

SECTION **EXT**  
EXTERIOR

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
EXT  
L  
M  
N  
O  
P

CONTENTS

|   |    |                                   |    |
|---|----|-----------------------------------|----|
| <b>SYMPTOM DIAGNOSIS</b> .....  | 3  | Exploded View .....               | 13 |
| <b>SQUEAK AND RATTLE TROUBLE DIAG-<br/>NOSES</b> .....  | 3  | Removal and Installation .....    | 14 |
| Work Flow .....   | 3  | <b>REAR BUMPER</b> .....          | 16 |
| Inspection Procedure .....  | 5  | Exploded View .....               | 16 |
| Diagnostic Worksheet .....  | 7  | Removal and Installation .....    | 16 |
| <b>PRECAUTION</b> .....   | 9  | <b>FRONT GRILLE</b> .....         | 19 |
| <b>PRECAUTIONS</b> .....  | 9  | Exploded View .....               | 19 |
| <b>FOR MEXICO</b> .....   | 9  | Removal and Installation .....    | 19 |
| FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" .....         | 9  | <b>COWL TOP</b> .....             | 20 |
| FOR MEXICO : Precaution Necessary for Steering Wheel Rotation After Battery Disconnect .....                          | 9  | Exploded View .....               | 20 |
| FOR MEXICO : Precaution for Procedure without Cowl Top Cover .....  | 10 | Removal and Installation .....    | 20 |
| FOR MEXICO : Precaution for Work .....  | 10 | <b>FENDER PROTECTOR</b> .....     | 22 |
| <b>FOR USA AND CANADA</b> .....   | 10 | Exploded View .....               | 22 |
| FOR USA AND CANADA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" ..... | 10 | Removal and Installation .....    | 22 |
| FOR USA AND CANADA : Precaution Necessary for Steering Wheel Rotation After Battery Disconnect .....                  | 10 | <b>MUDGUARD</b> .....             | 24 |
| FOR USA AND CANADA : Precaution for Procedure without Cowl Top Cover .....  | 11 | Exploded View .....               | 24 |
| FOR USA AND CANADA : Precaution for Work .....  | 11 | Removal and Installation .....    | 24 |
| <b>PREPARATION</b> .....  | 12 | <b>FLOOR SIDE FAIRING</b> .....   | 25 |
| <b>PREPARATION</b> .....  | 12 | Exploded View .....               | 25 |
| Special Service Tools .....   | 12 | Removal and Installation .....    | 25 |
| Commercial Service Tools .....  | 12 | <b>ROOF SIDE MOLDING</b> .....    | 27 |
| <b>ON-VEHICLE REPAIR</b> .....  | 13 | Exploded View .....               | 27 |
| <b>FRONT BUMPER</b> .....   | 13 | Removal and Installation .....    | 27 |
|   |    | <b>ROOF RAIL</b> .....            | 28 |
|   |    | Exploded View .....               | 28 |
|   |    | Removal and Installation .....    | 28 |
|   |    | <b>DOOR OUTSIDE MOLDING</b> ..... | 29 |
|   |    | Exploded View .....               | 29 |
|   |    | Removal and Installation .....    | 29 |
|   |    | <b>DOOR PARTING SEAL</b> .....    | 30 |
|   |    | Exploded View .....               | 30 |
|   |    | Removal and Installation .....    | 30 |

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|                                 |           |                                |    |
|---------------------------------|-----------|--------------------------------|----|
| <b>BACK DOOR FINISHER</b> ..... | <b>31</b> | Removal and Installation ..... | 31 |
| Exploded View .....             | 31        |                                |    |

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

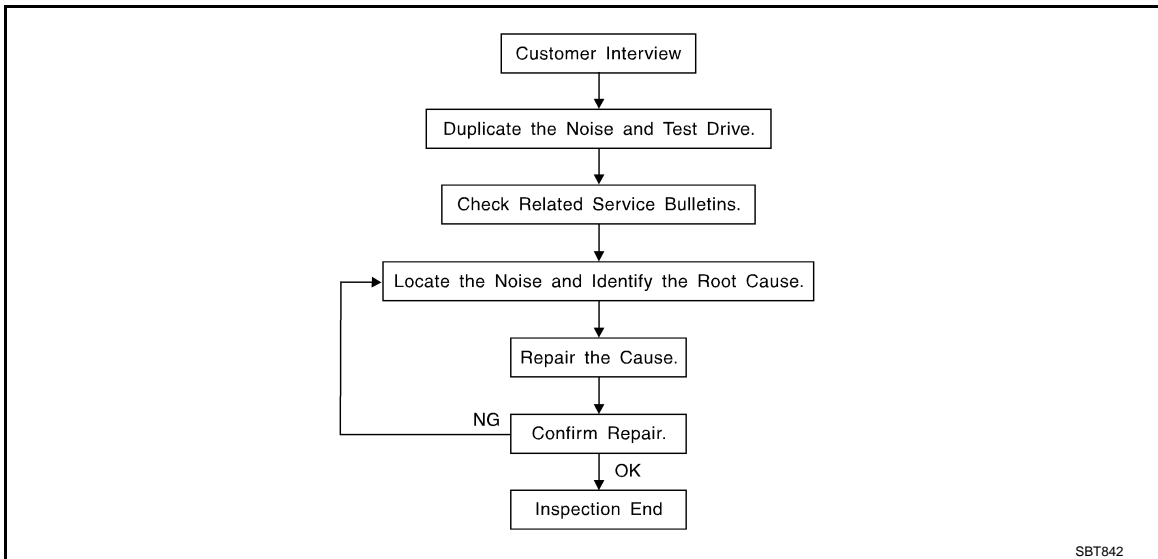
< SYMPTOM DIAGNOSIS >

## SYMPTOM DIAGNOSIS

### SQUEAK AND RATTLE TROUBLE DIAGNOSES

#### Work Flow

INFOID:000000004542000



#### 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 of customer's comments; refer to [EXT-7, "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, perform a diagnosis and repair the noise that the customer is concerned about. This can be accomplished by performing a cruise test on 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 bumblebee)  
Buzz characteristics include high frequency rattle/firm contact.
- Often the degree of acceptable noise level will vary depending up on the person. A noise that a technician 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

## < SYMPTOM DIAGNOSIS >

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 the repair is reconfirmed.

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 models, drive position on 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 and mechanics 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 is are suspected to be the cause of the noise.  
Do not use too much force when removing clips and fasteners, otherwise clips and fastener can be broken or lost during the repair, resulting in the creation of new noise.
  - Tapping or pushing/pulling the component that is are suspected to be the cause of 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 by hand by touching the component(s) that is are suspected to be the cause of the noise.
  - Placing a piece of paper between components that are suspected to be the cause of the noise.
  - Looking for loose components and contact marks.  
Refer to [EXT-5. "Inspection Procedure"](#).

## 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-43980) is available through the authorized Nissan Parts Department.

### **CAUTION:**

**Never 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 following materials are contained in the Nissan Squeak and Rattle Kit (J-43980). Each item can be ordered separately as needed.

URETHANE PADS [1.5 mm (0.059 in) thick]

Insulates connectors, harness, etc.

76268-9E005: 100 × 135 mm (3.94 × 5.31 in)/76884-71L01: 60 × 85 mm (2.36 × 3.35 in)/76884-71L02: 15 × 25 mm (0.59 × 0.98 in)

INSULATOR (Foam blocks)

Insulates components from contact. Can be used to fill space behind a panel.

73982-9E000: 45 mm (1.77 in) thick, 50 × 50 mm (1.97 × 1.97 in)/73982-

50Y00: 10 mm (0.39 in) thick, 50 × 50 mm (1.97 × 1.97 in)

INSULATOR (Light foam block)

80845-71L00: 30 mm (1.18 in) thick, 30 × 50 mm (1.18 × 1.97in)

FELT CLOTHTAPE

Used to insulate where movement does not occur. Ideal for instrument panel applications.

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## < SYMPTOM DIAGNOSIS >

68370-4B000: 15 × 25 mm (0.59 × 0.98 in) pad/68239-13E00: 5 mm (0.20 in) wide tape roll

The following materials, not found in the kit, can also be used to repair squeaks and rattles.

### UHMW (TEFLON) TAPE

Insulates where slight movement is present. Ideal for instrument panel applications.

### SILICONE GREASE

Used in place of UHMW tape that is be visible or does not fit. Will only last a few months.

### SILICONE SPRAY

Used when grease cannot be applied.

### DUCT TAPE

Used 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.

## Inspection Procedure

INFOID:000000004542001

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

## INSTRUMENT PANEL

Most incidents are caused by contact and movement between:

1. The cluster lid A and instrument panel
2. Acrylic lens and combination meter housing
3. Instrument panel to front pillar garnish
4. Instrument panel to windshield
5. Instrument panel mounting 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 silicon spray (in hard to reach areas). Urethane pads can be used to insulate wiring harness.

### **CAUTION:**

**Never use silicone spray to isolate a squeak or rattle. If the area is saturated with silicone, the recheck of repair becomes impossible.**

## CENTER CONSOLE

Components to pay attention to include:

1. Shifter 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 following:

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. The areas can usually be insulated with felt cloth tape or insulator foam blocks from the Nissan Squeak and Rattle Kit (J-43980) to repair the noise.

## TRUNK

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

In addition look for the following:

1. Trunk lid dumpers out of adjustment
2. Trunk lid striker out of adjustment

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G

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# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## < SYMPTOM DIAGNOSIS >

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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. Sunvisor 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.

### SEATS

When isolating seat noise it's important to note the position the seats in and the load placed on the seat when the noise occurs. 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 mounted to the engine wall
2. Components that pass through the engine wall
3. Engine wall mounts and connectors
4. Loose radiator mounting 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

< SYMPTOM DIAGNOSIS >

## Diagnostic Worksheet

INFOID:000000004542002



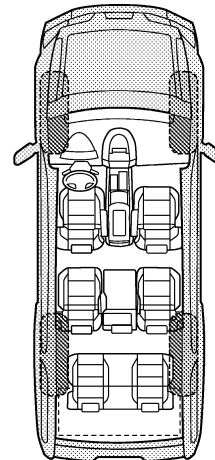
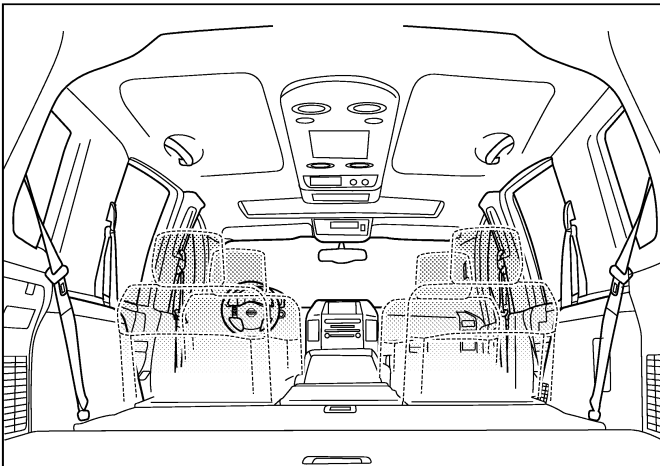
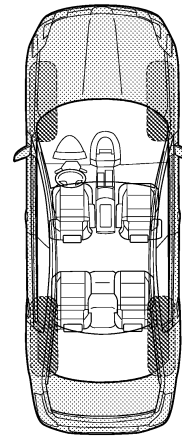
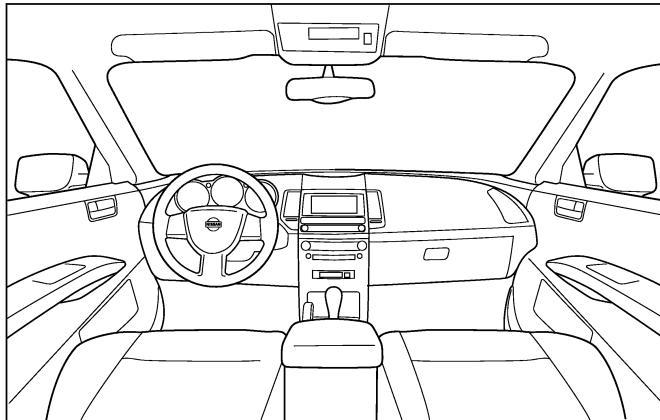
### SQUEAK & RATTLE DIAGNOSTIC WORKSHEET

Dear Nissan Customer:

We are concerned about your satisfaction with your Nissan vehicle. Repairing a squeak or rattle sometimes can be very difficult. To help us fix your Nissan 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.

#### 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.

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# SQUEAK AND RATTLE TROUBLE DIAGNOSES

< SYMPTOM DIAGNOSIS >

## SQUEAK & RATTLE DIAGNOSTIC WORKSHEET - page 2

Briefly describe the location where the noise occurs:

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### 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:

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|  | 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

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# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS FOR MEXICO

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

INFOID:000000004231611

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. Information necessary to service the system safely is included in the "SRS AIRBAG" and "SEAT BELT" 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 "SRS AIRBAG".
- 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.

#### FOR MEXICO : Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000004231612

#### **NOTE:**

- This Procedure is applied only to models with Intelligent Key system and NVIS/IVIS (NISSAN/INFINITI VEHICLE IMMOBILIZER SYSTEM - NATS).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the "LOCK" position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NVIS/IVIS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

#### OPERATION PROCEDURE

1. Connect both battery cables.

#### **NOTE:**

Supply power using jumper cables if battery is discharged.

2. Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.
5. When the repair work is completed, return the ignition switch to the "LOCK" position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

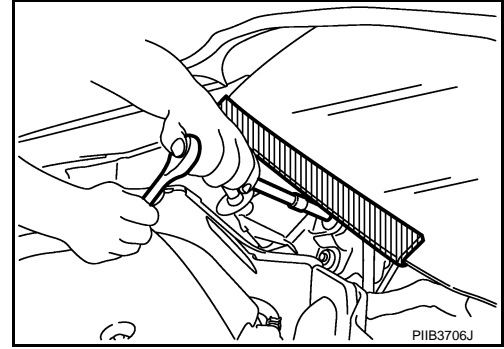
# PRECAUTIONS

< PRECAUTION >

## FOR MEXICO : Precaution for Procedure without Cowl Top Cover

INFOID:000000004231613

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



## FOR MEXICO : Precaution for Work

INFOID:000000004231614

- After removing and installing the opening/closing parts, be sure to carry out fitting adjustments to check their operation.
- Check the lubrication level, damage, and wear of each part. If necessary, grease or replace it.

## FOR USA AND CANADA

## FOR USA AND CANADA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000004231615

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 "SRS AIRBAG" and "SEAT BELT" 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 "SRS AIRBAG".**
- **Never 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.**

## FOR USA AND CANADA : Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000004231616

### **NOTE:**

- This Procedure is applied only to models with Intelligent Key system and NVIS/IVIS (NISSAN/INFINITI VEHICLE IMMOBILIZER SYSTEM - NATS).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the "LOCK" position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NVIS/IVIS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

## OPERATION PROCEDURE

# PRECAUTIONS

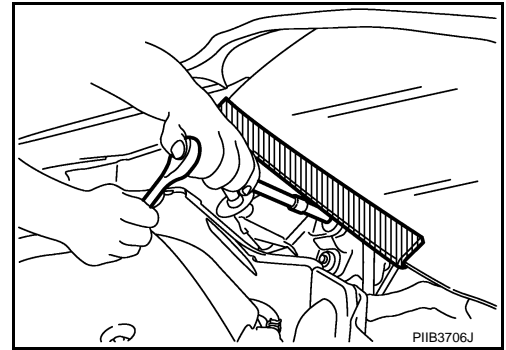
## < PRECAUTION >

1. Connect both battery cables.  
**NOTE:**  
Supply power using jumper cables if battery is discharged.
2. Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.
5. When the repair work is completed, return the ignition switch to the "LOCK" position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

### FOR USA AND CANADA : Precaution for Procedure without Cowl Top Cover

INFOID:000000004231617

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



### FOR USA AND CANADA : Precaution for Work

INFOID:000000004231618

- After removing and installing the opening/closing parts, be sure to carry out fitting adjustments to check their operation.
- Check the lubrication level, damage, and wear of each part. If necessary, grease or replace it.

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# PREPARATION

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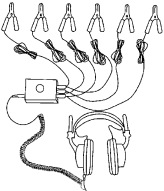
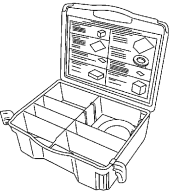
## PREPARATION

### PREPARATION

#### Special Service Tools

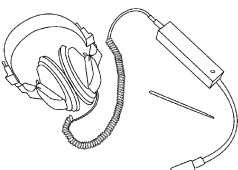
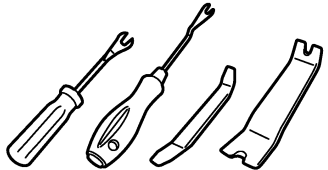
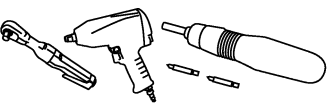
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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

| Tool number<br>(Kent-Moore No.)<br>Tool name  | Description                       |
|---|-----------------------------------|
| <p>(J-39570)<br/>Chassis ear</p>  <p style="text-align: right;">SIIA0993E</p>                      | <p>Locates the noise</p>          |
| <p>(J-43980)<br/>NISSAN Squeak and Rattle<br/>Kit</p>  <p style="text-align: right;">SIIA0994E</p> | <p>Repairs the cause of noise</p> |

#### Commercial Service Tools

INFOID:000000004231620

| Tool name   | Description                                 |
|---|---|
| <p>Engine ear</p>  <p style="text-align: right;">SIIA0995E</p>     | <p>Locates the noise</p>                    |
| <p>Remover tool</p>  <p style="text-align: right;">JMKIA3050ZZ</p> | <p>Removes clips, pawls and metal clips</p> |
| <p>Power tool</p>  <p style="text-align: right;">PIIB1407E</p>     |   |

# FRONT BUMPER

< ON-VEHICLE REPAIR >

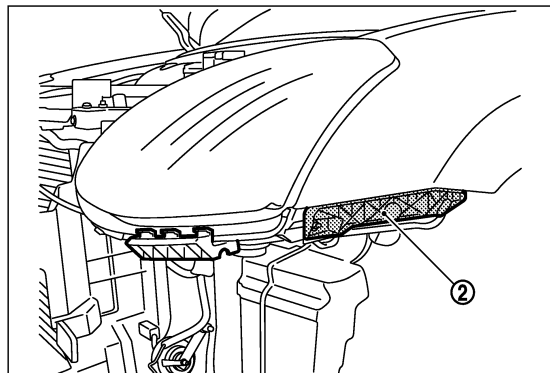
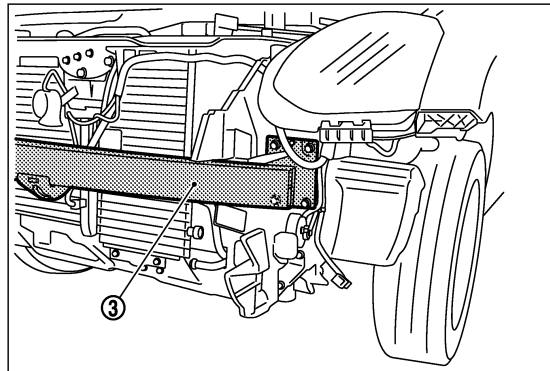
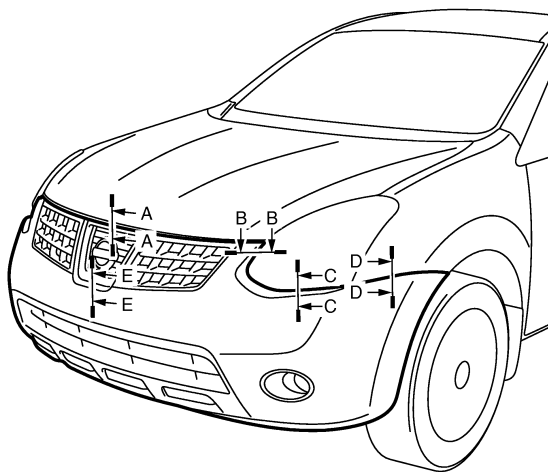
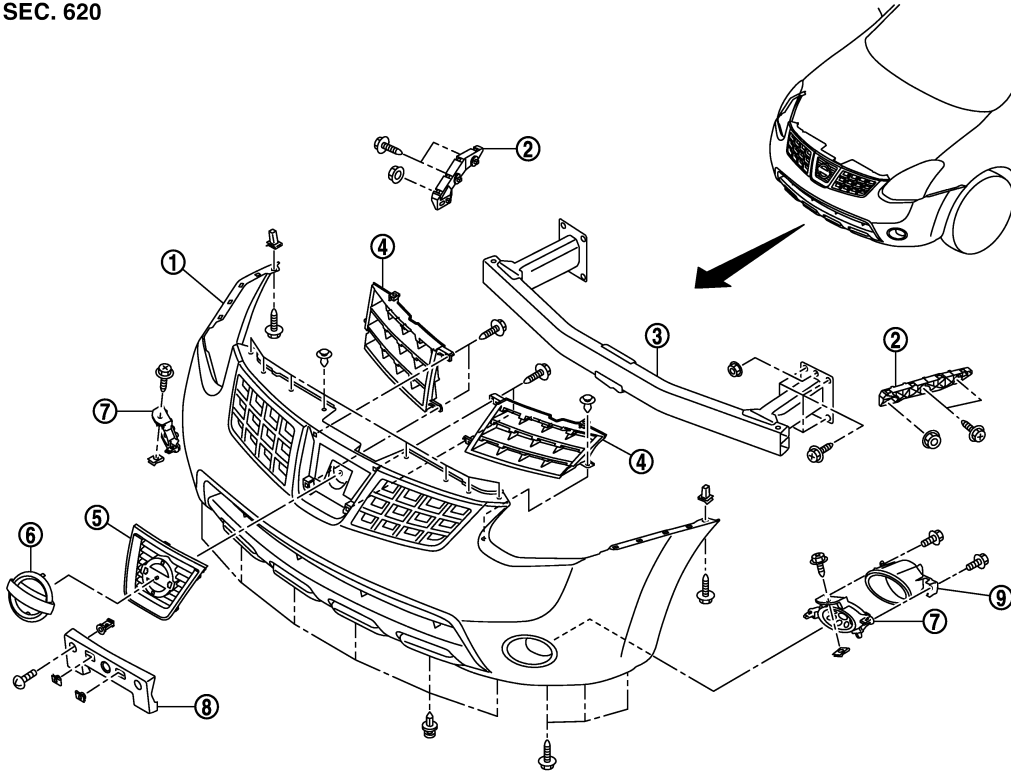
## ON-VEHICLE REPAIR

### FRONT BUMPER

Exploded View

INFOID:000000004231621

SEC. 620



JMKIA1302ZZ

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# FRONT BUMPER

## < ON-VEHICLE REPAIR >

- |                           |                          |                            |
|---------------------------|--------------------------|----------------------------|
| 1. Bumper fascia assembly | 2. Bumper side bracket   | 3. Bumper reinforcement    |
| 4. Front grille           | 5. Bumper molding        | 6. Front emblem            |
| 7. Front fog lamp bracket | 8. License plate bracket | 9. Front fog lamp assembly |

## Removal and Installation

INFOID:000000004231622

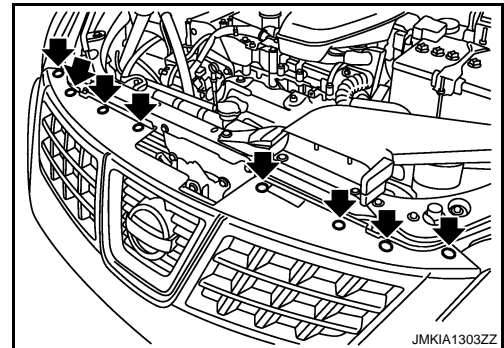
### REMOVAL

#### CAUTION:

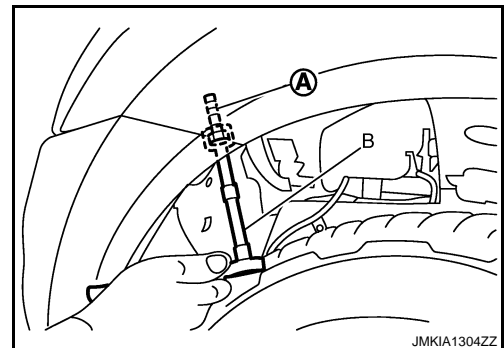
**Bumper fascia is made of resin. Never apply strong force to it, and be careful to prevent contact with oil.**

1. Fully open hood assembly.
2. Remove clips of bumper fascia assembly upper side.

← : Clip



3. Remove splash guard and fender protector (LH/RH). Refer to [EXT-22, "Removal and Installation"](#).
4. Remove front under cover. Refer to [EXT-25, "Exploded View"](#).
5. Remove bumper fascia assembly fixing screws (A), (LH/RH) with socket wrench (B).

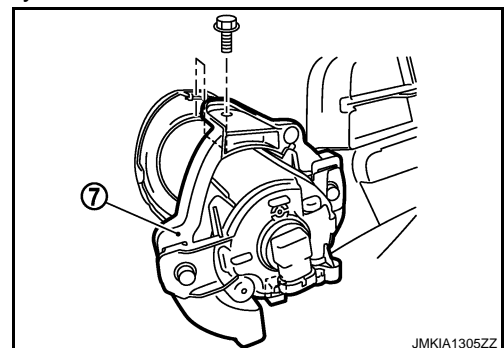


6. Disconnect front fog lamp harness connector (LH/RH) (with fog lamp).
7. Remove bumper fascia assembly.

#### CAUTION:

**When removing bumper fascia assembly, 2 workers are required so as to prevent it from dropping.**

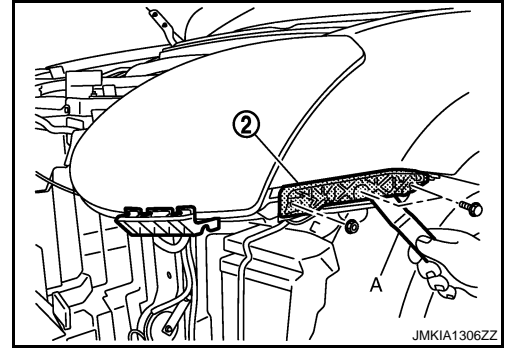
8. Remove the following parts after removing bumper fascia assembly.
  - Front fog lamp bracket (7) and fog lamp assembly.
  - Front grille. Refer to [EXT-19, "Removal and Installation"](#).



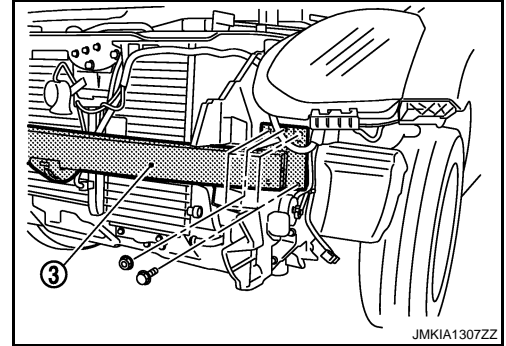
# FRONT BUMPER

## < ON-VEHICLE REPAIR >

9. Remove bumper side bracket (2) fixing bolt and nut, and then remove bumper side bracket (2) with remover tool (A).



10. Remove bumper reinforcement (3) mounting bolts and nuts (LH/RH), and then remove bumper reinforcement (3).



## INSTALLATION

Install in the reverse order of removal.

### NOTE:

After installing, perform fitting adjustment.

| Portion                               |       | Clearance                       | Surface height difference         |
|---------------------------------------|-------|---------------------------------|-----------------------------------|
| Front bumper – Hood                   | A – A | 3.5 – 8.5 mm (0.138 – 0.335 in) | -0.4 – 4.0 mm (-0.016 – 0.157 in) |
| Front bumper – Front combination lamp | B – B | 3.1 – 5.1 mm (0.122 – 0.201 in) | —                                 |
| Front bumper – Front combination lamp | C – C | 0.9 – 3.3 mm (0.035 – 0.130 in) | —                                 |
| Front bumper – Front fender           | D – D | 0.0 – 0.7 mm (0.000 – 0.028 in) | -0.2 – 1.8 mm (-0.008 – 0.071 in) |
| Front bumper – Bumper molding         | E – E | 0.1 – 1.9 mm (0.004 – 0.075 in) | —                                 |

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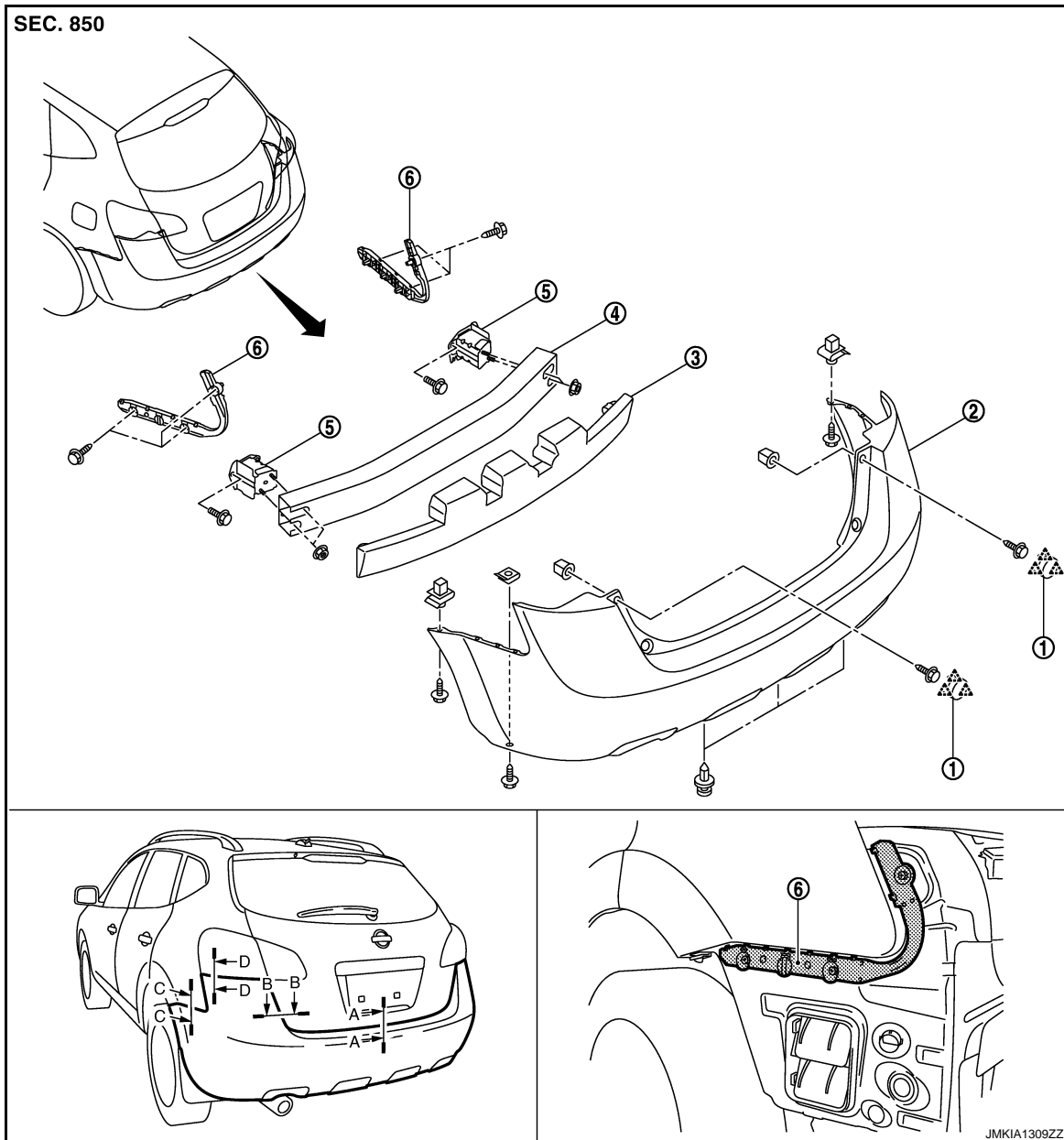
# REAR BUMPER

< ON-VEHICLE REPAIR >


## REAR BUMPER

Exploded View

INFOID:000000004231623



- |                         |                           |                        |
|-------------------------|---------------------------|------------------------|
| 1. Cap                  | 2. Bumper fascia assembly | 3. Energy absorber     |
| 4. Bumper reinforcement | 5. Bumper stay            | 6. Bumper side bracket |

 : Pawl

### Removal and Installation

INFOID:000000004231624

#### REMOVAL

#### **CAUTION:**

**Bumper fascia is made of resin. Never apply strong force to it, and be careful to prevent contact with oil.**


1. Fully open back door assembly.
2. Remove rear mud guard (LH/RH) and rear bumper closing (LH/RH).  
Refer to [EXT-24, "Removal and Installation"](#).

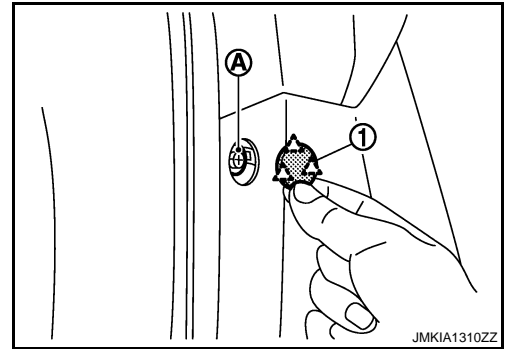


# REAR BUMPER

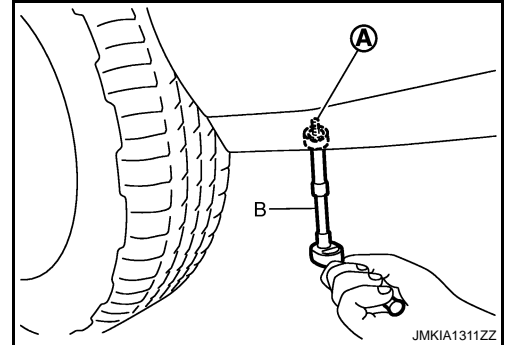
## < ON-VEHICLE REPAIR >

3. Remove cap (1), and then remove bumper fascia assembly fixing screw (A) (LH/RH).

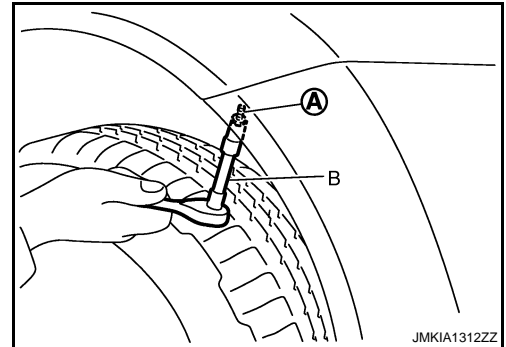
 : Pawl




4. Remove bumper fascia assembly (LH/RH) lower fixing screws (A) with tool (B).

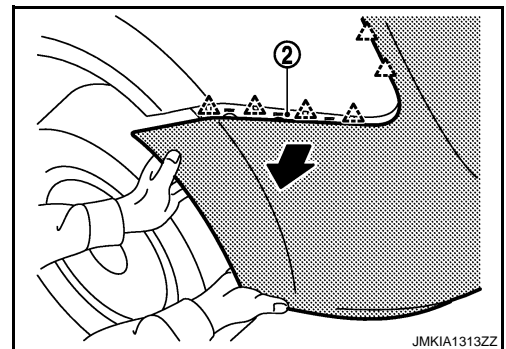


5. Remove bumper fascia assembly fixing screws (A), (LH/RH) with tool (B).



6. Pull to release bumper fascia assembly (2) from side bracket.

 : Pawl



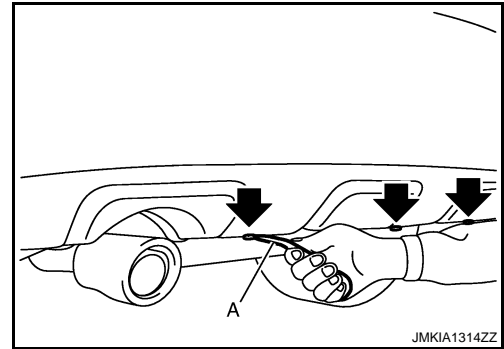
7. Remove clips of bumper fascia assembly underside with remover tool (A), and then pull out bumper fascia assembly toward rear of vehicle.

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# REAR BUMPER

## < ON-VEHICLE REPAIR >

← : Clip



8. Remove bumper fascia assembly.

**CAUTION:**

**When removing bumper fascia assembly, 2 workers are required so as to prevent it from dropping.**

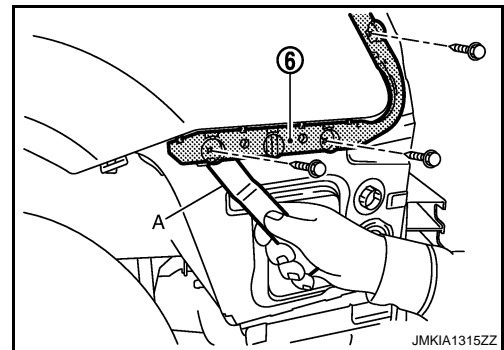
9. Remove energy absorber.

10. Remove bumper reinforcement mounting nuts (LH/RH), and then remove bumper reinforcement.

11. Remove bumper stay mounting bolts, and then remove bumper stay.

12. Remove the following parts after removing rear bumper fascia.

- Remove bumper side bracket mounting bolts, and then bumper side bracket (LH/RH) (6) with remover tool (A).



## INSTALLATION

Install in the reverse order of removal.

**NOTE:**

After installing, perform fitting adjustment.

| Portion                             |       | Clearance                        | Surface height difference         |
|-------------------------------------|-------|----------------------------------|-----------------------------------|
| Rear bumper – Back door             | A – A | 6.0 – 10.0 mm (0.236 – 0.394 in) | —                                 |
| Rear bumper – Back door             | B – B | 3.5 – 7.5 mm (0.138 – 0.295 in)  | —                                 |
| Rear bumper – Body side outer       | C – C | 0.0 – 0.7 mm (0.000 – 0.028 in)  | -0.3 – 1.7 mm (-0.012 – 0.067 in) |
| Rear bumper – Rear combination lamp | D – D | 0.5 – 3.5 mm (0.020 – 0.138 in)  | —                                 |

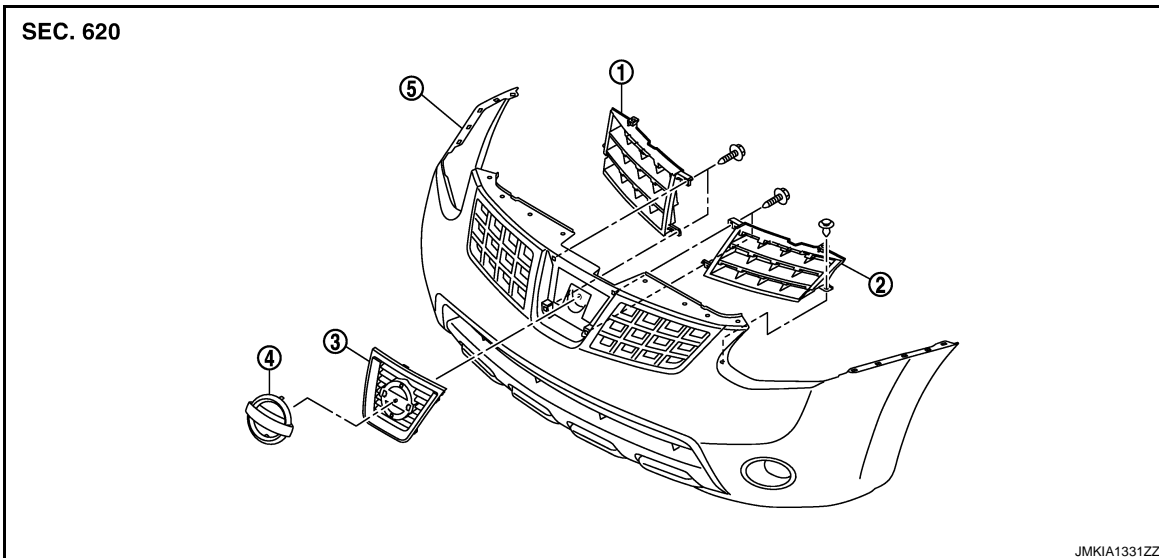
# FRONT GRILLE

< ON-VEHICLE REPAIR >

## FRONT GRILLE

### Exploded View

INFOID:000000004231625



- 1. Front grille (RH)
- 2. Front grille (LH)
- 3. Bumper molding
- 4. Front emblem
- 5. Bumper fascia assembly

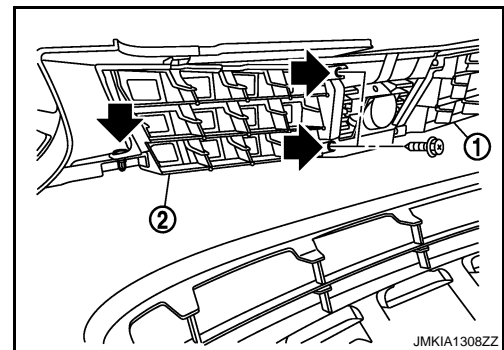
### Removal and Installation

INFOID:000000004231626

#### REMOVAL

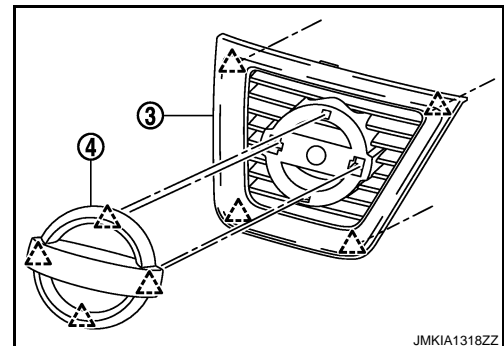
1. Fully open hood assembly.
2. Remove front bumper assembly. Refer to [EXT-14, "Removal and Installation"](#).
3. Remove front grille RH (1) and LH (2) fixing screws and clips, and then remove front grille RH and LH.

← : Clip



4. Remove bumper molding (3) fixing pawl, then remove bumper molding (3) from front bumper fascia assembly (5).
5. Remove emblem (4) fixing pawl, then remove emblem (4) from bumper molding (3).

△ : Pawl



#### INSTALLATION

Install in the reverse order of removal.

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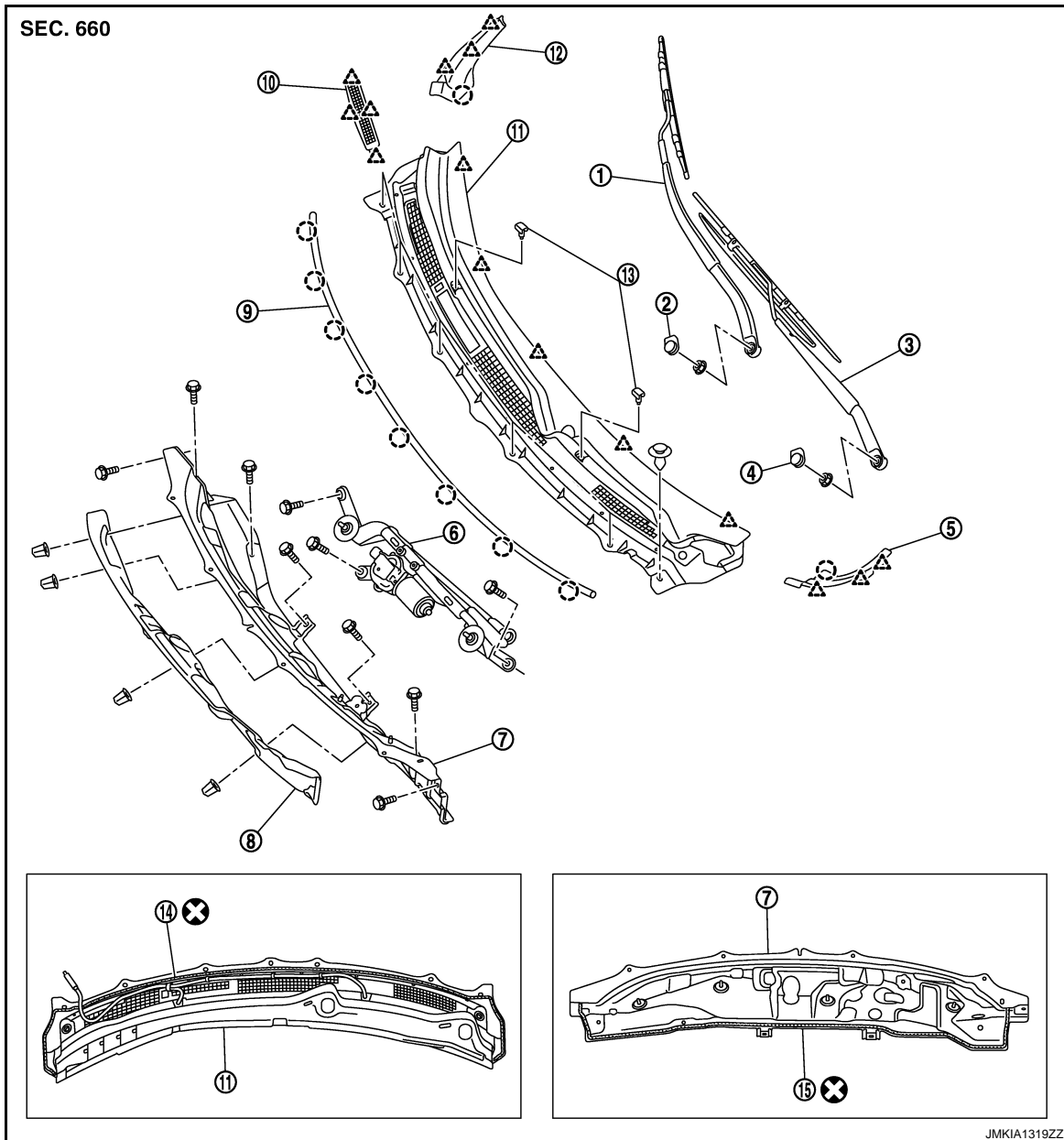
# COWL TOP

< ON-VEHICLE REPAIR >

## COWL TOP

### Exploded View

INFOID:000000004231627



- |                                 |                                      |                                     |
|---------------------------------|--------------------------------------|-------------------------------------|
| 1. Front wiper arm and blade RH | 2. Front wiper arm cover RH          | 3. Front wiper arm and blade LH     |
| 4. Front wiper arm cover LH     | 5. Front fender cover LH             | 6. Front wiper drive assembly       |
| 7. Extension cowl top           | 8. Dash lower insulator upper        | 9. Cowl top seal                    |
| 10. Cowl top cover cap          | 11. Cowl top cover                   | 12. Front fender cover RH           |
| 13. Washer nozzle               | 14. EPT sealer [t: 3.0mm (0.118 in)] | 15. EPT sealer [t: 5.0mm (0.197in)] |

○ : Clip

△ : Pawl

Refer to [GI-4. "Components"](#) for symbols in the figure.

## Removal and Installation

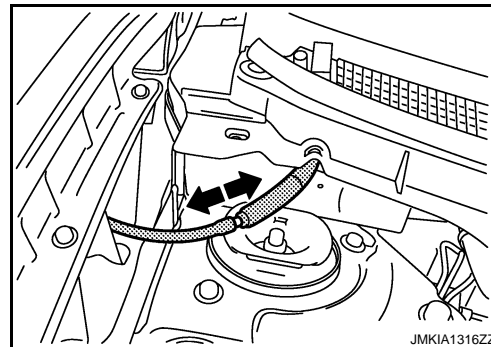
INFOID:000000004231628

### REMOVAL

# COWL TOP

## < ON-VEHICLE REPAIR >

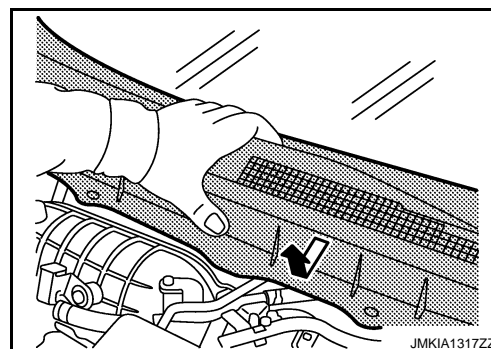
1. Fully open hood assembly.
2. Remove front wiper arm (LH/RH) from vehicle. Refer to [WW-91, "Removal and Installation"](#).
3. Remove front fender cover (LH/RH).
4. Disconnect front washer tube connector.



5. Remove cowl top cover fixing clips, and then pull forward to release cowl top cover from windshield glass.

**CAUTION:**

**When performing the procedure after removing cowl top cover, cover the lower end of windshield glass with urethane etc.**



6. Remove the following parts after removing cowl top cover.
  - Cowl top seal
  - Cowl top cover cap
  - Washer nozzle
  - Washer tube
  - EPT sealer
7. Remove front wiper drive assembly. Refer to [WW-93, "Removal and Installation"](#).
8. Remove extension cowl top mounting bolts, and then remove extension cowl top.
9. Remove dash lower insulator upper mounting nuts, and then remove dash lower insulator upper.

## INSTALLATION

Install in the reverse order of removal.

**CAUTION:**

- **When installing cowl top cover, check that blind clips are securely fitted in panel holes on body, and then press them in.**
- **Always replace cowl top cover EPT sealer on rear of vehicle with a new one when installing old cowl top cover.**
- **After installing, perform adjustment of wiper arms. Refer to [WW-91, "Adjustment"](#).**

# FENDER PROTECTOR

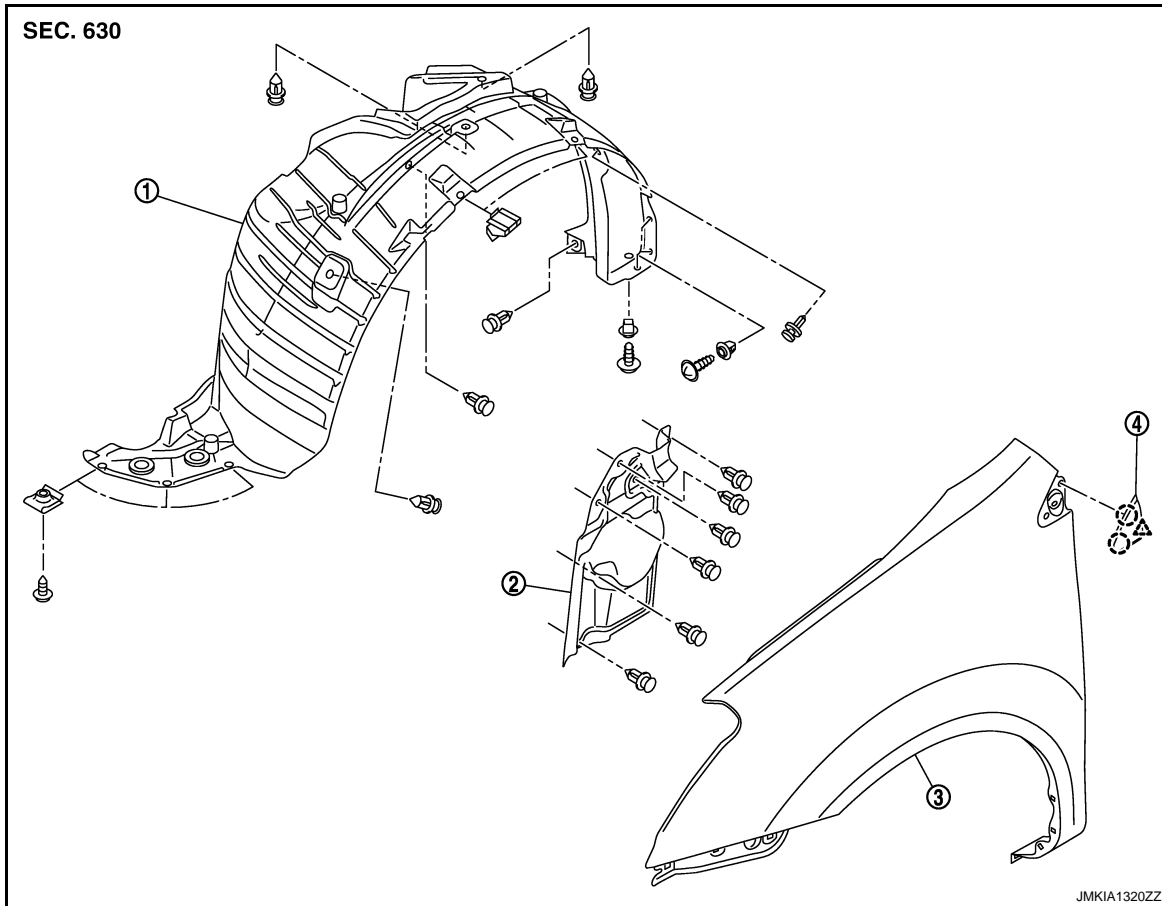
< ON-VEHICLE REPAIR >

## FENDER PROTECTOR

Exploded View

INFOID:000000004231629

FENDER PROTECTOR



1. Front fender protector

2. Splash guard

3. Front fender

4. Front fender finisher

○ : Clip

△ : Pawl

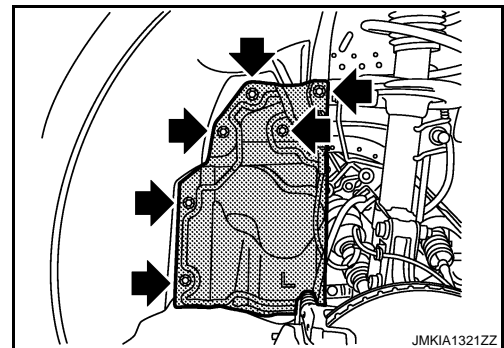
## Removal and Installation

INFOID:000000004231630

### REMOVAL

1. Remove splash guard fixing clips and then remove splash guard.

◀ : Clip



2. Remove front fender protector fixing clips.

# FENDER PROTECTOR

## < ON-VEHICLE REPAIR >

---

3. Remove front fender protector fixing screws.
4. Release front fender protector upper fixing clip, and then remove front fender protector.

### INSTALLATION

Install in the reverse order of removal.

#### **CAUTION:**

**When installing fender protector, check that clips are securely fitted in panel holes on body, and then press them in.**

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# MUDGUARD

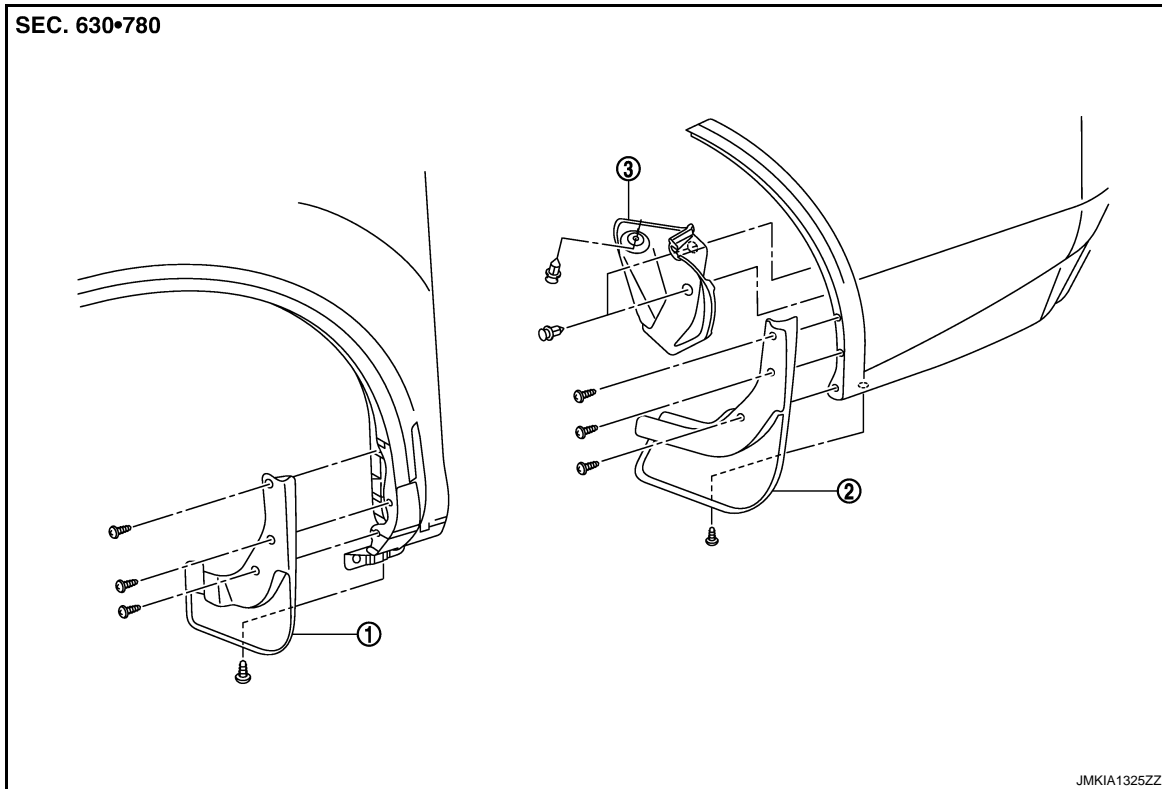
< ON-VEHICLE REPAIR >

## MUDGUARD

Exploded View

INFOID:000000004231631

MUDGUARD



1. Front mud guard

2. Rear mud guard

3. Rear bumper closing

## Removal and Installation

INFOID:000000004231632

### REMOVAL

1. Remove front mud guard fixing screws then remove front mud guard.
2. Remove rear mud guard fixing screws then remove rear mud guard.
3. Remove rear bumper closing clips then remove rear bumper closing.

### INSTALLATION

Install in the reverse order of removal.



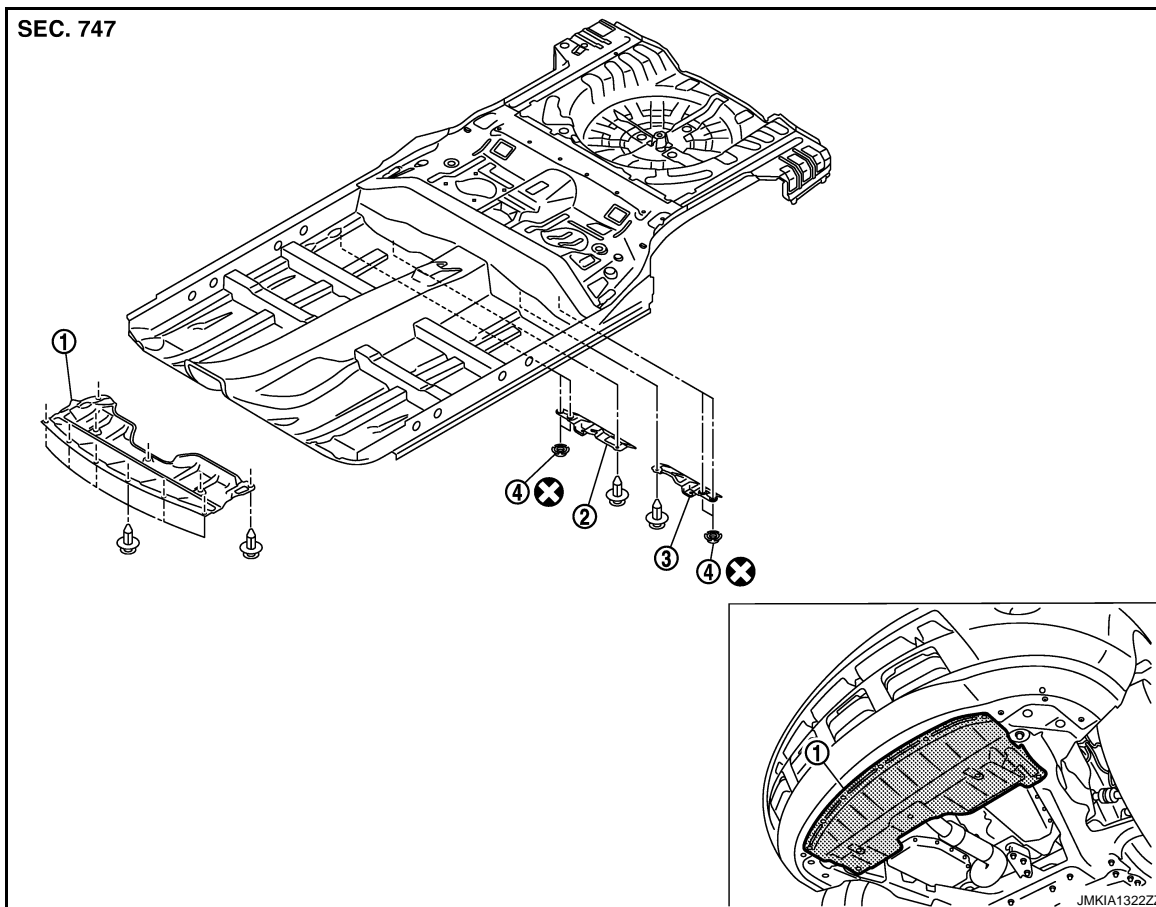
# FLOOR SIDE FAIRING

< ON-VEHICLE REPAIR >

## FLOOR SIDE FAIRING

Exploded View

INFOID:000000004231633



1. Front under cover

2. Floor under cover (RH)

3. Floor under cover (LH)

4. Push nut

Refer to [GI-4, "Components"](#) for symbols in the figure.

## Removal and Installation

INFOID:000000004231634

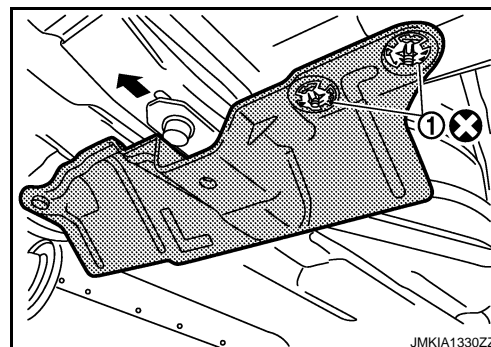
### REMOVAL

#### FRONT UNDER COVER

1. Remove front under cover mounting clips.
2. Remove front under cover.

#### FLOOR UNDER COVER

1. Remove floor under cover mounting clips and push nut (1).
2. Remove floor under cover.



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## FLOOR SIDE FAIRING

< ON-VEHICLE REPAIR >

---

### INSTALLATION

Install in the reverse order of removal.

**CAUTION:**

**When installing under cover, check that clips are securely fitted in panel holes on body, and then press them in.**

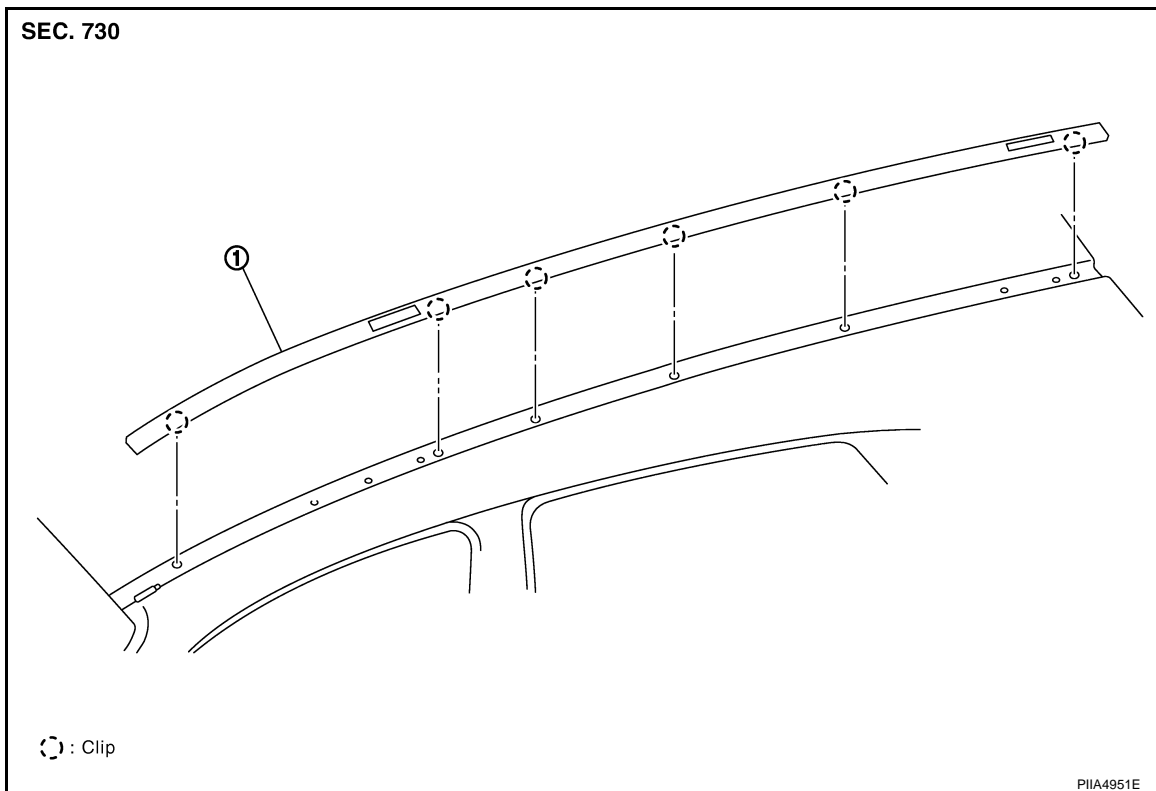
# ROOF SIDE MOLDING

< ON-VEHICLE REPAIR >

## ROOF SIDE MOLDING

Exploded View

INFOID:000000004231635



1. Roof side molding

○ : Clip

## Removal and Installation

INFOID:000000004231636

EXT

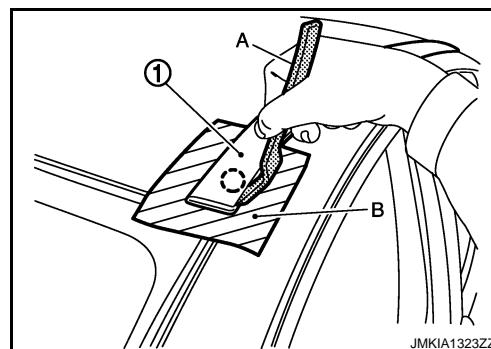
### REMOVAL

1. Remove roof rail assembly (with roof rail). Refer to [EXT-28, "Removal and Installation"](#).
2. Disconnect roof side molding (1) using remove tool (A) then remove roof side molding.

**CAUTION:**

- Apply protective tape (B) around the roof side molding.

○ : Clip



### INSTALLATION

Install in the reverse order of removal.

**CAUTION:**

When installing roof side molding, check that clips are securely fitted in body panel holes, and then press them in.

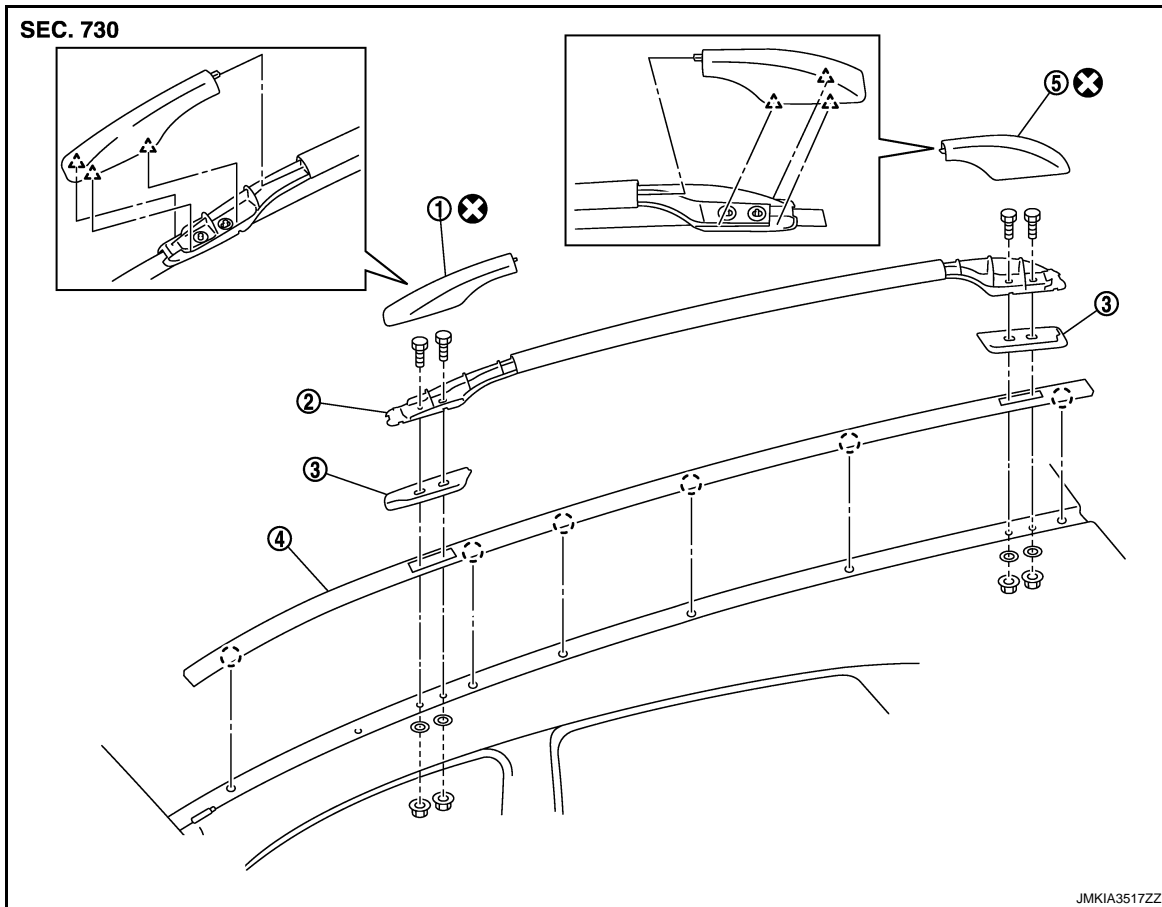
# ROOF RAIL

< ON-VEHICLE REPAIR >

## ROOF RAIL

Exploded View

INFOID:000000004231637



- |                            |                           |                |
|----------------------------|---------------------------|----------------|
| 1. Cover roof rail (front) | 2. Roof rail assembly     | 3. Rubber seal |
| 4. Roof side molding       | 5. Cover roof rail (rear) |                |

- : Clip  
 △ : Pawl

Refer to [GI-4. "Components"](#) for symbols in the figure.

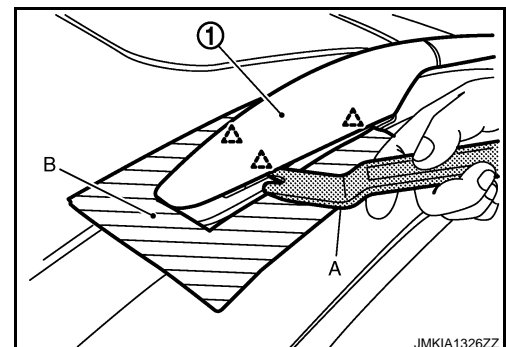
## Removal and Installation

INFOID:000000004231638

### REMOVAL

- Remove cover roof rail (1), using remover tool (A)  
**CAUTION:**  
 • Apply protective tape (B) around the roof rail.
- Remove bolt of roof rail and remove roof rail assembly.

- △ : Pawl



### INSTALLATION

Install in the reverse order of removal.

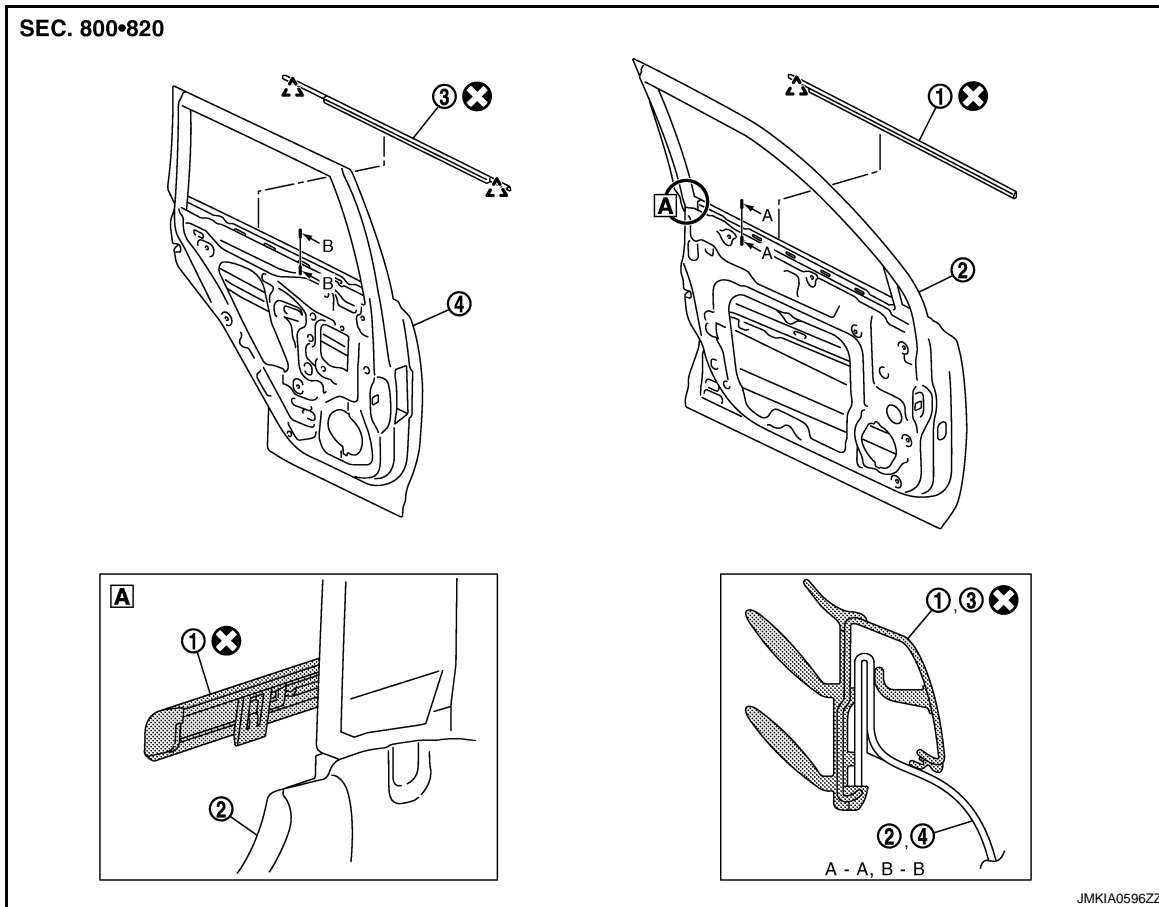
# DOOR OUTSIDE MOLDING

< ON-VEHICLE REPAIR >


## DOOR OUTSIDE MOLDING

Exploded View

INFOID:000000004231639



- 1. Front door outside molding
- 2. Front door panel
- 3. Rear door outside molding
- 4. Rear door panel

 : Pawl

Refer to [GI-4, "Components"](#) for symbols in the figure.

## Removal and Installation

INFOID:000000004231640

### REMOVAL

#### FRONT DOOR OUTSIDE MOLDING

1. Remove front door finisher. Refer to [INT-11, "FRONT DOOR FINISHER : Removal and Installation"](#).
2. Remove door mirror assembly. Refer to [MIR-19, "DOOR MIRROR ASSEMBLY : Removal and Installation"](#).
3. Twist and pull up to upper side, and then remove front door outside molding.

#### REAR DOOR OUTSIDE MOLDING

1. Fit rear door glass to lower position.
2. Twist and pull up to upper side, and then remove rear door outside molding.

### INSTALLATION

Install in the reverse order of removal.

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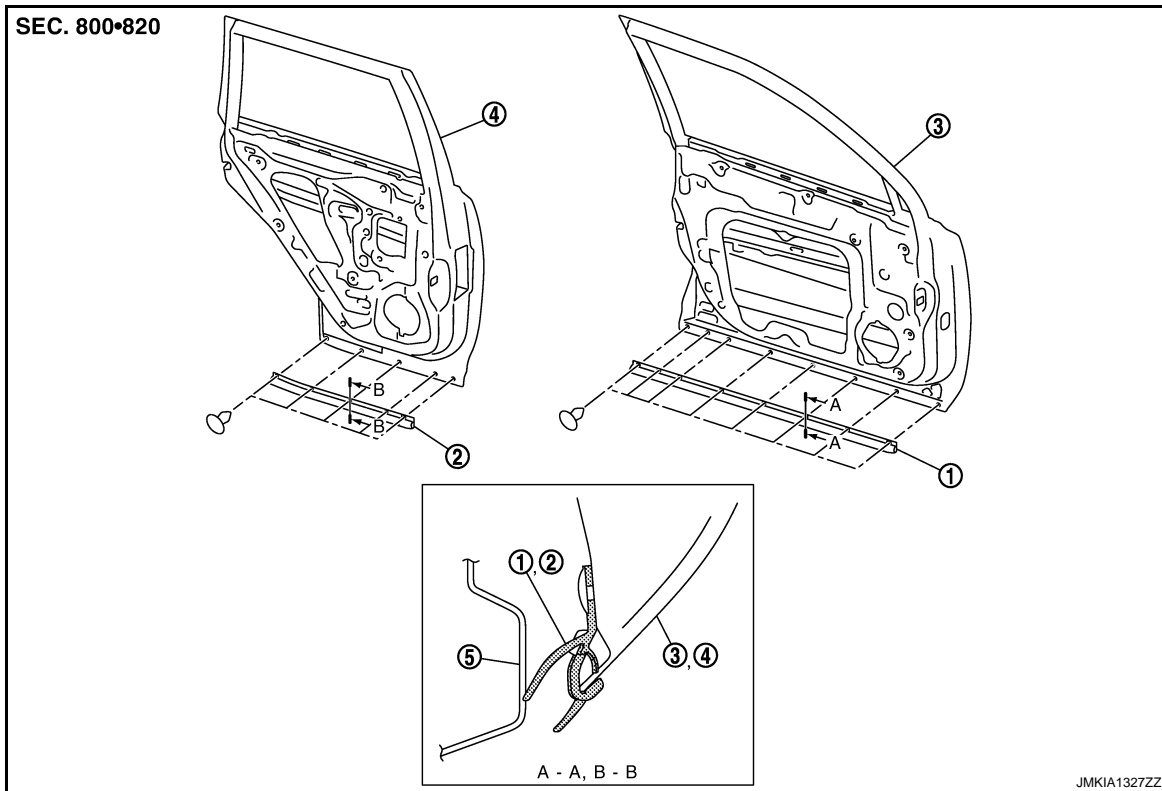
# DOOR PARTING SEAL

< ON-VEHICLE REPAIR >

## DOOR PARTING SEAL

Exploded View

INFOID:000000004231641



- |                            |                           |                     |
|----------------------------|---------------------------|---------------------|
| 1. Front door parting seal | 2. Rear door parting seal | 3. Front door panel |
| 4. Rear door panel         | 5. Sill outer             |                     |

## Removal and Installation

INFOID:000000004231642

### REMOVAL

#### FRONT DOOR PARTING SEAL

1. Fully open front door.
2. Remove front door parting seal mounting clips.
3. Remove front door parting seal.

#### REAR DOOR PARTING SEAL

1. Fully open rear door.
2. Remove rear door parting seal mounting clips.
3. Remove rear door parting seal.

### INSTALLATION

Install in the reverse order of removal.

#### **CAUTION:**

**When installing, visually check the clips, then replace them with new parts if they are damaged.**

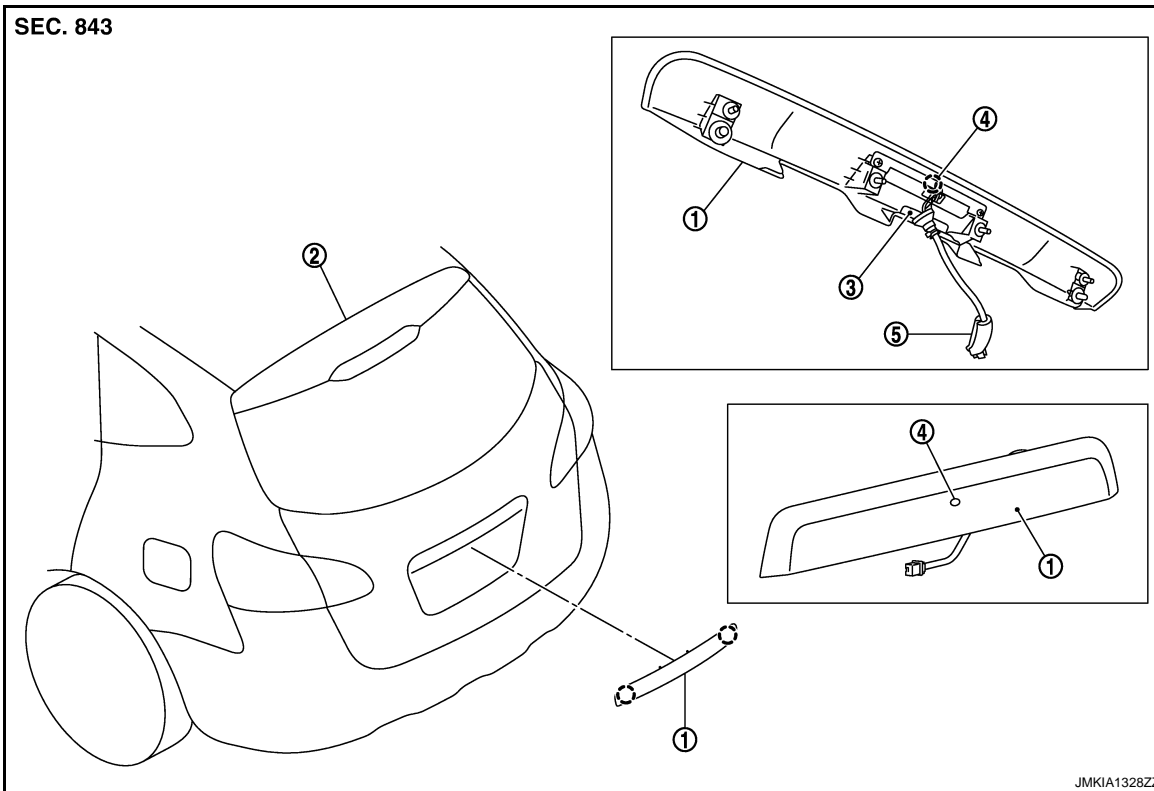
# BACK DOOR FINISHER

< ON-VEHICLE REPAIR >


## BACK DOOR FINISHER

Exploded View

INFOID:000000004231643



- 1. Back door finisher
- 2. Back door assembly
- 3. Back door opener switch
- 4. Back door request switch
- 5. Back door sub harness


 : Clip

### Removal and Installation

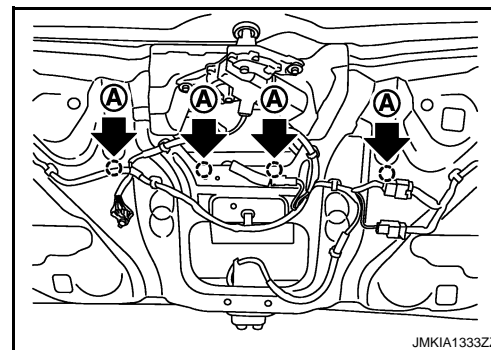
INFOID:000000004231644

#### REMOVAL

1. Fully open back door.
2. Remove back door finisher inner. Refer to [INT-33. "Removal and Installation"](#).
3. Disconnect back door request/opener switch harness connector.
4. Remove back door finisher fixing nuts (A) and release back door finisher fixing clips.

 : Clip

**CAUTION:**  
Apply protective tape around the back door finisher.




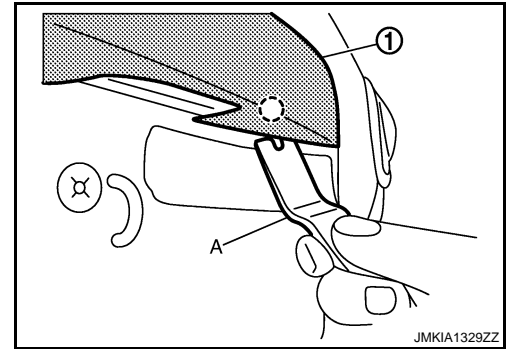
5. Pull harness grommet outwards from back door to release it.

## BACK DOOR FINISHER

### < ON-VEHICLE REPAIR >

6. Pull back door finisher (1) to remove it with remover tool (A).

 : Clip



7. Remove the following parts after removing back door finisher.
- Back door request switch (with request switch).  
Refer to [DLK-268. "Removal and Installation"](#).
  - Back door opener switch.  
Refer to [DLK-269. "Removal and Installation"](#).

### INSTALLATION

Install in the reverse order of removal.

#### **CAUTION:**

**When installing back door finisher, check that clips are securely fitted in back door panel holes, and then press them in.**