

GROUP 42

BODY

CONTENTS

HOOD	42-4	STRUT TOWER BAR	42-12
BODY DIAGNOSIS	42-4	REMOVAL AND INSTALLATION .	42-12
INTRODUCTION TO HOOD DIAGNOSIS	42-4	WINDOW GLASS	42-12
HOOD DIAGNOSTIC TROUBLESHOOTING		GENERAL	42-12
STRATEGY.....	42-4	WINDOW GLASS DIAGNOSIS . . .	42-14
SYMPTOM CHART.....	42-4	INTRODUCTION TO WINDOW GLASS	
SYMPTOM PROCEDURES.....	42-4	DIAGNOSIS.....	42-14
ON-VEHICLE SERVICE	42-6	WINDOW GLASS DIAGNOSTIC	
ADJUSTMENT OF CLEARANCE		TROUBLESHOOTING STRATEGY.....	42-14
AROUND HOOD.....	42-6	WINDOW GLASS DIAGNOSTIC TROUBLE	
ALIGNMENT OF HOOD LATCH AND		SYMPTOM CHART.....	42-14
STRIKER.....	42-6	SYMPTOM PROCEDURES.....	42-14
ADJUSTMENT OF HOOD HEIGHT . . .	42-7	SPECIAL TOOL	42-14
HOOD	42-8	WINDSHIELD	42-15
REMOVAL AND INSTALLATION.....	42-8	REMOVAL AND INSTALLATION.....	42-15
FENDER	42-10	REAR WINDOW GLASS	42-20
REMOVAL AND INSTALLATION .	42-10	REMOVAL AND INSTALLATION.....	42-20
FUEL FILLER LID	42-11		
REMOVAL AND INSTALLATION .	42-11		

Continued on next page

DOOR	42-23	WINDOW GLASS RUNCHANNEL AND DOOR OPENING WEATHERSTRIP	42-52
GENERAL DESCRIPTION	42-23	REMOVAL AND INSTALLATION.....	42-52
CENTRAL DOOR LOCKING SYSTEM DIAGNOSIS	42-23	TRUNK LID	42-59
POWER WINDOW DIAGNOSIS	42-23	TRUNK LID DIAGNOSIS	42-59
DOOR DIAGNOSIS	42-23	INTRODUCTION TO TRUNK LID DIAGNOSIS	42-59
INTRODUCTION TO GLASS AND DOOR DIAGNOSIS	42-23	TRUNK LID DIAGNOSTIC TROUBLESHOOTING STRATEGY.....	42-59
GLASS AND DOOR DIAGNOSTIC TROUBLESHOOTING STRATEGY	42-23	SYMPTOM CHART	42-59
SYMPTOM CHART	42-24	SYMPTOM PROCEDURES.....	42-60
SYMPTOM PROCEDURES	42-24	ON-VEHICLE SERVICE	42-61
HOW TO LOCATE WIND NOISE	42-27	ADJUSTMENT OF CLEARANCE AROUND TRUNK LID	42-61
SPECIAL TOOLS	42-28	TRUNK LID LATCH ADJUSTMENT....	42-61
ON-VEHICLE SERVICE	42-30	TRUNK LID HEIGHT ADJUSTMENT...	42-61
DOOR FIT ADJUSTMENT.....	42-30	TRUNK LID	42-62
DOOR WINDOW GLASS ADJUSTMENT	42-31	REMOVAL AND INSTALLATION.....	42-62
GLASS SLIDING MECHANISM CHECK AND ADJUSTMENT	42-32	INSPECTION	42-64
POWER WINDOW TIMER FUNCTION CHECK	42-32	KEYLESS ENTRY SYSTEM ..	42-65
POWER WINDOW OPERATING CURRENT CHECK	42-33	GENERAL DESCRIPTION	42-65
POWER WINDOW RELAY CHECK	42-33	KEYLESS ENTRY SYSTEM DIAGNOSIS	42-66
CIRCUIT BREAKER (INCORPORATED IN THE POWER WINDOW MOTOR) INSPECTION	42-34	SPECIAL TOOL	42-67
POWER WINDOW CHECK	42-34	ON-VEHICLE SERVICE	42-68
CENTRAL DOOR LOCKING SYSTEM INSPECTION	42-34	HOW TO REPLACE THE TRANSMITTER BATTERY.....	42-68
DOOR OUTSIDE HANDLE PLAY CHECK	42-35	KEYLESS ENTRY SYSTEM INSPECTION	42-68
DOOR INSIDE HANDLE PLAY CHECK	42-35	KEYLESS ENTRY SYSTEM TIMER LOCK FUNCTION INSPECTION	42-69
DOOR ASSEMBLY	42-37	ENABLING/DISABLING THE ANSWERBACK FUNCTION	42-69
REMOVAL AND INSTALLATION	42-37	HOW TO REGISTER SECRET CODE .	42-71
INSPECTION	42-38		
DOOR GLASS AND REGULATOR	42-39		
REMOVAL AND INSTALLATION	42-39		
INSPECTION	42-43		
DOOR HANDLE AND LATCH	42-46		
REMOVAL AND INSTALLATION	42-46		
INSPECTION	42-49		

Continued on next page

SUNROOF ASSEMBLY	42-73	INSPECTION	42-80
		DISASSEMBLY AND ASSEMBLY	42-81
GENERAL DESCRIPTION	42-73	LOOSE PANEL	42-82
SUNROOF DIAGNOSIS	42-73	REMOVAL AND INSTALLATION	42-82
SPECIAL TOOL	42-73	SPECIFICATIONS	42-84
ON-VEHICLE SERVICE	42-73	FASTENER TIGHTENING	
WATER TEST	42-73	SPECIFICATIONS	42-84
SUNROOF TIMER FUNCTION CHECK	42-74	SERVICE SPECIFICATIONS	42-85
SUNROOF FIT ADJUSTMENT	42-74	SEALANT AND ADHESIVES	42-85
SUNROOF CHECK	42-74	COMPONENT IDENTIFICATIONS	42-86
ROOF LID GLASS OPERATION			
CURRENT CHECK	42-74		
SUNROOF INITIALIZATION	42-75		
SUNROOF OPERATION CHECK	42-75		
SUNROOF ASSEMBLY	42-78		
REMOVAL AND INSTALLATION	42-78		

HOOD

BODY DIAGNOSIS

INTRODUCTION TO HOOD DIAGNOSIS

M1421005800363

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

HOOD DIAGNOSTIC TROUBLESHOOTING STRATEGY

M1421005900337

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

M1421006000371

SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Difficult locking and unlocking	1	P.42-4
Uneven body clearance	2	P.42-5
Uneven height	3	P.42-5

SYMPTOM PROCEDURES

INSPECTION PROCEDURE 1: Difficult Locking and Unlocking

DIAGNOSIS

STEP 1. Check that the release cable is routed correctly.

Q: Is the release cable routed correctly?

YES : Go to Step 2.

NO : Re-route 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.42-6](#)). 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 clearance around the hood.

Q: Is the clearance around the hood even?

YES : Go to Step 2.

NO : Adjust the hood (Refer to [P.42-6](#)). Then go to Step 2 .

STEP 2. Retest the system.

Q: Are the clearances between body panels even?

YES : The procedure is complete.

NO : Return to Step 1.

INSPECTION PROCEDURE 3: Uneven Height

DIAGNOSIS

STEP 1. Check the hood damper height.

Q: Is the hood damper height proper?

YES : Go to Step 2.

NO : Adjust the hood damper (Refer to [P.42-7](#)). 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.

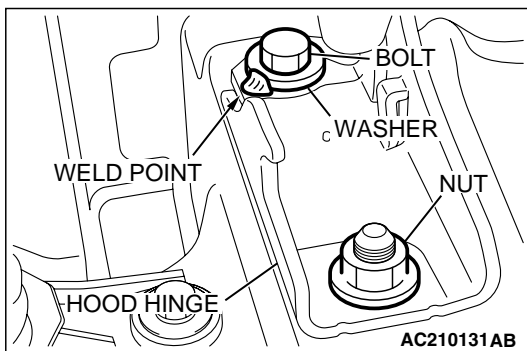
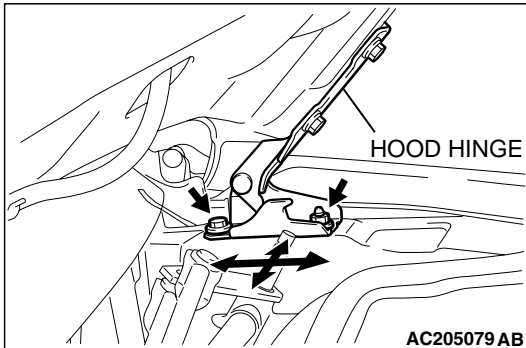
ON-VEHICLE SERVICE

ADJUSTMENT OF CLEARANCE AROUND HOOD

M1421007200130

Detach the front deck garnish (Refer to GROUP 51, Windshield Wiper P.51-15). Then loosen the hood hinge mounting nuts and bolts as shown, and adjust the hood by moving it until the clearance around it is even.

NOTE:



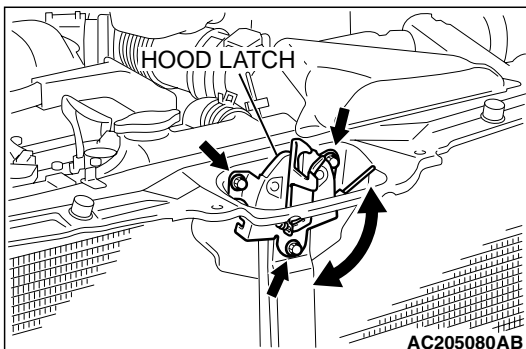
If the hood hinge mounting bolt washers are welded, grind off the welding according to the procedure below beforehand.

1. Remove the hood hinge (Refer P.42-8).
2. Use a chisel or grinder to release the hood hinge mounting bolt washer, which is welded to the hood hinge.
3. On completion, paint the affected area with a suitable touch-up brush to prevent corrosion.
4. Install the hood hinge (Refer P.42-8).

ALIGNMENT OF HOOD LATCH AND STRIKER

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Note the routing of the hood release cable, and then loosen the hood latch mounting bolts. Then align the latch with the striker by moving the hood latch. After alignment, ensure that the hood can be locked and unlocked correctly.

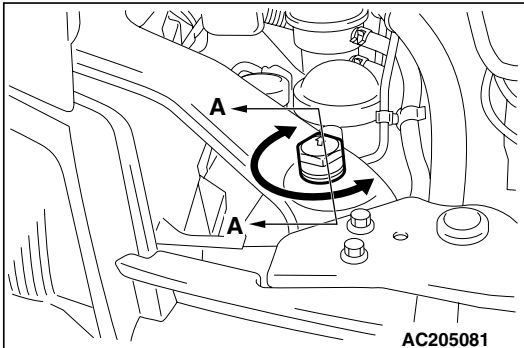


ADJUSTMENT OF HOOD HEIGHT

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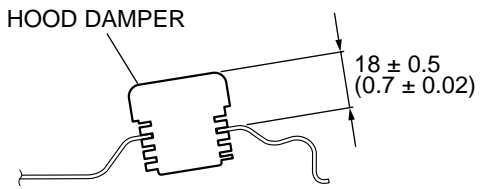
Turn the hood damper until its height is as shown. If the hood height is still not even at the left and right sides, turn the hood damper further until the hood height is even.

NOTE: Turning a new hood damper one full turn will increase/decrease the hood height by approximately 3 mm (0.1 inch).



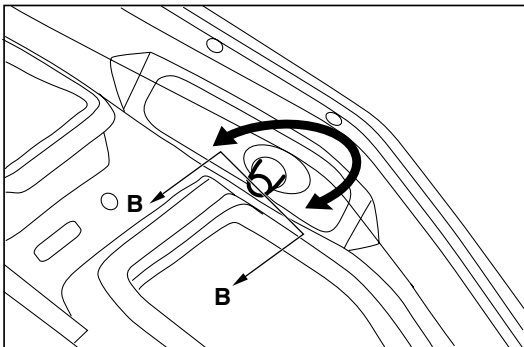
SECTION A - A

UNITS: mm (in)



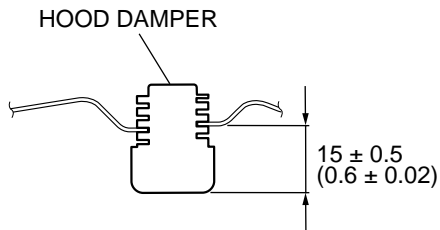
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SECTION B - B

UNITS: mm (in)



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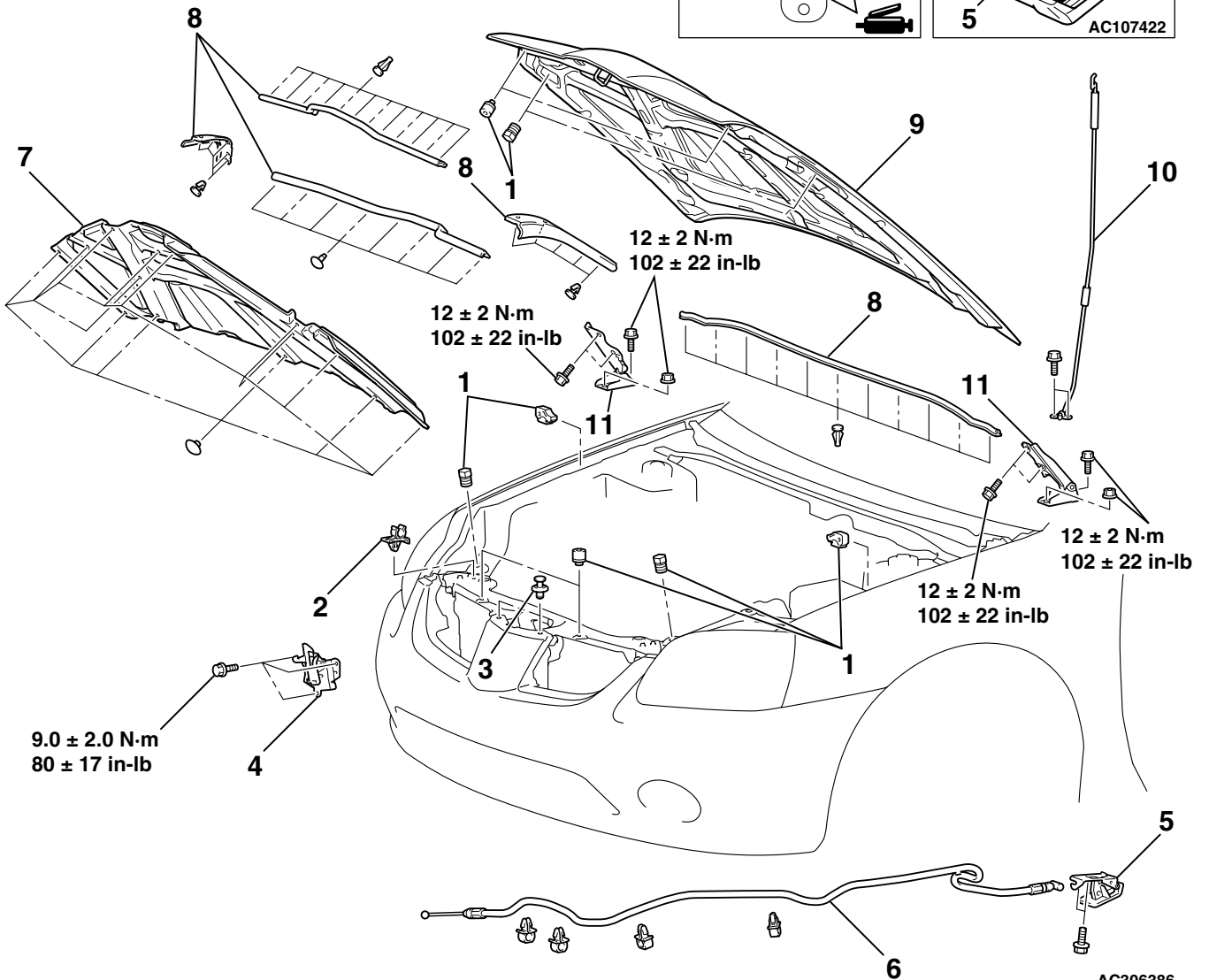
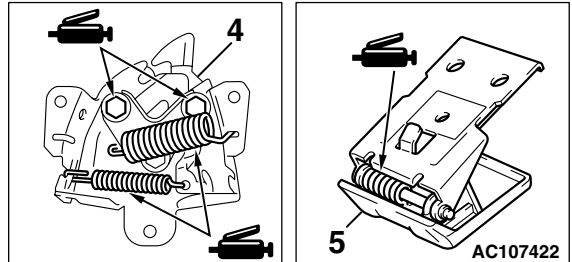
HOOD

REMOVAL AND INSTALLATION

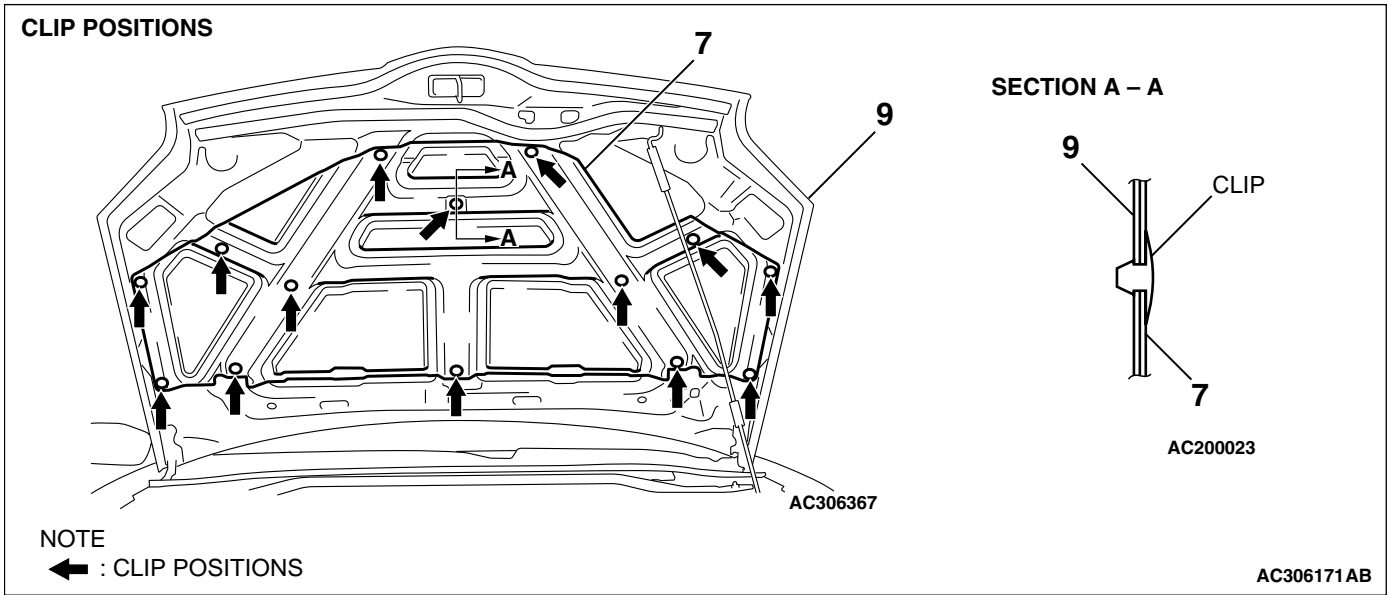
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Post-installation Operation

- Adjustment of Clearance Around Hood (Refer to P.42-6).
- Alignment of Hood Latch and Striker (Refer to P.42-6).
- Hood Height Adjustment (Refer to P.42-7).



AC306386
AC306497AB



NOTE
← : CLIP POSITIONS

REMOVAL

1. HOOD DAMPER
 2. CLIP
- HOOD LATCH AND HOOD LOCK RELEASE CABLE REMOVAL STEPS**
- RADIATOR GRILLE (REFER TO GROUP 51, RADIATOR GRILLE P.51-5).
 - 3. FRONT BUMPER MOUNTING CLIPS
 - 4. HOOD LATCH
 - SPLASH SHIELD (REFER TO P.42-10).
 - FRONT BUMPER ASSEMBLY (REFER TO GROUP 51, FRONT BUMPER P.51-2).
 - HEADLIGHT ASSEMBLY <LH> (REFER TO GROUP 54A, HEADLIGHT AND FRONT COMBINATION LIGHT P.54A-113).

<<A>>

HOOD LATCH AND HOOD LOCK RELEASE CABLE REMOVAL STEPS (Continued)

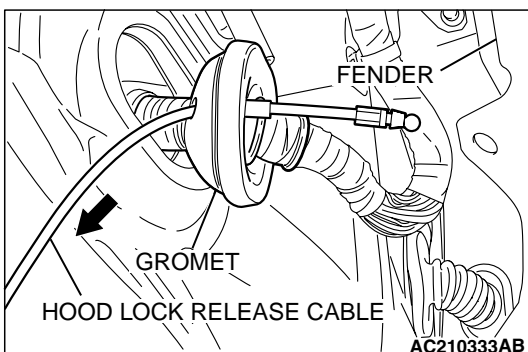
- FRONT END STRUCTURE BAR (REFER TO P.42-82).
 - 5. HOOD LOCK RELEASE HANDLE
 - 6. HOOD LOCK RELEASE CABLE
- HOOD AND HOOD HINGE REMOVAL STEPS**
7. HOOD INSULATOR
 8. HOOD WEATHERSTRIP
 - WINDSHIELD WASHER HOSE, WINDSHIELD WASHER NOZZLE (REFER TO GROUP 51, WINDSHIELD WASHER P.51-21).
 9. HOOD
 10. HOOD SUPPORT ROD
 - FRONT DECK GARNISH (REFER TO GROUP 51, WINDSHIELD WIPER P.51-15).
 11. HOOD HINGE

REMOVAL SERVICE POINT

<<A>> HOOD LOCK RELEASE CABLE REMOVAL

Release the grommet as shown, and pull out the hood lock release cable in the arrow direction (passenger compartment side).

NOTE: If you attempt to pull out the hood lock release cable in the opposite direction, the end of the hood lock release cable will engage the grommet and prevent cable removal.

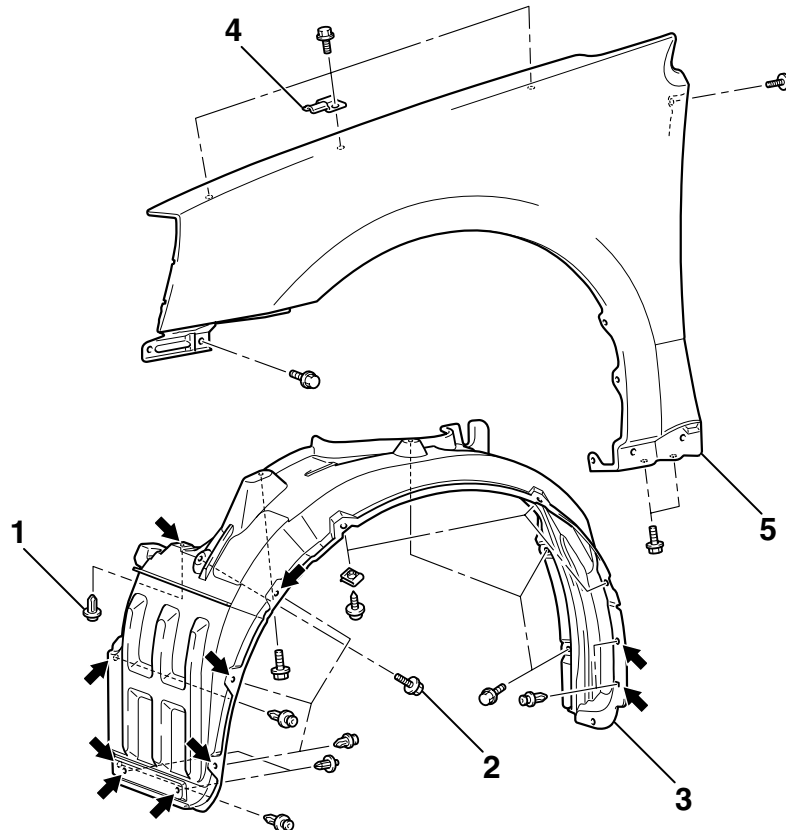


FENDER**REMOVAL AND INSTALLATION**

M1421001900313

Pre-removal and Post-installation Operation

- Front Bumper Assembly Removal and Installation (Refer to GROUP 51, Front Bumper P.51-2).
- Front Mud Guard Removal and Installation (Refer to GROUP 51, Mud Guard P.51-10).
- Headlight Removal and Installation (Refer to GROUP 54A, Headlight and Front Combination Light P.54A-113).

**NOTE**

← : CLIP POSITIONS

REMOVAL STEPS

1. SPLASH SHIELD MOUNTING CLIP
<DRIVER SIDE ONLY>
2. SPLASH SHIELD MOUNTING BOLT
<PASSENGER SIDE ONLY>
3. SPLASH SHIELD
4. HOOD DAMPER BRACKET

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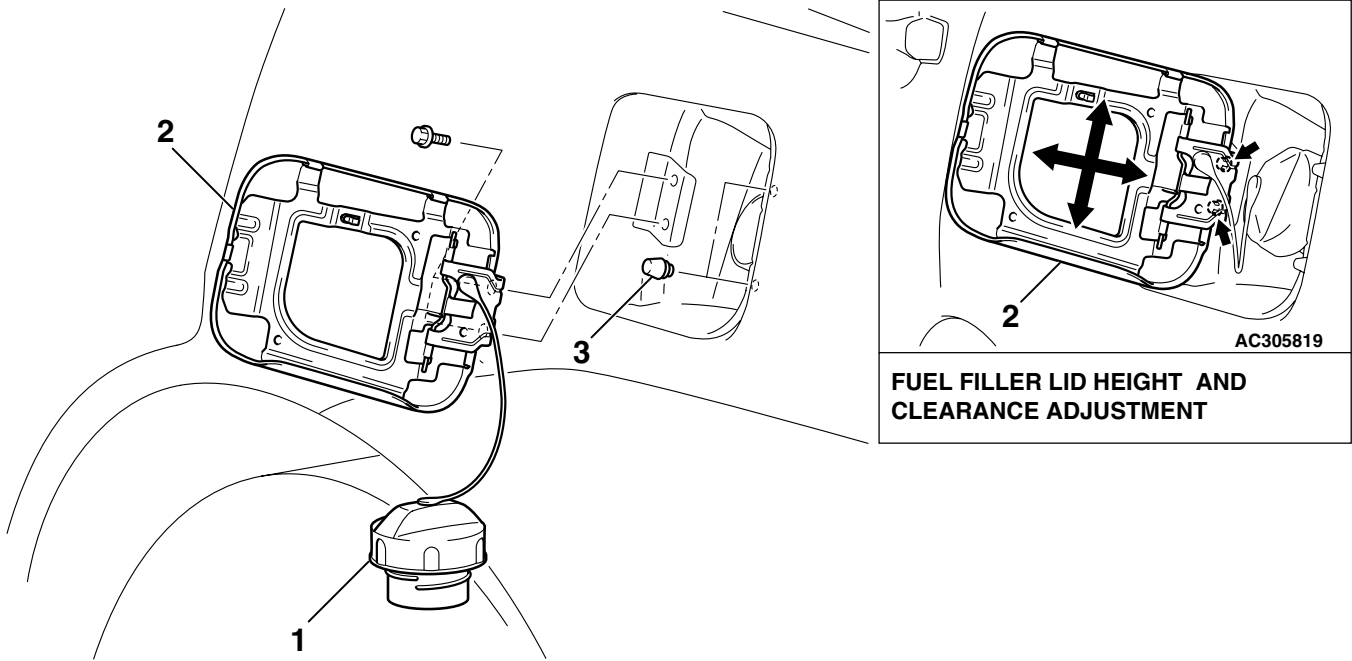
REMOVAL STEPS (Continued)

- DOOR MIRROR COVER (REFER TO GROUP 51, DOOR MIRROR P.51-41).
- FRONT DELTA GARNISH (REFER TO GROUP 51, GARNISHES AND MOLDING P.51-6).
- 5. FENDER

FUEL FILLER LID

REMOVAL AND INSTALLATION

M1421002500288



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REMOVAL

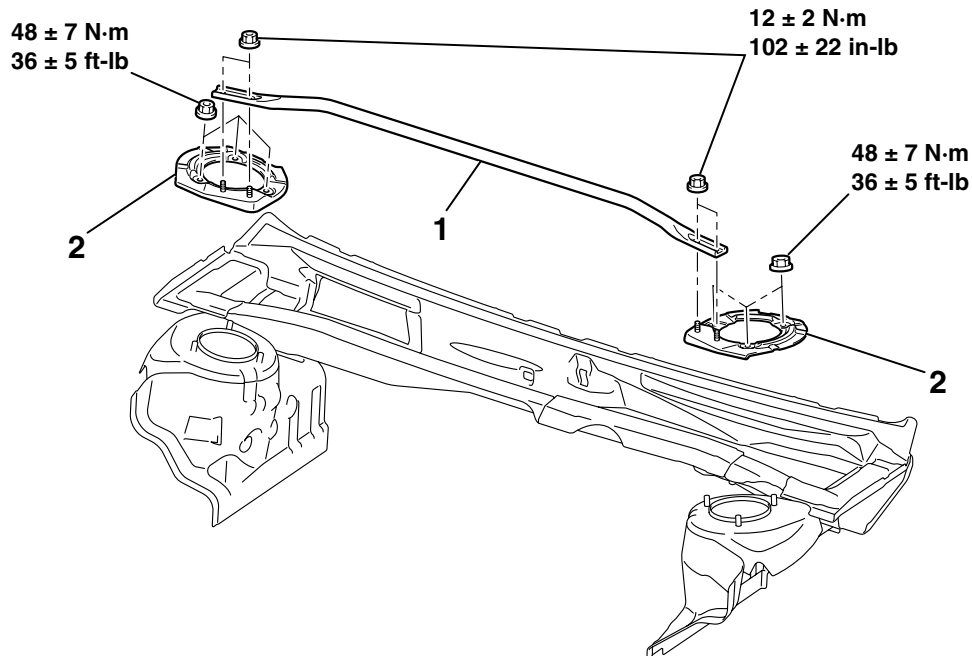
1. FUEL FILLER CAP

REMOVAL (Continued)

2. FUEL FILLER LID
3. FUEL FILLER LID DAMPER

STRUT TOWER BAR**REMOVAL AND INSTALLATION**

M1421005600109



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REMOVAL STEPS

1. STRUT TOWER BAR
2. STRUT TOWER BAR BRACKET

WINDOW GLASS**GENERAL**

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

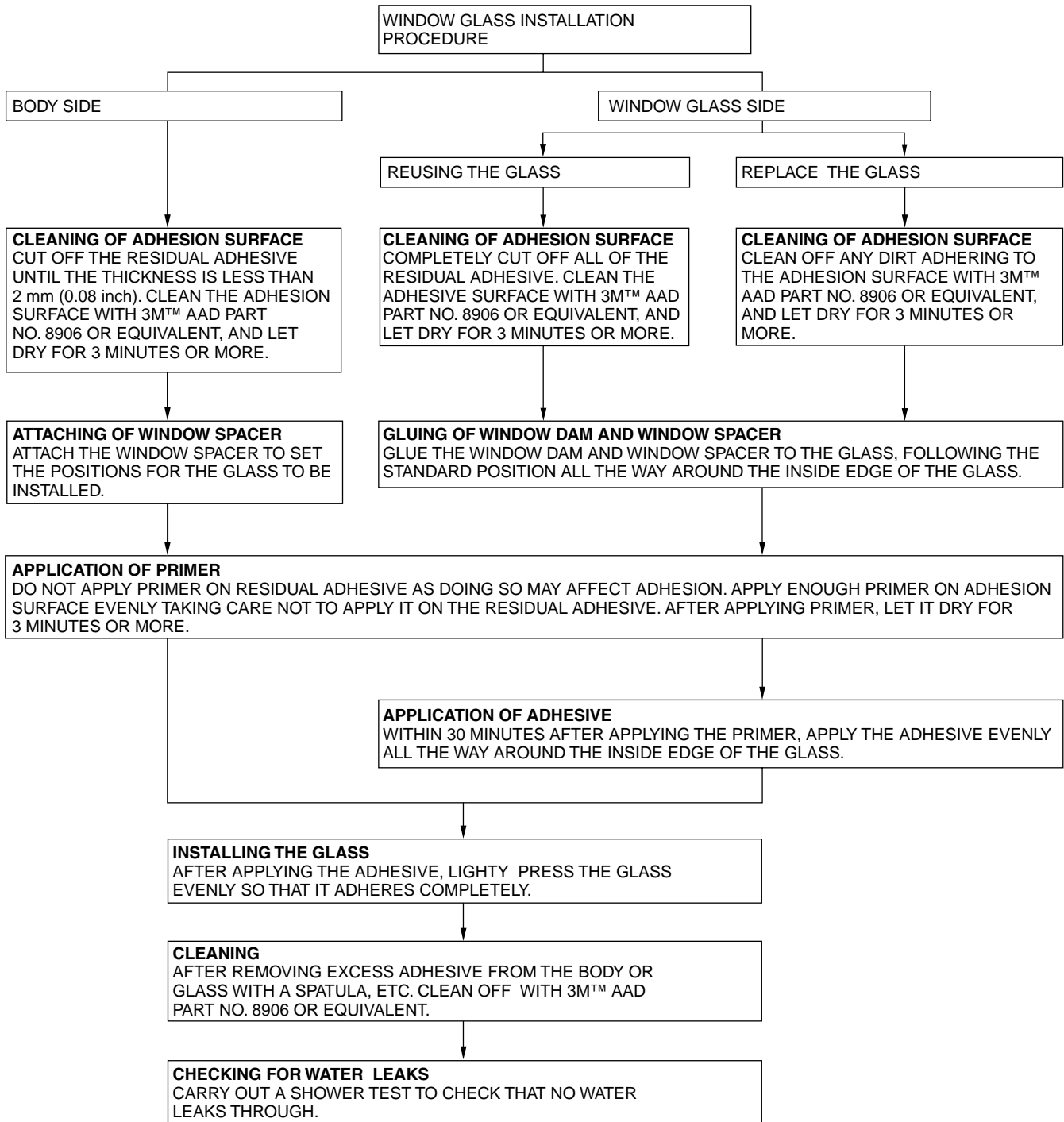
ITEMS

ITEM	APPLICATION	QUANTITY
Wire (diameter × length)	For cutting adhesive	Five pieces of wire 0.6 mm × 1 m (0.02 in × 3.3 ft)
Glass adhesive knife	For cutting adhesive	One
Sealant gun	For adhesive application	One
Wiping shop towels	-	As required
Sealer	For prevention of water and wind leaks after adhesive application	As required
3M AAD™ Part No. 8906 or equivalent	For cleaning	As required
Glass holder MB990480	For securing of window glass	Two

WINDOW GLASS INSTALLATION

⚠ CAUTION

Do not apply the primer on the adhesive remained as the adhesion may be reduced.



AC306636AB

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

M1422006700254

If water emerges from the following points, there is a problem in the seal or body flange.

- Windshield
- Rear window glass

WINDOW GLASS DIAGNOSTIC TROUBLESHOOTING STRATEGY

M1422006800240

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.

WINDOW GLASS DIAGNOSTIC TROUBLE SYMPTOM CHART

M1422006900281

SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Water leak through windshield	1	P.42-14
Water leak through rear window glass		

SYMPTOM PROCEDURES**INSPECTION PROCEDURE 1: Water Leak Through Windshield/Rear 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 :** Replay the body flange, then go to Step 3.
NO : Go to Step 3.

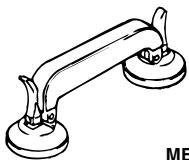
STEP 3. Retest the system.

Q: Is any water leaking?

- YES :** Return to Step 1.
NO : This diagnosis complete.

SPECIAL TOOL

M142200600301

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

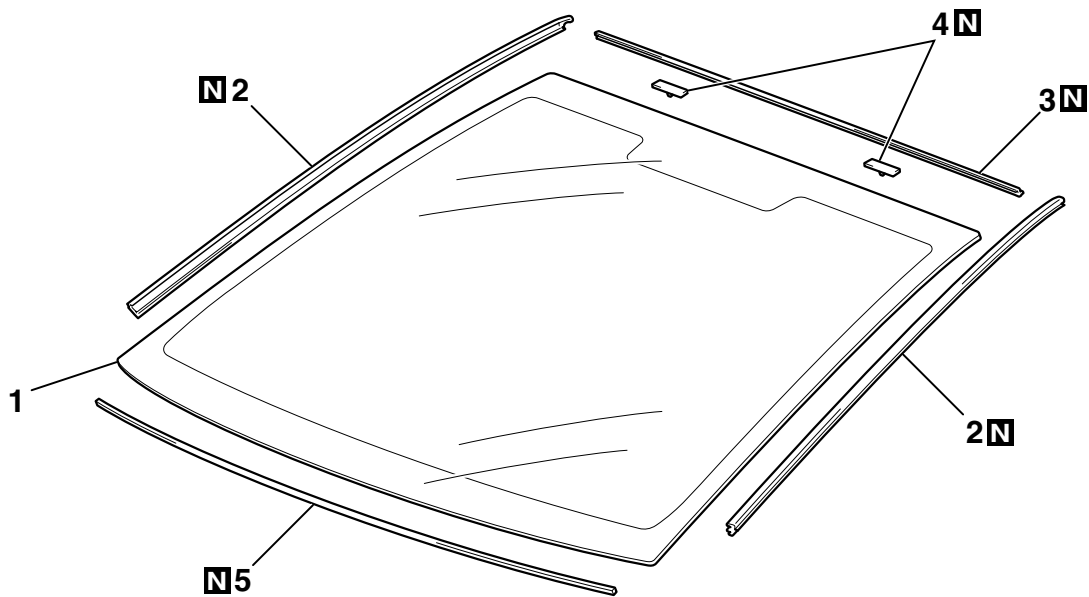
WINDSHIELD

REMOVAL AND INSTALLATION

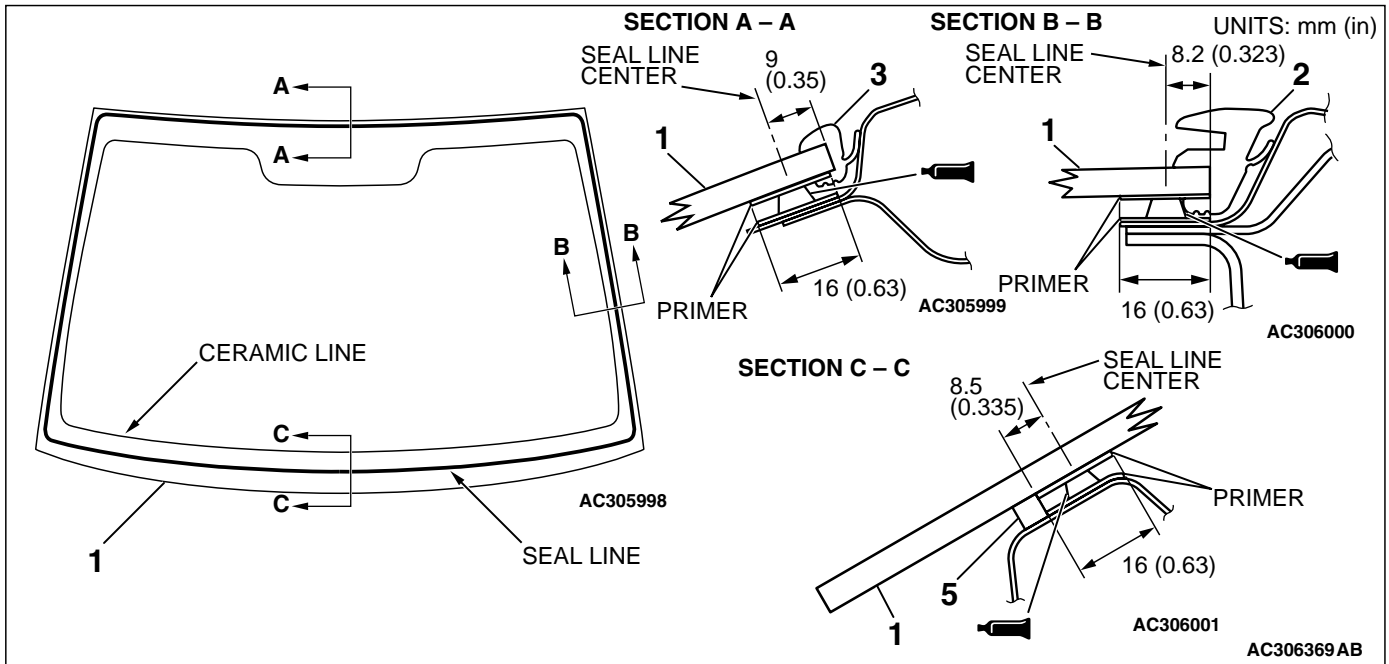
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Pre-removal and Post-installation Operation

- Front Deck Garnish Removal and Installation (Refer to GROUP 51, Windshield Wiper and Washer P.51-15).
- Roof Drip Molding Removal and Installation (Refer to GROUP 51, Garnish and Molding P.51-6).
- Front Pillar Trim Removal and Installation (Refer to GROUP 52A, Trims P.52A-10).
- Instrument Panel Front End Garnish Removal and Installation (Refer to GROUP 52A, Instrument Panel Assembly P.52A-3).
- Inside Rear View Mirror Removal and Installation (Refer to GROUP 52A, Inside Rear View Mirror P.52A-19).



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ADHESIVE: 3M™ AAD PART NO. 8609 SUPER FAST URETHANE AND 3M™ AAD PART NO. 8608 SUPER FAST URETHANE PRIMER OR EQUIVALENT

REMOVAL STEPS

- <<A>> >>B<< 1. WINDSHIELD
- >>A<< 2. WINDSHIELD SIDE MOLDING
- >>A<< 3. WINDSHIELD UPPER MOLDING
- >>A<< 4. GLASS STOPPER
- >>A<< 5. WINDSHIELD SPACER

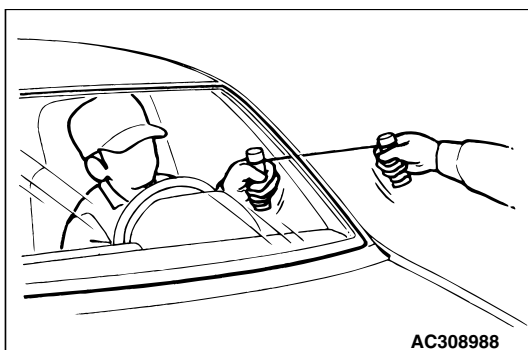
Required Special Tool:

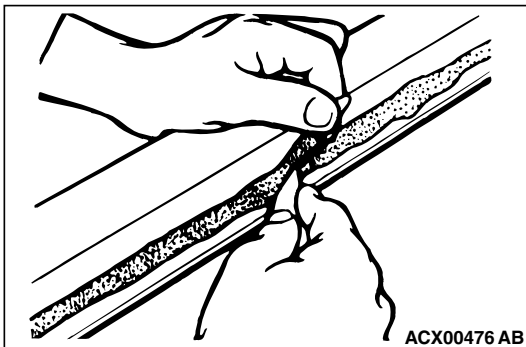
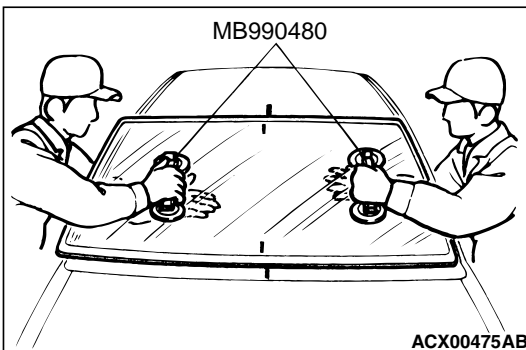
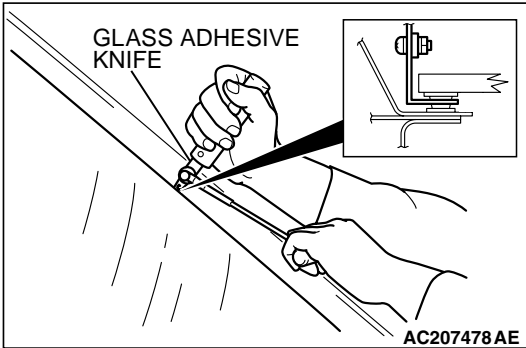
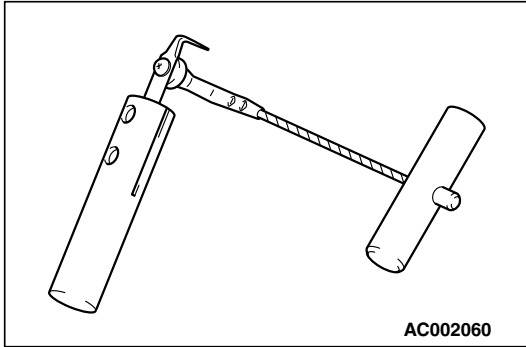
- MB990480: Glass Holder

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. Make mating marks on the windshield and body.
 3. Using piano wire.
 - (1) Using a sharp-point drill, make a hole in the windshield adhesive.
 - (2) Pass the piano wire from the inside of the vehicle through the hole.
- CAUTION**
Do not let the piano wire touch the edge of the windshield.
- (3) Pull the piano wire alternately from the inside and outside along the windshield to cut the adhesive.





⚠ CAUTION

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

4. Using glass adhesive knife

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

5. Use special tool MB990480 to remove the windshield.

⚠ CAUTION

- Be careful not to remove more adhesive than is necessary.
- Be careful also not to damage the paint on the body surface with the knife. If the paint is damaged, repair the damaged area with touch-up paint.

6. 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.

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

⚠ CAUTION

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

8. When reusing the windshield, remove the adhesive still adhering to the windshield, and clean with 3M™ AAD Part number 8906 or equivalent.

9. Clean the body side in the same way.

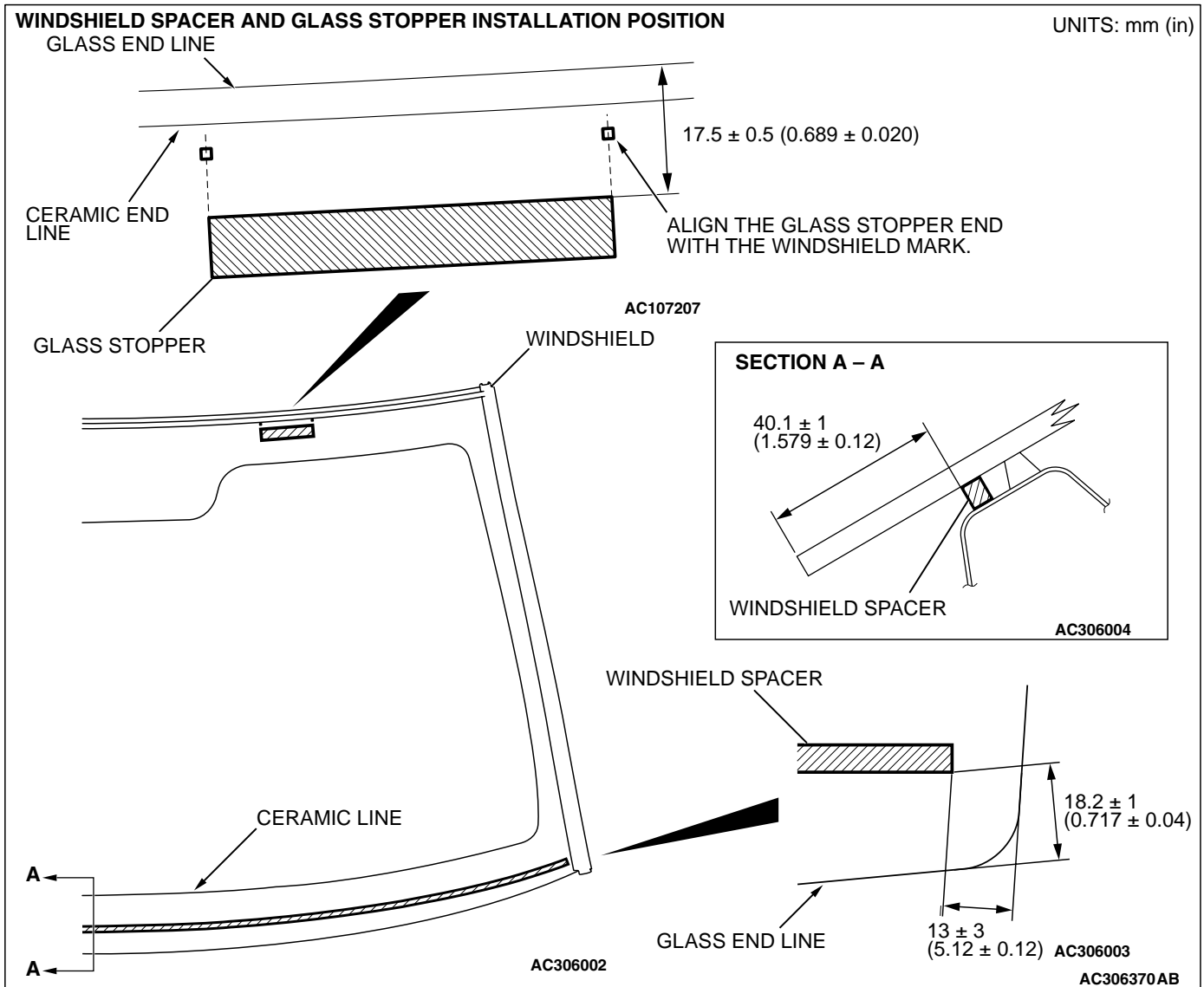
INSTALLATION SERVICE POINTS

>>A<< WINDSHIELD SPACER/GLASS STOPPER/WINDSHIELD UPPER MOLDING/WINDSHIELD SIDE 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 8906 or equivalent to degrease the inside and outside of the windshield and the body flanges.



2. Install the windshield spacer and glass stoppers to the specified positions so that there are no adrift or warped surfaces inside the windshield.
3. Install the windshield upper and side moldings to the windshield.

>>B<<WINDSHIELD INSTALLATION

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

CAUTION

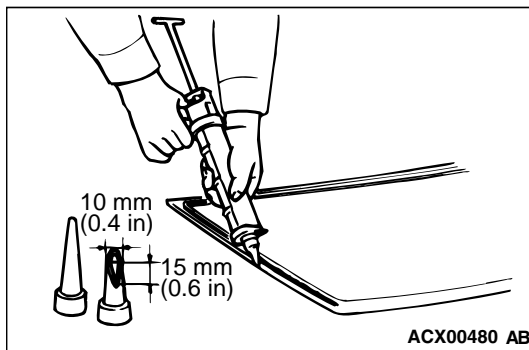
- The primer strengthens the adhesive, so be sure to apply it evenly around the entire circumference. However, a too thick application will weaken the adhesive.
 - Do not touch the coated surface.
 - Do not apply the primer on the remaining adhesive because of weakening the adhesive.
2. Soak a sponge in the primer, and apply evenly to the windshield 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 8906 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 apply strong water pressure.
7. Wait 30 minutes or more, and then test for water leakage.

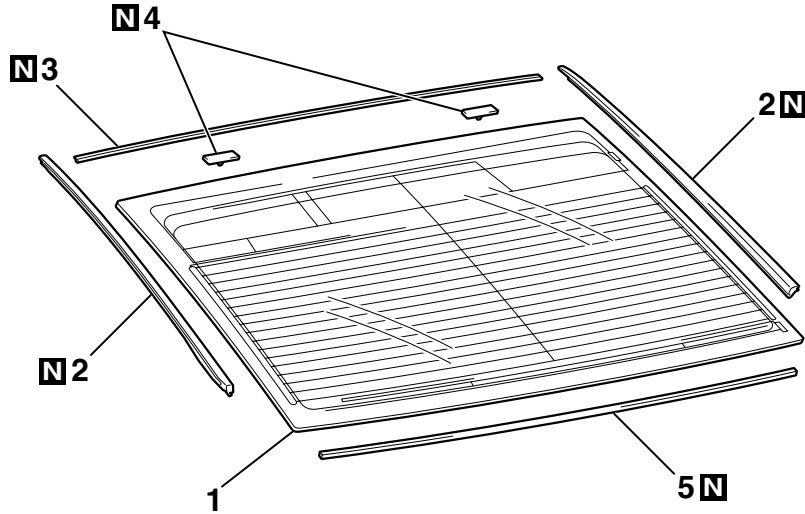


**REAR WINDOW GLASS
REMOVAL AND INSTALLATION**

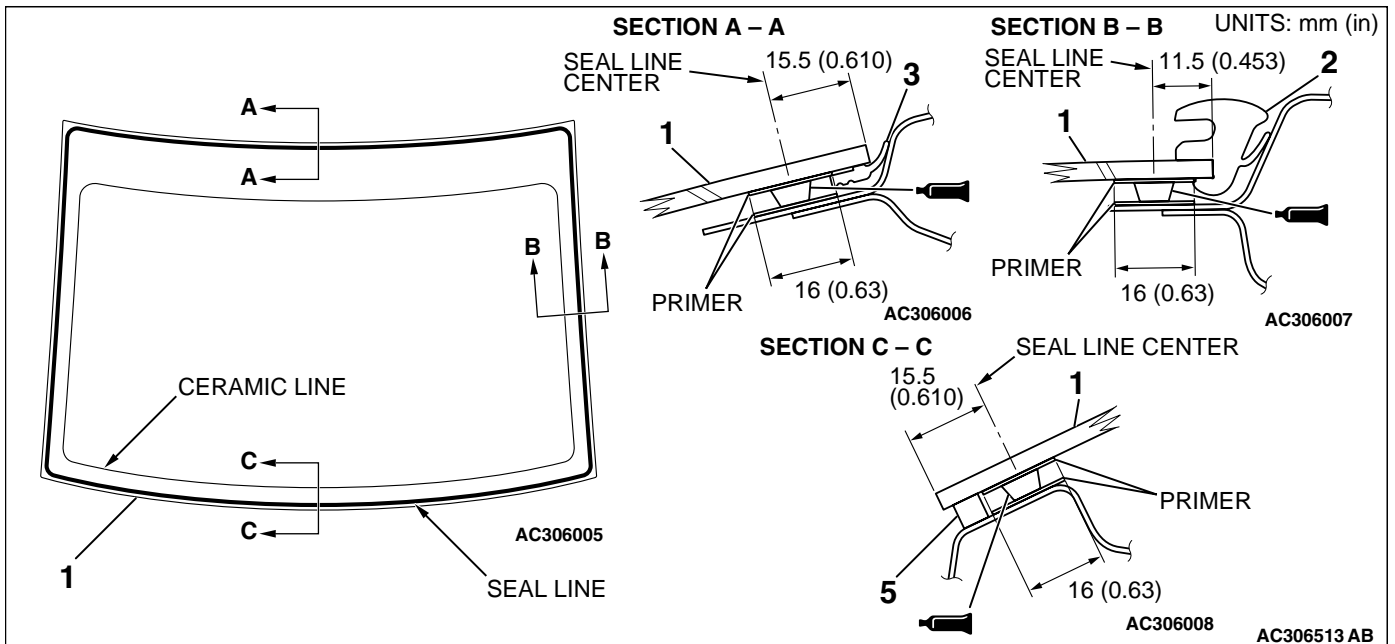
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Pre-removal and Post-installation Operation

- Roof Drip Moulding Removal and Installation (Refer to GROUP 51, Garnishes and Moulding P.51-6.)
- Rear Pillar Trim and Rear Shelf Trim Removal and Installation (Refer to GROUP 52A, Trims P.52A-10.)



AC305560AB



ADHESIVE: 3M™ AAD PART NO. 8609 SUPER FAST URETHANE AND 3M™ AAD PART NO. 8608 SUPER FAST URETHANE PRIMER OR EQUIVALENT

REMOVAL STEPS

- <<A>> >>B<< 1. REAR WINDOW GLASS
 >>A<< 2. REAR WINDOW SIDE MOLDING
 >>A<< 3. REAR WINDOW UPPER MOLDING
 >>A<< 4. GLASS STOPPER
 >>A<< 5. REAR WINDOW SPACER

Required Special Tool:

- MB990480: Glass Holder

REMOVAL SERVICE POINT

<<A>> REAR WINDOW GLASS REMOVAL

Remove the rear window glass using the same procedure as for the windshield (Refer to [P.42-15](#)).

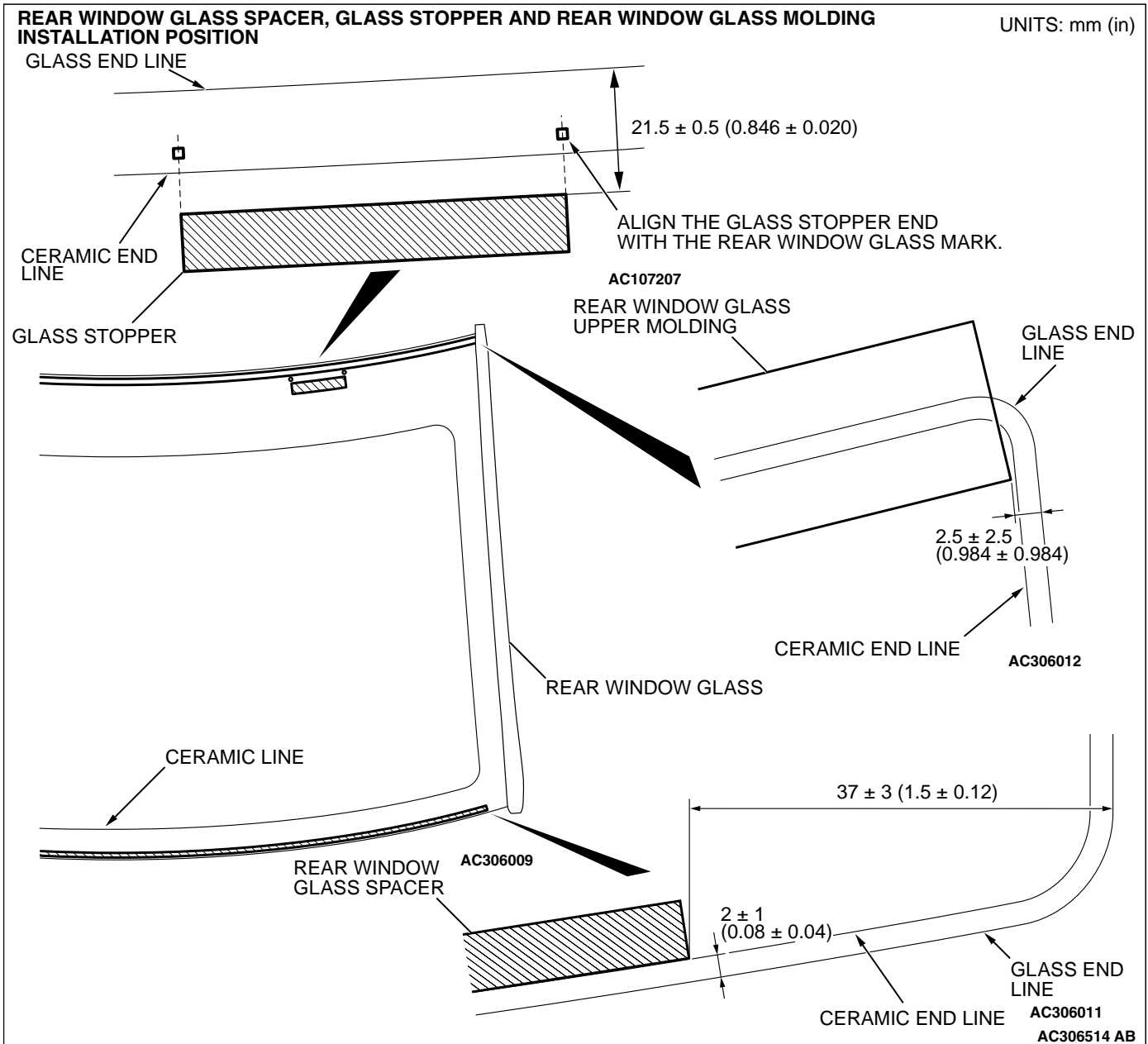
INSTALLATION SERVICE POINTS

>>A<< REAR WINDOW SPACER/GLASS STOP- PER/REAR WINDOW UPPER MOLDING/REAR WINDOW SIDE 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 8906 or equivalent. to degrease the inside and outside edges of the rear window glass and the surface of the body flange.



2. Install the rear window spacer and glass stopper to the specified positions so that there are no adrift or bent surfaces inside the rear window glass.
3. Install the rear window upper molding and side molding to the rear window glass.

>>B<< REAR WINDOW GLASS INSTALLATION

Install the rear window glass in the same way as for the windshield installation (Refer to [P.42-15](#)).

DOOR

GENERAL DESCRIPTION

M1423000100246

OPERATION

CENTRAL DOOR LOCKING SYSTEM

The central door locking system operates the door lock actuator to lock or unlock the doors using the door lock switch built into the front power window (main or sub) switch or key cylinder built into the driver's side door outside handle. 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 <RH>) switch.
- Insert the key into the driver's key cylinder and turn once to the unlock side to unlock the driver's door. Turn the key once again to the unlock side to unlock all doors.
- The key reminder function automatically unlocks all doors when door lock operation is performed and the front doors are opened while the key is inserted into the ignition switch.

CENTRAL DOOR LOCKING SYSTEM DIAGNOSIS

M1427000700217

The central door locking system is controlled by the simplified wiring system (SWS). Refer to GROUP 54B, SWS Diagnosis [P.54B-59](#).

POWER WINDOW DIAGNOSIS

M1429000700224

The power window is controlled by the simplified wiring system (SWS). Refer to GROUP 54B, SWS Diagnosis [P.54B-59](#).

DOOR DIAGNOSIS

INTRODUCTION TO GLASS AND DOOR DIAGNOSIS

M1423007300241

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

M1423006700246

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

SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Water leak through door window glass	1	P.42-24
Door window glass malfunction	2	P.42-24
Water leak through door edge	3	P.42-25
Water leak from door center	4	P.42-25
Door hard to open	5	P.42-25
Door does not open or close completely	6	P.42-26
Uneven gap between body	7	P.42-26
Wind noise around door	8	P.42-26

SYMPTOM PROCEDURES**INSPECTION PROCEDURE 1: Water Leak Through Door Window Glass****DIAGNOSIS****STEP 1. Check the window glass runchannel.**

Q: Is the window glass runchannel in good condition?

YES : Go to Step 2.

NO : Replace the runchannel, then go to Step 4.

STEP 2. Check the door window glass installation.

Q: Is the door window glass installed correctly?

YES : Go to Step 3.

NO : Reinstall the door window glass. (Refer to P.42-39). Then go to Step 4.

STEP 3. 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 4.

NO : Adjust the door window glass. Refer to P.42-31. Then go to Step 4.

STEP 4. Retest the system.

Q: Is any water leaking?

YES : Return to Step 1.

NO : The procedure is complete.

INSPECTION PROCEDURE 2: Door Window Glass Malfunction**DIAGNOSIS****STEP 1. Check the door window glass installation condition.**

Q: Is the door window installed correctly?

YES : Go to Step 2.

NO : Reinstall the door window glass. (Refer to P.42-39). 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 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 the door fit (alignment).

Q: Is the door fit (alignment) correct?

YES : Go to Step 3.

NO : Adjust the door fit (Refer to [P.42-30](#)). 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 : Clean the drain hole, then go to Step 3.

NO : Go to Step 2.

STEP 2. Check the weatherstrip.

Q: Is the weatherstrip in good condition?

YES : Go to Step 3.

NO : Repair or replace the weatherstrip, 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.

Refer to [P.42-30](#).

Q: Is the latch and striker engagement adjusted?

YES : Go to Step 2.

NO : Adjust the latch and striker. (Refer to [P.42-30](#)). Then go to Step 4.

STEP 2. Check for lock cable damage.

Q: Is the lock rod damaged?

YES : Repair or replace the lock cable, 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 : Check the door outside handle and inside handle (Refer to [P.42-35](#) and [P.42-35](#)). 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 correct?

YES : Go to Step 2.

NO : Adjust the door hinge (Refer to [P.42-30](#)). Then go to Step 4.

STEP 2. Check the door for damage.

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 lubrication.

Q: Are the door check and door hinge sufficiently lubricated?

YES : Go to Step 4.

NO : Apply grease, then go to Step 4.

STEP 4. Retest the system.

Q: Does the door open and close completely?

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.42-30](#)). 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 holding firmly?

YES : Go to Step 2.

NO : Adjust fit of door (Refer to [P.42-32](#)). 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: Are the door glass and door weatherstrip holder installed properly?

YES : Go to Step 4.

NO : Adjust the door glass and the weatherstrip holder (Refer to [P.42-32](#)). Then go to Step 5.

STEP 4. Check the door for deformation.

Q: Is the door deformed?

YES : Replace the door. then go to Step 5.

NO : Go to Step 5.

STEP 5. Retest the system.

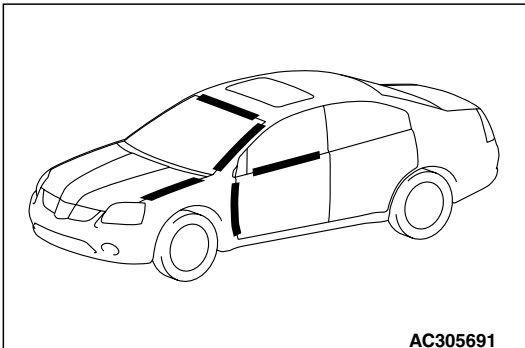
Q: Has the wind noise been improved?

YES : Return to Step 1.

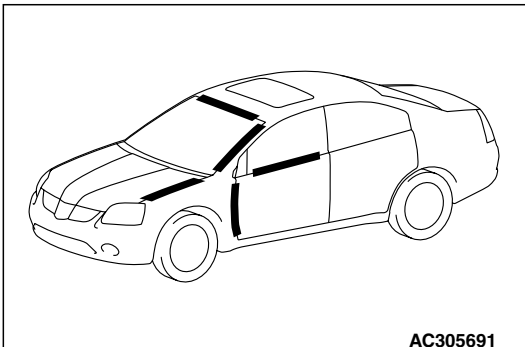
NO : This diagnosis complete.

HOW TO LOCATE WIND NOISE

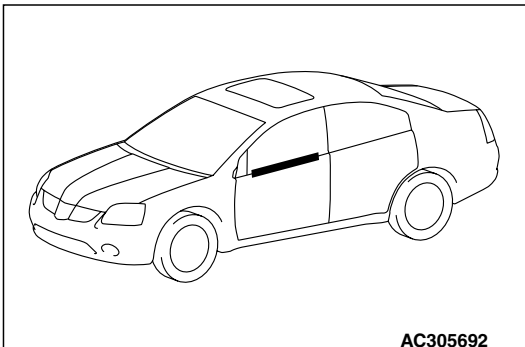
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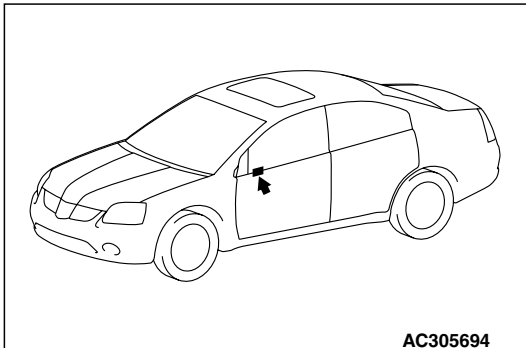
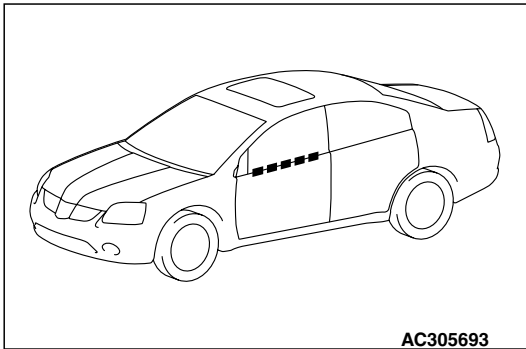
1. Attach cloth tape to every place, such as panel seams, projections, molding seams, glass and body seams, etc. which might conceivably be the source of wind noise.
2. Then make a road test to check that the places not covered by tape are not sources of wind noise.



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.

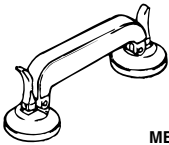
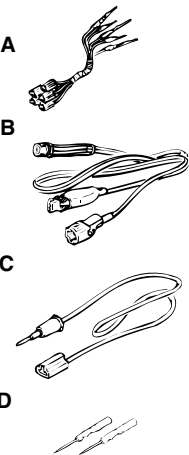
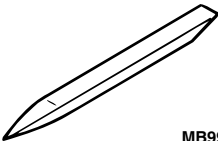


6. Cut the remaining piece of tape into smaller pieces, attach it again as it was before, and then remove the pieces one by one to narrow down the source.
7. Check that wind noise occurs when the last remaining tape is removed, and that noise does not occur when it is re-attached.
8. When the source(s) 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

M1423000600348

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
<p>MB990900</p>	MB990900 or MB991164 Door adjusting wrench	MB990900-01	Adjustment of door fit
<p>A</p> <p>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</p> <p>MB990241AC</p>	MB990241 Axle shaft puller A: MB990243 Body puller	MB990241-01 or General service tool	

TOOL	TOOL NUMBER AND NAME	SUPERSESION	APPLICATION
 <p>MB990480</p>	<p>MB990480 Glass holder</p>	<p>General service tool</p>	<p>Removal of power window regulator assembly</p>
 <p>MB991223AB</p>	<p>MB991223 Harness set A: MB991219 Test harness B: MB991220 LED harness C: MB991221 LED harness adapter D: MB991222 Probe</p>	<p>General service tools</p>	<p>Measurement of terminal voltage A: Connector pin contact pressure inspection B: Power circuit inspection C: Power circuit inspection D: Commercial tester connection</p>
 <p>MB990784</p>	<p>MB990784 Ornament remover</p>	<p>General service tool</p>	<p>Removal of power window switch panel assembly</p>

ON-VEHICLE SERVICE

DOOR FIT ADJUSTMENT

M1423001100380

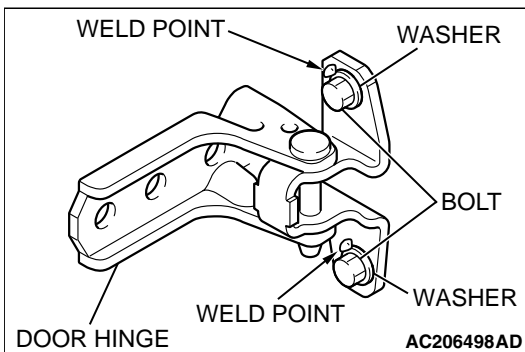
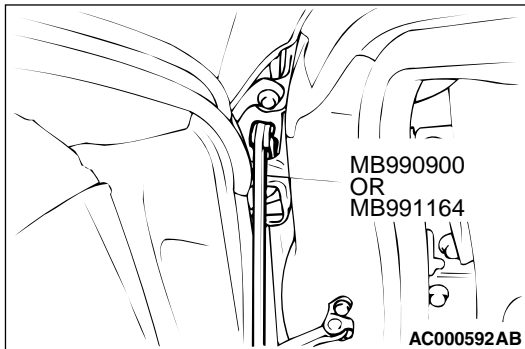
Required Special Tools:

- 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. Use special tool MB990900 or MB991164 to loosen the hinge mounting bolts on the body side, and then adjust the clearance around the door so that it is uniform on all sides.
2. If a door is not flush with its surrounding panels, loosen the door-side door hinge mounting bolts and adjust the door as necessary.

NOTE:

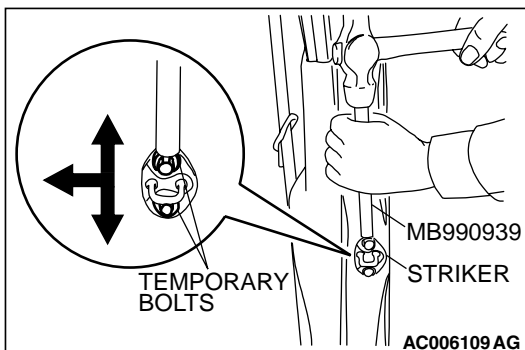
If the door hinge mounting bolt washers are welded, grind off the welding according to the procedure below beforehand.

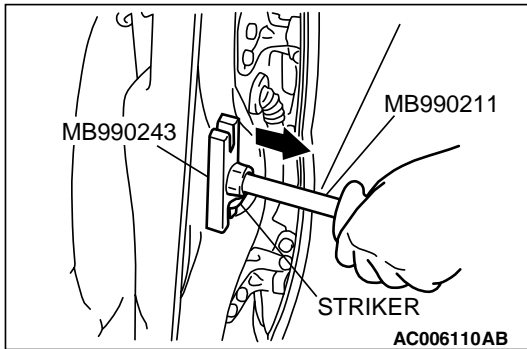
1. Remove the door hinge. (Refer [P.42-37.](#))
2. Use a chisel or grinder to release the door hinge mounting bolt washer, which is welded to the door hinge.
3. On completion, paint the affected area with touch-up paint to prevent corrosion.
4. Install the door hinge. (Refer [P.42-37.](#))

3. If the door is stiff to lock and unlock:

- (1) Adjustment by using the striker (vertically or toward the inside of the vehicle)

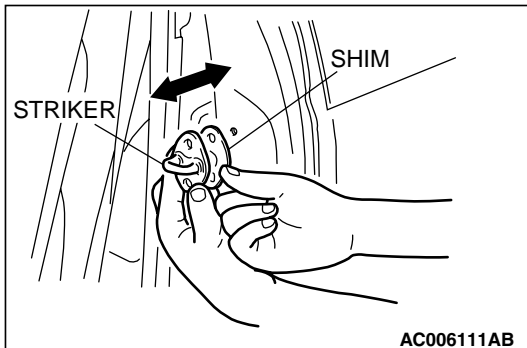
Install an temporary bolts instead of the striker mounting bolt, and use special tool MB990939 and a hammer to tap the bolt in the desired direction.





- (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)

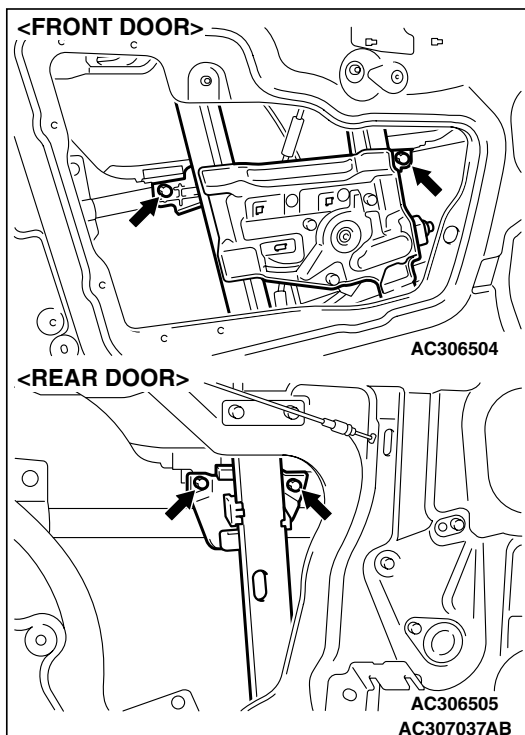
Increase or decrease the number of shims so that the striker engages with the door latch properly.

DOOR WINDOW GLASS ADJUSTMENT

M1423001000349

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

1. Remove the door trim assembly (Refer to GROUP 52A, Door trim [P.52A-13](#)).
2. Remove the waterproof film (Refer to [P.42-52](#)).
3. Loosen the door window glass mounting bolts.
4. Adjust the position of the door window glass so that it is aligned with the runchannel. On completion, tighten the door window glass mounting bolts.



GLASS SLIDING MECHANISM CHECK AND ADJUSTMENT

M1429000900109

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

1. Remove the door trim assembly (Refer to GROUP 52A, Door trim [P.52A-13](#)).
2. Remove the waterproof film (Refer to [P.42-52](#)).

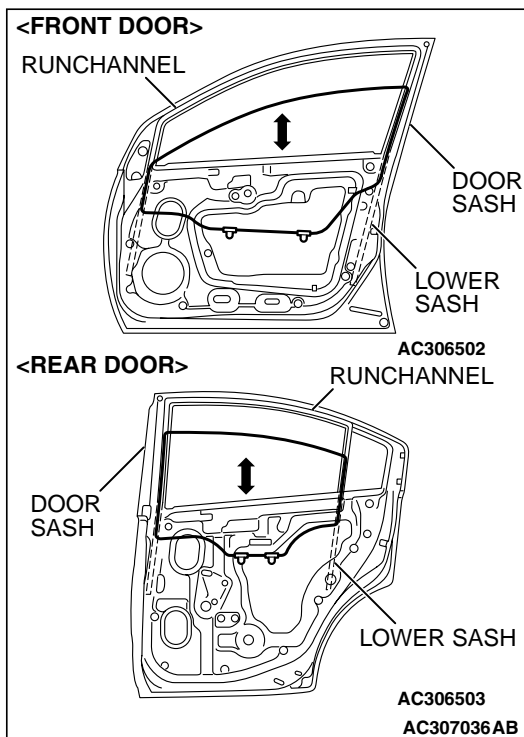
⚠ CAUTION

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

3. Remove the window regulator assembly from the door window glass, and then raise and lower the door window glass by hand to check the operation force.
4. If the door window glass does not move up and down smoothly, check or repair the following points:
 - Check the installation condition of the runchannel.
 - Repair any twisting in the door sash.
 - Check the installation condition of the lower sash.

NOTE: To align the lower sash, loosen the lower sash mounting bolts, and move the lower sash along the oblong mounting holes.

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

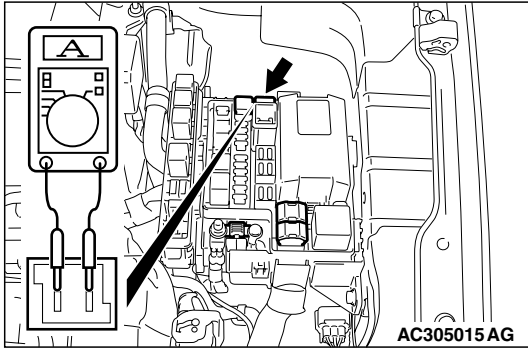
**POWER WINDOW TIMER FUNCTION CHECK**

M1429004300154

After the doors are closed and the ignition switch is turned to the "LOCK" (OFF) position, the power windows should work within 30 seconds. The timer expires if the front door is opened during that 30 seconds. If it does not, carry out the timer troubleshooting in GROUP 54B, SWS Diagnosis [P.54B-59](#).

POWER WINDOW OPERATING CURRENT CHECK

M1429001100195



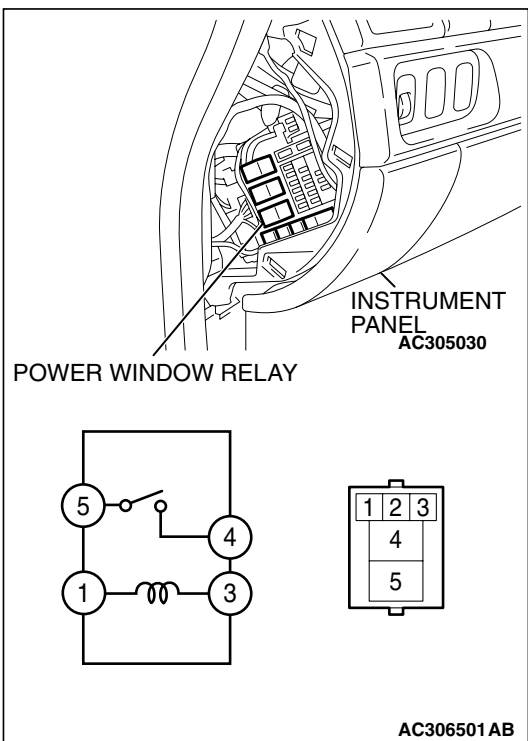
1. Remove the power window fuse and connect an ammeter as shown in the illustration.
2. When the power window switch is pressed in the "UP" position, a large amount of current flows from the time the window starts to close until it is fully closed, Measure the current during this time

Standard value (A): $5 \pm 1A$ [Power supply voltage $14.5 \pm 0.5V$, $25^{\circ}C$ ($77^{\circ}F$)]

3. If the operation current is outside the standard value, refer to GROUP 54B, SWS Diagnosis P.54B-63.

POWER WINDOW RELAY CHECK

M1429001800213



BATTERY VOLTAGE	TESTER CONNECTION	SPECIFIED CONDITION
Not applied	4 – 5	Open circuit
<ul style="list-style-type: none"> • Connect terminal No. 3 and the negative battery terminal. • Connect terminal No. 1 and the positive battery terminal. 	4 – 5	Less than 2 ohms

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

M1429001000284

1. Pull the power window switch to the UP position to fully close the door window glass, and keep pulling the switch for an additional ten 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 about 60 seconds.

POWER WINDOW CHECK

M1429004400214

1. Operate the power window switch of each door to verify that the power windows operate properly. If they don't, then troubleshoot as described in GROUP 54B, SWS Diagnosis [P.54B-59](#).
2. Turn ON the power window lock switch of the power window main switch. Then operate the passenger's door and rear door power window sub-switches to ensure that they do not operate. If they do, replace the power window main switch (Refer to [P.42-39](#)).

**CENTRAL DOOR LOCKING SYSTEM
INSPECTION**

M1427001100144

Check the following. Troubleshoot if operations malfunction (Refer to GROUP 54B, SWS Diagnosis [P.54B-59](#)).

- Insert the key into the driver's key cylinder and turn once to the unlock side to unlock the driver's door. Turn the key once again to the unlock side to unlock all doors.
- All doors can be locked using the door lock switch built into the front power window (main or sub <RH>) switch.

DOOR OUTSIDE HANDLE PLAY CHECK

M1423001600288

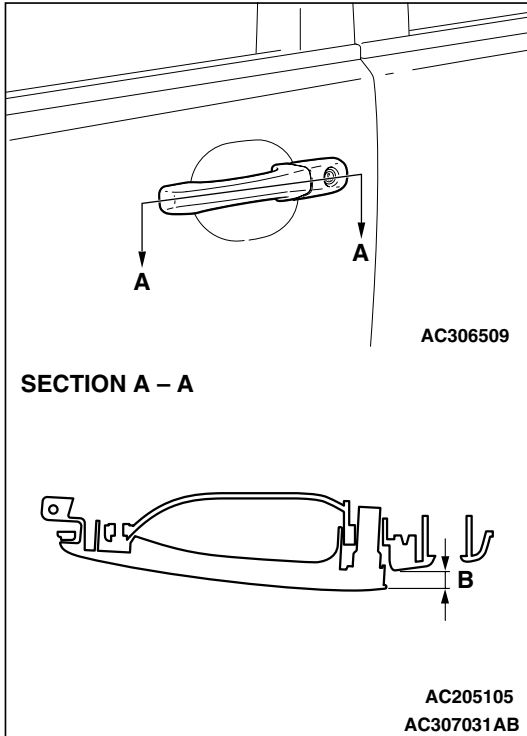
1. Check that the door outside handle play is within the standard value range.

Standard value (B):

Front door: 10 ± 3.5 mm (0.39 ± 0.138 inch)

Rear door: 11.2 ± 4 mm (0.441 ± 0.16 inch)

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



DOOR INSIDE HANDLE PLAY CHECK

M1423009400028

DOOR INSIDE HANDLE KNOB PLAY CHECK

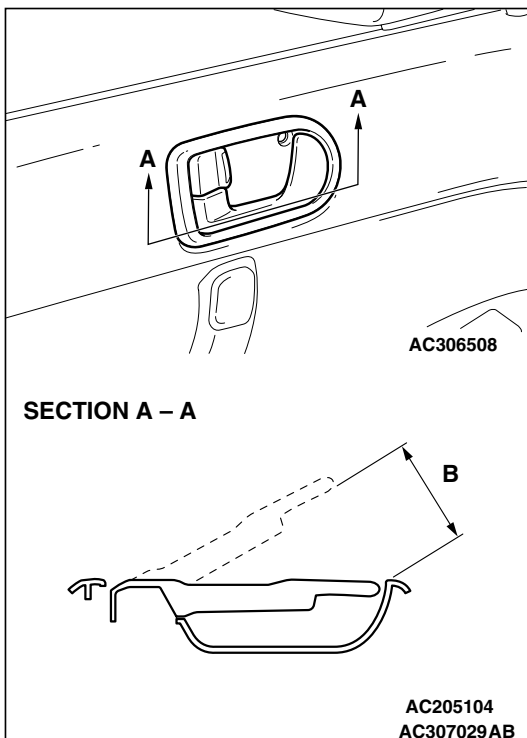
1. Check that the door inside handle play is within the standard value range.

Standard value (B):

Front door: 26.1 –58.1 mm (1.028 –2.287 inches) [Target value 41 mm (1.61inches)]

Rear door: 30.3 –58.1 mm (1.193 –2.287 inches) [Target value 41 mm (1.61inches)]

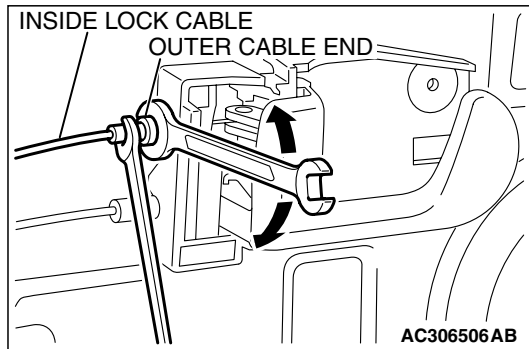
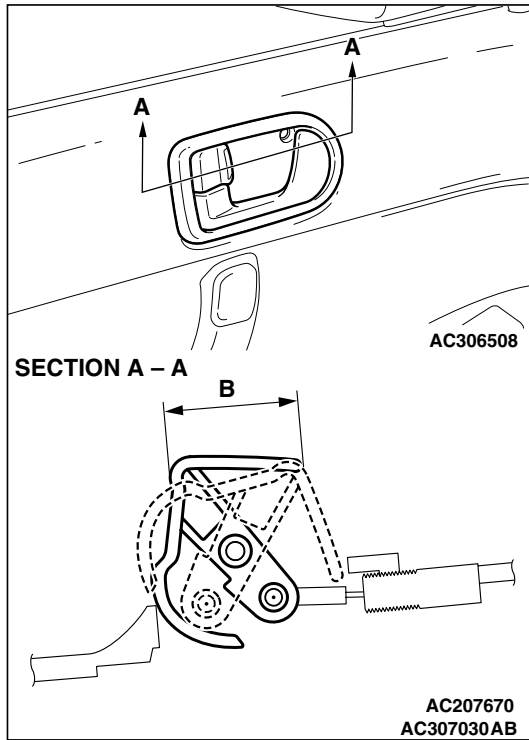
2. If the door inside handle play is not within the standard value range, check the door inside handle or the inside handle cable. Replace if necessary.



**DOOR INSIDE HANDLE LOCK KNOB STROKE
CHECK**

1. Remove the door trim assembly (Refer to GROUP 52A, Door Trim P.52A-13).
2. Check that the door inside handle lock knob stroke is within the standard value.

Standard value (B): 21.6 mm (0.850 inch)



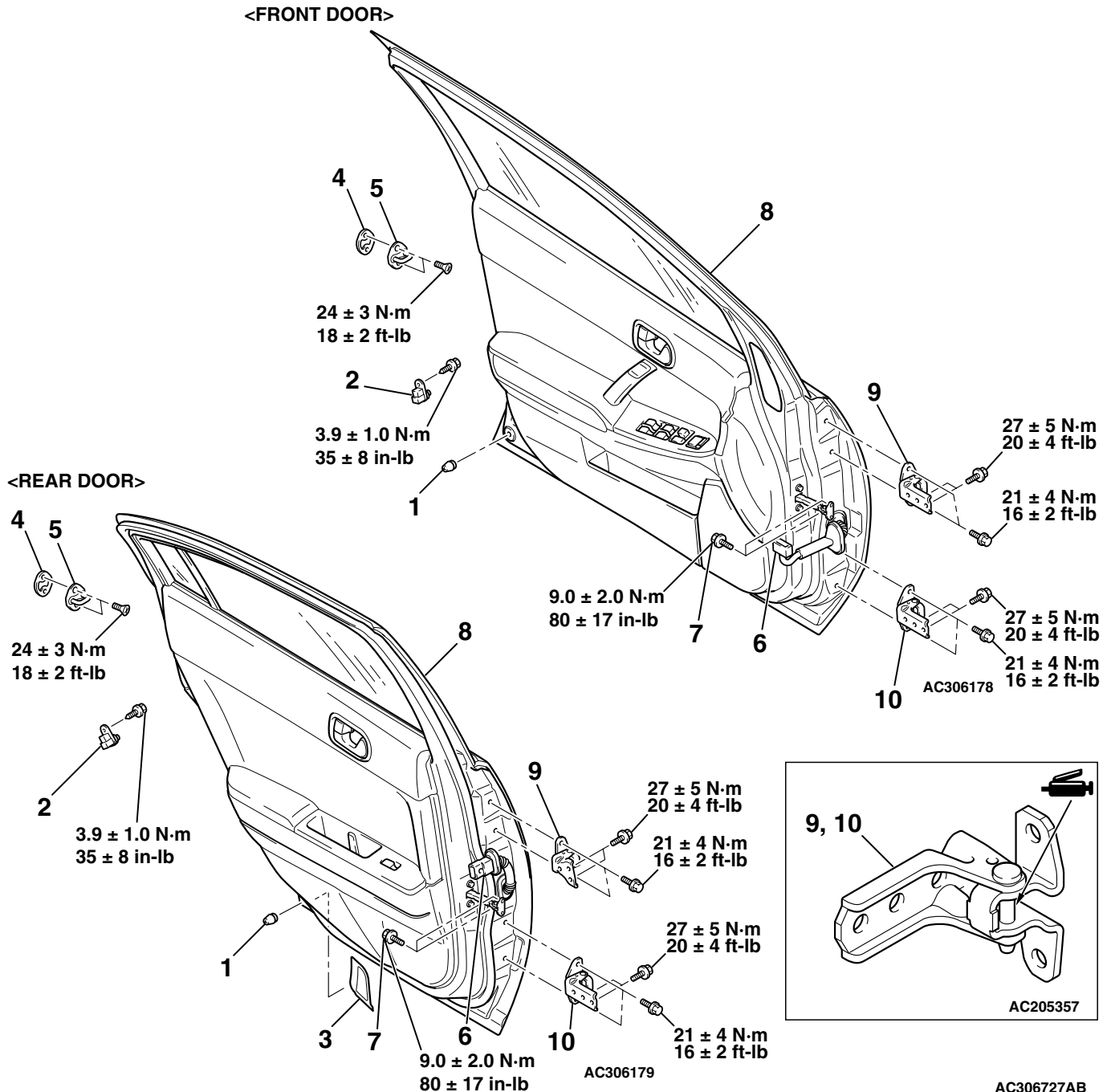
3. If not within the standard value, adjust the inside handle lock knob stroke with the outer cable end connecting the inside handle lock knob and inside lock cable.

**DOOR ASSEMBLY
REMOVAL AND INSTALLATION**

M1423002200294

Post-installation Operation

- Door Fit Adjustment (Refer to P.42-30).



REMOVAL

1. DAMPER
2. DOOR SWITCH
3. REAR DOOR PROTECTOR FILM

>>B<<

STRIKER REMOVAL STEPS

>>A<<

4. STRIKER
5. STRIKER SHIM

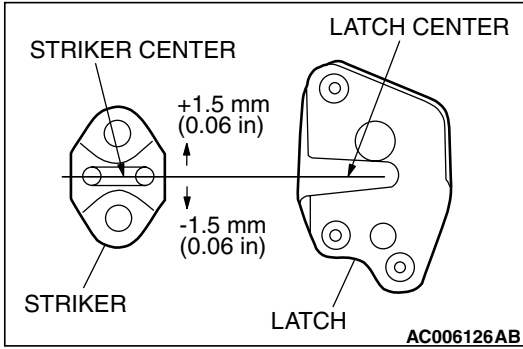
DOOR ASSEMBLY REMOVAL STEPS

- COWL SIDE TRIM <FRONT DOOR> (REFER TO GROUP 52A, TRIMS P.52A-10).
- 6. HARNESS CONNECTOR
- 7. DOOR CHECK MOUNTING BOLT
- 8. DOOR ASSEMBLY
- 9. DOOR UPPER HINGE
- 10. DOOR LOWER HINGE

INSTALLATION SERVICE POINTS

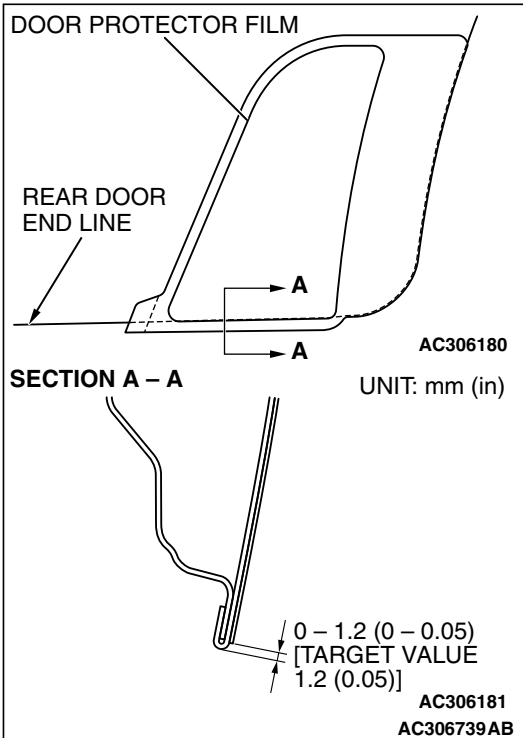
>>A<< STRIKER INSTALLATION

Align the center of the striker and latch within ± 1.5 mm (0.06 inch), and install.



>>B<< REAR DOOR PROTECTOR FILM INSTALLATION

Install the rear door protector film as shown.



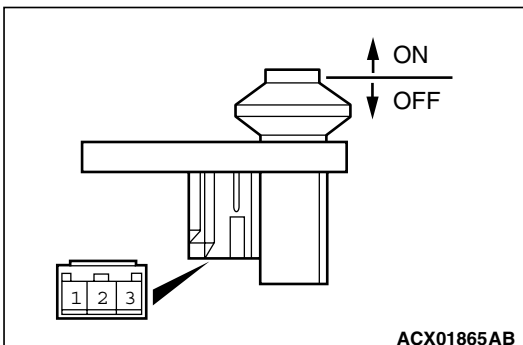
INSPECTION

M1423006000333

DOOR SWITCH CHECK

Check continuity between the switch terminals and body ground.

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



DOOR GLASS AND REGULATOR REMOVAL AND INSTALLATION

M1429001300326

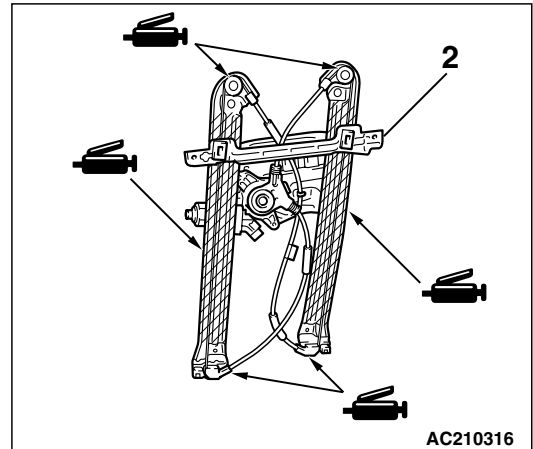
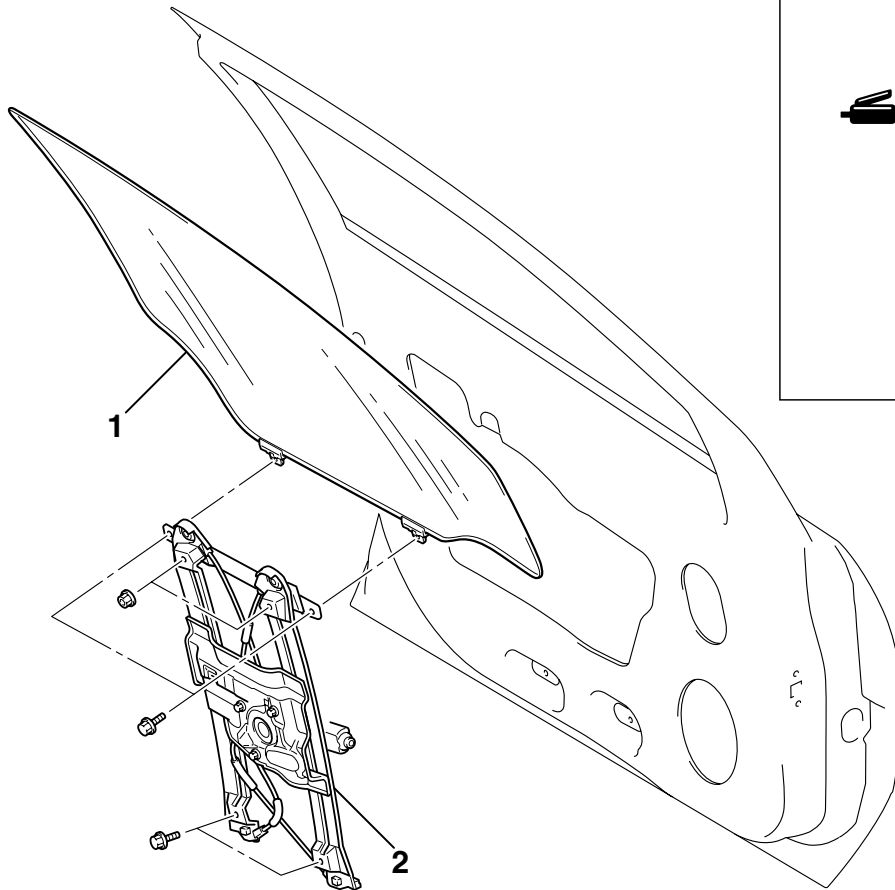
Pre-removal Operation

- Door Trim Assembly Removal (Refer to GROUP 52A Door Trim P.52A-13).
- Waterproof Film Removal (Refer to P.42-52).

Post-installation Operation

- Door Window Glass Adjustment (Refer to P.42-31).
- Waterproof Film Installation (Refer to P.42-52).
- Door Trim Assembly Installation (Refer to GROUP 52A, Door Trim P.52A-13).

<FRONT DOOR WINDOW REGULATOR ASSEMBLY>



AC306163

AC306511AB

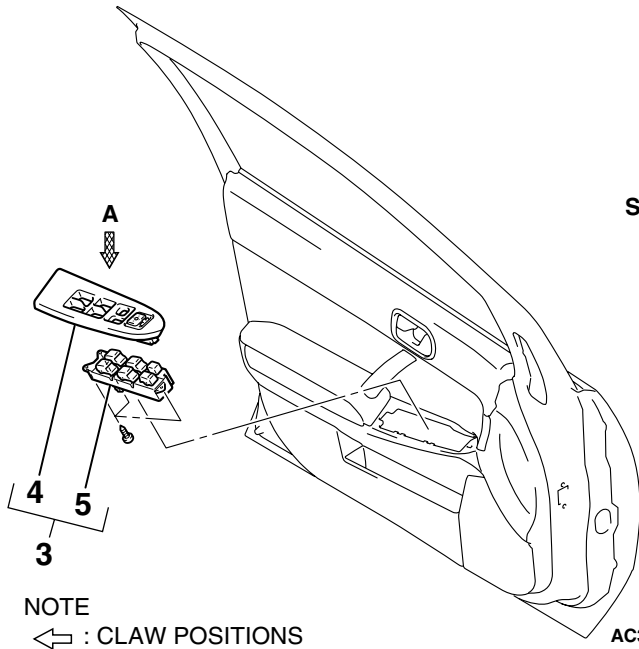
DOOR WINDOW REGULATOR ASSEMBLY REMOVAL STEPS

- DOOR BELTLINE MOLDING (REFER TO P.42-52).

DOOR WINDOW REGULATOR ASSEMBLY REMOVAL STEPS

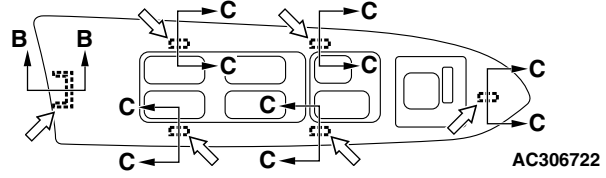
1. DOOR WINDOW GLASS
2. WINDOW REGULATOR ASSEMBLY

<FRONT DOOR POWER WINDOW SWITCH>

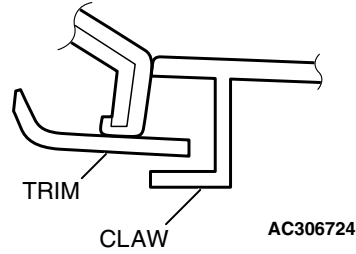


AC306515

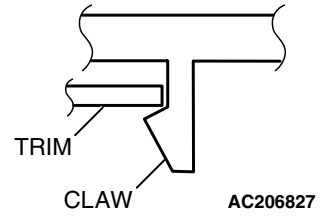
VIEW A



SECTION B - B



SECTION C - C



AC307259 AB

**POWER WINDOW SWITCH
REMOVAL STEPS**

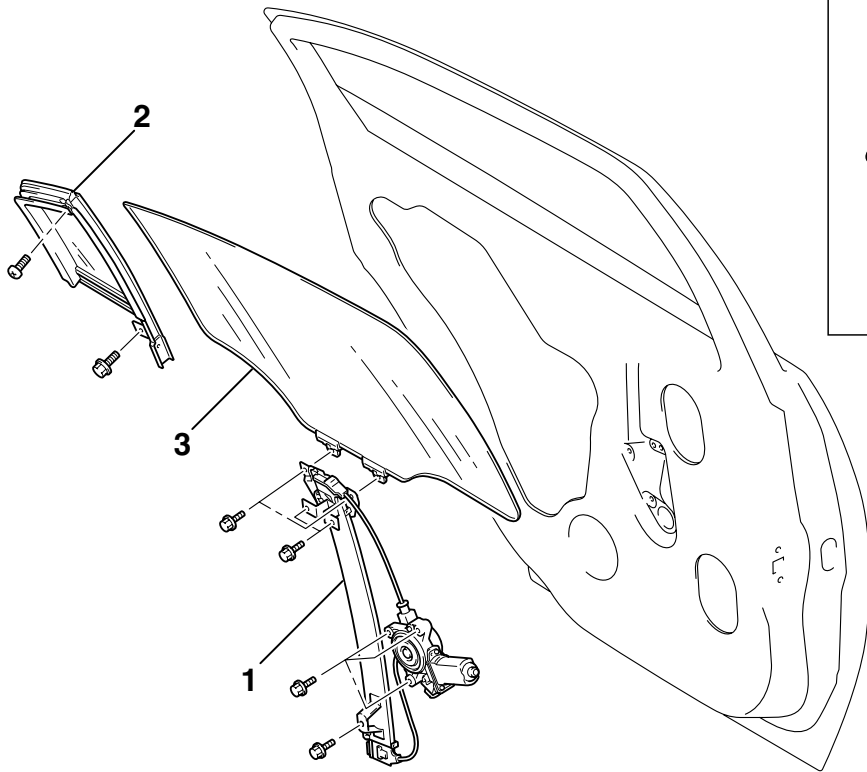
3. POWER WINDOW SWITCH PANEL ASSEMBLY
4. POWER WINDOW SWITCH PANEL
5. POWER WINDOW MAIN SWITCH (LH), POWER WINDOW SUB SWITCH (RH)

Required Special Tool:

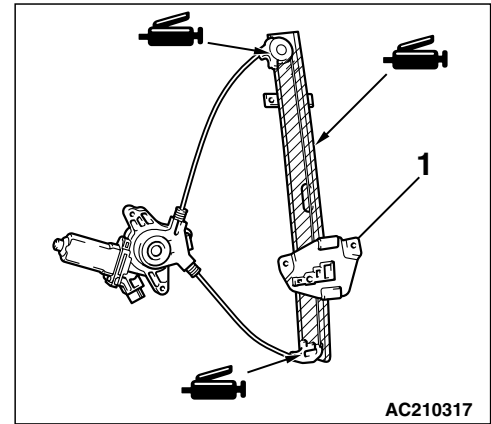
- MB990784: Orament Remover

<<C>>

<REAR DOOR WINDOW REGULATOR ASSEMBLY>



AC306164



AC210317

AC306512AB

<<A>>

**DOOR WINDOW REGULATOR
ASSEMBLY REMOVAL**

1. WINDOW REGULATOR ASSEMBLY
- DOOR WINDOW GLASS REMOVAL
STEPS**
- DOOR WINDOW GLASS RUNCHANNEL (REFER TO [P.42-52](#)).
 - DOOR BELTLINE MOLDING (REFER TO [P.42-52](#)).

<>

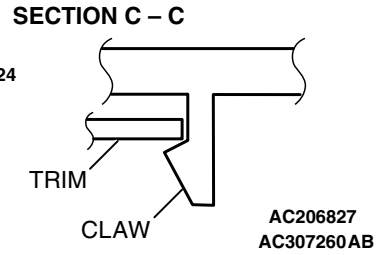
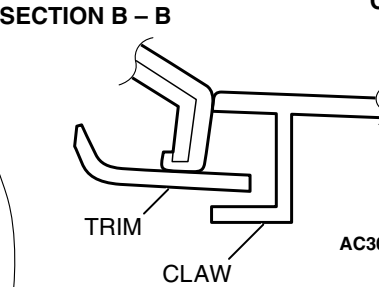
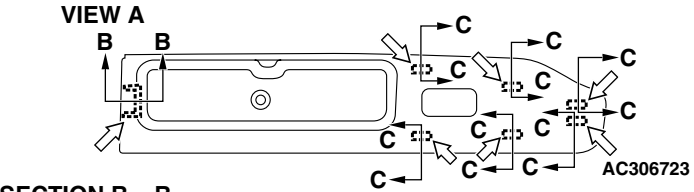
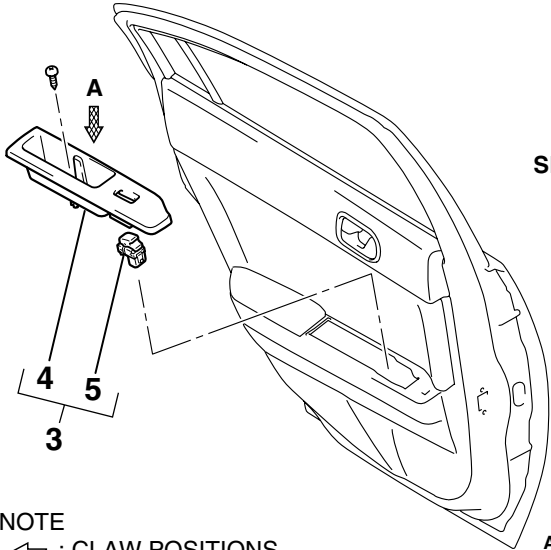
**DOOR WINDOW GLASS REMOVAL
STEPS (Continued)**

- LOWER SASH (REFER TO [P.42-46](#)).
- 2. REAR DOOR STATIONARY WINDOW GLASS ASSEMBLY
- 3. DOOR WINDOW GLASS

Required Special Tool:

- MB990480: Window Glass Holder

<REAR DOOR POWER WINDOW SWITCH>



**POWER WINDOW SWITCH
REMOVAL STEPS**

<<C>>

4. POWER WINDOW SWITCH PANEL ASSEMBLY
5. POWER WINDOW SWITCH PANEL
6. POWER WINDOW SUB SWITCH

Required Special Tool:

- MB990784: Orament Remover

REMOVAL SERVICE POINTS

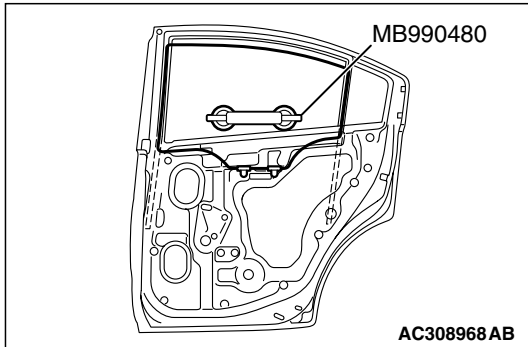
**<<A>> WINDOW REGULATOR ASSEMBLY
REMOVAL**

1. Remove the door window glass installation bolts.

CAUTION

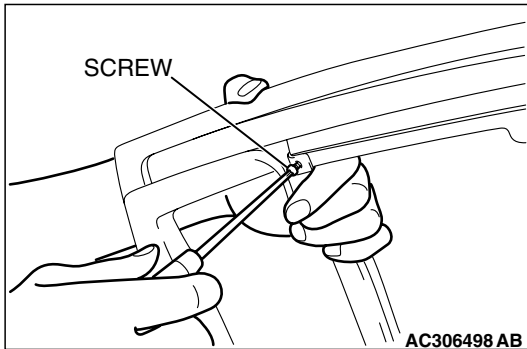
If tinting film is adhered to the door window glass, attach special tool MB990480 to the outside of the glass to prevent the film from peeling off.

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



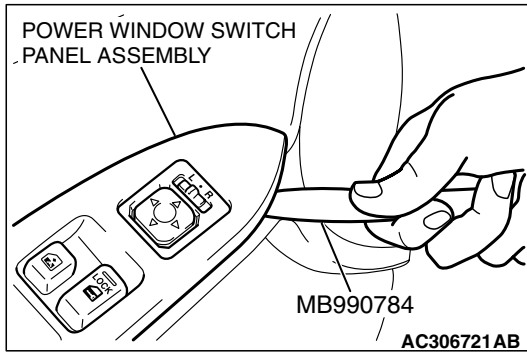
**<> REAR DOOR STATIONARY WINDOW
GLASS ASSEMBLY REMOVAL**

Remove the mounting screw of the top of the rear door stationary window glass assembly (the screw is hidden by the molding).



**<<C>> POWER WINDOW SWITCH PANEL
ASSEMBLY REMOVAL**

Insert special tool MB990784 as shown to remove the power window switch panel assembly.



INSPECTION

M1429001400293

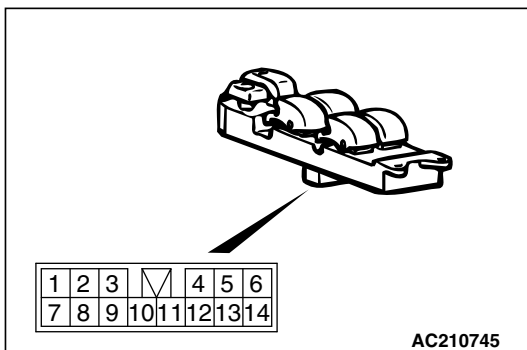
POWER WINDOW SWITCH CONTINUITY CHECK

Remove the power window switch. (Refer to P.42-39.)

**Power window main switch's front <LH> switch
check**

Connect terminal number 13 to the battery positive (+) post, and connect terminal number 12 to the battery negative (-) post.

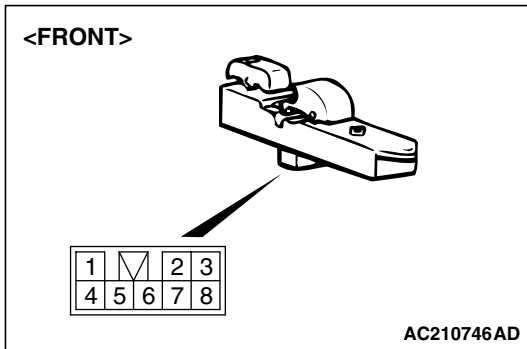
Main switch



SWITCH POSITION		TESTER CONNECTION	SPECIFIED CONDITION
FRONT (LH)	UP	8 - 13, 9 - 12,	Less than 2 ohms
	OFF	8 - 12, 9 - 12	Less than 2 ohms
	DOWN	9 - 13, 8 - 12	Less than 2 ohms
FRONT (RH)	UP	3 - 13, 11 - 12*	Less than 2 ohms
	OFF	3 - 11, 3 - 12*, 11 - 12*	Less than 2 ohms
	DOWN	11 - 13, 3 - 12*	Less than 2 ohms

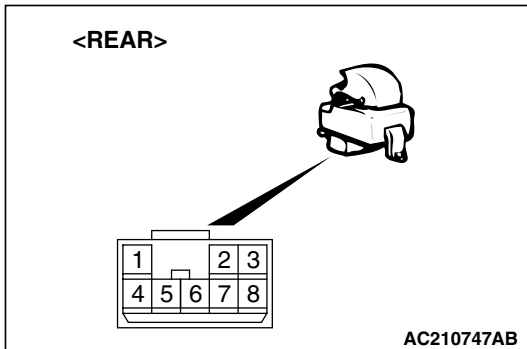
SWITCH POSITION		TESTER CONNECTION	SPECIFIED CONDITION
REAR (LH)	UP	1 - 13, 2 - 12*	Less than 2 ohms
	OFF	1 - 2, 1 - 12*, 2 - 12*	Less than 2 ohms
	DOWN	2 - 13, 1 - 12*	Less than 2 ohms
REAR (RH)	UP	13 - 14, 6 - 12*	Less than 2 ohms
	OFF	6 - 14, 6 - 12*, 12* - 14	Less than 2 ohms
	DOWN	6 - 13, 12* - 14	Less than 2 ohms

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



Sub switch <Front>

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



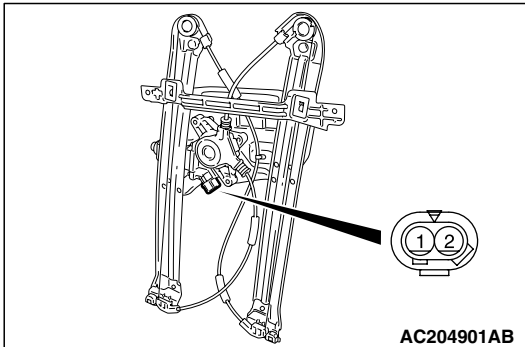
Sub switch <Rear>

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

DOOR WINDOW REGULATOR CHECK

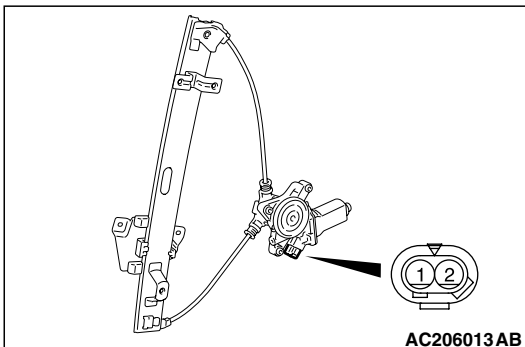
1. Connect a battery directly to the motor terminals and check that the motor runs smoothly.
2. Check that the motor runs in the opposite direction when the battery is connected with the polarity reversed.
3. If a defect is found, replace the window regulator as an assembly.

<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**

M1423004600340

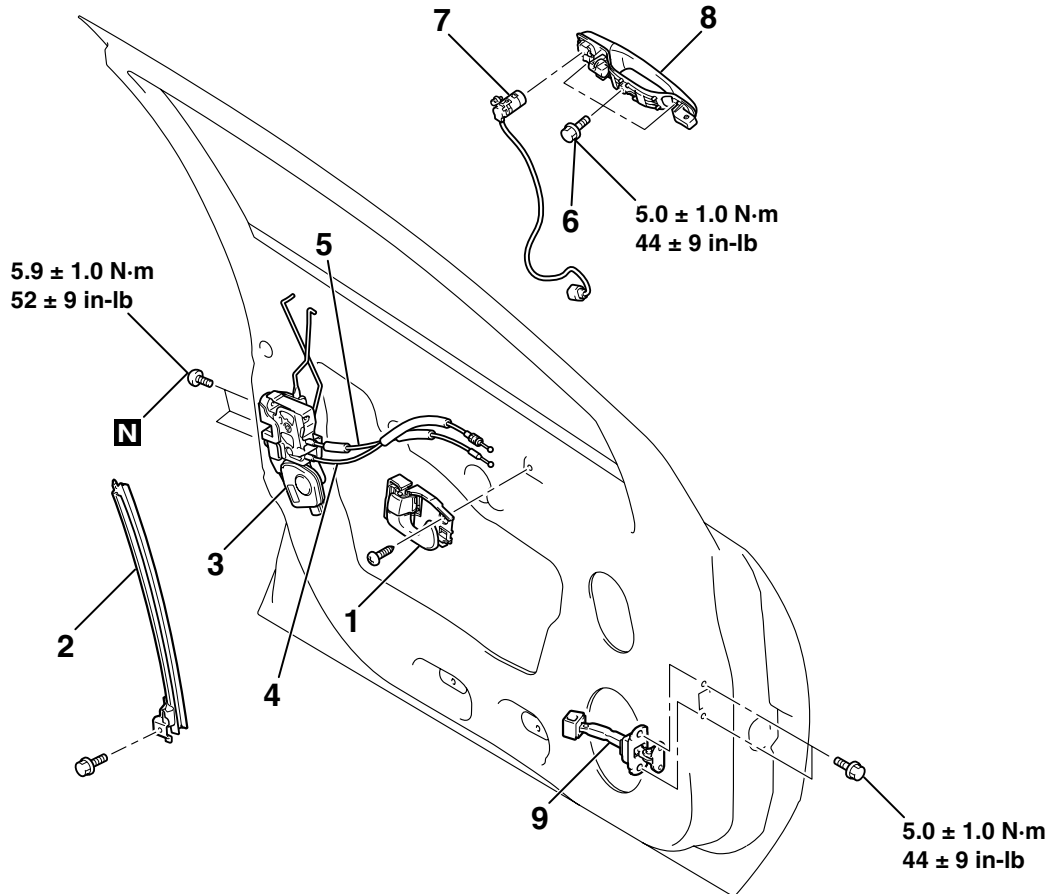
Pre-removal Operation

- Door Trim Assembly Removal (Refer to GROUP 52A Door Trim P.52A-13).

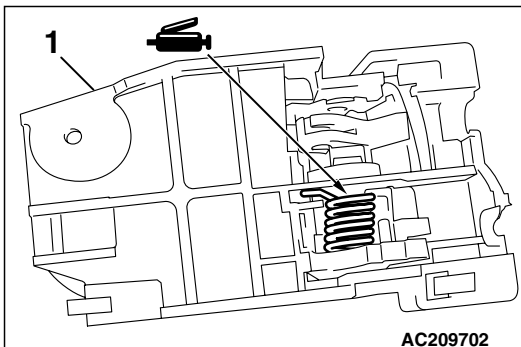
Post-installation Operation

- Door Inside Handle Play Check (Refer to P.42-35).
- Door Outside Handle Play Check (Refer to P.42-35).
- Door Trim Assembly Installation (Refer to GROUP 52A, Door Trim P.52A-13).

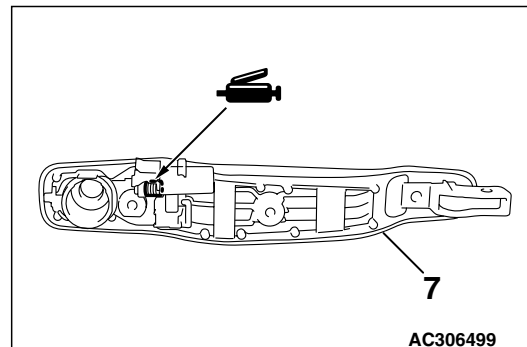
<FRONT DOOR>



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AC306499

AC306729AB

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

1. DOOR INSIDE HANDLE
- WATERPROOF FILM (REFER TO P.42-52).
- >>B<< 2. LOWER SASH
3. DOOR LATCH ASSEMBLY

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

4. INSIDE LOCK CABLE
5. INSIDE HANDLE CABLE
6. DOOR OUTSIDE HANDLE MOUNTING BOLT

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

DOOR CHECK REMOVAL

<<A>>

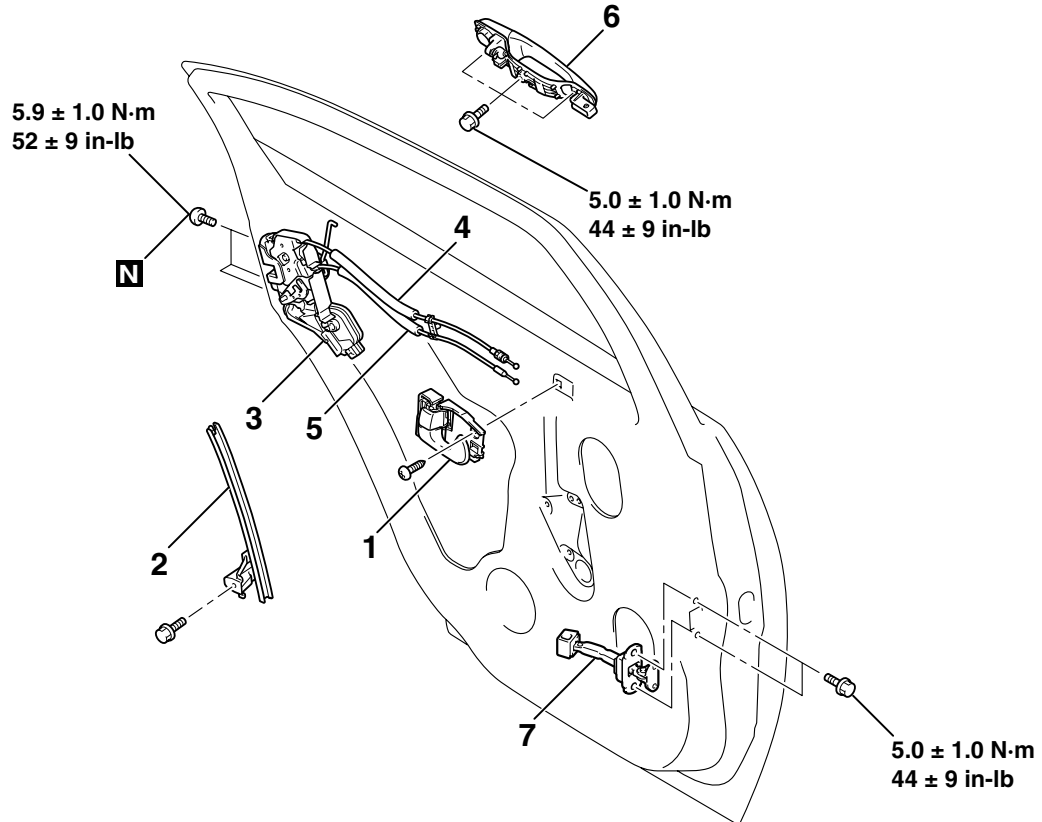
7. DOOR LOCK KEY CYLINDER ASSEMBLY (LH)
8. DOOR OUTSIDE HANDLE

>>A<< 9. DOOR CHECK

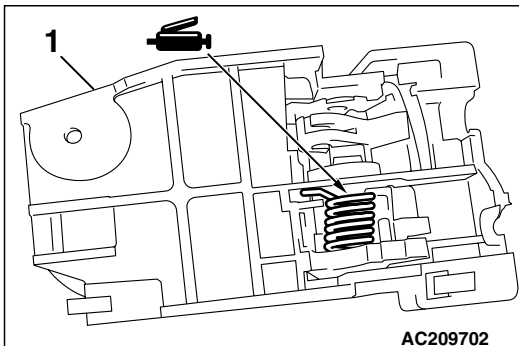
Required Special Tool:

- MB991223: Harness Set

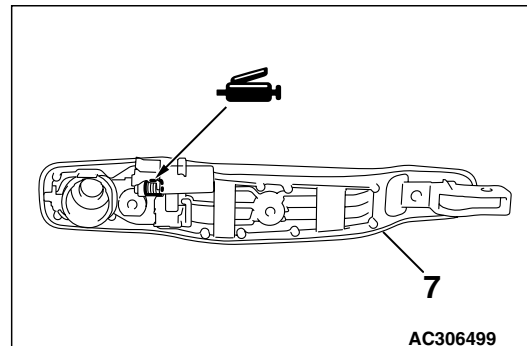
<REAR DOOR>



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

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

1. DOOR INSIDE HANDLE
 - WATERPROOF FILM (REFER TO P.42-52).
- >>B<< 2. LOWER SASH
3. DOOR LATCH ASSEMBLY
4. INSIDE LOCK CABLE

5. INSIDE HANDLE CABLE
6. DOOR OUTSIDE HANDLE

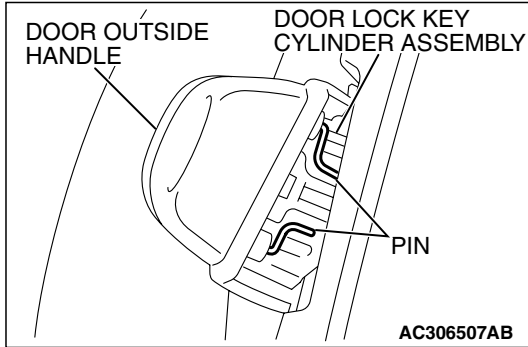
>>A<< 7. DOOR CHECK

Required Special Tool:

- MB991223: Harness Set

REMOVAL SERVICE POINT

<<A>> DOOR LOCK KEY CYLINDER ASSEMBLY REMOVAL

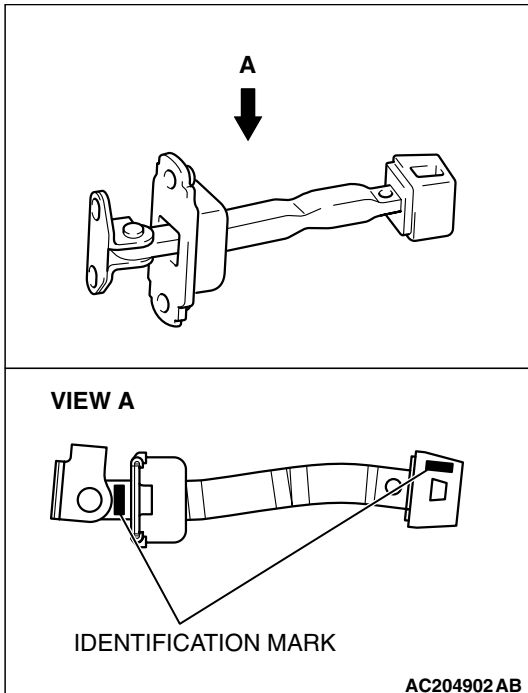


1. Create clearance between the door panel and the door outside handle to access the pin.
2. Open the pin and remove the door lock key cylinder assembly.

INSTALLATION SERVICE POINTS

>>A<< DOOR CHECK INSTALLATION

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



ITEM		IDENTIFICATION MARK
Front Door	Left door	P4FL
	Right door	P4FR
Rear Door	Left door	P4RL
	Right door	P4RR

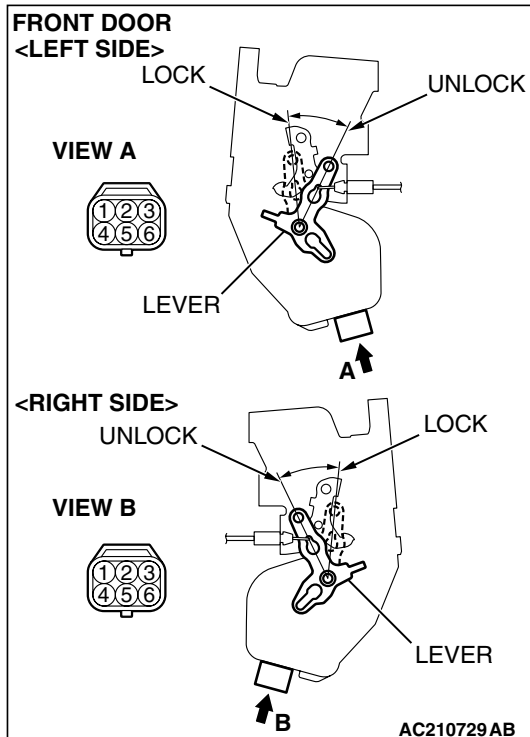
>>B<< LOWER SASH INSTALLATION

Securely insert the lower sash into the window rear sash.

INSPECTION

FRONT DOOR LATCH CHECK

The illustration shows when the door lock actuator is viewed from inside the door.



DOOR LOCK ACTUATOR CHECK <LEFT SIDE>

LEVER POSITION	BATTERY CONNECTION	LEVER OPERATION
At the "LOCK" position	<ul style="list-style-type: none"> Connect terminal No. 6 and the negative battery terminal. Connect terminal No. 4 and the positive battery terminal. 	The lever moves from the "LOCK" position to the "UNLOCK" position.
At the "UNLOCK" position	<ul style="list-style-type: none"> Connect terminal No. 4 and the negative battery terminal. Connect terminal No. 6 and the positive battery terminal. 	The lever moves from the "UNLOCK" position to the "LOCK" position.

DOOR LOCK ACTUATOR SWITCH CHECK <LEFT SIDE>

LEVER POSITION	TESTER CONNECTION	SPECIFIED CONDITION
At the "LOCK" position	1 - 2	Open circuit
At the "UNLOCK" position	1 - 2	Less than 2 ohms

DOOR LOCK ACTUATOR CHECK <RIGHT SIDE>

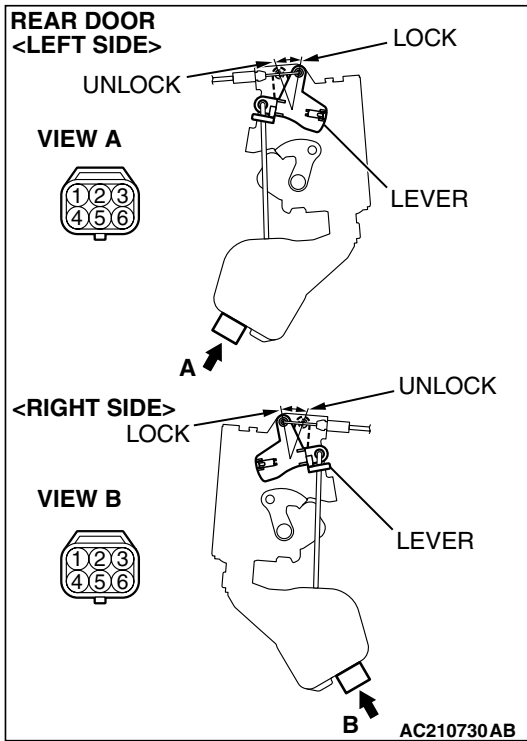
LEVER POSITION	BATTERY CONNECTION	LEVER OPERATION
At the "LOCK" position	<ul style="list-style-type: none"> Connect terminal No. 4 and the negative battery terminal. Connect terminal No. 6 and the positive battery terminal. 	The lever moves from the "LOCK" position to the "UNLOCK" position.
At the "UNLOCK" position	<ul style="list-style-type: none"> Connect terminal No. 6 and the negative battery terminal. Connect terminal No. 4 and the positive battery terminal. 	The lever moves from the "UNLOCK" position to the "LOCK" position.

DOOR LOCK ACTUATOR SWITCH CHECK <RIGHT SIDE>

LEVER POSITION	TESTER CONNECTION	SPECIFIED CONDITION
At the "LOCK" position	2 – 3	Open circuit
At the "UNLOCK" position	2 – 3	Less than 2 ohms

REAR DOOR LOCK ACTUATOR CHECK

The illustration shows when the door lock actuator is viewed from outside the door.



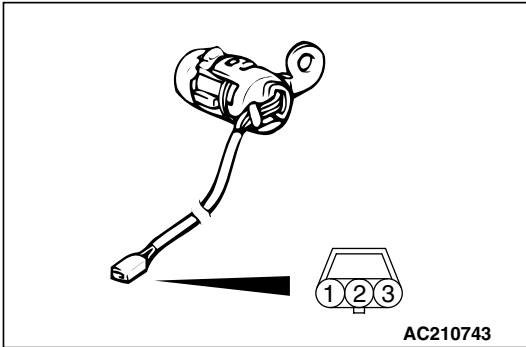
DOOR LOCK ACTUATOR CHECK <LEFT SIDE>

LEVER POSITION	BATTERY CONNECTION	LEVER OPERATION
At the "LOCK" position	<ul style="list-style-type: none"> Connect terminal No. 4 and the negative battery terminal. Connect terminal No. 6 and the positive battery terminal. 	The lever moves from the "LOCK" position to the "UNLOCK" position.
At the "UNLOCK" position	<ul style="list-style-type: none"> Connect terminal No. 6 and the negative battery terminal. Connect terminal No. 4 and the positive battery terminal. 	The lever moves from the "UNLOCK" position to the "LOCK" position.

DOOR LOCK ACTUATOR CHECK <RIGHT SIDE>

LEVER POSITION	BATTERY CONNECTION	LEVER OPERATION
At the "LOCK" position	<ul style="list-style-type: none"> Connect terminal No. 6 and the negative battery terminal. Connect terminal No. 4 and the positive battery terminal. 	The lever moves from the "LOCK" position to the "UNLOCK" position.
At the "UNLOCK" position	<ul style="list-style-type: none"> Connect terminal No. 4 and the negative battery terminal. Connect terminal No. 6 and the positive battery terminal. 	The lever moves from the "UNLOCK" position to the "LOCK" position.

DOOR LOCK KEY CYLINDER SWITCH CHECK

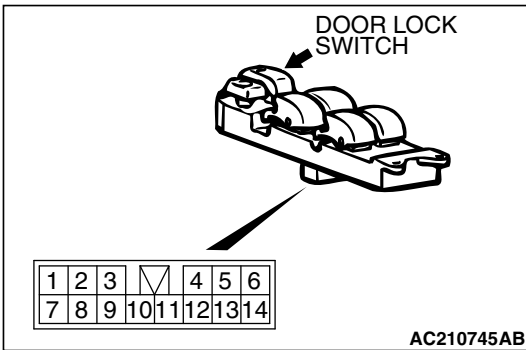


SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	2 – 3	Less than 2 ohms
NEUTRAL (OFF)	1 – 2, 2 – 3	Open circuit
UNLOCK	1 – 2	Less than 2 ohms

CENTRAL DOOR LOCK SWITCH CONTINUITY CHECK

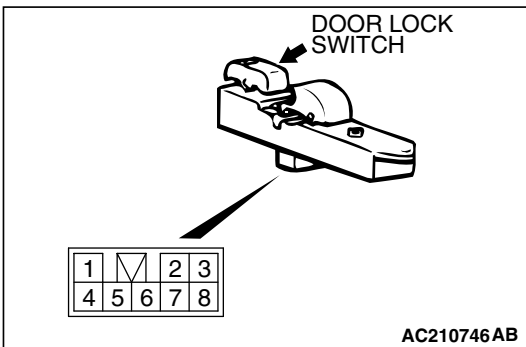
Remove the power window switch (Refer to [P.42-39](#)).

<DRIVER'S SIDE>



SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	5 – 12	Less than 2 ohms
OFF	5 – 12, 10 – 12	Open circuit
UNLOCK	10 – 12	Less than 2 ohms

<PASSENGER'S SIDE>

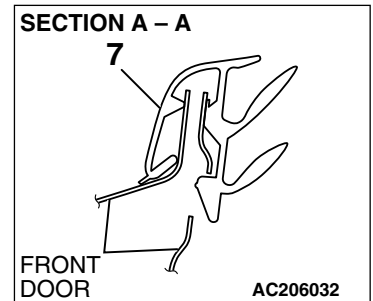
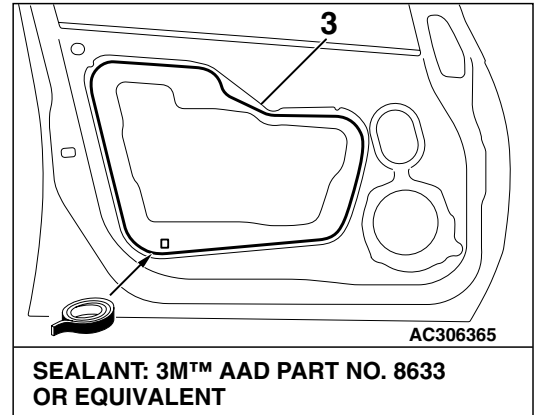
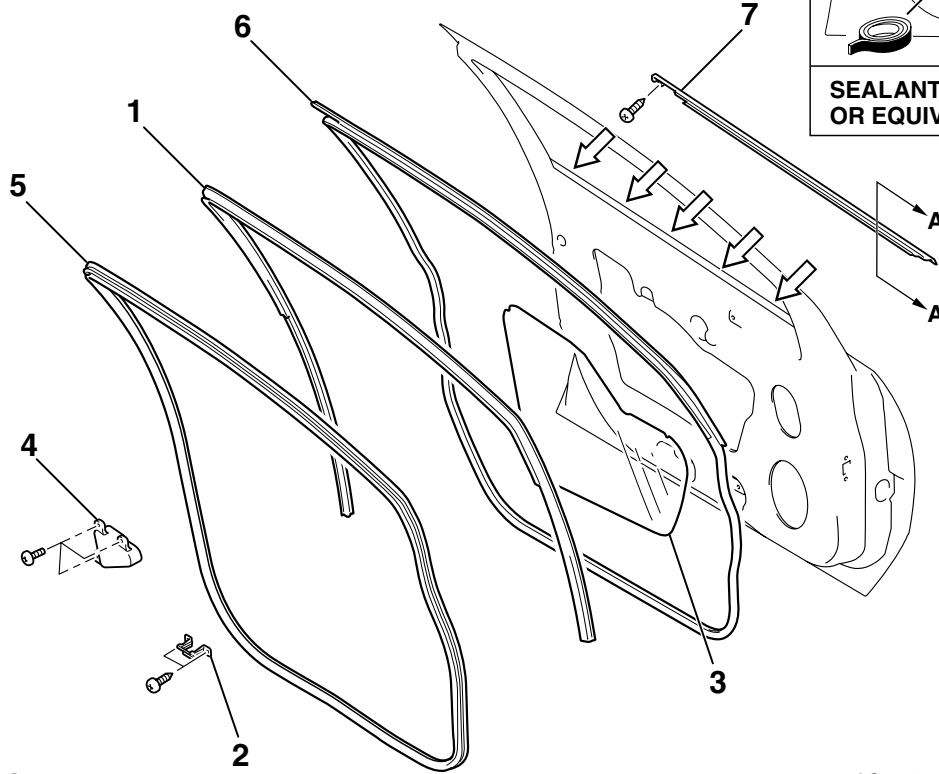


SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	1 – 2	Less than 2 ohms
OFF	1 – 2, 2 – 3	Open circuit
UNLOCK	2 – 3	Less than 2 ohms

WINDOW GLASS RUNCHANNEL AND DOOR OPENING WEATHERSTRIP
REMOVAL AND INSTALLATION

M1423003100319

<FRONT DOOR>

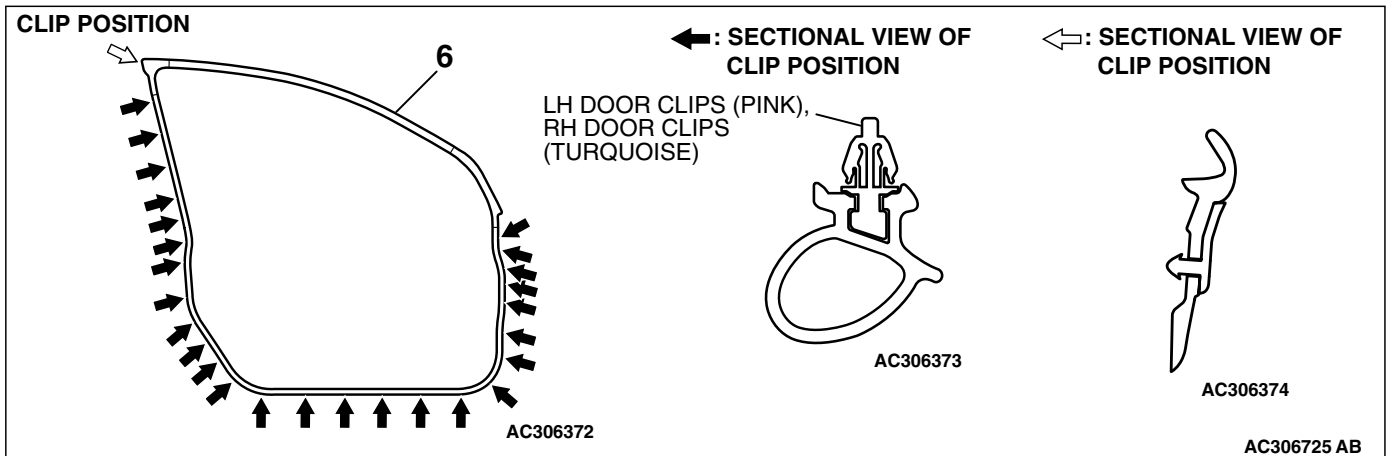


NOTE

↔ : THE CONVEX POSITION OF THE DOOR

AC306175

AC306732 AB



REMOVAL

- >>D<< 1. DOOR WINDOW GLASS
RUNCHANNEL

**WATERPROOF FILM AND DOOR
PANEL CORE REMOVAL STEPS**

- DOOR TRIM ASSEMBLY (REFER TO GROUP 52A, DOOR TRIM [P.52A-13](#)).
- DOOR INSIDE HANDLE (REFER TO [P.42-46](#)).
- 2. DOOR ARMREST BRACKET
- >>A<< 3. WATERPROOF FILM
- 4. DOOR PANEL CORE

**DOOR OPENING INNER
WEATHERSTRIP REMOVAL
STEPS**

- FRONT SCUFF PLATE (REFER TO GROUP 52A, TRIMS [P.52A-10](#)).
- >>C<< 5. DOOR OPENING INNER WEATHERSTRIP (BODY SIDE)

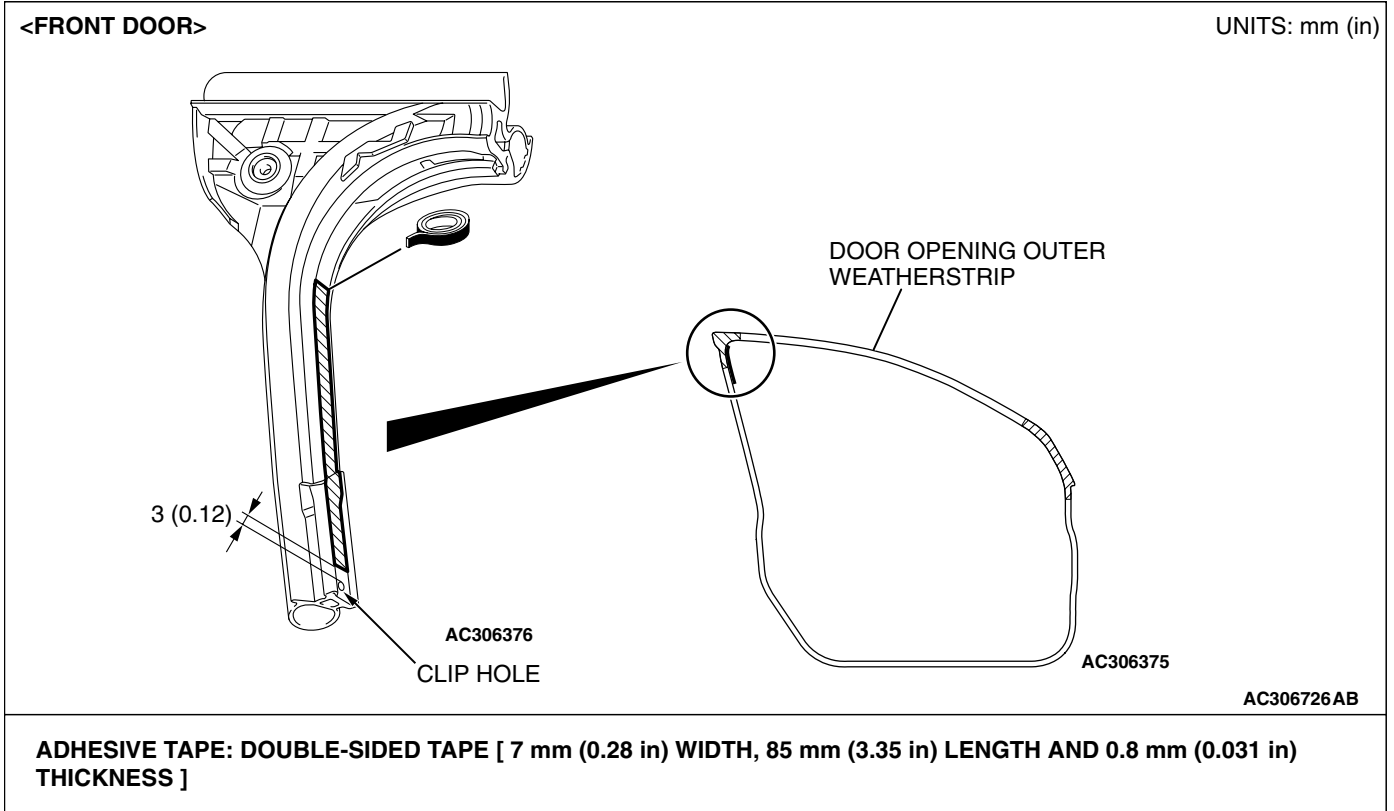
**DOOR OPENING OUTER
WEATHERSTRIP REMOVAL
STEPS**

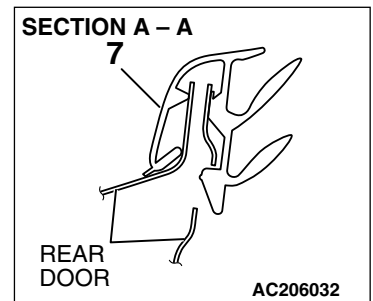
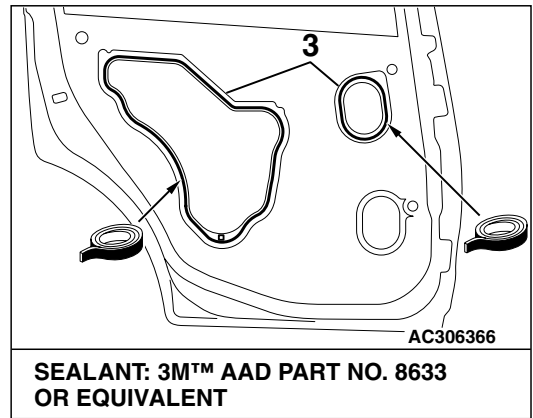
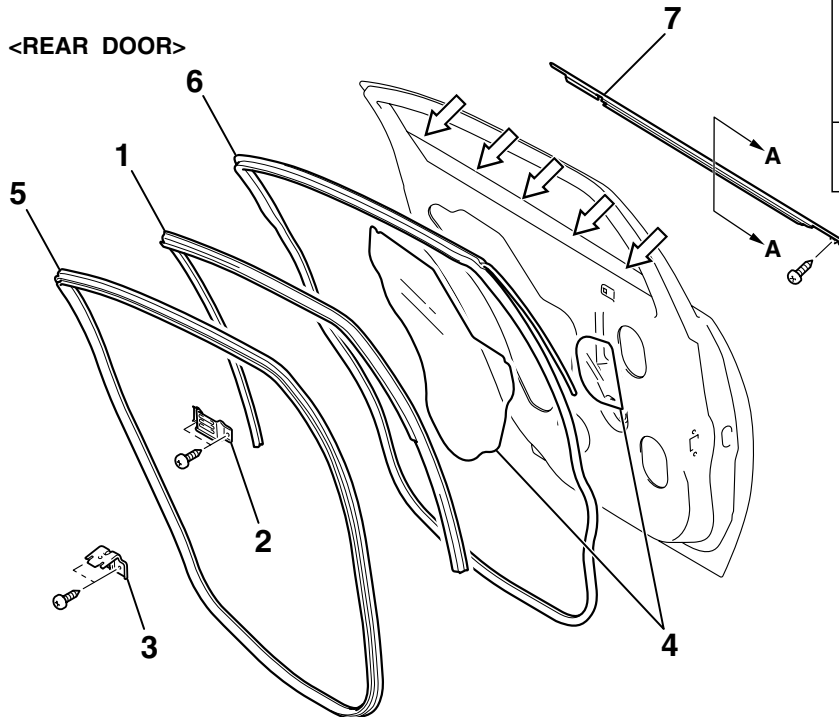
- DOOR CHECK MOUNTING BOLT (BODY SIDE) (REFER TO [P.42-37](#)).
- >>B<< 6. DOOR OPENING OUTER WEATHERSTRIP

**DOOR BELTLINE MOLDING
REMOVAL STEPS**

- DOOR TRIM ASSEMBLY (REFER TO GROUP 52A, DOOR TRIM [P.52A-13](#)).
- REMOTE CONTROLLED MIRROR ASSEMBLY (REFER TO GROUP 51, DOOR MIRROR [P.51-41](#)).
- 7. DOOR BELTLINE MOLDING

DOUBLE-SIDED TAPE POSITION

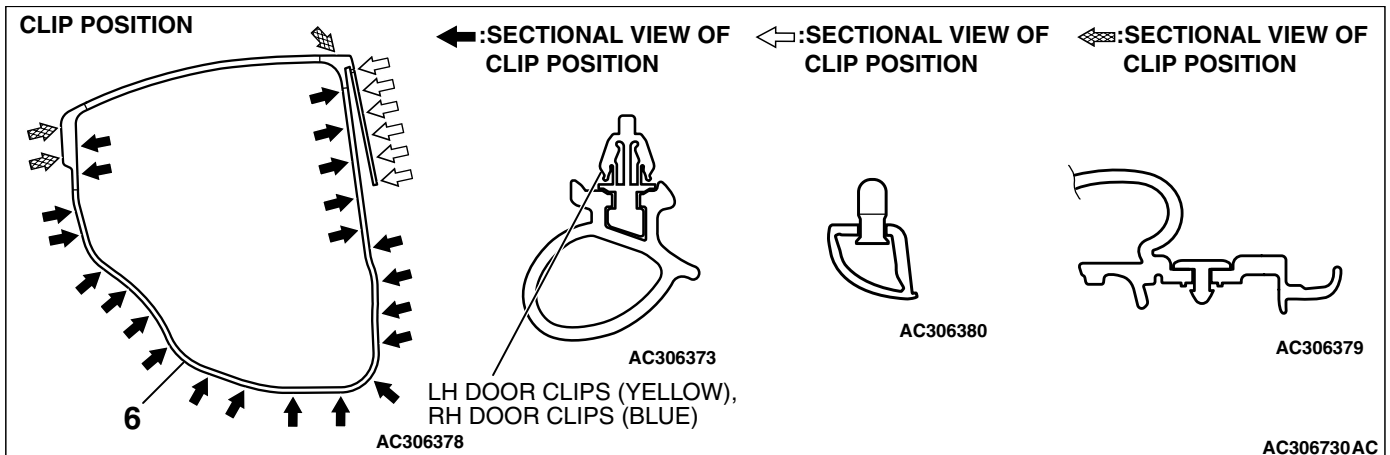




NOTE
↔ : THE CONVEX POSITION OF THE DOOR

AC306176

AC306733AB



- REMOVAL**
- >>D<< 1. DOOR WINDOW GLASS
RUNCHANNEL
**DOOR PANEL BRACKET
REMOVAL STEPS**
- DOOR TRIM ASSEMBLY (REFER TO GROUP 52A, DOOR TRIM P.52A-13).
2. DOOR PANEL BRACKET

- DOOR ARMREST BRACKET
REMOVAL STEPS**
- DOOR TRIM ASSEMBLY (REFER TO GROUP 52A, DOOR TRIM P.52A-13).
3. DOOR ARMREST BRACKET

WATERPROOF FILM REMOVAL STEPS

- DOOR TRIM ASSEMBLY (REFER TO GROUP 52A, DOOR TRIM P.52A-13).
- DOOR INSIDE HANDLE (REFER TO P.42-46).

>>A<< 4. WATERPROOF FILM

DOOR OPENING INNER WEATHERSTRIP REMOVAL STEPS

- REAR SCUFF PLATE (REFER TO GROUP 52A, TRIMS P.52A-10).

>>C<< 5. DOOR OPENING INNER WEATHERSTRIP (BODY SIDE)

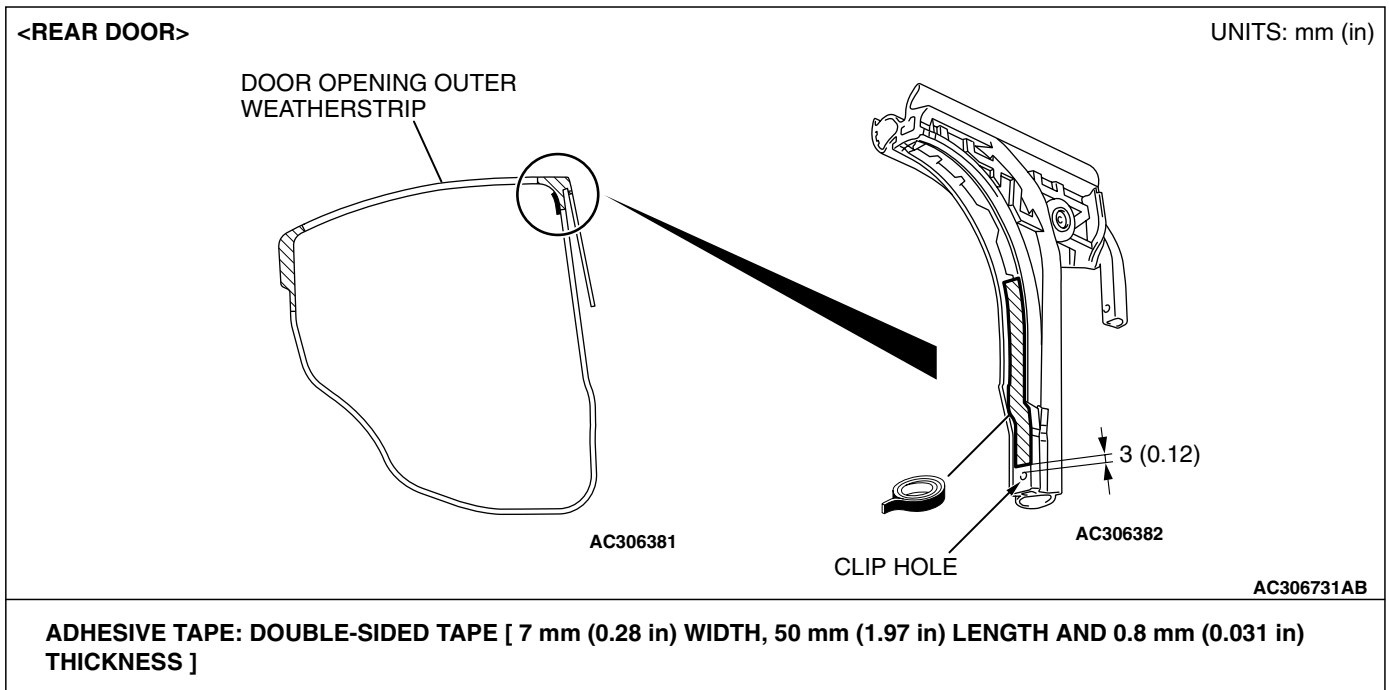
DOOR OPENING OUTER WEATHERSTRIP REMOVAL STEPS

- DOOR CHECK MOUNTING BOLT (BODY SIDE) (REFER TO P.42-37).
- >>B<< 6. DOOR OPENING OUTER WEATHERSTRIP

DOOR BELTLINE MOLDING REMOVAL STEPS

- DOOR TRIM ASSEMBLY (REFER TO GROUP 52A, DOOR TRIM P.52A-13).
7. DOOR BELTLINE MOLDING

DOUBLE-SIDED TAPE POSITION

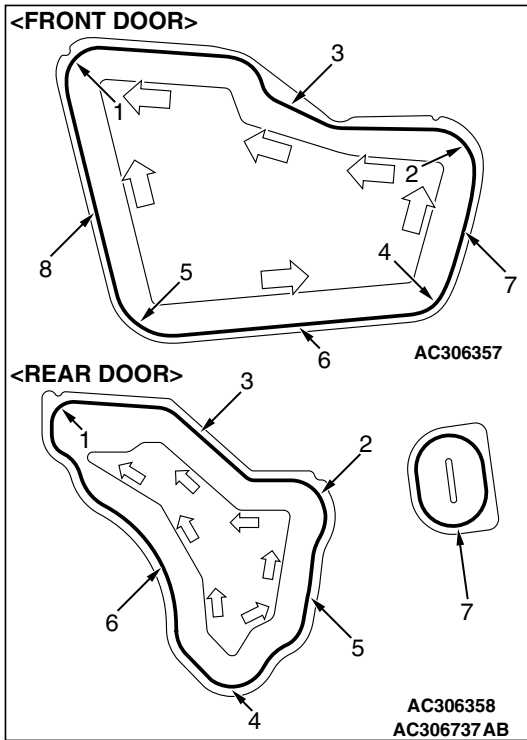
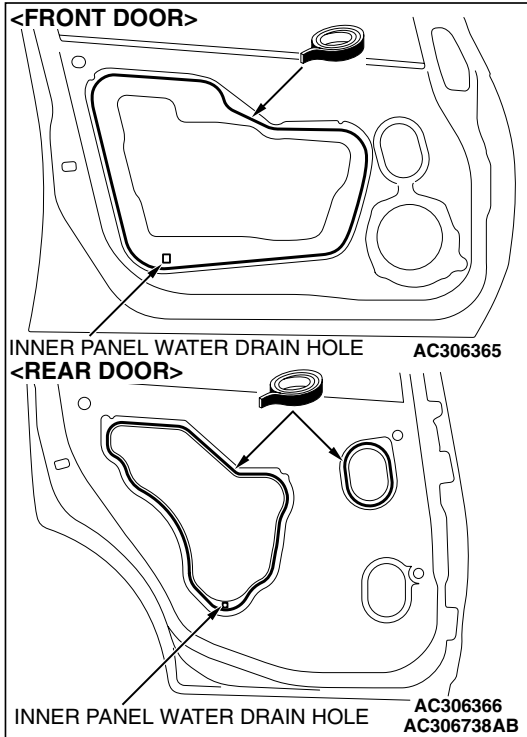


INSTALLATION SERVICE POINTS

>>A<< WATERPROOF FILM INSTALLATION

⚠ CAUTION

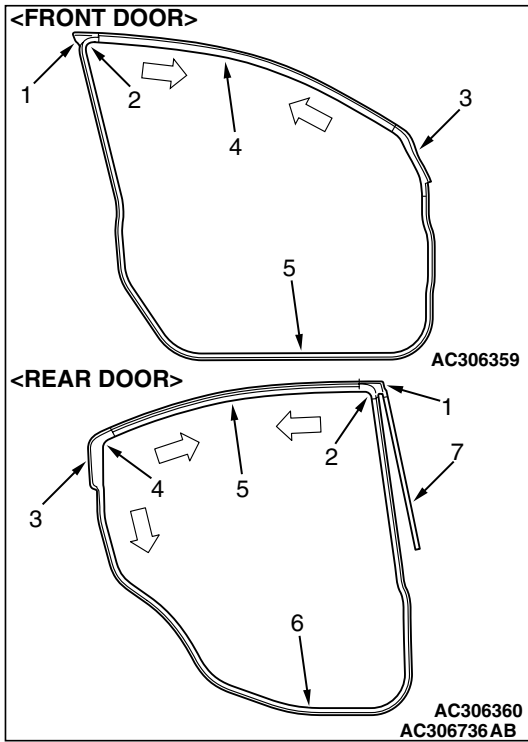
When the waterproof film is adhered, be careful that 3M™ AAD Part number 8633 or equivalent can pass under the inner panel water drain hole.



1. Stick the waterproof film to the door in sequence as shown.
2. Press the waterproof film toward the arrow in the illustration.

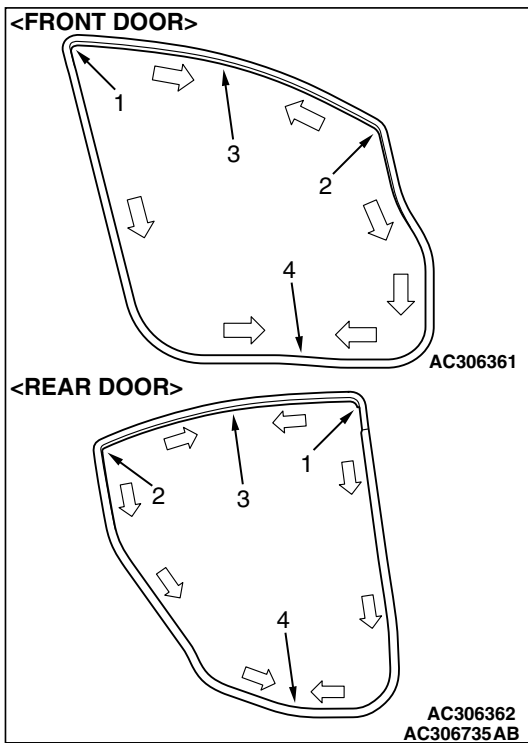
>>B<< DOOR OPENING OUTER WEATHERSTRIP INSTALLATION

Install the door opening outer weatherstrip in the sequence shown.



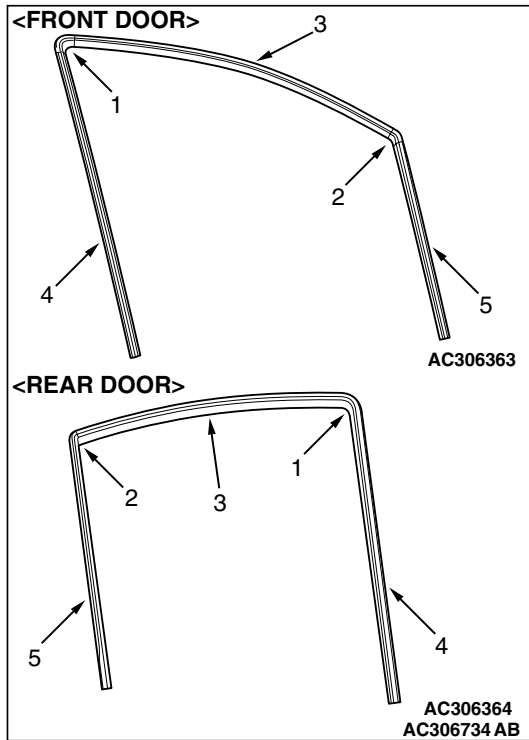
>>C<< DOOR OPENING INNER WEATHERSTRIP INSTALLATION

Install the door opening inner weatherstrip in the sequence shown.



>>D<< DOOR WINDOW GLASS RUNCHANNEL INSTALLATION

Install the door window glass runchannel in the sequence shown.



TRUNK LID

TRUNK LID DIAGNOSIS

INTRODUCTION TO TRUNK LID DIAGNOSIS

Difficult locking and unlocking, uneven clearance and height, and wind noise from the trunk lid may be caused by improper adjustment of the trunk lid.

M1421005800374

TRUNK LID DIAGNOSTIC TROUBLESHOOTING STRATEGY

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 trunk lid fault.

M1421005900348

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

M1421006000382

SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Difficult locking and unlocking	1	P.42-60
Uneven body clearance	2	P.42-60
Uneven height	3	P.42-60

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 3.
NO : Repair the release cable routing, then go to Step 2.

STEP 2. Check the engagement of the trunk lid latch and trunk lid striker.

- Q: Are the trunk lid latch and trunk lid striker engaged correctly?**
YES : Then go to Step 3.
NO : Adjust the trunk lid latch. Refer to [P.42-61](#).

STEP 3. Retest the system.

- Q: Does the trunk lid lock operate easily?**
YES : The procedure is complete.
NO : Return to Step 1.

INSPECTION PROCEDURE 2: Uneven Body Clearance

DIAGNOSIS

STEP 1. Check the clearance around the trunk lid..

- Q: Are the apertures between the trunk lid and the adjacent body panels aligned correctly?**
YES : Then go to Step 2.
NO : Adjust the trunk lid panel assembly. Refer to [P.42-61](#).

STEP 2. Retest the system.

- Q: Are the clearances between the body panels even?**
YES : The procedure is complete.
NO : Return to Step 1.

INSPECTION PROCEDURE 3: Uneven Height

DIAGNOSIS

STEP 1. Check the trunk lid bumper height.

- Q: Is the trunk lid bumper height proper?**
YES : Then go to Step 2.
NO : Adjust the trunk lid bumper. Refer to [P.42-61](#).

STEP 2. Retest the system.

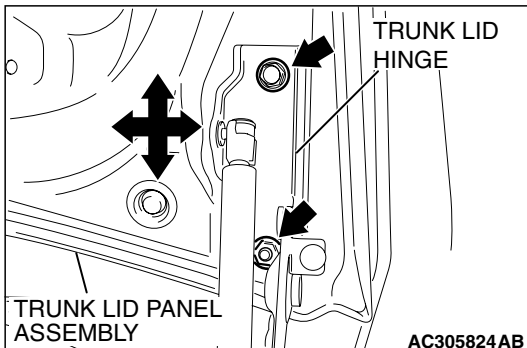
- Q: Are the trunk lid and body height even?**
YES : The procedure is complete.
NO : Return to Step 1.

ON-VEHICLE SERVICE

ADJUSTMENT OF CLEARANCE AROUND TRUNK LID

M1421008100040

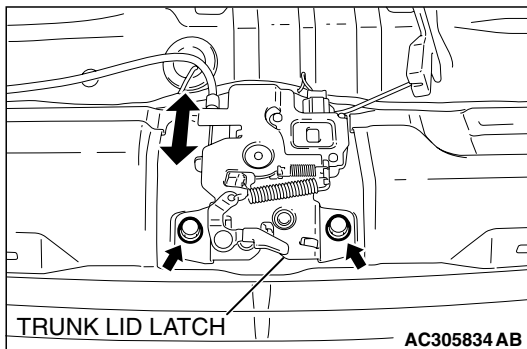
Loosen the trunk lid panel assembly mounting bolt and nut, and move the trunk lid panel assembly to make the clearance around the trunk lid even.



TRUNK LID LATCH ADJUSTMENT

M1421008600012

After checking the trunk lid release cable for proper routing, loosen the trunk lid latch mounting bolts. Change the position of the trunk lid latch relative to the trunk lid striker so that trunk lid locking and unlocking effort is correct.

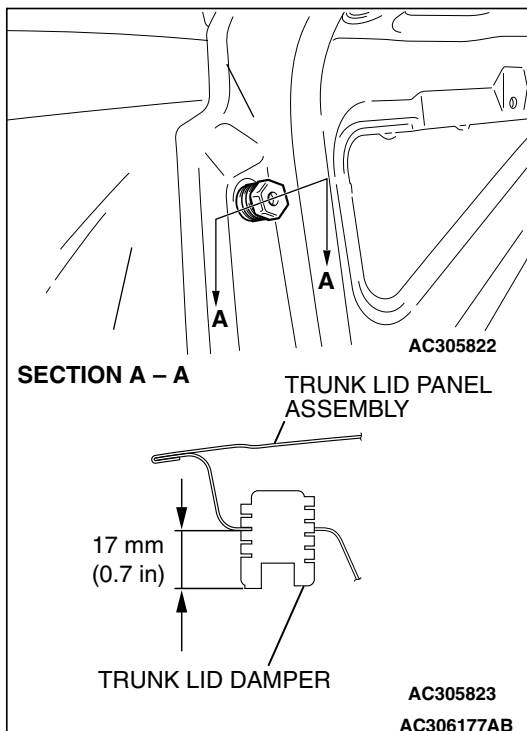


TRUNK LID HEIGHT ADJUSTMENT

M1421008300044

Turn each trunk lid damper to achieve the height shown in the drawing. If the trunk lid panel height on one side is different from that on the other side (even after the trunk lid dampers have been adjusted to the height indicated in the drawing), turn the trunk lid damper(s) slightly to make fine adjustments to the trunk lid panel height.

NOTE: When the damper is new, one full turn of the trunk lid damper changes the height approximately 3 mm. Turn it clockwise to reduce height. Turn it counterclockwise to increase height.



TRUNK LID

REMOVAL AND INSTALLATION

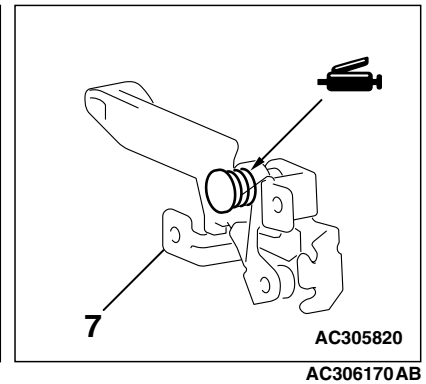
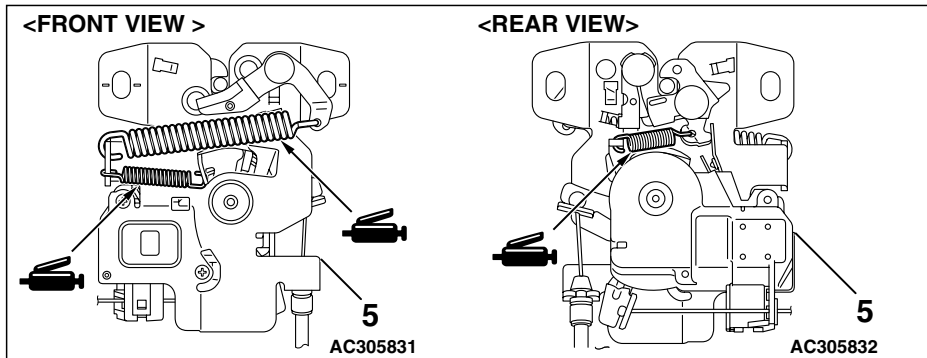
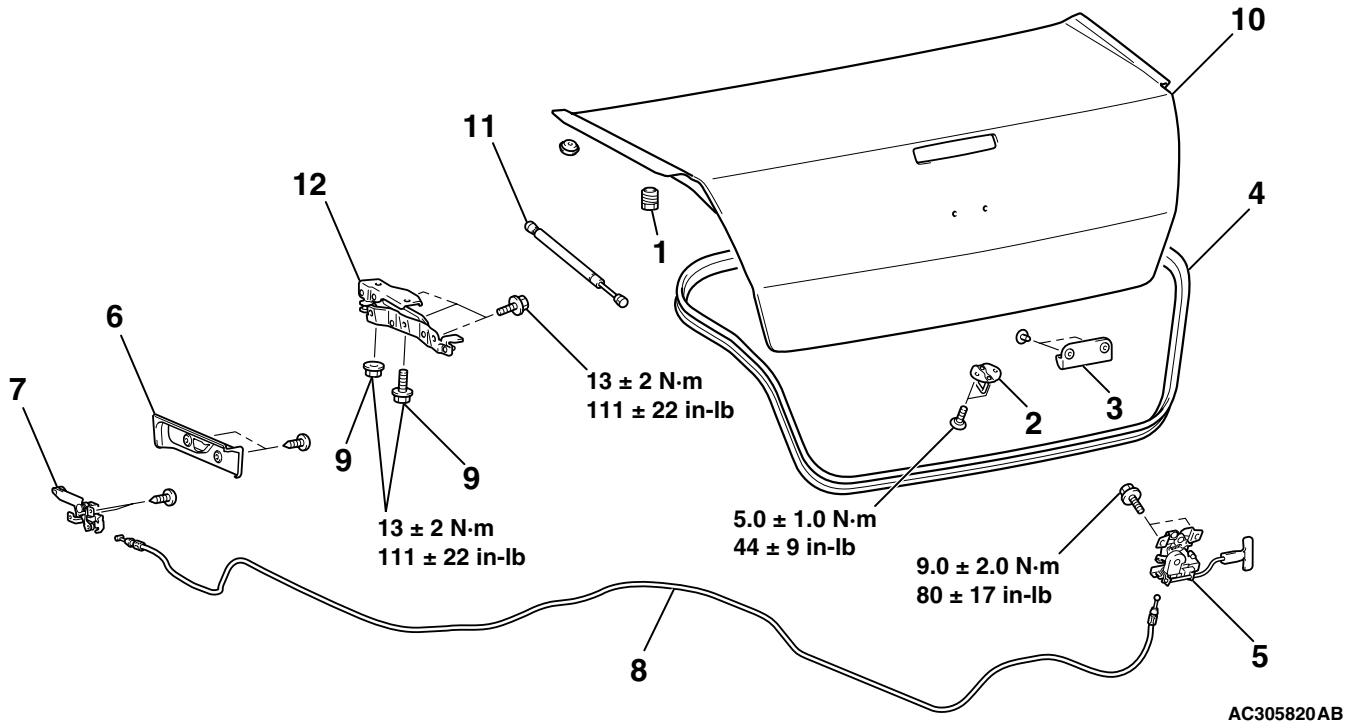
M1421002200191

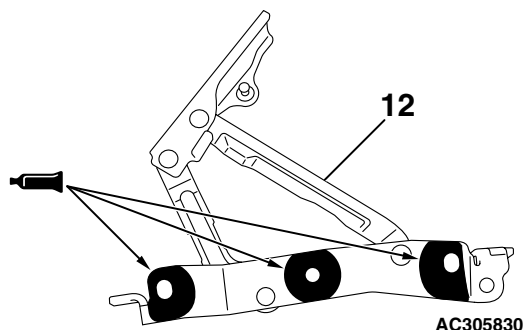
CAUTION

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

Post-installation Operation

- Adjustment of Clearance Around Trunk Lid (Refer to P.42-61).
- Trunk Lid Latch Adjustment (Refer to P.42-61).
- Trunk Lid Height Adjustment (Refer to P.42-61).





AC305830

ADHESIVE: 3M™ AAD PART NO.8531 HEAVY DRIP CHECK SEALER, 3M™ AAD PART NO.8646 AUTOMOTIVE JOINT AND SEAM SEALER OR EQUIVALENT

AC306174 AB

REMOVAL

1. TRUNK LID DAMPER
 2. TRUNK LID STRIKER
 3. TRUNK LID INSIDE HANDLE
- TRUNK LID WEATHERSTRIP REMOVAL STEPS**
- REAR END TRIM (REFER TO GROUP 52A, TRIMS [P.52A-10.](#))
- >>A<< 4. TRUNK LID WEATHERSTRIP
- TRUNK LID LATCH REMOVAL STEPS**
- REAR END TRIM (REFER TO GROUP 52A, TRIMS [P.52A-10.](#))
5. TRUNK LID LATCH ASSEMBLY
- TRUNK LID RELEASE CABLE AND TRUNK LID RELEASE HANDLE REMOVAL STEPS**
- REAR END TRIM (REFER TO GROUP 52A, TRIMS [P.52A-10.](#))
 - TRUNK TRIM ASSEMBLY (REFER TO GROUP 52A, TRIMS [P.52A-10.](#))
 - REAR SEAT (REFER TO GROUP 52A, SEAT [P.52A-29.](#))
 - CENTER PILLAR LOWER TRIM (REFER TO GROUP 52A, TRIMS [P.52A-10.](#))
 - COWL SIDE TRIM (REFER TO GROUP 52A, TRIMS [P.52A-10.](#))
6. TRUNK LID RELEASE HANDLE COVER

<<A>>

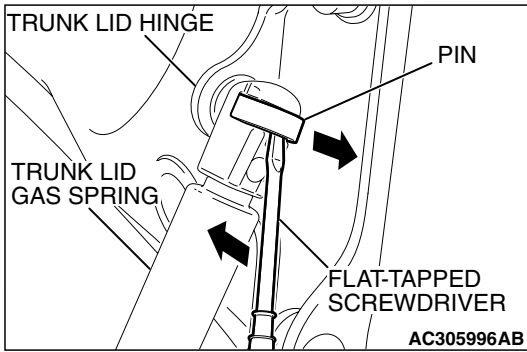
TRUNK LID RELEASE CABLE AND TRUNK LID RELEASE HANDLE REMOVAL STEPS (Continued)

7. TRUNK LID RELEASE HANDLE
 8. TRUNK LID RELEASE CABLE
- TRUNK LID PANEL ASSEMBLY REMOVAL STEPS**
1. TRUNK LID DAMPER
 2. TRUNK LID STRIKER
 3. TRUNK LID INSIDE HANDLE
 - THREE-DIAMOND MARK (REFER TO GROUP 51 MARKS [P.51-23.](#))
 - HIGH MOUNT STOPLIGHT <VEHICLES WITHOUT REAR SPOILER> (REFER TO GROUP 54A, HIGH-MOUNTED STOPLIGHT [P.54A-123.](#))
 - REAR SPOILER ASSEMBLY <VEHICLES WITH REAR SPOILER> (REFER TO GROUP 51, REAR SPOILER [P.51-9.](#))
 9. TRUNK LID PANEL ASSEMBLY MOUNTING BOLT AND NUT
 10. TRUNK LID PANEL ASSEMBLY
- TRUNK LID HINGE REMOVAL STEPS**
10. TRUNK LID PANEL ASSEMBLY
 11. TRUNK LID GAS SPRING
 12. TRUNK LID HINGE

REMOVAL SERVICE POINT

<<A>> TRUNK LID GAS SPRING REMOVAL

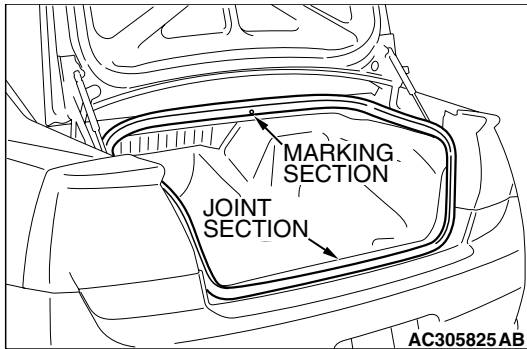
As shown in the figure, slide the pin upward, then remove the trunk lid gas spring in the direction of the arrow to unscrew the trunk lid hinge.



INSTALLATION SERVICE POINT

>>A<< TRUNK LID WEATHERSTRIP INSTALLATION

Install the trunk lid weatherstrip so that the marking and the joint are aligned with the body center line,

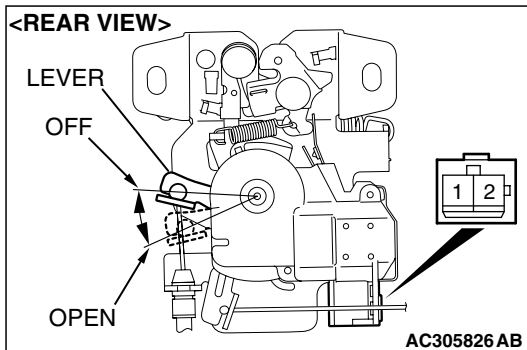


INSPECTION

M1421004800144

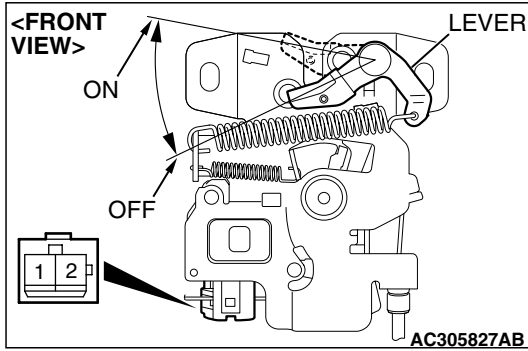
TRUNK LID LATCH ASSEMBLY CHECK

TRUNK LID LATCH ACTUATOR CHECK



LEVER POSITION	BATTERY CONNECTION	LEVER OPERATION
At the "OFF" position	<ul style="list-style-type: none"> Connect ground and the negative battery terminal. Connect terminal No. 1 and the positive battery terminal. 	The lever moves from the "OFF" position to the "OPEN" position.

TRUNK LID LATCH SWITCH CONTINUITY CHECK



LEVER POSITION	TESTER CONNECTION	SPECIFIED CONDITION
ON (Latch open)	2 – Ground	Less than 2 ohms
OFF (Latch shut)	2 – Ground	Open circuit

KEYLESS ENTRY SYSTEM

GENERAL DESCRIPTION

M1428000100229

- Antenna and receiver are incorporated in the ETACS-ECU.
- ID code can be registered by using scan tool MB991958 (MUT-III sub assembly).
- Transmitter is a key holder type, which incorporates lock button, unlock button, trunk button and panic button <Vehicles with panic alarm system>.
- When the transmitter unlock button is pressed once, the driver's door will be unlocked. If the button is pressed twice, all the doors will be unlocked. The adjustment function also allows you to open all the doors by pressing the unlock button only once. For further details on using the multi-center display (middle grade type) to adjust the unlock operation, refer to GROUP 54B, On-vehicle Service P.54B-555.
- When the transmitter is operated, the answer-back function will work as follows:

ITEM	OPERATION	
	DOORS LOCKED	DOORS UNLOCKED
Dome light	Flashes once	Illuminates for 15 seconds
Turn-signal lights (RH and LH)	Flashes once	Flashes twice
Horn	Sounds once when the lock button is pressed with all the doors locked	-

- The answerback operation can be altered as follows:

NOTE: Enabling/disabling the hazard warning light flashing, the horn sounding in accordance with the answerback function. For further details on using the transmitter to adjust answerback, P.42-69 see the section below. For further details on using the multi-center display (middle grade type) to adjust answerback, refer to GROUP 54B, On-vehicle Service P.54B-555.

ITEM	ADJUSTMENT ITEM	ADJUSTMENT DETAIL
Keyless entry system confirmation by turn signal lights	Adjustment of hazard answerback when the transmitter is used to lock doors	When adjusting hazard answerback after the doors are locked with the transmitter, the following flashing conditions can be selected. a. Flash (default) b. No flash
	Adjustment of hazard answerback when the transmitter is used to unlock doors	When adjusting hazard answerback after the doors are unlocked with the transmitter, the following flashing conditions can be selected. a. Flash (default) b. No flash
Keyless entry system confirmation by horn	Adjustment of horn answerback when the transmitter is used to lock doors	When adjusting horn answerback after the doors are locked with the transmitter, the following horn conditions can be selected. a. Horn sounds b. Horn sounds if doors are already locked (default) c. Horn does not sound

- If none of the doors is opened or the ignition key is not inserted in the ignition switch within 30 seconds after the doors are unlocked using the transmitter, the ETACS-ECU will relock the doors automatically. This is called "Timer lock function." This timer lock function prevents accidental unlocking of doors. The adjustment function allows you to change the timer lock period from

30 seconds (default setting) to 60, 120 or 180 seconds. For further details on using the multi-center display (middle grade type) to adjust the timer lock period, refer to GROUP 54B, On-vehicle Service [P.54B-555](#).

NOTE: The timer lock period begins when the doors are unlocked, and ends when the doors is relocked automatically.

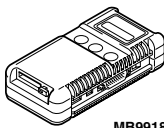
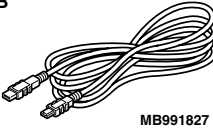
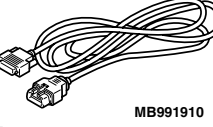
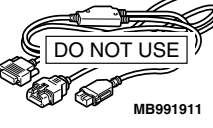
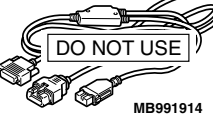
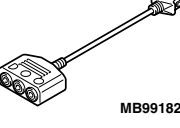
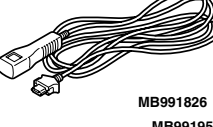
KEYLESS ENTRY SYSTEM DIAGNOSIS

The keyless entry system is controlled by the Simplified Wiring System (SWS). Refer to GROUP 54B, SWS Diagnosis [P.54B-59](#).

M1428000700298

SPECIAL TOOL

M1428000600291

TOOL	TOOL NUMBER AND NAME	SUPERSESION	APPLICATION
<p>A</p>  <p style="text-align: center;">MB991824</p> <p>B</p>  <p style="text-align: center;">MB991827</p> <p>C</p>  <p style="text-align: center;">MB991910</p> <p>D</p>  <p style="text-align: center;">MB991911</p> <p>E</p>  <p style="text-align: center;">MB991914</p> <p>F</p>  <p style="text-align: center;">MB991825</p> <p>G</p>  <p style="text-align: center;">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</i></p> <p><i>MUT-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.</i></p>	<p>For registration of secret code</p> <p>CAUTION</p> <p>For vehicles with CAN communication, use MUT-III main harness A to send simulated vehicle speed. If you connect MUT-III main harness B instead, the CAN communication does not function correctly.</p>

ON-VEHICLE SERVICE

HOW TO REPLACE THE TRANSMITTER
BATTERY

M1428000900269

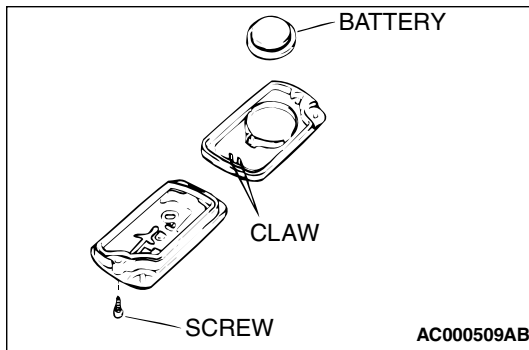
CAUTION

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

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

Battery required for replacement: Coin type battery CR2032

3. Insert the claw first, and reassemble the transmitter.
4. Verify that the keyless entry system operates.



KEYLESS ENTRY SYSTEM INSPECTION

M1428001400104

Check the following items. If defective, refer to GROUP 54B, SWS Diagnosis P.54B-10).

1. Operate the transmitter to check that the doors can be locked and unlocked.

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

- a. When the unlock button is pressed once, the driver's door will be unlocked. Then when the button is pressed once again, all the doors will be opened (initial setting).
 - b. When the unlock button is pressed only once, all the doors will be opened.
2. Press the trunk lid button of transmitter twice (press once, and then press again within 5 seconds) and confirm that the trunk lid opens.

3. Operate the transmitter to check that the answerback function works in response to doors locking/unlocking.

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

- a. Turn-signal lights: Flash once when doors are locked, and twice when unlocked (initial setting)
- b. Turn-signal lights: Flash once when doors are locked, but does not flash when unlocked.
- c. Turn-signal lights: Do not flash when doors are locked, but flash twice when unlocked.

d. *Turn-signal lights: Do not flash when doors are locked and unlocked.*

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

- a. *Horn: Sounds once when the lock button is pressed.*
- b. *Horn: Sounds once when the lock button is pressed (initial setting).*
- c. *Horn: Does not sound.*

KEYLESS ENTRY SYSTEM TIMER LOCK FUNCTION INSPECTION

M1428004000149

If the doors are not locked within 30 seconds after the unlock button is pressed, refer to GROUP 54B, SWS Diagnosis [P.54B-10](#).

NOTE: If either of the doors is opened or the key is inserted in the ignition switch within that 30-second period, the timer lock function will be cancelled.

NOTE: The adjustment function allows you to change the timer lock period from 30 seconds (initial setting) to 60, 120 or 180 seconds. Prior to this inspection, confirm which setting is activated.

ENABLING/DISABLING THE ANSWERBACK FUNCTION

M1428003200225

When the doors are locked or unlocked by using the transmitter, the dome light will flash/illuminate, the turn-signal lights will flash (hazard answerback), or the horn will sound (horn answerback) to inform the driver.

The hazard answerback and horn answerback functions can be enabled or disabled according to the following procedure:

ENABLING/DISABLING THE HAZARD ANSWERBACK FUNCTION

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 within 4 seconds to 10 seconds.

3. Release the "lock" button within 10 seconds after Step 2 and then release the "unlock" button. 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 within 4 seconds to 10 seconds.
3. Release the "lock" button within 10 seconds after Step 2 and then release the "unlock" button. 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 "unlock" button and then push the "lock" button within 4 seconds to 10 seconds.
3. Release the "lock" button within 10 seconds after Step 2 and then release the "unlock" button. 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

M1428001000593

Required Special Tools:

- MB991958: MUT-III Sub Assembly
 - MB991824: Vehicle Communication Interface (V.C.I.)
 - MB991910: MUT-III Main harness A

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

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

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

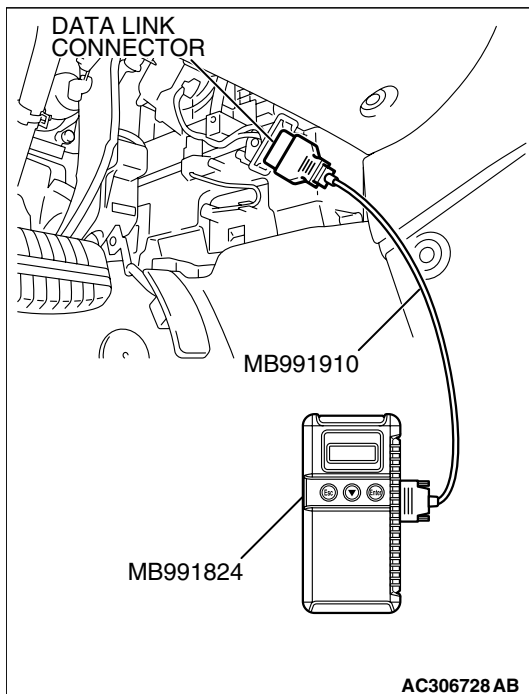
WHEN SPECIAL TOOL MB991824 (V.C.I.) IS USED

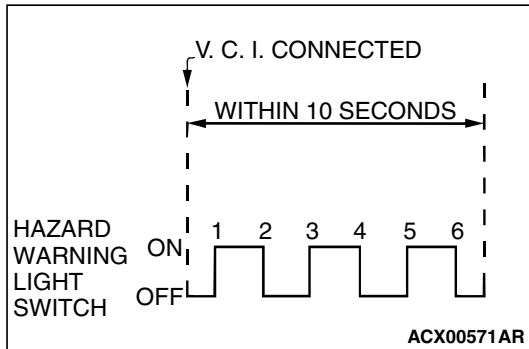
1. Check that the doors lock normally when the key is used.
2. Insert the ignition key.

CAUTION

To prevent damage to special tool MB991824 (V.C.I.), always turn the ignition switch to "LOCK" (OFF) position before connecting or disconnecting special tool MB991824 (V.C.I.).

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





4. Press the hazard warning light 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 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 the encrypted code has been registered, the ETACS-ECU locks and unlocks the doors automatically once.
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;
 - When the key is removed from the key cylinder;
9. After the registration is completed, remove the ignition key and close all the doors, and then check that the keyless entry system operates normally.

SUNROOF ASSEMBLY

GENERAL DESCRIPTION

M1426000100234

A motor-driven inner slide-type glass sunroof with a tilt-up mechanism is available in some models as a standard or optional equipment. 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.

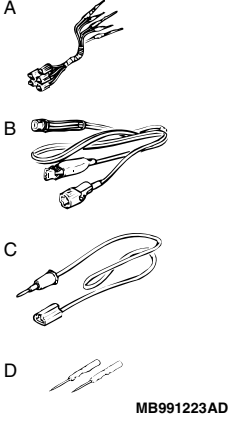
SUNROOF DIAGNOSIS

M1426000700311

The sunroof system is controlled by the Simplified Wiring System (SWS). Refer to GROUP 54B, SWS Diagnosis [P.54B-59](#).

SPECIAL TOOL

M1426000600228

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

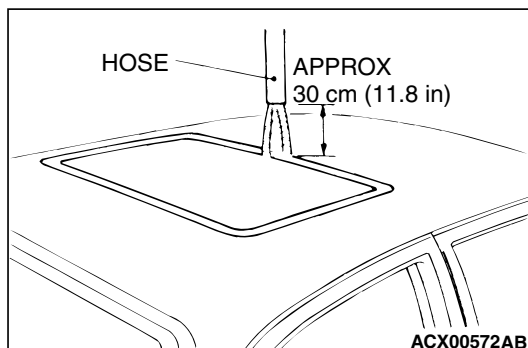
ON-VEHICLE SERVICE

WATER TEST

M1426000900274

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. Check if any water leaks can be found in the room while watering. Even though there are any water leaks around the roof lid glass, it can be acceptable as long as water is caught in the drip area.



SUNROOF TIMER FUNCTION CHECK

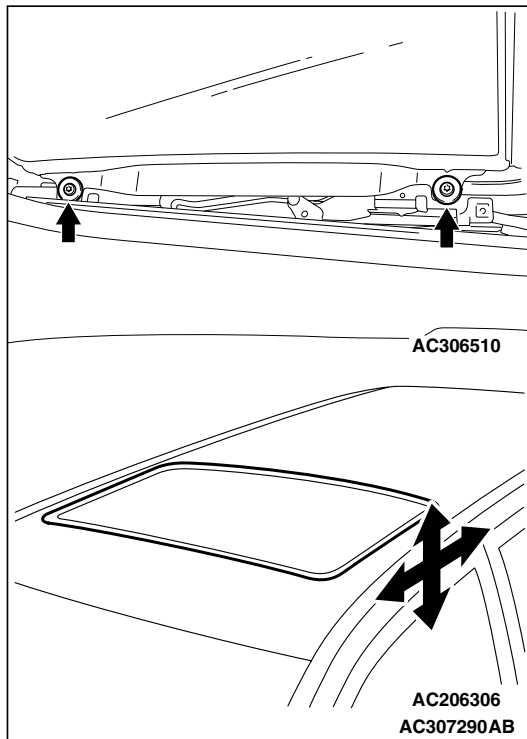
M1426004300100

Keep the door closed, turn OFF the ignition switch and check to see if the sunroof can be operated for 30 seconds after that. If not, perform troubleshooting (Refer to GROUP 54B, SWS Diagnosis P.54B-59).

SUNROOF FIT ADJUSTMENT

M1426001000285

1. Fully close the roof lid glass.
2. Fully open the sunshade.
3. Loosen the roof lid glass assembly mounting screws. Align the roof lid glass by moving it backward, forward, up or down along the guide oblong hole so that the clearance between the glass and the vehicle body is even.
4. Check to be sure that the roof lid glass is flush with the roof panel at corner areas.
5. Check to be sure that the sunroof operates smoothly.

**SUNROOF CHECK**

M1426004700119

Check to see that the sunroof operates by pressing the sunroof switch. Perform troubleshooting if operations malfunction (Refer to GROUP 54B, SWS Diagnosis P.54B-59).

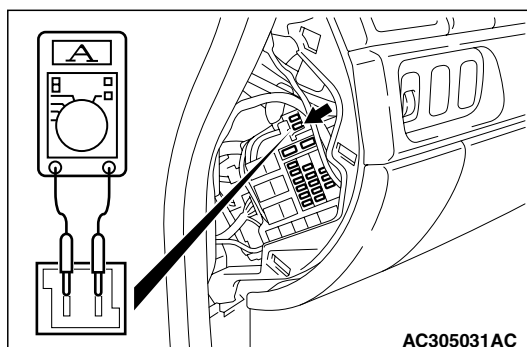
ROOF LID GLASS OPERATION CURRENT CHECK

M1426003200166

1. Remove the fuse of the sunroof, then connect the circuit tester as shown in the Figure.
2. Turn ON the sunroof switch, then measure the operating current when the roof lid glass is halfway opened.

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

3. Check the following areas if the operating current of exceeds the standard value:
 - Sunroof installation, deformation and appearance of any foreign substances.
 - Drive cable installation.
 - Tilting of roof lid glass.



SUNROOF INITIALIZATION

M1426004600123

The sunroof should be initialized when any of the following components are replaced, the sunroof position is miss timed.

- Roof lid glass assembly
- Sunroof motor assembly

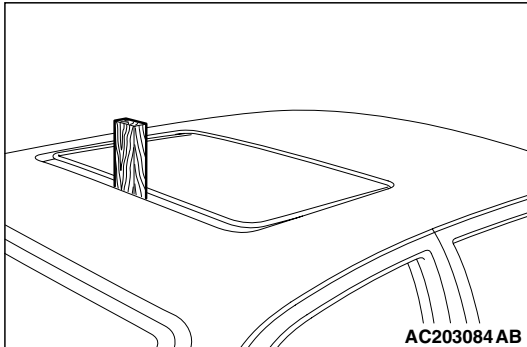
1. Ensure the components are correctly assembled. Ensure all the connectors are connected securely.
2. If the sunroof is already in learn mode, go to step 3. If the sunroof is not in learn mode, enter learn mode by (1) or (2) below.

(1) Disconnect the sunroof motor assembly connector while the sunroof is operating.

(2) Stop the sunroof operation by fitting the block (board etc.). Then press and hold the sunroof close switch for 10 seconds with the sunroof stopped.

3. Press the sunroof Close switch repeatedly until the sunroof is tilted up fully.
4. Press and hold the sunroof Close switch for at least three seconds.
5. Press the sunroof Close switch until the sunroof closes fully.
6. The sunroof should work normally.

NOTE: Do not stop the sunroof before it reaches the fully closed position during operations in steps 5 above. If the sunroof has stopped accidentally, repeat the procedure from step 1.



SUNROOF OPERATION CHECK

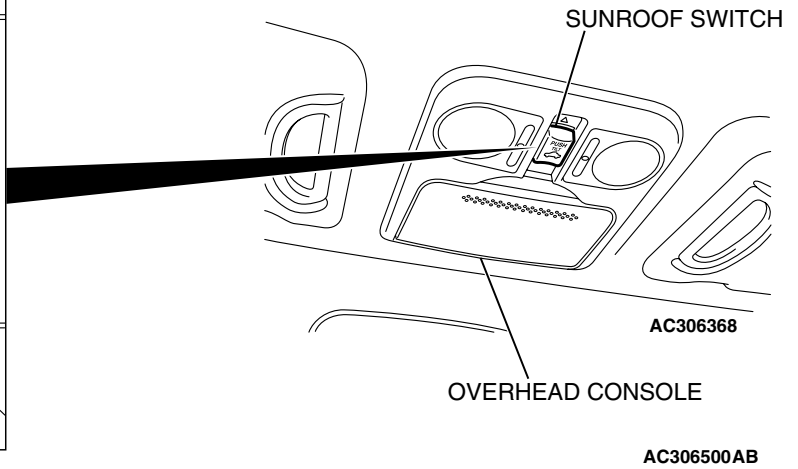
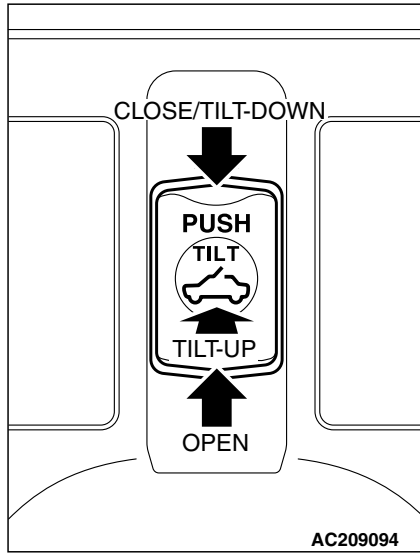
M1426002600332

⚠ CAUTION

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

- Installation condition of the sunroof assembly
- Installation condition, deformation and contamination of the sunroof drive cable
- Installation of sunroof lid glass
- Sunroof switch and sunroof motor assembly

Check that the following items. If faulty, replace the 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 and stops several centimeters forward of the fully open position (position for less wind noise). Then, when the sunroof switch is operated again, the sunroof opens further to fully open position.
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.

NO.	SUNROOF FUNCTION	REQUIREMENTS FOR THE SUNROOF TO FUNCTION		NORMAL OPERATION
05	AUTOMATIC OPERATION INTERRUPTION (OPEN)	A	1. Ignition switch: ON 2. Sunroof switch: OPEN or TILT-UP	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 while the sunroof is automatically opening and release the switch within two seconds)	The sunroof stops the automatic opening operation.
		C	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.
06	AUTOMATIC OPERATION INTERRUPTION (TILT-UP)	1. Ignition switch: ON 2. Sunroof switch: OPEN or TILT-UP, CLOSE/TILT DOWN		The sunroof stops the automatic opening operation.

Sunroof timer mechanism

In cases except the following, 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 turn 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

M1426001200308

⚠ WARNING

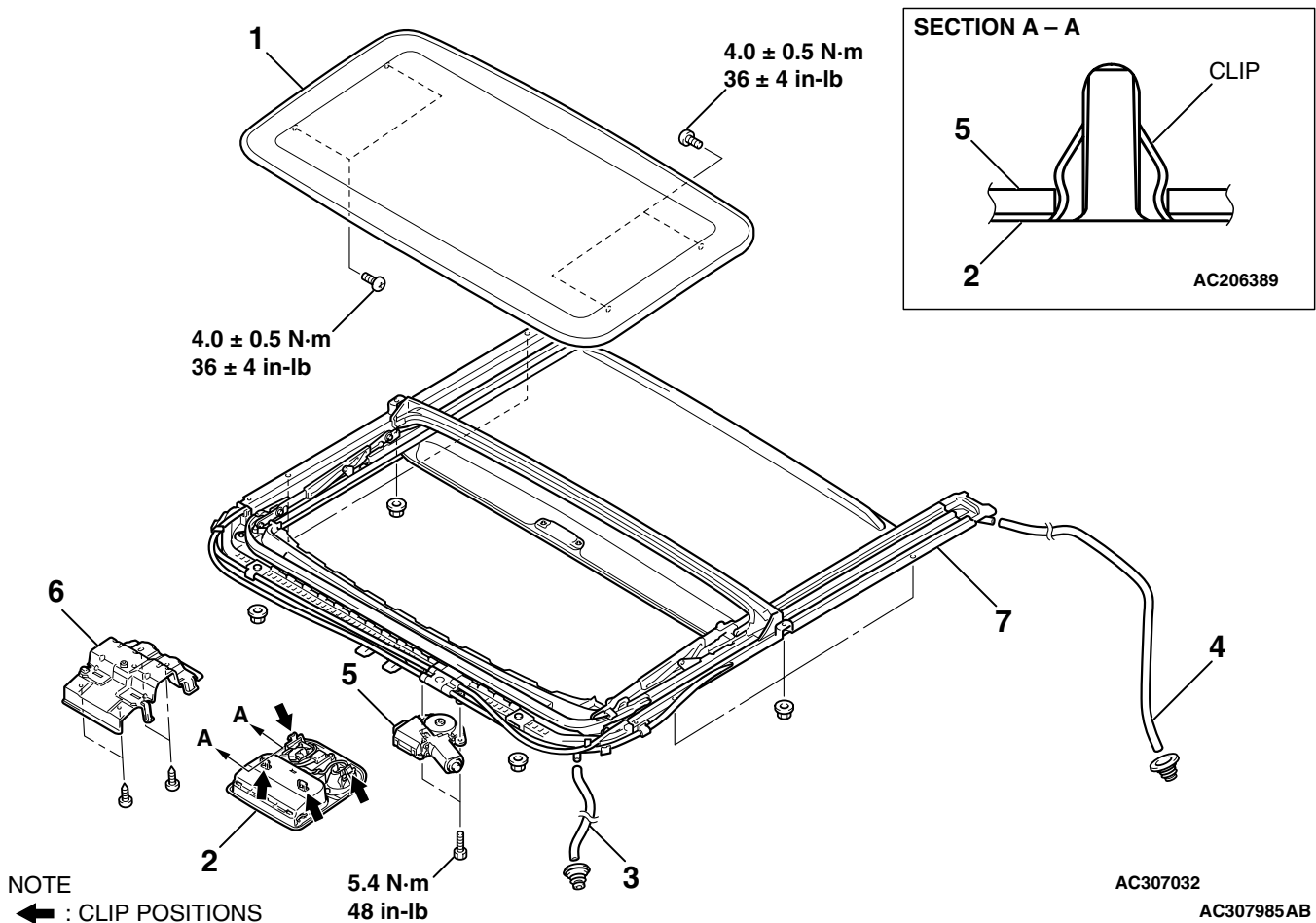
When removing and installing the front passenger seat, be sure to carry out accuracy check occupant classification sensor after the seat has been installed in the vehicle. (Refer to GROUP 52B, On-Vehicle Service P.52B-355.)

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

- Sunroof Water Test (Refer to P.42-73).
- Sunroof Fit Adjustment (Refer to P.42-74).

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

- Sunroof Initializing Adjustment (Refer to P.42-75).



NOTE
← : CLIP POSITIONS

REMOVAL

1. ROOF LID GLASS ASSEMBLY
 2. OVERHEAD CONSOLE ASSEMBLY
- DRAIN PIPE REMOVAL STEPS**
- FRONT HEADLINING PAD (REFER TO GROUP 52A, HEADLINING P.52A-18).
 - FRONT SPLASH SHIELD (REFER TO P.42-10).
 - UPPER FRAME TO FRONT PILLAR BRACE (FRONT DRAIN PIPE <LH>) (REFER TO P.42-82).

DRAIN PIPE REMOVAL STEPS

- INSTRUMENT PANEL PARCEL BOX (FRONT DRAIN PIPE <RH>) (REFER TO GROUP 52A, INSTRUMENT PANEL P.52A-3).
- >>A<< 3. FRONT DRAIN PIPE
- REAR HEADLINING PAD (REFER TO GROUP 52A, HEADLINING P.52A-18).
- TRUNK TRIM ASSEMBLY (REFER TO GROUP 52A, TRIMS P.52A-10).

DRAIN PIPE REMOVAL STEPS

- REAR SPLASH SHIELD (REFER TO GROUP 51, REAR BUMPER P.51-4).
- >>A<< 4. REAR DRAIN PIPE

SUNROOF MOTOR ASSEMBLY REMOVAL STEPS

- HEADLINING (REFER TO GROUP 52A, HEADLINING P.52A-18).
5. SUNROOF MOTOR ASSEMBLY

SUNROOF ASSEMBLY REMOVAL STEPS

1. ROOF LID GLASS ASSEMBLY
- HEADLINING (REFER TO GROUP 52A, HEADLINING P.52A-18).

SUNROOF ASSEMBLY REMOVAL STEPS (Continued)

- DRAIN PIPE CONNECTION
5. SUNROOF MOTOR ASSEMBLY
6. OVERHEAD CONSOLE BRACKET
7. SUNROOF ASSEMBLY

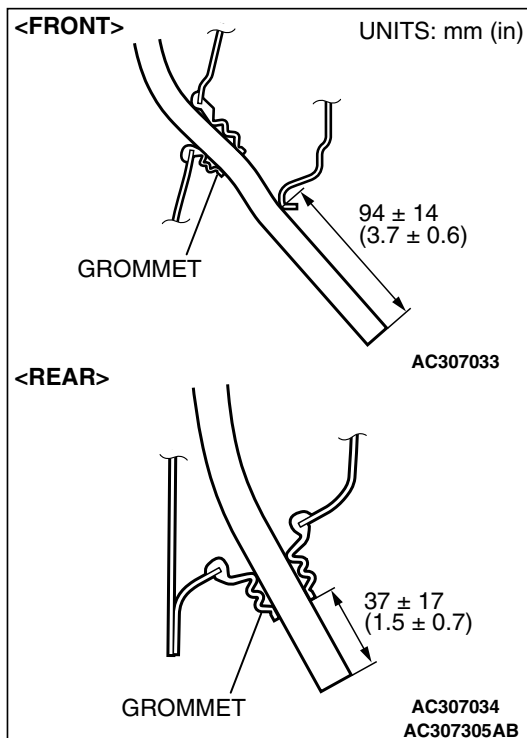
Required Special Tool:

- MB991223: Harness set

INSTALLATION SERVICE POINT

>>A<< REAR DRAIN PIPE/FRONT DRAIN PIPE INSTALLATION

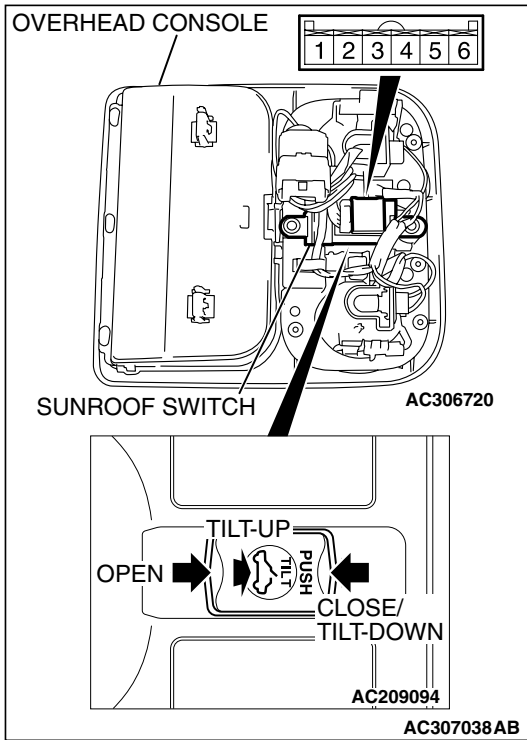
Install the grommet, and then position the drain pipe so that it protrudes from the grommet as shown in the illustration.



INSPECTION

M1421007600440

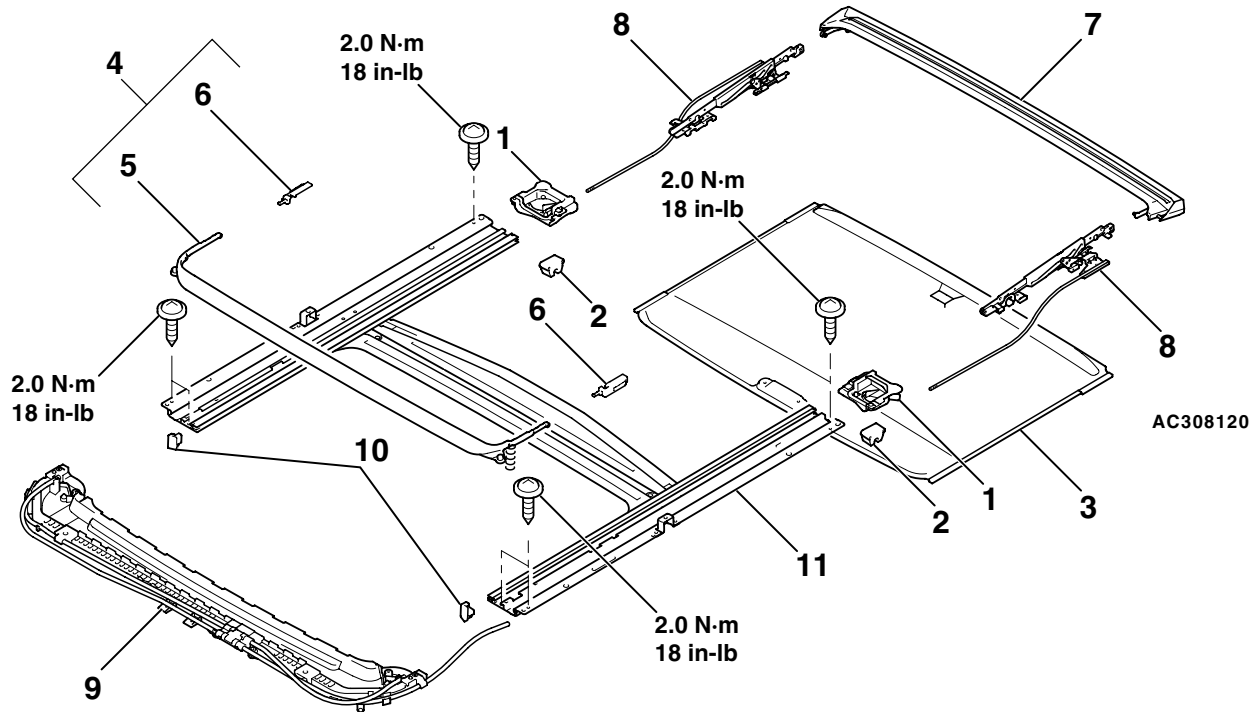
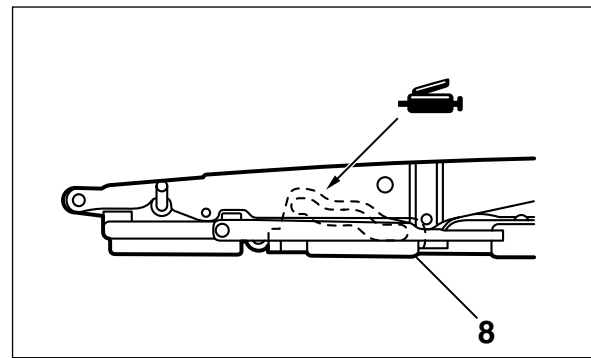
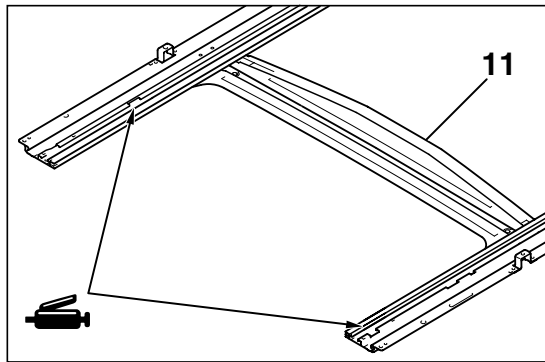
SUNROOF SWITCH CONTINUITY CHECK



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

DISASSEMBLY AND ASSEMBLY

M1426001400294



AC309052AB

DISASSEMBLY STEPS

1. SUNROOF DRIP PLATE
2. SUNROOF SUNSHADE STOPPER
3. SUNROOF SUNSHADE
4. SUNROOF DEFLECTOR
5. SUNROOF DEFLECTOR ASSEMBLY

DISASSEMBLY STEPS

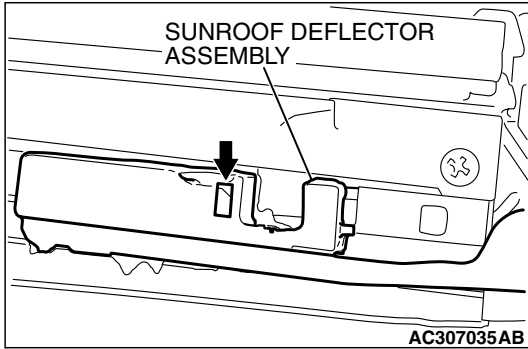
6. SUNROOF GUIDE RAIL ROD HOLDER
7. SUNROOF DRIP RAIL
8. ROOF LID SLIDER
9. SLIDING ROOF OPERATING UNIT
10. ROOF BLIND STOPPER
11. SUNROOF HOUSING

<<A>>

DISASSEMBLY SERVICE POINT

<<A>> SUNROOF DEFLECTOR ASSEMBLY
REMOVAL

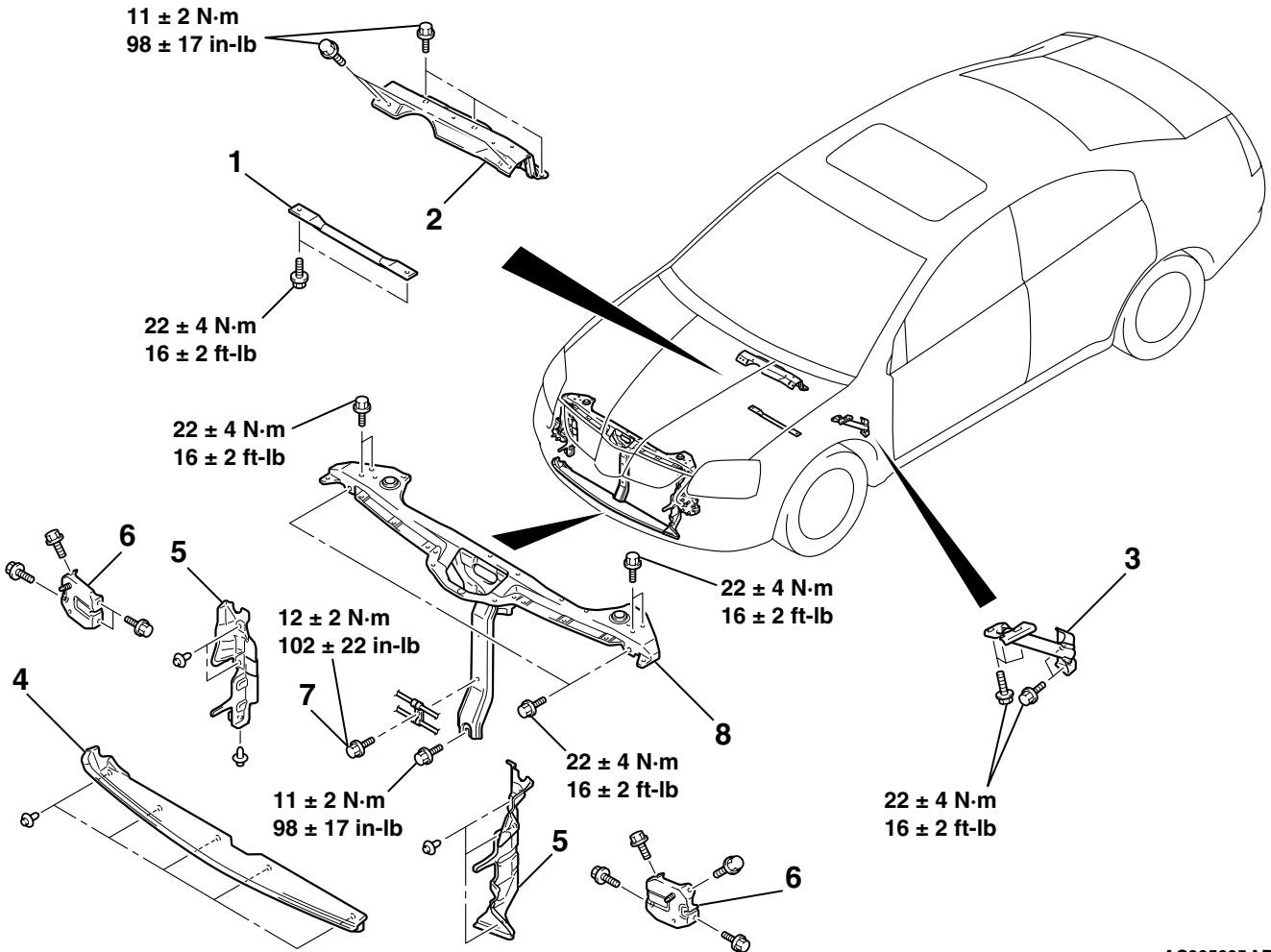
Slide the sunroof deflector assembly to the front of the vehicle by holding the arrow area shown in the illustration with a flat-tipped screwdriver, and remove it.



LOOSE PANEL

REMOVAL AND INSTALLATION

M1421003100056



AC305695AB

REMOVAL

1. FRONT FLOOR BACKBONE BRACE

**COWL TOP COVER OUTER
REMOVAL STEPS**

- FRONT DECK GARNISH (REFER TO GROUP 51, WINDSHIELD WIPER [P.51-15.](#))
 - 2. COWL TOP COVER OUTER
- UPPER FRAME TO FRONT PILLAR
BRACE REMOVAL STEPS**
- SPLASH SHIELD (REFER TO [P.42-10.](#))
 - 3. UPPER FRAME TO FRONT PILLAR BRACE
- AIR GUIDE PANEL REMOVAL
STEPS**
- FRONT BUMPER ASSEMBLY (REFER TO GROUP 51, FRONT BUMPER [P.51-2.](#))
 - 4. AIR GUIDE PANEL CENTER
 - FRONT BUMPER REINFORCEMENT ASSEMBLY (REFER TO GROUP 51, FRONT BUMPER [P.51-2.](#))
 - 5. AIR GUIDE PANEL SIDE

**FRONT BUMPER
REINFORCEMENT BRACKET
REMOVAL STEPS**

- FRONT BUMPER REINFORCEMENT ASSEMBLY (REFER TO GROUP 51, FRONT BUMPER [P.51-2.](#))
 - 5. AIR GUIDE PANEL SIDE
 - 6. FRONT BUMPER REINFORCEMENT BRACKET
- FRONT END STRUCTURE BAR
REMOVAL STEPS**
- RADIATOR GRILLE (REFER TO GROUP 51, RADIATOR GRILLE [P.51-5.](#))
 - FRONT BUMPER MOUNTING CLIPS UPPER (REFER TO GROUP 51, FRONT BUMPER [P.51-2.](#))
 - HOOD DAMPER AND HOOD LATCH (REFER TO [P.42-8.](#))
 - 7. COOLER TUBE ASSEMBLY MOUNTING BOLT <2.4L ENGINE>
 - 8. FRONT END STRUCTURE BAR

SPECIFICATIONS**FASTENER TIGHTENING SPECIFICATIONS**

M1421005300216

ITEM	SPECIFICATION
Hood	
Hood hinge bolt (body side)	12 ± 2 N·m (102 ± 22 in-lb)
Hood hinge bolt (hood side)	12 ± 2 N·m (102 ± 22 in-lb)
Hood hinge nut (body side)	12 ± 2 N·m (102 ± 22 in-lb)
Hood latch bolt	9.0 ± 2.0 N·m (80 ± 17 in-lb)
Strut tower bar	
Strut tower bar nut	12 ± 2 N·m (102 ± 22 in-lb)
Strut tower bar bracket nut	48 ± 7 N·m (36 ± 5 ft-lb)
Door	
Door check bolt (body side)	9.0 ± 2.0 N·m (80 ± 17 in-lb)
Door check bolt (door side)	5.0 ± 1.0 N·m (44 ± 9 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 outside handle bolt	5.0 ± 1.0 N·m (44 ± 9 in-lb)
Door latch assembly screw	5.9 ± 1.0 N·m (52 ± 9 in-lb)
Door switch screw	3.9 ± 1.0 N·m (35 ± 8 in-lb)
Striker screw	24 ± 3 N·m (18 ± 2 ft-lb)
Trunk lid	
Trunk lid hinge bolt (body side)	13 ± 2 N·m (111 ± 22 in-lb)
Trunk lid hinge bolt (trunk lid side)	13 ± 2 N·m (111 ± 22 in-lb)
Trunk lid hinge nut (trunk lid side)	13 ± 2 N·m (111 ± 22 in-lb)
Trunk lid latch bolt	9.0 ± 2.0 N·m (80 ± 17 in-lb)
Trunk lid striker bolt	5.0 ± 1.0 N·m (44 ± 9 in-lb)
Sunroof	
Roof lid glass screw	4.0 ± 0.5 N·m (36 ± 4 in-lb)
Sunroof drip plate screw	2.0 N·m (18 in-lb)
Sunroof housing screw	2.0 N·m (18 in-lb)
Sunroof motor bolt	5.4 N·m (48 in-lb)
Loose panel	
Cowl top cover outer bolt	11 ± 2 N·m (98 ± 17 in-lb)
Front end structure bar bolt	22 ± 4 N·m (16 ± 2 ft-lb)
	12 ± 2 N·m (102 ± 22 in-lb)
	11 ± 2 N·m (98 ± 17 in-lb)
Front floor backbone brace bolt	22 ± 4 N·m (16 ± 2 ft-lb)
Upper frame to front pillar brace bolt	22 ± 4 N·m (16 ± 2 ft-lb)

SERVICE SPECIFICATIONS

M1421000300299

<DOOR>

ITEM		STANDARD VALUE
Door inside handle knob play mm (in)	Front	26.1 - 58.1 (1.028 - 2.287) [Target value 41 (1.61)]
	Rear	30.3 - 58.1 (1.193 - 2.287) [Target value 41 (1.61)]
Door inside handle lock knob stroke mm (in)		21.6 (0.850)
Door outside handle play mm (in)	Front	10 ± 3.5 (0.39 ± 0.138)
	Rear	11.2 ± 4 (0.441 ± 0.16)
Power window operation current A		5 ± 1 [Power supply voltage 14.5 ± 0.5V 25°C (77°F)]

<SUNROOF>

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

SEALANT AND ADHESIVES

M1421000500204

<WINDOW GLASS>

ITEM	SPECIFIED ADHESIVE
Rear window glass	3 M™ AAD part No. 8609 super fast urethane and 3 M™ AAD part No. 8608 super fast urethane primer or equivalent
Windshield	

<DOOR>

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

ITEM	SPECIFIED ADHESIVE TAPE
Front door opening outer weatherstrip	Adhesive tape: Double-sided tape [7 mm (0.28 in) width, 85 mm (3.35 in) length and 0.8 mm (0.03 in) thickness]
Rear door opening outer weatherstrip	Adhesive tape: Double-sided tape [7 mm (0.28 in) width, 50 mm (1.97 in) length and 0.8 mm (0.031 in) thickness]

<TRUNK LID>

ITEM	SPECIFIED SEALANT	REMARK
Trunk lid hinge	3 M™ AAD part No. 8531 Heavy drip check sealer, 3 M™ AAD part No. 8646 Automotive joint and seam sealer or equivalent	Body sealer

COMPONENT IDENTIFICATIONS

M1421005400246

<DOOR CHECK>

APPLICABLE LOCATION		IDENTIFICATION MARK
LH	Front door	P4FL
	Rear door	P4RL
RH	Front door	P4FR
	Rear door	P4RR

<DOOR OPENING OUTER WEATHERSTRIP>

APPLICABLE SIDE		IDENTIFICATION CLIP COLOR
LH	Front door	Pink
	Rear door	Yellow
RH	Front door	Turquoise
	Rear door	Blue