

SECTION

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# PRECAUTIONS

< SERVICE INFORMATION >

## SERVICE INFORMATION

### PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000011560409

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

#### **WARNING:**

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

#### **WARNING:**

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.

#### Service Notice

INFOID:0000000011560410

- When removing or installing various parts, place a cloth or padding on the vehicle body to prevent scratches.
- Handle trim, molding, instruments, grille, etc. carefully during removing or installing. Be careful not to soil or damage them.
- Apply sealing compound where necessary when installing parts.
- When applying sealing compound, be careful that the sealing compound does not protrude from parts.
- When replacing any metal parts (for example body outer panel, members, etc.), be sure to take rust prevention measures.

#### Precaution for Work

INFOID:0000000011560411

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:
  - Water soluble dirt:
    - Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
    - Then rub with a soft, dry cloth.
  - Oily dirt:

## PRECAUTIONS

### < SERVICE INFORMATION >

- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.
- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

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# PREPARATION

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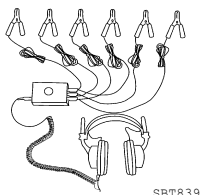
## PREPARATION

### Special Service Tool

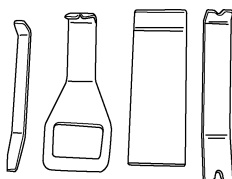
INFOID:0000000011560412

The actual shape of the tools may differ from those illustrated here.

| Tool number<br>(TechMate No.)<br>Tool name     | Description                  |
|------------------------------------------------|------------------------------|
| —<br>(J-39570)<br>Chassis Ear                  | Locating the noise           |
| —<br>(J-46534)<br>Trim Tool Set                | Removing trim components     |
| —<br>(J-50397)<br>NISSAN Squeak and Rattle kit | Repairing the cause of noise |



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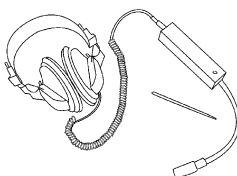


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### Commercial Service Tool

INFOID:0000000011560413

| (TechMate No.)<br>Tool name | Description        |
|-----------------------------|--------------------|
| (J-39565)<br>Engine ear     | Locating the noise |



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# CLIP LIST

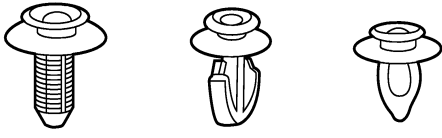
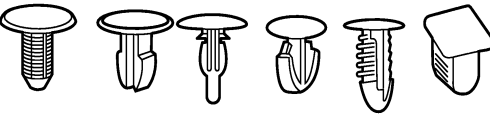
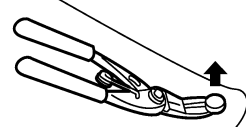
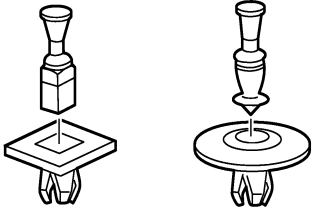
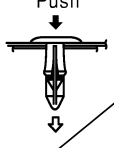
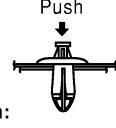
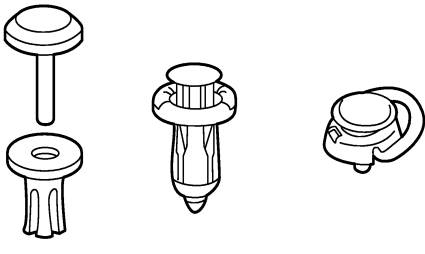
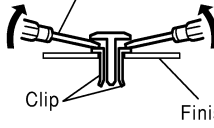
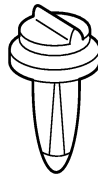
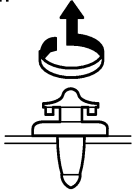
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## CLIP LIST

### Descriptions for Clips

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Replace any clips which are damaged during removal or installation.

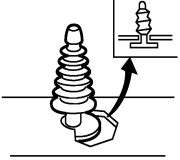
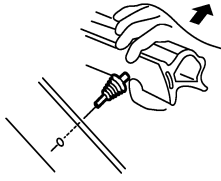
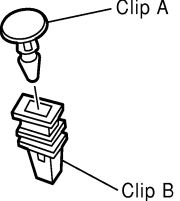
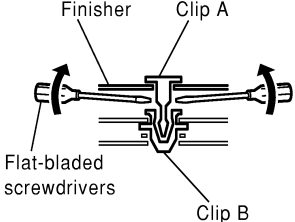
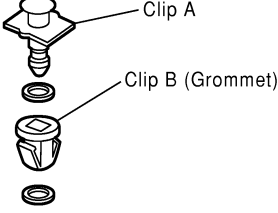
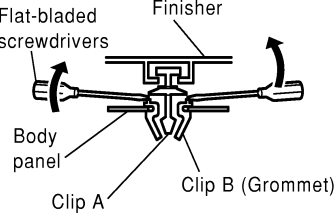
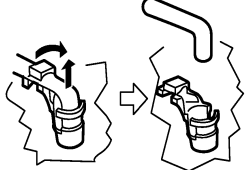
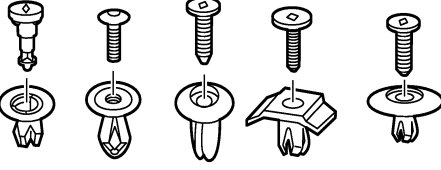
| Symbol No.                                                                                  | Shapes                                                                              | Removal & Installation                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C101<br>   |    | <b>Removal:</b><br>Remove by bending up with flat-bladed screwdrivers or clip remover.<br>                                                                                                                                                   |
| C103<br>   |    | <br><b>Removal:</b><br>Remove with a clip remover.                                                                                                                                                                                           |
| C203<br> |  | <b>Removal:</b><br>Push center pin to catching position.<br>(Do not remove center pin by hitting it.)<br>Push<br><br><b>Installation:</b><br>Push<br> |
| C205<br> |  | <b>Removal:</b><br>Flat-bladed screwdriver<br><br>Clip<br>Finisher                                                                                                                                                                         |
| C206<br> |  | <b>Removal:</b><br>                                                                                                                                                                                                                        |

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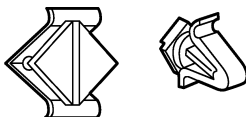
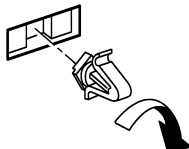
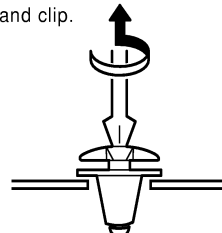
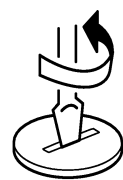
## < SERVICE INFORMATION >

| Symbol No.                                                                                   | Shapes                                                                              | Removal & Installation                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CE103<br>   |    | <b>Removal:</b><br>                                                                                                          |
| CF110<br>   |    | <b>Removal:</b><br>                                                                                                          |
| CF118<br>   |   | <b>Removal:</b><br>                                                                                                         |
| CR103<br> |  | <b>Removal:</b><br>Holder portion of clip must be spread out to remove rod.<br>                                            |
| CS101<br> |  | <b>Removal:</b><br>1. Screw out with a Phillips screwdriver.<br>2. Remove female portion with flat-bladed screwdriver.<br> |

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# CLIP LIST

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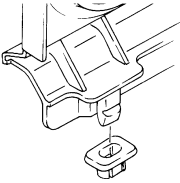
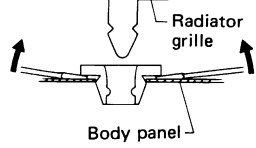
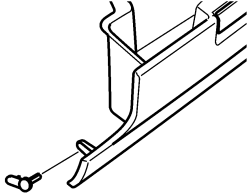
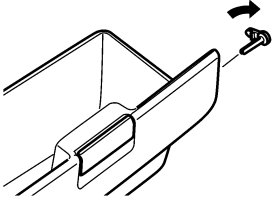
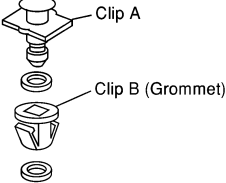
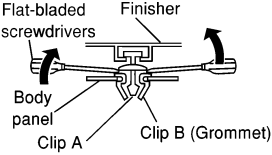
| Symbol No.                                                                                   | Shapes                                                                              | Removal & Installation                                                                                                                                                                                                                                                  |                                                                                                             |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| CG101<br>   |    | <b>Removal:</b><br><br>Rotate 45° to remove                                                                                                                                          | <b>Installation:</b><br> |
|                                                                                              |                                                                                     | <br><b>Removal:</b>                                                                                                                                                                  |                                                                                                             |
| CS102<br>   |    |                                                                                                                                                                                      |                                                                                                             |
| CS113<br> |  | <b>Removal:</b><br>Disconnect upper connection of clip with a flat-bladed screwdriver, then remove clip while inserting a flat-bladed screwdriver between body panel and clip.<br> |                                                                                                             |
| C111<br>  |  |                                                                                                                                                                                    |                                                                                                             |

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< SERVICE INFORMATION >

| Symbol No.                                                                                        | Shapes                                                                            | Removal & Installation                                                                                                                                        |
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| <b>CG104</b><br> |  | <b>Removal:</b><br>Remove by bending up with flat-bladed screwdrivers.<br> |
| <b>CE114</b><br> |  |                                                                            |
| <b>CF118</b><br> |  | <b>Removal:</b><br>Flat-bladed screwdrivers<br>                            |

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# SQUEAK AND RATTLE TROUBLE DIAGNOSES

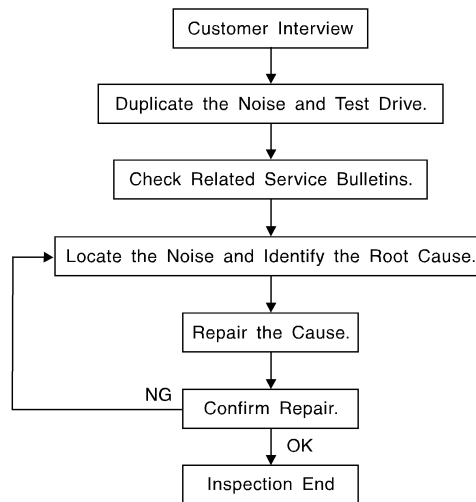
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## PERIODIC MAINTENANCE

### SQUEAK AND RATTLE TROUBLE DIAGNOSES

#### Work Flow

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#### CUSTOMER INTERVIEW

Interview the customer if possible, to determine the conditions that exist when the noise occurs. Use the Diagnostic Worksheet during the interview to document the facts and conditions when the noise occurs and any customer's comments; refer to [EXT-13, "Diagnostic Worksheet"](#). This information is necessary to duplicate the conditions that exist when the noise occurs.

- The customer may not be able to provide a detailed description or the location of the noise. Attempt to obtain all the facts and conditions that exist when the noise occurs (or does not occur).
- If there is more than one noise in the vehicle, be sure to diagnose and repair the noise that the customer is concerned about. This can be accomplished by test driving the vehicle with the customer.
- After identifying the type of noise, isolate the noise in terms of its characteristics. The noise characteristics are provided so the customer, service adviser and technician are all speaking the same language when defining the noise.
- Squeak —(Like tennis shoes on a clean floor)  
Squeak characteristics include the light contact/fast movement/brought on by road conditions/hard surfaces = higher pitch noise/softer surfaces = lower pitch noises/edge to surface = chirping.
- Creak—(Like walking on an old wooden floor)  
Creak characteristics include firm contact/slow movement/twisting with a rotational movement/pitch dependent on materials/often brought on by activity.
- Rattle—(Like shaking a baby rattle)  
Rattle characteristics include the fast repeated contact/vibration or similar movement/loose parts/missing clip or fastener/incorrect clearance.
- Knock —(Like a knock on a door)  
Knock characteristics include hollow sounding/sometimes repeating/often brought on by driver action.
- Tick—(Like a clock second hand)  
Tick characteristics include gentle contacting of light materials/loose components/can be caused by driver action or road conditions.
- Thump—(Heavy, muffled knock noise)  
Thump characteristics include softer knock/dead sound often brought on by activity.
- Buzz—(Like a bumble bee)  
Buzz characteristics include high frequency rattle/firm contact.
- Often the degree of acceptable noise level will vary depending upon the person. A noise that you may judge as acceptable may be very irritating to the customer.
- Weather conditions, especially humidity and temperature, may have a great effect on noise level.

#### DUPLICATE THE NOISE AND TEST DRIVE

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## < PERIODIC MAINTENANCE >

If possible, drive the vehicle with the customer until the noise is duplicated. Note any additional information on the Diagnostic Worksheet regarding the conditions or location of the noise. This information can be used to duplicate the same conditions when you confirm the repair.

If the noise can be duplicated easily during the test drive, to help identify the source of the noise, try to duplicate the noise with the vehicle stopped by doing one or all of the following:

- 1) Close a door.
  - 2) Tap or push/pull around the area where the noise appears to be coming from.
  - 3) Rev the engine.
  - 4) Use a floor jack to recreate vehicle "twist".
  - 5) At idle, apply engine load (electrical load, half-clutch on M/T model, drive position on CVT and A/T models).
  - 6) Raise the vehicle on a hoist and hit a tire with a rubber hammer.
- Drive the vehicle and attempt to duplicate the conditions the customer states exist when the noise occurs.
  - If it is difficult to duplicate the noise, drive the vehicle slowly on an undulating or rough road to stress the vehicle body.

## CHECK RELATED SERVICE BULLETINS

After verifying the customer concern or symptom, check ASIST for Technical Service Bulletins (TSBs) related to that concern or symptom.

If a TSB relates to the symptom, follow the procedure to repair the noise.

## LOCATE THE NOISE AND IDENTIFY THE ROOT CAUSE

1. Narrow down the noise to a general area. To help pinpoint the source of the noise, use a listening tool (Chassis Ear: J-39570, Engine Ear: J-39565 and mechanic's stethoscope).
2. Narrow down the noise to a more specific area and identify the cause of the noise by:
  - removing the components in the area that you suspect the noise is coming from.  
Do not use too much force when removing clips and fasteners, otherwise clips and fasteners can be broken or lost during the repair, resulting in the creation of new noise.
  - tapping or pushing/pulling the component that you suspect is causing the noise.  
Do not tap or push/pull the component with excessive force, otherwise the noise will be eliminated only temporarily.
  - feeling for a vibration with your hand by touching the component(s) that you suspect is (are) causing the noise.
  - placing a piece of paper between components that you suspect are causing the noise.
  - looking for loose components and contact marks.Refer to [EXT-10. "Generic Squeak and Rattle Troubleshooting"](#).

## REPAIR THE CAUSE

- If the cause is a loose component, tighten the component securely.
- If the cause is insufficient clearance between components:
  - separate components by repositioning or loosening and retightening the component, if possible.
  - insulate components with a suitable insulator such as urethane pads, foam blocks, felt cloth tape or urethane tape. A NISSAN Squeak and Rattle Kit (J-50397) is available through your authorized NISSAN Parts Department.

### CAUTION:

**Do not use excessive force as many components are constructed of plastic and may be damaged.**

### NOTE:

- Always check with the Parts Department for the latest parts information.
- The materials contained in the NISSAN Squeak and Rattle Kit (J-50397) are listed on the inside cover of the kit; and can each be ordered separately as needed.
- The following materials not found in the kit can also be used to repair squeaks and rattles.
  - SILICONE GREASE: Use instead of UHMW tape that will be visible or does not fit. The silicone grease will only last a few months.
  - SILICONE SPRAY: Use when grease cannot be applied.
  - DUCT TAPE: Use to eliminate movement.

## CONFIRM THE REPAIR

Confirm that the cause of a noise is repaired by test driving the vehicle. Operate the vehicle under the same conditions as when the noise originally occurred. Refer to the notes on the Diagnostic Worksheet.

## Generic Squeak and Rattle Troubleshooting

INFOID:0000000011560416

Refer to Table of Contents for specific component removal and installation information.

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## < PERIODIC MAINTENANCE >

### INSTRUMENT PANEL

Most incidents are caused by contact and movement between:

1. Cluster lid A and the instrument panel
2. Acrylic lens and combination meter housing
3. Instrument panel to front pillar finisher
4. Instrument panel to windshield
5. Instrument panel pins
6. Wiring harnesses behind the combination meter
7. A/C defroster duct and duct joint

These incidents can usually be located by tapping or moving the components to duplicate the noise or by pressing on the components while driving to stop the noise. Most of these incidents can be repaired by applying felt cloth tape or silicone spray (in hard to reach areas). Urethane pads can be used to insulate wiring harness.

#### **CAUTION:**

**Do not use silicone spray to isolate a squeak or rattle. If you saturate the area with silicone, you will not be able to recheck the repair.**

### CENTER CONSOLE

Components to pay attention to include:

1. Shift selector assembly cover to finisher
2. A/C control unit and cluster lid C
3. Wiring harnesses behind audio and A/C control unit

The instrument panel repair and isolation procedures also apply to the center console.

### DOORS

Pay attention to the:

1. Finisher and inner panel making a slapping noise
2. Inside handle escutcheon to door finisher
3. Wiring harnesses tapping
4. Door striker out of alignment causing a popping noise on starts and stops

Tapping or moving the components or pressing on them while driving to duplicate the conditions can isolate many of these incidents. You can usually insulate the areas with felt cloth tape or insulator foam blocks from the NISSAN Squeak and Rattle Kit (J-50397) to repair the noise.

### TRUNK

Trunk noises are often caused by a loose jack or loose items put into the trunk by the owner.

In addition look for:

1. Trunk lid bumpers out of adjustment
2. Trunk lid striker out of adjustment
3. The trunk lid torsion bars knocking together
4. A loose license plate or bracket

Most of these incidents can be repaired by adjusting, securing or insulating the item(s) or component(s) causing the noise.

### SUNROOF/HEADLINING

Noises in the sunroof/headlining area can often be traced to one of the following:

1. Sunroof lid, rail, linkage or seals making a rattle or light knocking noise
2. Sun visor shaft shaking in the holder
3. Front or rear windshield touching headlining and squeaking

Again, pressing on the components to stop the noise while duplicating the conditions can isolate most of these incidents. Repairs usually consist of insulating with felt cloth tape.

### OVERHEAD CONSOLE (FRONT AND REAR)

Overhead console noises are often caused by the console panel clips not being engaged correctly. Most of these incidents are repaired by pushing up on the console at the clip locations until the clips engage.

In addition look for:

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# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## < PERIODIC MAINTENANCE >

---

1. Loose harness or harness connectors.
2. Front console map/reading lamp lens loose.
3. Loose screws at console attachment points.

## SEATS

When isolating seat noise it's important to note the position the seat is in and the load placed on the seat when the noise is present. These conditions should be duplicated when verifying and isolating the cause of the noise.

Cause of seat noise include:

1. Headrest rods and holder
2. A squeak between the seat pad cushion and frame
3. The rear seatback lock and bracket

These noises can be isolated by moving or pressing on the suspected components while duplicating the conditions under which the noise occurs. Most of these incidents can be repaired by repositioning the component or applying urethane tape to the contact area.

## UNDERHOOD

Some interior noise may be caused by components under the hood or on the engine wall. The noise is then transmitted into the passenger compartment.

Causes of transmitted underhood noise include:

1. Any component installed to the engine wall
2. Components that pass through the engine wall
3. Engine wall mounts and connectors
4. Loose radiator installation pins
5. Hood bumpers out of adjustment
6. Hood striker out of adjustment

These noises can be difficult to isolate since they cannot be reached from the interior of the vehicle. The best method is to secure, move or insulate one component at a time and test drive the vehicle. Also, engine rpm or load can be changed to isolate the noise. Repairs can usually be made by moving, adjusting, securing, or insulating the component causing the noise.

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

< PERIODIC MAINTENANCE >

## Diagnostic Worksheet

INFOID:0000000011560417

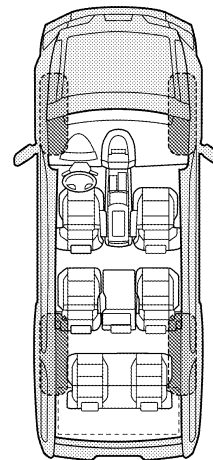
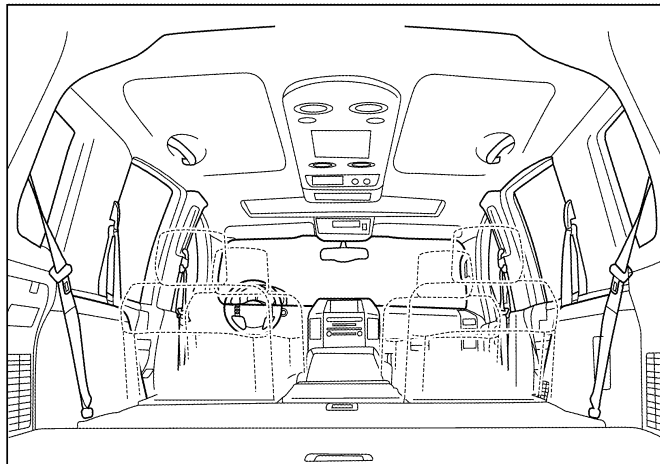
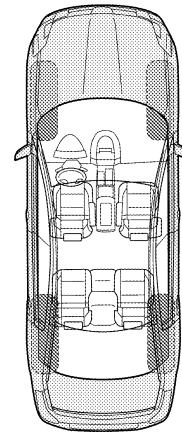
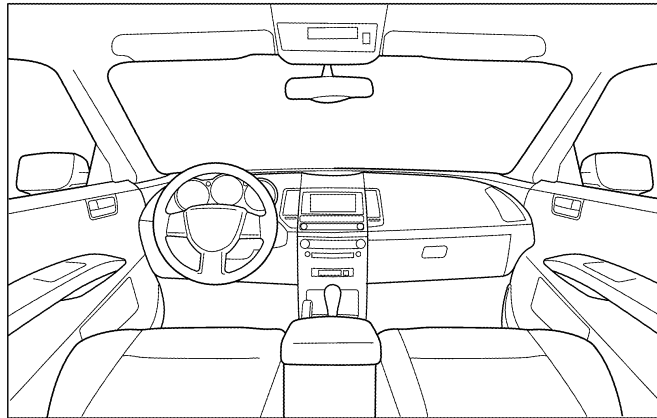
Dear Customer:

We are concerned about your satisfaction with your vehicle. Repairing a squeak or rattle sometimes can be very difficult. To help us fix your vehicle right the first time, please take a moment to note the area of the vehicle where the squeak or rattle occurs and under what conditions. You may be asked to take a test drive with a service advisor or technician to ensure we confirm the noise you are hearing.

### SQUEAK & RATTLE DIAGNOSTIC WORKSHEET

#### I. WHERE DOES THE NOISE COME FROM? (circle the area of the vehicle)

The illustrations are for reference only, and may not reflect the actual configuration of your vehicle.



Continue to page 2 of the worksheet and briefly describe the location of the noise or rattle. In addition, please indicate the conditions which are present when the noise occurs.

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

< PERIODIC MAINTENANCE >

## SQUEAK & RATTLE DIAGNOSTIC WORKSHEET - page 2

Briefly describe the location where the noise occurs:

---

---

### II. WHEN DOES IT OCCUR? (please check the boxes that apply)

- |                                                       |                                                        |
|-------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Anytime                      | <input type="checkbox"/> After sitting out in the rain |
| <input type="checkbox"/> 1st time in the morning      | <input type="checkbox"/> When it is raining or wet     |
| <input type="checkbox"/> Only when it is cold outside | <input type="checkbox"/> Dry or dusty conditions       |
| <input type="checkbox"/> Only when it is hot outside  | <input type="checkbox"/> Other:                        |

### III. WHEN DRIVING:

- ☐ Through driveways
- ☐ Over rough roads
- ☐ Over speed bumps
- ☐ Only about \_\_\_\_ mph
- ☐ On acceleration
- ☐ Coming to a stop
- ☐ On turns: left, right or either (circle)
- ☐ With passengers or cargo
- ☐ Other: \_\_\_\_\_
- ☐ After driving \_\_\_\_ miles or \_\_\_\_ minutes

### IV. WHAT TYPE OF NOISE

- ☐ Squeak (like tennis shoes on a clean floor)
- ☐ Creak (like walking on an old wooden floor)
- ☐ Rattle (like shaking a baby rattle)
- ☐ Knock (like a knock at the door)
- ☐ Tick (like a clock second hand)
- ☐ Thump (heavy muffled knock noise)
- ☐ Buzz (like a bumble bee)

### TO BE COMPLETED BY DEALERSHIP PERSONNEL

#### Test Drive Notes:

---

---

---

|                                                    | YES                      | NO                       | Initials of person performing |
|----------------------------------------------------|--------------------------|--------------------------|-------------------------------|
| Vehicle test driven with customer                  | <input type="checkbox"/> | <input type="checkbox"/> | _____                         |
| - Noise verified on test drive                     | <input type="checkbox"/> | <input type="checkbox"/> | _____                         |
| - Noise source located and repaired                | <input type="checkbox"/> | <input type="checkbox"/> | _____                         |
| - Follow up test drive performed to confirm repair | <input type="checkbox"/> | <input type="checkbox"/> | _____                         |

VIN: \_\_\_\_\_ Customer Name \_\_\_\_\_  
W.O.# \_\_\_\_\_ Date: \_\_\_\_\_

This form must be attached to Work Order

LATA0071E

# FRONT BUMPER

< REMOVAL AND INSTALLATION >

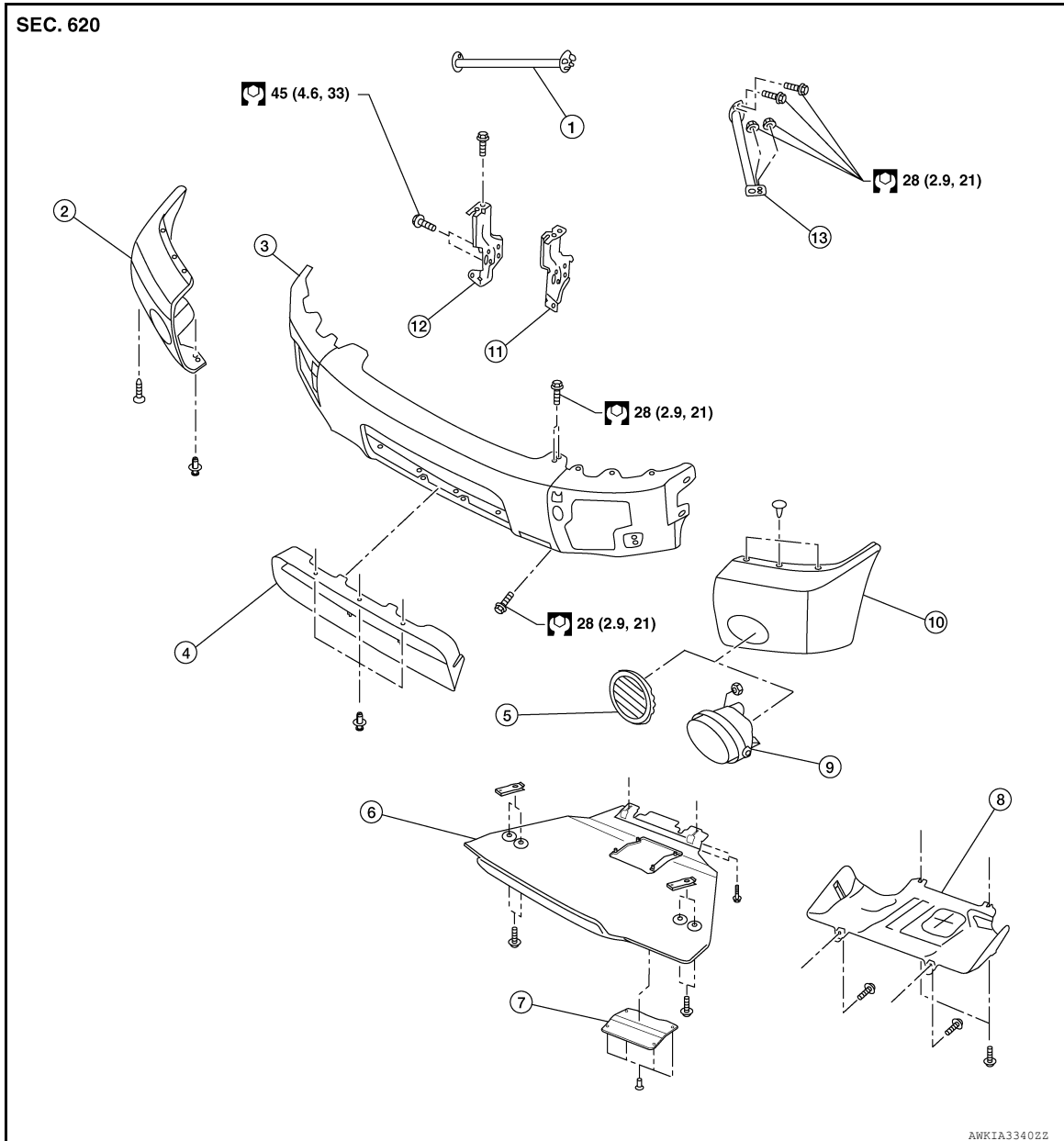
## REMOVAL AND INSTALLATION

### FRONT BUMPER

#### Removal and Installation

INFOID:0000000011560418

#### STEEL BUMPER



- |                                  |                                                  |                                       |
|----------------------------------|--------------------------------------------------|---------------------------------------|
| 1. Front bumper bracket (RH)     | 2. Front fascia finisher (RH)                    | 3. Front bumper assembly              |
| 4. Front bumper opening finisher | 5. Fog lamp opening finisher (if equipped)       | 6. Skid plate (with off-road package) |
| 7. Access cover                  | 8. Engine under cover (without off-road package) | 9. Fog lamp assembly (if equipped)    |
| 10. Front fascia finisher (LH)   | 11. Front bumper bracket stay (LH)               | 12. Front bumper bracket stay (RH)    |
| 13. Front bumper bracket (LH)    |                                                  |                                       |

#### Removal

1. Remove the front grille. Refer to [EXT-20](#).

# FRONT BUMPER

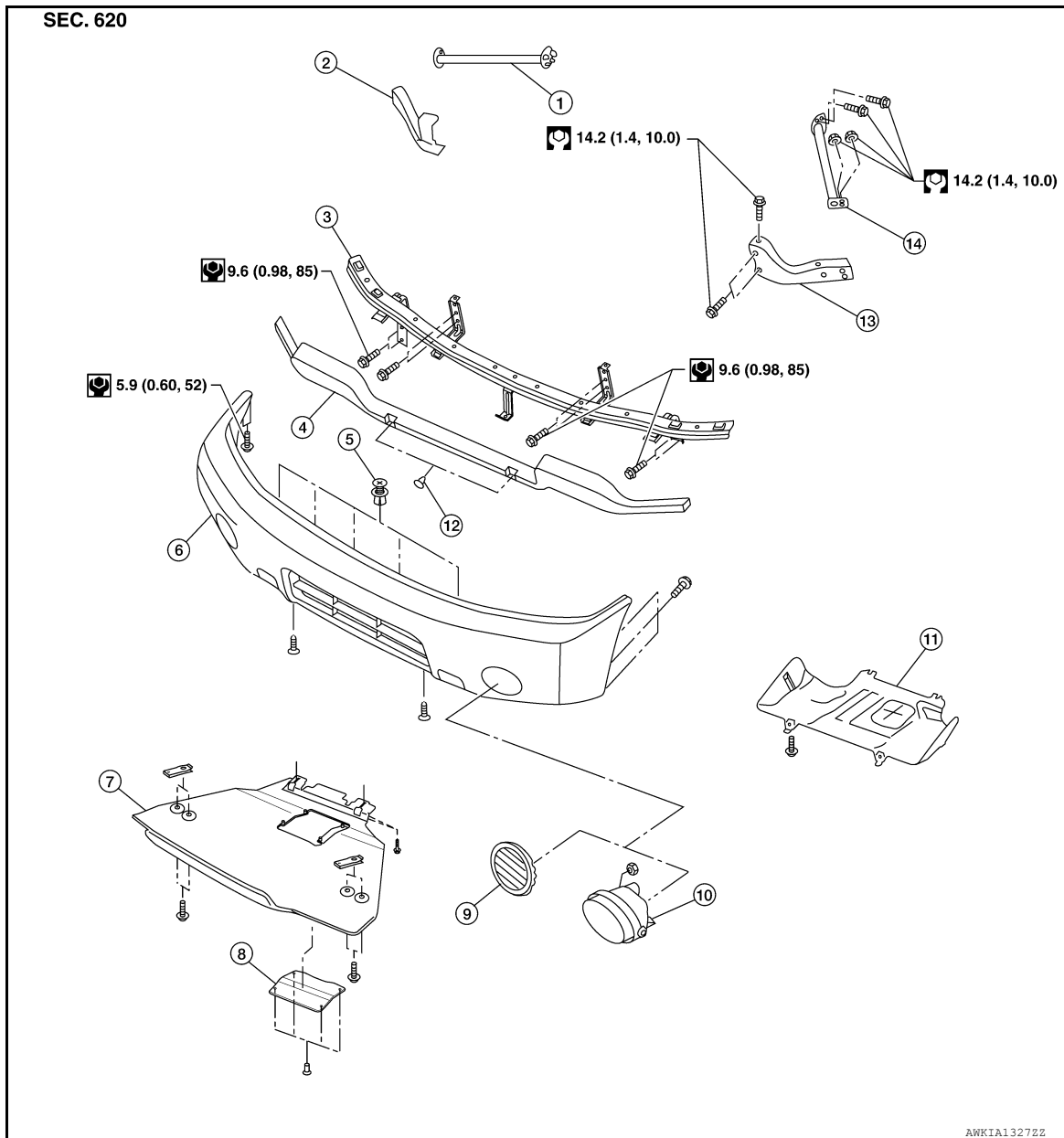
## < REMOVAL AND INSTALLATION >

2. Remove the engine under cover or skid plate.
3. Remove the fog lamp (if equipped). Refer to [EXL-142, "Removal and Installation"](#).
4. Remove the front bumper side bracket nuts.
5. Remove the front bumper assembly.
6. Remove the front bumper opening finisher clips and remove the front bumper opening finisher.
7. Remove the front bumper (LH/RH) side finishers.
8. Remove the front bumper brackets (LH/RH).
9. Remove the front bumper stays (LH/RH).

### Installation

Installation is in the reverse order of removal.

## PLASTIC BUMPER



- |                                       |                           |                                            |
|---------------------------------------|---------------------------|--------------------------------------------|
| 1. Front bumper bracket (RH)          | 2. Front bumper stay (RH) | 3. Retainer bracket                        |
| 4. Energy absorber                    | 5. Fastener               | 6. Plastic fascia                          |
| 7. Skid plate (with off-road package) | 8. Access cover           | 9. Fog lamp opening finisher (if equipped) |

## FRONT BUMPER

### < REMOVAL AND INSTALLATION >

- |                                     |                                                   |                  |
|-------------------------------------|---------------------------------------------------|------------------|
| 10. Fog lamp assembly (if equipped) | 11. Engine under cover (without off-road package) | 12. Plastic clip |
| 13. Front bumper stay (LH)          | 14. Front bumper bracket (LH)                     |                  |

#### Removal

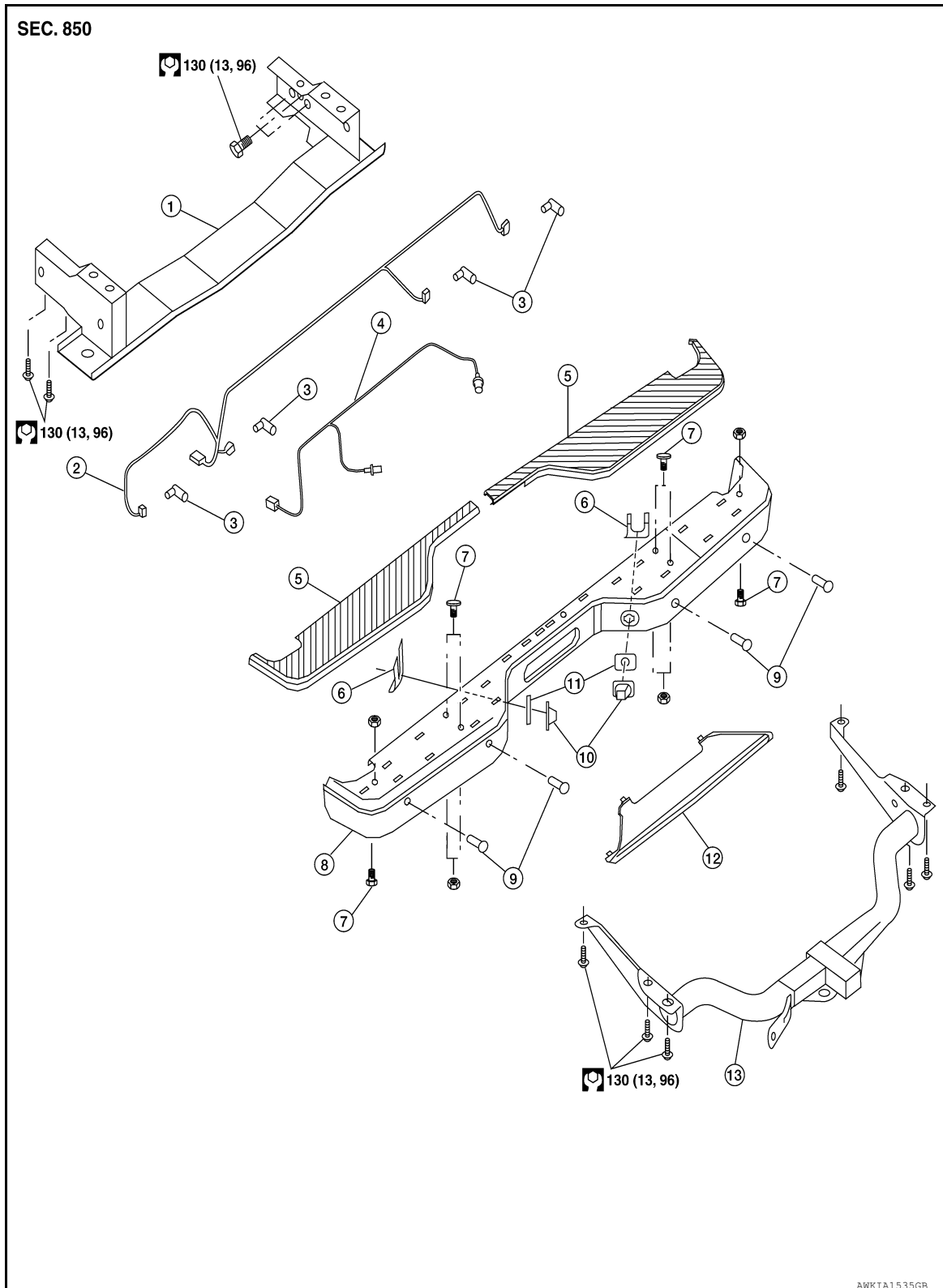
1. Remove the front grille. Refer to [EXT-20](#).
2. Remove the skid plate or front engine under cover.
3. Remove the fog lamp (if equipped). Refer to [EXL-142. "Removal and Installation"](#).
4. Partially remove the (LH/RH) front fender protectors. Refer to [EXT-24. "Removal and Installation"](#).
5. Remove the screws and fasteners and remove the plastic fascia assembly.
6. Remove the fog lamp opening finisher (if equipped), from the plastic fascia assembly.
7. Remove the clips and energy absorber from the retainer bracket.
8. Remove the retainer bracket.
9. Remove the front bumper brackets (LH/RH).
10. Remove the front bumper stays (LH/RH).

#### Installation

Installation is in the reverse order of removal.

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INFOID:0000000011560419



- |                              |                                       |                                        |
|------------------------------|---------------------------------------|----------------------------------------|
| 1. Rear bumper reinforcement | 2. Sonar sensor harness (if equipped) | 3. Sonar sensor (if equipped)          |
| 4. License lamp harness      | 5. Upper step pad                     | 6. License lamp clip                   |
| 7. Carriage bolt             | 8. Rear bumper                        | 9. Sonar sensor retainer (if equipped) |

## REAR BUMPER

### < REMOVAL AND INSTALLATION >

- |                             |                         |                    |
|-----------------------------|-------------------------|--------------------|
| 10. License lamp            | 11. License lamp washer | 12. Lower step pad |
| 13. Tow hitch (if equipped) |                         |                    |

A

#### REMOVAL

1. Disconnect the sonar sensor harness connector (if equipped).
  - Disconnect the sonar sensors from retainers.
2. Disconnect the license lamp harness.
3. Remove the clips from the license lamps and remove lamps.
4. Release the clips and remove the upper step pads.
5. Remove the rear bumper reinforcement bolts and remove the rear bumper.
6. Disconnect the harness clips from the black steel bumper.
7. Remove the sonar sensor retainers from the rear bumper (if equipped).
8. Remove the sonar sensors and harness from the rear bumper (if equipped).
  - Disconnect the sonar sensors from harness.
9. Remove the license lamp harness from the rear bumper.

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#### INSTALLATION

Installation is in the reverse order of removal.

- Apply sealant to clips securing upper step pad during installation.

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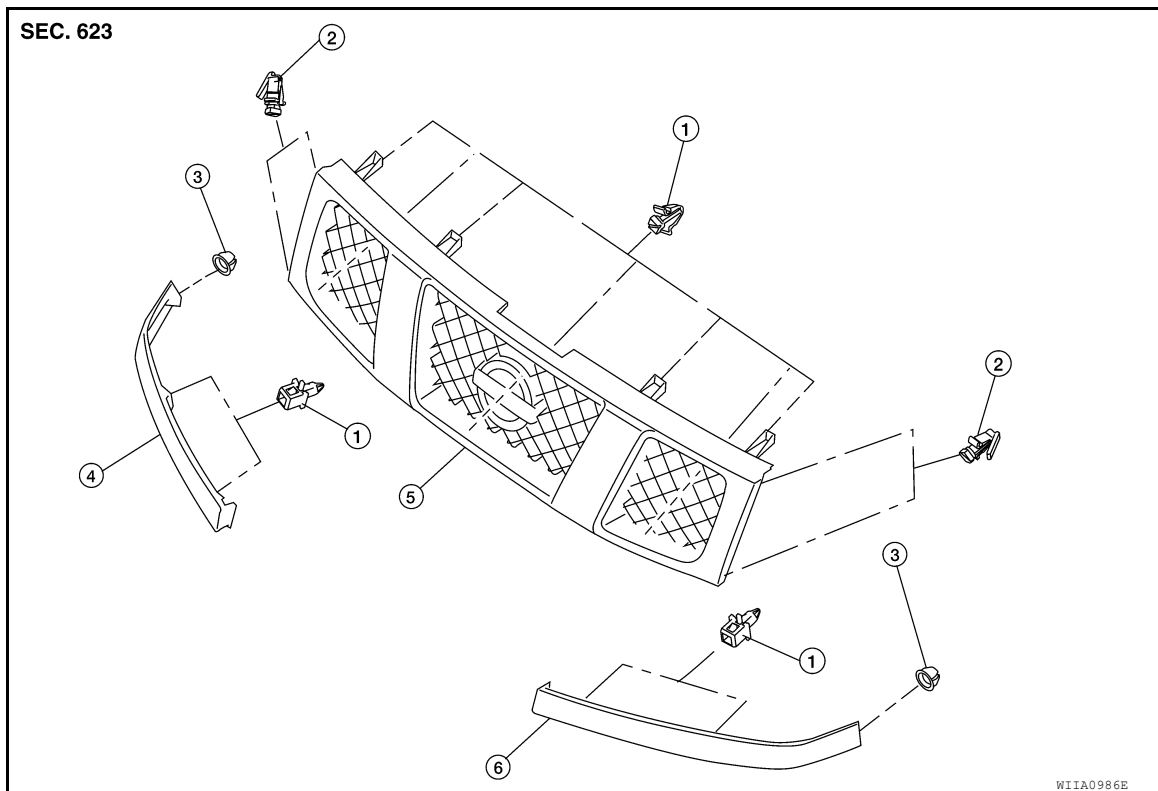
# FRONT GRILLE

< REMOVAL AND INSTALLATION >

## FRONT GRILLE

### Removal and Installation

INFOID:000000011560420



- |                                   |                 |                                   |
|-----------------------------------|-----------------|-----------------------------------|
| 1. Plastic clip                   | 2. Plastic clip | 3. Grommet                        |
| 4. Front bumper filler panel (RH) | 5. Front grille | 6. Front bumper filler panel (LH) |

### REMOVAL

1. Release the plastic clips and remove the front grille.
2. Remove the (LH/RH) front bumper filler panels.
3. Remove the front emblem (if necessary).

### INSTALLATION

Installation is in the reverse order of removal.

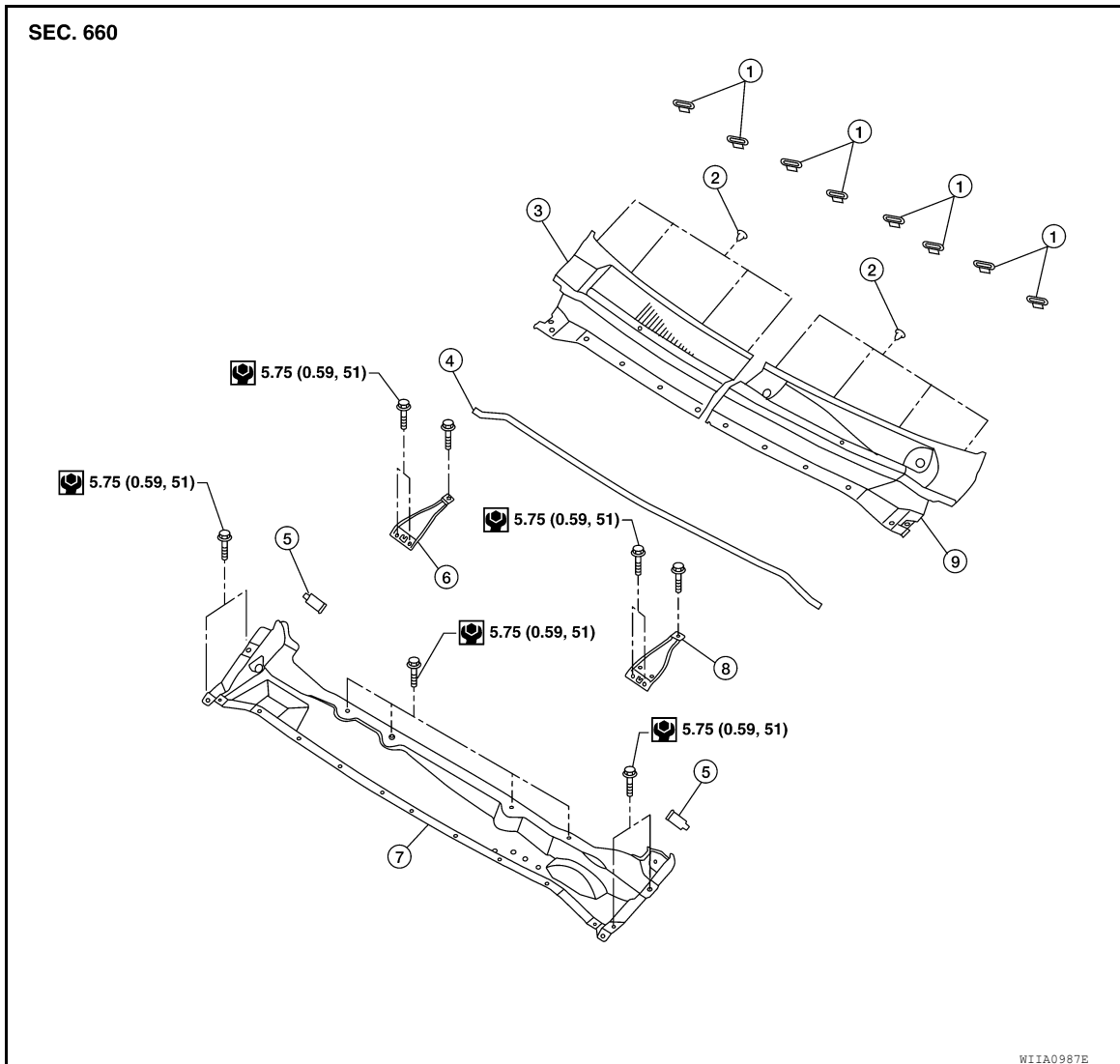
# COWL TOP

< REMOVAL AND INSTALLATION >

## COWL TOP

### Removal and Installation

INFOID:0000000011560421



- |                       |                                    |                                    |
|-----------------------|------------------------------------|------------------------------------|
| 1. Grommet            | 2. Plastic clip                    | 3. Cowl top (RH)                   |
| 4. Cowl top seal      | 5. Drain tube                      | 6. Cowl top extension bracket (RH) |
| 7. Cowl top extension | 8. Cowl top extension bracket (LH) | 9. Cowl top (LH)                   |

### REMOVAL

1. Remove the right and left wiper arms. Refer to [WW-53, "Front Wiper Arms"](#).
2. Remove the cowl top seal.
  - Release the plastics clips on the cowl top seal which go through the cowl tops (LH/RH) and cowl top extension.
3. Remove the cowl top covers (LH/RH).
  - Release the plastic clips under cowl top covers attaching to grommets on hoodledge.
  - Disconnect the washer tubes from washer nozzles.
4. Remove the cowl top extension brackets (LH/RH).
  - Disconnect the wiper motor harness from cowl top extension bracket (LH).
  - Cowl top extension bracket (LH) must be removed prior to removal of the wiper motor and connecting rod assembly.
5. Remove the wiper motor and connecting rod linkage. Refer to [WW-54, "Wiper Motor and Linkage"](#).

## COWL TOP

### < REMOVAL AND INSTALLATION >

---

6. Disconnect the windshield washer tube. Refer to [WW-56, "Washer Tube Layout"](#).
7. Remove the A/C low-pressure pipe bracket from cowl top extension. Refer to [HA-38, "Removal and Installation"](#).
8. Remove the drain tube from each side of cowl top extension.
9. Remove the cowl top extension.

### INSTALLATION

Installation is in the reverse order of removal.

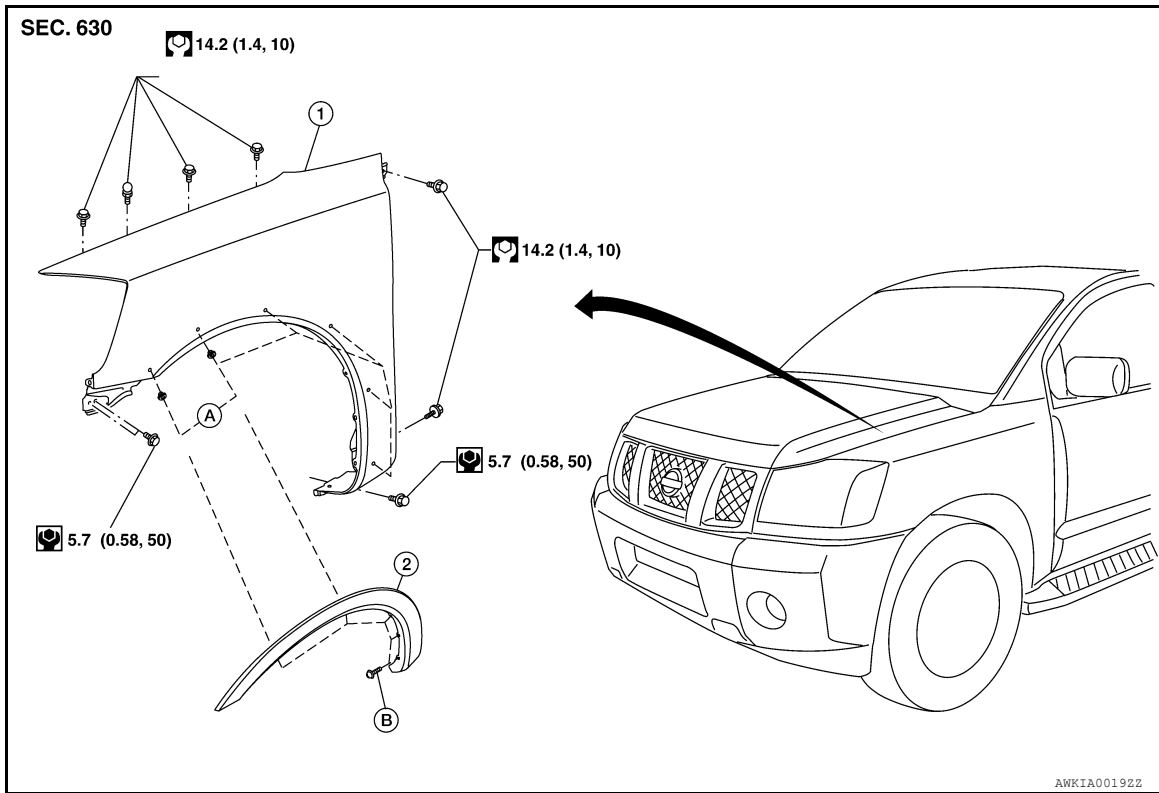
# FRONT FENDER

< REMOVAL AND INSTALLATION >

## FRONT FENDER

### Removal and Installation

INFOID:0000000011560422



1. Front fender  
2. Front fender wheel opening finisher (if equipped)  
A. Clip  
B. Screws

### REMOVAL

1. Remove the front mudguards (if equipped). Refer to [EXT-27](#).
2. Remove the headlamps. Refer to [EXL-139, "Removal and Installation"](#).
3. Remove the fender protector. Refer to [EXT-24](#).
4. Remove the hood stay. Refer to [DLK-122, "Removal and Installation of Hood Lock Control"](#).
5. Remove the front fender.
6. Remove the front fender wheel opening finisher screws, then remove the front fender wheel opening finisher, using a suitable tool (if equipped).

### INSTALLATION

Installation is in the reverse order of removal.

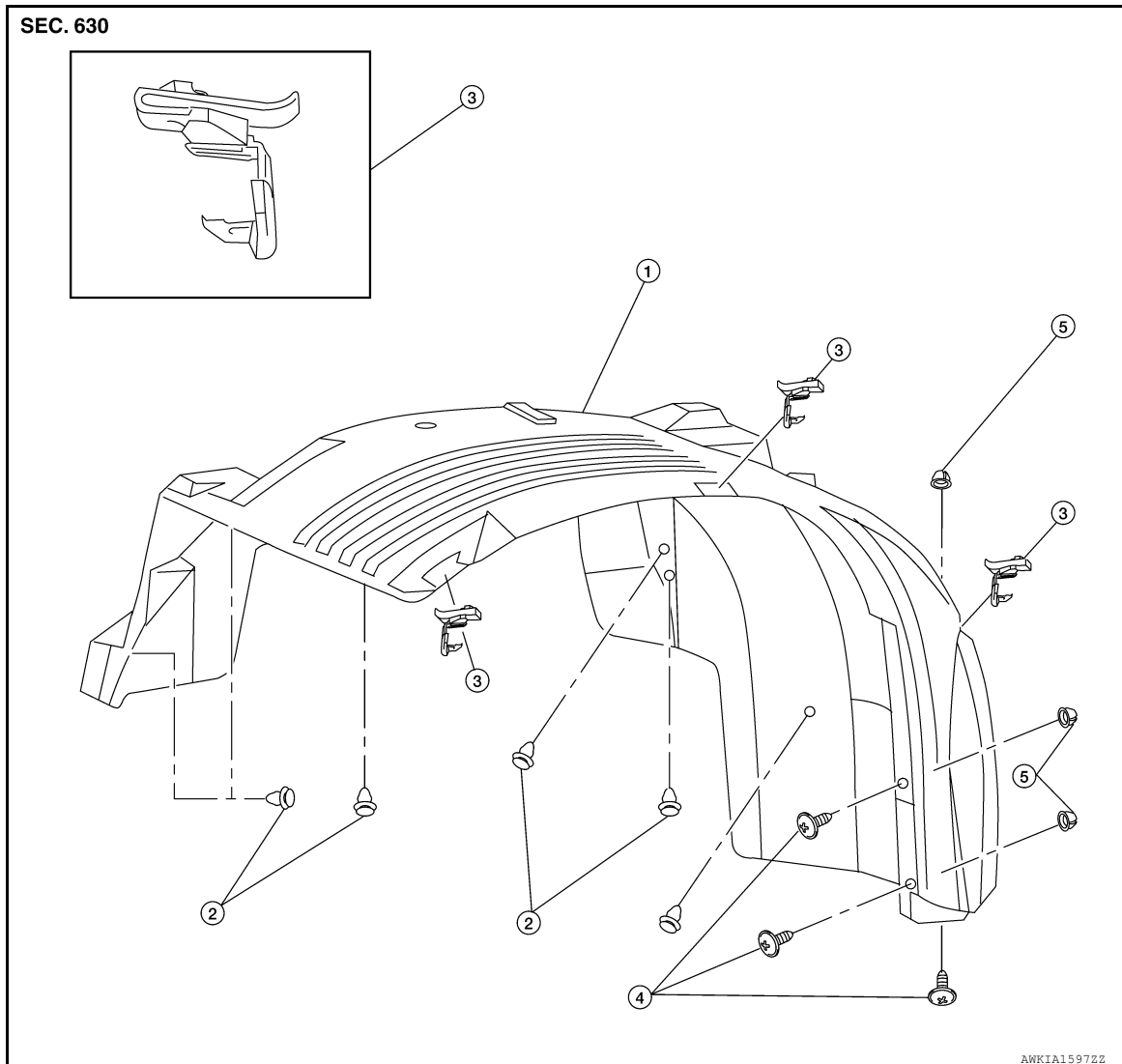
# FENDER PROTECTOR

< REMOVAL AND INSTALLATION >

## FENDER PROTECTOR

### Removal and Installation

INFOID:000000011560423



- |                        |             |                  |
|------------------------|-------------|------------------|
| 1. Fender protector LH | 2. Pushpins | 3. Plastic clips |
| 4. Screws              | 5. Grommets |                  |

### REMOVAL

1. Remove the front mudguard, if equipped. Refer to [EXT-27](#).
2. Remove the screws.
3. Remove the plastic clips.
4. Remove the pushpins.
5. Remove the fender protector.

### INSTALLATION

Installation is in the reverse order of removal.

# RUNNING BOARDS

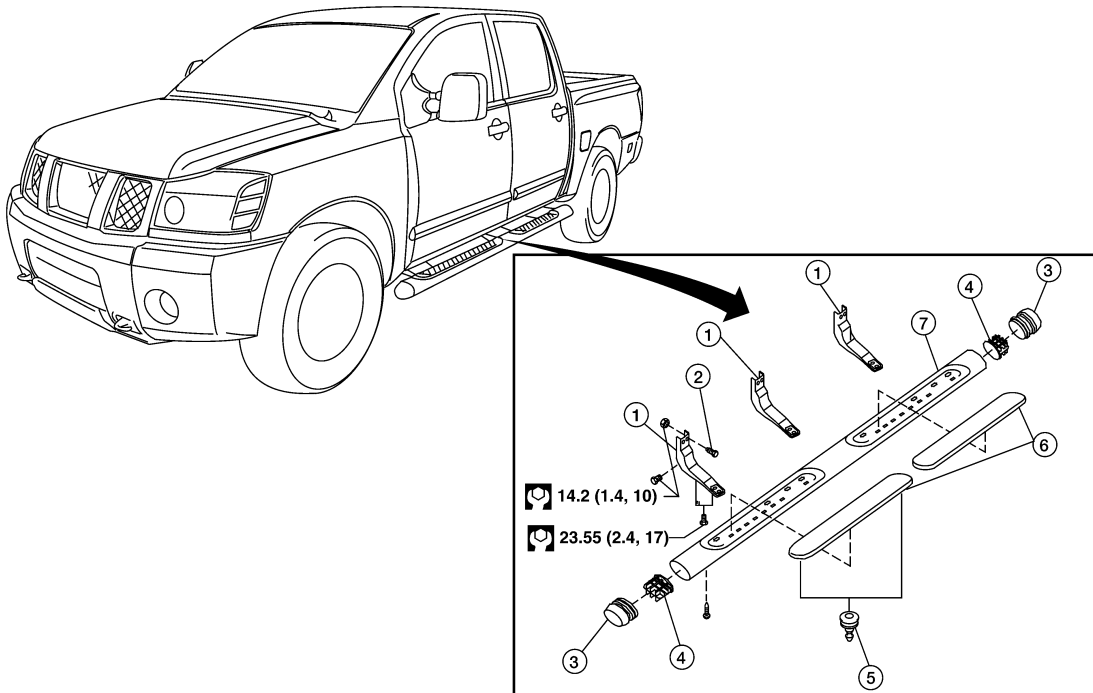
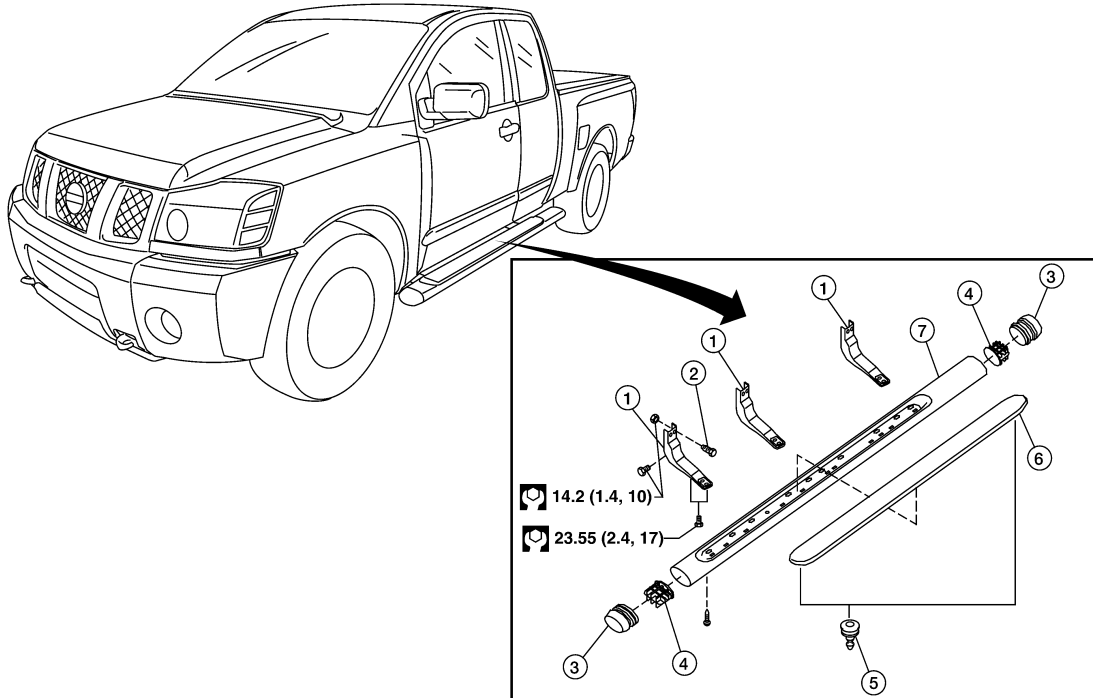
< REMOVAL AND INSTALLATION >

## RUNNING BOARDS

### Removal and Installation

INFOID:0000000011560424

SEC. 767



- 1. Running board bracket
- 4. End cap reinforcement
- 7. Running board

- 2. Weld stud
- 5. Plastic clip

- 3. End cap
- 6. Step pad

WIIA0994E

## **RUNNING BOARDS**

### **< REMOVAL AND INSTALLATION >**

---

#### **REMOVAL**

1. Remove the bolts and remove the running board from running board brackets.
2. Remove the screw and remove the end cap.
  - Remove the reinforcement from end cap.
3. Release the clips and remove the step pad from the running board.
4. Remove the nuts and bolts and remove the running board brackets.

#### **INSTALLATION**

Installation is in the reverse order of removal.

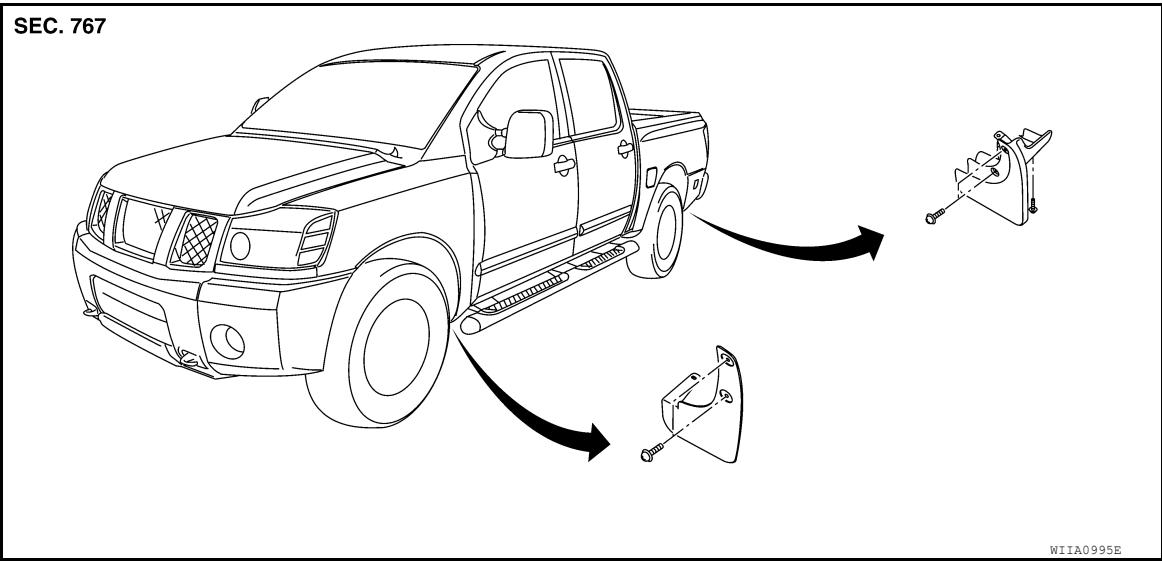
MUDGUARD

< REMOVAL AND INSTALLATION >

MUDGUARD

Removal and Installation

INFOID:0000000011560425



**NOTE:**  
Crew Cab shown King Cab similar.

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EXT

# DOOR OUTSIDE MOLDING

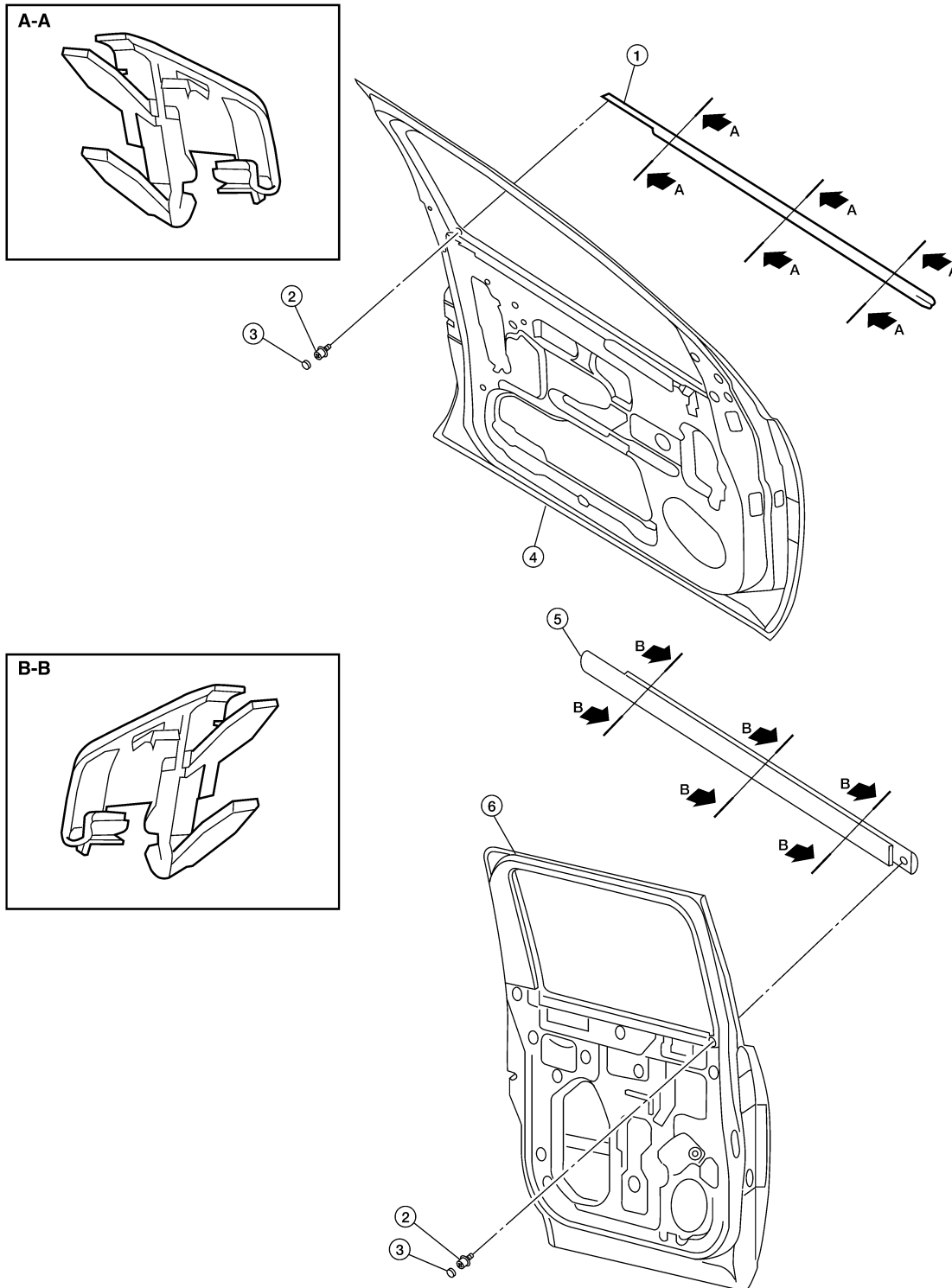
< REMOVAL AND INSTALLATION >

## DOOR OUTSIDE MOLDING

### Removal and Installation

INFOID:000000011560426

SEC. 800 • 820



W1IA0996E

- 1. Front door outside molding LH
- 4. Front door LH

- 2. Screw
- 5. Rear door outside molding LH

- 3. Hole cover
- 6. Rear door-Crew cab

## DOOR OUTSIDE MOLDING

### < REMOVAL AND INSTALLATION >

---

#### FRONT DOOR OUTSIDE MOLDING

##### Removal

1. Open the window fully.
2. Remove the door mirror. Refer to [MIR-18, "Door Mirror Assembly"](#).
3. Remove the molding
  1. Remove the hole cover and screw.
  2. Lift the molding from the rear side.
  3. Disconnect the clips from flange.

##### Installation

Installation is in the reverse order of removal.

#### REAR DOOR OUTSIDE MOLDING

##### Removal

1. Open the window fully.
2. Remove the molding.
  1. Remove the hole cover and screw.
  2. Lift the molding from the rear side.
  3. Disconnect the clips from flange.

##### Installation

Installation is in the reverse order of removal.

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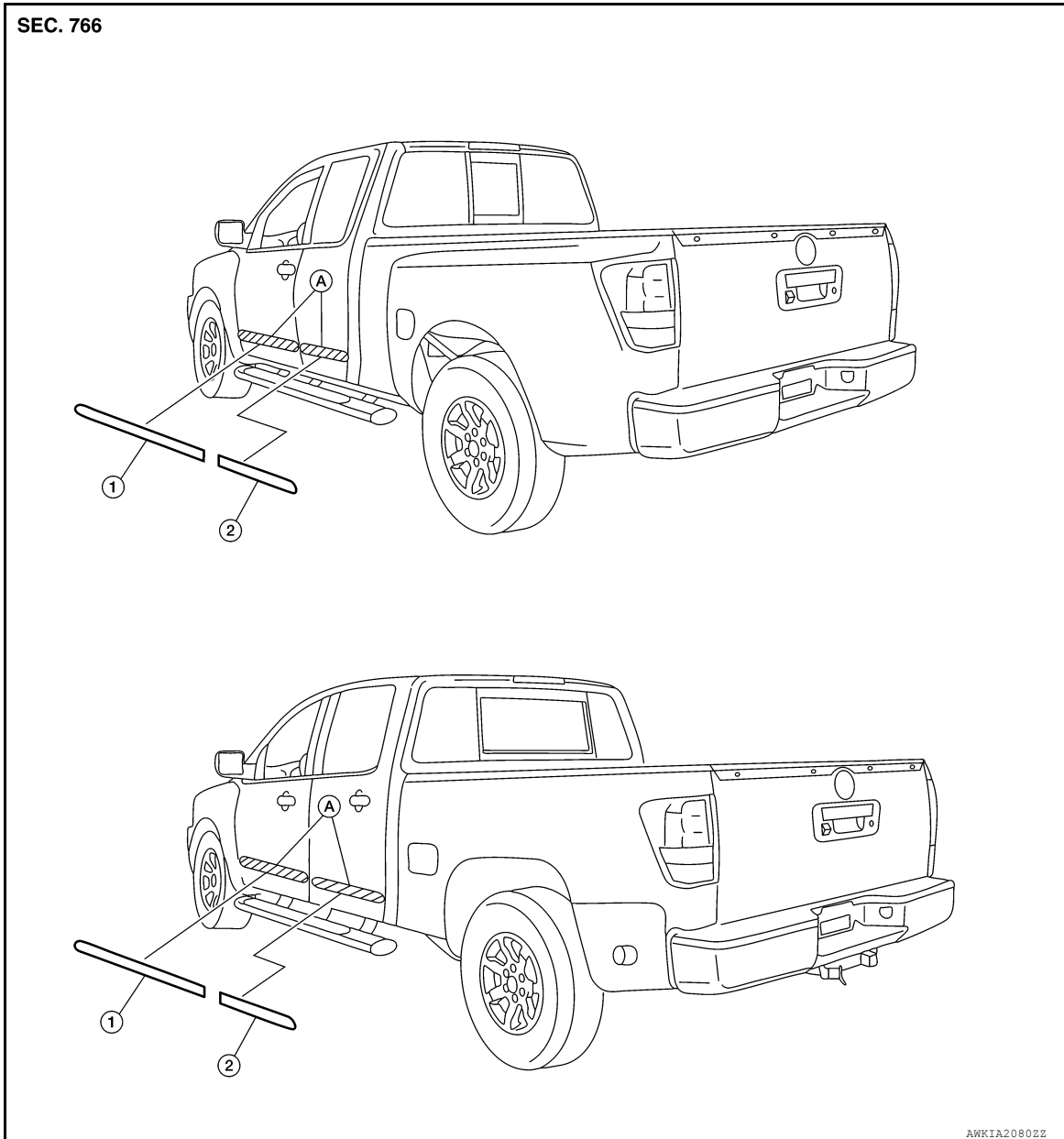
# SIDE GUARD MOLDING

< REMOVAL AND INSTALLATION >

## SIDE GUARD MOLDING

### Removal and Installation

INFOID:000000011560427



1. Front door side guard molding 2. Rear door side guard molding A. Double-faced adhesive tape application locations

#### Removal

##### **CAUTION:**

**Do not apply tack-paper adhesive remover to body panel surfaces finished with lacquer-based paints.**

- Original side guard molding is affixed to the body panel with double-faced adhesive tape.
1. Heat the molding to between 30° and 40°C (86° to 104°F) with a heat gun.
  2. Raise the end of the molding and cut away the tape to remove the molding. Remove all traces of tape.

#### Installation

- On the vehicles coated with Hard Clear Coat, use double-faced 3M adhesive tape Product No. 4210 or equivalent, after priming with 3M primer Product No. N200, C-100 or equivalent.
- The repair parts are also affixed with double-faced adhesive tape.

## SIDE GUARD MOLDING

### < REMOVAL AND INSTALLATION >

- To re-use existing molding, clean all traces of double sided tape from the molding and apply new double-faced tape to the molding.
- 1. Clean the panel surface with isopropyl alcohol or equivalent to degrease the surface.
- 2. Heat the panel and molding tape surface to 30° to 40°C (86° to 104°F).
- 3. Remove the backing sheet from the tape surface.
  - Align the locating pin into the hole in the outer door.
  - Continue aligning the pins into their corresponding holes in the outer door during installation.
- 4. Press ends by hand and use a roller to apply 5 kg-f (11 lbs-f) to press molding to door surface.
  - Apply even pressure along molding to insure proper wet out.

#### **CAUTION:**

**For a secure contact, do not wash vehicle for 24 hours after installation.**

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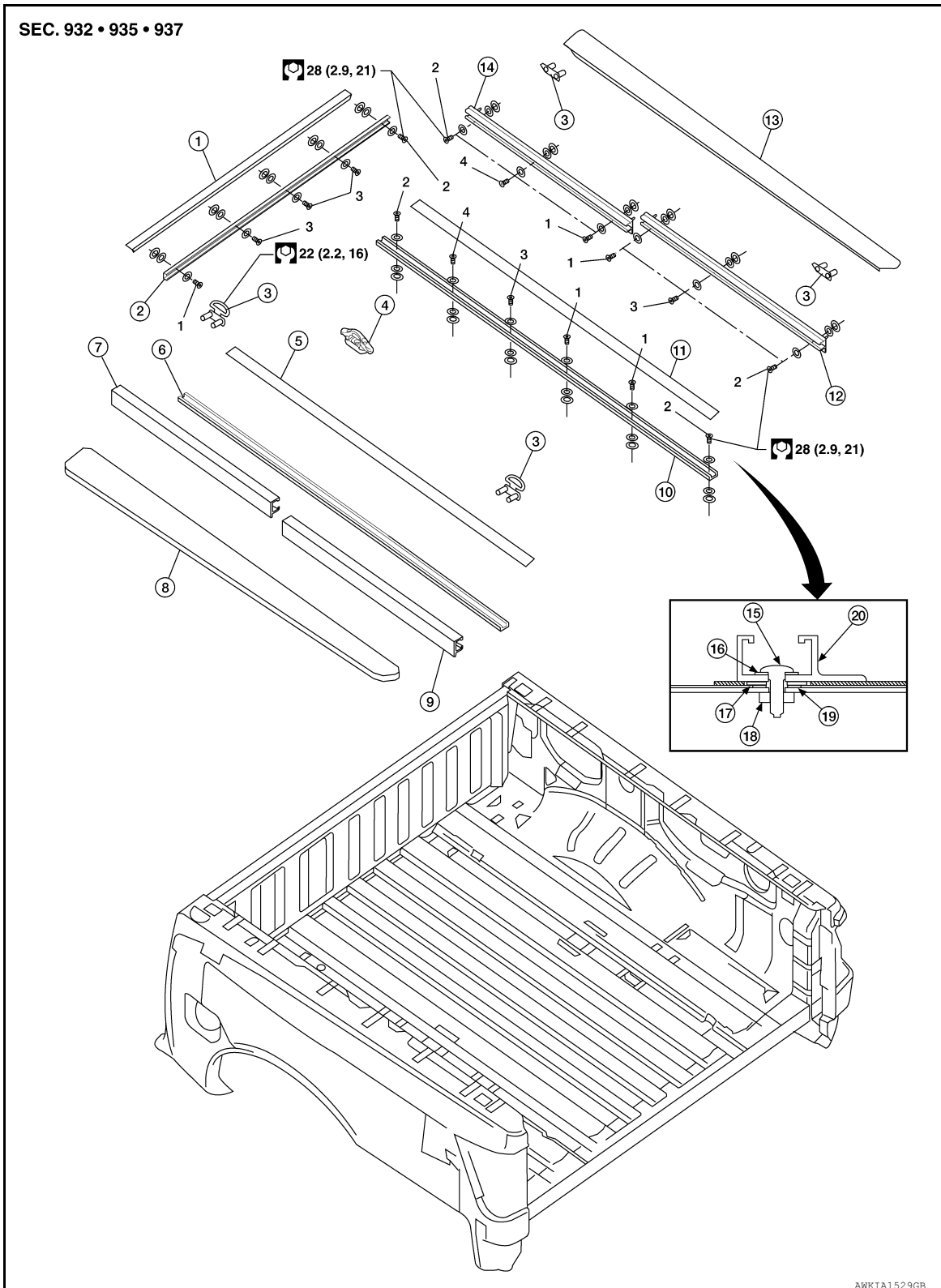
# BED RAILS AND TRIM

< REMOVAL AND INSTALLATION >

## BED RAILS AND TRIM

### Removal and Installation

INFOID:000000011560428



BED RAILS AND TRIM

< REMOVAL AND INSTALLATION >

- |                             |                                       |                                      |
|-----------------------------|---------------------------------------|--------------------------------------|
| 10. Floor rail (RH)         | 11. Floor rail cover (RH)             | 12. Bed side rear tie down rail (RH) |
| 13. Top side rail trim (RH) | 14. Bed side front tie down rail (RH) | 15. Bolt                             |
| 16. Washer                  | 17. Spacer                            | 18. Weld nut                         |
| 19. Plastic keeper          | 20. Rail                              |                                      |

REMOVAL

1. Remove floor rail covers.
2. Remove tie down cleats.
3. Remove floor rails (LH/RH).
4. Remove bed side front and rear tie down rails (LH/RH).
5. Remove rope hooks.
6. Remove header tie down rail.
7. Release clips and remove header top trim.
8. Release clips and remove top side rail trim (LH/RH).

INSTALLATION

Installation is in the reverse order of removal.

NOTE:

Tighten rail bolts in numerical order.

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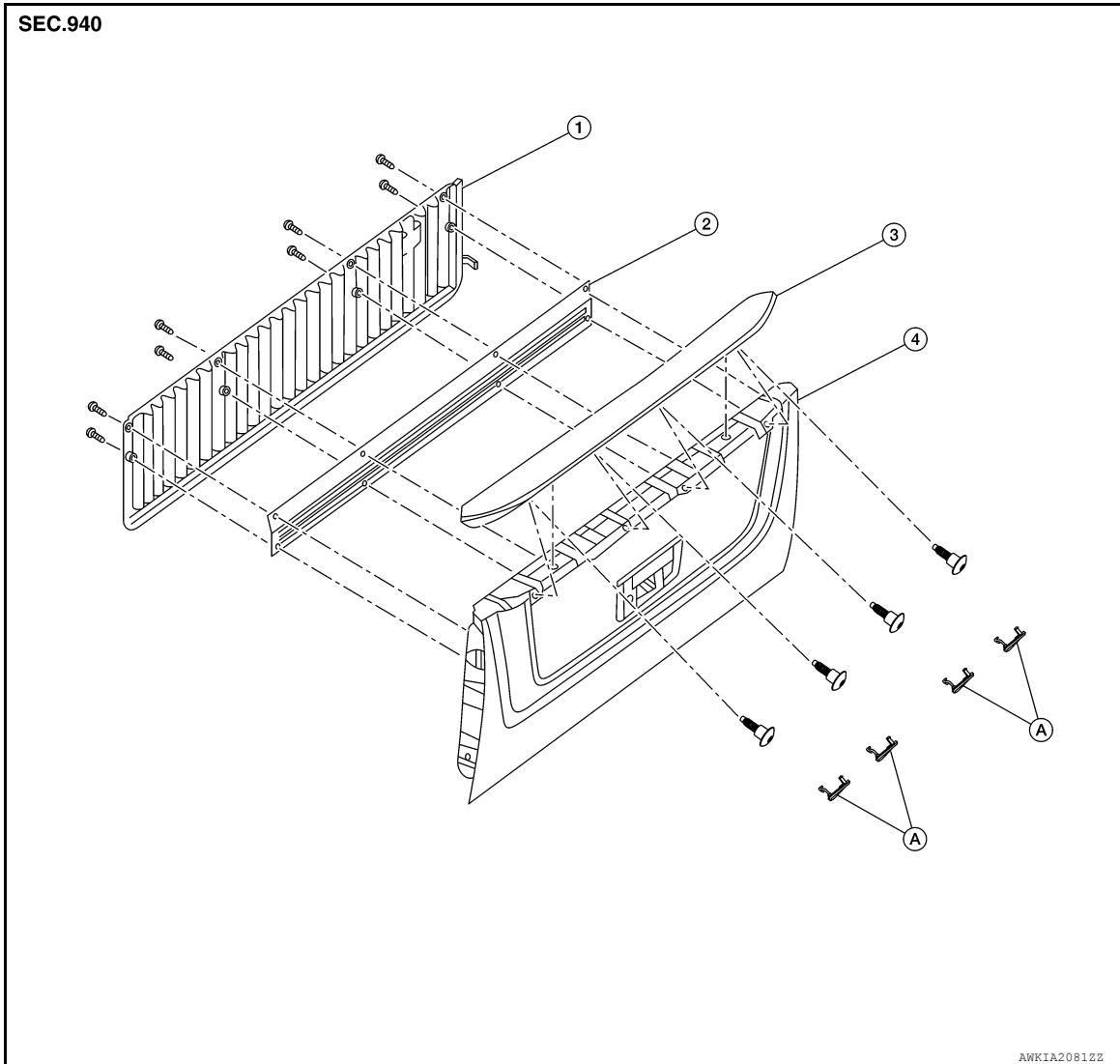
# TAIL GATE FINISHER

< REMOVAL AND INSTALLATION >

## TAIL GATE FINISHER

### Removal and Installation

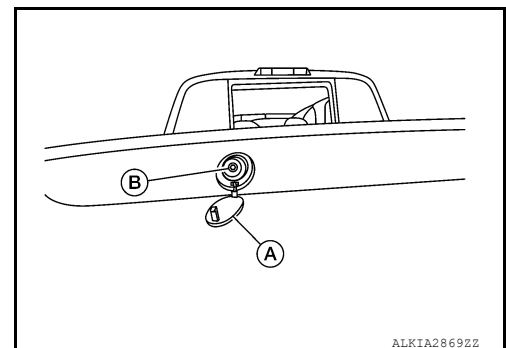
INFOID:0000000011560429



- |                                      |                          |                           |
|--------------------------------------|--------------------------|---------------------------|
| 1. Tail gate protector (if equipped) | 2. Tail gate cover plate | 3. Tail gate rear spoiler |
| 4. Tail gate assembly                | A. Bolt cover            | ○ Pawl                    |

### REMOVAL

1. Release the bolt cover (A) and remove the bolt (B), using a suitable tool.



2. Remove the tail gate rear spoiler.
3. Remove screws and remove tail gate protector (if equipped) and tail gate cover plate.

## TAIL GATE FINISHER

< REMOVAL AND INSTALLATION >

---

### INSTALLATION

Installation is in the reverse order of removal.

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# STORAGE BOX

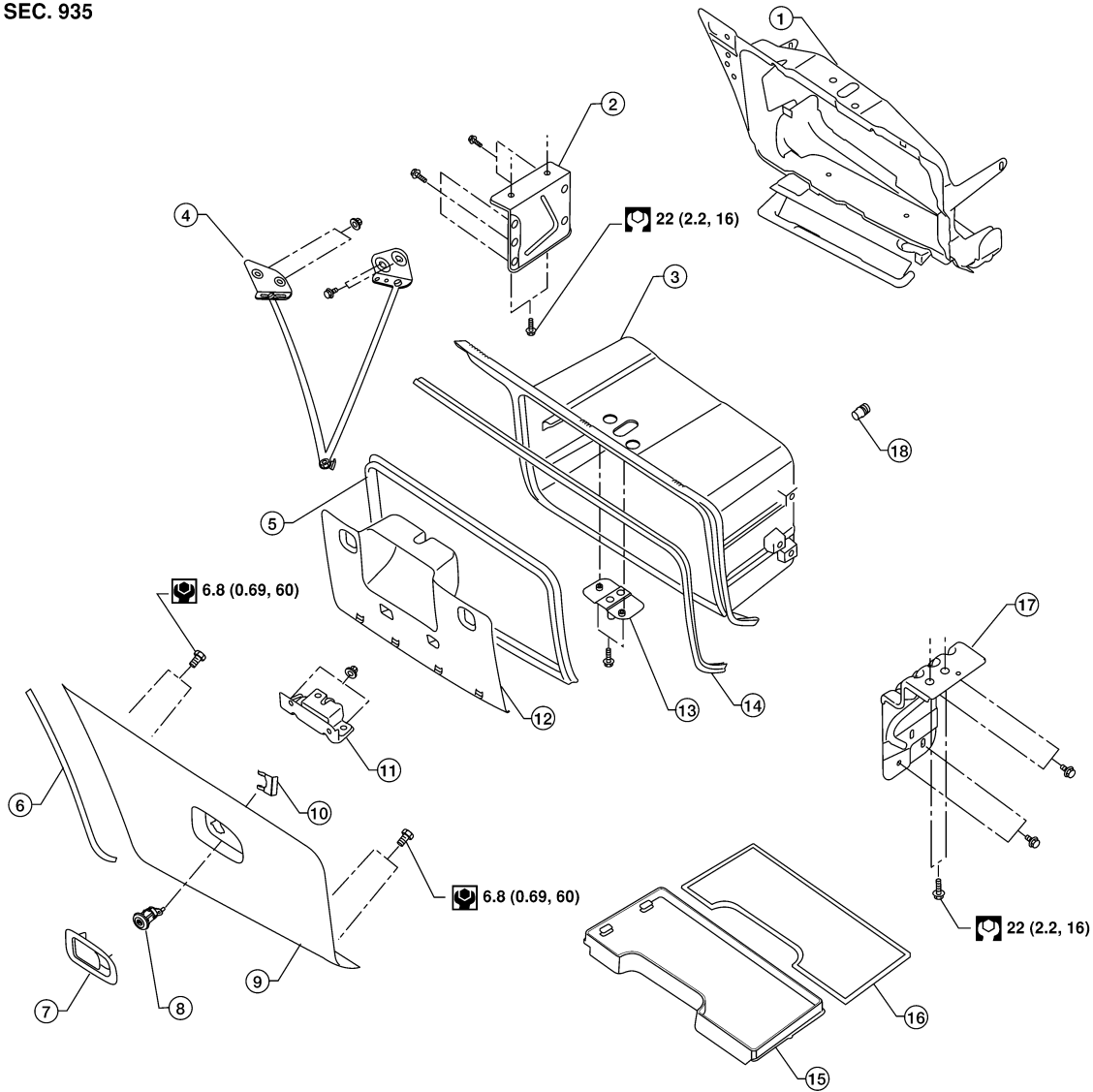
< REMOVAL AND INSTALLATION >

## STORAGE BOX

### Removal and Installation

INFOID:000000011560430

SEC. 935



N-m (kg-m, in-lb)

N-m (kg-m, ft-lb)

WIIA0352E

- |                              |                        |                      |
|------------------------------|------------------------|----------------------|
| 1. Surround assembly         | 2. Front outer bracket | 3. Storage box       |
| 4. Door stay assembly        | 5. Bulb seal           | 6. Outer seal        |
| 7. Key cylinder lid assembly | 8. Key cylinder        | 9. Storage box door  |
| 10. Key cylinder retainer    | 11. Latch assembly     | 12. Inner door cover |
| 13. Striker                  | 14. Door seal          | 15. Shelf bin        |
| 16. Shelf bin mat            | 17. Rear outer bracket | 18. Back stop        |

### REMOVAL

1. Remove rear mudguard (if equipped). Refer to [EXT-27. "Removal and Installation"](#).
2. Remove bolts, release clips and remove storage box assembly.
3. Remove shelf bin and mat from storage box.
4. Remove storage box door from hinge.
  - Remove door stay assembly.

## STORAGE BOX

### < REMOVAL AND INSTALLATION >

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5. Remove inner door cover.
6. Remove nuts and remove latch assembly from door.
  - Remove key cylinder.
7. Remove outer seal and key cylinder lid assembly from door.
8. Remove bulb seal and door seal from storage box.
9. Remove storage box from surround assembly.

### INSTALLATION

Installation is in the reverse order of removal.

A

B

C

D

E

F

G

H

I

J

EXT

L

M

N

O

P