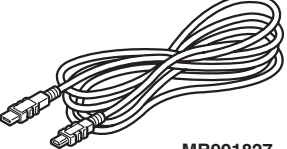

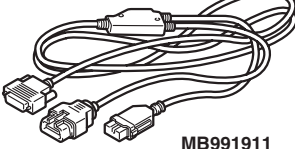
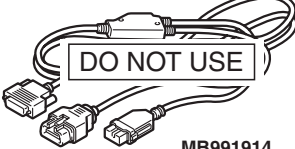
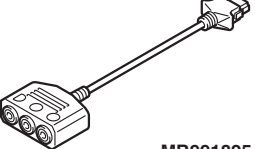
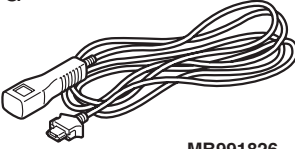
- Antenna and receiver are incorporated in the ETACS-ECU.
- ID code can be registered by using the scan tool MB991958 (MUT-III sub assembly).
- Transmitter is a key holder type, which incorporates lock button, unlock button, and panic button.
- The locking is answered back by two times' flashing of the dome light, two times' flashing of the turn signal lights and one time sounding of the horn answerback.
- The unlocking is answered back by illuminating of the dome light for 15 seconds and one time flashing of the turn signal lights.

KEYLESS ENTRY SYSTEM DIAGNOSIS

M1428000700027

The keyless entry system is controlled by the Smart Wiring System (SWS). For troubleshooting, refer to Group 54B, Diagnosis [P.54B-22](#).

SPECIAL TOOLS

TOOL	TOOL NUMBER AND NAME	SUPERSESION	APPLICATION
 <p>MB991529</p>	<p>MB991529 Diagnostic trouble code check harness</p>	<p>Tool not necessary if scan tool (MUT-III) is available</p>	<p>For setting of hazard answerback function</p>
<p>A</p>  <p>MB991824</p> <p>B</p>  <p>MB991827</p> <p>C</p>  <p>MB991910</p> <p>D</p>  <p>MB991911</p> <p>E</p>  <p>MB991914</p> <p>F</p>  <p>MB991825</p> <p>G</p>  <p>MB991826 MB991958</p>	<p>MB991958</p> <p>A: MB991824 B: MB991827 C: MB991910 D: MB991911 E: MB991914 F: MB991825 G: MB991826</p> <p>MUT-III sub assembly</p> <p>A: Vehicle communication interface (V.C.I.) B: MUT-III USB cable C: MUT-III main harness A (Vehicles with CAN communication system) D: MUT-III main harness B (Vehicles without CAN communication system) E: MUT-III main harness C (for Daimler Chrysler models only) F: MUT-III measurement adapter G: MUT-III trigger harness</p>	<p>MB991824-KIT</p> <p><i>NOTE: G: MB991826 MUT-III trigger harness is not necessary when pushing V.C.I. ENTER key.</i></p>	<p>SWS communication line check (ECU check and service data)</p> <p>CAUTION</p> <p>MUT-III main harness B (MB991911) should be used. MUT-III main harness A and C should not be used for this vehicle.</p>

ON-VEHICLE SERVICE

HOW TO REPLACE THE TRANSMITTER BATTERY

M1428000900173

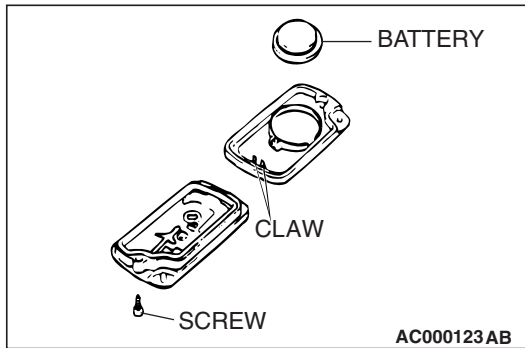
⚠ CAUTION

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

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

Battery required for replacement: Coin type battery CR2032

3. Insert the claw first, taking with care not to displace the O-ring, and assemble the transmitter.
4. Verify that the keyless entry system operates.



ENABLING/DISABLING THE ANSWERBACK FUNCTION

M1428003200311

If the keyless entry system locks or unlocks the doors, the dome light flashes or illuminates, the hazard warning light flashes (hazard answerback function) and the horn sounds (horn answerback function). The hazard and horn answerback functions 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 THE TRANSMITTER IS USED AFTER CONNECTING SCAN TOOL MB991502 TO THE DATA LINK CONNECTOR OR GROUNDING DATA LINK CONNECTOR TERMINAL (1)>

Refer to GROUP 54B, SWS – On-vehicle Service [P.54B-622](#).

<HOW TO ADJUST HAZARD ANSWERBACK WHEN THE TRANSMITTER IS USED TO LOCK DOORS>

1. Remove the ignition key.
2. Push the "UNLOCK" button and then push the "LOCK" button after 4 seconds to 10 seconds.
3. Release the "LOCK" button and then release the "UNLOCK" button within 10 seconds after Step 2. The ETACS-ECU tone alarm 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 tone alarm will sound once.**
- **Disable the hazard answerback function when the doors are locked: The ETACS-ECU tone alarm will sound twice.**

<HOW TO ADJUST HAZARD ANSWERBACK WHEN THE TRANSMITTER IS USED TO UNLOCK DOORS>

1. Remove the ignition key.
2. Push the "UNLOCK" button and then push the "LOCK" button after 4 seconds to 10 seconds.
3. Release the "UNLOCK" button and then release "LOCK" button within 10 seconds after Step 2. The ETACS-ECU tone alarm will sound, indicating that the hazard answerback function can be enabled or disabled when the door are unlocked.
 - **Enable the hazard answerback function when the doors are unlocked: The ETACS-ECU tone alarm will sound once.**
 - **Disable the hazard answerback function when the doors are unlocked: The ETACS-ECU tone alarm will sound twice.**

ENABLING/DISABLING THE HORN ANSWERBACK FUNCTION

1. Remove the ignition key.
2. Push the "LOCK" button and then push the "UNLOCK" button after 4 seconds to 10seconds.
3. Release the "LOCK" or "UNLOCK" button and then release the "UNLOCK" or "LOCK" button within 10 seconds after Step 2. The ETACS-ECU tone alarm will sound, indicating that the horn answerback function can be enabled or disabled.
 - **Enable the horn answerback function*: The ETACS-ECU tone alarm will sound once.**
 - **Disable the horn answerback function: The ETACS-ECU tone alarm will sound twice.**
 - **Enable the horn answerback function**: The ETACS-ECU tone alarm will sound three times.**

NOTE:

*: *The horn will sound if "LOCK" button is pressed with the doors locked.*

**:*The horn will sound if the doors are locked with the keyless entry system.*

HOW TO REGISTER SECRET CODE

M1428001000612

Required Special Tools:

- MB991529: Diagnostic trouble code check harness
- MB991958: Scan Tool (MUT-III Sub Assembly)
 - MB991824: Vehicle Communication Interface (V.C.I.)
 - MB991911: MUT-III Main Harness B

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 two or more transmitters or are adding more transmitters, the codes for all transmitters must be registered at the same time.

When special tool MB991529 is used

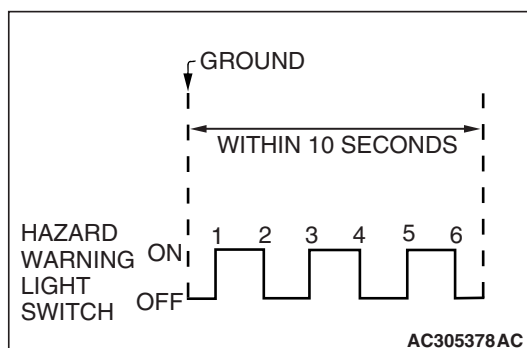
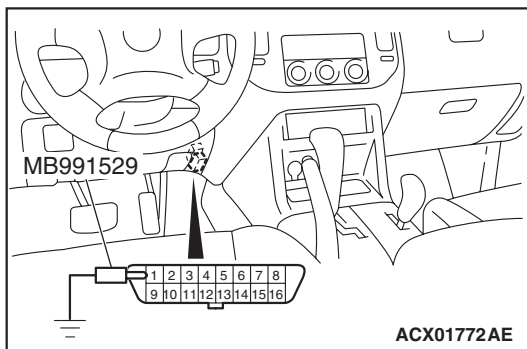
1. Insert the ignition key into the key cylinder and check that the doors have been locked normally when the ignition key is turned.
2. Insert the ignition key into the key cylinder.

CAUTION

Turn the ignition switch to the "LOCK" (OFF) position and then connect data link connector terminal 1 to ground.

3. Connect the data link connector terminal 1 to ground.

NOTE: Connecting terminal 1 of the data link connector to ground will put the system in secret code registration standby mode.



4. Push the hazard warning light switch six times within 10 seconds.

NOTE: At this time the code registration monitor request is output and becomes registration mode (all doors locked and then all doors unlocked).

NOTE: The hazard warning light 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. When registration is completed, the code registration monitor request is output (all doors locked and then all doors unlocked).
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 canceled 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 data link connector terminal 1 to ground is disconnected;
 - When the ignition key is removed from the ignition key cylinder;
9. After the registration is completed, carry out the following.

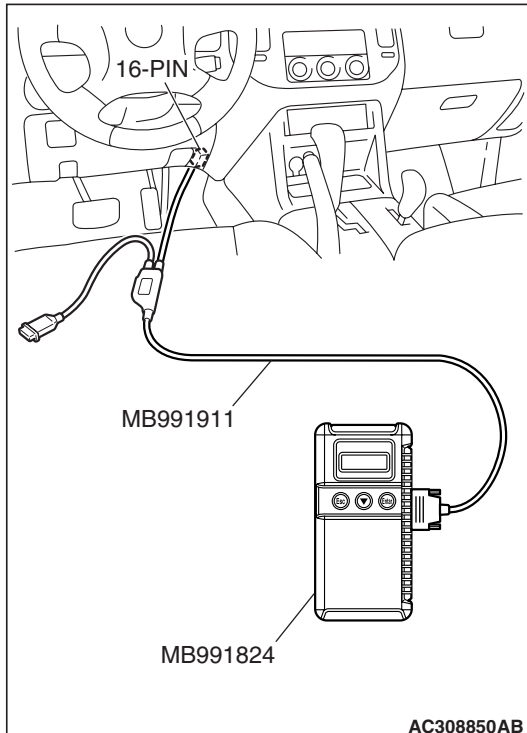
 CAUTION

Turn the ignition switch to the "LOCK" (OFF) position and then disconnect data link connector terminal 1 from ground.

10. Disconnect data link connector terminal 1 from ground.
11. Remove the ignition key from ignition key cylinder.
12. Close all of the doors.
13. Verify the keyless entry system operates normally.

When special tool MB991824 (V.C.I.) is used

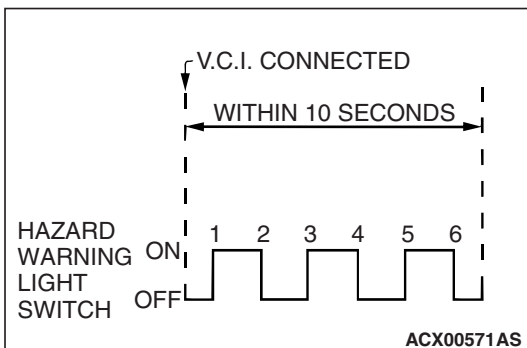
1. Insert the ignition key into the key cylinder and check that the doors have been locked normally when the ignition key is turned.
2. Insert the ignition key into the key cylinder.



CAUTION

Turn the ignition switch to the "LOCK" (OFF) position and then connect special tool MB991824 (V.C.I.) to the data link connector.

3. Connect special tool MB991824 (V.C.I.) to the data link connector.



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

NOTE: When the hazard warning light switch has been pressed six times, the ETACS-ECU locks and unlocks the doors and the liftgate automatically once. The ETACS-ECU is ready to register an encrypted code.

NOTE: The hazard warning light switch is a toggle switch.

5. Press the transmitter button, and then press it two times within 10 seconds of the first press. This will register the code.
6. When registration is completed, the code registration monitor request is sent (all doors locked and unlocked).
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 canceled 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 special tool MB991824 (V.C.I.) is disconnected from the data link connector
 - When the ignition key is removed from the ignition key cylinder;
9. After the registration is completed, carry out the following work.

⚠ CAUTION

Turn the ignition switch to the "LOCK" (OFF) position and then disconnect special tool MB991824 (V.C.I.) from the data link connector.

10. Disconnect special tool MB991824 (V.C.I.) from the data link connector.
11. Remove the ignition key from ignition key cylinder.
12. Close all of the doors.
13. Verify the keyless entry system operates normally.

SUNROOF ASSEMBLY

GENERAL DESCRIPTION

M1426000100182

A motor-driven inner slide-type glass sunroof with a tilt-up mechanism is provided as an option. Even when the sunroof is fully closed, a sufficient amount of lighting and a feeling of openness can still be obtained by opening the sunroof sunshade.

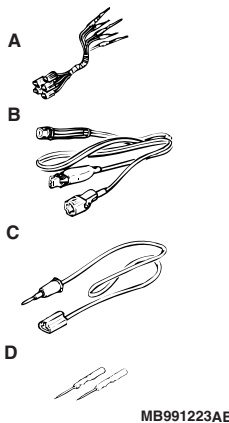
SUNROOF DIAGNOSIS

M1426000700021

The sunroof system is controlled by the Simplified Wiring System (SWS). For troubleshooting, refer to GROUP 54B, Diagnosis [P.54B-22](#).

SPECIAL TOOL

M1426000600024

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
 <p>MB991223AB</p>	<p>MB991223 Harness set</p> <ul style="list-style-type: none"> • A: MB991219 Test harness • B: MB991220 LED harness • C: MB991221 LED harness adapter • D: MB991222 Probe 	<p>MB991223</p>	<p>Measurement of terminal voltage</p> <ul style="list-style-type: none"> • A: Connector pin contact pressure inspection • B: Power circuit inspection • C: Power circuit inspection • D: Commercial tester connection

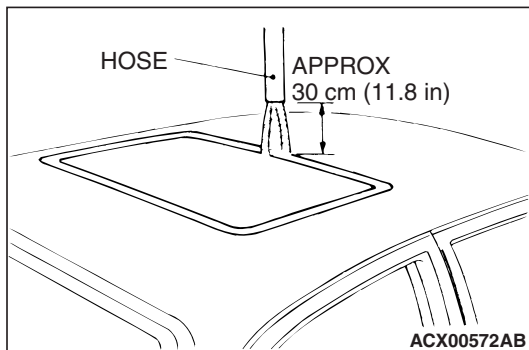
ON-VEHICLE SERVICE

WATER TEST

M1426000900036

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

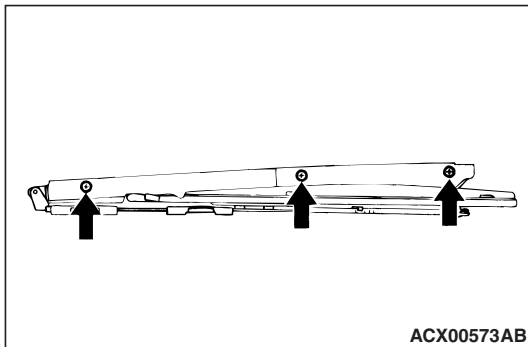
1. Fully close the roof lid glass.
2. Adjust the water pressure so that water comes out of the hose to a height of approximately 50 cm (19.7 inches) when the hose is held vertically facing upwards.
3. Hold the end of the hose approximately 30 cm (11.8 inches) above the roof and let the water run onto the weatherstrip for 5 minutes or more.
4. With the water running on to the weatherstrip, check that there is no water leaking into the passenger compartment.



SUNROOF FIT ADJUSTMENT

M1426001000199

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



OPERATION CHECK

M1426002600224

Check the following items. If faulty, reinstall or replace the appropriate component.

CAUTION

Check that the following items are normal before carrying out this operation check.

1. Installation condition of the sunroof assembly
2. Installation, condition and foreign material of the sunroof drive cable
3. Improper fit of sunroof glass
4. Sunroof switch and sunroof motor assembly

Basic operation

NO.	SUNROOF FUNCTION	REQUIREMENTS FOR THE SUNROOF TO FUNCTION	NORMAL OPERATION
01	OPEN	1. Ignition switch: ON 2. Sunroof switch: OPEN	The sunroof opens fully and automatically.
02	CLOSE	1. Ignition switch: ON 2. Sunroof switch: CLOSE/TILT-DOWN	The sunroof closes while the sunroof switch is pushed to the CLOSE/TILT-DOWN position.
03	TILT-UP	1. Ignition switch: ON 2. Sunroof switch: TILT-UP	The sunroof tilts up fully and automatically.
04	TILT-DOWN	1. Ignition switch: ON 2. Sunroof switch: CLOSE/TILT-DOWN	The sunroof closes while the sunroof switch is pushed to the CLOSE/TILT-DOWN position.
05	AUTOMATIC OPERATION INTERRUPTION	A 1. Ignition switch: ON 2. Sunroof switch: TILT-UP or CLOSE/TILT DOWN (Push the sunroof switch to the CLOSE/TILT-DOWN position while the sunroof is automatically opening and release the switch within two seconds)	The sunroof stops the automatic opening operation.
		B 1. Ignition switch: ON 2. Sunroof switch: CLOSE/TILT DOWN (Push the sunroof switch to the CLOSE/TILT-DOWN position more than two seconds while the sunroof is automatically opening)	The sunroof stops the automatic opening operation, and the sunroof closes while the sunroof switch is pushed to the CLOSE/TILT-DOWN position.

Jam preventing mechanism

NO.	SUNROOF FUNCTION	REQUIREMENTS FOR THE SUNROOF TO FUNCTION	NORMAL OPERATION
01	CLOSE	1. Ignition switch: ON 2. Sunroof switch: CLOSE/TILT-DOWN 3. Sunroof initial position: being closed or opened 4. Interrupt the sunroof operation before the sunroof is fully closed.	After you interrupts the sunroof operation, it opens by the predetermined distance and then stops automatically.
02	TILT-DOWN	1. Ignition switch: ON 2. Sunroof switch: CLOSE/TILT-DOWN 3. Sunroof initial position: being tilting down 4. Interrupt the sunroof operation before the sunroof is fully close.	The sunroof tilts up automatically after it is interrupted.

Sunroof timer mechanism

In cases except the followings, the basic operation and jam preventing mechanism will be maintained for thirty seconds after the ignition switch is turned to the LOCK (OFF) position. (Sunroof timer function)

- If you open a door within that period (i.e. a door switch is on), the sunroof timer function will be cancelled immediately.
- If you closes the sunroof fully while the timer is working, the sunroof timer function is cancelled after that sunroof operation.
- If you turns the ignition switch to the LOCK (OFF) position while the timer is working, the sunroof will continue moving until it closes fully regardless of the time-out period.

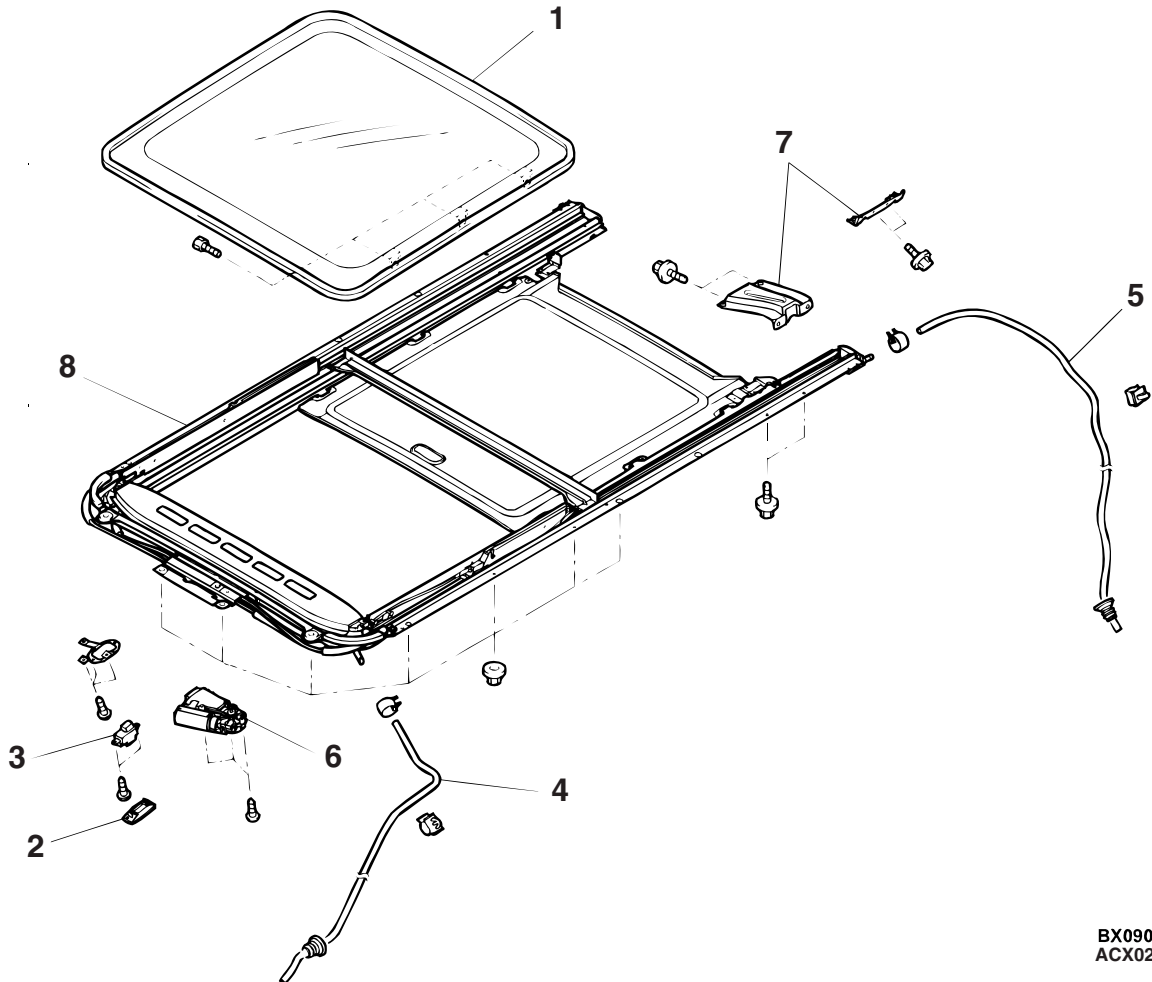
SUNROOF ASSEMBLY

REMOVAL AND INSTALLATION

M1426001200546

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

- Sunroof Fit Adjustment (Refer to P.42-63.)
- Sunroof Water Test (Refer to P.42-63.)



BX0902CA
ACX02405 AB

1. ROOF LID GLASS ASSEMBLY
SUNROOF SWITCH REMOVAL STEPS

2. SUNROOF SWITCH COVER
3. SUNROOF SWITCH

DRAIN HOSE REMOVAL STEPS

- HEADLINING (REFER TO GROUP 52A, HEADLINING P.52A-10.)
 - SPLASH SHIELD (FRONT DRAIN HOSE) (REFER TO P.42-7.)
 - INSTRUMENT PANEL ASSEMBLY (REFER TO GROUP 52A, INSTRUMENT PANEL ASSEMBLY P.52A-3.)
4. DRAIN HOSE (FRONT SIDE)
 - PILLAR DUCT (PASSENGER'S SIDE) (REFER TO GROUP 55A, VENTILATORS P.55A-150.)

<<A>> >>A<<

DRAIN HOSE REMOVAL STEPS

- REAR QUARTER DUCT (PASSENGER'S SIDE) (REFER TO GROUP 55A, VENTILATORS P.55A-150.)

5. DRAIN HOSE (REAR SIDE)
SUNROOF MOTOR REMOVAL STEPS

- HEADLINING (REFER TO GROUP 52A, HEADLINING P.52A-10.)

<> >>B<<

6. SUNROOF MOTOR ASSEMBLY
SUNROOF ASSEMBLY REMOVAL STEPS

- HEADLINING (REFER TO GROUP 52A, HEADLINING P.52A-10.)
4. DRAIN HOSE (FRONT SIDE)

**SUNROOF ASSEMBLY REMOVAL
STEPS (Continued)**

- PILLAR DUCT (PASSENGER'S SIDE) (REFER TO GROUP 55A, VENTILATORS P.55A-150.)

**SUNROOF ASSEMBLY REMOVAL
STEPS (Continued)**

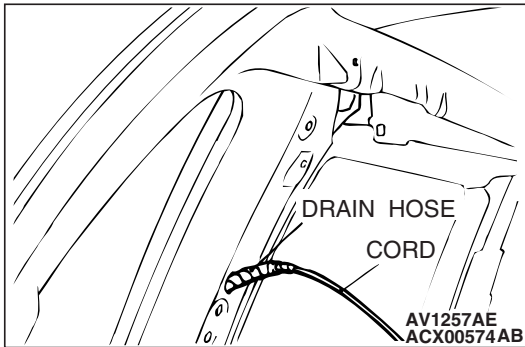
- REAR QUARTER DUCT (PASSENGER'S SIDE) (REFER TO GROUP 55A, VENTILATORS P.55A-150.)
5. DRAIN HOSE (REAR SIDE)
 6. SUNROOF MOTOR ASSEMBLY
 7. SET BRACKET

<<A>> >>A<<

REMOVAL SERVICE POINTS

<<A>> DRAIN HOSE REMOVAL

Tie a cord to the end of the drain hose, and wind tape around the tie until it is smooth. Then pull the drain hose out into the wheel housing.



<> SUNROOF MOTOR REMOVAL

⚠ CAUTION

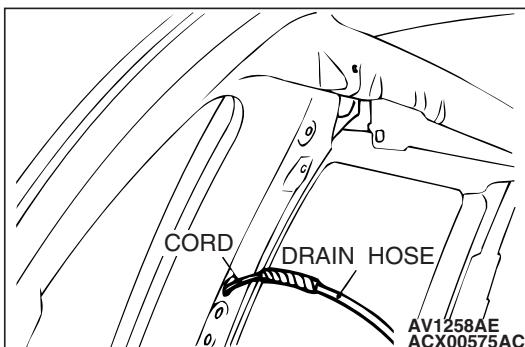
Always close the roof lid glass fully before removing the sunroof motor. If the fully-closed positions of the roof lid glass and the sunroof motor are not the same, the sunroof will not operate properly.

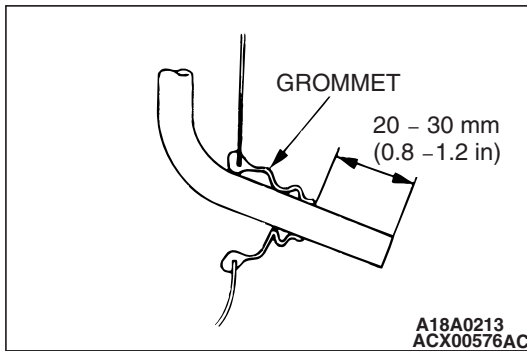
NOTE: If there is a problem with the sunroof motor so that the roof lid glass cannot close fully, use an Allen wrench to turn the gear section of the sunroof motor to fully close the roof lid glass.

INSTALLATION SERVICE POINTS

>>A<< DRAIN HOSE INSTALLATION

1. Tie the cord that was used during removal to the end of the drain hose, and wind tape around it until it is smooth.
2. Feed the drain hose through the wheel housing aperture. Pull the cord until the drain hose appears, and then untie the cord.





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

>>B<< SUNROOF MOTOR ASSEMBLY INSTALLATION

<Mounting of removed sunroof motor assembly>

1. Placing the sunroof assembly at fully closed position, mount the roof lid glass assembly and the sunroof motor assembly.
2. Connect the sunroof motor assembly connector and the sunroof switch connector to the vehicle's wiring harness connector.

NOTE: After installing the sunroof motor assembly, carry out the operation check to confirm that the sunroof operates properly (Refer to P.42-63). If the sunroof does not operate properly, carry out the troubleshooting (Refer to P.42-62).

NOTE: If the sunroof anti-trap function works consecutively five times, it will be cancelled. Once the function has been cancelled, the sunroof motor assembly should be initialized (learning mode) in the same manner as for a new one.

<Mounting of a new sunroof motor assembly>

Install a new sunroof motor assembly in the same manner as above. Then initialize (learning mode) the sunroof motor assembly as follows:

⚠ CAUTION

In the following cases, repeat initialization (learning mode) from step 1.

- **The sunroof switch is released while sliding the roof lid glass in steps 5 and 7.**
 - **The sunroof open switch is pressed once, but does not move to the fully open position.**
 - **The sunroof motor assembly does not operate properly after the initialization (learning mode).**
1. Continue pushing the sunroof open switch and move the roof lid glass to the fully open position.
 2. When the sunroof close switch is pushed once, the roof lid glass slides toward the closed position by 30 mm (1.2 inches), and stops automatically. Repeat this operation until the roof lid glass is fully closed.
 3. Push the sunroof close switch once so that the roof lid glass tilts up fully.
 4. Push the sunroof close switch for approximately three seconds until a click is heard from the sunroof-ECU.

5. Continue to push the sunroof close switch until the roof lid glass tilts down fully.
6. Push the sunroof open switch once so that the roof lid glass open fully.
7. Continue to push the sunroof close switch until the roof lid glass closes fully.

NOTE: The roof lid glass can be operated only by means of the sunroof close switch from the fully closed position to the fully tilt-up position during the initialization (learning mode). The roof lid glass does not tilt up even if the sunroof tilt-up switch is pushed during the initialization (learning mode).

NOTE: After the initialization (learning mode), carry out the operation check to confirm that the sunroof operates properly (Refer to P.42-63). If the sunroof does not operate properly, repeat the initialization (learning mode). If the sunroof still does not operate properly, carry out the troubleshooting (Refer to P.42-62).

INSPECTION

M1421007600406

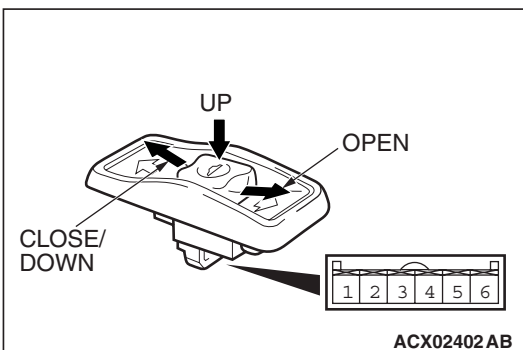
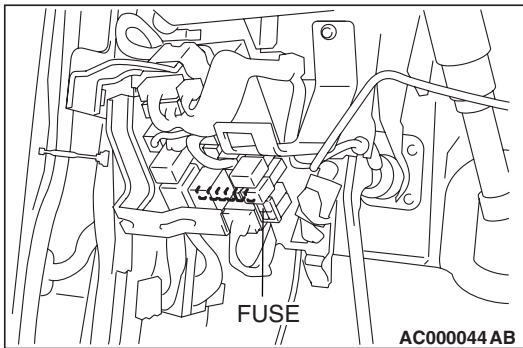
ROOF LID GLASS CIRCUIT CHECK

1. Remove the sunroof fuse and connect an ammeter as shown in the illustration.
2. Press the sunroof switch to operate the sunroof, and then measure the current while the roof lid glass is moving (not when the sunroof starts to operate, when it is fully open, when it is fully closed and when it is fully tilted up).

Standard value: 7 A or less [at 20°C (68°F)]

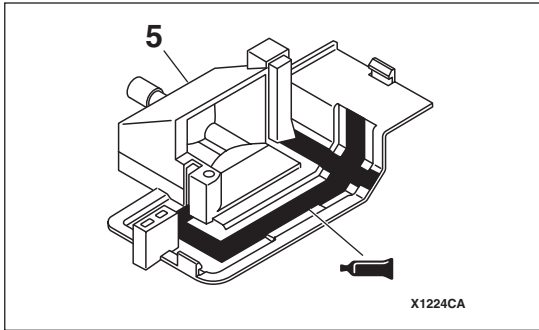
3. If the measured current is outside the standard value, check the following points.
 - Installation condition, warping or jamming of sunroof assembly
 - Sticking of drive cable
 - Tilt of roof lid glass

SUNROOF SWITCH CONTINUITY CHECK

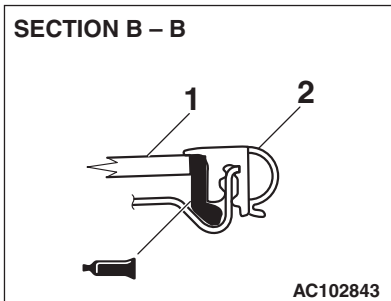
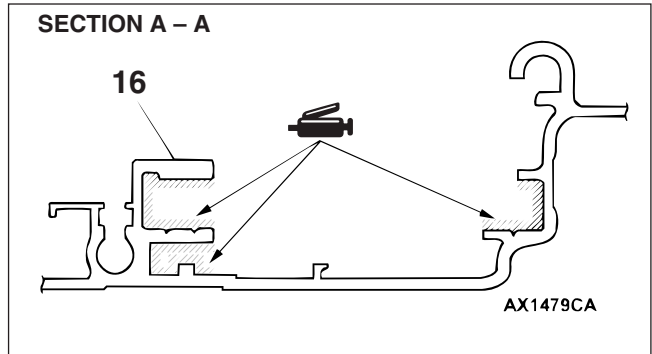


SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Open	4 – 5	Less than 2 ohms
Off	3 – 4, 4 – 5, 4 – 6	Open circuit
Tilt up	3 – 4	Less than 2 ohms
Slide closed, Tilt down	4 – 6	

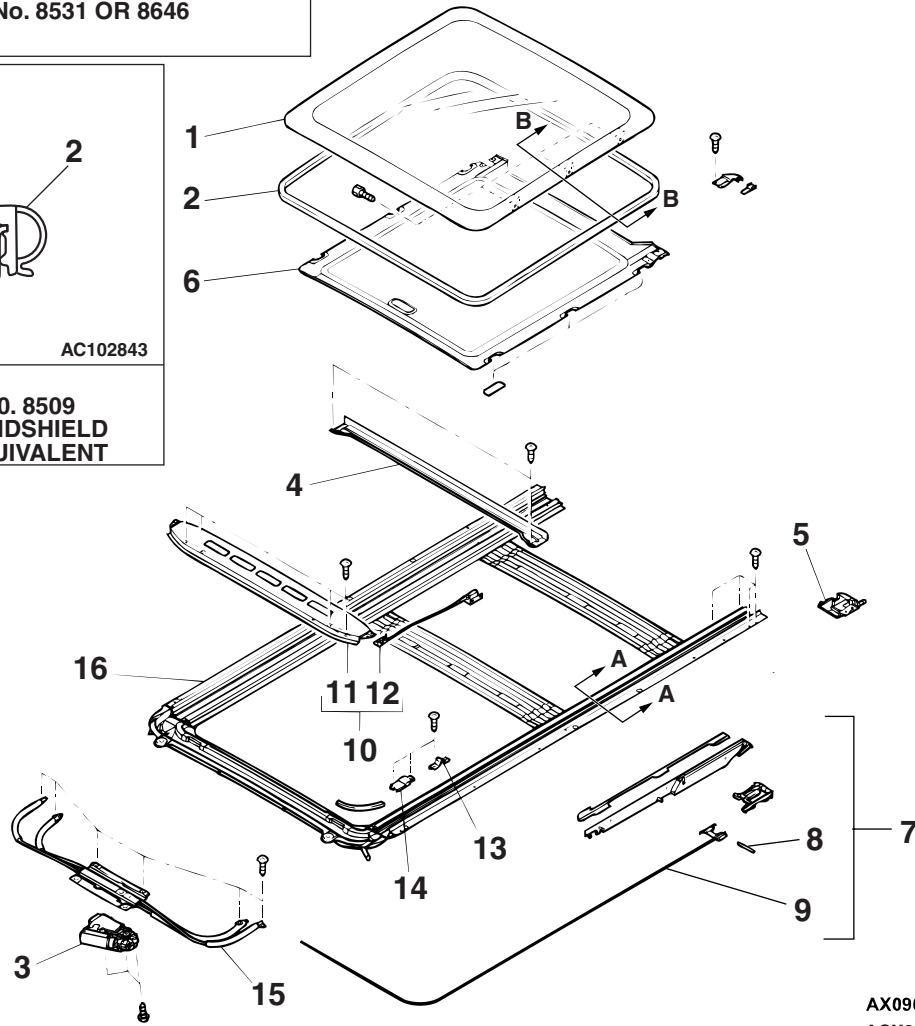
DISASSEMBLY AND ASSEMBLY



SEALANT :
3M™ AAD PART No. 8531 OR 8646
OR EQUIVALENT



ADHESIVE:
3M™ AAD PART NO. 8509
GROMMETED WINDSHIELD
SEALANT OR EQUIVALENT



AX0903CA
ACX02406AC

DISASSEMBLY STEPS

- 1. ROOF LID GLASS ASSEMBLY <>
- 2. WEATHERSTRIP
- 3. SUNROOF MOTOR ASSEMBLY <<C>>
- 4. ROOF DRIP CHANNEL <<C>>
- 5. SEALER
- 6. SUN SHADE ASSEMBLY
- 7. DRIVE CABLE ASSEMBLY
- <<A>> >>A<<
- <<A>>
- 8. SHAFT
- 9. DRIVE CABLE

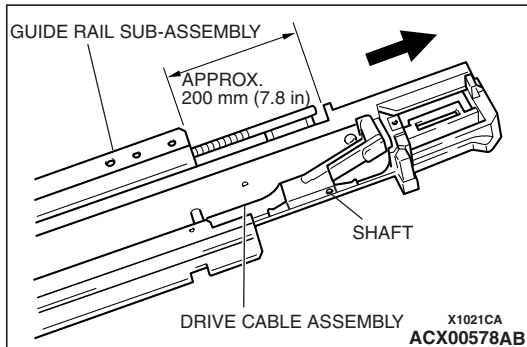
DISASSEMBLY STEPS (Continued)

- 10. ROOF WINDOW DEFLECTOR
PANEL ASSEMBLY
- 11. DEFLECTOR
- 12. DEFLECTOR LINK
- 13. SET PLATE
- 14. FRONT COVER
- 15. CABLE GUIDE CASING
- 16. GUIDE RAIL SUB-ASSEMBLY

REMOVAL SERVICE POINT

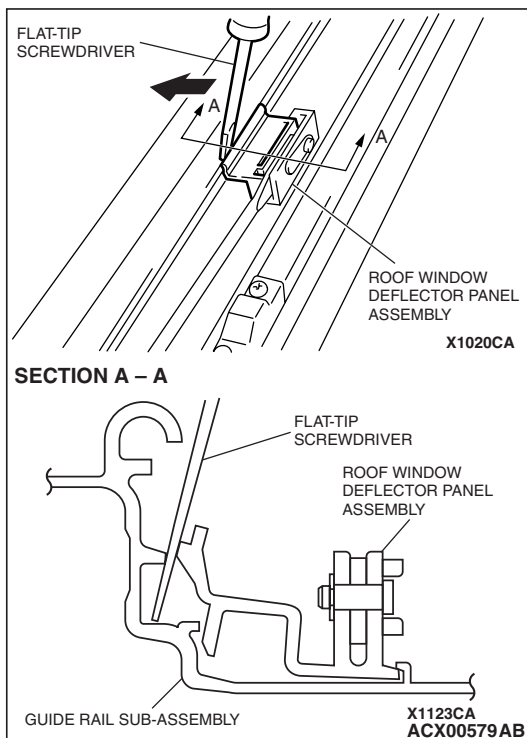
<<A>> SHAFT/DRIVE CABLE REMOVAL

Draw out the drive cable assembly as shown in the illustration, then remove the shaft and the drive cable.



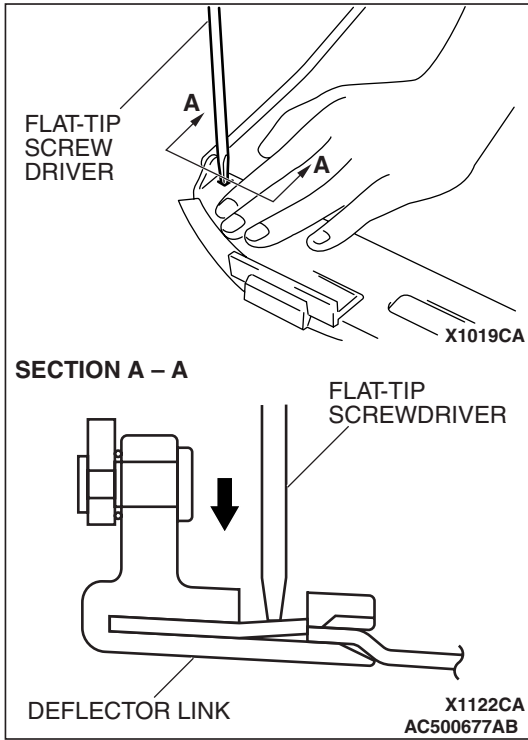
<> ROOF WINDOW DEFLECTOR PANEL ASSEMBLY REMOVAL

Pry out the roof window deflector panel assembly using a flat-tip screwdriver as shown in the illustration.



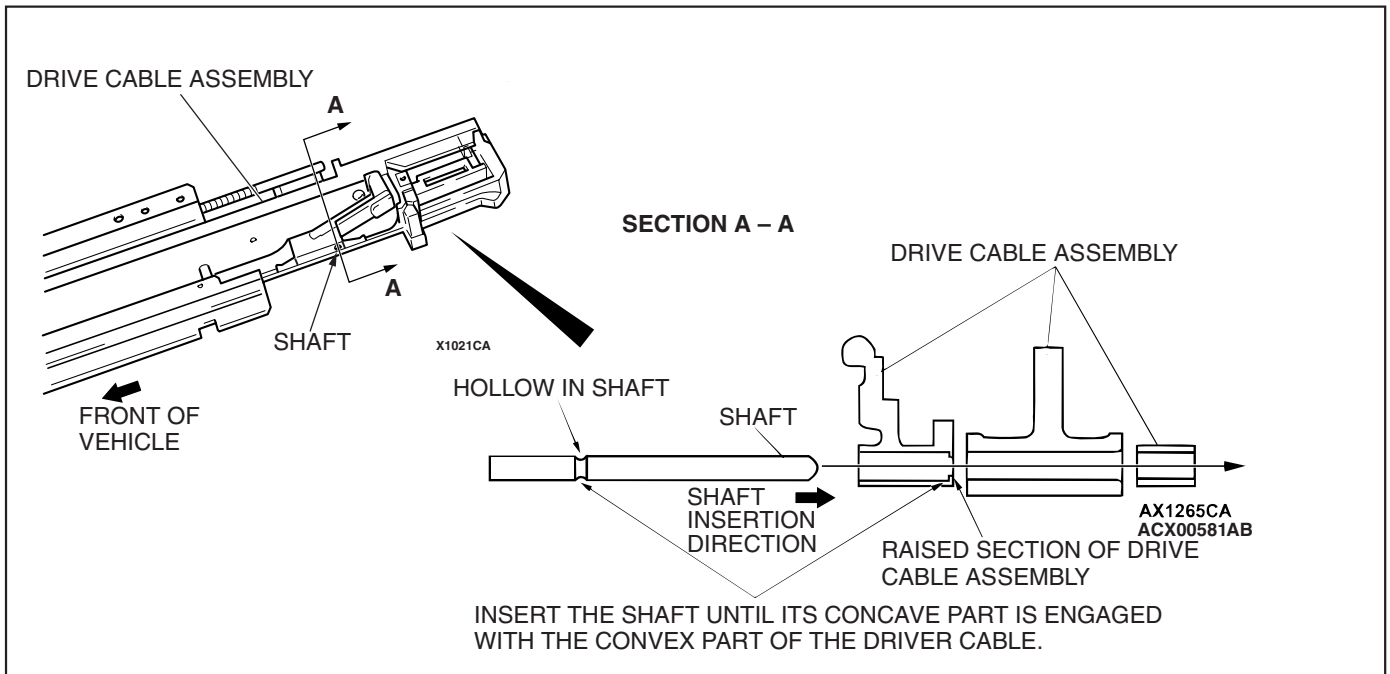
<<C>> REMOVAL OF DEFLECTOR/DEFLECTOR LINK

Disconnect the deflector and the deflector panel using a flat-tip screwdriver as shown in the illustration.



INSTALLATION SERVICE POINT

>>A<< SHAFT INSTALLATION



Install the shaft to the drive cable from the outside of vehicle as shown in the illustration.

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

M1421005300250

ITEM	SPECIFICATION
Hood	
Hood latch bolt	9.0 ± 2.0 N·m (79 ± 18 in-lb)
Hood support rod bolt	5.0 ± 1.0 N·m (44 ± 9 in-lb)
Hood hinge bolt (hood side)	22 ± 4 N·m (16 ± 3 ft-lb)
Hood hinge bolt (body side)	22 ± 4 N·m (16 ± 3 ft-lb)
Door	
Door check bolt (body side)	11 ± 2 N·m (98 ± 17 in-lb)
Door hinge bolt (body side)	27 ± 5 N·m (20 ± 4 ft-lb)
Door hinge bolt (door side)	21 ± 4 N·m (16 ± 2 ft-lb)
Door hinge nut (door side)	21 ± 4 N·m (16 ± 2 ft-lb)
Door latch assembly screw	5.9 ± 1.0 N·m (52 ± 9 in-lb)
Power window motor bolt	5.4 ± 1.4 N·m (48 ± 13 in-lb)
Striker screw	11 ± 2 N·m (98 ± 17 in-lb)
Back door	
Back door hinge bolt	21 ± 4 N·m (16 ± 2 ft-lb)
Back door latch assembly bolt	5.9 ± 1.0 N·m (52 ± 9 in-lb)
Striker bolt	11 ± 2 N·m (98 ± 17 in-lb)

SERVICE SPECIFICATIONS

M1421000300181

<DOOR>

ITEM	STANDARD VALUE	
Door inside handle play mm (in)	5.1 (0.20) or more	
Door outside handle play mm (in)	Front	2.0 (0.08) or more
	Rear	1.7 (0.07) or more

<BACK DOOR>

ITEM	STANDARD VALUE
Back door handle play mm (in)	2.3 (0.09)

<SUNROOF>

ITEM	STANDARD VALUE
Roof lid glass operation current A	7 or more [20°C (68°F)]

SEALANTS

M1421000500163

<DOOR>

ITEM	SPECIFIED SEALANT	REMARK
Waterproof film	3 M™AAD Part No.8633 or equivalent	Ribbon sealer

<BACK DOOR>

ITEM	SPECIFIED SEALANT	REMARK
Waterproof film	3 M™AAD Part No.8633 or equivalent	Ribbon sealer

<WINDOW GLASS>

ITEM	SPECIFIED SEALANT
Back door	3 M™AAD Part No.8609 or equivalent
Quarter window glass	3 M™AAD Part No.8509 or equivalent
Windshield	3 M™AAD Part No.8609 or equivalent

<SUNROOF>

ITEM	SPECIFIED SEALANT
Roof lid window glass assembly	3 M™AAD Part No.8509 or equivalent
Sealer	3 M™AAD Part No.8531 or 8646 or equivalent

COMPONENT IDENTIFICATION

M1421005400150

<DOOR CHECK>

APPLICABLE LOCATION		IDENTIFICATION MARK
LH	Front door	20L
	Rear door	26L
RH	Front door	20R
	Rear door	26R