

# GENUINE PARKING SENSORS (Rear)

## INSTALLATION INSTRUCTIONS



Thank you for purchasing a genuine Mazda accessory.


Before removal and installation, be sure to thoroughly read these instructions.


Please read the contents of this booklet in order to properly install and use the parking sensors (Rear). Your safety depends on it.

Keep these instructions with your vehicle records for future reference.

### **WARNING**

- There are several  **WARNING** and  **CAUTION** sections in this booklet concerning safety when installing or removing the parking sensors (Rear). Always read and follow them in order to prevent injuries, accidents, and possible damage to the vehicle.

 **WARNING:** Indicates a situation in which serious injury or death could result if the warning is ignored.

 **CAUTION:** Indicates a situation in which bodily injury or damage to the vehicle could result if the caution is ignored.

- For areas indicating the tightening torque in this instruction manual, tighten to the specified torque using a torque wrench.
- Do not modify the parking sensors (Rear).
- Do not install the parking sensors (Rear) remove in any way other than described in the following instructions.
- If in any doubt, please ask your Mazda dealer to install the accessory in order to prevent errors in installation.
- If you have any questions about the use of the accessory, ask your Mazda dealer for proper advice before using it.
- Mazda and its suppliers are not responsible for injuries, accidents, and damage to persons and property that arise from the failure of the dealer or installer to follow these instructions.
- To ensure safety and reliability of the work, installation, removal and disposal work must be carried out by an Authorized Mazda Dealership.
- Be careful not to lose removed parts, and be sure that they are kept free from scratches, grease or other dirt.

<b>PART NAME:</b>	<b>Parking Sensors (Rear)</b>
<b>VEHICLE:</b>	<b>MAZDA CX-5</b>
<b>PART NUMBER:</b>	<b>KB7W V7 290A (Parking Sensors, Main Kit)</b>
	<b>C860 V7 281A (Parking Sensors, Sensor Kit)</b>
	<b>KD33 V7 282 (Optional ON-OFF switch)</b>

### **NOTE**

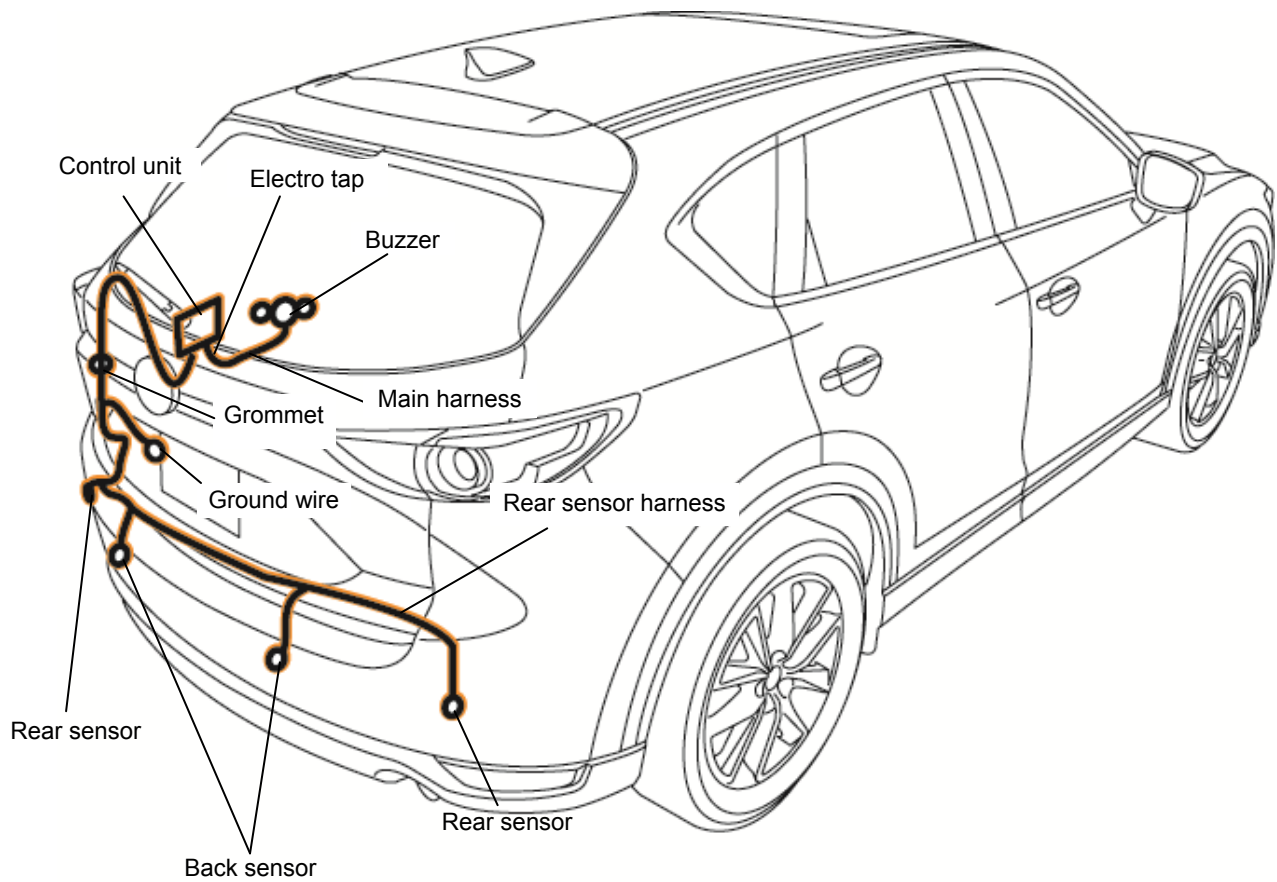
#### **To the dealer**

- Please turn over these instructions to the customer after installation.

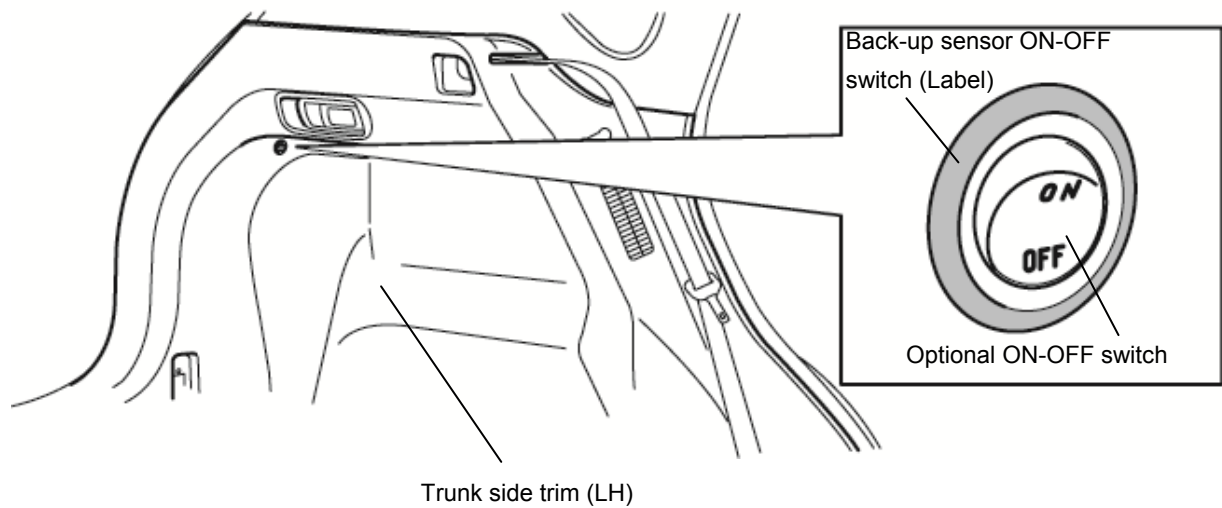
#### **To the customer**

- Keep these instructions after installation. The instructions may be necessary for installing other optional parts or removal of this accessory.
- Should the vehicle or this accessory be resold, always leave these instructions with vehicle for the next owner.

## 1. INSTALLATION VIEW



### 【Optional ON-OFF switch installed】


















## 2. PARTS




### Note

- Verify that the kit includes all the following parts and that the parts are not dirty, scratched, or damaged.

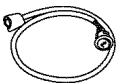


#### KB7W V7 290 (Parking Sensors, Main kit)

Part	Part name	Qty.	Part	Part name	Qty.	Part	Part name	Qty.
	Control unit	1		Buzzer	1		Main harness	1
	Electro tap	1		Mount base	9		Sensor harness	1
	Tie wrap	30		Double-sided adhesive tape (Control unit)	1		Double-sided adhesive tape (Buzzer)	1
	Cushioning tape	2		Grommet	1		Crump tie wrap	1
	Female contact housing	1		Installation instructions	1		User manual	1

#### C860-V7-281A (Parking Sensors, Sensor kit : needed x2 sets for a vehicle)

Part	Part name	Qty.	Part	Part name	Qty.	Part	Part name	Qty.
	Sensor	2		rubber	2		Sensor spacer	2

#### KD33-V7-282 (Optional ON-OFF switch)








Part	Part name	Qty.	Part	Part name	Qty.	Part	Part name	Qty.
	Optional ON-OFF switch	1		Harness (With electro taps)	1		Back-up sensor ON-OFF switch (Label)	1

## 3. BEFORE INSTALLATION

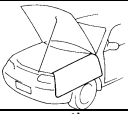
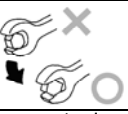
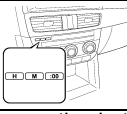
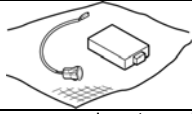
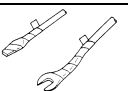
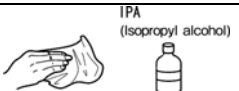



### ■ REQUIRED TOOLS

☆Screwdriver (Flathead)	☆Screwdriver (Phillips)	☆Socket wrench
☆Box-end wrench/Combination wrench	☆Torque wrench	☆Nipper
☆Pliers	☆Hole saw (20mm)	☆Drill (1.5mm, 3mm)
☆Punch	☆Pincers	☆Remover tool
☆Flathead screwdriver wrapped with protective tape	☆Fastener remover wrapped with protective tape	☆Flat, round file
☆Round file	☆Deburring Tool	☆Masking tape
☆Soft clean cloth	☆Electrical vinyl tape	☆Mat
☆IPA (Isopropyl alcohol)		

### ⚠ WARNING

			
If the negative battery is connected while performing the work, it may cause electrocution or other personal injuries. Disconnect the negative cable before /installation.	Before performing any work, park the vehicle on level ground, apply the parking brake securely, and then block the wheels.	Be careful when handling drills and other sharp objects. If not handled properly, it could result in serious injury.	
			
When connecting/disconnecting connectors, grasp the connectors, not the wires. Otherwise, a fire or other accident could occur due to a short circuit or poor contact.	Make sure the connector is securely pressed in until a click sound is heard. Otherwise, a fire or other accident may occur due to an open circuit or poor contact.	Secure the wiring harness with the tape (part included) so that they are not left dangling. Otherwise, a fire or other accident may occur due to a short circuit.	Do not pull a wiring harness with excessive force. Doing so can cause breakage which could result in a short circuit or a fire.

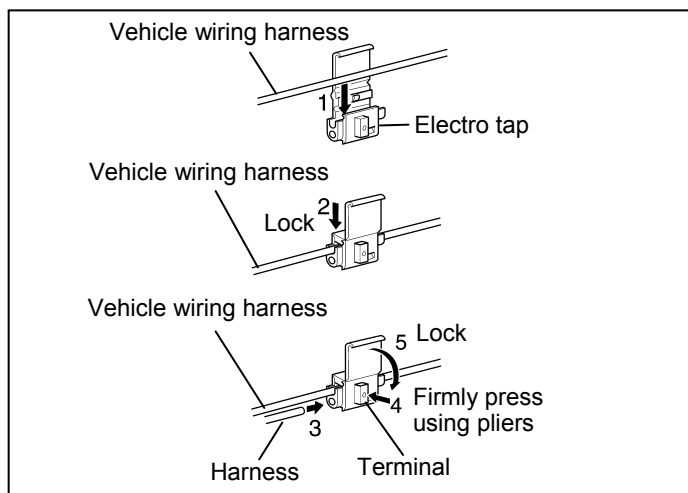
### ⚠ CAUTION

			
Be sure to cover the vehicle body with protectors or mats to prevent stains, scratches and damage when removing/installing the vehicle parts.	Using improper tools may damage parts. Use the correct tool for the job.	When the negative battery cable is removed, the initial value or memory for the power windows, clock, i-stop, steering angle sensor reference point will be cleared. Perform re-initialization.	Put the removed parts and the kit accessory parts on a protective sheet to prevent scratches.
			
Wrap protective tape around screwdrivers and fastener remover tools to prevent scratching the vehicle.	If there is dust, dirt or grease on the adhesion surface, the adhesive strength of the double-sided adhesive tape will be weakened. Wash and degrease the surface of the adhesion area before applying the double-sided adhesive tape. Be sure to wash interior and exterior parts using IPA (isopropyl alcohol).	If tape or a mount base is removed and then re-adhered, the adhesive strength will be weakened. Before adhering, accurately determine the adhesion position.	To assure sufficient adhesiveness of the double-sided adhesive tape, press the adhesive surface of the tape to the adhesion surface evenly. In particular, press sufficiently at the ends of the double-sided adhesive tape where the adhesion surface is curved.
			
Make sure to remove burrs from the surface so that the bumper surface is smooth.			

### Advice


Refer to the Workshop Manual for removal and installation of vehicle parts.

## ■ Branch connection procedure using electro tap



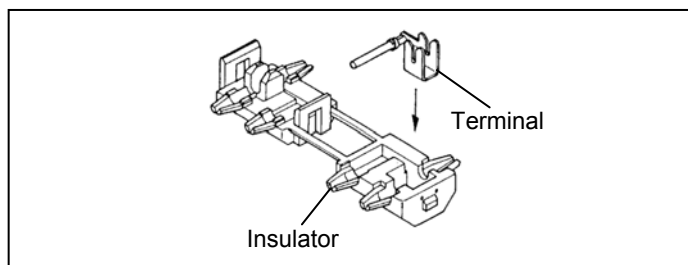
1. Insert the harness and vehicle wiring harness into the electro tap.
2. Fold the electro tap as shown in the figure and lock it.

### ⚠ CAUTION

- Firmly engage the lock part until a click sound is heard.

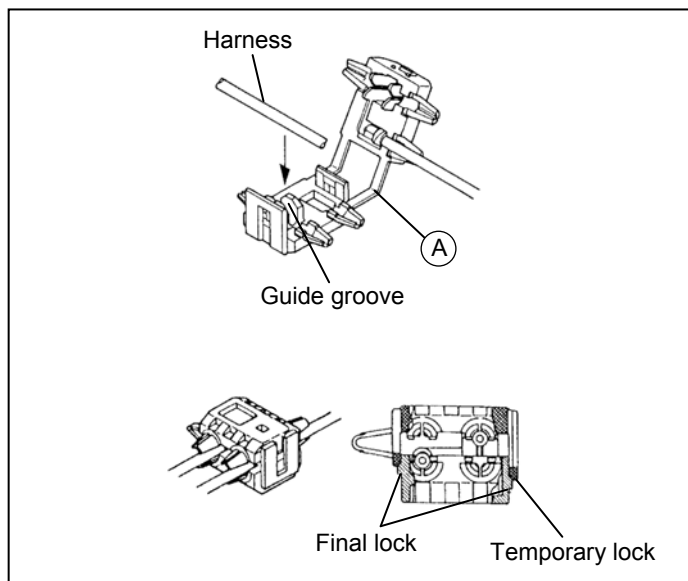
3. Insert the harness to the end of the electro tap.
4. Firmly press the electro tap terminal using pliers.
5. Fold the electro tap in the direction of the arrow shown in the figure and lock it.
6. Soundproof using urethane tape.

## ■ Branch connection procedure using electro-tap (Optional ON-OFF switch installed)



### ⚠ CAUTION

- The terminal is embedded in the insulator. If it is not, insert the terminal as shown in the figure and press it in until it is securely fixed.



1. Put the harness to be branch-connected into the guide groove.
2. Fold back the electro-tap from the A part as shown in the figure.
3. Lock the electro-tap temporarily.

### ⚠ CAUTION

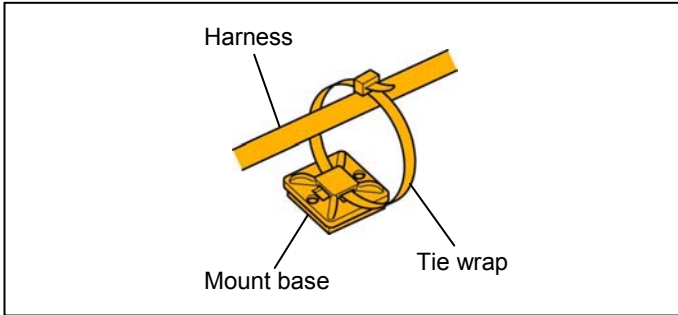
- The temporary lock is provided on only one side. Stop short of locking the final locks.

4. Firmly press the electro tap terminal using pliers.

### ⚠ CAUTION

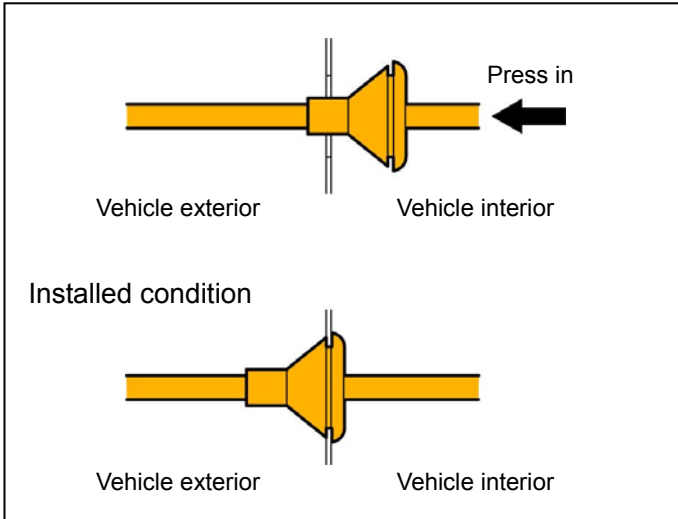
- Pinch the electro-tap until a clicking sound is heard from the final locks on the both sides.

## ■ Securing harness



1. When the wiring harness is secured using a mount base, passing a tie wrap through the mount base and temporarily tightening the wiring harness as shown in the figure will make the operation easier.

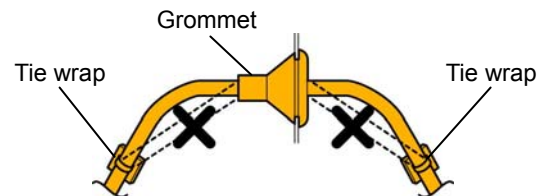
## ■ Securing grommet



1. When inserting the grommet, firmly press in the entire circumference by hand.

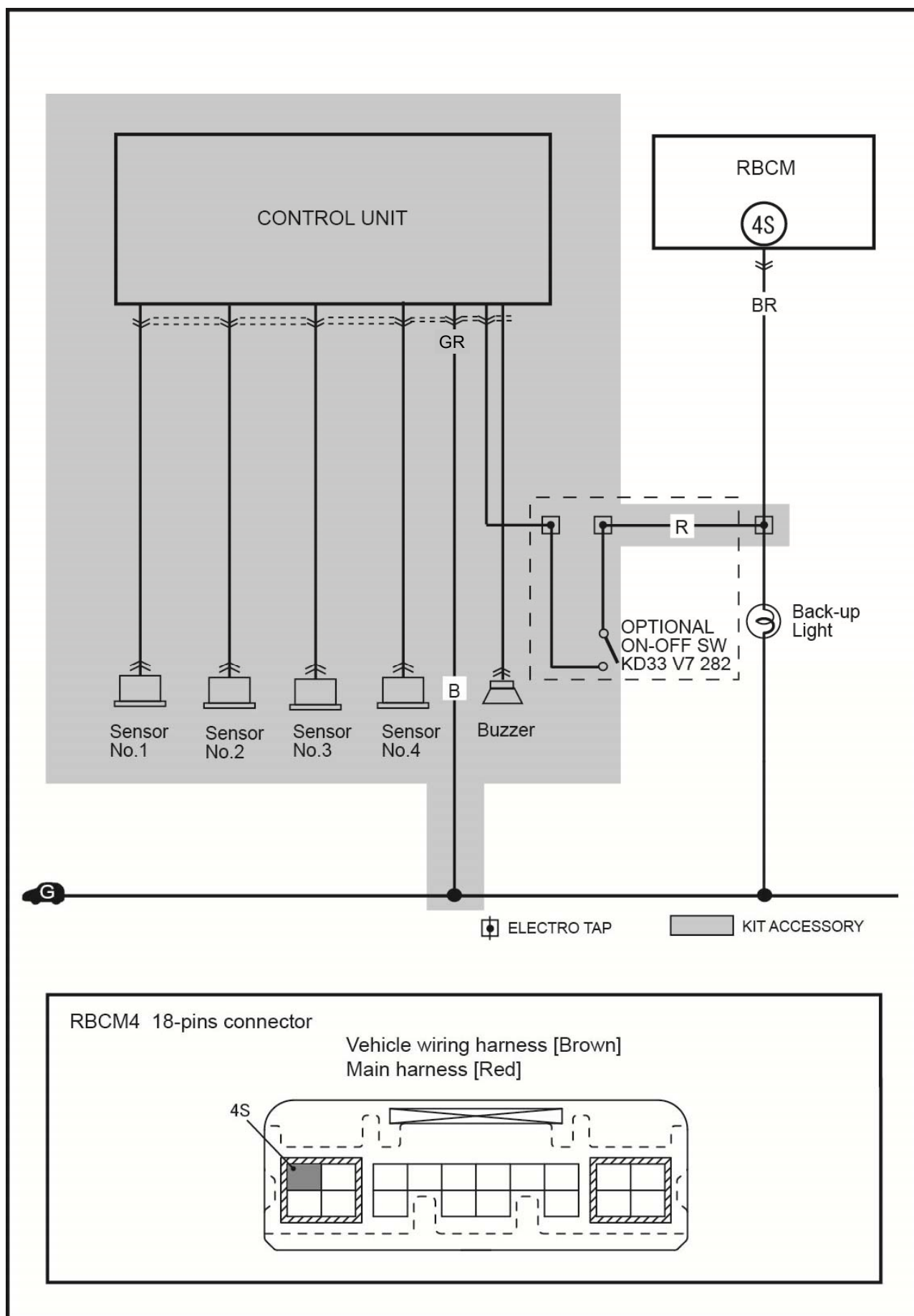
### ⚠ CAUTION

- Completely encapsulate with no eversion on the grommet. Otherwise, water may penetrate the cabin causing rust or a malfunction.
- When securing the tie wrap, be careful not to deform the grommet or separate it at the ends.



## 4. CONNECTION DIAGRAM

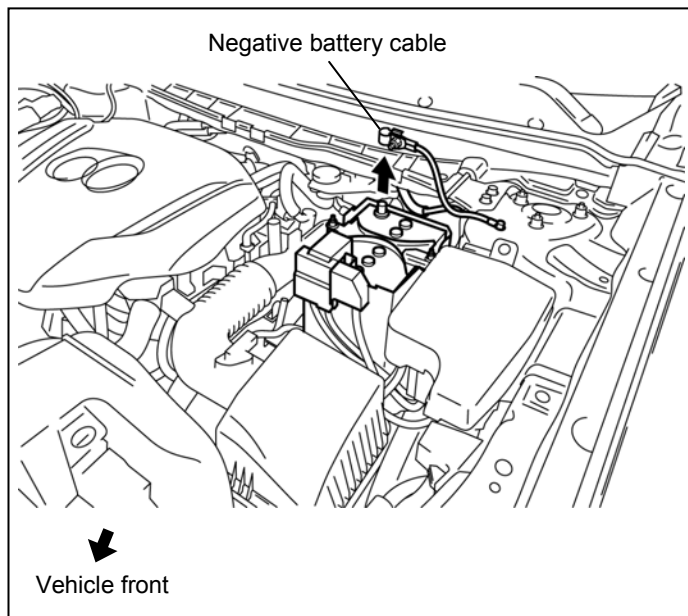
- Figure shows connector viewed from harness side.
- Wire color indicated in figure is wiring harness color for parking sensor kit.



## 5. VEHICLE PART REMOVAL

### ⚠ CAUTION

- Be careful not to damage or lose any parts removed from the vehicle since they will be reused.



### Negative battery cable disconnection

1. Set the selector lever to P range.  
(AT vehicles only)

### ⚠ WARNING

- When removing/installing the parts, park the vehicle on level ground and apply the side brake securely. Be sure to turn the ignition switch off, otherwise the vehicle can move, causing personal injury or vehicle damage.

2. Disconnect the negative battery cable and wrap tape around it to insulate.

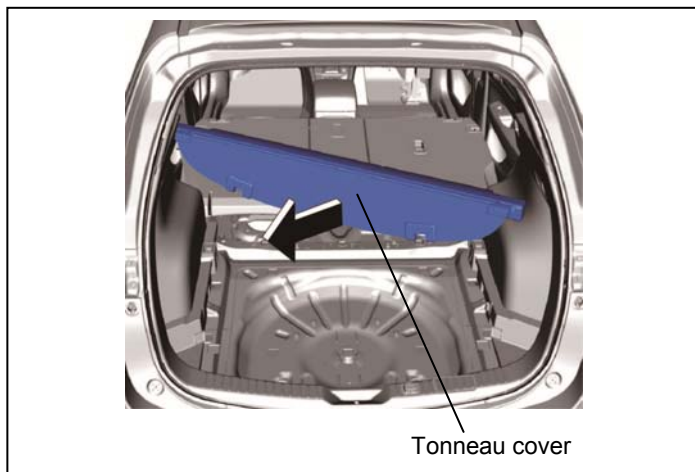
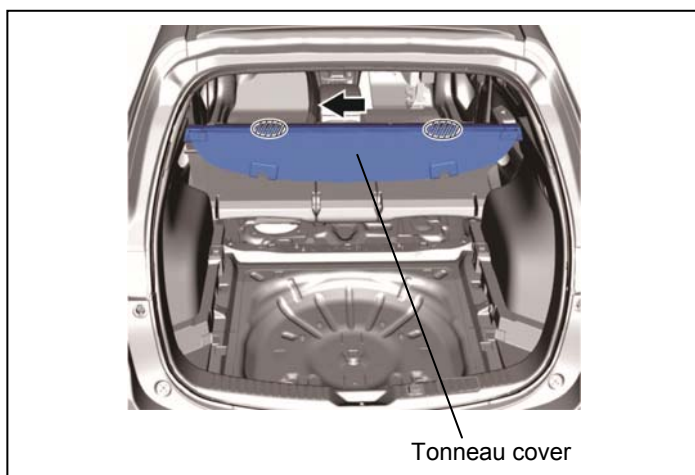
### ⚠ WARNING

- If the negative battery cable is connected while performing the work, it may cause electrocution or other personal injuries. Disconnect the negative battery cable before removal/installation.

**Tightening torque : 4.0-6.0 N·m**

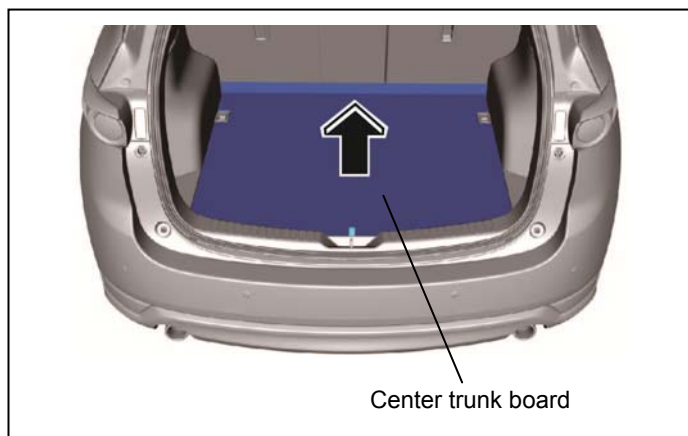
### Tonneau cover removal

1. Hold the shaded areas shown in the figure and move the tonneau cover in the direction of the arrow.



2. Remove the tonneau cover in the direction of the arrow shown in the figure.



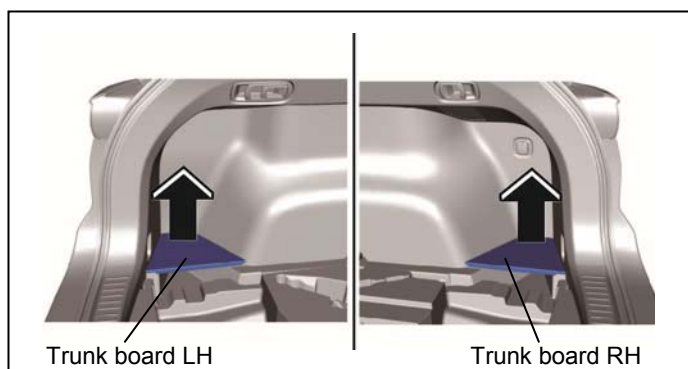
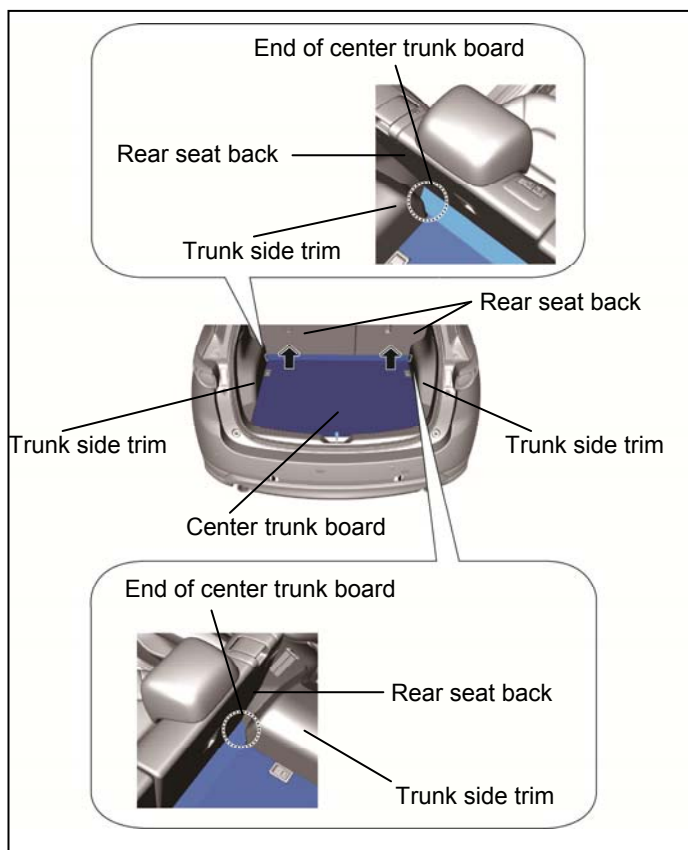


## Trunk board removal

1. Remove the center trunk board.

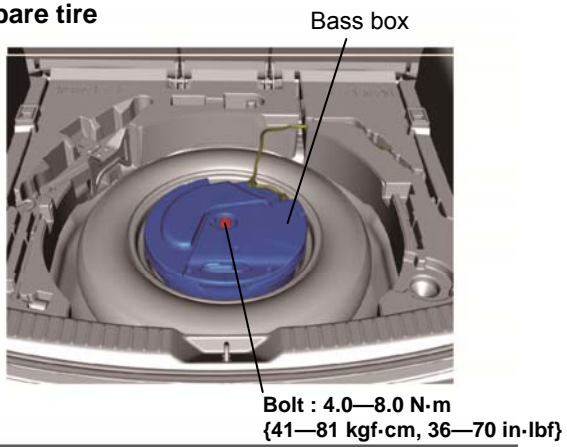
### Note

- Move the center trunk board in the direction of the arrows shown in the figure, and remove the ends of the center trunk board from the gap between the trunk side trim and the rear seat back.

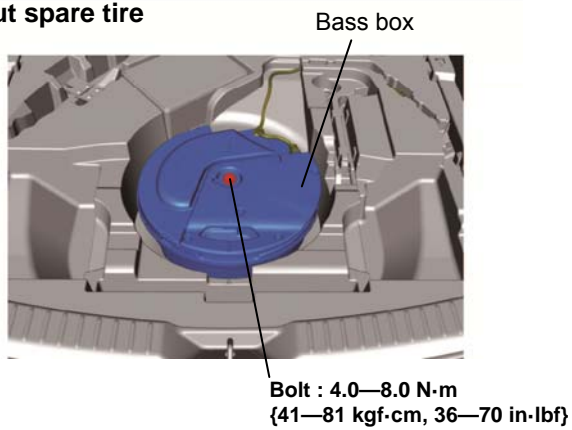


2. Remove the trunk board RH and trunk board LH.

### With spare tire



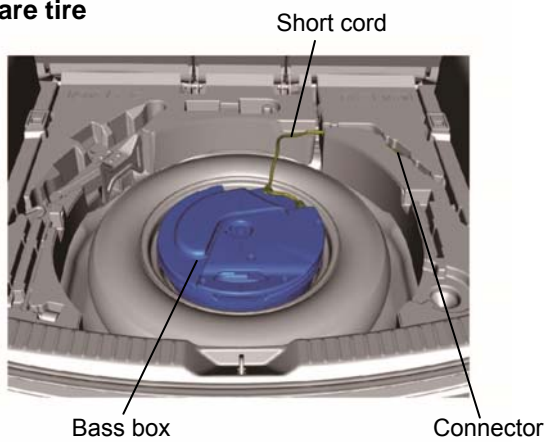
### Without spare tire



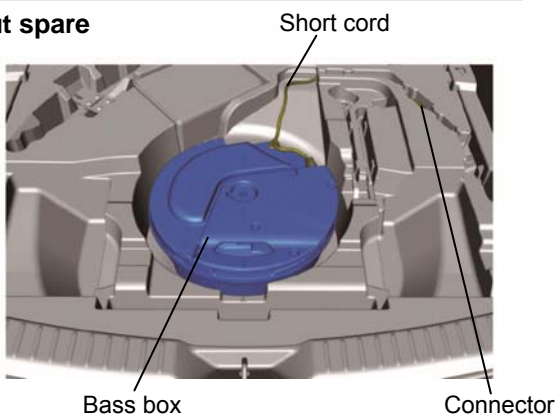
## Bass-box removal

1. Remove the bolt.

### With spare tire

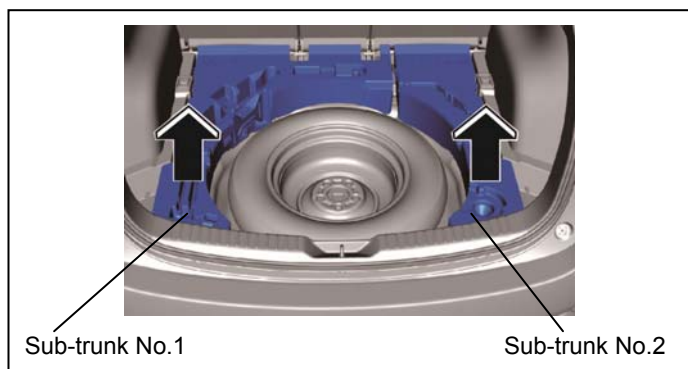


### Without spare



2. Disconnect the connector.

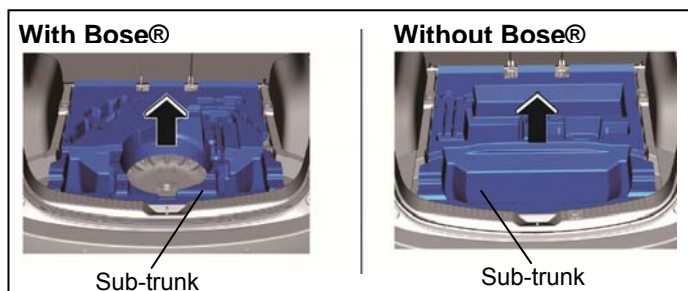
3. Remove the bass box and short cord as a single unit.



## Sub-trunk removal

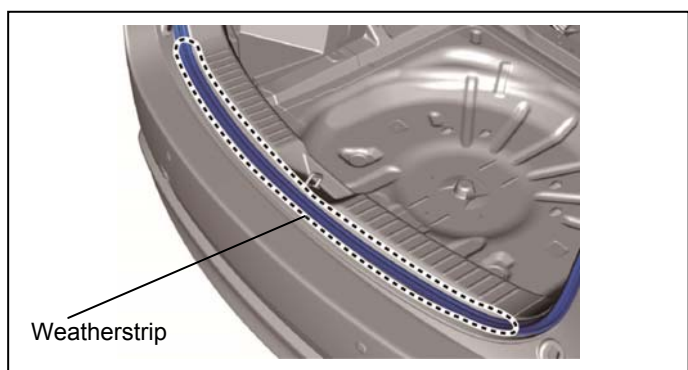
### [With spare tire]

1. Remove sub-trunks No.1 and No.2 in the direction of the arrows shown in the figure.



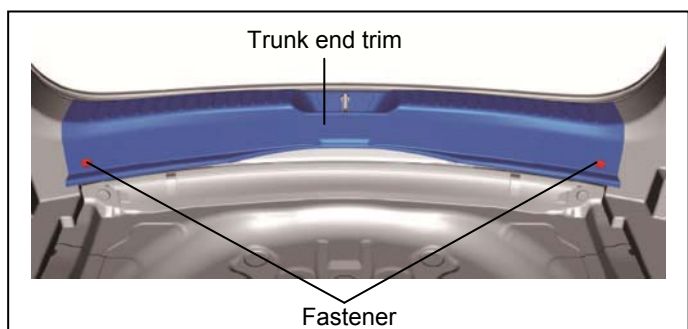
### [Without spare tire]

2. Remove the sub-trunk in the direction of the arrow shown in the figure.

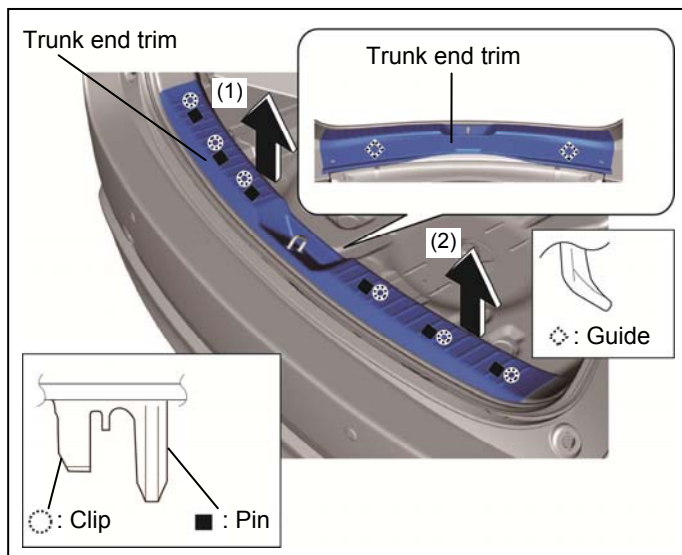


## Trunk end trim removal

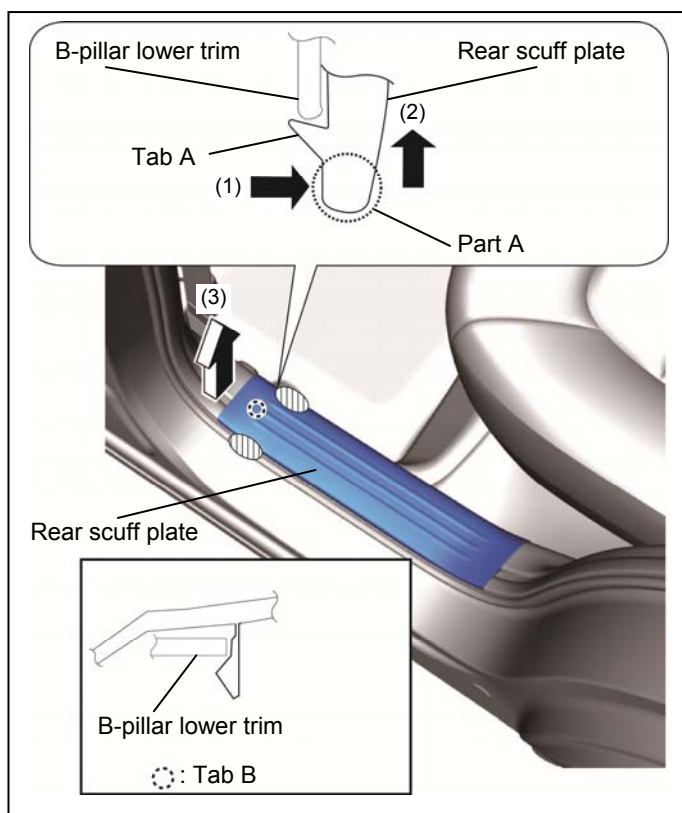
1. Partially peel back the weatherstrip.



2. Remove the fasteners.

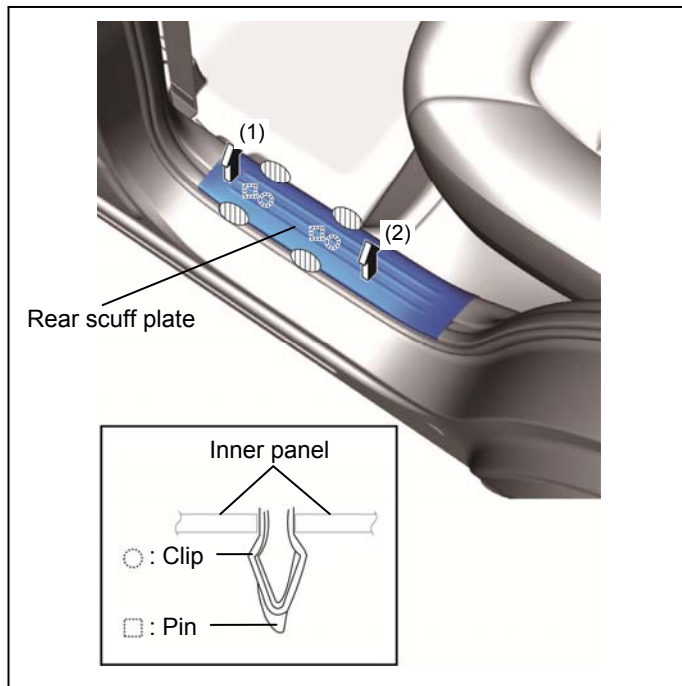


3. Move the trunk end trim in the order of arrows (1) and (2) shown in the figure, remove it while detaching the clips, pins, and the guides.

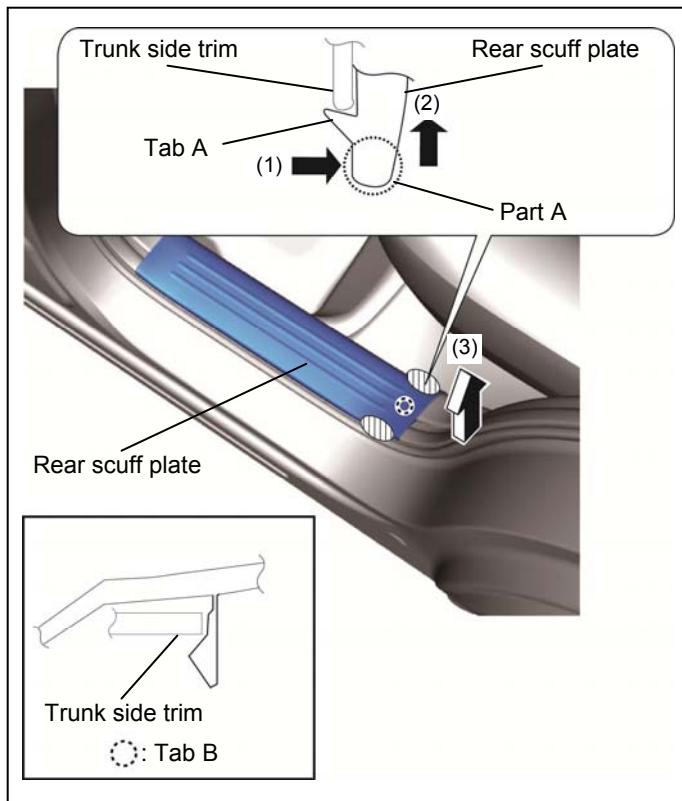


### Rear scuff plate removal

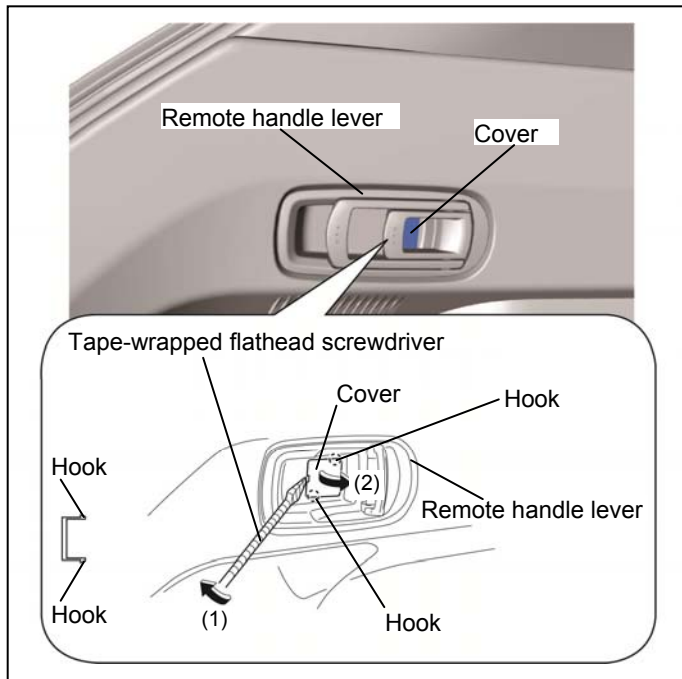
1. Hold part A shown in the figure, open the rear scuff plate in the direction of arrow (1), move it in the direction of arrow (2), and detach tab A of the rear scuff plate from the B-pillar lower trim.
2. Hold the shaded areas shown in the figure, move the rear scuff plate in the direction of arrow (3), and detach tab B of the rear scuff plate from the B-pillar lower trim.



3. Hold the shaded areas shown in the figure, move the rear scuff plate in the direction of arrow (1), detach the clip from the inner panel, and pull out the pin.
4. Hold the shaded areas shown in the figure, move the rear scuff plate in the direction of arrow (3), and remove it while detaching tab B of the rear scuff plate from the trunk side trim.

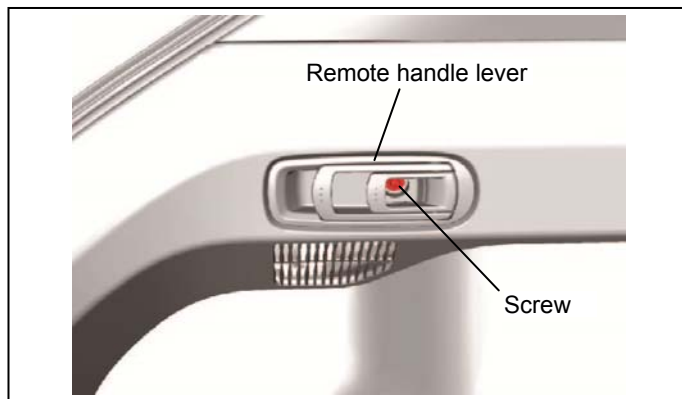


5. Hold part A shown in the figure, open the rear scuff plate in the direction of arrow (1), move it in the direction of arrow (2), and detach tab A of the rear scuff plate from the trunk side trim.
6. Hold the shaded areas shown in the figure, move the rear scuff plate in the direction of arrow (3), and remove it while detaching tab B of the rear scuff plate from the trunk side trim.

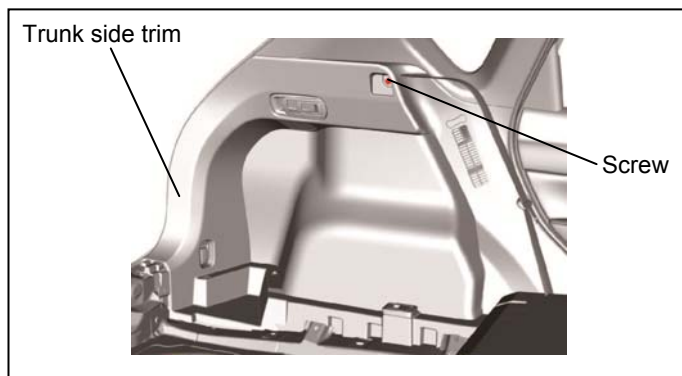


## Trunk side trim removal

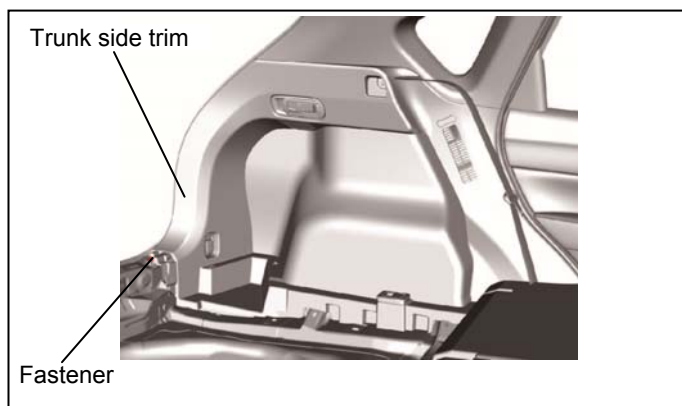
1. Insert a tape-wrapped flathead screwdriver into the position shown in the figure, move it in the direction of arrow (1), and while detaching the hooks of the remote handle lever, open the cover in the direction of arrow (2).



2. Remove the screw.

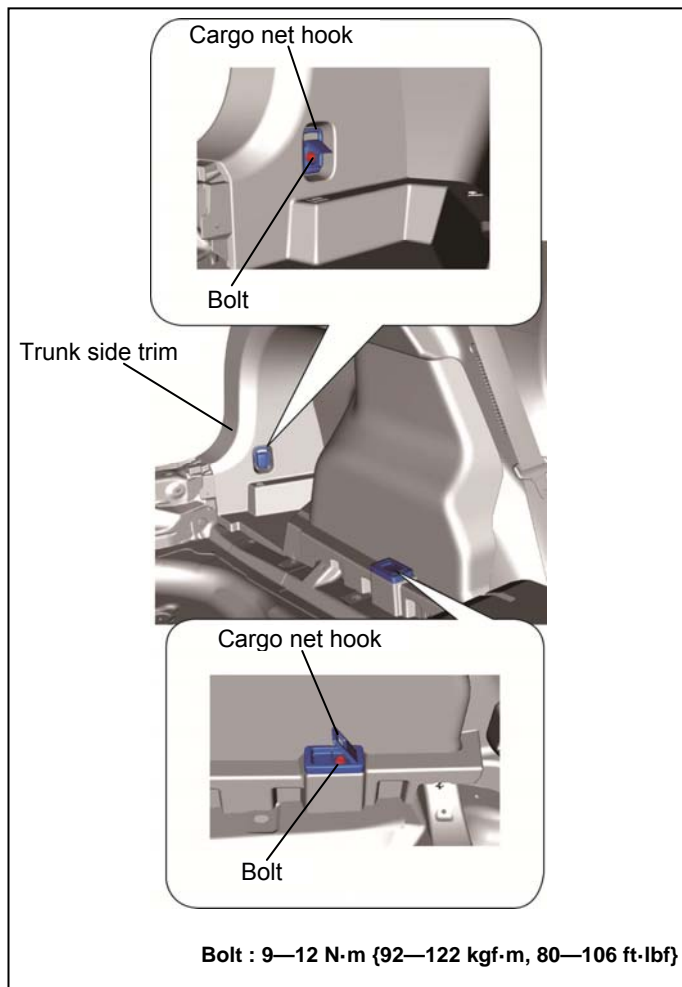


3. Remove the screw.

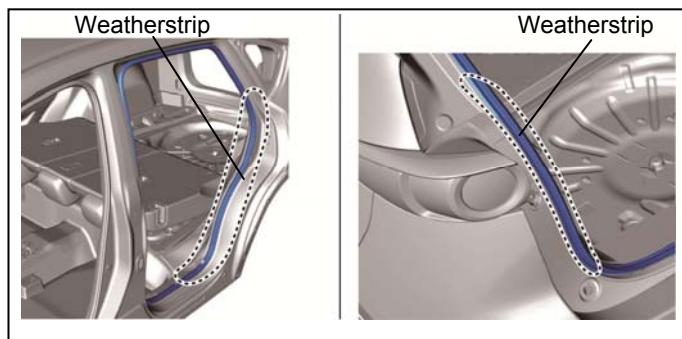


4. Remove the fastener.

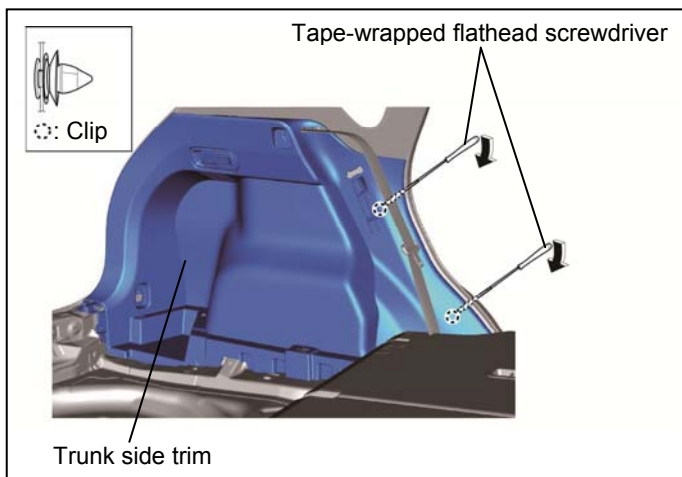




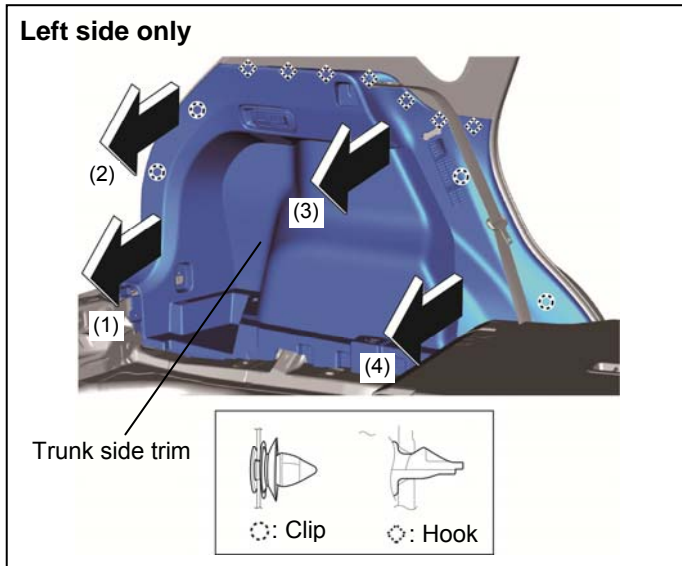
5. Remove the bolts.
6. Remove the cargo net hooks.



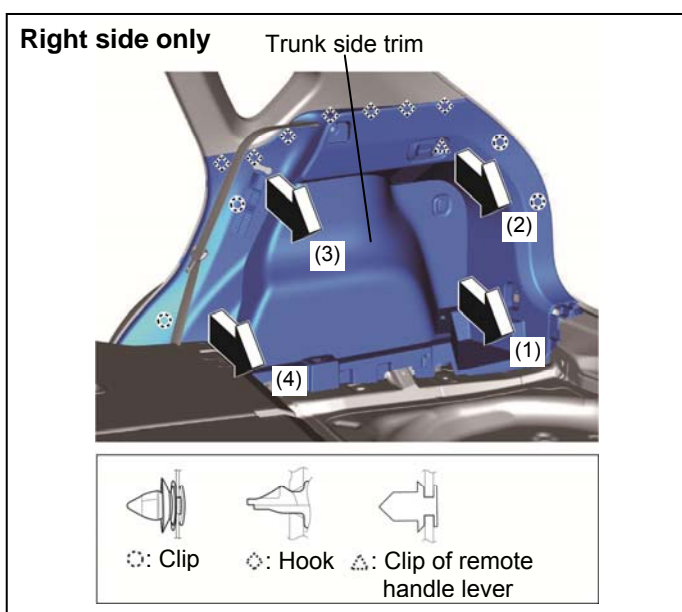
7. Partially peel back the weatherstrips.
8. Remove the rear seat cushion.
9. Fold the rear seat back.



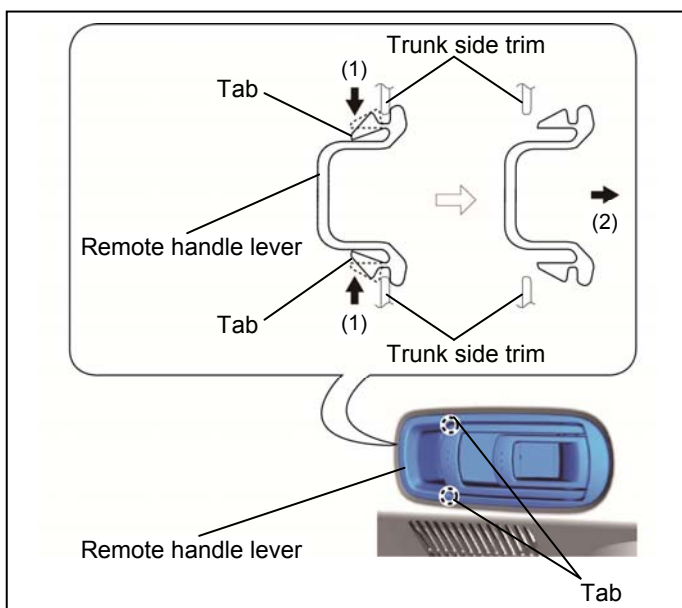
10. Insert a tape-wrapped flathead screwdriver into the position shown in the figure, move it in the direction of the arrows, and remove the clips.



11. Move the trunk side trim in the order of arrows (1), (2), (3), and (4) shown in the figure, and remove the clips and hooks.

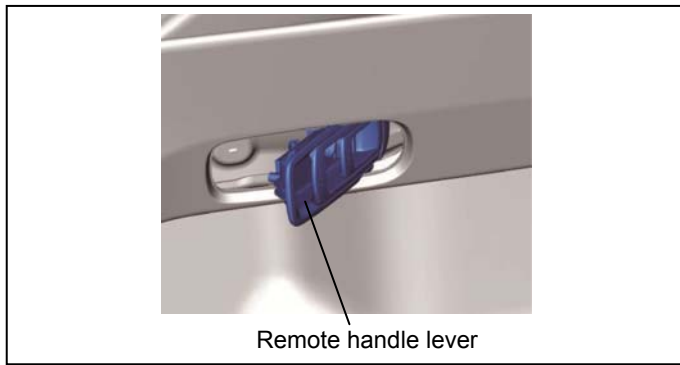


12. Move the trunk side trim in the order of arrows (1), (2), (3), and (4) shown in the figure, and remove the clips, hooks, and the clip of the remote handle lever.

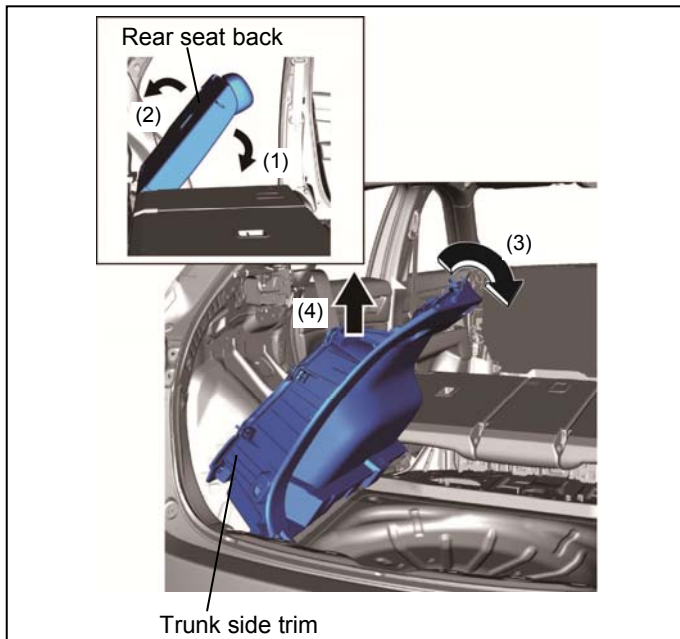


13. Insert a hand into the back side of the trunk side trim, press the tabs of the remote handle lever in the direction of arrows (1) shown in the figure, and remove the remote handle lever in the direction of arrow (2).

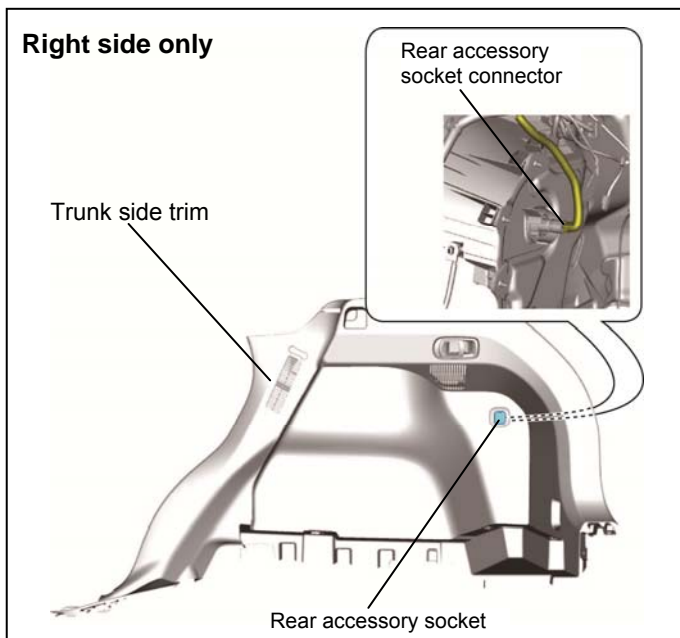




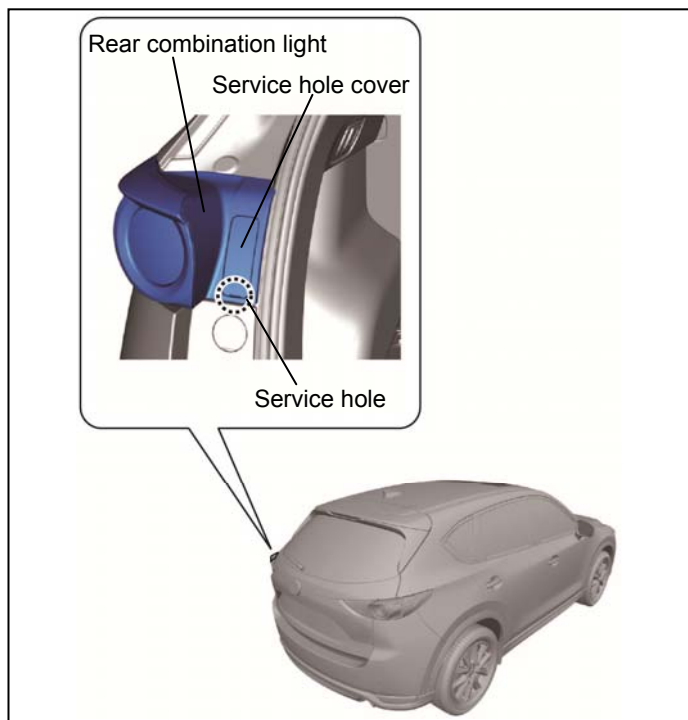
14. Set the remote handle lever aside.



15. Move the position of the rear seat back in the direction of arrows (1) and (2) shown in the figure, while adjusting it at a position where the trunk side trim can be removed, move the trunk side trim in the direction of arrow (3) shown in the figure, and remove it in the direction of arrow (4).



16. Disconnect the rear accessory socket connector.

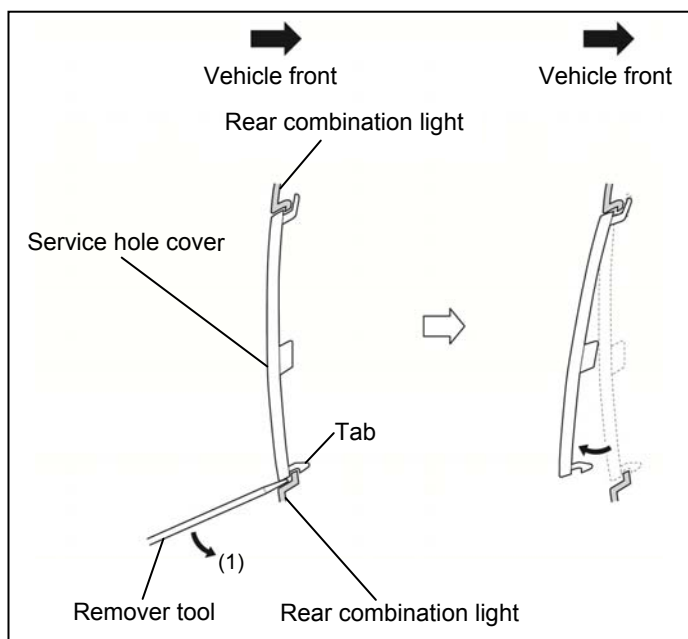


## Rear combination light removal

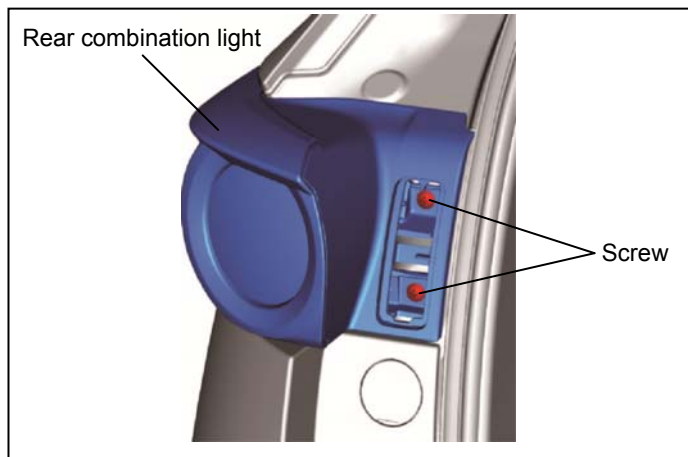
### Note

- Fogging or condensation on the inside of the rear combination lights may occur due to a natural phenomenon occurring as a result of a temperature difference between the interior and exterior of the combination lights. However, it has no effect on the light performance because the temperature inside the rear combination lights rises after illuminating a rear turn light or a period of time has elapsed.

1. Insert the remover tool into the service hole at the position shown in the figure.



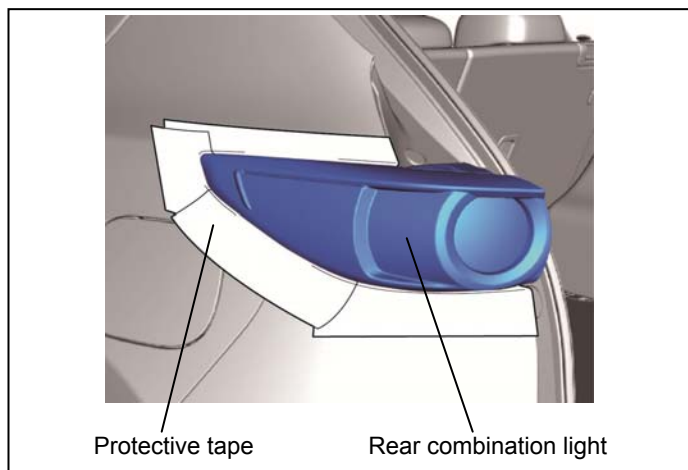
2. Move the remover tool in the direction of arrow (1) shown in the figure and pull out the service hole cover tab from the rear combination light.
3. Remove the service hole cover.



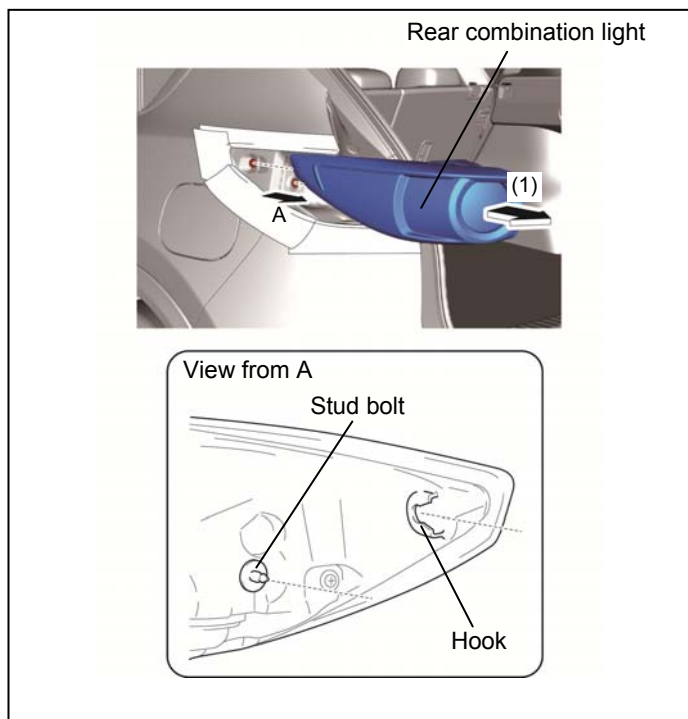
4. Remove the screws.

### CAUTION

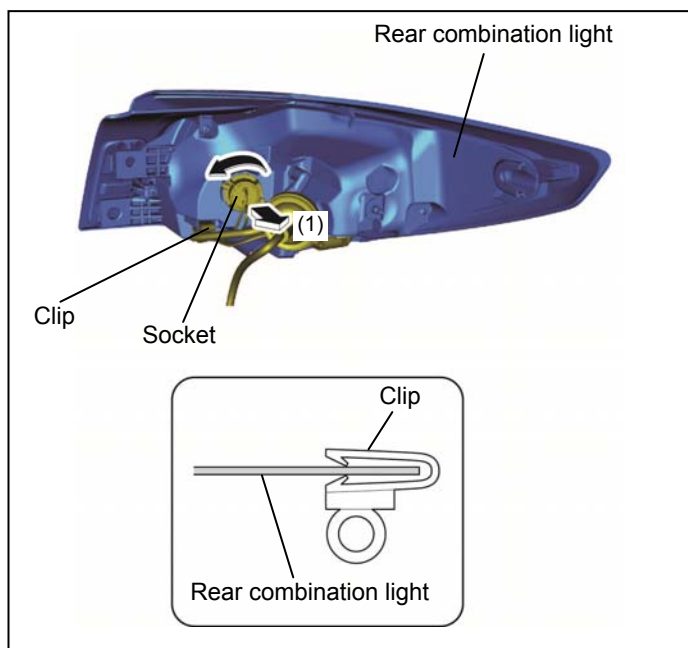
- When removing the rear combination light from the body, it could interfere with the body and cause scratching or damage to the body. When removing the rear combination light from the body, apply protective tape to the body.



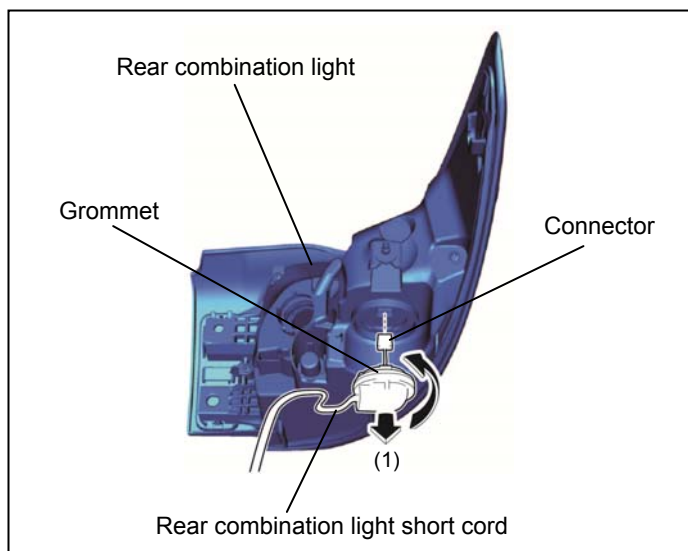
5. To prevent scratches or damage, affix protective tape to the position shown in the figure.



6. Pull the rear combination light in the direction of arrow (1) shown in the figure and pull out the rear combination light from the body.



7. Remove the clip from the rear combination light.
8. Turn the socket counterclockwise and remove it in the direction of arrow (1) shown in the figure.

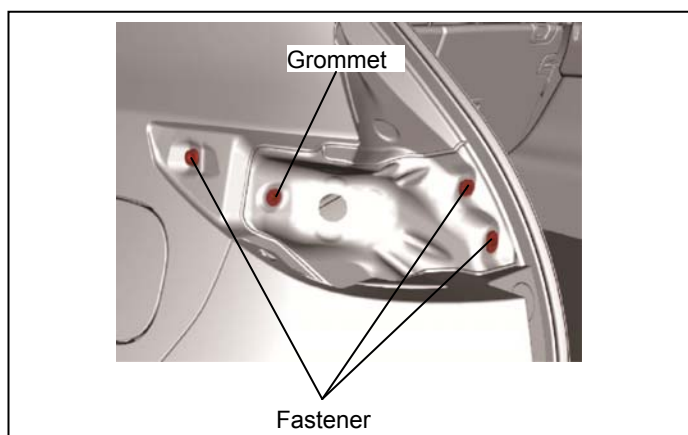


9. Turn the grommet counterclockwise and remove it in the direction of arrow (1) shown in the figure.

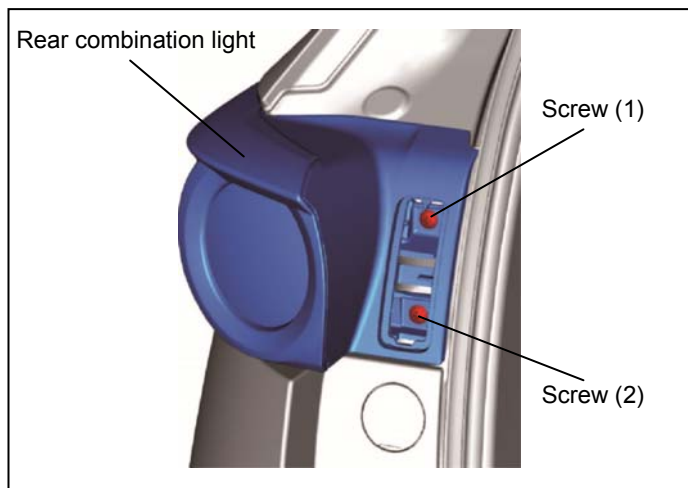
**CAUTION**

- When removing the rear combination light from the body, the rear combination light may fall off and be damaged. Remove the rear combination light from the body while holding the rear combination light on the lens side by hand.

10. Disconnect the connector and remove the rear combination light from the body.

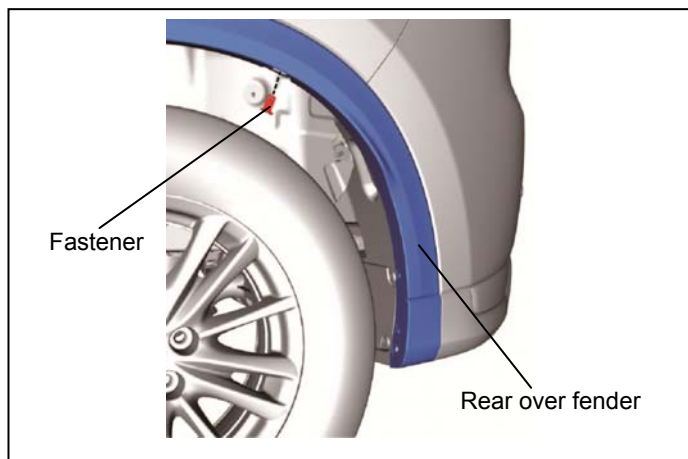


11. Remove the grommet and from the body.
12. Remove the fasteners.



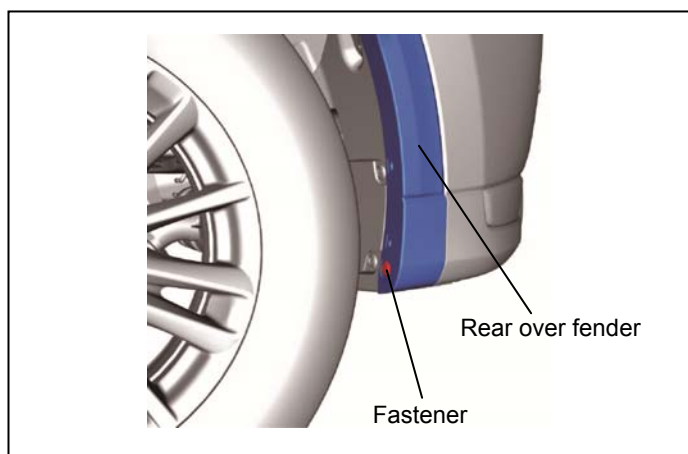
**Screw installation note**

1. Install the screws in the order of (1) and (2).

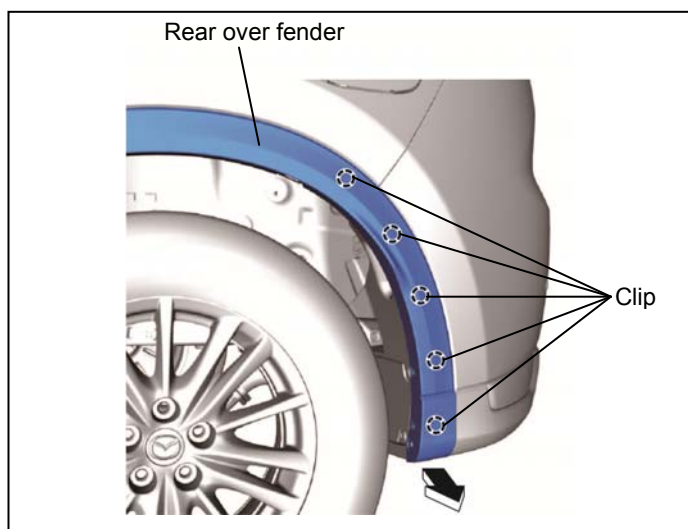


## Rear splash shield removal

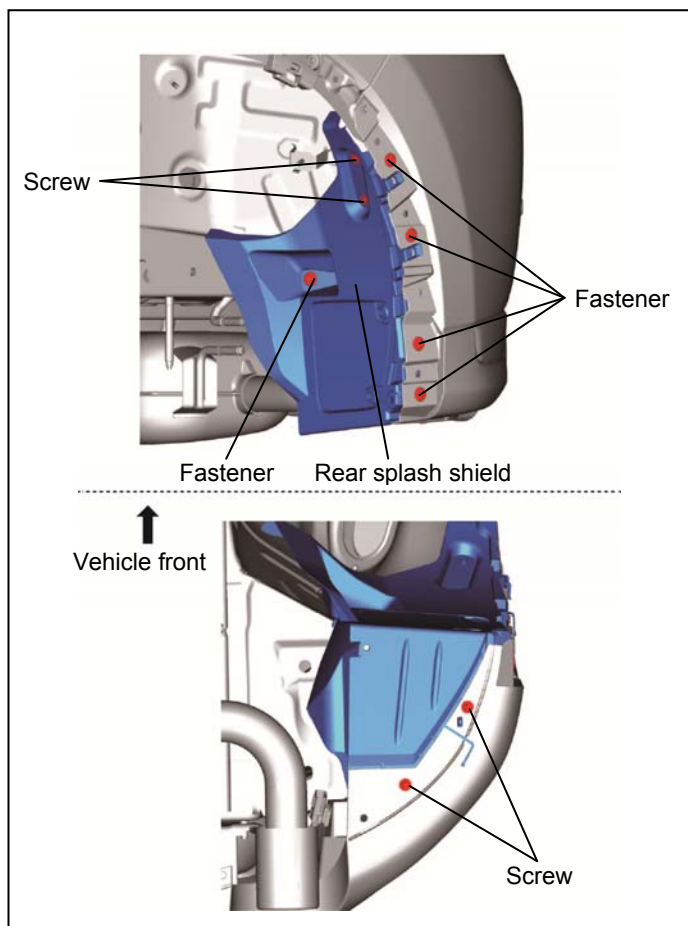
1. Remove the fastener.



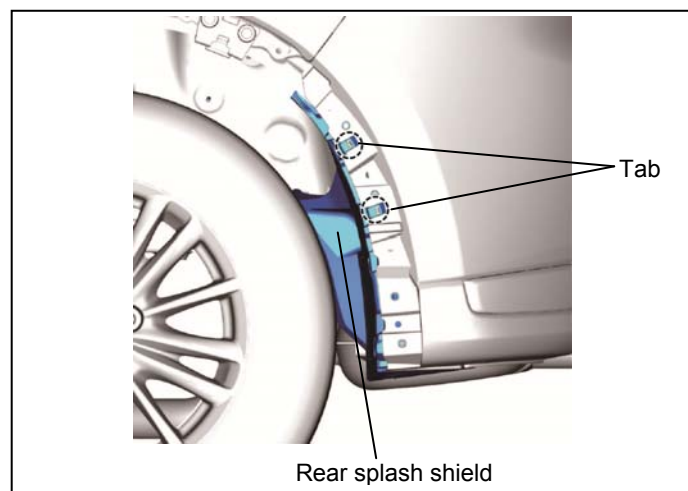
2. Remove the fastener.



3. Pull the rear over fender in the direction of the arrow shown in the figure and disengage the clips shown in the figure.

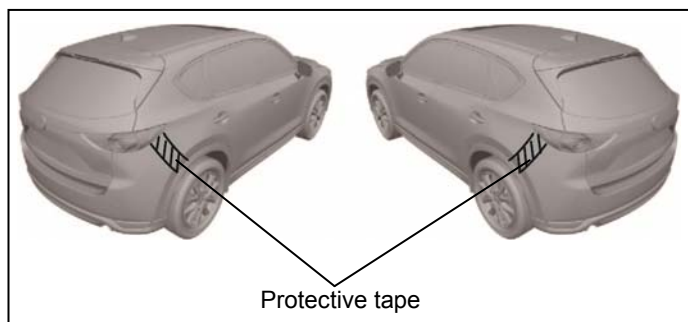


4. Remove the fasteners.
5. Remove the screws.



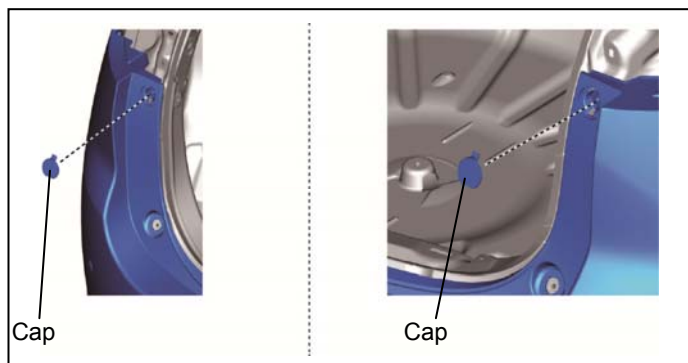
6. Detach the tabs from the rear bumper and remove the rear splash shield.





## Rear bumper removal

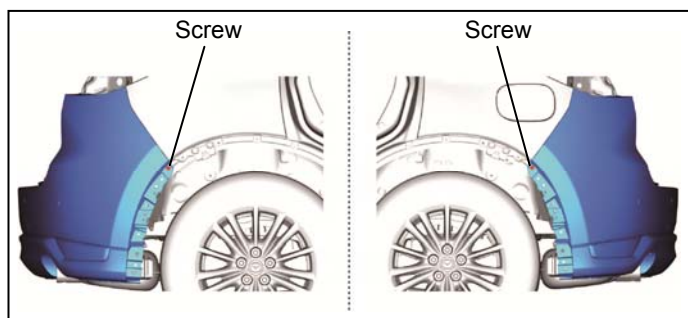
1. Affix the protective tape to the position shown in the figure to prevent scratches and damage.



2. Remove the cap.

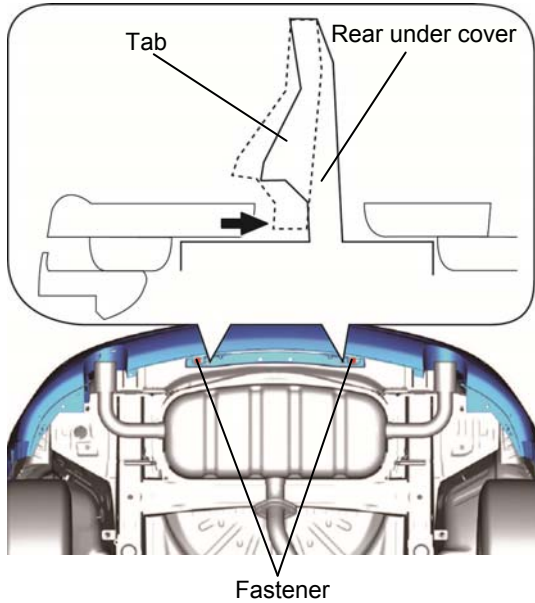


3. Remove the screws A and B.

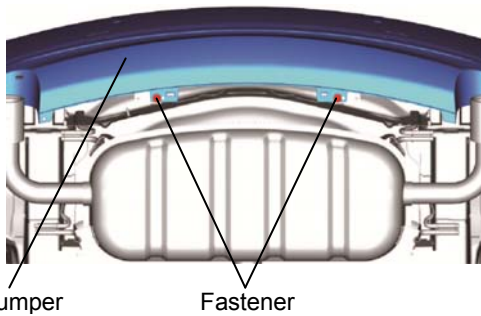


4. Remove the screws.

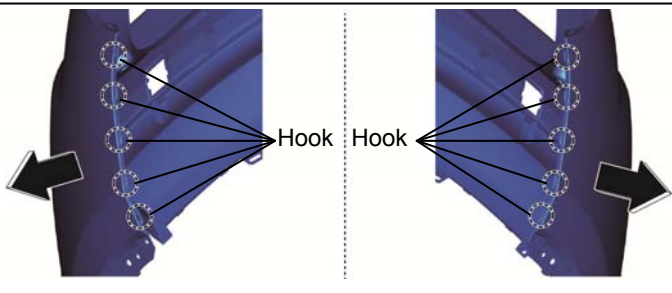
**With rear under cover**



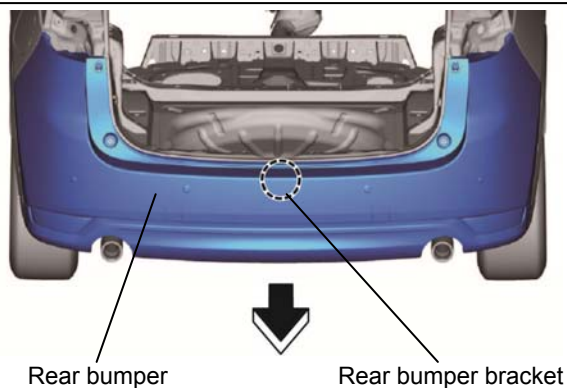
5. Remove the fasteners.
6. Press the tab of rear under cover and remove it.



7. Remove the fasteners.

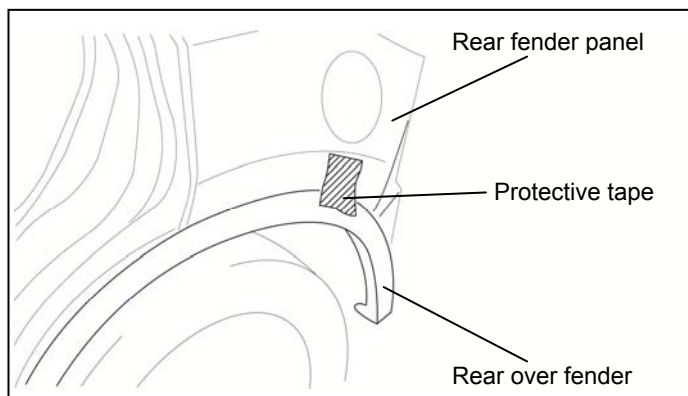


8. Detach the rear bumper from the rear bumper slider while holding the rear end of the rear bumper, moving it in the direction of the arrows shown in the figure, and detaching the hooks.



9. Move the rear bumper in the direction of the arrow shown in the figure and detach it from rear bumper bracket.

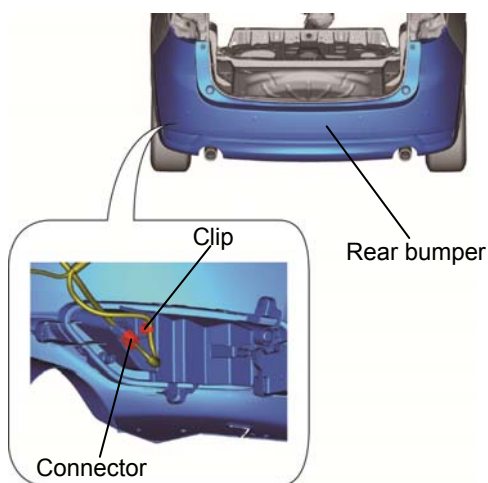




### ⚠ CAUTION

- After removing rear bumper, it may hit the rear over fender and cause a damage and/or injury. Perform the following procedure to prevent the rear over fender from being damaged.  
— Fix the rear over fender and rear fender panel with protective tape.

#### With rear parking sensor



10. Disconnect the connectors.
11. Detach the wiring harness clip.
12. Remove the rear bumper.

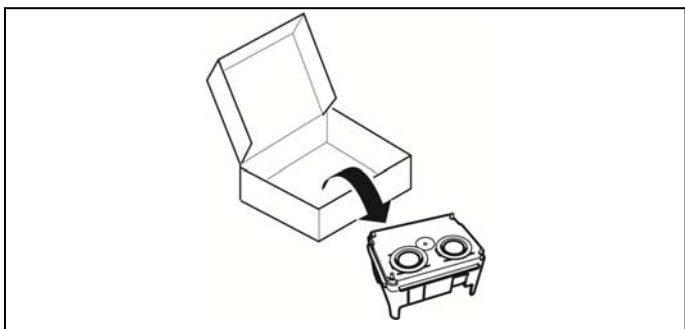
#### [With blind spot monitoring system]

13. If the rear bumper is replaced, perform the blind spot monitoring (BSM) radar test.

### ⚠ CAUTION

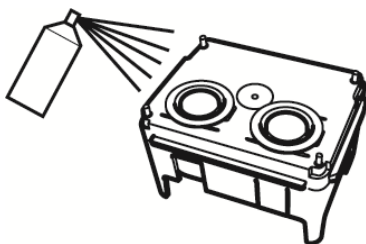
- If the rear bumper installation position is changed or individual differences (coating film/thickness) occur, the blind spot monitoring control module radar angle will deviate which could result in the module not detecting a vehicle approaching from the rear correctly. If the rear bumper is replaced, perform the blind spot monitoring (BSM) radar test.

## 6. PAINT SENSOR



### SURFACE TREATMENT

- a: Paint same as body color
- b: Masking not required



1. Masking not required.

2. Coat the sensor surface with the body color paint.

#### CAUTION

- Paint characteristics vary according to paint type. Check manufacturer specifications before painting.

3. Use two-component urethane paint. (Main component: acrylicpolyol, curing agent: isocyanate)

#### CAUTION

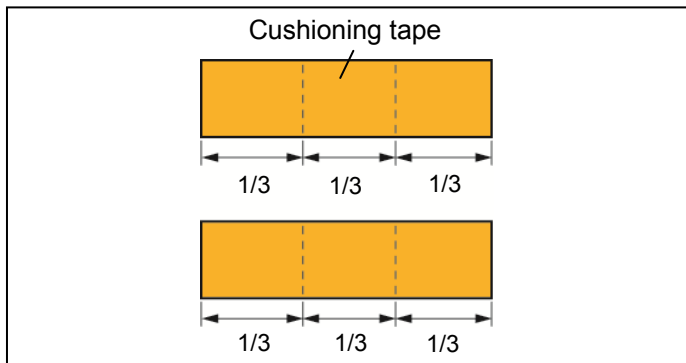
- Do not use lacquer paints because their weatherproofing and adhesion characteristics are poor.
- Maximum paint thickness: primer 30  $\mu\text{m}$ , paint and coating 95  $\mu\text{m}$  in total.
4. When painting, use a spray gun to apply the paint evenly.
- Paint infiltration into connector must be avoided; pin contact must be guaranteed after painting.
  - Maximum paint curing: 90 C for 1 hour.
5. After baking, do not touch the painted product until it has cooled down completely.
- Hot storage temperature: 85 C.
6. When the painting is dried, remove the sensors and the bezels from plastic base.

#### CAUTION

- Be careful not to peel off the paint when removing the sensors and the bezels from plastic base.

## 7. PREPARATION FOR INSTALLATION

### ■ Cutting the cushioning tape

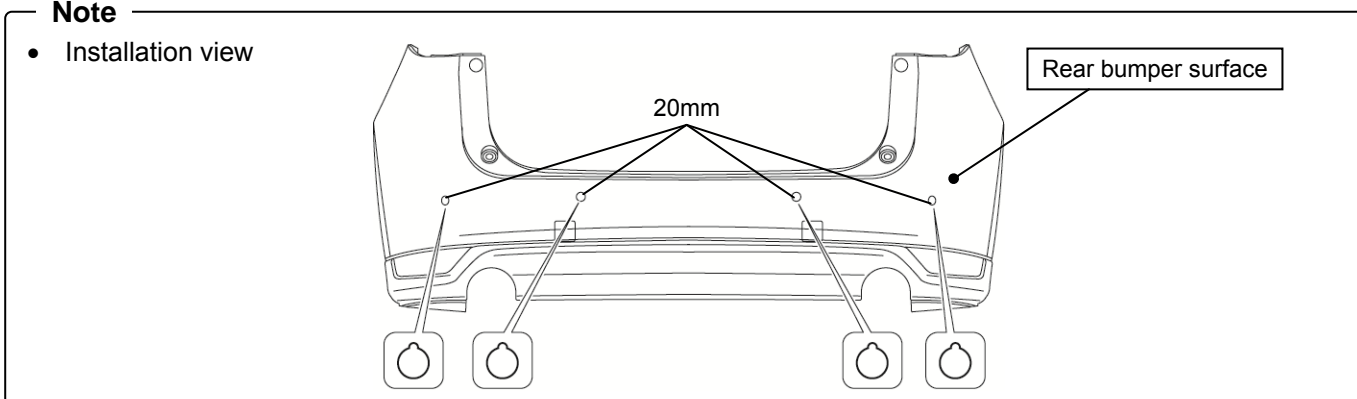


7. Cut the cushioning tape into thirds as shown in the left figure.

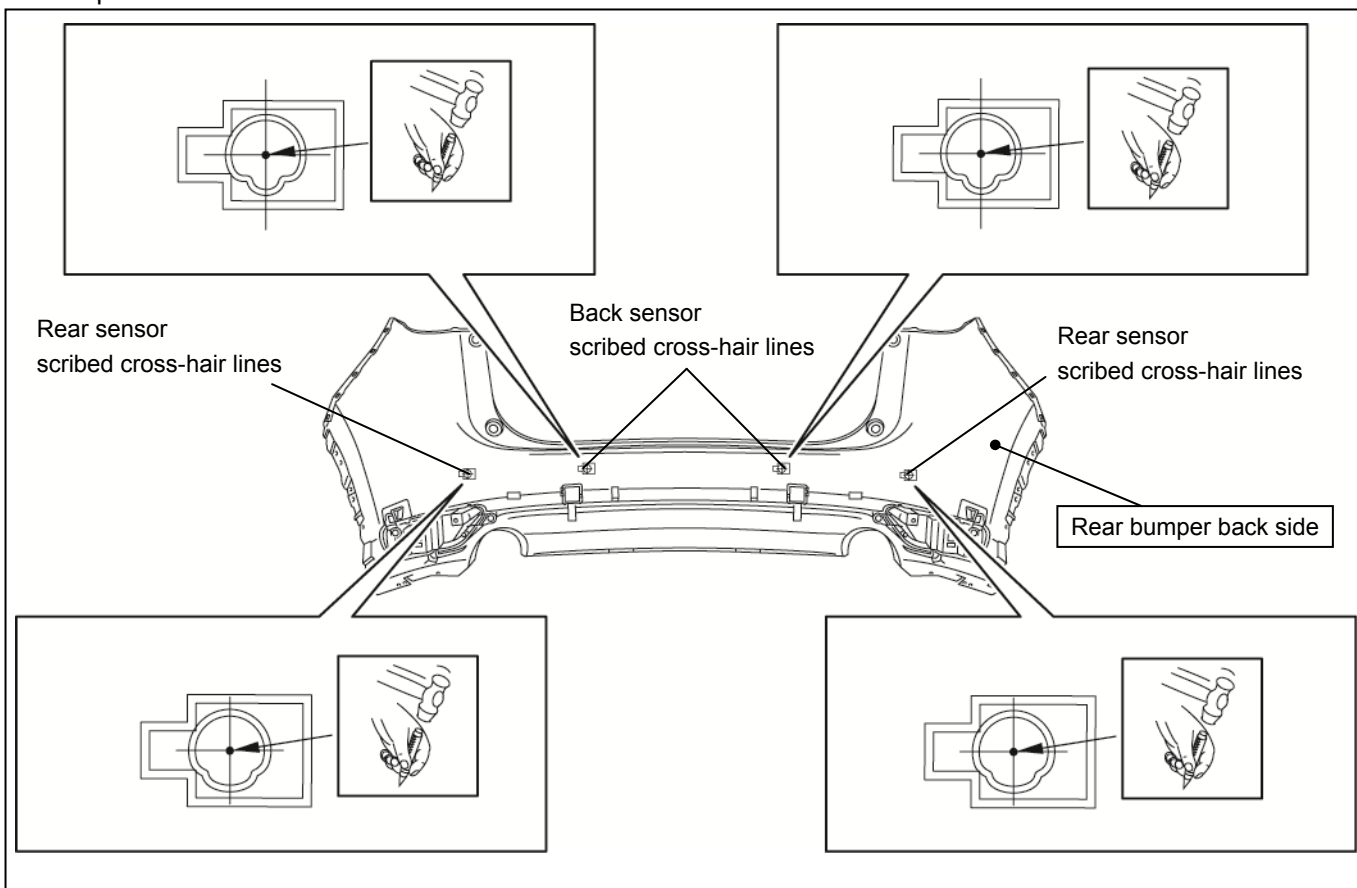
### ■ Sensor installation

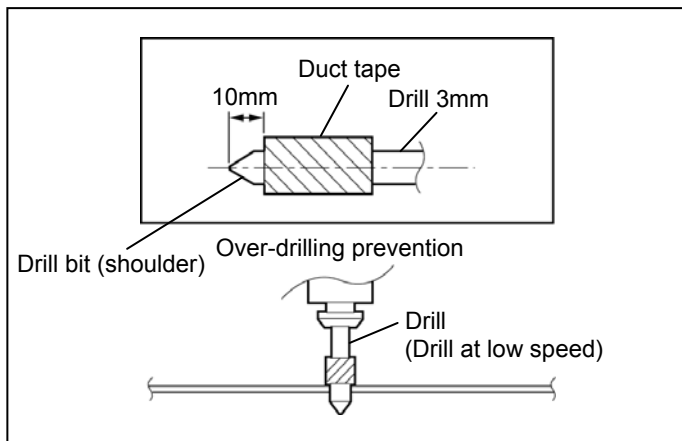
#### Note

- Installation view



1. Tap the punch into the center of the scribed cross-hair lines for sensor installation on the back side of the bumper.





2. Wrap the drill bit with duct tape as shown in the figure.
3. Set the drill rotation to low speed.

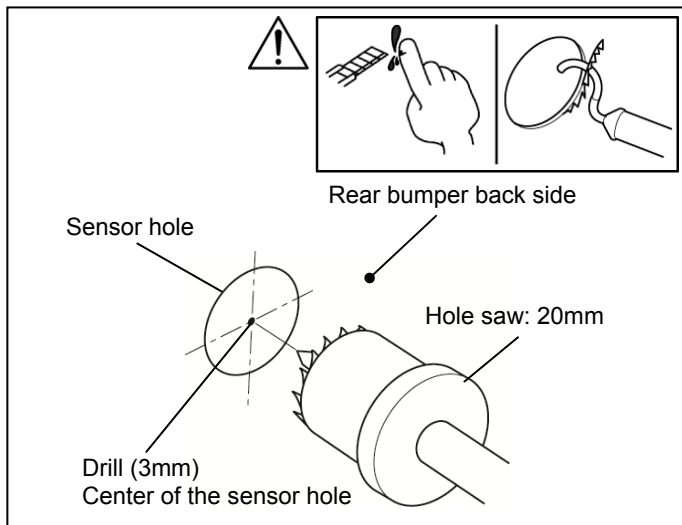
**⚠ CAUTION**

- Always use a drill with a rotation speed adjustment, otherwise the rear bumper may deform.
- Be careful when handling drills and other sharp objects.
- To prevent scratching and over-drilling, always wrap the drill bit with duct tape.

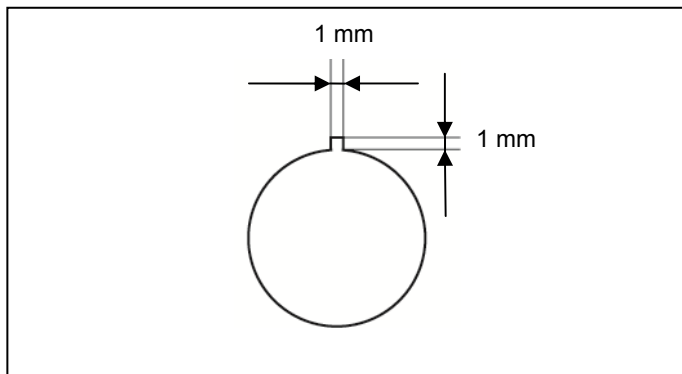
4. With the drill bit pointed perpendicular to the bumper, drill 3mm holes in the marked positions.
  - 3mm hole

**⚠ WARNING**

- Be careful when handling drills and other sharp objects.  
If not handled properly, it could result in serious injury.

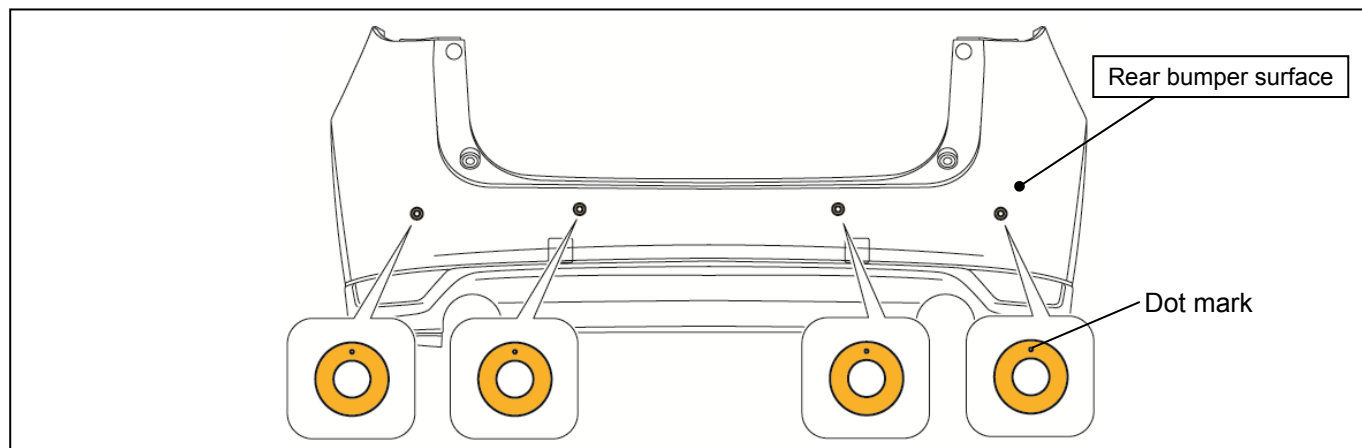


5. Drill 20mm holes in the center of each sensor hole using a hole saw.



6. Using a utility knife, cut a notch into the upper part of each sensor hole at the dimensions shown in the figure on the left.

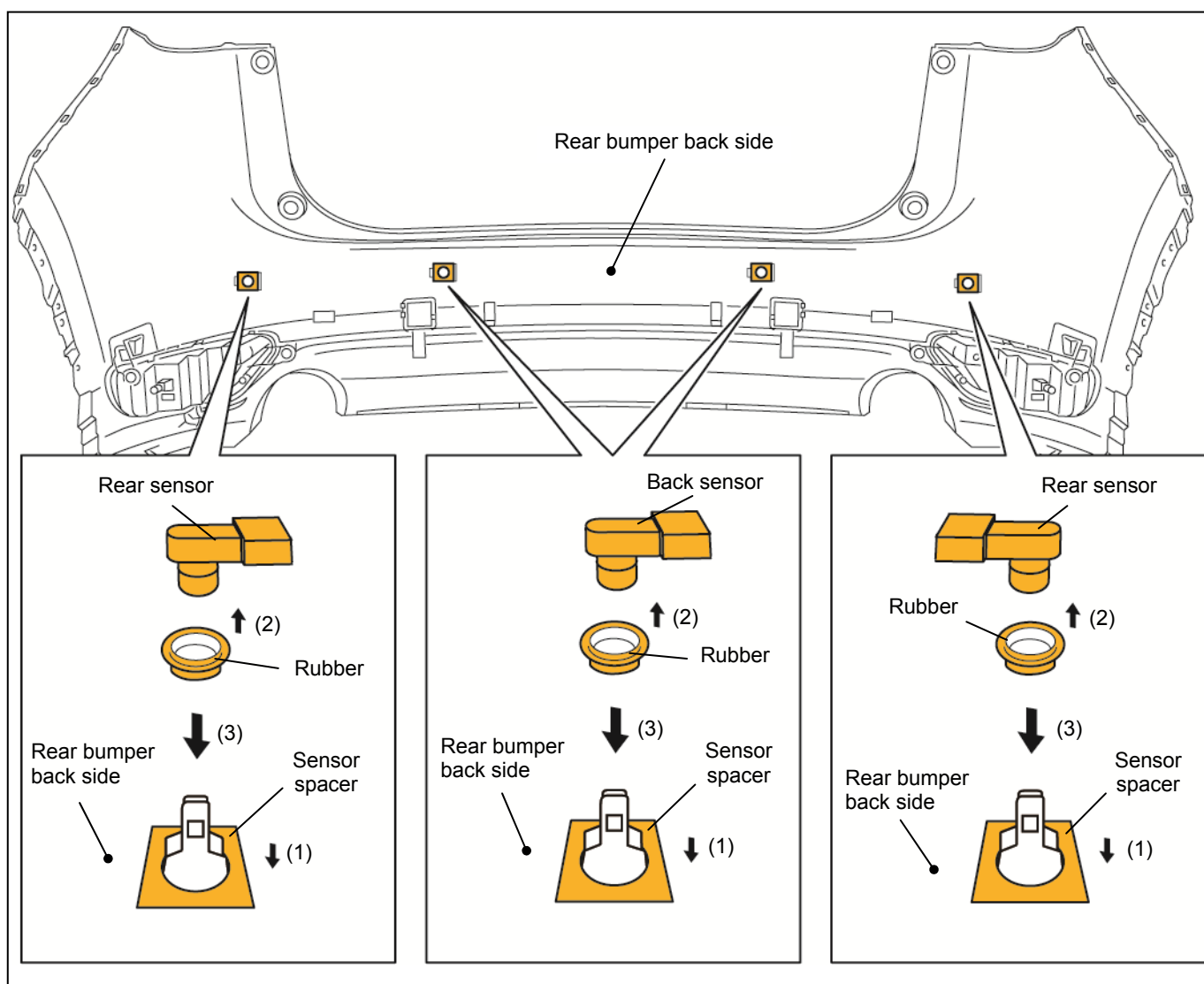
7. Remove the bezel from the sensor and install it to the surface of the rear bumper with the bezel dot mark on the top.



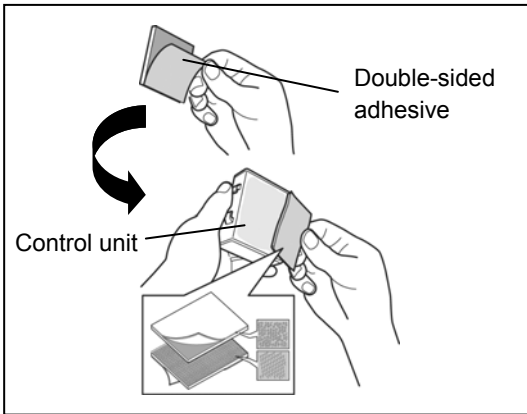
8. First install the spacer, then sensor with rubber to the back side of the rear bumper.

**CAUTION**

- The shapes of the washers differ, therefore verify the shape before installing them.
- Insert the sensor projection into the washer recess.
- After installing, make sure the rear sensor and back sensor are securely pressed into the rear bumper.



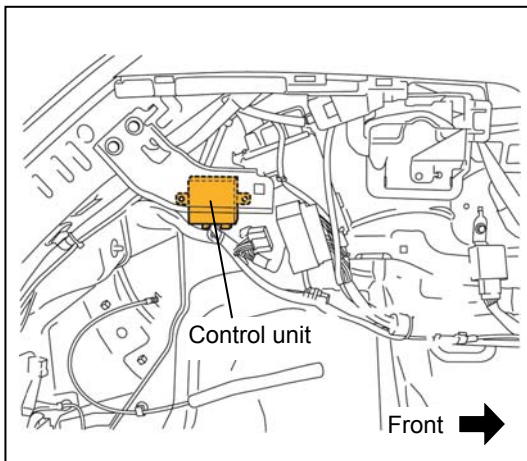
## ■ Control unit installation



1. Affix double-sided adhesive tape to the control unit.

### ⚠ CAUTION

- Always remove dirt or oil because the adhesive strength of the double-sided adhesive tape weakens.

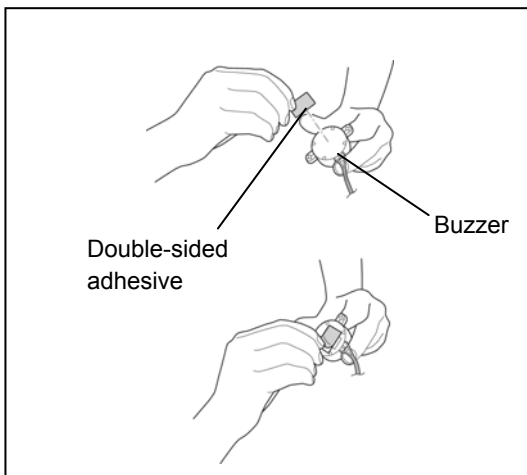


2. Peel off the double-sided adhesive tape backing and adhere the control unit to the body panel of the lower part inside of the trunk side trim (driver's side).

### ⚠ CAUTION

- Always remove dirt or oil because the adhesive strength of the double-sided adhesive tape weakens.

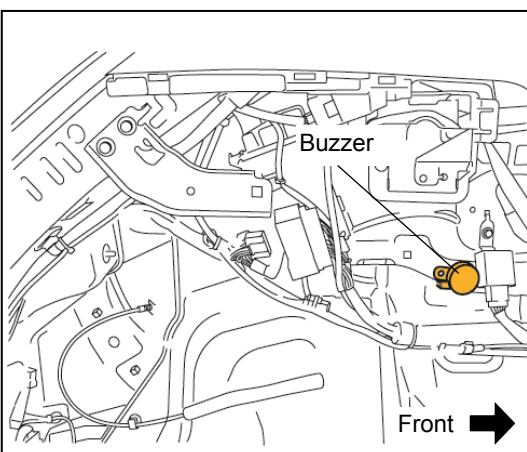
## ■ Buzzer installation



1. Affix double-sided adhesive tape to the buzzer.

### ⚠ CAUTION

- Always remove dirt or oil because the adhesive strength of the double-sided adhesive tape weakens.



2. Peel off the double-sided adhesive tape backing and secure the rear buzzer to the body panel of the upper inside part of the trunk side trim (driver's side).

### ⚠ CAUTION

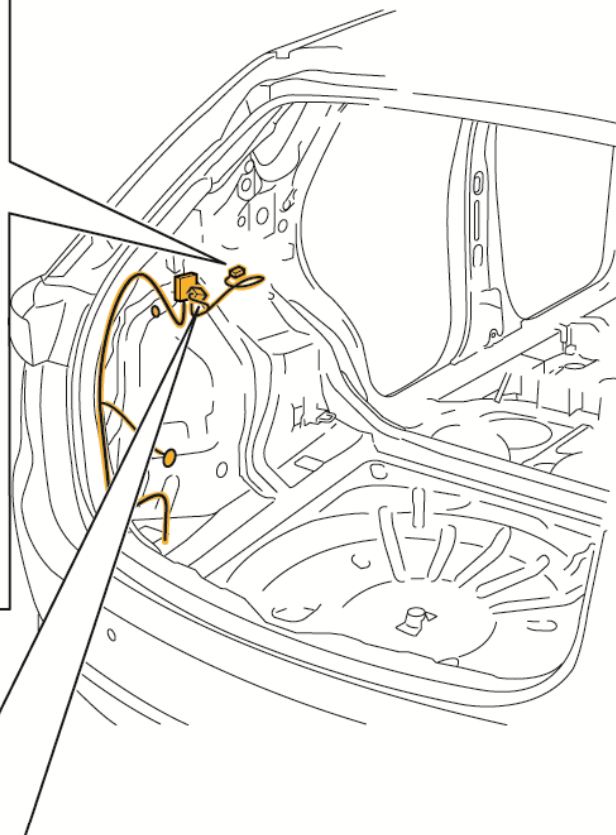
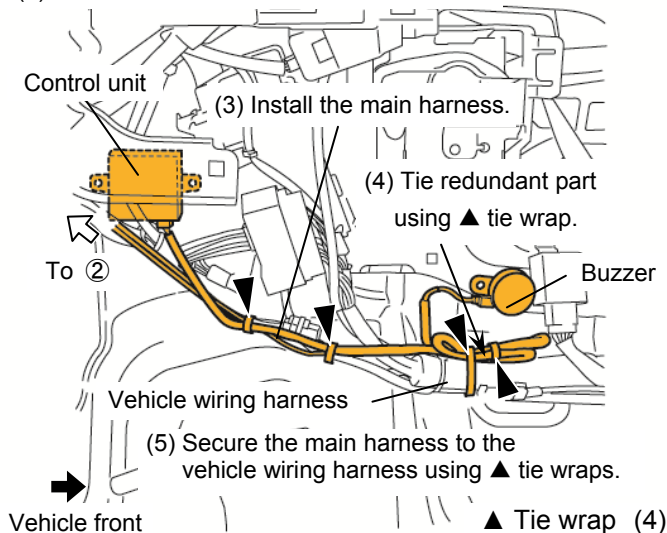
- Always remove dirt or oil because the adhesive strength of the double-sided adhesive tape weakens.

## 8. INSTALLATION OF THE HARNESS

### [ Main harness ]

①

- (1) Connect the main harness to the control unit.
- (2) Connect the main harness to the buzzer.



#### ⚠ CAUTION

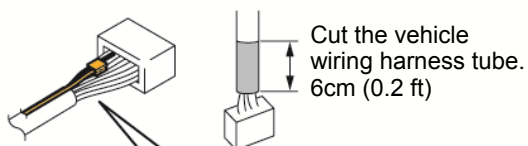
- When affixing the main wiring harness to the vehicle harness using a tie wrap, do not affix the harness together with the fuel filler lid opener cable.

②

- (1) Connect an electro-tap to the position shown in the figure.
- (2) Wrap cushioning tape around the electro-tap.

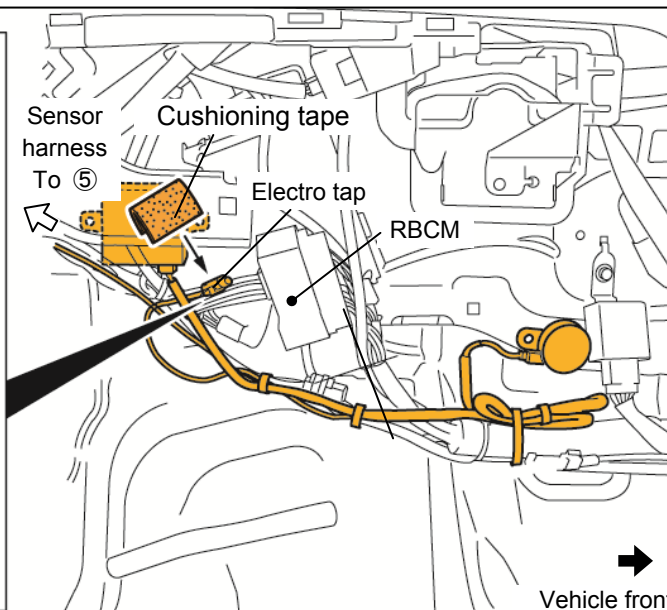
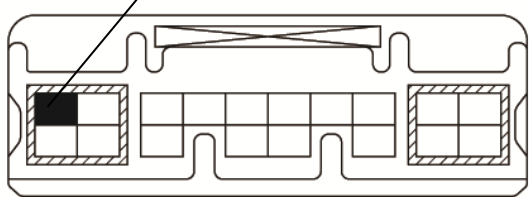
#### ⚠ CAUTION

- Connect an electro-tap for the main harness to the indicated signal line securely. Misconnection may cause a system or vehicle malfunction.
- For branch connection procedure using electro tap, refer to [Branch connection procedure using electro tap] on page 5.



RBCM4 18-pin connector [Blue]  
(View from harness side)

Vehicle wiring harness [Brown]  
Main harness [Red]

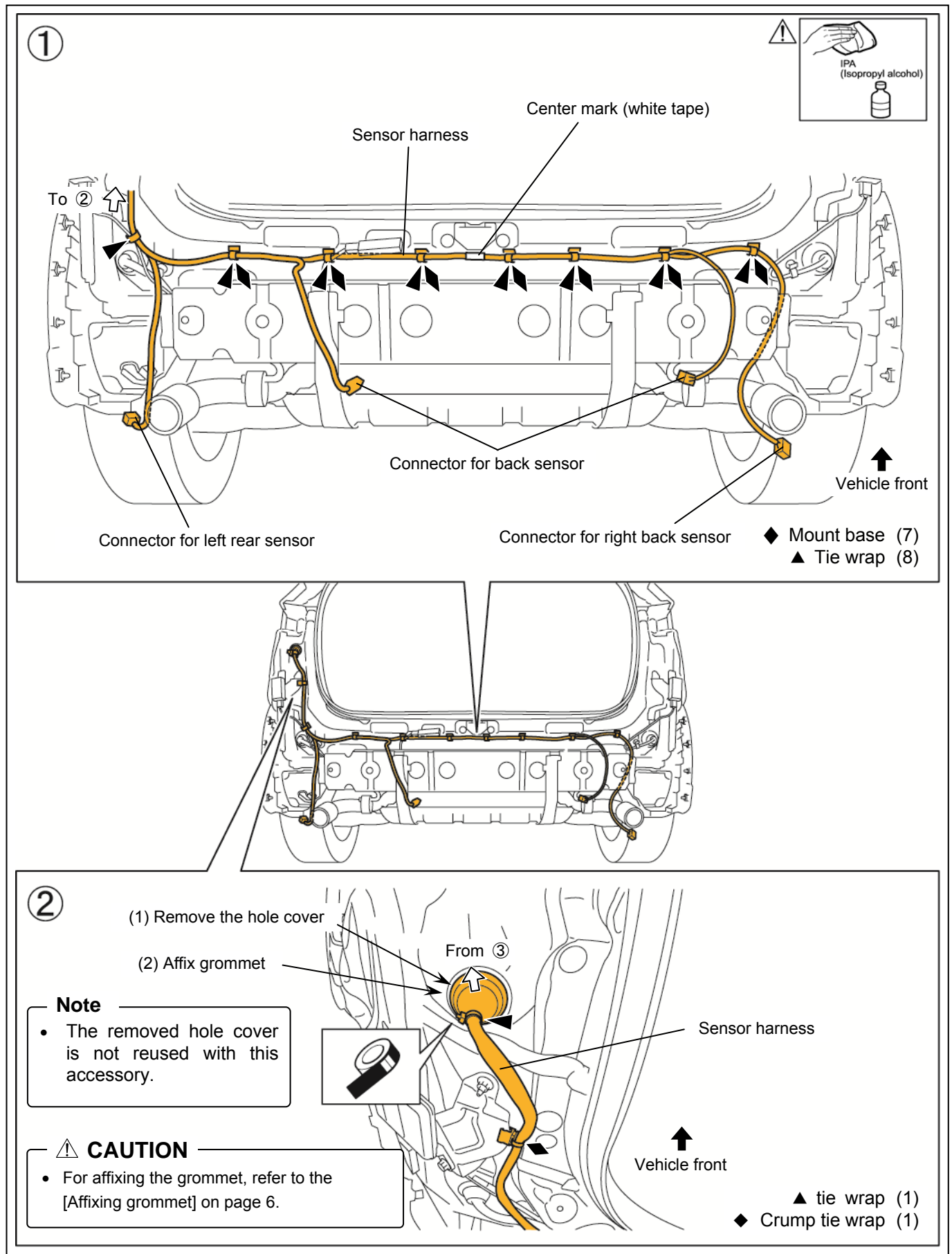




## [ Sensor harness (1) ]

### Vehicle with BSM

※ Install the wiring harness to the cabin interior from the rear bumper side.

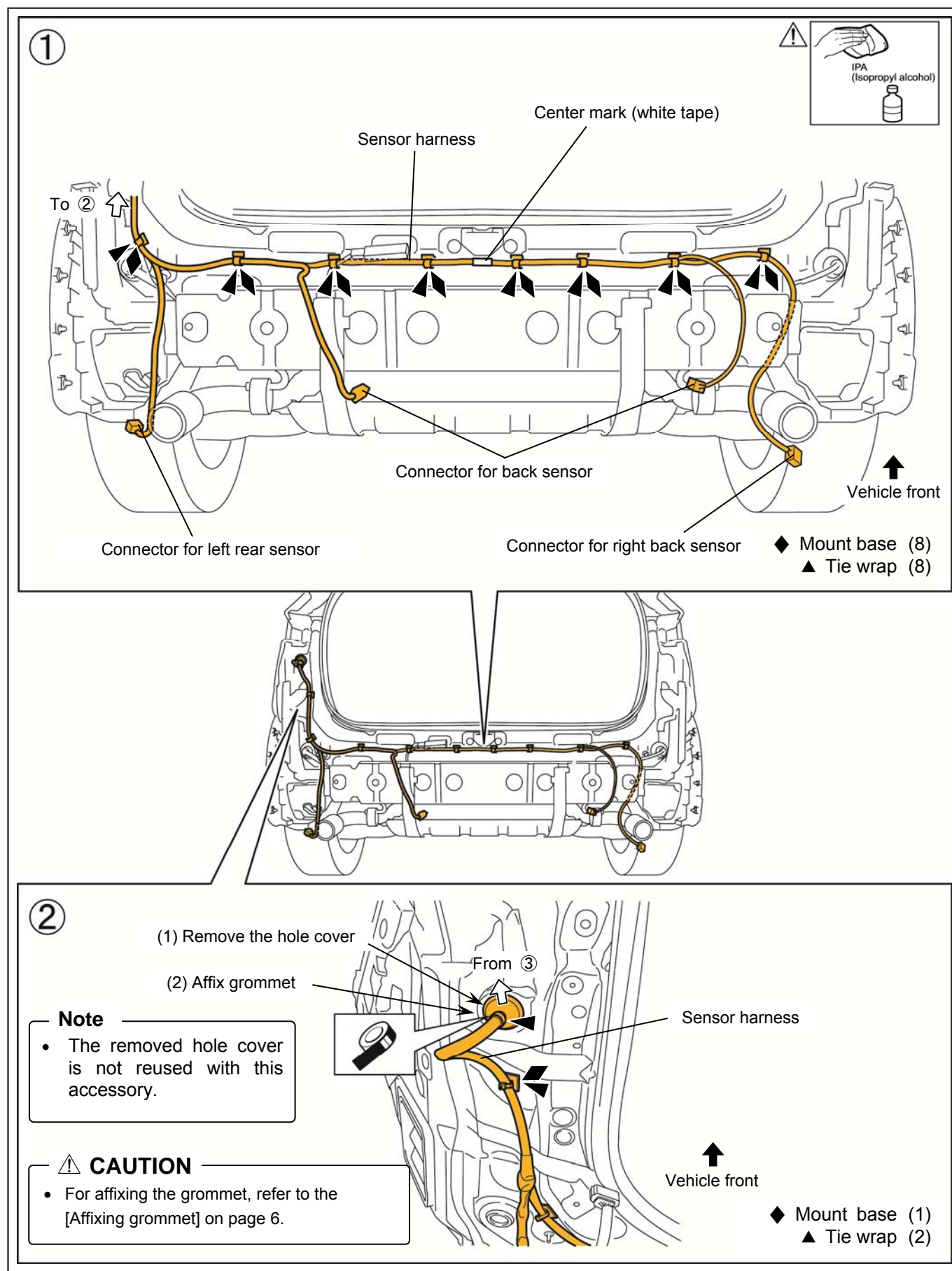




## [ Sensor harness (1) ]

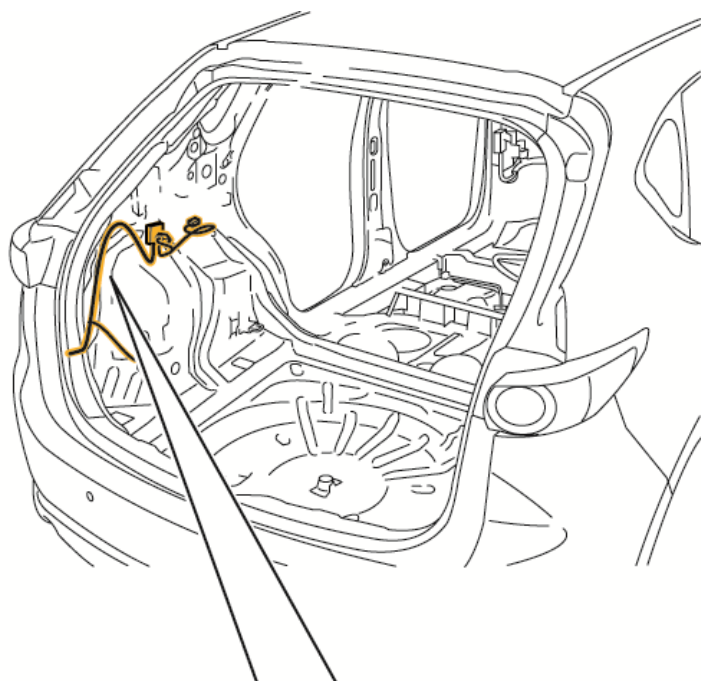
### Vehicle without BSM

※ Install the wiring harness to the cabin interior from the rear bumper side.

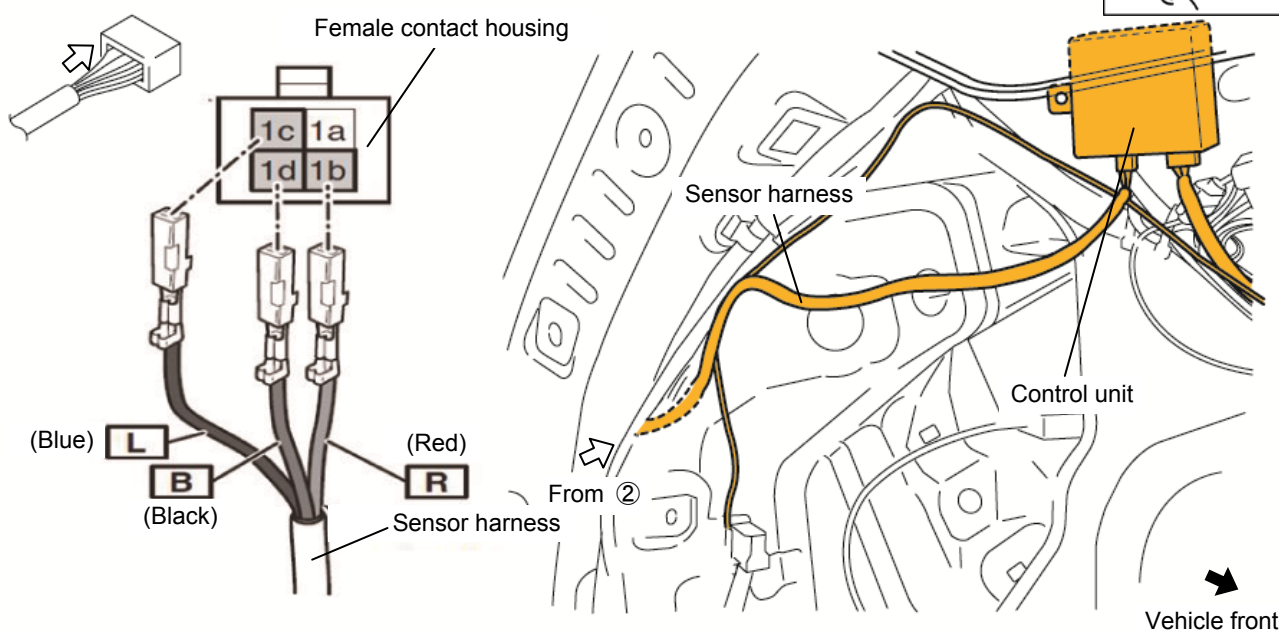


## [ Sensor harness (2) ]

※ Install the wiring harness to the cabin interior from the rear bumper side.

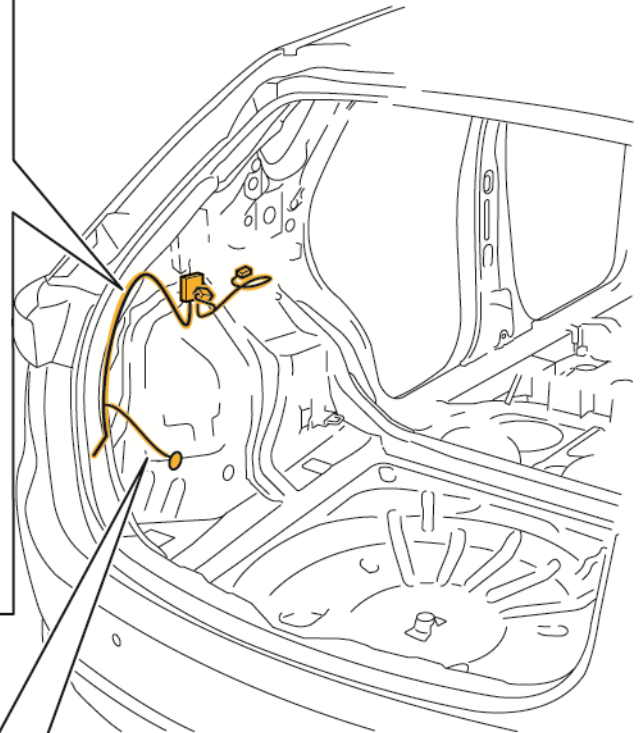
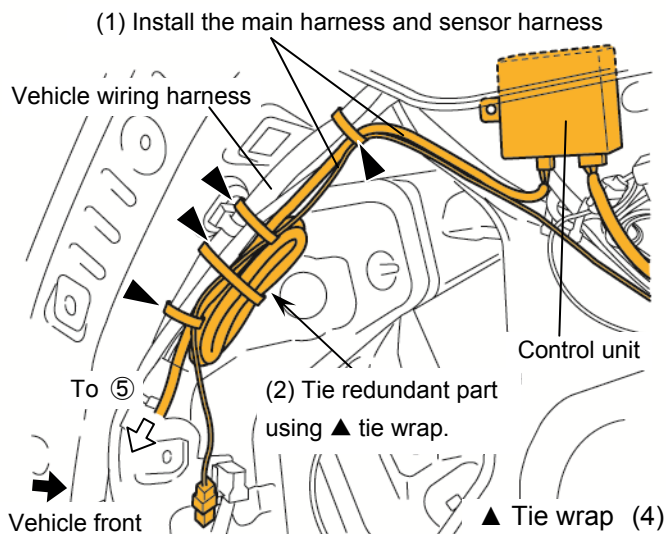


- ③ (1) Insert sensor harness terminals to female contact housing.  
(2) Connect the sensor harness connector to the control unit.

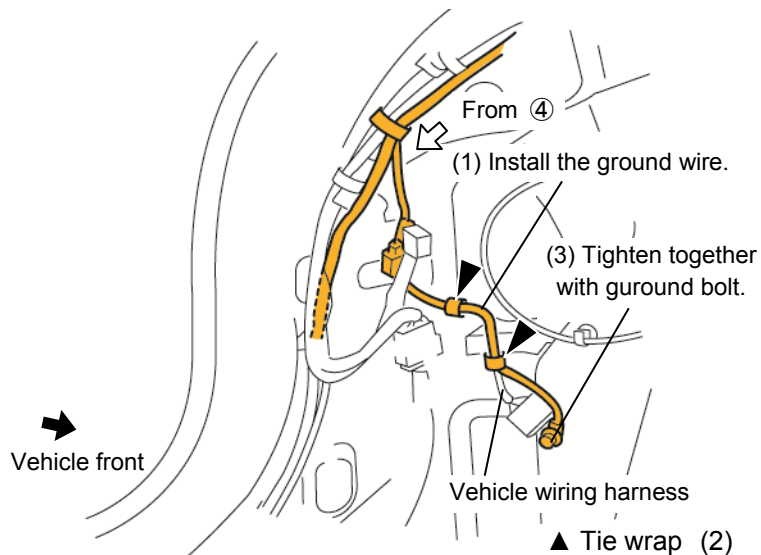


## [ Sensor harness (3) ]

- 4** (3) Secure the main harness and sensor harness to the vehicle wiring harness using ▲ tie wraps.



- 5** (2) Secure the main harness to the vehicle wiring harness using ▲ tie wraps.



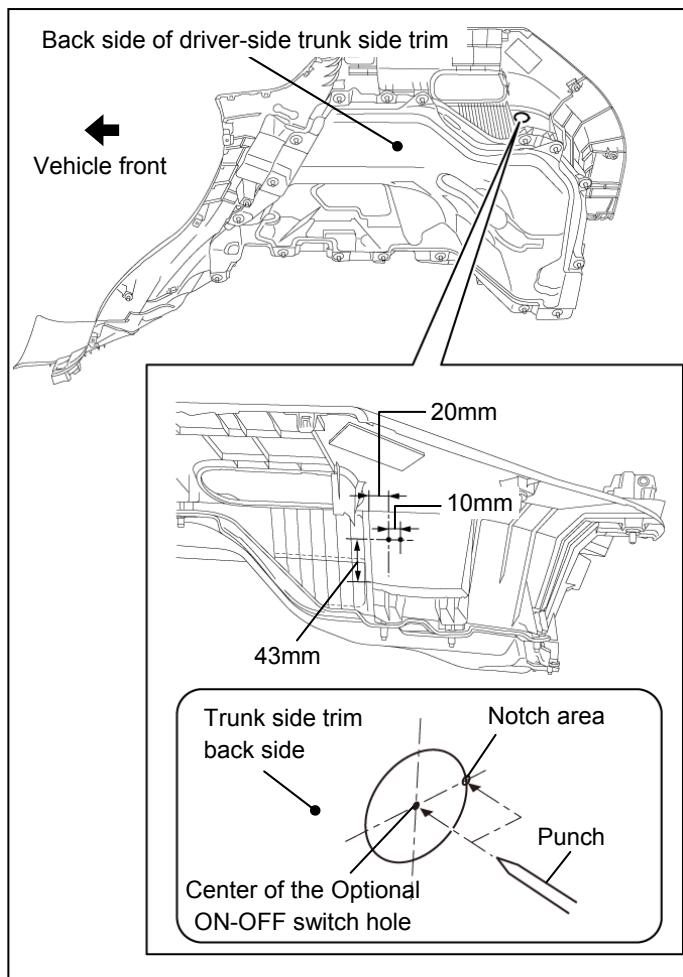
• Ground bolt tightening torque : 8.8-12.7 N·m

## 9. INSTALLATION OF OPTIONAL ON-OFF SWITCH FOR USE WHEN TOWING

### Note

- This procedure is not necessary if the [optional on-off switch for use when towing] is not installed.  
Go to 9. CAUTIONS WHEN RE-INSTALLING.

### ■ Optional ON-OFF switch installation



- Mark the back side of the driver-side trunk side trim in the position shown in the figure using a punch.
- Wrap the drill bit with duct tape as shown in the figure.
- Set the drill rotation to low speed.

### ⚠ CAUTION

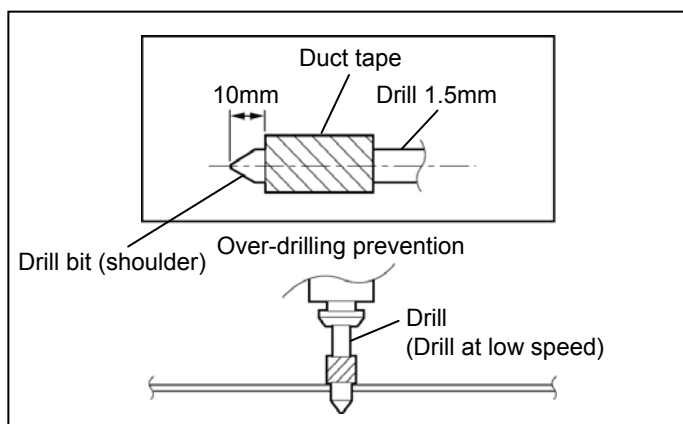
- Always use a drill with a rotation speed adjustment, otherwise the rear trunk side trim may deform.
- Be careful when handling drills and other sharp objects.
- To prevent scratching and over-drilling, always wrap the drill bit with duct tape.

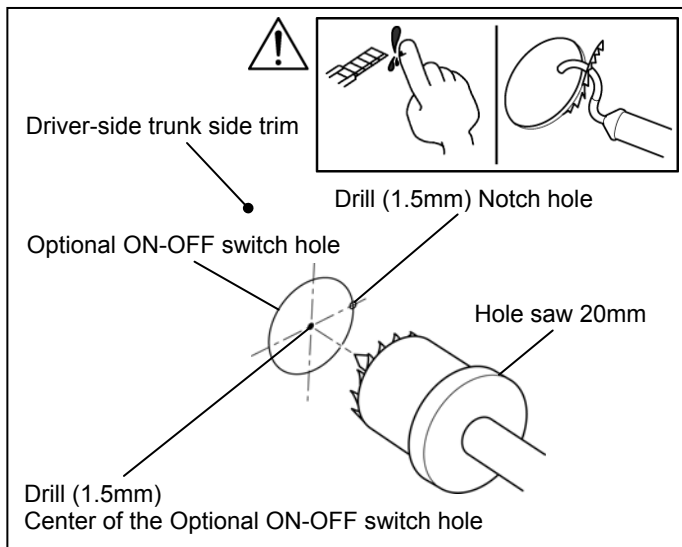
- With the drill bit pointed perpendicular to the trunk side trim, drill 1.5mm holes in the marked positions.

- 1.5mm hole (2 locations)

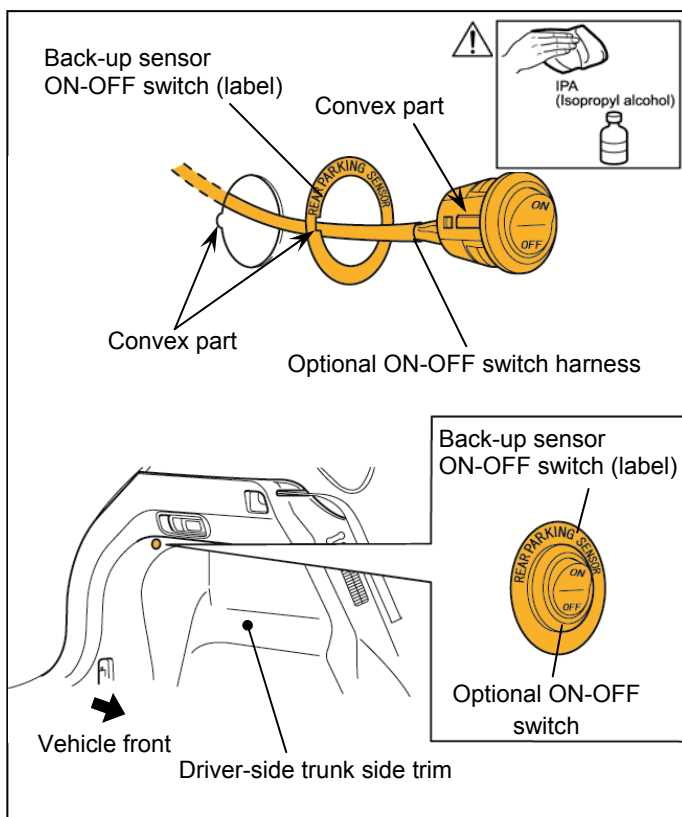
### ⚠ WARNING

- Be careful when handling drills and other sharp objects.  
If not handled properly, it could result in serious injury.

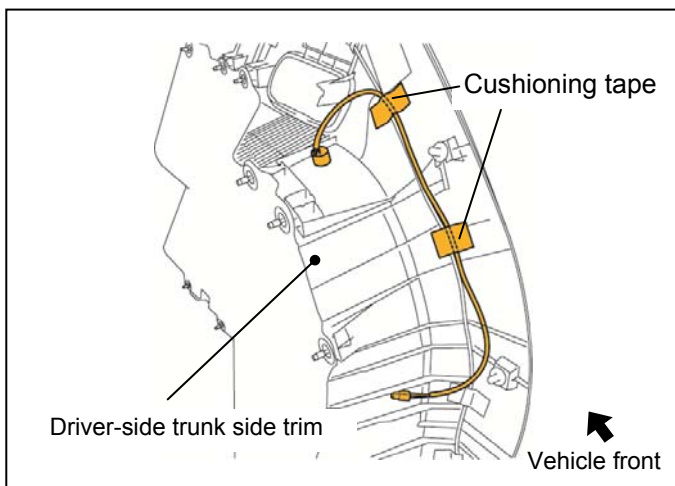




6. Drill a hole in the center of each Optional ON-OFF switch hole using a hole saw 20mm.



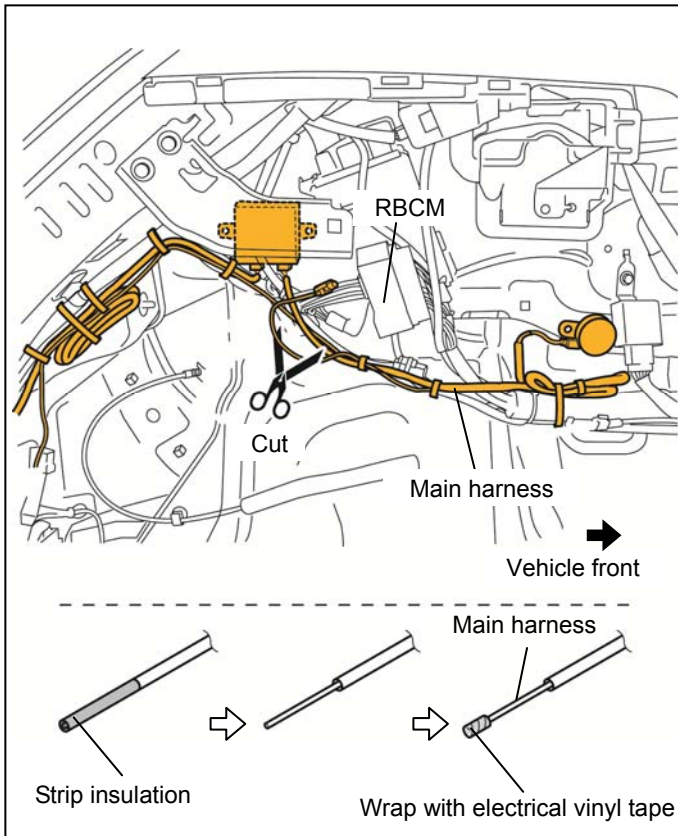
7. Remove the paper backing from the back-up sensor ON-OFF switch (label) and adhere the label to the driver-side trunk side trim.
8. Install the Optional ON-OFF switch harness by passing it through from the surface of the driver-side trunk side trim.



9. Secure the switch harness to the underside of the trunk side trim (driver's side) as shown in the figure on the left using cushioning tapes.



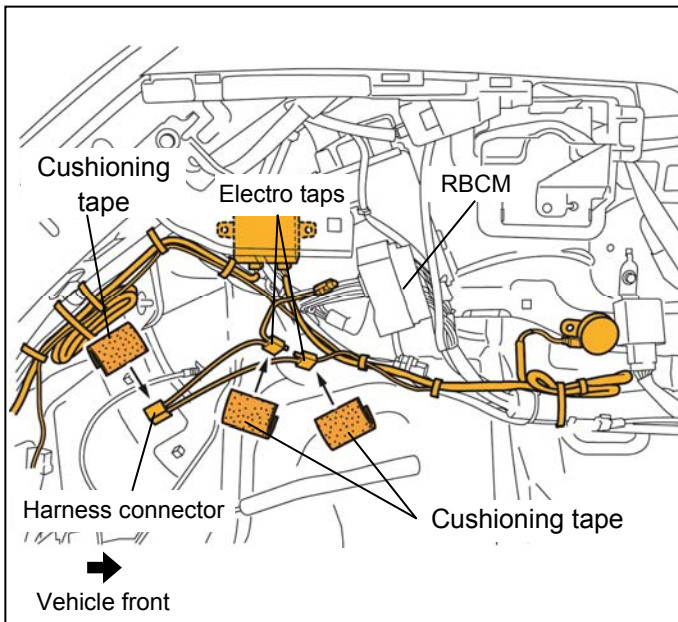
## ■ Harness installation



1. Cut the main harness (Red wire) at the position shown in the figure.
2. Strip the main harness insulation and wrap electrical vinyl tape around the tip of the stripped main harness for insulation.

### ⚠ CAUTION

- Always insulate the main harness.



3. Connect the wiring harness included in the optional on/off switch kit to the main harness stripped in Step 1. with electro taps. (No polarity)

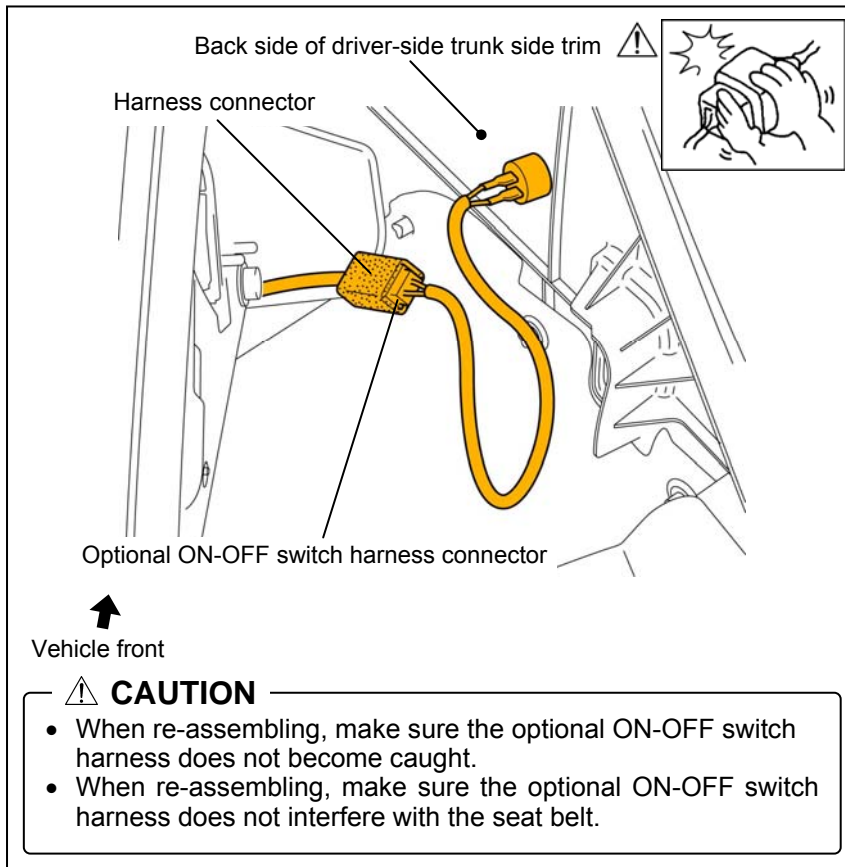
### ⚠ CAUTION

- For branch connection procedure using electro tap, refer to [Branch connection procedure using electro tap (Optional ON-OFF switch installed)] on page 5.

4. Wrap the electro taps in the 2 locations and the harness connector with cushioning tapes.

## 10. CAUTIONS WHEN RE-INSTALLING

1. Reinstall parts in the reverse order of the installation procedure in “VEHICLE PARTS REMOVAL”.
  - Connect the main wiring harness to the rear sensor.
  - Connect the optional on-off switch harness to the harness.



2. Refer to “Required servicing after disconnecting/connecting negative battery cable” in the vehicle workshop manual or the owner’s manual to restore the vehicle functions.
3. Perform reinstallation and inspection of the vehicle parts.

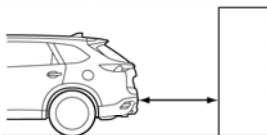
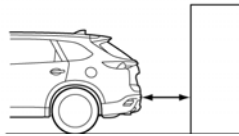
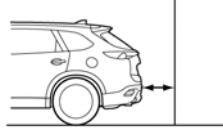
## 11. OPERATION CONDITION

- Is available when the ignition is switched ON and shift lever is in the R position.
- The sensor detects obstructions when the shift lever is in the R position.

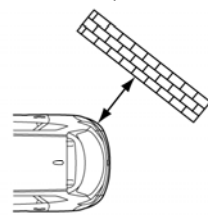
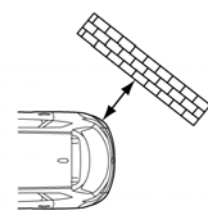
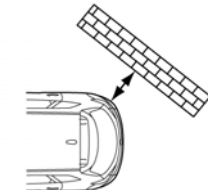
### • Alarm (beeper) sound

- The beeper operates (sounds) as follows while the system is operating.

#### ◇ Back sensor

Distance between the vehicle and the obstruction	Beeper sound*
Approx. 130-100cm (4.3-3.3 ft) 	Slow intermittent sound
Approx. 100-50cm (3.3-1.6 ft) 	Fast intermittent sound
Within approx. 40cm (1.3 ft) 	Continuous sound

#### ◇ Rear sensor

Distance between the vehicle and the obstruction	Beeper sound*
Approx. 60-50cm (2.0-1.6 ft) 	Slow intermittent sound
Approx. 50-40cm (1.6-1.3 ft) 	Fast intermittent sound
Within approx. 40cm (1.3 ft) 	Continuous sound

\* The closer the obstruction is approached the faster the continuous sound is emitted.

## 12. TROUBLESHOOT

Malfunction symptom	Inspection	Action
Alarm sound (buzzer) does not activate even though there is an obstruction around the sensor.	Is the ignition switched ON?	Switch the ignition ON.
	Is each part connected correctly? (Each connector, reverse signal line, ground terminal)	Connect each part correctly.
	Is there a device generating ultrasonic waves near the vehicle? (Air compressor, high-pressure car washer, impact wrench, or electric drill)	Take the device away from the ultrasonic wave generation source.
	Is the shift lever in the R position?	Shift the shift lever to the R position.
Alarm sound (buzzer) activates even though there is no obstruction around the sensor.	Is the ground detected? * If beep sound stops after placing cardboard on the ground, the ground may be detected.	Install the sensor correctly.